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Sinha, Dipendra

Ritsumeikan Asia Pacific University, Japan and Macquarie University, Australia

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DO EXPORTS PROMOTE SAVINGS IN AFRICAN COUNTRIES?

Dipendra Sinha
Macquarie University and Yale University

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Abstract: Maizels (1968) hypothesizes that exports contribute more to savings than the non-export part of GDP. In this paper, we study the Maizels' hypothesis for 17 African countries using time series data. The study finds general support for the Maizels' hypothesis.

JEL Classification: C22, F14, O11, O54

Introduction

The African continent consists of a variety of countries in terms of their export orientation and economic growth. The countries differ significantly with respect to size and resource endowments. Africa's share in the world trading system deteriorated throughout the 1980s. Generally speaking, African countries have relied on non-manufactured products with regard to exports. This dependence on the non-manufacturing exports is one of the primary reasons for the poor trade performance (Euromonitor, 1989, p. 139). Africa relies more heavily on exports to developed countries in North America and Western Europe than developing countries in other parts of the world. Similar patterns can also be found in imports as well. Trade among African countries has generally been lower than 5%. This figure is much lower than intra-regional trade in other parts of the world.

Maizels' (1968) hypothesis is that exports contribute more to savings than the non-export part of GDP. According to Maizels, there are a number of reasons for this phenomenon. First, a more efficient resource allocation is likely to result from increased trade opportunities. Second, increased trade also has a multiplier

effect. Third, there are a number of indirect educative effects by which exports contribute to savings (Lee (1971)). These are (a) the propensity to save is higher in the export sector than in the non-export sector (b) government savings may rely on taxes on international trade (c) a sustained growth in exports is likely to lead to an increase in the marginal propensity to save in other sectors. Maizels estimates savings functions for a number of countries to test his hypothesis and finds general support for his hypothesis. However, Maizels was constrained by the lack of data for a reasonable period of time since his study was published in 1968. To test Maizels' hypothesis, we need to estimate two savings functions. The first one is the traditional Keynesian saving function given by

$$\text{The function is } S_t = a_0 + a_1 Y_t + e_t \quad (1)$$

where S_t is current saving and Y_t is current GDP. The second is of the following form:

$$S_t = b_0 + b_1(Y_t - X_t) + b_2 X_t + U_t \quad (2)$$

where X_t stands for export. In the growth models of Solow (1956) and Swan (1956), savings play a very crucial role in economic growth of a country. Thus, if it is found that exports contribute more to saving than nonexport part of GDP in Africa, there is yet another reason for promoting exports in Africa.

Only a handful of other studies have tested Maizels' hypothesis. These have included Kim (1990), Lee (1971) and Wilbur and Haque (1992) and Sinha (1996).

The earlier studies such as Kim, Lee and Wilbur and Haque do not investigate the unit root properties of the variables and might have estimated spurious regressions. Wilbur and Haque include a number of African countries in their regressions. Just like other studies, they did not use the cointegration methodology. In addition, they use logarithmic transformations of the variables without explaining why such transformations are necessary. Our study differs from other previous studies in the following ways. First, we use the recent advances in time series econometrics. Thus, we explore the unit root properties of the variables before estimation to avoid estimating spurious relationships (see Phillips (1986)). Second, we use a longer time frame for all countries.

We use annual data for the following 17 African countries: Burundi (1965-96), Cameroon (1968-90), Cote d'Ivoire (1960-96), Egypt (1952-95), Ethiopia (1965-96), Kenya (1964-96), Madagascar (1964-96), Morocco (1952-96), Niger (1963-96), Nigeria (1953-94), Senegal (1967-96), Sierra Leone (1956-96), South Africa (1948-96), Swaziland (1967-96), Tanzania (1965-96), Tunisia (1962-96) and Zimbabwe (1964-91). We were dictated by the availability of data for a reasonable length of time in our choice of countries. All data are from the *International Financial Statistics* of the International Monetary Fund (1997). Following previous studies, we define the variables as follows. Gross domestic saving (S) is defined as gross domestic product (Y) minus government consumption and private

consumption. Nonexport part of gross domestic product ($Y - X$) is simply gross domestic product minus export (X). All variables are expressed in real terms.

