

The welfare effects of economic integration in the Tripartite Free Trade Area

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DECLARATION

I declare this thesis titled

The welfare effects of economic integration in the tripartite free trade area

is my own work and all the materials and resourced which were quoted and used were duly acknowledged using in-text citations and complete references, and that I have not previously submitted the thesis for degree purposes at another university

.....

Michael Takudzwa Pasara

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I dedicate this work to my late mother, Grace. She was a fearless fighter who infused in me the world of possibilities in a world of impossibilities.

ABSTRACT

African countries continue to view economic integration as a rational response to the inevitable rise in globalisation and international trade in order to stimulate economic growth and increase economic welfare. Thus, this thesis investigated the welfare effects of economic integration in the Tripartite Free Trade Area which is an agreement between the twenty six member countries of the three regional economic communities (RECs) namely Common Market for East and Southern Africa (COMESA), the East African Community (EAC) and the Southern African Development Community (SADC). The overarching objective was subsequently divided into primary, theoretical and empirical objectives.

The study employed three models, that is, two econometric models and one simulation model, in order to realise these objectives. The first model was focused on testing whether the macroeconomic variables as identified in the convergence criteria were converging or diverging. These tests included both statistical analysis and tests for stationarity. The second model employed was the augmented gravity equation which is a panel model. This augmented gravity model was aimed at establishing two things. Firstly, the model identified the factors which influence the level of intra-African trade using historical trade data between 2000 and 2015 across the 26 member countries. Secondly, the model was aimed at establishing the level of trade creation and trade diversion among the three RECs. The study conducted several procedures which include diagnostic tests which include tests for multicollinearity, tests for stationarity, Lagrange multiplier test and the Hausman test. Post estimation tests also included tests for autocorrelation and cross-dependence test. The third model employed was the World Integrated Trade Solution-Software for Market Analysis and Restrictions on Trade (WITS-SMART) simulation model. The WITS-SMART simulation model was aimed at establishing the potential winners (or losers) from the TFTA both at country and sectorial level. The main findings from this thesis are as follows:

Firstly, the study observed evidence of relatively strong forms of convergence of macroeconomic variables across the TFTA member countries. However, as expected, the evidence is scattered because it was detected in some but not all economies or sub-periods. Nonetheless, the thesis acknowledges the progress made by the member countries over the 15 year period in stabilising key macroeconomic variables especially inflation and service debt. Although cross-country dispersion of deficit was decreasing over time (which indicates convergence), the evidence remained weak and unstable. In general, the magnitude of

convergence was stronger for monetary variables but the majority of TFTA countries were still struggling to fuse (move towards convergence) and stabilise their fiscal positions.

Secondly, the empirical results of the augmented gravity model indicate that the incomes of both the importing and exporting country had a significant influence on the level of bilateral trade across the TFTA countries. However, the income of the former carried more weight at 1% level of significance whilst the income of the latter was weakly significant at 10% level. The proxy for income was the Gross domestic product (GDP). The results also indicate that the effect of weighted distance on bilateral trade was negative and statistically significant coefficient at 1% level. Country idiosyncratic factors included whether or not trading countries had a common official language, shared border and whether the country was landlocked or coastal. Language was found to be insignificant to bilateral trade levels. Countries with a shared border had a positive coefficient whilst that of landlocked was negative. Both coefficients were statistically significant coefficient at 1%. The variable of whether or not the country was a member of a free trade area (FTA) indicated the degree of economic integration (or trade liberalisation) in the economy. The FTA variable was found to be positive and statistically significant at 1% level implying that integrated countries trade more with each other than those that are not. The results also indicated the level of trade creation and trade diversion across the three RECs. The study found that there was trade created in the SADC region for the period 2000 to 2015 but the results were inconclusive for COMESA.

The results also indicated that the EAC coefficient was negative and statistically significant for the EAC indicating they traded below the expected levels amongst themselves than they did with the rest of the world. The gravity results also traced changes into the regional openness dummies to provide evidence into the trade diversion effects. The EAC sign was positive and statistically significant implying that imports into the EAC from non-member countries in the rest of world (RoW) were higher than the gravity model would predict. Thus, it was difficult to statistically determine the net welfare effects for the EAC since both the regional dummy coefficient and the openness coefficient were higher than the gravity model would predict. The estimated coefficient for trade diversion for SADC was negative and statistically significant. The net effect for SADC was negative since trade diversion outweighs trade creation. Thus, SADC countries were now trading more with other SADC member states who were less efficient at producing certain commodities for the mere reason that these products had become cheaper due to tariff reduction resulting in a net welfare loss for the region. The net effect for COMESA was positive but statistically insignificant.

The final model, the WITS simulation procedure indicated the countries and economic sectors which were likely to gain the most (or least) once they start implementing the TFTA. Net trade gains were found to be polarised towards a few economies. The Democratic Republic of Congo, Mozambique, Ethiopia, South Africa, Djibouti and Uganda were found to have the highest potential for positive net trade gains whilst Seychelles, Swaziland, Lesotho, Mauritius and Madagascar were found to be the least potential beneficiaries. In general, countries which were already pursuing trade liberalisation were not likely to gain much from the TFTA since they were already enjoying the trade creation benefits prior. Thus, the more closed the economy was prior to the agreement, the more it was likely to gain post liberalisation. In addition, larger economies were likely to gain more than smaller economies due to economies of scale in both production and consumption. The WITS-SMART model also found the amount of revenue losses that each of the twenty six countries were likely to lose as a result of tariff liberalisation and the overall welfare effects for each economy.

At sectorial level, the WITS-SMART model indicated the levels of trade creation, diversion, net trade effects, revenue effects and overall welfare effects which are likely to accrue to each economic sector. The product classification and economic sectors which were adopted in this thesis are raw materials, intermediate goods, consumer goods, capital goods, agricultural sector, industrial sector and petroleum sector. Overall net trade gains were estimated at around USD 2.1 trillion per annum. Overall, the results indicate that trade in the industrial sector has the greatest potential with 34% followed by trade in intermediate goods with 24%. The agricultural sector has potential to contribute 18% of overall economic welfare. Trade in raw materials will likely increase 3% of total welfare whilst the petroleum sector will contribute a meagre 1% to overall economic welfare.

The main contributions emanating from this study are as follows. Firstly, the study was able to show that economic integration leads to *ex-post* convergence of macroeconomic variables. Macroeconomic convergence is vital because it reflects if the respective economies are moving towards a similar level of development and wealth which indicates that it is not all doom and gloom for the continent. Secondly, the study was also able to the need for fiscal discipline among many economies to ensure stability and sustainability of economic growth and welfare. Convergence is significant because it implies business cycles are synchronised which makes it feasible and effective for policy makers to prescribe similar solutions across the region. Thirdly, the study also employed both econometric and simulation procedures and used different data sets to produce results which are to a larger extent, consistent. The different

models also allowed the thesis to capture various dimensions and aspects on the economic integration subject which may not have been achievable with one models. Moreover, the study also focused mainly on developing and transitional economies in its empirical review which provided an opportunity to be more comprehensive in its analysis on various issues which mainly affect developing countries. Notably, the thesis specifically discussed the various issues pertaining the three RECs (COMESA, EAC and SADC) which make up the TFTA and also the challenges peculiar to the African paradigm of regional economic integration.

The conclusion is that African economic integration is beneficial for Africa and countries should continue to liberalise their trade policies and integrate their systems. However, care should be taken and measures put in place to protect small and vulnerable countries and economic sectors in order to minimise polarisation of benefits. This can be done by providing special concession to key sectors especially to small economies which are largely depended on that sector, providing a systematic way liberalisation which is staggered to allow for economies to adjust, providing supplementary income to those economies which are largely depended on tariff revenue and also through subsidisation process. In the long term, there will be need to have policies such as reskilling of labour which will accommodate the structural changes which will be brought about as a result of trade liberalisation and economic integration.

Key words: Economic integration, welfare effects, Free trade area, intra-trade, international trade, WITS-SMART, Gravity model, macroeconomic convergence, tripartite free trade agreement

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LIST OF ACRONYMS AND ABBREVIATIONS

AEC	African Economic Community
AfDB	African Development Bank
ASEAN	Association of Southeast Asian Nations
AU	African Union
CEN-SAD	Community of Sahel-Saharan States
CET	Common External Tariff
CFTA	(African) Continental Free Trade Area
CMI	COMESA Monetary Institute
COMESA	Common Market for East and Southern Africa
COMTRADE	Common Format for Transient Data Exchange
DRC	Democratic Republic of Congo
EAC	East African Community
ECCAS	Economic Community of Central African States
ECOWAS	Economic Community of West African States
EFTA	European Free Trade Area
FDI	Foreign Direct Investment
FEM	Fixed Effects Model
FTA	Free Trade Area
GDP	Gross Domestic Product
GTAP	Global Trade Analysis Project
HIPC	Highly Indebted Poor Countries
HS	Harmonised Commodity Description and Coding System
ICT	Information and Communication Technology

IDB	Inter-American Development Bank
IFI	International Finance Institutions
IGAD	Intergovernmental Authority on Development
IMF	International Monetary Fund
ISI	Import-Substitution Industrialisation
MLG	Multi-level Governance
MTSP	Medium Term Strategic Plan
NTBs	Non-Tariff Barriers
OSBP	One Stop Border Post
PIDA	Project Infrastructure for Development in Africa
PPP	Purchasing Power parity
REC	Regional Economic Community
REM	Random Effects Model
RIA	Regional Integration Arrangement
RTA	Regional Trade Agreement
RISDP	Regional Indicative Strategic Development Plan
SADC	Southern African Development Community
SADCC	Southern African Development Coordinating Conference
SDGs	Sustainable Development Goals
SIPO	Strategic Development Plan for the Organ
SITC	Standard International Trade Classification
SPS	Sanitary and Phytosanitary standards
SSA	sub-Saharan Africa
TFA	Trade Facilitation Agreement under the WTO

TFTA	Tripartite Free Trade Area (Agreement)
TRAINS	Trade Analysis and Information Systems
TTNF	Tripartite Trade Negotiating Forum
UMA	Arab Maghreb Union
UNCTAD	United Nations Conference on Trade and Development
UNECA	United Nations Economic Commission of Africa
USD	United States Dollar
WB	World Bank
WITS	World Integrated Trade Solution
WTO	World Trade Organisation

1 CHAPTER 1: RESEARCH BACKGROUND

1.1 INTRODUCTION AND BACKGROUND OF THE STUDY

The role of international trade in development is becoming increasingly significant in recent decades especially with the unavoidable incidence of globalisation. Krugman, Obstfeld and Melitz and Marc (2010) highlighted that 21st countries are more linked due to trade in goods and services, flows of money and foreign investments making economic relations a critical element of every country, especially in the developing world. However, Africa continues to engage at the periphery of the global economy as evidenced by a declining share in global production and trade (AEO, 2016; AfDB, 2014; WTO, 2011). Most sub-Saharan Africa (SSA) economies are small and least developed, characterised by low income per capita and small markets. In 2008, twelve SSA states had populations of less than 2 million and 19 economies had a gross domestic product (GDP) which was below US\$5 billion, of which six of them were less than US\$1 billion (Beyene, 2014a; UNECA, 2016; Walters *et al.*, 2016). Economic analysts have argued that Africa is further disadvantaged by high transaction costs to trade since the continent is characterised by 15 countries which are landlocked (AfDB, 2012; Mold and Mukwaya, 2015).

Many other constraints exist in Africa, which increases transaction costs of international trade and dampens the trade volumes and growth prospects. The continent is characterised by low per capita densities of road and rail infrastructure resulting in poorly developed cross country connections (Mothae, 2005). The transaction costs are expatiated by the fact that the continent covers a much wider geographical span compared to other regional economic communities like those within the European Union and Asia Pacific region (Mold and Mukwaya, 2015). Moreover, high regulatory policies especially in air transport, reduce both competition and efficiency (Beyene, 2014c; Ariovich, 1979). The African geo-political configuration which was largely influenced by European colonial hegemony resulted in small and fragmented domestic markets which translated into lack of scale economies in production and distribution of merchandise (Baldwin and Seghezza, 1998; Claassen *et al.*, 2016).

Within Africa itself, there is a wide variance between the wealthiest and the poorest countries. For instance, the Gross Domestic Product per capita (GDPP) at purchasing power parity (PPP) in 2010 USD figures are as follows: Botswana, Mauritius and Seychelles topped the rankings with PPP of USD14 000 while South Africa and Angola had a GDP per capita PPP of USD 10

700 and USD 8 200, respectively. Namibia's GDPP in PPP terms was estimated to be USD 6900 and Egypt had USD 6 200. On the lower end, Lesotho, Kenya and Zambia had a GDPP PPP of USD 1700, USD 1 600 and USD 1 500, respectively. Comoros, Ethiopia and Mozambique had USD 1 000 while Malawi had a GDPP PPP of USD 800. Zimbabwe's GDPP PPP was USD 500 and the Democratic Republic of Congo had the least in the tripartite member countries with a PPP of USD 300 (World Bank, 2013; AEO, 2016; AfDB, 2014). The figures become even more revealing as sectorial statistics are taken into account. These statistics give an indication of the already existing disparities across economies which contribute to the complexities around intra-African trade since some low income countries will not have sufficient market absorbing capacity to sustain continental growth. All these factors place emphasis on the need for African economies to converge and minimise the welfare disparity.

Among other possible solutions, economic analysts have (for decades) been advocating for regional economic integration so that African economies could exploit more on the gains of intra-trade (Bhagwati, 1978; Balassa, 1978; Krueger, 1978; Ocampo, 1986; Frankel and David, 1999; Dollar and Kraay, 2001; Yu and Hassan, 2008; World Bank, 2002; UNECA, 2012; AfDB, 2014). Although there is no overarching definition of economic integration, some analysts defined it as the abolition of trade discriminations within an area (Balassa, 1961; Mundell, 1961, 1973; Marks *et al.*, 1993; Hwang and Lee, 2015) or a process of combining separate economic units into a larger economic region (WTO, 2002; Mckinnon, 2004; UNECA, 2008; AfDB, 2012; Karambakuwa *et al.*, 2015). While economic integration may involve economic units within a single country or economy, regional economic integration is an agreement between countries who intend to upgrade collaboration by adopting common institutions, policies and rules (Kumo, 2011). The study uses the term 'regional economic integration' because economic integration is being analysed in a regional context, that is, within the context of regional economic communities. The objectives of regional economic integration usually range across the economic, political and environmental sectors (Lundberg *et al.*, 1980; OAU, 1980; Kempf and Rossignol, 2003).

African governments viewed regional economic integration as a rational response to continental challenges characterised by numerous small national markets and non-coastal economies. The commitment to regional integration led to the establishment of the Organisation of African Unity (OAU) in 1963, later transformed to the African Union (AU) in 2002. Consequently, several regional integration arrangements (RIAs) have been concluded by African governments. The European Union (EU) was traditionally the most important

investment, trade and development partner for Africa (AfDB, 2014). Trade was governed by the Lome` Conventions which granted African countries access to the EU markets. The Cotonou Agreements were later concluded in 2000 and they smoothen the negotiation of Economic Partnership Agreements (EPA) which are compatible with the World Trade Organisation (WTO). Different configurations of African economies constituted negotiating clusters, of which the majority were cutting across the neighbourhood of regional integration arrangements (RIAs) which existed thereby increasing to the complexity of the process of regional integration in the continent. The prolonged and demanding EPA negotiations indicates to some degree the magnitude of the difference between the African paradigm and the European Union (EU) model of regional integration. Thus, the EPA negotiations revealed significant fissures between political motivations and economic veracity in the African process of regional integration (AEO, 2016; AU, 2013).

Basically, Africa follows a linear model of market integration. This is a stepwise integration of goods, labour and capital, and finally integration of the monetary and fiscal sectors and policies. The initial point of a linear model is ordinarily a *free trade area* (FTA) followed by a *customs union* (CU), a *common market* (CM) and then an *economic union* which integrates monetary and fiscal matters (Gurova, 2014). The attainment of a political union is the final objective in most African RIAs. A FTA is generally a trading bloc where a set of countries abolish commodity tariffs and sometimes non-tariff barriers among each other and allow each other to concentrate on their comparative advantages in order to produce and trade more (Jawoodeen, 2010). Countries under a FTA do not necessarily apply common external tariffs (CET) to non-members. Examples of FTA include the North American Free Trade Agreement (NAFTA) of 1994 and the European Free Trade Association (EFTA). Under a customs union, member countries apply a CET to non-members in addition to measures applied by the FTA. To minimise tariff evasion, countries use the principle of rules of origin which requires a minimum contribution of local input and value adding transformation process (Gurova, 2014; Jawoodeen, 2010). The common market is a CU with provisions for factor mobility, especially labour and capital. An economic union is a developed common market where there are provisions for synchronisation of macroeconomic and regulatory policies (Höpner and Schäfer, 2012). The European Union is a common example of an economic union. This study will focus more on the welfare effects of a free trade area in the context of developing economies in general and Africa in particular since the tripartite agreement (TFTA) was signed under the ‘free trade area’ clause.

Economic integration is part of the broader vision of the African Union (AU). The process of economic integration in Africa was initiated by the Lagos Plan of Action for Development of Africa (1980). The creation of regional economic communities (RECs) was then proposed under the Abuja Treaty (1991). RECs are basically groupings of African countries individually created and developed to facilitate the process of regional economic integration both within and across member countries. RECs serve as strategic building blocks which structure and smoothen the process of regional economic integration. As of February 2017, the African Union recognised eight Regional Economic Communities (RECs), namely: the Arab Maghreb Union (AMU/UMA); the Common Market for Eastern and Southern Africa (COMESA); Community of Sahel-Saharan States (CEN-SAD); East African Community (EAC); Economic Community of Central African States (ECCAS); Economic Community of West African States (ECOWAS); Intergovernmental Authority on Development (IGAD); and the Southern African Development Community (SADC) (Ismail, 2017). The basis for the establishment of these RECs was to a large extent geographically based, for instance, the EAC is for East African countries and SADC is for Southern African countries. The notion behind this was that economies with proximity to each other are more likely to be engaged in economic transactions together and, therefore, it would be beneficial to integrate them (AfDB *et al.*, 2013; UNECA, 2012). There are also several sub-regional communities within the continent. More details of these RECs are discussed in this study in Chapter 2.

AfDB (2014) highlighted that Africa is showing a stable upward improvement in its economic performance for the past decade after several decades of relative stagnation. This positive trend was partly attributed to regional integration (Claassen *et al.*, 2016). On average, continental economic growth was approximately 5% and the intra-African trade value became four times larger over the past ten years to an approximate value of USD 130 billion (AEO, 2016; Claassen *et al.*, 2016). However, despite these notable improvements, analysts continue to argue that several issues are still stalling the progress of regional economic integration in Africa. For instance, the bulk of African REC have membership overlap which has resulted in some confusion in terms of implementing trading rules and instruments since different RECs are guided by various statutes and articles. The RECs themselves have also been characterised by what other authors described as ambitious schemes with unrealistic timelines (Okko, 2003;

Rossouw, 2006), poor implementation records (Kalaba and Tsedu, 2008; UNECA, 2008) and inefficient institutional structures (Stevens and Kennan, 2013).¹

It is generally acknowledged that regional economic integration continues to be a pertinent pillar of development in Africa despite the global context having significantly transformed since the continental goal was formulated in the early 1960s (Venkatraman, 2014; Raballand *et al.*, 2012; Bond, 2011; AEO, 2016). As such, the African Development Bank (AfDB) placed regional economic integration amongst its high five priorities (ACBF, 2017; AfDB, 2014). The other priorities include development of infrastructure and the private sector, accountability and governance, skills and technology. These are all highly linked to the subject matter of region economic integration (AfDB, 2014). In order to address the challenges highlighted above, and accelerate the progress towards the vision of the African Economic Community (AEC) while at the same time keeping up with the global trends in terms of trading instruments and policies, the Tripartite Free Trade Agreement (TFTA) was signed on 10 June 2015 in Sharm El Sheikh, Egypt by 26 countries from the three RECs namely COMESA, EAC and SADC (UNECA, 2016). The implementation of the TFTA was aimed at making the arrangement the largest trading agreement in Africa. However, at the time of writing of this study, African leaders had already started the process of signing and ratifying the process of an even larger trading agreement, namely the Continental Free Trade Area (CFTA). The CFTA was signed by 44 countries in Kigali, Rwanda in March 2018 and more countries were still being added at the time of writing of this thesis.

The TFTA is aimed, among other objectives, at lessening drawbacks associated with overlapping membership and smoothening institutional barriers and friction by harmonising functions of structures. Moreover, the TFTA also seeks to remove trade barriers among COMESA, SADC and EAC member states, thereby increasing the level and volume of intra-regional trade (Tralac and SIDA, 2012; Walters *et al.*, 2016). Using economic reasoning, an improvement in these factors is expected to lead to increased economic growth and development of the member countries which will ultimately improve economic welfare (Dollar and Kraay, 2001; Frankel and David, 1999; Cheong and Wong, 2007).

¹ See Chapter 5 for more details on challenges of African RECs.

Intra-trade refers to trade within the continent, or trade among African countries, taking to account the rules of origin.² In Africa only 12% of trade is intra-regional trade as compared to averages of 61% and 67% of the European Union and Asia-Pacific Economic Cooperation, respectively (AEO, 2016; AfDB, 2014). Other sources such as UNCTAD (2016) and IMF (2017) state that intra-African trade is pegged at slightly higher figures of around 18% compared to 69% intra-Europe and 59% intra-Asia trade. The figures remain low on the whole compared to other regions. However, the sources acknowledge some slight improvements in Africa over the past decade especially on the share of exports but highlights that the share of imports remained stagnant despite the increase the volume of total imports. Sow (2018) highlighted that sub-Saharan African trade was trending away from developed economies towards emerging countries especially in the past decade.³ Exports to the United States of America (USA) and the EU declined by 66% and 5%, respectively between 2009 and 2017. In the same period, exports to Brazil, India, Indonesia, Turkey and Russia doubled (IMF, 2017). Although the proportion of aggregate exports to traditional partners (the EU, USA and China) remained noticeably higher compared to that of the emerging partners, this progress indicates a new picture on the future of African trade.

Within the tripartite region, the current intra-regional trade levels are also very low with COMESA oscillating between 5% and 10%, SADC falling from 15% to 11% predominantly because of the sharp increases in commodity exports from SADC to the rest of the world. The EAC trend is the only one which is slightly rising, though generally low in relative terms, slightly above 20% in 2014 (Mold and Mukwaya, 2015). Krugman *et al.* (2010) highlighted that policy makers should carefully assess the likely effect of international trade agreements since benefits (or losses) are not straightforward. There is, however, potential for development within the African region and studies by Mold and Mukwaya (2015) indicate intra-trade could increase by 30% in 2030 in manufacturing and textiles industries while Makocheanwa (2012b) also estimated 22% improvement in agrifood production. This study seeks to establish the potential welfare gains (or losses) particularly in the TFTA region. The study employs two variant methodologies, econometric estimation and *ex-ante* simulation, to achieve the study

² Rules of origin refers to the original country of a good, or a country where there has been value addition process before it is traded.

³ This was necessitated by several national policies such as the Look East policy in Zimbabwe which shifted its trade focus towards Asian nations, Zambia shifting its main trade to China and South African joining the BRICS community.

objective. The details of the methodologies will be discussed below. The following subsection discusses the problem statement.

1.2 PROBLEM STATEMENT

While there is a general consensus that regional economic integration is more likely to lead to increased welfare of the combined respective economic regions, there is still debate as to the distribution of that welfare (Mold and Mukwaya, 2015; Gurova, 2014; AfDB, 2014). There is potential for polarisation of benefits across different economic units. Some countries and economic sectors are poised to benefit at the expense of others, thereby dividing countries and economic sectors into winners and losers (Hoderlein and Vanhems, 2013; Duede and Zhorin, 2016). For instance, some more developed countries like South Africa and Kenya are set to benefit at the expense of least developed nations like Malawi and Zimbabwe. In addition, regional integration is also poised to benefit other economic sectors thereby shrinking incomes and livelihoods of other economic sectors (Mold and Mukwaya, 2015) and this, coupled with imperfect substitutability of factors of production especially labour, may lead to welfare losses (Gray, 1998; Cattaneo, 2009). Makochekanwa (2012a) attempted to analyse the welfare effects of the TFTA but focused on cereals only. This study includes multiple economic sectors to produce a more comprehensive analysis.

Secondly, some schools of thought hypothesize that for regional economic integration to be successful there should be convergence of macroeconomic variables among economic systems that seek to integrate (Mundell, 1961; Bernard *et al.*, 1996; Aziz Wane, 2004; Phillips and Sul, 2007; Duede and Zhorin, 2016). Convergence implies economic systems are well coordinated and synchronized (Masalila, 2000). Lack of convergence will increase vulnerability of countries within the regional integration arrangement (RIA) to deal with asymmetric shocks and this will undermine the economic performance of member states (Masalila, 2000; Carmignani, 2005; Mundell, 1973). African economies respond differently to economic shocks which implies that there is a high possibility of a lack of macroeconomic convergence. Lack of macroeconomic convergence, coupled with low intra-regional trade volumes, will most likely lead to the TFTA being ineffective.

Thirdly, literature still remains ambiguous and inconclusive in establishing if a relationship actually exists between trade and economic growth and which factors influence this relationship. Studies by Osei-Yeboah *et al.* (2012) and Ahmed *et al.* (2008) found a positive relationship between trade openness and GDP across 38 African countries. The former study

employed a Cobb-Douglas production function from 1980 to 2008 and has a gap in that the methodology only included factors of production such as capital-labour ratio, FDI and exchange rate. Other studies such as Gray and Singer (1988a), Agosin and Ffrench-Davis (1995), and Dollar and Kraay (2001) also investigated the subject in various trading communities but results remained inconclusive. In addition, literature also remains ambiguous as to which factors influence the level of bilateral trade with various authors using different model specifications in various studies. For instance, using dynamic panel estimations, Busse and Königer (2012) argued that the effect of trade on growth and development depends crucially on the specification of trade from both a theoretical and empirical point of view while Ghosh and Yamarik (2004b) responded to the contentions by listing over 40 variables which influence bilateral trade. This study seeks to move from generic to specific variables in the TFTA. This study, therefore, intends to add to economic literature by not only investigating the relationship between trade and economic growth but also investigating the factors which influence bilateral trade within the 26 member countries of the tripartite agreement.

Fourthly, despite the anticipated benefits, the feasibility of economic integration in an African context still remains contentious (Mold and Mukwaya, 2015). For instance, free trade implies liberalising trade borders between the economic units or countries. However, economic literature points out that African traders are still faced with several constraints such as transport costs, language barriers, capital and labour mobility, regulatory and competition policies among others (Jayasinghe and Sarker, 2007; Warin *et al.*, 2009; Karambakuwa *et al.*, 2015). The dynamics of interaction of these factors become complex as the distance between two countries increases. Taking into account the fact that the TFTA arrangement covers a large geographical space from Cape Town in South Africa to Cairo in Egypt, there is need to assess the extent to which liberalising trade will influence changes in trade volumes. Traders have cited high transport costs as a major constraint to regional trade in Africa (AfDB, 2014; Cattaneo, 2009; Beyene, 2014b). Comparable studies have shown that intra-trade is higher in the European Union and Asia-Pacific Economic Cooperation at approximately 61% and 67%, respectively (Mold and Mukwaya, 2015; Krapohl and Fink, 2013). This could be attributed to a smaller geographical span both in Europe and Asia coupled with developed transport infrastructure and liberalized air transport systems (Khan and Marwat, 2016; Ridhwan, 2016; Krapohl and Fink, 2013). In contrast, the African continent is still characterised by poor road and rail transport infrastructure and stringent air transport regulations, and more language

barriers⁴ among other factors (AfDB, 2014; AEO, 2016; UNECA, 2016). The study seeks to add to economic literature by employing the augmented gravity model in determining the geographical and spatial effects on trade creation and trade diversion within the TFTA. This will feed into the overarching objective of the study, determining the welfare effects of the TFTA.

1.3 OBJECTIVES OF THE STUDY

1.3.1 Primary objective

The primary objective of the study was to establish the welfare effects of the Tripartite Free Trade Area (TFTA)

1.3.2 Theoretical objectives

In order to realise the primary objective, the following theoretical objectives were formulated to articulate the rationale and underlying thought behind the subject: that is, the propositions and modal logic behind economic integration:

- To describe and assess the underlying thought and scope conditions of theories on welfare effects of economic integration
- To describe and assess the underlying thought and scope conditions on convergence theories and contextualize them into the TFTA
- To describe and assess underlying thought and scope conditions on international trade theories.

1.3.3 Empirical objectives

The following empirical objectives have been formulated in order to achieve the overarching primary objective:

- To establish if economies within the TFTA are synchronized or converge using econometric methods.
- To establish the factors which influence the level of bilateral trade within the TFTA
- To establish, using econometric models, the trade creation and diversion effects in COMESA, EAC and SADC prior to the formation of the TFTA.

⁴ Language barriers contribute to social and political conflicts, uneasiness of doing business, and market fragmentation all of which reduce the volume of intra-trade.

- To establish the potential winners and losers at the country level using simulation procedure.
- To establish who wins and who loses at the sector level using simulation procedure.

1.4 SIGNIFICANCE OF THE STUDY

Regional economic integration, particularly trade integration, will remain an engine of economic growth in modern economies (Thirwall, 2011; Lopes, 2013). The argument is becoming increasingly stronger with the unavoidable occurrence of globalisation (Qobo, 2007). There is, therefore, need for countries and economic communities to put strategies in place that will enable them to realise the benefits of participating in regional economic communities and international trade. This study is driven by these facts and makes the following considerations:

Firstly, the study will provide evidence based literature that may assist the member countries of the TFTA with a strategy which it can consider adopting which may lead to export-led growth. Secondly, the study intends to identify specific sectors and countries which may be short-changed from the process of regional economic integration which may need assistance or special policy concessions to help minimise the polarisation gap in terms of welfare distribution. Thirdly, the study may also contribute through comments as to the areas or sectors which need harmonisation in terms of trade instruments between the three RECs which make up the TFTA. Fourthly, the study may assist by indicating some connection between trade and economic growth in the TFTA which policymakers and technocrats could utilise when formulating policies and implementing them. Although there is relatively vast literature on economic integration, there is still scanty literature on the TFTA (Makochekanwa, 2012a; Mold and Mukwaya, 2015; Walters *et al.*, 2016). The study intends to contribute to the literature enrichment on the discussion of the tripartite arrangement. Lastly, it is envisaged that this study is likely to give trade policy options and recommendations to the Regional Economic Communities (RECs) in general, and more specifically if this would in turn assist the economic communities and member countries in their export drive as well as improve their competitiveness in international markets.

1.5 LITERATURE REVIEW

The literature review in this study is divided into two main sections, that is, the theoretical and empirical. The theoretical literature review focused on the theories of international trade and

economic integration, economic growth and welfare economics. The theoretical postulations provided the foundations and rationale for international trade and regional economic integration. Secondly, the empirical literature focused on the case studies that have been investigated under regional integration in the various economic and trade zones over the years and how regional economic integration has evolved and developed over the years. The empirical studies paid much attention to cases in developing countries and also investigated and contextualized the history and development of economic integration in Africa from 1963, when the Organisation of African Unity was formed, to date.

The literature review for this study has been derived from relevant textbooks, journals, conference papers, reports of governments and research institutes, research papers, conference papers, newspaper articles and official websites and agreements (treaties) of various internationally recognised organisations such as the International Trade Center (ITC), United Nations Economic Commission for Africa (UNECA), World Trade Organisation (WTO), the World Bank (WB), and national statistical and revenue agencies.

1.6 RESEARCH DESIGN AND METHODOLOGY

1.6.1 The model

The study used three methodologies in establishing the welfare effects of economic integration in the TFTA. Firstly, the study employed the empirical growth model derived from the theoretical postulations of Solow (1956, 2007) to determine whether the macroeconomic policies of TFTA economies are converging or not. The second model employed in this study is the augmented gravity model. The gravity model was used to simultaneously achieve two things, that is, the factors which influence the level of bilateral trade or intra-regional trade and also to establish whether there was trade creation or trade diversion among the three RECs of COMESA, EAC and SADC prior to the signing of the TFTA. The gravity model employed historical data and other qualitative variables to establish from the year 2000 when the EAC came into effect until 2015 when the TFTA was ratified. Thirdly, the model employed a simulation procedure called World Integrated Trade Solution-Software for Market Analysis and Restrictions on Trade (WITS-SMART) model. This model assisted in identifying who stands to win and lose both at country and sectorial level as a result of the signing of the TFTA. The WITS-SMART model established the potential trade creation, trade diversion, customs revenue and welfare effects of the TFTA agreement once the implementation phase begins.

The methodology of the SMART model is anchored on the theoretical postulations posted by Viner (1950) and is able to decompose the effects in trade creation, trade diversion and revenue effects *ex ante*.

1.6.2 Data

The study employed quantitative research using secondary trade data. The major sources for the data were the International Trade Center (ITC) and the World Bank (WB). National sources and other statistical databases were used as complementary sources where some variables were not available. In the case of the WITS-SMART model, the study employed trade data in the format of the Harmonised Commodity Description and Coding System (HS). The HS format was fully described in the methodology chapter in Section 6.4.2.8. There was sufficient trade data for 23 out of the 26 countries for the period 2000 to 2015 which was used in this study.

1.7 ETHICAL CONSIDERATIONS

Secondary data was used and was available. Access to data was also granted by the International Trade Center (ITC) through a registration process on their website to download the data and registration was also done to perform SMART simulations using the World Bank WITS-SMART software. There were no ethical clearances needed on the data which was employed for the other two econometric models since the data was available on public domains. In addition, the study was also ethically cleared by the North-West University Economics and Management Sciences Research Ethics Committee and classified as a ‘low’ risk type. The reference number is ECONIT-2018-27.

1.8 ORGANISATION OF THE STUDY

The study comprise the following chapters:

In Chapter 1, the introductory themes leading to the study were presented. The chapter discussed issues such as the background of the study, problem statement, research questions and objectives of the study and the significance of the study. The chapter also defined the economic integration and its various stages and how it has evolved over the years.

Chapter 2 provided an overview of the profiles of the three RECs, that is COMESA, EAC and SADC, which make up the tripartite agreement. The chapter described the aims, objectives, structures and the trading instruments and rules which govern those economic communities. The purpose of this chapter was to give a background of events and developments which

culminated into the formulation of the TFTA. The chapter also described the Tripartite Free Trade Agreement (TFTA).

Chapter 3 identified and elaborated on theories of international trade and regional economic integration and how they relate to the context of the Africa's integration arrangements that have been effected in the past. The study evaluated the robustness of the various trade models which were postulated by various theorists and also derived lessons from these models. More specifically, the study contextualized the theories with the Tripartite Free Trade Area (TFTA). The theoretical analysis provided a logical basis for the thesis to review related empirical studies.

Chapter 4 reviewed the empirical literature of the study and analysed the case studies that relate to trade, economic growth and regional economic integration in different economic zones both within and without Africa. The study paid more attention to empirical literature on developing countries.

Chapter 5 discussed the methodological framework employed to achieve our objective of establishing the welfare effects of economic integration within the TFTA. The study discussed the theoretical as well and empirical justifications for each proposed model. The study used quantitative data and employed three methodologies in order to achieve the objectives of the study.

Chapter 6 presented the empirical estimations and analysis. Panel models were employed for the first two procedures. The first one was to establish the relationship if there exists some level of convergence among the macroeconomic variables in the TFTA. The second model employed an augmented gravity model using historical data to establish trade creation and trade diversion effects. The chapter also presented simulation results which indicated which countries and economic sectors stand to benefit as a result of the implementation of the TFTA. The WITS-SMART simulation procedure was applied in the third model to establish the welfare effects.

Chapter 7 provided the findings which arose from the study and subsequently puts forward appropriate policy recommendations. Moreover, the chapter also reflects on limitations of the study and identifies some opportunities for further research in this area. The chapter also highlights the contributions made by the study relating to the welfare effects of economic integration.

2 CHAPTER 2: OVERVIEW OF REGIONAL ECONOMIC INTEGRATION IN AFRICA

2.1 INTRODUCTION

The chapter discusses the structure of the eight regional economic communities (RECs) which are acknowledged by the African Union, their membership, objectives, milestones achieved and future prospects and how they interlink with the overall objective of regional economic integration in Africa. The chapter will give more attention to the profiles of the three regional economic communities which make up the Tripartite Free Trade Area (TFTA) which are COMESA, EAC and SADC and the details of the tripartite agreement. RECs were mainly formed to facilitate the economic integration process in Africa under the Lagos Plan of Action for the Development of Africa (1980) and the Abuja Treaty (AU, 1991).

In terms of the demographics, the Community of Sahel-Saharan States (CEN-SAD) and the Common Market for Eastern and Southern Africa (COMESA) have the highest number of member countries with twenty-three and twenty, respectively. The RECs with the least number of member countries are the AMU with five members, the EAC with six members and IGAD with seven members. COMESA and SADC covers the widest geographical area of 13 000 km² and 10 000 km², respectively. The EAC is the least in terms of the geographical space covered with approximately 2 500km². Distance has an influence on trade volume and this argument shall be discussed later in the chapters below. Table 2.1 gives a summary of the demographic structure of the eight regional economic communities mentioned above.

Table 2.1: Demographic structures in various African RECs

Region	Name of the RECs/Other Regional Blocs	Area (km ²)	Population	GDP (PPP) (USD) in millions	GDP (PPP) Per capita	Number of Member States
Continental	AEC	29,910,442	853,520,010	2,053,706	2,406	54
Inter-Regional	COMESA	12,873,957	406,102,471	735,599	1,811	20
	CEN-SAD	-	-	-	-	23
	ECCAS	6,667,421	121,245,958	175,928	1,451	11

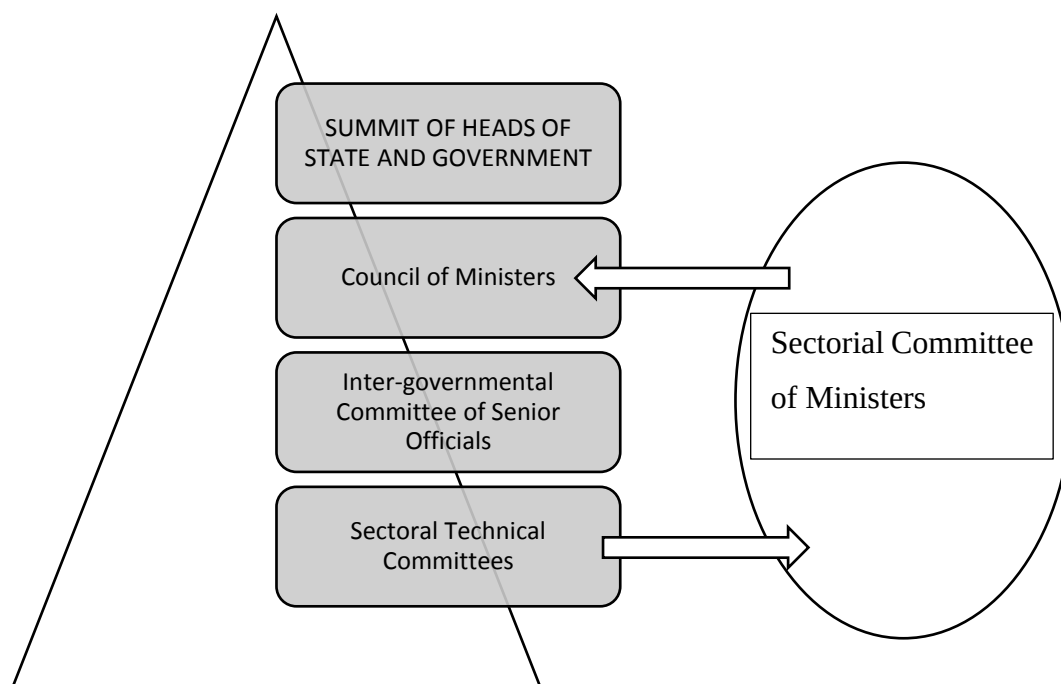
Central	CEMAC*	3,020,142	34,970,529	85,136	2,435	6
	ECOWAS	5,112,903	300,000,000	1,322,452	3,888	15
Western	UEMOA*	3,505,375	80,865,222	101,640	1,257	8
Southern	SADC	9,882,959	233,944,179	737,335	3,152	15
	SACU*	2,693,418	51,055,878	541,433	10,605	5
	AMU	5,782,140	84,185,073	491,276	5,836	5
Northern	GAFTA*	5,876,960	166,259,603	635,450	3,822	5
	EAC	2,440,49	169,519,847	411,813	2,429	6
	IGAD	5,233,604	187,969,775	225,049	1,197	7

Source: (UNECA 2012)

* Economic bloc inside a pillar REC

In terms of GDP per capita (GDPP) in Purchasing Power Parity (PPP), the African Economic Community has an average value of USD 2 406. The AMU has the highest average figure of approximately USD 5 900 followed by ECOWAS and SADC with averages of USD 3 900 and USD 3 200, respectively. Smaller economic blocs such as SACU and GAFTA have higher averages of income per capita in PPP terms with SACU values surpassing the USD 10 00. This could be possibly because of the law of averages spread over a fewer number of countries and also that smaller regional blocs are flexible enough to quickly deepen the level of economic integration, thereby reaping more benefits as a result. Secondly, higher GDPP (PPP) terms in smaller economic regions could also be because (as shall be discussed later in Chapter 5, Section 5.2 and 5.7), these smaller economic blocs sometimes attract more loyalty from member countries than larger regional blocs resulting in more gains from deeper integration (AEO, 2016). The GDP (PPP) per capita of ECOWAS is also relatively higher possibly because of the presence of continental powerhouses such as Ghana, Nigeria and Côte d'Ivoire. The continent has a total population of over 1 216 billion covering an area of approximately 30 000 km². This presents huge markets and growth opportunities within the continent which can be tapped into through the deepening of regional economic integration (AEO, 2016; UNECA, 2012). The RECs in Africa inherently have a similar basic structure which has been adopted from the African Union (AU). The basic structure is illustrated in Figure 2.1

Figure 2.1: REC and AU decision-making structures



Source: Author's computation

In addition to the above structures, the African Union (AU) also has a committee on coordination which provides advice on policies and acts as an oversight on the implementation of the protocol. The committee also coordinates and monitors progress made by RECs in the stages towards the attainment of regional economic integration goals as outlined in Article 6 of the Abuja Treaty (Hartzenburg, 2012). The committee consists of executives from the United Nations Economic Commission for Africa (UNECA) and other financial institutions and should meet at least biannually according to Article 8 of the Protocol. The members must make consensus decisions or alternatively simple majority decisions by voting of present members when a consensus cannot be reached (AUC, 2016). The AU structures also consists of technocrats from both UNECA and senior officials of the the African Development Bank (AfDB) which reflects to some extent the significance of regional integration on these African institutions. The study now focuses its attention on the three RECs which make up the Tripartite Free Trade Area (TFTA). Table 2.2 shows the membership of the three regional economic communities, that is, COMESA, EAC and SADC. It also indicates if a country had joined a free trade area within that community or not.

Table 2.2: Member countries of COMESA, EAC and SADC

Country	COMESA		EAC	SADC	
	Member	FTA member		Member	FTA member
Angola				X	
Botswana				X	X
Burundi	X	X	X		
Comoros	X	X			
Congo, Dem. Rep.	X			X	
Djibouti	X	X			
Egypt, Arab Rep.	X	X			
Eritrea	X				
Ethiopia	X				
Kenya	X	X	X		
Lesotho				X	X
Libya	X	X			
Madagascar	X	X		X	X
Malawi	X	X		X	X
Mauritius	X	X		X	X
Mozambique				X	X
Namibia				X	X
Rwanda	X	X	X		
Seychelles	X			X	
South Africa				X	X
Swaziland	X			X	X
Tanzania			X	X	X
Uganda	X		X		
Zambia	X	X		X	X
Zimbabwe	X	X		X	X

Source: COMESA, EAC and SADC websites

Note: '+' includes Sudan and South Sudan

2.2 THE COMESA PROFILE

2.2.1 Background of COMESA

The Common Market for East and Southern Africa was formed in 1994 (COMESA, 1994) as a development of the Preferential Trade Area (PTA) of 1981. COMESA envisioned a fully integrated and economically competitive regional economic community (REC) which would stimulate trade co-operation and integration through harmonised customs systems, monetary affairs, agriculture, transport and communication, industrial technology and agriculture among as the key areas (Walters *et al.*, 2016; Rojid, 2006; Erasmus, 2013). Although COMESA has other objectives such as peace and security, economic integration is at the centre of its mission as it seeks to expedite sustained development within the region (Tumwebaze and Ijjo, 2015). The main thrust on the establishment of COMESA was to form a large trading and economic unit which would address the barriers encountered by individual countries (Carmignani, 2005). The strategy was summarised as ‘economic prosperity through regional integration’.

COMESA attained the free trade area (FTA) status in October 2000 when nine member countries, namely Mauritius, Sudan, Djibouti, Madagascar, Malawi, Kenya, Zambia and Zimbabwe eliminated tariffs on commodities originating from the COMESA region (Rojid 2006). Rwanda and Burundi became FTA members in January, 2004. In addition, COMESA members have also been working on eventual elimination of quantitative restrictions and other non-tariff barriers (NTBs) when the discussions of the Tripartite Free Trade Area (TFTA) began. Although the programmes and activities necessary for the launch of the customs union (CU) were outlined in the Cairo meeting which was to be achieved by 2008, the CU was launched in 2009 and was yet to be fully operational as September 2018. This reflects how the integration process in Africa has been stalling over the decades. In addition, COMESA envisaged becoming a Common Market by 2017, and a full Economic Community by 2025 (Tumwebaze and Ijjo, 2015). COMESA presents a huge trading market for both internal and external economic stakeholders. It currently has twenty member countries with an approximate population above 400 million people as indicated in Table 2.1. This is coupled with a yearly bill of USD 32 billion worth of imports and USD 82 billion worth of exports indicates the huge potential in the region (AEO, 2016).

2.2.2 Organisational structure of COMESA

The organisational structures of the RECs give us a better overview of how the economic communities intend to achieve the overall objectives of improved trade and welfare through economic integration. COMESA accounts to the Heads of State and Government. The structure includes a council which is composed of ministers who make policies with the support of technocrats and other advisory bodies such as the judiciary. The COMESA Secretariat is headquartered in Lusaka, Zambia. However, COMESA has several other institutions based in various countries in order to promote participation and development at the sub-regional level. Kenya houses the Trade and Development Bank of East and Southern Africa (PTA Bank), a monetary institute and a trading agency whilst Malawi hosts the Competition Commission. Other countries where COMESA institutions have their presence include Egypt, Zimbabwe and Ethiopia (COMESA, 2018).

The structures within the COMESA institution are relevant to this study because COMESA was established as a trading bloc with the purpose of deepening economic integration in the region. As such, the structures were established in a manner that lubricates the process of intra-regional trade within COMESA. Therefore, the TFTA could benefit by adopting such institutional structures from the organisations such as COMESA which feeds into them so as to smoothen the transition process. The TFTA should appreciate that, for the institution to be functional, it needs various arms as was implemented by COMESA and other RECs. In addition, adopting already existing structures will reduce the costs of establishing a completely new system, thereby making the process efficient. Moreover, the offices of these various institutions were spread out across the member countries. This is important because it provides a sense of ownership and belonging among member countries thereby increasing the chances of participation and harmonisation.

2.2.3 Objectives of COMESA

COMESA was created with an ultimate objective of an economic union in sight which was guided by the Treaty Establishing the African Economic Community (AEC). The objective of COMESA was attaining a unified and fully integrated economic space which was internationally competitive within which all factors of production and merchandise would move across national borders with minimum to zero restrictions. The COMESA model was similar to that of many RECs which is the formation of a preferential trade area (PTA) at the initial stage. At the PTA stage, there will be lower tariffs applied to intra- than extra-regional

trade. This would be followed by a free trade area (FTA) where no levies are charged on products from other COMESA states although each country would apply its own tariff regime when it is importing goods from other nations outside the region. The third stage would be the customs union (CU) which would be followed by a common market and an economic union as the last stage (Jawoodeen, 2010).

The creation of the COMESA single market would not only increase economic integration but also strengthen the degree of economic interdependence among member countries thereby reducing room for national autonomy in policy making while simultaneously amplifying the effects of cross-border development (Carmignani, 2005). This would eventually lead to structural changes across member countries thereby increasing the need for coordinated policies among member countries to increase effectiveness (Mutoti and Kihangire, 2006; Tumwebaze and Ijjo, 2015). Tumwebaze and Ijjo (2015) opined that policies must be geared towards stabilising prices, balancing growth and ensuring that there is convergence between the external equilibrium, rising standards of living and high employment.

Article 3 of the COMESA Treaty outlined the objectives as follows

- Attaining growth and development in a sustainable manner for all member countries,
 - Promoting mutual development in economic issues,
 - Creating a supportive environment for investors, either cross-border or local,
 - Promoting regional stability through peace and security, and
 - Consolidation of trade relationships between COMESA and the rest of the world.
- (COMESA, 2017).

The above objective would be complemented by relevant administrative and legal structures, integrated computer networks and better transport and communication systems. COMESA also highlighted on the need to harmonise the goods and factor market in order to establish a unified economic space. The economic space was ideally supposed to comprise of the following basic elements:

- a regional market without internal frontiers within which both merchandise and factors of production can move unhindered;
- communal policies which stimulate structural changes and development of the region;
- coordination of macroeconomic policies;
- regulation of competition policies in order to strengthen the market mechanisms;

- Currency management and integration of the banking sector and creation of a monetary union
(COMESA, 2017)

In return, member countries of COMESA are able to tap from several benefits which include a broader, coordinated and more competitive market (Carmignani, 2006). Member countries also begin to experience better industrial productivity and competitiveness both at the regional level and also on the international market. Countries also gained through increased production in the agricultural sector leading to food security, not only because of increased production and productivity but also because of the freer trade allowing for produce to flow more easily from areas where there is mass production to drought-prone areas leading to a more rational utilisation of resources (Musila, 2005; Mutoti and Kihangire, 2006). Other benefits include more harmonised monetary, banking and financial policies and more reliable transport and communications infrastructure (Rojid, 2006).

2.2.4 Medium term strategic plan

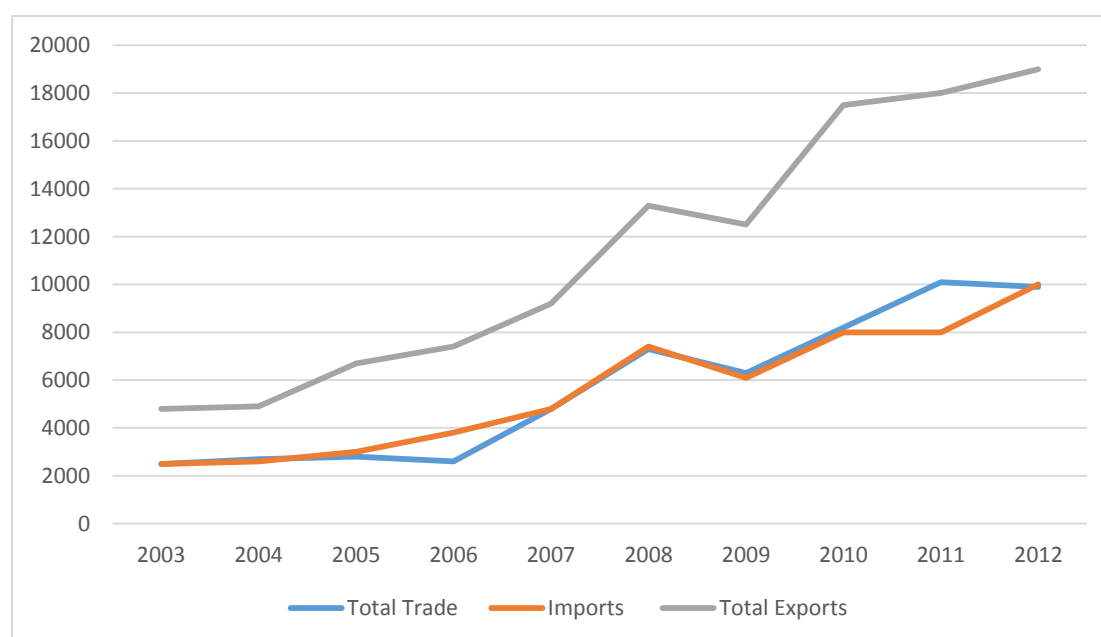
COMESA developed medium term strategic plans (MTSP) as one of its most tactical guidelines towards the attainment of deeper economic integration and an economic union. The MTSP covers a five year period. The most recent MTSP (2016-2020) is in line with the TFTA because it considers regional integration as a prominent strategy for development among countries and regions. The MTSP (2016-2020) focuses on entrenching market integration, facilitating trade, and development of infrastructure and industrialisation which covers small and medium enterprises. The strategic plan promotes sustainable economic growth and industrialisation through intra-trade, investment promotion and infrastructure development of infrastructure (UNECA, 2016; AEO, 2016). It provides a huge market for the parallel development of new industries which reduces vulnerability of member countries and local industries through increased bargaining power on the international markets (UNECA, 2016). This in turn increases the national incomes of the respective countries. To date, African countries face several constraints to constraints, among them tariff and NTBs to exchange goods as well as regulatory requirements on trade in services (AfDB, 2014; AEO, 2016). All these factors impede economic development. The relatively weak trade performance of Africa's intra-trade could be due to such obstacles which limit the spill overs associated with exchanges within the region (UNECA 2016). The MTSP (2016-2020) provides some strategic measures to bridge

some of the gaps rocking African regional economic integration and trade. One such strategic measure is the Tripartite Free Trade Agreement (TFTA).

Over the years, COMESA was gradually transforming isolated national markets into a unified regional market. This led to substantial achievements, mainly in either reducing or eliminating both tariff and non-tariff barriers (NTBs). Figure 2.2 indicates the increases in intra-COMESA trade thereby reflecting the remarkable increases.

Besides trade issues, COMESA has also demonstrated commitment to gender equality, equity, empowerment of women and social development as reflected in Articles 110, 143, 154, and 155 of the Treaty. This fits into the very long term Millennium- and post 2015 Sustainable Development Goals of 2030 which promote human development as key to sustaining economic and social development and the African Union Agenda 2063 whose aspirations focus on people centred development, human rights and the potential of youth and women.

Figure 2.2: Intra-COMESA Trade performance, 2003-2012



Source: COMSTAT Database (2014)

For the period 2016-2020, the COMESA MTSP identified several objectives which include but not limited to strengthening market integration; attracting increased investments; strengthening the blue economy as well as infrastructure; industrialisation; fostering gender equality improving the regional skills capacity. In implementing the identified objectives, COMESA will be mindful of environmental safeguards including climate risks. The strategic plan also indicated a strong awareness of the need for key pre-conditions to be in place for the REC to

meet its objectives. These include, but are not limited to: good governance, peace, security and stability, environmental management, regional macroeconomic stability, transparency, accountability and alignment of national policies and plans to the COMESA Treaty, model laws and protocols. Similar principles will have to be applied to ensure the fruition of the new trade arrangement (TFTA).

With specific regards to the objective of strengthening market integration, COMESA intends to have a seamless flow of goods, services, capital and people (COMESA, 2018). Trade facilitation will be achieved through simplification and harmonisation of documents and procedures, and lowering costs of cross border trade by removing barriers in sync with the tripartite agreement. Market integration will lead to multi-level economic development and promote harmonious and balanced development of production and marketing systems (Mold and Mukwaya, 2015; Rojid, 2006). To this end, COMESA joined the TFTA whose developmental model has been elaborated in three pillars of industrial development, market integration and infrastructure development. COMESA recognises the TFTA as a key Africa-led project which promotes economies of scale, enables attractiveness and diversity while at the same time addressing supply-side constraints and knowledge sharing, promotes regional value chains, intra-regional trade and investment, enhances cross-border infrastructure and overcomes the limitations of small markets (Walters *et al.*, 2016).

2.2.5 Macroeconomic policy convergence under COMESA

COMESA agrees with the vast body of economic literature and identified macroeconomic convergence as a strategic tool for deepening economic integration in Africa (Masalila, 2000; Carrol, 1993; Carmignani, 2006; Duede and Zhorin, 2016; Dorwick and Nguyen, 1989; Koçenda, 2001; Mutoti and Kihangire, 2006)⁵. Consequently, COMESA adopted several treaties and protocols related to the convergence of macroeconomic policy.

The COMESA Monetary Cooperation Programme was adopted in 1992 by The Authority of Heads of State and Government with the aim of establishing a Monetary Union in 2025 but this was then adjusted backwards to 2018 by the Council of Ministers (Tumwebaze and Ijjo, 2015). The programme involves consolidating current monetary instruments, introducing

⁵ Chapter 3, Section 3.5 further discusses theoretical literature on convergence and Chapter 4, Section 4.2 focuses on the empirical findings on macroeconomic convergence in a regional economic integration framework.

restricted currency convertibility and coordinating economic policies through a common monetary institution.

According to the MTSP (2016-2020), member states were to first undergo a monetary harmonisation process in order to attain macroeconomic convergence. Therefore, a convergence criteria was formulated to assist in assessing the implementation of the programme. The convergence criteria was set in a manner which is consistent with the African Monetary Cooperation Programme (AMCP). A for a summary of the convergence criteria for COMESA and other TFTA members, that is, EAC and SADC is provided in Table 2.4 in subsection 2.5.5 below (Hartzenburg, 2012; Walters *et al.*, 2016). Due to sluggish progress during the implementation phase (AEO, 2016), COMESA member countries were subdivided into clusters, namely: the Indian Ocean subgroup, Northern African subgroup, Southern African subgroup, and Central and Eastern African subgroup. Substantial progress was observed in the Central and Eastern subgroups compared to the others. The progress in this sub-group may possibly be due to the fact that some of these countries are also partner countries of the East African Community (EAC) which has a relatively deeper level of economic integration (AEO, 2016; ACBF, 2017). The EAC is discussed below in Section 2.3.

2.2.6 COMESA and the Tripartite Agreement

On 10 June 2015 in Sharm El Sheikh, Egypt the Tripartite FTA was launched with immediate signing of more than 15 member states (TRALAC, 2016). COMESA and the other RECs are currently working on negotiating remaining issues of phase 1 and are about to embark on phase 2 negotiations. It has, however, been observed that without the free movement of persons, labour, services and the eventual right of residence, the aspirations of a fully integrated region cannot be realised. It is in this context that COMESA has joined hands with the African Union and other African RECs to push this agenda and ensure that the African people who already share strong ethnic, cultural, political, historical, economic and social bonds enjoy the benefits of regional integration. The COMESA Secretariat has already embarked on the process of facilitating the gradual removal and eventual elimination of visas. Member countries like Kenya, Mauritius, Rwanda and Seychelles have reached the highest rate of implementation of this protocol by removing the requirement of visas for almost all African citizens.

For the period 2016-2020, the COMESA strategic plan lays out the need for concerted efforts in implementing of agreed commitments in line with the TFTA in four priority areas, namely: transport, communication, financial and tourism services. The specific annexures in this regard

are the Protocol on Transit Trade and Transit Facilities, the Protocol on Third Party Motor Insurance Scheme, and the Protocol on Rules of Origin. They provide the mandate for the key COMESA trade facilitation instruments which have been developed and implemented over the years. To complement this, COMESA has also mapped out trade facilitation projects to implement the new Bali WTO Trade Facilitation Agreement (2013) which includes customs cooperation, transparency through consultation, notification and publication of trade measures, transit cooperation, fees and appeal procedures among others in the Category A⁶ obligations that member countries can implement.

2.3 THE EAST AFRICAN COMMUNITY PROFILE

2.3.1 Background of the EAC

The East African Community (EAC) is a regional intergovernmental establishment of six partner countries, namely, Kenya, Burundi, Uganda, Tanzania, Rwanda and South Sudan. The EAC was formed 1967, disbanded in 1977 and in 1999. Rwanda and Burundi joined in 2007 but South Sudan received consent in 2016. The pioneering members - Kenya, Uganda and Tanzania - intended to deepen political, economic and social integration (EAC, 2017). Similar to COMESA model, the EAC also implemented a linear model of trade and market intergration which started with a customs union (CU), followed by a common market (CM) and finally culminating into an EAC Political Federation.

