“The structural adjustment program in developing economies: pain or gain? Evidence from Nigeria”

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The structural adjustment programme in developing economies: pain or gain? Evidence from Nigeria

Abstract

The structural adjustment programme (SAP) is an economic reform package suggested by the multilateral agencies (IMF and World Bank) for developing countries. Its core aims are to fuel local productivity, expand the economic base, realize viability in balance of payments, cause reduction in government expenditure, improve economic competence and boost the growth potential of the economy in order to move the developing countries forward. Many African countries and other developing countries adopted this programme as a panacea to their seemingly economic problems. This study examines the influence of the SAP in developing economies – with a special focus on Nigeria. The study reviews the period when SAP was introduced (1986), through to 2012. Correlation test and error correction mechanism (ECM) were used after confirming the constant nature of the parameters. The finding illustrates the presence of a long-term association among the variables. Furthermore, SAP has a significant and direct influence on the growth of the Nigerian economy. The study suggests that SAP has contributed positively to economic growth of Nigeria; however, certain economic problems can be attributed to the level of the nation's economic growth. Based on the findings, the study supports the IMF proposition that SAP is beneficial to the growth of an economy and it enhances the stability of the economy.

Keywords: structural adjustment programme, Nigeria, International Monetary Fund (IMF), World Bank, error correction mechanism
JEL Classifications: E02, E58, E65, F63.

Introduction

There is documentary evidence that the 1980s witnessed a high rate of trade and economic reforms – as well as structural adjustment programmes by the developing countries. These reforms and programmes were mainly to launch these countries from their autarkic economies, to open ones, in order to ensure sustainability in economic progress, ease of economic and trade integration, and foreign competitiveness in the global market. A number of these reform programmes were precipitated by the assistance received or to be received from International Organizations like the International Monetary Fund (IMF) and the World Bank.

The structural adjustment programme (SAP) is an economic reform package suggested by the multilateral agencies (IMF and World Bank) for developing countries. Its core aims were to fuel local productivity, expand the economic base, realize viability in balance of payments, cause reduction in government expenditure, improve economic competence and boost the growth potential of the economy (Poyi, 2006). The SAP, also dubbed *'Washington Consensus',* allowed developing nations to shift from the administrative control model to a more market-based system as a means to improve economic performance. Heidhues & Obare (2011) stated that SAP was conceptualized to address the perceived key problems of the economic development of African countries'. Countries embracing SAP are compelled to create policies focused on the deregulation of markets and trade liberalization. Noorbakhsh & Noorbakhsh (2006) expressed that the conditions attached to SAP were aimed at plummeting the price increase trend and promoting the production efficiency and its management. These include fostering of unhindered transactions, contractionary fiscal and monetary policies, wage control, liberalization in trade activities, currency depreciation, and privatization among others. The governments of the benefitting countries were compelled to introduce austerity measures by cutting public expenditure. Theoretically, reducing public expenditure is a mechanism for pushing inflationary pressure down.

From 1973 to 1985, there was negative growth in Nigeria with the real GDP growth rate averaging 1.5% per year (Adebiyi, 2001). This scenario gave the government the impetus to adopt SAP in 1986. In the pre-SAP era, the economy was financially repressed; however, the adoption of SAP under the regime of General Ibrahim Babaginda signalled the end of financial repressive policies in Nigeria. SAP brought forth a series of economic reforms aimed at fostering sustainable economic growth.

Controversy still exists as to whether the World Bank and IMF recommended SAP to assist developing countries achieve the expected and desired benefits. A view exists that SAP is a sham for countries implementing it, however, a number of empirical studies have shown the structural programmes to be favorable – but generally the literature is inconclusive as there are others who have shown otherwise.

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According to Ogbonna (2012), SAP by its nature, is inflationary, because it increases the amount of the domestic currency required in exchange for a unit quantity of local goods and imports. IMF structural programmes, however, have been widely criticized for failing to restore economic growth and confidence (Imam, 2007).