A brief description of the countries with regard to the variables under study can be found in Appendix I of the paper.

Econometric Methods and Empirical Results

The first step in our analysis is to analyze the unit root properties of the variables. We use the Augmented Dickey-Fuller (ADF) test, which estimates the following equation:

$$\Delta y_t = c_1 + \omega y_{t-1} + c_2 t + \sum_{i=1}^p d_i \Delta y_{t-i} + v_t \quad (3)$$

In (3), $\{y_t\}$ is the relevant time series, Δ is a first-difference operator, t is a linear trend and v_t is the error term. The above equation can also be estimated without including a trend term (by deleting the term $c_2 t$ in the above equation). The null hypothesis of the existence of a unit root is

$H_0: \omega = 0$. The results of the unit root tests on the levels of the variables are in Table 1. The results show that except for the following cases, all variables in their levels have a unit root: S for Morocco, Y for South Africa; X for Burundi, Madagascar, Senegal and Sierra Leone; Y-X for South Africa, Swaziland and Zimbabwe. The results of the unit root tests on the first differences of the variables are in Table 2. The results show that except for the following cases, all variables are stationary in their first differences (i.e., the variables are integrated of order 1):

Y for Cameroon, Ethiopia and Swaziland; X for Cameroon; Y-X for Cameroon and Ethiopia. In all such cases, unit root tests were performed on the second differences of the variables (not shown here). In all cases, the second differences of the variables were found to be stationary. If it was found that at least one variable was I(2), then the saving function(s) was(were) estimated in the second differences of the variables.

[Tables 1-2, about here]

If it is found that the variables are I(1), then we proceed with the Johansen (1991) framework of cointegration tests as modified by Pesaran and Pesaran (1997).

The general form of the vector error correction model is given by:

$$\Delta y_t = a_{oy} + a_{1y} t - \Pi_y z_{t-1} + \sum_{i=1}^{p-1} \Gamma_{iy} \Delta z_{t-i} + \Psi_y w_t + e_t, \quad t=1,2,\dots,n \quad (4)$$

where $z_t = (y_t', x_t')$, y_t is an $m_y \times 1$ vector of endogenous variables I(1) variables, x_t is an $m_x \times 1$ vector of exogenous I(1) variables

$$\Delta x_t = a_{ox} + \sum_{i=1}^{p-1} \Gamma_{ix} \Delta z_{t-i} + \Psi_x w_t + v_t \quad (5)$$

and w_t is a $q \times 1$ vector of exogenous/deterministic variables I(0) variables.

In this model, the disturbance vectors of e_t and w_t satisfy the assumptions (a) and

(b) below:

$$(a) \quad u_t = (e_t' w_t')' \sim \text{iid} (0, \Sigma) \quad (6)$$

where Σ is a symmetric positive-definite matrix.

(b) u_t (the disturbances in the combined model) are distributed independently of w_t

$$\text{i.e., } E(u_t | w_t) = 0 \quad (7)$$

a_{0y} and a_{1y} (the intercept and the trend coefficients respectively) are $m_y \times 1$ vectors; Π_y is the long run multiplier matrix of order $m_y + m$, where $m = m_x + m_y$; $\Gamma_{1y}, \Gamma_{2y}, \dots, \Gamma_{p-1,y}$ coefficient matrices capture the short run dynamic effects and are of order $m_y \times m$; and Ψ_y is the $m_y \times m$ matrix of coefficients on the $I(0)$ exogenous variables.