Countries agreed to not only remove tariffs but also all technical barriers by harmonising and mutually recognising standards and also implementing common trade policies within the region. The partner states were to also ease movement of persons across borders and adopt an integrated system of border management (EAC, 2016). In addition, the EAC members adopted an investment code which serves as a reference guide for member states to align their investment policies and improve the economic climate thereby promoting trade (EAC Secretariat, 2006).

⁶ Category A of the WTO Trade Facilitation Agreement (TFA) prescribes measures to member countries to improve transparency and predictability of cross-border trading and reduce a discriminatory business environment. TFA procedures include faster clearance, freedom of transit, improved appeal rights for traders, reduced fees among other factors. Capacity building support is provided for countries under Category B and C commitments.

2.3.2 Structure of the EAC

The Community is overseen by the Summit of Heads of State and Government which gives the overall direction on goals and objectives. The structure also comprises of a ministerial council which is responsible for making decisions. The council is advised by the legislative assembly, a court of justice and a coordination committee. The committee coordinates activities of the sectoral councils. The Secretariat is the executive organ of the EAC and is responsible for ensuring that principles and directives agreed upon by the council are implemented in a proper manner (EAC, 2016).

2.3.3 Objectives of the EAC

The objectives of the EAC as stated in Article 5 states that regional community must develop policies and programmes which will both broaden and deepen collaboration partner states. The areas to be covered include economic, political, social, research, technology, regional security and legal affairs. The EAC established the following principles to facilitate harmonisation of policies and regional integration:

- Attaining growth and development in a sustainable manner
- Strengthening and consolidating participation in all economic fields to achieve equity among partner countries thereby raising the standard of living
- To utilise natural resources in a sustainable manner
- The promotion of regional peace and security to ensure stability
- To enhance and strengthen public-private partnerships.

(EAC, 2016)

In summary, the objectives of the EAC are hinged around the attainment of deeper regional economic integration in order to increase the economic welfare of its citizens (UNECA, 2012).

2.3.4 Macroeconomic policy convergence

The EAC has been engaging in comprehensive economic reforms since its formation to stimulate growth especially in the private sector. They gradually liberalised financial sectors and adopted more flexible exchange rate regimes to enhance macroeconomic harmonisation. Moreover, macroeconomic policy convergence as articulated in Article 83 and 84 of the Treaty Establishing the EAC specified the framework for coordinating harmonisation of macroeconomic and monetary policy within the region (EAC, 2007; EAC, 2016).

Member countries were required by the Protocol on the Establishment of the EAC Common Market to pursue macroeconomic convergence so that they can maximise the benefits of a common market (EAC, 2016; Walters *et al.*, 2016). The Protocol stated that harmonisation in areas of investment and development of the private sector development should be enacted. In line with this, The EAC Secretary effected the apparatuses of the Financial Sector Development and the Regionalisation Project for Africa which was a partnership between the community and the World Bank on investment Climate. The EAC was preparing for the establishment of an EAC Monetary Union when preparations for the tripartite agreement (TFTA) began . (EAC, 2016; Walters *et al.*, 2016). The EAC also decided to establish the East African Monetary Institute and the East African Bank as part of the broader goal on monetary policy convergence. Convergence was a critical and distinguishing element for the EAC region and it enabled them to attain a much deeper level of integration compared to the other TFTA members, that is, COMESA and SADC.

2.3.5 Free movement of persons

There was a realisation among the EAC member countries that for regional economic integration to be effective it has to be complemented by free movement of persons (EAC, 2016). Kenya, Uganda and Tanzania had already established free labour movement from as far as back as 1967 (Walters *et al.*, 2016). Consequently, the EAC passport was launched and Article 104 of the Treaty Establishing EAC (1999) as cited in EAC (2007) provided for free labour movement and the right to reside for all regional citizens. The EAC passport allows EAC citizens to freely travel for a period of upto six months and plans are underway to have the document formally adopted as an international traveling document. Furthermore, Article 12 of the Protocol provides for an integrated system of border management and removal of labour restrictions (EAC, 2016). This clearly indicates that the EAC region was now at an advanced level of economic integration compared to its counterparts. The articles and model of the EAC can be easily adopted by the TFTA member countries to quicken the regional economic integration process on a broader scale.

2.3.6 The EAC strategic policies

The EAC does not have explicit harmonisation policies in its treaties or protocols as in the case of the RISDP of SADC but, implicitly, it has what it refers to as the ‘four freedoms’ of movement. These are freedom of movement on the capital, goods, services, and labour. These

were further specified into sectors such as education, infrastructure, investment promotion, energy, agriculture, private sector development and trade.

With regards to transport and communication infrastructure, the EAC recognised five main corridors totalling 15 000 km which was regarded as a strategic priority and required rehabilitation. This resulted in the formation of road boards and agencies, private sector participation and axle load controls in the road subsector (EAC, 2016; AEO, 2016). Moreover, the EAC committed itself to developing rail networks with standard gauges. However, parts of the line networks are also under the COMESA programmes, given the multiple memberships of countries (AEO, 2016). Member states have also committed to harmonise regulations in civil aviation, especially flight safety standards which include licencing processes, airworthiness, certification of aerodromes and aviation security (AfDB, 2014; UNECA, 2016).

The energy sector was also identified as a critical sector for effective regional economic integration process. The East African Power Master Plan which was approved in June 2011 outlined the minimum cost of generating and transmitting electricity in order to meet regional demand over the period 2013-2038. For agriculture, the EAC approved a Food Security Action Plan to handle food security issues. The plan was, however, described as ambitious because it was generally broad covering aspects of policy, production, legislative, institutional, marketing and even nutritional aspects (Walters *et al.*, 2016; Mold and Mukwya, 2015; Makocheke, 2012b). The Action Plan was, however, in line with the principles of the Comprehensive Agriculture Development Programme for the African Union. The EAC also set an objective of harmonising the healthcare sector for joint action against communicable and non-communicable diseases. It was the conviction of the EAC that all these aspects discussed above had a strong bearing on the level of intra-trade, development and economic welfare of its citizens.

2.3.7 The EAC and the Tripartite Agreement

In June 2015, the EAC joined COMESA and SADC and to form the Tripartite Free Trade Area (TFTA). Although the agreement was signed, it has not yet entered into effect because of technical work which is outstanding on rules of origin, tariff liberalisation, trade remedies, and harmonisation on trade-related policies. The EAC member countries are convinced that the TFTA will be instrumental in achieving the 'Vision 2050' of the EAC which seeks to optimise the utilisation of resources and accelerate productivity. The ultimate aim is to increase the

economic welfare of citizens. Thus, the TFTA is viewed by the EAC as an effective tool and a decisive step towards continental integration.

2.4 THE SADC PROFILE

2.4.1 Background of SADC

The Southern African Development Community (SADC) Treaty of 1992 was signed in Windhoek, Namibia to supplant the Southern African Coordinating Conference (SADCC) established by the Lusaka Declaration of 1980 in Lusaka, Zambia (Sandrey, 2013). The main mandate of SADC is to achieve regional development, peace and security, and economic growth, thereby improving the standard of living within Southern Africa. At its core, SADC also aims to improve the welfare of the economically and socially deprived through regional economic integration (Steier and Patel, 2016). Historically, SADCC was formed mainly to minimise dependence on apartheid South Africa by forging linkages to create equitable economic integration (Kalaba and Tsedu, 2008; Sandrey, 2013). In terms of its organisational structure, SADC also has a similar model to the other RECs which is headed by the Heads of States and Governments and has supporting arms

2.4.2 Objectives of SADC

The following objectives were identified by SADC to in order to attain its goal of economic growth and development

- Integration of markets;
- Convergence of macroeconomic indicators;
- Consolidation of capital and financial markets;
- Deepening monetary cooperation;
- Raising investment levels; and
- Enhancing the competitiveness of the SADC region.

(SADC, 2018)

2.4.3 Strategic policies of SADC

SADC formulated several policies and strategies to smoothen the process of regional integration so as to achieve economic growth and development. The expected gains included a bigger market, value-added intra-regional trade and investment, and improved technology

transfer and experience (Zyuulu, 2003; Kalaba and Tsedu, 2008; Rossouw, 2006). The details of the guidelines and priorities for SADC were outlined in various strategic documents such as the Protocol on Trade (SADC, 1996; SADC, 2014), the Regional Indicative Strategic Development Plan (2004), the Protocol on Finance and Investment (2006) and the draft Protocol on Trade and Services (2012).

SADC also embarked on a series of institutional reforms in 2000 and later launched one of its most strategic plans called the Regional Indicative Strategic Development Plan (RISDP) in Arusha, Tanzania in 2004 (SADC, 2004). This was followed by the Strategic Indicative Plan for the Organ (SIPO) which was initiated in 2005. The RISDP was comprehensively designed to provide strategic direction on the regional economic integration agenda of SADC over from 2005 to 2020. The ultimate agenda was to *‘deepen integration in the region with a view to accelerate poverty eradication and the attainment of other economic and non-economic development goals.’*

The RISDP (2004) was viewed also regarded by some analysts as an ambitious plan due to its milestones and timelines (Walters *et al.*, 2016; Rossouw, 2006; Sandrey, 2013). According to the plan, a free trade area (FTA) was to be established by 2008 followed by a Customs Union (CU) in 2010. By 2015, SADC was supposed to have attained the Common Market (CM) status and a Monetary Union the following year. In 2018, the RISDP had outlined that SADC was supposed to have a single currency and becoming an Economic Union. At present, SADC is still to fully realise a full FTA status with only Southern Africa Customs Union (SACU)⁷ member countries relishing the customs union level. SACU members have allowed free movement (with minimal to no restrictions) of labour in addition to movement of goods. For instance, Namibia, as part of SACU, has attained up to 99.7% tariff-free imports as part of the tariff liberalisation under the SADC Protocol on Trade (Government of Namibia, 2006:22-25).

The RISDP identified twelve priority sectors to be focused on to realise the goal of eradicating poverty and integrating the region. The areas were subdivided into cross-sectoral intervention spaces and sectoral cooperation and integration intervention areas.

The cross-sectoral priority areas are:

- Eradicating poverty;

⁷ SACU is intuitively a subset of SADC since its member countries are also members of SADC and COMESA. SACU member countries are Botswana, Lesotho, Namibia, South Africa and Swaziland.

- Fighting HIV and AIDS;
- Promoting equality in gender;
- Investing in science and technology;
- Enhancing the flow of information and better communication technologies;
- Development of the private sector

(RISDP, 2004)

This will be achieved through various measure which include liberalising and developing trade, providing suport for the development of infrastructure, ensuring food security in the region and promoting human and social development (SADC, 2017a).

Within the trade liberalisation framework, SADC promotes free trade as a key component to eradicate poverty (Tralac, 2012). The SADC Protocol on Trade (2005) envisaged the establishment of a FTA which came into fruition in 2008. Under the free trade arrangement member states removed tariffs on trade with one another, but there was no common external tariff (CET) on import from the rest of the world. Its objectives were to further open up intra-regional merchandise trade, ensuring efficiency in production; cross-border and foreign investment; and enhancing regional diversification and industrialisation (Lewis *et al.*, 2003; Kalaba and Tsedu, 2008). Freeing trade would create larger markets thereby increasing trade potential, economic growth and creating employment. According to the RISDP (2004) and SADC Protocol on Trade (2005), the SADC FTA would meet the needs of the economic stakeholders. These needs included improved access to inputs and consumer goods leading to icreased production, improved business opportunities, higher regional intra-trade, greater employment opportunities, increased foreign direct investments (FDI) and the creation of regional value chains (Rossouw, 2006; Kalaba and Tsedu, 2008; Maleleka, 2007).

Since the SADC FTA was implemented in 2008, 85% of intra-trade attained zero duty (Walters *et al.*, 2016). Although the benchmark were attained earlier on, the maximum tariff liberalisation was only achieved in 2012 after the completion of the tariff phase-down mainly due to Malawi and Zimbabwe which lagged behind their implementation schedules. In December 2010, Malawi engaged in a reformation exercise to align its schedule with that of COMESA and SADC. Zimbabwe encountered some challenges in its tariff commitments on sensitive products and was granted leeway to suspend tariff phase-downs between 2010 and 2012. Annual reductions were, therefore, to resume in 2012 for a two year period until 2014. Even though Tanzania was on schedule with its commitments on tarrifs, it sought for

derogation to levy a 25% import duty on its key sectors of sugar and paper products until 2015 so that local industries can transition smoothly (AEO, 2016; UNECA, 2016; AfDB, 2014; Ismail, 2017). The impact of the SADC Trade Protocol has been significant, evidenced by intra-SADC trade more than doubling since 2000, growing from approximately USD13.2 billion in 2000 to about USD34 billion in 2009, that is, an increase of 155% (Ismail, 2017; UNECA, 2012). Similar to the COMESA and the EAC communities, SADC also pursued macroeconomic convergence as a key tool for a successful integration process.

2.4.4 Macroeconomic convergence

To promote regional integration and equitable welfare, SADC promoted convergence of macroeconomic indicators in the region. It is a process which advocates for member countries to move toward a communal macroeconomic climate characterised by similar macro-policies (Rossouw, 2006; McCarthy, 2002). Macroeconomic convergence ensures regional stability because it safeguards it from excessive fluctuations caused by external factors. In general, it targets low and stable levels of inflation, budgets which have sustainable deficits, minimal public debt; and current account balances which are equitable (UNECA, 2008; AfDB, 2014; AEO, 2016; Okko, 2003; McKinnon, 2004; Carroll, 1993). The macroeconomic stability will then foster economic development by providing an environment which is predictable and attractive for investment (Büthe and Milner, 2008). SADC signed a Memorandum of Understanding on Macroeconomic Convergence (2002) to endorse macroeconomic convergence and it was later annexed into the Protocol on Finance and Investment (2006).

The SADC Protocol on Finance and Investment (2006) required all member countries to synchronise their economic policies to promote stability. Historically, inflation has been highly volatile throughout SADC. A low, stable level of inflation is ideal because it allows businesses to grow without drastically reducing savings and the purchasing power of a population (Ridhwan, 2016; Maleleka, 2007). Member states performed well at stabilising inflation with average regional inflation decreasing from 20% in 2002 to 7.7% in 2012 and most member states currently experience single-digit inflation which is a significant change from the figures reflected in the 1990s. Although Seychelles and Zimbabwe are the only countries which attained the target of less than 5% as of 2016, the current level of inflation is still a milestone achievement. Inflation still remains a concern for economic development because, whilst it has greatly subsided, it still remains high in comparison with nations outside the region (Beyene,

2014b; AfDB, 2014). Furthermore, UNECA (2016) highlighted that interest rates in SADC remain high thereby hindering borrowing and investment.

Sustained large deficits can be harmful to SADC economies, therefore, SADC dictates that member states should maintain a prudent fiscal position by limiting large deficits. In the case that the large deficits already exist, governments must not monetise them (Rossouw, 2006; Maleleka, 2007; Walters *et al.*, 2016). SADC countries agreed to measure and monitor their fiscal balances and had a target of achieving a deficit to GDP ratio of less than 5% by 2008, further reducing it to less than 3% by 2012 then sustaining the ratio until 2018 (AEO, 2016). However, these targets were heavily undermined by the global economic meltdown of 2008. Table 2.3 indicates the overall fiscal balance (including grants) in SADC.

Table 2.3: Fiscal balance (including grants) for SADC countries (2004-2010)

Country	2004	2005	2006	2007	2008	2009	2010
Angola	1.4	9.4	11.8	11.3	8.9	-4.9	7.7
Botswana	1.2	8.3	11.2	4.7	-5.3	-10.9	-9.8
DR Congo	-5.1	-10.1	-1.3	-4.1	-4.1	-5.2	1.2
Lesotho	7.5	4.4	14.1	10.9	8.7	-3.9	-4.6
Madagascar	-5.0	-3.0	-0.5	-2.7	-1.1	-3.1	-0.4
Malawi	-5.3	-1.2	0.3	-4.7	-5.5	-5.4	1.6
Mauritius	-4.6	-4.7	-4.4	-2.6	-1.3	-2.0	-3.5
Mozambique	-4.4	-2.8	-4.1	-2.9	-2.5	-5.5	-3.9
Namibia	-3.6	-1.0	2.0	4.2	2.6	-1.7	-7.1
Seychelles	-0.8	1.6	-5.9	-9.7	5.8	3.0	-0.8
South Africa	-1.2	0.0	0.8	1.5	-0.5	-5.1	-5.0
Swaziland	-4.1	-2.6	7.2	7.2	1.0	-6.4	-12.7
Tanzania	-2.9	-3.0	-4.9	-4.0	0.0	-4.8	-7.0
Zambia	-2.9	-2.8	20.2	-1.3	-1.5	-2.6	-3.1
Zimbabwe	n/a	-8.6	-3.3	-3.9	-2.7	-2.9	-0.3
SADC	-2.1	-1.1	2.9	0.3	0.2	-4.1	-3.2

Source: IMF, 2011

After the 2008 crisis, only Angola, DRC and Malawi had budget surpluses (including grants) but the region fared fairly well toward reducing budget deficits in general and the overall fiscal health of SADC reached its target with a budget deficit of 3.2%. It should be noted, however,

that these fiscal positions are likely to have hit the surplus margin due the inclusion of grants. The statistics are also sturdier compared to the EAC and COMESA which have fared worse since 2008 (IMF, 2011).

Current account balances are also another tool used by SADC to ensure macroeconomic convergence. Current Accounts record the amount of capital passing through an economic region over a given period (Okko, 2003; Rossouw, 2006; Zyuulu, 2003). The WTO (2002; 2011) and UNECA (2008) highlighted that strongly integrated countries are usually associated with current account surpluses because international transactions usually constitutes the current account. The framework on current accounts is stated in the Protocol on Finance and Investment (2006). As of 2013, SADC approximately had 7% deficit with some countries such as Botswana and Mauritius having surpluses and others like South African and Zimbabwe with moderate deficits of no greater than 5% while Angola, Lesotho and Malawi had deteriorating accounts (Beyene, 2014a; AfDB, 2014).

However, because of the high volatility in emerging markets, current account balances have been shifting dramatically in recent years (SADC, 2017b). Although the positive indicator could be interpreted as stronger integration into world markets, it does not necessarily imply that all economies are benefiting (Okko, 2003; Rossouw, 2006; Maleleka, 2007). On one hand, current accounts for middle income members such as Mauritius and South Africa have been widening due to growth in imports. On the other hand, members like Lesotho, Botswana, Swaziland and Namibia have recorded surpluses which are stemming from transfer payments from SACU, and not necessarily an increase in exports (AEO, 2016; UNECA, 2016). Similarly, low income countries have run an average of 12% current account deficit emanating from increased aid-financed imports and oil prices which are rising. High oil prices have significantly benefited Angola while developments in the Madagascar mining sector created rapid import growth thereby pushing its current account deficit to 24% of GDP in 2008, a situation which is anticipated to reverse when the sector becomes productive (WTO, 2011; AfDB, UNECA and UNDB, 2013; Karambakuwa *et al.*, 2015). After 2008, current account balances of the region improved steadily from 11% deficit in 2009 to 8.3% by 2011. In addition, the high magnitude was also due to the high prices of strategic imports used for development, such as oil, which costs SADC around USD 3.6 billion in 2011 (Walters *et al.*, 2016).

Lastly, public debt has also been identified as a key macroeconomic convergence tool by SADC. Public debt consists of all outstanding loans and guarantees that a central government

owes to its creditors, be it internal from selling bonds or external received from governments or international institutions (Sachs, 1989; Mckinnon, 2004; Maleleka, 2007). Public debt to GDP measures a nation's debt and potential credit risk and therefore SADC strives to avoid a high ratio especially taking into account the sustainability of the debt (Rossouw, 2006; Kalaba and Tsedu, 2008; Laursen *et al.*, 2008). As such, SADC member states were advised to maintain a public debt to GDP ratio of not more than 60% (Rossouw, 2006). In 2001, Angola, DRC, Tanzania, Mozambique, Zambia and Malawi had an external debt of more than 100% amounting to USD 62.12 billion. Five SADC members qualified for Highly Indebted Poor Countries (HIPC) Initiative which was launched by the World Bank (WB) and International Monetary Fund (IMF). The HIPC was designed to offer debt relief to countries whose debt burdens were no longer sustainable. Nonetheless, there was significant progress between 2004 and 2012. SADC reduced its average public debt to GDP from nearly 80% to less than 40% and most member states are well within their 60% ratio targets. Botswana is the most performing country at approximately 16% (AfDB, 2014). The table below indicates the summary of macroeconomic convergence criteria for the three RECs which constitutes the TFTA.

Table 2.4: Summary of macroeconomic convergence criteria for COMESA, EAC and SADC

REC	Primary Criteria	Secondary Criteria
COMESA	1. Ratio of fiscal deficit to GDP, excluding grants 2. Inflation rate 3. Reserve accumulation	1. Use of indirect monetary policy instruments 2. Interest rate policy 3. Achievement of market determined exchange rates 4. Growth 5. Savings 6. Investment 7. External current account, excluding grants External debt
EAC	(No difference between primary and secondary factors) 1. GDP growth rate: A high a sustainable rate of growth of real GDP, with 7 percent as the minimal annual rate (by the year 2000). 2. Inflation: Maintenance of low and stable underlying inflation to single digit rates of less than 5 percent (by the year 2000).	

	3. Current account deficit excluding grants/GDP; reduction of the current as a percentage of GDP to sustainable levels. 4. Budget deficit (excluding grants)/GDP: Reduction of budget deficit to less than 5 percent (by the year 2000). 5. National savings/GDP: raising national savings-to-GDP ratio to at least 5 percent (by the year 2000). 6. Gross foreign exchange reserves in months of import of goods and services: Build gross foreign reserves to a level equivalent to six months of imports in the medium term. 7. Maintenance of low and stable market-determined exchange rates. 8. Maintenance of low market-determined interest rates. 9. Pursuit of debt reduction initiatives to reduce both domestic and foreign debt, including statutory borrowing limits. 10. Maintenance of prudential norms of banking regulation, effective supervision, improved corporate governance and transparency of all financial transactions	
SADC	1. Inflation 2. Budget deficit/GDP 3. Debt/GDP 4. Current Account/GDP	1. Economic growth 2. External Reserves/Imports 3. Central bank credits or government

Source: UNECA (2008)

Furthermore, SADC also recognised the significance of the private sector in promoting the regional economic integration agenda. SADC and the private sector identified several areas in which private sector involvement can significantly benefit the region. These are trade and investment; infrastructure and transportation; agriculture and food security; tourism; employment; and the role of women (Rossouw, 2006; Maleleka, 2007; McCarthy, 2002).

2.4.5 SADC and Tripartite Agreement

SADC member countries joined the TFTA because they recognised the need to further strengthen and deepen economic integration in the eastern and southern Africa region. The notion was to harmonise policies and programmes across the three RECs in areas of customs, development of infrastructure and trade. The ultimate aim will be to enhance the economic and

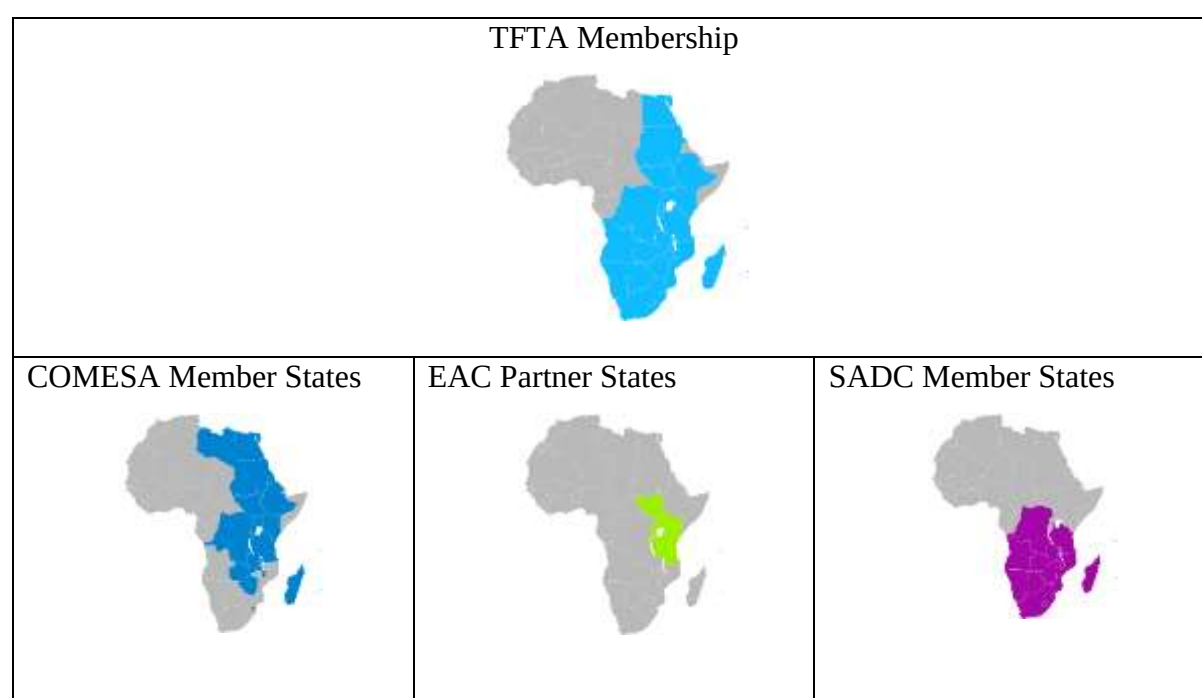
social welfare of TFTA citizens (Hartzenburg, 2012; Walters *et al.*, 2016). SADC highlighted that regional economic growth could be promoted by creating a stimulating environment for regional trade employing measures such as the reducing tariff and non-tariff constraints to trade and implementation of trade and transport facilitation measures (SADC, 2018b).

Although the implementation phase had not taken off by November 2017, the TFTA strategy is aimed at enhancing trade facilitation by improving the flow of commodities along the transport corridors in the region by reducing trading costs and transit times (Hartzenburg, 2012). Planning and implementation of programmes will be jointly done especially in the areas of surface infrastructure (comprising of rail, road, seaports and border posts) and air transport, energy and ICT (Mold and Mukwaya, 2015). The section below gives an overview of the instruments governing the Tripartite Free Trade Agreement (TFTA).

2.5 THE TRIPARTITE FREE TRADE AGREEMENT

The Tripartite Free Trade Agreement (TFTA) was established under Article 2 and was signed by the Heads of State and Government or duly Authorised Representatives of the Member States of COMESA, the EAC and SADC on the Third Tripartite Summit on 10 June 2015 in Sharm El Sheikh, the Arab Republic of Egypt. The First Tripartite Summit was held on 22 October 2008 in Kampala where there was a Memorandum of Understanding on Inter-regional Cooperation and Integration amongst COMESA, EAC and SADC. This was followed by the Johannesburg Communiqué of the Second Tripartite Summit held on 12 June 2011 where the Declaration Launching Negotiations for the Establishment of the Tripartite Free Trade Area was signed. At the time of the signing, the tripartite agreement was to cover the largest free trade area in Africa stretching from South Africa to Egypt. As of August 2017, 24 members had signed the Declaration and only Libya and Eritrea are yet to sign. South Africa and Madagascar signed the TFTA Agreement on 7 July and 13 July 2017, respectively. The Agreement requires 14 ratifications to come into force and no country has ratified it so far as of August 2017 (Ismail, 2017). The figure below indicates the various geographical spaces covering the three regional economic communities (COMESA, EAC and SADC) and the combined geographical space covered by the tripartite free trade area.

Figure 2.3: Geographical span of the member states of the Tripartite Free Trade Area



Source: Tralac and SIDA (2012)

The solemn aim of the tripartite agreement is to deepen, broaden and quicken the economic integration process. The scope and coverage of the agreement is covered in Article 3 of the Treaty.

The general objectives of the Treaty are outlined in Article 4 as follows:

- Promoting regional economic and social development;
- Creating a large single market where merchandise can move freely thus stimulating intra-TFTA trade
- Enhancing the processes of continental and regional integration; and
- Building a strong trading zone which will increase the welfare of people

Article 5 of the Treaty outlines the specific objectives which will help fulfil the general objectives set out in Article 4. The specific objectives are:

- Progressively remove tariff and NTBs to merchandise trade;
- Liberalising trade in the services sector;
- Join forces on measures to implement trade facilitation and customs matters
- Establishing and maintaining a framework which will facilitate the administration and implementation of institutions.

The TFTA takes cognisance of the significance of development integration composed of three key pillars namely industrial development, market integration and infrastructure development (TFTA, 2015). The operationalization of the TFTA was designed to be in phases which was supposed to be expedited by member states. However, there has been some delays in discussing Phase II of the negotiations due to some unresolved issues in Phase I (Tralac, 2017). The deadline for the first phase was June 2016 which was not met. The unresolved matters in Phase I are related to Annex I which deals with Elimination of Import Duties, Annex II on Trade Remedies and Annex IV on Rules of Origin. Phase II of the negotiations covers trade in services, cooperation in trade and investment and development. It also covers policies which relate to competition, cross-border investments and intellectual property rights (EAC, 2016; UNECA, 2016; AEO, 2016). The responsibility of negotiating the second phase of the negotiations was tasked to the Tripartite Sectoral Ministerial Committee on Trade, Finance, Customs, Economic Matters and Home/Internal Affairs. This Committee is responsible for providing timelines for strategic activities of the negotiations, their conclusions and also a roadmap of how implementation of the outcomes of the negotiations will proceed (TFTA, 2015; EAC, 2016).

2.6 SUMMARY OF CHAPTER

The chapter gave a brief overview of the other five RECs and placed more emphasis on the three regional economic communities which make up the Tripartite Free Trade Agreement (TFTA), namely COMESA, EAC and SADC. The chapter presented the background for each REC, the structure and membership of each organisation, their objectives and strategic policies and instruments which guide each REC towards the attainment of their respective objectives. More importantly, the chapter discussed how all that feed into the broader context of this study of improved intra-trade and economic welfare through deepened economic integration.

It is observed from the above discussion that African RECs have basically similar organisational structures and are guided by similar principles and trade instruments since they were all formed under the umbrella of the AU. The major variation is that these economic communities are at various levels of integration, some shallow while others are at a deeper level. The chapter also highlighted how the three RECs, namely COMESA, EAC and SADC, proposed and agreed to form and implement the TFTA. The chapter also clarifies that, even though COMESA, EAC and SADC are forming a free trade area, they are merging from different levels of integration with some communities such as EAC already at a deeper level of

integration where they are operating under a customs union whilst the majority of SADC countries are still at the free trade level. The main issues derived from this chapter are that the subject of regional economic integration has been in existence for more than four decades and progress has been made, maybe not necessarily to the extent which would have been desired, in attempting to improve intra-African trade and the welfare of the continent. Consequently, the tripartite agreement was entered into effect to simultaneously accelerate, broaden and deepen the integration process in Africa.

3 CHAPTER 3: THORETICAL LITERATURE REVIEW OF REGIONAL ECONOMIC INTEGRATION

3.1 INTRODUCTION

This chapter analyses the various economic integration theories from the classical ones to the most recent developments in regional integration. Although the main aim of this study is to analyse the welfare effects of economic integration, the analysis in this chapter will also consider other theories which influence the dynamics around the subject of regional economic integration since they shape the evolution of the process of regional economic integration. The study will use the term ‘regional economic integration’ because economic integration is being analysed in a regional context, that is, within the context of regional economic communities and more specifically the Tripartite Free Trade Area.

Several authors highlighted that the analysis of regional economic integration theories needs a thorough understanding of the motives of integration because there are different forms of integration. These forms were highlighted earlier in Chapter 1, that is, free trade area(FTA), customs union (CU), common market (CM) and economic union. Insufficient understanding of the cause and effect relationships of these processes usually leads to superficial judgements and misconceptions around the subject of economic integration (Greene, 2005; UNCTAD, 2010; Bustillo and Maiza, 2012). There is a general acknowledgement among scholars that regional economic integration theories are in themselves intertwined and intricate because the subject is both an economic and political one (Ujupan, 2005; Puga, 2002; Rosamond, 2000a; Santos, 2009). For instance, it requires both politicians and technocrats for a regional trade agreement to come into effect. The former have the task of making decisions that remove trade barriers while the latter offer a prognoses for the consequences of such decisions and actions on economic welfare through the use of scientific methods (Ujupan, 2005). This study adopted the role of the latter and attempted to scientifically provide a critical assessment of integration theories and develop scientifically based recommendations for the improvement of regional economic integration in the implementation of the tripartite free trade agreement.

3.2 CLASSICAL THEORIES OF REGIONAL ECONOMIC INTEGRATION

The subject of economic integration has been long deliberated by classical economists with major linking insights being anchored on division of labour, specialisation, industrialisation and its implications on economic integration and uneven development (Mill, 1920; Haas, 1958; Napoleoni, 1975; Ricardo, 1817; Viner, 1937). Contemporary economists have been constantly touting the gains of ‘division of labour’ and ‘specialisation’, advocating for unrestricted economic integration among countries. The free trade school of thought fundamentally relies on the principle of perfect competition where there are perfect factor markets which are unimpeded in their allocation process across the country or region. These markets are also characterised by the least opportunity cost thereby generating perfect allocative efficiency. This then leads to maximisation of global production which will then mirror the effective demand of the consumers (Gray, 1998).

Classical theory supports the notion that free trade reduces import and export constraints and is the most effective approach for stimulating growth. They argue that an increase in economic growth comes from two ends: firstly, due to production gains derived from comparative advantage resulting in increased efficiency and, secondly, due to gains in consumption because of increased choices at lower prices (Beyene, 2014a; Ujupan, 2005; Napoleoni, 1975). The classical theories were mainly developed during the phase of industrialisation and as such the concepts of division of labour, specialisation and integration of operations and trade were developed within this broad concept (Mill, 1920; Ricardo, 1817; Smith, 1776; Coats, 1975). Adam Smith, Karl Marx, Allan Abbott Young, and Albert Otto Hirschman were among the major theorists to have proposed some economic integration theories during the industrial phase.

It was Smith (1776) who indisputably gave strong emphasis to division of labour and attempted ‘an analytical enquiry into the causes of the wealth of nations’ based upon such a process. Although he did not go into the details of carefully separating them, Adam Smith described two types of division of labour which are division of production processes and specialisation on final products (Sai-Wing Ho, 2016). At one extreme each worker must assume all operations necessary for the manufacture of his substance, and on the other extreme, is a scenario where has to carry out only one operation of the whole process. Similar to Smith, Napoleoni (1975) also asserted that there are two classes of division of labour. These are division of labour

between corporations harmonised by the markets and division of labour within a corporation harmonised by entrepreneurs. He highlighted that there is need for workers to enter into exchange relationships (social integration) among themselves so that they can effectively transition from one extreme end to the other. This will ensure that they are able to satisfy their consumption needs (Napoleoni, 1975). Although the theory was developed at a micro level, Smith (1776) was able to show that division of labour will increase productivity and production and therefore give rise to the need for integration so that parties could trade with each other. Using Smith's argument, opening up of trade borders will likely lead to a multiplier effect on economic growth due to increased multiple partners.

However, Smith's theories were put forward during the initial stages of industrial development and as such he did not witness its further progress especially with the use of extensive machinery. It was Marx (1867) who later provided a richer and penetrating breakdown of the industrial transitions and he summarised the transition as two overlapping stages. Firstly, was the invention of machines which fundamentally became mechanisms to operate tools which were initially operated by the specialised workers. Secondly, was the application of collective systems these machines in factories, and this, according to Marx, was a primary characteristic of large-scale industries in the modern era. Karl Marx observed the contrasting processes of industrial differentiation and integration and highlighted that a plane existed where a link between the two could probably be proposed. In other words, Marx's theory was merely an extension of Smith's specialisation concept, only in this case he was applying more complex and rigorous analysis which was relevant to the industrial phase. Both Smith (1776) and Marx (1867) were able to provide an economic rationale of the industrial sector which would make specialisation and trade even more beneficial. Using these arguments, there is need for developing countries especially in Africa to have a well-developed and coordinated industrial sector for economic integration to be effective.

Young (1928a, 1928b) developed from the above arguments and noted that division of labour transforms a group of complex processes into simpler ones which would stimulate the use of machinery. Although Marx (1867) was aware and highlighted on industrial differentiation, his main thrust was on establishing the argument that large-scale operations is the principal feature of modern industry. It was Young (1928) who placed emphasis on the former and specifically cautioned that industrial integration should not be ignored as a concomitant of increasing industrial output but it is actually the opposing process of industrial differentiation which leads to growth in production. In other words, Young attributed economic growth to be a result of

industrial differentiation rather than industrial integration. The studies of both Max and Young are relevant to this study because they indicate that regional economic integration is often accompanied or sometimes preceded by industrial integration. It is therefore important to take into account factors which affect industrial development such as technological factors and transfers in order to have a deeper understanding of integration processes and development. The significance of technological factors in regional economic integration were later articulated by authors such as Romer (1986b), Grossman and Helpman (1991) and Barro and Sala-I-Martin (1997).

In his analysis of classical theories, Sai-Wing Ho (2016) made an interesting note and opined that classical integration and trade theories were mainly concerned with division of labour between firms which relates with final product specialisation and paid less attention to division of labour within firms which corresponds to division of production operations. A similar argument was also raised by Ietto-Gillies (2002) who mentioned that less attention was given to the analogous proposal that division of labour within a firm is constrained by the scope of the firm. This therefore implies that a more complete analysis of economic integration should take into account both trade between and within industries and countries (Quah and Rauch, 1990). This is essential because, as countries engage in free trade, it induces change in the way in which industries within those respective countries conduct their production operations, either among themselves or across each other in order to maximise the potential gains from such preferential arrangements (Giroud and Mirza, 2006; Hwang and Lee, 2015; Thanh *et al.*, 2016).

The studies pioneered by Smith (1776), Marx (1867) and Young (1928a, 1928b) focused mainly on capitalist economies since their theoretical assumptions and conclusions were mainly relevant to nations which had attained a certain level of industrial progress and were extensively engaged in division of production operations using advanced technologies and machines. Hirschman (1958, 1968) was more concerned about development and paid attention to countries whose division of production operations remained limited in terms of magnitude and indigenous technological capabilities. Hirschman's question was thus to find a way in which extensive divisions could be created and replicated in the less developed countries (Hufbauer, 1970; Kim, 2007; Gray, 1998). The focus of Hirschman (1958, 1968) was not merely on a one-time change but on a manner which would enable these developing countries to sustain further division and progress. He argued that economic development is a process of activating different kinds of linkages which would become the necessary steps towards the attainment of those extensive divisions of production operations (Sai-Wing Ho, 2016). What

Hirschman described as linkages could also be viewed as a process of economic integration in which production processes and technologies can be replicated from one country to another through linkages. The idea of establishing linkages was later expounded by Krugman (1990) in his theory of new economic geography. Paul Krugman highlighted that national linkages can be established by establishing free trade areas which would allow a smooth transfer and transition of technology and other factors from one country to the other. Krugman's (1990) theory will be discussed in further later in section 3.6 of this chapter.

Hirschman (1958, 1968) distinguished between backward and forward integration and laid out some scenarios of how the industrial process might spread out to satellite industries. It could be due to factors such as strategic location or proximity to the master industry where the main inputs or by-products of the master industry are used by the complementary industries without going through a further elaborate process of transformation. He opined that the satellite industries may appear to be insignificant in size compared to the master industry if viewed in isolation but when their presence is paired, stronger linkage dynamics which are beneficial are likely to emerge (Sai-Wing Ho, 2016; Giroud and Mirza, 2006). The combined linkage effects of the master and satellite industries are likely to be greater than the summation of the effects of individual industry linkages in isolation. This possibly constitutes an argument in favour of multiple development and economic integration if 'linkages' and 'integration' are to be used synonymously (Ujupan, 2005).

The postulations by Albert Otto Hirschman provided valuable insight into how economic integration between countries at various levels of economic development could benefit from each other through backward and forward linkages leading to a multiplier effect on benefits. Integration at country level could also allow for industrial linkages across industries in different countries to take place where such industries are located close to each other, for instance, near border towns of the two respective countries (Puga, 2002; Madariaga *et al.*, 2003; Pieck, 2011; Witkowska, 2016). Hirschman also related this process to the sustained utilisation of pecuniary external economies. Hirschman considered activating backward linkages to be more pivotal for development than forward linkages because it allows countries to advance into production of capital equipment and machinery (Hirschman, 1958; Hirschman, 1968). However, like Young's (1928a, 1928b) emphasis on industrial differentiation, Hirschman did not consider the production to be taking place in large plants only but should rather be complemented by a revolutionised transport and communication system which will be employed as a weapon for conquest of foreign markets (Marx, 1867; Smith, 2015; Limao and Venables, 2001; Napoleoni,

1975). The arguments for transport and communication and their role in international trade and regional economic integration were later extended by Tinbergen (1962) in his gravity model which will be discussed in section 3.3.6 and Krugman (1990) under the new economic geography in section 3.6.

In summary, the above theorems by Smith (1776); Marx (1867); Young (1928a, 1928b) and Hirschman (1958, 1968) established a platform for incipient uneven development among nations. Uneven development is what this study in part described earlier in the introduction as polarisation of benefits or unequal distribution of wealth. The authors above noted with some degree of unanimity that the introduction of (free) trade and economic integration is one possible solution to the emergence of division of labour or production operations and specialisation. They opined that there will be rapid upsurges in productivity and a variety of both intermediate and final products in some economies as a result of using machines and increased industrial differentiation (Sai-Wing Ho, 2016; Napoleoni, 1975). The logic derivable therefrom is that economies which are leading in industries should drive for closer integration with lagging ones (Haas, 1975; Nunez and Otero, 2017; Ndiritu, 2013). Regional economic integration would assist the leading industrial countries in securing sales outlets which these countries would have produced by large-scale machinery (Claassen *et al.*, 2016). Karl Marx ends his discussion by noting that:

‘A new and international division of labour springs up, one suited to the requirements of the main industrial countries, and it converts one part of the globe into a chiefly agricultural field of production for supplying the other part, which remains a pre-eminently industrial field.’ (Marx 1967)

The argument by Marx (1867) is a common characteristic which is relevant not only across the two continents of Africa and Europe but also even within Africa itself. Europe has remained integrated with the African continent for basically two reasons: cheap supply of raw materials and labour and, secondly, Africa has been a significant market base for most European processed or manufactured products for close to a century since the inception of the industrial phase (Haas, 1958; Levy, 1997; Bacharach and Lawler, 1998; Kempf and Rossignol, 2003; Van der Loo and Van Elsuwege, 2012; ECDPM, 2013). Within Africa itself, there is a large disparity in the levels of development and countries such as South Africa, Egypt, Kenya and Mauritius have become so industrially developed to an extent that other least developed countries such as Zimbabwe, Malawi, Swaziland, Lesotho have become suppliers of

agricultural products and cheap labour on one end, and a market for the products of these industrialised African countries on the other (Mold and Mukwaya, 2015; UNECA, 2008; World Bank, 2002; World Bank, 1990; World Bank, 1987). In 2014, the African Development Bank (AfDB) acknowledged that South African firms play a critical role in the expansion of regional trade and investment in Africa but their role is still highly uneven and heavily guarded. South Africa accounts for 25% of all intra-African exports in Africa and a meagre 10% of imports (AfDB, 2012). The influence of South Africa is both regional and continental with Southern African Development Community (SADC) being the second biggest trading partner after the European Union (EU). SADC accounted for 22.3% of manufactured exports (National Treasury of South Africa, 2013). In sub-Saharan Africa, 90% of the imports are from South Africa for over 1000 country per product combinations. There are over 3287 country per product combinations (excluding the SACU) and South Africa accounts for over 50% of imports (Stevens and Kennan 2013). This has led to some challenges in opening up trade leading to some countries still pursuing protectionist policies despite being members of regional economic communities (RECs) amid fears that the industrialised countries will continue to exploit the less developed nations thereby widening the inequality gap.

Sai-Wing Ho (2016) added on to the complexity of economic integration debate from the viewpoint of exploitation and polarisation of benefits by explaining the role of transnational corporations in economic integration due to division of labour and subsequent industrial development. The author argued that transnational corporations (TNCs) from the leading economies seek regional economic integration to influence how international production operations especially when searching for cheap labour. Economic integration and free trade agreements make the process complex because when the TNCs are allowed to act without any significant fetters put in by their host countries, the likely outcome is a different form of enclave development (Sai-Wing Ho, 2016; Giroud and Mirza, 2006; Hwang and Lee, 2015). On the other hand, if the activities of these TNCs are subjected to increased regulations, they usually react by influencing trade negotiations which usually results in rolling back of restrictions leading to uneven development (Giroud and Mirza, 2006; Sai-Wing Ho, 2016). As a result of this, some economies reaped more benefits because of increased returns bringing about incipient uneven development between leading and the trailing countries. Sai-Wing Ho (2016) argued that if multi-lateral agreements limit the usage of subsidisation and investment processes and do not reinforce the protection of intellectual property rights, then there will be

sustained uneven development due to polarisation of benefits in a particular area of an economic region, the leading industrial nation in this case.

The rationale for uneven incipient development in regional economic integration and international trade led to some theorists arguing for and against regional economic integration and liberalised international trade. The following subsection discusses some theories of international trade and the rationale for regional economic integration. Some theories emphasised on illustrating that economic integration turns participating parties or countries into winners and losers, that is, polarisation of benefits and uneven development while other theories placed more emphasis on providing an economic justification for trade despite the challenges.

3.3 INTERNATIONAL TRADE THEORIES

International trade theories are relevant to this study because trade integration is the most widespread form of integration in the global economy with the majority (if not all) of the regional economic communities having a strong trade component (Puga, 2002; Kalaba and Tsedu, 2008; Mothae, 2005). In actual fact, the Tripartite Free Trade Agreement (TFTA) is largely a trade agreement; although it has some political components in it. Trade theories make an attempt to show the welfare effects resulting from international trade transactions and explain reasons why some argue for and against economic integration.

3.3.1 Mercantilist view

A reasonable starting point for discussing trade theories would be with the mercantilist view. Although mercantilism is not viewed as a theory of trade *per se*, the wisdom which arose from mercantilism significantly influenced economic policies of many European countries during that era (Coats, 1975). Mercantilism became prevalent in the 16th and 17th century and was based on the notion that wealth, power and capacity of any economy was depended on the value of its precious metals (Irwin, 1996; Napoleoni, 1975). Bullionism emerged with countries acquiring more silver and gold⁸ in international trade in order to become the most powerful and influential nation. Countries were encouraged to export more and import less since trade was viewed as a zero-sum game (Smith, 1776; Mill, 1920; Irwin, 1996). This philosophy encouraged most European countries to impose trade restrictions such as tariffs, quotas and even embargoes in order to control and minimise import values into their respective economies.

⁸ Silver and gold were regarded as more valuable than other metals.

These trade policies were also complemented by subsidies to local industries in order to boost the international competitiveness in foreign markets (Mill, 1920).

Ricardo (1817) and Viner (1937) challenged the mercantilist view on several fronts and highlighted a nation's wealth cannot be solely measured on its precious metals and also that trade was not a zero-sum game implying that trade could be mutually beneficial when freely initiated. Ricardo (1817) argued that there will be improved efficiency and growth due to economies of scale when economies specialise. He also argued that the collusive behaviour between industry and government was detrimental to the general populace. Lastly, Viner (1937) maintained that whilst the mercantilist policies were fundamentally intended to benefit the commercial sector and the government, the notion of *the invisible hand* and free markets, a key tenet of classical economic thinking, will lead to larger overall economic welfare for the entire population (Smith, 1776). In other words, free trade leads not only to more economic welfare but also a better distribution of that welfare source (Cooper, 1987).

3.3.2 Ricardo's comparative advantage theory

The mercantilist argument of international trade being a zero-sum game was first clearly contrasted by David Ricardo in 1817 with his concept of comparative advantage and specialisation. His argument was that the whole world gains from international trade and each side is at least as well off with free trade as with no trade. In other words, a country can gain from trade even if it is worse at everything or better at everything than the rest of the world. The theory by Ricardo (1817) explains why it remains mutually beneficial for economies to participate in international trade even when labour in one economy is more efficient at producing all products than other economies. Unlike Adam Smith's (1776) model which had earlier alluded to the notion of absolute advantage as the rationale for trade, David Ricardo was able to demonstrate in a general equilibrium mathematical model that two economies capable of producing two goods in the free market can increase overall consumption and economic welfare by exporting the good for which it has a comparative advantage and import the other products assuming that there are variances in labour productivity between the economies. The table below illustrates hypothetical changes in production.

Table 3.1: Hypothetical changes in production

	Maize	Thousand Computers
South Africa	-10	+100
Malawi	+10	-30
Total	0	+70

Source: Author's compilation

In this example, the comparative advantage of Malawi is in maize and South Africa has a comparative advantage in production of computers. Economic welfare can be increased in both nations if Malawi produces maize for the South African market, while South Africa produces computers for the Malawian market. Trade can benefit both countries if either country exports the goods in which it has a comparative advantage. According to the Ricardian model, trade patterns depend on productivity differences and terms of trade will fall between economies when both countries specialise in the production of commodities for which they have a comparative advantage over due to a decrease in opportunity costs. Ricardo's theory asserts that it is comparative rather than absolute advantage which gives better rationale for international trade.

It is this rationale which contributes significantly to the argument for economic integration and free trade that each country stands to gain from the international trade even if one country is better-off at everything. Applying Ricardo's argument, one can reason that the TFTA member countries stand to gain from each other when trade is liberalised. This will allow countries to specialise and benefit from comparative advantage gains. One may argue that intra-trade within Africa is less beneficial since the majority of these countries are agro-based economies. However, by applying the comparative advantage argument, the point still remains that these African countries may still choose to specialise and produce different kinds of agricultural produce and beneficial trade can still take place thereafter. For instance, Malawi can specialise in tobacco production, Kenya in coffee, Tanzania in rice and Zimbabwe in maize production. These countries can then benefit from intra-trade due to the existence of free trade leading to an increase in overall welfare across countries.

Ricardo's theory was, however, not without criticism. John Stuart Mill argued that demand was not necessarily reciprocal, implying demand and supply across countries would not be met (Mill 1920). In addition, the theory of comparative costs may show limits within which the equilibrium must be, but it does not show how to determine the terms of trade, and hence the

price of the goods (Balassa, 1979; Batra, 2007). This criticism would become the focal point of the Stopler-Samuelson's (1941) theory and the factor price equalisation theory to be discussed in the subsequent subsections (Samuelson, 1949). Nevertheless, Bhagwati (1964) pointed out that the model ought to be analysed from a normative point of view since it helps to prove well the proposition that trade is beneficial. On another note, Gray (1998), Yoshimatsu (2007) and Kaur (2016) recognised that the new international mobility of some factors of production on a substantive scale makes the simple concept of free trade based on comparative advantages inadequate. Yoshimatsu (2007) and Gray (1998) argued in favour of free economic policy in a world in which trade in Schumpeter-goods⁹ takes place among economic units located in industrialised countries. Free economic policy was defined as comprising both free trade and freedom to invest abroad.

Whitman (1981) attempted to explain unobserved patterns in international trade theories. The author employed the term “neo-factor proportions” which was first used by Hufbauer (1970) to describe essential elaborations of the factor proportions theories and concluded that trade is based on differences in national characteristics (factor endowments) and takes place in a basically competitive and cosmopolitan world economy (Pollack, 2001). This, therefore, makes the concept of comparative advantage relatively ambiguous in terms of both the implications of trade for economic welfare and for the distribution of that welfare (income) both within and among nations (Pollack, 2001; Beyene, 2014c; Wang, 2016). In other words, the welfare effects are not as clearly cut as portrayed by the traditional international trade theories. This is because the configurations of factor endowments that give rise to trade are by and large regarded as exogenous. Rigidities that might constrain movements along the production-possibilities curve, as well as transitional costs of adjustment associated with the reallocation of factors of production, are ignored in favour of a focus on the long-run (optimality) properties of these models (Sai-Wing Ho, 2016; Beyene, 2014c).

3.3.3 The factor endowment theory

The factor endowment theory is another point of interest because it provides a sound theoretical foundation on the rationale of international trade and economic integration. The theory was published in 1933 by Bertil Ohlin although it had a significant contribution from Eli Hecksher who had earlier worked on the model in his doctoral thesis. The model was developed from two variant theories which emphasized on the supply side economics which are Adam Smith's

⁹ Goods which are depended on the availability of technology that is proprietary to the producing firm.

theory of absolute advantage and David Ricardo's principle of comparative advantage (Smith, 1776; Ricardo, 1817; Leamer, 1995). The Heckscher-Ohlin (H-O) theory stressed on the significance of factor proportions and highlighted that countries trade due to comparative advantages in factor proportions. These comparative advantages are influenced by the interaction between the resources possessed by each country and they influence the relative intensity by which the factors of production are utilised in the cycle of production (Leamer, 1995; Browning *et al.*, 1999). The differences in relative factor endowments and the pattern of factor intensities will make a country export one good instead of another when trade opens up. The Heckscher-Ohlin (H-O) theory predicts that countries export the goods for which they use their abundant factors intensively and import the goods for which they use the scarce factors intensively.

The theory was developed under the assumption of a two-sector two-country model. The two countries would produce two products, for example [food (X) and textiles (Y)] using two types of production which need two different inputs, assuming a classical production function $Q = f(L, K)$, where output (Q) is a function of labour (L) and capital (K) which are available in limited quantities. The available resources can be used to produce two products as well from the given production function, that is, either food (X) which is labour intensive or textiles (Y) which is capital intensive. Using the conditions, the H-O model elucidates the implications of trade between two economies, A and B, given that the countries produce similar products: food (X) and textiles (Y).

Table 3.2: Relative resource abundance, factors intensity and trade specialisation

Country	Inputs and production without trade		The relative abundance and trade specialization in the product for which there is factor intensity	
Product	Labour (L)	Capital (K)	L/K	K/L
M	X	Y	X	-
X	20	95	0.21	4.75
Y	10	5	2.00	0.50
Total	30	100	0.30	3.33
N	X	Y	-	Y
X	3	5	0.60	1.66

Y	10	2	5.00	1.20
Total	13	7	1.85	0.53

Source: Author's computations

As shown in Table 3.2 above, countries are efficient in the production of products for which they have relatively abundant factors thereby making it possible to specialize. In this scenario, country M is relatively abundant in labour (L) and will specialize in food production (X) while country N specialises in textiles (Y). Trade is mutually beneficial in this in case. However, changes in relative prices of commodities have a significant effect on the relative income acquired by different resources and the distribution of the incomes. According to the factor endowment theorem, there is expansion in the export-oriented sector (where a country has abundant factors) while there is a contraction in the import-competing sector (where there are scarce factors) (Leamer, 1995; Browning *et al.*, 1999). The effects of the changes in production are different for the short- and long-run and may imply an uneven distribution of the welfare gains from specialisation and trade (Romer, 1986b).

The short and long-run uncertainties mentioned in the paragraph above possibly suggest why some African countries have approached the idea of specialisation and trade liberalisation with scepticism (Ban, 2017; Sai-Wing Ho, 2016; Thirwall, 2012). There have been fears that liberalising trade and opening up trading borders could lead to those owners of factors of production earning more income due to increased earnings from exports while those who own a country's scarce factors will find their incomes dwindling due to increased imports to an extent that those losing may outweigh those gaining, thereby defeating the whole purpose of improving the welfare of people (Tumwebaze and Ijjo, 2015; Walters *et al.*, 2016). Even though the overall effect may be positive, AfDB (2014) was more concerned with the distribution of the welfare because it highlighted that Africa's approach to regional economic integration should be that of inclusive growth where all economic stakeholders are both participants and beneficiaries of the economic integration process. In this regard, the tripartite agreement should be designed in a manner which endeavours to optimise the benefits and minimise the negative effects on those owners of the factors of production which are less abundant. Other authors suggested that economic integration should be supported by complementary policies such as subsidisation policies, transfer payments and sharing the burden of revenue losses (Havrila and Gunawardana, 2003; AfDB, 2012; AEO, 2016; AfDB, 2014).

The factor endowment theory was criticised by Wassily W. Leontief whose paradox stated that economies with a higher capital per worker ratio have lower capital per labour ratio for exports than imports (Leontief, 1965). The paradox was the result of an econometric finding when Leontief attempted to empirically test the Heckscher-Ohlin theory. Leontief (1965) found out that the United States, regarded as a capital abundant country by world standards, was exporting goods that were more labour intensive which was contrary to the Heckscher-Ohlin theorem. Giersch (1979)¹⁰ supported Leontief (1965) and argued that international trade patterns have changed from the period when the free trade argument was formed. A significant proportion of international trade now occurs among economies with similar endowments of generically applicable factors, that is, among industrialised countries, thereby giving rise to the significance of intra-industry trade and economic integration. This view was complemented by Gray (1998) who highlighted that a significant part of international trade now occurs under the auspices of multinational corporations (MNCs), therefore, the free trade argument developed under the classical factor-proportions theory no longer holds.

In 1971, Baldwin employed a measure similar to the one employed by Leontief (1965) and showed, using 1962 trade data, that the United States imports were 27% more capital intensive compared to its exports (Baldwin and Segheza 1998). Leamer (1980) questioned Leontief's original methodology of putting in comparison factor contents of an equivalent monetary value of exports and imports (that is, on a real exchange rate basis). He, however, acknowledged that the US paradox still appeared in Baldwin's 1962 data even after using a modified methodology of comparing factor contents of domestic consumption and net exports. A survey was later conducted in 1999 by Elhanan Helpman and established that the paradox by Leontief still holds although some studies in non-US trade are still consistent with the Heckscher-Ohlin theory (Helpman, 1999). Other theorists such as Wolfgang Stolper and Paul Samuelson began to emerge within the same period to try and expand from the foundations laid by Heckscher and Ohlin in the factor endowment theorem.

3.3.4 Stolper-Samuelson theorem

In 1941, Wolfgang Stolper and Paul Samuelson developed a variant of the factor endowment theorem by applying less restrictive assumptions (Samuelson, 1949). The Stolper-Samuelson theorem explains the connection between factor rewards and prices of output in relative terms, specifically real returns to capital and real wages. Under the assumptions of constant returns to

¹⁰ Note that industrial countries do have natural resources but they are less significant relative to generic resources.

scale, equal factors and products and perfect competition, the theorem asserts that increases in relative prices of goods leads to increases in returns to those factors which were employed most intensively in the production of a commodity and, conversely, to a decrease in the returns to the other factors (Bernhofen *et al.*, 2012; Solow, 1999). Although he used very general conditions, Jones and Scheinkman (1977) were able to show that the factor returns change with prices of output as proclaimed by the Stolper-Samuelson theorem. *Ceteris paribus*, the robust finding was that yields to the scarce factor will decrease when real returns are considered under increased international trade (Samuelson 1949; Bernhofen et al. 2012; Jones and Scheinkman 1977). Another supplementary robust corollary was that compensation to the scarce resources exist from the abundant resources and will overcome this effect causing the increased trade to be Pareto optimal (Bernhofen *et al.*, 2012; Hwang and Lee, 2015).

Prior to the Stolper-Samuelson theory, empirical tests had challenges in predicting the effect on unskilled workers high-income economies when trade is liberalised. This was because the original Heckscher-Ohlin theorem only captured two factors under a specified labour market. Stolper and Samuelson (1941) were able to extend the model and showed more sophisticated representations with various classes of worker productivity within each class of labour which made it relatively easier and applicable for econometric and empirical testing. Bernhofen *et al.* (2012) tested the Stolper-Samuelson theorem for Japan and highlighted that inexpert workforce which produced commodities in a high-skill country will be worse off when international trade increases because they will be a less abundant factor of production compared to capital relative to the goods they produce to the world market. Therefore, economic integration between countries in different levels of development is likely to put the general worker in the capital intensive country worse off (McGrattan and Schmitz, 1999; Sai-Wing Ho, 2016; Dobrusin, 2015).