SAP was said to have been adopted as a panacea to remedy the worsening economic situation in Nigeria. The poverty rate, unemployment level, and level of economic growth in Nigeria in the post-SAP era lead to the question as to whether the twin multilateral institutions (World Bank and IMF) were realistic in terms of using SAP to promote economic growth by achieving the objectives specified in the economic reform package. It is presumed that countries tend to grow faster by jettisoning the established self-sufficient approaches; however, literature is far inconclusive on the nexus between SAP reforms and economic growth. This has generated ambiguity on the role of SAP and apathy from citizens of developing countries with respect to the SAP reform agendas and programmes. Hence, the quest of this research is to provide empirical answers to this question as previously queried by Jinjarak, Salianas & Tsikata (2013): Were the economic reform programmes advantageous to the nations that implemented them in terms of improvements in macroeconomic indices? Considering that few empirical studies exist on this matter of discourse in Nigeria, this study will make a contribution to the existing body of knowledge and literature on the research topic in Nigeria in particular – and also developing countries at large. The study adopts a methodology that is capable of providing legitimate findings. Its objective is to empirically investigate whether SAPs have caused pain or gain for the Nigerian economy. The period spans from when SAP was adopted in 1986 through to 2012. The study is segmented as follows: relevant literature is reviewed in section 1, section 2 deals with methodology, section 3 focuses on result and discussion of the findings, and, lastly, the final section presents concluding remarks.

1. Review of related empirical studies

The role of structural adjustment programmes in an economy is a contentious issue. This has motivated a number of scholars to conduct studies to provide the empirical evidence. The discovery of Imam (2007) on the economic agents' expectations about IMF programmes showed that the loans granted by IMF have a marked effect on their expectations in early phases of collapsing growth periods and further revealed that IMF programmes have substantial expectations during uncertainty periods and less influence when the countries were subjected to slight economic shocks. The outcomes of SAP as trade liberalization and openness have been described by various authors. Dollar and Kraay (2004), Berg, Ostry & Zettelmeyer (2012) – and a host of others – showed that growth rate is directly influenced by openness; hence, the higher the extent of openness in an economy, the higher the tendencies for such a country to grow. Similarly, the study of Wacziarg & Welch (2008) discovered that economic productivity, investment and openness in trade activities rose considerably after trade liberalization.

Ogbonna (2012) evaluated the result of SAP on the Nigerian economy. The period under review was divided into Pre-SAP (1960-1985) and during SAP (1986-2008). Applying the error correction mechanism (ECM) technique and other tests on data covering the period of 1960-2008, the findings suggested that in both time-horizons the role of exchange rate depreciation in trade balance adjustments appeared to be inconsequential and that the problem of Nigeria is not that of demand management, but rather that of supply. The study stated that SAP has failed in achieving the key economic objectives, thereby concluding that SAP is not beneficial to Nigerian economy. Noorbakhsh & Paloni (1997) in their evaluation of the response of export supply to SAP revealed the failure of SAP to create proper supply which can generate long-term expansion and diversification in exports.

Easterly (2005) investigated the link between IMF and World Bank adjustment loans and growth. He identified that none of the top 20 recipients achieved reasonable growth and that the repeated lending policies failed to show favorable effect. Dreher (2005) examined the influence of IMF on growth process of the economy in 98 countries. Using panel data over the period of 1970-2000, it was shown that growth rates are reduced due to endogeneity problem and concluded that IMF advances do not a significant impact on the countries. Easterly (2003) examined the nexus between IMF and World Bank SAPs and poverty. The results suggested that structural adjustment lending offers consumption smoothing for the poor – causing a decline in the rise in poverty for a given contraction – but also alleviating poverty for a given expansion. In addition, there is no strong support of lending raising growth in the long-term. The findings in Easterly's study gave support to both the proponents and opponents of SAPs.

