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Assessing the Intra-SADC Trade in Goods and Services

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Abstract
This study investigated the extent of trade within SADC member states and identified factors affecting intra-regional trade in the region. The study used the relative measure of trade intensity to measure the exports and imports shares within member states and gravity model to identify factors affecting intra-SADC trade flows. The results from relative measure of trade intensity indicated that although the intra-SADC trade remains low, but figures appear to increase compared to the previous recorded facts. The analysis indicates that the share of intra-SADC exports averaged to 31.3 percent between 2008 and 2012. More specifically, Swaziland and Zimbabwe have the highest share of their total exports, while Seychelles has the smallest share of exports to SADC member states. Meanwhile, the share of intra-SADC imports averaged to 35.0 percent between 2008 and 2012 from which Lesotho and Zimbabwe had the largest share of their total imports, while South Africa has the smallest share within the region.It was found that South Africa has a comparative advantage in trade, receiving the largest share of exports and imports from other member states within the region. Generally, findings indicated that most SADC member states appear to trade more with other countries outside the SADC region. 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, 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. It is recommended that, SADC countries need to adopt export diversification through identifying priority products, in which each country has a comparative advantage within the SADC member states.

1. Introduction

1.1 Background

The unique geographical characteristics across Southern African Development Community (SADC) member states make regional trade integration more urgent in the region. Many member states within the region are landlocked countries in which, most obviously, they are dependent on coastal neighbors for access to the sea and the global market. These countries are also subjected to low population densities with low per capita income. Not only that but also most SADC member states are imperiled to larger rural communities, who are often disconnected because of inadequate infrastructure and high transportation costs as well as remoteness from major markets (AfDB, 2013). These among other things have hindered smooth trade flows in the region. Not only that but also most SADC member countries are very far from America, Asia, and Europe and are also far from the major shipping routes.

Identification of critical factors hindering intensive intra-regional trade can help to achieve economies of scale and build the supply capacity and competitiveness among SADC member states through targeted regional infrastructure, cross-border trade, investments and financial flows. Improvement of intra-regional trade of goods and services may well be the stepping-stone, not only to create potential for production chains and value addition and therefore product diversification, but also improving economic growth within the SADC region.

One of the intended effects of a regional trade agreement is through the reduction and removal of bottlenecks to trade to enable more efficient producers in a region to expand production (and reap economies of scale and scope) to the advantage of consumers and detriment of less competitive producers. Although tariff reduction remains a key aspect of regional integration areas, the broader implication is how to reduce overall trading costs within and outside the trading block, which still remain the main challenge facing SADC. Though tariff reduction in SADC region is key to reap the economic fruits within the region, other barriers to trade need to be considered and addressed through the process of fostering closer regional integration in terms of developing new policy tools.

The positive effect of regional integration on trade expansion and consequently on economic growth has been pointed out in many studies (Baldwin 2003; Henrekson et al., 1997; Sala-i-Martin and Barro, 1997;

Italianer, 1994; and Grossman and Helpman 1994). However, since the establishment of SADC in 1992, the economies of SADC Member States have remained relatively small (Qualmann, 2000; Sophie and Guillaume, 2002) and economic growth performances have not been consistent and robust enough to put member countries to compete with developed countries in the world trade market. Therefore, it is against this background that this study investigated trade flows and factors hindering intra-regional trade performance with SADC member countries.

The main object of this study was to assess the conditions for the dynamism of intra-regional trade within SADC member states. More specifically, the study intended to:

(i) Measure the trade intensity through trade-linkage within SADC member states;
(ii) Identify factors affecting intra-regional trade within SADC member states;

1.2 Organization of the Paper

What follow are Section Two, which presents review of both theoretical and empirical literature, while Section Three provides research methodology. Section Four presents findings and discussion of the results. The last Section is devoted to conclusions and policy recommendation.

2. Literature Review

2.1 Theoretical Literature

The literature on regional integration dates back to at least Viner (1950), who suggested that the effects of regional integration on trade can be either trade creating or trade diverting. Like any form of liberalization, one intended effect of a regional trade arrangement is to allow the more efficient producers in the region to expand production to the advantage of consumers and the detriment of less competitive producers, which is referred as trade creation. On the other hand, trade diversion occurs when the removal of tariffs within the region leads to goods that were previously imported from outside (from the cheapest global source) being replaced by more expensive goods produced inside the region which can be sold for less because they no longer have to pay any import duty.

However, there are other important roles that closer regional integration and cooperation can play. Regions can better support the provision of, for example, public goods; this includes 'hard' infrastructure like roads, energy and the physical networks required to support trade, as well as 'soft' infrastructure such as institutions, related to the governance of trade. Many competitiveness challenges are regional in nature. For example, a landlocked country is dependent on the appropriate infrastructure being available in transit countries for its trade flows. National development programmes will not normally consider activities with strong regional (or international) externalities as the benefits cannot be fully appropriated nationally (Lawrence, 1996).

Theoretical underpinning of regional integration through free trade areas and customs unions gives a justification for the aspect to be considered as a significant vehicle for trade expansion within member countries. Regional integration provides both a response to the structural challenge of the small size national markets and a strategic tool to mitigate the negative effects of too unbalanced multilateralism (Anderson and Blackhurst, 1993).

Regional integration can foster competition, subsidiarity, access to wider market (via trade), larger and diversified investment and production, socio-economic and political stability and bargaining power for the countries involved. It can be multi-dimensional to cover the movement of goods and services (i.e. trade), capital and labour, socio-economic policy coordination and harmonization, infrastructure development, environmental management, and reforms in other public goods such as governance, peace, defense and security (Mothae, 2005).

2.2 Empirical Literature

Previous studies show that intra-SADC trade has been growing since the establishment of SADC but the speed is yet to accelerate to the global standard. Sophie and Guillaume (2002) indicated that the share of exports from SADC countries sold within the bloc amounted to only 0.90 percent in 1980, but increased to 10.0 percent in 1999. The study clarified that this share was dominated by South Africa followed by Zimbabwe. On the import side, the study indicated that while in 1980, 1.6 percent of total SADC imports were supplied by SADC members, by 1999, this share amounted to around 10.2 percent

Development Policy Research Unit (2001) report also indicated that the intra-SADC trade accounts for more than 20.0 percent of the region's global trade. Botswana and Namibia account for the largest proportion of intra-SADC imports, while South Africa, Botswana, Swaziland and Zimbabwe were observed to account for the bulk of intra-SADC exports, with South Africa alone accounting for around 50 percent. Also Keane *et. al*., (2010) found that South Africa was a dominant economy that accounted for a large proportion of the imports by other SADC countries. According to their findings, in early 2000, about 59.0 percent of intra-SADC imports were originating from South Africa. That was a drop from a decade earlier when intra-SADC imports from South Africa represented 81.0 percent of total intra-regional imports.

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).

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 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.

Martinez and Nowak (2001) 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. The authors 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.

Martinez and Suarez (2005) used the OLS with fixed effect model to investigate the relationship between trade flows and transport cost in the EU and five Latin America countries. They included GDP and per capita income as intervening variables. They found a significant positive and negative impact of GDP and per capita income on export, respectively.

Papazoglou, (2007) analysed the potential trade flows in Greece using a gravity model approach on a panel of cross-country data of 14 EU member states. He found a significant positive and negative impact of GDP and population on export, respectively. Also DeRosa (2008) investigated determinants of bilateral merchandise trade flow and inward stocks of foreign direct investment applying the gravity model approach in a panel data set up. He found that distance between trading partners and being landlocked as expected, reduce bilateral trade and investment. But GDP of the partners expands bilateral trade, *ceteris paribus*.