Using the above rationale in the case of the TFTA, the incomes of the unskilled labour in relatively industrialised countries such as South Africa, Egypt, and Kenya are likely to worsen from two angles due to regional integration and increases in intra-regional trade. Firstly, the low income countries are more labour abundant implying they can easily and cheaply increase the exports of goods which are labour-intensive in production. This will have dynamic effects on the income of suppliers of labour resulting in a decrease in real wages of unskilled labour located in the industrialised countries and an increase in real wages of less developed countries since they will be exporting more (Taylor, 1991; Puga, 2002; Baldwin and Seghezza, 1996; Gehring, 1996). Secondly, free movement of production factors also implies that people can

move from low-income countries which are relatively labour abundant to high income countries which have higher real wage rates. This would lead to a reduction in the real wage rates of unskilled labour in those industrialised countries. This possibly explains why countries like South Africa are reluctant to liberalise their immigration laws in order to minimise an influx of labour immigrants from surrounding countries which are also members of the trading agreements. These arguments could perhaps be disputed by the factor price equalisation theorem which argues that under free trade factor prices would adjust and eventually equalise across countries, thereby eliminating the need for factor mobility such as migration (Samuelson, 1949; Okko, 2003; Bernhofen *et al.*, 2012).

The factor price equalisation theory was developed by Paul Samuelson in 1949 as an extension of the Stolper and Samuelson (1941) theorem. The factor price equalisation theorem stated that there is a proclivity for factor prices to equalise for economies with similar technologies regardless of international factor mobility (Okko, 2003). Samuelson (1949) purported that prices of identical production factors like rent of capital and the wage rate will equalise across economies due to international trade in commodities. The theory was modelled in a framework of 'two-goods two-factors'. The theorem was also modelled on the fundamental assumptions that economies will face identical prices due to free trade, have the same technologies and produce both commodities. Samuelson (1949) concluded that factor prices will be equalised across countries without the need for factor mobility such as migration of labour or capital flows. Bernhofen *et al.* (2012) noted that the conclusions held by Samuelson (1949) possibly hold in the long run when all economies would have reached their steady state. However, countries are likely to experience significant labour and capital mobility in the short-run as economic agents will be seeking for the most lucrative regions.

Samuelson's (1949) argument was that the factor which receives the lowest prices before the two economies integrate and effectively become a single market will likely to be more expensive in relation to other factors in the economy and those which had higher prices will then tend to become cheaper. An example in the labour market was cited; when two countries enter free trade agreement, wages for identical jobs in both countries tend to approach each other. For instance, after the NAFTA was signed, wages for unskilled labour in the United States gradually fell while those in Mexico gradually rose (Madariaga *et al.*, 2003; Witkowska, 2016). There were similar experiences in the European Union which partially contributed the United Kingdom opting to exit the economic union (BREXIT) citing that free labour movement was putting pressure on the British labour market (ECB, 2017).

The factor price equalisation theory was also independently discovered by Lerner (1933) although it was published much later in 1952. Arber P. Lerner (1952) employed unit-value isoquants to illustrate how prices in the goods and factor market equalise when international trade is opened up and free. The factor price equalisation theorem explains convergence in both the goods and factor market due to regional integration agreements (Vahter and Varblane, 2005; Fazio and Piacentino, 2011; Bernhofen *et al.*, 2012).

The factor-price equalisation theorem is significant in this study because of its ability to explain and justify how low income countries could improve their welfare by opening up their trade borders with seemingly more industrialised nations. The theorem also makes a good attempt in explaining interactions between the goods and the factor market, clearly explaining how income disparities between the two countries smoothen out as a result of what they termed ‘equalisation of prices’. The theory is a double-edged sword which explains low income member countries will have their average wage rate improving while high income countries will have their wage rates decreasing. Okko (2003) cautioned that it should be noted that the wage rate referred to is in relative terms and not absolute terms. This implies that it is possible for the absolute wage rate of high income countries to be still higher than those of low income countries.

3.3.5 Viner’s theory

The international trade models discussed above were to a larger extent able to show that trade is not a zero sum game in which one nation gains at the expense of others. Due to division of labour, specialisation, differences in relative prices, factor intensities and the advent of comparative advantages these models were able to illustrate that countries stand to gain by opening up to trade and integrating economically.

However, although incomplete Viner (1950) was perhaps the first author to postulate a ground breaking model which was contrary to the generally believed hypothesis and showed that FTAs and CUs do not always enhance welfare and may actually reduce global economic welfare. The theory concentrated on the effects of regional economic integration in the short-run and failed to provide a conclusive rationale as to why economies enter into these agreements (Musila, 2005; Shujiro and Misa, 2010; Gurova, 2014; Endoh, 1999). Viner’s static analysis separated the potential effects of economic integration into trade creation and trade diversion. Trade creation denotes to a scenario where two or more economies enter into a trade agreement causing trade to shift from a high-cost supplier member state to a low-cost supplier member

state in the economic community. Trade diversion occurs when imports shift from a low-cost supplier of a non-member country of the community (third country) to a high-cost supplier who is a member of the economic community. This is usually the case when common tariffs are structured in a manner which protects the high-cost supplier in the union from the competition of non-member countries who are efficient producers (Cheong and Wong, 2007; Gurova, 2014).

Viner (1950) asserted that trade creation increase the welfare of the home country and trade diversion reduces it. He also argued that size does matter in international trade because of economies of scale and larger economic regions are more likely to lead to beneficial economic activity if they operate in a free trade direction (Mold and Mukwaya, 2015; Makochehanwa, 2012b). The theory makes an attempt to give insight to the significance of the size of the customs union where economies of scale lower the transaction cost of doing business. However, it was Tinbergen (1962) who later placed much emphasis on size of the economy in his gravity model while Krugman (1990) placed much emphasis on economies of scale in his model. Although Viner's (1950) work was later modified by relaxing some underlying assumptions, the postulations by Viner provided some lucid economic reasoning on welfare effects of free trade areas, especially the resultant effects of trade creation and diversion.

When trade creation outweighs trade diversion, the resultant effect is an increase in economic welfare gains and there will be welfare losses if trade diversion outweighs trade creation (Makochehanwa, 2012a, 2012b; Karambakuwa *et al.*, 2015). Introducing a free trade arrangement across the 26 member countries of the TFTA is likely to result in mixed results with some countries experiencing a net welfare gain while other countries might experience a loss. Secondly, even if all countries are to gain (or lose) there is a high possibility that they will not gain (or lose) in similar proportions leading to a redistribution of that welfare. Furthermore, there will be welfare changes across economic sectors within the member countries leading to changes in the economic structures of those respective countries. Since Viner (1950) argued that size does matter in influencing trade creation or diversion, member countries with the TFTA have varying economic sizes which implies that there is a high possibility of polarisation of benefits with larger industrialised economies being more likely to experience more welfare gains as compared to small economies. Another important contribution by Viner (1950) was the fact that industrialised countries are likely to gain as a result of size or scale economies. The issue of size was technically explained by Tinbergen (1962) in the gravity model to be discussed in the next subsection.

3.3.6 Gravity model of international trade

The gravity model of international trade predicts that bilateral trade flows are a function of economic sizes and the distance between two economic units or trading cities. The gravity model was first independently applied in international trade flows by Tinbergen (1962) and Poyhonen (1963) but had been used earlier in other fields such as human migration and investment flows across economies. The gravity model borrows from the ‘law of universal gravitation’ by Isaac Newton in 1867. The theory by Newton (1867) posited that the force of magnetism between two units, i and j , is a positively related to their respective masses and is an inverse function of the squared distance between the objects. Using the original representation but analogous to Newton’s representation, the basic gravity model for trade between two countries, say i and j , takes the form

$$F_{ij} = G \left(\frac{M_i^{\beta_1} M_j^{\beta_2}}{D_{ij}^{\beta_3}} \right) \dots\dots\dots (3.1)$$

where F is the attractive force or trade flow, M is the economic mass of each economic entity in which GDP is often used as a proxy, D represents distance between two economic trading units and G is a gravitational constant or trade multiplier which depends on mass and force. If logarithms are taken to the gravity model Equation (3.1), the model will be transformed into the following representation:

$$\ln F_{ijt} = A + \beta_1 \ln M_{it} + \beta_2 \ln M_{jt} + \beta_3 \ln D_{ij} + \beta_4 X_{ij} + \varepsilon_{ij} \dots\dots\dots (3.2)$$

In equation (3.2), A , β_1 , β_2 and β_3 are estimated coefficients and ε_{ij} is the error term capturing other shocks and fortuitous events which may influence bilateral trade. X_{ij} represents a vector of additional possible variables employed in the literature of international trade. Thus, when empirically testing the gravity model in Equation (3.2), income is expected to positively affect bilateral trade and whilst distance will have a negative effect (Rojid, 2006; Jayasinghe and Sarker, 2007; Warin *et al.*, 2009; Shujiro and Misa, 2010; Karambakuwa *et al.*, 2015).

Tinbergen (1962) argued that geography and spatiality are the fundamental factors influencing the volume of trade. The gravity model is efficient for economies with large volumes of intra-industry trade whilst at the same time having similar factor endowments compared to a contrasting situation (Warin *et al.*, 2009; Shujiro and Misa, 2010; Frankel and David, 1999). However, despite the empirical success of the gravity model in that it predicts bilateral trade

flows, some scholars believe there is no theoretical justification for the gravity equation (Warin *et al.*, 2009; Krugman *et al.*, 2010; Karambakuwa *et al.*, 2015). The gravity model was also criticised for not taking into account comparative advantage which some economists believe is the foundation of international trade (Ariovich, 1979; Wang, 2016; Yoshimatsu, 2007). It was, however, established by many analysts that gravity relationships arise in almost any model of trade where the costs of trade increase with distance.

Distance is another key factor which is likely to influence the volume of intra-trade in Africa. Unlike other regional economic communities such as the European Union (EU) and the Association of South East Asian Nations (ASEAN) community, the Tripartite Free Trade Area (TFTA) covers a vast distance across Africa (from Cape Town to Cairo). Large distances between major cities coupled with poor transport and communication infrastructure may have possibly contributed to low levels of intra-trade of approximately 15% in Africa compared to over 60% in Europe and Asia (AfDB, 2014). Therefore, African regional economic communities (RECs) should endeavour to work on transport infrastructure in addition to eliminating tariffs. Technically, an efficient transport system reduces distance in the sense that it reduces the time need to move the merchandise from one trading point to another (Puga, 2002; Akpan-obong and Parmentier, 2009). Transport infrastructure and communication have long-run effects on economic growth and development (Mothae, 2005; AfDB, 2012). These long-run effects are referred to by some authors as dynamic effects on growth. The next subsection will discuss the dynamic theory of economic integration.

3.4 STATIC AND DYNAMIC THEORIES OF ECONOMIC INTEGRATION

Another school of thought viewed economic integration theories from the perspective of the nature of gains derived. The gains of trade and economic integration can be viewed as either static or dynamic (Gurova, 2014; Kodheli and Vokshi, 1982; Wacziarg, 2001; Ban, 2017; Benhabib and Farmer, 1999). Static gains are generally one-time gains while dynamic gains refer to gains which overlap into several economic sectors and over the long-run. Scholars generally agree that the static gains from international trade and economic integration due to specialisation and rationalisation of *existing* resources are less when matched with the dynamic gains as a result of an increase in the growth rate and the additional resources which will be availed by the trading country. Dynamic gains are a consequent of physical capital accumulation in addition to the human capital because of several factors. These include

higher rate of foreign and domestic savings, improved transmissions of technology and better quality of macroeconomic policies (Gurova, 2014; Ban, 2017; Romer, 1989; Romer, 1986a; Frankel and David, 1999). Moreover, dynamic gains lead to improvements in X-efficiency such as improved managerial skills and less slack in the production process. In other words, dynamic effects can also be viewed as the ‘compounded effects’ of economic integration.

The earlier analysis by Viner (1937, 1950) which was discussed in Section 3.3.5 focused only on the static effects of regional economic integration or trade liberalisation. However, dynamic theories bring to light that certain gains of regional economic integration will be realised only in the long run and members of the TFTA should take into account both the static and dynamic effects in making decisions and policy prescriptions. Dynamic gains result in increased output growth in the medium and long run whereas static gains are realised in terms of the immediate increases in trade volumes as a result of trade liberalisation. Consequently, Shujiro and Misa (2010) pointed out that member countries should endeavour to create a balance between static (short-run) and dynamic (long run) gains when entering into regional trading arrangements such as the TFTA. This is because certain agreements might lead to welfare gains but only in the short-run at the expense of long term growth which will ultimately worsen the objective of equitable distribution of economic welfare.

Some authors distinguished between ‘shallow’ and ‘deep’ types of integration (Barro and Sala-i-Martin, 1997; Baldwin and Seghezza, 1998; Christiano *et al.*, 1999; Evans and Honkapohja, 1999; Rajec, 2014; Nunez and Otero, 2017). Shallow integration will likely cause static welfare gains while deep integration will likely lead to dynamic gains. Shallow integration involves the removal of trade barriers such as tariffs, quotas and other NTBs. Deep integration, on the other hand, is the removal of internal barriers which dissuade efficient allocation of production in an economic area. These internal constraints include standards for products which are different from internationally accepted norms, regulation of inward investment and domestic production, policy regarding competition and intellectual property rights, procurement rules and customs procedures (Evans and Honkapohja, 1999; Murray and Orcalli, 2012; Gelan and Omore, 2014; Thanh, 2015; Barro and Sala-i-Martin, 1997). It is, therefore, critical to understand and appreciate that while the TFTA is a positive move towards deepening economic integration, more work still needs to be done. This is because the free trade area stage involves shallow integration which leads to static gains. There is more work that should be done concerning regulation of customs procedures, protecting intellectual property rights, and investment and

competition policy among other factors for the region to start reaping the benefits of deepened integration.

Another class of scholars employed endogenous growth models to illustrate the dynamic effects of regional economic integration. The models were able to show countries can increase their economic growth and welfare through increases in foreign direct investment. The foreign investment which would have increased as a result of liberalised capital movement within the region will induce the rate of technology diffusion (Hufbauer, 1970; Barro and Sala-i-Martin, 1997; Romer, 1989) while trade in intermediate goods raises the rate of technology adoption (Barro and Sala-i-Martin, 1997; Helpman, 1999; Coe and Hooffmaister, 1998). Similarly, by limiting the monopolistic market powers of local corporations tied to current production, adoption of technology can be raised which in turn increases growth and economic welfare. According to proponents of dynamic theory, economic integration can neutralise monopoly powers of domestic firms because the increase in the number of foreign firms will increase competition. Therefore, firms will have to seek more efficient and effective means of producing their products, leading them to adopt new technology (Parente and Prescott, 2000). Technology can increase through the increase in portfolio investment, foreign direct investment and competition rules (Barro and Sala-i-Martin, 1997).

In other words, member countries within the TFTFA can accelerate the rate of economic growth and welfare gains through trade liberalisation and economic integration because technology diffusion and adoption have dynamic (long-term) effects. Therefore, in addition to short-run static gains, regional economic arrangements such as the tripartite arrangements are likely to lead to long-run welfare gains across member countries through both technology diffusion and adoption from industrialised countries to least developing countries. It is likely that as technology continues to diffuse from higher income countries to low income countries the gap between the two will continue to narrow down over time. This narrowing down has been referred to in economic literature as economic convergence or catch up effect. The aspect of economic convergence is discussed in the next section.

3.5 ECONOMIC CONVERGENCE THEORIES

The rationale for economic integration, trade liberalisation and welfare changes was also argued by some schools of thought from the perspective of economic convergence. The hypothesis of economic convergence postulates that when economies integrate the income per capita of poorer countries tends to grow at a faster rate than those of wealthier economies

(Woodford, 2009; Ben-David, 1993; Duede and Zhorin, 2016). Economic convergence occurs when partner states tend to reach a comparable level of development and wealth (Barrientos, 2007). Convergence occurs because developing economies have potential to grow faster and ‘catch-up’ faster than developed economies due to diminishing returns, especially on capital, being relatively weaker in the former than the latter (Barro and Sala-i-Martin, 1997; Romer, 1986b; Rodriguez and Dani, 2000). Poorer countries can easily and cheaply replicate technology, production methods and institutions (Ben-David, 1993; Duede and Zhorin, 2016).

Theorists have generally viewed the aspect of convergence from two variant angles. The *ex-ante* theorists believe that economic convergence is a necessary prelude for a successful integration process while those from the *ex post* perspective believe that once countries enter into a free trade agreement, economic convergence among key macroeconomic variables will begin to occur due to the catch-up effect on technology transfers, increased labour and capital productivity among other factors. According to Solow (1956) growth model as quoted in (Solow, 2007) an economy will converge towards its steady state because of diminishing returns to investment in physical capital.

Solow’s assumed equality across economies in all areas except the initial level of capital per capita. He also indicated that poor countries would eventually ‘catch up’ with rich countries because they have higher marginal capital productivity. This view is similar to some extent to that of the differences in factor-proportions (in this case initial capital) raised by earlier theorists. Sachs and Warner (1995) supported the arguments and cited that technology differences and lack of a sound human capital base in poor countries contribute to low levels of convergence.

They noted, however, that economies are likely to have faster growth when the variance between their current income and their potential in the long run is greater. Solow’s assumptions were acknowledged by the findings of Dorwick and Nguyen (1989) who confirmed convergence among developed countries but concluded that convergence was not applicable amongst the poorest economies of the world. Perasan and Tosetti (2011), nevertheless, cautioned that such conclusions of the presence of a convergence club could be due to spurious results which reflect inconsistencies in the structure of the model, poor choice of a sample period and also challenges in generating data. Using the *ex-post* argument, TFTA member countries can benefit from economic convergence as a result of economic integration since there is a wide variance between the wealthiest and the poorest countries within the 26

member TFTA arrangement. The variance between these economies was earlier noted and discussed in Chapter 1 of this study.

Mundell (1961) was the pioneer of the convergence argument in economic integration and he emphasized the need for synchronized business cycles in order to have a successful integration process. Mundell (1961) viewed the significance of economic convergence as *ex ante* and argued that synchronisation is significant among integrated economies because it enables those respective countries to deal with asymmetric shocks. He argued that an adjustment mechanism is needed in case of asymmetric shocks if there is a poor level of economic integration. This is because, as the theory states, asymmetric shocks undermine the real economy in the event that integrated economies are not convergent.

According to Mundell (1961, 1973), regional economic communities such as the TFTA must address four key areas to ensure a successful integration process. These include ensuring that there is labour mobility across the region, trade openness with capital mobility, price and wage flexibility and a risk sharing system such as an automatic fiscal transfer mechanism which will redistribute income to sectors which had been adversely affected. Lastly, Mundell (1961, 1973) also highlighted that business cycles of the member countries within a regional economic community should be synchronised (Mckinnon, 2004). This will minimise the negative impact of global economic shocks, especially bearing in mind that all the member countries are small as far as world trade is concerned, that is, none can influence world prices. The three regional economic communities have, in their individual capacities and operations, made significant progress towards achieving business cycle synchronisation and macroeconomic convergence by establishing macroeconomic convergence criteria. As already discussed in Section 2.3.9 in Chapter 2 above, there is now a need to harmonise the convergence criteria between the three RECs of COMESA, EAC and SADC.

Mongelli (2002) later reviewed Mundell's (1961, 1973) four key areas and added some properties that would allow integrated countries to have effective adjustment mechanisms. These properties are flexibility in prices and wages, diversified consumption and production, mobility of production factors, integration of financial markets, fiscal policies and business cycles, and openness and trade integration. Winkler *et al.* (2004) also suggested that fiscal and political integration are key convergence criteria which can be used as asymmetric shock absorbers. The variables mentioned above would ensure that there is economic stability which would create the necessary environment for economic integration to be effective. In summary,

the authors highlighted the significance of economic and political integration stability as necessary conditions for economic integration.

3.6 GROWTH MODELS IN THE CONTEXT OF ECONOMIC INTEGRATION

There is also some rationale that could be derived from growth models which partly explain and possibly justify why economic integration is viewed as a significant component of increases in economic growth and economic welfare. The growth models discussed in this study are mostly endogenous ones which would start in a closed economy setting and then later open up to show the effect of international trade liberalisation (especially free trade) on economic growth.

Grossman and Helpman (1991) developed an endogenous growth model and highlighted that industry success is proportional to research and development. They defined industrial research and development as a process of creating an ever-expanding range of horizontally differentiated products. Their model predicted that once there is economic integration and an economy is finally opened up to international trade, the locus of output will move back and forth between two regions where the former region and the more advanced region improves quality while the latter begins the process of imitating new and improved products. Countries within the tripartite free trade area (TFTA) can benefit from research and development in each country and thus improve not only on volume of international trade but also on the quality of products traded among each other.

Grossman and Helpman (1994) further developed their model and highlighted that improvements in technology are the force behind perpetually rising living standards and also that technical advancement required some level of intentional investment from profit seeking firms. They developed a model in which industrial innovation is the engine of growth and examined how disparities in institutions, structures of the economy and policies translate into different rates of productivity gain. Their rationale is that growth is endogenous and emanates from technological progress. Although their model was endogenous, by opening up trade in arrangements such as TFTA countries can significantly grow their economies through technology transfer and diffusion. The model by Grossman and Helpman (1994) was consistent with other earlier theories such as the absolute and comparative advantage theories (Smith, 1776; Ricardo, 1817), dynamic theories (Romer 1986b), convergence models (Solow, 1956;

Solow, 2007), (Viner 1950) among others in illustrating that the level of technology and rate of technological transfers are significant variables in economic integration. Technology is an umbrella term which covers a wide range of aspects from technology inventions, innovations and adoptions of the use of either machinery and equipment or simply the production functions. As such, technology remains a key component in several development and integration models.

In the same period, Barro and Sala-I-Martin (1997) developed a more mathematically involving model which combined the elements of endogenous growth model with the convergence implications of the neoclassical growth model and concluded that followers converge toward leaders because copying is cheaper than innovation. Technology diffusion and convergence are critical elements in our study because a larger free trade area allows for more diffusion between leaders and followers resulting in convergence and faster growth. Gray (1998) highlighted that multinational corporations (MNCs) play a significant role in technology diffusion and integration. The model argued that the broader concept of non-interference with the exchange of goods and services, that is, free economic policy, is still valid if the goal is the maximisation of world welfare. Basically, the growth theories highlight that, although initial growth might be initiated due to endogenous factors, once trade is opened up these growth factors can be easily copied or diffused to the less innovative and poorer countries who do not have sufficient capacity to conduct their own research and development, thereby leading to their growth as well. In this context, therefore, the TFTA will more likely lead to increased economic growth and welfare of the combined 26 African countries. Economic integration does not lead only to welfare changes through income convergence but may lead also to possible changes in the structure of the economy as a whole, that is, the way in which industries are located or distributed. The following section discusses factors which influence industry location and ultimately welfare distribution. The factors which influence industry location and ultimately welfare distribution are discussed in Section 3.6 below.

Kempf and Rossignol (2003) employed an endogenous growth model with scale effects to analyse the aspect of convergence in economic integration. The authors assumed the benefits of integration to be given and analysed national decisions to integrate in a two country model of median voter. According to their model, technology is constant and returns to scale on labour and capital and total factor productivity depend on public goods which then give rise to an endogenous growth model with scale effects. Since the government is faced with other internal obligations to meet, if it then decided to raise income taxes in order to finance the production of public goods, the political system will then decide on the magnitude of the tax rate.

Individuals will have different preferences on the tax system since they have different (initial) non-human wealth. Poor agents will prefer high taxes towards rich individuals which will allow the government to produce high amounts of public goods, thereby increasing labour productivity and wages.

Kempf and Rossignol (2003) then highlighted that a world economy will be formed if national median voters in two countries agree on the possibility of integrating the two countries into a union. Median voters (or the political economy) is an important consideration in economic integration formulation and implementation because there will be basically three effects on the welfare of the national median voters. The first one is the ‘efficiency effect’ which is strictly positive since economic integration has a positive scale effect.¹¹ The second one is called the ‘status effect’ where integration may remove the key policy-making position of the national median voter. This policy-making position will be possibly transferred to the ‘high authority’ discussed earlier in theoretical literature and the median voter may possibly view this as unambiguously costly for him since the high-authority may or may not make decisions in his interest. The last effect is referred to as the ‘position effect’ which relates to the changes in the position of the median voter in terms of income distribution. This last position is unmistakably ambiguous and may be the case that national voters do not agree on the creation of a union. The position effect depends on the relative size of countries, the initial wealth of countries and how unequal national median voters are (Licandro, 2004).

3.7 NEW ECONOMIC GEOGRAPHY THEORY

Krugman (1990) developed an economic integration model on what has been termed the ‘new economic geography’ which highlighted on the potential impact which can be brought about by economic integration on the geographical dispersion of the industries. The model was developed in a general equilibrium framework with linear cost and demand functions and resource endowments. The model also assumed imperfect competition as the rationale for trade. It emphasized the trade-off between three main variables, namely scale economies, transport costs, fixed costs, and externalities or spill overs. Externalities of relevance are those linked to (i) the physical accumulation of capital, (ii) the human capital accumulation, that is, skills improvement and (iii) ‘knowledge production’, that is, learning how to imitate, technology adoption and innovation to meet one’s needs. These components have long run

¹¹ As assumed earlier in the paragraph.

effects which make permanent or sustainable growth possible due to positive externalities (Cheong and Wong, 2007; McGrattan and Schmitz, 1999; Mold and Mukwaya, 2015).

Krugman (1990) distinguished between a centre and a periphery. Prior to the integration process, the model presumed that the manufacturing industry will be dispersed between the two regions and trade costs will be high. Post integration, costs of trade will fall thereby provoking industries to relocate. The exact form of how the industries will relocate will depend on the relative importance of trading costs and prevailing economies of scale. If the costs of trade decrease to negligible levels, the peripheral region will benefit from the integration process because firms will be attracted to lower costs and there will be no incremental costs associated with the peripheral location. This also reflects a form of convergence between the centre and the periphery that would have been provoked by industry relocation. Later studies such as the one by Mold and Mukwaya (2015) and Krugman *et al.* (2010) acknowledged that the outcome of industry relocation as a result of integration is more complex at intermediate levels especially when factoring in transport costs. Assuming the process of regional economic integration is imperfect and costs of trade remain considerable, Krugman (1990) hypothesized a condition where it may be rewarding to concentrate production at the centre which will be having higher costs but also having better access. This would allow the industries to take advantage of economies of scale in production. Krugman (1990) foresaw the possibility of a sizeable relocation of industry in preference of the centre away from the periphery when trade liberalization and economic integration is incomplete. This is because the cost will outweigh the benefits. This view was complemented by Barry (1996) who highlighted that there is a likelihood that richer economic zones will benefit the most due to their enhanced attractiveness as prime industrial locations. Within the TFTA, there has been a sizeable reallocation of industries within the East African Community (EAC) especially from Tanzania and Uganda into Kenya. In the SADC region several industries have relocated from struggling countries such as Zimbabwe and Mozambique into South Africa citing, among other factors, higher operating costs and poor transport networks. If transport and communication infrastructure are improved through regional economic integration projects, there could be a relocation of industries from centres to peripheries (low income and underdeveloped areas) which would ultimately lead to an increase in the welfare of economic stakeholders in those peripheries. Corado (1990) also argued that it maybe essential to deepen the process of economic integration in order to reduce the costs of accessing the market from the periphery to the centre thereby increasing the attractiveness of the periphery.

In light of this, the AfDB (2012, 2014) strongly recommended investment into transport and communication infrastructure including software infrastructure in order to improve access to the continent's periphery areas so that the Tripartite Free Trade Area (TFTA) optimises its potential benefits. The regional bank cited that the low level of infrastructure development in Africa largely accounts for the low competitiveness, productivity, and intra-regional trade levels in addition to the low share of world exports. Economic integration can accelerate inclusive infrastructure development between the industrial centres and periphery by linkages through roads, railways, information and communication technology (ICT), power infrastructure, and ports and harbours (Lima and Venables, 2001; AEO, 2016; AfDB, 2014). Since 25% of African countries are landlocked, regional infrastructure which is well-conceived can integrate marginalised populations thereby broadening the scope for economic involvement (AfDB, 2014). Therefore, regional infrastructure could be deliberately targeted to inaccessible areas or countries with huge deficits in infrastructure. Principally, the interpretation of new economic geography relies on the (non)-existence of trade barriers. If barriers remain, using the '*second-best theorem*'¹² it could be profitable for peripheral economies to resist further integration (Krugman *et al.*, 2010; Pieck, 2011).

The next section analyses other schools of thought which influences the dynamics of regional economic integration. The contributions from these schools of thought were derived from the fields of international relations and comparative politics which are closely interrelated to the subject of regional economic integration.

3.8 OTHER REGIONAL INTEGRATION SCHOOLS OF THOUGHT

We earlier noted in Chapter 1 that economic integration is both an economic and political matter. Although not exclusively political, the next section attempts to provide another view of regional economic integration using other non-conventional theories. The theories elucidate the rationale, process and stages of economic integration using theories which have been derived from unorthodox literature. More specifically, the study discusses arguments from organisational theories, international relations and comparative politics.

¹² On an intuitive level, the second best theorem infers that if an economy suffers from two or more distortions, their effects could be partially or wholly to neutralize each other. Removal of one of them (in our case, high transport costs) could thus result in an even more inefficient outcome.

3.8.1 The neofunctionalist perspective

Rosamond (2000a, 2000b) attempted to explain regional integration from a governance view using the two main theories of neofunctionalism and intergovernmentalism. Neofunctionalism theory views society as composed of various interest groups in which an integration process would better satisfy them. Neofunctionalism brought the idea of spill overs where integration would deepen from economic to political leading to an integrated union of states (and/or societies) which have acquired the features of ‘domestic political systems’ (Rosamond, 2000a). The theory highlights that there exists a *high authority* which will be above nation states which would perform the role of giving direction to the integration process. The functions of a high authority in the context of this study can be presumed to be those performed by the Organs of the State and Government and the Secretariat within the three regional economic communities of COMESA, EAC and SADC.

According to neofunctionalists, a high authority that guides its members wrongly becomes the definitive element which propels the respective union to failure (Ujupan, 2005). Edmond Haas, the founding father of neofunctionalism, purported that political spill over would be attained when nation states transfer their domestic allegiance or loyalty to the higher authority (Haas, 1975; Haas, 1958). Although Haas (1958) initially described the economic integration process of spill over as one directional, Lindberg and Steigold (1970), acknowledged the idea of spill back. The latter argued the fact that economic integration could slow down or halt from deepening further because of pressure that it causes among members. Using the neofunctionalists arguments, there is need for member countries of the TFTA or any other regional economic community to transfer or ‘give up’ some of its power (or sovereignty) to the high authority. The sovereignty or power transference equips the high authority to not only outline terms of trade but also have some enforcing and monitoring power to ensure successful implementation of the agreement. Controversy usually arises in terms of the amount and extent of power (sovereignty) that each country is willing to give up (Bacharach and Lawler, 1980; Ujupan, 2005; Krapohl *et al.*, 2014). The power should not be so little that the high authority does not have an enforcement ability, but neither should it be too much that the member countries are crippled to make certain strategic domestic decisions. However, without the existence of a high authority, implementation of the TFTA would be difficult if attainable at all.

Neofunctionalism has been criticised for not emphasising or rather decreasing the role and authority of the member states. In addition, the idea of spill over - particularly the view that economic integration develops into political integration - was also challenged (Ujupan, 2005). For instance, Hoffmann (1966, 1982) regarded economics and politics as being mutually exclusive from each other and made a distinction between high and low politics. He described low politics as engaging more technocrats which does not include much sovereignty transfer from member states; therefore, integration would be feasible in such a case. On the other hand, high politics involves key policy issues such as macroeconomic strategies, taxation, defence and Hoffmann (1966, 1982) argued that nation states would not consent to transfer of sovereignty in preference of high authority. It is at the level of high politics where a lot of friction is felt among member countries in a regional economic community. It was high level politics which led the United Kingdom opting to exit the European Union (BREXIT) and some frictions in the 1990s between COMESA and the SADC Secretariat¹³ (Maleleka, 2007; Walters *et al.*, 2016). Loss of sovereignty is an even more critical and sensitive matter among developing countries in Africa as they feel more vulnerable when exposed to the international market. This leads them to enter into integration arrangements with caution and they are not willing to completely open their economies to free trade in its absolute sense. For instance, the Zimbabwean government refused the viable option suggested to it by economists to join the Rand Monetary Area (RMA) and adopt the South African rand when its local currency collapsed in 2009 amid fears of loss of monetary policy sovereignty (Gibb and Treasure, 2014; Makochekanwa, 2012a).

3.8.2 Intergovernmentalism

Intergovernmentalism, which was a response to neofunctionalism, was embedded in two currents. The first one was neorealism whose core idea was that the capacity to distribute between member countries induces the differences in power. The second was neoliberalism which emphasised on the interaction of states' interests (Ujupan, 2005). Intergovernmentalism is a school of thought which purports that economic integration continues to exist because economies realise that they are interdependent on each other. Among other factors, the realisation of interdependence among nation states could have stimulated member countries of COMESA, EAC and SADC to establish the tripartite region so that they deepen the level of integration in the continent. Putnam (1998) coined the notion that intergovernmentalism

¹³ The tension between SADC and COMESA is discussed in detail in Chapter 5, Section 5.1.

describes economic integration from a governance perspective. This school of thought views economic integration as a two level game played by members. At the national level will be characterised by office holders who build coalitions among their domestic clusters and the the union level will be members who are bargaining in order to enhance their domestic level positions by ensuring that the demands of all key interest groups are satisfied. (Bacharach and Lawler, 1998; Ujupan, 2005). At an empirical level, the dynamics of the two level game between national level and union level office holders have led to some challenges in the implementation process within Africa's RECs. These issues are discussed in Chapter 5, Section 5.2.1 below under political obstacles to progress in regional economic integration.

Another key theorist, Moravcsik (1998) argued that the extent of depth of regional economic integration is largely determined by the members and it can go as far as member states want it to go. The author highlighted that unions exist because of the deliberate will of member states to satiate their interests and these unions are tools for achieving the objectives of the member states. A union is a platform where member countries strategically bargain their interests which would have been articulated within their domestic level negotiations. Moravcsik's (1998) liberal view considers economic interdependencies as the rationale for members to collaborate while neo-institutionalists believe a reciprocally reinforcing relationship between regional inttituon-building and intra-regional trade (Stone, Sweet and Sandholtz, 1997). Criticism of liberal intergovernmentalism highlights that it is more of an approach than a theory since Moravcsik (1998) failed to describe the conditions in which this 'theory' could be empirically refuted (a similar criticism to neofunctionalism). They also argued that Moravcisk's approach failed to account for connections between institutions and their impact of membership (Pollack, 2001).

Another view of regional economic integration was developed from a comparative politics school of thought which described economic integration as a governance aspect as opposed to a process. The view acknowledges that multi-level governance is affected by several complex actors especially within African governance. This is because integration favours devolution of authority and influence from the state to both sub- and supra-national levels and there are significant differences among subdivisions of policy-making. The current eight RECs have had challenges with devolution of power and this is another key area that has to be carefully dealt with by the architects of the TFTA, otherwise the tripartite arrangement will simply be a bigger version of the current RECs. For multi-level governance (MLG) advocates "the normal politics of sovereignty is, therefore, a politics of absolutes" (Rosamond, 2000a). Peterson and Bomberg

(1999) suggested distinguishing levels of policy-making into four levels. These are supra-systemic, systemic, sub-systemic and historical. Critics of multi-level governance (MLG) argued that it was too static and did not account for dynamics of regional economic integration. Advocates of historical institutionalism such as Pierson (1996) stated that regional economic integration takes place because of the inabilities of governments to forecast and control the effects of their decisions. Between two ‘highly political’ intergovernmental agreements, minor changes may happen which may propel actors from sub- or supra-national levels to improve their power and slowly swing the balance towards a position which is more favourable for them thereby creating ‘path dependencies.’

3.8.3 Organisational theory

Organisational theory provides another stimulating perspective of analysing regional economic integration. Organisational theory encompasses an enormous field of research and its wealth of concepts gives us a better comprehension of the processes of integration and how it functions (Ujupan, 2005). The theory states that organisations exist because they are able to create value and satisfactory outcomes for various stakeholders who are actors with a claim, interest or stake in the organisation. These stakeholders are also concerned with what the organisation does and how well it performs (Jones, 2004). According to organisational theory, member countries (which are the organisations in this context) of the TFTA are motivated or prepared to join and participate in an organisation (the TFTA in this case) if the ‘inducements’ which are likely to accrue to them will exceed the value of their contribution they make into the organisation for it to continue to function (Morgan, 1998; Cheong and Wong, 2007; Johnston and Trebilcock, 2013). The inducements of regional economic integration referred to in organisational literature are what is being referred to as welfare gains. The theory is generally postulating that organisations or countries integrate because they realise that there are some welfare benefits or inducements which they can only attain as a result of economic integration.

The literature on regionalism by Mansfield and Milner (1999) employed an organisational approach and emphasized on the outward orientation of regional economic integration. They argued that ‘new’ regional organisations such as the TFTA endeavour for investment and trade with extra-regional actors. The emphasis on open regionalism co-evolved with the transition from the strategy of import substitution to export development (Krueger, 1993). Thus, regional economic integration within the tripartite region may possibly complement export-based development strategies by multiplying size and stability effects as a consequence of three main

factors. Firstly, integrated regional economies become more attractive to market-seeking investors (Büthe and Milner, 2008). Secondly, member states will have improved bargaining positions in international trade negotiations due to size effects (Doctor 2007; Mansfield and Reinhardt, 2003). Thirdly, regional economic integration is linked with better political and economic stability because it reduces the conflicts and improve the quality of domestic political institutions (Bacharach and Lawler, 1981; Büthe and Milner, 2008; Munin, 2010).

They argued, however, that open regionalism in the developing economies does not lead to increased intra-regional but extra-regional interdependence. Since the rationale of regional economic integration in developing regions is to attract foreign direct investment (FDI) and increase its access to extra-regional export markets, its success depends on how the extra-regional actors react (Munin, 2010; UNECA, 2008). Economic integration implies loss of sovereignty, therefore, the loss of decision-making can only be sustained if there is an economic pay off. As discussed earlier, the African integration process has been stalled to some extent because of some unwillingness by certain central authorities to give up their economic sovereignty to the REC. As a minimum, regional economic integration in developing countries will only proceed if it leads to increases in foreign direct investment (FDI) inflows and access to other regional markets in the world in the short run. Only in the long-run may open regionalism increase the level of interdependence as the potential for intra-regional trade and investment increases (Munin, 2010; Büthe and Milner, 2008).

Krapohl and Fink (2013) concluded that there is an economic rationale for regional integration in the developing regions. The authors neglected the extra-regional economic benefits that regional economic integration deliver and argued that intra-regional relationships and extra-regional actors are of great importance when building regional institutions in developing regions. Their conclusion contradicted with Mattli (1999) who argued that regional integration in these regions was least likely to succeed because member countries only derive negligible profit from intra-regional trade. Similar arguments were raised by some economists in trying to justify the current low levels of interregional trade in Africa because the majority of these countries produce similar products which are mostly unprocessed agricultural or primary products implying little profit can be derived from them (Beyene, 2014c). This study aims at empirically analysing if indeed regional economic integration is beneficial in the context of developing countries and to what extent.

Ujupan (2005) proposed the application of elements of organisational theory when tackling the theoretical shortcomings in explaining the regional economic integration process. The organisational theory used the power-dependence perspective to explain how relations between actors engaged in an integration process, and these account for different stages and forms of integration. he argued that actors depend on each other due to scarcity of resources, hence, they react to the situation by pooling resources together by entering into arrangements such as the tripartite agreement. the author further explained that whether a regional economic community deepens and widens or stagnates is largely determined by the processes of organisational change or how its resistance to that change. The perspective by Ujupan (2005) partially explains the various stages which the three regional economic communities (RECs) of COMESA, EAC and SADC have gone through over the years since their inception. In essence, the RECs are organisations which have evolved over the years. On one hand, the three RECs were formulated and continue to exist because member states realised that they depend on each other while, on the other hand, the progress of these RECs was partially stalled by the natural processes of organisational change and resistance to change due to various factors such as different economic and political ideologies and divergent vision on the future of the economic community.

One enigma of the organisation is that stakeholders constantly involved in a process of simultaneous and continuous competition and collaboration, which is essentially the essence of the organisation (Jones, 2004; Morgan, 1998; Bacharach and Lawler, 1980). Member states within the TFTA will have to constantly compete for factors of production and markets for their products while simultaneously collaborating in order to either adopt new technology or production methods or expand their markets and sell their products to other regions as a joint supplier. All stakeholders are concerned with the survival of the organisation (TFTA), as a fundamental condition for attaining their objectives, thus, they collaborate in this sense. They then compete on how gains should be allocated in order to maximise their main individual country interests. Bacharach and Lawler (1998) highlighted that actors compete and collaborate when necessary. There is no actor who has a deliberate intent to annihilate others while at the same time noone is willing to forego their own goals in order to cooperate on every issue for the sole purpose of organisational harmony or for the benefit of the organisational as a whole (Bacharach and Lawler, 1998; Ujupan, 2005; Büthe and Milner, 2008). Thus, to some extent, the survival of organisations is driven by the *invisible hand* of self interests and the organisation is a platform for which these actors can bargain and pursue their interests just like the markets

are in the case of the free markets where either buyers and sellers or labour and employers meet. Each has their own interests and yet they need each other for continuity and an equilibrium must be sought.

Ujupan (2005) extended the view of organisational theory and highlighted that member states should not be viewed as monoliths but rather as organisations where preferences are negotiated until a common position is reached. The author also claimed that stakeholders do not carry the same weight and some have more 'shares' than others. This applies even within the European Union and Latin America where countries like Germany and the United States have more influence in negotiating the terms of the regional economic community. In Africa, South Africa exerts a much greater level of influence in the South African Customs Union (SACU) while Kenya has more influence in the East African Community (EAC). Bacharach and Lawler (1980) argued that stakeholders are categorised power bases and the most powerful have a leverage to pursue most of their objectives. Similar to the Principal-Agent theory, the management system influences the organisational priorities and preferences. However, the principal also considers the preferences of other stakeholders to avoid loss of position. Organisational theory is helpful because it gives a foundation of understanding that regional economic communities survive in an environment characterised by continuous adaptation both internally and externally and is influenced by various causes of changes which range from economic, social, technological to political.

3.9 SUMMARY OF CHAPTER

This chapter presented an in-depth exploration of the theories related to regional economic integration. The chapter made a notable attempt to point out that regional economic integration is a complex matter which can be partially explained by several theories from various fields. The complexity and intricacy of the subject is exacerbated mainly because regional economic integration is both an economic and political matter both within and across countries. The chapter highlighted that the major rationale for regional economic integration is explained from the perspective of international trade theories. This is because the main aim of countries engaging in economic integration is to increase their economic welfare through increases in intra-trade. Several international trade theories were discussed with some underscoring the distribution of the economic welfare while others simply explained how the level of international trade changes when countries liberalise their borders and trade instruments. Another school of thought focused on short and long term effects (that is, static or dynamic

theories) of regional economic integration, while other theories paid more attention to factors which influence the level and terms of trade. One such consistent factors were technology (either adoption or diffusion), and geographical factors (include transport, coastal or landlocked) which influence economies of scale, among others factors. Other theories focused on the changes which happen either on the demand or supply side when economic integration occurs. The last category of theories discussed in this study was neofunctionalism which focused on governance issues of economic integration. The emphasis of intergovernmentalism was on structural issues such as the existence of a high authority and interdependence between stakeholders whilst organisational theories were more concerned with serving of mutual interests within an organisation. We can therefore observe the richness of perspectives through which the process of integration can unfold. It is thus difficult to create an over-arching approach because integration is complex. However, this study tried to focus more on the international trade aspects of regional economic integration whilst at the same time appreciating the effects of the other variables which influence both the process and depth and regional economic integration.

4 CHAPTER 4: RELATED EMPIRICAL LITERATURE REVIEW FOR ECONOMIC INTEGRATION IN DEVELOPING COUNTRIES

4.1 INTRODUCTION

This chapter presents empirical literature focused mainly on developing countries since Africa is characterised by many developing countries and a few upper-middle income countries.¹⁴ The first subsection of the study reviewed the effects of trade orientation on economic growth which will be followed by the relationship between economic convergence and economic integration and finally by an analysis of literature on the welfare effects of economic integration. The study has chosen to adopt the abovementioned subsections so that it can attempt to establish how economic integration influences international trade, economic growth and economic welfare through various forms and channels which are sometimes interconnected and intricate.

4.2 TRADE ORIENTATION AND ECONOMIC GROWTH IN THE CONTEXT OF ECONOMIC INTEGRATION

Economic integration conjectures opening up international trade or liberalising trade. This implies that economic integration has a quantitative effect on trade. Balassa (1971), Taylor (1988) and Makochekanwa (2012) postulated that trade integration is the most widespread form of economic integration. In other words, most if not all economic integration arrangements across the various regional economic communities (RECs) have a strong trade component. Traditional literature implicitly or explicitly argued that freer trade affects productivity and growth especially in the long run (Romer, 1986b; Lucas, 1988; Mold and Mukwaya, 2015; Lorden, 1986).

The idea of international trade being a growth engine dates back to Adam Smith as already discussed in the preceding chapter (Smith, 1776; Mill, 1920). However, there was a long phase in the 20th century when developed countries popularised protectionist theories and policies resulting in most developing countries in Latin America and Africa religiously following and implementing these protectionist policies. These import-substitution industrialisation (ISI) strategies were based on a very limited degree of international openness (Krugman *et al.*, 2010).

¹⁴ The few upper-middle income countries in Africa are Angola, Botswana, Algeria, Gabon, Libya, Mauritius, Namibia, Seychelles, Tunisia and South Africa (World Bank, 2015).

The rationale to pursue protectionist policies and protect infant industries was mainly stimulated by declining international prices of raw materials in the 1950s which widened the gap between rich and poor countries (Singer, 1950; Prebisch, 1950).¹⁵ This view was largely embraced from the 1950s until the 1970s by development economists until emerging researchers began to show contrary empirical evidence which suggested that more open and outward oriented economies outperformed those that pursued protectionism (Krueger, 1978; de la Cuadra and Hachette 1991; Edwards, 1993). By the 1980s, protectionist influence began to curve in, and from this, coupled with the debt crisis of 1982, emerged the importance of restructuring trade policy views regarding development strategies and long-term growth. Moreover, International Financial Institutions (IFIs) such as the World Bank (WB), the International Monetary Fund (IMF) and other multilateral institutions were now requiring developing nations to open their external sectors, liberalise trade and integrate as a condition for getting financial aid (Krugman, 1990; Edwards, 1993; World Bank, 2002; Krugman *et al.*, 2010). Unlike other regions, this condition, however, was not so for Africa. Africa was prescribed Structural Adjustment Programmes (SAPs) which had no strong liberalisation and economic integration agenda but rather focused on internal reforms. This will be discussed later in Chapter 5 under Section 5.8.

However, despite the decision by developing countries to move towards international trade reforms, controversies still remained in some aspects of trade policies. More particularly, there was disagreement as to whether economic integration and trade liberalisation plays a part in the performance of outward oriented economies (Edwards, 1993; Balassa, 1989; Helleiner, 1986). For instance, Sachs (1987) quizzed the premise that trade liberalisation is a necessary element for outward oriented strategies and reasoned that the success of East Asian nations was largely due to government's active role in export promotion in an environment where imports were not fully liberalised, while Taylor (1991) argued that liberalising trade is an “intellectually moribound” strategy with no great benefits.

However, a larger body of literature held the view that trade orientation, especially trade liberalisation, is an integral component of economic integration (Behrman, 1976; World Bank, 1989; Kim, 1991; Leamer, 1995; Thirwall, 2012; Karambakuwa *et al.*, 2015; AfDB, 2016). Some proponents argued that economic integration significantly boosts the level of intra-

¹⁵ The ideas by Prebisch (1950) became influential especially in Latin America since he was the Secretary General for the United Nations Economic Commission for Latin America.

regional trade thereby improving the growth and welfare of the respective economies (Sunde *et al.*, 2009; Jansen and Sandrey, 2011; AfDB, 2014; Blyde *et al.*, 2015; Mold and Mukwaya, 2015; AEO, 2016; Ismail, 2017). They posited that a positive relationship exists between trade volume, economic welfare and economic integration. For instance, in the Mercosur and Andean regions, Frankel (1997) found that regional economic integration increased intra-regional trade by 65% and 150%, respectively. On the other hand, authors such as Soloaga and Winters (2001) claimed that no correlation exists between trade growth and economic integration by showing that the wave of regional economic integration in the 1990s did not significantly increase intra-regional trade. Using various case studies, they indicated a cocktail of results with the European Union (EU) and the European Free Trade Area (EFTA) indicating trade diversion whilst other blocs had trade creation.

The following subsection will explore in detail the link between trade orientation and economic growth. Trade orientation simply shows the degree to which a country is pursuing either a protectionist policy or a trade liberalisation policy (Helleiner, 1986; Edwards, 1993). The empirical literature in the next subsection attempts to reveal the quantitative effects on trade which are likely to be experienced when countries adjust their trade orientation, that is, as countries move from protectionist policies towards trade liberalisation which is economic integration. These quantitative effects on trade have a strong bearing on the negotiation and implementation of the trade instruments of any regional economic community (REC) including the Tripartite Free Trade Area (TFTA) since each member country is largely interested in the quantitative trade benefits that it can derive from joining the regional economic community (REC).

4.2.1 Multi-country studies on trade liberalisation and economic growth

Little, Scitovsky and Scott (1970) and Balassa (1971) pioneered multi-country empirical investigations on trade liberalisation and economic growth in developing countries using the concept of effective rate of protection (ERP). The notion of ERPs which was earlier developed technically by Balassa (1965), Johnson (1965) and Corden (1966) captured in a single indicator the protection rate granted to ‘value added’ in a country. They postulated that the rate of protection is given by

$$\tau_j = \frac{VA_j - VA_j^*}{VA_j^*} \dots\dots\dots (4.1a)$$

Where VA is the value added domestically and VA* is world value added which is usually assumed to be the most efficient way of producing j. The model stated that if a_{ij} represents an input-output coefficient and there exists a linear relationship between inputs and outputs, then equation 1(a) can be expressed as:

$$\tau_j = (t_j - \sum_i a_{ij}t_i)/(1 - \sum_i a_{ij}) \dots\dots\dots (4.1b)$$

Where t_i is the tariff on input i . The key property of ERP conveyed by equations 4.1(a) and 4.1(b) is that if tariffs on final products exceed tariffs on intermediate inputs, activities which have low value added such as high $\sum a_{ij}$ tend to have higher ‘effective’ protection than what is indicated by nominal tariffs. Little *et al.* (1970) employed the concept of effective rate of protection (ERP) and analysed cases of Argentina, Mexico, Pakistan, the Philippines, Taiwan Brazil and India while Balassa (1971) studied Chile, the Philippines, Malaysia, Pakistan, Mexico, Brazil and Norway using the same concept. The results from both studies indicated that in sectors such as agriculture and mining where intermediate inputs are subject to tariffs with $t_j < \sum a_{ij}t_i$, the ERP has been negative for many developing countries.

In addition, the results by Little *et al.* (1970) and Balassa (1971) also indicated that the amount of protection given to the manufacturing value added was significantly higher, that is, almost twice than was suggested by nominal data on imported tariffs. They concluded that, post World War II, developing countries excessively pursued industrialisation at the expense of lowering the incentives for expanding the agricultural sector and exports. They further argued that this protectionist policy worsened the income or welfare distribution across developing countries in the form of reduced savings and increased unemployment, and lowered the rate of capacity utilisation. Little, Scitovsky and Scott (1970), Balassa (1971) and Tan (1970; 1972) recommended that developing economies should significantly lower the degree of protection and open their economies by liberalising trade, a strong move towards economic integration. Other studies such as Tan (1970), Corden (1971) and Bruno (1972) alternatively employed the concept of domestic resource costs (DRCs) in computing the measure of protection. Domestic resource costs (DRCs) measure the social domestic cost that is incurred by either earning or saving a unit of foreign currency. Unlike effective rate of protection (ERP), domestic resource costs (DRCs) use shadow prices to measure the value added but the conclusions were fundamentally the same.

However, the concepts of ERPs and DRCs were criticised by Behrman (1976), Krueger (1978), and Edwards and Cox-Edwards (1991) for using fairly aggregated data and a lack of general equilibrium properties in their construct, thereby posing important challenges in interpreting the results. They also argued that neither of the authors analysed how specific nations evolved from one trading regime to another. Furthermore, they did not empirically investigate how alternative policies affected growth but rather concentrated on physiognomies of import-substitution regimes without comparing them to alternative methods of organising the external sector (Edwards, 1993).

Bhagwati (1978) and Krueger (1978) attempted to measure trade orientation and improve from earlier studies by Little *et al.* (1970) and Balassa (1971) by employing the concept of anti-export bias. The former defined liberalisation of trade policies which reduce the degree of anti-export bias. The authors measured trade orientation by the extent to which the protection and incentive structure is biased against exports expressed as an index. An index was defined as the ratio of exchange rate effectively paid by importers EER_M to exchange rate effectively paid by exporters EER_X . A ratio greater than one implies a bias against exports by the respective trade regime. More specifically, EER_X was defined as; $EER_X = E_X(1 + r + s)$ where E_X is the nominal exchange rate applied to exports which has been corrected by export subsidies (s) and other exports incentives (r) and $EER_M = E_M(1 + t + n + PR)$ where E_M is the exchange rate in nominal value applicable to imports corrected by the average effective import tariff (t), other import surcharges (n) and the premium linked with quantitative restrictions like import licenses (PR). Mathematically, the degree of bias can be expressed as in the index form B, where

$$B = \frac{EER_M}{EER_X} = \frac{E_M(1+t+n+PR)}{E_X(1+s+r)} \dots\dots\dots(4.2),$$

where

A value of $B < 1$ implies that the country is following an export promotion strategy; unitary value reflects a neutral regime and $B > 1$ reflects a bias against exports implying that import substitution policies are being pursued. Two properties can be deduced from the index value B. The first property is that this definition of bias implicitly allows for continuum of regimes since B can be high, low, relatively high or relatively low; thereby in principle avoiding a dichotomised view of trade regimes. This allows for trade analysis to be done over different time frames which technically caters for the concern of a transition period raised by earlier critics (Edwards, 1993). Secondly, since the index value is also computed using aggregated

data and averages, it is feasible for countries to protect some of its key industries and still not exhibit an anti-export bias. From a mathematical standpoint, this implies that the degree of export bias (B) only partially reflects whether a country is pursuing a trade liberalisation policy or not.

For instance, it is possible for countries within the Tripartite Free Trade Area (TFTA) such as Angola, Democratic Republic of Congo (DRC), Uganda and Zimbabwe to actually exhibit a low anti-export bias value (using average values) when they are in actual fact charging higher import tariffs and licences reflected by PR in equation 2 above. (Mutoti and Kihangire, 2006; Karim and Ismail, 2007; Tumwebaze and Ijjo, 2015). Countries can be categorised as liberalised using the concept of anti-export bias and yet still charge relatively high tariffs especially in some of its key industries especially when the countries are employing aggregated macroeconomic data where only averages are taken into account. This implies that, like several other economic models, the concept of export bias does not fully reflect reality. Therefore, the application of technical concept such as the use of B in assessing the status of countries in a regional economic community such as the TFTA should not be used in isolation but rather complemented by other supporting evidence and analysis to get a more complete outlook of the economies under study (Edwards, 1993; Ismail, 2017; Baldwin and Segheza, 1998). The proponents of the anti-export bias concept, Bhagwati (1978) and Krueger (1978), argued that the concept of anti-export bias indicates that trade liberalisation does not necessarily require import tariffs to be zero or low. However, the drawback to this argument might be that the definition of liberalisation has evolved over the years into becoming almost synonymous with free trade where tariff and non-tariff barriers are completely eliminated (Rodriguez and Dani, 2000; Edwards and Cox-Edwards, 1991b; Edwards, 1993; Njinkeu and Fosso, 2006).

Empirically, the premium (PR) in equation (2) captures the significance of quantitative restrictions in international trade (Krugman, 1990; Krugman *et al.*, 2010). The premium is defined as the percentage difference between the actual domestic price of tradable goods and the domestic price which will prevail when quantitative restrictions are absent. Reducing import licences (PR) was identified a key step in liberalisation reforms since a decrease in PR reduces the value of the numerator which in turn reduces the index value (Bhagwati, 1978; Krueger, 1978). As discussed earlier in Section 2.4, Phase I of the Tripartite Agreement focused on the reduction or elimination of import duties which, according to this argument, helps to lower the exchange rate effectively paid by importers (EER_M). Lal and Rajapatirana (1987) argued that trade liberalisation policies should not aim at lowering the bias on anti-export but

rather pursue liberal trade where trade distortions like tariffs are eliminated completely. However, the argument was criticised for lack of evidence linking liberal trade and economic growth (Sachs, 1987; Baldwin and Seghezza, 1996). The debate was further worsened by a failure to clearly define what is meant by alternative policies to trade liberalisation reforms. Some authors highlighted that the confusion emanated from loosely using phrases which sound dichotomous (Edwards, 1989a; Bradford and Branson, 1987; Cooper, 1987).

To minimise confusion which may emanate from loosely defined phrases, the trade instruments within the Tripartite Free Trade Agreement (TFTA) must be clearly articulated with legal and professional input to ensure uniform and harmonised interpretation. Cooper (1987) quotes;

“It is necessary to distinguish between different types of liberalisation and to make it clear that liberalisation can be viewed as a process rather than as a state and to disassociate liberation from laissez-faire.”

However, Edwards (1993) noted that dealing with precise definitions of trade regimes and successfully measuring the types of trade orientation pursued by different countries is not an easy task, especially in developing economic regions. African studies have found it remarkably difficult to gather data and empirically compute satisfactory indices of protection and trade orientation (Esfahani, 1991; Michaely *et al.*, 1991; Krueger, 1993). Other studies indicated that the computation of effective indices of protection and trade orientation is even worsened in developing countries since non-tariff barriers such as licences and quotas traditionally constitute a significant part of trade restrictions.

Consequently, the TFTA has made provisions in Phase II of its trade negotiations to address the issue of non-tariff barriers (NTBs) which hinder the effectiveness of trade liberalisation policies and economic integration (Hartzenburg, 2012). Therefore, analysis which focuses exclusively on book values of import tariffs can produce a misleading picture if other variables such as non-tariff qualitative barriers are not factored in (Wacziarg, 2001; WTO, 2002; Tumwebaze and Ijjo, 2015). However, despite these difficulties in data gathering, trade policies should be properly evaluated by making use of quantitative formulae such as the ones described in Equation (1) and Equation (2) above before a regional economic integration arrangement is fully implemented.

Bhagwati (1978) and Krueger (1978) acknowledged that countries go through a transition period from pursuing highly protectionist policies to a fully liberalised economy. The authors

then suggested a framework which combined the aspect of premium (PR) and trade bias (B) into five phases of transition. Phase 1 involved the imposition of quantitative controls across-the-board. This phase is usually associated with a balance of payment crisis. In Phase II, the international trade system becomes discriminatory and complex. It increases the anti-export bias of the regime. In Phase III, the trade liberalisation process begins. The third phase is characterised by implementation of nominal devaluations and relaxing some quantitative controls. Phase IV advances liberalisation by replacing quotas with tariffs and in Phase V the economy is fully liberalised. At this stage, the current account transactions are fully convertible and quantitative controls are no longer used. The first two characterise illiberal trade regimes while the last three indicate the different stages that can be used in moving towards liberalisation and economic integration.

Using the Bhagwati-Krueger (1978) framework, it can be observed that African countries have evolved from highly protectionist policies towards liberalisation although, of course, at different rates. Trade arrangements have evolved from relatively restrictive policies in the 1960s to early 1980s. This was followed by a relatively smaller level of appreciation of the need to integrate and liberalise in the 1980s signalled by the signing of some preferential trade arrangements (PTAs) such as SADCC of 1980, the former East African Community (EAC) of 1966-1977, the Economic Community of West African States (ECOWAS) of 1975, and the Economic Community of Central African States (ECCAS) of 1983. It was during the 1990s and early 2000s where Phase III of the Bhagwati-Krueger (1978) model was probably realised. During this phase, SADCC was renamed SADC in 1992 with new trade instruments; COMESA was established in 1994, IGAD in 1996 and the East African Community (EAC) was also revived in 2000 from its former arrangement which had only lasted ten years (1967-1977).