Munthali (2004) assessed the influence of SAPs on growth of the manufacturing sector in Malawi and found that the outcome of SAPs have helped improve manufacturing growth – but disappointingly so, because the SAP on manufacturing growth sec-

tor's growth has been characterized by fluctuations. In addition, a shift in production has occurred in the country but substantial from agriculture to industry. The study also showed the weak effect of SAPs on the country's economic growth. Kingston et al. (2011) examined the impact of structural adjustment policies in Africa – with reference to Cote d'Ivoire, Senegal, Uganda and Zimbabwe. Their findings suggested that the free market proposition of the World Bank and IMF has had a catastrophic impact on Africa's development – in contrast to the specified objectives of SAP. They further stated that macroeconomic stability has improved modestly in a few African countries, but some analysts are skeptical about its sustainability judging from the experience of these four countries.

Naqvi (2014) concluded in his study on the issue of IMF conditionality in advancing financial assistance, that IMF conditionality can be effective and favorable in improving resources' distribution in lending nations if there is no external diversity of interest. This suggests that IMF conditionality should not be a blanket one, but should be given with cognisance of the internal diversity of concerns that are present in the borrowing nation. Similarly, the study revealed that there is always a political undertone in all IMF lending, and this considered, conditionality may fail to restore allocation efficiency of resources as the borrowing nation's interest would not be the IMF's topmost priority. Jinjarak et al. (2013) empirically investigated how the trade adjustment assistance provided by the World Bank affects the growth of trade in 45 developing countries from 1987 to 2004. Employing panel data regression analysis, it was deduced that there was incremental changes in the recipient nations' GDP as a result of World Bank trade adjustment loans and increase in import growth with sustainable benefits for the recipient economies. The study showed modest evidence that a trade adjustment loan positively affected export growth, and that the level of infrastructural facilities remains key to the success of the SAP policy intervention. The study therefore, supports the proposition that structural adjustment programmes are beneficial to the nations that adopt them.

It is obvious from the above review that there has not been consensus among the scholars on the real effect of SAPs on the economy; hence, justifying the need for further research of this nature.

2. Methodology

This section explains the methodological steps involved in the analysis of this study.

2.1. Data-related issue and variables. The basis of this study is to examine the influence structural adjustment programmes have had on developing countries with respect to the economic opulence of Nigeria. Annual time-series data from the year SAP was implemented (1986), through to 2012, were collected from the Statistical Bulletin of Nigeria's Central Bank. The indices for SAP in this study are non-oil exports (NOX), consumer price index (CPI), total government expenditure (TGE), exchange rate (EXGR), and balance of trade (BOT) while the Nigerian economy was captured using gross domestic product (GDP) – a standard yardstick to measure economic growth. The SAP indices were selected in line with a number of specific objectives of SAP as stated by IMF – in order to get a robust finding.

2.2. Specification of model. The model is built to reflect how the objectives of SAP have assisted to progress the Nigerian economy. It specified economic growth (GDP) as a function of NOX, CPI, TGE, EXGR, and BOT representing the explanatory parameters. The econometric equation is stated as:

$$GDP=\beta_0+\beta_1 NOX+\beta_2 CPI+\beta_3 TGE+\beta_4 EXR+ +\beta_5 BOT+\mu \quad (1)$$

β_0 – intercept value or constant parameter

β_1 - β_5 – coefficient of exogenous variables

μ – error term or stochastic variable

The model is further stated in logarithm form to bring all the data of the parameters to a comparative level. By stating in logarithm form, the model becomes:

$$logGDP = \beta_0 + \beta_1 logNOX + \beta_2 logCPI + \beta_3 logTGE + + \beta_4 logEXGR+\beta_5 logBOT+\mu. \quad (2)$$

From equation (2), an error correction model can be developed as stated below;

$$\Delta logGDP = \beta_0 + \beta_1\sum logNOX_{t\text{-}1} + \beta_2\sum logCPI_{t\text{-}1} + +\beta_3\sum logTGE_{t\text{-}1} + \beta_4\sum logEXGR_{t\text{-}1} + \beta_5\sum logBOT_{t\text{-}1} + +\lambda ECT_{t\text{-}1} + \square_t \quad (3)$$

Δ – change

t-1– lagged value of each variable

$\square_t$ – white noise residual

λ – speed of adjustment parameter/coefficient of ECM

ECT – error correction term

The *'a priori'* or theoretical expectations are given as $\beta_1, \beta_3, \beta_4, \beta_5 > 0$ and $\beta_2 < 0$. This indicates that it is expected based on economic theory that all the exogenous parameters impact positively on the endogenous parameter (GDP), except CPI.

