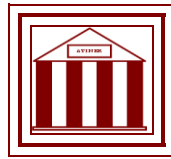


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**An Empirical Analysis of the
Determinants and Growth of South
African Export: 1980-2013**

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An Empirical Analysis of the Determinants and Growth of South African Export: 1980-2013

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Abstract

Exports have considerable effects on economic growth, employment and trade so it is crucial to understand the factors that are responsible for their variation. This paper analyses the fundamental determinants of exports using annual South African data covering the period 1980 to 2013. It initially provides an overview of the South African export structure and export growth. A review of theoretical determinants is then specified. The study tests for stationarity and cointegration using the Johansen (1991; 1995) methodology. A vector error correction model is run to provide robust determinant variables on exports. The following variables which have been found to have a long run relationship with exports include: real effective exchange rate, trade openness, foreign income and price of inputs (cost of production). The estimate of the speed of adjustment coefficient found in this study indicates that about 29% of the variation in exports from its equilibrium level is corrected within one year. The results that have emerged from this analysis corroborate the theoretical predictions and are also supported by previous researchers or studies.

Keywords: Determinants, exports, South Africa

Introduction

Exports play a vital role in foreign trade and economic development. It is apparent that changes in export levels have wider and far reaching economic effects. It is very important that we understand the factors determining the volume of exports as well as those that underpin the growth of exports in South Africa. The primary objectives of any country are to maintain an adequate level of foreign reserves and to create and maintain a sustainable, internationally competitive exporting sector that will contribute to job creation and high incomes. In addition, the country must also have the capability to deliver the products to the foreign market. In short, the nation must be able to do business in a dynamic global environment. The increase of exports in a country will stimulate domestic production and employment thus, exports contributes to an improvement in a nation's welfare.

Several researchers have pointed out the importance of exports and export growth in the economy and why it is important to understand the exports' fundamental determinants (see for example Sangita, 2000; Bleaney and Wakelin, 2000; Changqi and Cheng, 1999 and Grenier, Mckay and Morrissey, 1998). There are very few studies that have looked at this relationship in South Africa, for example Edwards and Alves (2006) and Gouws (2005), but they did not pay attention to the growth of exports in South Africa which calls for a fresh analysis of this relationship. In addition, this study employs more recent econometric techniques, whose application is still in its infancy in South Africa. Therefore, in this case, this study seeks to identify factors determining exports and how they can be administered to promote exports growth. South African exports have fluctuated considerably over the years depending on the prevailing trade policies and exchange rate. Such concerns warrant an examination of the determinants of exports in South Africa. Since real export is a crucial variable in the economy, it is necessary to understand the factors determining this variable so as to manage it better and to place the South African economy on a path of growth and sustainable development. This research will also contribute to empirical literature on the factors that drive exports growth in South Africa. Every economy of the world strives to be internationally competitive so as to improve economic growth and people's welfare.

South Africa is best known for its precious metals. It holds the world's largest reserves of gold (35%); platinum group metal (55.7%), manganese ore (80%), chrome ore (68.3%) and it also produces a large share of the world's diamonds. In addition, the country is also known for its agricultural products like fruits and wine (Investment Sectors, 2000).

South Africa's foreign trade and investment was affected by sanctions and boycotts especially during the 1980s and early 1990s. These measures included an oil embargo first instituted by oil producing and exporting countries (OPEC) in 1979, a 1983 prohibition on International Monetary Funds (IMF) loans; a 1985 cutoff of most foreign loans by private banks; the US 1986 comprehensive Antiapartheid Act; and the 1986 European Economic

Community (EEC) ban on trade and investment. The Organisation of African Unity (OAU) also discouraged trade with South Africa (World Fact Book, 1996). Throughout this period, South Africa's economy depended heavily on foreign trade even though it was under pressure from international sanctions and recessions. In the early 1980s, the mining sector exports accounted for between 60% and 65% of total exports (Edwards and Alves, 2006). Gold dominated the country's exports during this period.

In 1994, the new democratically elected government inherited an economic system which was characterised by declining economic growth (Edwards, *et al*, 2006). In response to these pressures, the South African government adopted a number of policies and programmes to restructure the economy in order to make it a globally competitive nation able to confront the rapid changes in the world.

