

Economic Development in a Deregulated Economy: The Nigerian Experience⁺

Faced with serious economic crisis in the mid 1980s which resulted in both internal and external imbalance, Nigeria adopted deregulation as a policy option to put the economy on the path of sustainable growth. Several elements of the policy included using the interest rates to encourage capital inflow and accumulation; exchange rate flexibility; reduction in public sector borrowing and size; trade liberalization and other short-term measures. This study examines deregulation with a view to assessing whether it actually led to growth in the Nigerian economy. Adopting the new econometric technique, the results show that the targeted variables had the potential of inducing growth if the policies had been properly administered.

Introduction

The concept of development has undergone several changes, yet

* Mr. Essien is a Senior Statistician in the Research Department, Central Bank of Nigeria (CBN), Abuja.

** Mr. Onwioduokit is an Economist in the International Economic Relations Department, Central Bank of Nigeria (CBN), Abuja.

there is still no universally acceptable definition of it. *Economic development* is defined as a sustainable increase in living standards that encompasses material consumption, education, health, and environmental protection (World Bank 1991). In the broader sense, development includes other important and related attributes, notably, more equality of opportunity, political freedom and civil liberties. Overall, the goal of development is, therefore, to increase the economic, political, and civil rights of people across gender, ethnic groups, religious races, regions, and countries.

When many developing countries achieved independence, the primary economic goal of their leaders was the rapid structural transformation of backward agrarian economies into modern industrial ones. The dominant paradigm of the time recognized four main issues in development, namely, physical capital, agriculture, trade and market failures, and the policy goal was to increase savings and investment which would then lead to rapid accumulation of capital. Lack of physical capital, especially infrastructure, was initially thought to be the critical constraint on development (Rosen Stein Rodan 1943; Mandelbaum 1945; Nurkse 1952; and Lewis 1954 & 1955). Domestic capital formation was certainly a primary concern. As (Lewis 1954) puts it "the central problem in the theory of economic development is to understand the process by which a community which was previously saving 4 or 5 per cent of its income or less converts itself into an economy where voluntary saving is about 12 to 15 per cent of national income or more". The two-gap model also stressed a foreign exchange constraint, that is, the difficulty of financing import needs by means of exports (Chenery and Bruno 1962; Little 1982; Bacha 1984). The two-gap model of domestic saving and foreign exchange constraints to growth guided external aid and lending agencies in judging the extra resources that developing countries would need to finance imports and investment. The contribution of human capital to development was later annexed to the analysis. Early works that link human capital with development include (Schultz 1961 and Becker 1964). From these studies, accumulation of human capital emerges as one of the most powerful engines of development.

The agricultural sector was seen as a resource of industrial investment, but the policies adopted to protect local industries turned the terms of trade against it. Also, with respect to trade, policy makers felt that import substitution was necessary for development. They also feared that integration with the global economy might destabilize development. The response, usually, was in support of import protection.

Regarding the role of the market, it was assumed that, in the early stages of development, markets could not be relied on, and that only the state could direct the development process. The major development institutions (the United Nations and its agencies, including the World Bank and several bilateral aid agencies that form part of Official Development Assistance) supported these views with varying degrees of enthusiasm.

However, by the early 1980s, the belief in the ability of the state to direct development gave way to a greater reliance on markets. Inward-oriented strategies are more and more being replaced by outward-oriented ones. Discriminatory taxes on agriculture to fund industries are no longer the norm. In recent years, many countries have implemented market-oriented reforms. With these changes has come a growing recognition that development is a multidimensional process with which price reforms, investment, and institution-building are complementary.

Economists have traditionally considered an increase in per capita income to be a good proxy for other attributes of development. But the weakness of income growth as an indicator is that it may mask the real changes in welfare for larger segments of the poor population. For instance, improvements in meeting the basic needs of food, education, health care, equality of opportunity, civil liberties, and environmental protection are not captured by statistics on income growth. While there may be an association between poverty and underdevelopment, and riches and development, there are a number of reasons why some care must be taken in using income figures alone as a criterion of development (unless underdevelopment is defined as poverty and development as riches). Bearing in mind this arbitrariness of income, it is still very convenient to have one readily available and easily understandable criterion for clas-

sifying countries. Yet, it must be understood that income has also one positive advantage, namely, that it focuses on the *raison d'être* of development, which is raising of living standards and the eradication of poverty. In the last resort, income is not a bad proxy for measuring the social and economic structure of societies. Indeed, all the known indices of economic development are positively correlated with economic growth. Thus, economic growth could serve as a suitable proxy for economic development (Onwioduokit 1997).

