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DEREGULATION AND ITS IMPLICATIONS FOR ECONOMIC GROWTH

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I. Introduction

Nigeria is Africa's fourth largest economy, with gross domestic product (GDP) at current prices at$41. 5 billion in year 2001, behind South Africa's $112.9 billion, Egypt's $ 93.5 billion and Algeria's $54.6 billion. The country's weight in total African GDP was 7.6 percent (ADB 2002.3) Aggregate real GDP and per capita growth real GDP growth rates have ranged between 2 and 5 percent for much of the past decade and a half, which is far below what is required (7% GDP and 4.5% per capita growth rate) to achieve a significant reduction in poverty and attain international development goals by year 2015. It is thus observed that Nigeria's economy falls far short of its demographic high profile.

The challenges facing Nigeria is brought home by the African competitiveness index 2000 which ranks her 20 out of 24 countries UNDP 2001. This is to be expected in a situation where producers have to provide their own infrastructure facilities (electricity, water, transport, and even security) in the face of inadequate public provision. This should be of concern to a government desirous of reducing or alleviating poverty through private sector-led growth of the economy.

Nigeria, like many other developing countries, faced external shocks and internal imbalance problems in the early 1980s. She experienced growing level of unemployment, high inflation rate, low capacity utilization rate in manufacturing and low real growth rate (see table1). In the face of the internal and external imbalances and mounting debt burden, Nigeria in mid-1986 adopted a wide-ranging structural

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adjustment programme. Central to this was the liberalization of the financial sector. This entailed a policy of market-determined exchange rate from September 1986 and the interest rate from July 1987, a more liberal licensing of commercial banks, and some institutional and regulatory changes in both the money and capital markets. Next was the deregulation of the real sector, starting with the domestic airlines, then the telecommunications subsector and the petroleum subsector, particularly the downstream end of the subsector.

Following the deregulation measures, growth performance of the economy has recorded mixed results. There have been episodes of improved and of deteriorating growth performance. In most of the period, target growth rate was seldom achieved. The interest of the paper is, therefore, to empirically investigate the impact of deregulation measure on Nigeria's growth performance in the period since 1986.

The paper is structured as follows. Following the introductory section, section 11 presents an overview of macroeconomic development in Nigeria, as a background to the economic deregulation policies; section III briefly highlights features of the deregulation measures in both the financial and real sectors of the economy. Section IV analyses growth performance during the period of deregulation. Section adopts an analytical framework which enables empirical investigation of the impact of quantitative indicators of deregulation policies on economic growth, in a model which analyses the determinants of growth in Nigeria. Section VI presents concluding remarks and policy recommendations flowing from the analysis

II. Macroeconomic development and background to deregulation

As an oil exporter, Nigeria experienced two major booms in 1973/74 and 1979/80. The oil boom which resulted from the quadrupling of oil prices in 1973 and continued with high prices until 1980, had profound effects on the Nigerian economy. High level of government revenue and efforts to monetize the revenue was the order of the day. Macroeconomic policy during the period was characterized by a concern to promote rapid economic growth. The economy witnessed high levels of oil-induced public

investments and an upsurge in private investments being accompanied by more protectionist and interventionist policies.

As a result, the economy soon became "overheated". Inflation rate which was 2.9% and 5.5% respectively in 1972 and 1973 rose to 33 . 8% in 1975. Fell to 23.9% in 1976, from where it declined steadily to 7.7% in 1982. In 1983 and 1984 it was once again on the increase to 23.2 and 39.6% respectively, although it declined to 5.4% in 1985.

A cautious foreign borrowing policy was adopted up to late 1970s, to the extent that Nigeria was described as being "under-borrowed". However., following the collapse in oil prices in mid-1981 and again in early 1986, the worldwide recession and an increase in US real interest rates which all worsened Nigeria's balance of payments position, foreign borrowing rose sharply. External debt which was ₦1.27 billion in 1978 and ₦1.87 billion in 1980, by 1983 was ₦10.57 billion and by 1985 was ₦17.29 billion. Consequently, the debt service to exports ratio rose from 3.0% and 3.7% in 1975 and 1976 respectively, and 2.2 % and 2.9% in 1979 and 1980 to 6.8% in 1981. Thereafter it rose respectively to 13.6,21.03, 27.9% and 44.9% in 1982, 1983, 1984 and 1985, see Table 1.

