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Acknowledgement

Table of Contents

Abstract

This study investigates the extent of intra-SADC trade flows and the contributing factors. The study uses the relative measure of trade intensity to capture exports and imports shares of the member states and gravity model to identify factors affecting intra-SADC trade flows.

The findings suggest that although the intra-SADC trade is low, trade has been increasing over time. On average, the share of intra-SADC exports was 31.3 percent between 2008 and 2012. Swaziland and Zimbabwe recorded the highest shares of exports to the SADC market, while Seychelles had the smallest share. Meanwhile, the share of intra-SADC imports averaged 35.0 percent in the same period, with Lesotho and Zimbabwe registering the largest shares, and South Africa recorded the lowest share.

On individual country analysis, the findings indicate that South Africa has a comparative advantage in trade, as it accounts for the largest shares of exports and imports from other SADC member states. Generally, most of the SADC member states trade more with countries outside the region than they do among themselves. With respect to factors influencing intra-regional trade, GDP, per capita income, the value of manufactured products, foreign direct investment, financial development and infrastructure development, exchange rate, and inflation were found to be statistically significant.

In order to boost intra-regional trade, the study recommends for SADC countries to adopt export diversification strategies taking into account comparative advantages across countries in the region, as well as address factors constraining trade expansion.

1.0   Introduction

The importance 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 the member states have remained relatively small (Qualmann, 2000) and growth of the economies has not been consistent and robust enough to enable the countries to compete in the world trade market and to improve people's welfare. Contributing to this poor performance includes sparsely populated countries characterized by rural communities with low per capita incomes, factors related to tariff and non-tariff barriers, and inadequate and poor infrastructure (AfDB, 2013).

Although tariff reduction is key in helping countries reap economic benefits in a regional arrangement, addressing other barriers to trade are equally important. Identification and addressing of non-tariff constraints can help countries achieve economies of scale, enhance trade competitiveness, create production chains and value addition ultimately boosting economic growth. This study seeks to explore the magnitude of intra-SADC trade flows and the non-tariff contributing factors. Specifically, the study measures the intra-regional trade intensity and identifies factors influencing trade among SADC member states.

The rest of the paper is organized as follows: section 2 presents the literature review, followed by methodology in section 3. Study findings are presented and discussed in section 4, while section 5 concludes the paper.

2.0   Literature Review

2.1 Theoretical Literature

The literature on regional integration dates back to Viner (1950), who suggests that the effects of regional integration on trade can either be trade creating or trade diverting. One intended goal of regional trade arrangement is to allow more efficient producers and service providers to expand to the advantage of consumers—trade creation. In contrast, trade diversion occurs when removal of tariffs within the region leads to goods and services previously imported from outside the region (from the cheapest global source) to be replaced by more expensive goods produced within the region.

There are other important roles that regional integration and cooperation can play. Such regional arrangements can better support the provision of, for example, public goods; including 'hard' infrastructure like roads, energy and physical networks required to support trade, as well as 'soft' infrastructure such as institutions, related to governance of trade. Many competitiveness challenges are also regional in nature. For example, a landlocked country is dependent on the appropriate infrastructure available in transit countries for its trade flows. National development programs will not normally consider activities with strong

regional (or international) externalities as the benefits cannot be fully appropriated nationally (Lawrence, 1996).

Furthermore, the 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). 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: it increases the market size and thus allows for increasing returns to scale; it improves business competitiveness and promotes a better allocation of resources; 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).

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, defence and security (Mothae, 2005).

2.2 Empirical Literature

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 is comparable and relates to regional integration in Africa failing to achieve its objectives of increasing intra-regional trade.

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 expectations. But the effect of the exporting and importing countries' population is negative; 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 less populated countries. Exchange rate and income differences are also found to be important determinants of trade flow.

Martinez and Suarez (2005) used the OLS with fixed effect model to investigate the relationship between trade flows and transport costs in the EU and five Latin American countries. They included GDP and per capita incomes 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. The findings suggest 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 and found that distance between trading partners and being landlocked reduce bilateral trade and investment, as expected but GDP expands bilateral trade.

Bac (2010) used a panel gravity approach to estimate the determinants of export flows in Vietnam. Together with other variables, the study found that a depreciation of the Vietnamese dong increases the country's exports. 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. The study found that geographic distance impacts negatively the intra-regional trade in these commodities, 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.

On the role of FDI in export promotion, studies have found mixed results. The studies include 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). For example, Hoekman and Djankov (1997) found insignificant or weak impact of FDI on exports. They point 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.

