THE TRADE EFFECTS ON SADC FREE TRADE AREA ON SOUTH AFRICA
Working Paper 1[1] by Matodzi Rathumbu

ABSTRACT

Research Focus

The study will focus on the impact of the SADC FTA on trade and growth for south Africa. In other words, it seeks to investigate whether the SADC FTA has had an impact on export and import growth and the relationship of trade flows to output growth in RSA before and after the Trade Protocol came into force. The period of analysis chosen caters for South Africa's trade patterns prior to the Trade Protocol, that is, a five years' period from 1995 to 1999, and between 2000 to 2014, when the Protocol was in force.

The study will look specifically at South Africa, in relation with three major trading SADC partners, that is, Zambia, Mozambique, Zimbabwe. The reasons for selecting a subset of countries in SADC is to be able to analyse the relationship between trade flows and growth before and after the signing and implementation of the SADC Trade Protocol. All these three countries have acceded to the SADC Trade Protocol. Trade flows with Angola and the Democratic Republic of Congo (DRC) will also be assessed as both have not acceded to the Protocol and are therefore not part of the SADC FTA and this provides an important comparator. In order to exclude other contributing factors that are likely to have positively or negatively affected the trade patterns, a parallel investigation will be made on SADC (South Africa and its six major trading partners) and trade patterns with South Africa's major global trading partners (China, European Union, United States and Japan) over the same period (1995-2015) on the same trade goods as follows:

- *Machinery and Equipment by sub-categories;*
- *Plastics;*
- *Food and Beverages*
- *Motor vehicle, parts and accessories; and*

When completed, the research will employ Panel data for the period, 1994 to 2014 on South Africa bilateral trade flows with the selected countries using the Augmented Gravity Model with sectoral data as highlighted above. This will be to

[1] Not for distribution (electronically and otherwise) beyond the PSEF Annual Congress 2016 audience as this is part of my unpublished book

investigate the trade effects (Trade Creation and Trade Diversion) of SADC FTA on South Africa's Trade.

In addition to the trade effects of SADC FTA on South Africa, the study will further look at whether there are dynamic gains arising from the SADC FTA such as economies of scale and competitive effects, technological diffusion, externalities and learning effects, intra and extra-regional investments and agglomeration effects.

Research Questions

The study must attempt to respond the following research questions:

1) *What has been the trade impact of SADC Regional Integration? In other words, it must establish whether the growth of trade, in particular exports to the select SADC countries can be attributed to the SADC Trade protocol*
2) *What has been the impact of SADC RIA on growth through the proxy on value addition by select sectors and sub-sectors of focus*

3) *Have the gains/cost of regional integration in SADC been allocated distributed evenly to members?*
4) *What has been the challenges of integration in SADC?*
5) *Is integration beneficial to SADC and can it be accelerated on what conditions?*
6) *Is the institutional arrangement (structures) in SADC conducive to the RIA?*
7) *Are the lessons from other RIAs that can be applied in order to attain the maximum benefits to SADC RIA?*

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CHAPTER 1: INTRODUCTION

1.1. Background

Regional economic integration is defined as the pooling together of countries within and outside the same geography to jointly pursue programmes of economic and political interest in particular in trade, industrial policy and subsequently political union (Bhagwati, 1958; Hartzenberg 2011).

It is multilateralism at a regional level where members agree to remove obstacles to trade (and economic development) in goods and service, through the removal of tariff, non-tariff barriers (NTB) and quotas amongst each other. It is considered “second best” to the wider multilateralism in trade (pursued through the World Trade Organisation, WTO), because it is discriminatory in nature as only the members’ offers reciprocal trade preferences whilst continuing to impose barriers to non-members (Lipsey 1957; Balassa, 1965).

Regional economic integration is however permissible under GATT, Article XXIV, which states that such agreements will be recognised as long as they do not raise new barriers (tariffs, NTB and quotas) to non-members and lead to the attainment of regional welfare.

1.1.1 Types of Regional Integration Arrangements

According to Balassa (Balassa, 1961, p. 1) economic integration can be defined as “the abolition of discrimination within an area”. Kahnert defines it as “the process of removing progressively those discriminations which occur at national borders” (Kahnert et al, 1969). This is why measures that only decrease discrimination among countries are referred to as economic cooperation and not as economic integration. Allen (Allen, 1963, p. 450) claims that every researcher understands economic integration differently. That is why according to him one of the main contributions of Balassa is that he defines integration and shows its difference from cooperation – integration is a restriction of discrimination while cooperation just reduces its negative effects.

According to Lipsey economic integration theory “can be defined as that branch of tariff theory which deals with the effects of geographically discriminatory changes in trade barriers” among countries (Lipsey, 1960, p. 460).

Integration according to Machlup (1977) is the process of combining separate economies into a larger economic region. Machlup (1977) and Staley (1977, p.243) further argue that integration is concerned with the "utilization of all potential opportunities of efficient division of labour".

Different Bulgarian researchers also define integration differently. According to Shikova economic integration can be defined as a process of economic cohesion of national economies (Shikova, 2011, p.11). V. Marinov characterizes integration as a coordinated by the concerned countries process of deep coalescence of their national production processes that is objectively irreversible and leads to the gradual creation of a relatively united economic complex (Marinov, 1999, p.10). Panusheff defines economic integration as the process of integrating national economies to common mechanisms of interaction in which their independent functioning becomes an element of an upward development and source of dynamism. Savov connects economic integration with the formation of regional economic blocs ... resulting in increasing their economic interdependence (Savov, 1995, pp. 467-468).

Despite the differences in these definitions one could formulate the following simple definition of economic integration: it is the process of elimination of discrimination in trade relations between countries. A more complete definition describing economic integration with its main characteristics could be that it is an economic agreement between two or more countries that aims at improving welfare, which is characterized by a reduction or elimination of tariff and non-tariff barriers to trade, as well as by coordination of economic, monetary and fiscal policy, with the ultimate objective to achieve full integration, including monetary, fiscal, social and economic policies managed by supranational institutions.

According to Balassa (1965), there are four main types of Regional Integration Arrangements and are as follows:

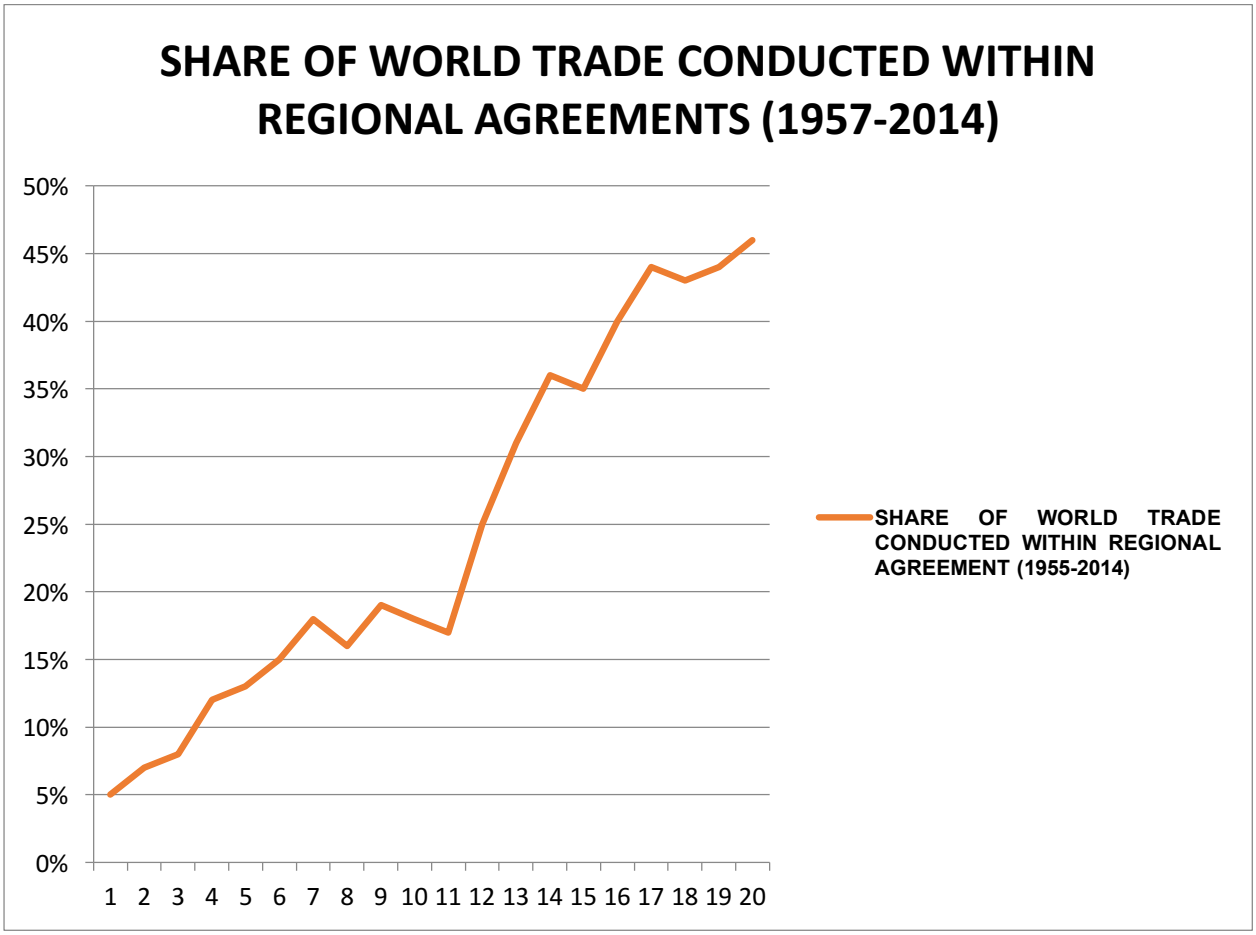
a) **Free trade area.** This is the most basic form of economic cooperation. Member countries remove all barriers to trade between themselves but are free to independently determine trade policies with non-member nations. An example is the Southern Africa Development Community (SADC) Free Trade Area (TFA).
b) **Customs union.** Barriers to trade are removed between member countries and members adopt a common external tariff (CET), which applies to trade with non-members. An example of this is the East Africa Economic Community.
c) **Common market.** This type allows for the creation of economically integrated markets between member countries. Trade barriers are removed, as are any restrictions on the movement of labor and capital between member countries. Like customs unions, there is a common trade policy for trade with non-member nations. The primary advantage to workers is that they no longer need a visa or work permit to work in another member country of a common market. An example is the Common Market for Eastern and Southern Africa (COMESA).
d) **Economic union.** This type is created when countries enter into an economic agreement to remove barriers to trade and adopt common economic policies. This type of the agreement further ensures that member states cede more

sovereignty to the supranational institution than in other types of RIA that were already discussed. An example is the European Union (EU).

According to Alimiyehu (2015) more than a third of global trade takes place within the regional integration arrangements (RIAs) and each country is at least a member of one, whilst others, in particular African countries have an overlapping membership to different RIAs. More than a third of global trade takes places within the Regional Integration Arrangements (RIA) and each country is at least a member of one, whilst others, in particular African countries have an overlapping membership to different RIAs. There has been a rise in the number of RIAs since the signing of the Treaty of Rome in 1957, which led to the formation of the European Union. Figure 2.1, depicts the share of total world trade conducted within regional trade agreements since 1957 (1) to 2014 (20), which is a period of 57 years.

Figure 1.1 shows that trade within RIAs has been increasing exponentially, barring the periods of global crisis such as the oil crisis in 1973 (8), the Asian Financial Crisis in 1997 (13) and the Global Recession (17), where the share of trade conducted within RIAs declined before recovering again. By 2014 (20), the share had increased to 46% of total global trade. This phenomenal growth can be attributed to the proliferation of RIAs in the half century period and that trade between RIA members has been growing faster compared to that of non-RIA members. The success of EU has led to the replication of the RIAs across the globe, but the proliferation has become more prominent in developing regions such as Africa.

Figure 1.1: Trade conducted within regional trade agreements (Source: IMF Direction of Trade statistics, 2014)



To illustrate the above point, Table 1.1 depicts the average trade growth within RIAs and that of countries outside RIAs for a period 1980 to 2014. Trade within RIAs such as European Union (EU) and the Southern Common Market (MERCUSOR) has been growing at an average of 3% more than that of countries outside RIAs. The margin is even bigger for RIAs such as the Association of South East Asian Nations (ASEAN) and North Atlantic Free Trade Association (NAFTA) that have grown by 14.18% and 8.65%, respectively in the same period compared to non-RIA countries, where trade has grown on average by 3.71% in the same period. African RIAs has not grown as much as the other RIAs that have been tabled. Trade amongst the 14 African RIAs has been growing on average by a paltry average of 1.5% in the same period.

Table 1.1: Average growth rate within/outside RIA (Source: IMF Direction of Trade statistics, 1980-2014)

Average Trade Growth with RIA	
Regional Integration Arrangement	**Average growth Rate**
European Union	6.50%
NAFTA	8.65
ASEAN	14.18%
MERCOSUR	7.48%
Average Trade growth outside RIA	
Non-RIA countries	3.71%
Africa RIAs	1.5% (estimated)

There are 14 major regional economic groupings in Africa. Out of the 54 countries, 27 are members of two RIAs, 18 belong to three, and one country is a member of four. Only seven countries have not maintained overlapping memberships. Overlapping regional blocks is one of the main challenges facing Africa's Regional Economic Communities (Kalenga, 2004; McCarthy, 1999; UNECA, 2014).

The formation of RIAs as we have them in the current format, can be traced back to the Abuja Treaty of 1991, which guides regional economic integration in Africa. The Treaty proclaimed that the continent would become an economic union by 2022. This process will be undertaken through the consolidation of Regional Economic Communities (RECs) in the following regions:

- North-Maghreb;
- West-The Economic Community of West African States (ECOWAS);
- South-Southern Africa Development community (SADC);
- East-East Africa Community (EAC); and
- Central-Economic Community of Central African States (ECCAS)

According to Negasi (2009) and McCarthy (1999) most RIAs in the developing world have not been that successful compared to similar arrangements in the developed world. In Africa, with the highest proliferation of RIAs, intra-regional trade amongst these has on average been around 15% and the reasons that have been cited in the literature, include amongst others the following:

- Lack of complementarity among the traded goods in the region;

- Low level of innovation, research and development leading to low level of industrialization;
- Despite the tariffs phase downs, the non-tariff barriers have remained intact or are re-introduced, increasing the costs of cross-border trade;
- Lack of network infrastructure development in particular road and rail transport, which makes it difficult to move goods across vast territories;
- Lack of administrative capacity to manage supra-national institutions that govern regional integration;
- RIA that are more political than economic, this could be seen through the low level of participation and interaction between regional industrial and corporate players;
- Uneven distribution of the benefits and costs that accrue as a result of regional integration;
- Lack of hegemon leadership by a country or a group of countries which will guarantee the regional integration projects; and
- Lack of joint industrial programmes or common industrial policy as well as competition policy.

1.2. Research Focus

This study is confined to regional economic integration in Southern Africa pursued through the Southern African Development Community (SADC) in particular the SADC FTA trade and growth effects on South Africa. According to the SADC Yearbook (2014) the SADC region comprises 15-member countries[2] and has a population of approximately 256 million. The trade regime governing SADC integration is the Trade Protocol (signed in 1996 and entered into force in 2000), which defines the future of SADC in terms of trade relations and industrial development. It proposes a linear integration in SADC, starting with the SADC Free Trade Area (declared in 2008) the Customs Union (2010), Common Market (2015) and Economic Union (2018). In terms of the SADC FTA, SADC has four categories of goods that are to be liberalized as part of the SADC Trade Protocol tariff phase down:

- Category A - Goods that were to be liberalized immediately after the FTA came into effect in 2000. These were goods that were already at a very low tariff level.
- Category B is made of goods that were to be liberalized by 2008, for an FTA to have reached 85% of tariff elimination to qualify as a substantial FTA (in terms of the WTO, Article XXIV). Member countries were required to have built the revenue base to offset the revenue that was received from the trade in these goods,
- Category C is sensitive goods. Sensitive products in the basket of traded goods comprises 15% of the total and the members were to free these from

[2] SADC member countries are South Africa, Botswana, Lesotho, Swaziland, Namibia, Mozambique, Malawi, Zambia, Angola, Democratic Republic of Congo, Tanzania, Madagascar, Mauritius, Seychelles and Zimbabwe

discrimination by 2010. The lists of sensitive goods include products such as textiles and apparels, cereals and vehicles, wheat and sugar. These led to the application of derogation by countries such as Zimbabwe, Malawi, Tanzania and Mozambique, largely against South Africa's imports. By 2012, other members have already liberalized these goods.

- Category D are goods that will remain sensitive to trade, as it is the situation with other regions of the world. These kinds of goods include armaments, firearms, nuclear and so forth.

1.3. Problem Statement and Rationale

Despite the FTA that has lowered trade barriers (tariff, non-tariff and quotas), SADC intra-regional trade is a paltry 18% compared to similar RIAs in Europe (EU) and Asia (ASEAN), where intra-regional trade is about 70% and 55%, respectively. SADC countries do not seem to be benefitting from the static and the dynamic gains that accrue to RIA as it is in other parts of the world. Furthermore, there appears to be uneven distribution of the benefits and costs of regional integration, prompting poorer member states to renege on the agreements and even introduce new barriers in the forms of derogations and Beyond the Border Barriers (Chalambides, 2014).

Using data from Comtrade and corroborated by other data sources, this research will measure the impact of regional integration (through the SADC FTA) to South Africa's trade and growth. Given that it has always been argued in the literature that the benefits to SADC RIA is tilted towards RSA's favour whilst other 14 SADC members bear the costs, the trade pattern will reveal the growth (non-growth) of trade and output (proxied through the growth in value addition of RSA major traded commodities with six SADC countries) that can be attributed to the FTA (2000 to 2015).

This study therefore aims to measure the static and dynamic gains of SADC FTA to South Africa. The study will investigate whether the Protocol has led to static or/and dynamic gains for South Africa vis-a-vis other SADC member states.

1.4. Research Problem

The study will focus on the impact of the SADC FTA on trade and growth for south Africa. In other words, it seeks to investigate whether the SADC FTA has had an impact on export and import growth and the relationship of trade flows to output growth in RSA before and after the Trade Protocol came into force. The period of analysis chosen caters for South Africa's trade patterns prior to the Trade Protocol, that is, a five years' period from 1995 to 1999, and between 2000 to 2014, when the Protocol was in force.

The study will look specifically at South Africa, in relation with three major trading

SADC partners, that is, Zambia, Mozambique, Zimbabwe. The reasons for selecting a subset of countries in SADC is to be able to analyse the relationship between trade flows and growth before and after the signing and implementation of the SADC Trade Protocol. All these three countries have acceded to the SADC Trade Protocol. Trade flows with Angola and the Democratic Republic of Congo (DRC) will also be assessed as both have not acceded to the Protocol and are therefore not part of the SADC FTA and this provides an important comparator. In order to exclude other contributing factors that are likely to have positively or negatively affected the trade patterns, a parallel investigation will be made on SADC (South Africa and its six major trading partners) and trade patterns with South Africa's major global trading partners (China, European Union, United States and Japan) over the same period (1995-2015) on the same trade goods as follows:

- Machinery and Equipment by sub-categories;
- Plastics;
- Food and Beverages
- Base metals;
- Motor vehicle, parts and accessories; and
- Petroleum and Gas

In addition to the trade effects of SADC FTA on South Africa, the study will further look at whether there are dynamic gains arising from the SADC FTA such as economies of scale and competitive effects, technological diffusion, externalities and learning effects, intra and extra-regional investments and agglomeration effects.

1.4.1 Research Questions

The study must attempt to respond the following research questions:

8) What has been the trade impact of SADC Regional Integration? In other words, it must establish whether the growth of trade, in particular exports to the select SADC countries can be attributed to the SADC Trade protocol
9) What has been the impact of SADC RIA on growth through the proxy on value addition by select sectors and sub-sectors of focus

10) Have the gains/cost of regional integration in SADC been allocated distributed evenly to members?
11) What has been the challenges of integration in SADC?
12) Is integration beneficial to SADC and can it be accelerated on what conditions?
13) Is the institutional arrangement (structures) in SADC conducive to the RIA?
14) Are the lessons from other RIAs that can be applied in order to attain the maximum benefits to SADC RIA?

1.5. Research Methodology

This research seeks to study and quantify the impact of SADC Regional Economic integration (Trade Protocol) on South Africa's trade and growth. The theory on Regional Integration posits that countries join such arrangement on the expectation of traditional (static) and dynamic gains (Viner, 1950; Lipsey (1957); McCarthy, 2008). The rationale for regional integration is based on these expected gains in addition to addressing SADC small and fragmented markets. The long-term plan is that RIA in SADC will assist to develop an enlarged internal market, where 15-member states agree to phase down tariffs and beyond the border barrier to reduce trade costs on goods. The removal of the trade protection (tariffs) has been achieved and the World Trade Organisation has now declared SADC a full Free Trade Area and over 99% of trade is duty free. This study will prove/disprove whether the expected benefits in terms of static and dynamic gain where attained.

The methodology to measure the impact of SADC RIA impact on South Africa's trade and growth will be quantitative as well as qualitative

1.5.1. Quantitative-Measuring the Static Gains

For the quantitative aspect, the study will use the Gravity Model to determine the impact of SADC regional economic integration on trade and growth (trade creation and diversion). It will use data on bilateral trade between South Africa and six SADC major trading partners disaggregated at a sub-sectoral level for the six most traded commodities. In order to capture the influence of the Economic Integration represented by the SADC Trade Protocol, the agreement will be introduced as a regional dummy, where a zero (0) represent a period before the implementation of the SADC Trade Protocol, that is, 1995 to 1999 and one (1) represent the period under the SADC Trade Protocol, that is 2000 to 2014.

The Gravity Model will measure the impact RIA trade flows between South Africa and other SADC member states. The Gravity Model is able to measure the impact of RIA before and after integration using the dummy variable for regional integration. It will cover the period from 1995, when RSA acceded to the SADC to 2015. Data has been sourced from UN's Comtrade and corroborated with Quantec and the Department of Trade and Industry's trade data. It is an annual data on South Africa's trade patterns with four SADC major trading partners, that is Malawi, Mozambique, Zambia, Zimbabwe. These countries have acceded to the SADC Trade Protocol and trade between South Africa and these countries is 99% duty free. In order to eliminate other causes of trade growth (non-growth), two SADC comparator countries, Angola and DRC, who are not part of the FTA will also be analyzed using the similar methodology of the FTA study group and this will further be extended through the inclusion of four Non-SADC countries (Regions), which are major trading partners of south Africa, that is the European Union, United States, China and Japan.

1.5.2. Measuring the Dynamic Gains

It must be stated that there have not been many attempts to measure the dynamic impact of RIA and this study will develop the pioneering work on this measure for a developing region like SADC.

The methodology for measuring the impact of SADC RIA in terms of dynamic gains to RSA is proposed as follows:

Table 1.2: Dynamic effects of Regional Economic Integration Indicators:

Dynamic effect measure	**Measure**	**Source of data**	**Literature**
Competitive effect	Market size (measured as volumes produced) Herfindahl-Hirchman Index (4 firm concentration ratio and the 8 firm concentration ratio) Rosenbluth index	1. Annual Reports of Dominant firms in the sectors that are a focus of analysis and this will be used to measure the Market share of companies by revenue. 2. Who Owns Who to gauge the ownership patterns. 3. The Competition Commission on the mergers and acquisition 4. South Africa Competitiveness Report	1. Baldwin (1994); 2. Schiff & Winters (1993) 3.Baldwin and Venables (1995) 4. Limao & Venables (2001) 6. Roberts, Vilakazi, et al (2014) 7.Krugman and Venables (1990 and 1996)
Technological diffusion and learning effects	Labour market efficiency (L/TP) Company spending on R&D Patent applications University-industry collaborations (by sector)	-Industry bodies -Annual reports -SABS/CSIR -Universities (Engineering departments and applied sciences	1 Romer (1990) 2. Lucas (1988) 3. Grossman and Helpman (1991)

	Firm level technology absorption Internationally recognized quality certification	-The dti on patent and copyright registration	
Investment effects	Number of multinationals present by sector Access to venture capital	-Reserve Bank on the annual investment report to trace the value and the nature of new investment - Global Investment Intelligence Report that traces country investment by city, sector, project, value and employment contribution	1. Krugman and Venables (1996) 2. Hanson (1993) 3. Kindleberger (1966) 4. Roberts, Vilakazi et al, (2014)
Agglomeration effect **(Basically measuring concentration of industry in one area)**	Economies of scale EG Index (Ellison Glaeser index – similar to the HHI) Continuous index (paper attached) Transportation costs between suppliers (value chain analysis (?)	-The dti incentive report on the new investment - The Municipalities investment application. High levels of spatial concentration and agglomeration	1. Ellison-Glaser (1997) 2. Maurel and Sedillot (1999) 3. Mori et al (2005) 4. Guillain and Le Gallo (2007)

In the first column of table is the expected dynamic gains of RIA as applicable to any RIA and it measure the presence (lack of) Competitive effects, Technological diffusion and learning effects, Investment effects and Agglomeration effect in South Africa market, which can be attributed to SADC RIA.

The second column list the measurement indicators that are used to measure the presence (lack of) of the dynamic gains and the last column of the table suggest the data sources to be used to measure the dynamic effects. In a nutshell, in order to measure the dynamic effects of SADC regional integration on South Africa's trade and

growth (before and after the formation of the SADC FTA), the following will be measured:

- Technology, learning effects and externalities - What is the level of foreign R&D stock before and after the FTA came into effect? What is the level of total factor productivity (in human, capital and technology on the chosen sectors for analysis)?
- Economies of scale and competition effects - Has the share of trade in chosen sectors increased? Has there been an increase/decrease of firms in the chosen sectors?
- Agglomeration effect - Have the firms (within the chosen sectors) relocated in/to various SADC countries to take advantage of SADC FTA. Have there been new clusters formed (in the chosen sectors' value chain) in response to SADC FTA?
- Stimulus to investment - What have been the level of intra and extra regional investments prior and after the SADC FTA came into effect?

1.5.3 Qualitative Measurement

Because the SADC integration process has been observed to be highly political, it will also be important to consider measuring the perceptions about the political economy and the institutional structure of through a snap survey (structured questionnaire) with the major role players in SADC, including among others:

- Current and retired Personnel from South Africa's Department of International Relation and Cooperation (DIRCO), Trade and Industry, members of SADC diplomatic corps based in South Africa and the SADC Secretariat in Botswana;
- Researchers, academics and Opinion makers who are analysts for SADC political economy/economic diplomacy.

These members are at the forefront on the SADC integration project from the administrative as well political side. These members will be required to respond to the following:

(1) Whether in their view, the political and economic elites are supportive of the SADC regional integration?

(2) What, in their view is their hindrances to SADC integration, such as missing set milestones?

(3) Their view on the sharing of costs and benefits of SADC regional integration?

(4) Whether, they view South Africa as the hegemon to the SADC integration process. If so, whether South Africa plays the hegemon role seriously?

(5) What needs to be done to bring the integration process to fruition as per the milestones?

(6) Is it necessary to have SADC integration? If no, what should replace it, and which arrangement do they consider to be the perfect replacement of the SADC integration?

1.6. Contribution to Theory

Whilst a lot has been done in the literature to measure the traditional gains (the impact of RIA) through the use of gravity model, including studies in Africa and SADC (Lewis, 1999; Kalenga, 2004; Negasi, 2009; Sandrey, 2014), there has not been attempt to study the dynamic impact of RIA in Africa, so this study will be the first.

Secondly, most of the measurement of traditional effects was based on the aggregated data on sectoral level and this study will make an attempt to disaggregate the data to sub-sectoral level to understand which sub-sectors can be attributed to the growth in trade and growth between South Africa and selected SADC and non-SADC countries.

Thirdly, in order to avoid spurious correlation, care will be taken to include comparator countries that are not part of the SADC FTA (Angola and DRC) and non-SADC countries, that is the US, EU, China and Japan. This will certainly help to determine whether a growth (non-growth) in RSA trade and output during the review period was a result of SADC FTA or a general increase in RSA trade with all its major trading partners.

1.7. Chapter Outline

The study will be segmented into five chapter as follows:

Chapter 2: Section 1 of the Chapter will focus on the theoretical framework/foundation for regional economic integration. Furthermore, the theoretical framework explaining the evolution and the types and theoretical foundations of research methods used to measure the impact of trade agreements. It will then be narrowed down to the theories that are most applicable to RIA in Africa and Southern Africa. The second section will contrast RIA to multilateralism and provide background of various RIA arrangements across other continents and in Africa, critical success factors for a RIA. The third section will cover regional integration in Southern Africa detailing trade patterns between RSA and the six SADC countries on the six major traded commodities. Attempts will be made to also consider RSA trade with the rest of the world (Row), in particular the selected major trading partners, also on the similar sectors and sub-sectors. This analysis will be at a disaggregated level of sub-sector (goods). Furthermore, the chapter will also cover the role of the instruments for regional integration such a regional industrial policy, competition policy, and the SADC tribunal, among others.