The oil boom was widely recognized to have contributed to overvaluation of the Naira exchange rate between 1973 and 1980. Aigbokhan (1988) estimated that there was an overvaluation (oil premium) rate of between 27% and 32%, and Struthers (1990) estimated that between 1973 and 1980 there was an overvaluation by 20%, that between 1976 and 1980 alone the naira exchange rate appreciated by 17%, although it depreciated by 43% between 1980 and 1985.

The recession soon spread to the manufacturing sector. Capacity utilization rate in the sector fell to 47.8%, 42.7% and 40.4% in 1983. 1985 and 1987 respectively. The index of manufacturing output after 1982 shows a large decline. In contrast to the 1970-82 period when annual increases in manufacturing output averaged 13.4%, the index declined by 28.6% in 1983 and by 12.0% in 1984, see the index declined by 28.6 percent in 1983 and by 12.0 percent in 1984. The agricultural sector similarly recorded

less impressive performance. in 1981 the index of agricultural production rose by 3.4%, compared to the 2.5% recorded in 1980. In 1982 it rose by 2.7% but declined by as much as 9.4% in 1983.

In 1981 industrial production declined by 7.9% despite the 5.7% growth in manufacturing, reflecting the 30.5% decline in mining production. In 1982 mining output further declined by 10.4% and in 1983 by 12.0%. Aggregate output consistently declined, by 5.4% in 1981, 1.9% in 1982, 8.5% in 1983 and 5.5% in 1984, before it recovered with 1.2% growth in 1985. As a result of the glut in the oil market since 1980, Nigeria's balance of payments deteriorated throughout 1981. External deficit rose to N3.0 billion. This led to heavy drain on the external reserves which continued into early 1982, falling to barely one month's import cover. In the face of this, the Economic stabilization measure (ESM) was introduced in April 1982, essentially to protect the balance of payments and revamp the economy.

Despite the ESM, however, the external payments situation deteriorated further in 1983, resulting in the largest accumulation of payments arrears ever recorded. Government had to commence negotiations with the International Monetary Fund (IMF) and the World Bank for a balance of payments loan and a structural adjustment loan respectively. During the year, agricultural output fell by 9.4%, and industrial output declined by 11.8%, due largely to the 20.7% decline in manufacturing output. The latter was occasioned by the drastic shortage of industrial inputs following the tight import control because of foreign exchange shortage. An appraisal of the economy that year concluded that on the whole, the Nigerian economy went into deeper and widespread recession in 1983. The GDP declined further, industrial production declined by 11.8%, manufacturing output slumped 20.7%, while agricultural production declined by 4.4%.[1] It is thus apparent that control may not necessarily ensure improved performance. Indeed this was an observation made by Adam Smith over two centuries ago when he noted thus:

> *"No regulation of commerce can increase the quantity of industry in any society beyond what its capital can maintain. It can only divert a part of it into a direction into which it might not otherwise have gone and it is by no means certain that this cotificial direction is likely to be more advantageous to the society than that which it would have gone of its own accord"*[2]

The severe balance of payments pressure which characterized the economy since 1982 worsened in 1985 as a result of increased debt burden and accumulated trade arrears. Government had to declare a state of National Economic Emergency in October 1985, expected to last for a period of fifteen months.

It was against this background that Government had to introduce the structural adjustment programme (SAP) in mid-1986. SAP was designed to facilitate adoption of a realistic exchange rate policy, coupled with the liberalization of the external trade and payments system, and adoption of appropriate pricing policies in all sectors with greater reliance on market forces. The programme started with the liberalization of the financial sector, with the introduction of Second – tier foreign Exchange Market (SFEM), and in the real sector with the substantial reduction of the subsidy on petroleum products except household kerosine to a level of 20%. The price of gasoline (petrol) was raised from ₦ 0.20 to ₦0.395 and that of diesel was raised from ₦0.11 to ₦0.295.