The outward looking trade policy adopted by South Africa since the early 1990s has ensured that exports growth played a critical role in the government's Growth, Employment and Redistribution (GEAR) strategy (see Naude, 2000 and Bahad and Amusa, 2003). GEAR was aimed at promoting policies that support free market activities in order to strengthen South Africa's external competitiveness and foster long term economic growth. South Africa also joined the Southern African Development Community (SADC) in 1994. The main purpose of SADC was regional re-integration. In addition, the country acceded to the World Trade Organisation (WTO) and negotiated a Free Trade Agreement (FTA) with the European Union (EU) in 1999. This was meant to increase access to the strategic markets (Locomotive for Africa Growth, 2002). Improved access to markets stimulated exports. The reintegration of South Africa into the world economy since 1994 led to rapid increases in exports to various regions. The Department of Trade and Industry (DTI) in South Africa promoted the formation of industry-based export councils to assist exporters in reaching their targets.

The structure of the paper is as follows: First an overview of supporting literature is given to point out important determinants of exports. Subsequently, the methodology used in the study is presented which is followed by an empirical model specification. The main findings are discussed and finally we end with a conclusion and some implication for policy formulation. The following section provides a brief review of supporting literature.

A Review of Supporting Literature

This study is anchored by several economic theories which include; the theory of comparative advantage that was expounded by David Ricardo. The theory explains why it can be beneficial for two countries to trade if one country has a lower relative cost of producing some goods. The Heckscher (1919) and Ohlin (1933) (H-O) theory is more sophisticated than the Ricardian theory in acknowledging that there exists, at least, some commodities that can be produced with various production techniques. This assertion implies that it

is not only the relative abundance of a resource that will be important in determining the comparative advantage of a country, but also the intensity of the use of resources in producing the commodities across different countries that will determine the pattern of trade. New trade theory provides a more balanced perspective, focusing on both demand and supply sides. The new trade theorists discussed some of the short-comings of the static theorists. The most important characteristic of the new trade theory is that it takes into account the market structure in relation to imperfect competition. The imitation lag theory relaxes the assumption in the Heckscher-Ohlin analysis that the same technology is available everywhere. It assumes that the same technology is not always available in all countries and that there is a delay in the transmission or diffusion of technology from one country to another. The product cycle theory (PCT) of trade builds on the imitation lag hypothesis in its treatment of delay in the diffusion of technology. The PCT also relaxes several other assumptions of traditional trade theory and is more complete in its treatment of trade patterns. The PCT is concerned with the life cycle of a new product and its impact on international trade.

Previous researchers conducted several studies regarding the determinants of exports. However, assorted results were observed due to the countries researched, methods used and the data employed. Research conducted in developed countries includes the work of (Dennis, 2003; Cattao and Falchetti, 2002; , Duenas-Caparas, 2006; Dijk, 2002; Ravindra and Kapur, 2005; Chang, 2001; Chetty and Hamilton, 1993). Various studies have investigated the determinants of exports in developing countries. These are among others; Sangita (2000), Grenier McKay and moorrisey (1998) and Roberto (2002). Although a large gap of literature exists in South Africa, various researchers have tried to investigate the determinants of exports in South Africa. Some of the researchers are Edwards and Alves (2006), Naude (2000), Matthee and Naude (2007) and Gouws (2005). The next section discusses the methodology used for this study.

Methodology Used in the Study

To estimate the determinants of exports in South Africa, this study uses a vector autoregression (VAR) model. Data is firstly tested for stationarity using the Phillips (1988) and Perron (1988) and the Augmented-Dickey Fuller tests. Subsequently, the Johansen (1991; 1995) cointegration technique is used to test for cointegration, after which a vector error correction model (VECM) is used to estimate the long run equation and the existence of error correction. Diagnostic checks are also performed to test for normality (Jarque-Bera), heteroskedasticity (White test) and serial correlation (Lagrange Multiplier). Finally, impulse response analysis and variance decomposition are performed to respectively examine the impact of each determinant or variable.

Model Specification

The study uses a variant of the imperfect substitution model outlined in Goldstein and Khan (1985) as discussed further in Edwards and Wilcox (2003) and Edwards and Alves (2006) to investigate the major determinants of exports in South Africa. This model is represented as a system of equations for export supply (X^s) and export demand (X^d) which simultaneously determines the export price and the export quantity.