2.3. Econometric approach. The estimation techniques employed in the study are: error correction

mechanism (ECM), correlation test, Johansen co-integration test, and Augmented Dickey-Fuller (ADF) unit-root test. The correlation test illustrates the form of relationship existing between the endogenous variable and each of the exogenous variables. The ADF unit root test is employed to conduct the stationarity test on data, in order to ensure that such data no longer contain a unit root. The Johansen co-integration test reveals whether a long-term balanced connection exists among the parameters and it is a condition necessary before proceeding to error correction mechanism. ECM develops an error correction model which incorporates short-term dynamism into the long-term relationship, and this approach overcomes the problem of spurious regression.

3. Result and discussion of findings

The results from the methods explained in section two above are presented and discussed in this section.

3.1. Correlation test. The correlation test shows the association present between two variables – say variables X and Y. The correlation coefficient (r) determines the type of relationship that subsists between two variables – normally the dependent variable and independent variable – and is usually less than or equal to 1 – i.e. $r \leq 1$. If $0 < r < 1$, a positive (+) correlation or direct relationship exists but if $r < 0$, a negative (-) correlation or inverse relationship exists. Table 1 presents the result of the correlation test between GDP and the exogenous variables (NOX, CPI, TGE, EXGR, and BOT).

Table 1. Correlation test result

Variable	R
NOX	0.984049
CPI	0.991108
TGE	0.798558
EXGR	0.958486
BOT	0.973980

Source: Author's analysis

The correlation test result shows that all the explanatory parameters have a positive correlation with or directly related to GDP. This means a direct relationship exists between GDP and each of the independent variables; therefore, an increase in the value of each independent variable increases GDP.

3.2. Augmented Dickey-Fuller (ADF) unit root test. The need to eradicate unit root in time series data and avoid spurious regression necessitates this test. Conventionally, time series data are presupposed not to be stationary, and hence the need to conduct a test. The unit root test establishes that the data are stationary and also reveals the variables' degree of integration. Employing the ADF unit root test, data are deemed to be stationary if at absolute term, the ADF test statistic value is greater than 5% or 10% of the Mackinnon test critical value.

Table 2. ADF unit-root test result

Variable	Test Statistic Value	Mackinnon Critical Value	Trend & Intercept	Order of Integration
GDP	-2.339498*	-1.955020	No	I(1)
NOX	-5.148490*	-1.955020	No	I(1)
CPI	-1.78209**	-1.609070	No	I(1)
TGE	-7.636017*	-1.955020	No	I(1)
EXGR	-4.411944*	-1.955020	No	I(1)
BOT	-4.926726*	-1.955020	No	I(1)

*(**) denotes no unit root at 5% (10%) Mackinnon test critical value
Source: Author's analysis.

Table 2 (above) shows that all the variables are series I(1) – implying they are integrated in the same order and are established to be stationary at first difference. Following the unit root test, the co-integration test can be performed to confirm the presence of long-term association among the parameters.

3.3. Co-integration test. The co-integration test follows the Johansen approach. For co-integration to exist, it is hypothesized that at least one of the parameters is not equal to zero – i.e. one out of $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5 \neq 0$. The trace test is conducted to determine co-integration. The condition for co-integration applying trace test is that trace statistic must exceed the critical value at 0.05.

Table 3. Result of co-integration test (trace test)

Trace statistic	0.05 Critical value	p-value**	Hypothesized No. of CE(s)
154.4963	95.75366	0.0000	$r = 0$*
90.90271	69.81889	0.0004	$r \leq 1$*
56.79074	47.85613	0.0058	$r \leq 2$*
27.01049	29.79707	0.1014	$r \leq 3$
8.885397	15.49471	0.3761	$r \leq 4$
0.844932	3.841466	0.3580	$r \leq 5$

Trace test indicates 3 co-integrating equation at 0.05 level
* denotes acceptance of the hypothesis at 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values
Source: Author's analysis

The Trace test shows that three co-integration equations are present, signifying the existence of long-term relationship; thus, providing evidence in support of the hypothesis for the co-integration test. In a long-

term, the co-integrated parameters trend with each other over an extensive duration in a stationary manner. The existence of co-integration is germane for error correction mechanism (ECM) to be conducted.