Table 1:Nigeria's selected Macroeconomic indicators, 1986-2003

	GDPGR	BD/GDP	INF	PR	OPEN	M/GDP	DS/EXP	OER	
1986	3.1	11.3	5.4	10.5	20.83	33.67	32.7	3.3166	38.8
1987	-0.5	5.5	10.2	17.5	41.97	27.55	14.2	4.1916	40.4
1988	9.9	8.4	38.3	16.5	34.54	29.45	30.4	5.3530	41.5
1989	7.4	6.7	40.9	26.8	39.93	20.56	26.1	9.6500	42.5
1990	8.2	8.5	7.5	25.5	65.41	24.91	22.8	9.0001	39.02
1991	4.7	11.0	13.0	20.01	65.89	26.19	25.2	9.7545	39.4
1992	3.0	10.1	44.5	29.8	63.74	23.44	30.6	196609	40.4
1993	2.3	12.3	57.2	36.09	55.58	28.23	16.6	22.6309	36.2
1994	1.3	7.7	57.0	21.00	40.34	29.14	15.2	21.8861	30.4
1995	2.2	+0.1	72.8	20.18	80.50	16.09	13.8	21.8861	29.3
1996	3.4	+1.3	29.3	19.74	79.47	13.04	31.3	21.8861	34.7
1997	3.2	0.2	8.5	18.40	71.01	14.69	32.2	21.8861	34.2
1998	2.4	4.7	10.0	18.40	56.02	18.74	36.6	76.81	032.4
1999	0.9	+8.9	6.6	19.93	64.23	21.91	26.10	92.34	135.9
2000	5.4	2.3	6.9	16.25	64.11	22.84	14.9	101.65	136.1
2001	4.6	4.3	18.9	18.75	64.87	25.47	14.6	111.90	139.6
2002	3.5	5.5	12.9	19.0	63.50	29.15	17.4	120.47	144.3
2003	10.2	2.8	14.0	15.75	67.50	27.73	15.1	129.36	146.3

PR – CBN prime lending rate, OER – official exchange rate

DS – debt service /exports ratio, M/GDP-M is M2.

Source: underlying data are from CBN Annual Report, and Statistical Bulletin.

III (a) Deregulation of the Financial Sector

Until September 1986 the value of the exchange rate of the naira relative of that of the currencies of Nigeria's trading partners was administrative determined by the monetary authorities. Although the exchange rate was in 1978 fixed against a basket of currencies, it was allowed to fluctuate within a narrow margin. In other words, up to 1986 the naira exchange rate was under managed floating regime. From September 29, 1986 the exchange rate became market-determined, with the introduction of the auction system. Since that date various modifications have been made to the auction system, but essentially market forces has ever since determined the exchange rate. In 1994 when a policy of guided deregulation was introduced which saw reintroduction of temporary and minimum controls, the official exchange was fixed at ₦22 to the US dollar. Though the cap on exchange rate was removed in 1998, some of the underlying features of guided deregulation were retained. For example, monetary policy circular No 34 of 2000 stated that in order to further consolidate the gains from the adoption of guided deregulation, the policy shall remain in force in 2000. Thus, foreign exchange transactions shall continue to be subject to minimum documentation requirements largely for statistical purposes. The inter-bank foreign Exchange market (IFEM) shall continue to operate freely. The Dutch Auction system (DAS) was retained as the main mechanism for foreign exchange management and exchange rate determination in 2003 and 2004. As a result of deregulation, the naira exchange rate has moved variously and stabilized at ₦129.36 in December 2003, although has further depreciated in the third quarter of 2004 (see Table 1). Some of the weaknesses in foreign exchange management during the early years of deregulation are reviewed in Obadan (1993).