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

In empirical literature, the role of FDI in export promotion is controversial. There are many studies which found a mixed results, such as those by Horst, (1972); Ajami and BarNiv, (1984); Jeon, (1992); O'Sullivan, (1993); Blake and Pain, (1994); Pfaffermayr, (1996); Grosse and Trevino, (1996); Djankov, (1997); and Zhang, (2002). Hoekman and Djankov (1997) found insignificant or weak impact of FDI on exports. They pointed out that the role of FDI in export promotion in developing countries remains controversial and depends crucially on the motive for such investment. According to them, if the motive behind FDI is to capture domestic market (tariff-jumping type investment), it may not contribute to export growth. On the other hand, if the motive is to tap exports markets by taking advantage of the country's comparative advantage, then FDI may contribute to export growth.

Investigating the determinants of trade flows, O'Sullivan (1993) and Blake and Pain, (1994) found a significant positive impact of FDI on exports in Ireland and UK respectively. Pfaffermayr (1996) found that FDI has a significant positive impact on exports. Also findings from Zhang (2002) indicated that FDI has a positive impact on China's exports performance. Moreover, Ajami and BarNiv (1984) and Grosse and Trevino (1996) found that export and FDI are complementary to each other and are positively correlated. On the other hand, Horst (1972) and Jeon (1992) found that the two variables are substitute and negatively correlated.

Using data on bilateral exports from 107 countries and 27 sectors over the period 1985-1995, Manova (2006) provides evidence that credit constraints importantly determine international trade flows. Financially

developed countries are more likely to export bilaterally and ship greater volumes when they become exporters. Using data on 65 countries from 1966 to 1995, and after controlling for unobserved heterogeneity and reverse causality, Beck (2002) found that countries with a higher level of financial development experience higher shares of manufactured exports in GDP and in total merchandise exports and have a higher trade balance in manufactured goods.

A growing literature at the interaction of finance and trade argues that financial development promotes export performance. There is strong and robust empirical evidence that credit constraints are an important determinant of trade patterns (see, for example, Beck, 2003; Svaleryd and Vlachos, 2005; Chaney, 2013; Manova, 2013).

In this study, two approaches were used to assess the conditions for the dynamism of intra-regional trade within SADC member states. The first approach focused on measuring the trade intensity within SADC member states, where a relative measure of intra-regional trade intensity was used to capture the export share of a country. In this case exports and imports shares for all SADC member states were computed to find out the extent of trade intensity within member states. The second approach was the gravity model, where factors affecting trade flows were modeled in explaining intra-regional trade flows within member states. Comparison of findings from this study and the aforementioned studies were made for reference purpose.

3. Research Methodology

3.1 Introduction

This section presents the empirical methodology of the study, where relative measure of intra-regional trade intensity equation, gravity model, data sources and analysis techniques are presented.

3.2 Absolute and Relative Measures of Intra-regional Trade Intensity

Following Urata and Kiyota (2005), we define relative measures as follows**:**

$$R = \frac{A}{\sum_k x_{jk} \Big/ \sum_k \sum_j x_{jk}} = \frac{x_{jk}}{\sum_k x_{jk}} \qquad (1)$$

where j and k indicate home and partner countries, respectively. x_{jk} represents exports/imports from country j to country k, respectively. The relative measure indicates the export/import share of country j to/from country k relative to country j 's total exports/imports.

3.3 The Gravity Model

Gravity models have been successful empirically used in various studies of intra-regional flows. Anderson (1979) and Bergstrand (1985) provide the first theoretical justifications to the model by including resistance factors to trade such as multilateral prices, transportation costs and other costs borne by consumers. However, others (Ajami and BarNiv, 1984; Foroutan and Pritchett, 1993; Grosse and Trevino, 1996; Lyakurwa *et al*., 1997; Elbadawi, 1997; Ogunkola, 1998; Longo and Sekkat, 2004; Martinez and Suarez, 2005; Papazoglou, 2007; DeRosa, 2008; and Simwaka, 2011) modified the model to include other important variables, such as macroeconomic variables, depending on a country specific circumstance.

This study is based on a theoretical foundation for the gravity equation of Anderson (1979). However, the model was modified by adding dummy variables such as free trade area, landlocked countries and other variables such as the value of manufacturing, inflation rate and exchange rate to capture the influence of these factors on the trade flows. Therefore, the gravity model was used to explain conditions for the dynamism of intra-regional trade within SADC region. In this case variations in intra-regional trade flows were described basing on the determinants of trade bilateral flow within the region. The model is specified as:

$$\ln EXP_{it} = \alpha_0 + \alpha_1 \ln GDP_{it} + \alpha_2 \ln GDPOC_{jt} + \alpha_3 \ln PI_{it} + \alpha_4 INFit + + \alpha_5 \ln POP_{it} + \alpha_6 \ln EXCH_{it} +$$

$$\alpha_7 \ln MAF_{it} + + \alpha_8 \ln FDI_{it} + \alpha_9 FD_{it} + \alpha_{10} \ln IFD_{it} + \alpha_{11} FTA + \alpha_{12} LLC + \varepsilon_{it} \qquad (2)$$

Where:

ln: Natural logarithm,

EXP_{it}: The value of exports of country i at time t within SADC in million dollars;

GDP_{it}: Gross Domestic Product (GDP) of country i at time t in million dollars,

$GDPOC_{it}$: Gross Domestic Product (GDP) of Other Countries js within SADC member states at time t in million dollars,

PI_{it}: Per Capita Income of country i at time t in million dollars,

FDI_{it}: Foreign Direct Investment of country i at time t in million dollars,
$EXCH_{it}$: Exchange rate of country i at time t,
INF_{it}: Inflation rate of country i at time t,
MFA_{it}: Value of manufacturing of country i at time t,
FD_{it}: Financial development of country i at time t, represented by credit to GDP ratio,
IFD_{it} : Infrastructure development of country i at time t, proxied by total road networks in km,
ε_t: Residuals.
and the following are dummy variables:
FTA: The binary variable which is equal to 1if country i is in a free trade area arrangement, and zero otherwise, and
LLC: The binary variable which is equal to 1if country i is not a landlocked, and zero otherwise.

3.4 Data
This study used secondary annual panel data for 15 SADC member states for a period of 23 years from 1990 to 2012. The main sources of data were the SADC Statistical Unit, central banks of SADC member states and UNCTAD.

3.5 Estimation and Data Analysis Methods
Equations (1) is a ratio, hence was analysed accordingly. However, equation (2) was analysed using STATA econometric package to estimate the determinants of intra-regional trade flows in SADC region. Both fixed and random effect models were estimated using the Hausman specification test; and random effect vs pool effect models using the Breusch-Pagan test. The idea was to find out, which model is more appropriate for the data. Since time dimension is short, then unit root and cointegration were not estimated. If the time dimension is big enough, then you need to check for the panel unit root and panel cointegration. But if the time dimension is short, the results will not make any sense to test them. For panel data, time dimension should at least be greater than 30 in order to produce a unit root sensible results (Badi, 2005).

In order to capture individual heterogeneity, equation (2) was also estimated using the Seemingly Unrelated Regression (SUR). The SUR is a best regression when number of cross-section units is much less than the number of time dimension. In this case time dimension is 23 while cross-section units are 15 SADC member states. The results from the intra-SADC trade intensity and gravity model with fixed effect and SUR regression results are presented and discussed in the following section.

4. Findings and Discussion of the Results
This section discusses results computed from the relative measure of trade intensity as well as regression results from gravity model. The results for both fixed effect model and Seemingly Unrelated Regression (SUR) are presented and discussed.

4.1 Relative measure
This sub-section highlights intra-regional trade flows within the SADC region across all member states. Appendices 2 and 3 present average share of exports and imports over the period 2008-2012 respectively. The results indicate that the SADC member states record the small share of intra-regional exports and imports as a proportion of their total exports and imports in the world, respectively. However, there are some clear differences of trade flows between South Africa and other SADC member states in the region.