Policy makers in most developing countries have long recognized that development encompasses more than rapid income growth. They, however, have different opinions about priorities. India's economic plans, for example, assumed that income growth alone would fail to reach many of the poor. Much emphasis was, therefore, placed on measures to tackle poverty directly. For Malaysia the reverse was considered. Her own policy was expressed thus: "For operational purpose, therefore, rapid economic growth of the country is a necessary condition for the success of the New Economic Policy. It is only through such growth that the objective of New Economic Policy can be achieved without any particular group in the Malaysian society experiencing any loss or feeling any sense of deprivation" (Malaysia 1973).

Economic deregulation or liberalization, on the other hand, is defined as a deliberate and systematic removal of regulatory controls and structures and complex operational guidelines in the administration and pricing system of the economy. It also involves the rationalization of government participation in the economy such that it does not constitute a hindrance to the growth of the economy (Ojo 1991). Thus, there are at least two elements in a programme of deregulation. The first implies the movement of an economic-based system to a market-based one in which it is believed that factors of production, goods and services are efficiently priced and optimally allocated under competitive conditions. The second element seeks to reduce the role of the public sector and correspondingly increase that of the private sector, based on the belief that, generally, private enterprises are more conscious of market signals and that there is a more positive relationship between investment growth and

private sector activity than with public sector activity. Active involvement of the public sector in economic activities tends to crowd out the private sector. However, public investment in infrastructure complements private investment to induce higher factor productivity.

Deregulation is often a response to regulatory failure, and is resorted to when the outcome of attempts to fight market failures are inferior to what the situation would have been without regulation. It, however, does not imply the removal of all regulations. Prudent controls are essential while continued government participation in certain activities, such as public utilities and infrastructural development, has been found to produce a salutary effect on overall economic performance. Government interventions in the workings of markets are, indeed, permissible under a regime of deregulation if such interventions are market-friendly and are undertaken with the appropriate instruments and in consonance with the dynamics of the markets (Ojo 1994).

The pertinent question that this study seeks to answer is: has deregulation led to economic development in Nigeria? In the paper, growth in income is used as a suitable proxy for economic development. This question, indeed, forms the main objective of this paper and it would be examined empirically using the recent methodology of econometrics. The remaining part of the paper is organized thus: section 2 discusses deregulation in Nigeria. In section 3, the model framework is developed while, in section 4, an empirical analysis of the deregulation package is carried out. The study is summarized and concluded in section 5.

2. Deregulation in Nigeria

The deregulation of the Nigerian economy came with the adoption of the structural adjustment programme (SAP) in 1986. The programme had the following characteristics: (i) a market-based exchange rate; (ii) liberalized trade; (iii) removal of most import bans; (iv) a new tariff schedule; and (v) new policies to increase export growth. Highlights of the deregulation as embodied in SAP are as follows:

- adoption of tight fiscal and monetary policies to reduce inflation and rationalize public expenditure, including the public investment programme;
- dismantling of exchange controls and the adoption of a market-determined exchange rate policy;
- liberalization of trade, rationalization of customs and excise duties, and abolition of price controls;
- adoption of financial sector reforms; and
- privatization and commercialization of public enterprises and the abolition of marketing boards.

In broad terms, the above strategies can be categorized into two – macroeconomic and sectoral policy reforms. In this paper, only the macroeconomic reforms will be discussed.

2.1 Macroeconomic Policy Reforms

2.1.1 Fiscal Policy

Government's fiscal policy and public expenditure reforms pivoted around reducing the relative size of the public sector and reallocating public expenditures towards infrastructure and human resources. Federal budget deficits were targeted to be brought below 4 per cent of GDP.

2.1.2 Monetary/Banking Policy

This programme did not initially address financial sector reforms. However, one of its goals was to establish a market-oriented financial system that would support the mobilization of financial savings and encourage a more efficient allocation of financial resources. The programme, thus, involved reforming the old system of fixed credit allocations, subsidized and regulated interests rates for priority sectors, and project funding by development finance institutions. The strategy also involved adopting ways to increase competition in the sector and strengthening the supervisory role of the regulatory authorities. Entry into the system was liberalized, permitting a large number of banks and non-bank financial institutions to commence operations during the period. The expected result

would be an improvement in the financial intermediation process which is a crucial element in economic development.