The results of the cointegration trace tests for equation (1) are given in table 3. The number of lags was determined by using the Akaike Information Criterion (AIC). The results indicate that the variables are cointegrated only for Kenya and Tunisia. The results of the cointegration tests for equation (2) are in table 4. The results show that the variables are cointegrated only for Egypt, Kenya and Tunisia. Thus, in these cases, we can apply the Phillips-Hansen (1990) fully modified OLS procedure. The model is given by

$$y_t = \beta_0 + \beta_1' x_t + u_t, \quad t = 1, 2, \dots, n \quad (8)$$

where y_t is an $I(1)$ variable, and x_t is a $k \times 1$ vector of $I(1)$ regressors which are not cointegrated among themselves. It is also assumed that x_t has the first difference stationary process

$$\Delta x_t = \mu + v_t, \quad t = 2, 3, \dots, n$$

where μ is a $k \times 1$ vector of drift parameters, v_t is a $k \times 1$ vector of $I(0)$ variables and that $\xi_t = (u_t, v_t)'$ is strictly stationary with zero mean

and a finite positive definite covariance matrix, Σ . This procedure has a number of advantages: it corrects for endogeneity and serial correlation effects; it also asymptotically eliminates the sample bias. This procedure is applicable only where

there is only one cointegrating vector. Indeed, in all cases where we find evidence of cointegration, the number of cointegrating vectors is found to be equal to one. Also, the Phillips-Hansen procedure is valid only when the independent variables are not cointegrated among themselves. We performed cointegration tests for the independent variables for equation (2) for Egypt, Kenya and Tunisia (not shown here). However, we did not find any evidence of such cointegration. Thus the Phillips-Hansen procedure is applicable in all these cases. We used Parzen lag window in our estimation.

[Tables 3-4, about here]

By now, it is clear that we need to use different methods of estimation in different cases. When the variables were found to be cointegrated, we used the Phillips-Hansen fully modified procedure. In cases where the variables were found to be $I(1)$ but not cointegrated, we used either OLS or the Cochrane-Orcutt autoregressive method (where we found evidence of serial correlation). In cases where at least one variable was found to be $I(2)$, we used either OLS or the Cochrane-Orcutt autoregressive procedure. In all cases where Cochrane-Orcutt autoregressive procedure was used, AR(1) model was sufficient.

The results of these varieties of estimation procedures are in table 5. Different types of estimation procedures make it difficult to compare the results. However, the estimated results for equation (2) shows that the coefficient on exports is statistically significant at 5 per cent level for the following 12 countries:

Cote d'Ivoire, Egypt, Ethiopia, Kenya, Morocco, Niger, Nigeria, Senegal, South Africa, Swaziland, Tunisia and Zimbabwe. On the other hand, the non-export part of GDP is statistically significant at 5 level for the following 9 countries: Cameroon, Cote d'Ivoire, Egypt, Kenya, Morocco, Senegal, South Africa, Swaziland and Tunisia. This provides support for the Maizels' hypothesis. A comparison of the goodness of fit for equation (1) and (2) can also provide a test of the hypothesis (Maizels (1968), pp. 93-94) even though strict comparisons are not possible due to differences in the estimation procedure. The Phillips-Hansen procedure does not provide us with the \bar{R}^2 . \bar{R}^2 is higher for equation (2) for ten countries. On the other hand, \bar{R}^2 is higher for equation (1) for only four countries. Again, this supports Maizels hypothesis that exports do promote savings in African countries – more so than the non-export part of GDP.

[Table 5, about here]

Conclusion

A number of models emphasize the role of savings in promoting economic growth. These models include the Solow-Swan model in which the saving rate is exogenous and the Ramsay model in which the saving rate can be derived from the parameters reflecting tastes and preferences. Alfred Maizels systematically explores the relationship between exports and savings. His hypothesis is that exports component of GDP contributes more to saving than the non-export part of GDP. In this paper, we test Maizels' proposition intensively using data for 17 African countries using

recent time series econometric methods. We find general support for Maizels' hypothesis.

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Table 1. Augmented Dickey-Fuller Tests on the Levels of the Variables

