Agricultural Growth, Rural Poverty and Hunger In Africa.

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Abstract

The long-term reduction of hunger and poverty in Sub-Saharan Africa remains one of the great challenges for the International development community. Poverty in Africa is predominately rural, majority of the poor people live in rural areas and are dependent on food production through farming or livestock keeping for most of their livelihood. It is estimated that over two hundred million people in Sub-Saharan Africa live in extreme poverty and among these are the rural poor in Eastern and Southern Africa where the worlds highest concentration of poor people are found. Given Agriculture's central role in the region's economies, can agriculture play a major role in poverty alleviation? How can Africa's role in poverty reduction be enhanced? What could be done to boost agricultural production, economic growth and the incomes of the rural poor to help achieve the Millennium Development Goals especially that of cutting poverty in half by 2015. These are some of the questions the author addresses in the paper - A roadmap that is considered extremely useful and timely.

Introduction

Agriculture and rural growth promotion show a recent "comeback" in development cooperation, but action on the ground so far is not sufficient. After years of neglect, policy makers have recognized that poverty reduction in many low income countries can only be achieved if development efforts are clearly focused on the sector which employs most of the poor, and the space where most of the poor live. The importance of agricultural growth was amply demonstrated during the economic transformation of Asia. Forty years ago, Asia was a continent of widespread poverty. Today, most Asian countries are experiencing significant growth and poverty reduction. Rapid growth in productivity in the small-farm sector helped drive this process. Sub-Saharan Africa however failed to achieve rapid agricultural growth and remains mired in poverty and hunger. If Africa is to halve poverty by 2015 in accordance with the MDGS, agriculture will need to maintain an annual growth rate of 6 percent between 2000 and 2015 (World Bank, 2006).

Problem

Sub-Saharan Africa is unlikely, based on present trends to reach Target 1 of the MDGs – i.e. to halve by 2015, the number of people living on less than $1 a day. Indeed if nothing changes, the absolute numbers of poor in the region will continue to increase and by 2015, close to half the world's poor will live in this region.

Agriculture in the region remains largely subsistence, production has not kept pace with population growth, household income required to afford purchased food cannot be generated and the numbers of malnourished people are consequently rising.

Justification

Eighty five percent of poor people in Sub-Saharan Africa live in rural areas and largely dependent on agriculture for their livelihoods (FAO, STAT, 2007). Agricultural growth is therefore key to poverty reduction and economic growth

The objective is to transform Sub-Saharan Africa from a crisis to sustainable growth.

Methods

Review of past trends from literature. Descriptive analysis was used as the analytical approach

Results

Poverty projections indicate that over the next 15 years the share of the population living in extreme poverty is expected to decline in all developing regions. Overall the poverty Millennium Development Goal (MDG) of reducing extreme poverty by 50 percent from its 1990 level by 2015 will be achieved. At the global level, this means that by 2015, only 12 percent of the population in developing countries will live on less than $1 a day or less, down from 29 percent in 1990. The sharp drop in percentage terms is only partially reflected in the absolute number of poor. Due to

population increases, the number of poor is forecasted to be 721 million in 2015 as compared to 1.2 billion in 1990 and 1.1 billion in 2002.

However, the decline in poverty across regions is highly uneven. In East Asia, the goal of halving extreme poverty has already been achieved. By 2015, the percentage of poor is projected to drop to less than 3 percent, albeit with a still significant 15 percent share using the broader $2 a day poverty indicator. At the other extreme is Sub-Saharan Africa where, despite a 4.7 percentage point decline in the share of people in extreme poverty between 1999 and 2004, some 36 percent of Africans will still be living in extreme poverty by 2015 according to projections based on the latest data. This is a far higher portion than the target of 23 percent necessary for reaching the MDG. Furthermore, due to higher population growth, the absolute number of Africans living at or below the $1 a day level is projected to increase. And, because per capita incomes elsewhere are projected to grow faster, the continent will continue to fall farther behind the rest of the world—unless steps are taken to improve economic growth in Africa. The region now accounts for 30 percent of the world's extreme poor, compared with 19 percent in 1990, and only 11 percent in 1981.