2.1.3 Exchange Rate Policy

The focal point of the reforms was the establishment of a market-determined foreign exchange rate. Prior to the reforms, the demand for foreign exchange far exceeded the available supply, hence it was subjected to arbitrary rationing. The reform programme established a floating exchange rate regime introduced in phases and consisting of two tiers. The first-tier was an officially administered rate which applied to all public service transactions, while the second-tier rate applied to all other market transactions and was determined by auction in the second-tier foreign exchange market (SFEM). This reform sought to curtail demand for imports, encourage capital inflows and non-oil exports, eliminate distortions imposed by the import-licensing system and, above all, provide a realistic exchange rate for the naira.

2.1.4 Liberalization of International Trade

In an effort to create a conducive business environment for the efficient production and distribution of goods, the reform liberalized trade. Several public sector trade corporations were abolished. The import licensing system and the 30 per cent import surcharge were abolished. Customs and excise tariffs were restructured so that the average unweighted nominal rate of protection fell from more than 33 per cent to about 23 per cent. With regard to exports, the policy sought to support growth and diversify exports, particularly manufactured goods. To this end, the exchange rate system was liberalized. In an effort to promote exports, most export bans and the duty drawback scheme were abolished.

2.1.5 Liberalization of Domestic Prices, Markets, and Trade

Price liberalization was a major policy of the reform programme. Before the reforms, price distortions in the agricultural sector led to a sharp decline in domestic and traditional

export production. Consequently, six core agricultural commodity boards were abolished in an effort to give the private sector access to internal and external markets for all agricultural produce.

Also, before the reforms, many manufactured goods were subjected to price and distribution controls that were applied and enforced primarily at individual factories, thus enabling traders to absorb rents arising from the differential between the market price and the control price. As part of the reforms, private enterprises were allowed to establish their own prices, thus taking these rents away from traders. There were also public sector reforms which established four criteria in an effort to rationalize, privatize and commercialize public enterprises as follows:

- enterprises that could operate fully on a commercial basis would be privatized;
- those that could operate partially would no longer receive government subsidies;
- those that could be partially or fully commercialized and still continue to be controlled by the government would be required to operate without government subventions;
- those that could be turned into full public entities would continue to receive public support subject to appropriate user fees.

All these policies were taken in order to move the economy higher on the growth and development path.

Empirical evidence tends to support the claim that the less an economy is regulated, the more flexible it becomes and the higher its growth potential. Empirical studies in this regard are essentially inconclusive. While (Moore 1991) found that the series of deregulatory measures introduced in the United States of America between 1982 and 1989 made it one of the fastest growing countries in the OECD during the period, thus establishing a positive relationship between deregulation and economic growth and by extension economic development, (Khatkhate's 1992) study of selected developing countries showed a mixed result. While the result of the Indian reform

programme was disappointing, that of Indonesia was successful. In addition, the reform programme of the Philippines had a modest result while that of Sri Lanka was not commensurate with the far-reaching deregulation reforms embarked on by the country.

Although several studies on the impact of SAP exist in Nigeria, efforts to appraise deregulation have been essentially poor; none has adopted a wholly empirical appraisal of the reform package. For instance, (Anyiwe 1994) observes that as a result of SAP policies, general price levels have increased in all markets except the labour market. Nigeria's real output or income has declined and income distribution has continued to be in favour of the rich. SAP has not aided, and cannot aid, economic recovery since it has adverse effects on incomes and prices.

(Okon 1994) also discusses the implications of reducing public expenditure under SAP, and notes that the programme has led to increased unemployment, low level of capacity utilization and lack of effective demand. In a related study, (Ikpeze 1993) reviewed a sample of four microeconomic reforms, namely, financial liberalization, removal of subsidies, privatization/ commercialization of public enterprises, and the adoption of a realistic exchange rate policy. He found that liberalization was beset with a host of difficulties, uncertainties and controversies, and thus, focused on those problems arising from the dynamics of adjustment, such as the persistence of the parallel market for foreign exchange, and the ideological complexion of liberalization.

(Iyoha 1995) examined economic liberalization and the external sector and concludes that SAP has not yielded the expected gain. He, therefore, called on government to adopt policies to compress imports, boost export promotion, increase foreign investment, manage the external debt optimally, and improve diversification of the economy.

In assessing the impact of SAP on the Nigerian financial sector, (Ndekwu 1995) notes that the liberalization measures has increased competition among the banking institutions, and thereby, released resources for efficient use. He also observed that resource allocation from money to capital market and from

public to private sector had been achieved with considerable success.

