



Effect of exchange rate policies on non - traditional agricultural export - a case study of pineapple export in Ghana

Fred Nimoh¹, Daniel Addo-Brown¹, Ransford Yeboah¹ and Enoch Kwame Tham-Agyekum²

¹Department of Agricultural Economics, Agribusiness and Extension, KNUST-Kumasi

²Department of Agricultural Extension, University of Ghana, Legon-Accra

ARTICLE INFO

Article history:

Received: 14 April 2011;

Received in revised form:

21 May 2011;

Accepted: 28 May 2011;

Keywords

Exchange rate policies,
Export,
Pineapple,
Ghana.

ABSTRACT

Exchange rate policies associated with developmental programs of the past 28 years have led to the transformation of the agricultural export sector in many ways in Ghana. This study examines the effect of the exchange rate on pineapple export, one marked example of an increase in agricultural export for the European market. Based on a priori economic and statistical considerations, a logarithmic Cobb-Douglas functional model was used which applies annual time series data from 1980 to 2004 to estimate the export of pineapple as a function of real exchange rate, income of trading partner, competing price of pineapple of Cote d'Ivoire, and the local producer price of pineapple. The study shows that the real exchange rate has an effect on the pineapple export of the country, especially in the long run confirming the devaluations over the period of 1980 – 2004 with its concomitant increase in pineapple export. The study ended suggesting that authorities adhere to the fundamentals of the real exchange rate to be able to improve the performance of the exports, but this action must be consistent with other fiscal policies in order to attain balance of payment equilibrium.

© 2011 Elixir All rights reserved.

Introduction

The importance of an accelerated and improved export performance in economic growth with its attendant poverty reduction cannot be overemphasized. The current increasing awareness in policy reforms to enhance trade, especially increasing in both developed and undeveloped countries around the globe attest to this importance. No wonder the world's largest exporters like the United States, China etcetera, are those countries with significant economic growth. In a current report, the secretary of commerce of United State stated that "export success has become a major contributor to strong U.S. economic growth" and for that matter convincing American businesses that are not exporting to consider exporting, and those already exporting to enter more overseas market (The 2007 National Export Strategy).

Dankwa (1986) observed that there are no examples of countries that have significantly reduced poverty without significantly increasing their exports. Studies have reviewed that Sub-Saharan African countries during the latter half of the twentieth century have experienced the greatest erosion of their world export market shares, a loss that amounts to an annual \$ 65 billion in its export earnings (Amjadi and Yeast, 1995). The severe losses in the export share of this region have undoubtedly contributed to the prevalence of poverty. A typical example of the erosion in their world export market share is Ghana, losing its long holding place as the highest producer of cocoa in the world with its recorded share of world cocoa exports declining from 35% in 1961-1965 to only 15% in 1981.

Formerly known as the Gold coast, Ghana has a diverse and rich resource base. The nation's Gross Domestic Product is a composition of contributions from the agricultural sector - 37.3%, industry sector - 25.3% and the service sector - 37.5% .

The agricultural sector is a major source of government revenue, mainly through duties paid on exports of agricultural commodities, particularly cocoa. This implies that for Sub-Saharan African countries (like Ghana) to achieve strong economic growth, there is the need for maintaining and improving on its export market share.

Apart from market share, other advantages of exports are identified as: the reduction of dependence on the domestic market, where domestic demand is too low to support a national market-based strategy (Sheila, 2004), the stimulation for adaptation and innovation of products to suit both domestic and foreign markets, and addition of value to our domestic products.

Most of the studies carried out to examine the barriers to export, particularly in the Sub-Sahara African countries identify and emphasize factors of trade reforms, specifically tariff reduction and liberalization, foreign investments and the likes. The importance of these factors relating to export performance has been highly and widely acknowledged making it a lynch pin in many structural adjustment programs. However evidence provided by Noorbakhsh and Paloni (1998) support the view that countries that were relatively closed and inward oriented benefited the most from trade reforms. However when these trade reforms were completed they ceased to act as a determinant of exports. It can be concluded that these reforms reduce "anti-export bias" which without appropriate real exchange rate adjustments makes these reforms "significantly bias against the export sector" (Dennis, 2003).