Deregulation of interest rate commenced in duly 1987. Up till then, interest rates were determined administratively by fixing the ranges within which both deposit and lending rates were set by commercial banks. However, in July 1987, as part of the general reforms package, interest rates deregulation was introduced. Commercial banks were then at liberty to fix whatever they consider to be competitive rates, until January 1994 when the rate was once again fixed by government, at between 12 and 21%.

In the period 1987-91, minimum rediscount rate and Federal Government stocks rates ranged between 15 and 22%, although commercial banks lending rates ranged between 15 and 30.30. Average nominal lending rate increased from 12% in 1986 to 27.5% in 1992, and except for 1988, 1989 and 1992, real interest rate became positive since the min-1980s with the abrupt increase in 1987 after liberalization.

The prime rate of the CBN, which theoretically influences other interest rates, has systematically declined from its peak of 36.09 percent in 1993 to 19.0 percent in 2003 (see Table 1) Commercial bank lending rates have, however, been substantially higher than the margin theory suggests should exist between them and the prime rate. Despite deregulation, oligopolies structure of the banking industry continues. The 10 largest banks accounted for 58% of aggregate commercial banks assets, 57% of total deposits and 53% of loans and advances in 1994. In 1997 it was respectively 63.2% 59.88% and 58.4%

III (b) Deregulation of the Real Sector

As noted by Ojo (1991,1994), deregulation also involves the rationalization of government participation in the economy such that it does not constitute a hindrance to the growth of the economy. The focus of this aspect of deregulation was to downsize the public sector, with the aim of reducing fiscal deficit. The initial target was to reduce fiscal deficit to about 4 percent of GDP by1988. This strategy was principally pursued through a programme of commercialization and privatization (see Obadan and Ayodele (1995) for a review).

As a part of deregulation of the real sector aimed at liberalization of domestic prices, commodity boards were abolished. The number of excisable produced was reduced from 412 to 182 in 1988. The airline sector was deregulated with licensing of domestic airlines to compete with the Nigeria. Airways monopoly. That marked the beginning of price liberalization in the subsector.

Deregulation of the communication sector to break the NITEL monopoly saw the

introduction of the Global system of mobile (GSM) communication in 2001. The two private operators, MTN and Econet (now Vmobile) increased their lines from 300.000 in 2001 to 1, 660.000 in 2002. This, with NITEL's 136758 GSM lines and 38881 and 932424 fixed lines in 2002, are Nigeria teledensity of 1:51, which is above the International Telecommunication Union standard of 1.100

The oil sector has been a key propeller of the Nigerian economy since the early 1970s. The sector has, however, been characterized by vulnerability to external factors and severe disruption in fuel supplies. To address the problem of domestic supplies, deregulation was introduced in the downstream end of the sector in December 1998. With the deregulation, the NNPC monopoly in the importation of petroleum products was removed. The major marketers, independent marketers and third parties are now allowed to participate in the importation. This was followed by the liberalization of oil marketing industry.

With deregulation also came the regime of increases in the prices of petroleum products. In 1986 the price of fuel was increased as part of SAP, from ₦0.20 in 1985 to ₦0.40 for petrol, and from N0.11 to ₦0.30 for diesel. The price of domestic kerosine remained ₦0.11 per litre. Differential pricing of gasoline (petrol) was introduced in 1989. Private vehicles were to purchase at ₦0.40 per litre, and commercial vehicles at ₦0.60. The two – tier gasoline pricing was abolished in 1990 and the price was unified at ₦0.60 per litre. Between 1993 and 2003, the prices of petroleum products were increased six times, of which three times were between June 2000 and June 2003. In 2004 the prices were increased twice to ₦45 and ₦53 per litre for petrol (see Table 2). The regime of price increases since June 2000 was based on government conviction that the protracted fuel crisis since the mid-1990s was due to inappropriate pricing.