Despite low level of exports share of SADC member states, South Africa remains to be the largest market and major export destinations in the region, taking an average of 21.9 percent for all SADC member states exports. In terms of individual countries, Zimbabwe takes up the first highest share of exports to South Africa of 57.5 percent of its total exports, followed by Namibia, 44.1 percent, Swaziland, 33.9 percent, Angola, 33.5 percent and Lesotho, 33.3 percent. Other SADC countries absorb about 12.1 percent of SADC exports.

As it was the case of export destinations, South Africa remains a more important source of imports supplying to other SADC countries with average of 29.4 percent for all SADC member states. Lesotho became the first country with the highest import share to South Africa of 91.8 percent of its total imports, followed by Zimbabwe, 59.8 percent, Mozambique, 52.1 percent, Swaziland, 51.3 percent, Zambia, 32.2 percent, and Malawi, 27.4 percent.

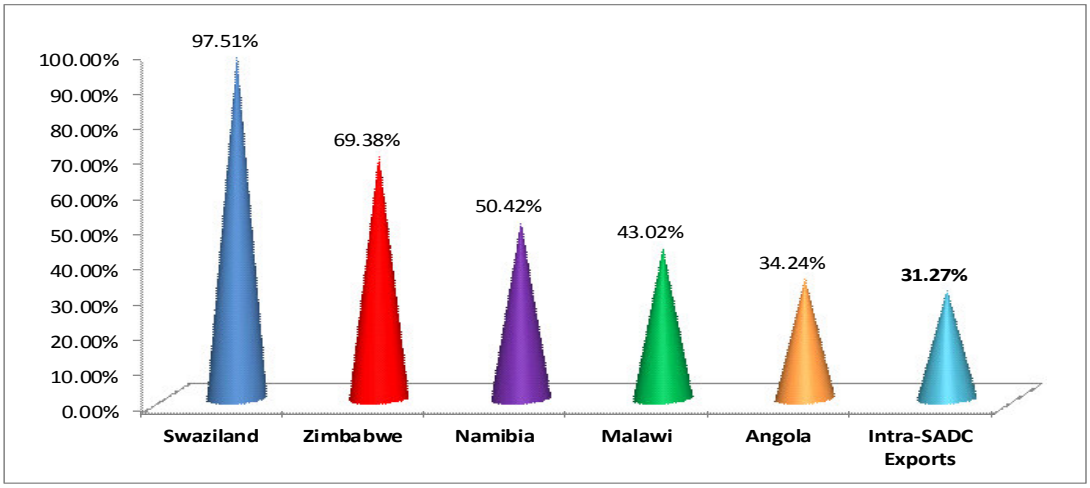
It is expected that the landlocked countries of the region such as Malawi, Zambia and Zimbabwe have a high degree of dependence on regional partners for both exports and imports. It may be the case that goods in transit may be recorded as if they are destined or originating from some member countries particularly South Africa (which has many major ports serving landlocked countries).

The results suggest that South Africa has a comparative advantage in trade compared to other SADC member states within the region. Geographical position, high per capita income and good transport

infrastructure exist in Southern Africa may be among of the explanations compared to other SADC countries, which are landlocked and/or have poor transport infrastructure.

The analysis indicates that share of intra-SADC exports averaged to 31.3 percent. More specifically, exports by trading partner show that Swaziland has the highest share of exports to SADC member states of 97.5 percent of its total exports, followed by Zimbabwe, 69.4 percent, Namibia, 50.4 percent, Malawi, 43.0 percent and Angola, 34.2 percent (Figure 4.1). Meanwhile, Seychelles takes up the least share of exports in the region (**Appendix 1**).

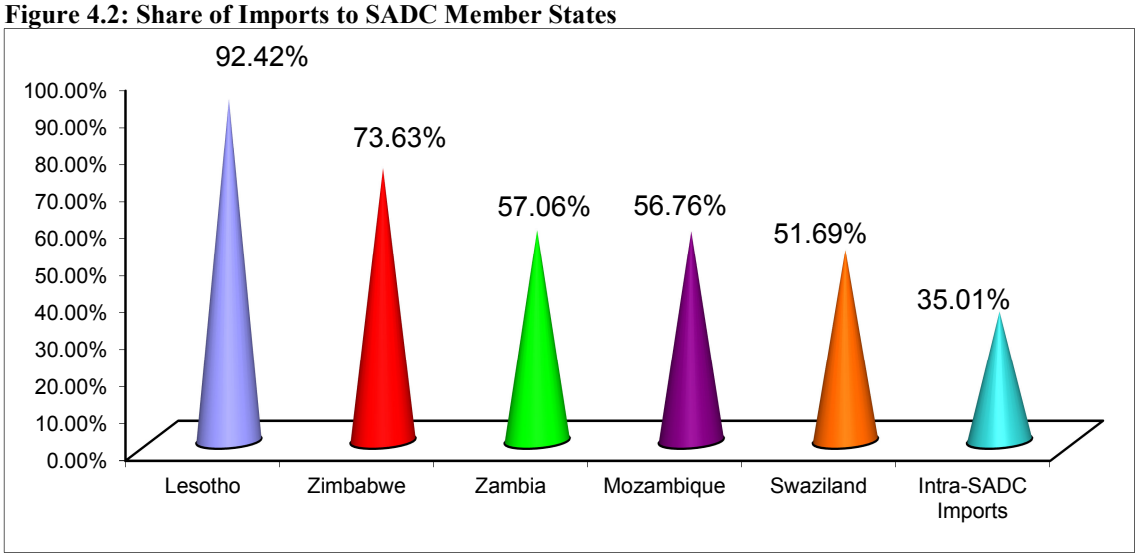
Figure 4.1: Share of Exports to SADC Member States



Source: Author's Computation

Meanwhile, share of intra-SADC imports averaged to 35.0 percent from which, Lesotho contains the largest share of its total imports (92.4 percent) within the region, followed by Zimbabwe, 73.6 percent, Zambia, 57.1 percent, Mozambique, 56.8 percent, and Swaziland, 51.7 percent (Figure 4.2). South Africa takes up the least share of imports in the region (Appendix 2).

Figure 4.2: Share of Imports to SADC Member States



Source: Author's Computation

The findings indicate that trade flows even among Southern African Customs Union (SACU) members is surprisingly very minimal. By excluding South Africa, which is the most export destination and import sources of other member states, all other SACU members recorded trade flows of less than 5.0 percent of their total trade among themselves. Therefore, the area makes up only a small proportion of exports and imports among members.

Africa's exports are highly concentrated on a few products, mainly primary and some manufacturing commodities. Relative to other regions the high concentration, e.g. measured by a concentration index, is very evident. Even more worrying is the upward tendency in the concentration index (UNCTAD, 2012). The index

increased from 0.34 in 2000 to 0.45 in 2012 for Africa as a whole and from 0.16 to 0.33 in SADC, representing a considerable movement towards greater concentration in exports.

Generally, the results from relative measure of trade intensity indicate the existence of a small share of both export and import shares within SADC member states. Studies show that trade flows in most African countries have been minimal due to small economic size; trade barriers; border delays; lack of adequate infrastructure; poor condition of the roads; lack of integration into value chains; too many and high costs of road tolls for the use of roadways (ADB, 2000; UNCTAD, 2009). More importantly, Chauvin and Gaulier (2002) clarified that a low degree of complementarity among SADC economies is among the critical reasons for low trade flows within SADC member states. Most SADC member states have similar export profiles, based mainly on primary commodities, which limits the potential growth of trade within the region.

