

# Testing Export-led Growth Hypothesis in Kenya: An ADRL Bounds Test Approach

Mohan, Ramesh and Nandwa, Boaz

Bryant University

 $3 \ {\rm November} \ 2007$ 

Online at https://mpra.ub.uni-muenchen.de/5582/ MPRA Paper No. 5582, posted 04 Nov 2007 UTC

## Testing Export-led Growth Hypothesis in Kenya: An ADRL Bounds Test Approach

**Ramesh Mohan** Bryant University

**Boaz Nandwa**<sup>\*</sup> Yale University

#### Abstract

Over the years, there has been extensive research on the relationship between a country's export and economic growth with ambiguous and mixed results. Instead of using the conventional cointegration approach, this paper re-examines the export-led growth hypothesis for Kenya using autoregressive distributed lag (ADRL) bounds technique. This approach is capable of testing for the existence of a long-run relationship regardless of whether the underlying time series are individually I(1) or I(0). This enhances the stability and robustness of our results. In addition, we examine the Granger causality between exports and economic growth over the sample period. The results indicate that there exists a long-term relationship between GDP growth and exports, and it is unidirectional, running from exports to GDP growth. Hence, in the case of Kenya, export enhancing policies are recommended in promoting and sustaining economic growth.

JEL Code: C32, F20, F41, O11

Key Words: Exports, economic growth and causality.

<sup>\*</sup>*Correspondence author*: Boaz Nandwa, Economic Growth Center, Yale University, 27 Hillhouse Avenue, New Haven CT 06511. E-mail: <u>boaz.nandwa@yale.edu</u>.

#### **1. INTRODUCTION**

Since its independence in 1963 there has been considerable progress in the trade reform in Kenya, advancing from import substitution from the colonial master to an export-oriented economy. Export led growth (ELG) policies of the successful East Asian economies is partly the motivation for Kenya to embark upon it.<sup>1</sup> Kenya's export market is mainly concentrated on primary products. The agriculture sector contributes about 25% of Kenya's GDP and accounts for 65% of total export earnings. Tea, horticulture, coffee, pyrethrum, sisal, fishery, and leather products are the country's major agricultural exports. The focus of Kenya's exports on unprocessed primary products is mainly due to low levels of education among population and availability of abundant natural resources. Kenya, a late starter in embracing industrialization, depends largely upon the export sector as envisioned by the Kenyan Finance and Planning Ministry<sup>2</sup>. The African region, especially Common Market for Eastern and Southern African States (COMESA), is the major market for Kenya's exports, followed by the European Union. The African Growth and Opportunity Act 2000 (AGOA) provides incentives for African countries to foster barrier free exports and to build free markets. Regional blocks such as COMESA, SADC, ECOWAS, and the respective Central and West African CFA franc zones are also key factors to promote export via reduced intra-regional barriers. Through AGOA, Kenya's Export Promoting Zones (EPZs)<sup>3</sup> also expanded largely with duty and quota free access for exports to capture a larger market. This creates employment opportunities and

<sup>&</sup>lt;sup>1</sup> Export Promotion Council of Kenya <u>http://www.epckenya.org</u>

<sup>&</sup>lt;sup>2</sup> Government of Kenya, (June, 2001). *Poverty Reduction Strategy Paper for the Period 2001-2004*, Vol. I & II, Ministry of Finance and Planning, Nairobi, Kenya.

<sup>&</sup>lt;sup>3</sup> The main objective of EPZs is to promote the export-oriented firms by providing incentives such as import duty exemption for inputs, income tax break etc.

cultivates development of other sectors in the economy. The five major destinations of exports by country in 2004 include: Uganda (17.29%), U.K. (10.45%), Tanzania (8.36%), Netherlands (7.97%) and Pakistan<sup>4</sup> (5.30%). Appendix 1 shows Kenya's value of exports by sectors 1997-2004 and Appendix II lists major destinations of Kenya's exports by country 1997-2004.

To diversify the exports, Kenyan National Export Strategy (NES) have identified six out of 14 sectors to focus namely: horticulture (flowers, fruits and vegetables) and other agriculture, textiles and clothing, commercial crafts and SMEs, fish and livestock products, other manufacturing, and services other than tourism<sup>5</sup>. Despite the initiative towards diversification, Kenya's exports predominantly depend upon primary agricultural products (Were at. al, 2002). Wood and Mayer (1998) in their UNCTAD study contended that the best short run development strategy for African countries is to increase the level of primary exports (processed and unprocessed) followed by a long-term development goal.