Admittedly, some policies of the reforms cannot be easily quantified, however, the major aspects of trade liberalization, as well as exchange and interest rate policies, which were expected to impact positively on growth, can be quantified. The impact of these variables on income would be used to assess the impact of deregulation on economic development in Nigeria

3. Deregulation and Economic Growth

3.1 The Model

Several combinations of the aforementioned policies were needed to restore growth to the economy. Economic development itself requires some of the structural changes embodied in the deregulation package which would make growth self-sustaining. The measurable variables contained in the package were interest and exchange rates, and trade liberalization which was to create competition and encourage export of homemade goods. However, it must be noted that if deregulation is not properly implemented, it can lead to the macroeconomic instability it was intended to correct. The cost of any sustained macroeconomic instability would depend on how the policies affected economic growth through its effect on investment.

Basically, there are two complementary approaches to assessing economic growth to the growth theory and the growth accounting approaches. The accounting framework starts with the production function, which is assumed to be characterized by constant return to scale. For example, when the quantity of each factor input is doubled, the output itself will double.¹ Thus, output level is directly proportional to input of capital and labour. The miscellaneous factors that affect economic growth, which is sustained in this framework and which is relevant to this study, is reduction in the distortions in the economy which would enhance efficient allocation of resources. Thus, we would expect a more optimal intervention of government in the economy, an appropriate degree of export orientation in production, an optimal interest rate and commodity

pricing policies, etc. Based on the growth theory framework, several models exist in the literature which are basically different from each other with regard to their underlying assumptions (see Harrod-Domar 1957; Solow 1957, etc.).

Let us consider the World Bank three-gap model which assumes that there are four sectors in the economy, namely, the household, business firms, government and the rest of the world. Let us also consider the national income identity where national income is the sum of the consumption expenditure by the private sector, gross private domestic investment, total government purchase of goods, and the trade balance. That is:

$$Y = C + I + G + X - M \quad \dots \dots \dots (1)$$

This can also be written as:

$$Y = C + S_p + T \quad \dots \dots \dots (2)$$

where Y and C are as in equation (1); S_p = total private savings; and T = net tax payments.

Equation (2) shows how income earned through the sale of goods is disposed of.

From equations (1) and (2) we have:

$$C + I + G + X - M = C + S_p + T \text{ and}$$

$$I = \Delta K = S_p + (T - G) - (X - M) = S_p + S_g + S_f \quad \dots \dots \dots (3)$$

where S_g and S_f represent government and foreign savings.

Let us assume that output is proportional to capital stock and change in output is proportional to change in capital stock such that:

$$\Delta Y = v \Delta K \quad \dots \dots \dots (4)$$

where v = output-capital ratio. Thus, from equation (3) we notice that a change in capital can be constrained by exchange rate instability as it influences foreign savings i.e., an un-

restricted depreciation of the domestic currency vis-a-vis the currency of the major trading partners leads to a decline in foreign savings. Also, the degree of openness of an economy (defined as the sum of imports and exports denominated by the gross domestic product (GDP)), which depends on magnitude of international transaction, factor mobility and degree of interaction, also has effects on capital stock changes, and hence, investment. Thus, a country with a high degree of openness stands to benefit from international contracts and technological adaptation even though it may still be vulnerable to external shocks. Finally, both government and private savings could be constrained through outright discouragement of savings because of an inappropriate interest rate structure which leads to a reduction in capital accumulation with dire consequences on investment. Thus, interest rate determines the amount of savings available for investment in the capital market, i.e., the higher the rate of interest, the higher the available investible funds.

A model for economic growth would, therefore, consist of both domestic and foreign components. The shift factors would be due to domestic distortions captured by the exchange rate or its premium, and external shocks indicated by the degree of openness of the economy.

3.2 Model Specification

A model which incorporates the determinants of economic growth and development apart from some unquantifiable variables subsumed in the quantifiable ones within the deregulation package can be specified along the World Bank's three-gap model framework as:

$$Y = f(i_L, e_M, o_p) \dots \dots \dots (5)$$

where

- y = log of gross domestic product or LGDP
- i_L = log of domestic rate or LDER
- e_M = log of official market exchange rate or LEXR
- o_p = log degree of openness (imports + exports)/GDP or LOPN

Thus, mathematically,

$$y = a_0 + a_1 i_d + a_2 e_m + a_3 o_p + \varepsilon \quad \dots \dots \dots (6)$$

A priori, we expect a_1 , a_2 and $a_3 > 0$.