4.2 Gravity Model with Fixed Effect Regression

Before estimation and discussion of the regression results of the model, we tested both fixed effect against random effect models using the Hausman specification test, and random effect against pool effect models using the Breusch-Pagan test. The test in Table 4.1 indicates that the fixed effect model is preferred than random effect model, because the P-value (p = 0.00018464) is significant for the Hausman Tests. At the same time, because the Breusch-Pagan test is significant (P = 0.00006776), then Random Effect is better than the Pool model. Therefore, the fixed effect model is more appropriate for the data.

Table 4.1: Fixed Vs Random Effect and Random Vs Pool Effect Test

Breusch-Pagan test	**Hausman test**
Null hypothesis: Variance of the unit-specific error = 0	Null hypothesis: GLS estimates are consistent
Asymptotic test statistic: Chi-square = 257.264	Asymptotic test statistic: Chi-square = 100.638
with p-value = 0.00006776	with p-value = 0.00018464

Source: Regression results

It has to be noted that the fixed effect model does not allow estimation of the time invariant variables; thus two dummy variables included (whether a country is landlocked or not landlocked and free or non-free trade area) were dropped automatically during estimation. However, in order to capture some important information of dummy variables, interacting variables, which have economic sense, were generated and included in the model. A variable such as EXCHLLC- interaction between a dummy variable of a country which is a landlocked or not landlocked and exchange rate was generated. **Table 4.2** summarizes the results for the fixed effect model.

Table 4.2: Fixed-Effects (within) Regression Results

. xtreg lnexp lngdp lngdpoc lnpi inf lnpop lnexch lnmaf lnfdi fd lnifd exchllc, fe

lnEXP	**Coef.**	**Std. Err.**	**t**	**Prob**
lnGDP	0.381	0.019	20.520*	0.000
lnGDPOC	1.266	0.897	1.411	0.562
lnPI	-8.387	1.955	-4.290*	0.000
INF	-2.253	9.784	-0.230	0.818
lnPOP	3.489	1.092	3.200*	0.007
lnEXCH	0.418	14.336	0.030	0.977
lnMAF	0.699	0.167	4.190*	0.000
lnFDI	-5.673	6.855	-0.830	0.409
FD	2.371	0.541	4.383*	0.000
lnIFD	1.007	0.268	3.362*	0.004
EXCHLLC	-0.046	0.026	-1.770**	0.077
CONS	-0.539	0.145	-3.710*	0.000

R-square: Within = 0.891
Between = 0.911
Overall = 0.893
Number of obs = 322
Number of groups = 15

Note: * and ** Significant at 1% and 10% level respectively

Source: Regression results

The regression results from equation (2) give satisfactory results in terms of expected signs and significance. However, some variables such as inflation rate, foreign direct investment and exchange rate were found to be not statistically significant, from the t-test results (Table 4.2). The model was then successively

reduced until the parsimonious and robust one was obtained, the results of which are presented in Table 4.3. A comparison of the results in Tables 4.2 and 4.3 indicate that the reduction process has eliminated some insignificant variables (with exchange rate variable maintained because of inclusion of EXCHLLC) without losing valuable information related to the significant variables.

Table 4.3: Fixed-Effects (within) Regression Results of the Preferred Model
xtreg lnexp lngdp lnpi lnpop lnmaf lnexch fd lnifd exchllc, fe robust

lnEXP	Coef.	Std. Err.	t	Prob
lnGDP	0.382	0.018	20.650*	0.000
lnPI	-7.916	1.864	-4.250*	0.000
lnPOP	3.475	1.079	3.220*	0.001
lnMAF	0.698	0.166	4.200*	0.000
lnEXCH	-0.158	14.266	-0.010	0.991
FD	3.631	0.672	5.403*	0.000
lnIFD	1.815	1.331	1.364	0.427
EXCHLLC	1.045	0.426	2.453**	0.0378
CONS	-0.533	0.143	-3.730*	0.000

R-square: Within = 0.891
Between = 0.911
Overall = 0.894
Number of obs = 322
Number of groups = 15

Note: * and ** Significant at 1% and 5% level respectively
Source: Regression results

Results in Table 4.3 show that approximately 89 percent variations in the value of exports is explained by the GDP, per capita income, population, value of manufacturing, and exchange rates. The results indicate that GDP has a positive and significant impact on the value of exports. That is as SADC member states increases its level of GDP, then value of export increases too. Also the findings reveal that per capita income was found to have a negative impact on export value, and its coefficient was statistically significant at 1 percent level. The negative impact of per capita income on export signifies the positive relationship between income and consumption. Therefore, as per capita income increases, goods which were previously exported are now consumed domestically, signifying a rise of the absorption capacity of the domestic market.

The relationship between the value of manufacturing and export was proved to be positive and statistically significant at 1 percent level. At the same time the positive impact of the population on export volume was proved to be positive and statistically significant at 1 percent level, indicating that a country with high population tends to export more than less populated ones. Most developing countries are subjected to small domestic markets as a result of low level of income, thus giving a room to export most of goods and services. Also, perhaps the most significant effects which population size has on manufactured exports are related to how these variables influence government policy decisions.

The interaction between exchange rate and a status of the country (whether landlocked or not) was generated and included in the model. The results indicate that exchange rate of countries, which are not landlocked, has positive and significant impact on export volume in SADC member states {with the coefficient (-0.158 + 1.045) = 0.887}. Therefore, depreciation of exchange rates, or an increase in exchange rate of countries which are not landlocked contribute to export performance more than countries which are landlocked. The fact may be that the impact of exchange rate of most landlocked countries on exports may be minimal due to lack of territorial access to the sea, remoteness and isolation from world markets and high transit costs (freight and insurance costs), which continue to impose serious constraints to export performance on those countries. Therefore, landlocked countries are often at a major competitive disadvantage as exporters of the high bulk low value products that comprise many developing countries' commodity exports. The coefficient of credit to GDP ratio as a proxy for financial development was found to be positive and statistically significant. Therefore, financially developed countries are more likely to export greater volumes within the SADC member states.

The regression results of the fixed effect model discussed above represent the average coefficients for all SADC member states. However, regression of each country is important because it maintains and highlights the individual characteristics of each member state. The Seemingly Unrelated Regression (SUR) was analysed and presented in order to give out the impact of regressors on the value of exports for each country in the region.

4.3 Gravity Model with Seemingly Unrelated Regression

Generalized Least Squares (GLS) method was used to estimate the SUR. This method solves the problem of autocorrelation and heteroscedasticity. This method transforms the model to get rid of the two problems

automatically.

Regression for the SUR treats equations for each SADC member country as independent but assuming that error terms are related across member states. In this case, external shocks are assumed to affect all SADC member states. Therefore, there is a link among the cross-section units (SADC member states) but at the same time retaining the coefficients for cross-section units. The Pesaran test indicated the presence of cross-sectional independence (results are not presented here).The results of the SUR are presented in Appendix 3 and discussion of each member state is presented below.

4.3.1 Angola

The findings from the analysis show that there is a positive and significant relationship between GDP and exports in Angola. At the same time GDP of other SADC member states (GDPOC) was found to have a positive and significant impact of the value of exports in Angola. The results indicate that if GDP of other SADC member states increases by 1 percent point, the value of exports in Angola increases by 3.8 percent point. Meanwhile, per capita income was found to be negatively related to the value of exports; implying that as per capita income increases people tend to consume domestically produced goods, thus reducing the value of exports. The relationship between exchange rate and export was proved to be positive. Therefore, depreciation of the Angola Kwacha tends to favour export in Angola. Surprisingly an increase in the value of manufacturing tends to decrease the value of export in Angola, which may suggest existence of substitution effect between the manufacturing and non-manufactured goods.