This paper was guided by three research objectives: (i) To re-examine the exportled growth (ELG) hypothesis for Kenya using a technique capable of testing for the existence of a long-run relationship regardless of whether the underlying time series are individually I(1) or I(0); ii) To examine the contribution of export sector to the economic growth and development of Kenya; iii) To examine Granger causality between exports and economic growth over the sample period.

The rest of the paper is structured as follows. Section two summarizes some of the literature on export-growth relationships. Section three presents empirical methodology.

<sup>&</sup>lt;sup>4</sup> Pakistan is a major tea importer from Kenya.

<sup>&</sup>lt;sup>5</sup> Export Promotion Council of Kenya <u>http://www.epckenya.org</u>

Section four discusses the empirical results and limitations of the study followed by policy implications and conclusion.

#### **2. LITERATURE REVIEW**

Theoretically, the ELG hypothesis suggests that there is a positive link between export and growth. The fundamental idea of traditional international trade and development theory is that export-oriented policies would accelerate economic growth. The basic idea of this outward-oriented development policy is that export expansion leads to an increase in the quantity and quality of production of goods and services to sell abroad. The country would enjoy economies of scale due to specialization, which in turn has a positive impact on labor productivity, capital accumulation and efficiency, technological improvement, thus enhancing the country's income. However, the emergence of growth theories lately suggests that an inverse relationship exists; more specifically referred as growth driven exports (GDE). To explore the correlation between export and economic growth, this study re-examines the export-led growth hypothesis for Kenya using the bounds test approach. Further, to analyze whether the causality is from export to economic growth or vice versa, this study uses Granger causality to compare the unidirectional/bi-directional or no causality link between exports and economic growth.

Jung and Marshall (1985) examined the causality of exports and economic growth in developing countries. Four African countries were included in the sample of the study. The results in this paper showed that among the African countries, only in Kenya did economic growth play a positive role in boosting exports. Fosu (1990) investigated the

4

role of export growth in less developed African countries. Using a pooled time-series for the period of 1960-1970 and 1970-1980, the author found that exports have a positive and significant effect on economic growth in 28 African LDCs. However, in comparing the non-African LDCs with African LDCs, the study concluded that the impact of exports on economic growth is comparatively smaller in the African sample.

Ahmad and Kwan (1991) looked into the causal relationship of exports and economic growth in 47 countries in Africa. By utilizing pooled time series and cross sectional data from 1981-1987, the study tested Granger causality based on an error correction model. The results generally supported the notion that no causation exists between exports and economic growth (or vice versa) in the African countries. However, the authors showed that in some low-income African countries, weak causality runs from economic growth to exports. Ukpolo (1994) studied the linkage of export and economic growth using eight low-income African countries over the period 1969-1988. Based on the time-series regression results, the author concluded that there is a positive relationship between non-fuel primary exports and economic growth. However, the regression results (including Kenya) present some inconclusive outcome on the positive role of manufactured exports on economic growth.

Amoateng and Amoako-Adu (1996) used the trivariate causality analysis by including the external debt into the export-economic growth Granger causality regression. Using data for Low-Income Africa, Middle-Income Africa, Africa - south of Sahara, and the entire sample, (for the period of 1971-1990, 1971-82 and 1983-90), the relationships among GDP growth, export revenue growth and foreign debt service was

examined in this study. The authors found bidirectional causality between external debt servicing, economic growth and exports.

Giles and Williams (2000) did a comprehensive review of literature of about 150 applied papers on ELG from 1963-1998. The literature was divided into three groups: cross-country correlation coefficients, cross sectional, and individual country-specific time-series. Two-third of the papers under review used time series, and about 70 of them focused on the dynamic relationship of exports and economic growth using the concept of Granger causality. The authors presented somewhat mixed results of ELG studies done so far with diverse and contradicting conclusions.