Chapter 3: This will be the Research methodology application focused chapter. The use of the Gravity model to measure the impact of SADC Trade Protocol through bilateral trade flows between South Africa and six other SADC countries as well as between South Africa with the rest of the world on the same traded products covering the period, 1995 to 2015. Furthermore, the dynamic gains from SADC regional integration will be measured in terms of the benefit indicators/indices. Parallel to that,

will be the administration of the structured questionnaire and interviews for the targeted group to consider the political economy and institutional structures.
Chapter 4 will be an explanation of the model findings and this will be compared to the observations made by other writers investigating a similar subject.
Chapter 5 will draw conclusions and recommendation for the study

CHAPTER 2: THE THEORY OF REGIONAL INTEGRATION IN SOUTHERN AFRICA

2.1 Introduction

Chapter 2 will have four sections; Section 2.1 is focused on the theory of regional integration. It starts by attempting to respond to a question on why nations trade with each other, by narrating the evolution of international trade and how the rationale for international trade was later expanded to the regional trading arrangements and how they impact on trade and growth.

Section 2.2 provide the theory of empirical evidence on the impact of regional economic integration in terms of trade and growth for member countries. With the trade effects of RIA, particularly in terms of the traditional gains (trade creation and trade diversion) an analysis of the evolution of the theory will be elaborated. Furthermore, the analysis will also cover the dynamic effect of RIA for member states.

Section 2.3 is dedicated to contrasting regional integration arrangements with a special focus on ASEAN, EU and Latin America

Section 2.4. will cover the trade patterns of South Africa's trade with the other SADC FTA member states over a period of 20 years 1994 to 2014. This will be done in order to observe whether RIA (through SADC FTA) had had any impact on the trade pattern between South Africa and SADC member states. In order to counter for other attributions to the change in the trade patterns, during the observed period, a further analysis will be done to study the trade pattern between South Africa and other non-SADC and SADC non-FTA members for the same review period focusing on the five most trade goods between South Africa and SADC FTA members as well as between South Africa and Comparator countries.

Chapter 2 prepares for the empirical evidence of the effects of SADC FTA on South Africa's Trade and Growth, which will be carried out in Chapter 3.

SECTION 1: Theories International Trade and their Applicability to Regional Integration Arrangements

This section provides a rationale of why countries trade with each other, that is what are the benefits of trade. The section will cover the theories for international trade and how it has evolved from Classical theories with the emphasis on factor-endowments-specialization-price equalization to the new trade theories (NTT), all advocating that trade (free trade) is beneficial to countries, whist differing on the assumptions leading the benefit of trade. The section will also cover how the theory of international trade has been converted to provide the rationale for regional integration arrangements (RIA).

2.2.1 Developments in international trade theory

2.2.1.1 Classical theories

Smith (1776) provided the first analysis for international trade. Observing England's industrial revolution, he opined that the basis for trade between England and another country (or trade between two nations) is the division of labour, through lowering of labour costs, which ensures effective competition between countries, which is a condition for exchange of goods (trade) between countries. This will be dependent on the assumption that the factors of production (labour and land) are immobile and that countries have different technologies.

Ricardo (1817), expanded Smith's theory and concluded that countries engage in international trade because they stand to gain if they specialize in the production of products with low opportunity cost. In other words, the basis of international trade is the comparative advantage of countries in terms of unit labour cost per unit of production. According to Ricardo, a country that understand its comparative advantage in the production of a certain good should then direct production to the best alternative in utilizing the available resources for export and in turn imports the good in which in has comparative disadvantage in terms of unit labour cost per unit produced.

Ricardo emphasized his point using the opportunity cost theory. Noting that resources are scarce, a country has to give up production of one product in order to produce the other. To know which one to give up, a country has to determine where it would have higher output if the same resource available was utilized in the production of either

product. A country would specialize in production of that product whose utilization of the available resource produces the most output. In opportunity cost terms, a country should specialize in production of that product whose cost for failure to produce it is higher than that of the second alternative. To Ricardo countries are endowed differently and so they have different opportunity costs. The difference in opportunity cost is what would enable countries to engage in international trade with each other so as to get the products in which it has a cost disadvantage in producing.

Ricardo further gave an explanation for the absolute and comparative advantages and how it impacts on trade. He stressed that even if a country would produce more of the two products than the other country (the absolute advantage), it should specialize in producing that product in which it has an advantage in utilization of the available resources (comparative advantage).

The following assumptions underline Ricardo theory for the rationale of international trade, which was based on 2X2X1, that is two-country, two-goods and one factor of production (labour) model:

e) That the factor productivity is assumed to be constant, in that if all factors of production are doubled then output will also double.
f) The market is perfectly competitive
g) The market has homogenous factors of production-They have fixed and same abilities and productivity levels.
h) Factors are perfectly mobile within country and between sectors –Can be shifted from production of one product to another and from one region to another, but immobile between countries –Endowments in one country cannot move to another country.
i) The two countries face the fixed level of technology.
j) The two countries are at full employment.
k) There is no protection (tariff and non-tariff) barriers between the two trading partners.
l) Transport costs are not considered.

The latter critics to the Ricardian comparative advantage theory, mainly Heckscher and Ohlin (1933) and latter Samuelson (1951) viewed the comparative advantage theory as a theory of its time (around industrial) revolution which was no longer applicable to explain the rationale for international trade in the 20th century and some of their criticism can be listed as follow:

a) Free international trade is beneficial not only to that country with a more productive sector than foreign countries but also to those countries that are able to avoid the high costs for goods that they would otherwise have to produce domestically.

b) The theory is not complex enough to examine income distributional issues within a country. For example, free trade with countries that pay low wages can hurt

high-wage countries. Even though consumers benefit because they can purchase goods more cheaply, international trade may reduce wages for some workers, thereby affecting the distribution of income within a country. In fact, international trade with such low wage countries erodes the incomes of the producers/workers that are earned using resources more efficiently and through higher prices/wage.

c) The assumption that all countries are identical except for their differences in technologies is farfetched. Countries differ in their endowments of important factors of production (inputs).

d) The theory ignores the nature and form of transport in the different countries and the effect this has on the relative price for one good to any other. Transport costs differ in terms of cost, swiftness and appropriateness in delivery mechanisms. These differences have a bearing on the price of the product and do influence the terms of trade. In other words, a country with a comparative advantage say in using labor to produce coffee could find itself disadvantaged in the international market, if its transport sector is not well developed.

j) Factors of production are not necessarily homogeneous. Because they are not the same, they cannot necessarily move from the production of one good to another.

2.2.1.2 The Heckscher-Ohlin Factor Endowment Theory of International trade

The Heckscher-Ohlin model (1933) assumes rationale for international trade is based on the assumption of 2-countries and 2-goods, one fixed factor endowment, domestic mobility, perfect competition, taste and preference are the same between countries and technology is constant and the factors of production have a constant return to scale.

Whilst the above assumption is not distinct from the Ricardian comparative advantage, Heckscher-Ohlin added three further assumptions in that there is international factor immobility, that countries have factor differences in a way that one country has higher proficiency levels than the other and thirdly, that countries are identical except with regard to endowments.

According to Heckscher-Ohlin even if countries have same factor endowment, its productivity in respect to production of a particular product differs between two countries. As such, a country should specialize in the production of a product in which factor productivity is higher. In other words, each country has a comparative advantage in the production that requires relatively less of the factor with which it is well endowed.

Later on, Stopler and Samuelson (1951) emphasised that international trade can lead

to equalization of factor prices across the two nations. In this sense, international trade and factor movement are substitutes.

The Heckscher-Ohlin (H-O) theory has empirically failed to explain the current wave international trade, in which a country that has an abundance of factor of production can however export products in which its factors are not in abundance. Leontief (1956) explained this through a paradox, whilst observing United State trade pattern with Sudan. According to H-O theory, United States, which a capital abundant country should have been exporting the capital-intensive goods whilst Sudan, which was considered to be a labour-abundant country, should have been specializing in the labor-intensive good. To Leontief surprise, the US was exporting more labor-intensive goods to Sudan, which seemed to be a deviation to the H-O theory. A further analysis by Leontief demonstrated that in a country even a factor (s) of production can have different levels of sophistication (low to highly skilled), that is the labour that was an input to the export to Sudan was highly skilled and Sudan labour share to its exports to the US was low-skilled labour force.

It was further established that the current pattern of international trade exhibit a trade in similar finished goods (e.g. cars) between countries and regions or trade in the value chain of similar product (the multinational production of automotive), where each country produces a part (s) of the same car. So, the current wave of international trade is not only inter-industry trade of dissimilar goods in line with H-O theory but has a high dimension of intra-industry trade on similar goods.

The constant return to scale for factors of production does no longer hold water, countries will have sectors that are favored and develop into a monopoly who faces increasing return to scale and that countries differ in the technology they face in their production and there is premium that has to be paid to access technology.

The group of theories that differed with the key assumption of classical and H-O theory are called the New Trade Theory (NTT) and they will be discussed below:

2.2.1.3 The New Trade Theory On Why Countries Engage in International Trade

New trade theory differs with both Ricardo and H-O on their assumptions. Prominent among the New Trade Theories are Dixit and Stiglitz (1977), Baldwin (1994), Krugman (1979, 1990 &1996), Grossman and Helpman (1987), Schiff and Winters (1993), Venables (2003) Venables and Puga (1981).

On the H-O assumption of constant return to scale, the NTT emphasizes that a firm or industry may have increasing returns to scale or economies of scale in way that when all factors of production are doubled, output more than doubles which will necessitate a bigger market and thus forcing firms to engage in international trade where there is

a larger market. The New Trade Theorists (NTT) noted that the bigger the size of a firm or industry, the more the efficiency of its operations in that the the cost per unit of output falls as a firm or industry increases output. The increase in output must however be met with an increase in the market size if it has to be sustainable.

The NNT further noted that the existence of economies of scale makes large firms to be more efficient than small firms, and the industry may consist of a monopoly or a few large firms. Production may be imperfectly competitive in the sense that excess or monopoly profits are captured by large firms. In other words, New Trade Theory on why countries engage in international trade is opposed to the assumption made in the Ricardian and Heckscher models that there is perfect competition in the market in that all income from production is paid to owners of factors of production and there is no "excess" or existence of monopoly profits. To NTT, countries engage in international trade because of the notion of economies of scale. To them the presence of scale economies (both external and internal to the firm) leads to a breakdown of a perfect competition and creates more efficient firms which continue to expand on the markets because of increased outputs.

The New Trade Theorists explained that because engaging in international trade increases market size, this decreases the average cost in an industry, which is feature of monopolistic competition. They also noted that when countries engage in international trade, the variety of goods those consumers can buy also increases thus increasing their welfare. As average costs decrease, consumers also benefit from a decreased price.

Thus said countries engage in international trade because of the inherent and potential economies of scale, which are two. The first one is the internal economies in which average costs of individual firms will fall as they produce more output and become larger and the second one is the external economies of scale in which average costs of the industry in a country will decline as it produces more output and grows larger.

This means that a larger firm is more efficient because average cost decreases as output Q increases (fixed costs spread across larger output). The increase in output must be met with an equivalent market if it has to be sustainable and thus the reasons why a firm or a country will engage in international trade so as to enjoy the benefits of economies of scale.

In a nutshell, the rationale for trade is that it has trade effects (through trade creation/diversion) and welfare effect (growth effect). The benefits of trade will be discussed in detail in the next sub-section.

2.2.2 The Effects of Trade on Growth

Both the classical and new trade theories have a consensus that trade has an impact on growth in terms output or per capita income. This sub-section discusses how trade

affect growth of trading partners. The relationship between trade and growth is derived from both the neoclassical and endogenous growth theories. For both the classical and and endogenous growth theories, economic integration can affect growth of output through the channel of production function in terms of the and increase in total factor productivity that is brought about by technological spillovers from trading partners.

Solow (1956) is credited with the seminal analysis of the neo-classical growth theory. He argued that that in steady-state equilibrium, the level of gross domestic product (GDP) per capita will be determined by the prevailing technology and the exogenous rates of saving, population growth and technical progress. The theory's key assumption is that technical change is exogenous and that the same technological opportunities are available across countries and production function exhibit constant and decreasing return to scale. This implies that the steady state growth solely depends on exogenous population growth and exogenous technical progress.

The endogenous growth theory on the other hand argues that long-run growth is driven by the accumulation of knowledge and thus technology which are assumed to be endogenous, rather than exogenous as it is the case with Classical theory. By assuming aggregate production functions that exhibit non-decreasing returns to scale, endogenous growth models have provided mechanisms through which economic (trade policy) and social policies can affect long-run growth through their effects on human and physical capital accumulation. The main implication of the endogenous growth theories is that human capital is endogenous and hence there need not be diminishing returns to investment.

The foundation of the endogenous growth theory was laid by Lucas (1988) who posited that human capital is the engine of growth through learning by doing. He argued that the initial conditions determine the comparative advantage of each country and, thus, which products each country will produce under free trade. The model predicts that each country's comparative advantage increases through learning by doing. This implies that some countries are locked in sectors with relatively little learning by doing and diverge from the rest of the world. However, it predicts that only countries with initial comparative advantage in sectors with significant learning by doing will benefit from free trade.

Further contribution to the endogenous growth theory and the trade on growth were made by Grossman and Helpman (1991); Rivera- Batiz and Romer (1991); Frankel (2003; Romer (1990); Krugman (1990) Coe and Helpman (1997); Mankiw (2004), Rodriquez and Rodrick (2001). The consensus among these writers is that trade increases innovation through economies of scale, technological spillovers, and the replication of research and development (R&D) in different countries. They had consensus that innovation of new products is a positive function of past innovations, which represent the stock of knowledge. International trade provides access to a large

international market, to advanced technology, and, therefore, to a larger stock of knowledge, leading to more innovations and faster growth. This implies that a country benefits from free trade with large economies and an advanced stock of knowledge, assuming that technological spillovers are absorbed to the same degree across countries. In his analysis of the North American Free Trade Agreement, Hanson (1997) concluded that a country's total factor productivity depends not only on its own R&D capital stock but also on the R&D capital stocks of its trade partners, the case in point being the productivity growth of Mexico, after its trade agreement with both the US and Canada.

The relationship between regional economic integration and growth of output (per capita income) can be traced back to both the classical and endogenous growth theories. Within the neoclassical growth theory, economic integration, economic policy measures and other institutional aspects (trade policy) have no effect on the steady state growth rate, which is solely determined by the exogenous rate of technological progress, which is assumed to be the same for all countries. Institutional changes, such as the reduction of trade and investment barriers between countries and within a region, increases in efficiency or changes in investment rates following economic integration and this have only temporary effects on the growth rate, meaning that regional integration has a once-off impact on the growth of output in member states. Temporary (Medium term) growth effects occur as a consequence of shifts in the general level of productivity attributed to the formation, deepening or widening of a regional integration agreement. The productivity shift in turn induces accelerated physical capital formation that gradually diminishes towards its long-term steady state. Hence, economic integration is seen as any other major economic policy change that affects economic growth only on the transition path leading towards the steady-state (Solow, 1956).

The endogenous growth models on the other hand, by assuming non-diminishing returns to the accumulation of broadly defined capital predict permanent or long-term effects of economic integration on production and output (Baldwin, 2003; Bosworth and Collins; Grossman and Helpman, 1991; Frankel and Romer, 1999). That is, the introduction of human capital and if it keeps up with other investment and knowledge flows freely, returns can be sustained and trade patterns can transfer technology. The access to larger technological base through integration arrangements may in turn speed growth. Economic integration is also seen as expanding the consumer base which may also increase the necessary competition and hence mitigate redundancy in research and development required to generate growth. Economic integration may also lead to inter-sectoral and international reallocation effects or trigger economic geography forces (Basu and Weil, 1998; Krugman, 1991; Keller, 2002).

The empirical analysis of regional integration on growth has been studied in almost all the RIAs (that is North-North, North-South and South-South). Barro and Sala-I-Marin (1995) and Dollar (1992) tested the robustness of the determinants of growth and

found that free international trade indirectly affects growth through investment. Countries that have low trade barriers invest more and therefore grow faster. This result is robust to different specifications and to different indexes of openness, that is the share of trade to the country gross domestic product.

The analysis of the impact of European Union integration on growth by both Ben-David (1993) and Baldwin and Seghezza (1996) concluded that there is convergence of growth across EU members. Both agreed that the convergence in growth can also be attributed to openness to international trade and this is an indication that a RIAs that have high barriers with the rest of the World might not experience the convergence. They suggest that a country that is more open to free trade will have greater technological spillovers and, therefore, faster growth than a country that is less open.

With regard to Africa continent, Alemayehu and Haile (2010) pointed to a weaker relationship between trade and growth for the Southern Africa Customs Union (SACU) and East African Community (EAC). He pointed out that this could be a result of weak policies and the structures of the economy, which include among others, poor domestic policies, relatively small sizes of individual economies, geography, colonial legacy, political instability, weak institutions, lack of openness, and inhospitable external environment among other factors.

Using Barro (1996) growth model, in which the independent variables to growth are the Terms of Trade at given time, foreign direct investments net inflow (% of growth) for countries at given time t, Exchange Rates (%) for countries at a given time and Inflation Rates, GDP deflator (annual %) for countries at a given time, Muruiki (2015) estimated the effect of trade on the growth for Kenya, Uganda and Tanzania, which are members of the East Africa Community between 1977 to 2014. The analysis showed that trade and investment (which is also a dynamic gain from regional integration) had had an overall positive impact on the economic growth of the three countries by 4,1%.

The studies on the impact of trade on growth through unilateral liberalization versus regional integration between North-North, North-South and South-South member countries by Puga and Venables (1998) concluded that unilateral liberalization is more beneficial but further argued that the gains from regional integration are likely to be larger, bringing greater benefits to developing countries in the case of North-South relative to South-South regional integration agreements.

Venables (2003) further posited that the South-South integration does not matter and describes North-South as just good while North-North as better. This latter argument became one the driving forces behind the conversion of the EU-Africa trade relation from the Lome Convention to the Economic Partnership Agreements, which an effect in way in which the structures of Africa regional economic integration arrangements are configured.

2.2.3 RATIONALE FOR REGIONAL INTEGRATION

Given the proliferation of the RIAs and more trade taking place within the arrangements, the question that is frequently asked is whether there are associated benefits of membership to RIA. The answer to this question can be traced back to the evolution of the theory on regional economic integration and the impact of such arrangements on the members' welfare, trade and growth prior and after accession to any RIA. In this section, the evolution of the theory on regional economic integration will be discussed.

The theory of regional economic integration is a subset of international trade theory that seek to investigate why nations trade with each other and the impact of trade to countries' welfare.

The theory of regional integration dates back to Jacob Viner's seminal analysis on the rationale for forming Customs Union (CU). It is based on three-countries (two being members of RIA and the third one opting out), two-goods model and adapted from H-O theory of international trade. According to Viner (1950) regional integration might lead to trade creation and trade diversion. Trade creation occurs when countries move from expensive and inefficient domestic production (prior to joining customs union) to cheaper partner imports after CU is formed. On the other hand, trade diversion occurs when members of RIA move from cheap imports from CU outsiders to expensive CU partner imports. His analysis concluded that trade creation is desirable as it increases welfare among the CU members whereas trade diversion is undesirable as it reduces member states welfare through the inefficient allocation of resources. Similar the theory of international trade, regional integration arrangement is said to lead to the efficient resource allocation and growth effect, even though the growth effect is once off, immediately after the integration. The latter point was disputed by the NTT, which argued that RIA can dynamic impact and that it can change the trajectory of growth for members permanently.

In terms of allocation effect, the demand for goods directs productive resources to the production of that good. This allocation effect is however distorted by protectionist measures (that are introduced by countries) such as tariffs and non-tariff and hence their removal is perceived to have an effect in increasing efficiency in resource allocation. An outcome of the allocation effect is the scale and variety effects. After integration, the scale economy occurs as result of removal of protection for inefficient firms that lead to the re-allocation of resources to the efficient firms. The latter refer to the availability of a larger variety of goods once a country's economy is integrated in a bigger market to increase welfare levels in that country. This also opens the possibility to choose from a wider group of production factors to increase productivity (Grossman and Helpman, 1997).

The accumulation or growth effect post integration occurs when the regional market is

enlarged and attracts more suppliers, which results in specialization by firms in the market. The enlarged market attracts investment from the region as well as from outside. Investments lead to the transfer of knowledge or technology (through learning by doing). These technological spillovers as a consequence of regional integration result in higher productivity and lower production costs, attracting additional investment and hence factor accumulation. This combined effect is believed to have a positive impact on economic growth. Given this, regional integration seems to have all the ingredients needed to foster growth and development to enable the region a higher level of participation in the global.

The proponents of regional integration, among others, Schiff and Winters (1993), Venables (1999 & 2003), Frankel & Rose (2000) argue that in most cases regional trade arrangements can have a positive effect on intra-regional trade depending on the levels of economic development for members and the policies that they pursue (whether inward or outward-oriented) but the process does lead to winners and losers. Those against regional integration, that count among others, Bhagwati (1993) maintains that that unilateral trade liberalization is more beneficial than regional integration arrangements as the latter is discriminatory and can lead divergence in terms of members' growth (UNECA, 2010).

An open regional regionalism, in which barriers to trade are lowered for members and but does not raise barriers for non-members is seen as beneficial and can lead access to bigger markets and increased levels of trade resulting in higher economic growth. Countries participating in trade derive significant welfare gains from it, although not necessarily in an equitable way. In most trading relationships, there will be winners and losers). However, universal agreement exists that trade in general promotes economic growth because trade stimulates the allocation of resources based on the perceived comparative advantage of participating countries.

2.2.3.1 The Traditional Gains from Regional integration

The static gains (trade creation versus trade diversion) from regional integration (read Customs Union) was according to Viner (1950) the rationale why countries join the customs union. The Vinerian static effects for trade creation and diversion in the Customs Union (CU) is demonstrated below: It is based on a three-country model of a CU (South Africa and Zambia, being members of the CU and the Third Country (the Rest of the World, ROW, opting out of the CU)) and one commodity (maize) produced by both countries and the RoW. Both countries are open to trade (through a common external tariff that is applied to maize imported to the RS-Zambia's CU), giving consumers in South Africa (Zambia) an opportunity to consume maize produced at home, from Zambia (RSA) and the Rest of the World (RoW), depending on taste and the prevailing price. It demonstrates the welfare effects in terms of producers, consumers and the government of RIA (in this case a Customs Union).

a. Trade creation

Figure 2.2; illustrate the trade creation that occurs when South Africa and Zambia forms a customs union (CU) and both of them are producers of maize. Before the CU, the prevailing price for maize between the two countries S1 +T, which is the price plus tariff in this scenario, the distortion of the tariff plus price ensures that consumers are forced to consume maize at a higher price than the prevailing the world price (which is supply price plus tariff).

Upon the implementation of the CU, tariff is removed between Zambia and South Africa, the price of Zambian maize imported to South Africa become lower in comparison to the South African maize price. This has a potential to increase the volume of maize sold in the CU and this will increase welfare of Zambian maize producers as well as South African consumer whilst at the same time will reduce government revenue from customs duties for both South African governments. The net welfare for the enlarged market is larger and trade is created.

In the absence of the CU and with tariff imposition (S_1 +T), South Africa consumes 50 tons of maize at $2 per of which 20 tons is produced locally whilst 30 tons is imported from the RoW. After the formation of the CU between Zambia and South Africa and the reduction of tariff (that is price minus tariff, $S_{1)}$ South Africa increases its maize consumption from 50 tons 70 tons, of which 20 tons is imported from Zambia as a result of the CU. The RSA-Zambia CU has created a new maize trade of 20 tons as a result of tariff reduction, but has not altogether stopped the imports from the RoW, but it merely demonstrates a new trade of 20 tons in addition to the previous 30 tons that was imported from the RoW (including Zambia) in the absence of the CU.

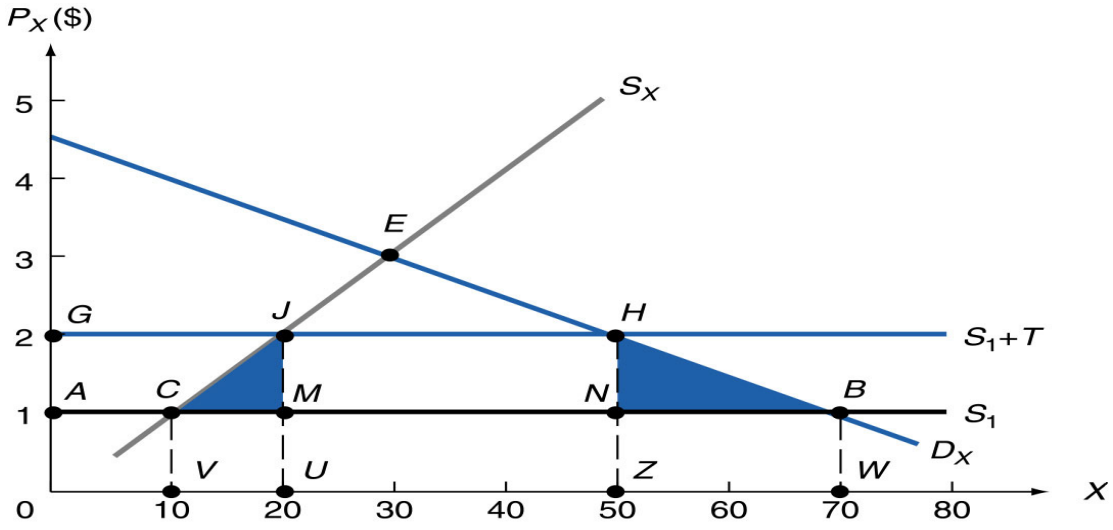


Figure 2.2: Trade Creation- South Africa and Zambia on Maize trade (Source: Viner, 1950)

In a nutshell, the following effects can be observed

- With Tariff (S_1 +T), South Africa's production surplus increases while the consumer surplus decreases; the deadweight loss is the total of protection effect and consumption effect. And it reduces the national welfare;
- With the formation of a customs union and the removal of tariff, it can increase the national welfare, which is the total of protection effect and consumption effect. This is represented by triangles, CJM and NHM. Domestic consumption rises from 50X to 70X and this borne by import from a CU partner country.
- A trade-creating customs union can increase the national welfare— the trade creation: production welfare and consumption welfare from the comparative advantages.
- A trade-creating customs union also increases the welfare of non-members because some of the increase in its real income spills over into increased imports from the rest of world

b. Trade Diversion

Trade Diversion occurs when a high cost producer within CU within the CU replaces the least-cost producer who is not a member of CU. As in the earlier example of a CU between South Africa and Zambia on maize trade, the result on trade diversion will be as follows: Before CU, even in the presence of a tariff on the price of maize, both South Africa and Zambia are able to import some maize from the rest of the world as the prevailing world price is cheaper. But after the CU between South Africa and Zambia and removal of tariff, imports from the rest of the world become expensive and are replaced by expensive imports from the partner country. This situation increases producers' welfare (revenue) and consumer welfare is lost, and so is the government revenue from custom duties of a partner country. The overall welfare is lower and from Figure 2.3, the following effects can be observed:

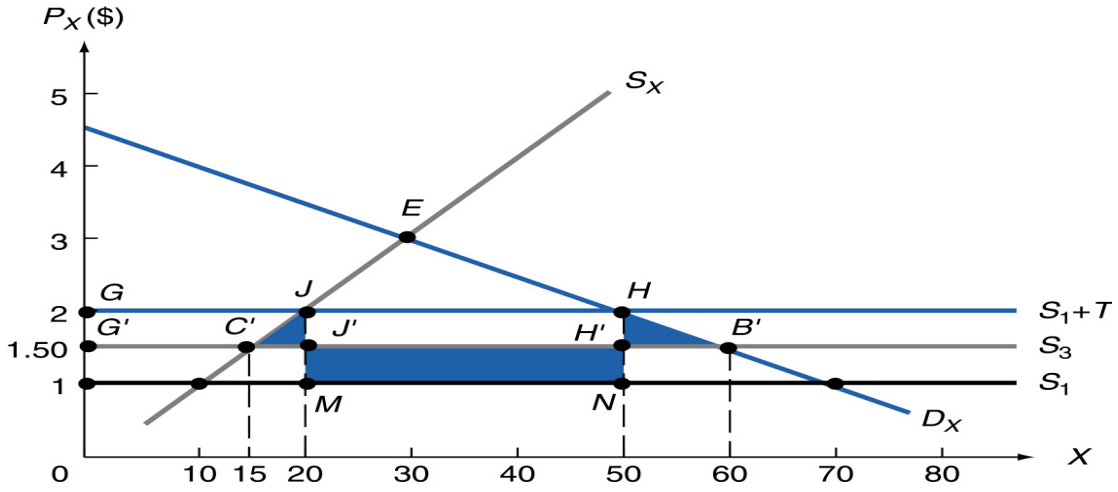


Figure 2.3: Trade Diversion- South Africa and Zambia on Maize trade (Source:

Viner, 1950)

- With free trade, with prevailing world price, S_1 South Africa's consumption of maize is 70X (domestic supply 10X while the imports 60X);
- After the formation of the CU, with tariff (S_1 +T) applied to imports from the Rest of the World, domestic consumption of maize is 50 (domestic supply 20X while the imports 30X);
- Within the RSA-Zambia CU and the preferential tariff, S_3, the domestic consumption increases to 60 (domestic supply 15X while the imports from the member 45X). This new trade is however at a higher price that the global price, S_1 and the efficient or least cost producer from the RoW has been replaced by the producers within the CU, represented an increase of 10 tons (that is 5 tons each produced by South Africa and Zambia).
- In a nutshell, the overall loss is represented by area CJM, JMNH, representing a loss of welfare for consumers in South Africa and the government revenue as a result of RSA-Zambia CU preferential tariff. The welfare gains were only accrued to the South Africa and Zambia producers on increased sales and revenue, represented by 10 combined tons.
- The total welfare loss is greater in the trade diverting CU.