An additional argument adduced for deregulation is the need to remove government subsidy on petroleum products. It was maintained that government subsidy on fuel was ₦12 per litre, and this amounts to ₦250 billion per year. And the third justification is the need to discourage smuggling to neighbouring countries. For example, at a time the price of gasoline was 13 US cents per litre in Nigeria, it was 51 cents, 75 cents, 75 cents and 94 cents in Cameroon, Chad, and Niger respectively (Egwiakhide et al., 2004).

From the foregoing, it is apparent that deregulation policies introduced since 1986 were designed to address the problems of economic deterioration which characterized the economy up to 1985. Supporters of deregulation do argue that it improves the functioning of markets and strengthens competitive welfare, and propels the economy into the path of sustained economic growth, Ojo (1994). Indeed, experience of some countries lends support to this expectation (see Ojo 1994).

It is, however, also recognised that some enabling factors would need to be in place for deregulation to translate into growth. These include the proper sequencing of implementation, political stability, adherence by the public sector to its defined responsibilities under the regime, and moderate import dependence and virile non-mineral export sector. Absence of these factors have been identified as problem of deregulation of the Nigerian economy, Ojo (1994), Obadan (1993).

Table 2: Nigeria's official prices for petroleum products, 1985-2004 (naira per litre)

	PMS (Petrol)	AGO (Diesel)	DPK (Kero)
1985	0.2	0.11	0.11
1986	0.4	0.3	0.11
1987	0.4	0.3	0.11
1988	0.4	0.3	0.11
1989	0.4	0.3	0.11
1990	0.6	0.5	0.4
1991	0.7	0.5	0.5
1992	0.7	0.55	0.5
1993	3.25	3.00	2.75
1994	11.0	9.00	6.00
1995	11.0	9.00	6.00
1996	11.0	9.00	6.00
1997	11.0	9.00	6.00
1998	11.0	9.00	6.00
1999	20.0	19.00	17.00
2000	22.0	21.00	17.00
2001	22.00	21.00	17.00
2002	26.00	26.00	24.00
2003	40.00	38.00	38.00
2004	53.00	62.00	60.00

Daily Times June 23,2003 in Egwaikhide et al (2004) and the Guardian Sept. 24, 2004.

IV. Macroeconomic Performance during the period of deregulation

In the immediate post – deregulation years, the economy recorded fairly improved performance. Manufacturing output grew by 15.3% and agriculture by 2.1% in 1986. Industrial output declined by 3.4%, which was due mainly to decline in mining, dominated by petroleum. GDP which declined by 2.1% in 1986, grew by 1.2% in 1987. Manufacturing output further grew in 1987 by 9.9% and agriculture by 1.6%. mining once again declined, due to a 10.5% decline in crude oil production. GDP grew by 4.2%, 5.2% and 5.2% in 1988, 1989 and 1990, and so did agriculture and manufacturing. The growth in manufacturing in particular was attributed to improved access to foreign exchange for importation of raw materials and spare parts, occasioned by deregulation of FEM. Crude oil production also grew, by 10.5%, 2.4% and 12.4% in the respective years. The regime of positive growth rate of GDP continued through to 2004 (see Table 1), though the level has fluctuated between 1.3% and 4.5%. Specifically, in 1994 the resort to regulatory policies further complicated the problem (of macroeconomic instability which began in 1992) as the growth of domestic output diminished (1.3% growth rate), inflationary pressivers hightered, and the naira exchange rate depreciated sharply in the unofficial foreign exchange market[3] Table 3 shows the sectoral contribution to GDP growth.

As Table 1 shows, budget deficit continued to be much higher than the initial 3-4% of GDP target under deregulation up till 1994. Thereafter, except for 1998, 2001 and 2002, performance was within the target rate, with budget surpluses in 1995, 1996 and 1999.

A notable feature of growth performance is that it continued to be dictated largely by performance of the oil sector. For example, in 1994 when GDP grew by 1.3%, oil sector declined by 2.5% in 1995 when GDP grew by 2.2%, oil sector grew by 2.5%. in 1997 the respective growth rates are 3.2% and 8.4%, the oil sector having grown by 6.9% in 1996. In 1999 when GDP grew by 2.8%, industrial output declined by 2.2%, which was due to the oil sector which suffered external price shocks in the international oil market and disturbances in the Niger Delta. Oil price fell below $10 per barrel in the first half or 1999.