#### **3. EMPIRICAL FRAMEWORK**

In their seminal work, Pesaran et al. (2001) pointed out that as long as there exist both I(1) and I(0), a conventional cointegration test on the long-run equilibrium will produce biased results in the long-run interactions between the variables. In order to eliminate such bias (due to the co-existence between I(1) and I(0)), we implement the autoregressive distributed lag (ARDL) model, also known as bounds testing approach suggested by Pesaran et al. (2001). This framework is useful because we can examine both the short-run adjustment and long-run relationships between exports and imports and the direction of their causality. Thus, we construct a vector autoregression of order p, VAR(p), for the following export-led growth function:

$$y_t = \varphi + \sum_{i=1}^p \beta_i y_{t-1} + \varepsilon_t \tag{1}$$

where  $y_t$  is a vector of both the dependent variable real GDP ( $z_t$ ) and exogenous variables ( $x_t$ ),  $\beta_i$  is a matrix of VAR parameters to be estimated and  $\varepsilon_t$  is a white noise error term.

According to Pesaran et al. (2001), the dependent variable must be I(1), while the exogenous variables can be either I(1) or I(0). Based on equation (1), we can develop a vector error correction model (VECM) as:

$$\Delta y_{t} = \varphi + ct + \psi y_{t-1} + \sum_{i=1}^{p-1} \gamma_{i} \Delta z_{t-1} + \sum_{i=0}^{p-1} \theta_{i} \Delta x_{t-1} + \mathcal{E}_{t}$$
(2)

where  $\Delta$  is the difference operator and the long-run multiplier matrix,  $\gamma$ , can be partitioned as:

$$\gamma = \begin{bmatrix} \gamma_{zz} & \gamma_{zx} \\ \gamma_{xz} & \gamma_{xx} \end{bmatrix} = -\sum_{k=j+1}^{p} \phi_{k}$$
(3)

The diagonal elements of the matrix are unrestricted, thus the selected series can either be I(1) or I(0). This is because it allows for the possibility that each of the series can either be I(1) or I(0). If  $\gamma_{zz} = 0$ , then z is I(1), while if  $\gamma_{zz} < 0$ , then z is I(0). As our research interests concentrate on the long-run effect of exports on growth, we impose the restriction that ( $\gamma_{zz} \neq 0$ ). This implies that exports are a *long-run force* for economic growth in Kenya<sup>6</sup>.

It should be noted that the VECM outlined in equation (2) is important in testing for the number of cointegration between dependent variable and the exogenous variables according to Johannsen (1988). In addition, following Pesaran et al. (2001), if we impose the restrictions that  $\gamma_{xz} = \gamma_{zx} = 0$ ,  $\varphi \neq 0$  and c = 0 (i.e. no trend), then the estimated exportled growth function can be stated using the unrestricted error correction model (UECM) as:

<sup>&</sup>lt;sup>6</sup> To test the validity of this assumption, we test for the exclusion of the lagged level of exports in the growth equation of the VECM specification. The test results are supportive of the *long-run force* assumption (results not reported here but available from the authors upon request).

$$gdp_{t} = \theta_{0} + \theta_{1}gdp_{t-1} + \theta_{2}\exp_{t-1} + \theta_{3}imp_{t-1} + \theta_{4}exr_{t-1} + \theta_{5}labr_{t-1} + \sum_{i=1}^{p}\theta_{6}\Delta gdp_{t-i} + \sum_{i=1}^{p}\theta_{7}\Delta \exp_{t-i} + \sum_{i=1}^{p}\theta_{8}\Delta imp_{t-i} + \sum_{i=1}^{p}\theta_{9}\Delta exr_{t-1}\sum_{i=1}^{p}\theta_{10}\Delta labr_{t-i} + \xi D_{t} + \eta_{t}$$
(4)

where gdp is the real GDP, exp is the exports, *imp* is the imports, exr is the exchange rate and *labr* is the labor force, while  $D_t$  is a dummy denoting the period of economic liberalization in Kenya (i.e. the year 1985). The error term,  $\eta_t$ , is independent and identically distributed (*iid*). All the variables are expressed in their natural logarithms.

The long-run elasticities obtained from estimating equation (4) are the coefficients of the one lagged explanatory variable (multiplied by a negative sign) divided by the coefficient of one lagged dependent variable (Bardsen, 1989). For instance, the long-run export and import elasticities are  $(\theta_2/\theta_1)$  and  $(\theta_3/\theta_1)$  respectively. On the other hand, the short-run adjustments are captured by the coefficients on the differenced ( $\Delta$ ) variables. The null and alternative hypotheses tested are:

$$H_0: \theta_1 = \theta_2 = \ldots = \theta_5 = 0$$
 (no long-run relationship). (5)

$$H_1: \theta_1 \neq \theta_2 \neq \dots \neq \theta_5 \neq 0$$
 (long-run relationship exists). (6)