Regional economic integration and trade liberalisation continued to evolve in Africa through the various stages. By 2015, member countries of the East African Community (EAC) and the Southern Africa Customs Union (SACU) countries had transitioned to latter phases of trade liberalisation and are at a stage where most of their quantitative controls have been relaxed under the provisions of the Tripartite Agreement. Analysts noted, however, that regional economic communities such as SADC and COMESA are at different but relatively intermediate phases of the economic integration and trade liberalisation process. SADC is relatively at an earlier phase of trade liberalisation (free trade) whereas COMESA is at a more advanced stage of customs union with some of its member countries working towards common market arrangements (AEO, 2016; Walters *et al.*, 2016; Ismail, 2017).

In managing transactions from one trade regime to another, Papageorgiou *et al.* (1991) posited that issues related to sequencing, speed and transition should be analysed and compared across countries. Michaely *et al.* (1991) analysed trade regimes by measuring the importance of different quantity restrictions on 19 countries between 1948 and 1985. They used a scale of 1-20 from highly repressed external sector to fully liberalised foreign trade. Their results indicated that only Chile had a value of 20 in the late 1970s. The study identified 36 different liberalisation attempts. Of these, 19 were considered to be strong trade liberalisations, 17 as weak and only 15 of the 36 were sustained since some countries reversed their decisions after a few years. Edwards (1993) denoted that despite the efforts by Michaely *et al.* (1991), difficulties still arise in measuring trade orientation especially after taking into account transition periods under different trade regimes. This then makes the use of a trade liberalisation index highly subjective which only reflects the personal perception of the country author. Consequently, comparisons across countries are difficult and can only be meaningfully applied when accounting for changes over time in the respective country (Shaw *et al.*, 1999; Edwards, 1993).

Tornell (1998) raised an interesting argument regarding the discussion on phases (or regimes) of trade liberalisation and growth. He showed that 60 percent of episodes of economic reforms which included trade reforms usually occurred after a domestic economic or political crisis. Consequently, measuring differences in growth relative to early pre-reform outcomes minimises the danger of falsely attributing growth to economic or trade reforms whereas in actual fact the growth was stemming from depressed economic conditions in the period immediately preceding the reforms. The authors indicated that three years post the trade reforms, countries usually experience a growth rate of around 0.30 percentage points but the effect is statistically indistinguishable from zero. Sustained differences in growth only become ostensible after three years estimating increases of around 1.44 points in period $T+3$ to $T=6$ where T is the initial period of the economic or trade reform. However, Tornell's (1998) sample also indicated that averages may mask interesting idiosyncrasies across countries. Bekaert *et al.* (2001) also warned on the need to avoid capturing the impact of other financial reforms such as capital market liberalisation which may have been simultaneously adopted with trade reforms. As such, timing of financial reforms should be carefully considered. The contributions by Tornell (1998) and Bekaert, Campbell and Lundblad (2001) are significant to this study because they highlighted that not all trade increases and economic growth should be attributed to trade reforms and economic integration measures such as the TFTA.

Wacziarg (2001) and Wacziarg and Welch (2008) found out that countries which experienced higher growth subsequent to liberalisation had sustained trade reformations which were not strictly limited to the period of liberalisation. The authors cited Chile which continued to deepen its trade reforms after liberalisation in 1976, managed to recover from the Latin American debt crisis and sustained its growth into the 1980s. Tariffs were reduced and several bilateral free trade agreements were implemented during this era. Korea, Taiwan and China also lowered their tariffs and removed non-tariff barriers in the 1960s up to the 1980s. Indonesia sustained its 1970 reforms by reducing export duties in 1976 while Uganda deepened its 1988 liberalisation reform with another wave of external reforms between 1993 and 1994. This implies that African countries through regional economic integration arrangements such as the TFTA should not only sustain but also continue to deepen their trade reforms to experience higher growth and welfare on the continent.

Wacziarg and Welch (2008) also found that some countries did not experience increases in growth rates after trade reforms because they implemented counteractive policies. Israel mitigated the effects of opening trade on domestic producers through its social pacts which were based on broad alliances between labour, government and the industrial sector. They set patterns for wages, prices and exchange rates in a manner which diminished the positive effects of trade reforms. In the case of the Philippines, trade liberalisation was supplemented by increased shares of state owned enterprises. The Philippines also doubled the share in GDP of pecuniary transfers from government to state-owned enterprises in the period 1987 to 1989. This kind of intervention can preclude the realisation of gains from trade even though it is designed to partly protect domestic producers from import competition (Beck *et al.*, 2011). Table 4.5 below gives a more detailed overview of how different countries fared after liberalisation attempts.

Table 4.1: Trade orientation and concurrent events on sample countries

Country (year of trade liberalisation)	Sample period	Concurrent events
Countries that experienced negative or zero growth after trade liberalisation		
Botswana (1979)	1961-98	-IMF (2002) claims Botswana had one of the fastest growth rates since its independence in 1966 with an annual growth rate of 7.7% (Rodrik, 2003), an income per capita in purchasing power parity (PPP) four times that of Africa (adjusted in terms of 1998). -Botswana had an average growth difference of -1.99% in years pre- and post-liberalisation. However, there is still high government intervention and public sector accounts for a larger share of the economy despite trade liberalisation and an export oriented economy. -The export economy for Botswana expanded when diamond mining began in 1971 which accounts for 70% of the country's exports and more than 33% of its GDP (IMF, 2002; Harvey, 2000). The economy was drawn into a recession in 1981/82 due to a weak diamond market but the economy has since recovered. Volatile diamond prices continue to have a significant impact on the country's overall economic performance. However, growth remained positive throughout the sample period.
Colombia (1986)	1951-98	-Between 1990/1 Columbia pursued market-oriented reforms in addition to further trade liberalisation after failing to pay its principal debt payments. It lifted its price controls, implemented financial sector reforms, liberalised exchange control systems, modernised the regulatory framework and privatised some industries ((Wacziarg and Wallack, 2004). -Colombia implemented substantial trade reforms in the 1990s which included bilateral trade agreements with other Latin American countries in 1993/4 (Dima <i>et al.</i>, 2015). The 90s were characterised by civil unrest and political instability which limited post-liberalisation economic growth.
Hungary (1990)	1971-98	-Hungary was characterised by declining growth, political uncertainty, and poor economic conditions between 1971 and 1991. A new stabilisation programme was launched in 1989 which included high taxes, tight monetary policy and currency devaluation (World Bank, 1995). -the IMF restructuring programme was implemented in 1990/91 which included currency devaluation, a new mechanism for

		exchange rates, tight wage policy in the public sector and fiscal measures to revenue generation and minimising expenditure. Privatisation was accelerated and major commercial banks and financial sector reforms were introduced (Wacziarg and Wallack, 2004; Wacziarg and Welch, 2003). -Hungary adhered to the plan and began to experience gradual economic recovery by 1992/93 but growth did not return to levels experienced before liberalisation. The lack of trade liberalisation gains may have been attributed to persistent debt and current account deficits. Moreover, the government tightened monetary policy and increased interest rates which may have dampened the economy (World Bank, 1995; Wacziarg and Wallack, 2004). However, Wacziarg and Wallack (2004) acknowledge that the full effects of trade liberalisation might not have been realised by the end of study period (1998).
Israel (1985)	1951-98	-Israel's growth was limited by the wars of 1967 and 1973. In 1977, the country relaxed its tariff and currency barriers and approved a five year plan to reduce inflation and customs rates in 1979. Tariffs on imports from the European Economic Community were further reduced in January, 1980. -In June 1982, Israel invaded Lebanon and experienced a deep economic crisis approximately a year later. The crisis was characterised by triple-digit inflation, a broadening trade gap, rapidly increasing external debt and significant appreciation of real exchange rate. The government responded by implementing an emergency economic stabilisation plan in July 1985 in order to stop hyperinflation. It signed a free trade agreement with the United States (Henry, 1999; Munin, 2010). Inflation significantly dropped in late 1985 and 1986 and the IMF announced its support for Israeli reforms. Exchange rates were fixed to a trade-weighted currency basket in 1986 followed by a currency devaluation by 19% in 1987. Several other changes were made which affected the tax system and money markets. -In 1988/89, currency was devalued and interest rates increased due to currency volatility. By 1991, it was implementing a crawling band exchange rate system and the shekel was devalued by 6% to boost the economy which was negatively affected by the Gulf War. A free trade treaty was signed between Israel and the European Union in November 1995 (Henry, 1999). -(Wacziarg and Wallack, 2004) purport that Israel's heterodox stabilisation programme over may have offset the trade reforms and effects of trade liberalisation made over the period.

Mexico (1986)	1951-98	-Mexico experienced political and social stability and relatively rapid economic growth in the 1940s-1960s (Tornell <i>et al.</i>, 2003). The early 1970s were characterised by expansionary fiscal and monetary policies which resulted in increased debt levels, inflation, decreased investment levels and an overvalued exchange rate leading to the Peso devaluation in 1976 (Gonzalez <i>et al.</i>, 1997). -The economy recovered between 1978 and 1982 after the oil discovery. Oil accounted for 75% of Mexico's exports. However, this was accompanied by massive government spending financed by international borrowing resulting in overvaluation of the currency, the Peso. In 1982, Mexico declared it was unable to service its debt and the government devalued its currency by 30% and implemented a two-tier forex system in the same year. -Mexico privatised in 1984 to attract foreign direct investment (FDI) and implemented stabilisation and structural adjustment programmes which included trade liberalisation (joining the GATT in 1986), significantly reducing its import tariffs and restrictions. Trade liberalisation continued until the 1990s (Wacziarg and Welch, 2008). -Mexico was hit by another economic crisis in 1994-95 which was accompanied by political unrest. The Peso was devalued in December 1994 and a floating exchange rate system was implemented. (Wacziarg and Welch, 2008) concluded that despite the economic recovery and trade liberalisation attempts of the 1980s, Mexico did not really recover from its pre-crisis growth levels. IMF reports highlighted that the economy is still characterised by persistent macroeconomic instability, volatile oil prices, uncertainty with regards to debt negotiation, speculative attacks on the Peso and lack of supporting mechanisms on structural reform programmes further limit the gains from trade liberalisation.
Philippines (1988)	1951-98	-The Marcos regime increased trade barriers in the 1960s until the 1980s. The economic crisis of 1983-86 resulted in inflation, currency devaluation by 50%, expansionary monetary policy, limited capital inflow and low economic growth. -The Marcos era ended in 1986 which resulted in the Philippines implementing trade liberalisation measures including removal of import restrictions. However, government investment in the private sector doubled during the same period.

		-The capital market was liberalised in the 1990s including foreign exchange rate reforms. -Despite the trade liberalisation attempts, the Philippines failed to witness economic growth like other countries due to limited structural reforms and high level government involvement. In addition, Pritchett (2003) also cited institutional uncertainty which emanated from political instability as another dampening factor to investment and economic growth.
Countries that experienced positive economic growth after trade liberalisation		
Chile (1976)	1952-98	-In 1979, Chile nationalised mines, banks and other enterprises. Government expenditure sharply rose, budget deficit increased from 2.7% of GDP to 25% between 1970 and 1973. Black market currency premium was above 600% in 1972 and inflation was over 100% in 1973. -There were structural reforms between 1975 and 1982 and tariffs were significantly reduced to a uniform rate of 10%. The exchange rate was fixed, capital controls reduced, tax system simplified and privatisation was implemented. In addition, interest rate and price controls were lifted and the labour market was also liberalised (Easterly and Mirvat, 2002; Stallings and Brock, 1993). -In 1980/81 Chile privatised its social security system and implemented banking reforms. The Latin American debt crisis caused it to fail to access credit markets and government assumed control of troubled banks. GDP fell by 14% and inflation doubled in 1982. -The peso was devalued between 1982 and 1985, tariffs were raised to 35% and privatisation schemes were reversed (Stallings and Brock, 1993). In 1985, tariffs were reduced again to 15% and privatisation resumed. Chile signed the free trade agreement with Colombia and Mexico and engaged in substantial market liberalisation (Henry, 1999).
Ghana(1985)	1956-98	-Ghana gained independence in 1957 and pursued import substitution strategy characterised by restrictive trade policies (tariff and non-tariff barriers) and exchange rate controls. By 1966, Ghana was characterised by an overvalued currency, cycles of political instability and rising inflation (Leith and Lofchie, 1993). -Another economic crisis was experienced in 1982 leading to a fall in foreign reserves. The government launched a four-year economic recovery plan which included physical infrastructure and economic institutions and lowering inflation through

		prudent monetary, fiscal, and trade policies. Ghana continued to implement trade and capital reforms through the late 80s and 90s (Wacziarg and Welch, 2008).
Indonesia (1970)	1961-98	-Experienced a budget crisis in the 1960s characterised by high budget deficits and an annual inflation of 640%. Five year development plan was implemented in 1966 and capital markets were liberalised in 1970. In 1976, export duty was reduced but government intervention increased despite trade liberalisation reforms. Oil revenue was significant in the 70s, and economic growth weakened in the early 80s partly due to the decline in oil prices. The impact was mitigated by the country's rapid adjustment and a relatively low debt burden (Temple, 2003). -Government had bank reforms in 1983 followed by removal of credit subsidies in 1988. Devaluations occurred in 1983 and 1986. -The country entered into bilateral trade agreements with the Soviet Union, the United States and several other countries. The oil market crashed in 1986, the same period when further trade and investment liberalisation measures were implemented coupled with gradual removal of qualitative restrictions and non-tariff barriers. -A large-scale privatisation programme was implemented in the late 80s and early 90s. There were banking reforms between 1991 and 1995 which stimulated lending and capital markets which were aimed at improving the stock exchange (EIU various years; Henry, 1999).
Korea, Rep. of (1968)	1954-98	-Political unrest in the late 1950s and early 1960s. Inflation increased and foreign exchange reserves decreased significantly before the country stabilised and slowly transitioned into a democratic state (Haggard, Cooper and Moon, 1993). -Korea transition from import substitution to export-oriented growth in the mid-1960s. Tariff and non-tariff barriers were reduced and export-processing zones were created. Measures to increase FDI were adopted (Sakurai, 1995). The economy devalued its currency, reformed its tax systems and interest rates, liberalised its capital market and eliminated quantitative restrictions. However, liberalisation was not universal as certain sectors remained protected and government involvement remained pervasive. -The government introduced a five-year economic plan of structural adjustment. However, economic growth was dampened during the financial crisis of 1982-84.

		-In 1984, there were capital and banking sector reforms coupled with further trade reforms (tariff and non-tariff barriers). Banking reforms were then deepened in 1991 to attract FDI and another five year plan was adopted in 1993.
Poland	1971-98	-The economy of Poland collapsed during the 1970s followed by political unrest in the 1980s. Poland was accepted by the IMF in 1986 and pursued debt restructuring. Hyperinflation impeded economic growth in 1989 leading to a debt to GDP ratio of 74% (de Menil, 2003). -In 1990, swift comprehensive market reforms were implemented which included trade liberalisation in order to stabilise the economy. Price controls were removed, government expenditure and investment was reduced, exchange rate was devalued and energy subsidies were removed (Wacziarg and Welch, 2008). -Trade liberalisation measures included the liberalisation and elimination of exchange controls and the abolition of state trading monopolies and almost all quotas and tariffs. -A new IMF plan was implemented in 1991 which involved tax reforms and continued privatisation. In 1996, Poland became a member of the Organisation for Economic Co-operation and Development (OECD). -de Menil (2003) posits that productivity gains appear to be the primary factors in Poland's growth during the 1990s. The author believes that structural reforms facilitated economic transformation, resource reallocation and rapid adoption of Western principles of management and standards of efficiency.
Taiwan (China) (1963)	1952-98	-majority of countries in this subsample implemented trade liberalisation in the wake of economic or political crises. In contrast, Taiwan's economy was stable with relatively low tariffs at the time of liberalisation. Trade was liberalised in the early 1960s which involved further tariff reduction and well as the creation of export-promotion zones for attracting FDI (Sakurai, 1995). -Taiwan further reduced its tariff and non-tariff barriers between 1985 and 1987 and also implemented policies to liberalise foreign exchange. Capital markets were tightened in 1987 followed by banking reforms and privatisation between 1989-92 (Henry, 1999).
Uganda (1988)	1951-98	-Uganda attained its independence in 1962. Between independence and 1980, the Ugandan economy was in crisis due to mismanagement and war. Capital was destroyed and the

		manufacturing sector was operating way below capacity. In 1981, Uganda successfully implemented an IMF reform programme which included floating the currency, removing price controls and imposing fiscal austerity. Success was not sustained as the IMF withdrew its support in 1984; the economy collapsed and civil war erupted in the same year. -In 1985, the country implemented policies which stimulated FDI and liberalised the foreign exchange market. However, the capital market was tightened due to political unrest. There was further trade and capital market liberalisation in 1988 followed by banking reforms between 1989 and 1992. Again, there was further trade and capital market liberalisation in 1993-94 including interest rates. A variety of currency regimes was implemented between 1988 and 1992 (Amvouna, 1998).
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Source: Wacziarg and Welch (2008) plus author's compilation

The table above indicates that some countries may still not experience economic growth after trade liberalisation due to mitigating circumstances particularly restrictive macroeconomic policies and economic shocks in terms of trade. For instance, Hungary and Mexico experienced a fall in economic growth after liberalisation due to tight monetary policies characterised by high interest rates. Overvaluation of the Mexican currency (the Peso) also negated the trade liberalisation effects in the late 80s and early 90s. Botswana's terms of trade accounted for the absence of a post-liberalisation growth surge in the early 80s. This was exacerbated by volatility on world market for diamonds soon after Botswana implemented trade reformations in 1979 resulting in a growth rate of about 2 percentage points lower than pre-liberalisation in 1981 and 1982. By 2002, Botswana had addressed several trade liberalisation reforms and was among the fastest growth rates globally at a rate of 7.7 annually percent and had a per capita income and purchasing power parity (adjusted in terms of 1998) which was four times higher than the African average (IMF, 2002; Rodrik, 2003).

Therefore, it is essential to manage shocks in terms of trade for countries to experience growth post trade liberalisation. Other countries like Colombia, Israel, and the Philippines were affected by political instability which prevented them from realising the gains of trade liberalisation. On the other hand, countries like Taiwan (China), Chile, Indonesia and Korea experienced higher growth due to relative political stability even though some of that stability coincided with the rise to power of authoritarian regimes. Nevertheless, there was some lasting degree of political stability which resulted in those countries realising growth due to trade

liberalisation reforms. We can summarise from the above sample countries that there is need for appropriate tailor-made policies to complement trade reforms if the respective economies are to derive any gains from trade liberalisation. Deriving from this reasoning, the three regional economic communities (COMESA, EAC and SADC) can be encouraged to harmonise and implement the macroeconomic convergence objectives which they were already pursuing individually (Makochehanwa, 2012b; AEO, 2016; UNECA, 2016; Walters *et al.*, 2016). These harmonised macroeconomic policies will complement the successful implementation of the tripartite free trade arrangement and stimulate positive outcomes.

4.2.2 Early econometric studies on trade liberalisation and economic growth

Econometric studies on trade orientation began as early as the 1970s. During this phase, countries were experiencing a low economic downturn and, coupled with the oil-shock of 1973, a need arose to investigate further using empirical analysis if the traditionally adopted protectionist policies were still relevant. The study presents some empirical results and conclusions which began to emerge during that era which were supported by econometric techniques. Michaely (1977) employed simple rank correlations on 41 countries from 1950-73 to analyse if export growth rates are associated with GDP growth. To avoid spurious results emanating from the fact that exports are a component of gross domestic product (GDP), the author used growth rate of exports as a share of GDP. Michaely (1977) found the Spearman rank coefficient to be significantly positive. Balassa (1978) investigated further on the same issue and used the rank correlation methodology and also found a positive correlation coefficient between export growth and output growth. The data used by Balassa (1978) was for eleven countries between 1960 and 1973. The findings by both Michaely (1977) and Balassa (1978) were criticised because the role of other factors were ignored, endogenous and exogenous variables were not distinguished and causality between exports growth and GDP growth was not addressed (Bethelmy and Morrison, 1989; Dollar, 1992). In addition, the analysis was also criticised for lack of firm theoretical foundations (Carrol, 1993).

One of the pioneer econometric studies was conducted by Krueger (1978) who employed econometric techniques on examining the relationship between trading regimes and economic growth. Her study tested two hypotheses; firstly, more liberalised trade regimes have higher export growth rates; and, secondly, more liberalised trade regimes have a positive aggregate effect on growth. She estimated the following equation

$$\log X_{it} = a_{0i} + g \log REERX_{it} + rT_t + a_1 d_1 T_t + a_2 d_2 T_t + a_3 d_1 + a_4 d_2 + \mu_{it} \dots (4.3)$$

Where X_{it} represents traditional or non-traditional exports in country i at time t . $REERX_{it}$ are the exports effective of real exchange rate expressed in domestic currency units received by the exporter for each real dollar worth of exports; T_t represents linear time trend; d_1 was a time dummy which assumed the value of 1 in earlier phases (Phase I and Phase II) and zero otherwise, and d_2 was a country dummy which assumed a value of one in Phases IV and V and zero, otherwise. Secondly, Krueger also estimated a Gross National Product (GNP) equation for each individual country represented by

$$\log GNP_t = b_0 + b_1 T_t + b_2 \log X_t + b_3 d_1 T_t + b_4 d_2 T_t + \varepsilon_{it} \dots \dots \dots (4.4)$$

Where X_t is the dollar index value of exports for country i in time t . The results strongly indicated that more depreciated REERX had a positive effect on both traditional and non-traditional exports. The model results also indicated that traditional exports appeared to be insensitive to changes in exchange rates in real terms. The coefficient of d_2 was significantly positive in latter phases suggesting that moving towards a liberalised regime has positive growth effects. However, the real exchange rate seemed to contribute relatively more than movements in liberalisation phases. Krueger (1978) also argued that there were strong indications favouring indirect liberalisation of trade on growth implying that higher exports had a positive impact GNP growth. No dummies were found to be significant suggesting that there was no direct effect of liberalisation on growth.

The conclusion by Krueger (1978) which placed much emphasis on real exchange rates and suggested that there was no direct effect of trade regimes on economic performance was criticised by Balassa (1982). The latter argued that Krueger's results were affected by inadequate classification of regimes since the protective effect caused by tariffs was ignored. Citing the Argentinian experience, Balassa (1982) highlighted that, without quantitative restrictions, high tariffs present a strong bias against exports. He observed that economies with lower anti-export bias had faster exports growth rate. Thus, Balassa (1982) concluded that there was strong evidence to support the view that protectionism seriously hampers the expansion of exports. It was also during this era when African countries began to actively move towards economic integration with their trading partners resulting in the formation of several regional economic communities discussed earlier. The findings were by Balassa (1982) later complemented by Collier and O'Connell (2008) and Beck *et al.* (2011) who attributed dismal economic growth for most developing countries especially in Africa to previous barriers to international trade. In a similar vein, Beck *et al.* (2011) and Menyah *et al.* (2014) argued that

Africa experienced limited progress even after political liberation and because the promise of efforts to liberalise trade, stabilise exchange rates and integrate economically were only partially fulfilled.

However, like Krueger (1978), Balassa (1982) also faced problems in measuring trade orientation and used export growth rate as a trade orientation proxy. He employed Spearman rank coefficients on pooled data for eleven countries and observed that there is a positive correlation between export and output growth. Balassa's study together with several other subsequent studies such as Hausman (1978), Papageorgiou *et al.* (1991), Edwards (1993) and Wacziarg and Welch (2008) had limitations which included an arbitrary definition of export incentives, an unclear role of real exchange rates in explaining performance of exports, used a highly suspicious proxy (export growth) for trade orientation did not deal with causality issues. Edwards (1993) argued that the most analytical challenge in addressing the relationship between trade policy and growth lied in the absence of firm theoretical foundations which connect domestic national policies to long-run equilibrium growth. For instance, neoclassical growth models postulated that trade policies affect the equilibrium position of total output but does not affect the growth rate (Solow, 2007; Solow, 1999; Solow, 1956). However, some endogenous growth models have modified this framework to handle policy effects on growth (Benhabib and Farmer, 1999; Romer, 1986b).

Some authors tried to avert the criticism of rank correlation studies by formulating a conceptual framework anchored on neoclassical production functions (Solow, 1999; Barro and Sala-I-Martin, 1997; Romer, 1986a). This approach was based on the notion that exports contributed to total output in two important ways. Firstly, it is assumed that the export sector generates positive externalities on non-export sectors due to improved production techniques and more efficient management styles. Secondly, some argued that there is productivity differential in favour of the exports sector. Therefore, even if the export sector expands at the expense of other sectors, the net effect on aggregate output will still be positive leading to welfare gains (Feder, 1983).

Baldwin (1971), Giersch (1979) and Corden (1985) argued that regression models which favour outward trade orientation tended to be overly simplistic and ignored the effects of world market conditions. Consequently, econometric techniques began to rigorously test for structural breaks, measurement errors and simultaneity in order to improve the quality of results (Hausman, 1978). Several authors started integrating world conditions such as the 1973 oil

shock, the stock market crash of 1996 and the global financial crisis of 2008 are amongst some favourite breaking points amongst scholars using econometric techniques. Balassa (1985) and Ram (1985, 1987) found out that the point estimate on export growth coefficient was higher in the post oil shock period thereby concluding that there exists clear benefits to pursuing outward oriented policies for export performance and economic growth when faced with external shocks. This view was largely emphasised by the father of optimum currency areas, Robert Mundell, who argued that well integrated and convergent economies are better able to deal with external shocks (Mundell, 1961; Mundell, 1973).¹⁶ Rana (1988) pointed out that the major limitation was that regressions for different periods were difficult to compare in the strictest sense. Using a sample of 41 countries, Rana (1988), Kohli and Singh (1989), and Esfahani (1991) found that even though the coefficients for exports growth were positive, point estimates post structural breaks were smaller than pre-structural breaks especially on the 1973 oil shock. Table 4.2 below shows some selected work on exports growth ($\dot{X}/X$), GDP growth and world market conditions by various authors especially after the oils shock of 1973.

Table 4.2: Relationship between export growth and GDP growth under world market conditions

Author	Methodology	Results
Balassa (1985)	- ($\dot{X}/X$) was employed as a regressor in a production function -Results of 11 countries were compared for period 1960-73 with results of 43 countries affected by the oil shock covering the period 1973-79	The coefficient of ($\dot{X}/X$) was found to be higher in the 1973-79 period than in the earlier phase
Ram (1985)	-Employed a production function approach covering 73 countries between 1960-70 and 1970-77. -Sample period breakdown due to oil shock	Found the coefficient of ($\dot{X}/X$) to be positive for both periods but was higher in the latter period
Kavousi (1985)	-Employed Kravis (1970) technique to decompose sources of exports growth	-Finds a significantly stronger correlation between ($\dot{X}/X$) and GDP growth

¹⁶ Refer to theoretical section 3.4 for a detailed exposition of the argument.

	-Constructed ranks for outward orientation -countries were classified into those facing 'favourable' and 'unfavourable' world market conditions -Two periods 1967-73 and 1973-1977 were used to compute Spearman rank coefficients	than those facing unfavourable world conditions
Ram (1987)	-Time series and cross section approach in a production function framework -Divided the sample into 'before' and 'after' oil shock; 1960-72 and 1973-82 -Divided countries into low and middle income groups	-The estimated coefficient of $(\dot{X}/X)$ for 1973-82 exceeded that of 1960-72 for the majority of cases
Rana (1988)	-Employed balanced sample of 43 countries for pre- and post-oil shock of 1973 -Regression were estimated using both OLS and random effects procedure	-The estimates of $(\dot{X}/X)$ were found to be significantly positive even though the post-oil shock period were smaller than those of the pre-oil shock period
Gray and Singer (1988)	-Employed method by Kavoussi (1985) decomposition technique (1976-73 and 1973-83) -Divided countries into those experiencing 'above average' and 'below average' world demand -Also used Spearman rank coefficient	-The Spearman coefficient was positive and significant for 'above average' countries but insignificant for the 'below average' ones.
Kohli and Singh (1989) (1989)	-Employed Feder's (1983) model on 41 sample countries for the periods: 1960-70 and 1970-81	-The coefficients for $(\dot{X}/X)$ were always positive for the

		former period but not always for the latter
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Source: Edwards (1993)

Other authors analysed the effects of world conditions from a different perspective. They categorised economies between those facing favourable or unfavourable world demand conditions. They found a strong positive correlation between growth of exports and growth of GDP for those economies with positive world demand conditions. The correlation was either weak or non-existent for economies facing below world demand (Esfahani, 1991; Ocampo, 1986; Heitger, 1987; Bacha, 1984). Consequently, Gray and Singer (1988) concluded that recommendations of outward orientation cannot be universal for every condition and all types of countries. Quah and Rauch (1990), Grossman and Helpman (1991), and Edwards (1992b) stressed that, although the work on world market demand conditions remains inconclusive, it provides strong indications that world business cycles have some effect on the way the external sector interacts with aggregate GDP.

It is apparently unclear if exports growth causes output expansion or vice versa (Michaely *et al.*, 1991; Ben-David, 1993; Njinkeu and Fosso, 2006). Carrere (2004) supported the view that countries with penetrating and sustained trade liberalisations outperform those who have failed to liberalise. There was a general consensus by some authors that trade openness policies and higher ratios of trade volumes to GDP were positively correlated even after controlling for a variety of other growth determinants (Dollar, 1992; Edwards, 1992a; Ben-David, 1993; Sachs and Warner, 1995; Ales and Edwards, 1999; Alesina *et al.*, 2000). Investigations on a causal link suggested a positive impact of trade (Rodrik, 1998; Rodriguez and Dani, 2000; Baldwin and Seghezza, 1996; Makochehanwa, 2012b; Mold and Mukwaya, 2015; Gurova, 2014). Rodríguez and Rodrik (2001) contested the findings to their prior study by Rodriguez and Dani (2000) and argued that they were less robust than claimed due to challenges in measuring trade openness, the sensitivity of model specifications to statistics, the collinearity between protectionist policies and other bad policies in addition to other econometric difficulties.

Sachs and Warner (1995) concentrated on the export of natural resources between 1971 and 1989 and showed that countries with a high ratio of natural resources tended to have low growth rates. The results were obtained after controlling for initial per capita income, trade policy and investment rates in a cross-country growth model which attempted to establish connections between trade policy and growth. Wacziarg and Welch (2008) extended the Sachs and Warner

(1995) study to investigate the relationship between openness of trade openness and economic growth from 1950 to 1998. Using new evidence on investment in physical capital, time paths of economic growth and episodes of openness around trade policy liberalisation, the study suggested that the countries which had liberalised trade regimes had average annual growth rates of approximately 1.5 percentage points higher than before they liberalised. There was also an increase of between 1.5-2.0 percentage points in post-liberalisation investment rates in addition to an increase in the average trade to GDP ratio of about 5 percentage points. However, the authors noted that the average effects mask the large disparities across countries.

In summary, the above empirical analysis has indicated that, to a larger extent, a relationship exists between trade orientation and economic growth. More specifically, scholars have advocated for trade liberalisation indicating that more liberalised economies (instead of protectionist policies) are more likely to experience increases in both rate of export growth and volume of trade. Economic policies should be adjusted in such a way that anti-export bias is reduced. Regional economic integration creates a conducive economic environment not only for trade liberalisation but also for member countries to harmonise their macroeconomic policies and pursue a common goal. It is important that economic integration and trade liberalisation be complemented with appropriate policies on fiscal and monetary sector, exchange rates, labour and capital movement. These factors will ultimately lead to an increase in economic growth of the respective member countries and also an increase in economic welfare. Regional economic integration also facilitates technological diffusion and adoption from industrialised countries to poor countries and this will also increase the export capacity and growth of the latter countries. In addition, regional growth can also be experienced because economic integration will foster peace and security in the region. This peace can be achieved by member countries engaging in regional infrastructure projects such as joint construction and operation of transport systems (railways, roads, airways, and ports), soft infrastructure such as ICT and power pools. All these have significant and positive effects on economic growth and welfare especially if there is inclusive participation of all stakeholders (private citizens, private companies and governments).

4.2.3 The role of infrastructure in regional economic integration

Khan and Marwat (2016) postulated that economic integration and trade liberalisation also fosters economic growth and welfare by promoting peace in the region. The authors investigated the potential influence of the China-Pakistan Economic Corridor (CPEC) on

regional peace and prosperity in regional and intra-regional peace and prosperity. They concluded that the open model of regional economic integration adopted by CPEC increased regional security through interdependence and this in turn facilitated increases in regional and global trade. Using this argument, pursuing an open trade model within the tripartite region is preferable compared to close and tight regionalism where member countries pursue protectionist policies for non-member and non-regional states since this will foster peace in the region. Khan and Marwat (2016) suggested several ways in which economic interdependence within RECs such as the Tripartite Free Trade Area (TFTA) region can be increased. These include infrastructural projects such as highways, railways, pipelines and ports. Several scholars also emphasised the significance of an efficient transport sector in fostering economic integration, harmonisation and improving welfare (Puga, 2002; Mothae, 2005; AfDB, 2014; AfDB, 2012). These authors were of the view that infrastructural integration especially in the transport sector minimises the chances of conflicts, thereby stimulating trade and economic growth. The significance of transport networks in economic integration has been discussed earlier in theoretical literature under the gravity model and the new economic geography under Section 3.3.6 and Section 3.7, respectively.

Apart from transport infrastructure, regional infrastructure can take several other forms which can also become channels of economic integration. The other forms of regional infrastructure are logistics systems and regulatory frameworks which govern access, sometimes referred to as ‘soft’ infrastructure and national power plants with export capacity, ICT broadband networks dams and tunnels, multinational distribution infrastructure and institutions for collective management (Mezui *et al.*, 2013; Ndungu, 2013; AfDB, 2014). All these forms of infrastructure affect economic growth via multiple channels which include private consumption and investment, expenditure by the government and net exports (Witkowska, 2016; Tumwebaze and Ijjo, 2015). This is because the life of an infrastructure has basically two phases: the construction phase, and the operation phase. The former usually involves increases in government expenditure which will directly increase GDP levels. Private consumption may arise from increased disposable income of the labour force since construction is a labour intensive sector (AfDB, 2014; AEO, 2016). Similarly, contracting may increase value added by the private sector (Ndungu, 2013). Therefore, regional economic integration on large scale infrastructure projects is likely to lead to multiplier effects on export capacity and growth (Mold and Mukwaya, 2015).

In Africa, countries such Equatorial Guinea, Algeria, Djibouti, Cape Verde and Ethiopia experienced significant GDP growth effects due to investments in infrastructure (AfDB 2014; AEO 2016). Between 2003 and 2012, African increased infrastructure expenditure. Gross capital formation (GCF) was increased to approximately 22% of GDP and every 1% rise in gross capital formation as a proportion of GDP was related to a 0.05% rise in GDP growth rates (AfDB 2014). Indirectly, citizens can benefit from regional infrastructural development through encouraged innovation and increased access (AUC and ECA, 2012; World Bank, 2013). Member countries within the Tripartite Free Trade Area are encouraged to start new regional projects to facilitate an efficient and cost effective way of moving merchandise from one economic region to the other. AfDB (2014) highlighted that accelerated development in Africa's regional economic integration demands a joint action plan which will warrant the efficient development of infrastructure. Integration of infrastructure has the following advantages:

- (i) Delivers scale economies in production thereby supporting spatial integration
- (ii) Enables efficiency in markets and trade
- (iii) Supports mobility of production factors, for example, capital and skills

(AfDB, 2014)

The regional bank also adds to the above points by highlighting that augmenting the production base expedites participation of member countries within a regional economic community especially in global value chains. In addition, infrastructural integration also integrates marginalised populations which widens the scope for participation in the development process (AfDB 2014; AfDB 2012).

Cooperation in the development of regional infrastructure also supports institutional establishment. These institutions may be economic, political or social. For instance, the Project Infrastructure for Development in Africa (PIDA) works with various African REC level development plans in order to address various challenges of regional cooperation in the development of infrastructure. Under the scheme, REC have adopted new roles such as managing databases for projects in methods which are usable by private investors when preparing or promoting the projects (AUC and ECA, 2012; AEO, 2016; UNECA, 2016). However, it has been noted that the primary role of coordination and facilitation of regional projects, monitoring and evaluation remains the role of REC. This is because sub-regional entities like power pools and river basins usually lack the required mandate to put members to

account when implementing scheduled projects. Alternatively, these sub-regional institutions such as PIDA must be empowered (SAPP, 2011; SAPP, 2012).

It becomes feasible to harness a cluster of economies through regional economic integration which will largely support the proliferation of more inclusive development models both within and across members (Stevens and Kennan, 2013; Salvatore, 2013). Even though there is an improvement of infrastructure in Africa, there is need to establish a proper model for developing infrastructure. Infrastructure integration remains poor especially in roads, information communication technology (ICT), and power networks (AUC and ECA, 2012; Mezui *et al.*, 2013; Ndungu, 2013). There is also a need to increase the capacity at ports and access to airways. In some cases, ‘backbone’ infrastructure is available but the benefits derivable therefrom are not maximised because marginalised populations are excluded (AUC and ECA, 2012; Van der Loo and Van Elsuwege, 2012; Dima *et al.*, 2015). To optimise the welfare distribution of infrastructure both in terms of its construction and use, the TFTA must ensure there are inclusive institutions which cater for the marginalised communities. The African system is also constrained by constraints in ‘soft infrastructure’ which results in sub-optimal use of available assets (AfDB, 2014). Some have cited that poor regulation of monopolies accompanied with collusive behaviour of authorities make pricing uncompetitive thereby limiting affordability of services and reducing trade volumes (Raballand *et al.*, 2012; Mezui *et al.*, 2013).

Krapohl and Fink (2013) analysed the various pathways to integrate using a diachronic network visualisation of networks of trade in three zones. The authors focused networks of trade and regional institution-building in Southeast Asia, Southern Africa and Europe. They argued that there are three possible developmental paths to regional economic integration which depend on economic asymmetries in trade networks in the region and also on the centrality of external actors. The first one leads to intra-interdependence at the regional level, the second one strengthens reliance on extra-regional actors and the third one reinforces regional asymmetries. They concluded that the European Union (EU) corresponds to the first pathway, the Association of Southeast Asian Nations (ASEAN) to the second and SADC to the third. They also argued, contrary to other authors, that regional economic integration does not transform existing economic structures but rather reinforces them.

4.2.4 Static and dynamic effects of economic integration

Other empirical studies attempted to focus their investigations on the static and dynamic effects of regional economic integration on growth. Using cross-country and time series growth regressions over a two decade period from 1970 to 1990, Vamvakidis (1998) found that economies which are open and have large neighbours tend to grow faster even though the growth rate of those neighbouring countries has no significant influence on the respective countries' growth. The author examined the impact of the Association of Southeast Asian Nations (ASEAN), the Andean Pact, the Central American Common Market (CACM), the Customs and Economic Union of Central Africa (also known in French as 'Douanière et Économique de l'Afrique Centrale-UDEAC') and the European Union (EU) on the economic growth of its members and found no significant impact for any member countries except for the EU. This suggested that agreements among small and closed economies in the developing world are unlikely to lead to faster growth. The findings by Vamvakidis (1998b) possibly explain why Africa has experienced very low levels of intra-trade and economic growth despite having made some progress towards regional economic integration. Africa is characterised by many small developing markets and countries whose trading activities have very little influence on their neighbours, let alone the global market (Simwaka, 2011; Njinkeu and Fosso, 2006; Cattaneo, 2009; Longo and Serkkat, 2004). For instance, the growth in agricultural output in Zambia between 2001 and 2014 has failed to have a positive spill-over effects into its neighbouring countries (Tumwebaze and Ijjo, 2015).

Schiff and Winters (2003) analysed the impact of technology diffusion from a member country to a non-member country and found no significant empirical evidence of dynamic effects of economic integration agreements. The authors, however, showed that the North American Free Trade Area (NAFTA) imports increased productivity in Mexico (in the range of 5.5% to 7.5%) due to imported foreign stocks of knowledge but extra-regional imports had no significant effects. The imported foreign knowledge can be viewed as a dynamic effect due to its long run benefits which can spill over and benefit the poor leading to an increase in their economic welfare. Yamarik and Ghosh (2015) constructed cross-country measures to investigate the impact of broad and regional economic integration on economic development in the long-run. The measures included an account for both the individual endogeneity of the regional integration agreements and their magnitude coupled with shares on broad trade, geography and institutions. The examination was conducted using a deep determinants regression. Unlike broad trade, the results indicated that regional integration can increase the long-run level of

real per capita GDP. The following sub-section shows discusses some econometric studies which were conducted in the analysis of the relationship between trade orientation and growth.

4.2.5 Devaluations and trade liberalisation

Economic integration and trade liberalisation also influence the trade volume and rate of export growth via the indirect influence of exchange rates regimes, especially devaluations. Devaluations are considered a significant component in trade liberalisation policies because quantitative restrictions imply a real devaluation which reduces rent accrued to those with import licences (Bhagwati, 1978; Krueger, 1978; Michaely *et al.*, 1991). Using Bhagwati's (1978) framework discussed earlier in Section 4.2.1, devaluation results in lower premium (PR) thereby reducing anti-export bias. The effect is explained in Figures 4.1 and 4.2 below which show a partial equilibrium analysis.

Figure 4.1 shows pre-devaluation scenario where D is the imports demand schedule, P^* is the international price of imports expressed in foreign currency, E_0 is the initial nominal exchange rate (pre-devaluation), t is the import tariff and $\bar{Q}$ is the maximum amount allowed into the country (quantitative restrictions). Without licenses M_0 , $\bar{Q} < D$ calling to rationing and domestic price will exceed international price inclusive of tariff $E_0 P^* (1 + t)$. P will be the domestic price which clears the market and PR_0 will be the premium concomitant with the existence of the licence. A devaluation increases the domestic value of foreign exchange thereby increasing the tariff inclusive of world price of imports expressed in domestic currency such that, $E_0 P^* (1 + t) < (1 + t) E_1 P^* (1 + t) < P$ where E_1 is the new and higher nominal exchange rate as indicated in Figure 4.2. This reduces the premium to PR_1 consequently lowering anti-export bias.

Figure 4.1: Pre-devaluation scenario

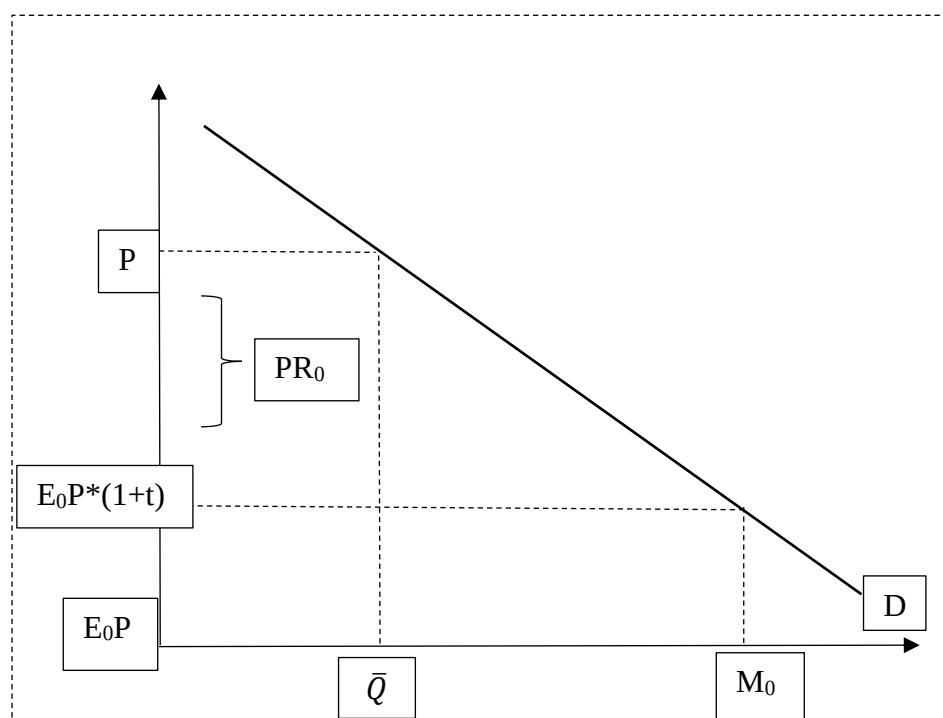
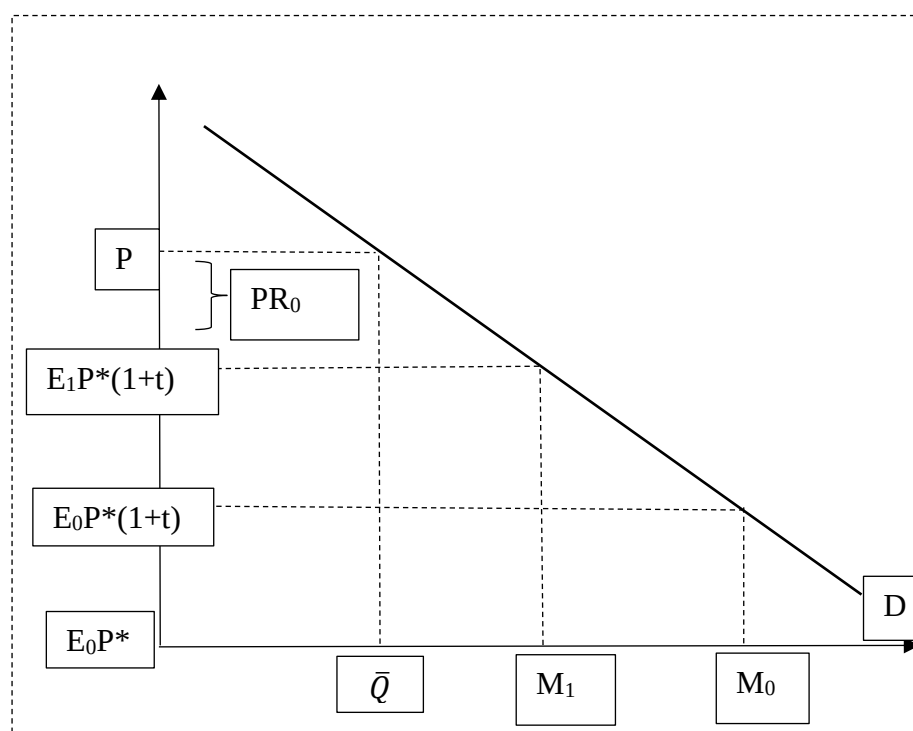


Figure 4.2: Post devaluation scenario



Source: Author based on Krugman et al. (2010)

Devaluations do not affect the premium if accompanied by an equi-proportionate increase in domestic price of non-tradable goods but can be affected through real exchange rates (RER).

Real exchange rates (RER) can be affected when nominal devaluations are accompanied by expansionary fiscal and monetary policies or if wages or other prices are severely indexed. This results in inflationary pressure causing the real exchange rate to be overvalued. Therefore, exchange rate policies should be harmonised among integrating economies to ensure that there is a uniform lowering of the anti-export bias among member countries.

In an extensive study across developing countries, Edwards (1989a,) employed 39 major devaluation episodes between 1962 and 1982 and found that real exchange rate can be generated if nominal devaluations are accompanied by consistent macroeconomic policies. 25 out of 39 nominal adjustments resulted in significantly altering the real exchange rate. With regards to trade liberalisation, Michaely (1991) and Edwards (1993) generally concluded that countries with a volatile real exchange rate experienced a poorer overall performance thereby indicating the fundamental role of stabilising real exchange rate in trade liberalisation episodes. Until the 1990s, policies in most sub-Saharan African countries have historically vehemently opposed devaluations and liberalisation policies amid fears of increased external vulnerability. Consequently, Africa's economic integration success was greatly neutralised especially during the 1990s when countries engaged in uncoordinated devaluation strategies where they focused only on their internal policies under the structural adjustment programmes (SAPs) (AUC and ECA 2012; Kumo 2011). Instead of producing growth, self-sufficiency and better welfare conditions, the outcome of inward oriented policies was severe crises in Africa mostly between the 1960s and 1990s, characterised by a distortion of market incentives and plummeting of food production (World Bank, 2011; UNECA, 2012; Makochekanwa, 2012b). African regional economic communities (RECs) such as COMESA, EAC and SADC member states responded to the challenge of policy inconsistency and lack of harmonisation in economic policy between domestic policy and international trade policy by setting macroeconomic targets among themselves which included the external or international trade sector with specific instruments on devaluation policies and strategies. These macroeconomic targets have been discussed in Chapter 2 above under the macroeconomic convergence criteria. There is need to control and monitor intra-trade flows and real exchange rates across the tripartite member countries in order to ensure macroeconomic policy consistency throughout the implementation phases.

World Bank (1981, 1990) recommended economic reforms which included agricultural export promotion and major devaluations. Critics argued that nominal devaluations in Africa without reducing anti-export bias is simply translated into higher domestic inflation, possibly explaining the high inflation rates experienced by most African states in the 80s and 90s

(Ridhwan, 2016; Maleleka, 2007; Harvey, 2000; Kumo, 2011). Moreover, the effectiveness of exchange rate adjustments have been met with scepticism especially since aggregate agriculture exports in Africa are not very responsive to relative price changes, that is, have low elasticity. Olofin and Babatunde (2003) estimated price and income elasticities of 20 sub-Saharan African exports from 1980 to 2003. The study employed a fixed effects model and disaggregated products into agricultural and manufactures exports. The econometric results indicated that exports had low elasticity in relation to world income and were uncompetitive on the global markets in the majority of cases. The estimated long run elasticity was ranged between 0.48 and 1.30 for income and -0.01 and -0.17 for prices.

However, some empirical evidence by Bond (1983), Balassa (1989), Makochehanwa (2012a) and Karambakuwa *et al.* (2015) indicated that long run supply elasticities in Africa of aggregate exports are significantly positive. For instance, elasticities for Uganda and Senegal ranged from 0.07 and 0.6 respectively. Balassa's (1989) estimates for 16 SSA countries ranged from 0.78 and 0.91. Using data for six countries, Berthelemy and Morrison (1987) found even higher ranges of between 0.1 in Madagascar to 1.0 for Senegal. These empirical results led to a gradual embracing of devaluation policies and real exchange rates alignment in Africa thereby accelerating the economic integration process. Nevertheless, more work still needs to be done by African governments and central banks to align real exchange rate and trade liberalisation agreements such as the tripartite free trade area (TFTA).

4.2.6 The role of institutions in economic integration

Economists generally agree on the existence of a positive relationship between quality of institutions and the economic performance of a society, country or region (AfDB, 2014; AfDB, 2012; Krapohl and Fink, 2013; Lagoarde-segot and Lucey, 2008). However, the direction of causality is still contentious. Some schools of thought support the notion that institutions are endogenously determined and highly related to the economic performance of the respective economies (Bond, 2011; Krapohl and Fink, 2013), while others argue that institutions are exogenous factors (Gutmann, 2011; Demetriades and Law, 2006). Te Velde (2011) therefore highlighted the need for policy makers to understand the normative role of institutions in order to address developmental issues since well-functioning institutions are a crucial requirement for both export and economic growth.

In his study of linking the impact of economic integration and institutions on economic growth, Gancia (2003) viewed the protection of intellectual property rights (IPRs) as the most important

institution for fostering innovation and economic integration. Gancia (2003) assumed two regions, the South and the North, in which the South countries generally provide low protection to intellectual property rights (IPR). The author showed that two effects are likely to occur when there is economic integration and trade opens up. Firstly, there will be a shift in technical adjustment which favours Northern countries while some measure of innovation will be lost by industries in the South due to low protection of IPR which will in turn lead to income inequality in favour of North countries. Secondly, opening up trade will dampen growth even in countries in the North as a direct result of the second best principle.¹⁷ The argument is that, contrary to popular wisdom, the elimination of distortions such as trade barriers may not necessarily be good to economic growth and uniform welfare distribution when intellectual property rights (IPR) are not protected. However, if regional economic integration is complemented with the protection of IPR, trade benefits will dominate and integration will be good for growth. In Africa, there is still much work to be done in terms of protection of property rights. Technological inventions and innovations and methods of production are easily and cheaply replicated without any regard of property rights (Johnston and Trebilcock, 2013). Some authors highlighted that enforceability costs of these property rights are too high, especially for developing countries which makes it not feasible to implement them (Sai-Wing Ho, 2016; Barro and Sala-I-Martin, 1997). Enforceability is still a challenge in Africa because most laws are not yet harmonised among member countries within the same regional economic community which brings several inconsistencies. Therefore, harmonising property right laws can help mitigate this challenge. The TFTA will specifically address the issue of IPR under Phase II of the negotiations together with other trade related matters which include trade in services and competition policy. The Tripartite Sectoral Ministerial Committee on Trade, Finance, Customs, Economic Matters and Home/Internal Affairs was tasked to negotiate on intellectual property rights (IPR).

Another school of thought is of the idea that institutions can be best analysed by analysing the political economy. They postulated that the political economy can help in identifying structural, institutional and external impediments when implementing regional integration agreements by recognising the national interests which are threatened by economic integration processes, and why (Fisher and Watson, 2013; Fashoyin, 2004; Collier and O'Connell, 2008). The political economy approach helps identify sources of power and influence. Regional powers or

¹⁷ Refer to Section 3.7 for explanation on the second best principle.

‘hegemons’ have been identified as drivers of regional economic integration. In this context, a hegemon is a state with strong economic institutions which is pivotal to other nations adhering to a regional economic agreement (Bacharach and Lawler, 1981; Alesina *et al.*, 2000). A regional hegemony has the potential to not only enforce adherence using non-violent measures but also underwrite the maintenance costs of the regime. However, it is least likely that the perceived African hegemons will have the capacity to underwrite the costs of regional economic integration (Draper, 2010). Africa’s large economies, South Africa, Nigeria, Kenya, Egypt, Angola and Sudan, are characterised by high incidences of poverty and cannot finance the development of their neighbours within their regional economic groupings that are less well-off. However, these countries still have some strong degree of hegemonic roles within their REC and have a strong influence in determining both the depth and pace of economic integration (UNECA, 2016; Draper, 2010). The table below indicates the various domains through which the political economy can exert its influence over matters on regional economic integration.

Table 4.3: Three spheres of political economy

Structural factors	
Structural factors cannot be easily transformed even in the medium and long term. Structural factors influence regional economic integration both at the broad level of negotiations and the functional cooperation level between stakeholders from neighbouring countries.	<i>Sub-factors</i> - History of country formation - Geographical factors - Economic endowments - Size and income of the country - Income source and concentration of income
Institutions	
Institutions govern and shape individual behaviour. Formal institutions should be interpreted in relation to informal ones. In developing countries, the latter have strong influence to potentially have significant effect when either supporting or undermining formal institutions and rules.	<i>Actors and sub-factors</i> - Formal institutions: agreements, treaties laws and regulations - Informal institutions: norms, traditions, and culture
External factors	

Universal and regional drivers influence domestic institutions, their incentives and options for development and outcomes	<i>Actors and sub-factors</i> - Global powers and alliances - Rent bases - Reputational burdens on the elite - Aid - FDI - Threats and responses to international and regional security - Global legal measures and sanctions
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Source: Author's drawing on ECDPM (2013)¹⁸

AfDB (2014) highlighted that the slow pace of the integration process in Africa was not because of lack of key initiatives such as the Lagos Plan of Action (1980), the Abuja Treaty (1991) and the New Partnership for Africa's Development (2000). The regional bank argues that the major impediments were due to inadequate institutional guidance on the execution strategies at the national and regional levels. Poor institutional structures, lack of direction and coordination from the 'centre to periphery' (African Union to RECs), and treaties and protocols which only outlined what should be done but not how it should be done have led to remarkably slow progress in achieving them (AfDB, 2014; World Bank, 2011; UNECA, 2016). There was need, from a political economy perspective, to cede a measure of sovereignty to regional and continental agencies but it is practically challenging due to coordination challenges, domineering national interests and limited resources (Demetriades and Law, 2006; Mezui *et al.*, 2013; Scerri, 2013).

The tripartite agreement (TFTA) will become a significant institution or building block in harmonising resources, bringing guidance and ensuring that some power is ceded to the lower level institutions. There is potential to resolve misconceptions and reduce policy differences across various lower level institutions especially in terms of trade in goods and services and labour movement (Walters *et al.*, 2016). Within the TFTA, the Tripartite Trade Negotiating Forum (TTNF) made significant progress towards implementing of the programme, meeting nine times since its launch in 2011 until July, 2017. The TTNF created four technical groups with the task of discussing rules of origin and details on specific duties and restrictions. The forum was also working on harmonising specific non-tariff barriers (NTBs) to trade, sanitary

¹⁸ Supplementary paper drafted for AfDB 2013/14 report.

and phytosanitary¹⁹ measures which are usually aimed at protecting and regulating national markets. The TTNF has already completed work on institutional coordination which is to be achieved through harmonising procedures in customs operations, simplification of documentation, procedures and transit instruments. As of 2016, there were still considerable differences among TFTA countries on how to address dispute settlements. However, there has been reasonable progress in the tripartite agreement which resulted in some misconceptions being ironed out and areas of divergence narrowed down (AEO, 2016; EAC, 2016; Walters *et al.*, 2016).

There is also need for member countries to stimulate in-house institutional commitment in implementing regional economic integration policies in order to ensure that there is inclusive growth. This commitment can be attained if the lower level institutions which are usually responsible for implementing policies are engaged from the initial phases. AfDB (2014) highlighted that the current African economic integration model has some irony in it because planning is done at a regional level yet implementation occurs at the national level. For instance, parliaments should cede its sovereignty on trade issues for the free trade agreements (FTAs) to be effective. Therefore, both regional and national policies and institutions should be consistent and harmonised. Tralac and SIDA (2012) highlighted that fast-tracking regional economic integration requires credibility and a rules-based governance system to be used by the REC. This will improve implementation of regional integration measures through monitoring, evaluation and settlement of disputes (SADC, 2017b). In addition, there should be institutional architecture which sanctions non-enforcement at the lower levels. However, the system does not necessarily need to be coercive but could assist by building capacity in member countries. However, Demetriades and Law (2006) and Woodford (2009) noted that formal institutions should be comprehended relative to informal ones. This is because channels of power in informal institutions are likely to be greater in developing economies and may potentially undermine the efforts of formal institutions and rules. Therefore, there is need for inclusivity through the participation of private sector and underserved groups within the institutions in the regional economic integration process. Underserved groups include small and medium sized enterprises, young entrepreneurs and women in business.

¹⁹ Relates to health especially of plants in international trade.

4.3 CONVERGENCE AND GROWTH IN ECONOMIC INTEGRATION

4.3.1 Introduction

This part of the study focuses on empirical literature on economic convergence. As has been discussed earlier in the theoretical literature under Section 3.5, it is important for studies on regional economic integration to analyse if there exists macroeconomic convergence within the Regional Economic Community (REC), either pre- or post-integration. Economic convergence is significant to this study because it sheds some light as to whether developing economies are moving towards a more even distribution of wealth or not. Sustainable development and poverty eradication can be attained as low income countries converge towards high income countries and regional economic integration can help achieve that. The following subsections will analyse some of the factors which influence economic convergence in the process of regional economic integration. The study acknowledges that some of the factors have already been discussed in earlier discussions but now they will be analysed from the convergence perspective.

4.3.2 The role of geography on macroeconomic convergence and economic integration

Geography plays a very key role in the integration process with most of the economic integration arrangements being geographically based. The interaction of economic transactions across national frontiers are likely to be as significant as within national boundaries when economies are somewhat open to trade (Okko, 2003; Mold and Mukwaya, 2015). Economic regions also tend to overlap two or more nations as characterised by most REC in Africa where several countries are members or more than one community as indicated earlier in Chapter 2. Economic geography is a fundamental instrument in the analysis of economic integration because it helps us to appreciate the location decisions by firms which are highly related to foreign direct investments and benefits associated with scale economies when merchandise, capital and labour are allowed to move freely across national borders (Krugman, 1990). More particularly, the analysis assists in understanding the factors which promote agglomeration (convergence) and dispersion (divergence) of economic activities and how they can be corrected in order to promote and equilibrate efficient resource allocation across countries within an integrated community.