Proceeding further, we adopt the (Engel-Granger 1987) modelling framework by first testing for stationarity and cointegration in the variables to determine the existence of a long-run equilibrium relationship between the variables which could be realized through market forces or an admixture of government policies. Deregulation stipulates a market-oriented economy and promotes growth in the economy if the key variables in the adjustment process are stationary.

A test for stationarity in the Nigerian data is very important. With the discovery of oil in commercial quantities, macro-economic aggregates began to fluctuate more greatly. Hence, the need to iron out these wild swings. The consequence of using non-stationary series for modeling is so grave that well established models are breaking down as they continuously fail to predict outcomes. The problem, according to (Granger and Newbold 1974), is that regression results on non-stationary series may, most times, be "spurious or nonsensical" to the extent that a relationship would be accepted as existing between two variables, as measured by their coefficient of determination, when, in fact, no relationship exists. Inferences from non-stationary time series, apart from being spurious, violate the classical econometric assumption, thus making the results unreliable for policy making. Several ways around this problem in terms of time and resources did not completely achieve its aim. The growing successes in time series modelling pioneered by (Box and Jenkins 1970) saw the emergence of a more comprehensive treatment of times series data in econometric modeling by examining their properties and developing the notion of cointegration (Hendry 1986; Granger and Newbold 1986). Thus, if the interaction of a non-stationary series results in an error term, which is stationary, then the model is sufficient and the variables affecting the phenomenon are essentially those that would lead to a variation in the dependent variable.

The second step involves the formulation of an error correction model. This formulation (see Cheremza and Deadman 1992) incorporates the residual from the cointegrating regression as a valid error correction variable. According to the Engel-Granger representation theorem (Engel-Granger 1987), if two series are cointegrated then they will be most efficiently represented by an error correction specification, and furthermore, if the series are cointegrated, this dynamic specification will encompass any other dynamic specification. Error correction and cointegration help to determine the existence of long-run equilibrium while specifying the model in a short-run dynamic way.

4. Empirical Results

4.1 Estimation of the Model

The data used in this work were taken from quarterly reports between 1986 and 1993 when deregulation was in force in Nigeria, and were obtained from the *International Financial Statistics* (IFS), a publication of the International Monetary Fund (IMF) and the *Statistical Bulletin* of the Central Bank of Nigeria. In estimating the model specified in equation (6), our first task was to test for the presence of unit root in the series in order to determine the order of integration in the variables and examine such variables for cointegration along the rule earlier specified.

Table 1 shows the results of the stationarity test using the Dickey Fuller set of unit root test. This test was not statistically significant for all the variables in the model at their levels but was significant at their first difference. Thus, having assumed that our series belonged to the homogenous time series class, differencing once was enough to induce stationarity. We conclude that our variables are integrated of order I, denoted I (I). Also, the error correction variable (ECV), being the residual from the cointegration regression, was found to be stationary, i.e., I(0), thus indicating that the series are cointegrated. With the existence of such long-run equilibrium we would thus be led to an error correction model.

Table 1
Result from Unit Root Test

Series	DF		ADF							
			1		2		3		4	
	AL	FD	AL	FD	AL	FD	AL	FD	AL	FD
LGDP	-3.5 (-0.94)	-7.85 (-7.80)	-2.55 (-0.94)	-4.85 (-4.91)	-2.41 (0.98)	-3.38 (-3.44)	-2.59 (-0.12)	-1.94 (-2.02)	-3.86 (-0.75)	-2.62 (-2.74)
LDER	-2.45 (-1.33)	-5.06 (-5.15)	-2.85 (-1.45)	-3.51 (-3.58)	-3.1 (-1.52)	-2.57 (-2.63)	-4.36 (-1.82)	-3.03 (-3.10)	-3.65 (-1.07)	-3.3 (-3.37)
LEXR	-3.29 (-2.41)	-5.18 (-4.92)	-4.29 (-2.41)	-3.97 (-3.77)	-5.12 (-2.14)	-4.08 (-4.31)	-2.99 (-0.81)	-3.81 (-4.06)	-2.59 (-0.39)	-3.11 (-3.19)
LOPN	-2.5 (-2.30)	-6.41 (-6.29)	-2.38 (2.44)	-4.72 (-4.42)	-2.47 (-2.72)	-3.76 (-3.27)	-3.29 (-3.37)	-3.02 (3.26)	-2.15 (-1.45)	-2.69 (2.89)
ECV	-4.58 (-4.11)	— —	-3.66 (-2.79)	— —	-2.8 (-2.00)	— —	-2.64 (-1.83)	— —	-1.51 (1.64)	— —

Notes: AL = test at levels of variables; FD = test at first difference
Values in parenthesis are for test without trend.