We used the Wald test to impose restrictions on the exogenous variables. The computed F-statistics are then compared to the critical values in table CI(iii) found in Pesaran et al. (2001). Hence, the lower bound critical values assume that the explanatory variables,  $x_t$ , are integrated of order zero (i.e. I(0)), while the upper critical values assume that the  $x_t$  are integrated of order one (i.e. I(1)). If the computed F-statistic is smaller than the lower bound value, then we reject the null hypothesis and hence conclude that there is no long-run relationship between economic growth and exports. On the other hand, if the computed F-statistic is larger than the upper bound value, then there is long-run

relationship between economic growth and exports. It should be noted that ambiguous results can arise when the computed F-statistic falls between the lower and upper bound values.

#### **4. ESTIMATED RESULTS**

Except for the exchange rate series, which was obtained from International Financial Series (IFS), IMF CD-ROM, the rest of the series was obtained from the World Bank's World Development Indicators (WDI) CD-ROM, 2005. The sample period extends from 1970-2004. To avoid spurious regressions, we first conduct a stationarity test using the Augmented Dickey Fuller (ADF) test proposed by Dickey and Fuller (1979).

$$\Delta y_{t} = c + (\rho - 1)y_{t-1} + \sum_{i=1}^{k} \gamma_{i} y_{t-1} + \mathcal{E}_{t}$$
(7)

The unit root test is performed on both the levels and first differences of the variables. Another unit root test is the Phillips-Perron (PP) test proposed by Phillips and Perron (1988):

$$y_t = \alpha_0 + \alpha y_{t-1} + e_t \tag{8}$$

The difference between these two approaches lies in their treatment of any "nuisance" serial correlation. That is, the PP tends to be more robust to a wide range of serial correlations and time-dependent heteroskedasticities. In these tests, the null hypothesis of non-stationarity (presence of unit root) for ADF and PP are given by  $\rho = 0$  and  $\alpha = 1$  respectively. Rejection of the null implies stationarity of the series. The unit roots test results in levels and first differences are presented in table 1. The results show

that the null hypothesis (that the nominal exchange in levels is non-stationary) is not rejected for all the countries. However, the null is rejected for the first difference. This implies that the series is integrated of the first order.

Table 1: Unit Root Tests							
	ADF T	ests, $\tau(\rho)$	PP test, $z(t_{\alpha})$				
Variables	Levels	First	Levels	First diff.			
	diff.						
$gdp_t$	-1.23(2)	-9.44 (5)**	-0.97(4)	19.23(2)***			
$exr_t$	-2.40(4)	-5.22 (2)***	-1.04(6)	20.01(5)***			
$labr_t$	-2.85(2)	-8.88(4)***	-0.18(3)	18.73(2)***			
$exp_t$	-1.80(3)	-10.57 (6)***	-0.77(2)	24.11(4)***			
$imp_t$	-0.53(5)	-9.97 (4)***	-1.34(4)	15.42(2)***			

*Notes*: The critical ADF and PP values are taken from Dickey and Fuller (1981) and Philips and Perron (1988) respectively. The regressions were done with a constant term only and the lag length, based on AIC, are in brackets which are selected to eliminate serial correlations, while \*\*\* and \*\* indicate 1% and 5% significance level, respectively. Seasonal dummies were included to control for seasonal unit roots (not reported here but available from the author upon request).

Table 2 shows the results from estimating equation (4). To obtain the results in table 2, we used the general-to-specific approach in estimating (4). This is based on selecting coefficients with significant lags using Akaike Information Criterion (AIC). The  $R^2$  and adjusted  $R^2$  indicate a good fit since the model explains more than 80% of the variations. Further, we implement diagnostic tests, for instance, testing for serial correlation (Breusch-Pagan LM), heteroskedasticity (ARCH) and normality test (Jarque-Bera). These test results shows that our model is correctly specified.