Collier and O'Connell (2008) posited that regional economic convergence in Africa could be attained through economic growth spill-overs from a better performing economy to a poorly performing economy. The spill-overs can be stimulated by regional economic integration. The authors highlighted that countries with access to the sea have a growth advantage of 1.5 percentage points compared to landlocked countries. 35% of Africa's population lie in non-coastal, resource-poor countries as compared to a meagre 1% which is outside of Africa. They also pointed out that the economic performance of landlocked countries is largely dependent upon the neighbourhood effect where growth in one economy has a contagion effect on its neighbours. Sadly, Africa does not have significant neighbourhood growth spill-overs due to higher internal trade barriers (Collier and O'Connell, 2008). This is further compounded by high transport costs in most African landlocked countries (Puga, 2002; UNECA, 2008). This possibly explains why there are no growth spill-overs in countries such as Lesotho, Swaziland and Zimbabwe even though they have a prosperous neighbour, South Africa. Similar arguments could be raised for East African countries - Uganda, Rwanda and Tanzania - which are neighbours with the relatively better performing economy of Kenya. Other authors such as Barro and Sala-i-Martin (1997), Njinkeu and Fosso (2006) and Kumo (2011) suggested that member countries could bridge some gaps and stimulate convergence by encouraging each other to engage in inter-regional investment projects which include transport, utilities and telecommunication to facilitate wholesale provision to individual countries. This should be done in manner which stimulates investment, and increases productivity and competitiveness within the regional economic community (AfDB, 2014). These comprehensive regional economic integration programmes should be aimed at alleviating internal barriers, otherwise growth prospects in Africa's poor countries would remain limited. At the same time, larger economies should be synchronised in an effective way so that they become growth poles through spill-over effects (AEO, 2016; Walters *et al.*, 2016).

Collier and O'Connell (2008) find that non-African landlocked countries gained around 0.6% of any one-percentage growth of their neighbours but there was no growth spill-over for African non-coastal economies. They attributed their findings to inadequate access into sub-regional markets. Sub-regional markets can be accessed at a deeper level by removing intra-regional trade barriers. There has been considerable progress in e-services, technological advances and air transport which have reduced the geographical disadvantage between African countries. There has also been significant growth in the continent due to liberalised telecommunication and mobile services (AfDB *et al.*, 2013). However, there is still need for

initial infrastructural investment in telecommunication services and well-trained labour force (Akpan-obong and Parmentier, 2009). Prices remain high partly due to inadequate regulation and limited size of the market. Overhead costs in telecommunications are too high and can be addressed by consolidating national regulatory agencies into a regional one (Karambakuwa *et al.*, 2015). Zimbabwe already proposed a consolidation move among local mobile telecommunication private players; however, the move faced serious resistance due to private company concerns on their privacy.²⁰

Some authors such as Schiff and Winters (2003) use the terms ‘agglomeration’ and ‘dispersion’ synonymously with convergence and divergence, respectively. They argued that economic integration results in deep microeconomic integration which is anchored on a simultaneous process of agglomeration and decentralisation of sectorial undertakings. This in turn results in an increased intersectorial and intrasectorial trade. Therefore, the notion of convergence and divergence in economic integration is highly connected to the recent developments in economic geography (Grossman and Helpman, 1991). Shaw *et al.* (1999) and Giroud and Mirza (2006) highlighted that firms usually locate where there are abundant resources and larger domestic markets with effective demand. Other factors such as access to the sea or efficient transport infrastructure also lower transaction costs. Demetriades and Law (2006), Te Velde (2011), and Hwang and Lee (2015) highlighted that there should be proper institutional frameworks which minimise firms concentrating in some parts of the region leading to an uneven clustering of economic activities which would create further divergence thereby creating tension among member countries of the economic integration scheme.

Madariaga *et al.* (2003) hypothesised that there exists a bell-shaped link between agglomeration of economic activities and transport costs and in a two-economy scenario where one is poorer and the other is richer. Using the case studies of NAFTA and Mercosur regions, Madariaga *et al.* (2003) constructed various measures of agglomeration of economic activities to measure the effect of regional economic integration on agglomeration or economic convergence. The authors employed regressions on standard convergence with a Gini index on three different variables, namely population, area of land and sectorial activity. They find some evidence on divergence across NAFTA regions and agglomeration (or convergence) in the Mercosur regions, although there was a slowdown in the process in Mercosur post 1991 upto

²⁰ The move was proposed by the Post and Telecommunication Regulatory Authority of Zimbabwe (POTRAZ) in 2014.

1993 and accelerated thereafter. The authors included measures of agglomeration in the standard regression models and claimed that there is a positive relationship between the density of economic activities and growth rate. They also argued that NAFTA did not contribute significantly to the convergence process between Mexico and the U.S.

The study illustrates how disparities in the density of economic activities and wage rates across different locations can stimulate workers to migrate from the poorer to the richer location such as South Africa thereby worsening the income distribution. This leads to polarisation of both industry location and welfare benefits accrued by the owners of the factors of production within that locality. The creation of free trade areas (like SADC) and customs union (like SACU) has allowed a much freer movement of capital and labour into the already economically developed regions and several companies have since moved their headquarters and major operations into these economically developed regions like South Africa. Industry location became more concentrated in these richer locations. However, Licandro (2004) criticised the study by (Madariaga *et al.*, 2003) for not analysing whether the movements in regional agglomeration were caused by changes between countries or changes within the respective country; the model only predicts the former. The criticism by Licandro (2004) is vital because countries like Zimbabwe and Mozambique, for instance, have within those same periods been characterised by political instability and several inconsistent macroeconomic policies which pushed investment away. Therefore, migration from these poor economies to greener pastures cannot solely be the resultant effect of economic integration.

Rodrik (2003) highlighted that Latin America faced the main challenge of finding a growth strategy which would allow them to converge to the living standards of advanced economies, more particularly the European standards. Over the period 1980-2000, Latin America paradoxically introduced a sizeable number of orthodox reforms but failed to deliver economic benefits. Licandro (2004) then questioned if the framework of the Euro-Latin network of regional economic integration was the appropriate growth strategy for Latin America. He argued that if a poor region desires to converge with a richer region, they must take into account the institutional innovations since they do not travel very well from one region to another (Mutoti and Kihangire, 2006; Fabra, 2013; Phillips and Sul, 2007). The inability of institutional networks to travel well from one geographical space to another is another significant factor hampering the successful implementation of European integration models in Africa. Similar to the Latin-American case, Africa's institutions are significantly different from those in Europe

to the extent that the possibility of economic convergence predicted by European models due to economic integration is also weakened.

Using the European integration experience on Free Trade Area of the Americas (FTAA), Schiff and Winters (2003) divided the lessons into economic and political. Economically, they claimed that if America offers potential for trade creation and economic development, they may suffer greater economic divergence because of large initial differences in economic levels. Politically, they claimed that integration demand deep institutions and political commitment which are aimed at promoting and protecting integration from the inevitable frictions with national goals. In Europe, this role was played by the Franco-German axis of European integration and the Brussels institutions (Leslie and Elijah, 2012; Witkowska, 2016). Similarly, Doctor (2007) analysed if it made economic sense to create a monetary union within the Southern Common Market (Mercosur) region which will be similar to the European Monetary Union (EMU). Using optimum currency areas, they argued that Mercosur did not have the necessary pre-requisites for a monetary union. Mercosur countries are generally closed leading to low trade flows within the Mercosur countries compared to member countries of the EMU. Furthermore, the endowments of Mercosur members are too similar for them to derive benefits from trade. This implies that Mercosur have limited effect on regional trade. Similar arguments have been raised also in the case of African regional economic integration. Authors such as Njinkeu and Fosso (2006), Sunde *et al.* (2009), Karambakuwa *et al.* (2015), and Mold and Mukwaya (2015) have also cited that, in addition to producing similar products, African economies do not meet the required pre-requisites for a successful convergence and economic integration process. Moreover, politically Africa's regional economic integration process suffered continuous blows from consistent frictions national goals of member countries. This argument is discussed further in the subsequent chapter under Section 5.3.

Since macroeconomic convergence provides the necessary environment for free trade areas to develop and evolve into deeper economic integration arrangements such as monetary unions, Levy Yetaye and Sturzenegger (1999) highlighted that developing countries should learn from the success of Europe's Economic and Monetary Union (EMU). They argued that there is need for a country which will provide the necessary credibility of monetary and fiscal discipline, one with 'hegemonic powers' discussed earlier in Section 4.2.6. In the case of the EMU, it was German which assumed the responsibility. Africa could use countries like South Africa in the southern hemisphere, Kenya in the eastern and central parts, Egypt in the northern parts and Nigeria and Ghana in West Africa to provide the fiscal and monetary benchmarks which can

be used as convergence criteria. Although optimum currency areas and monetary unions are further developments of free trade areas and beyond the scope of this study, Levy Yetaye and Sturzenegger (1999) provided the relevant rationale that certain institutional pre-requisites must be met before a REC can adopt a model which was previously successfully implemented in another regional integration arrangement (RIA). The fulfilment of these pre-requisites will in turn stimulate the convergence progress among integrated economies (Fabra, 2013; Kumo, 2011).

4.3.3 African studies on macroeconomic convergence in the context of economic integration

There has been much debate as well on whether regional economic integration has stimulated convergence or divergence between countries. As alluded to earlier in the theoretical literature, there are basically two schools of thought or hypotheses on macroeconomic convergence and economic integration. Firstly, some schools of thought argue that macroeconomic convergence is a necessary pre-condition for a successful integration process (Mundell, 1961; Mundell, 1973). The second school of thought postulates that economic integration leads to economic convergence (Solow, 2007). The debate could merely be a causality one. Macroeconomic convergence has a significant welfare effect on economic integration because the rationale behind trade liberalisation and economic integration is to both improve the welfare of developing countries and regions and also to reduce the disparity between rich and poor countries (Solow, 2007). It is the reduction of this disparity which is referred to as convergence, that is, when incomes of economies tend to move towards each other.

Ghura and Hadjimichael (1996) investigated 29 sub-Saharan African countries which belonged to a regional economic integration scheme and found a proclivity of income per capita convergence increasing by approximately 2%. Taking the old East African Community (EAC) into account (1960-1977), Venables (1999) argued that the production structure of Kenya moved in the opposite direction as it would have done under free market conditions and expanded its manufacturing production base at the cost of poorer countries since they shifted their manufacturing imports from the rest of the World to Kenya. At the same time countries which were losing (Tanzania and Uganda) were unable to exploit the trade creation benefits since their limited product range were also produced more efficiently in Kenya. In other words, the study by Venables (1999) indicated divergence within the East African Community.

Using a sample of 46 African economies, Hammouda *et al.* (2007) used econometric analysis to assess the level and rate of income for members of COMESA, SADC, UEMOA, CEMAC and ECOWAS. They found a weak relationship between income convergence and regional economic integration. The weak relationship was attributed to various reasons: firstly, slow growth output, accumulation of factors of production and productivity; secondly, low intra-regional trade levels biased towards trade in commodities and low factor mobility; and the third reason was the limited foreign direct investment (FDI) inflow which would further constrain the accumulation of capital.

Several other studies have found conflicting evidence in Africa. For instance, studies by Holmes (2005) found convergence in SADC between 1960 and 2000. Holmes (2005) found no convergence in ECOWAS over the same time period 1960-2000 while Jones (2004) found convergence in ECOWAS over the period 1960-1990. No convergence over 1980-2002 was found in COMESA (Carmignani, 2006), while convergence was found in the same COMESA region between 1995 and 2004 (Mutoti and Kihangire, 2006). There was limited convergence in UEMOA from 1990 to 2003 (van den Boogaerde and Tsangarides, 2005) while Aziz Wane (2004) found convergence across UEMOA, 1965-2002. The conflicting evidence could be due to varying time periods and methodologies employed. The methodologies used were either statistical which described the income levels or econometric which would make use of standard growth models.²¹

Several studies have since discussed the reasons behind convergence and divergence of incomes in regional economic communities. Holmes (2005) concludes that group size does not matter. Carmignani (2005) highlighted that integration and harmonisation of policies, different institutions and trading rules have a significant influence on convergence (or divergence) of regional incomes while van den Boogaerde and Tsangarides (2005) and Konseiga (2005) emphasised labour mobility. Rossouw (2006) placed emphasis on macroeconomic convergence while the focus of Venables (1999) was on competitive advantage.

²¹ A standard growth model can be presented in the form $g_{it} = \alpha + \beta Y_0 + \delta X_{it} + \varepsilon_{it}$; where g_{it} which is growth rate computed as the first difference of real per capita GDP; Y_0 = logarithm of the initial level of real GDP per capita; X is a vector of explanatory variables; and subscripts i and t represents countries and time respectively.

4.4 WELFARE EFFECTS IN ECONOMIC INTEGRATION

4.4.1 Empirical studies on the welfare effects of regional economic integration

This section presents the portion of economic integration literature which is not necessarily concerned with whether economic integration leads to increases in economic growth or not, but is mainly concerned with the distributional effects or the welfare changes which are brought about as a consequence of economic integration arrangements such as the formation of FTAs. In other words, the literature is concerned with who wins and who loses from the integration process. According to Viner (1950), when more trade is created than diverted, then we have welfare gains, and the vice versa is true. This subsection will review some empirical studies which have investigated the welfare effects of economic integration.

Krugman (1990) used a model where nations and exogenous trading blocks are symmetrical to show that reducing the number of blocks resulted in a decrease in world welfare. Conversely, in the presence of few trading blocs engaged in limited trading with each other, consolidation and expansion of intra-bloc trade could increase economic welfare. The argument was complemented by the results of Collie (1997) who employed a multi-country framework and found out that bilateralism and economic integration would be good for countries as they may increase welfare. Using a two-period three-country model, Freund (2000) observed that regional trade in 'Period 1' followed by free trade (area) in 'Period 2' has a greater and permanent effect on trade and welfare among member countries.

However, other studies were less enthusiastic about regional economic integration and its effects on trade and welfare. For instance, Levy (1997) used a Heckscher-Ohlin setting to show that bilateral FTAs have potential to undermine political influence and limit further multilateral trade liberalisation. This is because some significant portion of influence would have been transferred to a 'higher authority' thereby limiting the ability of respective governments to fully engage in further trade arrangements and other developmental programmes which may be idiosyncratically relevant. Frankel *et al.* (1995) found that economic welfare could be lowered by creating several sub-regional preferential trade arrangements.

Molinari (2003) investigated eight European Union trade sectors using the gravity trade model. The study analysed the level and trend of sectorial integration effects within member countries of an economic bloc since the 1970s. Among other determinants, effects of trade integration or preferential trade arrangements (PTAs) such as EU, EFTA and NAFTA were found to be

positively correlated to levels of trade implying trade creation or welfare gains. Jayasinghe and Sarker (2007) concentrated on agrifood products to study the welfare effects on NAFTA. They used an augmented gravity model over the period 1985-2000 and focused on grains, red meat, vegetables, sugar, oil seeds and fruits. The results suggested that there was a significant trade gain among NAFTA members in grains, red meat, vegetables and sugar during the period under study. They were accelerated increases in vegetables and red meat. The study also showed that countries within the NAFTA zone traded more among themselves than with non-member countries. They attributed this to two reasons: a decrease of intra-NAFTA tariffs which led to trade creation and also trade which was diverted from the rest of the world into intra-NAFTA channels. The results confirm the view that economic integration processes such as the creation of free trade areas will likely create more trade than divert it, leading to welfare gains among member countries.

Some schools of thought in literature argued that countries with similar production and economic structures may not gain much in terms of welfare from regional economic integration. To validate or reject the claim, Karim and Ismail (2007) used a plethora of trade indices which included production similarity index, instability index, comparative production performance, revealed comparative advantage, export similarity index to quantify the potential of intra-regional trade. The study focused on COMESA agricultural trade and used Egypt, Kenya and Sudan as case studies. They found that instability indices of cereal production, roots, tubers and pulses were more stable at the regional than national level. The production similarity index indicates some disparities in patterns on all three countries and the export similarity indices also indicated dissimilar patterns. Revealed comparative indices were generally higher for dominant export products for each country. As such, the pattern of specialisation differs significantly across countries since dominant products differ among countries. This implies that there is potential for expansion of intra-regional trade in the region. The study concluded that COMESA member countries, especially Sudan, should have policies which encourage integrating their markets regionally so that they can benefit from the potential trade and comparative advantage within the region.

In the same vein, Sunde *et al.* (2009) investigated the welfare gains of intra-trade between Zimbabwe and its regional trade partners in SADC. They employed a gravity model in an ordinary least squares (OLS) framework which had intra-industry trade (IIT) index among other explanatory variables. The study found that distance, trade intensity, income per capita, exchange rate and GDP significantly explain IIT between Zimbabwe and SADC trading

partners. Thus, the welfare benefits or losses from the integration process are largely influenced by the abovementioned factors. However, Sunde *et al.* (2009) found contrasting evidence to the study of Karim and Ismail (2007) and concluded that most countries traded similar goods because the colonial era subjected them to the setting up of similar economic structures and income per capita.

Some researchers were aiming at confirming or dismissing the view that intra-trade levels in Africa are too low which also have a bearing on economic welfare. Foroutan and Pritchett (1993) find intra-regional trade in Africa to be above expectations with the sub-Saharan Africa (SSA) having an average share of 8.1%. However, the gravity model predicted a relatively lower average of 7.5%. Coe and Hooffmaister (1998) also argued that bilateral trade was not unusually low between the industrial countries and SSA in the 1990s. Rodrik (1998) also found that the trade to GDP ratio for SSA to be comparable to those economies with similar size and income. He concluded that Africa's marginalisation is mainly as a result of low income growth. Carrere (2004) compared the impact of RTAs for COMESA, ECOWAS and SADC in an augmented gravity model. She found that significant increases in trade between member countries was linked to the formation of RTAs. The author also found that agreements which included trade and currency components such as UEMOA and CEMAC were more effective in increasing intra-regional trade. This indicates that even though FTAs are effective in that they improve intra-trade, more gains can be derived when trade agreements are deepened such as the ones involving currencies. Musila (2005) estimated level of trade creation and diversion for ECCAS, COMESA and ECOWAS using the gravity model. The results indicated that the trade creation intensity was greater in the ECOWAS followed by COMESA.

Some empirical studies suggest that the effects of liberalising trade on economic growth are to a larger extent mediated by the rate of investment in physical capital. Based on cross-country findings, Levine and David (1992), Baldwin and Seghezza (1998), and Wacziarg (2001) suggested that investment rate is an important channel which links trade and growth. A fixed effect regression in the form below was suggested:

$$\frac{I_{it}}{Y_{it}} = \eta_i + \phi LIB_{it} + \omega_{it} \dots\dots\dots (4.5)$$

where I_{it} is the investment in physical capital and Y_{it} is GDP in country i at time t , and ω_{it} captures the country and year effects. The empirical findings confirmed that trade liberalisation fosters growth partly due to its effect on physical capital accumulation. Longo and Serkkat

(2004) examined the feasibility of expanding intra-trade in Africa in a gravity model and also analysed the obstacles to intra-regional trade. The authors revealed that mismanagement of economic policies, internal political tensions and infrastructures are the major obstacles to African trade. The results complement Limao and Venables (2001) who showed that underdeveloped infrastructure accounted for 40% of projected transport costs for coastal economies and approximately 60% for landlocked ones. Limao and Venables (2001) concluded that volumes of trade were substantially lower and costs of intra-trade were substantially higher for SSA countries compared to non-SSA countries. They acknowledged that lack of competitiveness was the major impediment to regional trade and economic integration could play a significant role in improving efficiency and welfare.

Lewis *et al.* (2003) analysed the impact of liberalising trade in SADC using a multi-country computable general equilibrium (CGE) model. They found that increased imports from FTA partners exceeded the decrease in imports from non-FTA countries which resulted in a net gain in economic welfare. Kemp and Wan (1976) showed that member countries can carefully adjust their external tariff by reducing tariffs up to a point at where external trade continues to be at its pre-union level in order to warrant that there is no trade diversion. Consequently, the launch of SADC tariff schedule phase-down under the SADC Trade Protocol motivated Chauvin and Gaulier (2002) to analyse the potential benefits of such a trade liberalisation initiative. The paper also analysed the potential for increasing intra-SADC trade to member countries considering their similar economic structures. The study employed two methodologies, that is, statistical and econometric (gravity model). Statistically, they calculated trade related indices which included revealed comparative advantage, export diversification indices and trade complementarity indices. Both the statistical and econometric results indicated that there was limited room for further trade within SADC. The results were complemented by the study of Kalaba and Tsedu, (2008) who used the statistical analysis approach to evaluate the performance of intra-SADC trade. The study covered the period 2000 to 2006 when the SADC Trade Protocol was implemented. The authors focused on intra-SADC export shares and compared them with other regional blocs and intra-country trade share. Findings showed that intra-SADC trade remained weaker despite the remarkable growth in total exports for the period concerned. The results imply that an increase in export growth due to economic integration does not always translate to an increase in intra-regional trade and economic welfare.

The findings of Kalaba and Tsedu (2008) were complemented by the findings by Karingi and Fekadu (2009) who investigated which of the three regional economic communities would benefit most from the tripartite agreement. Their results indicated that a greater proportion of welfare benefits would accrue to SADC if the tripartite arrangement is to be fruitful. This is because economic regions which are less liberated have more to gain once the trade is liberalised as a result of trade creation. Kalaba and Tsedu (2008) concluded that SADC still lagged behind most regions. Statistical figures actually indicated that extra-regional trade in SADC grew more than intra-regional trade. Moreover, the authors also noted that more than sixty-percent of total intra-SADC trade was conducted via South Africa, indicating polarisation and uneven distribution of welfare gains. Rojid (2006) investigated two issues in regional integration: firstly, the degree to which COMESA was a building or constraining bloc and, secondly, the estimation of the potential of COMESA trade amongst its member countries. He used a gravity model of trade with a Tobit estimation technique over a 21 year period, 1980 to 2001. Two conclusions were drawn from the results: COMESA was a building bloc and the region liberalised trade more internally than was diverted from outside the region. However, results suggested that there was a limited trade potential since most COMESA member countries were overtrading.²²

4.4.2 Welfare effects on unemployment

Another branch of empirical literature emphasised the unemployment effects of economic integration, especially trade liberalisation. Unemployment effects are a major macroeconomic concern for all economic stakeholders, that is, individual households, the private sector and government. Several trade liberalisation and economic integration attempts were aborted mid-way due to market uncertainty which was presumed to result in labour market disruptions. Michaely *et al.* (1991) and Edwards (1993) highlighted that trade liberalisation schemes should consider avoiding high unemployment. Little *et al.* (1970) focused on addressing the income distribution effects of trade liberalisation policies and argued that rapid trade reforms resulted in unmanageable changes in income distribution. This effect would probably trigger an opposition force from the political front to implement these policies. This assertion prompted some analysts to recommend gradual trade liberalisation processes even though there is still no

²² Overtrading or churning is a situation where economic stakeholders engage in more business than can be supported by the market or available resources (possibly leading to working capital challenges)

empirical evidence to support the conjecture that more gradual reforms have a smaller effect on unemployment (Sunde *et al.*, 2009; Mold and Mukwaya, 2015).

Bhagwati (1978) and Krueger (1978) discussed the employment consequences of trade reforms using data from Indonesia, Colombia, Korea, Tunisia, Chile, Brazil, Thailand, Ivory Coast, Pakistan and Uruguay. Their evidence showed that unemployment grew at a faster rate during the latter phases of liberalisation with stronger cases in Thailand and Korea. Under the National Bureau of Economic Research (NBER) project, Krueger (1981) also analysed the relationship between employment creation and trade orientation in the long run. The study analysed whether the presence of factor market distortions resulted in deviations from the directions suggested in the Hecksher-Ohlin-Samuelson framework. They computed labour coefficients of foreign trade, estimated production functions and assessed the magnitude of factor market distortions. They found that labour markets were significantly distorted for all ten countries and industrial minimum wages were the most prevalent form of distortion. Their analysis also indicated that export industries tend to become more labour intensive compared to import competing industries (Edwards 1993).²³ In addition, the data also indicated that exportable industries employed unskilled labour more intensively. The results supported the Hecksher-Ohlin predictions to a larger extent. The findings from this study reveal some fears among policy makers that some African countries which do not export many of their products will have their industries negatively affected leading to high unemployment even though the overall regional welfare would have increased. Bhagwati (1978) and Krueger (1978) also concluded that outward oriented economies have a faster employment growth rate. Edwards (1993) later suggested that developing countries could benefit in the long run by creating employment if they removed both factor market distortions and trade restriction benefits.

Under the World Bank Project, Balassa (1982) also investigated the long term consequences on employment of different trade regimes. Using data from eleven countries, Balassa pointed out that economic integration and reduction of tariffs will likely benefit employment because most activities in the primary and manufacturing sectors are labour intensive. The study, however, did not address the unemployment experience during the transition period of trade reforms. In a similar study, Michaely *et al.* (1991) distinguished between gross and net effect of trade reforms. The gross effect “disemployment” was defined as unemployment due to contraction of industries after trade liberalisation reforms. On the other hand, net effect referred

²³ Using the Hecksher-Ohlin sense of definition.

to the total change in aggregate employment in the country. Economic analysts would naturally be more interested in the net effect. Their study indicated that there were generally three trade liberalisation attempts between 1960 and 1980. The first two episodes - 1960-66 and 1970-74 - experienced significant increases in employment but there was a decline in the third episode from 1977-1980. They found that the net effect on employment for Chile and Yugoslavia was positive resulting in a decline in unemployment. The results were obtained after controlling for other factors such as terms of trade, economic fluctuations and macroeconomic policies.

Other studies used 'before' and 'after' methodology in assessing trade reform effects on employment. There were increases in unemployment after the following episodes: Argentina (1967-70) and (1976-80); Israel (1952-55) and (1962-68); Indonesia (1966-72); Korea (1978-79); the Philippines (1960-65); and Turkey (1980-84). However, despite the fact that unemployment increased virtually after the reforms, authors tended to attribute it to other causes than the reform itself. For example, Argentina attributed it to overvaluation, Israel to restrictive macroeconomic policies and Korea to recession (Kim, 1991; Hallwood *et al.*, 2006; Munin, 2010). Even though Edwards (1989b, 1993) and Edwards and Cox-Edwards (1991a) acknowledge that Michaely *et al.* (1991) attempted to provide a rich link between structural reforms and labour market, they pointed to some weaknesses in that it lacked a clear discussion on the role of indexation practices, labour market distortions and minimum wages.

4.5 EMPIRICAL STUDIES SPECIFICALLY ON THE TFTA

This section presents empirical studies which have investigated specifically the tripartite free trade arrangement. Jansen and Sandrey (2011) employed the Global Trade Analysis Project (GTAP) model to analyse the impact of the TFTA and found that significant gains would accrue to Mozambique and South Africa. The study indicated that South Africa would get an estimated increase in welfare of approximately USD 1 321 million while that of Mozambique was approximated to be USD 57 million. Other SACU countries, namely Namibia, Botswana, Swaziland and Lesotho, were estimated to have a combined welfare loss of approximately USD 100 million. Similarly, Mold and Mukwaya (2015) used a GTAP computable general equilibrium (CGE) model and found that intra-regional trade among COMESA-EAC-SADC members could increase by 29% if tariffs were to be eliminated, thereby signifying that RTAs have a huge mean effect on intra-regional trade (Frankel and Rose, 2002).

Karingi and Fekadu (2009) examined the implications of the TFTA and found that there are overall benefits to be derived from the tripartite arrangement. However, the distribution of

benefits was uneven with a greater proportion accruing to the SADC region followed by the EAC and finally the COMESA region. The findings of Kalaba and Tsedu (2008) were complemented by Karingi and Fekadu (2009) who investigated which of the three regional economic communities would benefit most from the tripartite agreement. Their results indicated that a greater proportion of benefits would accrue to SADC if the tripartite arrangement is to be fruitful. This is because economic regions which are less liberated have more to gain once the trade is liberalised as a result of trade creation. Kalaba and Tsedu (2008) concluded that SADC still lagged behind most regions.

Makochehanwa (2012) used agrifood products to investigate the extent to which the TFTA would impact its members. The author used the World Integrated Trade Solution, the Software for Market Analysis and Restrictions on Trade (WITS-SMART) model. He found out that new trade worth approximately USD 2 billion will be created when the tripartite arrangement comes into fruition. Approximately USD 454 million will be diverted resulting in a net effect of approximately USD 1.5 billion. The study also suggested that the tripartite region will post huge food surpluses with the following approximations in tonnes of maize: Tanzania (153 337), Zambia (443 597), South Africa (510 371) and Malawi (890 153). The projections were for the year 2016. However, the region would have a shortfall of approximately 962 863 tonnes in wheat and 660 118 tonnes in rice. This study employed a similar methodology to the one employed by Makochehanwa (2012a) as one of its models. However, this study included all economic sectors all classified in trade data to get a more complete picture of the welfare effects of the tripartite arrangement. In addition, this study also employed some econometric models as complementary models to the WITS-SMART model.

4.6 SUMMARY OF CHAPTER

This chapter presented an overview of some empirical investigations and developments over the decades in the area of regional economic integration. The first subsection of the empirical literature review placed emphasis on the quantitative effects of liberalising trade. A greater proportion of this literature advocated for trade liberalisation and this can be achieved at a regional level through regional economic integration. The studies highlighted that, through different channels, quantitative effects of trade are influenced by factors such as infrastructure, technology, currency devaluations, institutions and other qualitative factors. Some studies employed multi-country studies whilst others employed econometric studies. The thrust of the chapter is that economic integration leads to changes in economic welfare through increased

international trade. This is because international trade forms a greater proportion of regional economic integration arrangements.

Another branch of studies focused on establishing that regional economic integration leads to convergence among integrated economies. The rationale for such investigations is that there are propositions that the wealth of integrated economies will move towards each other since poorer countries will move toward wealthier countries. The results of these studies were mixed with some indicating convergence while others indicated divergence. The last branch of empirical studies in this study focused on the welfare effects of regional economic integration. The various studies employed either econometric techniques or computable general equilibrium (CGE) models. It can be concluded that empirical results are influenced by several factors which include the efficiency of the model, the quality of data and the time frame under study but generally the majority of the studies indicated positive welfare effects.

5 CHAPTER 5: OBSTACLES TO AFRICAN ECONOMIC INTEGRATION

5.1 INTRODUCTION

This chapter discusses the key obstacles to the African economic integration process and proposes possible ways of addressing them. This is timely and can assist in the process of establishing a feasible implementation plan of the TFTA which is aimed at fostering economic integration in Africa. There is a general feeling that progress made on the economic integration programmes in Africa have invariably been disappointing (Qobo, 2007; Njinkeu and Fosso, 2006; Chauvin and Gaulier, 2002). Targets have either not been met or in some cases achievements have been reversed or lost (Njinkeu and Fosso, 2006; Beyene, 2014c; AfDB, 2014). With the renewed vigour at the beginning of the new millennium and the fruition of the TFTA, the key question will be whether progress will be made and targets achieved. Juma and Mangeni (2015) argued that it is likely that economic integration in Africa will not be successful as desired if obstacles are not addressed. It is unlikely that the African Economic Community (AEC) will be built if regional and sub-regional communities are continuously established in an uncoordinated manner. This will result in a wastage of resources and a complex web of overlapping communities which may ultimately become an institutional mess (AEO, 2016; UNECA, 2016; Walters *et al.*, 2016).

5.2 OVERLAPPING ISSUES OF REGIONAL ECONOMIC COMMUNITIES

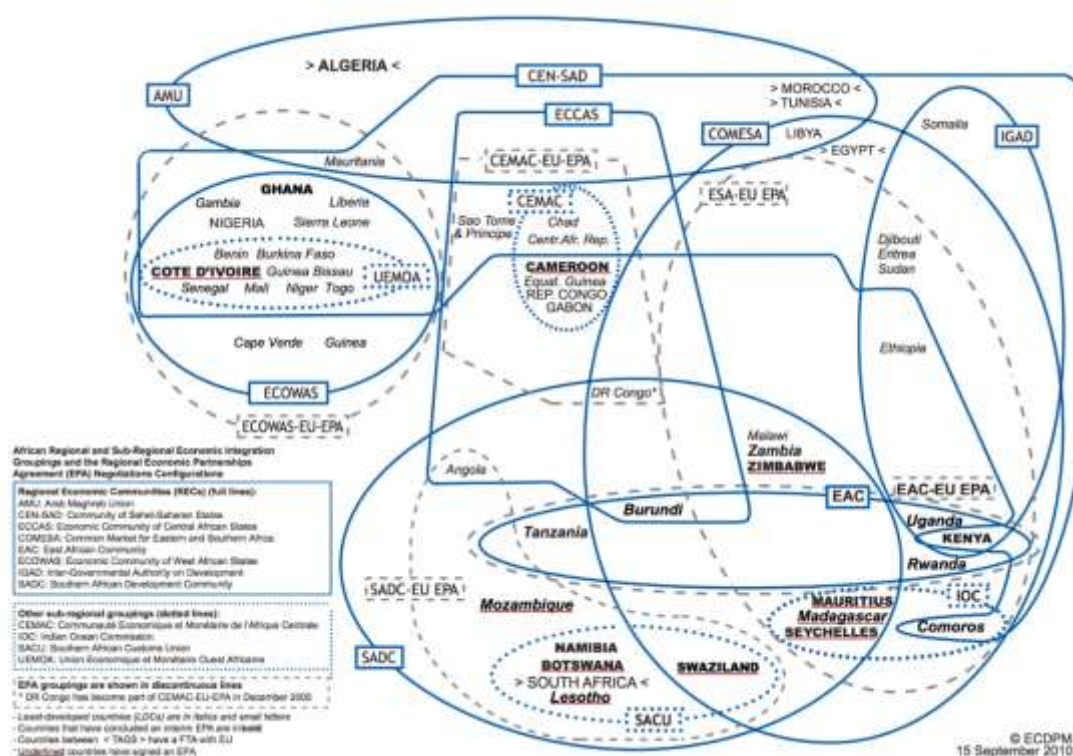
One of the challenges identified to have stalled the process of regional economic integration in Africa is the issue of overlapping membership. As noted in Chapter 2 of this study, Africa is characterised by several countries which are members of more than one regional economic community. Prior to the proposition of the Tripartite Free Trade Area (TFTA) in 2008 and its fruition in 2015, African RECs themselves have for decades significantly obstructed progress as building blocks of the African Economic Community (AEC) by failing to either merge or harmonise their policies and instruments (Venkatraman, 2014; AfDB, 2014). In some instances, sub-RECs have attracted more loyalty with deeper and faster integration (Draper 2010). For example, the Economic and Monetary Union of West Africa (UEMOA)²⁴ and the

²⁴ Benin, Burkina Faso, Cote d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal and Togo

Rand Monetary Area (RMU)²⁵ within SACU have common currencies (Maleleka, 2007; Aziz Wane, 2004). The EMU adopted the CFA Franc as its common currency which was backed by the French Treasury on the grounds of common colonial legacy of member countries, except Guinea Bissau. These factors have become an impediment to widening of economic integration (van den Boogaerde and Tsangarides, 2005). The East African Community (AEC) has also attained a deeper level of economic integration especially in monetary, fiscal and immigration policies. This kind of loyalty has been difficult to get, especially in larger RECs such as COMESA and SADC which are recognised by the AEC resulting in stalled economic integration progress (Juma and Mangeni, 2015; ECDPM, 2013). The diagrams below give an indication of what has been termed by some analysts as a ‘spaghetti bowl’ of African membership.

²⁵ South Africa, Lesotho, Namibia and Swaziland

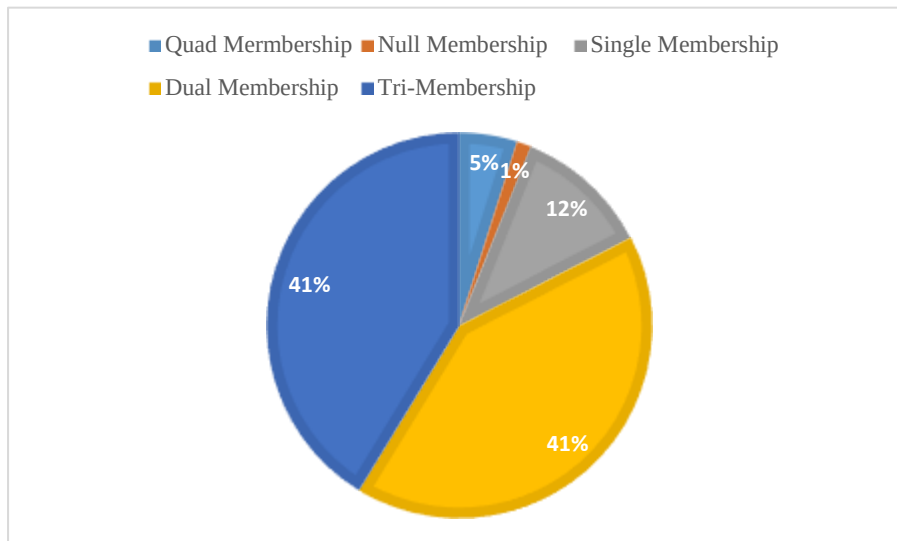
Figure 5.1: Spaghetti bowl of African membership



Source: ECDPM (2010)

The only country which a REC member is Sahrawi Arab Democratic Republic but the other countries are members in at least one bloc or more. Six countries, namely Cape Verde, Mozambique, Morocco, Algeria, Mauritania and São Tomé and Príncipe belong to only one regional bloc. Twenty-two countries which account for 41% of the African countries have dual membership. These countries are Cameroon, Republic of Congo, Ethiopia, Angola, Malawi, Comoros, Equatorial Guinea, Lesotho, Namibia, Gambia, Republic of Guinea, Nigeria, Somalia, Botswana, Gabon, South Africa, Tanzania, Tunisia, Ghana, South Sudan, Zambia, and Zimbabwe. Similarly, there are also twenty-two countries which have membership in three regional economic communities. These are Benin, Chad, Egypt, Burkina Faso, Central African Republic, Sierra Leone, Swaziland, Djibouti, Eritrea, Niger, Kenya, Togo, Senegal, Guinea Bissau, Madagascar, Liberia, Mali, Libya, Mauritius, Seychelles, Sudan and Uganda. Four nations are the members of four RECs, namely Burundi, Democratic Republic of Congo, Côte d'Ivoire and Rwanda. Figure 5.2 below indicates the proportions of the various member countries in different RECs.

Figure 5.2: Membership of African Economic Integration



Source: Author

The issue of overlapping membership resulted in an acrimonious and puzzling relationship between COMESA and SADC in the 1990s. Open tensions emerged between the two secretariats. On one hand, COMESA blamed SADC of being reluctant to merge while on the other hand the SADC Executive Secretary gave members who belonged to COMESA a notice to choose between the two, but denied this shortly afterwards (Carmignani, 2005; Juma and Mangeni, 2015; Walters *et al.*, 2016). The COMESA Secretariat pushed for a merger basing their arguments on the original goal of developing the Preferential Trade Area (PTA) into a common market. On the other hand, the SADC Secretariat with support especially from Botswana, South Africa and Zimbabwe upheld the contrary view that SADC should also continue.

Consequently, South Africa and Botswana did not join COMESA even though provisions were made for their membership should they decide to join in future. Zimbabwe later joined although it had doubts initially, especially when South Africa gave notice that it would not join COMESA. In 1996, Lesotho and Mozambique gave a 12 month notice to leave citing reasons that they preferred smaller organisations with fewer problems. Mozambique also argued that it did little business with COMESA members. In fact, the Mozambican president Mr Joachim Chissano had initially signed the COMESA Treaty against his economists' advice. Namibia also came close to leaving COMESA but later reaffirmed its membership citing that the

relationship between COMESA and SADC had been clarified.²⁶ The major concerns rocking the two RECs were that the programmes were uncoordinated and duplicated which made implementation difficult (Juma and Mangeni, 2015; Mothae, 2005; Tumwebaze and Ijjo, 2015; Makochekanwa, 2012a).

In January 1993 in Lusaka, Zambia, the Authority noted that the PTA and SADC had to continue to exist as autonomous but complementary entities with distinct objectives. They decided that matters of harmonisation, co-ordination and merger should be resolved by the PTA Authority (later COMESA) with the help of a ministerial committee which comprised of three PTA and three SADC ministers. In June 1993 in Harare, Zimbabwe, the ministerial committee consisting of Botswana, Burundi, Mozambique, Tanzania, Uganda and Zambia met to sort out points of duplication and difference and a way to avoid conflict and duplication of responsibilities. At the same time, they also discussed how PTA and SADC could evolve towards AEC which ultimately led to successful initiation of the TFTA discussions in 2008. Within the same year of 1993, the COMESA Treaty was being discussed and drafted which later came into effect in 1994.

A position was concluded, then, that the two communities are to co-exist but they had to harmonise their policies and instruments. It was, however, viewed by some analysts as an unsatisfactory solution especially due to the continued refusal by South Africa and Botswana to join COMESA, coupled with the departure of Mozambique and Lesotho who cited lack of proper coordination as the reason. Since COMESA had a much wider agenda which also encapsulated that of SADC, it appeared a fair suggestion that SADC be regarded as part of COMESA. With the fruition of the TFTA, much progress has been made over the last two and half decades from the 1990s towards harmonisation and coordination of policies and instruments. It should be noted, however, that the TFTA agreement has failed to meet its implementation targets so far (2017 targets) due to participating nations failing to agree on certain trade instruments such as rules of origin, trade in services and intellectual property rights among other points.

Nonetheless, the merging of COMESA-EAC-SADC is superlative in the sense that COMESA and EAC have already been implementing (in their own unique ways) project- or sector-

²⁶ A report by experts advised and clarified that COMESA and SADC were to remain as two autonomous organs (Article 29 of the PTA Treaty, 1993). See also, Item VII of *the Final Communique of the 11th Meeting of the Authority of the Ministerial Meeting of the Plenipotentiaries of the Draft COMESA Treaty* dated 29-30 October 1993 ref. PTA/LEG/MP1/2, [COMESA Secretariat]; and the preamble to the COMESA Treaty.

oriented approaches to economic integration thereby attracting the interest and partnerships of international financial institutions (IFIs). It seemed unreasonable that gains available to a country in a sector or project co-operation should be foregone on account of differences in membership. Therefore, fusing the RECs together is likely to lead to multiplier effects in both acquiring benefits of economic integration and in distributing them. Areas which affect trade such as rules of origin should be clearly articulated in the TFTA arrangement to avoid the impossibility of coordination.

5.3 POLITICAL FACTORS

Political factors have also been identified as another obstacle to the progress on regional economic integration in Africa (Mothae, 2005; AfDB, 2012; AfDB, 2014; ECDPM, 2013). On several occasions individual political leaders have assumed the responsibility of economic integration. Apart from the institutional frameworks in Africa, economic integration generally predicates on the attitudes of political leaders in the sense that the Assembly or Authority, that is, the organ of the Heads of State and Government, is the supreme organ to an extent that projects live or die with them (Juma and Mangeni, 2015; Mothae, 2005). In other words, the process of economic integration cannot take place if they do not act. The drawback in such a framework is that Africa is known for endemic political instability which is characterised by political leaders who either do not stay in office for long or stay around too long until they are forcibly ejected (Alesina *et al.*, 2000; Mothae, 2005; Büthe and Milner, 2008). This has usually resulted in acrimony which in turn paralysed the activities of political organs (Hanieh, 2010). A possible solution would be for economies to incorporate economic integration into national laws as a fundamental national policy as a democratic agendum through which elections are held or contested. This will place the economic integration programmes above the fleeting spans of African political leaders (Johnston and Trebilcock, 2013).

5.3.1 Political will

Some analysts argued that, even though many resources have been devoted by political leaders to speeches, conferences, resolutions and treaties, they still identified lack of political will as another basic problem to the process of regional economic integration (Hazlewood, 1967; Obasanjo and d'Orville, 1990). There are several reasons which can possibly explain this kind of outcome. Firstly, leaders could have concluded the treaties without the endorsement of the parliament and as a result the concluded treaty does not reflect popular opinion. It therefore becomes difficult to attract follow-up action from people who may not even be aware of the

treaty. Secondly, there may be delays in the ratification process due to lack of support from relevant institutions, resulting in the treaty failing to take-off at all in some instances. In some cases, ratified treaties are not timely disseminated to relevant stakeholders such as the business community and service providers who are usually interested in expanded markets. Leaders do not disseminate the ratified treaties intentionally so that they do not become accountable to electorates with regards to the performance of these treaties and as such political leaders will not have an incentive to implement them (Mangeni, 2008). A possible solution might be to give sufficient power to technical organs to proceed irrespective of the political outlook might be a more effective approach. However, for the approach to be effective there is need for treaties to be sufficiently comprehensive and leave the implementation phase to national technical agencies such as immigration or customs authorities (Mothae, 2005; AEO, 2016; ECDPM, 2013).

Political leaders have also reneged on their obligations assumed under treaties due to national emergencies. Pursuing of long-term strategies of regional economic integration appeared like a luxury which is unjustified to disregard domestic national emergencies. National emergencies appear in various forms such as internal civil strife, ethnic conflicts, suppressed popular or political dissent, transition periods between elected governments and national disasters (le Roux, 2005; Candau and Dienesch, 2015). Except for national disasters, the majority of these national emergencies are governance issues, lack of democracy and gross violation of human rights sustained over long periods. These concerns usually draw the attention of governments and civil society thereby taking priority over issues of economic integration. Candau and Dienesch (2015) argued that if economic integration is successful, it can significantly and positively promote good governance and human rights for member countries leading to much greater welfare.

AfDB (2014) argued that, in some instances, lack of political will is merely as a result of lack of vision and failure to see the significance of the unity of Africa or regional economic integration as a necessary tool for Africa's economic development. The short-sightedness of making national policies their only domain could be attributed to unfavourable education, inadequate exposure to global developments and priorities, failed appreciation of benefits which can be derived from economic integration or merely a sheer disregard for the common good (AfDB, 2012; AfDB, 2014). It is, thus, necessary to ensure that economic integration is part of political and social processes through vanguard business, professional and political relations at the national level (ECDPM, 2013). The matter must be approached with a view of

making economic integration a people's or democratic demand by prodding relevant organs into action.

5.3.2 Cleavages

Africa is divided so much that it has posed serious challenges for the continent to take a common stand on several issues. Although this has resulted in defeat and humiliation for the continent on several fronts, it is interesting that there has not been enough shock (stimuli) for Africans to take necessary actions to address the divisions (Van der Loo and Van Elsuwege, 2012; Draper, 2010). The past decades have seen African economies being overtaken and those economies which are already strong are uniting and creating even stronger blocs and Africa appears to be lukewarm on its approach to integration. Rather than focusing on forging stronger alliances, Africans have shifted from blaming super powers to finding fresh sources of hatred and divisions (AEO, 2016).

The nature of disunity is multifaceted. There are sustained cleavages emanating from ethnic violence which sometimes spill over into neighbouring countries (Johnston and Trebilcock, 2013; Walters *et al.*, 2016). There are also differences over changes in government where in some cases a forceful change of government makes host of the deposed leader an enemy of the incumbent government. This can become a serious dividing factor especially when some governments are apparently committed to democratic governments (Juma and Mangeni, 2015; Van der Loo and Van Elsuwege, 2012). However, according to AfDB (2014) there has been a general appreciation lately by the new breed of leader who are making efforts to form a core group of united African countries by following up on the vision of the African Economic Community (AEC).

RECs themselves seem to be another source of disunity. Blocs, for instance, can tend to be exclusive like the tension and acrimony between COMESA and SADC in the 1980s. Egypt was also turned away by the Maghreb Union headquartered in Morocco when it applied for membership.²⁷ Paradoxically, Morocco withdrew from the OAU upon the admission of the Sahrawi Republic and is not a member of the AEC. Similarly, some strange cases of divisions have manifested as closer co-operation between Francophone countries to the exclusion of Anglophone ones in West and Central Africa.

²⁷ Egypt was eventually admitted into COMESA in 1998 despite the fact that it falls within North Africa.

Regional economic integration is a tool which can be used to effectively contain divisions due to inter-linkages, that is, the extension of the neo-functionalism methods of peaceful co-existence (Karambakuwa *et al.*, 2015). Care should be taken because these cleavages can prevent the integration process in the first place, raising the need to investigate how to break the vicious cycle. This can be addressed by ensuring that sources of economic integration are economic and sector driven.

5.4 WORLD MARKETS

Some schools of thought posit that international systems have been unfavourable to economic integration efforts by political leaders in Africa. International systems have promoted open market economies and export promotion policies which place access to markets of developed countries higher on the national agenda, possibly to the prejudice of intra-African integration (Juma and Mangeni, 2015). For instance, although the European Union (EU) was cooperating with African, Caribbean and Pacific countries under the Lomé Conventions and Cotonou agreement by offering preferential access, the conditions were still designed to offer considerable protection for the EU market, especially in textiles and agriculture. Similar schemes were also employed under the Generalised System of Preferences, EC-South African FTA Agreement, the USA sub-Saharan Africa co-operation arrangement under the US African Growth and Opportunity Act and several other bilateral treaties and investment codes (Manservisi and Mény, 2009; Mansfield and Reinhardt, 2003; Witkowska, 2016). Africa can address these issues by taking a position in these agreements with the AEC and REC constituting part of the negotiating teams. This will enable some African countries to focus their efforts in trying to meet the criteria unilaterally set by the United States of America in dealing with their trading partners. Otherwise, regional trade agreements (RTAs) with countries outside the AEC could become another source of detraction from the aims of the AEC Treaty and indeed the REC treaties for African economic integration (Manservisi and Mény, 2009; Ismail, 2017).

Moreover, economic policies of most African countries tended to focus on foreign markets and not seriously consider African markets, thereby shifting emphasis away from the AEC and RECs. This has resulted in small proportions of intra-African trade (AfDB, 2014; ECDPM, 2013). The tripartite free trade agreement (TFTA) will address some of these biases and complement them with policies which promote regional markets through African economic

integration. The expected outcome is a significant boost of intra-trade and welfare levels in Africa (Mold and Mukwaya, 2015; Makochehanwa, 2012b).

However, some argue that the continent will not realise significant increases in trade since African economies and products are homogeneous and in competition. This has become the basis for the conclusion that African countries have nothing to carry out trade exchange with and, therefore, without trade, economic integration cannot arise (Rvaenhill, 1979; Chauvin and Gaulier, 2002; Beyene, 2014a). Yet, in reality, even developed countries exchange a lot in trade despite producing similar or competing manufactured goods. This is because the grounds for exchange decisions can arise from various factors which range from different structures of industrial and commercial properties, varying technical developments for production processes and product differentiation, considerations of market access and location and also differences in legal and political regimes (Limao and Venables, 2001; Mold and Mukwaya, 2015; Karim and Ismail, 2007). Therefore, even in the case of production of similar products or of substitutes trade can take place on the basis of differences in production costs and externalities, which is actually the basis of comparative advantage.

McGrattan and Schmitz (1999), AfDB (2014) and AEO (2016) argue that African economies are, in fact, not competitive but rather produce substantially different products due to differences in resource endowments. On the contrary, therefore, Africa is characterised by heterogeneous economies which produce primary products on the whole, but varied primary products. In other words, Africa produces similar but differentiated products (Makochehanwa, 2012; Karambakuwa *et al.*, 2015; Mold and Mukwaya, 2015). For instance, coffee from Kenya is different from coffee from Uganda. The substantial levels of processing industries make the situation conducive to transnational trade. Rather, historical factors have caused the paucity of intra-African trade since economies have been oriented to export to developed economies.

It should be acknowledged that, though African economies traditionally produced primary products, the industrial process has begun to take root. Policies have shifted from import substitution to export promotion together with other complementary strategies such as diversification and liberalisation (Maleleka, 2007; Ismail, 2017). Multinational National Corporations (MNCs) are now taking into account factors such as cheap labour and inputs, credit lines and cost free insurance against political risks, access to markets and fundamental determinants in location (Giroud and Mirza, 2006). This signals potential for industrialisation in developing countries and economic integration is a feasible route or channel in which larger

markets to support industrialisation can be availed. For instance, South African products have been able to easily penetrate the South African Customs Union (SACU) market while at the same time the country has managed to draw cheap labour and inputs from the respective SACU countries (Gibb and Treasure, 2014; Mothae, 2005). The increased intra-African trade also suggests that trade creation and expansion rather than trade diversion is most likely.

5.5 SHARING OF WELFARE GAINS AND LOSSES

An unclear model of sharing welfare gains and losses has been another obstacle to progress in the process of economic integration (Mothae, 2005; AEO, 2016). The benefits of economic integration are usually economic developments due to increased market opportunities and economies of scale that are exploited. These are usually manifested in the form of increased access to the regional market which would have been previously untenable (Juma and Mangeni, 2015; AEO, 2016). Economic integration leads to losses as well in the form of customs revenue foregone due to reduced or eliminated tariffs. However, economic integration tends to favour economies which are stronger relative to others, with more competitive enterprises which tend to dominate regional markets, thereby outperforming weaker enterprises in supplying regional markets (Cheong and Wong, 2007; Makochekanwa, 2012a; Mold and Mukwaya, 2015).

Mold and Mukwaya (2015) highlighted that the size of regional markets is usually the attraction factor in the sense that single enterprises can supply to several economies. The effect will be dispersed via a trickle down process from relatively well-established industrial centres with developed infrastructure. However, resistance may rise if other member countries on the lower end of the trickle-down effect perceive that the linkages do not yield much gain as is obtained by the best performing economies (Cheong and Wong, 2007; Kopsakangas-savolainen, 2009). Consequently, political rhetoric may lead to economic nationalism thereby destroying the whole process of economic integration on the basis of imbalance which will be perceived as unfair gains or uneven distribution of welfare (AfDB, 2014; ECDPM, 2013).

Economic policies should be structured in a manner which complements economic development by complementing industrialisation in partner countries. These policies should be allowed and promoted by economic integration projects in a way which equips an economy's comparative advantage, that is, to take in imports and incoming capital through linkages (Piggott, 2003; Kopsakangas-savolainen, 2009; Barro and Sala-I-Martin, 1997). This approach

may avoid the bureaucracy and dirigism²⁸ associated with using common approaches (Lundberg *et al.*, 1980; Alesina *et al.*, 2000). The possible solutions include transfer of taxes, regional industrial planning and allocating foreign investment to specific economies and engaging in regional national projects such as dams and electricity grids which are targeted in least developed areas within the community (AfDB, 2014; AfDB, 2012). Alternatively, a development fund can be created although care should be taken so that ventures into depressed regions are done in a sustainable manner. Regional development banks can be successful if they are given operating permits which have commercial considerations (Bekaert *et al.*, 2001; Tornell *et al.*, 2003; UNECA, 2008).

In terms of customs revenue, the REC can designate a community institution to collect or simply design a formula to collect and disburse the revenue, for instance, collecting at a point of production, sale or consumption (Mothae, 2005). However, the latter approach may not adequately address the problem of imbalances, thus the former serves better. Makochekanwa (2012a) and Walters *et al.* (2016) argued that since the process of economic integration only attracts the support of governments when they envisage actual gains, indispensable political will is needed for foregoing the revenue especially where customs revenue forms a significant source of government revenue. This is because short term losses are usually more apparent with welfare gains from economic integration usually being realised in the long-term (Mold and Mukwaya, 2015; Makochekanwa, 2012a).

The problem of welfare imbalances or sharing of gains and bearing costs should be addressed from the constitutive stages of the strategy of economic integration policies. This involves member countries undertaking analytical work to establish a case for participating in economic integration (Mothae, 2005). This will assist the respective countries in adopting appropriate negotiating positions to ensure that the interests of all parties are fully taken into account in preparing instruments for treaties (AfDB, 2014). Member countries must be clear about both the nature and timing of available gains, taking into account transition stages (Cheong and Wong, 2007; Kopsakangas-savolainen, 2009). Those economies which are less endowed to benefit from the process can be allowed derogation from the regional incentive regime so that they can offer a more enhanced regime to attract investment into their depressed areas (Puga, 2002; Cooper, 1987; Gurova, 2014). This can also be done in collaboration with regional development banks (Mukasa *et al.*, 2013; AfDB, 2014). The derogation should be uniform

²⁸ Dirigism is a socioeconomic system built upon the basis of totalitarianism as the best system for humanity.

throughout the regional market so that losses associated with competitively generous incentive regimes are avoided (Piggott, 2003; Kopsakangas-savolainen, 2009; Endoh, 1999). Overall, the aim should be to achieve regional economic development which is uniformly distributed among member countries.

5.6 LEGAL FACTORS

Legal factors include laws applicable to cross-border trade, establishment of businesses and labour movement including the right to work (Van der Loo and Van Elsuwege, 2012; Johnston and Trebilcock, 2013; Fox *et al.*, 2016). These complement free movement of goods, capital and enforcement obligations regionally. Legalities may also include establishing and regulating standards in various areas so that policies are uniform and harmonised in FTAs, common markets or economic unions (Johnston and Trebilcock, 2013). The legal framework serves the purpose of guiding the establishment and operation of various organs and jurisdiction of courts. It should also recognise the judgements and qualifications for regional jurisdiction of community institutions especially the technical ones. This will ensure efficacy in the regional market and economy (Erasmus, 2013). Harmonised laws increase efficiency and certainty in operations thereby lowering transaction costs (Erasmus, 2013; Johnston and Trebilcock, 2013). Without an enabling legal framework, the economic integration objective of free movement of merchandise can hardly be achieved due to national administrations that can lawfully resist any efforts. Positive legislation is needed to remove and prohibit barriers to the freedoms and the limitations on the operation and jurisdiction of community institutions.

When such frameworks are absent or inadequate, like in several African regional economic communities, transaction costs increase (AEO, 2016). The costs could emanate from actual cross border transaction costs for both tariffs and costs linked to restrictions under work permits and various licences (UNECA, 2012; UNECA, 2016). Other additional costs may be due to uncertainties of applicable laws and of the exact nature of assumed obligations which may lead to unnecessary litigation and excessive insurance (Erasmus, 2013; Kalaba and Tsedu, 2008). For instance, production costs may include time taken to process the clearances and permission which could have been avoided. Differences in health, safety, environmental and labour regulations and other standards such as packaging can be interpreted as protectionist policies which lead to huge increases in production costs, thereby constituting barriers to market access (Lopes, 2013; Mothae, 2005). Moreover, MNCs may deem it necessary to locate in various national markets so that they qualify to be national entities and avoid barriers to market access,

but this may possibly lead to higher production and operating costs as well as leading to firms operating below their optimal levels or even withdraw from the market altogether (Giroud and Mirza, 2006).

Legal frameworks can be harmonised using treaties, model laws or by commercial practices (Ovrawah, 1994), or by regulating and making decisions through community institutions. Interpretation of rules is crucial in generating a uniform understanding and application. Therefore, institutions play a crucial role in developing a legal framework which leads to the attainment of economic integration. The institutions include courts of law, arbitral tribunals and Assemblies of Heads of State and Governments.

It is important to realise, however, that the legal framework merely implements economic and political objectives which would have been laid in constitutive instruments of economic communities and the concomitant measures taken by various organs (AfDB, 2012; AfDB, 2014; UNECA, 2008). A well-established legal framework is to lubricate the process of economic integration. In Africa, the unimpressive progress could partially be reflecting inadequate concomitant measures and lack of zeal in implementing the constitutive instruments of the treaties or agreements. Africa still needs to adequately develop the legal framework by harmonising the necessary instruments and institutions responsible for implementation and processing. On one hand, inactivity in the interpretative process could perhaps be attributed to limited jurisdiction granted to community courts in that *locus standi*²⁹ is restricted to community organs and governments of participating nations and excludes private actors who will be active participants in economic integration. On the other hand, the low levels of intra-regional trade and investment has not generated enough occasions and load for interpretations and sustained court activity (Lopes, 2013; AEO, 2016).