Viner's analysis was based on assumption that for the trade creation and diversion to take place within the CU, the conditions should be that of perfect competition and an infinitely elastic world supply, full employment of resources, zero cost adjustment procedures and perfect factor mobility and constant return to scale. Viner analysis became the first theoretical argument underpinning customs union and the first modern RIA, that is the European Union (1957) was hatched on the basis of such a theory. Although other writers such a Meade (1954), Lipsey (1957) and among others, Bhagwati (1961) criticised his simplistic version of analysis, they did acknowledge the initial finding by Viner that CU does create or divert trade.

They have however critised the simplistic assumption of Viner and that it does not mirror the real world. The critics argued that in the real world, a CU might involve more than two countries and more goods and whilst there could be trade diversion on one good, there could trade creation on others (Lipsey 1957). They further argued that is also possible for trade diversion to take and the welfare of CU members to increase at the same time considering the dynamic effect of RIA such as competitive effects, that lead to re-organisation of the market, where uncompetitive producers are forced to leave the market as a result of an enlarged regional market and an entry of producers that are better organized, the intra and extra RIA investments, which brings about new technologies and learning effects to firms in the region, taking advantage of the enlarged market and agglomeration of firms to better serve the market at home base or from the partner country market depending on transport costs (Krugman and Venables, 1993).

Meade (1954) and Johnson (1965) argued that for a RIA to be beneficial (trade creating), in that its members should be on the same level of development, it must be competitive and potentially complementary (in terms of export baskets for CU members) and a have a low common external tariffs (CET) compared to the pre-union levels. According to Vanek (1965), customs union will benefit both members if the CET is lower compared to pre-union level and it will contribute to increased global welfare in the end and this is consistent with GATT Chapter XXIV, which stipulate that CU must not increase protection to non-members, but should reduce them on members, thus creating a virtuous effect for other RIAs to reduce their protection, which in the ultimate end, increases global welfare. Studying the trade patterns of EU and European Free Trade Agreement (EFTA), he concluded that trade flows increased after the CET was lowered to 1.6% original EU Six members as well as EFTA members in the 1960s.

In order for the theory of regional economic integration to reflect the real world, there is a need to relax the assumptions of perfect competition and constant return to scale, as well as freely available technology. This means there are gains where integration influences the location and growth in the REC of industries subject to scale economies and technology and learning effects, as well as increased competitive rivalry in larger regional markets. To those who studied EU integration (among others, Baldwin (2004), Bhagwati (1993), Balassa (1967), Young 1991), this rang true.

Countries that produce similar goods can also trade together and benefit from RIA. The EU integration has shown that countries that produce similar goods can trade with each other, for example, France and Germany. Both of these countries produce and specialize in automobiles, for example, France producing Peugeot, whilst Germany produces Volkswagen. Depending on their specialization and tastes of consumers, the two countries do trade with each other (EU commission, 2000). This intra-industry trade described above that is inherent in RIAs such as the EU, NAFTA and ASEAN is very minimal in other developing RIA such as those in Africa, where the larger promotion of trade is comprised of dissimilar good (inter-industry), which is bases on factor endowments. This development is going to be investigated further in other section, in response to a low level of intra-regional trade amongst Africa's RIAs.

Cooper-Masell (1965) and Bhagwati (1993) criticised Viner on his assertion that preferential tariff reduction is superior to unilateral tariff reduction. Cooper-Masell (1965) argued that, for a smaller country, unilateral tariff reduction is beneficial to preferential tariff reductions in RIA, as gains from non-discriminatory liberalization outweigh the welfare impact of a preferential trade agreement. Both asserted that tariff reduction component was the unique source of trade creation, whilst the pure-trade diversion component reflected traditional welfare losses, as it failed to account for its preferential tariff policy.

This view was rejected by Yeong –Her Yeh (2002) among others, who argued that this assertion does not hold. To prove this, he analysed the welfare levels (measured in terms of per capita income) of Spain and Portugal prior to and after joining the EU. He concluded that these countries attained better welfare levels after joining the EU than before, and this welfare increase can be attributed to their accession to the EU.
Krugman and Venables (1995) expanded Viner's model and managed to demonstrate how the creation of a CU between two low-income countries with a similar comparative advantage (and therefore factor endowments) may lead not only to trade diversion but also to greater economic divergence. He posited that such as situation happens because of traditional forces of trade diversion and creation working in a perfectly competitive environment.

Venables (2003) further argued that a greater potential for welfare gains exists from trade between countries with vastly different factor endowments (similar to Heckscher-Ohlin theory). This could take the form of the inclusion of a more developed country within the South RIA. The latter point has often been used as a rallying point to encourage the formation of the the North-South RIA, for example EU- Sub-Saharan Economic Partnership agreements (EPAs) on the basis of countries of regions with different factors of economic endowments and development. The impact of the North-South RIA such has been found to result in both positive static effects (trade creation) and dynamic effects such as the investments effects and learning effects (Lewis and Thierfinder, 2002).

The analysis of the impact of the North-South RIA did show that although the inclusion of countries with vastly different static comparative advantages may help to promote more economic convergence than divergence, the gains may still be disproportionate. show how relatively large welfare gains may accrue to the most developed country of a regional trade agreement, or hub, because of conditions of imperfect competition and the agglomeration effects of industries that choose to cluster closer together (McCarthy, 1999).

In a nutshell, there is a consensus around the theories of regional integration that whilst RIA is beneficial to members, it is discriminatory and thus second best compared to free trade trade liberalization (multilateralism). The VInerian assumption for the RIA do not explain the current wave of RIA across the globe, in which member states join in order to attract both intra and extra-RIA investments, to access the best technologies and overall. Furthermore, the current wave of RIA has members which are on different levels of development, that North-South, South-South and North-North. The formation of RIA is also pushed by the market as opposed to only the state-led RIA. These markets, through transnational Corporation (TNC) have often pushed their host states to form RIAs so that it can be easy to conduct cross border production. It has often been cited that the members of the Association of South East Nation lowered more tariff and non-tariff barriers before the formal agreements (through ASEAN) as a national policy to attract the wild geese investment from Japan.

2.2.3.2 Dynamic Effects of RIA

The traditional theories of trade, in particular the Vinerian built-in assumptions, which assume constant returns to scale, perfect competition and freely available technology provide a limited insight to regional integration economic integration, in particular in developing countries such as in Africa. The rationale for RIAs in Africa, as outlined in the Abuja Treaty is that whilst there was a strong reasoning that RIAs in Africa will create trade, African leaders were more interested on the role of RIA in reducing underdevelopment that manifest through smaller and fragmented individual markets, low levels of foreign direct investment, the concentration of economies on extractive industries (resources) and and the vulnerability of the the African economies when interacting with the global economy Hatzenberg and Kalenga (2014).

In order to understand African RIAs, the Vinerian assumptions will have to be relaxed. The reality in Africa, as it is in other parts of the world is that economies have dominant firms that are a result of either political decision such as monopolies created by governments in the strategic sectors of the economy (energy, petroleum, water, etc.) and technology is not freely available and is protected by law and can sometimes be accessed at a cost. So when countries agree to a regional integration arrangement, the national monopolies will also want to expand their business and sales to the regional level.

Unlike the static effects that are once-off and are concerned with the resource allocative efficiency before and after the formation of CU/RIA, the dynamic gains of RIA are long-term and can change the structure of the economy permanently so that the economy can be on a long-term higher growth trajectory. The assumptions underlying dynamic effects are imperfect competition and increasing returns to scale. The following dynamic gains will be analysed in terms of their applicability to SADC regional integration:

a) Stimulus to Investment

An increased Foreign Direct Investment in the RIA/country is said to increase technology diffusion and income convergence over time. According to the Solow-Swan neo-classical growth models these gains from FDI are however dependent on the returns to investment (Solow, 1956). The view was further supported by and Lucas (1988) and Romer (1990) who stressed that for the benefit of FDI to set-in it is dependent on increasing returns to investment and localized technology externalities with countries that have more R&D and human capital gaining faster from cross border investment than countries with low stock of both R&D and human capital.

The literature further point that the formation of RIA stimulates the investments to take the advantage of the enlarged market. The formation of the North Atlantic Free Trade

Agreement between US, Canada and Mexico created a huge boost for Mexico border economy as both the US and Canada increased investment in the export processing zones along Mexico's border with the US (Hanson 1993). The formation has helped to spur even outsiders to set up production facilities within the NAFTA to avoid trade barriers imposed on non-union products *(called as tariff factories)* For example, the U.S. Investments in EU after 1955 and after 1986 increased exponentially to avoid this tariff.

The effects of RIA on Foreign Direct Investments (FDI) can be traced to Kindleberger (1966) who argued that the effects of a CU are not only trade creation and trade diversion in the goods market, but also investment creation and investment diversion. Investment creation is due to an increase of inward FDI flows to the CU from third countries, and is the response of firms from non-member countries to trade diversion: outside firms previously exporting to the area locate plants inside the CU in order to maintain their market share. Investment diversion is the shifting of FDI within the CU and is the consequence of trade creation, that is, the re-organization of production inside the CU, and this implies a shift of investments from one member to another. This could be to take advantage of input-output linkages and to be nearer to the customers with the union.

Krugman and Venables (1996) further extended Kindleberger's by identifying three types of investment respond to the formation of RIA CU:

- Defensive export-substituting investments are the response of non-member firms to the trade diversion effect in order to maintain market share (investment creation). In this case, FDI replaces trade: the net trade effect is negative, while the net FDI effect is positive.
- Reorganization investments occur when outside firms are already inside the block before integration, and emerge as a consequence of trade creation (investment diversion); they imply a consolidation of previous operations into fewer larger plants. The net trade and FDI effects are likely to be neutral for the region as a whole; however, the net FDI effect may be positive for some countries (those where FDI are concentrated) and negative for others;
- Offensive export-substituting investments are the consequence of one of the dynamic effects of the CU, that is, the increase in the growth rate of member countries; firms invest in the CU to take advantage of the growing demand; these investments do not necessarily replace existing trade, even though they may preclude a further expansion of trade; the net FDI effect is positive

Multinational corporations have long dominated this tariff-jumping investments and if the RIA is credible (and has potential benefits), it helps to increases the inflow as investors to the RIA ensure that their products do not have to face the tariff in the RIA. Most of the goods produced by the new investment to the RIA are geared into the RIA and to other markets in which the host RIA might have a preferential trade

arrangement with. For the RIA (or individual member countries) to increase the gains from the new investments, it must have capacity to utilize the new investments in terms of labour and technology (which comes through learnings) or else it will create a situation of RIA (and individual member states) being used a re-exporting zones with minimal value addition. Thus why, within RIA, in particular, the Free Trade Areas (FTA), they introduce the Rules of Origin (RoO) to measure and monitor the value addition for products to qualify as originating from the RIA (McCarthy, 1993; Kalenga, 2004).

In SADC, Masiyandima (2015) has studied the impact of FDI on income convergence and technological diffusion and learning effects (between 2009 and 2013) and he concluded that countries such as South Africa and Mauritius realized the technological diffusion and the income growth much faster than the rest of SADC member countries and the same could be observed in East Africa Community, where Kenya has been the principal beneficiary as a result of FDI investments. An observation on the three countries reveals that they had better human capital and local R&D stock.

The increase in FDI as a result of RIA might not necessarily bring convergence across the RIA, SADC being the case in point, but can however lead to a term called “club convergence” as suggested by Masiyadima (2015) who posited that within RIA, countries with harmonized social capabilities such R&D, human capital, markets and institutions will converge into their own club while those that lag behind continue to diverge or at least converge at a much smaller pace.

In analyzing the impact of RIA on FDI in Africa, UNCTAD (2014) found that intra-Africa foreign direct investment has been increasing and has been dominated by South African, Mauritian, Kenyan and Nigerian transnational corporations (TNCs). According to a report by UNCTAD (2014), between 2009 and 2013, the share of intra-Africa greenfield investment projects rose to 18% of the cumulative FDI for Africa compared to an increase of only 5% over the period 2003 to 2010.

A further advantage is that these stock of intra-African FDI is largely concentrated in manufacturing (comprising 49%) compared to investments from the rest of the world, in which manufacturing constitute 44% of total FDI. This potentially gives the continent enhanced growth opportunities in intra-regional trade, value chains and technology convergence.

Given that these intra-Africa FDI is dominated by countries that have a large domestic R&D and capital stock, it creates an incentive for intra-regional technology transfer, which in the long-term will ensure regional growth convergence

The analysis of FDI trends in SADC (between 2009 and 2013) concluded that the region experienced a growth in FDI stock with South Africa constituting up to 80% of some member countries’ total FDI stock (UNCTAD, 2014). According to the Africa

Development Bank (AfDB) RSA invested a total of US$ 980 million in Botswana, Mauritius, Mozambique and Zambia, which are the largest recipients of RSA' FDI in 2010.
The relaxation of South Africa's exchange controls on outward FDI to Africa has had a positive impact in the growth of RSA-SADC intra-regional investment. These investment has surely increase the technological diffusion, but the situation could be better if the recipient countries increase their FDI absorptive capacity through increased R&D, productive infrastructure and human capital stock.

At the same time, there has been little growth convergence, in terms of per capita and output growth for all the regional economies, but there is some evidence indicating that those economic activities in SADC countries that are the major recipients of FDI stock from RSA and the Rest of the World have seen a substantial increase in the returns for the factors of production.

b) Economies of scale and competition effects

As a result of the reduction of internal barriers to trade and the enlargement of the protected market, firms are induced to reorganize their production structures inside the area to exploit economies of scale. Regional integration can potentially overcome a number of factors negatively affecting the competitiveness of small economies, among them, a small domestic market size and high concentration, thus manifest in terms of local monopolies. Firstly, small domestic market size can potentially limit the expansion of domestic firms to reach the minimum efficient scale (MES) of production, resulting in failure to realise scale economies. By opening up the regional market to domestic firms, integration potentially relaxes the market size constraint, allowing producers to move down their cost curves, and thus enhance competitiveness (Baldwin 1994; Schiff & Winters 1993).

Secondly, small domestic markets sizes tend to limit the number of firms that can profitably/optimally operate in the domestic market - and thus tends to cultivate monopolies/oligopolies. High industry concentration reduces the firms' incentives to enhance efficiencies, to the detriment of consumers and broader national welfare, particularly when these monopolies operate under tariff and other protectionist measures. Similarly, a small domestic market may limit incumbent firms' incentives to escalate competition by incurring high fixed/sunk costs owing to the small potential returns from such investment. A RIA can mitigate the inefficiencies associated with monopolies dominating the domestic markets by opening up the domestic markets to competition, at least from within the enlarged market. For example, in the absence of RIA three neighbouring countries who produce maize (using a monopoly structure) will rely on the tariffs to protect their domestic markets. But with regional integration resulting in the tariff reduction the enlarged market will now feature rivalry between three firms – likely resulting in improved x-efficiency and allocative efficiency. If there is competition regulation in the enlarged market, the three companies will not be

permitted to collude on price setting nor merge to the detrimental of consumers in the region. The inefficient producer(s) among the three will be driven out of the market. Thus integration potentially reduces the exercise of monopoly power, promotes competition and enhances welfare. As a corollary therefore, integration also enhances competitiveness vis-a-vis third party producers, thus generating long-term gains for the community (Baldwin and Venables 1995; Limao & Venables 2001; Schiff &Winters 1993).

The pro-competitive effects of RIA are applicable in both static and dynamic setting. Before the formation of a RIA, producers in the domestic market are likely to be sluggish and complacent behind trade barriers. This is more evident in markets dominated by monopolies that are likely to charge average costs unlike in competitive markets where goods are charged at marginal costs of production (Roberts, Vilakazi, et al 2014). According to Krugman and Venables (1991 and 1996), when a RIA is formed, producers in each country must become more efficient to meet the competition of other producers within the union, merge, or go out of business, reducing the cost of production to the benefit of consumers. The dynamic effects can be measured in terms of long-term effect of the competition brought about by increase in the number of producers within an enlarged market, that is, the increased level of competition is also likely to stimulate the development and utilization of new technology, reducing the cost of production to the benefit of consumers.

In 2014, SADC countries adopted the Competition Framework to standardize and harmonise the national competition laws. To countries that have fully functional competition authorities like South Africa and Mauritius, it is easier for the national authorities to monitor anti-competitive behaviour within their jurisdictions, but do not necessarily monitor such a behaviour when their firms invest in the SADC region. Without cooperation among the national competition authorities, the effect of regional Competition Framework will be minimal.

Almost all SADC countries in SADC (including South Africa) protect their strategic sectors with subsidies (in various guises), incentives and tariff and non-tariff protection. This result in price distortion in the finished goods market. Official Protection exists in the 15% of SADC goods that are classified sensitive through the SADC Trade Protocol. Despite the SADC FTA schedule that has set 2012 as the date in which almost 100% of SADC goods should be duty free, there is a considerable amount of protection as well as derogation applied by countries on the “sensitive goods”, in particular on the preferential access given to South Africa. The list of the protected goods includes among others, food and beverages (processed foods such as sugar), Textile and Clothing, Cement and so forth. Whilst this does derail the regional integration target, it could be seen in some way as retaliation to South Africa, whose production of goods is incentivized for almost all goods categories, whereas the other SADC member countries cannot match South Africa’s large fiscal transfer that empowers it manufacturing sector.

As things stand, the total removal of protection will result in dominance of South Africa and Mauritius firms on the SADC markets resulting in the lost of markets for various small enterprises in in SADC countries. Without any compensatory framework, it is highly unlikely that SADC countries will ever entertain a full free trade area in the theoretical sense. But at the same time, the delay in opening up the markets fully in SADC will certainly derail the potential economic developments gains (such as cross-border manufacturing activities-intra firm trade) and the economic welfare which associated with the gains from RIA.

c) Agglomeration, Technology Diffusion, learning effects and externalities

Integration can encourage investment in technologies by firms within and outside the integration area. The more clustered (agglomeration) are the economic activities of a country, the better technological diffusion and adoption of new technologies by local firms, thus obviously depending the absorptive capacity. When a country has a local capacity in terms of its R&D (representing the technological stock), human capital and clusters, there is strong likelihood that upon regional economic integration, its cluster regions will realize more intra and extra-regional investments as opposed to countries that do not have such a capacity.

The seminal analysis on the role of agglomeration effects in technology transfers was provided by Marshall (1920) and later modelled by among others writers such as Henderson (1974), Rauch (1991) and Ciccone and Hall (1996). These models concluded that there will be technological spillovers of intra-industry in nature with exchange of information taking place among similar industries situated in close proximity. Jacobs (1969), differed with the earlier view by Marshall (and supported by others) on the nature of spillovers. Jacobs (1969) pointed out that agglomeration externalities will be in the forms of inter-industry through across all industries through production complementarities and diversification. The empirical evidence has proved that the Marshallian intra-industry spill overs are more prominent in various RIA, whereas the Jacobian inter-industry technological spillover can be seen as a higher stage which is concerned with the evolution of new cities. Typical examples of the intra-industry are the role of automotive investments in Tshwane region of South Africa, which buoyed by various government investments incentive, has ensured that the cluster increase its scope in terms of the industry value chain, that is from automotive assembly, to parts manufacturing, to professional services.

The inter-industry agglomeration, can be observed for most of the emerging cities in China and India, where the investments started as intra-firm investments and the cluster grow, the government ensured that other supporting sectors are also nurtured in the same region through incentives, which triggers more investments (intra/extra-regional) in the supporting sectors followed by population expansion is such a region resulting in the formation of new city. So in a nutshell, both Marshallian and Jacobian

theory on the role of agglomeration on the technological diffusion is complementary

The is consensus in the literature on the agglomeration externalities emphasizes the role of human capital as a source and catalyst for technology externalities, with agglomeration externalities and human capital endogenously depending on each other. Glaeser and Resseger (2010) assert that the high levels of human capital and city size (industrial organization/agglomeration) interact to push out the frontier of knowledge and the level of productivity while Hanson (1997) note that higher interaction of highly-skilled people is more likely to result in more innovation than increasing the density of low human capital people. These models suggest that in countries or regions where levels of education and skills are low, there is limited or no agglomeration economies. Without undermining the technology externalities from human capital, other sources of technology externalities such as R&D, trade and FDI are likely to interact in more or less the same way with agglomeration as human capital to enhance productivity, though not widely studied.

The country level studies estimating the existence of agglomeration effects on income growth have been undertaken by Brulhart and Sbergami (2009) and Henderson (2003). Brulhart and Sbergami (2009) used urbanization, population density and an index of spatial concentration to measure agglomeration for 105 countries and confirmed positive agglomeration effects for the countries when per capita income is less than US$10 000 and negative effects beyond this income per capita while Henderson (2003) finds that urban primacy, defined as urban concentration as opposed to urbanization has positive agglomeration effects also up to a given income of about US$2 300. Their studies suggest that agglomeration effects are non-linear and point to the importance of country capacity factors that improve the elasticity of productivity with respect to agglomeration such as infrastructure.

A study by De Propris and Driffield (2006), estimated productivity spillovers from FDI for firms in and outside clusters for United Kingdom (UK) concluded that there is a significant difference in productivity spillovers between the two groups. The study finds evidence suggesting the existence of significant intra and inter- industry productivity spillovers from foreign to domestic firms in industries and regions that possess significant clusters and no evidence of spillovers for non-clusters in which they instead find evidence for crowding out effects. The study finds that even though firms in clusters suffer from increased competition from new foreign investment, the loss in productivity is more than offset by the beneficial effects of FDI.

In SADC, there is no study yet to measure the impact of the interplay between FDI and productivity (and growth) conditioned by the presence of agglomeration (cluster regions), existing stock local technology and human capital. From observation, SADC countries does have regional cluster on various industrial goods, but are dominated by South Africa, with strong clusters on food and beverages, Machinery and equipment, automotive and parts, metals, petroleum and petrochemicals whereas

other countries, such as Mauritius have clusters in Clothing, Footwear, textile and leather and Zambia on metals. An analysis of the FDI trends in SADC reflect that investments are directed towards this cluster that are seen as regional clusters that can satisfy the appetite of SADC region and beyond. Local incentives are geared towards propping up these clusters. It is not a foregone conclusion that the above-mentioned clusters have total factor productivity, given the growth of FDI in the clusters, it could be because of the host country incentives that motivate the Original Equipment Manufactures to continue to invest in those cluster.

The rationale for the continuation and expansion of incentive regime in South Africa has always been presented in the forms of shock the population that such a discontinuation of incentives will result in disinvestment and subsequent job losses and loss of the larger portion of output.

d) Agglomeration effects

Continuing with the same assumption of incorporating imperfect competition in the presence of increasing returns and trade costs, firms and workers tend to locate close to large markets. The post-Vinerian Economists such as Perroux (1955) on ‘growth poles’, Myrdal’s (1957) work on ‘circular and cumulative causation’, and Hirschman (1958) pioneered thinking about industrial organisation. However, the linkage between industrial organization and regionalism was provided by Pred (1966). Spence (1976) and Dixit and Stiglitz (1977) models of monopolistic competition also made predictions on the effects of closer economic integration on the location of economic activities.

Krugman and Venables (1991) are credited with the theory of New Economic Geography (NEG). They formalized the cumulative causation mechanisms, to show that regions, which are similar, or even identical, in underlying structure, can endogenously differentiate into rich ‘core’ regions and poor ‘peripheral’ regions. They indicated that firms producing in locations with relatively many firms face stronger competition in the local product and factor markets. This tends to make activities dispersed in space. The combination of increasing returns to scale and trade costs, however, encourages firms to locate close to large markets, which in turn are those with relatively many firms. This creates pecuniary externalities, which favour the agglomeration of economic activities.

According to Krugman and Venables (1991) the formation of RIA leading to reductions in trade or transport costs, by affecting the balance between dispersion and agglomeration forces, can decisively affect the spatial location of economic activities. For high trade costs, the need to supply markets locally encourages firms to locate in different regions. For intermediate values of trade costs, the incentives for self-sufficiency weaken.

The price of local factors and the availability of goods, however, tend to increase wherever agglomeration takes place. If this is the case and there is enough mobility, as trade costs continue to fall, rising factor prices simply give an additional kick to agglomeration by inducing immigration.

On the other hand, if there is little mobility, for very low trade costs it may be that firms relocate in response to wage differentials. The combination of minimal inter-regional migration with institutional constraints on inter-regional (but not international) wage differentials can, however, lead to a rise in income inequalities between regions within each country at the same time as inequalities between countries fall. Further, if agglomeration is not reflected in wage differences, it may show in unemployment rate differences between regions. Since clusters of activity may extend across borders, this can result in clusters of high and low unemployment extending across regions and even across countries. Firms tend to co-locate with firms to which they are more closely related and to avoid congestion by moving away from firms to which they are not. This also promotes increasing specialization in a way in which is not just driven by traditional comparative advantage considerations.

In conclusion the removal of trade and transport costs as a result of RIA can have different impact for developed and developing regions, especially if it is not accompanied by explicit capital and labour mobility. Within the EU, for example, the Trans-European Transport Network European Union has reduced transport costs and provides better access to the main economic centres. According to NEG, this low trade and transport costs could have induced firms to relocate to the EU periphery taking advantage of wage differentials, but because the clusters and input-output linkage had preceded the union expansion, it become difficult to simply relocate on the basis of lower labour costs that are also likely to rise in time. This further exacerbated by the free labour and capital mobility in EU and the resultant situation will be labour and capital moving to chase clusters in the core region. In this case the Trans-European Transport Network can help to improve access to the periphery market from the core.

In developing regions such as SADC for example, the potential agglomeration effects are stymied by poor network infrastructure connectivity, limited capital and labour mobility and existing strong clusters in South Africa that are incentivized and the lack of such kinds of incentives in the rest of SADC region.

2.2.4 Trade and industrial development

There has often been an argument that trade policy of a country is extension of its local industrial development policy and thus nations choose countries and regions that they form regional economic integration arrangements to complement their industrial policy. Given the endogenous growth theory's assumption that a country current innovation is by-product of earlier investment in technologies, regional integration will have countries that are far ahead in terms of industrial development and it then

become difficult (specially if the partner countries have low innovation absorption capacity) to catch up.

Brander and Spencer (1985); Krugman and Obstfeld (1992) have observed that countries do select industries or sectors of the economies that are supported an cannot be allowed to fail and are then termed strategic industries. Even the RIA cannot be able to dismantle such incentivized monopolies who in the end has a potential to dump their products in other RIA members' territory.

This is similar to the argument of the dependency theories like Prebisch (1963) and Amin et al (1981) who posited that developing countries should nurture their infant industries under protectionism and only open up when such industries have already graduated. In Africa and Latin America, the advice of Perish led to the now-defunct import-substitution regime of the 60s and 70s, which have failed dismally, given that at the time there was no emphasis investment in technology, which is the precondition for factor accumulation and growth.

According to Krugman (1984) within the United States, the theory of Strategic trade gained currency in the 70and early 80s, which was based on the theory that it was the "vagaries of history" rather than resources that determine what a country produces and exports. Thus the role of "history and accident" were both considered crucial in determining the location of an industry in the world map. Proponents of this thinking, which include among others Robert Reich of the Kennedy School in the United States, and Lester Thurow, author of *Zero-Sum Society*, recommended that by the early 1980s, government should intervene to shift resources from "sunset" to "sunrise" industries, thus generating "high value-added products" (Krugman 1994: 248).