	S_t	Y_t	X_t	$Y_t - X_t$
Burundi	-2.318	0.640	-3.554*	-2.177*
(1965-96)	(-3.58)	(-3.58)	(-2.97)	(-2.97)
Cameroon	-0.498	-0.008	-2.121*	-2.882
(1968-90)	(-3.67)	(-3.67)	(-3.03)	(-3.67)
Cote d'Ivoire	-2.601*	-1.738	-2.089	-1.064
(1960-96)	(-2.95)	(-3.55)	(-3.55)	(-3.55)
Egypt	-2.884*	0.054*	-1.531*	0.273*
(1952-95)	(-2.94)	(-2.94)	(-2.94)	(-2.94)
Ethiopia	-2.107	-2.448*	-2.370	-2.142*
(1965-96)	(-3.58)	(-2.97)	(-3.58)	(-2.97)
Kenya	-0.892	-1.949	-2.650	-2.352
(1964-96)	(-3.57)	(-3.57)	(-3.57)	(-3.57)
Madagascar	-2.858*	-2.167	-3.396*	-2.208
(1964-96)	(-2.97)	(-3.57)	(-2.97)	(-3.57)
Morocco	-4.218	-3.005	-3.053	-3.314
(1952-96)	(-3.52)	(-3.52)	(-3.52)	(-3.52)
Niger	-1.734*	-2.696	-2.043	-3.273
(1963-96)	(-2.96)	(-3.57)	(-3.57)	(-3.57)
Nigeria	-2.638	-1.405	-2.831	-0.955
(1953-94)	(-3.53)	(-3.53)	(-3.53)	(-3.53)
Senegal	-1.672*	-1.724	-3.081*	-1.996
(1967-96)	(-2.98)	(-3.59)	(-2.98)	(-3.59)
Sierra Leone	-2.391*	-2.321	-4.88	-1.794
(1964-95)	(-2.97)	(-3.58)	(-3.58)	(-3.58)
South Africa	-0.130	-5.353*	-3.045	-3.642
(1948-96)	(-3.51)	(-2.93)	(-3.51)	(-3.51)
Swaziland	-1.689	-3.172	-1.258	-4.121
(1967-96)	(-3.59)	(-3.59)	(-3.59)	(-3.59)
Tanzania	-2.546	-2.564	-0.538	-2.862
(1965-96)	(-3.58)	(-3.58)	(-3.58)	(-3.58)
Tunisia	-2.220	-2.441	-2.252	-2.778
(1962-96)	(-3.56)	(-3.56)	(-3.56)	(-3.56)
Zimbabwe	-0.940	-3.564	-1.768	-3.827
(1964-91)	(-3.61)	(-3.61)	(-3.61)	(-3.61)

Note: Critical values at 5% level are in parentheses. Lags were determined by the Akaike Information Criterion (AIC).

*Indicates no trend

Table 2. Augmented Dickey-Fuller Tests on the First Differences of the Variables

	S_t	Y_t	X_t	$Y_t - X_t$
Burundi	-6.099	-4.754	-6.802	-5.228
(1965-96)	(-2.98)	(-2.98)	(-2.98)	(-2.98)
Cameroon	-3.166	-0.627	-2.872	-0.678
(1968-90)	(-3.04)	(-3.04)	(-3.04)	(-3.04)
Cote d'Ivoire	-4.567	-3.632	-5.003	-4.437
(1960-96)	(-2.96)	(-2.96)	(-2.96)	(-2.96)
Egypt	-23.58	-40.30	-25.52	-20.76
(1952-95)	(-2.94)	(-2.94)	(-2.94)	(-2.94)
Ethiopia	-5.957	-2.807	-4.114	-2.728
(1965-96)	(-2.98)	(-2.98)	(-2.98)	(-2.98)
Kenya	-6.557	-3.335	-5.115	-3.629*
(1964-96)	(-2.97)	(-2.97)	(-2.97)	(-2.97)
Madagascar	-5.113	-4.999	NA	-4.972
(1964-96)	(-2.97)	(-2.97)		(-2.97)
Morocco	NA	-3.420	-4.519	-2.994
(1952-96)		(-2.94)	(-2.94)	(-2.94)
Niger	-5.548	-5.881	-4.107	-6.721
(1963-96)	(-2.97)	(-2.97)	(-2.97)	(-2.97)
Nigeria	-3.350	-5.563	-6.671	-4.799
(1953-94)	(-2.94)	(-2.94)	(-2.94)	(-2.94)
Senegal	-6.620	-5.048	NA	-4.249
(1967-96)	(-2.99)	(-2.99)		(-2.99)
Sierra Leone	-5.131	-4.036	NA	-4.341
(1964-95)	(-2.98)	(-2.98)		(-2.98)
South Africa	-5.368	-5.353	-5.433	NA
(1948-96)	(-2.93)	(-2.93)	(-2.93)	
Swaziland	-4.246	-2.852	-4.120	NA
(1967-96)	(-2.99)	(-2.99)	(-2.99)	
Tanzania	-4.647	-3.753	-4.351	-3.975
(1965-96)	(-2.98)	(-2.98)	(-2.98)	(-2.98)
Tunisia	-5.914	-4.200*	-5.277	-4.119
(1962-96)	(-2.96)	(-3.57)	(-2.96)	(-2.96)
Zimbabwe	-4.588	-3.207	-4.496	NA
(1964-91)	(-3.00)	(-3.00)	(-3.00)	