Apart from oil price shocks, the sector's output has also been subjected to OPEC quota, often introduced to shore up international oil market price. The essence of this observation is to note that macroeconomic performance, as measured by GDP growth, since deregulation has sometimes been dictated by factors outside the influence of deregulation policies. It is also observed in Table 1 that inflation rate for the first ten years of deregulation, except for 1991 and 1992, rose rapidly. It peaked at 72.8% in 1995 before it began to show market decline until year 2000. It is observed from the table that in only five years was the inflation rate below double digit level. Much of the inflationary pressure has been attributed to naira exchange rate depreciation, given Nigeria's import dependence, and fiscal overshoot, Aigbokhan (1991) and Folorunsho and Abiola (2000). It is observed also from the table that the level of capacity utilization in manufacturing has been low. Throughout the period it was below 50%, it was in fact below 40% in much of the period. Both of these manifest macroeconomic instability and sub-optimality. In the next section, it would be interesting to find out to what extent the economy's growth performance can be quantitatively attributed to deregulation policies.

V. Deregulation and Economic Growth: econometric analysis

In this section we attempt to assess the deregulation – growth link, using some deregulation policy variables, to see if they are significantly and positively correlated with growth.

The neoclassical growth model based on aggregate production function with exogenous labour-augmenting technological progress provided analytical framework for empirical studies of growth for over three decades up to the 1980s. The three main determinants of growth in the model, namely, savings rate, population growth rate, and technological progress all assumed to be exogenous, and are thus are outside the control of policy. The neoclassical growth model came under criticism from the lack of empirical support for the unconditional convergence hypothesis implied in the model. Rather, conditional convergence is found when investment and public policies are taken into account (Barro

1990,1991). This gave birth to the endogenous growth model which assumes a decreasing (rather than constant) returns to scale, endogenous technological progress and development of human capital Endogenous growth model thus provides for a link between public policies and economic growth. It is the model adopted in this paper to assess the link between deregulation policies and economic growth in Nigeria.

V.1 The Model[4]

We assume an aggregate production function of the form

$$Y = A_0 (A_p K_p)\mu (A_h K_h)b (A_l L^{1-\mu-b}) \quad (1)$$

Where Kp and Kh are respectively the physical and human capital stock, A_0 is an index of technology and efficiency in the economy, A_p and A_h are the physical and human capital augmenting technology respectively, and A_l is the labour-augmenting technology.

$$\text{Defining } A = A_L (A\mu_p A\mu_h) 1^{1-\mu-b} \quad (2)$$

Equation (1) can then be re-written as

$$Y = K\mu_p Kb_h (A.L)^{1-\mu-b} \quad (3)$$

Where, A, encompasses the economy-wide augmenting factors of level of technology and efficiency. The level of technology, A, which is fundamental to the endogenous growth model, is assumed,

$$\frac{dA}{dt} = A (X) K/L^{\alpha} + \lambda A)$$

Where A is the technological change multiplier, μ is the learning coefficient, l is the exogenous rate of labour – augmenting technological change, and X is a vector of other factors, including public policy, that affect growth. The coefficient is assumed to be greater than zero, to ensure that A grows at an increasing rate.

V.2 Overview of related studies

Olomola (2004), using endogenous growth model, assessed the impact of macroeconomic polices on growth in the period 1960-98. The policy variables considered are exchange rate, money supply, fiscal deficit, inflation rate, level of government fixed investment, and degree of openness. An indicator of political instability was included. Annual data was used.

The study found that real exchange rate has a positive and significant impact on growth, inflation has similar impact. Government fixed investment has negative significant impact on growth, and so does external debt. Fiscal deficit was found to have positive but insignificant impact on growth. As the period covered in the study contains twenty six pre-deregulation years, the influence of deregulation may not have been accurately captured. Partly to address this concern, a dummy variables was introduced for the SAP years. It was found not to be significant, implying that the (SAP) introduced since 1986 did not translate into long-run economic growth.