Critical Values for the Dickey Fuller
Test at 95% Confidence Interval

			DF			
			1	2	3	4
With Trend		-3.56	-3.57	-3.57	-3.58	-3.59
Without Trend		-2.96	-2.96	-2.97	-2.97	-2.98

Adopting the "general to specific" framework with an auto-regressive distributed lag (ADF) specification of the form:

$$\alpha(L)x_t = \gamma_0 + \beta(L)u_t \dots \dots \dots (7)$$

we estimate an overparameterized error correction model (see Table 2) which would enable us to identify the main dynamic patterns in the model. A maximum lag of four was chosen in accordance with (Hendry and Mizon 1985) to ensure that the main dynamics in the model are not constrained by too short a lag. This unrestricted dynamic model was subsequently tested, transformed, and reduced to a more parsimonious one (see Table 4).

Table 2
The Overparameterized Error Correction
Model of DLGDP by OLS

Series	Lag	Co-efficient	T-Value
DLGDP	1	-0.36	-0.96
DLGDP	2	-0.25	-0.68
DLGDP	3	0.14	0.35
DLGDP	4	0.12	0.25
CONSTANT		0.04	0.34
DLEXR		0.31	0.73
DLEXR	1	0.47	1.46
DLEXR	2	0.30	1.18
DLEXR	3	-0.10	-0.30
DLEXR	4	0.93	0.20
DLOPN		0.30	-1.33
DLOPN	1	-0.15	-0.51
DLOPN	2	-0.19	-0.73
DLOPN	3	-0.05	-0.23
DLOPN	4	-0.03	-0.10
DLDER		0.19	0.49
DLDER	1	0.13	0.30
DLDER	2	-0.14	-0.42
DLDER	3	0.05	0.16
DLDER	4	-0.18	-0.46
ECV	1	-0.21	-0.87

Notes: $R^2 = 0.83$; $F(20.6) = 1.49(0.33)$; $I = 0.14$; $DW = 1.98$
 Information criteria: $SC = + 2.86$; $HQ = -3.56$; $FPE = 0.4$
 R^2 Relative to difference + Seasonals = 0.93

Table 3
Tests on the Significance of Each Lag

Lag	F(V ₁ V ₂)	Value	Probability
4	F(4,6)	0.239	0.907
3	F(4,6)	0.222	0.917
2	F(4,6)	0.591	0.682
1	F(4,6)	0.708	0.615

Table 4
The Parsimonious Error Correction Model

Series	Lag	Co-efficient	T-Value
DLGDP	1	-0.35	-2.1
DLGDP	2	-0.45	-2.4
CONSTANT		0.06	1.7
DLEXR		0.47	3.6
DLEXR	1	0.21	1.5
DLEXR	2	0.33	2.1
DLOPN		-0.50	-4.4
DLOPN	2	0.27	-2.0
DLDER		0.33	1.6
ECV	1	0.39	-2.34

Notes: $R^2 = 0.76$; $F(9,19) = 6.8$ (0.00020); $I = 0.12$; $DW = 1.94$
 $RSS = 0.29$.

Information criteria: $SC = -3.44$; $HQ = 3.76$; $FPF = 0.02$
 R^2 Relative to Difference + Seasonals = 0.90

4.2 Major Findings of the Study

Following the above discussion, the parsimonious error correction model in Table 4 shows that:

- i. previous income was statistically significant in explaining current income at 5 per cent level of significance. Both in the first and second lagged quarters, a unit increase in previous income would reduce current income by 35 and 45 per cent, respectively. The negative sign associated with the coefficient of past income confirms the submission in (Essien *et al* 1995) of a negative relationship between current and previous income as a result of declining growth in GDP over the past few years;
- ii there was a significant relationship between exchange rate and income with the coefficient appropriately signed both in the current period and the second lagged quarter. Current appreciation in exchange rate would boost income by as much as 47 per cent. The exchange rate lagged by one quarter was not significant in ex-

plaining income. This is so because the foreign exchange previously absorbed in the current period would need a gestation of more than a quarter. Thus, the second quarter was found to re-enforce the current lagged values;