Around the same time, the Berkeley Roundtable, an influential think-tank at the University of California, pointed at the tendencies for de-industrialization of the United States and recommended active state intervention, advocating industrial policy along the above line (Krugman 1994: 249). So in a nutshell, industrial policy was considered to have an impact of shifting trading policy to favour domestic production and by reinforcing the role of strategic trade, nations can support its favoured sector to an extend that it will create a considerable advantage in its trade to other nations.

Given that industrial policy is a national pride, there are hardly any RIA which has an industrial policy embedded, rather countries within RIA harmonise their industrial policies and increase industrial cooperation, a good example being that of France and Germany (within EU) in their co-production of the Airbus

The SADC region also have the Industrialization Strategy and Roadmap, 2015-2063, which is premised on the conviction that regional integration will promote industrialization. The Strategy that industrial policy and implementation will be largely undertaken at the national level and that its success depends on forging a compact

for industry consisting of the government, the private sector, civil society, labour and the development partners.

Whilst the strategy has good intention and phased set targets, its success is dependent on the developments of the value chain and harmonizing the investments policies in order attract the global chain as a region. Currently, South Africa seem to be the only country that can pays the premium (incentives) required to participate in the global value chain such as automotive, machinery and equipment and so forth.

Unlike in East Asia, where there was a concentration of multinational production within the region as a result of incentives and investments in Human Capital and Research and Development, other SADC members do not appear to have a catchup strategy to south Africa nor a potential to attract the low end global value chain production when the labour costs in South Africa rises.

SECTION 2: THE THEORY ON THE EFFECT OF RIA ON TRADE AND GROWTH

2.3 Introduction

According to Negasi (2009) the impact of trade creation and trade diversion effects on trade can be carried out in two ways, namely: the use of Computable General Equilibrium (CGE) modelling or the use of the gravity model of bilateral trade.

CGE modelling is relevant and more useful for *ex-ante* analysis, that, is an analysis that is done before trade between two countries actually takes place. Countries use the CGE to determine whether they should join the RIA on the basis of the potential benefits and the policies that they must pursue upon joining in order to attain the maximum benefits from a RIA (Lewis and Thierfinder, 2002).

The Gravity Model on the other hand, is appropriate for *ex-post* analysis, that is, an analysis that is done after trade has taken place between two countries or when the countries are in a preferential trading arrangement (Cernat, 2003:7).

2.3.1 Computable Equilibrium Model

According to Negasi (2009) the Computable Equilibrium Models (CGE), the sectorial aggregation does not permit analysis of specific markets. Mckitrick (1998) pointed out the weakness of the CGE is that policy information is usually outdated, and base line scenarios are far from facts and based on the older data. CGE methods are also very data demanding and tending not to be applied with high levels of data disaggregation (Milner and Sledziewska, 2005:7). Therefore, the validity of the results of CGE studies is questionable in some case.

Furthermore, the CGE is based on assumptions of perfect competition and constant elasticity of substitution (CES) technology and a system of demand and supply ensuring market-clearing mechanism (Geda, 2015), which is not realistic. Moreover, it lacks details on sectors (using high levels of sectorial aggregation), particularly for the poorest countries, where data is scares. Hence, the results of CGE studies are sometimes questionable. (Jayasinghe and Sarker, 2004: 5).

This measurement of the impact of regional economic integration in this study will be done through the gravity model and its will measure the pre and post-FTA trade patterns, hence its elaboration in the next section.

2.3.2 The Gravity Model

The gravity equation typically explains cross-sectional variation in country pairs' trade flows in terms of the countries' incomes, populations, bilateral distance, and dummy

variables for common languages, for common land borders, and for the presence or absence of an FTA.

Tinbergen (1962) was the first to provide an econometric study using the gravity equation for international trade flows (including dummies for FTAs). However, his school of thought typically assume that regional dummy is an exogenous variable to represent the FTA “treatment effect,” that is, the effect of an FTA on the bilateral trade flow. In reality, FTA dummies are not exogenous random variables; rather, countries likely select endogenously into FTAs for reasons possibly related to the level of trade (Carrere, 2002)

Gravity model incorporates the effects of RTAs into the model specification and estimate models using pre-RTA and post-RTA data, which is perfect to measure the effect of regional integration before and after. The impact of RTAs on trade flows is captured through the use of regional dummy variables. This is known as the gravity model approach, which explains bilateral trade flows between trading partners over time. The gravity model of bilateral trade hypothesizes that the flows of trade between two countries is proportional to their gross domestic product (GDP) and negatively related to trade barriers between them (Negasi 2009).

Many authors, including Clausing (2001), Ghosh and Yamarik (2004), Cernat (2003), Musila (2005), Sarker and Jayasinghe (2007), Carrere (2006) and Coulibaly (2004) have used the gravity model of bilateral trade to assess trade creation and trade diversion using dummy variables that capture a country's membership in a preferential trade agreement, where it is assigned 0 for non-RIA membership and 1 for being a RIA member.

Tinbergen (1962) posited that trade flows between two countries can be likened to Newton's gravitational force between two objects. Trade flows are directly proportional to the countries' income (GDP) and inversely proportional to the distance separating them. A set of dummies can also be added in the specification of the model to account for factors enhancing or restraining the trade flow.

After the mid 1970s, there was a development in theories that supported the gravity model of bilateral trade. Anderson (1979) made the initial formal endeavour to derive a gravity model of bilateral trade based on product differentiation. Anderson and Wincoop (2003) further argued that the major feature of the gravity model of bilateral trade is the dependence of trade flows on a trade resistance factor. In a quest to prove the strength of the theoretical foundation of the gravity model of bilateral trade, Oguledo and MacPhee (1994) derive a gravity model from a linear expenditure system.

The basic functional form of the gravity model of bilateral trade is as follows:

$$X_{ij} = \frac{\kappa Y_i^{\alpha} Y_j^{\beta}}{D_{ij}^{\gamma}}$$

where X_{ij} represents bilateral trade flows (usually exports), Y_i is the GDP (economic mass of country i (reporter), Y_j is the GDP of country j (partner), D_{ij} is the distance between countries i and j.

2.3.2.1 The Evolution of the Gravity Model

According to Baier and Bergstrand (2002) the problem with the estimation techniques over the years has always been on the treatment of the dummy variable as exogenous, meaning that countries just happen to find themselves within a RIA, whereas in reality, countries chooses a RIA on the basis of their perceived benefits and align their policies accordingly, making the dummy variable endogenous to the model. Trefler (1993) and Lee and Swagel (1997) showed previous estimates of the impact of trade liberalization on imports had been considerably underestimated resulting in the dummy coefficient as insignificant.

On average, when ignoring the endogeneity of an FTA, the agreement tends to increase the value of trade by 23 percent. By contrast, when acknowledging the endogeneity of an FTA, the agreement tends to increase the value of trade by 92 percent.

The treatment-effects methodology derived by Heckman (2001) demonstrate that a large coefficient estimate for an FTA dummy variable indicates that the FTA has a large effect on bilateral trade and that the two countries that have formed an FTA have “chosen well” to be each others’ partners on the basis of potential benefits.

Carrere (2002) also attempted to reduce the bias that is brought by exogenity of the dummy variable. She paid particular attention to the specification and the estimation of the gravity model to correct for biases present in previous studies. The panel estimation with bilateral specific random effects was revealed to be statistically justified after correcting for the endogeneity of the income, size, infrastructure and intra-RIA trade variables. Moreover, dummies were introduced to take into account the selection rule of the sample. Arguably, these modifications lead to a better formulation of the counterfactual against which one assesses the trade performance of RIAs.

She concluded that in most RIAs, there is a considerable increase in intra-regional trade beyond levels predicted by the gravity model, often coupled with a reduction in imports from the rest of the world, and at times coupled with a reduction in exports to the rest of the world, suggesting evidence of trade diversion.

2.3.2.2 The Use of Gravity model

The impact of the RIA on trade and other macroeconomic variable has been measured across all regions. Jayasinghe and Sarker (2004), for example, conducted a study that analyzed trade creation and trade diversion effects the North America Free Trade Agreement (NAFTA) on trade of six selected agri-food products from 1985 to 2000. Their investigation estimates an extended gravity model using pooled cross –sectional time –series regression and generalized least squares methods. They found that a share of intra-regional trade is growing with in NAFTA and that NAFTA has displaced trade with the rest of world. Using panel data econometric models analysis applied to highly disaggregated trade data, Milner and Sledziewska (2005) come out with the result that shows the European Agreement had transitory but significant trade diverting effects for Poland's import; the trade diversion substantially dominating the trade creation.

Clausing (2002) explored the determinants of bilateral trade flows between the European Union and Mercosur applying the gravity model in panel data framework and analysed the trade potential between the two trading blocs. They found that the partners' incomes had the expected positive impact on bilateral trade flows and the income elasticity of trade flows was found to be near unity in line with the theoretical expectation. But the effect of the exporting and importing countries' population is opposite; exporting countries' population has large negative coefficients, implying domestic absorption effect whereas that of importing countries' has large positive impact suggesting that highly populated countries import more compared to those less populated countries. Exchange rate and income differences were also found to be important determinants of trade flow in these two trading blocs.

Bac (2010) used a panel gravity approaches to estimate the determinants of export flows in the Vietnamese economy. Together with other variables, he found that an increase in exchange rate, or a depreciation of the Vietnamese dong increased exports in the country.

Free trade areas with their static and dynamic effects have been proved to contribute to the collective regional and global well-being (Baldwin 2003; Grossman and Helpman, 1994 and Viner, 1950). Trade openness, whether through national reforms, regional agreements or multilateral negotiations, exerts leverage on the economy through several transmission channels:

(i) it increases the market size and thus allows for increasing returns to scale,

(ii) it improves business competitiveness and promotes a better allocation of resources,

(iii) it constitutes an important vector for the transmission of technological innovations among trading partners, through FDI or because of upgrading

constraints exercised by competition on domestic firms (UNECA, 2013).

Several studies have been carried out to assess the performance of regional blocs in Africa using a gravity model. Among such studies are those of Lewis and Thierfinder (2002), Simwaka (2011), Longo and Sekkat (2004), Ogunkola (1998), Lyakurwa *et al*. (1997), Elbadawi (1997), and Foroutan and Pritchett (1993). Although the results of the studies somewhat vary, the general conclusion seems to be comparable. Their major conclusion is that regional integration in Africa has failed to achieve its objectives of increasing intra-regional trade, in particular, and fostering policy coordination in general.

Cassim (2001) used a cross section econometric gravity model to look at the potential for trade among SADC countries. Results from this study show that specific areas where potential trade is less than actual trade are mostly South African and Zimbabwean exports to the region. In the case of South Africa, he found that in all instances, its potential exports are significantly low. Elbadawi (1997) found results that are compatible with the pattern of intra-regional trade reported by earlier studies. His results indicated that SADC did not have a significant effect on trade among its members, although the performance of the bloc is slightly improved when controlling for exchange rate policy effects.

Using the Gravity model, Alimayehu and Seid (2014) found that Africa has a potential to increase intra-regional trade. He then concluded that despite this potential, intra-Africa trade is very low because of lack of complementarities for both the export and import basket for African countries in their trade with other African countries, including within African RIAs. He attributes this low level of intra-African trade to weak infrastructure, productivity and trade facilitation — in short, acute export supply constraint that characterizes the African export trade.

Makochekanwa (2012) analysed the impact of regional trade agreements on intra-trade in selected agro-food products (i.e. maize, rice and wheat) in three regional economic communities (RECs) namely COMESA, EAC and SADC. He found that geographic distance impacts the intra-regional trade in these commodities negatively, whereas the GDP of the partner countries have the expected positive signs. Besides the traditional determinants of bilateral trade, the author found positive and significant coefficients for the regional trading blocs which imply that these trading blocs promote intra-regional trade in the commodities.

Negasi (2009) study analyzes the effects of SADC on trade in four sectors, namely, agricultural commodities, fuel and minerals, heavy manufacturing and light manufacturing products. Empirical studies on regional economic integration process in Africa exhibit sluggish progress and there by limited level of intra trade. The existing literatures in Africa, particularly in Southern African regional integration bloc, SADC

have neglected effects of regional economic integration dealing with disaggregated data. This study analyzes trade creation and diversion effects of the Southern African Development Community (SADC) using disaggregated data from 2000 to 2007. The investigation estimates an augmented gravity model using panel data and random effect estimator methods. The results show that the intra-SADC trade is growing in fuel and minerals, and heavy manufacturing sectors while it displays a declining trend in agricultural and light manufacturing sectors. This implies that SADC has displaced trade with the rest of the world in both fuel and minerals, and heavy manufacturing sectors. SADC has served to boost trade significantly among its members rather than with the rest of the world. Countries participating in SADC have moved toward a lower degree of relative openness in these sectors trade with the rest of the world. However, the increasing trend of extra-SADC trade bias over the sample period in both agricultural commodities and light manufacturing sectors means that there has been a negative trade diversion effect. In other words, the value of trade between members and non-members has been increasing for the two sectors. These results seem to suggest that SADC countries retained their openness and outward orientation despite they signed the trade protocol for enhancing intra-SADC trade in agricultural and light manufacturing sectors.

Alemayehu and Kibret (2002, 2012, 2006), on their study for COMESA, show that bilateral trade flows among the regional groupings could be explained by standard variables as demonstrated by the results of the conventional gravity model, while regional groupings have had insignificant effect on the flow of bilateral trade. Further, they suggest that the performance of regional blocs is mainly constrained by problems of variation in initial condition, compensation issues, real political commitment, overlapping membership, policy harmonization and poor private sector participation.

Using a multi-region model constructed to focus on the determination of sectoral and geographic trade patterns**,** Lewis et al (1999) modeled South Africa and the rest of Southern African to evaluate how alternative SADC regional trade strategies can influence trade pattern in the region and how the EU deal affects the region's economies. They concluded that: (i) trade creation dominates trade diversion for the region under all FTA arrangements; (ii) the rest of Southern Africa benefits from an FTA between the EU and South Africa; (iii) the rest of Southern Africa gains more from zero-tariff access to EU markets than from a partial (50 percent) reduction in global tariffs; and (iv) the South African economy is not large enough to serve as a growth pole for the region. Access to EU markets provides substantially bigger gains for the rest of southern Africa than access to South African markets.

Cernat (2003:9),concluded that there is significant evidence that the SADC preferential trade agreement has had a trade contraction effect. However, these results have to be taken with caution as the SADC preferential trade agreement had been scheduled to initiate a comprehensive implementation in 2008 only. In fact, countries like South Africa, Zimbabwe and Mauritius have liberalised their tariffs

between 2000 and 2008 while on the other hand, Zambia, Malawi and Mozambique only effectively joined the trade agreement in 2008. It is important to note that though the SADC as a development body has been in existence since 1996, the SADC preferential trade agreement started being implemented only in 2000

Keck and Piermartini (2005) applied the general equilibrium model (15 regions, 9 sectors) to simulate the impact of Economic Partnership Agreement (EPAs) for countries of SADC. Their simulation results show that EPAs with the EU are welfare-enhancing for SADC overall, leading also to substantive increases in real GDP. For most countries further gains may arise from intra-SADC liberalization. The possibility of the EU entering a FTA with other countries, such as Mercosur, reduces estimated gains, but they still remain largely positive. Similarly, estimated gains need to be revised downwards if agriculture liberalization is not as far reaching as a reduction of import barriers for manufactures.

Lewis, Robinson and Thierfinder (1999) used a multi-country, computable general equilibrium (CGE) model to analyze the impact of trade liberalization on countries, sectors, and factors. The model included seven countries in Southern Africa (South Africa, Botswana, Malawi, Mozambique, Tanzania, Zambia, and Zimbabwe), the rest of SADC, the rest of Sub-Saharan Africa, and five other aggregate regions comprising the rest of the world. They found that trade creation dominates trade diversion for the region under all FTA arrangements. Some SADC economies gain slightly, some lose slightly, but overall, the agreement is not a “beggar thy neighbor” policy. For SADC countries, unilateral access to the EU is more beneficial, in terms of real GDP and real absorption, than a SADC FTA. However, reciprocal reforms under an EU-SADC FTA dominate unilateral access to the EU because they generate more welfare-enhancing structural adjustment.

2.3.3. Factors determining trade in SADC

Findings from the gravity model indicates that other factors remaining constant, trade flows within SADC region significantly depend on GDP, per capita income, the value of manufacturing, foreign direct investment, financial development and infrastructure development, stable exchange rate, and low inflation rate. These variables were found to be important factors to the intra-regional trade flows in most SADC member states. For example, to estimate the Gravity Model for South Africa’s Trade flows with a SADC country, the equation will be as follows:

$$X_{ij} = \phi_0 Y_i^{\phi_1} Y_j^{\phi_2} N_i^{\phi_3} N_j^{\phi_4} ER_i^{\phi_5} D_{ij}^{\phi_6} PTA_{ij}^{\gamma_1} PTA_i^{\gamma_2} u_{ij}$$

where X_{ij} is the exports from South Africa to its trading partner, Y_i is South Africa's GDP, Y_j is the trading partner's GDP, N_i is South Africa's population, N_j is the trading partner's population, ER_i is the average real effective exchange rate of the rand, D_{ij} is the distance between the capital cities of South Africa and the trading partner, PTA_{ij} is

a dummy variable capturing whether South Africa and its trading partner both belong to the same preferential trade agreement (SADC or EU-SA), i.e. intra bloc trade, PTA_i is a dummy variable capturing current membership status of South Africa in the SADC FTA, where PTA_i = 1 if only SA is a member of the PTA, 0 otherwise.

SECTION 3: RIA EXPERIENCES

2.4 Introduction

This section will provide an analysis of RIAs, in particular the successful one and how their indicators of success can be used to measure the performance of RIA in Africa and Southern Africa. The key focus of this section is to contrast RIA across the globe through examples that covers the developed world (the EU), emerging markets region in Latin America (through the Southern Common Market-MERCOSUR). Regional integration integration developments in Africa, in particular, Southern Africa, will be benchmarked on the outcome of the RIAs in Europe and Latin America.

2.4.1 The European Integration experience

The EU integration trajectory, which was cemented through the signing of the Treaty of Rome in 1957 was motivated by Post World War II peacetime idealism, which sought to reduce tensions in Europe through the deepening of economic and political relationship, in particular the reduction of aggression between German and France (EU Commission, 2012) The EU is 28-member[3] RIA and 19 of those members are members of the currency union, called the Eurozone. Some of the achievements of the EU integration are as follows:

- The macro economic convergence on inflation, budget deficit and debt as a percentage of Gross Domestic Product (GCP). This is defined through the Fiscal Stability Pact, which is anchored on Germany macroeconomic variables;
- The common currency, the Euro, that has replaced the domestic currencies and has reduced the trade transaction among member states and has also created the second most tradable currency after the US Dollar;
- The EU Cross-border Infrastructure Network in road, rail and ports that has reduced the costs and delays in the movement of goods across the EU;
- The absence of aggression in the last 57 years. EU member states have not been to war with each other; and
- Intra-EU trade is now 62% of total trade, meaning that EU nations trade with each other than with the rest of the world.
- Per capita income for new members has risen and to some extent to the same level as that of the core countries. There is evidence that Ireland, Portugal and Spain's growth was accelerated by their accession to the EU in 1981 for Ireland and 1986 for both Spain and Portugal.

[3] The EU countries are: Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the UK

The integration process has become an experience that is been replicated across the globe because of its relative success. According Venables and Winters (2003) the success of the EU is largely based on the following pillars:

a) The current structure of the EU was built step by step, making it almost impossible to regress or exit by member states. This is with the exception of United Kingdom (where there are indications of exiting the EU), which has always been a reluctant member in the EU's 57-year history.

b) One the critical success factors for the EU is the establishment of common political institutions (the European Commission, the EU Court of Justice and the European Central Bank, among others), which play a key role in the administration and enforcement of the agreements. Furthermore, all agreements and policies that are entered into at EU level are ratified by national parliament, ensuring harmonisation. The decisions of the EU Court of Justice, for example, superseded hat of national courts.

c) The presence of the hegemon power(s) is key as a guardian of the institutions and decisions. The French-German (sometimes, including the United Kingdom) has ensured the stability of the institutions of the EU and through their comparatively large monetary contribution has ensured that the EU is well resourced to deepen its integration process despite the challenges that have been encountered on the way.

d) The sharing of costs and benefits has been key in acceding new members in particular the poorer one. The European Union has developed funding mechanism to offset the costs of integration. The following are the five main Funds to support economic development across all EU countries, in line with the objectives of the Europe 2020 strategy:

- European Regional Development Fund (ERDF)
- European Social Fund (ESF)
- Cohesion Fund (CF)
- European Agricultural Fund for Rural Development (EAFRD)
- European Maritime and Fisheries Fund (EMFF)

Furthermore, the EU has adopted the Instrument for Pre-Accession Assistance (IPA) for candidate countries or potential candidate countries, which focus on the following:

- Assistance for transition and institution building;
- Cross-border cooperation (with EU Member States and other countries eligible for IPA);
- Regional development (transport, environment, regional and economic development);

- Human resources (strengthening human capital and combating exclusion);
- Rural development.

The accession to the EU gives national governments guaranteed the speedy introducing a large number of reforms without facing an important social resistance. Accession is conditional to a certain number of domestic reforms, which national government can implement because the nations gives a high value to EU membership and European transfer payments facilitate the use of redistributive policies. More important, these reforms are politically sustainable, given that the reversal is unlikely.

This is not to say that the EU integration trajectory was (is) without challenges. In recent time, especially in 2012, it has become clear that new members were pushed to undergo reforms that have led to local instability. Some members such as Greece even misrepresented its debt figure so that it can remain, part of the in-group and thus leading to the crisis it finds itself in.

2.4.2 Latin America-MERCUSOR

MERCOSUR is the custom union in Latin America comprising five full members[4] and associated members. In applying the lessons for EU integration for Latin America, Venables and Winters (2003) drew few to contrast the two RIAs. On the economic side, they claim that even if the Latin America (MERCOSUR) has a greater potential for trade creation and economic development, they are unable to reach their potential due to economic divergence that can be attributed to the initial economic levels before accession.

Despite Brazil being a large economy, it is unable to exercise leadership or twin leadership similar to that of France-German Axis within EU. Latin American countries are also plagued by political instabilities that makes it difficult to makes it difficult to commit to long-term reforms at the home front. The macroeconomic instability of key countries such as Brazil and Argentina makes it difficult for anchoring the macroeconomic convergence similar to EU convergence around Germany (EU Commission, 2012).

Furthermore, there is no compensating mechanism for costs associated with accession and this makes it difficult for countries to complete their tariff phase down as well as the elimination of non-tariff barriers.

In a nutshell, the MERCOSUR integration suffers from the same conditions and fate as that of SADC and rushing to deepen integration along the lines of EU will not be beneficial to member states as it likely to increase the economic and political

[4] MERCOSUR full members are Argentina, Brazil, Paraguay, Uruguay and Venezuela and its associate member countries are Bolivia, Chile, Peru, Colombia, Ecuador and Suriname.

dominance of Brazil to the chagrin of other members.

2.4.3 The Rationale for regional integration in Africa

Hatzenberg (2011) asserts that regional integration in Africa, in particular Sub-Saharan Africa is compelled by the fragmentation of the market, where 48 small economies, has on an average a Gross Domestic Product (GDP) of US$6 billion and a combined GDP equal to the GDP of Spain. The problem of small domestic markets is further compounded by generally high production costs and deficient investment climates result in limited investment (Africa attracts less than 2% of global foreign direct investment).

According to Negasi (2009) and McCarthy (2010) most RIAs in Africa have not been that successful compared to similar arrangement in developed world. In Africa, with the highest proliferation of RIAs, intra-regional trade amongst these has on average been around 10% and the reasons that have been cited in the literature, include amongst others, the following:

a) Lack of complementarity among the traded goods in the region

It has often been stated that African countries have the same factor endowments, which makes it difficult for them to trade with each other, and this view is supported by Heckshler-Ohlin-Samuelson theory on the rationale for international trade. However, the new trade theories argue that even if countries have similar factor endowments, they can still trade with each other through intra-industry trade, similar to the situation in developed regions. The large proportion of inter-industry trade that dominate the trade patterns in Africa is a reflection of African countries not maturing from the colonial economic structures, in which the colonies exports were geared toward satisfying the appetite of the colonizers and this manifest in the exchange of mineral resources destined for Europe and in return importing finished goods. The export baskets of African countries are dominated by raw materials (in particular minerals) and because there is little product transformation, they find themselves producing similar goods whose market is with countries outside Africa.

b) Low level of innovation, research and development leading to low level of industrialization

The per capita expenditure on research and development (R&D) is very low in Africa compared to that of developing and emerging markets. Africa registers few patents and copyright than any other region. The R&D is the cornerstone of industrial development. There is also less collaboration among African countries on value chain of R&D, from idea generation, product development and commercialization of new

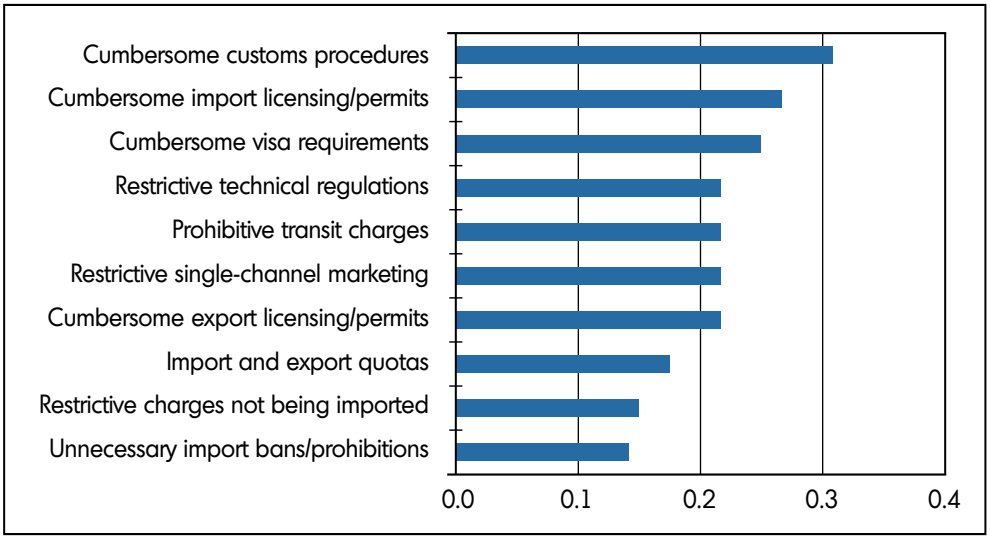
products. What further exacerbates this problem is the lack of harmonization of product standards among member countries (Alimayehu, 2015).

c) Despite the tariffs phase downs, the non-tariff barriers have remained intact or are re-introduced, increasing the costs of cross-border trade

Empirical evidence indicates that although tariff barriers have been reduced in line with the FTA schedule, non-tariff barriers (NTBs) or Beyond the border barriers have remained strong and even those that have been removed are re-introduce if the country faces economic difficulty such as in the period of global recession in 2008/9. According to Keane *et al*., (2010) the NTB reduces intra-SADC trade, while increasing exports of non-SADC countries into the community. The Chauvin and Gaullier (2002) classified NTB as among others, surcharges on imports; customs documentation and related procedures; border- related controls and transportation of goods and persons; foreign exchange bottlenecks, tend to discourage trade transactions; delays in payments; and clearance and settlement systems.

SADC is an FTA and almost 99% of SADC trade is duty free, except for some sensitive goods. However, the benefit of this FTA and its likely impact on the growth of trade is hindered by the presence of non-tariff barriers. These beyond the border barriers are difficult to deal with, as they require a change in domestic and regulatory policy before harmonization at regional level. The study of the prevalence of the non-tariff barriers (NTBs) in Southern Africa by Imani Institute corroborated by Chalambides (2014) presented the experience of the private sector in the region. The study focused particularly on the impact of NTBs such as: licensing rules, import permits, standards (as well as their implementation) and customs procedures. It did not look at those barriers that are overtly trade restricting by intention (for example, antidumping duties, quantitative restrictions, import levies). Figure 2, below depicts the NTBs that are most prevalent which Southern African traders face in selling merchandise across borders on a day-to-day basis:

Figure 2: Most severe NTBs in the SADC region (3 = moderate; 5 = very serious)



In the same study, the South African retail giant Woolworths reported that retail prices in its franchise outlets in non-SACU SADC countries are up to 1.8 times higher than its stores within SACU because of the costs associated with meeting additional barriers to regional trade.

d) Lack of network infrastructure development in particular for road and rail transport, which makes it difficult to move goods across vast territories

SADC member states have attempted to deepen the integration process through establishing the SADC regional infrastructure development master plan. SADC adopted the Regional Infrastructure Development Master Plan (RIDMP) in August 2012 as a 15-year blueprint that will guide the implementation of cross-border infrastructure projects between 2013 and 2027. The Master Plan has prioritized infrastructure projects in the six sectors namely Energy, Transport, Tourism, ICT and Postal, Meteorology and Water, which are projected to cost US$500 billion in the medium term (SADC Regional Infrastructure Development Master Plan (RIDMP, 2012).