3.4. Error correction mechanism (ECM). The result of the error correction mechanism is presented in Table 4 (below)

Table 4. Result of ECM

Variable	Coefficient	*p*-value
C	-0.023729	0.4055
ΔNOX	0.297783	0.0000*
ΔCPI	0.414649	0.1502
ΔTGE	0.003983	0.7940
ΔEXGR	0.190016	0.2860
ΔBOT	0.150938	0.0001*
ECT	-0.890293	0.0140*

R^2=0.835707 F-statistic=11.86895
F-statistic (*p*-value) = 0.000085*
(*) denotes significance at 0.05 level of significance i.e. 5% threshold value
Source: Author's analysis

The result of the ECM shows that all the explanatory parameters are positively related to GDP. This outcome is similar to the result of the correlation test. All the exogenous variables conformed to their respective theoretical expectations – except CPI. A unit increase in NOX, CPI, TGE, EXGR and BOT lead to 0.297783, 0.414649, 0.003983, 0.190016, and 0.150938 units or approximately 29.7%, 41.4%, 0.39%, 19%, 15.1% increase in the value of GDP respectively. If all the exogenous variables remain constant or unchanged, GDP decreases by 0.023729 or approximately 2.37% because the intercept value is -0.023729. The estimated coefficient of the error correction term (ECT) is -0.890293, and it is adjudged to be significant because it is negatively signed. The significance of ECT shows that it can correct deviations that occur in the past period to the present, and that the long-term equilibrium connection between economic growth and indices of SAP is valid. The ECT coefficient suggests a high speed of adjustment rate, indicating that approximately 89% of the disequilibria in the shock of previous year returns to the long-term equilibrium in the present year – meaning that deviations from the short-term to the long-term are corrected by 89% per annum. The coefficient of multiple determination (R^2) is 0.835707, and is high since $0 < R^2 \leq 1$. In order to determine the goodness of fit of the model, the value of R^2 indicates that the regression line fits well to the sample of data in the model. Also, R^2 shows that approximately 84% of total variation in GDP is caused by the exogenous variables put together while factors not included in the model i.e. error term accounts for the 14%. It can be inferred from the R^2 that the model is robust. The F-statistic of 11.86895 with *p*-value of 0.000085 is statistically significant at the 0.05 level of significance – implying that the model adequately captured the impact of SAP on the Nigerian economy and affirming that SAP has a predictive ability on the Nigerian economy. In addition, only NOX and BOT were found to be statistically significant on GDP, at the 0.05 level of significance.

3.5. Implication of findings. The study examined the impact the structural adjustment programmes have had on the developing economy of Nigeria. The correlation test showed that the indices representing SAP are all positively correlated with economic growth – thus suggesting that economic growth increases when these indices increase. The co-integration test revealed that a long-term association exists amongst the parameters – hence implying that the parameters drift together over time so that deviations from the previous period can be corrected in the long-term. The ECM suggested that SAP has a strong and direct influence on the growth of the Nigerian economy. All indices of SAP in the study exerted a positive effect on economic growth. However, only non-oil exports and the nation's balance of trade contributed more significantly. The positive and significant impact of non-oil exports implies that diversification of the export base and the nation's participation in the global market occupy vital roles in fostering the productivity of Nigeria, and are a determinant of economic growth. The CPI suggests that the general price level has not been detrimental to the economy, though its influence is not significant. The expenses of government affect the economy positively, but insignificantly – implying that the fiscal measure through government expenditure increases the nation's level of output, but is not a significant mechanism of economic growth. The positive influence of exchange rate exerted on economic growth means that the devaluation of the Nigerian domestic currency (Naira) has stimulated domestic production and allowed the nation to compete well in the global markets. This is a trivial contributor to economic growth. Nigeria's trade balance wielded a significant positive influence on the nation's growth process – thus suggesting that international trade activities have been favorable, and it is a determinant of economic growth.