Across regions, the risk of falling short is even greater for the human development goals. In particular, on current trends, most regions will fall short of the health and related goals, including reduced child and maternal mortality, the reversal of the HIV/AIDS pandemic, and increased access to sanitation. Prospects are brighter in education, but the pace of progress remains too slow in Africa, South Asia and the Middle East to attain the goal of universal primary education. And although significant progress has been made, these three regions will not achieve the goal of gender equality in primary and secondary education on time.

Fighting Poverty

Against this backdrop, and with less than 10 years to 2015, achieving the global goals is a huge challenge, which calls for a concerted effort by developing and developed countries alike. In particular actions are needed in the following areas.

Anchoring efforts to achieve the MDGs in country-led development strategies is central to coherent and effective scaling up of development progress. Framed against a long-term development vision, these strategies should set medium-term targets—tailored to country circumstances—for progress toward the MDGs and related development outcomes. And they should define clear national plans and priorities for achieving those targets, linking policy agendas to medium-term fiscal frameworks. As of February 2007, 51 low-income countries had prepared Poverty Reduction Strategies. To improve the effectiveness of its support, the World Bank aligns its activities to these national plans through its Country Assistance Strategies (CASs). The national strategies also serve as a basis for harmonization with other development partners.

Aid effectiveness can be increased by strengthening the country-driven development model. In March 2005 developing countries and donors committed to the Paris Declaration on Aid Effectiveness. Months later, at Gleneagles, donors reaffirmed their commitments to scaling up aid to help meet the Millennium Development Goals (MDGs), stating that this would amount to a doubling of development aid (ODA) to Africa by 2010. For this aid to translate into poverty reduction, close attention must be paid to the quality of aid distribution. Most donors are strongly committed to a country-based development model which can improve the quality of aid. The country-based development model comprises of three principal pillars. Pillar I consists of nationally-driven, results-oriented development strategies, which rely on strengthened domestic institutions. Pillar II is based on donor alignment behind country strategies to deliver timely and predictable assistance in a way which reinforces, rather than strains, these institutions. Pillar III encompasses the mechanisms of mutual accountability which ensure that both national governments and donors are responsible for meeting their commitments to country-based development. Progress under the three pillars of the country-based development model indicates that the scaling up of aid is feasible in a variety of contexts.

Shared Growth is the key to poverty reduction. A broad consensus has been built around the shared growth agenda which recognizes economic growth as the main driver of poverty reduction. Evidence to date on the role of growth in poverty reduction underscores the fact that strategies for sustained poverty reduction need to have, at their core, measures for sustained and rapid economic growth. Growth, although extremely important, does not explain all the variation in poverty

reduction. Inequality affects the *pace* at which growth is translated into poverty reduction. Growth is less efficient in lowering poverty levels in countries with high initial inequality or in countries where the distributional pattern of growth favors the non-poor. Rising inequality over the 1990s offset the gains from growth in a number of fast growing countries. To accelerate poverty reduction, we need to address the country specific constraints that prevent poor households from participating in and benefiting from growth. This task requires a conscious and sustained effort on the part of governments to provide the basic conditions necessary for broad-based growth in the regions and sectors where the poor live and work. Country-specific analysis can help identify binding constraints on shared growth, be they macroeconomic, human or physical capital, or institutional in nature. This analysis can be used to develop sequenced plans to alleviate these constraints. When coupled with systems and processes that support evidence-based decision making and strong domestic accountability, this can foster more effective use of domestic resources and aid flows for poverty reduction.

Conclusion

The task facing African agriculture today and beyond is formidable indeed. It must cope with the needs of a rapidly growth in food crops not merely to maintain output per person but also to reduce food calorie deficits and to lower food imports.

In the process, it must be a major employer of Africa's growing labour force and compete on world markets to earn the foreign exchange that Africa needs to fuel its economic growth therefore transforming agriculture and expanding its productive capacity is the prerequisite foe improving living standards in Sub-Saharan Africa.