Studies which found a significant positive impact of FDI on exports include: O'Sullivan (1993), Blake and Pain (1994), Pfaffermayr (1996), Zhang (2002). Moreover, Ajami and BarNiv (1984) and Grosse and Trevino (1996) found that export and FDI are complementary to each other and are positively correlated, whereas Horst (1972) and Jeon (1992) found that the two variables are substitute and negatively correlated.

A growing literature on the interaction of finance and trade suggests that financial development promotes export performance. There is strong and robust empirical evidence that credit constraints are important determinants of trade patterns (see, for example, Beck, 2002 and 2003; Svaleryd and Vlachos, 2005; Chaney, 2013; Manova, 2006 and 2013). For example, 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. Furthermore, using data for 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.

Previous studies have shown increased intra-SADC trade but the speed is yet to accelerate to the global standard. Cassim (2001) used a cross-section econometric gravity model to investigate the potential for trade among SADC countries. Results from this study show that specific countries where potential trade is less than actual are mostly South Africa and Zimbabwe. In the case of South Africa, the study found that in all instances, its potential exports are significantly low. Also, Elbadawi (1997) indicated that SADC did not have a significant effect on trade among its members, although the performance of the bloc slightly improved when controlling for exchange rate policy effects. Sophie and Guillaume (2002) indicated that the share of intra-SADC exports to total exports amounted to only 0.90 percent in 1980, but increased to 10.0 percent in 1999; where the 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 had amounted to around 10.2 percent.

Development Policy Research Unit report (2001) 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.

Consistent with the literature, the current study uses two approaches. The first approach focuses on measuring the trade intensity within SADC member states, where a relative measure of intra-regional trade intensity is used to capture the trade shares of a country. In this approach, 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 is the gravity model, where factors affecting trade flows were modelled to explain intra-regional trade flows.

3.0 Methodology

3.1 Absolute and Relative Measures of Intra-regional Trade Intensity

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

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

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.

3.2 The Gravity Model

Gravity models have been 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. Others studies (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 the country specific circumstance.

This study follows Anderson (1979)'s gravity model theoretical foundation. Modifications were made to the model by adding dummy variables to capture effect of free trade area, landlocked countries, and other variables including value of manufactured products, inflation and exchange rate.

The model is specified as:

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

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

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_i: 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.

3.3 Data

Secondary annual panel data for 15 SADC member states spanning the period 1990 through 2012 were used. The main sources of data were the SADC Statistical Unit, central banks of SADC member states and the United Nations Conference on Trade and Development (UNCTAD).

3.4 Estimation and Data Analysis Methods

The ratio in equation (1) was computed and analysed accordingly. Coefficients of variables in equation (2) were estimated using STATA econometric package to assess the determinants of intra-SADC trade flows. In deciding the appropriate model for the data, the Hausman specification test was carried out to decide on using fixed effect model or random effect model, whereas the choice between random effect model and pool effect model was done through the Breusch-Pagan test. Unit root and cointegration tests were not made since the time dimension of the data is short[1].

In order to capture individual heterogeneity, equation (2) was also estimated using the Seemingly Unrelated Regression (SUR). The SUR is a best regression when the number of cross-section units is much less than the number of time dimension. For the case of this study, 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.

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[1] Unit root test results would not make any sense if the time dimension were short. According to Badi (2005), for panel data, time dimension should at least be greater than 30 in order to produce sensible unit root results.

4.0 Results and Discussion

4.1 Relative Measure

This sub-section highlights the intra-SADC trade flows. **Appendices 2** and **3** present average shares of exports and imports over the period 2008-2012 respectively. The results indicate that the SADC member states record small shares of intra-regional exports and imports as a proportion of their total exports and imports in the world, respectively. Clear difference in trade flows is observed between South Africa and other SADC member states.

South Africa accounts for the largest market share and remains the major export destination in the region, taking an average of 21.9 percent of all SADC member states' exports, while other countries absorbed about 12.1 percent of SADC exports. On individual countries, Zimbabwe ranks high as 57.5 percent of its total exports were directed to South Africa, followed by Namibia, 44.1 percent, Swaziland, 33.9 percent, Angola, 33.5 percent and Lesotho, 33.3 percent.

Furthermore, South Africa is the main source of imports for SADC countries, supplying about 29.4 percent of all imports to all SADC countries. Lesotho has the largest share, with 91.8 percent of its total imports coming from South Africa, followed by Zimbabwe (59.8 percent) Mozambique (52.1 percent), Swaziland (51.3 percent), Zambia (32.2 percent), and Malawi (27.4 percent).

As expected, the landlocked countries such as Malawi, Zambia and Zimbabwe have a high degree of dependence on other regional countries for both exports and imports. It could be that goods in transit are recorded as if they are destined or originating from some member countries particularly South Africa. This notwithstanding, South Africa seems to have a more comparative advantage in trade due to relatively more developed infrastructure including ports and roads, strategic geographical position, and high per capita income.