In this study the export demand will be modeled as a function of real exchange rate, real foreign income and domestic price of exports. This can be expressed as follows:

$$EX^d = \alpha_0 + \beta_1 REER_t + \beta_2 Y_t + \beta_3 DP_t + \mu_i \dots \dots \dots (4.1)$$

In order to avoid any misinterpretation of empirical results, this section provides the description of all variables appearing in the estimated equations. All the variables are converted to logarithms for the obvious reasons of obtaining elasticity coefficients on these variables and minimising the impact of outliers. The model is thus of the form:

$$lEX^d = \alpha_0 + \beta_1 lREER_t + \beta_2 lY_t + \beta_3 lDP_t + \mu_i \dots \dots \dots (4.1.1)$$

Where:

LEX^d = is the logarithm of goods and services that are produced domestically and sold to buyers in another country.

LREER = is the logarithm of the real effective exchange rate of the rand, measured in foreign currency terms (index 2000-100). Thus an increase in this variable indicates an appreciation of the rand. The real effective exchange rate $REER_i$ for country i is normally calculated as a geometric weighted average of bilateral real exchange rates:

$$REER_i = \prod_{i \neq j} \left(\frac{p_i e_{i1}}{p_j e_{j1}} \right) x_{ij}$$

Where:

e_j denotes the exchange value of country j 's currency against the US dollar, x_{ij} is country j 's weight in country i 's index, and p_j is the price index of country j . Under this definition, a rise in REER represents a real appreciation of the domestic currency.

LDP = is the logarithm of the price at which a commodity trades with a country in contrast to the world price. In other words it is the ratio of domestic prices to world prices. The domestic price is determined by supply and demand.

LY = Foreign income is defined as income arising from a source outside South Africa which is chargeable under or by virtue of a list of provisions, such

as trading income. This variable is proxied by index of real GDP for the industrialised countries. In this study GDP for US is used (2000=100).

μ_i = is an error term.

We postulate the following adjustment mechanism for exports:

$$IX_t - IX_{t-1} = \delta (IX_t^d - IX_{t-1}) \dots \dots \dots (4.1.2)$$

Where:

δ = coefficient of adjustment ($0 < \delta < 1$). By substituting equation (4.1.1) into equation (4.1.2) the following model is derived:

$$IX_t^d = \alpha_0 + \beta_1 REER_t + \beta_2 Y_t + \beta_3 IDP_t + (1 - \delta) IX_{t-1} + \mu_t \dots \dots \dots (4.1.3)$$

On the supply side the desired level of exports are assumed to be influenced by the real exchange rate (REER), price of other inputs apart from labour (PI), and capacity factors (CU). This can be expressed as follows:

$$EX^s = \alpha_0 + \beta_1 REER_t + \beta_2 PI_t + \beta_3 CU_t + \mu_t \dots \dots \dots (4.2)$$

In log linear form the function becomes

$$LEX^s = \alpha_0 + \beta_1 lREER_t + \beta_2 lPI_t + \beta_3 lCU_t + \mu_t \dots \dots \dots (4.2.1)$$

Where:

LEX^s = is the logarithm of exportables.

lPI = Price of other inputs apart from labour (the proportion of manufacturing production in total output).

LOPEN = trade openness).

This specification assumes that the desired level of exports supplied is equal to the level of exports supplied. To get a disequilibrium export supply function, a partial adjustment mechanism is needed. We postulate the following adjustment mechanism for exports.

$$\Delta IX_t = \lambda (IX_t - IX_{t-1}) \dots \dots \dots (4.2.2)$$

Where:

λ = coefficient of adjustment ($0 < \lambda < 1$). By substituting equation (4.2.1) into equation (4.2.2), the following model is derived:

$$LEX_t = \alpha_0 + \beta_1 lREER_t + \beta_2 lPI_t + \beta_3 lCU_t + (1 - \lambda) lX_{t-1} + \lambda \mu_t \dots \dots \dots (4.2.3)$$

By substituting equation (4.1.3) into equation (4.2.3), the general export function for South Africa is derived as follows:

$$LEX_t = \alpha_0 + \beta_1 REER_t + \beta_2 Y_t + \beta_3 IPI_t + \beta_4 IOPEN_t + \beta_5 IDP_t + \mu_t \dots \dots \dots (4.3)$$

This will give us potentially important relationships among expected determinants and trade growth on which the estimation will apply.