Exchange rate has therefore become an important figure of recognition in trade reforms for economic growth. It is used as a tool for regulating flows of trade and capital by many developing economies which have fiscal problems, specifically deficits in their balance of payment. Models of real exchange

rates reflect the relative prices of one country in reference to tradable to non-tradable between countries.

Report has showed that exports in Sub-Sahara Africa are highly reactive to exchange rate changes, especially agricultural exports (Balassa, 1990). Not only is the level of exchange rate the determining factor but also the degree of exchange rate misalignment and the variability of the exchange rate. Increases in both the degree of misalignment and the variability of the exchange rate adversely impact on exports. It is interesting therefore to consider whether adjusting the exchange rate system of this country could promote economic growth through high export performance.

Although the rate of economic growth in developing countries may vary widely, all available evidence point to the conclusion that this rate of economic growth is associated with the rate of growth in the agricultural sector, specifically export as in the case of Ghana. Through duties paid on exports of agricultural commodities, the sector constitutes the major source of the government revenue, making it the dominant sector in the Ghanaian economy.

At the onset of independence, Ghana had the highest per-capita income in Africa which could have made her a middle class country by today's status. With an income per capita of \$ 354 in 1950, this was the highest among the West-African states. However, this did not last for long and owing to the persistent decline in the market share of Ghana's export, the country in 1950-1980 experienced a continual decline in her per capita income with its attendant increase in the incidence of absolute poverty.

During the post independence era in Ghana, different political regimes influenced exchange rate policies of this country. It was actually the economies of this era which were highly characterized with high level of inflation, an overvalued currency and a very low national output. "Failure to adjust the official exchange rate in line with deteriorating prices strongly appreciated the real exchange rate and led to the emergence of a flourishing black market. The appreciation of the real exchange rate also shifted relative incentives away from exports into import trade, with adverse effect for Ghana's current account balance (Sackey, 2002).

This overview paints a picture of a failure in the growth or performance of the country's export per capita with a destabilizing exchange rate system. It is in this light that this study seek to identify exchange rate as a key determinant of export even though there has being emerging view on the importance of other factors such as infrastructural cost and productivity.

In relation to the issues above the following research questions are raised;

- What has been the trend in the real exchange rate of Ghana from 1980 to 2004?
- What has been the trend in pineapple export of Ghana over the period 1980-2004?
- How has changes in real exchange rate affected the pineapple export of Ghana from 1980 to 2004?

Methodology

The scope, and for that matter the data for this study extends between 1980 and 2004, an era characterized by different exchange rate systems. Conventionally, it has been established that the amount of export depends mainly upon the domestic prices of the goods, the exchange rate which determines the foreign price, the price of competing goods of other countries

and foreign incomes. The data used in this study is secondary data, specifically time series data on the following;

- Nominal exchange rate figures of Ghana from Ghana Statistical Service (GSS)
- Volume of pineapple exported from Ghana Export Promotion Council (GEPC)
- Income of the United Kingdom (GDP per capita) from UN stats
- Both foreign and domestic price of goods proxied by the respective consumption price indices from UN Stats.
- Competing pineapple price of Cote d'Ivoire,
- Domestic price of pineapple

To ensure consistency throughout the work, a common unit of currency must exist and be used throughout the analysis. The US dollar was used in this study. The following data were transformed from their original local currencies to the US dollar; the local producer price of pineapple in cedi and the competitive price of pineapple of Cote d'Ivoire in CFA. This was done by multiplying the prices to their respective exchange rates of the currency in that particular year.

Lastly the nominal exchange rate was also converted to real exchange rate by multiplying the nominal by the ratio of the foreign consumer price index to local consumer price index.