A study by UNCTAD (2013) has found that the potential for deepening integration through sharing operations of infrastructure facilities, hubs or development corridors has observed to be useful among member states in order to reduce transaction costs and enabling smooth movement of goods and services.

There is broad consensus that infrastructure is a key enabler of socio-economic development and the point of departure for deepening regional economic integration and unlocking opportunities for trade, development and enhanced global competitiveness. Many SADC countries are landlocked, making road and rail networks very important in linking these countries to both regional and global markets. It is

recorded that by 2009 the SADC inter regional railway network was 22,500 km and the regional trunk road network was 62,000 km (SADC, 2009). The quality of the roads, particularly the major roads linking regional markets, is therefore of particular importance to the competitiveness in the SADC trade of goods and services. SADC has fewer kilometers of roads and the region has the highest costs for transporting goods in the world. By 2011, SADC region had a total road network of 996,533 Km (African Development Bank, 2012).

The African Development Bank Group (2011) report indicates transport costs (in terms of real costs and delays) have a huge impact on the cost of exported goods. Transport costs are higher in Southern Africa than in other regions can be attributed to a share 15% and 20% of import costs – three to four times higher than in developed countries. Despite the enthusiasm about the SADC Infrastructure Master Plan, infrastructure delivery faces various challenges from resource mobilization to political inconveniencies. For example, the development of Kazungula Bridge between Zambia and Botswana across the Zambezi River has taken 10 years to plan until construction resumed in 2014 and it will take another four years to build. The delay of ten years has increased construction costs from US $100 million (2004) to US$ 259.3 in 2014 (Lusaka Times, 2014).

The completion of the bridge will reduce the transit time from 36 hours to two hours and reduce transportation costs and the cost of doing business in general and ultimately increase revenue for the two countries. Currently, there is a reliance on ferry transport, which can only carry 30 trucks per day and this causes delivery delays and congestion.

e) Lack of administrative capacity to manage supra-national institutions that govern regional integration

In SADC it is clear that regional institutions that designed to resemble EU one, do not possess the same supra-national authority to contribute to the implementation of the agreements. Furthermore, the SADC institutions do not have authority or legitimacy to enforce national compliance and domestic policy, legal and institutional development as may be required by the RIAs.

SADC track record of resolving and settling regional dispute is appalling. The case in point is the case in point is SADC Tribunal, which is an equivalent to the EU Court of Justice. A case that was brought to the Zimbabwe farmer who had his land expropriated resulted in the collapse of the Tribunal. Following a decision by the Tribunal that Zimbabwe was in breach of Article 6 of the SADC Treaty, Zimbabwe expressed its dissatisfaction with the decision, and as a result, at the August 2010 Summit, the SADC Tribunal was suspended (Afadameh-Adeyemi & Kalula 2011).

f) RIA that are more political than economic, this could be seen through the low level of participation and interaction between regional industrial and corporate players

SADC and other Africa RIAs are more political in nature and Summit after summit; Heads of state makes commitment about deepening regional integration without any domestic consideration. Heads of State often commit to conflicting agendas in multiple RIAs.

Missed targets in terms of the achievement of the successive steps in the linear regional integration model are also common among Africa RIAs. Delays in the ratification and domestic incorporation of regional legal instruments by member states are common across RIAs and there is no mechanism to punish deviant behavior.

The domestic corporate players hardly have a say in the integration agenda. Even with the establishment of regional chambers of commerce, it becomes difficult to make any meaningful contribution if it has not been fused with national position

g) Uneven distribution of the benefits and costs that accrue as a result of regional integration

SADC does not have pre and post accession fund to reduce the costs of association for new members, in particular poorer one. This could be one of the reasons why member states re-imposed tariffs and keep their non-tariff barrier intact because there is no mechanism to distribute the costs and benefit to members' states. In other RIAS, such as the Southern Africa Customs Union and the EU, there are development funds in various guises to ensure that member states are not worse off by being tied to a RIA.

According to Trademark Southern Africa (2013), there exist a Revenue Fund within SACU that is pooled from the proceeds of the member states import duties. Such a fund is disbursed through a revenue sharing formula, which has a development component to fund the cross-border infrastructure. Even though other SACU member states such as Botswana, Lesotho, Namibia and Swaziland often complain about South Africa's dominant role in decision making related to the Fund, they are better off through the proceed apportioned to them, even though they largely use it to fund their national revenue shortfall. Given the historical fact that SACU has a polarised trade and commercial pattern where industrial activity was concentrated and biased towards South Africa, such revenues accorded to the BLNS might be a small price to pay, considering RSA dominant role on trade in the region.

h) Lack of hegemon leadership by a country (ies), which will guarantee the regional integration projects

The presence of a hegemon (not particularly one country, but a group) can be guarantor of the RIA. Within the EU, the Anglo-Franco-German axis, Singapore and Thailand for Association of South East Asian Nations (ASEAN) can be seen a benevolent hegemon for the continuation of the RIA. In Southern Africa, whilst South Africa can be seen as a powerhouse, there exist a culture of elders, where countries that have received independence first (such as Angola, Zimbabwe and Tanzania) view themselves as better guarantor of the SADC RIA than RSA. RSA itself, knowing this, is reluctant to really take that mantle of leadership. This political dimension will be tested through a perception survey in Chapter 4.

i) Lack of joint industrial programmes or common industrial policy as well as competition policy.

SADC has adopted the competition and industrial policies in 2014, but these have not been ratified by all national parliaments, which makes it difficult to harmonise them. The New Economic Geography theory stresses that when a RIA has high transport costs, industries will certainly settle in other regional markets through the establishment of subsidiaries, so that they can be in proximity to their customer base. In SADC with high transport costs, South African companies have established distribution network through the presence of its retail in almost all SADC countries. Other SADC countries have not been able to expand their industries to South Africa as a result of competition issues, given that South African market have a lot of monopolies, some which are subsidized, making it difficult to comply with the standards regime.

The presence of South Africa's retail has become a bone of contention in SADC public platform, given that they hardly source their inputs and finished goods from host countries even when the costs are comparably low.

In SADC, there are no joint industrial programmes, such as the German-French Airbus, or setting up various firms across the region to cater for the value chain of particular products

2.4.3.1 RIAs in Africa

There are 14 major regional economic groupings in Africa. Out of the 54 countries, 27 are members of two RIAs, 18 belong to three, and one country is a member of four. Only seven countries have not maintained overlapping memberships. Overlapping regional blocks is one of the main challenges facing Africa's Regional Economic Communities ((Kalenga 2004, UNECA 2004).

The Abuja Treaty of 1991 guides regional Economic Integration in Africa. The Treaty proclaimed that the continent would become an economic union by 2025. This process

will be undertaken through the consolidation of Regional Economic Communities (RECs) in the following regions:

- North-Maghreb;
- West-The Economic Community of West African States (ECOWAS);
- South-Southern Africa Development community (SADC);
- East-East Africa Community (EAC); and
- Central-Economic Community of Central African States (ECCAS)

This means that other REIs must be integrated, so that in the end, there will five in Africa, as listed above.

In Africa, regional economic integration dates back from pre-independence in Southern Africa, where the Union of South Africa entered into a trade agreement with then Bechuanaland, Swazi and Basotho territories in 1910. This was followed by the East Africa Communities (EAC), which brought together Tanganyika, Uganda and Kenya in 1919. EAC has become a customs union whose membership includes Tanzania, Uganda, Kenya, Burundi and Rwanda. It has ambition for being a common market and further (Sadry 2013, Rathumbu 2008, Negasi 2009).

a. RIA in Southern Africa

Regional integration in Southern Africa straddle across four regional integration arrangements that is, the Southern Africa Development Community (SADC), the Southern Africa Customs Union (SACU), the Common Market for Eastern and Southern Africa and East African Community (EAC). Whilst SADC is the common RIA for all Southern African countries, its member states also have additional membership in the other three RIAs, namely, SACU, EAC and COMESA. The table below depicts the RIAs in Southern Africa, their membership as well as year in which they where founded. Overlapping members across RIAs are showing in bold:

Table 2.2: RIAs in Southern Africa (Source-Own Compilation)

RIAs	Members	Year Founded
1. Southern Africa Development Community (SADC)	Angola, **Botswana, DRC, Lesotho**, **Madagascar, Malawi, Mauritius**, Mozambique, **Namibia**, Seychelles, **South Africa**, **Swaziland**, **Tanzani**a, **Zambia and Zimbabwe**.	1992

2. East African Community (EAC)	Burundi, Kenya, Rwanda, Tanzania, Uganda and **DRC**	2005
4. The Common Market for East and Southern Africa countries (COMESA)	**Burundi**, Comoros, Djibouti, **DRC**, Egypt, Eritrea, Ethiopia, Kenya, Libya, **Madagascar, Malawi, Mauritius, Rwanda, Seychelles**, Sudan, **Swaziland, Uganda, Zambia, and Zimbabwe**	1994
South African Customs Union	**Botswana**, **Lesotho**, **Namibia, South Africa** and **Swaziland**	1910 and Revised in (1969) and (2002)

Except for Mozambique, almost all Southern African countries belong to more than one RIA. To solve the problem of overlapping membership and conflicting trade regimes, a tripartite Free Trade Area (T-FTA) has been decided between SADC, COMESA and EAC to harmonized the trade regimes and agree on a single FTA by 2018. This will bring together 26 countries with a population of more that 600 million and a combined GDP of more that one trillion US dollars. This part of the rationalisation process towards the formation of the African Economic Community in 2025.

SADC region comprises 15-member countries and has a population of approximately 253 million with a GDP of USD 564 billion. Regional integration in Southern Africa is characterised by the dominance of South Africa, which accounts for about two-third of SADC's GDP and 62% of its exports. SADC comprises a diverse group of countries with a GDP per capita ranging from USD 201 in DRC and USD 408 in Mozambique to USD 7255 in South Africa, USD 7403 in Botswana and USD 7488 in Mauritius (The Economic Commission of Africa, 2014).

According to the SADC Yearbook (2014), the trade regime governing SADC integration is the Trade Protocol (signed in 1996 and entered into force in 2000), which defines the future of SADC in terms of trade relations and industrial development. It

proposes a linear integration in SADC, starting with the SADC Free Trade Area (declared in 2008) the Customs Union (2010), Common Market (2015) and Economic Union (2018). In terms of the SADC FTA, SADC has four categories of goods that are to be liberalized as part of the SADC Trade Protocol tariff phase down:

- Category A - Goods that were liberalized immediately after the FTA came into effect in 2000. These were goods that were already at a very low tariff level.
- Category B is made of goods that were liberalized by 2008, for an FTA to have reached 85% of tariff elimination to qualify as a substantial FTA (in terms of the WTO, Article XXIV). Member countries were required to have built the revenue base to offset the revenue that was received from the trade in these goods,
- Category C is sensitive goods. Sensitive products in the basket of traded goods comprise 15% of the total and the members liberalised these from discrimination by 2010. The lists of sensitive goods include products such as textiles and apparels, cereals and vehicles, wheat and sugar. These unfortunately led to the application of derogation by countries such as Zimbabwe, Malawi, Tanzania and Mozambique, largely against South Africa's imports. By 2012, other members have already liberalized these goods.
- Category D is goods that will remain sensitive to trade, as it is the situation with other regions of the world. These kinds of goods include armaments, firearms, nuclear and so forth

CHAPTER 3: AN OVERVIEW OF SOUTH AFRICA'S TRADE FLOWS

3.1. Introduction

The Vinerian framework of RIAs is not applicable to RIAs if the assumptions of the H-O trade theory do not hold. Instead we have to consider the implications of allowing for scale economies, imperfect competition and externalities for trade and what this means for RIAs. As has been demonstrated in the critical review of developments in trade theory, there is a number of economic rationales for RIAs (Krugman, Venable etc). These possible rationales do not mean that a given RIA will yield the expected benefits. The theory indicates the relevant factors for the empirical analysis.
In this section, the relevant factors are considered in more detail based on the applicable trade theory, considering the nature of SADC economies, as briefly set out in the introduction, namely the mining and agricultural dependence of most economies, as well as the relatively more industrialised nature of South Africa by comparison.

This section covers South Africa (RSA) Trade patterns for a 20-year period (1994-2014) with its major trade partners within the Southern Africa Development Community (SADC) as well as non-SADC members. Because the purpose of the section is to investigate the impact of the SADC FTA on South Africa's trade and growth, a 20-year period analysis will be studied. The chosen period of analysis, 1994 to 2014 will cover the period before the SADC FTA came into force (1994-1999) as well as the period falling under the FTA regime (2000-2014).

The purpose on analysing the pattern over twenty years is to try and understand whether RSA trade structure, in terms of exports and imports to the major trade partners has changed, that is whether trade has expanded, whether the basket of exports and imports has changed over time. The section will begin with an analysis of RSA trade overall exports and imports to the world on in terms of the main categories, that is manufacturing, agriculture and fishing and forestry and mining and quarry.

This will be followed by RSA exports and imports on the main categories. In order to capture the impact of FTA on the industrialization, the focus on the analysis will be on the changes in manufactured exports and imports to SADC with SADC Free Trade Area (FTA) members, proxied by major trade partners[5], that is: Mozambique, Zambia and Zimbabwe. In order to exclude other factors that could have contributed to the change in trade flows, comparator countries from SADC (non-FTA members, Angola and DRC) and other non-SADC major trading partners, China, Japan, European Union

[5] Whilst the members of the Southern Africa Customs Union (SACU), are some of RSA major trade partners in SADC, they have been excluded from this analysis because the trade regime in which they operate in is a customs union, which is deeper that the object of analysis, which is the impact of SADC FTA on RSA's Trade and Growth. So, in this section, any reference to SADC is on non-SACU SADC.

and United States will also be part of the study group, in terms of analysis of trade patterns between 1994 to 2014 on manufactured goods.

This will then be followed by the determinants of trade between RSA and SADC members. Lastly, the section will provide a synopsis on whether the has been dynamic gains for South Africa emanating SADC regional economic integration.

3.2. SADC trade – Intra-regional and external trade

Data has been sourced from UN Comtrade and corroborated by data from South African Revenue Services and the Department of Trade and Industry. This section provides a synopsis of RSA trade (exports and imports) on aggregated sectoral level.

3.2.1. RSA Trade with the World

South Africa's trade structure has not changed much in terms of sectoral concentration. The share of agriculture, forestry and fishing, mining and quarry and manufacturing to total exports has remained the same. Figure 1, depict RSA overall exports to the world in terms of Agriculture, Mining and Quarry and Manufacturing over a period of 22 years (1994-2015). The figure shows that in 1994, manufacturing accounted for 52% of total exports, increased to 62% in 2004, declined to 55% in 2011, before it recovered to 58% in in 2015. On average, manufacturing has accounted to 55% during the the 22-year period under review.

Mining and quarry share to total exports has also remained the same at 40% of total exports for the 22-year period and Agriculture, forestry and fishing share has also remained at about 5% to total exports. Despite the expansion in exports (both in terms of volume and value) in the review period, the sectoral share of the structure of exports have remained the same.

Figure 1: RSA Exports to the World (Source: COMTRADE)

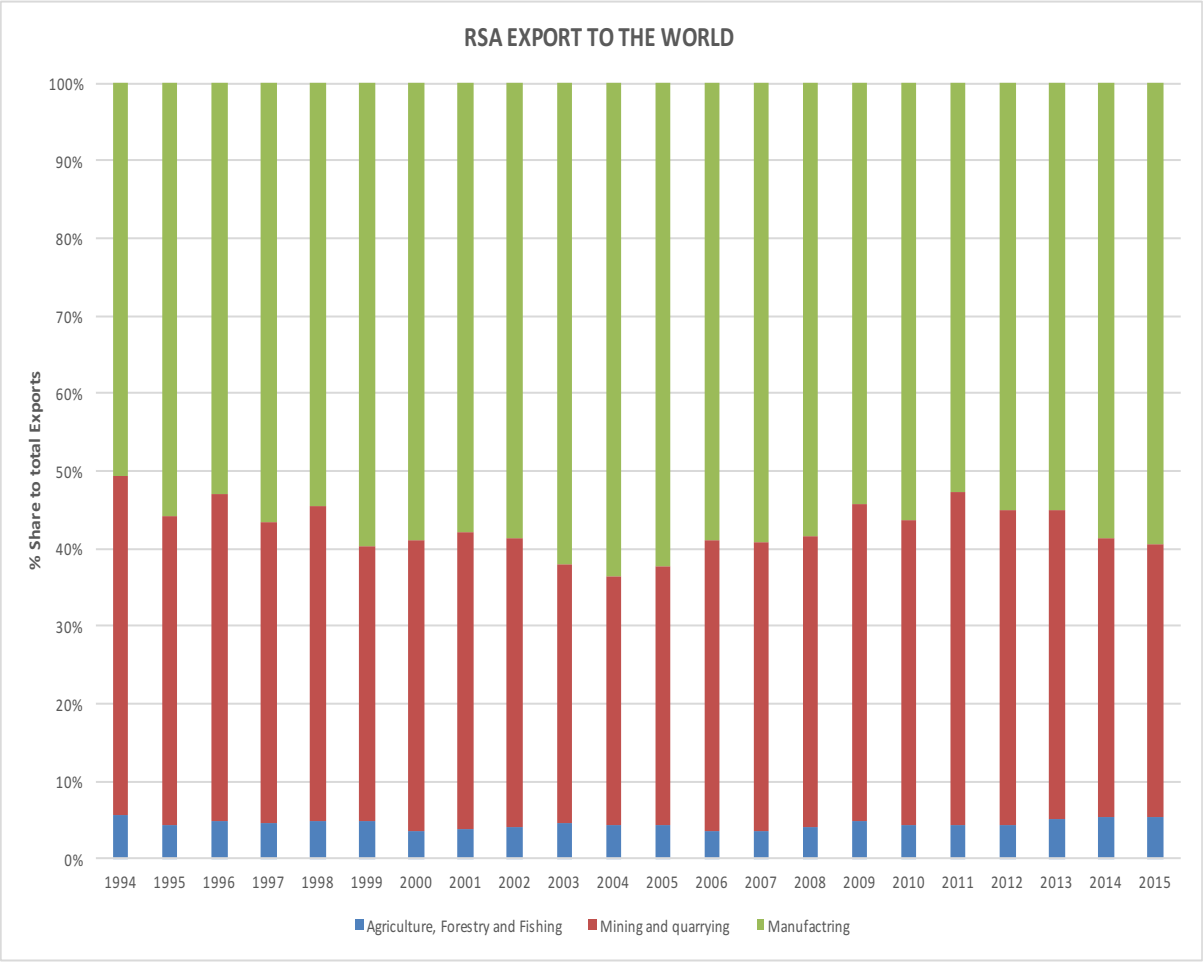
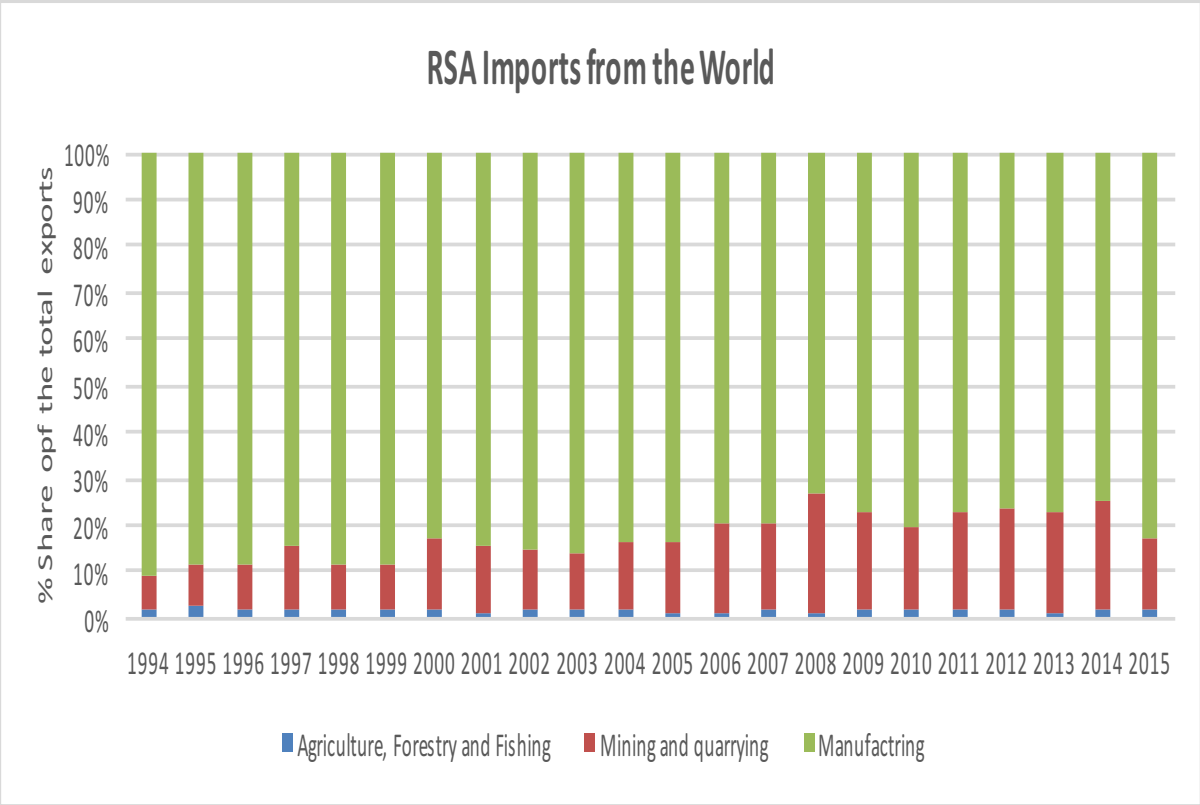


Figure 2, depicts that South Africa's imports from the Rest of the World (RoW) are largely comprised of manufactured goods, accounting for 80% of total imports for the observed period (1994-2015), whilst Mining and Quarry accounted for an average 15% of total imports and Agriculture share of imports as a percentage of total imports have remained the same at 2%.

Figure 2: RSA Imports from RoW (Source: COMTRADE)



The structure of trade is a reflection that the South African economy has not changed much in the reviewed period. It also shows that the economy has not industrialised much in the same period and the growth of trade, in particular exports, reflect an expansion as a result of new markets and replacement of import partners.

3.2.2. RSA Trade with Africa

Figure 3 depicts RSA trade exports to Africa between 1994 and 2015, in terms of the Agriculture, Mining and Quarry as well as manufacturing. RSA exports to Africa are largely manufactured goods, which averaged 83% to total export for the 22-year review period (1994-2015), this is followed by mining and mineral products, which averaged 10% and agriculture at 5% of the total exports in the same period. From 2008, the trend of manufactured exports to Africa seemed sustained at 85 percent to the total exports.

Figure 3: RSA Exports to Africa (Source: COMTRADE)

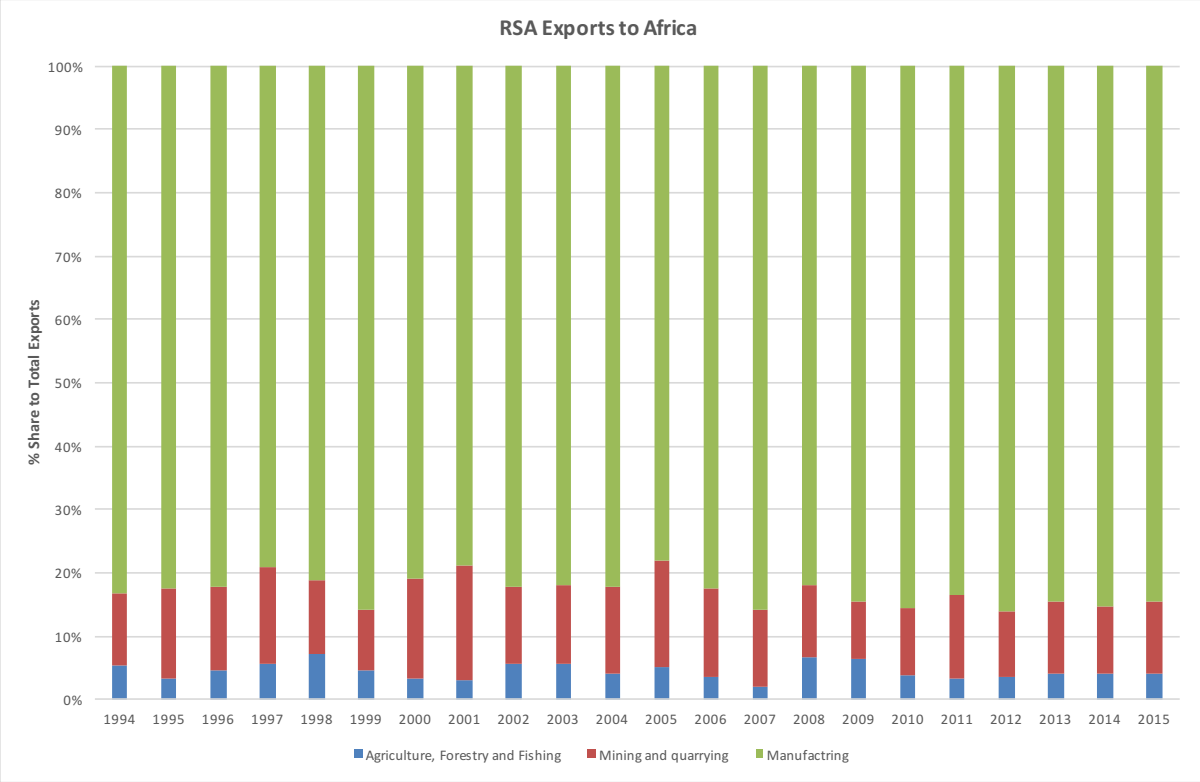


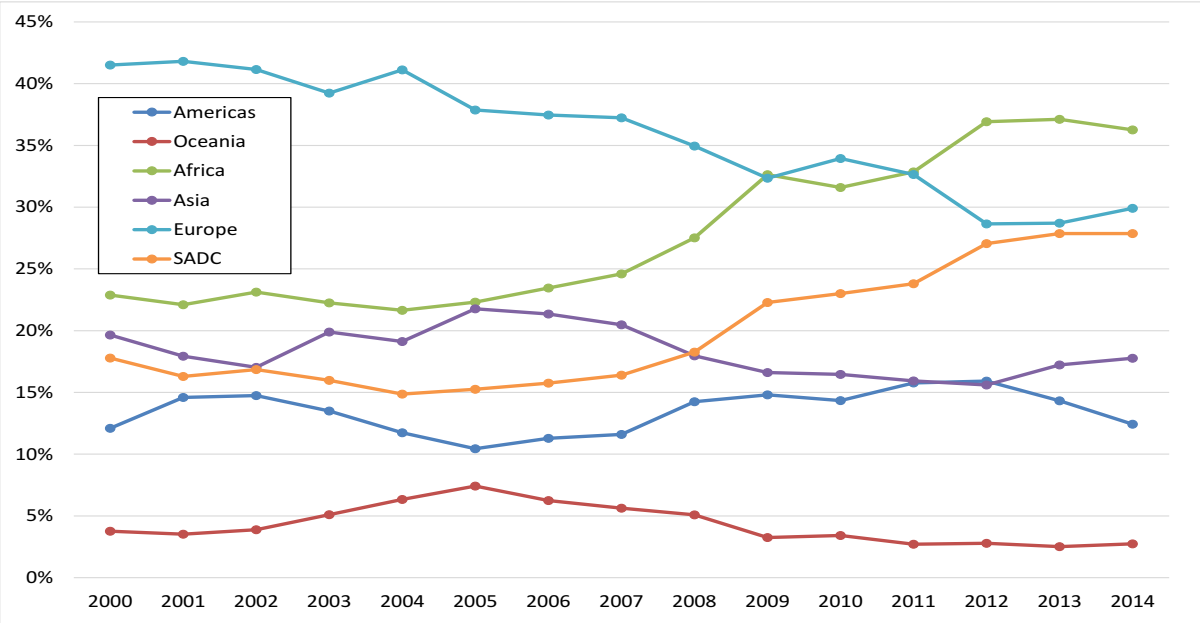
Figure 4, overleaf, depicts the market share for RSA share for RSA manufactured goods between 2000 and 2014. It reflect the changes in the market for export of manufactured good to the following regions:

- Americas;
- Africa;
- Asia;
- Europe;
- Oceania; and
- SADC

Whilst Europe is still a major market for RSA export market, its important is has started to decline in 2009 and has been overtaken by the African market, whose share has increased from 24% to total manufactured exports in 2000, to 33% in 2009 to 37% in 2014. So, in nutshell, the African market has become the most important export market for South African manufactured goods.