- iii. the degree of openness of the economy, though highly statistically significant, was not properly signed. This can be explained by the fact that crude oil, whose quantity and price are fixed by the OPEC, dominates Nigeria's exports. Consequently, the trade liberalization policy could neither affect the levels of output nor price. On the other hand, the country's imports were mostly dominated by consumables which add little or nothing to investment. In addition, there are still some items in the banned list of exports and imports, hence the degree of openness might not have been liberal enough to lead to growth;
- iv. deposit rate, which is believed to boost capital accumulation and investment activities that lead to economic growth, did not meet *a priori* expectations in terms of size even though it was properly signed. On the basis of empirical evidence, we can conclude that any policy on interest rate should attempt to maintain a fairly constant premium between deposit and lending rates for deposit rates to impact significantly on income. If the premium is too wide, savings would be discouraged;
- v. the error correction variable (ECV) was statistically significant at 5 per cent and was appropriately signed. The significance of the ECV indicates that the explanatory variables are indeed cointegrated with income, confirming our earlier conclusion of a long-run equilibrium relationship between these variables and income. Market forces, a veritable tool for the attainment of a long-run equilibrium relationship, was the central theme in the deregulation package. That the results confirm this is no surprise. Any disequilibrium, which would be transient, is captured by the ECV. The significance of the ECV also confirms that the other unquan-

tifiable policy measures subsumed in the quantifiable ones were able to significantly explain variation in income; and

- vi. results from the diagnostic test show that exchange and interest rates, and degree of openness accounted for 76 per cent of the variation in income at the time, which is very significant. Thus, the model adequately fits the data. Overall, regression was significant while there was no presence of serial correlation.

4.3 Policy Extensions

The possible policy implications of the empirical findings include the following:

- i. given the established relationship between economic growth and the exchange rates, it is imperative that an appropriate exchange rate through liberalization of the external sector will impact positively on the growth of the Nigerian economy;
- ii. there is need to continue the policy of deregulating the economy in order to open it up. This will make it benefit from global financial flows which is needed for development. On this count, the need to pursue the privatization and liberalization programmes becomes very crucial. In addition, trade policy should be made more liberal while the current account liberalization should be given serious consideration by government; and
- iii. the poor result of interest rate in our model may not be unconnected with the fixed interest rate regime observed for most of the period of this study. Thus, the financial sector needs to be completely deregulated by allowing more operators to come into the market for effective mobilization of savings for development.

Overall, for deregulation to continue to benefit the economy, there is need for policy consistency. The reversal of the deregulation policy in 1994 was a major setback to economic growth in Nigeria. The world is fast becoming a global village and Nigeria should, through adequate policies, reposition herself to benefit from the globalization trend. To do otherwise will

amount to taking a back seat in the global train to the next century.

5. Concluding Remarks

The reform package as embodied in the structural adjustment programme (SAP) is capable of contributing to growth. However, we have seen from our study that this was not exactly the case in Nigeria. The reason is not far to seek: the stop-go implementation policy of the government and the absence of an enabling environment have had adverse impacts on growth. It is our considered opinion that SAP should be fine-tuned and implemented to the letter as there is no easy way out of the current economic quagmire. The benefits of the reform are enormous and it is better to embark on total reform measures in the short run with little inconveniences than to adopt half-baked policies which are merely palliative. The time for reform is now.

Endnote

- ¹ $Y = AF(K, N) \dots (1)$ where Y = output level, K and N denote input of capital and labour and A is the state of technology.

References

- Adams, C.S. (1992): "Recent Developments in Econometric Methods: An Application to the Demand for Money in Kenya." *AERC Research Paper 15*, Nairobi: AERC.
- Anyiwe, M.A. (1994): "The Macroeconomic Impact of the Structural Adjustment Programme on Incomes and Prices." *The Nigerian Journal of Economic and Social Studies* 36(1): 312-324.
- Bacha, E.L. (1984): "Growth with Limited Supplies of Foreign Exchange: A Reappraisal of the Two-Gap Model." In: Mosche Syrguin, L. Taylor and Larry Westphall (eds). *Economic Structure and Performance*. New York: Academic Press.
- Becker, G. (1964): *Human Capital*. New York: Columbia University Press.
- Box, G.E.P. and G.M. Jenkin (1970): *Time Series Analysis: Forecasting and Control*. San Francisco: Holden Day.
- Charemza, W. and F. Deadman (1992): *New Directions in Econometrics Practice. General to Specific Modelling, Cointegration and Vector Autoregression*. Cambridge: Cambridge University Press.
- Chenery, H. and M. Bruno (1962): "Development Alternatives in an Open Economy: The Case of Israel." *Economic Journal* 72 (285): 79-103.