Analytical Framework

Regression method, graphs and simple arithmetic for calculating growth rate were employed to analyze the data to achieve the objectives of the study. It is of paramount essence of this study to determine quantitatively how exchange rate affects the export demand, thus to say if negatively or positively and by what amount or degree. To be able to achieve this therefore calls for an analytical procedure capable of fulfilling this. Since the study attempts estimating the relationship among economic variables with the hope of constituting an economic theory, it applies the most widely basic technique used for estimating relationships. This is the regression analysis (Kellick, 1978). It is in this line that the regression analysis provides estimates of values of the dependent variable from the values of the independent variable from the so called the regression line. However these estimations can be feasible only if the model or the data set complies with the ordinary least square (OLS) assumptions, the method of statistical analysis applied in this study.

Since in econometrics we deal with stochastic relationships which have some uncertainties associated with them, an error term is added. The sources of this error term, thus measurement errors in the dependent variable, effect of large number of variables omitted or included and the likes, cause the stochastic nature of the regression model.

Considering a single model of

$$Y = b_0 + b_1x_i + U_t$$

Where, u_t is the error term or stochastic term.

It is assumed that the error terms (u_t) of the different years are independently and normally distributed with zero mean and a common variance. The above sentence is broken down as:

Zero mean: the mean value of u_t in any particular period should be zero. That is

$$E(u_t) = 0 \text{ for all value of } t.$$

In meeting this zero mean assumption the study will be able to apply the rules of algebra to stochastic phenomena and relationship in the regression model.

Autocorrelation (independence): the error terms of different years (u_i, u_j) are independent. If this assumption is not met we

say there exist autocorrelation or serial correlation and it is an indication that the systematic part of the model has not been specified correctly because of probable omitted variables. Consequences include high or over estimated t-values and R-squared values. This leads to unreliable estimates of the coefficient ($b_i s$)

Normal distribution:

This states that the u_t of the different years should be normally distributed so that we can conduct statistical tests of significance of the parameter estimates. When violated the results is still unbiased and good estimates ($b_i s$) but we cannot assess their statistical reliability by the classical test of significance since this test is based on normal distribution.

The three assumptions about the error term are mostly the problem of time series data which for that matter, matters more in this study. Other assumptions include heteroskedasticity and independence of x_t ; u_t , multicollinearity and the likes.

The ordinary least square method was used in this study due to the following reasons: The least square method has been used in a wide range of economic relationships with fairly satisfactory results, and has become commonly accepted for estimating relationships in econometrics. The mathematical procedure of using this method is such that there is no possibility of subjectiveness,

Empirical Model

Using the OLS method, the volume of pineapple exports (supply) was regressed on the real exchange rate (RER), income of trading partner (It), competing country's price, Cote d'Ivoire, (Cp) and the local producer price of pineapple (Lp). The simplest representation is given by:

$$(1) \quad X = f(RER, It, Cp, Lp)$$

Using the double – log function:

The regression model for the pineapple export market for this study is given by:

$$(2) \quad \ln(x)_t = b_0 + b_1 \ln(RER)_t + b_2 \ln(It)_t + b_3 \ln(Cp)_t + b_4 \ln(Lp)_t + b_5 \ln(x)_{t-1} + u_t$$

Where,

X = real export volume of pineapple,

RER= real exchange rate,

It = income proxied by the real GDP of trading partner (United Kingdom),

Cp = competitive pineapple price of Cote d'Ivoire proxied by their producer price,

Lp = producer price of pineapple in Ghana.

b_0 = regression constant and the exponents, b_1, b_2, b_3, b_4 , and b_5 measure the elasticities with respect to the explanatory variables.

u = disturbance terms,

Haque et al. (1990), argued that to capture the partial adjustment behavior, a lagged term in the dependent variable should be included in the estimated equation hence the inclusion of the lag $(x)_{t-1}$.

It is assumed that Ghana is a small open economy and consequently a small price taking economy in the global context, explaining why the income variable (It) is of the trading partners and not of Ghana.

A logarithmic functional form is adopted for the analysis based on 'a priori' economic as well as statistical considerations which include the following facts; exports' reaction with changes in its arguments is proportionate, the signs of the coefficients of the regressors should make economic sense and the equation should come out with a reasonably high coefficient

of determination as this gives it a high or better explanatory ability.