Whilst the growth has been exponential from 2006 to 2012, by 2014, the growth has slowed down, not only in Africa, but across all the major trading partners as a result of weak global demand. Of the African market, SADC constitute the lion share, at 80% of the total African exports for manufactured goods.

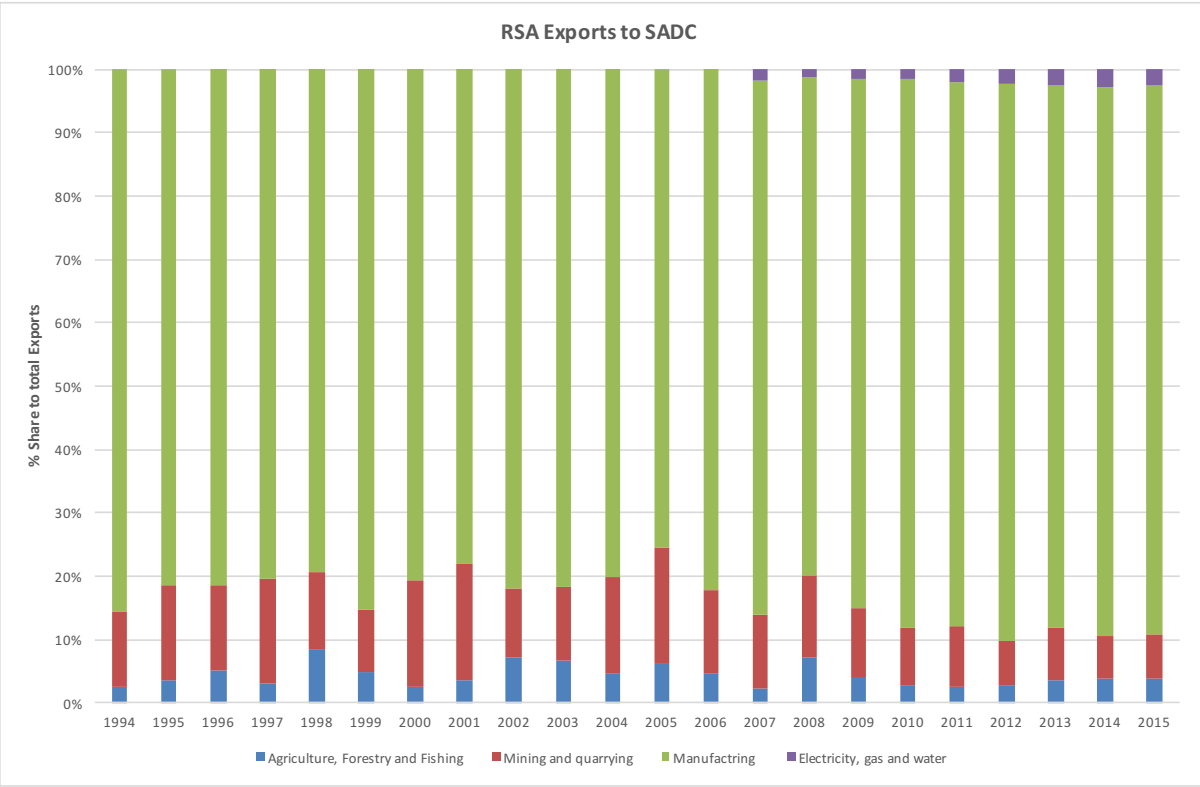
Figure 4: RSA Exports-Regional Distribution Distribution (Source: COMTRADE)



3.2.3 RSA Trade with SADC

The breakdown of RSA exports to SADC are illustrated in Figure 5 below. These are in the main categories of Agriculture, Mining and Quarry, Manufacturing and oil, electricity and gas

Figure 5: RSA SADC Exports (Source: COMTRADE)



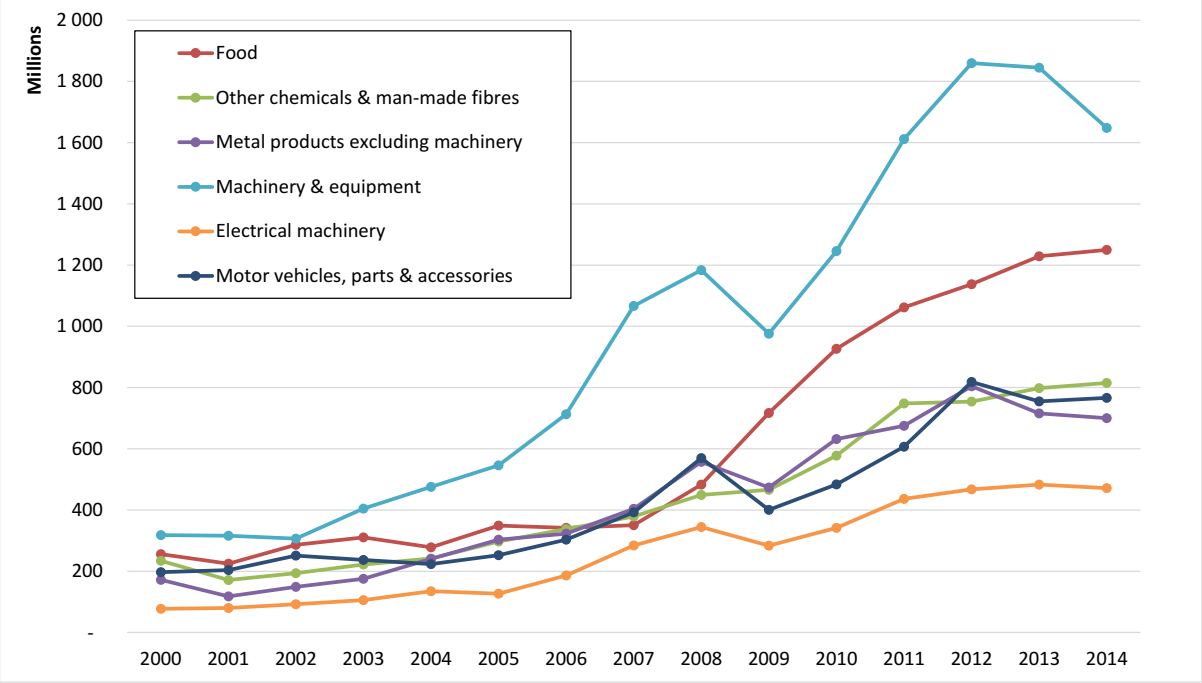
RSA Exports to SADC has remained largely manufacturing. The manufacturing share to total exports for SADC has increased from 82% in 1994 to 85% in 2007 and 88% in 2015. The expansion RSA exports from 2000 can be attributed to SADC demand as a result of growth in output (which averaged 4.5% in between 2000 and 2013) and per capita income, which has been growing an average at 2.6% since 2000. RSA manufactured good to SADC compete with those from the rest of the world, and the reduction in tariffs since 2000 as a result of the SADC FTA, the proximity to SADC market and the expansion of RSA Supermarket footprint in SADC can be attributed to an increase in the demand

a. Composition of Manufacturing Exports to SADC

The trend in RSA manufactured exports to SADC between 2000 and 2014 shows an exponential growth, which started in earnest from 2006. The trend for the period prior to 2000 is flat. Figure 6 shows the manufactured exports to SADC are dominated in ranking order by the following products:

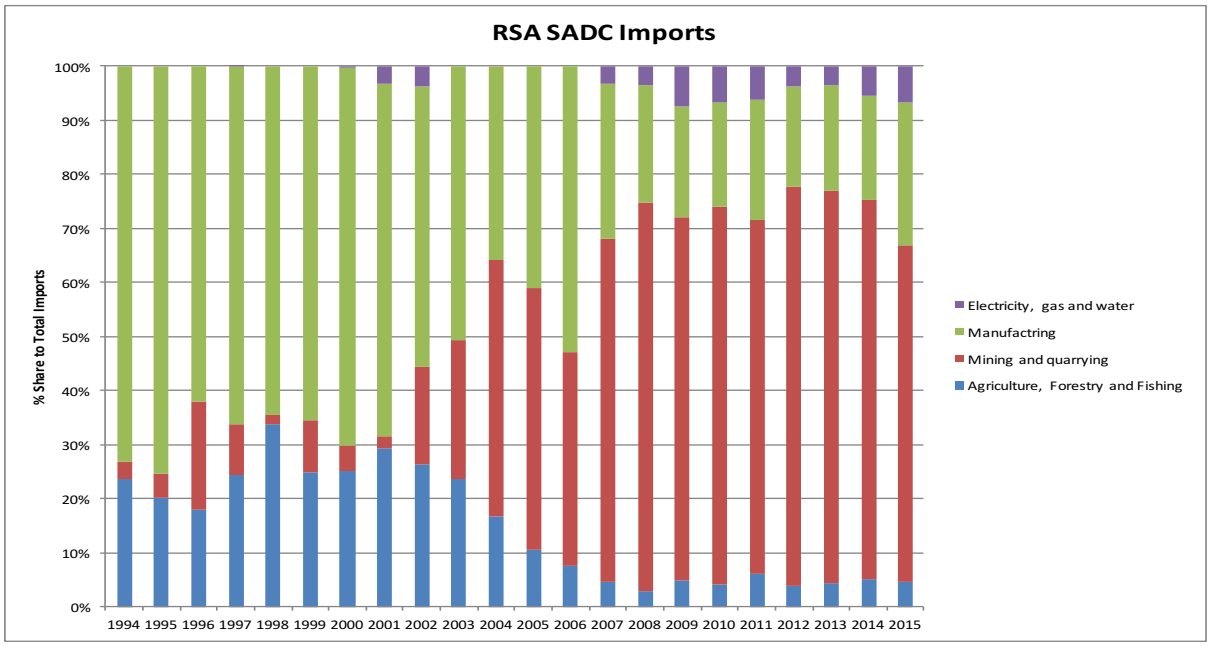
- Machinery and Equipment;
- Food;
- Chemicals and man-made fibers;
- Motor Vehicle and parts;
- Electrical machinery; and
- Transformed metal products.

Figure 6: RSA Manufactured Exports to SADC, in, US$ millions (Source: COMTRADE)



Overall, the manufactured exports to SADC has increased from the 81% in 2000 to a new average of of 89% in 2014, which an overall increase by 8% in the 14-year observed period.

Figure 7: RSA SADC Imports (Source: COMTRADE)



In terms of imports from SADC, Figure 7 depicts that SADC manufactured goods have lost a share of the South African market from 73% of total SADC exports to RSA to 30% share in 2015. SADC has also lost its market on Agriculture and forestry, which has also declined from 25% of its total exports to RSA to 11% in 2005, before a further decline to 5%in 2015. The decline of SADC manufactured exports to South Africa coincide with the decline in Zimbabwe's economy staring from early 2000 and this seems to suggest that the larger proportion of SADC manufactured goods to South Africa were mainly from Zimbabwe. At the same time, it also coincides with the growth of China manufactured exports to RSA in the same period, which might also mean that SADC manufactured exports to South Africa has been displaced by China's emergence as South Africa's number one trade partner.

Thus said despite the tariff reductions as result of the SADC FTA, SADC manufactured exports to South Africa are unable to compete on price and other factors, hence the decline in the market share over the observed period.

SADC has however gained a market share in the South African market for the mining and quarry, whose export to RSA has increased exponentially, starting in 2003 (20%) to 70% in 2008 and has remained at that level up to 2015. SADC has also increased its share of electricity, gas and water exports to South Africa. The utilities such as water, gas and electricity are managed in terms of Southern African Power Pool, which in addition to the FTA, reflect a sectoral cooperation and development strategy.

3.2.4. RSA major trade partners

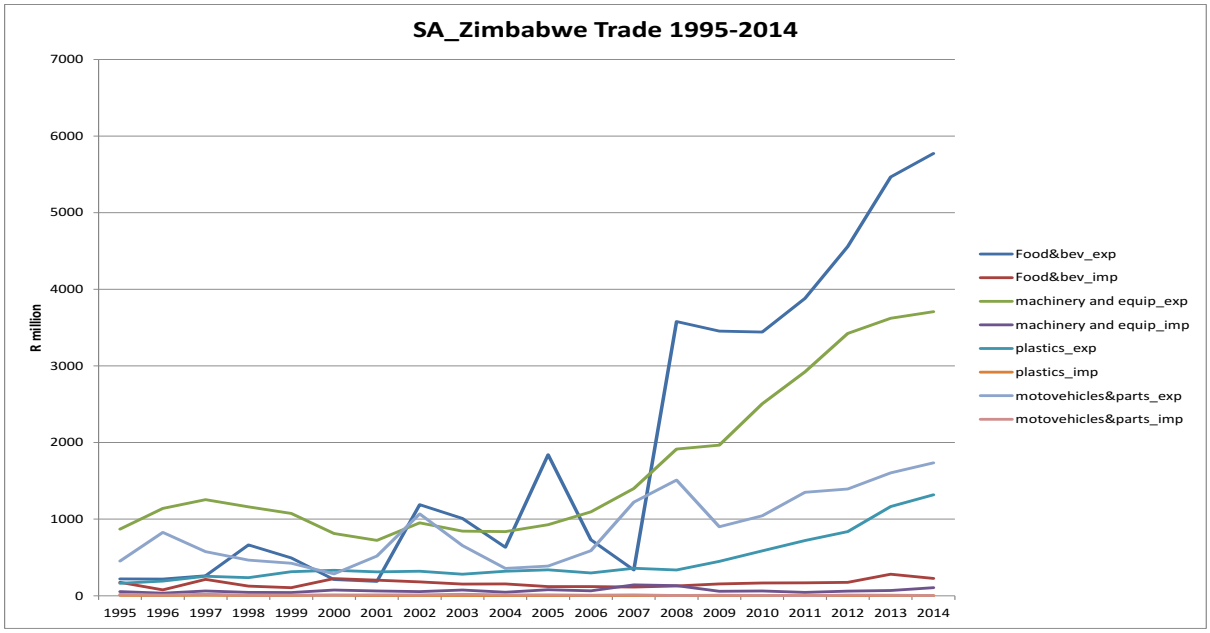
This sub-section illustrates the direction of RSA trade flows with SADC trade partners to determine whether the changes are as a result of the SADC FTA. In order to understand the impact of the FTA, which was signed was implemented from 2000, one has to also look at the trade patterns prior to the trade area thus why the analysis will start from 1994, when RSA rejoined SADC and the subsequently the World Trade Organization (WTO) in 1995. So in a nutshell, the analysis will determine the impact of SADC FTA on South Africa trade (in terms of export and imports) and growth (in terms of industrialization, which is proxied on manufacturing growth). The sub-section will look at the changes in trade for manufactured products (exports and imports) in the review period and the following manufactured products have been prioritized as a result of their proportional share to total trade:

- Food and Beverages;
- Machinery and equipment;
- Plastics and Rubber;
- and Motor vehicle and Parts

RSA major trading partners in SADC who are part of the FTA are Mozambique, Zambia and Zimbabwe and the SADC non-FTA members are Angola and the Democratic Republic Congo whilst non-SADC partners who have been selected as part of the comparator countries are the China, Japan, European Union and United States. All these countries (SADC and non-SADC members) have been selected on the basis of RSA proportion of trade (exports and import) with them over a 20-year period, 1994 to 2014.

3.2.4.1. RSA Trade with Angola

Figure 8: RSA Trade with Angola (Source: SARS)

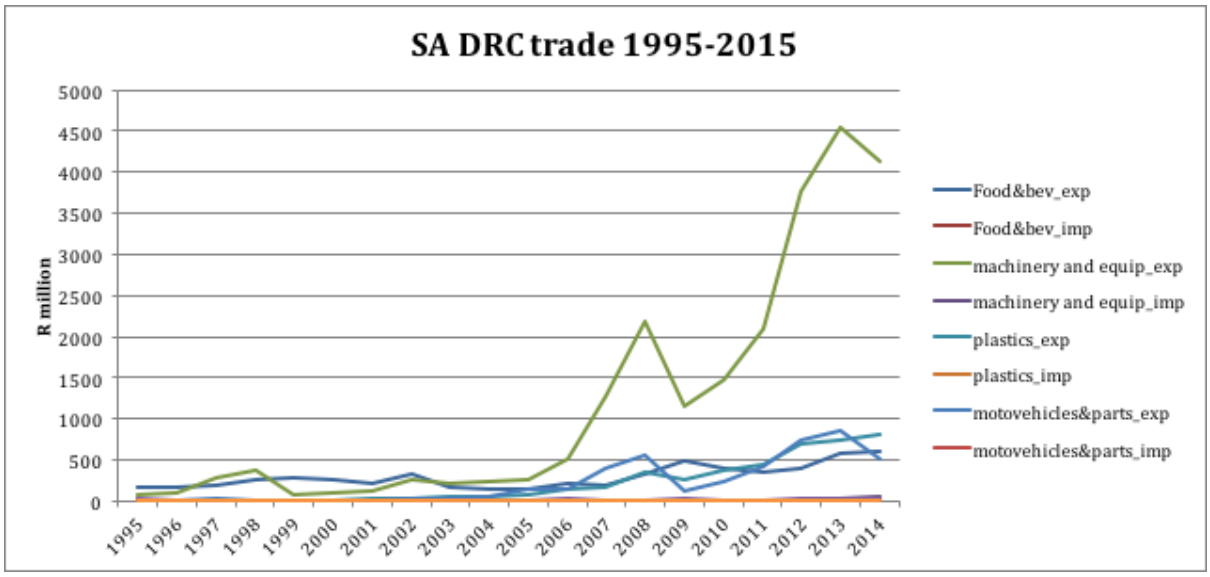


Food & beverage and machinery & equipment were the most exported products in 2014 to Angola. The food & beverage exports increased from R204 million in 1995 to R3.1 billion in 2014. Machinery & equipment were second the most exported products to Angola in 2014. In 2014, Angola imported about R180 million worth machinery & equipment in 2014

3.2.4.2. Trade with the Democratic Republic of Congo

Machinery & equipment are the most exported products to DRC. Between 1995 and 2006, the machinery & equipment exports were stagnant followed by a rapid increase until 2008 in which DRC imported about R220 million worth of machinery & equipment before slowing down to R110 million in 2009 as a results of the global recession and weak demand.

Figure 9: RSA Trade with the DRC (Source: SARS)



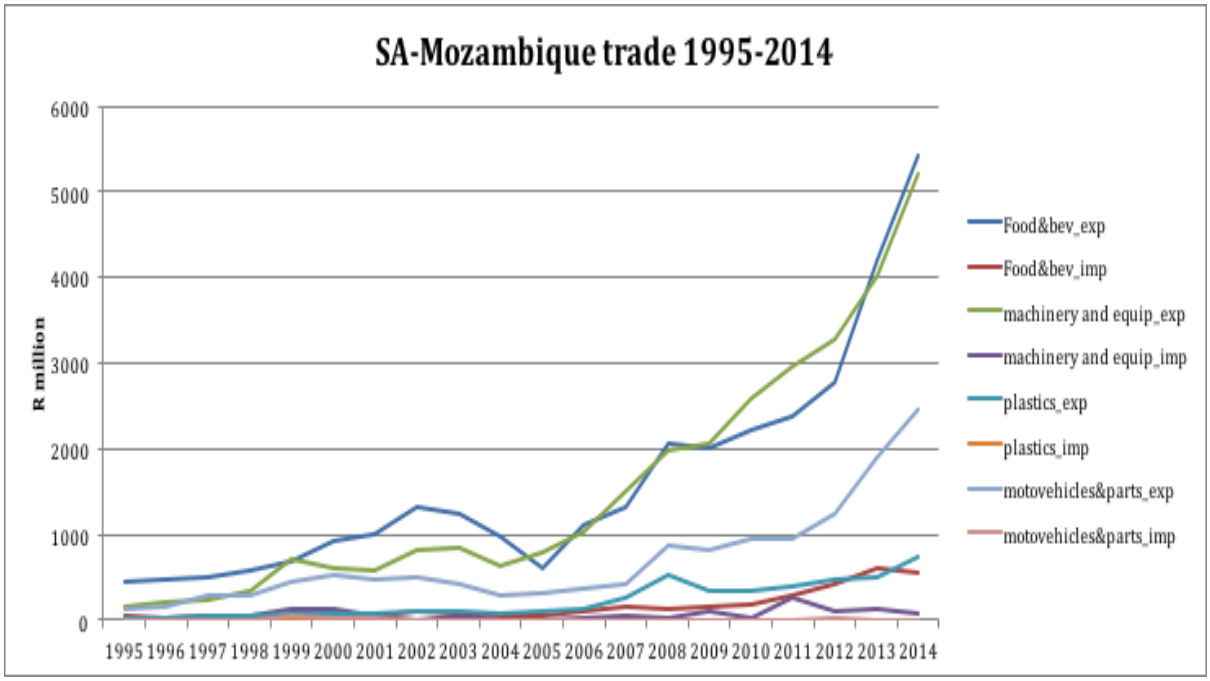
Automotive vehicle & parts exports experienced a stagnant growth between 1995 and 2006. This was followed by a period of an increase in demand of these products in 2007 and reached a peak in 2008 (R110 million and R500 million). The demand of these products by DRC decreased in 2009 as a result of the economic meltdown of 2008.

3.2.4.3 RSA Trade with Mozambique

Figure 10 depicts RSA trade with Mozambique. The Food & beverages (R520 million) were the most exported products to Mozambique followed by exports of Machinery & equipment (R510 million) in 2014. The machinery and equipment exported were mainly capital equipment and construction and earth moving machines. Automotive vehicle & parts exports grew to R240 million in 2014. The exports trend for all these products (automotive vehicle & parts) started from a very low based in 1995 the substantial increase was only witnessed from 2006 onwards.

RSA bilateral trade agreement in the mid-90s does not seem to have an impact on the trade on manufactured goods by both countries. It is not clear whether the substantial increase in the exports of RSA manufactured goods from 2006 onwards can be attributed to the lag effect of the earlier bilateral trade or the SADC FTA or a general increase in the demand of imports from all the partners, including South Africa.

Figure 10: RSA Trade with Mozambique (SARS)

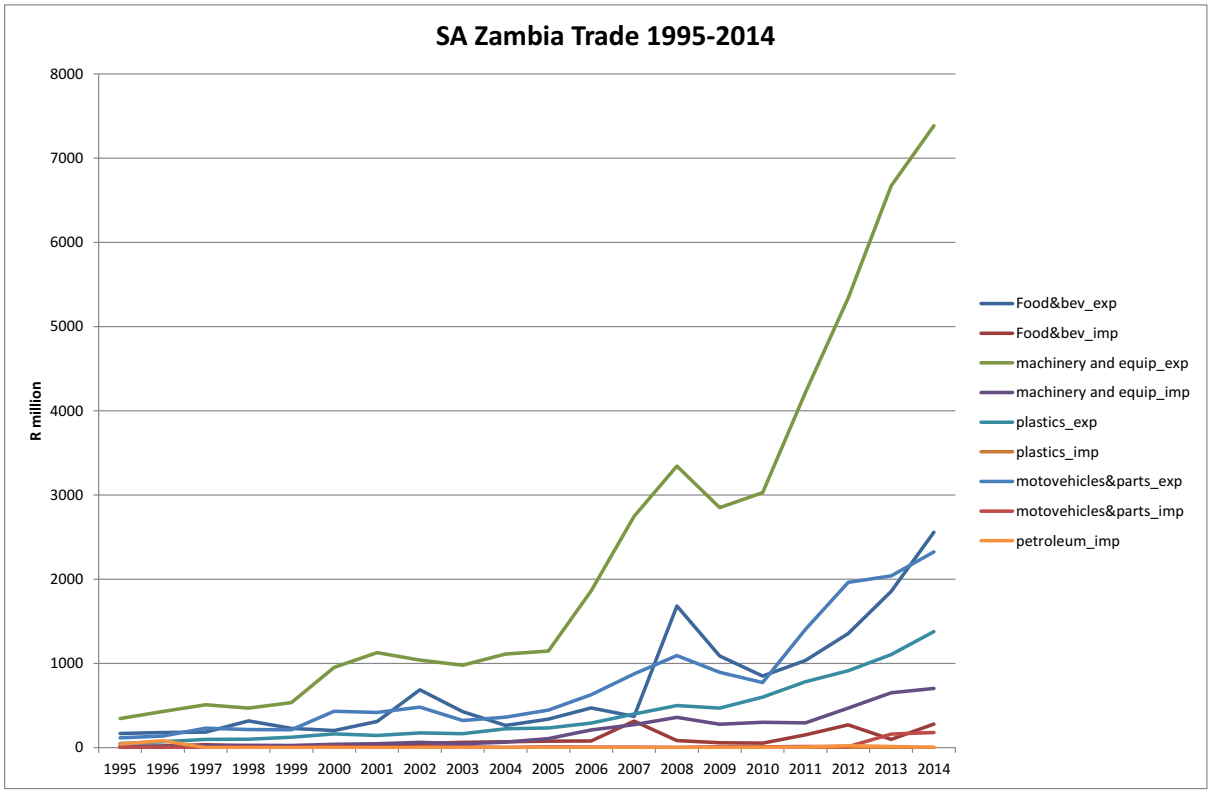


3.2.4.4. RSA Trade with Zambia

Figure 11 depicts RSA's exports to Zambia, which are dominated by machinery & equipment in the review period (1995-2015). Machinery & equipment export to Zambia increased between 1995(R34 million) and 2008 (R330 million) before declining to R280 million in 2009. This was a result weak demand as result of global economic crisis. Exports of machinery & equipment recovered in 2010 (R300 million) and increased to R738 million in 2014.

The machinery exports to Zambia and equipment comprises valves, pumps, transformers, mine sorting machine. This is followed by the the export of food to Zambia that exhibited a similar trend of growth such as that of machinery. Zambia export a sizeable quantity of food to South Africa in the forms of flour, cereals, sugar and, which are rebranded for RSA market and are sold mostly in RSA supermarkets in Zambia. RSA food and beverage exports to Zambia are largely maize, cereals and food preparatory agents.

Figure 11: RSA Trade with Zambia (Source: SARS)



3.2.4.5. RSA Trade with Zimbabwe

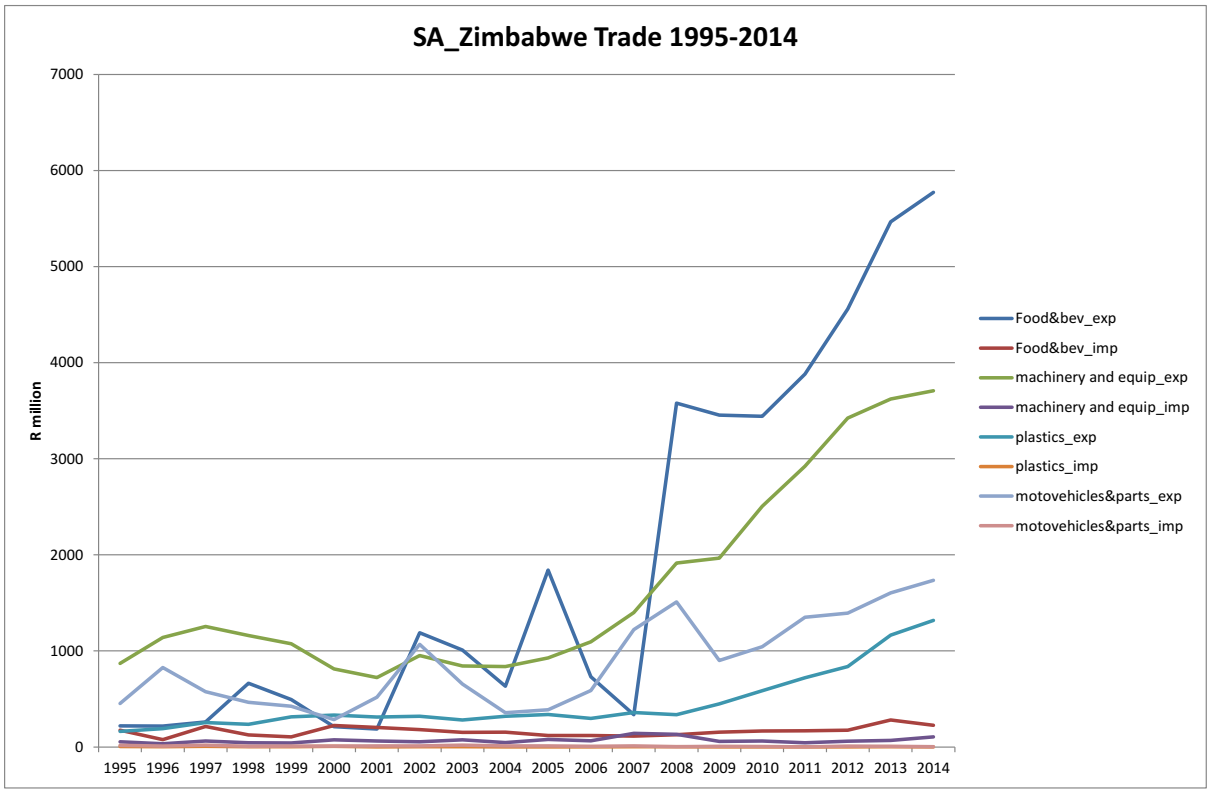
Figure 12 depicts RSA trade with Zimbabwe. The two main products that Zimbabwe imports from South Africa is food & beverages and machinery & equipment. The food & beverage exports reached the highest in 2014 with a record of R570 million. This was followed by export of machinery & equipment with the value of R370 million. The exports of food & beverages to Zimbabwe was extremely low in 2007 (R79 million). This was a results of hyper-inflation experience by Zimbabwe between 2005 and 2007. In terms of imports, food & beverages dominated South Africa's imports from Zimbabwe at a value of R225 million.