The findings indicate that the share of intra-SADC exports averaged 31.3 percent, with Swaziland recording 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**). Seychelles recorded the least share (**Appendix 1**).

Figure 4.1: Percentage Share of Exports to SADC Member States
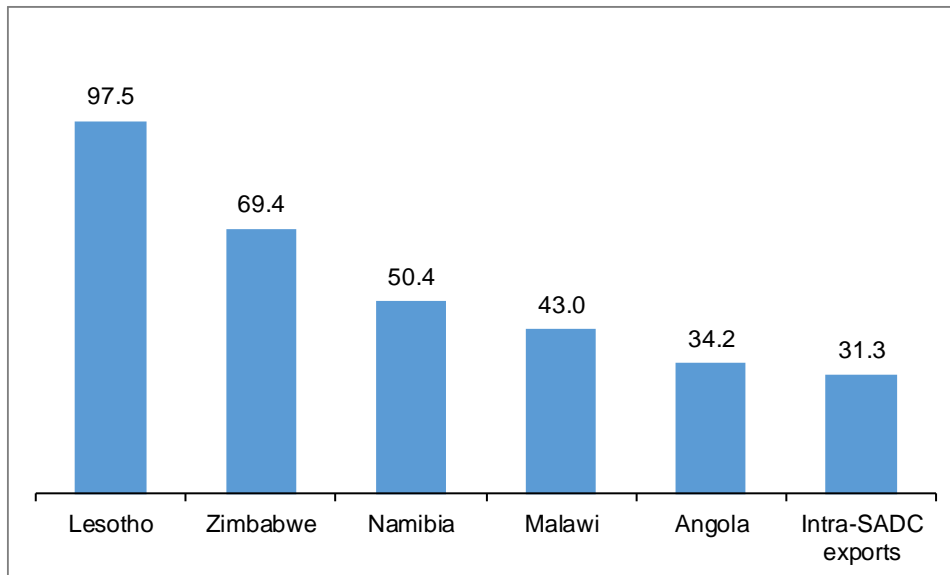
Note: The shares are calculated out of the respective country's total exports.
Source: Author's Computations

Meanwhile, the share of intra-SADC imports averaged 35.0 percent, with Lesotho registering the largest share (92.4 percent) of its total imports from 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 had the least share (**Appendix 2**).

Figure 4.2: Percentage Share of Imports to SADC Member States
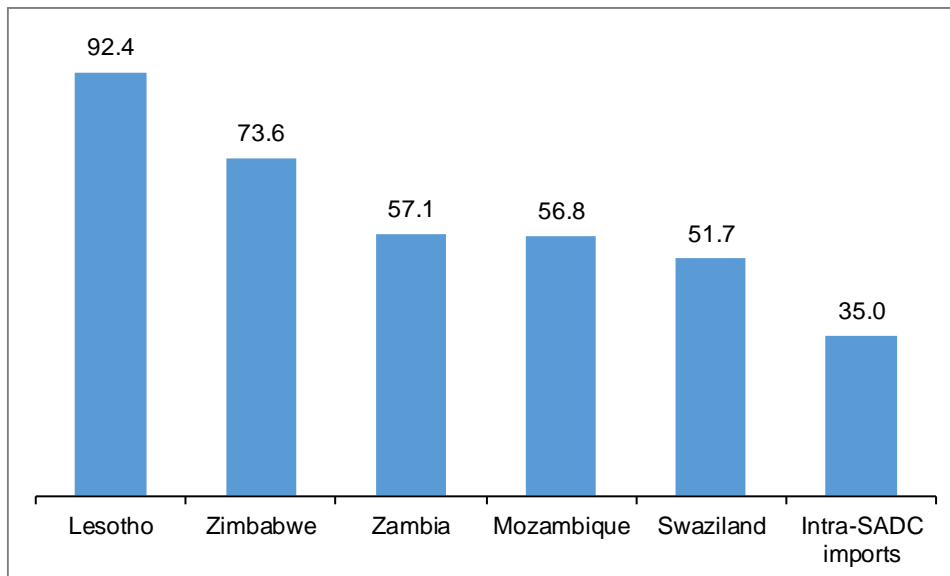
Note: The shares are calculated out of the respective country's total imports.
Source: Author's computations

The findings indicate that trade flows even among SACU members is surprisingly very low. By excluding South Africa, which is the largest export destination and import source of other member states, all other SACU countries recorded trade flows of less than 5.0 percent of their total trade in the sub-region.

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 findings lend support to the conclusion made in earlier studies that trade flows in most African countries have been unexpectedly low due to among others 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) argues that a low degree of complementarity among SADC economies could 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 limit growth of trade within the region.