The functional form of the exports model applied in this study is standard in the empirical trade literature and is used in Haque et al., (1990) and Musila (2002).

Results and Discussion

Trend in Real Exchange Rate: 1980 – 2004

The period over 1980 – 2004 is categorized into four eras which coincide with policies regimes in the history of Ghana. The first era from 1983 – 1988 coincides with the first phase of the SAP; the second era from 1988 - 1995 coincides with the later phases of the SAP where in 1995 the government launched Ghana's Vision 2020 program which form the basis for the third era from 1995 – 2000; and finally the last era from 2000 - 2004, which coincides with the change of government of Ghana from the National Democratic Convention Party to the National Patriotic Party.

In spite of the few declines in the real exchange rate, Figure 1 shows that the real exchange rate increased over the entire period of 1980-2004. Any decline in the real exchange rate will result in a negative growth rate as witnessed for the periods of 1987-1991, 1994-1996 and 2001-2004 with negative average growth rate of -0.03854, -0.01016 and -0.04369 respectively. The lowest absolute decline of the cedi (-0.00692) was recorded for the period 1994-1997.

Table 1: Negative Growth Rate

Year	Growth Rate
1987-1991	-0.03854
1994-1997	-0.00692
2001-2004	-0.04369

Source: Author's computation using basic data from UN Stats. and the Ghana Stats. Service

The largest annual average increase in the RER is recorded for the period 1983-1988, followed by 1988-1995 with their respective annual absolute average growth rates as 0.62 and 0.52. The percentage average growth rate per annum is recorded as 26. It is clear that a change in the real exchange rate of the cedi may be due to a change in one or more of the independent variable; the nominal exchange rate ϵ , the foreign consumer price index P^* and the local consumer price index P .

Table 2: Percentage Growth of the Real Exchange Rate and the Sources of the Growth

Period	Av. Growth of Real Exchange Rate	Av. Growth of Nominal Exchange Rate	Growth of Foreign CPI	Growth Of Domestic CPI
1983-88	0.62 (62%)	1.42 (76.34)	0.05 (2.69)	0.39 (20.97)
1988-95	0.52 (52%)	0.29 (44.62)	0.05 (7.69)	0.31 (47.69)
1995-00	0.07(7%)	0.35 (50)	0.03 (4.29)	0.32 (45.71)
2000-04	0.04(4%)	0.25 (50)	0.03 (6)	0.22 (44)

Source: Author's computation using basic data from UN Stats. and the Ghana stats. Service.

Note: The figures in bracket represent the absolute percentage shares of the various variables to the growth of real exchange rate of the cedi over the period 1980-2004.

Table 2 shows that the rise in RER for the period 1983-1988 was faster. The implication of this is that the real exchange of cedi rate depreciated in real terms at a faster rate over this period as compared to the other periods, with an average growth rate of 62 per cent. This in Fosu (1992), work was explained by the fact that, the sum of the growth of the nominal exchange rate of the

cedi and the foreign consumer price index exceeded the growth in the local consumer price index of goods and services. The 62 percent growth rate per annum (1983-1988) in the real exchange rate is largely due to the rise in the nominal exchange rate which contributed approximately 76.34 per cent (implying a faster rate of depreciation in the cedi). The foreign CPI made the least contribution of 2.69%. This occurred during the first phase of the Structural Adjustment Period (the economic recovery program 1983-1988). The growth rate of the real exchange rate of the other periods could be similarly explained. From the results, it appears that during periods when the real exchange rate of the cedi grew slowly or appreciated, this was largely due to increases in the domestic price level.

Trends in Pineapple Export

The time profile of Ghana's pineapple export over the entire period of 1980-2004 reports a general growth rate computed at an average of 86 per cent per annum. The highest compound growth rate depicting a faster increase in export volume of pineapple was registered for the period 1983-1988. This is 2.44, followed by 0.20 for both 2000-2004 and 1988-1995 and 0.15 for 1995-2000.