	Table 2: Estima	lea Coefficients	
Variables	Coefficient	P-values	t-statistics
Constant	4.631*	0.00021	2.860
$gdp_{t-1}$	0.143**	0.0001	5.196
$exr_{t-1}$	0.042*	0.0015	2.942
labr <sub>t - 1</sub>	0.036	0.0491	1.053
$exp_{t-1}$	0.451**	0.0001	6.202
imp <sub>t - 1</sub>	-0.042	0.6209	-3.172
Dummy <sub>t</sub>	2.519**	0.0001	4.118
$\Delta exr_t$	-0.072*	0.0023	-2.741
$\Delta exr_{t-2}$	0.186*	0.0008	2.709
$\Delta exr_{t-3}$	0.143*	0.0012	2.166
$\Delta exr_{t-5}$	0.008	0.0732	1.298
$\Delta labr_t$	0.012	0.6210	0.962
$\Delta labr_{t-2}$	0.038	0.0582	0.574
$\Delta labr_{t-4}$	0.117*	0.0017	5.219
$\Delta exp_t$	0.216**	0.0001	2.513
$\Delta exp_{t-2}$	0.162*	0.0044	3.167
$\Delta exp_{t-3}$	0.095*	0.0026	2.930
$\Delta exp_{t-4}$	0.027*	0.0009	2.578
$\Delta exp_{t-6}$	0.150	0.9612	0.388
$\Delta imp_t$	-0.311	0.4613	-1.571
$\Delta imp_t$	-0.172*	0.0011	-2.861
$\Delta imp_{t-2}$	0.048	0.6604	0.023
$\Delta imp_{t-4}$	0.139	0.0971	1.372
$R^2$	0.859		
Adjusted R <sup>2</sup>	0.813		
RESET	1.4023		
LM(2)	15.437		
LM (4)	18.312		
JB	0.545		
ARCH (2)	0.428		
ARCH (2)	0.631		

**Table 2: Estimated Coefficients** 

*Notes*: The \*\* and \* denotes significance at the 5 and 10 percent level respectively. RESET test is the Ramsey's Regression Specification Error Test, LM is the Breusch-Pagan serial correlation test, JB is the Jarque-Bera normality test and ARCH tests for the presence of heteroskedasticity

According to the reported results, we find that exports and labor force have a positive and significant relationship. For example, a 1% increase in exports and labor force will lead to 4.5% and 0.36% increase in GDP growth respectively. Similarly, exchange rate depreciation has a positive and significant relationship with GDP growth.

This is because devaluation of a country's currency makes its exports competitive (cheap) on the international market<sup>7</sup>. In addition, due to the increase in receipts from exports, there is an increase in spending on consumption and investment in the economy, and through the multiplier effect, leads to higher growth. Thus 1% depreciation in Kenyan Shillings leads to a decline of 0.42% in GDP growth. The impact of imports on GDP growth is negative but insignificant. This negative relationship has been used over the years to argue for home industry protection, especially those engaged in exports. However, as the insignificant results show, this argument does not hold. The dummy variable is positive and significant, indicating the presence of a structural break in the series. By taking the value of 1 after economic liberalization and zero otherwise, the coefficient on the dummy shows that economic liberalization has helped in improving competitiveness of the Kenyan economy, raising its growth rate.

In testing for the long-run relationship, we follow the bounds test approach suggested by Pesaran et al. (2001) and fail to reject the null hypothesis at a particular significance level when our sample test statistic is below the associated lower critical value. The null hypothesis is then accepted regardless of whether the underlying orders of integration of GDP growth and exports are I(0) or I(1). On the other hand, we reject the null in favor of the alternative that there exists a long-run relationship between GDP growth and exports when our test statistic exceeds the relevant upper critical value. Similarly, the null is rejected regardless of whether the underlying integration of GDP growth and exports are I(0) or I(1). Finally, when the reported test statistic falls in between the upper and lower bounds value, we interpret the results as being inconclusive

<sup>&</sup>lt;sup>7</sup> We further carried out test of the validity of the J-Curve for Kenya due to exchange rate devaluation. We found that there was evidence of the J-Curve effect during early 1990s.

at the given significance level. The bounds test statistics reported in table 3 shows that the null hypothesis in (5) is rejected at the 5% significance level in favor of the alternative that, there exits a long-run relationship between exports and GDP growth.

Table 3: ADRL Bounds Test						
Lower Bound Value	Critical Value					
4.25	6.13	1%				
3.16	4.79	5%				
2.74	3.62	10%				

*Notes:* Computed F-statistic = 19.043 (with lags, k = 2, 4, 6, 8 and 12).The upper and lower bounds were obtained using unrestricted intercept with no trend. The critical values are obtained from Pesaran et al. (2001), table CI (iii).