Note: Critical values at 5% level are in parentheses. Lags were determined by the Akaike Information Criterion (AIC).

*Indicates trend. NA indicates not applicable i.e., the variable did not have a unit root in its level.

Table 3. Trace Tests for equation (1)

	Null: $r=0$	Null: $r\leq 1$
Burundi	6.82	0.004
Cote d'Ivoire	15.40	1.062
Egypt	8.69	0.017
Kenya	23.07*	0.348
Madagascar	8.54	1.98
Niger	10.27	1.25
Nigeria	12.71	0.003
Senegal	10.46	2.90
Sierra Leone	9.76	0.272
South Africa	16.12	0.481
Tanzania	4.06	0.81
Tunisia	42.13*	8.09
Zimbabwe	9.31	2.83

Note: The critical values for null hypotheses of $r=0$ and $r\leq 1$ are 20.18 and 9.16 respectively at 95% level. The alternative hypotheses are $r=1$ and $r=2$ respectively. The lags were determined by using the Akaike Information Criterion (AIC).

*Significant at the 5% level.

Table 4. Trace Tests for equation (2)

	Null: $r=0$	Null: $r\leq 1$
Burundi	26.84	6.85
Cote d'Ivoire	24.64	10.26
Egypt	35.06*	7.48
Kenya	36.39*	9.72
Niger	14.76	4.06
Nigeria	25.78	10.47
Tanzania	13.69	5.13
Tunisia	58.06*	19.48

Note: The critical values for null hypotheses of $r=0$ and $r\leq 1$ are 34.87 and 20.18 respectively at 95% level. The alternative hypotheses are $r=1$ and $r=2$ respectively. The lags were determined by using the Akaike Information Criterion (AIC).

*Significant at the 5% level.

Table 5. Regressions of Gross Domestic Saving on GDP and Exports

Coefficient of Equation 1			Coefficient of Equation 2		
	Y_t	\bar{R}^2	X_t	$Y_t - X_t$	\bar{R}^2
Burundi (1965-96)	0.07915 ^d (1.0538)	.007	0.3378 ^d (1.7950)	0.0349 ^d (0.4384)	.05
Cameroon (1968-90)	0.2983 ^{dd} (2.7728)**	.37	0.6505 ^{dd} (1.5800)	0.3505 ^{dd} (2.7646)**	.35
Cote d'Ivoire (1960-96)	0.6672 ^d (7.9822)**	.60	0.8462 ^d (9.1077)**	0.3856 ^d (3.2963)**	.69
Egypt (1952-95)	0.6860 ^d (17.372)**	.99	0.1632 ^{ph} (8.8180)**	0.0832 ^{ph} (6.3828)**	NA
Ethiopia (1965-96)	0.2172 ^{dd} (4.5282)**	.61	1.3289 ^{dd} (5.1754)**	0.0231 ^{dd} (1.3753)	.71
Kenya (1964-96)	0.2048 ^{ph} (10.155)**	NA	0.3147 ^{ph} (2.6824)**	0.1950 ^{ph} (8.7639)**	NA
Madagascar (1964-96)	0.0767 ^d (0.8012)	.03	0.05623 ^d (0.2627)	0.0664 ^d (0.5714)	-.04
Morocco (1952-96)	0.4588 ^d (5.8372)**	.50	0.8057 ^d (5.7478)**	0.3484 ^d (4.2360)**	.57
Niger (1963-96)	0.2537 ^d (2.5130)**	.08	0.7569 ^d (3.0915)**	0.0951 ^d (0.7496)	.17
Nigeria (1953-94)	0.4597 ^d (7.7639)**	.60	0.8127 ^d (7.6076)**	0.0707 ^d (0.6810)	.73
Senegal (1967-96)	0.2440 ^d (2.1264)**	.18	0.7308 ^d (5.7991)**	0.1892 ^d (2.3133)**	.57
Sierra Leone (1964-95)	0.1337 ^d (1.5937)	.03	0.3273 ^d (1.8616)	0.1170 ^d (1.4540)	.07
South Africa (1948-96)	0.6224 ^d (10.855)**	.74	0.8512 ^d (14.235)**	0.4794 ^d (9.6199)**	.85
Swaziland (1967-96)	0.6859 ^{dd} (3.5545)**	.36	0.6223 ^d (2.8169)**	0.5694 ^d (3.5022)**	.27
Tanzania (1965-96)	0.0648 ^d (0.8989)	.03	0.6598 ^d (1.6538)	0.0130 ^d (0.1632)	.01
Tunisia (1962-96)	0.2171 ^{ph} (31.007)**	NA	0.3236 ^{ph} (4.5660)**	0.1671 ^{ph} (4.7553)**	NA
Zimbabwe (1964-91)	0.3193 ^d (2.4914)**	.17	1.1692 ^d (4.0022)**	0.8095 ^d (0.6053)	.38