Table 3: Average Growth Rate of Pineapple Export

Year	Growth Rate
1983-1988	2.44165
1988-1995	0.19746
1995-2000	0.14924
2000-2004	0.20184

Source: Author's computation using basic data the Ghana Stats. Service

It is of no coincidence that this same period witnessed the fastest growth rate per annum in the real exchange rate (62%). In a study hitherto the time scope of this study, Fosu (1992) established that there existed an appreciating real exchange rate regime of the cedi with a concomitant total decline in general export of Ghana. He further added that the rising share of exports during the 1980s was due to the export drive undertaken during the structural adjustment program which began 1983.

Takane (2004) also confirms that "the rapid increase in pineapple export has been associated with a series of liberalization policies adopted under the SAP. Of particular importance was the gradual removal, beginning in 1986, of foreign exchange controls. In addition, all non-traditional exporters became exempt from export duty and eligible to claim a corporate tax rebate. Such increased incentives among exporters contributed to the increased volume of pineapple export"

Effect of RER and Other Factors on Pineapple Export Ordinary Least Square Estimates of Regression Analysis

The volume of pineapple exports is regressed on the previous year's export volume(x_{t-1}), the real exchange rate (RER), income of trading partner (It), competing country's price, Cote d'Ivoire, (Cp) and the local producer price of pineapple (Lp). Using the OLS method, the result of the regression analysis is presented in Table 4.4.

Table 4: Regression Results

Variables	Coefficient	Std. error	t-statistic	Prob.
Log(RER)	0.582511	0.357917	1.627504	0.1210
Log(It)	0.527084	1.661163	0.317298	0.7547
Log(Lp)	-0.195766	0.254228	-0.770043	0.4513
Log(Cp)	0.376467	0.506892	0.742698	0.4672
Log(x_{t-1})	0.500194***	0.181558	2.755003	0.0130
C	-6.512587	16.42435	-0.396520	0.6964

Dependent Variable: LOG(X)

Method: Ordinary Least Squares

Sample (adjusted): 1981 – 2004

Included Observations: 24 after adjusting endpoints

Notes; *** denotes 1% level of significance

Source: Author's computation using basic data from UN Stats. and the Ghana Stats. Service

From Table 4, the result of the regression analysis is summarized as follows:

$$\ln(x)_t = -6.51 + 0.58\ln(RER)_t + 0.53\ln(It)_t - 0.20\ln(Lp) + 0.38\ln(Cp) + 0.50\ln(x)_{t-1}$$

Prob (t-values) (0.12) (0.75) (0.45)
(0.47) (0.01)***

The regression equation obtained by the use of the double log function has its intercept as negative 6.51, implying that without all the explanatory variables and all things being equal, there will be a deficit gap of about 6.51 tones of pineapple needed to be exported.

The result presented in Table 4 shows that the elasticity of export with respect to the key determinant of this study, the real exchange rate (RER) has the expected positive sign but insignificant at conventional levels. This relationship indicates that a 10% increase (devaluation) in real exchange rate increases the volume of export by 5.8 per cent. It is evident that the real exchange rate elasticity in relation to export lies between zero and unity ($0 \leq RER \leq 1$). If the elasticity of RER obtained in the analysis can confidently be rounded to unity ($0.6 \approx 1$) then a 1 percent appreciation of the real exchange rate (devaluation of cedi) would generate a 1 per cent increase in export volume.

On this basis, any nominal devaluation of the exchange rate would improve the export performance in the long run. In a study on export and import demand, Keshab *et al.*, (2005) obtained a relatively high elasticity (0.7) of real exchange rate in relation to export and a low elasticity for import. Basing their results on the Marshall-Lerner-Robinson (MLR) condition for successful devaluation of a currency, they concluded that the real exchange rate rather than the other factors are important in the determination of the export and import demand for Ghana in the long run. They further added that the high magnitude of the elasticity with respect to exchange rate suggests that exchange rate policies somehow have been effective.