To achieve food security, food production will have to grow at about 6 percent a year (World Bank, 2006). Thus Africa must set its target for long-term agricultural growth not lower than 5

percent a year.

Policy implications

The principal elements of an action plan to raise agricultural growth are as follows:

- The private sector, including cooperative and grassroot organizations should be given a bigger role. Private investment in production, agricultural processing and farm input supply should be promoted, not constrained by excessive regulations and administrative controls or legislation.

- Intensive new efforts are required to strengthen the management of agricultural research at the national level, linked to streamlined national extension services.

- The development and maintenance of rural infrastructure needs to be given greater attention.

- Environmental protection action plans for each country are needed to address issues of soil erosion, deforestation and water shed management.

- Programs to assist women as farmers and traders require government assistance and encouragement women's groups should be fostered.

- Governments should assist the evolution of land tenure systems by providing legal and administrative mechanisms to ensure greater security of tenure.

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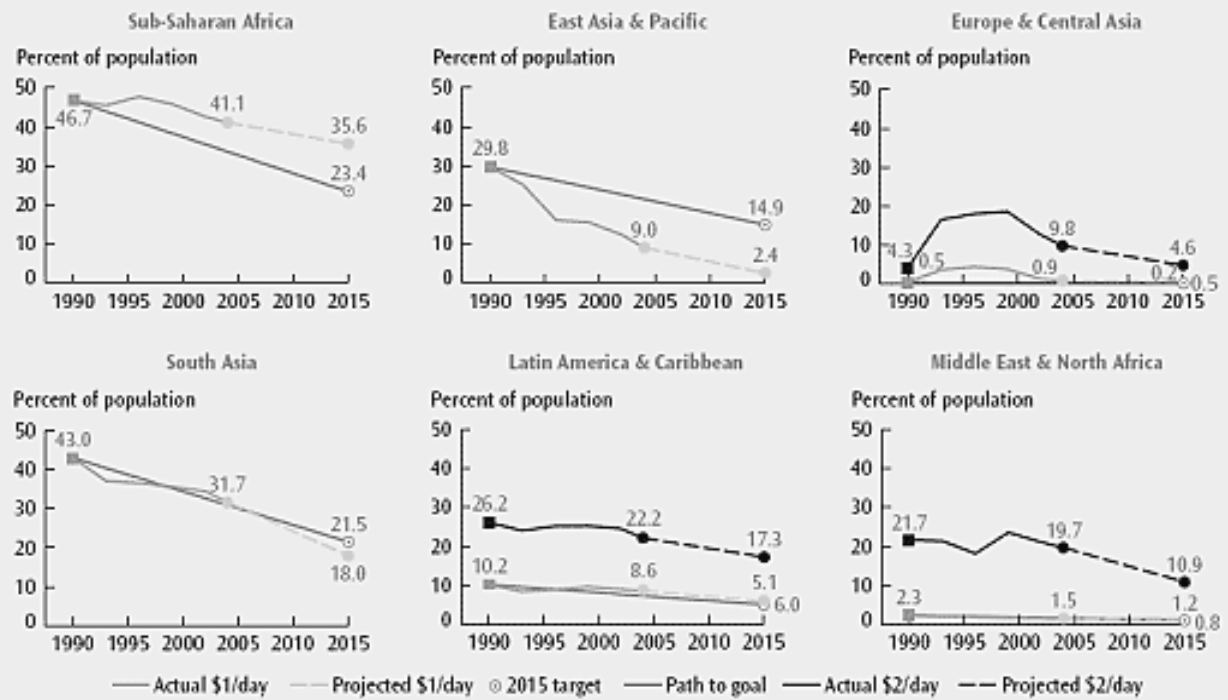Human Development Indicators 2005.

World Bank: Poverty Net: Overview. 2006

Acknowledgement

MDG 1 FIGURE 1 Share of people living on less than $1 or $2 a day in 2004, and projections for 2015

Source: World Bank staff estimates (weighted averages).