Finally, having established that there exists a long-run relationship between exports and GDP growth, we report in table 4 estimates of the parameters which describe the long-run relationship between GDP growth and exports, exchange rate, imports and labor force. These estimates show the long-run response of GDP growth to the various regressors. We find evidence consistent with the export-led growth hypothesis that over the long-term an increase in 1% of exports will lead to a higher growth rates in an economy.

Table 4: Long-run Elasticities				
Exports	1.257**			
Exchange Rate	0.683*			
Imports	-0.312			
Labor force	0.491*			
M . TT1 44 14 1				

*Notes*: The \*\* and \* denotes significance at the 5 and 10 percent level respectively.

Using the Wald test, the causality tests are conducted by restricting the coefficient with its lags (GDP growth or exports) to zero. Thus, the null hypothesis of no causality between GDP growth and exports is rejected, we conclude that exports Granger causes GDP growth, and not vice versa. The results are reported in table 5.

Table 5: Causality Tests	6
Exports caused GDP growth	5.041**
	(3.390)
GDP growth causes Exports	0.372
	(1.618)
Notes: The ** denotes significance a	t the 5
percent level.	

We find that the reported results confirm the validity of export-led growth hypothesis for Kenya. That is, exports indeed lead to higher GDP growth!

#### 5. CONCLUSION

Controversy still exists on whether exports lead to higher economic growth or vice versa. This paper implemented the ARDL Bounds test approach in testing the export-led growth hypothesis for Kenya. Given the instability inherent in low-income countries time series data, this technique allow testing for the existence of the long-run relationship between exports and GDP growth without having to specify whether the two series are individually I(0) or I(1). This represent an improvement over the standard cointegration analysis which requires the assumption that the two series must both be I(1). We found evidence in support of the export-led growth hypothesis for Kenya. In addition, we found that the direction of causality runs from exports to GDP growth and not the other way round. This has important policy implications in terms of creating conducive macroeconomic and institutional environment to enhance Kenyan exports.

## Appendix I: Value of Exports, 1997-2004 (KSh. Billions)

ITEM	1997	1998	1999	2000	2001	2002	2003	2004*
Horticulture	13.75	14.94	17.64	21.22	19.85	28.33	36.49	39.54
Tourism	16.86	12.82	21.36	21.55	24.24	21.73	25.80	39.20
Tea	22.80	32.97	33.10	35.20	34.49	34.38	33.01	36.07
Iron and Steel	5.20	3.82	2.76	2.61	3.67	4.12	4.05	7.53
Coffee	16.86	12.81	12.00	11.70	7.46	6.54	6.29	6.94
Soda Ash	2.29	1.24	1.30	1.44	1.99	2.13	2.39	5.36
Fish and Fish Preparations	3.08	2.79	2.27	2.95	3.86	4.21	4.01	4.18
Articles of Plastics	1.74	2.00	1.57	2.10	2.57	2.99	2.60	3.14
Essential Oils	3.27	3.36	3.36	2.12	2.47	2.45	2.84	3.12
Tobacco and Tobacco manufactures	1.73	1.61	1.55	2.17	2.89	3.45	2.98	2.95
Animal and Vegetable Oils	2.20	2.40	2.19	1.20	1.30	2.28	2.41	2.51
Medicinal and Pharmaceutical Products	1.80	1.66	1.66	2.35	1.57	1.70	2.15	2.27
Sugar Confectionery	0.85	0.83	0.87	1.33	1.58	1.88	1.83	2.01
Cement	1.33	1.44	1.25	1.35	1.03	1.48	1.98	1.96
Footwear	1.14	0.91	1.12	1.14	1.20	1.55	1.46	1.79
Petroleum Products	7.16	9.13	9.60	9.43	12.35	3.90	0.07	1.10
Maize	0.06	0.13	0.49	0.03	0.02	1.69	0.13	0.25
All Other**	29.24	22.39	22.68	21.43	23.14	28.32	32.05	38.35
<b>Total Exports</b>	131.32	127.26	136.77	141.32	145.67	153.12	162.51	198.26

Source: CBS; Economic Survey, 2005 Compiled by the Export Promotion Council (EPC)

\* Provisional figures

<sup>\*\*</sup> Mainly manufactured goods such as textiles, margarine, cleansing materials, confectionery & breakfast cereals, stationery, pharmaceuticals, beverages (beer & spirits), construction & building materials, body care products, industrial chemicals, engineering products (e.g. metal frames & bus bodies)