5.7 EXCLUSIVENESS OF REGIONAL ECONOMIC COMMUNITIES

Prior to the proposition of the TFTA in 2008 and its fruition in 2015, African RECs themselves have for decades also significantly obstructed progress as building blocks of the AEC by failing to either merge or harmonise their policies and instruments. In some instances, sub-RECs have attracted more loyalty with deeper and faster integration. For example, the West African Economic and Monetary Union (UEMOA)³⁰ and the Rand Monetary Area (RMU)³¹ have

²⁹ *Locus standi* means the right or capacity to bring an action or to appear in court

³⁰ Burkina Faso, Mali, Senegal, Guinea Bissau, Benin, Ivory Coast, Niger and Togo

³¹ South Africa, Namibia, Lesotho and Swaziland

common currencies. The former adopted the CFA Franc as its common currency which was backed by the French Treasury on the grounds of common colonial legacy of member countries, except Guinea Bissau. Establishing a sub-regional economic community on such a basis can become a major impediment to widening it. Smaller communities such as the EAC have also attained a deeper level of economic integration especially in monetary, fiscal and immigration policies. This kind of loyalty has been difficult to get especially in larger RECs such as COMESA and SADC which are recognised by the AEC. A deeper level of economic integration in larger regional economic communities would have significant effects towards the development of Africa and the achievement of the vision of building an African Economic Community (AEC). Another historical case of controversy is that of the strained relationship between COMESA and SADC in the 1990s which has been discussed earlier in subsection 5.1.1 under overlapping issues. Analysts have argued that this resulted in duplication and wastage of resources which, hopefully, will be addressed when the Tripartite Free Trade Agreement (TFTA) is being implemented.

The merging of COMESA-EAC-SADC is ideal in the sense that COMESA and EAC have already been implementing (in their own unique ways) project- or sector-oriented approaches to economic integration thereby attracting the interest and partnerships of International Finance Institutions (IFIs). It seemed unreasonable that gains available to a country in a sector or project co-operation should be foregone on account of differences in membership. Fusing the RECs together is likely to lead to multiplier effects in both acquiring benefits and distributing them. Areas which affect trade such as rules of origin should be clearly articulated in the TFTA arrangement to avoid the impossibility of coordination.

5.8 INTERNATIONAL FINANCIAL INSTITUTIONS

African governments have also failed to prioritise the implementation of economic integration due to pursuant of other strategies thrust upon them by international financial institutions (IFIs) (Mothae, 2005). For instance, the World Bank (WB) and the International Monetary Fund (IMF) have exerted much influence on economic and political policies in Africa through structural adjustment programmes (SAPs) since 1980, the same period in which Africa was also attaining its independence and attempting to pursue economic integration (Bond 1983; Aziz Wane, 2004; World Bank, 1989; World Bank, 2002). Huge debts coupled with meagre resources available to Africa and regressive economic development weakened Africa's position against IFIs (Demetriades and Law, 2006).

In the Berg report³² in 1980, structural adjustment was the thrust of the programme for Africa for the next decade. The programme was distinctly marked with massive reductions in the role of public sector and public expenditure with little to no attention being paid to regional economic integration. Structural adjustment programmes (SAPs) focused on internal reforms by individual countries (World Bank, 1989; Ghura and Hadjimichael, 1996). This indirectly put pressure on governments to compete for foreign investment and resources from IFIs (AfDB, 2012; Johnston and Trebilcock, 2013). Some governments attempted to object to the SAPs for a while but others avidly embraced them thereby creating disunity (AfDB, 2014). The IFIs could have set economic integration to be a condition under SAP, thereby creating an atmosphere conducive for recipient economies to apply similar programmes in a harmonised manner which would eventually lead to predominance of policies favouring economic integration (Edwards, 1989; Maleleka, 2007; Mezui *et al.*, 2013).

This could have been achieved by reconciling the SAPs and the LPA (Lagos Plan of Action). The former sought internal political and economic reforms and open economies while the latter focused on economic integration as a broad aspect of collective self-reliance and self-sustaining development. Both policies could have been contemporaneously implemented with the outcome that the World Bank's policies would have been applied within the regional dimension in the framework of promoting economic integration. The World Bank, however, later recommended economic co-operation and integration in Africa (Laundell-Mills, 1989). The case for integration was made strongly for transport and communication, capacity building³³ (especially and education and training for skills acquisition), food security, and energy. However, industry took a lesser position in their recommendations (Sunde *et al.*, 2009; Cheng *et al.*, 2010; Mezui *et al.*, 2013).

The World Bank (1989) noted institutional obstacles such as top-heavy structures and weak secretariats. They also highlighted the need for strong institutions to oversee economic integration programmes. The World Bank, however, did not take a strong stand in recommending an institutional or legal framework (AfDB, 2012). The recommendations of the WB were criticised and viewed as “preaching to the converted” since several African

³² World Bank (1989)

³³ The ACBF was later formed in 1990 headquartered in Harare following the recommendation by the World Bank in 1989.

integration organisations were already in existence and quite successful by then (Juma and Mangeni, 2015; Ismail, 2017).

Moreover, the World Bank did not regard the strategy by the AEC which was established by the AEC Treaty. The strategy was to adopt a systematic scheme instead of the functionalist approach of the World Bank (AfDB, 2014). The systematic approach of the AEC was to build specified REC described in Chapter 2 above and methodically deepen their level of economic integration while simultaneously combining them (as in the case of the TFTA). IFIs can use their capacity and influence to gear governments to prioritise economic integration. However, IFIs can only be blamed to the extent to which African leaders themselves have failed to take a united stand against distraction of Africa's priorities from economic integration to structural adjustment programmes (SAPs). In summary, African economic integration has not been smoothly progressing due to a cocktail of causes. To a larger extent, the responsibility falls upon African leaders who are the serious causes of this powerlessness and endemic failure. They must live up to their undertakings. A decision to sign the tripartite free trade agreement (TFTA) is a significant move towards addressing these challenges and ensuring that the regional economic integration in Africa continues to deepen.

5.9 SUMMARY AND CONCLUSION OF CHAPTER

The chapter highlighted the several challenges and obstacles which have limited Africa from realising its full potential from the regional economic arrangements. The challenges range from political differences to challenges related to the markets, that is, demand and supply either at the local or international market. Progress in regional economic integration has also emanated from disputes in terms of how the welfare gains (or losses) should be distributed. The continent is also rocked by legal inconsistencies and unclear instruments which have resulted in some member countries manipulating the existing systems and hindering progress. The chapter also discussed how international finance institutions (IFI) have designed blueprints which were not very relevant and effective to the African context. The chapter also presented some possible solutions for each identified obstacle so as to accelerate the rate of growth and welfare increases due to economic integration. Most of these solutions are encompassed in the proposed Tripartite Free Trade Agreement (TFTA).

6 CHAPTER 6: RESEARCH METHODOLOGY, MODEL BUILDING AND SPECIFICATION

6.1 INTRODUCTION

The two preceding chapters attempted to review several theoretical and empirical studies which this thesis considered valuable to the discussion at hand. The various discussions presented in Chapter 3 and Chapter 4 made valuable contributions in highlighting the rationale for regional economic integration. More specifically, the studies highlighted how economic integration influence both intra-regional trade and international trade through various channels. Economic integration itself also has effects on economic convergence and distribution of welfare among economic stakeholders within the regional economic community. How welfare is either distributed or is perceived to be distributed due to trade liberalisation and regional economic integration has a significant effect or influence on policy formulation.

This chapter outlines the methodology employed in this thesis and specifies the models which were used to analyse the welfare effects of economic integration in a regional economic community context, that is, the Tripartite Free Trade Area (TFTA). This chapter attempts to explain the welfare effects of economic integration from three ends. First, the study attempted to establish if there exists some level of macroeconomic convergence among economies of the three member states. The presence of convergence would indicate that business cycles of economies of member countries are becoming synchronised. Secondly, the study employed the augmented gravity model to establish if there exists some welfare effects of regional economic integration. Thirdly, the study also employed the WITS-SMART simulation, a procedure to analyse the potential welfare effects of the tripartite arrangement.

The study employed the three variant models so that they complement each other because of their ability to capture various significant elements of this study. For instance, as shall be noted in the discussions below, there are several factors which are not directly captured by the WITS-SMART model and yet literature has highlighted that they have significant influence on the outcomes of regional economic integration. Factors such as distance, political background, and language, among other variables, are captured in the first two models and assist in explaining the outcomes in the last model. In other words, the three models complement each other to some extent thereby ensuring robustness of the results. For the purpose of better quality output, the study deemed that one methodology may not be sufficient enough to explain such a

comprehensive topic of economic integration which is influenced by many factors and can be analysed from several angles. The aim is merely to provide richer analysis and conclusions.

The study provides a chronological description of the models, starting with a brief theoretical justification for each model followed by the model specification and then justification of the variables employed in each model specification.

6.2 METHODOLOGY ON MACROECONOMIC CONVERGENCE

This section describes the methodology that the study employed to empirically test if there exists some level of macroeconomic convergence among the TFTA countries. Since the study aimed at establishing the welfare effects of economic integration, macroeconomic convergence was identified in theoretical and empirical literature in Chapters 3 and 4 of this study, as a key indicator of a successful economic integration process (Solow, 1956; Solow, 2007; Solow, 1999; Masalila, 2000; Duede and Zhorin, 2016; Rossouw, 2006). Convergence was discussed in theoretical and empirical literature defined as a situation in which economies tend to attain a comparable level of development and wealth. In other words, the per capita incomes of developing economies tend to grow faster than those of developed countries. In principle, convergence is a wealth matter and is therefore an important component of our study since the establishment of convergence (or divergence) informs whether the welfare gains (or losses) from regional integration agreements (RIAs) are fairly distributed among member countries, more specifically the TFTA. The next section will first discuss the theoretical underpinnings of the model which will then be followed by the discussion and specification of the econometric model.

6.2.1 Theoretical underpinnings of the model

Theoretically, testing for macroeconomic convergence within an integration context is anchored on economic growth models (Solow, 1956, 2007) and therefore this study used growth analytical techniques in determining the presence of macroeconomic convergence (or divergence). Te Velde (2011) highlighted that there are three broad facets of regions which should be measured. These are narrow, deep and functional integration. Narrow integration involves measuring intra-regional tariffs which is easiest, followed by deeper integration which involves adopting common investment rules and, finally, functional co-operation which involves the establishment of development finance institutions. The distinction highlighted by Te Velde (2006; 2011) is important to this study because, as discussed earlier in Chapter 2 and

Chapter 3³⁴ above, we have noted that the three regional economic communities under consideration are applying varying tariff measures (narrow integration), and are guided by different rules on investment (deeper integration) and some, for instance, COMESA already have development finance institutions (functional co-operation) which have been set up to foster economic integration.

Other theorists have distinguished two types of convergence, namely β - and σ -convergence (Masalila, 2000; Duede and Zhorin, 2016; Phillips and Sul, 2007; Varblane and Vahter, 2005; Kumo, 2011). The former is tested to determine if poor countries are growing at a faster rate than rich countries and its coefficient is indicated by a negative correlation between initial income per capita and the growth rate in income per capita. The latter tests if the dispersion between the per capita levels was declining over time. Since the three RECs under study (COMESA, EAC and SADC) had established the macroeconomic convergence criteria as benchmarks for their member countries, the empirical modelling in this study was structured in a manner which would test whether or not convergence was achieved based on the established anchors. The following section discusses the empirical model specification for testing for macroeconomic convergence.

6.2.2 Empirical modelling specification on time series convergence

There is need to engage the properties of time series macroeconomic data in order to have formal convergence tests. Economic literature suggests two notions of convergence. The first one takes place when the time-varying difference between the two series diminishes over time. The second notion states that the two series converge when there is a shared stochastic trend. Econometric tests linked with these two notions demand high frequency data which covers periods of time which should be sufficient enough. This study adopts the methodology applied by Carmignani (2006) who suggested that econometric convergence tests can be set up as $(x_{i,t} - x_{j,t})$, where x is the macroeconomic policy variable, i is the generic country, j is the benchmark for convergence and t is the generic time. This study employed the regional average or the inflation target which was set under the ‘convergence criterion’ in the RECs as the benchmark for convergence. For each TFTA member country, four benchmarks were considered: (i) unweighted regional average inflation rate; (ii) average inflation target specified by convergence criterion among the three regional economic communities (RECs), (iii) the

³⁴ Chapter 2 discussed the profiles of the three RECs (COMESA, EAC and SADC) and Chapter 3 was the theoretical literature which highlighted on narrow and deep integration and macroeconomic convergence.

average inflation of industrial countries and (iv) the average inflation targets set in accordance with the convergence criterion.

The difference $(x_{i,t} - x_{j,t})$ is modelled as a first-order autoregressive process such that:

$$(x_{i,t} - x_{j,t}) = \phi(x_{i,t-1} - x_{j,t-1}) + \varepsilon_t \dots\dots\dots (6.1)$$

Where initial values $x_{i,0}$ and $x_{j,0}$ are given, ϕ is an estimated parameter and ε is a stochastic disturbance with finite variance and zero mean. Convergence occurs for $\phi < 1$. The convergence test therefore amounts to unit root testing in the process $(x_{i,t} - x_{j,t})$. Rejecting the null hypothesis implies some degree of convergence in the mean between the series x_i and x_j . Elliott *et al.* (1996) improved the unit root analysis from the traditional Dickey-Fuller by estimating a simple transformation of equation (6.1). Denoting the process $(x_{i,t} - x_{j,t})$ by z_t and defining the quasi-difference $d(z_t|a) = z_t - az_{t-1}$, where a is a known parameter and $t > 0$ (for $t = 0$, the quasi-difference simmers down z_0 which is the initial value). Therefore, the transformed equation can be expressed as:

$$\Delta z_t^{GLS} = \alpha z_{t-1}^{GLS} + \sum_{k=1}^n \beta_k \Delta z_{t-k}^{GLS} + v_t \dots\dots\dots (6.2)$$

The superscript Generalised Least Squares (GLS) reflects detrended data³⁵, Δ represents first differencing and $\alpha = \phi - 1$. This implies that stationarity demands $\alpha < 0$. A significantly negative α signifies convergence. The test based on (6.2) is referred to as the GLS detrended unit root test and was applied in this study on two selected variables which are yearly inflation and money growth from 2000 to 2015. The selected lags were based on the Schwarz Information Criterion (SIC). The study will include full sample estimates (2000-2015) and also four-year sub-periods to give a general trend

The study specified t-statistic of the panel based unit root test consisting of all members of the TFTA. Following Perasan and Tosetti (2011) which allows for individual heterogeneity, the study specifies the null hypothesis as $H_0: \phi_i = 1, \forall i$ against $H_1: \phi_i < 1, 1 = 1, 2, \dots M_1, \phi_i = 1, i = M_1 + 1, M_2 + 2, \dots, P$ (given that P is the total countries in the panel). This formulation of H_1 is more general than $\phi_i = \phi < 1$ since it permits individual unit root processes in panels which otherwise would have assumed a common unit root process. A rejection of the null

³⁵Detrending is done in two steps. First, the quasi-differenced data are regressed on either a constant or a constant and a trend using Ordinary Least Squares (OLS). Then, the detrended z_t is computed as the original z_t minus the fitted values from the first step OLS regression evaluated at a specific value of a recommended by Elliott (1996).

hypothesis would imply that the panel-based tests indicate that there is convergence of macroeconomic variables for either for the sub-period or the full sample period.

Carmignani (2006) highlighted that the second notion convergence involves testing whether or not there exists a co-integrating relationship between variables. Variables should share a common stochastic trend for there to be convergence and thus there should be $p - 1$ co-integrating equations (where p is the number of series, or countries). Findings of less than $p - 1$ implies that some countries are converging in the long run and others are not. This is also referred to as partial convergence (Hafer and Khan, 1994). The co-integration test follows a Johanssen-Fisher (1999) and is performed on yearly inflation, domestic credit, money growth and debt service over the period 2000-2015. Similarly, lag selection was determined by the SIC. The tests were conducted under three different assumptions as follows: (i) level data have no deterministic trends and the co-integrating equations have intercepts, (ii) level data have linear trends but the co-integrating equations have only intercepts, (iii) level data and the co-integrating equations have linear trends (Carmignani 2006).

6.3 GRAVITY MODEL METHODOLOGY

The following section gives a detailed description of the gravity model and its relevance to some of the objectives of this study, describes the variables included in the model and how they are interpreted in the regression results in the next chapter.

6.3.1 Explanation of the model and variable interpretation

An extensive number of scholars have employed the gravity model and econometrically tested the variables which influence the volume of trade (Karambakuwa *et al.*, 2015; Jayasinghe and Sarker, 2007; Warin *et al.*, 2009; Shujiro and Misa, 2010; Rojid, 2006). Several trade researchers generally concur with the basic gravity model specification in equation (3.2) in Chapter 3 above which states that trade is the dependent variable while the core explanatory variables are gross domestic product (GDP) and distance. However, there was contention on other variables to be included in the augmented gravity model. Ghosh and Yamarik (2004) responded to the contention by providing a list of 48 dependent variables employed in literature when estimating the gravity model of trade. However, the authors noted that the combination of variables varied depending on the subject being examined. Among these variables, a regional trade agreement (RTA) variable usually presented as a dummy was frequently used as a proxy for economic integration. Jayasinghe and Sarker (2007) argued that RTA variables enable

analysts to isolate the two distinct effects, namely trade creation and trade diversion. Therefore, models which included RTA dummies have been used in several studies to estimate the possible amount of trade creation and diversion emanating from RTAs. Using the above argument on RTA dummies, this study extracts from the specifications by Frankel, Stein and Wei (1995), Jayasinghe and Sarker (2007) and Makochehanwa (2012b) and estimated the following gravity model:

$$\ln(trade_{ijat}) = A + \beta_1 \ln GDP_{it} + \beta_2 \ln GDP_{jt} + \beta_3 \ln(distance_{ij}) + \beta_4 \ln P_{it} + \beta_5 \ln P_{jt} + \beta_6 COMESA_{ij} + \beta_7 COMESA0_{ij} + \beta_8 EAC_{ij} + \beta_9 EAC0_{ij} + \beta_{10} SADC_{ij} + \beta_{11} SADC0_{ij} + \beta_{12} lan_{ij} + \beta_{13} border_{ij} + \varepsilon_{ij} \dots \dots \dots (6.3 \text{ adopted from 4.2.1}),$$

and $i = 1, 2, 3; j = 1, \dots, n$.

Where: $COMESA_{ij} = 1$ if j is a member of COMESA, 0 otherwise

$COMESA0_{ij} = 1$ if i is a net importer from a non-member j , 0 otherwise

$EAC_{ij} = 1$ if j is a member of EAC, 0 otherwise

$EAC0_{ij} = 1$ if i is a net importer from a non-member j , 0 otherwise

$SADC_{ij} = 1$ if j is a member of SADC, 0 otherwise

$SADC0_{ij} = 1$ if i is a net importer from a non-member j , 0 otherwise

In equation (6.3), the variable $trade_{ijat}$ is in current USD value of aggregate bilateral trade between two countries, i and j , in a given time period or year. GDP is in nominal terms and P_{it} and P_{jt} are populations for the two respective countries. Language is represented by lan_{ij} while $border_{ij}$ indicates if there is a shared border between two trading countries, i and j . The variable $distance_{ij}$ does not necessarily measure geo-distance which considers only the main cities of the countries in kilometres as implied in the general equation (3.2) in Chapter 3 but the extended gravity equation (4.2.1) in this study employs weighed distance. Weighed distance was employed because some capital cities do not have sufficient population to represent the ‘economic centre’ of the country. Therefore, weighted values assess the geographic distribution of the population to measure distance using city-level data. The notion was to calculate the distance between economic centres based on bilateral distances between the capital cities while at the same time the inner cities are being weighed by the share of the overall population of that city to the country.

Using inference from earlier investigations by Frankel and Wei (1995), Ghosh and Yamarik (2004), Jayasinghe and Sarker (2007) and Makochehanwa (2012b), this study defined two

dummy variables: (i) regional bloc and (ii) a trade openness dummy. For instance, $COMESA_{ij}$ in equation (6.3) represents the presence of a RTA between two countries, i and j . This was interpreted in a manner that an estimated coefficient of the regional bloc which is positive and statistically significant implies that intra-regional trade was stimulated by the implementation of the COMESA FTA. The estimated coefficient would indicate the additional amount of trade which would have taken place beyond what the characteristics of their economic and geographic idiosyncracies would allow, that is, trade among COMESA countries as a result of the implementation of a free trade agreement (FTA) within the region. Aitken (1973) and Endoh (1999) pointed out that the coefficient can be interpreted to reflect trade creation effects of an RTA, the implementation of the COMESA FTA in this example. Similar interpretations were applied for EAC_{ij} and $SADC_{ij}$.

On the other hand, the $SADC0_{ij}$ dummy encapsulates the degree of openness of imports to SADC member countries from the rest of the world. Countries which are net importers from the rest of the world take a dummy value of one (that is, the importer is a SADC member and the exporter is not in SADC) and zero otherwise. The dummy variable will reflect any trade diversion that would have occurred in the import structures of SADC member countries. The estimated coefficient of the dummy will show the extent to which SADC member states either under- or over-imported from the rest of the world with respect to projections of the standard gravity model. Therefore, a negative and statistically significant coefficient will indicate the degree to which SADC countries are under-importing from the rest of the world (RoW). At a more general level, this implies that a regional trade agreement (RTA) member country has decreased its net imports from the RoW in relation to its net exports to the RoW (Eichengreen and Irwin, 1998; and Frankel, 1997). Therefore, by focusing on the effects of the two dummies, it is possible to distinguish situations where SADC is trade creating only from the case where the increase in intra-regional trade are derived at the cost of exports by non-members to the bloc. The former causes increases in intra-regional trade to levels above average without adjustments in openness to trade with non-members while the latter effect is identified as trade diversion. Similar interpretations were applied to the coefficients of $COMESA_{ij}$ and EAC_{ij} .

The parameter estimates on GDP_i, GDP_j, P_i, P_j , and *distance* variable can be interpreted as elasticities given the double-logarithmic specification of the estimated equation. For instance, β_2 in equation (4.2.1) shows the percentage change in $trade_{ijat}$ which would have been induced by a 1% change in GDP_j , ceteris paribus. However, the parameters β_6 and β_7 cannot

be expressed in logarithmic form. As such, Halvorsen and Palmquist (1980) proposed a method of calculating the percentage effect of dummy variables and was expounded by Giles (2011). If, for instance, the estimated coefficient β_6 change if the value of a given total product trade at disaggregated level (that is, $trade_{ijat}$) can be calculated for change of dummy variable from zero to one using the following formula: $(trade_{ijat(1)} - trade_{ijat(0)})/trade_{ijat(0)} = e^{\beta_6} - 1$. For example, a coefficient estimate of the SADC dummy variable in equation (6.3), β_6 indicates that two SADC members traded an extra $[\{exp^{\beta_6-1}\} \times 100]$ relative to the amount they traded with a non-SADC country. This implies that the mean trade between two SADC countries is higher than their mean trade with the rest of the world by $[\{exp^{\beta_6-1}\} \times 100]$. Makochehanwa (2012b) noted that the benchmark, however, is when countries trade with non-member countries. Similarly, the $SADC0$ parameter, β_7 is negative then total trade for a given product at disaggregated level of a SADC member (where the member state of SADC is a net importer) with a non-SADC trading partner is $[\{exp^{\beta_7-1}\} \times 100]$ less than its net exports to non-members.

6.4 THE WITS-SMART MODEL

6.4.1 Theoretical underpinnings of the SMART model

Welfare effects of trade agreements can be empirically investigated using three main methodologies, either the Global Trade Analysis Project (GTAP) which is a computable general equilibrium (CGE) model (Mold and Mukwaya, 2015); or econometric studies (Ghosh and Yamarik, 2004); or the World Integrated Trade Solution-Software for Market Analysis and Restrictions on Trade (WITS-SMART) model (Makochehanwa, 2012). The first model is a general equilibrium model whilst the last two are partial equilibrium model. This study employed the WITS-SMART model in establishing the welfare effects of the Tripartite Free Trade Agreement (TFTA). The methodology was be anchored on the theoretical literature postulated by Viner (1950) discussed earlier in Chapter 3, Section 3.3.5. Viner's (1950) theoretical exposition provided a sound foundation upon which the effects of trade agreements can be studied. Although Viner's theory was briefly discussed above, it is deemed worthy to provide a further description as a justification of the methodology in this study and how it answers our main objective of welfare distribution among countries and economic sectors. Viner's theory remains relevant because of its ability to decompose trade effects into three main expanses which are trade creation, trade diversion and revenue effects.

6.4.1.1 Trade creation

According to Viner (1950), trade creation normally occurs when either a tariff reduction or removal alters the prices of imported products, in a manner that domestic production which is less efficient is substituted by imports from FTA members whose products are now inexpensive because tariffs were removed. In our context, trade creation will occur when the TFTA creates trade which otherwise would not have existed had the TFTA not been formed. The trade agreement will lead to trade creation by reducing the import prices from TFTA members. The adjustments in merchandise prices will shift the level of domestic demand for imports. This results in a positive consumption effect which benefits consumers and is welfare improving according to Viner's (1950) theory. This is because consumers of imports whose prices fell will be deriving utility at a lower cost. The elimination of tariffs allows more consumers to afford better quality goods at a cheaper price thereby moving at a higher indifference curve which is well-fare improving.

Empirically, calculation of trade creation using the WITS-SMART model is influenced by the import elasticity. There is a positive correlation between trade creation and import elasticity implying a bigger import elasticity will more likely lead to more trade creation. This makes economic sense because higher import elasticity implies imports are more responsive to tariff changes leading to more trade being created.

6.4.1.2 Trade diversion

Viner (1950) described trade diversion as the import substitution effect subsequent to the formation of a FTA from economies that are not participating in the FTA but are more efficient producers of commodities from less efficient countries within the FTA for the simple reason that they are receiving preferential treatment under the FTA. Thus, trade diversion lowers economic welfare because tariff elimination leads to a switch in the source of imports from low cost sources (in this instance, a non-TFTA member) to an inefficient economy among any of the TFTA member countries. The goods only become cheaper because of the preferential treatment which the member countries get under the preferential agreement but the switch does not reflect changes in efficiency.

Trade creation or trade diversion implies that TFTA member countries will be turned into winners and losers due to the existence of both positive and negative effects from a tariff change. The net effect reflects whether there was an overall welfare gain or loss. Trade diversion is empirically influenced by the Armington elasticity among other factors. The

Armington elasticity is also referred to as the substitution elasticity. The higher the substitution elasticity, the more trade diversion will be felt by the respective country or sector.

6.4.1.3 Revenue effect

Although Viner's theoretical model does not explicitly explain the revenue effects of a tariff change, these can be calculated using the WITS-SMART model. The revenue effect captures the changes in government or customs revenue as a result of either reduction or a complete removal of import duties. Change in government revenue is negative because removal of tariff barriers causes losses in customs revenue which is a loss in revenue that can be channelled towards government budgets. The magnitude of the loss will be largely dependent on the extent of trade among the TFTA member states. Revenue loss will be minimal for those countries which were already in some free trade agreements such the South African Customs Union (SACU) while it will be much more for those countries whose import arrangements were largely restrictive. Makochekanwa (2012) highlighted that the major concern on revenue loss as a result of a loss of customs duties will be that it affects the ability of the government to deliver important public services like health and education. Therefore, the developmental effects of such revenue losses can be huge in the majority of TFTA countries which may struggle to find replacement funds to compensate for such losses given that the majority of TFTA members are developing nations.

6.4.2 Empirical modelling

6.4.2.1 Justification of the model

The study employed a partial equilibrium approach in estimating the welfare effects of the TFTA on member countries. Literature showed that several partial equilibrium models such as econometric models can be employed to attempt and quantify the effects of regional trade agreements, for instance, Ghosh and Yamarik (2004). However, as already indicated above, this study employed the WITS-SMART model to quantify the static effects of TFTAs. The WITS-SMART software was developed by and is extensively used by the World Bank in conducting trade simulation studies on RTAs.

The SMART model is able to provide an integrated analytical tool to simulate tariff reductions. The methodology has been found to be effective because of its ability to use data from several reputable sources such as the Common Format for Transient Data Exchange (COMTRADE); Trade Analysis and Information Systems (TRAINS) supported by the United Nations Conference on Trade and Development (UNCTAD); Inter-American Development Bank

(IDB) and CTS. Since calculations can be done using standardised trade data from the above mentioned reputable databases, it implies that comparisons can be effectively made from various FTA and/or scenarios where varying tariff schedules and elasticities were employed. In other words, there is consistency in terms of both data inputs and results allowing for effective analysis of simulation results.

Standardised trade data is presented at 2-digit, 4-digit and 6-digit levels indicating the level of disaggregation from the lowest to the highest. The WITS-SMART model is also able to perform trade simulations at all data levels, that is, at the 2-digit, 4-digit and 6-digit level giving trade analysts relatively accurate indications of the estimated outcomes of the tariff phase outs at the uppermost probable measure of disaggregation. In this study, however, 2-digit data which is more aggregated because our interest is in analysing the combined effect at country level and sector level and also due to the multiple number of countries included in this study. Furthermore, the data requirements of a WITS-SMART model are relatively small compared to alternative forms of impact evaluation such as computable general equilibrium analysis. The methodology also has a simple and yet effective practical application when constructing and evaluating alternative phase out scenarios. The model is also able to provide a snapshot of the anticipated impact reducing tariffs and disregards any which adjustment processes which may accompany the change. In other words, it only reflects the static effects of the TFTA but not the dynamic effects. Lastly, the model assumes infinite elasticity which corresponds exactly with the reality amongst several developing countries since no single small country can influence world supply.

6.4.2.2 Weaknesses of the WITS-SMART model

The main shortcoming of the SMART model is that it exclusively focuses on the demand-side. Secondly, the model is also static and analyses in a partial equilibrium framework which functions under strict *ceteris paribus* conditions. Thirdly, SMART tariffs can be employed *ad-valorem* tariffs; however, non-tariff barriers can only be accommodated when their *ad-valorem* equivalents are estimated.

6.4.2.3 Assumptions of the WITS-SMART model

The study assumed export supply elasticity to be infinite across all TFTA member countries. This assumption is rational because all member countries were deemed small as far as world trade is concerned implying that changes in supply in one country cannot significantly

influence and change world supply. In addition, Armington assumption³⁶ on substitutability between suppliers is also assumed.

The study also assumed an import substitution elasticity value of 1.5. The study, however, acknowledges that different authors have assumed various import substitution elasticity values depending on time, country, industry and context. Hoekman et al. (2001), for example, assumed lesser values whiles Francois and Reinhardt (1997) and Francois and Hall (2003) assumed a value of 5. This thesis deemed an import substitution elasticity value of 1.5 rational because it suggests that similar commodities from different origins are imperfect substitutes. For instance, in the analysis of this study coffee from Tanzania will still be viewed as different from coffee from Kenya even though they are close substitutes.

Given the above empirical assumptions to be adopted in this study, the study also made the following empirical estimations in order to analyse the welfare effects of the TFTA.

6.4.2.4 Trade creation

The trade creation equation is estimated as follows:

$$TC_{ijk} = M_{ijk} * \eta * \frac{\Delta_{ijk}}{(1+t_{ijk})^{*(1+\eta/\beta)}} \dots\dots\dots (6.4)$$

TC_{ijk} = Trade creation on commodity i imported from country j to country k

M_{ijk} = Imports of commodity i to country j from exporting country k

t_{ijk} = Tariff

η = Import elasticity of demand in the importing country

β = export supply elasticity

6.4.2.5 Trade diversion

The equation below represents the effect of trade diversion; this is the relative change in tariff price paid for commodities originating from TFTA member countries in relation to other prices from the RoW. Diversion depends on the elasticity of substitution and the equation is estimated as follows:

$$TD_{ijk} = \frac{M_{TFTA} * M_{RoW} \left[\left(\frac{1+t_t}{1+t_0} \right) - 1 \right] * \lambda}{M_{TFTA} + M_{RoW} + M_{RoW} \left[\left(\frac{1+t_t}{1+t_0} \right) - 1 \right] * \lambda} \dots\dots\dots (6.5)$$

³⁶ Armington elasticities are based on product differentiation from their places of origin. It assumes imperfect substitution between demand for imports and domestic supply (Armington, 1969).

TD_{ijk} = Trade diversion on commodity i imported from country k into country j

M_{TFTA} = Imports from TFTA countries

M_{RoW} = Imports from rest of the world

t_t = Tariff (t_0 and t_t refer to pre and post integration tariffs)

λ = substitution elasticity

6.4.2.6 Net trade effect

Net trade effect (TE) is the sum of trade creation and diversion expressed as:

$$TE = TC + TD \dots\dots\dots (6.6)$$

6.4.2.7 Net revenue effect

Net revenue effect (RE) is the aggregate differential relative to prices of imports and import volumes computed after the change in tariffs

$$\Delta R_{ikj}/R_{ikj} = [\Delta t_{ijk}/(1 + t_{ijk})] * \eta * [(1 + \beta)/(\beta - \eta)] \dots\dots\dots (6.7)$$

ΔR_{ikj} = Revenue Effect of tariff change

η = Import elasticity of demand in the importing country

t_{ijk} = Tariff

β = Export supply elasticity

6.4.2.8 Welfare effect

Equation 6.5 below estimates the welfare effects on each of the TFTA member countries. Welfare effects are basically the summation of the producer and consumers' surplus.

$$W_{ikj} = 0.5(\Delta t_{ijk} * \Delta M_{ijk}) \dots\dots\dots (6.5)$$

6.4.2.9 Data

The data employed in this thesis was extracted from the Harmonised Commodity Description and Coding System (HS). The HS system allows traded goods to be classified on a common basis by participating countries for customs and related purposes. Globally, the HS is a six-digit code system which consists of around 5300 product descriptions, organised into 99 chapters and clustered into 21 sections. The six digits can be disintegrated into three parts: HS-2 identifies the chapter of the goods classification, HS-4 identifies groupings within that chapter, and the more specific HS-6. The HS system was established in 1988 and is adopted by most countries worldwide and the latest revisions were done in 2007. The study employed

data from the HS system to ensure consistency in terms of both data input and results which will allow effective comparisons to be made across both countries and sectors.

In conducting the trade simulations, the study used the seven standard product classifications which are already adopted under the HS system. The seven product classifications include the nature of the products according to use and also the three major industries involved in merchandise trade. The seven product classifications are raw materials, intermediate goods, consumer goods, capital goods, agricultural goods, industrial goods and petroleum products. Classifying trade data under these sectors will ensure data consistency in terms of collection, presentation, comparison and analysis. For the purpose of this study, the seven product classifications will be regarded as proxies for the economic sectors in each TFTA member country. In other words, this study distinguishes product classifications and economic sectors according to the purpose and use for which the product is being imported for. The following subsections give a brief description of each of the product classifications

a) Raw materials

A raw material is the basic substance from which a commodity is produced. These are substances employed in primary production or manufacturing of finished goods, energy or intermediate resources used as feedstock on forthcoming products. For instance, wheat is a raw material for the flour mill. Broadly speaking, a raw material is something with a potential for improvement, development or elaboration (Makoche Kanwa, 2012; Karambakuwa *et al.*, 2012; Mold and Mukwaya, 2015). Raw materials are crude or unprocessed materials converted by manufacturing, processing, or a combination of both into a new and valuable commodity. Raw materials are frequently referred to as ‘commodities’ on trade exchanges around the world and are traded in the factor market. Raw materials are also classified using ‘fixed or variable costs’. Fixed costs do not vary based on inputs or production levels whereas variable costs fluctuate based on the level of production. In this study, raw materials refer to the latter which vary with production levels. According to the UNCTAD database, there is an estimated 584 product classifications under 6-digit level of the HS coding system.

b) Intermediate goods

They are also referred to as producer goods or semi-finished products. They are items which are the final products of a process and they are utilised as inputs when producing other goods. For example, sugar is consumed directly as well as in the manufacture of food products. During a production process, intermediate commodities will either become part of the final product or

are completely transformed beyond recognition. In GDP measurements, intermediate goods are generally not measured to avoid double counting of added value (McGrattan and Schmitz, 1999; Diebold, 2003). However, in recent times, the phrase ‘intermediate goods’ can be misleading because in some developed economies, about 50% of their aggregate value of intermediate inputs include services (Kaur, 2016). According to UNCTAD there are approximately 2049 product classifications under the HS coding system. This study considered the trade of intermediate goods because they also contribute to total trade volume irrespective of whether they will be further processed or used as final products. Besides, the majority of the TFTA countries are still developing countries implying that there is a high possibility that much of the traded goods fall within this category.

c) Consumer goods

Consumer goods are alternatively called final goods are are purchased for consumption by the average consumer or are the resultant of manufacturing or production. Consumer goods serve the purpose of satisfying human wants or adding to people’s total utility (Stock and Watson, 1999). They are not used in any further production processes. The three main types are durable goods, nondurable goods and services. Durables such as bicycles and refrigerators have a longer life span and are consumed over time usually more than three years. Non-durables are have a shorter life span (Makochehanwa, 2012b). Examples of consumer goods include food and consumer services including haircuts and repairs. The UNCTAD has 1533 product classifications under the 6-digit HS coding system.

d) Capital goods

These are basically durable goods that are used in producing other consumer or intermediate goods. Usually they are tangible assets such as equipment, machinery, buildings and vehicles used to produce goods or services. Capital goods, labour and land are referred to as producer goods and the primary factors of production (Armington, 1969; Cattaneo, 2009; Fink *et al.*, 2014). Goods are basically classified based on how they are used. A capital good is deployed to assist increase production in the future. An analysis of trade in capital goods is significant in this study because they significantly contribute to improving the productive capacity of firms and economies. In other words, capital goods improve efficiency levels (Barro and Sala-I-Martin, 1997). The UNCTAD has 906 products using the 6-digit product classification (UNCTAD, 2010).

7 CHAPTER 7: EMPIRICAL ESTIMATION AND ANALYSIS OF RESULTS

This chapter presents and discusses the empirical results for this study. The results are divided into three sections. The first section (7.1) presents the convergence results, followed by the gravity model results Section 7.2 and finally the results of the SMART simulation model in 7.3.

7.1 FINDINGS AND DISCUSSION OF CONVERGENCE RESULTS

7.1.1 The convergence of macroeconomic policy variables

Macroeconomic convergence is a key element of regional economic integration because it assists in analysing whether or not countries are moving towards a similar level of development and wealth. As such, the three regional economic communities (RECs) under study established a set of macroeconomic convergence criteria through fiscal and monetary policy harmonisation in order to foster convergence. The study analyses the progress made towards the attainment of the macroeconomic convergence criteria from 2000 to 2015. The year 2000 was chosen as the starting point because that was when the East African Community (EAC) was established. The other two, SADC and COMESA were established earlier.

7.1.1.1 Cross-country convergence of macroeconomic indicators

The study will start the discussion of macroeconomic results by analysing the summary statistics of key indicators selected under the macroeconomic convergence criteria by COMESA, EAC and SADC. Macroeconomic data was averaged for the four sub-periods. The summary statistics has two indicators used to signal convergence. The first indicator of convergence is signalled by a decrease in standard deviation over time (sub-periods) and the second indicator is the decline in the percentage of countries falling in the tails (kurtosis) of the distribution. Standard deviation measures the average dispersion of each variable across countries in a given period. The percentage of countries which fall outside the range of $\pm 50\%$ of the weighted mean are indicated in the kurtosis (tail) column. For those variables where a proportion of GDP was employed, shares of GDP were employed as weights in computing weighted regional averages. The summary statistics for inflation are presented in Table 7.1 presented below.

Table 7.1: Summary statistics for inflation (annual % of change of CPI)

Period	Mean	Median	Maximum	Minimum	Standard deviation	Skewness	Kurtosis
2000-2003	28.26	6.36	513.91	-9.79	81.68	4.40	22.57
2004-2007	13.88	7.90	302.12	-2.20	39.65	6.77	48.01
2008-2011	9.66	8.83	44.39	-8.24	7.71	1.75	8.08
2012-2015	7.53	5.79	37.39	-8.12	7.19	2.08	8.36
2000-2015*	14.83	7.09	513.91	-9.79	46.25	7.72	67.77
2000-2015 [#]	161.27	7.11	35411.03	-9.79	2106.33	14.99	231.89

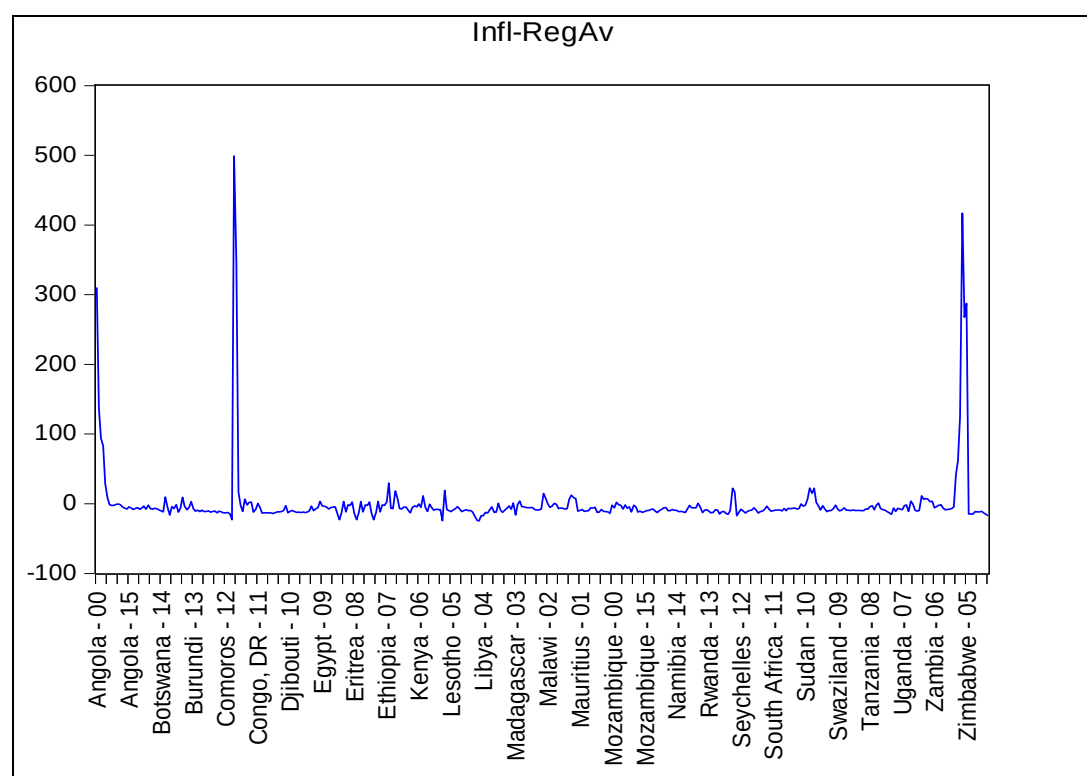
Source: Author

**inflation data for Zimbabwe was excluded for the period 2006-2008*

#Inflation data for Zimbabwe was included for the period 2006-2008

The standard deviation of inflation has been general declining over time. The value was 81.68 for the first four-year period (2000-2003) and then it declined to 39.65 in the second period (2004-2007). There was a further decline of the standard deviation to 7.71 and 7.19 in the third and fourth periods, respectively. Using the standard deviation statistics, it can be observed that there was convergence of the inflation variable among the 26 member countries of the TFTA. This indicates that most TFTA countries managed to tame inflation to manageable figures below 10% which indicates convergence. Although the set target of 5% was not achieved by some communities as reflected in the mean values (while the target of 10% for others like COMESA was achieved), there were significant efforts by African countries to commit to the convergence criteria resulting in most countries significantly reducing their inflation levels and moving towards single digit inflation, which is convergence. However, inflation data in the four sub-periods in the analysis excludes two extreme countries of Democratic Republic of Congo and Zimbabwe which experienced hyperinflation at some stage during the period of study. The inflation distortion by the two countries is reflected in Figure 7.1 below. This justifies why inflation for this period was excluded to avoid presenting a distorted view of the economic region.

Figure 7.1: Inflation figures for the TFTA countries



Source: Author's computations from EViews

The discussion of statistical results in Table 7.1 above was based on the standard deviation values. Similar analysis is applicable when using kurtosis values and the conclusions drawn are similar to those discussed above when using the standard deviation. Therefore, this study will continue to discuss the statistical results of the subsequent variables using standard deviation values to economise on time and space. The following table presents the statistical results for claims on central government.

Table 7.2: Summary statistics for claims on central government (% of GDP)

Period	Mean	Median	Maximum	Minimum	Standard deviation	Skewness	Kurtosis
2000-2003	12.72	4.52	114.99	-88.53	31.91	1.03	6.80
2004-2007	7.18	2.38	97.60	-74.33	28.64	0.79	6.07
2008-2011	2.23	2.12	110.23	-162.59	32.08	-0.86	12.25
2012-2015	4.30	3.55	60.64	-25.48	13.77	1.48	8.22
2000-2015	6.77	2.91	114.99	-162.59	28.16	0.40	10.44

Source: Author

The first three sub-periods for the standard deviation of claims on central government does not reflect any significant changes. The values are ranging between 28.64 and 32.08 for the period 2000-2011. This signals that there is neither convergence nor divergence during this period. There was a significant decline to 13.77 in the period 2012-2015 which shows some level of convergence during this period. The decline could be attributed to some policy changes among most African countries during this era. However, there is need for a much-detailed analysis in a separate study to investigate the possible causes of this sharp decline in the standard deviation values. The following table presents the summary statistics for debt service as a percentage of exports.

Table 7.3: Summary statistics for debt service (% of exports)

Period	Mean	Median	Maximum	Minimum	Standard deviation	Skewness	Kurtosis
2000-2003	11.48	7.91	62.12	1.21	11.18	2.60	10.42
2004-2007	8.38	5.79	134.71	0.72	15.05	7.07	58.71
2008-2011	3.70	2.49	16.48	0.40	3.28	2.00	7.20
2012-2015	4.72	3.19	17.18	0.43	3.93	1.20	3.66
2000-2015	6.94	4.76	134.71	0.40	10.05	7.30	81.50

Source: Author

The study observes that debt service signals convergence over the period. Although there was a slight upward shock in debt service during the period 2004-2007, it later trended downward indicating an overall tendency to converge for the variable. The International Monetary Fund (IMF) postulated the notion that the proclivity for debt service ratios to converge towards more sustainable levels was likely facilitated by the participation of several countries in initiatives such as the Highly Indebted Poor Countries (HIPC) apart from being part of regional economic integration. TFTA countries which have participated in the HIPC include Angola, Burundi, DRC, Ethiopia, Kenya, Madagascar, Malawi, Rwanda, Sudan, Uganda and Zambia. The IMF estimated that the average benefit for a country can be quantified as a reduction of debt service by 50% (Carmignani 2006). However, Thirwall (2012) cautioned that the picture presented by the debt service might be over-optimistic since data on debt service only included paid debt. It is likely that unpaid debt is large, for some countries at least. Table 7.4 presents the summary statistics for domestic credit as a percentage of GDP.

Table 7.4: Summary statistics for domestic credit (% of GDP)

Period	Mean	Median	Maximum	Minimum	Standard deviation	Skewness	Kurtosis
2000-2003	23.37	14.07	138.79	0.49	26.93	2.45	9.34
2004-2007	23.71	13.38	160.12	1.09	29.56	3.04	12.79
2008-2011	26.67	17.71	148.98	3.91	29.28	2.95	11.52
2012-2015	30.97	21.10	151.03	5.13	32.26	2.66	9.38
2000-2015	25.99	17.21	160.13	0.49	29.49	2.79	10.96

Source: Author

Similar to the claims on central government discussed earlier, the results for domestic credit indicates neither convergence nor divergence over the whole fifteen-year period. This indicates that African countries are on average not doing much in their economic policies to address the level of domestic credit. Table 7.5 presents the results for money growth in terms of annual money growth.

Table 7.5: Summary statistics for money growth (annual % change)

Period	Mean	Median	Maximum	Minimum	Standard deviation	Skewness	Kurtosis
2000-2003	1080.31	15.29	108613.3	-99.88	10699.52	10.00	101.01
2004-2007	19.64	17.41	81.85	-54.69	15.95	0.07	8.71
2008-2011	19.39	16.46	66.16	-4.47	14.27	1.43	5.22

2012-2015	16.75	13.42	39.14	-2.29	7.51	0.75	4.30
2000-2015	293.35	15.59	108613.3	-99.88	5450.22	19.85	394.98

Source: Author

The figures for money growth indicate that there is convergence of the macroeconomic indicator over time. There was a sharp decrease of the standard deviation between the first and second sub-period from 10699 to 15.95. This was followed by a slight decrease during the period 2008 to 2011 to 14.27 and an even further decrease in the last sub-period to 7.51. Although the figures in the first period appear to have been distorted and inflated, the statistics in Table 7.5 clearly indicate that there is convergence of the money growth variable over the full period 2000-2015. The table below indicates the statistical results for tax revenue as a percentage of GDP.

Table 7.6: Summary statistics for tax revenue (% of GDP)

Period	Mean	Median	Maximum	Minimum	Standard deviation	Skewness	Kurtosis
2000-2003	16.87	16.87	32.96	0.78	8.04	-0.08	2.26
2004-2007	20.34	21.67	49.35	5.28	10.18	0.76	3.55
2008-2011	20.14	17.03	58.41	6.58	10.06	1.45	6.05
2012-2015	21.45	18.49	48.92	8.99	9.67	0.98	3.79
2000-2015	19.82	17.25	58.41	0.78	9.68	0.99	4.66

Source: Author

There was insufficient data for tax revenue to conduct the analysis for eleven of the twenty-six countries under study. The following countries were not included in the data analysis for tax revenue due to missing data: Sudan, Rwanda, Mozambique, Libya, Kenya, Eritrea, Djibouti, Comoros, Tanzania, Uganda, and Zimbabwe. Therefore, the results presented for tax revenue above reflect only 58% of the countries under study. Using the available data, the standard deviation figures indicate that there was neither convergence nor diversion over time. The values are oscillating between 8.04 and 10.18. The tables and discussions presented above were anchored on summary statistics of the macroeconomic variables that are adopted under the macroeconomic convergence criteria by the RECs under study. The following section, 7.12, provides a relatively more rigorous econometric analysis in testing for convergence among the macroeconomic variables among the tripartite countries.

7.1.1.2 Evidence on convergence of monetary variables

There is need to engage the time series properties of macroeconomic data in order to have formal convergence tests. Economic literature suggests two notions of convergence. The first one takes place when the time-varying difference between the two series dies over time. The second notion holds that the two series converge when they share a common stochastic trend. Econometric tests linked with these two notions demand high frequency data covering sufficiently long periods. For this reason, this study adopts two monetary indicators namely inflation and broad money growth for reasons of availability of quality data and for summary purposes. This study adopts the methodology applied by Carmignani (2006) as discussed in the methodology section in the previous chapter. In summary, stationarity requires $\alpha < 0$. The test is based on the GLS detrended unit root test and is applied in this study to yearly inflation and money growth over the period 2000-2015. A negative and statistically significant α signifies convergence. The number of lags were chosen based on the Schwarz Information Criterion (SIC). For each TFTA member country, four benchmarks were considered:

- unweighted regional average inflation rate;
- (average inflation target specified by convergence criterion among the three regional economic communities (RECs),
- the average inflation of industrial countries and
- the average inflation targets set in accordance with the convergence criterion.

Table 7.7 presents full sample estimates (2000-2015) and also estimates for the two sub-periods (2000-2008 and 2009-2015). The reason for this split is that 2008-2009 period marks a structural break for many economies due to the Global Financial Crisis. Thus, it will be interesting to see the extent to which convergence varies across the two sub-periods. The table below reports the estimated α using the unweighted TFTA average inflation rate as the benchmark. The results obtained using other benchmarks are quantitatively similar to those presented in Table 7.7.

Table 7.7: Convergence results for inflation

	2000-2015	2000-2008	2009-2015
Angola	-6.8052***	-7.1031***	-1.0513
Botswana	-2.2366	-3.0353*	0.2524
Burundi	-4.3434***	-2.8038	-1.7269
Comoros	2.3787	-3.0393*	1.2182
Congo, DR	-5.6405***	-3.5140**	-1.254

Djibouti	-3.2225**	2.2493	-1.8525
Egypt	-2.2675	-0.3432	-1.7684
Eritrea	-2.8348*	-2.1462	-2.4574
Ethiopia	-3.0150*	-0.2294	-1.7204
Kenya	-3.3772**	-0.7959	-2.7672
Lesotho	-5.3919***	-3.8423**	-3.7092**
Libya	-2.0822	-0.0588	-2.4389
Madagascar	-4.3462***	-3.6594**	-1.2018
Malawi	-2.4649	-2.8775*	-0.9869
Mauritius	-2.0959	-0.7690	-1.6170
Mozambique	-2.4493	-3.1422*	-1.6995
Namibia	-3.2499**	-2.3053	-3.4403
Rwanda	-1.9043	-0.6290	-3.7446**
Seychelles	-3.2119**	-0.7694	-13.919***
South Africa	-3.4878**	-1.5132	-4.0639**
Sudan	-1.4839	-1.1530	-1.6957
Swaziland	-2.5014	-2.2461	-2.4914
Tanzania	-2.1906	1.2880	-1.6413
Uganda	-2.9201*	-1.6632	-2.0036
Zambia	-2.0096	-1.3301	-3.2817
Zimbabwe†	-1.6555	-1.3971	1.0255
Group (t-stat)	-7.11652***	-1.04593	-2.54396***

Source: Author's computations

*, **, *** denote significance at 10%, 5% and 1% level of significance, respectively.

† No data for money growth for Zimbabwe from 2009 onwards.

The missing data of money growth for Zimbabwe is because the nation adopted a multicurrency regime since 2009 where it started using five currencies (USD, Rand, Rupee, Yuan and Yen) for official transactions. Taking the full period (2000-2015) into account, the results in Table 7.7 indicate that there was convergence for inflation for thirteen countries. Only three were weakly significant at 10% level, five countries were significant at 5% level and the remaining five were highly significant at 1%. Considering the two sub-periods, the first sub-period (2000-2008) had eight countries that were indicating convergence for the inflation variable and only four countries in the second sub-period.

Table 7.8: Convergence results for money growth

	2000-2015	2000-2008	2009-2015
Country			
Angola	-1.7495	-1.3264	-4.4106**
Botswana	-3.8712**	-4.9151***	-1.5846
Burundi	-3.8642**	-3.3992**	-3.0134*
Comoros	-1.5760	-2.5637	-5.2284***
Congo, DR	-3.3370**	-7.4641***	-2.3207
Djibouti	-3.7677**	-2.2257	-2.9695*
Egypt	-2.8281*	-2.9652*	-1.1742
Eritrea	-2.1777	-1.4801	-1.7626
Ethiopia	-2.6162	-0.3497	-1.8218
Kenya	-2.3324	-1.5017	-1.4214
Lesotho	-4.3092***	-2.3526	-4.0565**
Libya	-2.4866	0.7843	-3.2101*
Madagascar	-4.4200***	-4.1365**	-1.7447
Malawi	-3.8099**	-0.8419	-3.1183*
Mauritius	-2.4271	-2.9654*	-2.3604
Mozambique	-3.4382**	-4.1943***	-3.5419**
Namibia	-4.3591***	-4.2602***	-15.207***
Rwanda	-4.6700***	-1.6419	-2.8724
Seychelles	-4.2202***	-3.3270**	-2.0183
South Africa	-1.8817	-3.2221*	-2.2898
Sudan	--3.3325**	-1.8644	-3.1762*
Swaziland	-3.9336**	-3.0987*	-4.8467**
Tanzania	-3.4382**	-3.1133*	-1.3811
Uganda	-3.6981**	-1.7614	-2.0835
Zambia	-5.5755***	-4352.2	-4.0525
Zimbabwe†	0.3799	-1.6916	
Group (t-stat)	-9.0145***	-625.06***	-5.6296***

Source: Author

The econometric results for the money growth presented in Table 7.8 reflect that there was convergence of seventeen countries for the monetary variable. The first sub-period indicates twelve countries and the second sub-period indicates eleven countries reflecting convergence of money growth. The last row indicates the group t-statistic of a panel based unit root test consisting of all member countries of the TFTA. The results indicate that overall, the TFTA member countries are converging at 1% level of significance.

In general, there were more countries reflecting convergence in terms of money growth than inflation. This is possibly because money growth is a more direct variable easily controlled by the central banks compared to inflation that is influenced by both demand and supply side factors. In other words, it is relatively easier for member countries to synchronise their monetary policies than it is to align different economies such that the inflation variable will move in a systematic manner. The study, however, acknowledges the significant efforts made by several African governments to tame the inflation variable over the years as indicated by the number of countries that are indicating convergence. Overall, the results for both inflation and money growth concur with the statistical results presented earlier and indicate that there is some relatively strong level of macroeconomic convergence for most macroeconomic variables among the TFTA member countries.

Carmignani (2006) highlighted that the second notion convergence involves testing whether or not there exists a co-integrating relationship between the countries monetary policy variables. Variables should share a common stochastic trend for there to be convergence and thus there should be $p - 1$ co-integrating equations (where p is the number of series, or countries). Findings of less than $p - 1$ implies that some countries are converging in the long run and others are not. This is referred to as partial convergence (Hafer and Khan, 1994). The co-integration test follows Johanssen-Fisher and is performed on yearly inflation, money growth, domestic credit and debt service over the period 2000-2015. The number of lags are selected using the Schwarz Information Criterion (SIC). The tests are conducted under three different assumptions as follows;

- (i) assumes that level data have no deterministic trends and the co-integrating equations have intercepts,
- (ii) (ii) assumes that level data have linear trends but the co-integrating equations have only intercepts,
- (iii) (iii) assumes that the level data and the co-integrating equations have linear trends.

Table 7.9: Johansen Fisher panel cointegration test

	No trend (restricted constant)		Linear deterministic trend		Linear trend (restricted)	
Hypothesise d Number of CE (s)	Fisher Stat (from Trace Stat)	Fisher Stat (max- Eigenvalue)				
None	356.6***	246.2***	324.3***	220.2***	386.1***	779.4***
At most 1	1273***	1254***	225.3***	190.3***	291.6***	224.5***
At most 2	85.47***	74.60***	94.75***	74.97***	1159***	170.3***
At most 3	43.69	43.69	73.57***	73.57***	40.62	40.62

*, **, *** denotes rejection of null hypothesis at 10%, 5%, 1% level of significance.

The results include 416 observations from seventeen countries. Nine countries were dropped from the analysis due to incomplete data in some of the variables. These are Burundi, Comoros, DRC, Eritrea, Ethiopia, Libya, Namibia, Seychelles and Zimbabwe. The co-integration tests confirms that there is strong evidence of convergence. The results are largely robust to changes in trend assumptions and are not dependent upon the test statistic employed. However, the number of co-integrating vectors is less than $p - 1$ which possibly suggests two reasons. Firstly, that some policies in some member countries are independently established, that is, are not guided by regional policies such as the convergence criteria. Secondly, some policies could have been ineffective due to exogenous factors which these countries have no control over leading to ineffective outcomes.

The results presented in the Johansen-Fisher panel cointegration test are complimented by the Pedroni residual cointegration tests in Table 7.4. The test also confirms the presence of panel co-integrating relationship among the variables. The Pedroni test-statistic values are presented below as a complimentary table. The Pedroni test includes 22 countries and drops only four countries in its analysis. The four countries dropped are Eritrea, Libya, Namibia and Zimbabwe.

Table 7.10: Pedroni residual cointegration test

	No trend		Deterministic intercept and trend		No intercept or trend	
(Within dimension)	Statistic	Weighted Statistic	Statistic	Weighted Statistic	Statistic	Weighted Statistic
Panel v-Statistic	0.565	-1.813	-1.622	-3.679	0.768	-1.939
Panel rho-Statistic	-2.068***	-0.525	-0.230	1.767	-3.05***	-1.436*
Panel PP-Statistic	-10.59***	-7.02***	-13.6***	-11.18***	-8.47***	-5.961***
Panel ADF-Statistic	-8.884***	-6.71***	-13.1***	-9.046***	-8.5***	-5.649***
(Between dimension)						
Group rho-Statistic	1.331		3.255		-0.308	
Group PP-Statistic	-12.25***		-15.31***		-9.74***	
Group ADF-Statistic	-11.6***		-10.23***		-8.71***	
Decision/Conclusion	There is cointegration		There is cointegration		There is cointegration	

Source: Author

*, **, *** denotes rejection of null hypothesis at 10%, 5%, 1% level of significance.