4.3.2 Botswana

The results indicate that per capita income was found to be positively related to exports, implying that as per capita income increases peoples' capacity to produce exports increases, thus increasing the value of exports in Botswana. This may be explain by the fact that Botswana is a country having low population associated with higher per capita income and enough capacity to produce goods and services sufficient to meet their domestic need and surplus to export. Also it was found that the value of manufacturing tends to decrease the value of export in Botswana as it was the case of Angola. Foreign direct investment has a negative and significant impact on the value of exports. This may be explained by the fact that FDI may be concentrated in the sectors where Botswana does not have a revealed comparative advantage. That is, where Botswana may not relatively be specialized in terms of their export share in their respective exports markets. Findings of this study are similar to the findings of Jeon (1992) who found that the two variables are substitute and negatively correlated. The importance of financial development to export performance was found to be significant in Botswana. The results indicate that financial development increases the value of export by 5.3 percent point in the country. The estimation results supported the Rajan and Zingales (1998) findings that the financially developed countries tend to improve export performance. At the same time road network improvements, which proxy infrastructure development, was observed to boost exports by 1.9 percent in the country.

4.3.3 DRC

The impact of GDP on exports was found to be positive and significant, indicating that national income plays an important role in promoting export in DRC. Also the results indicate that FDI is likely to affect exports performance positively in DRC. The experience in a number of countries suggests that FDI strongly contributes to the transformation of the composition of exports (UNCTAD, 2002b; Blake and Pain, 1994). For instance, it has been well documented that FDI inflows into Singapore and China, have helped to increase significantly the technological content of exports by supporting strongly the development of export supply capacity, including knowledge-based industries. Also findings from this study are similar to the findings by O'Sullivan (1993), Blake and Pain (1994), Pfaffermayr (1996), and Zhang (2002) who found a significant positive impact of FDI on exports. Furthermore, the value of manufacturing was found to contribute positively to an increase in the value of export in DRC. This indicates that most of manufactured goods were for export purposes.

However, per capita income and population were found to have a significant negative impact on export, indicating that as per capita income and population increase most of the goods were consumed domestically, rather than exporting to other countries. Martinez and Nowak (2003) and Armstrong (2007) argue that a negative relationship between exports and population is an indication of an absorption effect. This means that a country with a big population would indicate that the domestic market is large enough to 'absorb' a considerable share of domestically produced goods and thereby reducing the amount of domestically produced goods that could be exported. In this case, increases in the population size would result in lower exports. However, the result seems to be somehow paradox because this argument would only seem to be relevant for countries where poverty is not a big issue. In the case of DRC, a country is one of the highest Gini coefficients in the world.

4.3.4 Lesotho

The results confirm the positive relationship between the value of exports and GDP of other SADC member states. That is, GDP of other SADC member states increases the value of exports in Lesotho by 0.5 percent point. Also the value of manufacturing was found to have positive and significant impact on the value of exports in Lesotho. This indicates that as the value of manufactured goods increases, the value of exports sold in the export

market increase too. The textile and apparel industry has been the main engine of growth and job creation over the past decade, and the manufacturing sector has been growing at a faster rate in the country as a result of the inclusion of Lesotho in the African Growth and Opportunity Act (AGOA) since 2000. The impact of infrastructure development on export was found to be positive and significant at 1 percent level.

4.3.5 Malawi

The findings show that there is a positive and significant relationship between GDP and export in Malawi. It was further found that GDP of other SADC member states increases the value of exports in Malawi by 2.9 percent point. Also the value of manufacturing was found to contribute positively to an increase in the value of export, being an indication that most of manufactured goods were for export purposes. Meanwhile per capita income and exchange rate were found to be negatively related to export. The negative sign of the coefficient of per capita income is an indication of the presence of domestic absorption capacity in the country. The depreciation of Malawian Kwacha determined a decrease in domestic exports. According to Ripolln (2010), exchange rate depreciation may have either negative or a positive effect depending on the exchange rate system operates in the country.

4.3.6 Mauritius

Regression results indicate that per capita income, inflation and FDI have a positive and significant impact on the value of export. Mauritius has been experiencing a low rate of inflation since 1990 with an average of 6.6 percent. Therefore, an increase in the rate of inflation would encourage exports in the country. Meanwhile GDP and the value of manufacturing have a negative and significant impact on export in Mauritius. According Brandon (2012), countries with the lowest levels of human capital do not appear to benefit from exporting; in particular, the correlation between manufacturing exports and GDP is negative. The estimation results for financial development indicate the positive and significant impact on export performance in Mauritius as it was the case of Botswana. In this case, financial development increases the value of export by 3.6 percent.

4.3.7 Madagascar

Two variables were found to affect significantly the Madagascar's exports; the value of manufacturing, with a positive impact, which is the similar case to DRC, Lesotho and Malawi, and FDI with a negative impact, which is the similar case to Botswana.

4.3.8 Mozambique

The relationship between GDP and export was found to be positive and significant in Mozambique. At the same time a depreciation of the Mozambican Metical appeared to make the Mozambique products to be cheaper to foreign countries, thus increased demand for exports. Also the findings revealed that the value of manufactured goods contributed positively to the value of exports; implies that most of the manufactured products were exported. At the same time an increase in financial development by 1 percentage point increase the value of export by 0.7 percent in the country.

Similarly to the results of DRC, per capita income and population in Mozambique were found to have a significant negative impact on export, indicating the presence of domestic absorption capacity in the country.

4.3.9 Namibia

Financial development was found to have a positive significant impact on the value of exports in the country. The results indicate that 1 percentage point increase in financial development increase the value of export by 1.8 percent. At the same time, infrastructure development was found to have a significant impact on trade flows in Namibia. The evidence indicates that infrastructure development increases export by 0.9 percent in the country. Hard infrastructure, such as road networks, reduces trade costs, thus allowing smooth trade flows.

4.3.10 Seychelles

The impact of GDP on exports was found to be positive and significant for the case of Seychelles. However, per capita income was found to have a negative and significant impact on exports signifying high consumption of domestically produced goods as per capita income increase. Also the value of FDI was found to have a negative and significant impact on the value of exports as it was the case of Botswana and Madagascar, where one of the possibilities is that FDI may be concentrated in the sectors where the country does not have a revealed comparative advantage.

4.3.11 South Africa

The findings indicate that GDP, inflation and population have a positive and significant impact on export. As it was for the case of Mauritius, South Africa has been experiencing low level of inflation of an average of 7.7 percent since 1990, which seems to promote growth in the country. On the other hand per capita income has a negative and significant impact on exports, implying that as per capita income increases most of the exported goods were consumed domestically. It was evidenced that financial development contributed positively to export performance in the country. Further evidence indicates that infrastructure development has a positive significant impact on export performance by 3.6 percent in the country.

4.3.12 Swaziland

Findings from the analysis indicate that GDP of other SADC member states contributed positively and

significantly to the performance of exports in Swaziland by 4.3 percent. The results indicate a positive impact of per capita income and exchange rate on exports. Therefore, depreciation of Emalangeni seems to favour exporters in Swaziland. There has been a negative relationship between inflation and exports, indicating the way inflation discouraged exports performance in the country. This is consistent with the findings of Bruno and Easterly (1998) findings who concluded that countries with a high content of manufactured goods tend to have a negative correlation between inflation and primary exports.

4.3.13 Tanzania

Tanzania is among the SADC member states which experienced a significant positive contribution of GDP and FDI on exports. The relationship between exchange rate and export was proved to be positive and significant; implying that the depreciation of the Tanzanian shilling tends to favour the value of exports. Findings revealed a negative and significant impact of per capita income on exports, indicating domestic absorption capacity in the country. As it was the case of Angola, the value of manufacturing has a significant negative impact on the value of exports in Tanzania too. The evidence from the regression results confirms a positive significant impact of financial development on exports performance in the country. The introduction of financial sector reforms in Tanzania, aims at, among other things, gradually establishing more open credit markets, achieving flexible and eventually, liberal interest rates and enhancing financial intermediation may be one of the positive contribution to exports performance in the country. Also, the results confirm a positive significant impact of infrastructure development on exports in Tanzania as it was the case in Botswana, Lesotho and Namibia.