4.2. Gravity Model with Fixed Effect Regression

Before estimation and discussion of regression results, tests were made for 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 results are summarized in **Table 4.1** and they suggest that the fixed effect model is preferred to random effect model, while random effect model is better than the pool model. Estimations were thus, made by using the fixed effect model.

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 = 0.000068	with p-value = 0.00018

Source: Regression results

Since the fixed effect model does not allow estimation of the time invariant variables, two dummy variables (whether a country is landlocked or not landlocked and free or non-free trade area) were included in the estimation, but were dropped from the model as their coefficients were statistically insignificant. However, in order to capture some important information of the dummy variables, interacting variables were generated and included in the model. A variable such as EXCHLLC which represents interaction between a dummy variable of a country which is landlocked or not landlocked and exchange rate was generated. **Table 4.2** summarizes the results.

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 ** implies significant at 1 percent and 10 percent level, respectively
Source: Regression results

The regression results yield satisfactory results in terms of expected signs and statistical significance. However, some variables such as inflation rate, foreign direct investment and exchange rate were found to be statistically insignificant (**Table 4.2**). The model was then successively reduced until a parsimonious estimation was obtained, the results of which are given in **Table 4.3**. A comparison of the results in **Tables 4.2** and **4.3** indicate that the reduction process eliminated some statistically insignificant variables without losing valuable information to significant coefficients.

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 ** implies significant at 1 percent and 5 percent level, respectively
Source: Regression results

Results in **Table 4.3** show that approximately 89 percent variations in the value of exports is explained by 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' economies grow, the value of exports increases too. Per capita income seems to have a negative impact on the exports value, as the coefficient was found to be statistically significant at 1 percent level. The negative impact of per capita income on exports signifies the positive relationship between income and consumption, which increases the absorption capacity of the domestic market thus reducing exports. The coefficients of value of manufacturing and population were found to be positive and statistically significant at 1 percent level.

The results indicate that the coefficient of interaction term between exchange rate and a country not being landlocked has a 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. Thus, 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 from 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) model was estimated to gauge the impact of selected factors 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 takes care of autocorrelation and heteroscedasticity problems. Regression for the SUR treats equation 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. That is, 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 the discussion follows hereunder.

4.3.1   Angola

The findings 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 on 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 more of domestically produced goods, thus reducing the value of exports. The relationship between exchange rate and export was found to be positive. Therefore, depreciation of the Angola Kwanza 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 manufactured and non-manufactured goods.

4.3.2   Botswana

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 explained by the fact that Botswana is a country having low population associated with relatively high per capita income and enough capacity to produce goods and services sufficient to meet their domestic needs 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 for 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. The 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 statistically 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 support 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, the findings from this study are similar to those by O'Sullivan (1993), Blake and Pain (1994), Pfaffermayr (1996), and Zhang (2002) who found a statistically significant and positive impact of FDI on exports. Furthermore, the value of manufacturing was found to contribute positively to 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 are 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, it is one of the countries with 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 increases 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   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.

4.3.6   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. Similarly, 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 that operates in the country.

4.3.7   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 to 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.

4.3.8   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 found 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

The findings 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) 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 statistically significant positive contribution of GDP and FDI on exports. The relationship between exchange rate and export was found to be significant and positive; implying that the depreciation of the Tanzanian shilling tends to favour the value of exports. The 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 and 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 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, policy recommendation and areas suggested for further study.

5.0   Conclusion and Policy Implications

5.1 Conclusion

This study aimed at assessing the extent of intra-SADC trade flows and the contributing factors. The study uses the relative measure of trade intensity to capture exports and imports shares of the member states and gravity model to identify factors affecting intra-SADC trade flows. Under the 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 31.3 percent between 2008 and 2012. Swaziland and Zimbabwe were observed to have the highest share, while Seychelles had the smallest share of exports to SADC member states (out of their total exports). Meanwhile, share of intra-SADC imports averaged 35.0 percent between 2008 and 2012 from which, Lesotho and Zimbabwe contained the largest share, while South Africa had 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 statistically 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 increase 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 are 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 increases.

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 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 Policy Implications

The 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 calls 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 consistently to 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 favourable 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 needs to target and connect 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 sustainable 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 transform most SADC economies, which are predominantly agrarian and/or natural resources based to 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 Computations

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 Computations

Appendix 3: Seemingly Unrelated Regression Results with Dependent Variable lnEXP

No	Country	Cons	lnGDP	lnGDPOC	lnPI	INF	lnPOP	lnEXCH	lnMAF	lnFDI	lnFD	lnIFD	R²
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

Source: Author's Computations