Determinants of Selected Agricultural Export Crops in Nigeria: An Ecm Approach

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Abstract

This study examines the factors that determine the export performance of three major agricultural exportable commodities of cocoa, rubber and palm-kernel in the context of liberalization. Using time series data covering thirty three years and to avoid spurious result, error correction model was applied in the analysis. The unit root test is in line with the *a priori* expectation that macroeconomic variables are not stationary at their level. Virtually all the variables tested were differenced once before attaining stationarity. Each of the three equations indicated that the dependent variables cointegrated with their arguments at 1 percent level. There is the existence of short term and long term equilibrium relationships between the dependent variables and their determinants. The results of the parsimonious error correction specifications showed that the previous year's output and the net value of world trade negatively affect cocoa exports at 1 percent level while the previous year's GDP positively contributes to cocoa exports at 5 percent. The lagged price ratio reduces rubber exports significantly at 5 percent but the real exchange rate significantly increases the export performance of rubber at 10 percent level. The previous year's exports of palm kernel and the real GDP contributed positively to palm-kernel exports at 5 percent level while the lagged premium and palm kernel output negatively contributed to its export at 5 percent and 10 percent respectively. Promotion of agricultural exports is essential to reduce the burden of dependence on oil exports

Key words: Agricultural exports, Cointegration, ECM, Nigeria

Introduction

In the 1960's, Nigeria economy was largely sustained, at least from the point of view of off shore commitments, by the export earnings from basic agricultural and mineral commodities. The export list of the country within this period comprised groundnut, cocoa beans, palm oil and kernel, cotton, rubber, ginger, copra, hides and skins, timber, zinc, columbite, tin and lead. However, the commencement of large scale exploitation and exportation of crude petroleum in the early 1970s and the huge inflow of foreign exchange revenues therefrom diverted the attention of the government and a large percentage of the agricultural producers into other activities aimed at exploiting the economic boom. This development heralded the decline in agricultural production and the resultant drop in volume and value of the traditional export commodities (Ihimodu, 1993). The introduction of SAP in 1986 and a policy shift towards support for growth of traditional non-oil exports, led to an appreciable increase in exports. However, this growth of non-oil exports has not been consistent. Infact, the contribution of the non-oil sector to foreign earnings remain abysmally low representing less than 1% between 2000 and 2004 (CBN, 2004). Even then, primary agricultural produce remains a formidable non-oil sector contributing about 33% of total non-oil foreign earnings and second only to semi-manufactured products with 48.9% (CBN, 2004). The devaluation of the currency with the attendant increase in domestic prices of exports is nonetheless identified as one of the major factors responsible for the increase.This study examines the relationship between the key factors on the export of some selected agricultural crops.

Materials and Methods

Scope and Source of Data for the Study

This study covered export of three major agricultural exportable commodities in Nigeria, cocoa, rubber and palm kernel. The analysis covered the period between 1970 and 2002 and the study focuses on the determinants of agricultural exports in Nigeria. Secondary sources of data are used in this study. Such sources are:

(i)   The federal Office of statistics.

(ii)   The C.B.N. Statistical bulletin

Methodological Framework

The data for this study were analyzed using error correction mechanism (ECM). The stationarity levels

of the variables were determined using Phillips Peron (PP) test. The Phillips-Peron (PP) test, is non-parametric and usually produces a superior result that corrects for serial correlation and heteroscedasticity. The PP test is also known to be better in the presence of regime shift which is a problem usually encountered with African macroeconomic data. Thereafter, cointegration test was carried out using PP test also. The cointegration test is carried out to generate an error correction model. It employs the Engle-Granger two step method (Engle and Granger 1987). Cointegration is accepted when the residuals from the linear combination of non-stationary I(1) series are themselves stationary. In essence, if we are dealing with time series data, we must make sure that the individual time series are either stationary or that they are cointegrated. Otherwise, the result may be spurious (Gujarati 1999). The critical values for accepting or rejecting the hypothesis have been given in a number of studies from Monte Carlo simulations (Fuller, 1978; Phillips, 1987; Perron, 1988; Dickey and Fuller, 1981; Blangiewicz and Charemza, 1990).