RSA trade with Zimbabwe is dominated by food and beverages (which reflect the maize exports). This trade was largely as a result of Zimbabwe loosing her position as the agricultural food basket in the region. RSA import a substantial amount of food, comprising muslin flour, sorghum and cereals from Zimbabwe.

RSA is also the largest importer of Zimbabwean tobacco in SADC, which dominate the import of food and beverages. Whilst Zimbabwe and RSA trade started on a high base in 1995, it declined in 2005, when most SADC countries trade with RSA was rising (during the last phase of tariff phase down toward the declaration of SADC FTA in 2008). Even though the bilateral trade between the two countries recovered in 2007,

only machinery and equipment export to Zimbabwe have shown an exponential growth, whilst food and beverage exports have shown a declining trend.

Figure 11: RSA Trade with Zimbabwe (Source: SARS)



3.2.4.6. RSA Trade with China

Figure 13 depicts RSA trade with China in the reviewed period. Trade between South Africa and China, started at a low base in in 1994 and started to increase substantially. Trade its dominated by China's exports of machinery and equipment, which increased from R billion in 1998 to R38 billion in 2008, when China became RSA major trading partner. The import of machinery and equipment from China has since risen to R78 billion in 2014.

The machinery and equipment imports from China are dominated by electrical equipment, electronics and mechanical appliances. RSA and China trade on the remainder of manufactured goods has remained stagnant at an average R5 billion in the period, 2008 and 2014.

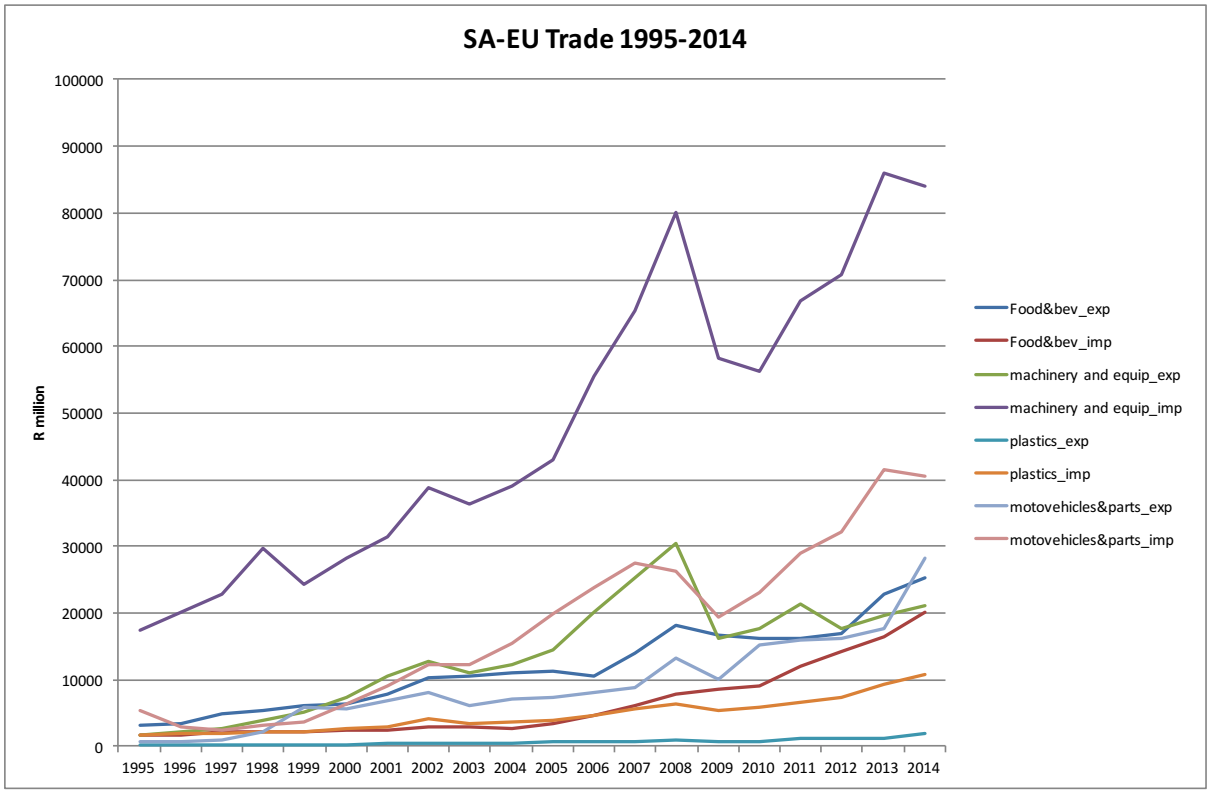
Figure 13: RSA Trade with China (Source: SARS)

3.2.4.7. RSA Trade with the European Union

Figure 14 overleaf depicts RSA trade with the EU. EU has been RSA historical RSA biggest trading partner. Trade between the two countries in governed by the Trade, Development and Cooperation (TDCA), which came into force in 1999, perhaps thus why trade started picking up from 2000. Both RSA and EU export shows a diverse basket, which has a substantial exports and import of manufactured goods on both sides. As a result of European OEM to South Africa such as Daimler Chrysler, BMW and Man, RSA re-export a larger proportion of local assemble cars to Europe.

From 2000 onward trade between RSA and EU grew substantially for both exports and imports. RSA exports to the EU has however declined in 2008 and 2012 as a result of the global economic crisis and EU sovereign debt crisis, which subsequently reduced demands by EU with almost all the regions of the world.

Figure 14: RSA Trade with EU (source: SARS)

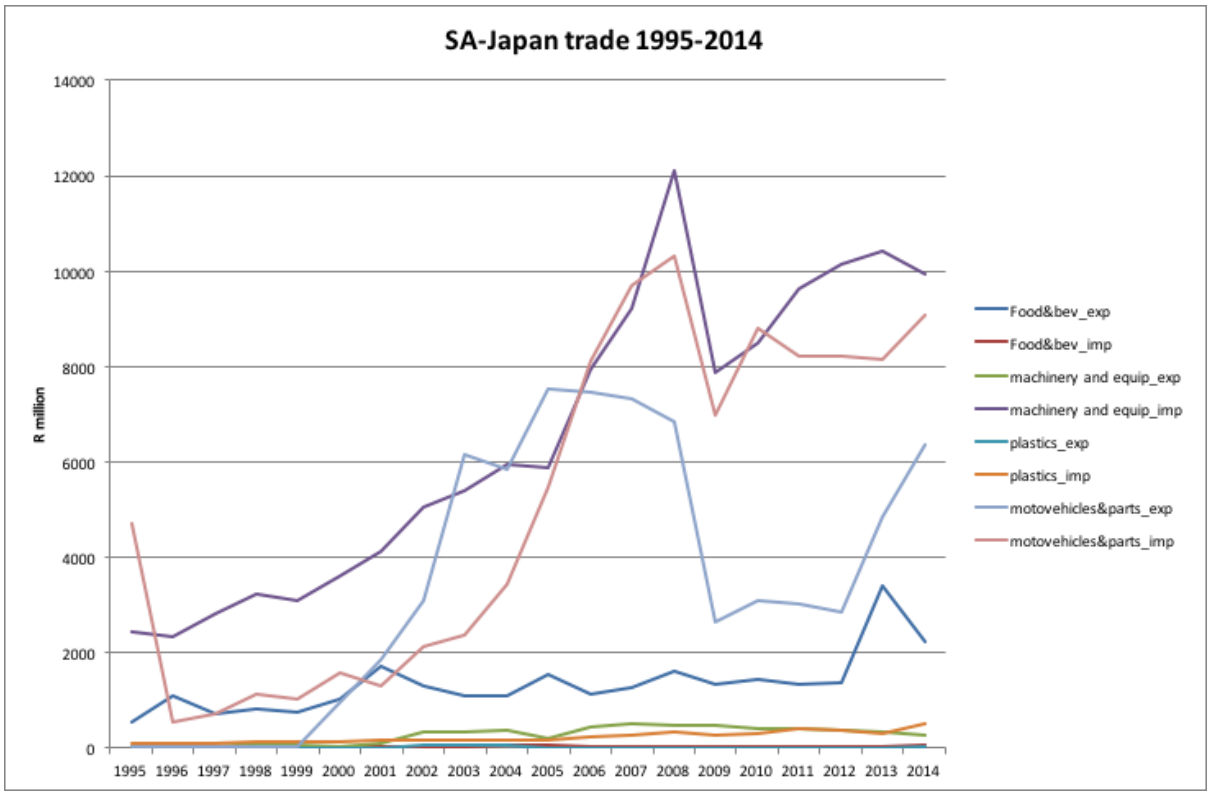


3.2.4.8. RSA Trade with Japan

Figure 15 depicts RSA trade with Japan. Trade between SA and Japan is dominated by machinery & equipment, automotive vehicle and parts. The most imported products by SA from Japan are machinery & equipment, automotive vehicle and parts while the most exported products to Japan are base metal and automotive vehicle & parts. In 2014, import of machinery & equipment was valued at R9.9 billion while that of automotive vehicle & part were valued at R9 billion. The imports of these two products started from a very low base in the 1990 to a value about R9 billion in 2014.

The value of automotive vehicle & parts exported to Japan in 1995 was R4.7 million. This was followed by a decreased in the value of exported automotive vehicle & parts in 1996 which fully recovered in 2001. From 2001, exports of automotive vehicle & parts increased from R131 million to R1.3 billion in 2008 followed by minor decline in 2009 to reflect the impact of the global financial crises.

Figure 15: RSA Trade with Japan (Source: SARS)

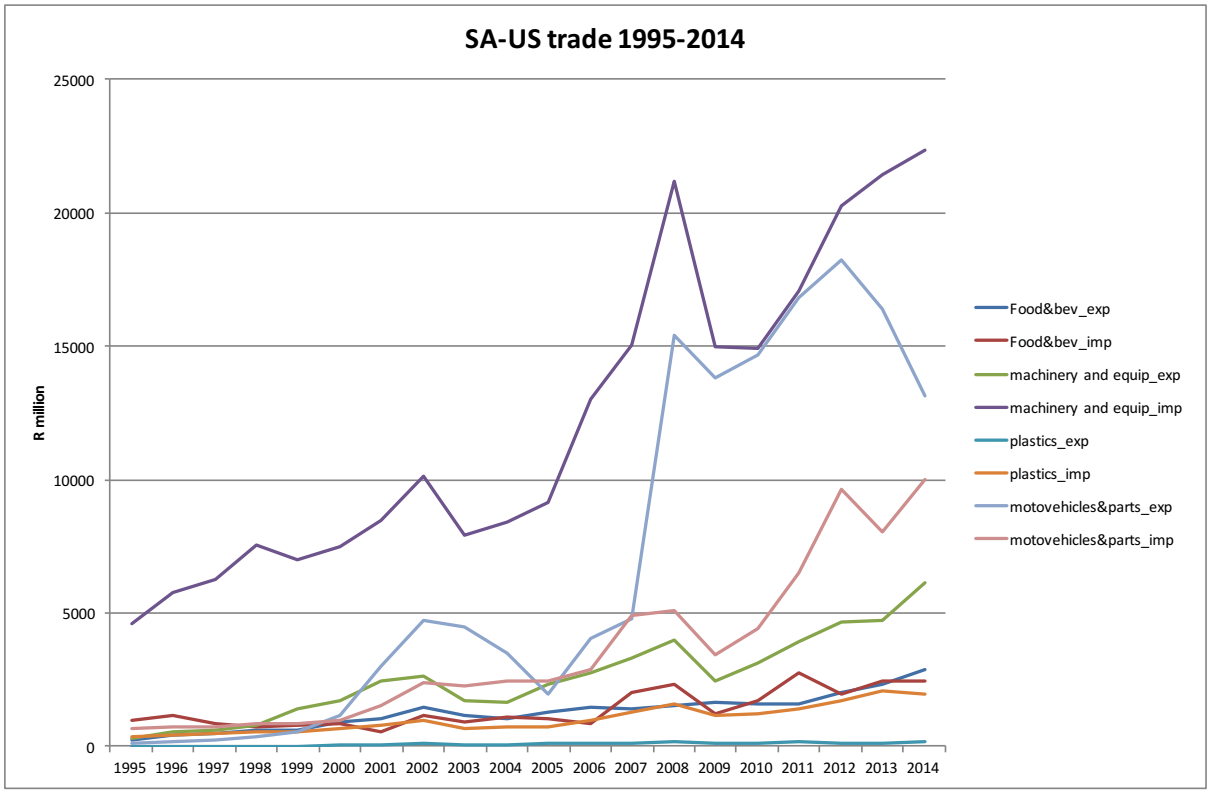


3.2.4.9. RSA Trade with the United States

The increase in two-way trade is a result of trade agreement between SA and US. The machinery & equipment imports from the US were valued at R23 billion in 2014 followed by the imports of automotive vehicle & parts valued at R1 billion in 2014. South Africa export to the US is dominated by automotive vehicle & Parts. In 2014, automotive vehicle & parts export to the US market declined to R131 billion from R1.8 billion in 2012.

RSA trade trade pattern with the US follows that of the EU, where exports are dominated by motor vehicle as a result of the US OEM investments in South Africa (Ford). Whilst a proportion of the manufactured cars are destined for the local and SAC regional markets, a larger proportion is exported to the US.
Trade between the two countries is governed through the Africa Growth and Opportunity Act (AGOA), which was signed into force in 2000 and amended in 2015. RSA-US trade started to peak in 2003.

Figure 16: RSA Trade with the United States (Source: SARS)



3.3 The determinants of trade between RSA and SADC

3.3.1. RSA Revealed Comparative Advantage

The sub-section below focuses on South Africa's Revealed Comparative Advantage (RCA) on products exports products, Plastic and Rubber, Machinery and Equipment, Food Products and Chemicals to its major exports markets within SADC and to the rest of the World. SADC countries that have been included is Mozambique, Zambia and Zimbabwe that are major exports market outside the Southern African Customs Union and are members of the SADC Free Trade Area and the non-SADC major trading partners include China, Japan, Germany and UK (as a proxy for the EU) and United States for the period, 1995 to 2014.

The RCA index was developed by Balassa (1965) as a measure to assess a country's comparative advantage/efficiency in the production of its exported products given the input at its disposal. Furthermore, an RCA can be used to measure the potential of exporting a particular product to a new market. On this sub-section the RCA is being used to measure whether the exporting county (which in this case is South Africa) has a comparative advantage in the export of such a product to the selected export markets. It reflects whether the final product from South Africa can compete on price and quality with both domestically produced product and import from the RoW.

The RCA index of country I for product j is often measured by the product's share in

the country's exports in relation to its share in world trade. South Africa's RCA can be explained as follows:

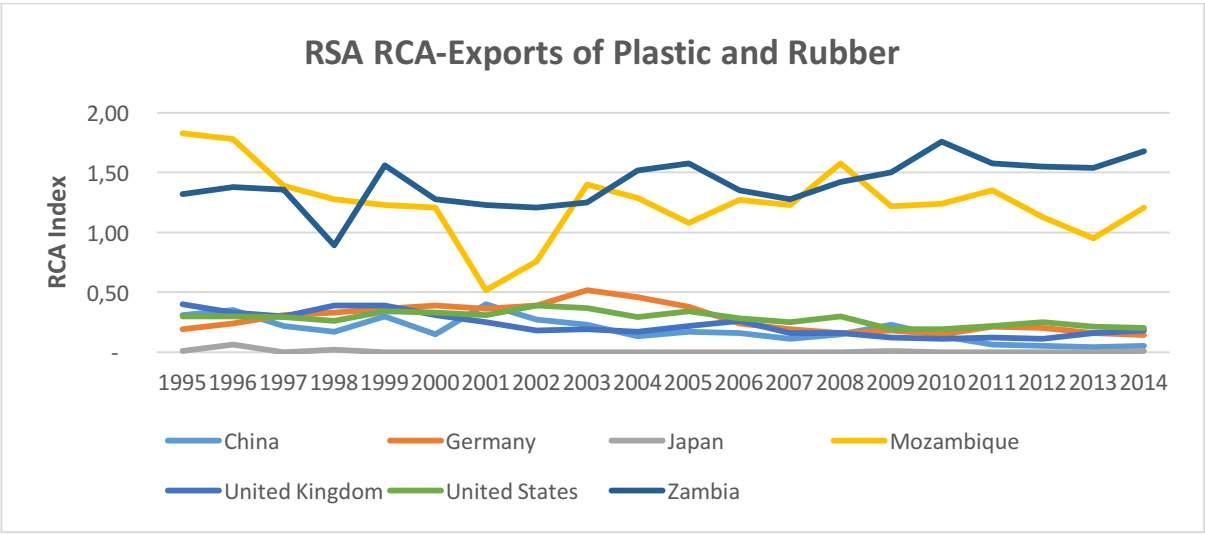
South Africa $(RCA)_j = (x_{ij}/X_{it}) / (x_{wj}/X_{wt})$

Where x_{ij} and x_{wj} are the values of RSA exports of product (Plastic and rubber, Machinery and equipment, Food products and Chemicals) and world exports of similar products and where X_{it} and X_{wt} refer to the RSA's total exports and world total exports. A value of less than one implies that the RSA has a revealed comparative disadvantage in the product whilst an index of greater than one, the reveals that RSA has comparative advantage in the product.

a. Plastic and Rubber

RSA has had a comparative advantage of the exports of Plastic and rubber Mozambique and Zambia since 1990s till 2014 even though the index show volatility. On average, the index has been hovering on average at 1.2 for the period under review. However, it does appear that RCA index has been on a decline from 2009. Even though it still shows an RCA index of above one, it is declining and this could be a reflection that RSA is loosing that export advantage to other countries, notably china in both markets. RSA has had a comparative disadvantage in the export of the same product to China, Japan, Germany, UK and the United States, where the RCA index has been overage 0.20 for the period 1995 to 2014:

Figure 17: RSA Revealed Comparative Advantage on Plastic Exports (Source: Wits)

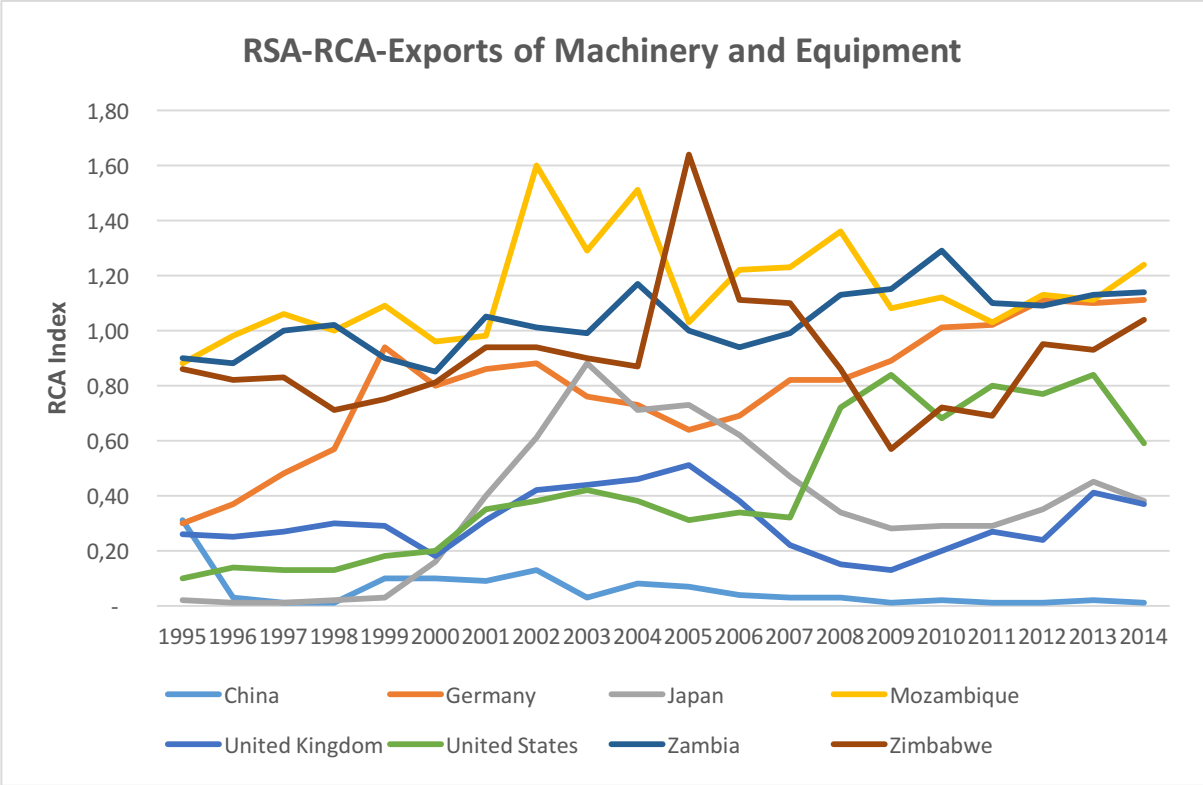


b. Machinery and Equipment

From 2001, onwards, RSA had had an RCA on the Machinery and Equipment exports to to SADC FTA countries, Mozambique, Zambia and Zimbabwe. RSA advantage to Zimbabwe was lost between 2008 and 2013, but this could be attributed of Zimbabwe reduced imports as a result of both the global recession and shortage of foreign currency as a result of its own domestic economic problems.

Of the non-SADC countries, RSA attained the advantage of exporting to Germany from 2010. RSA does not have comparative advantage of exporting to the rest of other non-SADC countries and the worst RCA index is with China on average 0.10, United Kingdom (0.30), Japan (0.40) and United States (0.42), although the RCA Index for the latter has showed improvement from 2007 onwards but still below one in 2014

Figure 18: RSA Revealed Comparative Advantage on Machinery Exports (Source: Wits)



c. RCA-Food Products

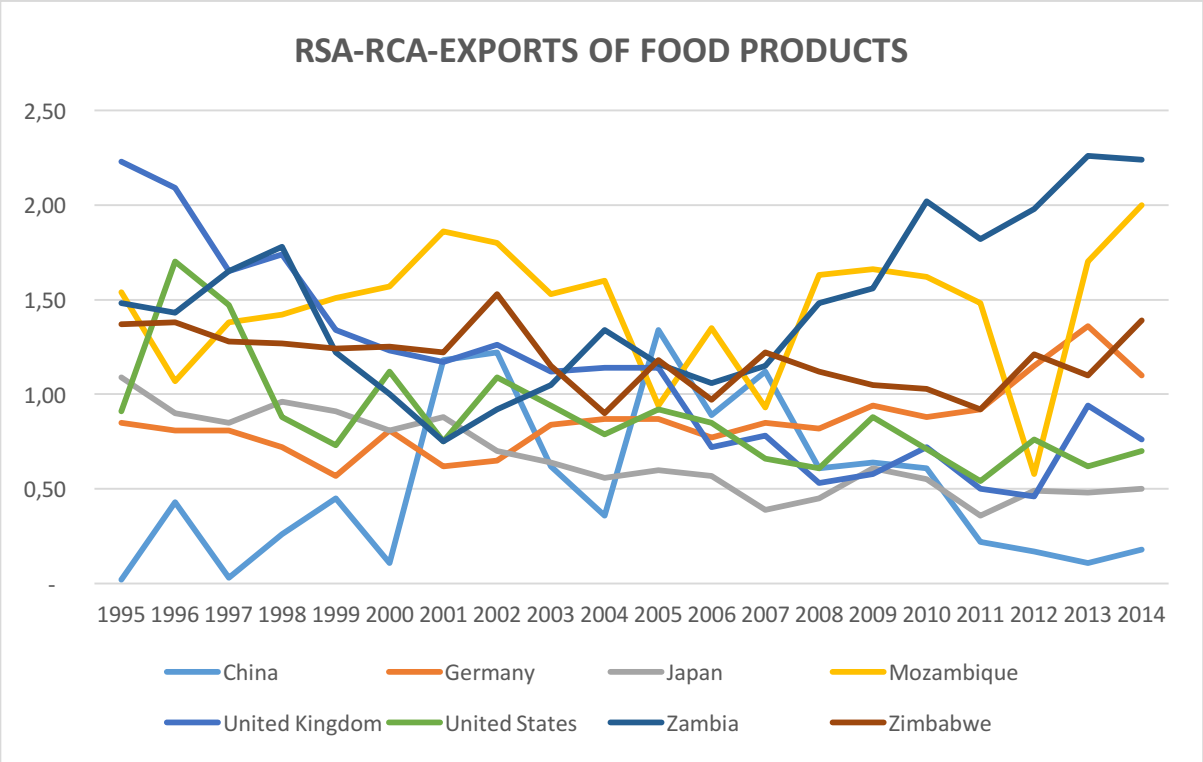
On the food products exports to SADC, RSA exports have had a RCA since the late 90. With the exception of Zambia, with a positive (above 1) and stable RCA, THE Mozambique and Zimbabwe RCA are volatile and whilst it has recovered it advantage

from 2011, it shows a declining trend and this could coincide the introduction derogation applied by both Mozambique and Zimbabwe on the imports of RSA food.

SADC Countries also have an RCA of greater than one on food export to South Africa and similarly RSA also have a positive RCA on food exports to SADC. The export and import of food between South Africa and SADC (Mozambique, Zambia and Zimbabwe) reflects an intra-industry trade as there is a two-way trade for similar products (such as maize, flour cereal, dairy products, sugar, amongst others) with branding differentiation.

Furthermore, there is a potential to increase food production in SADC within the value chains, if there is a cross-border cooperation and elimination of non-tariff barriers in the form of phytosanitary standards and application of derogation under the guise of protecting a local industry.

Figure 19: RSA Revealed Comparative Advantage on Food Exports (Source: Wits)

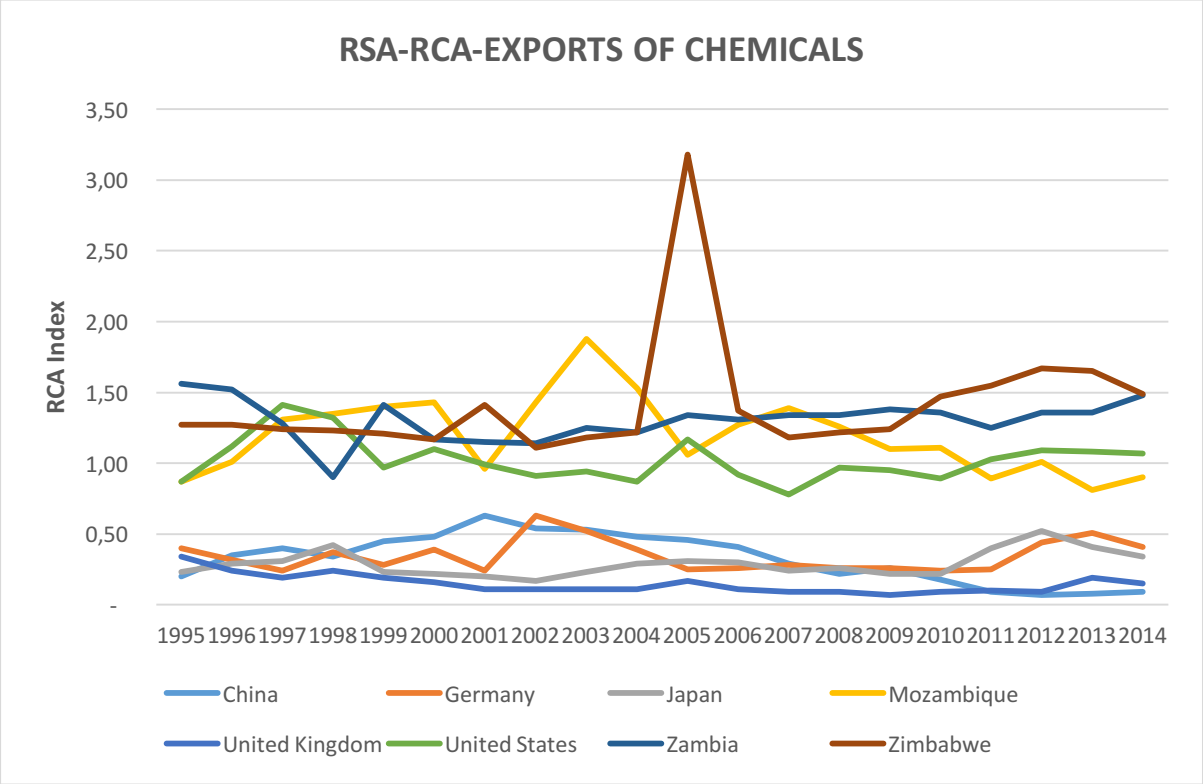


d. Chemicals

South Africa has a RCA on the exports of chemicals to Mozambique, Zambia, Zimbabwe and the United States. The positive RCA index for both all the above countries oscillated between 1.0 and 1.5 for the 19-year period (1995-2014). On the

other hand, RSA has always had a comparative disadvantage on the exports of the same product o China, Germany, Japan and United Kingdom.