We present a summary of the impact of each of these variables on exports in order to define equation (4.3). The impact of real exchange rate (REER) on exports is negative. An increase in exchange rate indicates an appreciation of the rand thereby resulting in a decrease in exports. Thus, a negative sign is therefore expected for the coefficient of exchange rate. A real depreciation of the exchange rate positively affects exports Sangita (2000) suggested that exchange rate depreciation will promote export volumes. An increase in foreign income will lead to an increase in exports and therefore the coefficient for foreign income is expected to have a positive sign.

The anticipated sign on domestic exports is positive. A higher price for exports raises profitability absolutely. Lower domestic prices and high input costs make selling domestically less attractive, so they promote export supply. The expected sign on domestic price is positive and this is supported by economic theory. Production capacity or capacity utilisation affects the export supply function in various ways. Higher GDP in foreign countries leads to higher demand in those countries. A foreign country can choose between the exporter's products, the foreign country's domestically produced alternatives and other countries' exports. The higher a country's production capacity, the higher is its export supply (Goldstein and Khan, 1985). This is supported by literature, hence Naude (2002) found that increases in South African GDP, labour productivity and manufacturing output in GDP were positively related to export volumes, while capacity utilisation was negatively related to exports.

As indicated earlier, the study uses quarterly time series data covering the period 1980 to 2012. Data on exports, trade openness and real effective exchange rate was obtained from the electronic database of QUANTEC while data on foreign income and input prices was obtained from the South African reserve bank website. To avoid the possibility of drawing up conclusions based on statistically spurious relationships, all data series were tested for stationarity. The Phillips-Perron and Augmented Dickey-Fuller unit root tests were used and test results are presented in Table 1. For the most part, both the Phillips-Perron and the Augmented Dickey-Fuller results suggested that the null hypothesis of the presence of unit root in the variables in levels could not be rejected at 1% significance level indicating that the variables are non-stationary in levels. However, when the variables are first differenced, the null hypothesis of the unit root in each of the series was rejected at 1% significance level. Therefore it can be concluded that all the variables are integrated of order one.

Table 1. Unit Root Tests Results

	Exports	REER	OPEN	PI	FY
	ADF				
Level	-3.14706	-3.37294	-2.38734	-2.97001	-3.05429
First Difference	- 6.01293***	- 5.49183***	- 5.58548***	- 8.33313***	- -4.01700**
	PP				
Level	-3.4448	-2.65013	-3.17460*	-2.69669	-3.14367
First Difference	- 16.3191***	- 9.89769***	- -15.683***	- 8.34336***	- 5.98022***

***, ** and * represent significance levels at 1 %, 5 % and 10 % respectively.

Main Findings

Given that variables in this study are integrated of the same order, cointegration tests are performed to determine the existence of a long-run equilibrium relationship amongst the variables. Cointegration of variables means that the linear combination of the variables is stationary even though the individual variables will be non-stationary.

Before performing cointegration tests, the study used the pair-wise correlation matrix to guide on the variable selection exercise. Table 2 shows results of the pair-wise correlation matrix used to determine the relationship between the five variables involved in this study. Results from the correlation matrix showed that all the explanatory variables except for real effective exchange rate are positively correlated with exports.

Table 2. Pair-Wise Correlation Results

	EX	REER	OPEN	PI	FI
EX	1.000000	-0.757936	0.936886	0.088607	0.952499
REER	-0.757936	1.000000	-0.685402	0.231174	-0.788232
OPEN	0.936886	-0.685402	1.000000	0.159407	0.849775
PI	0.088607	0.231174	0.159407	1.000000	-0.079922
FI	0.952499	-0.788232	0.849775	-0.079922	1.000000

The Johansen's (1991, 1995) maximum likelihood approach was used to test for cointegration. The Johansen cointegration technique used also requires an indication of the lag order and the deterministic trend assumption of the VAR before performing cointegration tests. The information criteria approach is applied as a direction to choose the lag order. In this study, the selection is made using a maximum of 3 lags in order to permit for adjustments in the model and accomplish well behaved residuals. Table 3 presents results for the lag length selection criteria which showed that almost all the criteria selected

lag 3 except for Schwarz and Hanna-Quinn information criterion that selected lag order 2. Therefore, the Johansen cointegration test is performed using 3 lags for the VAR.