7.1.2 Summary of evidence on macroeconomic convergence

The results from both the statistical and econometric analysis indicate evidence of relatively strong forms of convergence of macroeconomic variables within the TFTA region. However, to some extent, evidence is scattered since it was detected in some but not all of the countries or sub-periods. Nevertheless, the study recognises the progress made by the 26 member countries of the three RECs in stabilising key variables especially inflation and service debt. For some few variables, evidence of convergence is there but remains weak. For instance, although cross-country dispersion of deficit was decreasing over time, the majority of TFTA countries are still struggling to fuse and stabilise their fiscal positions. The next section presents and discusses the estimated results of the augmented gravity model.

7.2 FINDINGS AND DISCUSSIONS OF AUGMENTED GRAVITY MODEL RESULTS

This section presents and discusses the econometric results of the augmented gravity model. The gravity model assists us in determining the factors which significantly influence the volume of bilateral trade among member countries of an economic region over a given period of time. The regressions conducted in this study considers bilateral trade among all the member countries of the three regional economic communities (RECs) namely COMESA, the EAC and SADC. An understanding of the factors that influence bilateral trade will help the respective governments and regional institutions in shaping economic policies.

7.2.1 Diagnostic Tests

The proceeding diagnosti tests are performed in order to ascertain if the underlying assumptions of the variables employed in the panel model and also in the error term hold. This ensures that the model is not spurious and the results of the model can be depended upon.

7.2.1.1 Test for multicollinearity

Prior to estimating the regression equation, the study conducts some diagnostic tests. The study begins by testing for multicollinearity and the results are presented in the table below which is showing the correlation matrix.

Table 7.11: Correlation matrix

	Trade/ GDP	GDP(i)	GDP(j)	Pop(i)	Pop(j)	Langu age	Border	
Trade/GDP	1							
GDP(i)	-0.1632	1						
GDP(j)	0.0048	-0.0342	1					
Pop(i)	-0.4216	0.5668	-0.0003	1				
Pop(j)	0.0118	-0.0068	0.5098	-0.1184	1			
Language	0.0735	-0.0574	-0.0592	-0.1349	-0.1184	1		
Border	-0.1407	-0.0191	0.0216	0.1191	0.1297	0.147	1	
Landlcked	-0.1025	-0.3153	0.0235	-0.2603	0.0228	0.108	0.0474	
FTA	-0.1041	0.0996	-0.0074	-0.1971	0.0057	0.096	-0.0711	
COMESA	0.0492	-0.4096	0.0172	-0.1679	0.0039	0.018	-0.0662	
EAC	-0.4163	-0.1679	0.0107	0.0835	-0.0002	0.061	0.1368	
SADC	0.3978	0.0486	0.0029	-0.0846	0.0110	0.069	0.0015	
EAC0	-0.4374	-0.0992	0.0074	0.1908	-0.0049	0.048	0.1432	
SADC0	0.3240	-0.2911	0.0155	-0.2956	0.0150	0.145	-0.0308	
COMESA0	-0.2246	-0.3395	0.0139	-0.0209	-0.0027	0.056	-0.0064	
	Lndlkd	FTA	Comesa	EAC	SADC	EAC0	SADC0	COMESA 0
Landloked	1							
FTA	0.2159	1						
COMESA	0.2214	0.1486	1					
EAC	0.2343	0.0994	0.0480	1				
SADC	-0.0141	-0.0555	-0.4465	-0.4660	1			
EAC0	0.0064	-0.1486	-0.2140	0.7380	-0.2379	1		
SADC0	0.1777	0.2872	-0.0305	-0.1997	0.6193	0.199	1	
COMESA 0	-0.0064	-0.0994	0.7380	0.0480	-0.4465	0.048	-0.03	1

Source: Author

The correlation matrix indicates the degree of linear relationship of a variable with itself or between two variables (Greene, 2002; Gujarati, 2003) or simply the linear correlation between the concerned variables (Greene 2010). Table 7.11 shows that the main diagonal entries from the upper left to the lower right give the correlation of a particular variable with itself. This correlation is, and should always be one. The other values indicate the pair-wise correlations of variables. Econometric theory denotes that severe multicollinearity exists when the values are too high. More specifically, when $|C_m| > 0.8$, where C_m is the correlation value between two variables. Likewise, there will be no multicollinearity if the values are low. The only high value is that of GDP of exporting country [GDP(i)] and COMESA which is 0.738 but this is also within acceptable range. Using the correlation matrix table, the conclusion is that the model does not have multicollinearity challenges.

7.2.1.2 Test for stationarity

Table 7.12: Unit root tests for gravity model variables

	Fisher-type	Im, Perasan and Shin (IPS)
	(H ₀ : All panels contain unit root) (H ₁ : At least one panel is stationary)	(H ₀ : All panels contain unit roots) (H ₁ : Some panels are stationary)
LNBittrade	952.9055***	-6.6120***
LnExports	665.5895	-1.7190**
DLNExports	3088.9538***	
LNIMPORTS	668.4025	-3.7730***
DLNIMPORTS	1507.9191***	
LNGDP(i)	320.7511	13.5431
DLNGDP(i)	2460.8754***	-22.5435***
LNGDP(j)	506.3566	12.0011
DLNGDP(j)	2005.2057***	-17.0472***
LNPopulation(i)	2474.7589***	7.2639
DLNPopulation(i)		-58.3071***
LNPopulation(j)	2605.6606***	3.5741
DLNPopulation(j)		-63.2041***
[***] significant at 1% level		

Source: Author

Table 7.12 above indicates the unit root tests of the regression variables. The study employs two methods, that is, the Fisher-type based on Augmented Dickey-Fuller (ADF) test and the Im, Perasan and Shin (IPS) test. Two tests are employed to ensure robustness of stationarity results. The results of the two methods agree for the majority of cases. However, in the case where the results are different, for instance, imports, the study employed first-differenced variable because at this point all methods will be agreeing that the variable is stationary. The results indicate that only the trade variable is consistently stationary in levels across the two methods with the rest of the variables being consistently stationary at first-difference.

7.2.1.3 Lagrange multiplier test

The Breusch-Pagan Lagrange Multiplier (LM) test for random effects assist in deciding between a random effects regression and a simple Ordinary Least Squares (OLS) regression. The null hypothesis is variances across entities is zero. The null implies that there is no significant difference across unite, that is, no panel effect. The alternative hypothesis is that

variances across entities (countries in this study) are not zero and therefore, there is a panel effect. The LM function is specified below,

$$LNBiTrade[pairid, t] = Xb = u[pairid] + e[pairid, t]$$

$$\bar{\chi}^2(1) > 8396.46$$

$$Prob > \bar{\chi}^2 = 0.0000$$

The results above indicate that we can reject the null hypothesis and conclude that the variances across countries are not zero and therefore there is a panel effect. Therefore, the Lagrange-Multiplier test suggests that we use the random effects model.

7.2.1.4 Hausman test

The Hausman test helps in deciding whether or not to use the fixed effects model or the random effects model. The Hausman tests fundamentally checks to see if there is a correlation between the regressors and the unique errors in the specified model. The null hypothesis is that no correlation exists between the two, that is, the random effects model is the preferred model and the alternative hypothesis is that fixed effects model is preferred.

$$\bar{\chi}^2(1) = (b - B)'[(V_b - V_B)^{-1}](b - B) = 0.29$$

$$Prob > \bar{\chi}^2 = 0.5877$$

where, $(V_b - V_B)$ is not positive definite

The above results indicate that $\chi^2_{calculated} = 0.29$ and $p - value$ is 0.5877. The study does not reject the null hypothesis and conclude that the no correlation exists between the idiosyncratic errors and the regressors. Therefore, the random effects model is the preferred model.

In conclusion, both the Bruesch-Pagan Lagrange Multiplier and the Hausman test concur that the random effects is the most preferred model to be employed in this study. This implies that country idiosyncratic and time invariant factors such as border effects, common language, whether not the country is a landlocked or a member of the free trade area have a significant effect in the level of trade. These variables are dropped in the fixed effects model since they are time invariant. The results from the two tests also compliment the arguments raised by Jayasinghe and Sarker,(2007); Green (2008) and Makochekanwa (2012b) who highlighted that random effects should be employed if there are reasons to believe that differences across entities have some influence across on the dependent variable. In this study, there are reasons to believe that trade is influenced by other idiosyncratic factors across countries.

7.2.2 Presentation of results of the augmented gravity model

Five models are presented in Table 7.13. These models reflect different scenarios of international trade and regional economic integration which were discussed in the theoretical and empirical literature. Models 1-4 indicates the Stata 13 generated results of the random effects panel autoregressive distributive lag (ARDL). The models are explained as follows:

Model 1: Presents the basic gravity model which distance that the level of bilateral trade is positively related to the economic mass of the trading partners and inversely related to the distance between the two economic centres. Model 1 is the random effects panel autoregressive distributive lag (ARDL) of the basic gravity model with population parameters of the respective trading countries.

Model 2: This model is an extension of the basic gravity model in Model 1 plus the country idiosyncratic factors. The rationale for adding these factors is that each country possesses unique characteristics that gives it certain advantages when trading with certain countries. These characteristics include whether or not there is a shared language or shared border between trading countries, or whether the economy is landlocked or coastal. These idiosyncratic factors are not included in the basic gravity model and are therefore included in the augmented Model 2.

Model 3: This model adds the free trade area (FTA) variable to Model 2. The FTA variable is a proxy for economic integration factors start to be included in the model. Model 1 and 2 were taking into account factors which influence the level of bilateral trade before economic integration is factored in. The FTA variable indicates the significance of opening the market on bilateral trade. The rationale for including this variable is because there are some countries that were members of the COMESA, EAC or SADC but not necessarily in their free trade areas. The inclusion of this variable assists in determining the effect of joining a free trade area on the level of bilateral trade.

Model 4: This is an extension of model 3 and it measures the degree of trade openness. This model includes regional bloc variables and openness dummies. This model will assist in answering the question of whether or not there was trade creation or trade diversion among the three regional economic communities (RECs) namely COMESA, EAC and SADC that make up the TFTA between the period 2000-2016.

Model 5: This is the Generalised Least Squares (GLS). This model was included simply for comparison purposes with model 4. The rationale behind the inclusion of the GLS model is that it controls for cross sectional dependence, serial correlation and heteroskedasticity in its modelling. Therefore, in addition to the separate tests of serial correlation and heteroskedasticity conducted above for the random effects model, the results of the GLS model are also used to indicate consistency of gravity model results since these tests are included in the GLS model.

In the table below, the dependent variable is LNBiTrade which is the natural logarithm of the level of bilateral trade between two TFTA countries. The exporting country is denoted by the subscript (i) and the importing country is denoted by (j). DLNGDP represents the first-differenced of the natural logarithm of the Gross Domestic Product; DLNPopulation represents the first-differences of the natural logarithm of population and LNDISTANCEW represents the natural logarithm of the weighted distance. LANGUAGE and BORDER is the shared or common language and border, respectively, between the trading partners. The LANDLOCKED variable denotes whether or not a country is landlocked or coastal whilst the FTA variable represents whether or not a country is a member of a free trade area. The EAC , EAC0 , COMESA , COMESA0 , SADC and SADC0 variables represent the respective regional economic communities as described in the previous chapter, Section 6.3.1. The regression results of the augmented gravity model are presented in Table 7.13.

Table 7.13: Gravity model regression results

	Model 1	Model 2	Model 3	Model 4	Model 5 (GLS)
Dependent Variables	LNBiTrade	LNBiTrade	LNBiTrade	LNBiTrade	LNBiTrade
DLNGDP(i)	1.683* (2.38)	1.694* (2.39)	1.790* (2.53)	2.007* (2.83)	1.123* (2.53)
DLNGDP(j)	2.097*** (4.23)	2.095*** (4.23)	2.078*** (4.20)	2.064*** (4.17)	1.132*** (3.93)
DLNPOP(i)	2.892 (0.41)	7.351 (1.03)	7.701 (1.09)	8.928 (1.24)	-3.791 (-0.63)
DLNPOP(j)	12.74* (2.08)	11.64 (1.91)	11.81 (1.94)	11.00 (1.82)	0.219 (0.11)
LNDISTANCEW	-1.839*** (-6.54)	-1.088*** (-3.36)	-1.008** (-3.13)	-1.138*** (-3.94)	-1.405*** (-12.72)
LANGUAGE		0.159 (0.48)	0.248 (0.75)	0.508 (1.69)	0.251* (2.29)
BORDER		3.499*** (6.13)	3.540*** (6.25)	3.308*** (6.64)	2.647*** (17.35)
LANDLOCKED		-1.997*** (-6.06)	-1.753*** (-5.24)	-0.702* (-2.23)	-0.936*** (-6.13)
FTA			1.470*** (3.56)	1.867*** (4.70)	1.419*** (7.44)
COMESA				0.0234 (0.03)	0.0797 (0.30)
EAC				-3.249*** (-4.74)	-3.657*** (-8.73)
SADC				4.418*** (4.94)	3.370*** (10.80)
EAC0				3.411*** (5.09)	3.336*** (8.08)
SADC0				-5.263*** (-7.31)	-4.479*** (-22.63)
COMESA0				-0.213 (0.27)	-0.0569 (-0.20)
Constant	27.06*** (12.25)	21.67*** (8.18)	19.66*** (7.31)	20.12*** (7.76)	24.62*** (23.99)
N	3646	3646	3646	3646	3630
R ² : within	0.0088	0.0086	0.0084	0.0078	-
:between	0.1133	0.2586	0.2850	0.4556	
:overall	0.0707	0.2245	0.3322	0.5836	

Source: Author

*, **, *** denotes rejection of null hypothesis at 10%, 5%, 1% level of significance.

7.2.3 Post estimation test

The study presents some post-estimation tests before proceeding to the discussion of regression results. Post-estimation tests ensure that the results are robust and reliable for analysis.

7.2.3.1 Autocorrelation test

Serial correlation reflects the strength of the relationship between a variable and its lagged version over a period. Du (2017) and Lopez and Weber (2017) highlighted that panel data do not aim at eliminating serial correlation but to utilise within and between variation of variables. Within variation indicates the longitudinal variation whilst between variation indicates the cross-sectional variation. Serial correlation exists in most panel models because of their very nature, that is, several observations are collected for several countries over time. The Durbin-Watson (D-W) statistic tests for serial correlation using residuals from the regressions. The D-W statistic ranges between 0 and 4.

F test that all $u_i = 0$

$F(316, 3162) = 7.33$ $Prob > F = 0.0000$

modified Bhargava et al. Durbin – Watson = 1.8697126

Baltagi – WuLBI = 1.6302516

The general rule of thumb is that D-W statistical values ranging between 1.5 and 2.5 are reasonably normal. Thus, the study concludes that the value of 1.869 is not a cause for concern. Although this study is only testing autocorrelation for random effects model, it is important to note that the test statistic for the modified Bhargava et al. Durbin Watson (DW) and the Baaltagi-Wu LBI are identical for fixed and random effects because the formulas for these statistics do not depend on fitting the models (De Hoyos and Sarafidis 2006).

7.2.3.2 Cross-dependence test

This study employed the robust random effects model which takes into account time invariant variables and heteroskedastic-robust standard errors. This eliminates the need to conduct cross-dependence tests on the random effects model. Moreover, the GLS model that is being used for comparison purposes also controls for cross sectional dependence, serial correlation and heteroskedasticity in its modelling. The results of both Model 4 and Model 5 are consistent, therefore, the models are robust and the study proceeds to the discussion of results.

7.2.4 Discussion of results of the regression models 1 to 5

The variables in the basic gravity regression model 1 have the expected signs and are significant. Model 1 indicates that the incomes (GDP) of the trading countries have an influence on the level of bilateral trade. The results indicate that the income of the importing country [GDP(j)] is significant at 1% level whilst the income of the exporting country [GDP(i)] is weakly significant at 10% level. This implies that the income of the importing country carries more weight in influencing bilateral trade than the income of the exporting country. The population variable is not significant in the first model. Using the available data, this implies that it is economic mass rather than the size of the population that has an influence on the level of bilateral trade. The results of the population variable are similar to those of Karambakuwa *et al.* (2015) who employed the gravity model and found population for one of the economic regions (that is, European Union) to have an insignificant effect on trade flows. However, other similar studies such as Jayasinghe and Sarker (2007) and Shujiro and Misa (2010) found population to be significant. The study notes that the original gravity equation does not have the population variable. These inconsistent results from various empirical studies such as those highlighted above could possibly be the reason why population was excluded in the basic gravity equation.

The weighted distance variable in model 1 is negative and significant at 1%, which agrees with the postulations of the postulated in the basic gravity model. This implies that countries that are further from each other were trading less likely to trade with each other than those countries that are closer to each other. This variable is important for this study because one of the questions raised earlier in the study is that the TFTA is going to cover a wide geographical space (from Cape Town in South Africa to Cairo in Egypt). Therefore, even if tariffs are removed in the TFTA, still several other factors may still hamper optimal levels of trade. For instance, Egypt is geographically closer to the Arab community than South Africa. Thus, even though both countries are in the same TFTA region they may still not trade with each other due to other technical and infrastructural challenges involved in transporting the merchandise.

In model 2, the analysis for all the basic gravity model variables which are in model 1 are fundamentally the same since all the variables are consistent in terms of signs and levels of significance. Model 2 has three additional country idiosyncratic variables namely whether or not the trading countries have common language or not; whether they have a shared border or not; and whether the country is landlocked or coastal. The results indicate that common

language was not a significant factor influencing the level of bilateral trade. This is possibly because translators are relatively easier to find if countries intend to trade with each other. Thus, language is not a major barrier to trade especially in recent times of globalisation where even most internet websites can be easily translated into various languages. In model 2, the shared border variable is positive and highly significant at 1% level. This implies that, *ceteris paribus*, countries with a shared border are likely to trade more with each other than those that do not share a border by an approximate factor of 3.5. The last variable in model 2 is whether or not a country is landlocked. The results in model 2 indicates that the landlocked variable is negative and highly significant at 1%. This implies that, *ceteris paribus*, landlocked countries have an inherent disadvantage when it comes to trading than coastal countries by a factor of approximately 2.

The implication is that the level of bilateral trade for a single country can be affected by several inherent factors. For instance, a country that does not share a trading border with its trading partner and is further away from the trading partner and is landlocked has inherent disadvantages compared to a country which is not only close but shares a border and is a coastal country. These disadvantages have nothing to do with economic policies being pursued by the respective countries and yet they have a bearing on the level of bilateral trade.

The interpretation of the results in model 3 are basically the same with those in model 2. The additional variable in model 3 is whether or not a country was a member of a free trade area (FTA) at a particular period. The FTA variable reflects the degree of openness in an economy and the coefficient is positive and highly significant at 1% level. On average, a country that decides to join a free trade area will have additional bilateral trade by a factor of 1.5. This is because removal of tariffs will lower trading costs and stimulate the flow of international trade. It is at this level in model 3 that the study is now taking into account the effect of economic policies on the level of bilateral trade. Therefore, the results indicate that the decision of whether or not to integrate influence the level of trade between economies.

The purpose of the following analysis in model 4 is to give us a picture of whether or not there was trade creation or trade diversion in the three regional economic communities that make up the TFTA. This will give us a historical snap shot of what it was like when the countries integrated to form the three communities before they decided to form the TFTA. A positive and statistically significant coefficient for COMESA, EAC and SADC in model 4 implies that there was trade creation during the period 2000-2016. However, it is important to note that a

negative and statistically significant coefficient does not necessarily imply that there was trade diversion but rather that the member countries of COMESA, EAC or SADC traded less amongst themselves than they traded with the rest of the world (RoW) during the period under consideration.

More specifically, the coefficient of the regional bloc dummy of COMESA is both positive but not significant implying that being a member of COMESA does not lead to significant increases in the level of trade creation. This result is not surprising especially because of the issue of dual membership for most African countries. Nine out of fifteen countries are both members of SADC and COMESA and five out of six countries are members of both EAC and COMESA as well. This implies that there was little value addition to becoming dual members, an argument raised by Botswana, Lesotho and Mozambique when they refused to join COMESA. Thus, the TFTA will add value by addressing this issue of multiple membership by most African countries.

The coefficient for EAC is negative and significant at 1%. This implies that EAC countries traded less among themselves than they traded with the rest of the world (RoW) during the period 2000 to 2016. The negative coefficients imply that trade in this regional bloc is generally below the expected level especially considering the fact that the EAC is already in the dispensation of zero tariff reduction complemented by the free movement of persons under its customs union (CU). The negative coefficient obtained for EAC in this study are similar to the results by (Makochehanwa, 2012; Karambakuwa *et al.*, 2015) for the same regional bloc. The implication for the TFTA is that it is likely that EAC countries will not gain much in terms of trade creation because the EAC is already at a deeper level of integration (that is, customs union) than the tripartite agreement (free trade area). However, due to dynamic effects in the long term there is a possibility that the level of trade creation for EAC economies will increase once they implement the TFTA.

The estimated coefficient for the SADC regional dummy on overall trade is positive and statistically significant at 1% level. The coefficient of the SADC bloc indicates that there was trade creation between 2000 and 2016. The percentage of trade within the SADC bloc was much higher than the other regional blocs of COMESA and EAC. The positive and statistically significant regional dummy suggests that SADC countries traded more with each other than with the rest of the world (RoW). This could be explained by the fact that South Africa³⁷ is

³⁷ South Africa is an FTA member country and has a huge economy by Southern African standards.

among the highest trading partners of SADC countries. In 2017, South Africa exported USD 3.9 billion worth of products to Botswana which is 4.3% of its total trade and USD 3.6 billion (4%) to Namibia; USD 3 billion (3.3%) to Mozambique; USD 2.3 billion (2.6%) to Zambia and USD 2.1 billion (2.4%) to Zimbabwe. These SADC countries are in the top fifteen global trading partner countries that South Africa exported to in 2017 where approximately 64% of its exports were supplied to these top fifteen trading partners (CIA, 2018; ITC, 2018; Workman, 2018). In addition, within the SADC bloc is a well-functioning South African Customs Union (SACU), of which South Africa is a part.

The study also traces the level of changes in the regional openness dummies, that is; COMESA0, EAC0 and SADC0 so that it can provide evidences into the incidence of trade diversion effects. The trade diversion effects gives information as to whether there were decreases in import levels by the member states of the three regional blocs from non-members in relation to the level of exports by member states from each region to non-members over time.

The estimated coefficient of EAC0 is positive and statistically significant at 1% level. The positive sign suggests that imports into the EAC from non-member countries in the rest of world (RoW) were higher than the gravity model would predict. The estimated coefficient for the SADC0 openness dummy in model 4 is negative and statistically significant. This indicates there was trade diversion within the SADC community. The net effect for SADC is negative since the coefficient of trade diversion outweighs the coefficient for trade creation. This implies that SADC countries were now trading more with other SADC member states who were less efficient at producing certain commodities. The main reason why they switched (diverted) their trading partners from the rest of the world was that products originating in other SADC countries had become cheaper because of the removal of tariffs and not necessarily due to increased efficiency. This negative effect for SADC implied a net welfare loss for the region. The net effect for COMESA0 was positive although statistically insignificant. It is difficult to statistically determine the net welfare effects for the EAC since both the regional dummy coefficient and the openness coefficient were higher than the gravity model would predict.

7.2.5 Summary of the gravity model results and discussions

This section discussed the empirical findings of the augmented gravity model to establish three things. Firstly, the gravity model identified the inherent factors which influenced the level of bilateral trade within the three regional economic communities (RECs) namely COMESA,

EAC and SADC. The model was able to confirm the signs and significance of the basic variables which are income of the respective trading countries proxied by GDP and also the distance of the trading countries proxied by the weighted distance between the two economic centres of the trading countries. Secondly, the gravity model was also able to confirm that joining a free trade area (FTA) has a positive influence on the level of bilateral trade. Thus, the model empirically indicated the rationale behind regional economic integration. Thirdly, the gravity model was able to indicate the level of trade creation and trade diversion effects that were experienced within the three RECs between the period 2000 and 2016. The notion behind was to get a picture of what was happening prior to the implementation of the TFTA. The next subsection is a simulation model that will predict the potential trade creation and diversion effects once the TFTA is implemented.

7.3 FINDINGS AND DISCUSSIONS OF SMART SIMULATION RESULTS

This section presents the results of the SMART simulation procedures for all the 26 Tripartite Free Trade Area (TFTA) member countries and the seven product classifications. The analyses were done at the 2-digit aggregate level. The elasticity of supply and import substitution elasticity are as discussed in Chapter 6 above, that is, infinite elasticity of 99 and an import substitution elasticity of 1.5, respectively. The results are based on a 100% tariff reduction, which is an immediate complete tariff elimination and 2015 trade data was used to perform the simulations. This is because joining a free trade area implies a removal of all trade tariffs to the respective member countries. The results presented below are depended on the underlying assumptions and also the data employed. The results are based on the data available and all simulations were performed on the World Bank website implying that the author does not have control over either the imputed data or the output of the simulations. This implies that results can change if the assumptions are adjusted or new data sets are employed. For instance, the simulations are conducted using the data set provided by the Harmonised System (HS). Although it is the most comprehensive data database, there are several other data sets provided in SMART simulations such as the Standard International Trade Classification (SITC). Therefore, one can critic the simulation results presented in this section especially if they are familiar with a particular country and they have different data sets at their disposal.

The study will first present the tariff schedules using the latest available year. The tariff schedules will give an indication of the tariffs that are currently being implemented by the

TFTA countries and the level of imports for each countries. The study will first discuss the trade creation results which will be followed by the trade diversion results and then the net trade effect. The results are presented in this manner because of change in tariffs results in a simultaneous change or process of both trade creation and trade diversion and the changes occur in different magnitudes. Therefore, the results are first presented separately before the overall net effects are presented and discussed. The last discussion of this section consists of a presentation and discussion of the revenue effects and the welfare effects of implementing the tripartite agreement.

7.3.1 Tariff schedules of TFTA countries

The table below indicates the tariff schedules for each TFTA country using the latest available year which is 2014 and 2015 for most countries. Eritrea and Zambia have 2006 and 2013, respectively as their latest available years for the tariff schedules. These tariff schedules were used to perform the simulations.

Table 7.14: Tariff schedules using the latest available year

Reporter Name	Tariff Year	SA (TFTA)	WA (TFTA)	Standard Deviation (TFTA)	Imports Value in 1000 USD (TFTA)	Simple Average (World)	Weighted Average (World)	Standard Deviation (World)	Imports Value in 1000 USD (World)
Angola	2015	15.28	41.12	16.32	290.82	10.44	10.24	12.82	7336537.75
Botswana	2015	0.57	0.02	8.88	5650878.2	7.61	0.56	16.24	7551095.75
Burundi	2015	2.2	1.73	7.51	157294.44	10.42	6.13	12.26	559944.76
Comoros	2015	6.2	0.96	8.52	23168.92	12	5.04	8.94	115238.08
Congo, DR	2014	11.76	9.7	6.1	3355315.3	11.65	10.19	6.03	6495663.59
Djibouti	2014	18.38	12.84	9.15	47054.06	18.92	17.56	8.82	645337.93
Egypt	2015	8.73	0.75	98.1	767427.64	7.52	7.08	123.76	71076869.6
Eritrea	2006	3.99	1.93	5.64	36464.29	9.56	5.43	8.98	432839.18
Ethiopia	2015	18.15	12.83	10.91	567452.15	17.87	12.14	11.42	25389625.7
Kenya	2015	7.84	2.25	11.01	1916529.1	11.96	11.47	11.68	16945890.1
Lesotho	2015	0.27	0	6.53	1038305.6	3.6	2.79	14.4	1254224.27
Libya	2006	0	0	0	461991.25	0	0	0	6729085.47
Madagascar	2014	0.05	0.28	0.74	321420.74	10.69	5.99	7.62	3079377.67
Malawi	2015	0.15	0.01	1.43	1159022.2	9.05	4.24	10.82	2730483.54
Mauritius	2015	0.03	0.01	0.83	490790.06	1.76	0.68	6.2	4458341.51
Mozambique	2014	1.45	1.09	4.47	3119121.9	7.45	4.17	7.74	8743044.99
Namibia	2015	0.4	0	6.77	5301276.1	6.89	0.9	13.32	8521056.67
Rwanda	2015	3.34	1.02	8.5	629835.71	11.18	9.75	12.34	1954207.56
Seychelles	2015	1.81	1.88	11.44	109472.08	2.39	2.82	11.71	802251.86

South Africa	2015	1.76	1	7.53	5264371.1	6.35	4.38	12.17	72733768.1
Sudan	2012	1.87	1.1	7.14	634860.39	12.09	12.12	14.95	6219226.34
Swaziland	2015	0.2	0.01	9.15	1184093.5	4.68	0.99	15.58	1407365.7
Tanzania	2015	1.59	2.42	6.23	979852.49	11.92	7.28	11.83	14665700.9
Uganda	2015	5.55	2.06	10.26	1001872.5	11.68	7.88	11.89	5527015.09
Zambia	2013	0.24	0.05	2.24	6031952.4	10.3	3.35	10.44	10144571.3
Zimbabwe	2015	0.36	0.42	8.89	2968001.5	13.29	5.72	26.7	5959076.55

Source: Author's computations

SA= Simple Average; WA=Weighted Average; SD=Standard Deviation

The table above shows the average tariff schedules of total trade for all products (HS combined) for each member of the TFTA that the countries have been effectively applying on each other before the signing and coming into effect of the tripartite agreement. The table above clearly indicates that the average simple and weighted tariff schedules on intra-trade among the 26 member countries is lower than the world average. This can be possibly be explained by the fact that there are already existing trade agreements (that is, COMESA, EAC and SADC) where the majority of these African countries are already members of these regional trade agreements (RTAs) implying that their applied rates are generally lower than the World Trade Organisation (WTO) bound rates.

Despite the lower averages on tariffs schedules among TFTA member countries, the table also indicates that the majority of the TFTA members still import a significant proportion of their imports from the rest of the world with specifications varying from country to country. The imports results in Table 7.14 concurs with the findings of Mold and Mukwaya(2015) who highlighted that intra-trade levels in Africa are still very low. The following discussion now focuses on the trade creation simulations.

7.3.2 Trade creation effects of the Tripartite Free Trade Area

Table 7.15: Trade creation by country at aggregate level

Alphabetical Order		Highest to lowest		
Country	TC (USD, 000)	Country	TC (USD, 000)	% Share
Angola	147,618	Congo DR	1847574	71,93%
Botswana	103,061	Ethiopia	217252,5	8,46%
Burundi	6996,795	South Africa	183576	7,15%
Comoros	3443,476	Mozambique	183043,3	7,13%
Congo DR	1847574	Uganda	35442,8	1,38%
Djibouti	25402,72	Zimbabwe	28084,03	1,09%
Egypt	14144,12	Djibouti	25402,72	0,99%
Eritrea	3276,42	Egypt	14144,12	0,55%
Ethiopia	217252,5	Tanzania	9923,282	0,39%
Kenya	1584,485	Burundi	6996,795	0,27%
Lesotho	42,349	Zambia	6746,284	0,26%
Libya	0	Comoros	3443,476	0,13%
Madagascar	1137,702	Eritrea	3276,42	0,13%
Malawi	185,365	Kenya	1584,485	0,06%
Mauritius	27,366	Madagascar	1137,702	0,04%
Mozambique	183043,3	Namibia	404,368	0,02%
Namibia	404,368	Malawi	185,365	0,01%
Seychelles	66,148	Angola	147,618	0,01%
South Africa	183576	Botswana	103,061	0,00%
Sudan	0	Seychelles	66,148	0,00%
Swaziland	51,053	Swaziland	51,053	0,00%
Tanzania	9923,282	Lesotho	42,349	0,00%
Uganda	35442,8	Mauritius	27,366	0,00%
Zambia	6746,284	Libya	0	0,00%
Zimbabwe	28084,03	Sudan	0	0,00%
Total	2568655	Total	2568655	100,00%

Source: Author's computations based on SMART simulations

Table 7.15 indicates that the Tripartite Free Trade Area stands to gain a total of USD 2.6 billion as a result of an increase in intra-trade within the economic region. The Democratic Republic of Congo, Ethiopia, South Africa and Mozambique will be the biggest beneficiaries of the

implementation of the TFTA. The results meet *apriori expectations* for most countries because currently countries like DRC and Mozambique have relatively higher restrictive international trade policies and are not engaging in much intra-trade with other African countries. This is because although DRC is a SADC member and Ethiopia is a COMESA member; both countries are not in any free trade area, it implies that they are currently pursuing very restrictive international trade policies. On the other hand, the Mozambican government had earlier chosen to remain in SADC and refused to join COMESA implying that the country was still imposing higher tariffs for most COMESA countries that were not part of the SADC FTA. Therefore, removal of tariffs by these countries would significantly increase the level of trade created.

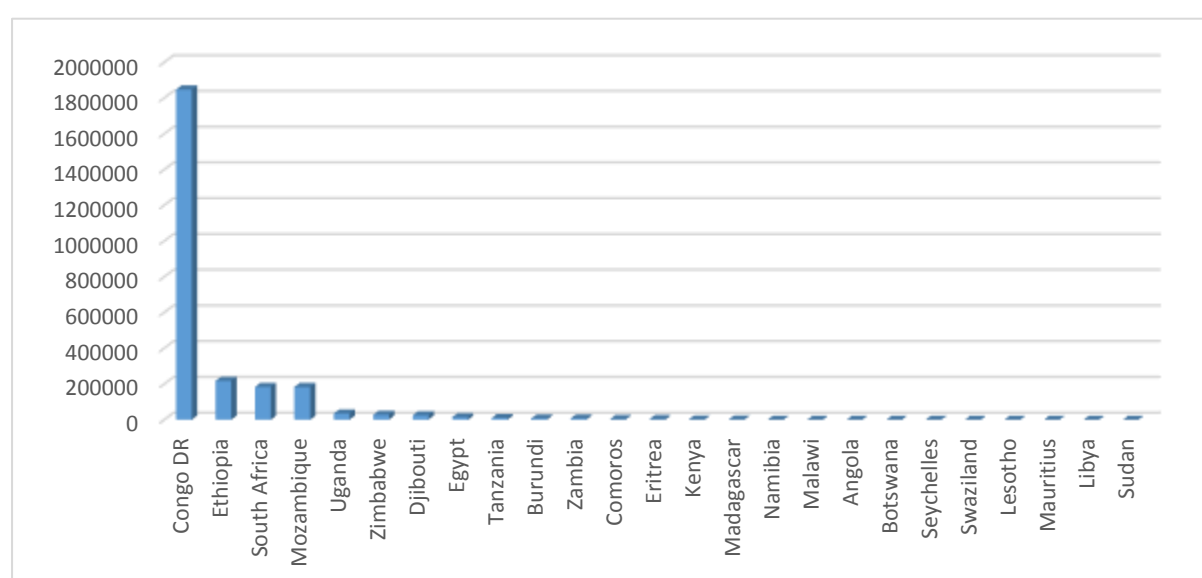
South Africa is also to become a bigger beneficiary of trade creation as already highlighted in theoretical and empirical discussions due to several advantages such as economies of scale in production that will result in more export into a relatively larger market in the framework of the TFTA. Countries such as Uganda, Zimbabwe and Djibouti are also in the top third of the potential beneficiaries. These findings also complement economic theory because the three countries are currently pursuing relatively restrictive international trade policies. Therefore, trade liberalisation because of the TFTA will likely lead to more trade creation. It should be noted that even though the percentage shares for most countries are still relatively small, the actual figures are quite considerable. For instance, a percentage share of 1.38% for Uganda equals to USD 35.4 million.

Countries such as Botswana, Lesotho and Swaziland who are already members of a deeply integrated sub-regional economic community in the name of the South African Customs Union (SACU) and the Rand Monetary Area (RMA) will have relatively lower levels of trade creation as indicated in the table. This implies that much of the trade which will be created within the Southern African region will be polarised into South Africa, which is a leading member country of both economic communities. This results in unequal distribution of welfare gains of trade created by the TFTA. Mauritius is also among countries with low trade creation because it is currently the most liberalised economy in Africa. This means that the creation of the TFTA will not result in much change as far as Mauritius' international trade policy is concerned.

In other words, the more liberalised an economy is before the creation of the TFTA, the less likely it is to derive significant benefits from trade created and the vice versa is true. This is because the liberalised country will already be enjoying the trade creation benefits from the time they liberalised. The SMART model only captures the immediate effects of a tariff

reduction. The results of Angola did not meet apriori expectations possibly due to lack of sufficient data to perform the simulations. Using economic theory, the expectation was for Angola to be among the largest beneficiaries of trade created due to the TFTA. This is because Angola is currently characterised by trade restrictive policies and is currently lowly engaged in intra-African trade. The results for Angola might be because of insufficient data to perform the simulation and as already indicated. The author does not have influence on the nature and quality of data to be imputed into the model. Libya and Sudan were not included in the analysis due to missing data.

Figure 7.2: Trade creation by country



Source: Author

The figure above shows that the trade creation benefits are largely concentrated on a few major economies within the economic region. However, there is need to further analyse these values in relation to the respective populations in order to get the income per capita (or trade created per capita) for each country. This will give a clearer picture of the welfare distribution.

Table 7.16: Trade creation by country per capita

Country	TC	Population	Per K	% share		% share
Alphabetical Order					Highest to lowest	
Angola	147618	29784193	0,495625	0,007012	Djibouti	37,56
Botswana	103061	2291661	4,497218	0,06363	Congo DR	32,18
Burundi	6996795	10864245	64,40204	0,911204	Mozambique	8,73

Comoros	3443476	813912	423,0772	5,985985	Comoros	5,99
Congo DR	1850000000	81339988	2274,404	32,17982	South Africa	4,59
Djibouti	25402720	956985	2654,453	37,55702	Ethiopia	2,93
Egypt	14144120	97553151	14,49889	0,20514	Zimbabwe	2,40
Eritrea	3276420	4474690	73,22116	1,035983	Uganda	1,17
Ethiopia	217000000	104957438	206,7505	2,925247	Eritrea	1,04
Kenya	1584485	49699862	3,188107	0,045108	Seychelles	0,98
Lesotho	42349	2233339	1,896219	0,026829	Burundi	0,91
Libya	0	6374616	0	0	Zambia	0,56
Madagascar	1137702	25570895	4,449207	0,06295	Tanzania	0,24
Malawi	185365	18622104	0,995403	0,014084	Namibia	0,23
Mauritius	27366	1264613	2,163982	0,030617	Egypt	0,21
Mozambique	183000000	29668834	616,8089	8,727033	Botswana	0,06
Namibia	404368	2533794	15,95899	0,225799	Madagascar	0,06
Seychelles	66148	95843	69,01704	0,9765	Swaziland	0,05
South Africa	184000000	56717156	324,4168	4,590071	Kenya	0,05
Sudan	0	40533330	0	0	Mauritius	0,03
Swaziland	51053	1367254	3,733981	0,052831	Lesotho	0,03
Tanzania	9923282	57310019	17,31509	0,244986	Malawi	0,01
Uganda	35442800	42862958	82,68865	1,169935	Angola	0,01
Zambia	6746284	17094130	39,4655	0,558385	Libya	-
Zimbabwe	28084030	16529904	169,8983	2,403837	Sudan	-
Total	2568655242	701514914	7067,796	100		100

Source: Author's computations

The per capita information presented in Table 7.16 reflects some changes from the aggregate values presented in earlier in Table 7.15. Considering population, the results reveal that Djibouti will be the biggest beneficiary of the tripartite arrangement with approximately USD 2600 per annum (37.6%) followed closely by DRC which will have around USD 2 300 per annum (32%). This is because Djibouti has relatively smaller population compared to most countries (less than 1 million). There is a huge difference between the second ranked DRC and the third ranked Mozambique which tends to gain a per capita share of 8%. Mozambique, Comoros, South Africa, Ethiopia and Zimbabwe are among the top ranked countries in terms of per capita shares. The distribution remain skewed towards a few countries with the top two countries amassing around 70% and the top six countries having a share of up to 94.38%. Except for Djibouti, the countries that stand to gain the most are fundamentally the same whether we consider population or not. The major difference lies in the variance between these countries, it tends to smoothen out as we consider population. The following table, Table 7.17 presents the trade creation levels by product classification.

Table 7.17: Trade creation by product classification and economic sector

Country	SoP1	SoP2	SoP3	SoP4
	TC	TC	TC	TC
Angola	15,804	31,092	26,715	0,198
Botswana	0,026	9,07	40,386	0,134
Burundi	109,588	444,62	2631,348	310,302
Comoros	111,575	1134,329	446,94	28,864
Congo DR	46326,209	484854,921	219543,826	110697,212
Djibouti	2366,274	532,316	8683,061	1119,711
Egypt	578,878	4826,292	1125,47	405,4
Eritrea	429,427	312,02	810,276	86,486
Ethiopia	8676,845	13783,791	69972,783	15671,371
Kenya	8,053	561,13	199,133	4,558
Lesotho	0	0,275	20,882	0,018
Libya	0	0	0	0
Madagascar	2,89	70,723	451,902	0,014
Malawi	0	0,142	87,119	5,422
Mauritius	0	0	13,683	0
Mozambique	9123,268	22728,129	37841,701	21827,608
Namibia	0	137,811	57,629	6,74
Seychelles	0,63	0	32,444	0
South Africa	6879,793	7379,884	71144,53	2564,004
Sudan	-	-	-	-

Swaziland	0	25,142	0,384	0
Tanzania	10,502	3803,681	935,119	100,533
Uganda	1058,174	5065,751	6526,25	4885,284
Zambia	33,894	52,171	3271,113	8,228
Zimbabwe	0,042	3269,392	5462,289	4962,496
Total	75731,872	549022,682	429324,983	162684,583

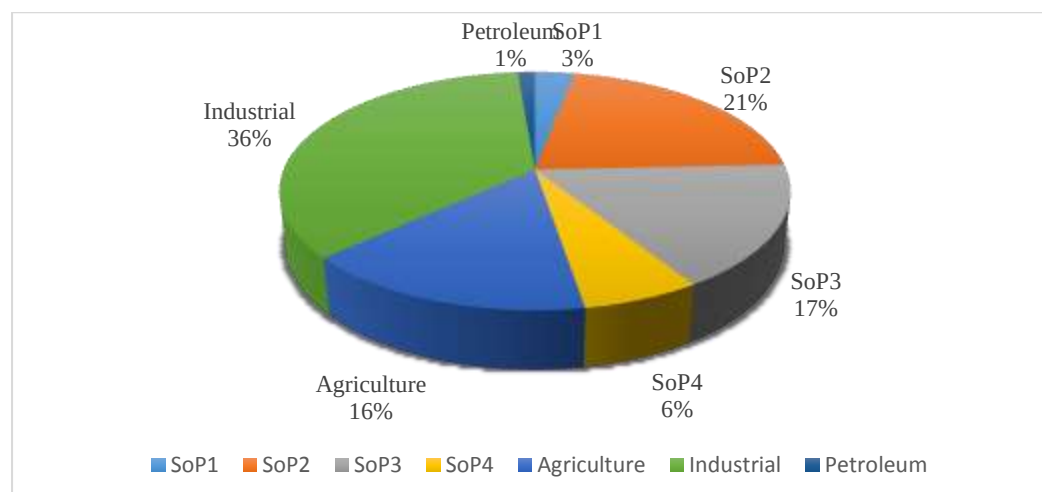
Source: Author's computations based on SMART simulations

SoP1 represents raw materials, SoP2 are the intermediate goods, SoP3 are consumer goods and SoP4 represents the capital goods. In terms of trade creation by product classification, almost eight countries will have zero trade creation for raw materials not have any trade created for raw materials. Except for DRC, which is outstanding in most cases, only six countries have trade creation ranging between USD 1 million and USD 10 million for raw materials and the majority of them have meagre values in this category. These are Djibouti, Ethiopia, Kenya, Mozambique, South Africa and Uganda. This is probably because most African countries do not engage in much trade with each other in terms of raw materials. Africa is endowed with natural resources and this removes the need for African countries to engage in much intra-trade in the category of raw materials. Raw materials only contribute a share of 3% of total trade created. Intermediate goods consists of a significant share of the total trade created which is around 21% amounting to USD 549 million. Significant share will accrue to DRC, Egypt, Ethiopia, Mozambique, South Africa, Tanzania, Uganda and Zimbabwe. The results reflected make economic sense because some value addition would have taken place that will stimulate trade in intermediate goods. Trade creation because of intra-trade in consumer goods is potentially significant contributing around 17% of total trade. This classification has quite a number of potential beneficiaries namely DRC, Djibouti, Ethiopia, Mozambique, South Africa, Uganda, Zambia and Zimbabwe. This is probably because there is a lot of cross-border trading within the continent by individuals and small and medium enterprises who engage in buying and selling of consumer goods.

The proportion of trade creation likely to emanate from capital goods is only USD 163 million that is only 6%. This makes economic sense because very few African countries currently have the capacity to trade capital goods. It should be noted also that the HS categorisation of capital goods include items such as animals for breeding, electrical equipment such as generators, light and heavy industrial equipment among others. The HS list had 906 items listed as capital goods at the time of writing of this thesis. This implies that the figures for capital goods could have

been significantly smaller had they been considering only heavy industrial machinery and equipment. The figure below indicates the proportions of each product classification and economic sector.

Figure 7.3: Proportions of trade creation by product classification and economic sectors



Source: Author's computations based on SMART simulations

The following table presents the trade creation effects according to economic sectors. The column of totals include both the product classification in Table 7.17 and the economic sectors in Table 7.18.

Table 7.18: Trade creation by economic sector

Country	Agriculture	Industrial	Petroleum	Total
Angola	46,905	26,904	0	147,618
Botswana	4,176	45,473	3,796	103,061
Burundi	190,41	2360,333	950,194	6996,795
Comoros	682,138	1030,392	9,238	3443,476
Congo DR	292593,044	673270,87	20287,73	1847573,813
Djibouti	3132,308	7459,079	2109,975	25402,724
Egypt	1162,759	6045,323	0	14144,122
Eritrea	1135,617	502,594	0	3276,42
Ethiopia	18686,11	86154,771	4306,803	217252,474
Kenya	466,459	345,152	0	1584,485
Lesotho	0,175	20,999	0	42,349
Libya	0	0	0	0
Madagascar	608,228	3,945	0	1137,702
Malawi	2,176	53,676	36,83	185,365
Mauritius	0,001	13,682	0	27,366
Mozambique	50619,162	39240,424	1662,969	183043,261

Namibia	0,296	201,892	0	404,368
Seychelles	33,074	0	0	66,148
South Africa	30739,375	64854,348	14,021	183575,955
Sudan				0
Swaziland	25,527	0	0	51,053
Tanzania	113,369	4728,457	231,621	9923,282
Uganda	4273,986	13249,974	383,381	35442,8
Zambia	259,134	3120,55	1,194	6746,284
Zimbabwe	2006,649	9127,941	3255,224	28084,033
Total	406781,078	911856,779	33252,98	2568654,954

Source: Author's computations using SMART simulations

The agricultural sector has potential to create additional trade of up to USD 407 million which is approximately 16% of the total trade to be potentially created. The results make economic sense because Africa is largely an agrarian economy. Secondly, in our simulation we assumed an import substitution elasticity of 1.5, which implies that even though two countries produce similar products but may still be differentiated by some idiosyncratic factors from their home countries. For instance, a country that produces coffee, sugar or cooking oil may still import those products from another African country because consumers may still perceive these products to be different due to country of origin. DRC is again the major beneficiary, followed by Mozambique and South Africa which will gain approximately USD 50 million and USD 30 million, respectively. More than nine countries will have an additional trade creation of more than USD 1 million in the agricultural sector.

The industrial sector is likely to contribute the highest share to total trade creation of approximately 36% which amounts to USD 900 million. The results are likely because although the number of transactions might be few compared to other categories, most of the traded items in this category are of high value. DRC, Ethiopia, Mozambique and South Africa are the top contributors in this category. The results make sense because all these countries have significant industrial and mining sectors and they carry huge potential. Ethiopia is currently engaging in a massive reconstruction and industrialisation exercise whilst DRC and Mozambique has a great potential in the mining sector. South Africa is the most industrialised nation in Southern Africa and amongst the top three in Africa (ACBF 2017).

Finally, the SMART model correctly predicted that countries such as Egypt, Eritrea and Kenya would not create any trade in the near future since they are either currently supplying oil or have major oil reserves. Overall, the petroleum sector does not contribute much to total trade

creation and its share is only 1% which amounts to USD 33 million. This is because even though some African countries have significant oil deposits, they do not process it to a point where it is ready for the African market. This results in most of the African crude oil being exported to European countries where it is processed before it is imported back again. The implication is that there will be little intra-African trade in the petroleum sector.

7.3.3 Trade diversion effects of the Tripartite Free Trade Area

The table below indicates the value of trade that is likely to be diverted because of implementing of the tripartite agreement (that is, the TFTA). Similar to the trade creation tables presented above, the countries are presented in alphabetical order on one end and are then arranged from the highest value to the lowest value.

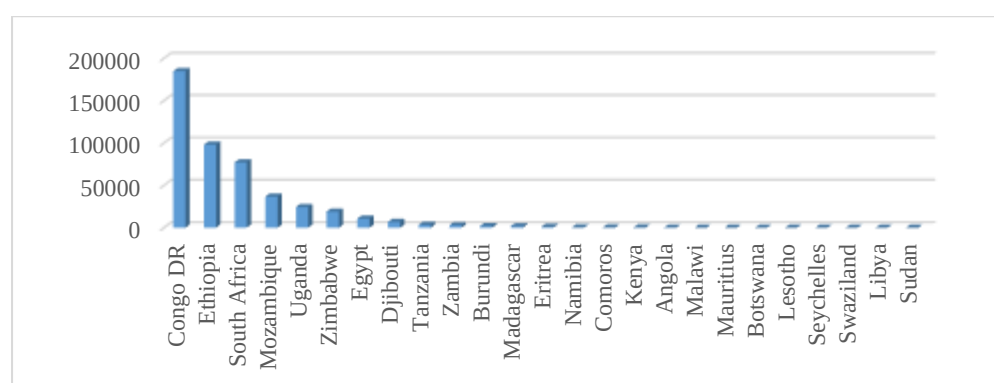
Table 7.19: Trade diversion by country at aggregate level

Alphabetical Order	USD (000)	Highest to lowest	USD (000)	% Share
Angola	146,121	Congo DR	184625,517	39,43
Botswana	18,746	Ethiopia	97929,317	20,91
Burundi	1911,298	South Africa	77109,407	16,47
Comoros	273,801	Mozambique	36548,288	7,80
Congo DR	184625,517	Uganda	24187,594	5,17
Djibouti	6709,823	Zimbabwe	18917,779	4,04
Egypt	10572,543	Egypt	10572,543	2,26
Eritrea	923,066	Djibouti	6709,823	1,43
Ethiopia	97929,317	Tanzania	3296,768	0,70
Kenya	188,876	Zambia	2796,155	0,60
Lesotho	14,636	Burundi	1911,298	0,41
Libya	0	Madagascar	1646,194	0,35
Madagascar	1646,194	Eritrea	923,066	0,20
Malawi	76,536	Namibia	317,779	0,07
Mauritius	59,014	Comoros	273,801	0,06
Mozambique	36548,288	Kenya	188,876	0,04
Namibia	317,779	Angola	146,121	0,03
Seychelles	2,058	Malawi	76,536	0,02
South Africa	77109,407	Mauritius	59,014	0,01
Sudan	0	Botswana	18,746	0,00
Swaziland	1,518	Lesotho	14,636	0,00
Tanzania	3296,768	Seychelles	2,058	0,00
Uganda	24187,594	Swaziland	1,518	0,00
Zambia	2796,155	Libya	0	0,00
Zimbabwe	18917,779	Sudan	0	0,00
Total	468272,834	Total	468272,834	100,00

Source: Author

The list of the countries with the highest share of trade diversion is quite similar to that of the trade creation one. DRC is the highest ranked with a portion of approximately 39% followed by Ethiopia with 21% and South Africa 16%. DRC will have an approximate diverted value of USD 184 million, USD 98 million for Ethiopia and USD 77 million for South Africa. These top three countries have a share of 76.8% whilst the first eight countries have a combined share of 97.5%. Mozambique, Uganda, Egypt, Zimbabwe and Djibouti have percentage shares that range between 1.4% and 7.8%. Countries like Tanzania, Zambia, Burundi and Madagascar have potential trade diversion effects of more than USD 1 million although these figures are less than 1% in overall share. Similar to the trade creation patterns, other SACU and small countries namely Swaziland, Seychelles, Lesotho and Botswana have lower values of trade diversion values contributing approximately zero percent. The figure below gives a pictorial view of the levels of trade diversion per country.

Figure 7.4: Trade diversion for TFTA member countries (USD, 000)



Source: Author's computation

The majority of the TFTA countries reflect very low figures which shows that there is relatively low economic activities in these countries, especially in terms of intra-African trade. The values of trade diverted are significantly less than the values of trade created which will result in a positive net effect. The following table takes into account respective populations of each economy and presents per capita values.

Table 7.20: Trade diversion by country per capita

Country (Alphabetical order)	Trade Diversion (TD)	Population	TD per capita	Trade Diversion per capita (Highest to lowest)	
Angola	146121	29784193	0,490599	Djibouti	37,56
Botswana	18746	2291661	0,818009	Congo DR	32,18
Burundi	1911298	10864245	17,59255	Mozambique	8,73

Comoros	273801	813912	33,64012	Comoros	5,99
Congo DR	184625517	81339988	226,98	South Africa	4,59
Djibouti	6709823	956985	701,1419	Ethiopia	2,93
Egypt	10572543	97553151	10,83773	Zimbabwe	2,40
Eritrea	923066	4474690	20,6286	Uganda	1,17
Ethiopia	97929317	104957438	93,30384	Eritrea	1,04
Kenya	188876	49699862	0,380033	Seychelles	0,98
Lesotho	14636	2233339	0,655342	Burundi	0,91
Libya	0	6374616	0	Zambia	0,56
Madagascar	1646194	25570895	6,437764	Tanzania	0,24
Malawi	76536	18622104	0,410995	Namibia	0,23
Mauritius	59014	1264613	4,666566	Egypt	0,21
Mozambique	36548288	29668834	123,1875	Botswana	0,06
Namibia	317779	2533794	12,54163	Madagascar	0,06
Seychelles	2058	95843	2,147262	Swaziland	0,05
South Africa	77109407	56717156	135,9543	Kenya	0,05
Sudan	0	40533330	0	Mauritius	0,03
Swaziland	1518	1367254	0,111025	Lesotho	0,03
Tanzania	3296768	57310019	5,752516	Malawi	0,01
Uganda	24187594	42862958	56,43006	Angola	0,01
Zambia	2796155	17094130	16,3574	Libya	-
Zimbabwe	18917779	16529904	114,4458	Sudan	-

Source: Author

Djibouti is the highest ranked country with 37.6% after considering population followed by DRC that has 32%. Similar to earlier the statistics, there is a huge difference between the second placed and third placed Mozambique that only has 9%. Comoros and South Africa are in the 5% range whilst Ethiopia and Zimbabwe are in the 2% range. Four countries namely Uganda, Eritrea, Seychelles and Burundi have averages of 1%. Smaller economies such as Malawi, Seychelles, Swaziland and Lesotho are likely to experience no trade diverted from them with values close to USD 0. This is possibly because these countries trade mostly with South Africa, an argument which some of them raised in the early years refusing to join bigger regional economic communities. In general, bigger economies are more likely to experience more trade diversion per capita than smaller economies. However, the results of Kenya contrast this general rule. Although Kenya is a relatively large economy, most of its intra-African trade is within the East African Community (EAC) whose level of integration is much deeper and more developed than the TFTA. this implies that the TFTA will is likely not to have any significant effect on the trading patterns and structure of not only Kenya but also other EAC members. The following table presents the trade diversion figures per product classification.

Table 7.21: Trade diversion by product classification and economic sector

Country	SoP1	SoP2	SoP3	SoP4
Angola	4,501	57,983	10,269	0,307
Botswana	0	0,897	8,46	0,014
Burundi	0,656	62,413	691,597	199,299
Comoros	4,093	18,891	106,095	7,82
Congo DR	1227,716	18012	41183,16	31346,3
Djibouti	117,696	198,45	2531,69	507,075
Egypt	261,737	2970,59	1269,481	688,578
Eritrea	19,688	88,617	275,357	77,872
Ethiopia	2446,74	12152,4	28910,68	4994,67
Kenya	3,084	21,547	64,679	3,071
Lesotho	0	0	7,318	0
Libya	0	0	0	0
Madagascar	3,492	41,752	685,171	0,024
Malawi	0	0,083	35,085	3,102
Mauritius	0	0	29,436	0
Mozambique	1045,614	1507,41	6093,371	9627,75
Namibia	0	147,528	10,093	1,268
Seychelles	0	0	1,029	0
South Africa	377,915	1532,6	33234,3	3116,79
Sudan				
Swaziland	0	0	0,759	0
Tanzania	10,516	752,359	656,699	157,007
Uganda	68,466	2861,93	4455,125	4682,46
Zambia	0,442	19,752	1366,243	10,599
Zimbabwe	0,027	56,839	4170,98	4459,41
Total	5592,383	40504	125797,1	59883,4

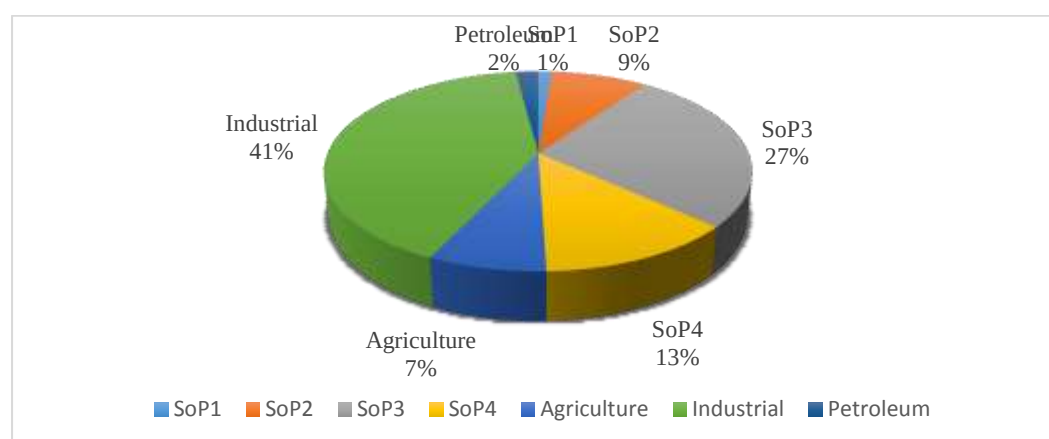
Source: Author's computations based on SMART simulations

SoP1 = Raw Materials; SoP2 = Intermediate Goods; SoP3 = Consumer Goods; SoP4 = Capital Goods

The results presented in Table 7.21 indicate that raw materials will have trade diversion of only USD 5.6 million which is about 1% of total trade diversion. Ethiopia will experience the highest trade diversion of raw materials with a value of around USD 2.4 million followed by DRC and Mozambique that will have USD 1.2 million and USD 1 million. The rest of the countries will experience very little diversion in terms of raw materials. This makes economic sense because since raw materials are abundant and can be cheaply accessed in most African countries, it is least likely that African countries were trading with high-cost suppliers of resources. Thus, there will be little diversion in this classification.