The Marshall-Lerner-Robinson (MLR) condition states that the real devaluation (or real depreciation) of the currency will improve trade balance if the sum of the elasticities (in absolute value) of the demand for imports and exports with respect to real exchange rate is greater than one ($\epsilon_x + \epsilon_m^* > 1$). Either one or all the elasticities must be either unity or close to unity to be able to have their sum greater than one.

However the study has shown that the elasticity of export in relation to the real exchange rate is insignificant at the conventional level. This may be due to; Practical limitation of empirical production functions leading to the occurrence of this insignificance by chance, unavailability of data allowing for the use of proxies as in the case of producer price for domestic price of Cote d'Ivoire. These and other factors can therefore result in the insignificance of the real exchange rate and some other variables on the export of pineapple.

The income of the importing country, UK, (It) had a positive elasticity; a relationship which indicates that 10 per cent increase in the real income of the trading partner (UK) would increase the volume of pineapple export by about 5.3 per cent. It is a fact that at higher income levels, a country tends to buy or import more goods to meet the country's needs. The study,

however, shows that this is statistically insignificant at the conventional levels

As a demand function of the trading partner, it is obvious that the amount of money or of their currency to be paid in exchange for goods will influence the decision to buy more or less of Ghana's export. This attests to the negative elasticity of the local or producer price (L_p) in the estimated model and is consistent with a priori reasoning. This relation implies that when producer price of pineapple (L_p) rises by 10% in level, the volume of export demanded will decrease by 2 percent. Another explanation is when the producer price of pineapple of Ghana, hence the export price, is higher than that of Cote d'Ivoire, Ghana's competitors, the importing country (the United Kingdom) will tend to shift to the lower price market. This will result in a decrease in the export quantity of Ghana, hence the negative sign.

Also from Table 4, the result showed that for any 10 percent change in the price of pineapple of Ghana's competitor, Cote d'Ivoire, the pineapple export of Ghana will increase about 3.8 percent. This is explained by the fact that as a country's export goods get expensive, the competitiveness of the country of that particular good relative to other exporters reduces leading to the buyer buying from the less expensive source.

The lagged term(x)_{t-1}, which is the previous year's export volume, is the most significant variable from the estimated regression. This is explained in the sense that there is surely bound to be an increase of about 50 per cent in the volume of pineapple export next year should it increase by 100% this year. This can be attributed to the marketing impression perceived about the market of that commodity, thus reliability, standard, availability and the likes and the infrastructure in maintaining and improving the standard of the export commodity at the lowest cost.

Table 5: Statistical Test of Regression Analysis

Statistic	Results
R-squared	0.970831
Adjusted R-squared	0.962728
Breusch-Godfrey	
Obs*R-squared	5.447753
Prob (obs*R-squared)	0.0195
F-statistic	119.8174
Prob (F-statistic)	0.000000
Jarque-berra	0.007550
Prob (Jarque-berra)	0.996232

Source: Author's computation using basic data

It is clear from the Table 5 that the success level of the regression in predicting the volume of pineapple export with respect to its explanatory variables is almost unity (1) as given as the R-squared (0.970831). Prob (F-statistic) is highly significant (0.0000). It therefore highly holds and as depicted by the estimated equation that any unit change in the export volume of pineapple is as a result of changes in the explanatory variables, granting the base to reject the null hypothesis of zero coefficient of these variables. The results for the Breusch-Godfrey LM test indicates that at conventional levels of 5% and 10% there is no autocorrelation among different years' estimated error terms. In addition these estimated error terms are normally distributed at all conventional levels. This is indicated by the prob (Jarque-berra). As a result there is nothing to suggest that the model is mis-specified.

Conclusions and Recommendation

The results obtained from the time profile indicate that in periods of higher growth rate in the real exchange rate of the cedi, there was a concomitant faster growth in the export of

pineapple, where the faster growth in the real exchange rate was due to the sum of the growth of the nominal exchange rate of the cedi and the foreign consumer price index exceeding the growth in the local consumer price index of goods and services. This period coincided with the Economic Recovery Program (ERP, 1983-1988) of the Structural Adjustment Program. No wonder Fosu (1992) stated that "it is worth noting that the share of exports has been rising due to the export drive undertaken during the structural adjustment program which began in April 1983".