4.3.14 Zambia

The relationship between GDP and exports was found to be positive and significant in Zambia as it was the case in most SADC member states. Also findings revealed that the contribution of FDI on exports was found to be positive and significant. This suggests that most of FDI were allocated in exports sector in Zambia. However, the value of manufacturing seems not to favour exports in the country, suggesting that most of the exported products may not be coming from manufacturing sector as a result of substitution effect as it was the case of Angola. Also evidence indicates that financial development contributed positively to exports performance in Zambia. Further results indicate that financial development increases the value of export by 5.3 percent in the country.

4.3.15 Zimbabwe

In Zimbabwe all variables included in the model seem to favour exports in the country. Findings indicate a positive impact of GDP, inflation, exchange rate, the value of manufacturing and FDI on exports in Zimbabwe. Meanwhile, per capita income and population were found to have a negative and significant impact on exports, results which seem to be similar to that of DRC, signifying the presence of domestic absorption capacity in Zimbabwe too. As it was observed to other countries, the infrastructure development has positive significant impact on exports by 3.04 percent in the country.

After discussion of the empirical findings, the next section provides conclusion and policy recommendation.

5. Conclusion and Policy Recommendations

This section presents summary of the study and conclusion, some policy implications, recommendations and suggesting area for further studies.

5.1 Summary of the Study and Conclusion

The study aimed to assess the conditions for the dynamism of intra-regional trade within SADC member states. Specifically, the study measured the trade intensity through trade-linkage within SADC member states, and identified factors affecting intra-regional trade within SADC member states.

The study used relative measure of trade intensity to capture the exports and imports share of the SADC member states and the gravity model approach to identify factors affecting intra-regional trade in SADC member states. Under gravity model, two regression analyses were performed and discussed: fixed effect and seemingly unrelated regressions. The latter regression was used in order to capture individual heterogeneity effects, which was eliminated in the fixed effect model.

The results from relative measure of trade intensity indicated that although the intra-SADC trade remains low, these are signs of improvement compared to the previous recorded facts. The analysis indicates that share of intra-SADC exports averaged to 31.3 percent between 2008 and 2012. Swaziland and Zimbabwe were observed to have the highest share, while Seychelles has the smallest share of exports to SADC member states (out of their total exports). Meanwhile, share of intra-SADC imports averaged to 35.0 percent between 2008 and 2012 from which, Lesotho and Zimbabwe contained the largest share, while South Africa has the smallest share of imports within the region (out of their total imports).

The findings from the fixed effect regression indicated that GDP, population, the value of manufacturing and exchange rate of countries, which are not landlocked have a significant positive impact on the value of exports. Meanwhile, per capita income was found to have a significant negative impact on the value of

exports within SADC member states.

The findings from the seemingly unrelated regression, which provides analysis for each individual country, indicate that GDP has a significant positive impact on the value of exports for most SADC member states. Therefore, the relationship between exports and GDP is almost similar across the member states. That is, as the most SADC member states increases their level of GDP, the value of export increases too. Meanwhile, the same variable was found to have a significant negative impact on the Mauritius's value of exports.

Also the findings reveal that per capita income has a negative impact on export value to most SADC member states. The negative impact of per capita income on export signposts the positive relationship between income and consumption. Therefore, as per capita income increases, goods which were previously exported were consumed domestically, which signifies a rise of the absorption capacity of the domestic market. The analysis for Botswana, Mauritius and Swaziland indicated the significant positive impact of the same variable on the value of exports.

The relationship between the value of exports and inflation rate was found to be positive and significant to countries with lower rates, particularly, South Africa and Mauritius. The same variable has a negative and significant impact on the Swaziland's value of exports.

The regression analysis suggested mixed results of the impact of population on the value of exports. It was found that, countries such as DRC and Mozambique, as population increases most of the goods were consumed domestically, rather than exporting to other countries. The same variable has a positive impact to the South Africa's value of exports, suggesting its capacity to export more as population increase.

Moreover, we found the export response to exchange rate changes to be more prominent in some SADC member states. In most cases, exchange rate depreciation was found to increase the value of exports in the region, particularly countries which are not landlocked.

The contribution of manufacturing on export performance was found to be significant in some SADC member states, such as DRC, Lesotho, Malawi, Mozambique and Zimbabwe. However, findings indicate the negative contribution of the variable to other member states such as Angola, Mauritius, Tanzania and Zambia, which may suggest the presence of substitution effect between manufactured and non-manufactured goods to those countries.

The empirical results suggest that FDI flows to DRC, Mauritius, Tanzania, Zambia and Zimbabwe have statistically significant and positive effects on their exports. This suggests that most of FDI was allocated in exports sector in those countries; hence, signifying the role of FDI in export performance of host countries.

At the same time an increase in FDI was found to reduce significantly the value of exports in Botswana and Seychelles. This may be explained by the fact that FDI may be concentrated in the sectors where those countries may not have a revealed comparative advantage and/or probably underreporting of exports from those sectors.

The results indicate that financial development plays a vital role to export performance in the region. The introduction of financial sector reforms in many SADC member states was observed to be among factors that boost the export sector. It was further found that the infrastructure development tend to improve export performance within the region. As a proxy of infrastructure development, road network improvements were observed to boost exports elastically.

Different studies indicated that trade flows in most African countries have been minimal due to small economic size; trade barriers; border delays; lack of adequate infrastructure; poor condition of the roads; lack of integration into value chains; too many and high costs of road tolls for the use of roadways (ADB, 2000; UNCTAD, 2009). More importantly, Chauvin and Gaulier (2002) clarified that a low degree of complementarity among SADC economies is among the critical reasons for low trade flows within SADC member states. Most SADC member states have similar export profiles, based mainly on primary commodities, which limits the potential growth of trade within the region.

Generally, it can be concluded that, one of the objectives of regional integration is to reduce trade barriers in order to promote and boost trade among member states. However, a small share of exports and imports within the SADC region depicts a slow improvement in trade among member states. Therefore, most of SADC member states appear to trade more with other countries outside the SADC region. An important lesson from successful experiences with export performance is that national policies should simultaneously address the twin issues of intra-regional market (in this case within SADC member states) and other foreign markets. Fighting for better access to other international markets without simultaneously paying attention to improve regional market is likely to weaken the intra-SADC trade.

5.2 Recommendations

Findings from this study suggest that to boost exports, SADC member states may require to take initiatives with care with respect to each member state's status due to the observed mixed impact of macroeconomic variables on exports in the region. However, the general observation indicates that it is of critical importance to maintain a

high and sustainable economic growth. Evidence has shown that effort to promote GDP tends to promote export performance in most SADC member states. Therefore, central banks should focus on creating the necessary conditions in which growth and development can prosper. To achieve this, central banks need to maintain the two overriding principles: (i) protecting the value of the national currency and (ii) the preservation of overall financial stability. Creating a stable macroeconomic environment promotes savings necessary to finance investments leading to export performance.

The results indicate that GDP of other SADC member states contributed positively to only four member states, namely Angola, Lesotho, Malawi and Swaziland. This may reflect the low level of integration among SADC member states. The free trade area envisaged for 2008 is not fully working, and the region has made uneven progress towards the subsequent milestones of a common market and monetary integration. This call for SADC member states to deepen the trade integration through commitment to, and progress on, integration targets in the region. This will be seen as appropriate mechanism to mitigate external shocks through trading among member states.