Figure 20: RSA Revealed Comparative Advantage on Chemicals Exports (Source: Wits)



3.3.2. Factor Endowments

Looking at the RSA trade patterns with SADC over a the 20-year reviewed period one comes to the conclusion that this pattern reflects the factor endowments of SADC countries, that is, RSA exports to SADC are industrial goods, beneficiated resources and food items whilst SADC exports to RSA largely comprised of Base metals (with some transformation into alloys and concentrates), minerals comprising mostly of crude oil, gas, electricity and textiles. A proportion of RSA exports to SADC and SADC to South Africa is in line with the Heschler-Ohlin theory of international trade theory that posits that a labour abundant country will export a labor-intensive products and a capital abundant country will export a capital intensive goods.

In the case of South Africa, the trade pattern reflect more the Leintoff Paradox observed in the USA-EU trade in the late 50s, that tried to explain why the US being a capital intensive producer produces and export both the labour and capital intensive products. The Paradox was that labour should not be treated the same as some goods are produced by low-skilled, medium and and advanced skill labour.

Both RSA and SADC are endowed with labour and their trade pattern reflect that SADC exports are from labor-intensive resources whilst South Africa's exports to SADC reflect the medium and advanced labor plus medium technologies.

3.4. Dynamic Gains from SADC integration

3.4.1. Agglomeration in SADC

The trade patterns in SADC reflect the new trade theory, in particular the Theory of Economic geography (by Krugman and Venables, 1991) on the location of firms and clustering in Southern Africa. The theory posits that in the absence of regional integration firms/economic activities tend to cluster in areas where there are inputs (man and capital) to their production, next to high population density centres with high population with high per capita expenditure. The presence of regional integration with low trade and transport costs might motivate firms to consider moving to the region to serve the customer from near shore, provided that the conditions of the enlarged market are as favourable9 as the home market cluster.

According to Krugman and Venables (1991) and Venables (1999) the key determinants of geographical advantages are the ease of interaction among economic agents, consumers, suppliers and various sources of information and technology. The presence of beneficial externalities between firms can take many different forms, such as knowledge spillovers and labour market pooling effects, which encourage firms to locate where they can benefit from readily available labour skills, as well as linkages between buyers and sellers. Assuming that production factors and/or firms are mobile, this may create agglomeration forces, which tend to lead to the spatial clustering of activities. These forces can operate at quite an aggregated level, resulting in a centre-periphery structure, or can be more narrowly focused. In both cases it may extend the advantage of locations that have a head-start

Good market access is a key factor in the geographical advantage of regions, influenced by the size of the population and the geographical area. Access to local markets is indicated by population density, while the ease of benefiting from agglomeration economies is determined by the level of urbanisation. Population density varies from the lowest rate of 1.8 people per km^2 in Namibia to the highest rate of 550.0 in Mauritius. The most urbanised country in the region is South Africa (50%), followed by Zambia (43%) and Mauritius (41%)

According to the traditional trade theory, production is spread out in line with endowment of factors of production, while the new theories of trade and geography predict that increasing returns to scale and presence of some beneficial externalities between firms encourage agglomeration of manufacturing activities. This means that

production characteristics are decisive for the spread/concentration of location.

In SADC, the movement of labour is not free and capital is controlled through capital controls. Furthermore, beyond South Africa, the conditions of clustering are limited by poor productive infrastructure such R&D, roads network that connect firms to the market and inadequate supply of electricity, which is the mainstay of RSA resources beneficiation. Furthermore, the current structure of Southern Africa reflects the hub and spoke, with the hub being Gauteng province and the spoke being the rest of SADC region. RSA attained the hub of production over time buoyed by early resources recovery and developing manufacturing capabilities based on mineral-energy complex and state support through industrial incentives.

The situation of Post-SADC FTA reflect a similar situation that has been observed in Europe post the EU integration, where the expectation that firms will relocate to the poorer and more labour abundant regions in East Europe did not materialized. Despite the connectivity infrastructure that was built to support integration and the free movement of capital and labour, the status quo in terms of Hubs and spoke continue, where the capitals of London, Berlin, Paris, Milan Luxemburg are the hubs and the new EU members, in particular Eastern European cities continue to be the periphery. What exacerbates the matter is that the proximity through road and rail is being used to deliver industrial goods to the periphery from the core countries and the benefit for the periphery is the distribution centres. In Southern Africa, the trade, transport and beyond the border costs have ensured that South Africa retailers expands to SADC countries and they serve as distribution network for RSA produced goods. The considerable proportion of SADC imports from RSA can be attributed to this strategy.

3.4.2. Competitive Effects

SADC region does not have a single Competition Regulation authority and despite an agreement that there is a need to harmonise the competition policies, this is yet to take effect given the lack of capacity of poorer member states and low level of enforcement within and across member states. The theory on regional economic integration posits that an enlarged market will lead to inefficient firms leaving the market as result of competition from other member states.

The uneven level of development has often been cited as the reason for SADC member states to apply derogation on RSA imports in order to protect their local industries. Lack of compensatory mechanism make it difficult for countries to open their market to imports from the dominating member state for fear of local industrial wipe-out. Whilst waiting for harmonization of competition policies to take effect, RSA has resorted to distributing its products to SADC markets through its retail shops that have sprung everywhere in the SADC market. So in a nutshell, there are no competitive effect as yet in the SADC market, given various protection mechanisms

that are in place in all SADC countries in the guise of protecting the local market and this has resulted in lost welfare to the SADC consumers in terms of the choice of products and price reduction that would have been brought about by the regional competition following the declaration of the SADC FTA.

3.5. Observation on RSA pattern of Trade with the Rest of the world

In SADC, RSA exports are largely industrial and intermediate goods. In fact, the SADC market has overtaken the EU as an important market for RSA finished goods.
The SADC market displays an agglomeration around Gauteng as the core and the source of innovation, capital and skilled labor versus the periphery, which is other RSA provinces and SADC regions that are largely rural and agricultural, except for few exceptions in Mozambique with the aluminum and gas cluster in Mozal and Zambia's northern region of Ndola which is emerging as the secondary mining capital equipment cluster.

SADC Intra-regional trade displays both the aspect of intra-industry and inter-industry trade. For the former, firms trade in similar goods in foods, whilst South African exports to SADC on machinery and equipment, automotive, chemicals and rubber reflecting a trade basket which is comprised by dissimilar goods.

There exist the economies of scale as firms re-organise themselves, re-invest (particularly in the OEMs space, which are dominated by South Africa). However, the re-organisation has not led to cross-border value chain development, which was a case in point for the development of Factory Asia.

Whilst SADC FTA might be one of the motivating factor for an increase in the two-way trade in the Mid-2000, it is difficult to attribute the growth of SADC intra-regional trade as trade has also expanded for SADC Non-FTA members (Angola and DRC) as well as the rest of the world such as the US, EU, Japan, etc.

The common factor for the period of SADC intra-regional trade expansion as well as with other regions of the world could be an increase in an exponential per capita growth in SADC between 2000 and 2013, an increase in national output buoyed by the commodity boom of the mid-2000.

To make more sense of the data on RSA bilateral trade with SADC and the RoW, it requires further interrogation of the data, through modelling of the impact of SADC Regional Trade on RSA trade and growth during the review period, incorporating the normal variables such distance, per capita income, GDP Growth and the dummy variable of SADC FTA.

CHAPTER 4: MODELLING THE STATIC AND DYNAMIC EFFECTS OF REGIONAL ECONOMIC INTEGRATION WITHIN THE SOUTHERN AFRICA DEVELOPMENT COMMUNITY

SECTION 4.1: THE STATIC EFFECTS OF REGIONAL INTEGRATION IN SADC

4.1. Introduction

South Africa has been a member of SADC for 22 years (1994 to date). In 2000, the country became a signatory of the of the SADC Trade Protocol, which enforced the gradual change of SADC trade regime along the linear stages from the Free Trade Area (FTA) to the Economic Union. In 2008, the World Trade Organization recognised SADC as a Free Trade Area after 85% of trade in the region was declared duty free and finally, in 2012, SADC obtained the status of the fully FTA in 2012, when 99% of its intra-regional trade was declared duty free. Of the 15 SADC member countries, only 12 members have acceded to Trade Protocol meaning that they are members of the SADC FTA and non-members are Angola, DRC and Seychelles.

This research aims to investigate whether the SADC FTA had had any effect the growth of bilateral trade between South Africa and other SADC countries, in particular, those that have acceded to the FTA on the most traded industrial goods. This will in a way measure whether the trade regime had any effect on regional industrialization, hence the choice of manufactured goods that are a proxy for industrialization. The research will look at both the static gains/losses (trade creation versus trade diversion) and the dynamic effects (competitive and economic of scale, learning and agglomeration effects). There is considerable literature on the measurement of the potential and actual trade creation and diversion within regional integration within regions, including Southern Africa, but thus far, there has nor been an attempt to measure the dynamic effects of regional integration arrangement.

4.1.1. Measuring the static effects of Regional integration in SADC

In order to measure trade creation and diversion within the Southern Africa Development Community (SADC) region, this study will focus on the bilateral flows (exports) between South Africa and five SADC countries that are RSA major trading partners in the region, that is Angola, the Democratic Republic of Congo (DRC), Mozambique, Zambia and Zimbabwe on the three most traded manufactured goods, that is food and beverages, machinery and equipment and automotive and parts.

Using the Gravity Model to measure trade creation and diversion, the investigation will focus on whether the declaration and accession of SADC countries to the FTA had any impact at all in changing the levels of bilateral trade flows using South Africa as a common denominator. In order to exclude other attributions to the changes in bilateral trade flows, the measure will take into consideration the countries that are members

of the SADC FTA (Mozambique, Zambia and Zimbabwe) and comparator (non-FTA) countries within SADC (Angola and DRC) and countries outside the region that are RSA major trading partners (EU, US, China and Japan) on the same categories of traded goods.

The period of observation is between 1994 and 2014 to cater for the period of RSA's joining and before the declaration of the FTA SADC (1995-1999), (2000-2008), the period of FTA consolidation and the post FTA period (2009-2014).

In a nutshell, there are *(10 countries x (3 measured sectors x 9 countries)/2=135 bilateral* relations per time period. The analysis covers a 20-year time span from 1994 to 2014; hence, the total potential sample space includes *N=20x135=2700* observations.

4.1.2. Literature Review on the Use of Gravity Model

The gravity model has over the decades been used to measure the patterns of bilateral trade flows between countries and regions. Tinbergen [1962] was the first to use the gravity model to assess the bilateral trade flows. The standard gravity model shows that bilateral trade between countries and regions is dependent on the economic size of the countries and is negatively affected by the distances between the two countries / regions. The usage was hampered by the fact that the model lacked theoretical foundations, which were developed by Anderson (1979) and refined by Bergstrand (1985, 1989); Deardorff (1997); Anderson and Wincoop (2003). These latter writers further expanded on the model specification to include region/country specific dummies such as participation in the regional integration agreement, proximity between countries and cultures beyond the simplistic estimation of Tinbergen [1962]. This new model became known as the Augmented Gravity Model given its departure from the standard Gravity Model that was formulated in the 1960s (Ghosh & Yamarik, 2004; Guillaume, & Stasavage, 2000, Frankel & Rose, 2002).

Just in the last decade, more than 50 studies on the gravity model have been compiles, which reinforces the dependence on the gravity model as a major instrument for analyzing trade flows and explaining trade effects of trade agreements (Please see the annexure of the recent literature reviewed). Despite earlier criticism, the research community has made efforts both in improving the model's theoretical foundation (see, for example, and adopted novel econometric methods for estimating its parameters with more accuracy (Anderson & Wincoop, 2003); Carrere, 2006; Martinez-Zarzoso & Nowak-Lehmann 2003).

The recent writers have preferred the usage of panel data as opposed to cross sectional data. In a nutshell, the common variables specified by the gravity model are the size of the economy measured in terms of gross domestic product (GDP), the purchasing power of the nation measured in terms of GDP per Capita, the distances

between major trading cities of the trading nations under study, common language Indicators such as remoteness, openness and trade complementarity are applied in a few cases only and transport costs are rarely included owing to the difficulty in calculation.

On the estimation technique, the ordinary lest square usage has been limited, especially after the conclusions drawn by Anderson and van Wincoop ((2003) that it does not capture the endogeneity of trade agreements and is unable to model to distinguish between time variant and invariant variables. Introduction of interaction effects (bilateral, time or two-way) has been a common practice in recent studies; however, as noted, the selection among random and fixed effects relies on the interests of the analysis, the country sample, the data properties and the underlying theoretical model used.

The gravity model has been used to measure the impact of various RIAs across the globe. The findings most of the studies have always shown mixed result, in that RIAs are either trade creating and trade diverting (Cernat, 2001). In his study, Endoh (1999) found that the Latin American Free Trade Agreement (LAFTA) has exhibited neither trade creation nor trade diversion on trade with Japan. Fukao *et al*. on the other end, found evidence of some trade diversion as a result of the North American Free Trade Agreement (NAFTA) for member countries, the Canada, Mexico and the United States of America.

In analyzing the trade effects of EU integration, Soloaga and Winters (2005) found evidence of trade diversion because of the for the EU members, especially the new members. Tang (2005) investigated the potential of a FTA between China and ASEAN countries and the finding was such an arrangement will neither be trade creating nor diverting. Egger (2001) indicated that while FTAs are not expected to have a short-term impact on trade volumes, a considerable long-run trade creation is anticipated; he reported a 15% long-term increase for NAFTA members. Carrere (2004, 2006) studied the potential benefit of the currency union for Africa RIAs and found that it will be benefitting under the condition of successful macroeconomic convergence among the RIA member states as it will will lead to a reduction in transaction costs. Furthermore, for Africa RIAs Musila (2009) did not find any considerable impact in trade creation or diversion within the Economic community of West African States (ECOWAS), Economic Community for Central Africa States (ECCAS) and the common Market for Eastern and African States (COMESA), given the lack of complementarity among the most trade goods.

4.1.3. Usage of gravity Model to Measure the impact of SADC RIA

4.1.3.1 Ex-Ante Studies

Literature on the use of the gravity model to measure the trade potential (ex ante) of regional trade agreement (SADC) and the actual impact (ex post) has in many instance showed that the RTAs have a potential to increase bilateral trade among the members and have a significant impact on the increase in intra-regional trade.

Among the prominent writers on the potential benefits of SADC FTA are Evans (1997), who used the partial equilibrium model to measure the potential impact of the SADC FTA on member countries' trade. His findings were that SADC FTA is likely lead to the trade creation of around 20%.

In his analysis of the trade potential of the SADC FTA, Elbadawi (1997) found that that SADC FTA did not have a significant effect on trade among its members, although the performance of the bloc is slightly improved when controlling for exchange rate policy effects.

Warin et al. (2009) also assessed the potential used the Gravity Model to assess the trade potential of the EU-SADC Economic Partnership Agreement and found that they will lead decrease bilateral trade between the EU and SADC countries, on the basis of the conditionality of reciprocity access to SADC markets by EU members. Their finding was meant to induce policy position by SADC countries that were to be affected by EPAs. The study of potential impact of EPA seem very late given that the EU required countries to implement reciprocity from 2016 and any remedial plan will have been to late given that industrialization takes longer to implement.

Cassim (2001), using the gravity model, also measured the trade potential among SADC countries given the FTA. His finding showed that only South Africa and Zimbabwe indicate a situation where potential trade is less than actual trade in terms of exports to the region, whereas other countries have a potential to increase exports in the region, when the FTA was to be fully implemented. This result should, however, be treated with caution as the author estimated the model using Ordinary Least Square which does not cater for situation of missing recorded data instead of the Tobin Model, which could have been more appropriate to capture the effects of missing trade data Furthermore, the model that he did not have a comparator group of countries. Additionally, the model did not capture all important determinants of intra-regional trade, which may lead to biased results.

Chauvin and Gaullier (2002) investigated the benefits expected from the SADC FTA given the economic structure disparities existing among its participating members. Specifically, they investigate whether it is feasible to expand intra-SADC trade. Their finding was that there is little room to expand trade given the low complementarity and the revealed comparative advantage in the SADC region

Using the augmented, Eita and Jordaan (2007) estimated trade potential of the metals and articles of base metal sector for the period 1995 to 2004 between South Africa and 33 countries. Their findings were that: the importer's GDP, exporter's GDP,

exporter's population, membership of SADC and being part of Africa are associated with an increase in exports of metal products. Distance is associated with a decrease in metal exports. Importer's population does not have a significant impact on exports of metal and articles of base metal products. The study further revealed that Canada, Hong Kong, India, Mozambique, Republic of Korea, United Kingdom and Zimbabwe, have the biggest unexploited trade potential, which is fertile market for South Africa's exports.

4.1.3.2. Ex-Post Studies

There are few writers who have attempted to measure actual impact of the SADC FTA (ex post). Those who have attempted to investigate the impact of SADC FTA on trade among members include among others, Kwentua (2006), Holden and McMillan (2006) Negasi (2009), Jordaan and Jordan and Eita (2006), Jordan and Kanda (2011).

Using the augmented Gravity model, Negasi modeled the trade effects of the of SADC FTA incorporating four products in SADC using disaggregated data on agriculture, minerals, and fuel and light and heavy manufacturing. The study concluded that regional integration matters in the growth of trade in SADC.

Jordan and Kanda (2011) investigated the trade effects of the EU-SA and SADC preferential trade agreements of which South Africa is a member. Using a panel data estimation of the gravity model of bilateral trade and based on data from 1994 to 2008, the study found that the EU-SA preferential trade agreement to have a significant trade expansion effect. The model on SADC FTA was inconclusive, given that the FTA was not fully operational, given that some countries (Mozambique, Zambia, Tanzania, among others) regressed by introducing derogations on their trade with South Africa. Their conclusion was that SADC should opt for an open regionalism, in which trade costs are lowered between members and with the rest of the world.

Using a cross-sectional estimation of the gravity model of bilateral trade based on 1998 data from a sample of 39 countries, Kwentua (2006) investigated the trade creation and trade diversion effects of the EU-SA agreement and finds evidence that both trade between members of the EU-SA agreement and trade between members and non-members of the EU-SA agreement increased, and therefore concludes that the EU-SA agreement is trade creating. Kwentua (2006) points out that the increase in trade between EU-SA members and the rest of the world could be attributed to an income effect, given that both GDP and GDP Per Capita for EU-SA has expanded in the review period. Based on 1994 to 2004 data covering 136 countries and using both cross-sectional and panel estimations, Holden and McMillan (2006) investigated whether the EU-SA and SADC agreements have had any effects on South Africa's trade. Their analysis also extends to the African Growth and Opportunity Act (AGOA) signed in 2000 between the USA and a host of African countries. The cross-sectional results find an insignificant impact while the panel results find evidence of a positive impact. Specifically, the panel results show that the EU-SA agreement stimulated both

exports and imports during the period 1994 to 2004 whereas the SADC agreement only stimulated exports. The AGOA results were not significant, indicating that during that period, South African exports had not beneficiated from preferential access into the USA market.

Using panel data for 2008 to 2010, Jordaan (2014) used the gravity model to determine effects of trade facilitation (efficiency (PE), customs environment (CE) and regulatory environment (RE)) on bilateral trade between South Africa and and 15 Southern and East African countries. Whilst the strength of the correlation of the sub-measures of trade facilitation with bilateral trade differs in terms of statistical significance, he concluded that an increased trade facilitation will lead to more trade between RSA and the countries under study.

4.1.4. The limitation of the Previous studies on Gravity Model

The limitation of most the studies cited is that it does not predict the the pattern of growth of trade, whether inter or intra-industry. The studies are mostly at aggregated level, given that the authors have used total trade as opposed to trade in industrial goods and this could be attributed to avoidance of using variables where there will data limitation. However, making an attribution on total industry for a single or specific industry could be misleading, in particular for the developing countries and regions such as SADC, given that their trade is mostly linked to resource endowments (few industries and not the structural variables such as the size of the economy and per capita income. Thus said, the trade effects of SADC RIA will be better measured when using disaggregated industrial data on the major trade good rather than using total trade. This study will attempt to certainly to model the disaggregated data to measure the static effects of regional integration in SADC using the augmented gravity model.

4.1.5. Estimation of the Gravity Model

According to Jordan (2014) standard gravity equation explains the size of exports from country *i* to country *j* by three factors including the total potential supply of the exporting country (*i*), the potential demand of the importing country (*j*), and the factors which represents the resistance to trade flow between countries. The standard gravity reflects that exports from country *i* to country *j* are determined by their economic sizes (GDP), population, geographical distances and a set of dummies which incorporate some kind of institutional characteristics common to specific flows. The augmented gravity specification is generally attributed to Martinez-Zarzoso and Nowak-Lehmann (2003) and it has been augmented to capture the institutional and other country specific fixed effects such as the SADC FTA dummy variable, the adjacency between countries and culture and common language. The Panel data for 10 countries, including South Africa will be used for the model. Given the heterogeneity of countries under the study and the pre-determined selection of countries, a fixed effect estimation will be employed. This paper analyses the trade between South Africa and a pre-selection of nine trading partners on the disaggregated data for the three most traded

industrial goods:

The equation is expressed in log formation as follows:

$$\mathbf{Ln}X_{(i,j)} = \alpha + \alpha \ln Y_i + \alpha \ln Y_j + \alpha \ln \text{PerCapita}_{(i,,j)} \alpha \ln POP_{(i,j)} + \alpha \ln D + \alpha \ln \text{Opennes}_{(i,,j)} + \alpha \ln \text{ImportTarrif}_{(,j)} + \alpha \ln \text{ExchangeRate}_{(i,,j)} + \alpha \ln \text{TransportCosts}_{(i,,j)} + \alpha \ln \text{Custom}_{(j)} + \alpha \ln \text{SSTE}_{(i,,j)} + \alpha \ln \text{SADC}_{\text{FTA}} + \alpha \ln RCA_{(I,j)} + \alpha \ln A + + + u$$

where

- X_{ij} is exports of goods from county *i (South Africa*) to country *j (the study group of Angola, Mozambique, DRC, Zambia, Zimbabwe, the EU, China, USA and Japan)* and is the dependent variable. The explanatory variables are as follows:
- **α** is a constant;
- Y_i and Y_j are the GDP of the South Africa and the study group. An increase in in the income of South Africa and the country in the study group is expected to lead an increase in exports and imports;
- Per Capita represent the purchasing power (wealth of a country) of South Africa and the other nine countries. As it is with the income, an increase in the wealth/purchasing power of citizenry for both countries will lead to more exports and import;
- *POP* and *POP* are the populations of the exporter and importer. An increase in population is expected to lead to more production within the exporting country and more imports for the the other countries;
- *D* is the distance in kilometers between South Africa the other nine countries, which is proxied on the distances between the major cities of the countries under the study. Distance is seen as an impediment and contribute to less trade in that an increase in the distance between two trading partners will lead to a decrease in the exports and imports;
- Openness of a country to trade is represented by the country's trade ratio to the GDP. The higher the import/export ratio is positively correlated to the expansion in trade;
- Exchange rate represented the transaction costs of goods when the local currency is exchanges to US Dollar (on purchasing power parity). An appreciating currency will lead to the reduction in exports for the exporting country but a similar appreciation to the importer country will lead to more imports.
- Import Tariff will be represented by the tariff imposed on traded good or average tariff; are an impediment to trade and as such an increase in tariff level will reduce trade between nations;
- Transport costs represent an actual transport costs of a container on the road/shipping as most of trade between RSA and SADC countries is done. is inversely correlated to the expansion in trade in that an increase in transport

costs will will lead to a reduction in trade

- Custom represent the Customs environment consists of two indicators namely the burden of custom procedures and prevalence of trade barriers. This indicates a measure of indirect customs costs and administrative transparency excluding the tariff barriers. This was adopted from Jordaan (2014) on the measurement of trade facilitation. Customs procedure is inversely correlated to the expansion of trade;
- SSTE represent the sector share of total export, that is Machinery and Equipment, Food and Beverages and Automotive and Parts share of South Africa exports. This is done to incorporate the sectoral dimension of export. The higher the SSTE, reflect more trade and vice versa;
- $SADC_{FTA}$ represent the dummy for SADC FTA, where membership of the FTA is assigned 1 and non-membership is assigned 0. This dummy is meant to measure the impact of the FTA on the pattern of trade;
- RCA $_{(I,j}$ represents the revealed comparative advantage (RCA) for both the exporting countries on the most trade goods. A higher RCA reveals that such a country will export more of the traded product:
- A_{ij} represents any other factor that influence the flow of trade, in particular, Adjacency and common language and ;
- and u_{ij} is the error term.

According to Eita and Jordaan (2011) and Jordaan (2014) the fixed effects can however not be used to estimate variables directly that does not change over time (time invariant), such as distance, language, common language because the inherent transformation wipes out such variables. This was further corroborated by Martinez-Zarzoso and Nowak-Lehmann (2003) who suggested that these variables can be estimated in a second regression by running the pooled model estimation. In this second estimation the individual effects, obtained in the first estimation through the fixed effect model, will be used as the dependent variable with time invariant and dummy variables as explanatory variables. This is estimated as:

$$IE_{ij} = \eta_0 + \eta_1 D_{ij} + \eta_2 D_{ADJ} + \eta_3 D_{ENG} + D_{SADC} + \mu_{ij}$$

where IE_{ij} is individual effects from the first estimation and other variables are as defined before and are part of A_{ij}

4.1.6. Data Sources

The study will employ the panel data at a disaggregated level for three main traded manufactured products (Machinery and Equipment, Food and beverages and Automotive and parts) between South Africa and its nine trading partners, Angola, DRC, Mozambique, Zambia, Zimbabwe, China, EU, Japan and the US. The data will

cove a period of 20 years (1994-2014), which covers the pre and post SADC Free Trade Areas declaration.

The table below depicts the dependent and explanatory variables in terms the data sources, the specific indicator to be measured and the signs of the coefficients:

Variables	**Data Sources**	**Indicator**	**Sign of Coefficient**
X_{ij}	UN Comtrade	Export on Sectors (Machinery and Equipment, Food and Beverages and Automotive and parts)	
$Y\ (GDP)_{ij}$	UN Development Indicators	GDP (PPP)	-
$POP_{(i,j)}$	UN Development Indicators	Average population	+
D	Online Distance Calculator-MACPROW	The distance in kilometers between two main cities	-
Openness	UN Comtrade	The ratio of exports and imports to GDP	+
ImportTarrif $_{(,j)}$	SADC Website	Tariff level/band on specific sector or average industrial tariff	-
ExchangeRate $_{(i,,j)}$	SARB, UN Development Indicators	US Dollar Expression of local currency	-
TransportCost $_{(i,,j)}$	UNECA, Transnet	The total cost for the Container of goods	-
Custom $_{(j}$	IMF Direction of Trade, UNECA	Administrative costs of export at the border point (in terms of number of document/ procedure and other delays	-
lnSVA $_{i,}$	SARS, UN Comtrade	To capture the sectoral disaggregation, this	+

		is the value addition of for the exporter countries	
RCA	World Bank	Advantage in the production of a good (index)	+
$SADC_{FTA}$	SADC website	Membership of the SADC FTA	+
SSTE	Calculated from Comtrade Data	% share of sectoral export to the total exports of a country	+
A- Unobserved	SADC Website, National Statistics	Country specific, will differ from country to	-,+

2.7. REFERENCES

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