Even though the study reported insignificance at conventional levels of the elasticity of the real exchange rate on export of pineapple, the results showed that a 1% change in the real exchange rate will result in almost a 1% change in the export volume of pineapple. This implies that there exists a high elasticity of export in response to the real exchange rate.

This is consistent with the theoretical prediction of this study and that of other works based on the long term. Supposing that the elasticity of import when added to that obtained in this study for export equals unity ($\epsilon + \epsilon^* > 1$) then the MLR condition for a successful devaluation is met. Hence from this study, there exists a stable linear relationship among the export of pineapple, domestic price, foreign income, the real exchange rate and competitive price of pineapple in Cote d'Ivoire.

The results of the study further showed that the elasticity of export in response to changes in the real exchange rate is of low significance at conventional levels and for that matter any policy based on the real exchange rate alone to improve the performance of export, specifically pineapple will be fruitful but not to the potential or targeted level in the long run. This can be explained by the fact that Ghana's exports are predominantly primary commodities which are not processed and are therefore subject to price dictation by its trading partner in the world market

In short, this study has shown that the appreciation of the real exchange rate of the cedi (devaluation of cedi) during the 1980s had significant positive effect on the export performance of pineapple and Ghana's export in general.

This result is very similar to the findings of earlier study on pineapple. However, this devaluation in terms of the MLR condition has proved not be effective since the country was characterized with large balance deficit during and after the period of the SAP, even though export performance improved.

Based on the results of the study the choice therefore is for authorities to adhere to the fundamentals of the real exchange rate to be able to improve the performance of Ghana's exports just as was witnessed during the SAP. However an appreciation in the real exchange rate of the cedi (devaluation in the cedi) can only be a success if in the long run it is able to attain a balance of payment equilibrium, hence consistency between exchange rate action on export and fiscal policies should be ensured.

References

1. Dennis, A. (2003). Export Determinants and Household Welfare Levels: Focusing on the Transmission Channels. Paper prepared for WIDER conference on "Sharing Global Prosperity"
2. Amjadi, A. & Yeats, A. (1995). Have Transport Costs Contributed to the Relative Decline of Sub-Saharan African Exports? World Bank Working Paper Series.
3. Balassa, B. (1982). 'Development Strategies in Semi-Industrial Economies', NY and London: Oxford University Press.

4. Sackey, H. A. (2002). External Aid Inflows and the Real Exchange Rate in Ghana Research Consortium.
5. Kellick, T. (1978). 'Development Economics in Action: A Study of Economic Policies in Ghana' London: Hienemann.
6. Dankwa, K. A. (1986). 'The appropriate foreign exchange rate policy for Ghana, BSc. Dissertation Submitted to the Department of Agricultural Economics, KNUST, Kumasi.
7. Haque, N. U. Karjal, L. and Montiel, P. (1990). 'Estimation of Rational Expectations Macroeconomic Model for Developing Countries with Capital Controls' Unpublished; Washington: International Monetary Fund.
8. Bhattarai, K. R. and Armah, M. K. (2005). 'The Effects of Exchange Rate on the Trade Balance in Ghana: Evidence from Co-integration Analysis' Research Memorandum.
9. Fosu, Y. K. (1992). The Real Exchange Rate and Ghana's Agricultural Export, AERC Research Paper 9.
10. Musila, J. W. (2002). Exchange Rate Changes and Trade Balance Adjustments in Malawi, *Canadian Journal of Development Studies*
11. Noorbakhsh, F. & Paloni, A. (1998). Structural Adjustment Programmes and Export Supply Response, *Journal of International Development*, Vol.10
12. Sheila, P. (2004). 'The Trade Policy Context'.
13. Takane, T. (2004). Smallholders and Nontraditional Exports under Economic Liberalization: The Case of Pineapples in Ghana, African Study Monographs.
14. The National Export Strategy (2007). The Administration's Trade Reform Agenda, USA.