Table 3. Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-2223.627	NA	6.97e+08	34.55236	34.66321	34.59740
1	-1237.487	1880.546	235.5480	19.65096	20.31604*	19.92120*
2	-1204.816	59.77088	209.4989	19.53203	20.75133	20.02745
3	-1173.228	55.34075*	189.9799*	19.42988*	21.20341	20.15050

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

Results from the much stricter Johansen cointegration trace test in Table 4 reflected that at least five cointegrating equations exist at 5% significance level. The null hypothesis of no cointegrating vectors is rejected since the trace (test) statistic of 202.7933 is greater than the critical value of approximately 69.8188 at 5% significance level. The next row of at most 1 shows again that the null hypothesis of no cointegration is rejected since the trace test statistic is greater than the critical values. This continues up to the last row, therefore we conclude that there are five cointegrating equations using the trace test. The maximum eigenvalue test in Table 5 confirms the results that we obtained from the trace test that there are 5 cointegrating equations. The null hypothesis of no cointegration is rejected since the maxi- eigen statistic of 66.4316 is greater than the critical value of approximately 33.87 in the first row. We reject the null hypothesis of no cointegration. Therefore, it can be concluded that there are five significant long run relationships between the variables (using both trace and maximum Eigenvalue test results). Since variables can either have short or long run effects, a vector error correction model (VECM) is used to disaggregate these effects.

Table 4. Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.407310	202.7933	69.81889	0.0000
At most 1 *	0.304837	136.3616	47.85613	0.0000
At most 2 *	0.244105	90.18324	29.79707	0.0000
At most 3 *	0.199039	54.64187	15.49471	0.0000
At most 4 *	0.188043	26.45514	3.841466	0.0000

Trace test indicates 5 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Table 5. Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.407310	66.43165	33.87687	0.0000
At most 1 *	0.304837	46.17839	27.58434	0.0001
At most 2 *	0.244105	35.54137	21.13162	0.0003
At most 3 *	0.199039	28.18673	14.26460	0.0002
At most 4 *	0.188043	26.45514	3.841466	0.0000

Max-eigenvalue test indicates 5 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

A vector error correction model (VECM) is useful when distinguishing between the long and short run impacts of variables so as to establish the determinants of exports in South Africa. The long run determinants of exports are shown in Table 6.

Table 6. Long Run Cointegrating Equation Results

Variable	Coefficient	Standard error	t-statistic
Constant	-8.3128	-	-
Exports(-1)	1.000	-	-
REER (-1)	-0.2433	0.07854	-3.09814
Openness (-1)	0.4703	0.1100	4.2731
Price of inputs (-1)	0.0117	0.4350	0.0271
Foreign income (-1)	1.1902	0.1163	10.2302

Several studies confirm the findings of this study for example, (Francis and Pasquale, 1996) on the export growth and its determinants: regarding some evidence for South Korea and Singapore, real effective exchange rate was statistically significant and it also carried a negative sign. In addition, a study by Naude (2000) confirms that real effective exchange rate carries a negative sign. This relationship is also confirmed in the econometric analyses by Fallon and De Silva (1994), Tsikata (1999) and Golub (2000) who estimated REER elasticities of exports between 0.63 and 1.4. According to this study, 1% decline in REER (1% improvement in exports) is estimated to raise manufacturing exports by between 0.24%.

Openness, a measure of the degree of trade openness is significant in regression. Trade openness determines how open an economy is to world trade and the income growth benefits that flow from trade. The positive coefficient of this variable in regression suggests that an increase in trade openness

increase exports and thus corroborates the theoretical relationship. The variable has a corresponding t-value of 4.2731. The size of the coefficient means that a 1% increase in trade openness increases exports by 0.4%. Trade openness is defined as the expenditure share of traded goods in overall consumption. Increasing openness means increasing foreign goods expenditure shares in both domestic production and consumption.