Note: The dependent variable is gross domestic saving. Y is gross domestic product and X is export. All variables are expressed in real terms.

^ddenotes the equation was estimated in first differences of the variables.

^{dd} denotes the equation was estimated in second differences of the variables.

^{ph} denotes the equation was estimated by using Phillips-Hansen procedure.

** denotes that the coefficient is significant at 5% level.

Appendix I: A Helicopter Tour of Seventeen African Countries

A brief description of the countries with respect to the variables that are used in the study follows.

Burundi: Burundi in Central Africa is one of the poorest countries in the world.

Agriculture accounts for over half of the GDP and over 80% of exports. Coffee is the most important export item. Exports as a percentage of GDP has averaged 9 per cent during 1965-96. Burundi had an extremely low saving rate during the period under consideration. The average rate has been only 3 per cent. During the 1990s, Burundi's savings have been negative. Political instability and ethnic clashes have hampered Burundi's economic performance in recent years.

Cameroon: Cameroon, a country rich in natural resources, had been growing at an average rate of about 7 percent during the first 25 years of independence (It became independent in 1960). Cameroon's saving rate has been around 4.8 per cent during the period under consideration. It depends heavily on oil, coffee and cocoa for exports. Exports as a percentage of GDP has been around 9.6 per cent during the 1970s and the 1980s. The fall in prices of these goods, a decline in oil production and an exchange rate appreciation all contributed to its deteriorating performance in recent years.

Cote d'Ivoire: . Agriculture remains the major sector of the economy. Like other countries in the region, Cote d'Ivoire also depends a great deal on cocoa, coffee and oil for its export earnings. However, its export performance has been better than most of the other countries in the region. During 1960-96, exports as a percentage of GDP has averaged around 31.5 per cent. Large government deficits and a falling saving rate adversely affected its economic growth during the late 1980s and the early 1990s.

Egypt: Egypt in north Africa is not primarily an agricultural country. For a long time, Egypt followed a policy of import substitution and public sector expansion. Government expenditure as a percentage of GDP still accounts for more than 60 per cent. Like many other middle Eastern countries, oil is the most important export item of Egypt. Exports as a percentage of GDP has averaged around 10.5 per cent during the period under consideration. However, it has shown a great degree of volatility. Its saving rate has averaged 14 per cent during 1952-95.

Ethiopia: Ethiopia has recently undertaken a series of measures to liberalize its economy. The country relies heavily on exports of coffee and leather goods. However, Ethiopia does not depend heavily on exports. Exports as a percentage of GDP has averaged around 7 during the period under consideration. The average rate of saving has been 7.8 per cent during the same period. Its saving performance has improved during the 1990s.