The level of trade diversion for intermediate goods is approximately 9%, which amounts to around USD 40 million. DRC, Egypt, Ethiopia, Mozambique, South Africa and Uganda are among the countries to experience the highest trade diversion in this classification. In the case of coastal countries like Egypt, Mozambique and South Africa, it is likely that they were importing these intermediate goods from other efficient producers from outside the continent. The TFTA is now making the African products cheaper due to eliminated tariffs although it may not necessarily mean that these African commodities were efficiently produced. The same analysis can also be applied for consumer and capital goods which have a proportion of trade diversion of about USD 126 million (27%) and USD 60 million 13%, respectively. For instance, South Africa is also a member of the BRICS community, which implies that it could have been finding it cheaper to import certain products from Brazil that is a more efficient producer. The implementation of the TFTA then implied that African products are now becoming cheaper for the simple reason that tariffs have been removed which may lead to South Africa now diverting its trade from Brazil to other African countries. The trade diversion figures for most small economies especially in Southern Africa are close to zero because of their reliance on the South African economy. This implies that, for these small economies, South Africa will remain an efficient trading partner both before and after the implementation of the TFTA leading to minimal trade diversion on their part. Figure 7.5 below indicates the proportions of trade diversion for each product classification and economic sector.

Figure 7.5: Trade diversion by product classification and economic sectors



Source: Author

SoP1 = Raw Materials; SoP2 = Intermediate Goods; SoP3 = Consumer Goods; SoP4 = Capital Goods

The table below presents the trade diversion figures according to economic sector. There is relatively little diversion in the agricultural sector which is about 7% of total diversion. Since most African countries are agro-based economies, this result makes economic sense because it is unlikely that countries were importing from less efficient producers prior to the TFTA. Moreover, most African countries were had already relaxed their tariffs for most agricultural products for supplementing food security, nutrition and health. The industrial sector is the largest with trade diversion of up to 41% which amounts to approximately USD 192 million. DRC will experience diversion of up to USD 75 million whilst Ethiopia and South Africa will experience diversion of around USD 36 million. Ethiopia is currently engaging in massive rebuilding and reconstruction of its industries and it is likely that it was trading with other efficient producers of industrial equipment who were not part of the TFTA. Therefore, the implementation of the TFTA will lead to significant trade diversion on their part. Mozambique also has a relatively huge figure of USD 15 million. Other economies like Uganda, Zimbabwe and Egypt have values of USD 11 million, USD 6.7 million and USD 4.5 million, respectively.

Table 7.22: Trade diversion by economic sector

Country	Agriculture	Industrial	Petroleum	Total
Angola	62,44	10,621	0	146,121
Botswana	0,002	9,368	0,005	18,746
Burundi	29,902	472,564	454,867	1911,298
Comoros	46,453	85,688	4,761	273,801
Congo DR	16135,35	75126,61	1594,378	184625,5
Djibouti	657,81	1783,696	913,406	6709,823
Egypt	837,03	4545,132	0	10572,54
Eritrea	247,194	214,338	0	923,066
Ethiopia	9712,443	37556,87	2155,513	97929,32
Kenya	35,673	60,822	0	188,876
Lesotho	0	7,318	0	14,636
Libya	0	0	0	0
Madagascar	910,876	4,879	0	1646,194
Malawi	0,09	32,335	5,841	76,536
Mauritius	0,001	29,577	0	59,014
Mozambique	2319,274	15221,18	733,697	36548,29
Namibia	0,037	158,853	0	317,779
Seychelles	1,029	0	0	2,058
South Africa	3297,08	35518,29	32,428	77109,41
Sudan				0

Swaziland	0,759	0	0	1,518
Tanzania	105,287	1560,989	53,911	3296,768
Uganda	1012,736	11020,92	85,95	24187,59
Zambia	37,154	1361,284	0,681	2796,155
Zimbabwe	3,168	6734,659	3492,698	18917,78
Total	35451,79	191516	9528,136	468272,8

Source: Author's calculations

The discussions above were analysing trade creation and trade diversion separately. This step was necessary because factors which influence trade creation are not necessarily the same as those which influence trade diversion. For instance, trade creation is mainly influenced by that proportion of change in trade which is directly related to change in tariffs. When tariffs reduce, then countries are more likely to engage in international trade with each other than before. However, trade diversion occurs when a country now has to switch from a more efficient producer of a commodity who is not a member country of a trade agreement such as the TFTA in favour of a less efficient producer who is a member. The switch (diversion) will be caused simply because the goods of the member country are now cheaper due to reduced tariffs and not necessarily because they were efficiently produced.

7.3.4 Net trade effect of the TFTA

The net trade effect is the summation of the trade creation and the trade diversion effects. The latter (trade diversion) is subtracted from the former (trade creation) and the results are presented in Table 7.23 below.

Table 7.23: Net trade effect by country

Country	TC Total	TD Total	TE (Net Trade Effect)	Country	TE (Net Trade Effect)
Alphabetical Order				Highest to lowest	
Angola	147,618	146,121	1,497	Congo DR	1662948,48
Botswana	103,061	18,746	84,315	Mozambique	146495,012
Burundi	6996,795	1911,298	5085,497	Ethiopia	119323,183
Comoros	3443,476	273,801	3169,675	South Africa	106466,593
Congo DR	1847574	184625,5	1662948,48	Djibouti	18692,897
Djibouti	25402,72	6709,823	18692,897	Uganda	11255,206
Egypt	14144,12	10572,54	3571,577	Zimbabwe	9166,251
Eritrea	3276,42	923,066	2353,354	Tanzania	6626,514
Ethiopia	217252,5	97929,32	119323,183	Burundi	5085,497
Kenya	1584,485	188,876	1395,609	Zambia	3950,129
Lesotho	42,349	14,636	27,713	Egypt	3571,577

Libya	0	0	0	Comoros	3169,675
Madagascar	1137,702	1646,194	-508,492	Eritrea	2353,354
Malawi	185,365	76,536	108,829	Kenya	1395,609
Mauritius	27,366	59,014	-31,648	Malawi	108,829
Mozambique	183043,3	36548,29	146495,012	Namibia	86,589
Namibia	404,368	317,779	86,589	Botswana	84,315
Seychelles	66,148	2,058	64,09	Seychelles	64,09
South Africa	183576	77109,41	106466,593	Swaziland	49,535
Sudan	0	0	0	Lesotho	27,713
Swaziland	51,053	1,518	49,535	Angola	1,497
Tanzania	9923,282	3296,768	6626,514	Libya	0
Uganda	35442,8	24187,59	11255,206	Sudan	0
Zambia	6746,284	2796,155	3950,129	Mauritius	-31,648
Zimbabwe	28084,03	18917,78	9166,251	Madagascar	-508,492
Total	2568655	468272,8	2100382,17	Total	2100382,17

Source: Author's computations based on SMART simulations

Without considering population, DRC stand to be the highest net gainer followed by Mozambique, Ethiopia and South Africa. DRC will potentially gain a total of USD 1.6 billion with the second most potential gainer, Mozambique following at approximately USD 146 million. Ethiopia and South Africa will have potential values of USD 119 million and USD 106 million, respectively. Countries with average values in terms of the figures reflected above include Zimbabwe, Burundi, Tanzania, Zambia, Egypt, Comoros and Kenya. The average values range between USD 18 million for Djibouti and USD 1.4 million for Kenya.

Although the values are positive for Malawi, Seychelles, Angola and SACU countries (Namibia, Lesotho, Swaziland and Botswana), the values are significantly low to an extent that it is unlikely that these countries will not derive much from the tripartite arrangement. According to the analysis, Malawi will gain approximately USD 108 000, Swaziland USD 50000 and Angola USD 1 200. However, there are suspicions of data from Angola which is suspected to be insufficient. Mauritius and Madagascar are the two countries indicating negative net effects of the TFTA in the short run. It should be noted that the SMART model reflects static results which implies that these countries may still stand to benefit in the long run as a result of dynamic effects. Table 7.24 below indicates the net trade effect per capita to reflect what the individual citizen potentially stands to gain or lose from the TFTA.

Table 7.24: Net trade effect per capita

Country	NE	Population	Per K	Highest to lowest % share	
Angola	147,618	29784193	0,004956	Djibouti	37,57
Botswana	103,061	2291661	0,044972	Congo DR	32,15
Burundi	6996,795	10864245	0,64402	Mozambique	8,73
Comoros	3443,476	813912	4,230772	Comoros	5,99
Congo DR	1847574	81339988	22,71422	South Africa	4,58
Djibouti	25402,72	956985	26,54453	Ethiopia	2,93
Egypt	14144,12	97553151	0,144989	Zimbabwe	2,4
Eritrea	3276,42	4474690	0,732212	Uganda	1,17
Ethiopia	217252,5	104957438	2,06991	Eritrea	1,04
Kenya	1584,485	49699862	0,031881	Namibia	0,98
Lesotho	42,349	2233339	0,018962	Seychelles	0,98
Libya	0	6374616	0	Burundi	0,91
Madagascar	1137,702	25570895	0,044492	Zambia	0,56
Malawi	185,365	18622104	0,009954	Tanzania	0,25
Mauritius	27,366	1264613	0,02164	Egypt	0,21
Mozambique	183043,3	29668834	6,169548	Botswana	0,06
Namibia	404,368	2533794	0,15959	Madagascar	0,06
Seychelles	66,148	95843	0,69017	Kenya	0,05
South Africa	183576	56717156	3,236693	Swaziland	0,05
Sudan	0	40533330	0	Lesotho	0,03
Swaziland	51,053	1367254	0,03734	Mauritius	0,03
Tanzania	9923,282	57310019	0,173151	Angola	0,01
Uganda	35442,8	42862958	0,826886	Malawi	0,01
Zambia	6746,284	17094130	0,394655	Libya	0
Zimbabwe	28084,03	16529904	1,698983	Sudan	0
Total					

Source: Author

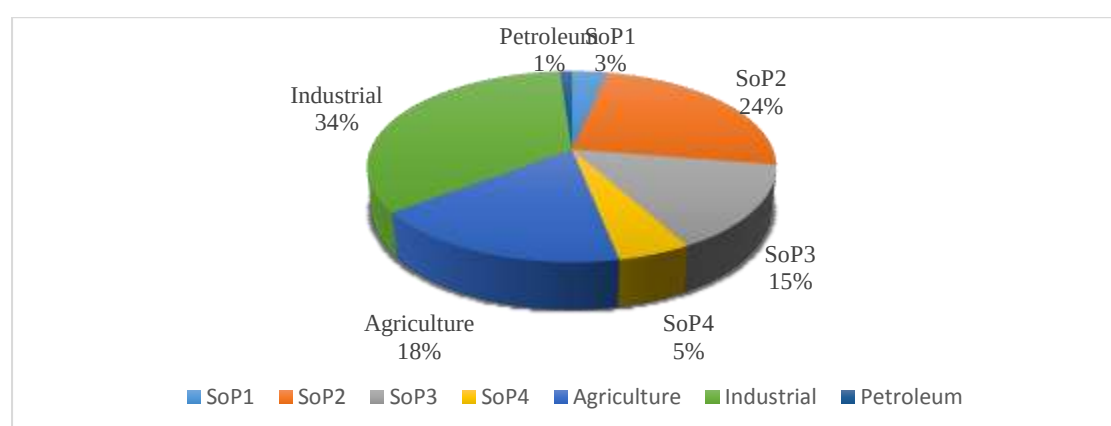
In terms of per capita income, the major change is that of Djibouti which will be the country likely to benefit the most with a net share of 37.6%. Djibouti has a very small population which implies that its net benefits will be shared amongst a few, assuming equal distribution of income. DRC is the second largest net gainer with a net worth of 32%. Mozambique is the third placed net gainr according to this simulation with a potential net gain of 8%. Another country that is likely to gain ground in terms of overall net gains is Comoros which is fourth placed with an overall accumulation of 6% per capita whilst South Africa is close by at 5%. Other countries with an overall net gain of more than 1% include Ethiopia, Zimbabwe, Uganda and

Eritrea whilst Namibia and Seychelles are very close to 1% with overall share values of 0.98%. Libya and Sudan are not included in this analysis.

Although the results are skewed towards a few countries especially for the case of DRC, the simulation results are encouraging since they reflect that some countries apart from the large and already industrialised economies stand to gain from the tripartite agreement. For instance, countries like Djibouti, Mozambique, Comoros, Ethiopia, Uganda, Zimbabwe, Namibia and Seychelles will have considerable net gains. Secondly, the SMART model only reflects once-off effects. This implies that even for those countries whose net gains are marginally smaller, the results are likely to increase due to multiplier effects. Thus, dynamic models are likely to produce even much greater gains for all TFTA countries.

Figure 7.6 below shows the net effects by product classification. The results and arguments are not significantly different from those presented and discussed earlier under the trade creation and trade diversion subsections. The results presented below indicate that the industrial and trade in intermediate goods have the highest potential to become beneficiaries of the TFTA. The industrial sector will have 34% net gain whilst the latter will gain 24%. The agricultural sector is expected to increase by 18% and trade in consumer goods will gain by approximately 15%. Petroleum trade will be the lowest with a 1% increase whilst raw materials will gain a meagre 3%.

Figure 7.6: Net trade effect by product classification and economic sector



Source: Author

SoP1 = Raw Materials; SoP2 = Intermediate Goods; SoP3 = Consumer Goods; SoP4 = Capital Goods

7.3.5 The revenue effects of the tripartite agreement

In the theoretical and empirical discussions above, the study indicated that joining a free trade area also results in the loss of customs or government revenue. The more restricted an economy was prior to joining the TFTA, the more revenue loss it will incur. Table 7.25 below presents the potential losses in customs revenue when countries begin implementing the TFTA that would result in an elimination of tariffs among member countries. The table shows two categories, the losses that will be incurred by governments when they trade with other TFTA countries and the second column indicates the losses that will be incurred when considering all countries of the world.

Table 7.25: Revenue effects at country level

Country	Revenue Effect 1000 USD	Revenue Effect World
Angola	-304,257	-152,129
Botswana	-70,418	-36,471
Burundi	-3015,257	-1509,267
Comoros	-482,245	-241,125
Congo, Dem. Rep.	-642110,193	-337015,583
Djibouti	-13486,11	-6743,055
Egypt, Arab Rep.	-12617,557	-6437,099
Eritrea	-1520,606	-760,303
Ethiopia(excludes Eritrea)	-163832,689	-82534,487
Kenya	-1822,125	-936,522
Lesotho	-38,924	-19,462
Libya	0	0
Madagascar	-1722,688	-943,664
Malawi	-152,944	-76,472
Mauritius	-68,366	-34,183
Mozambique	-72350,681	-36177,856
Namibia	-442,815	-221,416
Rwanda	-11170,479	-5651,845
Seychelles	-27,71	-13,855
South Africa	-131634,762	-66246,567
Swaziland	-60,702	-30,351
Tanzania	-6151,037	-3144,46
Uganda	-40185,748	-20144,364
Zambia	6352,477	-3180,108
Zimbabwe	-27539,002	-14400,852
Total	-1124454,838	-586651,496

Source: Author's Computations based on SMART simulations

The SMART model clearly reflects that countries will incur greater losses if conditions would be restricted to trading with other TFTA countries. However, the losses will become less when trade from the rest of the world (RoW) is taken into account because some revenue losses will be compensated from non-member countries. In general, countries with less restrictive international trade conditions such as Mauritius, Seychelles, and SACU countries (except for South Africa) will have minimal losses in terms of the customs revenue because they already incurred this loss when they liberalised. At the same time, countries with restrictive trade conditions will have more revenue losses. This is because these countries were generating a significant portion of their revenue from import duties that will no longer be available under a free trade arrangement. Table 7.26 below presents the share of customs duties as a percentage of government revenue and the tax revenue as a percentage of GDP in order to have a succinct view of the fiscal positions of TFTA economies.

Table 7.26: Share of customs duties in government revenue

	Country	Customs duties as % of government revenue	Tax revenue as % of GDP
1	Angola	5	5.7
2	Botswana	33	35.2
3	Burundi	n/a	17.4
4	Comoros	n/a	12.0
5	DRC	25-50	13.2
6	Djibouti	n/a	20.0
7	Egypt	19.74	15.8
8	Eritrea	n/a	n/a
9	Ethiopia	n/a	11.6
10	Kenya	38.6	18.4
11	Lesotho	60	42.9
12	Libya	n/a	2.7
13	Madagascar	n/a	10.7
14	Malawi	25-50	20.7
15	Mauritius	5	19.0
16	Mozambique	25-50	13.4
17	Namibia	25-50	28.8
18	Rwanda	n/a	14.1
19	Seychelles	n/a	32.0
20	South Africa	5	26.9
21	Sudan ⁺	n/a	6.3
22	Swaziland	25-50	39.8
23	Tanzania	25-50	12.0

24	Uganda	50.8	12.6
25	Zambia	25-50	16.1
26	Zimbabwe	< 25	27.2

Source: (Phiri 2011); (Mkenda and Hangi 2009) and Author's compilations

The table above indicates that Lesotho has the highest figures with customs revenue contributing 60% of its government revenue whilst its tax revenue consists of 43% of GDP. Uganda also has a high percentage of customs revenue which is indicated to be approximately 51% whilst Kenya has a share of 38.6%. Data for seven countries was given as a range of between 25% and 50%. Customs revenue for Angola, Mauritius and South Africa are the least with contributions of approximately 5% of total revenue. However, the figure for Angola should be treated with caution since other values presented earlier were inconsistent with economic theory and empirical expectations. Table 7.27 below presents the revenue effects by product classification and economic sector.

Table 7.27: Revenue effects by product classification and sector level

SoP1	SoP2	SoP3	SoP4	Agric	Industrial	Petroleum	Total
-23217,4	-137994	-268959	-120338	-124327	-440598	-21726	-1137160

Source: Author's computations based on SMART simulations

SoP1 = Raw Materials; SoP2 = Intermediate Goods; SoP3 = Consumer Goods; SoP4 = Capital Goods

7.3.6 Welfare effects of the tripartite agreement

In terms of welfare, DRC is the highest overall gainer with a positive welfare of approximately USD 66 million followed by South Africa with USD 20 million and Ethiopia with USD 16 million. Mozambique is another country with significant potential gains estimated at around USD 6.5 million Djibouti, Uganda and Zimbabwe are within the USD 2 million range which is relatively significant considering the size of their economies. Five countries namely Rwanda, Tanzania, Zambia, Egypt and Burundi will have potential welfare gains ranging between USD 150 000 and USD 750 000. The welfare gains of the remaining thirteen countries are below USD 100 000 with Seychelles, Mauritius, Lesotho, Botswana and Swaziland having the lowest welfare values below USD 5 000. The values reflected in the welfare table below reflect consistency with the values discussed earlier.

Table 7.28: Welfare effects at country level

Alphabetical order			Highest to lowest		
Country	Welfare in 1000 USD (TFTA)	Welfare in 1000 USD (World)	Country	Welfare in 1000 USD (TFTA)	Welfare in 1000 USD (World)
Angola	47,009	23,505	Congo, DR	125155,615	65895,232
Botswana	3,1	1,551	South Africa	38222,748	20089,485
Burundi	279,832	140,017	Ethiopia	32128,651	16152,781
Comoros	163,743	81,873	Mozambique	12999,386	6499,762
Congo, DR	125155,615	65895,232	Djibouti	3882,5	1952,007
Djibouti	3882,5	1941,25	Uganda	3858,679	1941,25
Egypt	723,614	395,276	Zimbabwe	3756,279	1907,53
Eritrea	190,649	95,325	Rwanda	1493,138	749,456
Ethiopia	32128,651	16152,781	Tanzania	1350,591	687,957
Kenya	48,825	24,822	Zambia	971,611	486,858
Lesotho	6,721	3,361	Egypt	723,614	395,276
Libya	0	0	Burundi	279,832	140,017
Madagascar	51,384	27,661	Eritrea	190,649	95,325
Malawi	17,045	8,522	Comoros	163,743	81,873
Mauritius	7,771	3,886	Madagascar	51,384	27,661
Mozambique	12999,386	6499,762	Kenya	48,825	24,822
Namibia	26,186	13,093	Angola	47,009	23,505
Rwanda	1493,138	749,456	Namibia	26,186	13,093
Seychelles	8,423	4,212	Malawi	17,045	8,522
South Africa	38222,748	20089,485	Seychelles	8,423	4,212
Swaziland	2,86	1,43	Mauritius	7,771	3,886
Tanzania	1350,591	687,957	Lesotho	6,721	3,361
Uganda	3858,679	1952,007	Botswana	3,1	1,551
Zambia	971,611	486,858	Swaziland	2,86	1,43
Zimbabwe	3756,279	1907,53	Libya	0	0
Total	225396,36	117186,852	Total	225396,36	117186,852

Source: Author's computations

The statistics above indicates that the Tripartite Free Trade Area (TFTA) will lead to overall positive welfare gains within the regional economic community (REC). However, despite the positive gains the statistics reflect that the distribution of the welfare is not evenly distributed among the member countries which is a concerning outcome. Some countries tend to benefit more than others which is likely to widen the gap between the rich and the poor thereby defeating the objective of the African Economic Community (AEC) of reducing poverty incidence and minimising the gap between wealthier and poorer countries.

Table 7.29: Welfare effects by product classification and sector level

SoP1	SoP2	SoP3	SoP4	Agricultural	Industrial	Petroleum	Total
4432,29	36368,1	56160,36	11268,7	32617,72	82671,5	1897,483	225416,1

Source: Author's computations based on SMART simulations

SoP1 = Raw Materials; SoP2 = Intermediate Goods; SoP3 = Consumer Goods; SoP4 = Capital Goods

Table 7.29 above presents the welfare contributions using product classifications and economic sectors. The industrial sector will contribute more welfare increases when the tripartite agreement is in effect with an approximate value of USD 82 million. Trade in consumer goods are placed in second position in terms of welfare contributions with a value of USD 56 million. Intermediate goods will increase welfare by USD 36 million whilst agricultural produce will contribute a welfare increase of more than USD 32 million dollars each year. Overall, the increase in welfare within the Tripartite Region is approximately USD 225 million per annum.

7.3.7 The Case of DRC

The results for DRC have been an outlier in most scenarios in the simulations. This subsection discusses the case of DRC as a special case to understand some of the underlying factors in the DRC economy that could be influencing these results. The country possess huge potential which is sometimes disturbed by political conflicts and uncertainties. Following their first multiparty elections in 2006, the economic performance of DRC has been very high oscillating between 6.9% and 9.5% from 2010 to 2016 due to increase business confidence among other factors. However, the economy took a sharp slump to 2.4% in 2016 before slightly recovering to 3.7% in 2017 following increased political conflicts after the announcement of the intention by Joseph Kabila to increase his term of office (Mutisi 2016). There is massive potential for growth in the country if the country manages to attain political stability. Political stability

would entail increased investor and business confidence that will likely to increased trade both regionally and internationally leading to more trade creation. The country is endowed with rich natural resources that range from diverse minerals, good agricultural lands and climate. It was the largest producer of cobalt globally (USGS, 2016) and was the second largest producer of industrial diamonds in 2015 with a global share of 24% after Russia which contributed around 30%. In addition, the country has the highest reserves of copper globally. The copper grade in some mines is as high as 3% which is significantly higher than the global average of 0.8% (ANAPI 2016; GTA 2017). The high-grade concentration provides a comparative advantage since the low costs mines attract private firms. DRC produces approximately 1,1 million tons of copper in 2016 and exceed the forecasts by 2.6%. In the mining sector, DRC has operational costs which are lower than conventional gold producing economies like South Africa causing a lot of renewed interest in the mining sector (FEC 2016; Staines 2018).

In terms of agriculture, the country has over 80 million hectares of arable land and great potential to become a global powerhouse. However, there is no food independence in the country because it is still producing way below its capacity and is failing to meet its domestic demand. The sector currently accounts for 18% of GDP and over 60% of new jobs that are mainly under subsistence farming; commercial agriculture is still limited. Once this potential is tapped into, the country has massive potential even for export. The recent discoveries of oil and gas reserves are also set to place the nation as the second largest reserves of crude oil in Central and Southern Africa, only following Angola. These reserves are not only likely to boost its oil export, but also huge electricity capacity through the establishment of a biogas plant that can trap its methane gas. This will go a long way in supplementing the current energy supplies which are way low than the regional average. Currently, 70 million people that is approximately 30% of urban population and 1% in rural population have access to electricity. The lack of energy access is negatively not only the health and education of its citizens, but also the productivity levels and potential to generate income for millions of Congolese people. Overall, the country carries huge potential due to its natural endowments in minerals and resources and its size that can lead to economies of scale once the potential has been tapped into. Although the author concentrated on cereal products only, a simulation study by Makochehanwa, (2012a) also confirmed that DRC would have the highest share of trade creation of 40.07% and an overall net trade effect of 48.39% if the TFTA is to be implemented. These simulation results indicate the amount of potential possessed by the country should its policy makers address not only their politics but also their international trade policies.

7.4 SUMMARY OF RESULTS

This section presented and discussed the empirical estimations of the World Integrated Trade Solution-Software for Market Analysis and Restrictions on Trade (WITS-SMART) model. In this context, elasticities were estimated and justified and real 2015 trade data and 2017 population were employed to perform the simulations. Trade simulations were also performed under the assumption of a 100% elimination of the currently applied tariff rates (as opposed to bound rates) recognized by the World Trade Organisation (WTO) for each country. This implies that if countries will finally agree on something less than a 100% tariff elimination (which is free trade by definition), then the values presented above will be lower depending on the magnitude of the variance from the 100% deduction. After performing the trade simulations, simulation results were further analysed by considering per capita values in order to have a more representative picture of the potential welfare gains (or losses) which are likely to be brought about because of implementing the TFTA. The results were presented at both country level and by product classification and economic sectors using the standardised Harmonised System (HS).

The results indicated the potential trade to be created and diverted for each country and economic sector (or product classification). The simulations also indicated the potential revenue losses for each member country because of the TFTA. Finally, the simulation results also showed the potential welfare gains to be drawn from the tripartite arrangement. The SMART simulation procedure was able to indicate using real trade data, the actual value in United States dollars, which countries and economic sectors stand to benefit from the agreement and to what extent thereby providing answers to questions and objectives raised in Chapter 1.

The SMART model also gave a clearer picture that even though the overall result is positive, the benefits of the TFTA are skewed towards a few countries. The countries that are likely to benefit the most possess two common characteristics. Firstly, they are large economies relative to other economies in the TFTA. Larger economies have greater advantages especially concerning economies of scale in both production and consumption. Secondly, those countries that were currently pursuing restricted international trade policies also had greater potential for gains than those that were already liberalised. This is because the model only captures the immediate effects of trade creation and those countries that are already liberalised will be already enjoying the benefits of liberalisation.

7.5 CONCLUSION OF CHAPTER AND DISCUSSION OF RESULTS

The chapter presented and discussed the results of three models employed in this study in line with the objectives of the study. The first model aimed at establishing the presence of macroeconomic convergence with the TFTA region. Using both statistical and econometric methods, the study was able to show that most macroeconomic indicators which were adopted by the three RECs in their respective ‘macroeconomic convergence criteria’ have been converging over the past fifteen years. The presence of macroeconomic convergence in the context of regional economic integration indicates that economic policies, wealth and business cycles of the respective member countries are becoming more synchronised over time. This makes it relatively easy for policy makers to provide consistent economic policies across the regional economic communities. Secondly, it also assists policy makers in dealing with asymmetric shocks across the regional as a result changes in exogenous variables since economies will be moving in a systematic fashion. Thirdly, from a wealth perspective, macroeconomic convergence over time is also one of the indicators that the income of countries is moving closer towards each other. In other words, the variance between the upper and lower bound will be narrowing over time. This is desirable because it indicates a much smoother distribution of income and wealth over time.

The second model employed was the augmented gravity model. The gravity model established the factors that have a significant influence on the level of bilateral trade among the three regional economic communities (RECs) which make up the tripartite region. The results were able to meet aprior expectations. Secondly, the gravity model was also employed to determine the level of trade creation and trade diversion prior to the formation of the TFTA. Bilateral trade was used as a proxy for intra-regional trade. The last model employed in the study is the WITS-SMART simulation model which was aimed at indicating the potential gains or losses that could be brought about as a results of implementation of the TFTA. These included potential trade creation and diversion effects of a tariff change and subsequently the net effects, the potential revenue losses and the potential welfare effects of implementing the TFTA. Except for a few countries such as Angola, Libya and Sudan whose data was inconsistent and insufficient, the SMART model was able to meet apriori expectations for most countries and economic sectors in its results.

The three models assist in establishing the overarching objective of the study, that is, to establish the welfare effects of regional economic integration in the context of the TFTA. Using

variant techniques and different data sets from the 26 African countries, the results from the three models indicate with great consistency that regional economic integration has positive effects on the 26 African countries under study. Largely, the results of the three models concur with the theoretical and empirical literature discussed earlier that economic integration leads to greater, positive economic and welfare gains both for the individual countries and for the region in general. The following chapter discusses the conclusions, policy recommendations and highlight some areas for further research related to this study.

8 CHAPTER 8: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

8.1 Introduction

The previous chapter, Chapter 7, discussed and subsequently reported the empirical estimations and findings of the three models that were explained in chapter 6. This is the final chapter and it encapsulates the salient elements which make up this thesis. The thesis investigated the welfare effects of economic integration in the tripartite free trade area. Regional economic integration is a subject that has been developing in Africa since the inception of the African Union (formerly the Organisation of African Unity) in 1963. The tripartite agreement was the largest trade integration agreement in Africa when the writing of this thesis began. Therefore, the thesis was concerned with investigating the welfare effects of economic integration in the tripartite free trade area.

The study recaps the empirical objectives of the study which were stated in the first chapter. The first objective was aimed at establishing if the economies in the three regional economic communities (that is, COMESA, EAC and SADC) were converging or diverging. To achieve this objective, the study employed econometric tests to test for σ - and β -convergence using the strategic macroeconomic variables which were already adopted by the three economic communities in their macroeconomic convergence criteria. β -convergence was used to determine if poor countries are countries at a faster rate than rich countries and its coefficient is indicated by a negative correlation between initial income per capita and the growth rate in income per capita. This study placed much emphasis on the σ -convergence which tests if the dispersion between the per capita levels were declining over time. The study was able to show the presence of macroeconomic convergence for most macroeconomic variables using both statistical and econometric methods.

The second empirical objective was aimed establishing the variables which influence the level of bilateral trade within the TFTA community. This was achieved by employing the augmented gravity model. The augmented model served two purposes. Firstly, it investigated the factors which influenced the level of bilateral trade in the TFTA region. Bilateral trade among TFTA countries was used as an indicator or proxy of the level of intra-trade. Secondly, the augmented gravity model was used to empirically establish the level of trade creation and trade diversion in the three RECs prior to the formation of the tripartite agreement. Trade creation and trade

diversion gives an indication of the level of welfare effects across the TFTA members. Generally, the results indicated positive net welfare effects for SADC and COMESA but the model was not able to determine the level of net welfare effects for the EAC region.

The other empirical objectives were aimed at establishing the potential winners and losers from the TFTA. The potential winners and losers were analysed at both country and sectorial level using the WITS-SMART simulation model. The model indicated the countries and economic sectors which were likely to benefit the most (or least) in terms of overall welfare effects. In addition, the WITS-SMART model was also able to show the potential revenue effects which are likely to accrue when the TFTA is implemented.

8.2 Summary of thesis

The study has eight chapters. The first chapter, Chapter 1, introduced the matters which led to the study. The chapter elaborated upon the general introductory issues and the background of the subject leading to the thesis. The first chapter also presented and briefly discussed the problem statement, study objectives, the significance and justification of the study as well as ethical considerations. Chapter 1 laid the foundation of the study.

Chapter 2 discussed the profiles of the eight regional economic communities recognised by the African Union (AU). More specifically, the chapter discussed in detail the profiles of the three RECs under consideration (that is, COMESA, EAC and SADC). The chapter discussed the background of each REC and their respective governance structures. Furthermore, the objectives and strategic policies of each REC especially those related to macroeconomic convergence and trade instruments were also discussed. The chapter also discussed how the three RECs finally integrated and formed the tripartite agreement (TFTA) in order to maximise the potential benefits for their member countries.

Chapter 3 discussed the theoretical literature on regional economic integration. The first section discussed the classical theories followed by the international trade theories. The theoretical theories also discussed the static and dynamic theories of economic integration. The other theoretical discussions were on economic convergence and growth models in the context of regional economic integration. The thesis also discussed theories on the new economic geography, a relatively new area of economic integration theory. Finally, the study also discussed regional economic integration theories inclined towards the political economy such as neofunctionalism, inter-governmentalism and organisational theory. The trade models

ranged from those postulated by classical theorists such as Adam Smith, David Ricardo, Eli Heckscher, Bertil Ohlin, Wolfgang Stolper, Paul Samuelson and Jacob Viner among others to more recent theorists such as Paul Krugman. The study also evaluated the robustness of the trade theory models highlighted and discussed some lessons arising from these theories and models. The theoretical discussions provided the rational framework upon which the thesis reviewed its empirical literature and influenced the methodology.

Chapter 4 of the thesis reviewed the empirical literature. The empirical studies were categorised according to their related and relevant categories. The first section discussed the relationship between trade orientation or the degree of openness and economic growth in the context of regional economic integration. This section analysed both the multi-country studies and early econometric studies. The thesis also analysed the role of infrastructure and institutions, the static and dynamic effects of liberalising trade and also the effects of devaluating currencies on the level of trade. The second section of empirical literature analysed the role of geography on macroeconomic convergence and economic integration. The study also reviewed some African studies on the subject of macroeconomic convergence in the perspective of regional economic integration. The third section presented some empirical discussions of the welfare effects of economic integration and the last section presented some empirical studies specifically on the TFTA.

Chapter 5 discussed some obstacles which are particularly relevant to the African economic integration process. These challenges range from overlapping membership issues, political and legal factors to challenges associated with world markets and international finance institutions. Other challenges are with regards to the exclusiveness of regional economic communities and the sharing of welfare of gains and losses. The chapter also discussed some possible solutions to overcome these challenges.

Chapter 6 presented and discussed three methodological frameworks applied in the thesis. The first econometric model was testing whether or not the strategic macroeconomic variables identified in the convergence criteria were converging or diverging between the time when the East African Community was established in 2000 until the TFTA was ratified in 2015. The second model was the augmented gravity model which was also tested over the same period (2000-2015) and the third one was the WITS-SMART model. The first two are econometric models whilst the third one is a simulation model. In particular, the methodological frameworks discussed the various steps taken when estimating the models, the variables included and their

justification and how results were interpreted. The chapter also highlighted the data sources, data sets and units of measurements and the justification for their use in relation to the study.

Chapter 7 presented the results of the empirical estimations, interpreted and analysed them. The results are presented in order; firstly, the convergence results followed by the augmented gravity model results and finally the SMART simulation results. The first results indicated that there exists some strong level of macroeconomic convergence for most macroeconomic economic variables identified by the three RECs in their respective macroeconomic convergence criteria. The strength of convergence is robust in the majority of variables and relatively weaker in others but, overall, the economic policies of the 26 member countries of the three RECs tend to converge over time.

In the second model, the variables in the augmented gravity model were able to meet apriori expectations on the factors which influence the level of bilateral trade among the member states of the TFTA community. The gravity model was also able to indicate the degree of trade creation and trade diversion experienced prior to the formation of the TFTA. In general, the SADC community was experiencing more trade creation than the EAC and COMESA prior to the formation and implementation of the tripartite agreement. Diagnostic tests were conducted for robustness of results.

In the third model, the WITS-SMART model indicated that trade creation outweighs trade diversion leading to positive net welfare effects for most TFTA countries. However, there is some strong level of polarisation of benefits since overall net benefits are skewed towards a few countries and economic sectors. The simulation results for the Democratic Republic of Congo were considered as an outlier and a supplementary section was included to provide possible reasons for such an outcome. The SMART model also indicated the potential revenue losses at both country and sectorial level as a result of the elimination of tariffs by member countries. In general, countries which are already liberalised or part of a free trade area are likely to lose less revenue than relatively closed economies. Overall, the three models were able to meet apriori expectations. These expectations were derived from theoretical and empirical review.

Chapter 8 provides the summary and policy inferences derived from this study. In other words, the chapter presents the executive summary of the whole study in a lucid and condensed manner. In addition, this chapter also presents the limitations of the study and the opportunities for further research regarding the matter under consideration in this study. The important

contributions regarding the subject of welfare effects of regional economic integration are also highlighted in this chapter.

8.3 Overall policy implications

This section discusses some policy recommendations derived from this study. The policy recommendations proposed in this thesis are not only emanating from the estimated econometric and simulation results but also from the reviewed literature.

8.3.1 Policies related to macroeconomic convergence

The study found that there is no clear criteria for macroeconomic convergence in the tripartite region and the study, therefore, recommends that TFTA member countries should adopt the strategy of setting up a macroeconomic convergence criteria. This strategy was separately adopted by the three RECs prior to the formation of the TFTA and results indicate that the strategy was effective in instilling discipline towards convergence since a clear quantitative benchmark will be set in the convergence criteria. The empirical results from this study indicated the presence of macroeconomic convergence which implies that economic policies were becoming synchronised over time. Synchronisation implies business cycles are moving in a systematic fashion. Synchronisation of economic policies for countries which are integrated is important because it makes it easier for member countries to adjust their economic policies and deal with asymmetric shocks. Since business cycles will be moving in a systematic manner, an adjustment of one instrument will have a closer to uniform effect on all economies thereby making it easier for policy makers to prescribe similar recommendations to the majority of member countries. The challenge of asymmetric shocks is that they can undermine the real economy and the effect is usually larger in smaller economies than in larger ones thereby worsening the welfare positions of the citizens in these countries. Thus, synchronisation allows for effected policies to have a spread out effect especially from larger economies which are able to cope and absorb better than smaller ones thereby evening out the overall effect of the asymmetric shocks. In other words, convergence makes it feasible for policies which address the effect of these shock across the TFTA region to dampen the negative effects of the shocks. Using Robert Mundell's (1973) argument on international risk sharing, larger free trade areas such as the TFTA are better able to cope with asymmetric shocks than smaller ones. Mundell also highlighted that the positive effects could be expatiated if free trade areas are complemented by common currencies. However, the issue of common currencies is beyond the scope of this study.

The general result from the econometric analysis is that convergence was detected for some countries and some macroeconomic policy variables especially monetary variables. However, with respect to fiscal policy stance, the TFTA is still characterised by some level of mild divergence and heterogeneity. This study suggests that action should be undertaken to sustain the process of economic integration in the TFTA region. There is need for strengthening of the policy harmonisation framework to ensure consistency across the region. The TFTA governance structures can also design effective mechanisms for monitoring and enforcement especially with regards to the macroeconomic convergence criteria. Currently, there are no strict enforcement and accountability procedures which indicates that countries still have a relatively stronger level of autonomy than would be desired in order to achieve much better results in terms of macroeconomic convergence.

Moreover, the study also recommends that the member countries formulate policies which stimulate fiscal discipline, increase transparency and accountability especially to the ‘higher authority’ which in this case will be the TFTA. This is feasible if the ‘higher authority’ has actual authority to set and enforce a stricter set of operational targets and parameters especially in terms of macroeconomic convergence criteria. This is because although there is a decrease in terms of cross-country dispersion over-time (that is, convergence), the majority of TFTA countries are still struggling to fuse (integrate) and stabilise their fiscal positions. This could be indicative of lack of fiscal discipline among some member countries which can be addressed if the ‘higher authority’ of the TFTA can set targets which are enforceable. The lack of fusion and stability makes it increasingly challenging to have meaningful and sustainable coverage. This can be achieved when member countries adopting similar taxation and national budget structures. Similar fiscal structures will ensure consistency and also promote fiscal discipline as government spending will be constrained by the benchmarks established by the ‘higher authority’ of the TFTA.

The study also recommends that the member countries should minimise incurring more debt and consistently continue to service their respective debt obligations. Settling of debt obligations by governments is another indicator of fiscal discipline and good governance which are important factors in boosting business and investor confidence especially if it is done without seignorage revenue. In addition, African countries must not only depend on financial institutions such as the International Monetary Fund (IMF) to introduce programs such as the Highly Indebted Poor Countries (HIPC) but also introduce their own initiatives in order to service debt thereby ensuring that the convergence momentum is sustained.

Complementary to the recommendations highlighted above, the study recommends that the TFTA should establish communitarian institutions in order to deepen macroeconomic integration. This is because deep macroeconomic integration and convergence demands efficient management of the macroeconomic convergence criteria which can be achieved through communitarian institutions. These institutions include, but are not only limited to, a regional system of central banks, surveillance procedures for the banking and credit sectors, data collection and analysis formats and regulatory frameworks for cross-border financial services. Another important factor to be considered include addressing matters concerning the design of the institutions especially during the transitional phases.

8.3.2 Policy recommendations derived from the augmented gravity model

The study recommends that countries engage in regional projects towards infrastructural development especially in transport infrastructure. This recommendation is derived from the gravity model results which indicated that distance is a significant variable and negatively affects the level of intra-regional trade within the TFTA. The TFTA covers a large geographical span from Cape Town in South Africa to Cairo in Egypt in the north and meaningful intra-trade can only be attained if there are proper transport infrastructures which can facilitate trade. There is need to improve both hard and soft infrastructure in the transport sector in order to reduce trading costs thereby improving the levels of intra-trade in Africa. Hard transport infrastructure includes improved road networks, standardised railway systems, better infrastructure at ports and airports. Soft infrastructure include less regulation in air transport to increase competition and efficiency and better infrastructure at the ports. There is also need to harmonise civil aviation regulations such as light safety standards (which include licensing of personnel, airworthiness and flight operations), aerodromes certification aviation security and air navigation services.

The effects of better transport infrastructure can also be complemented by harmonising cross-border infrastructure such as one-stop border post. The recommendation is derived from the empirical results which indicate that shared border has a positive and significant effect on the level of bilateral trade. The overall effect of improved infrastructure is a reduction in operational costs for traders has multiplier effects on overall benefits and wealth in the long run. Furthermore, there should be measures taken to address the negative effect which landlocked countries experience. Results indicate that landlocked countries have an inherent disadvantage on the level of bilateral trade than coastal countries. These disadvantages can be

addressed by granting special trading privileges to landlocked countries to compensate for their inherent disadvantages. This recommendation is aimed at reducing the effects of polarisation of benefits (or costs) to certain parts of the economic region. The aim is to have a closer to even distribution of wealth among the member countries.

The study also recommends that member countries of the TFTA should continue to engage in other measures which open up their economies even further. This is because the results indicate that being a member of a free trade area (FTA) has positive and significant effects on the level of bilateral trade. Membership of REC indicates the amount of incremental trade which can occur beyond what the physical and geographical characteristics of the respective countries can allow. Thus, the results indicate that countries trade more when they relax their borders and move towards trade liberalisation. However, elimination of tariffs is not the only way of opening up an economy. An economy can also be opened up through other non-tariff measures such as reducing quotas, addressing policies regarding rules and regulations of customs procedures and introducing a regional system of payments and regional markets. These will in turn boost the level of trade. In other words, the elimination of tariffs should be complemented by removal of non-tariff barriers for trade liberalisation to be complete. This is because it is possible for an economy to eliminate some tariffs and still not be liberalised due to the presence of non-tariff barriers.

8.3.3 Policy recommendations related to the SMART simulation model

Several recommendations have also be drawn from the SMART simulation procedure. The study recommends that TFTA countries should formulate policies which will cater for the revenue losses that will accrue to countries as a result of elimination of tariffs. The policies should give special attention to smaller economies which do not accrue much benefits in terms of trade created. This is important especially for developing economies because revenue loss implies less resources available to provide for the much needed merit and public goods. Failure for the governments to provide for these basic goods and services would imply that some citizens would become worse off in terms of distribution of welfare, which will neutralise the positive effects of opening up the economy. This is because the purpose of regional economic integration is to increase the welfare levels of the respective member countries and reduce the gap between rich and poor countries (polarisation of benefits). Furthermore, the failure of government to provide for these public amenities will have a negative effect especially on the political mileage at the national level. The effect will be that authorities may become reluctant

to open their economies further for fear of this loss of revenue. Thus, alternative measures should be put in place to protect the interests of both parties, that is, the authorities and the welfare of the individual citizens in the affected economies. These alternative measures could possibly include providing special concessions to strategic industries for a specified period of time to give the economies time to transition without additional pressure from international competitors. The idea is to avoid sudden shocks to these small economies as they may not have sufficient absorption capacity.

The study also recommends that the TFTA countries should develop policies which fosters trade creation within the regional economic community. This can be achieved not only through tariff elimination but also through industrialisation of Africa. Sectorial results indicate that the industrial sector has the highest potential of trade creation if the TFTA is to be implemented. Thus, developing the industrial sector increase the value of output which will in turn raise the value of traded goods thereby increasing the GDP of the respective countries. In addition, industrialisation will also increase intra-African trade since member countries will have to shift their current models of importing industrial products from the rest of the world (RoW) since these products will be now available within the continent at competitive prices and quality. In other words, there is a dynamic or multiplier effect to improving the industrial sector.

The rewards of regional economic integration can be expatiated by integrating upgraded technological systems in production and exports. This integration is important because production in infant industry stage cannot always compete with mature suppliers without substantial level of assistance and promotion such as subsidies. If regional markets are to set less exclusive benchmarks, production in infant industries can be broadened successfully. The availability of subsidies will lead to successful cooperation agreements in Africa in terms of both the share of manufactured products in intra-regional exports and also the increase of this share over time.

However, this success will largely depend on the slow liberalisation of regional markets vis-à-vis the rest of the world. In contrast, Africa is pursuing quicker and broader trade liberalisation compared to the rest of the world. Examples include the recent signing of the African Continental Free Trade Area (AfCFTA) in March 2018 (Tralac, 2018) before the full implementation of the TFTA which was only fully ratified in June 2015 (Tralac, 2016). This unstructured speeding up of the integration processes does not usually yield substantial results on the ground as reflected by the current low levels of intra-trade within the continent.

Therefore, the policy recommendation is that broadening of regional production networks will require a regional market which is not opened up indiscriminately. There should be a more structured and systematic way of deepening the levels of integration in Africa than the models that are being currently pursued.

Integrating economies and liberalising trade may also lead to structural changes in the economy since some economic sectors are likely to gain more than others as reflected in the simulation results. The study, therefore, recommends that certain policies should be adjusted to match the possible structural changes which are likely to happen due to the implementation of the TFTA. For instance, the sectorial results can inform policy makers which economic sectors are likely to be profitable and for which countries. This implies that the country will have, to a certain extent, some measure of comparative advantage in that sector or product classification. Therefore, owners of factors of production will find it profitable to invest in those economic sectors of products. The dynamic effect is that factors of production will begin to shift from the less profitable to more profitable sectors causing structural changes. The policy recommendation derivable therefrom is that there might be need to subsidise those sectors which may be negatively affected especially if those sectors are strategic.

The example of tobacco growers is illustrative of the double-edged nature of how one sector (or crop in this case) can lead to structural changes. On one hand, in the past two decades, most small holder farmers in Malawi and Zimbabwe have been switching from farming maize to tobacco which is a cash crop. Although the latter was profitable, the implication was food shortages. Therefore, there is a need for governments to continue stimulating farmers in the former sector to produce more. On the other hand, the recent developments in the health sector have led to several developed countries such as Australia, New Zealand, Europe and North America beginning to restrict international trade in tobacco (AEO 2016; FEC 2016). This will again lead to structural changes for most developing countries in the long term since tobacco will become less profitable. Although the cited example involves trade between Africa and the rest of the world (RoW), the effects on the structure of the economy due to structural changes in trade in commodities are similar even for intra-TFTA trade as well. Secondly, structural changes in the economy also have implications on the labour market. Labour which was productive in one sector may become redundant in another sector. There is, therefore, need for reskilling and retraining of labour to minimise structural unemployment.

8.3.4 Other generic policy recommendations

The study recommends the need to have a unified system of monitoring and regulating intellectual property rights (IPRs). This is because regional economic integration entails opening up of trading borders and loosening restrictions which may increase the proclivity for intellectual property to be transferred or adopted by other economies in a manner which infringes the rights of the owner. In fact, removal of trade distortions such as tariffs may not necessarily be welfare enhancing if IPRs are not protected.

The study also recommends that member countries should ensure independence of the TFTA so that there is minimal influence from political offices. The first advantage is that an independent regional body has higher credibility. This credibility is vital because it increases the chances of acceptance of the decisions made by the ‘higher authority.’ Such decisions include but not limited to setting targets for its members, setting the threshold for privileges for those economies which need support, deciding and implementing disciplinary decisions and policing of trading and regulatory systems.

Secondly, an independent ‘higher authority’ allows for continuity of the TFTA since it will not be affected by the domestic political developments in the respective member countries. For instance, the change in leadership or governments in any of the member countries should have little bearing on the operations and articles governing the TFTA. However, this should be done in a manner which ensures that the higher authorities are still accountable to governments and transparent in their operations. The challenge is to find an optimal balance between the three; that is, independence, transparency and accountability especially in the African context where the continent is affected by several governance issues. The balance can be achieved by including a proper mix of authority between politicians and technocrats who are experts in various fields such as economics, international trade, law, and logistics among others. The African narrative has been one that is dominated by political structures especially at the executive level. Whilst this model was desirable in the sense that it reflected political will and also that politicians have the domestic political authority to implement the outcomes of agreements in their respective economies, sometimes regional integration progress was stalled when the politicians get absorbed in domestic squabbles in a quest to retain power. Measures can be put in place to transfer part of this executive authority to technocrats so that regional integration progress is not solely depended upon the political powers.

The ultimate effect is a smoothened process of economic integration which stimulates intra-trade. This is because, in some cases, domestic political developments have discouraged some economic stakeholders especially in the private sector to engage in international trade with certain countries because contracts will be largely depended upon the fact a certain regime continues to hold power. Once power shifts, the incoming regime disrupts all existing trade agreements thereby affecting economic players especially in the private sector. Thus, a blend of politicians and technocrats in the executive of the TFTA will ensure continuity of trade agreements even when power changes hands because these agreements would have been made on economic merit rather than political basis.

8.4 Contributions of the study to the existing literature

This study makes some contributions to the existing body of literature on regional economic integration. Firstly, the study was able to show that most macroeconomic variables across the 26 member countries of the TFTA were converging over time since the countries became members of a regional economic community. Thus, the study was able to indicate that regional economic integration can lead to *ex-post* convergence of macroeconomic variables. Convergence implies that business cycles within the respective economies tend to move in a systematic fashion over time. This is necessary condition because it allows regional policies employed to be effective across the member countries since economies will be synchronised. This will further widen the scope for policy making for the tripartite regional region and can even be extended to the recently signed African Continental Free Trade Area (AfCTA). A number of related studies (Rossouw 2006; Zyuulu 2003; Carmignani 2005; Njinkeu and Fosso 2006) only reviewed either convergence in a SADC or COMESA context but no known study had investigated the aspect of macroeconomic convergence in the TFTA context (that is , all three RECs combined) and this study makes a contribution in this regard.

Secondly, the study employed a combination of econometric techniques and simulation procedures in investigating the wealth effects of economic integration. Most studies employed either econometric models or simulation studies but not necessarily both. The study makes a contribution by using different data sets and models to investigate the overall objective of the study. The consistency of the results from the various models reflects robustness of results. Regional economic integration arrangements affects not only the level of bilateral trade but also the wealth (or income) of the respective economies. These different dimensions have been captured in this thesis by the different models which can accommodate them. The study was

able to contribute that regional economic integration increases wealth in Africa from two dimensions. In the first instance, wealth increases through convergence of macroeconomic variables and whilst it increases through trade creation which outweighs trade diversion in the second.

Thirdly, the study made some significant contributions to the theoretical and empirical literatures it reviewed. These contributions were made in Chapters 3 and 4 where various comments and suggestions were made. Theoretically, the study did not only review the classical and international trade theories but also extended the discussions by analysing some unorthodox theories in regional economic integration such as neofunctionalism, intergovernmentalism and organisational theories. The study also focused mainly on developing and transitional economies in its empirical review which provided an opportunity to be more comprehensive in its analysis on various issues which mainly affect developing countries. Notably, the thesis dedicated Chapter 2 to specifically discuss the various issues pertaining the three RECs (COMESA, EAC and SADC) which make up the TFTA and also Chapter 5 to challenges peculiar to the African paradigm of regional economic integration.

In addition, the various policies which were put forward in this study will reinforce the international trade policies and the governance of regional bodies which oversee these policies. The policies will also address some bottlenecks and various challenges which have been identified to be undermining the efficacy of regional trade agreements over the past decades. Although the study is for the TFTA as a whole, it is envisaged that some policies emerging from this study could also be narrowed down, with relevant adjustments, and be applicable in shaping individual countries' trade policy formulation. For instance, individual countries could formulate policies which promote the exports of goods from a particular product or sector thereby maximising from comparative advantages emanating from opening up of borders. This is feasible because the results in the models were integrated to both country and sectorial levels and also by product classification.

8.5 Realisation of objectives of the study

The study managed to achieve all the objectives which were set out in Chapter 1. The study divided the objectives into three categories namely; primary, theoretical and empirical objectives.

The primary objective was set as to establish the welfare effects of economic integration with a view on the Tripartite Free Trade Area. The primary objective was achieved using two econometric models. These econometric models employed historical data of the three RECs which make up the TFTA. Even though the TFTA was ratified in 2015, the three RECs which make up the TFTA were already in existence prior, thus historical data could be employed from 2000 to 2015. The econometric model was able to indicate if the wealth of countries were converging towards each other since the formation of the three RECs. The first model which focused on establishing the level of macroeconomic convergence was able to show that, in general, the wealth of countries is converging indicating a move towards a fairer distribution of income in a regional economic integration context. The results of the first model were complemented by the second model, the augmented gravity model, which also indicated that more trade was created than diverted prior to the formation of the TFTA. This led to positive net welfare effects during the period 2000 to 2015. However, the distribution of trade creation results were skewed towards the SADC region whilst the net effect on the EAC region was almost uncertain to determine using historical data. The primary objective was also achieved using the WITS-SMART simulation procedure which indicated that potential trade creation will outweigh diversion once the TFTA is being fully implemented leading to positive net welfare effects. The SMART model was also able to indicate the revenue effects and the distribution of welfare, that is, which countries and economic sectors are likely to benefit most.

There were three theoretical objectives of this study set out in Chapter 1. The first objective is to describe and assess the underlying thought and scope conditions of theories on welfare effects of economic integration. This objective was realised in Chapter 3 of this study where some classical and international trade theories were discussed and analysed. These include, but limited to (Viner 1950; Ricardo 1817; Napoleoni 1975; Leamer 1995; Samuelson 1949; Stolper and Samuelson 1941). These theories explained from variant perspectives, the rationale for international trade and how welfare changes across different stakeholders as trade is liberalised.

The second theoretical objective of the study focused on describing and assessing the underlying thought and scope conditions on convergence theories. This objective was also achieved in Chapter 3. This chapter discussed pertinent issues on economic integration and trade liberalisation and welfare changes from the viewpoint of macroeconomic convergence. The study reviewed both the *ex-ante* and *ex-post* effects of economic integration on convergence of economic indicators. Strengths and weaknesses of the various theories were also presented and discussed.

The third theoretical objective was to describe and explain the underlying thought on international trade theories. The third objective was also achieved in Chapter 3 where several international trade theories were discussed and analysed in the context of the TFTA. These theories gave differing rationale for international trade and how evolved over the decades and centuries, how international trade is influenced by different factors such as exchange rates, country idiosyncratic factors like location, size of economy, population, and economic integration among several other factors. The three theoretical objectives were also achieved in one way or the other through other theories discussed in Chapter 3. These theories include dynamic and static theories on international trade, growth models and theories on the 'new' economic geography.

There were five empirical objectives set out in this study. Firstly, to investigate if the macroeconomic variables within the TFTA countries are converging or diverging. Secondly, to establish the factors which influence the level of bilateral trade in the TFTA region and thirdly, to establish the trade creation and diversion effects prior to the formation of the TFTA. The fourth and fifth objectives are to establish the potential winners and losers in the TFTA both at country and sector level using simulation procedures. The empirical objectives were achieved through the models built in Chapter 7 of this thesis. The results clearly indicated the presence of macroeconomic convergence for the majority of macroeconomic variables during the period under consideration, that is, 2000 to 2016. The second and third objectives were also achieved in the augmented gravity model. The model was able to show that traditional and idiosyncratic factors highlighted in literature which influence trade also hold true in the case of the TFTA. In addition, the gravity model also indicated the level of trade creation and diversion which has been occurring within COMESA, EAC and SADC prior to the formation of the TFTA.

The fourth and fifth objective were also achieved using SMART simulations. The study was able to show that even though the overall net wealth effects are positive, the distribution of this wealth is not smooth and stronger economies stand to gain more than weaker and poorer countries. The study was able to show that gains of regional economic integration will be polarised and opening up borders and economies alone is not enough to see an equitable distribution of benefits. Therefore the study was able to show that it is not enough to generalise conclusions and simply say economic integration is beneficial but further questions as to how these benefits are distributed should be asked. DRC was an exceptional case and was discussed separately. In addition to the distribution of wealth at the country level, the study was also able

to disintegrate these benefits at the sectorial level. This assists in formulating targeted policies since member countries will become more aware of sectors which have the highest potential in terms of trade creation and also identify key sectors which may need subsidisation especially if these key sectors are not profitable and yet are key to the economy. This is important because as the economies are opened up due to the implementation of the TFTA, economic stakeholders will move from less profitable sectors to more profitable ones leaving some key sectors vulnerable.

8.6 Challenges faced by the study

It is worth noting that no single study is conducted without its challenges. This study recognised the following as its challenges. Firstly, data was not readily available for some countries and for some variables and in some cases also for some years. The countries which had major challenges in data availability were Angola, Libya, Mozambique and South Sudan. Consequently, Libya and South Sudan were removed from the analysis. The case of South Sudan can be appreciated because it is a relatively new economy which will not obviously have data for some years. Secondly, the study notes that it is tantamount to oversimplification to assume that the econometric models employed in this study captures all the country-idiosyncratic factors which influence the level of bilateral trade within the TFTA especially taking into account the structural differences in the African economies. Moreover, the SMART simulations were performed the World Bank website which implies that the authors did not have control over the data being imputed. Although this has the advantage in the sense that the author cannot manipulate the output and also uses consistent data from one source, the challenge is that in some cases data may not have been sufficiently loaded into the system and the author did not have control over that.

8.7 Opportunities for further research

The subject of regional economic integration is a broad subject which can be tackled from several dimensions ranging from free trade areas, common markets, customs unions to economic unions. The study therefore suggests some opportunities for further research. Firstly, on the political ground, it is necessary to determine the factors which determine speed of integration. Some RECs tend to integrate faster than others and even within the same community, some countries appear to be more committed than others. An assessment from the theoretical and empirical viewpoint would help understand what popular and political support the process is likely to receive in the long run. On a stricter economic ground, the question of

how to achieve fiscal stabilisation is particularly relevant for most TFTA countries. This would in turn create a basis for critical assessment of the soundness of the fiscal convergence criteria which are currently being imposed by the policy harmonisation programmes. On the institutional side, further studies can investigate how efficient and effective is the system of relations currently especially in terms of linking African RECs and the African Union. For instance, clear problems of overlapping membership. Finally, a similar study to this current thesis can be conducted in the context of the recently signed African Continental Free Trade Areas (AfCFTA) which takes into account more than 50 countries compared to the 26 member countries of the TFTA.

8.8 Final remarks

This thesis investigated the welfare effects of economic integration using the three regional economic communities of SADC, COMESA and the EAC which make up the TFTA as a test centre. The study relied upon econometric panel models and simulation procedures in its attempt achieve its objectives. The findings of this study suggest that there is much potential for an increase in intra-regional trade in Africa which can be extrapolated by liberalising trade through measures such as establishing free trade areas. Since free trade areas are the most basic form of trade liberalisation, these gains are likely to be compounded as countries engage in deeper levels of economic integration such as customs unions, common markets and economic unions. The study was, however, able to indicate the gains acquired by the REC as a whole does not necessarily imply each country or economic sector is gaining in similar proportions. In order to minimise polarisation of gains (or losses), trade liberalisation must be complimented by other policies which will attempt to even out the distribution of the gains (or losses). Some of the possible policy intervention measures have been proposed in this study under policy recommendations. Indeed, the thesis also reinforces the opinions of other authors who have suggested that economic integration tend to be overall beneficial to member countries of the respective REC. Nevertheless, the thesis encourages more studies in respect of the subject under consideration especially in the areas suggested in the section on opportunities for further research. Finally, the author shall be satisfied if the findings of this study serve to provoke forthcoming research to carry out further studies which shall be integrated in policy prescriptions within the TFTA.

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