The mixed results of positive and negative impacts of inflation on exports may limit potential dynamic gains of trade if the variable is not evaluated properly in a specific country. An important implication of our study is that SADC member states are different and should be considered different when stetting the appropriate level of inflation in the region. Therefore, it is recommended that SADC countries need to maintain low and stable level of inflation.

In order to reap fruits of integration through diversification of comparative advantages in the region, each member state needs to exploit the available opportunities. The current situation where most members of the region exports/imports much to/from South Africa only reflects limited trade linkages among other SADC member states. The small share of exports and imports reveals that SADC member states need to move into the production of those products where they have a revealed comparative advantage in order to ensure expansion of the region market. Because, this phenomenon was observed consistent for almost all SADC member states, then it is recommended that the role of export oriented strategy and country specific policy should be emphasized in the region. Specifically, the SADC member states may need to promote infant export oriented manufacturing industries not only to promote exports but also to support domestic industries. This may include identifying priority products, which a country has a comparative advantage within the SADC member states.

Some SADC member states recorded a negative impact of FDI on exports. Therefore, we recommend that, the redirection of FDI to production for exports would improve export growth since this would lead to a change in the structure of exports; hence diversification. Therefore, FDI should be allocated towards upgrading the export-oriented activities and help diffuse skills, knowledge and technology to domestic firms.

The results suggest that there is a favorable impact of financial sector development to trade flows in the region. As policy implications, economic policies that promote financial sector development should be used to boost exports of manufactured goods and to reduce current account deficit. Central banks need to create policies which encourage credit to the private sector and pursue policies that will facilitate lowering of interest rates that are consistent with the underlying economic fundamentals, deal with high cost of intermediation, and easing credit procedures. Therefore, credit to private sector should be articulated as one of the predictor of export performance.

Infrastructure development seen to have significant and relatively large impact on trade flows in most SADC member states. This implies that there is urgent need to implement the SADC Regional Infrastructure Development Master Plan in order to increase trade shares within the region. The current Regional Infrastructure Development Master Plan need to target and connects landlocked SADC member states with major centers of population and economic activity to ports. Therefore, improvement in infrastructure may be a prerequisite for successful trade integration and growth. Also improvements in the quality of infrastructure in these countries need attention in order to ensure sustainability usage of these facilities in the long-run.

Lack of value addition in the production chain once addressed could also facilitate trade flows among member states. This is one of the constraints to trade expansion in the region. It is therefore recommended to pursue industrialization in order to drive trade expansion. Industrialization will transforms most SADC economies, which are predominantly agrarian and/or natural resources based to an economies that are largely driven by manufacturing of goods and services. Industrialization upgrades and expands existing manufacturing capacities, hence creating value addition products in the economy. Countries that have achieved industrialized status have shown remarkable growth in trade expansion, sustained economic growth rates and high per capita income growth that have lifted millions of their population from poverty.

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Appendices

Appendix 1: SADC Member States Exports Shares

	EXPORT/IMPORT	ANGOLA	BOTSWANA	DRC	LESOTHO	MADAGASCAR	MALAWI	MAURITIUS	MOZAMBIQUE	NAMIBIA	SEYCHELLES	S. AFRICA	SWAZILAND	TANZANIA	ZAMBIA	ZIMBABWE	TOTAL
1	ANGOLA		0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	0.06%	0.70%	0.00%	33.45%	0.02%	0.00%	0.00%	0.00%	34.24%
2	BOTSWANA	0.01%		0.05%	0.07%	0.00%	0.04%	0.08%	0.29%	2.11%	0.02%	8.62%	0.06%	0.02%	0.25%	0.85%	12.46%
3	DRC	0.02%	0.00%		0.00%	0.00%	0.00%	0.14%	0.12%	0.10%	0.00%	15.31%	0.00%	3.00%	2.59%	0.00%	21.28%
4	LESOTHO	0.01%	0.23%	0.00%		0.00%	0.00%	0.13%	0.04%	0.00%	0.00%	33.31%	0.00%	0.03%	0.00%	0.04%	33.79%
5	MADAGASCAR	0.01%	0.02%	0.02%	0.00%		0.01%	1.44%	0.05%	0.00%	0.44%	2.14%	0.02%	0.13%	0.02%	0.03%	4.33%
6	MALAWI	0.00%	0.28%	0.24%	0.06%	0.86%		0.10%	3.41%	0.00%	0.26%	28.40%	0.58%	1.70%	2.18%	4.94%	43.02%
7	MAURITIUS	0.05%	0.01%	0.00%	0.05%	5.45%	0.04%		0.07%	0.01%	1.17%	5.67%	0.00%	0.13%	0.05%	0.09%	12.79%
8	MOZAMBIQUE	0.33%	0.10%	0.06%	0.04%	0.02%	1.19%	0.15%		0.01%	0.00%	16.13%	0.15%	0.12%	0.71%	2.37%	21.40%
9	NAMIBIA	1.94%	0.26%	0.31%	0.03%	0.00%	0.05%	0.03%	0.86%		0.00%	44.12%	0.09%	0.64%	1.41%	0.67%	50.42%
10	SEYCHELLES	0.00%	0.00%	0.00%	0.00%	2.37%	0.00%	0.07%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%	0.00%	2.44%
11	S. AFRICA	0.23%	5.08%	0.30%	1.61%	0.04%	0.09%	0.06%	0.48%	4.09%	0.00%		1.86%	0.14%	0.53%	0.49%	15.01%
12	SWAZILAND	8.87%	2.37%	0.13%	1.36%	1.80%	1.97%	1.98%	28.66%	3.65%	0.07%	33.95%		7.56%	2.33%	2.80%	97.51%
13	TANZANIA	0.05%	0.12%	3.41%	0.00%	0.13%	1.30%	0.06%	0.98%	0.85%	0.02%	18.19%	0.19%		1.34%	0.09%	26.74%
14	ZAMBIA	0.10%	0.33%	6.38%	0.01%	0.01%	1.49%	0.53%	0.45%	0.62%	0.02%	10.04%	0.10%	1.36%		2.74%	24.20%
15	ZIMBABWE	0.12%	2.03%	0.59%	0.25%	0.03%	1.07%	0.10%	4.23%	0.17%	0.29%	57.45%	0.32%	0.05%	2.69%		69.38%
	AVERAGE	0.84%	0.77%	0.82%	0.25%	1.07%	0.52%	0.35%	2.83%	0.88%	0.22%	21.91%	0.24%	1.06%	1.01%	1.08%	31.27%