Concluding remarks and recommendations

The IMF and World Bank recommended SAP as a corrective measure to problems hindering the economic development of various nations – especially developing countries. Nigeria embraced SAP after being diagnosed with the problem of demand management. It is widely speculated that SAP is a camouflage used by the IMF and the World Bank, in order to have greater influence on a nation's economy and to promote possible clandestine motives.

Few studies have been conducted in Nigeria to provide empirical evidence of the influence that SAP has had on the Nigerian economy. The dearth of empirical studies in Nigeria has made it an ambiguous issue in the country. This study thus took a major stride in terms of filling this gap.

The empirical findings correlate with study on developing countries conducted by Jinjarak et al. (2013). In addition, the notion that SAP is harmful to a nation's economy is not necessarily correct, based on these empirical findings. However, the study suggested that the reason for the current stage of economic development in Nigeria cannot be attributed to SAP – but to other economic problems which includes: a high level of corruption, mismanagement of public funds, political instability, poor infrastructural facilities, and the pluralistic nature of the society which gave rise to a high level of ethnocentrism. Concomitant to this is a low level of industrialization, a low inflow of foreign capital, a tenacious dependence on crude oil which comprises the lion's share of Nigeria's exports, and capital flight – among other things have been the source of economic problems in Nigeria. However, unlike the demand-management philosophy suggested by the IMF, the real problem faced by Nigeria is supply management, that is management of production. The study recommends that Government at all levels should enforce due process in order to curb mismanagement of public funds and reduce corruption. The export products of the country should be increased via diversification to other products as against the current mono-product nature of the economy.