The Model

Having established the level of stationarity of the variables and the existence of cointegration among them, an ECM equation was specified for them. In explicit terms, this can be re-written as:

$$\ln QE_{it} = \alpha_o + \alpha_1 \ln(P^e_{it} / P^d_{it}) + \alpha_2 \ln PR_{it} + \alpha_3 \ln VWT_t + \alpha_4 \ln GDP_t + \alpha_5 \ln ER_t + PREMIUM_t + U_{it}$$

This is a modified form of the equation adopted in the work of Tambi, 1999. The modification involves the inclusion of the Premium in the model. Where:

$LnQE_{it}$ = the quantity of the ith commodity exported in thousand metric tonnes.

Ln (P^e_{it}/ P^d_{it})= the price ratio of the ith commodity, where P^e_{it} is the export unit value index and P^d_{it} is the domestic unit value index and P^d_{it}.

Ln VWT_t = the net exports value which invariably is the balance of trade

Ln GDP_t = the real gross domestic product measured at 1984 factor cost in billion naira.

Ln PR_t = the quantity of domestic production of the ith commodity in thousand metric tonnes.

Ln ER_t = the exchange rate in terms of units of foreign currencies (N/US$).

$PREMIUM_t$ = the extra amount added to the official real exchange rate by the parallel market operators. In addition, the premium is defined as the parallel rate minus the official rate over the official rate multiply by 100, and Ut is a stochastic error term and it is assumed to be independently and normally distributed with zero mean and constant variance (Nkurunziza 2002).

A priori, the price ratio P^e_{it} / P^d_{it}, PRit, GDP$_t$, ER$_t$ are expected to have a positive effect on QEit and is intended to capture the profitability of exports. On the other hand, A negative relationship is expected between premium PREMIUM$_t$ and exports. The net value of world trade can take either sign depending on whether or not exports exceed imports.

Results and Discussion

Determinants of the export performance of three agricultural exportable crops using ECM

Unit root tests of variables used

The examination of the time series properties of the variables used is presented in table 1.

Table 1: Unit root tests of variables using Phillips-Perron (PP)

VARIABLES	PP AT LEVEL	PP AT FIRST DIFFERENCE
Ln (QCE)	-2.82	-12.69
Ln (QCE)	-2.83	-7.06
Ln (QCE)	-1.29	-7.93
PREMIUM	-2.53	-4.72
Ln (VWT)	-0.99	-7.70
Ln (WPC/PPC)	-0.41	-5.05
Ln (WPR/PPR)	-2.94	-5.16
Ln (WPPK/PPPK)	-2.54	-8.55
Ln (COP)	-2.65	-7.65
Ln (RBP)	-0.83	-7.03
Ln (PKP)	-2.00	-6.11
Ln (GDP)	2.11	-6.87
Ln RER)	2.28	-4.63
CRITICAL VALUES		
1 PERCENT		
5 PERCENT	-3.65	-3.66
10 PERCENT	-2.96	-2.96
	-2.62	-2.62

The table reveals that virtually all the variables tested are not stationary at their level. This indicates that the variables are I(1) and any attempt to specify the dynamic function in the level of these series will be inappropriate and may lead to problem of spurious regression. Also, the econometrics result of the model in the level of the series may not be ideal for policy making (Adams, 1992).

Cointegration regression results of dependent variables

Cointegration test was carried out using PP to confirm that the residuals of the non-stationary series y and x that are I(1) are actually I(0).