Source: Author's Computation

Appendix 2: SADC Member States Import Shares

	IMPORT/EXPORT	ANGOLA	BOTSWANA	DRC	LESOTHO	MADAGASCAR	MALAWI	MAURITIUS	MOZAMBIQUE	NAMIBIA	SEYCHELLES	S. AFRICA	SWAZILAND	TANZANIA	ZAMBIA	ZIMBABWE	TOTAL
1	ANGOLA		0.01%	0.24%	0.00%	0.00%	0.00%	0.10%	1.61%	19.61%	0.01%	38.94%	0.42%	0.05%	0.01%	0.02%	61.03%
2	BOTSWANA	0.02%		0.00%	0.02%	0.00%	0.04%	0.01%	0.06%	0.94%	0.00%	11.46%	0.04%	0.06%	0.98%	2.67%	16.32%
3	DRC	0.01%	0.04%		0.00%	0.00%	0.00%	0.24%	0.51%	0.75%	0.00%	10.17%	0.00%	1.17%	2.13%	0.31%	15.32%
4	LESOTHO	0.00%	0.10%	0.00%		0.00%	0.00%	0.05%	0.10%	0.02%	0.00%	91.79%	0.09%	0.00%	0.15%	0.12%	92.42%
5	MADAGASCAR	0.03%	0.00%	0.01%	0.08%		0.00%	2.39%	0.03%	0.00%	0.30%	5.13%	0.30%	0.18%	0.01%	0.00%	8.47%
6	MALAWI	0.00%	0.60%	0.00%	0.03%	0.85%		0.33%	6.96%	0.22%	0.00%	27.39%	0.44%	3.04%	4.03%	1.51%	45.41%
7	MAURITIUS	0.01%	0.01%	0.00%	0.03%	0.41%	0.04%		0.31%	0.03%	0.26%	7.67%	0.20%	0.08%	0.25%	0.14%	9.45%
8	MOZAMBIQUE	0.13%	0.04%	0.00%	0.00%	0.51%	0.75%	0.49%		0.59%	0.00%	52.13%	0.55%	0.45%	0.71%	0.40%	56.76%
9	NAMIBIA	0.15%	1.65%	0.07%	0.00%	0.00%	0.00%	0.09%	0.18%		0.00%	10.00%	0.59%	0.28%	1.20%	0.24%	14.46%
10	SEYCHELLES	0.00%	0.00%	0.00%	0.00%	0.88%	0.00%	3.78%	0.00%	0.00%		5.25%	0.05%	0.01%	0.00%	0.00%	9.99%
11	S. AFRICA	0.55%	0.39%	0.00%	0.25%	0.22%	0.04%	0.01%	0.25%	0.62%	0.07%		1.10%	0.01%	0.08%	0.07%	3.67%
12	SWAZILAND	0.00%	0.01%	0.00%	0.02%	0.00%	0.02%	0.05%	0.17%	0.06%	0.00%	51.25%		0.00%	0.04%	0.06%	51.69%
13	TANZANIA	0.01%	0.03%	0.02%	0.00%	0.01%	0.14%	0.10%	0.18%	0.39%	0.00%	7.98%	0.30%		0.34%	0.03%	9.54%
14	ZAMBIA	0.01%	0.34%	14.21%	0.00%	0.01%	0.37%	0.37%	0.42%	0.23%	0.02%	32.20%	6.79%	0.73%		1.36%	57.06%
15	ZIMBABWE	0.00%	3.84%	0.09%	0.02%	0.12%	0.84%	1.15%	2.98%	0.22%	0.12%	59.81%	0.28%	0.06%	4.09%		73.63%
	AVERAGE	0.07%	0.51%	1.05%	0.03%	0.13%	0.16%	0.66%	0.98%	1.69%	0.09%	29.37%	0.80%	0.44%	1.00%	0.50%	35.01%

Source: Author's Computation

Appendix 3: SEEMINGLY UNRELATED REGRESSION RESULTS WITH DEPENDENT VARIABLE lnEXP

No	Country	Cons	lnGDP	lnGDPOC	lnPI	INF	lnPOP	lnEXCH	lnMAF	lnFDI	lnFD	lnIFD	R^2
1	Angola	-	2.745 (9.26*)	3.771 (3.115*)	-2.260 (-6.05*)	5.654 (1.18)	50.554 (0.63)	3.950 (2.15**)	-16.045 (-7.85*)	-4.163 (-1.55)	2.481 (0.23)	-0.024 (-0.81)	0.994
2	Botswana	-	-0.085 (-0.30)	-0.801 (-0.08)	1.655 (2.61*)	-1.540 (-0.56)	66.685 (0.26)	-6.069 (-0.20)	-7.775 (-4.62*)	-1.474 (-4.06*)	5.330 (4.22*)	1.852 (4.39*)	0.957
3	DRC	-	1.461 (4.91*)	-4.010 (-1.03)	-5.130 (-3.53*)	-4.692 (-0.21)	-144.978 (-2.17**)	6.309 (0.46)	4.921 (1.79***)	1.399 (5.53*)	4.542 (1.09)	1.913 (1.24)	0.966
4	Lesotho	-2.17 (-0.21)	1.018 (1.05)	0.502 (2.40**)	-1.433 (-0.65)	8.374 (1.39)	18.010 (0.03)	2.090 (0.73)	0.697 (2.02**)	3.398 (0.89)	-3.221 (-1.11)	0.612 (2.71**)	0.965
5	Malawi	-0.812 (-0.93)	0.409 (2.70*)	2.899 (5.90*)	-3.709 (-2.14**)	-8.633 (-0.99)	118.545 (1.35)	-3.871 (-2.48**)	0.492 (2.71*)	4.464 (0.09)	0.525 (1.02)	-2.311 (-1.23)	0.979
6	Mauritius	-0.668 (-2.19)	-2.101 (-2.24**)	1.100 (0.07)	32.939 (2.56**)	37.100 (3.37*)	0.042 (1.15)	55.900 (1.41)	-0.191 (-1.77***)	0.922 (2.08**)	3.643 (4.71*)	4.010 (0.66)	0.989
7	Madagascar	2.87 (1.10)	0.283 (0.98)	2.917 (1.18)	-5.581 (-0.95)	-13.90 (-0.38)	0.229 (1.21)	5.280 (1.38)	2.301 (2.45**)	-0.624 (-2.46**)	1.495 (0.08)	-0.047 (-0.03)	0.898
8	Mozambique	8.330 (3.02)	0.761 (2.59**)	8.041 (0.89)	-1.370 (-2.29**)	0.828 (0.22)	-55.679 (-3.19*)	7.450 (2.78*)	3.019 (5.23*)	-3.017 (-1.60)	0.657 (3.11*)	0.992 (1.57)	0.976
9	Namibia	-4.760 (-.23)	0.532 (1.41)	0.008 (0.10)	-24.728 (-0.24)	2.130 (1.14)	355.880 (0.26)	-0.297 (-0.29)	-0.300 (-0.51)	8.929 (1.41)	1.882 (2.49**)	0.926 (3.10*)	0.378
10	Seychelles	0.738 (0.12)	3.150 (3.36*)	6.089 (0.37)	-23.628 (-2.93*)	-6.524 (-0.10)	1.219 (0.15)	-3.378 (-0.75)	-0.848 (-1.51)	-4.131 (-2.21**)	-1.009 (-0.05)	2.190 (1.01)	0.976
11	South Africa	-	0.987 (4.57*)	5.016 (1.52)	-3.840 (-3.09*)	1.260 (3.38*)	0.789 (1.69***)	-2.600 (-1.46)	-0.034 (-0.14)	2.876 (1.07)	0.997 (2.33**)	3.552 (6.22*)	0.985
12	Swaziland	-	-1.086 (-1.33)	4.339 (6.88*)	1.922 (2.01**)	-0.401 (-3.15*)	-2.952 (-0.01)	9.460 (3.30*)	-0.688 (-0.84)	-3.095 (-0.40)	2.001 (1.33)	1.481 (0.90)	0.899
13	Tanzania	-0.466 (-0.30)	0.852 (9.46*)	-3.821 (-1.116)	-2.290 (-6.21*)	4.827 (0.62)	43.896 (0.65)	29.839 (2.41**)	-1.150 (-3.25*)	9.569 (3.93*)	2.572 (4.19*)	1.051 (2.94**)	0.996
14	Zambia	-	0.465 (3.29*)	-0.991 (-1.00)	-0.710 (-0.39)	5.506 (0.43)	-8.436 (-0.24)	-4.221 (-0.71)	-1.063 (-1.99**)	14.352 (6.91*)	0.268 (5.22*)	0.743 (1.43)	0.994
15	Zimbabwe	-	2.338 (12.30*)	5.449 (1.26)	-22.600 (-9.07*)	1.087 (1.69***)	-138.254 (-6.98*)	3.636 (4.84*)	0.610 (2.44**)	15.154 (4.22*)	-3.110 (-1.27)	3.042 (2.18**)	0.935

Note: *1. *, **, *** Significant at 1%, 5% and 10% respectively.*
2. Numbers in parenthesis are t-statistics
3. Constant was dropped automatically

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