Essien and Onwioduokit (1997) specifically assessed the impact of deregulation policies on growth, using quarterly data for the period 1986-93. The variables considered are deposit rate, official exchange rate and degree of openness. The study found a positive and significant relationship between growth and exchange rate. The impact of deposit was also positive but the size is low, while the degree of openness had significant but negative impact.

Since Essien and Onwiduokit (1997), deregulation has been implemented for another decade. Also, a particular deregulation policy has become more prominent since that study, namely, deregulation of the price of petroleum products, as the discussion above indicates.. The equation to be estimated, deriving from equation (4), and incorporating these observations is of the form.

$$\text{LnGDP} = \text{Constant} + \ln \text{OER} + \ln \text{MRR} + \ln \text{APPP} + \ln \text{CPI} + \ln \text{m2/GDP} + \ln \text{OPEN}$$

GDP-gross domestic product
MRR- interest rate, measured by CBN minimum rediscount rate
OER – officinal exchange rate
APPP – average petroleum product price (gasoline, diesel and kerosine)
CPI – inflation rate
M/GDP – financial depth, measured by ratio of M2 to GDP
OPEN – degree of openness, measure by rate of exports plus imports to GDP

The equation was estimated for non-oil GDP to assess the impact of deregulation on the non-oil sector. The additional variables are:

NOGDP- non – oil GDP, measured as total GDP less crude oil production
OPENNOL – non-oil openness, measured as non –oil exports plus imports (it was not immediately possible to disaggregate imports into oil and non-oil imports).

V.3 Estimation and Results

The data used in this study were taken from CBN Statistical Bulletin, and Annual Report of various years. Quarterly data for the period 1986Q1 – 2003Q4 were used. The Cochrane –Orcutt method of estimation was used. The ordinary least squares method did nor produce efficient estimates. Results are shown in Table 3. The diagnostic test statistic all show satisfactory results. R- bar squared value indicates that the model explains between 60 and 81 percent of growth performance. Durbin-Watson statistic suggests absence of serial correlation problem.

Table 3: Regression results for the growth equations

	Total GDP	Non-oil GDP
Constant	10.62	9.86
	(3.34)	(3.26)
Loner	0.17	0.64**
	(0.45)	(2.46)
ln MRR	0.98**	0.52
	(2.47)	(1.09)
M2/GDP	1.39*	-
	(5.80)	
lnM2/NOGDP	-	-0.06
		(0.51)
ln CPI	1.11*	0.38
	(4.21)	(1.35)
ln OPEN	1.22*	-
	(4.38)	
ln OPENNO	-	-0.72*
		(5.66)
ln APP	0.29***	0.40***
	(1.82)	(1.76)
N	72	72
R^2	0.61	0.81
DW	1.95	2.02
F-stat.	4.2343	39.1210

* Significant at 99 percent confidence level. ** Significant at 95 percent level
*** significant at 90 percent level.

Results from both equations indicate that official exchange rate is correctly signed, and is very significant in the non-oil equation. This suggests that the exchange rate policy since deregulation has contributed to improved growth performance, particularly with regards to non-oil activities. This is contrary to the general opinion that rapid depreciation of the exchange rate may have hurt non-oil sector.

Interest rate had positive and slightly significant impact on total GDP growth but insignificant with regards to non-oil GDP growth. This suggests that interest rate component of deregulation has not been effective in promoting growth.

Financial deepening has a positive and highly significant impact on total GDP growth, but negative and insignificant impact on non-oil GDP. Since the overall objective of deregulation is to diversify the economy away from oil, the results suggest that greater effort would need to be made on opening the financial sector to non-oil operators in the economy, especially in the rural areas.

Inflation has a positive and statistically significant impact on growth as predicted by theory. The result suggests that low inflation rate, working through positive real interest rate, boosts savings and investment for growth.