Kenya: Kenya achieved a remarkable growth and structural change during the decade following its independence in 1963 (World Bank (1996), p. 266)). Tourism has been one of the most important industries of this country. Its leading export earners have been tourism, coffee and tea. Exports as a percentage of GDP averaged at about 18 per cent while the saving rate averaged at about 19 per cent during the period under study.

Madagascar: Madagascar is the fourth largest island in the world. A country endowed with abundant natural resources, it has not been able to realize its potential. Its main items of export are coffee and other food items. During 1964-96, exports as a percentage of GDP has averaged around 12.8 per cent. During the same period, the average saving rate has been 6.8 per cent. During the early 1990s, saving rate was negative.

Morocco: Morocco, a country moderately dependent on agriculture suffered much during the first half of the 1990s due to severe droughts. It has maintained an average rate of growth of around 4 per cent in recent years. Agricultural products, phosphate rock and manufactures constitute major items of exports for Morocco. Morocco's average saving rate and exports as a percentage of GDP have been 13 per cent and 15 per cent for the last four decades.

Niger: Niger's rate of population at 3.3 percent is higher than other countries in the Sub-Saharan Africa (World Bank (1996) p. 372). During the period under consideration, the saving rate and exports as a percentage of GDP were 8.5 per cent

and 12.8 per cent respectively. Exports have fallen over the past decade. Metals constitute a major item of export.

Nigeria: Unlike other countries in the Sub-Saharan Africa, Nigeria is a major petroleum producing country. Petroleum production accounts for about half of the GDP and more than 90 per cent of exports. Nigeria is also the most populous country in the region. During 1953-94, the saving rate and the exports as a percentage of GDP have averaged around 18 per cent and 20 per cent respectively.

Senegal: Senegal is predominantly a rural country with limited natural resources and its economy is very vulnerable to climatic changes and price fluctuations in the international commodity markets (World Bank (1996), p. 451). Fish is the most important export commodity. During 1967-76, the saving rate and exports as a percentage of GDP have averaged 6.8 per cent and 18.5 per cent respectively.

Sierra Leone: The economy was growing fairly rapidly during the 1960s.

However, economic mismanagement led to a rapid rise in the poverty rate during the 1970s and the 1980s. Political turmoil during the 1990s has affected its growth.

Diamonds and kimberlite are two important items for exports. During the last 40 years, the averages of the saving rate and the exports as a percentage of GDP have been 11 per cent and 26 per cent respectively.

South Africa: Even though South Africa is the most advanced country in Africa, there remains a very high incidence of poverty among the black population.

Mineral exports (gold, diamonds and coal) are the main sources of foreign exchange

earnings for the country. The averages of saving rate and exports as a percentage of GDP have been 26 per cent and 25 per cent during the period under consideration.

Swaziland: More than 60% of the population is engaged in agriculture in this small landlocked country. Soft drink concentrate, sugar and wood pulp are the main foreign exchange earners. The surrounding South Africa is, by far, Swaziland's largest partner. During the past three decades, the country's saving rate and the exports as a percentage of GDP have averaged around 17 per cent and 7 per cent respectively.

Tanzania: Tanzania is among the world's poorest countries. This primarily agricultural country relies mainly on coffee and cotton for its exports. Tourism has grown significantly during recent years. During 1965-96, the average rate of saving and of exports have been 9 per cent and 13 per cent respectively.

Tunisia: Tunisia adopted a series of economic reforms since the middle of 1980s. These reforms have included increasing reliance on the private sector and a more open trade policy. Manufacturing exports account for bulk of the exports.

However, Tunisia also continues to export petroleum products. During 1962-96, the saving rate and exports as a percentage of GDP have both averaged around 20 per cent.

Zimbabwe: Zimbabwe adopted a number of structural reforms in 1991 after a period of lackluster growth in which per capita GDP steadily declined. The economy is still vulnerable to external shocks from weather and world prices of

export commodities (World Bank (1996), p. 568). Tobacco and gold remain important export items. The white minority still predominantly owns the productive assets, which account for less than 2 per cent of the population. During 1964-91, the average saving rate and exports as a percentage of GDP have been around 21 per cent and 26 per cent respectively.