The foreign income variable (FI) was correctly signed and significantly different from zero. The estimated income elasticity implies a fairly large response of manufactured exports to changes in world income. The variable has a corresponding t-value of 1.1902. Results from this study are similar to the findings by Naude (2000) that a 1% increase in foreign income increased exports by 1.1% in South Africa. Foreign income has a positive impact on export demand suggesting that exports can be regarded as an engine of growth in South Africa. Gouws (2005) found that the impact of income on the volume of exports, although interesting, does not provide the critical information necessary to inform policy formulation.

(DLPI) is the price of other inputs apart from labour (the proportion of manufacturing production in total output). The inputs variable is statistically not different from zero. The variable has a corresponding t-value of 0.0272. This result is against the theoretical predictions that there is an inverse relationship between the price of inputs or cost of production and output. Moreover, the VECM results suggested evidence of error correction as shown in Table 7. The coefficient of the differenced dependent variable (-0.2931) is statistically significant with a t-value of approximately -2.577. This shows that the speed of adjustment is approximately 29.31%; implying that if there is a deviation from equilibrium, approximately 29.31% is corrected in one quarter as the variable moves towards restoring equilibrium.

Table 7. Error Correction Results

Variable	Coefficient	Standard error	t-statistic
COINT	-0.2931	0.1137	-2.5775
D(LExports(-1))	0.63413	0.1761	3.60101
D(LREER(-1))	-0.0345	0.0950	-0.36418
D(LOPEN(-1))	0.2876	0.1740	1.6527
D(LPI(-1))	0.7422	0.5312	1.3971
D(LFI(-2))	0.1289	2.4559	0.0525

To validate the parameter evaluation of the outcomes achieved by the model used in this study, diagnostic checks were performed. The model was tested for fitness using three main tests, these are, the language multiplier (LM) test for serial correlation, the White test for heteroskedasticity and the Jarque-Bera test for normality. Results presented in Table 8 suggested that there is no serial correlation, there is no conditional heteroskedasticity and there is a normal distribution in the model.

Table 8. Diagnostic Checks Results

Test	Null Hypothesis	t-Statistic	Probability
Language Multiplier (LM)	No serial correlation	36.35	0.06
White (CH-sq)	No conditional heteroskedasticity	16.260	0.802
Jarque-Bera (JB)	There is a normal distribution	1.525	0.466

Conclusions And Policy Recommendations

The South African economy experienced sluggish growth in exports in the 1980s. This was because of the sanctions and debt crisis. Despite the relatively poor performance during the latter part of the decade, South Africa did succeed during the period of 1992-1999. One clue as to how this was achieved was re-entering international markets following the start of the political transition in February 1990, and the General Export Incentive Scheme (GEIS).

This research makes a contribution to the policy debate by examining the major determinants of South African exports. The study highlights real effective exchange rate as one of the major determinants of exports therefore there is a need for policy measures to maintain stability in currency to keep the country competitive. The econometric results in this study show that an increase in real effective exchange rate has adverse effects on the volume and growth of exports so the country has to maintain its exchange rate. A stable currency is generally good for trade, as it makes business more predictable, reduces risks and means that consumer prices can be kept stable hence artificially high exchange rate can put exporters at a disadvantage.

South Africa should facilitate trade in a new environment through economic interdependence and globalisation. This can be done through aggressive advertising in foreign markets and offering better deals. In other words, the country should develop new markets for products by adding value to its exports. Consequently, increasing market access for South African goods should be advanced vigorously. South Africa should vigorously structure its industrial and trade policy so as to create an environment in which firms can optimise production of exportable products. This can be done in a number of ways:

- The country should create a tax regime which encourages production and exports of goods and services. In addition, the country should improve the education of the population (through better school provision and improved higher education).
- Policy makers should highlight the need to locate factories closer to ports, so that transportation costs will be less. The less costs will be reflected in the lower prices of the goods to be exported. The international market will find South African goods to be a bargain and will buy more.
- The government should offer export promotion programmes that are geared towards development. For example, training programmes, underwriting trade fairs, market investigation study support so as to reduce the costs of exporting while at the same time providing management with information needed to boost exports.
- The government should grant financial assistance (in the form of subsidies) to exporting firms, hence it is essential that South Africa understand that the exporting industries have greatest competitive potential.
- The country should increase government expenditure by maintaining sound and stable macroeconomic policy capable of supporting growth of exports destined for the world markets.

The determinants of exports must be understood for sound export growth strategies in South Africa and growth of exports in the global markets.

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