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Appendix

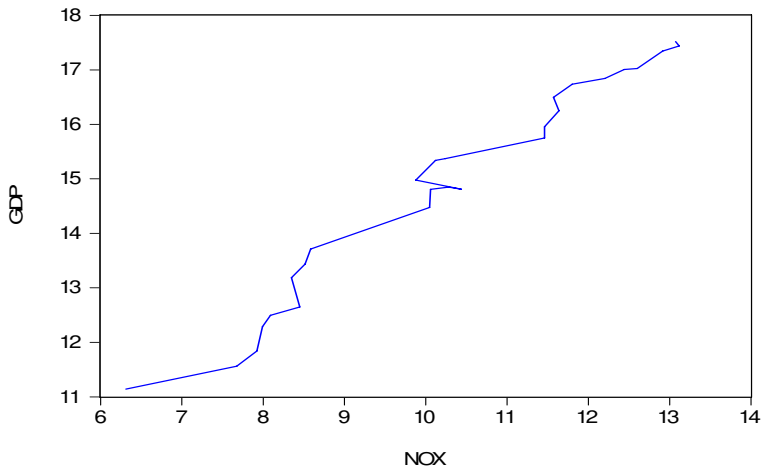

Fig. 1. Movement of trend in GDP growth with NOX

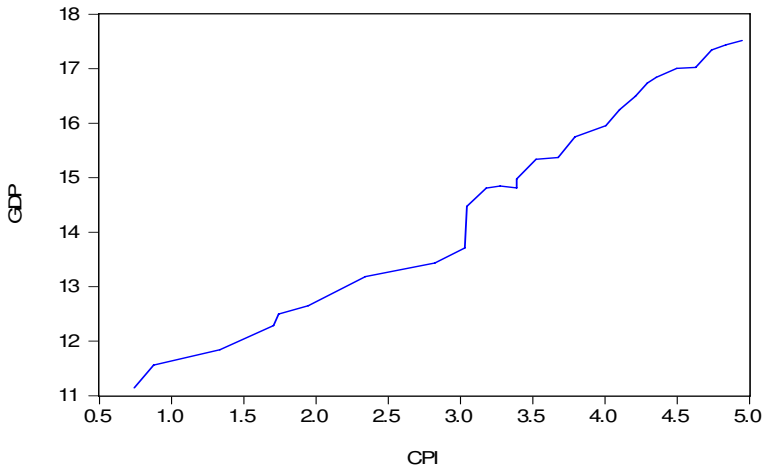

Fig. 2. Movement of trend in GDP growth with CPI

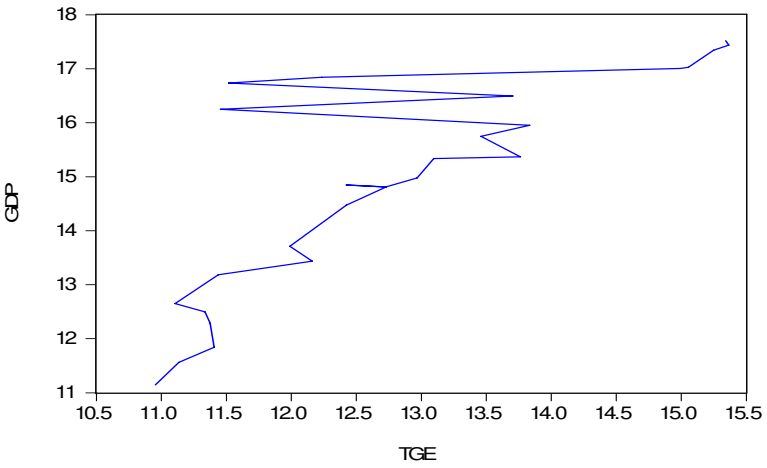

Fig. 3. Movement of trend in GDP growth with TGE

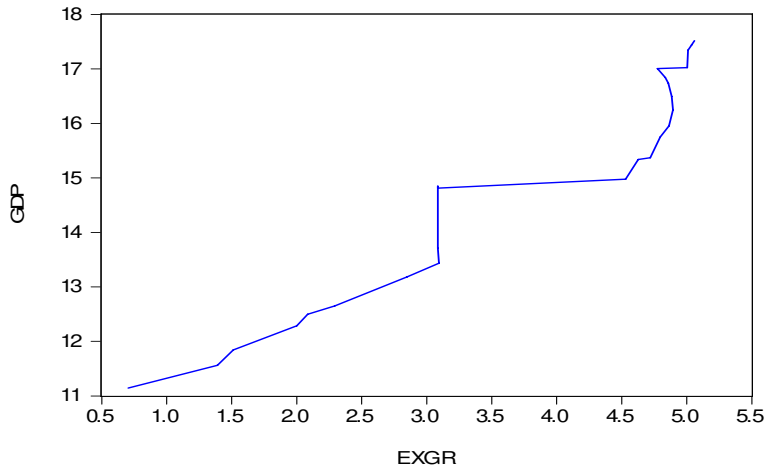

Fig. 4. Movement of trend in GDP growth with EXGR

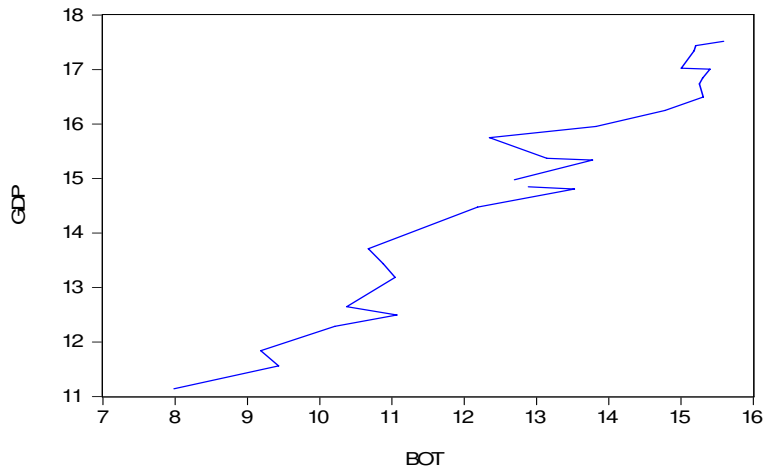

Fig. 5. Movement of trend in GDP growth with BOT

Source: system generated by E-view statistical package