Table 2: Cointegration regression result of dependent variables on their residuals

VARIABLE	P.P	DECISION RULE
Ln (QCE)	-5.50	Cointegrated at 1 percent level
Ln (QRE)	-5.60	Cointegrated at 1 percent level
Ln (QPKE)	-5.11	Cointegrated at 1 percent level
Critical Values		
1 Percent	3.65	
5 Percent	2.96	
10 Percent	2.62	

All the dependent variables were found to cointegrate with their determinants at the conventional 1 percent levels. The existence of cointegration among the dependent variables and their arguments confidently led to the specification of ECM for all the three equations estimated. The results presented are the restricted/ parsimonious models. The unrestricted model can be obtained from the authors.

ECM Results for the Determinants of Selected Agricultural Exports in Nigeria

Table 3 presents the results of the parsimonious ECM for the three export commodities (cocoa, rubber and palm kernel). In all, the adjusted R^2 ranges from 0.33 for Rubber to 0.67 for Cocoa. The F- values and the Log-likelihood ratio show that the models were well-fitted. The degree of adjustment of short run equilibrium to long run values was spontaneous for cocoa and a bit slower for the other two commodities. By and large, there is high level of adjustment of disturbances in the short run to long run values for all the commodities.

Hence, there seems to be a high feedback mechanism for all the crops. The combined short run dynamic effect of the lagged quantities of cocoa and GDP, and the net value of world trade jointly explains changes in exports of cocoa. The coefficients of VWT and the lagged value of GDP are rightly signed. However, the coefficient of the lagged value of COP is not rightly signed.

On the other hand, the combined shorts run dynamic effects of the real exchange rate and the lagged price ratio of rubber explains changes in rubber exports. The price ratio does not conform to apriori expectation due to the negative sign of the coefficient. This in essence, may indicate that the previous year relative price does not favour the quantity exported or perhaps the previous year price fell short of expectation and then discouraged current year exports of rubber. The real exchange rate is rightly signed.

The result for palm kernel shows that the combined short-run dynamic effect of the GDP and the lagged values of quantity of palm-kernel exported, premium and the palm-kernel annual output jointly account for the changes in palm-kernel exports. Of the four determinants, it is only the lagged output of palm kernel that is not rightly signed.

Conclusion

The performance of agriculture has not been two impressive even with liberalization measures. This is especially true in the area of commodity exports and foreign exchange earning. Though the exchange rate policy is probably the most likely instrument to induce increase competitiveness of agricultural export commodities in a developing country like Nigeria, parallel exchange rate premium only significantly affect the export performance of palm-kernel but not cocoa and rubber. Thus, critical attention should be paid to such incentives as export promotion because it is believed that export promotion have potential to stimulate productivity, thrift and entrepreneurship.

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Table 3: ECM results for the three agricultural export commodities

Variable	Cocoa	Rubber	Palm Kernel
Constant	-2.92 (-0.57)	0.21 (0.05)	-9.39 (-0.99)
dLn PR_t(-1)	-0.33 (-3.48)**	-	-0.09 (-1.95)*
dLn GDP	-	-	-
dLn GDP(-1)	122.66 (2.00)*	-	327.39 (2.55)**
dLn ($P^e it/ P^d it$(-1))	-	-0.09 (-2.01)*	-
dLnQE_{it}(-1)	-	-	0.40 (2.42)**
dLn VWT_t	-0.03 (-3.86)***	-	-
dLn ER_t	-	0.62 (1.82)*	-
d$PREMIUM_t$(-1)	-	-	-0.24 (-2.10)**
RESIDUAL (-1)	-0.99 (-6.30)***	-0.68 (-3.44)***	-0.87 (-4.67)***
R-Squared	0.72	0.40	0.59
Adjusted R-squared	0.67	0.33	0.51
Mean dependent variable	-1.99	2.62	-1.39
S.D. Dependent variable	46.87	26.73	71.37
S.E. of Regression	26.87	21.85	50.16
Sum square residual	18768.86	12886.68	62895.63
Log likelihood	-123.28	-137.45	-162.02
Durbin-Watson stat	2.31	1.81	2.08
Akaike information criterion	9.57	9.13	10.84
Schwarz criterion	9.80	9.31	11.12
F-statistic	16.33	5.97	7.15
Prob(F-statistics)	0.00	0.003	0.00