DESTINATION	1997	1998	1999	2000	2001	2002	2003	2004*
Uganda	18.20	19.47	21.09	24.19	30.04	31.28	30.67	37.06
United Kingdom	13.88	16.23	16.98	18.66	16.38	19.63	21.53	22.41
Tanzania	16.46	16.12	13.65	11.09	13.51	14.18	14.59	17.92
Netherlands	5.69	5.28	6.14	7.29	9.91	11.03	14.14	17.09
Pakistan	5.17	8.26	9.06	9.99	8.88	8.34	9.15	11.36
Dem. Rep. Congo	2.47	2.01	2.03	3.04	4.29	4.95	5.37	7.83
Egypt	3.06	5.69	6.71	7.10	7.12	6.75	5.45	6.92
Rwanda	3.78	3.04	3.11	3.5	3.52	4.31	6.01	6.19
Germany	7.65	5.55	5.79	5.58	5.14	4.38	5.33	4.57
U.S.A.	3.40	3.06	2.67	2.8	3.41	3.38	2.80	4.50
India	1.19	1.83	1.74	1.36	2.36	2.54	2.50	4.15
France	2.57	1.89	2.29	2.14	2.31	2.37	3.10	3.59
Somalia	2.00	1.84	2.03	2.94	1.65	4.56	3.74	3.28
Belgium	1.87	1.70	1.56	1.84	2.00	2.29	2.33	2.47
Ethiopia	2.17	1.54	1.41	2.06	2.15	1.98	1.62	2.22
Italy	2.25	1.75	1.64	1.52	1.11	1.76	1.67	1.77
All Other	29.80	29.46	25.94	30.78	33.81	48.10	55.65	61.08
TOTAL EXPORTS	121.61	121.18	122.11	134.52	147.59	169.3	183.2	214.40

### Appendix II: Major Destinations of Kenya's Exports by Country, 1997 - 2004 (KSh. Billions)

Source: CBS; Economic Survey, 2005 Compiled by the EPC

\* Provisional figures

#### REFERENCES

Ahmad, J., and Kwan, A.C.C. (1991), "Causality Between Exports and Economic Growth: Empirical Evidence From Africa, *Economic Letters*," Vol. 37, pp. 243-248.

Amoateng, K., and Amoako-Adu, B. (1996), "Economic Growth, Export and External Debt Causality: The Case of African Countries," *Applied Economics*, 28, pp.21-27.

Bardsen, G. (1989), Estimation of Long Run Coefficients in Error Correction Models," *Oxford Bulletin of Economics and Statistics*, Vol. 51(3), pages 345-50.

Dickey, D. A. and Fuller, W. A. (1979), "Distribution of the Estimators for Autoregressive Time Series with a Unit Root," *Journal of the American Statistical Association*, 77, pp.427-431.

Fosu, A. K. (1990), "Exports and Economic Growth: The African Case, World Development," Vol. 18, No. 6 pp. 831-35.

Giles, J.A. and Williams, C.L. (2000), "Export-Led Growth: A Survey of the Empirical Literature and Some Noncausality Results, Part 1," *The Journal of International Trade and Economic Development*, Vol. 9, pp.261-337.

Johannsen, S. (1988), "Statistical Analysis of Cointegration Vectors," *Journal of Economic Dynamics and Control*, 12(6), pp.231-254.

Jung, W.S., and Marshall, P.J., (1985), "Exports, Growth and Causality is Developing Countries," *Journal of Development Economics*, Vol. 18, pp. 1-12.

Pesaran, M.H., Shin, Y., Smith, R.J. (2001), "Bounds Testing Approaches to the Analysis of Level Relationships," *Journal of Applied Econometrics*, Volume 16, Issue 3, pp. 289 - 326

Phillips, P.C. and Perron, P. (1988), "Testing for Unit Roots in Time Series Regression," *Biometrica*, pp. 335-346.

Ukpolo, V. (1994), "Export Composition and Growth of Selected Low-Income African Countries: Evidence from Time-Series Data," *Applied Economics*, 26, pp. 445-449.

Were, M., Ndung'u, N.S., Geda, A., and Karingi, S.N. (2002), "Analysis of Kenya's Export Performance: An Empirical Evaluation," *Kipra Discussion Paper No.* 22, Nov. 2002 Kenya Institute for Public Policy Research and Analysis, Nairobi, Kenya.

Wood, A., and Mayer, J. (1998), "African Development in a Comparative Perspective," *UNCTAD Series*, Study No. 4, October 1998.