Openness, which is an outcome of trade liberalization, shows interesting results. It has a positive and significant impact on total growth performance, but a negative and more significant impact on non-oil growth. This suggests that domestic non-oil production activities has not benefited from openness. Imports may have displaced domestic production as a result of trade liberalization.

Lastly, the coefficient on the variable for petroleum products prices is positive and marginally significant in both equations. This suggests that recent incessant increases in petroleum product prices have not contributed significantly to growth, even though it may not have harmed growth.

VI. Concluding Remarks

Overall, most of the key policies of deregulation considered in this paper have impacted positively and significantly on economic growth in Nigeria. However, the impact on non – oil growth performance has either been positive but low or negative and high as in the case of trade liberalization and financial sector liberalization. This may explain why though real growth rate has been positive, as seen in table 1, it has been low. As was noted above, in none of the years was the target growth rate achieved. Therefore, if Nigeria is to attain her growth targets, which are already lower than the international millennium development goals target, greater effort would be needed not only to maintain consistency in the policies which currently impact positively on growth, but also to review the policies which generate negative impact.

Footnotes

1. CBN Annual Report 1983 p.11.
2. Adam Smith (1776) The Wealth of Nations, Book IV part ii, p.3
3. CBN Annual Report 1994 p.12
4. *This derivation draws on Olomola (2004)*

REFERENCES

Adenikinju, A and S.O.Olofin (2000) "Economic Policy and manufacturing sector Growth Performance in Africa", Nigerian Journal of Economic and Social Studies, 42,1 (March) pp. 1-22

Aigbokhan, B.E. (1991). "Naira Exchange Rate Depreciation and Domestic inflation in Nigeria", Indian Journal of Economics

____ (1995) "Government Size and Economic Growth" Nigerian Experience", Nigerian Economic society conference proceedings.

Ajakaiye, D. O. (2001) "Economic Development in Nigeria: A review of recent experience", in CBN, Growing the Nigerian Economy, Abuja.

Egwaikhide, F,.A. Isumonah, O. Oyeranti, and O. Ayodele (2004) "The Unending Fuel Crisis in Nigeria", in Garba et al eds. Pp. 339-315.

Essien, E.A. and E.A. Onwiduokit (1997) "Economic Development in a Deregulated Economy: The Nigerian Experience", Journal of Economic Management 4, 1 (January) pp. 63-84.

Folorunsho, B.A. and A.G. Abiola (2000) "The Long – run Determinants of inflation in Nigeria, 1970-98", Nigerian Journal of Economic and Social Studies 42,1 (March). pp. 37-54.

Garba, A.G., F. Egwaikhide, and A. Adenikinju eds (2004) Leading Issues in Macroeconomic Management and Development, Nigerian Economic Society, Ibadan.

Obadan, M.I. (1993) "Overview of Nigeria's Exchange Rate Policy Management since the structural Adjustment Programme", CBN Economic and financial Review 31,4 (December) pp. 367-384.

Obadan, M.I and O. Ayodele (1995) Commercialisation and Privatisation Policy in Nigeria, Ibadan NCEMA.

Obaseki, P.A. (1991). "Foreign Exchange Management in Nigeria: past, present and the future", CBN Economic and Financial Review 29,1 (March) pp. 57-78.

Ojo, M.O. (1991). "Deregulation in the Nigerian Banking Industry: A Review and Appraisal", CBN Economic and Financial Review 29,1 (March) pp. 1-14

- (1994) The Economics of Controls and Deregulation: The Nigerian case study, CBN Research Department Occasional Paper No. 10 (October).

Olomola, A.S. (1997). "Financial Deepening and Real Private Investment: Empirica Evidence from Nigeria, 1960-96," Journal of Economic Management 4,1 (January) pp. 51-61

- (2004) "Macroeconomic Policies and Long-run Economic Growth in Nigeria, 1960-98", in Garba et al., eds. Pp. 323-338.

Struthers, J.J. (1990) "Nigerian oil and Exchange Rates: Indicators of Dutch Disease", Development and Change 21, pp. 309-341.