- Dickey, D.A. and W.A. Fuller (1979): "Distribution of the Estimators for Autoregressive Time Series with a Unit Root." *Journal of American Statistical Association* 74: 427.
- Domar, E. (1947): "Expansion and Employment." *American Economic Review*.
——— (1981): "Likelihood Ratio Statistics." *Econometrica* 4: 1057-71.
- Engel, R.F. and C.W.J. Granger (1987): "Cointegration and Error Correction: Representation, Estimation, and Testing." *Econometrica* 55 (2): 251-76.
- Essien, E.A. *et al.* (1995): "Macrostatistics for Planning: Some Test of Properties." Group Report of the Course on Macroeconomic Policy Analysis. Ibadan: NCEMA.
- Essien, E.A., E.A. Onwioduokit and E.T. Osho (1996): "Demand for Money in a Debt Constrained Economy: A Case Study of Nigeria." *Economic and Financial Review* 34 (2).
- Granger, C.W. and P. Newbold (1974): "Spurious Regressions in Econometrics." *Journal of Econometrics* 2: 111-21.
——— (1977): "The Time Series Approach to Econometric Model Building: New Methods in Business Cycle Research." Federal Reserve Bank of Minneapolis.
- Harrod, R. (1948): *Towards a Dynamic Economics*. London: Macmillan Publishers.
- Hendry, D. F. (1986): "Econometric Modelling with Cointegration Variables: An Overview." *Oxford Bulletin of Economics and Statistics* 48: 201.
- Hendry, D.F. and G.E. Mizon (1985): "Procrustean Econometrics: or Stretching and Squeezing Data." Mimeo.
- Ikpeze, N (1993): "Elements of Structural Adjustment Programme in Nigeria: Liberalization and Deregulation." *Nigerian Journal for Economic and Social Studies* 35 (1): 144-65.
- Iyoha, M.A. (1995): "Economic Liberalization and the External Sector." In: Akin Iwayemi (ed) *Macroeconomic Policy Issues in an Open Economy: A Case Study of Nigeria*. Ibadan: NCEMA: 227-306.
- Khatkhate, D.R. (1992): "The Regulatory Impediments to Private Industrial Sector Development in Asia. A Comparative Study." *World Bank Discussion Papers*. Washington, D.C.: The World Bank.
- Lewis, W.A. (1954): "Economic Development with Unlimited Supplies of Labour." *Manchester School of Economic and Social Studies* 22 (2): 139-91.
- Lewis, W.A. (1995): *The Theory of Economic Growth*. Illinois: Homewood.
- Little, I.M. (1982): *Economic Development: Theory, Policy, and International Relations*. New York: Basic Books.
- Madelbaum, K. (1945): *The Industrialization of Under-Developed Areas*. Oxford: Blackwell.
- Moore, T.G. (1993): "Regulatory Reform of Transport." In: Carbago (eds).

- Nurske, R. (1952): "Some International Aspects of the Problems of Development." *American Economic Review: Papers and Proceedings* 42 (2): 571-82.
- Okon, S.E.N (1994): "Implications of Public Expenditure Reduction under the Structural Adjustment Programme." *Nigerian Journal for Economic and Social Studies* 36 (1): 325-34.
- Onwioduokit, E.A. (1997): "Economic Growth and Development: The Role of Public Relations." *Nigerian Journal of Public Relations*: 25-48.
- Ojo, M.O. (1991): "Deregulation in the Nigerian Banking Industry: A Review and Appraisal." *CBN Economic Financial and Review* 29(1).
- (1994): *The Economics of Control and Deregulation: The Nigerian Case Study*. Research Department Occasional Paper 10.
- Schultz, T.W. (1961): "Investment in Human Capital." *American Economic Review* 51 (1): 1-17.
- Solow, R.M. (1957): "Technical Change and the Aggregate Production Function." *Review of Economics and Statistics* 39: 312-20.
- Rosenstein-Rodan, N. Paul. (1943): "Problems of Industrialization in Eastern and South-Eastern Europe." *Economic Journal* 53: 202 - 11.
- World Bank. (1991): *World Development Report*. Washington, D.C.: World Bank.