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An Investigation into the Impact of Bank Policy Reforms on the Growth of Nigerian Economy

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Abstract: *The study assesses bank reforms impact on the growth Nigerian economy between 1972 and 2011. The period was chosen because it ecompasses virtually all notable bank reforms that have beem implemented so far in Nigeria. Using cintegration and error correction model, it was discovered that various policy reforms have more of transitory effect on growth of Nigeria than permanent of long-run effect. Again, money supply and exchange rate are major variables that drive bank policy reforms in Nigeria as they are the only variables thave significant and positive impact on economic growth of Nigeria. It is recommended that policy makers should work towards making bank reforms to have sustainable impact on growth while, attaching more importance to factors that affect money supply and exchange rate as key in their policy mix.*
Key Words: *money supply, exchange rate, bank reforms, economic growth.*

I. Introduction

Reforms in the Nigerian banking sector become prominent immediately after the Nigerian civil war of 1970. Kayode {2000}. However, the era that followed the civil war witnessed incessant changes in bank policies but they are mainly characterized with regulation. This trend of regulated sets of banking policies continued until 1985 when structural adjustment programme {SAP} was adopted as a major panacea for the severe economic problem Nigeria was facing immediately after the oil shock. Oyindo {2002}.

However four phrases of banking sector reforms have been recognized in Nigeria since the commencement of SAP in 1986. The first is the financial system reform of 1986 to 1993 which led to the deregulation of the banking industry that hitherto was dominated by indigenized banks that had over 60 percent federal and state government's stakes, in addition to credit, interest rate and foreign exchange policy reforms. The second phrase began in late 1993-1998, with the re-introduction of regulations. During this period, the sector suffered deep financial distress which is necessitated another round of reforms designed to manage the dstress. The third phase with the advent of civilian democracy in 1999 which saw the return to liberalization of the financial sectors accompoanied with the adoption of distress resolution programmes. This era also saw the introduction of universal banking which empowered the financial markets. The fourth phase began in 2004 to date and it is informed by the Nigerian monetary authorities who asserted that the financial system was characterized by structural and operational weaknesses and that their catalytic role in promoting private sector-led growth or real-sector led growth could be further enhanced through a more pragmatic reform (Balogun 2006).

Sanusi (2010), reviewing the situation preceding the banking crisis, said regulatory short falls, including the CBN and other regulators, host of other problem bordering or poor corporate governance within banks and lack of effective risk management practices contributed to the crisis over and above economic and macro prudential issued observed.

It has been observed that these myriad of problems have continued to bedevil the Nigerian banking sector over the years thus necessitating the series of banking reforms highlighted above. Nnanna (2000) maintained that the contributions of banking sector to the Nigeria GDP have been fluctuating over the years. For instance, the share of the banking sector in the GDP rose from 4.03% in year 2000 to 4.97% in 2002. Again it fell to 3.96% in 2004 and later rose to 4.01% in 2008, it fell back to 3.38% in 2011. The trend on the whole has shown a downward trend therefore raising question about the effectiveness of all the bank policy reforms that have been implemented so far. In addition considering the trend, it appears as if the reforms have not been able to have a sustainable impact on the growth of the banking sector and the overall growth of the economy.

Consequently, this study provides another avenue for assessing all the policy reforms that have been implemented so far with a view to assessing wether the effects it has on growth is transitory or permanent. Hence the major objectives of the study are to assess the relative effectiveness of the reforms as well as gauge the likely impact of the outcomes on economic growth of Nigeria.

II. Some Literature

Olajide etal (2011) in their study examined the impact of financial reforms on banks organizational performance in Nigeria between 1995 and 2004. They primarily focus on policies that deals with interest rates deregulation, exchange rate reforms and bank recapitalization and how they affect banks performance. They also analyzed how banks internal characteristics and industry structure affect the performance of Nigerian banks. They adopted panel data analysis. The result from their analysis confirmed that the effects of government policy reforms, bank specific characteristics and industry structure has mixed effects on banks profitability level and net interest margin of Nigerian banks. However their result further indicated that bank specific characteristics appeared to have significant positive influence on bank's profitability and efficiency level, while industry stricture variables appeared not to have contributed meaningfully to the profitability and efficiency performance of banks in Nigeria

Aurangzeb (2012) investigates the contributions of banking sector to the economic growth of Pakistan. He adopted cointegration and error correction model. The Augmented Dickey Fuller (ADF) and Philip Perron were used to test for unit root . Again, ordinary least square and granger causality test were used. He found out that the unit root test showed that all the variables are integrated of order one I (1) been used. The long run regression results indicated that deposits, investments, advances, profitability and interest earnings have significant positive impact on economic growth of Pakistan. However,the Granger-Causality test confirms the bidirectional causal relationship of deposits, advances and profitability with economic growth. But, on the other side we found unidirectional causal relationship of investments and interest earnings with economic growth runs from investments and interest earnings to economic growth.

Azeez and Ojo (2012) examined the effect of banking policy reforms on the economic growth of Nigeria from 1986 to 2010. Again, cointegration and error correction model was adopted as the estimating technique. This began with the unit root test which they use Augmented Dickey-Fuller (ADF) Unit Root test for. Johansen Co-integration test and Error Correction were employed to assess the relationship between bank policies and growth of Nigeria. Their result shows that there was a long run relationship among the variables. How ever the overall result indicated that banking policy reforms has not adequately and positively impacted on the economy.

Ango (2011) examined the impact of Nigerian Banking Sector Reforms on Small entrepreneurial finance. The study relied maily on primary data though secondary sources were also consulted. The primary source of data used are collected through interview conducted to the entrepreneurs of micro small and medium enterprises. Questionnaires were distributed within the five selected Local Governments Areas of Kaduna State Nigeria. It was found that the entrepreneurs have difficulty in sourcing finance from the banks because they cannot afford to meet up with the conditions of such source. Again, inspite of the various steps taken after the reforms, entrepreneurs finance needs were not met. The informal source of finance is still commonly used. The study concluded that micro-enterprises in the sample used largely obtained their initial capital from informal sources.

III. Model Specification

The model formulated for the purpose of assessing the impact of bank reforms on the growtn of the Nigerian economy follows the work of Azeez and Ojo (2012). Aurangzeb (2012) The model for this study was a modified to include money supply and exchange rate that were not included in their own models

$$GDP = f(INF, INTR, EXR, MS)$$

It is stated in log-linear form as

$$GDP = a_0 + a_1 INF + a_2 INTR + a_3 EXR + a_4 MS + u$$

Where: GDP= Gross domestic product (proxy for Nigerian economic growth), INF=Inflationary rate, INTR= Interest rate, EXR = Exchange rate and MS= Money supply.

Estimating Technique

The first step is to examine whether the time series contained in the equation has a unit root. In the cointegration literature, the more frequently used tests for a unit root are the Augmented Dickey-Fuller (1979 and 1981) Philips – Perron (1988) and Perron (1986 and 1988) test. These tests agreed in their treatment to the intercept parameter. Thus, the null hypothesis model to test for unit root has the following form:

$$X_t = \mu + aX_{t-1} + E_t \qquad \ldots 3$$

And the model under the alternative hypothesis:

The estimating technique adopted for this study is cointegration and error connection model. According to Engle and Granger methodology,

$$X_t = \mu + \theta(t - \tfrac{T}{2}) + aX_{t-1} + E_t \qquad \ldots 4$$

When X_t is the of the time series, and under the null hypothesis; $a = 1$ and $\theta = 0$. T represents the number of observations. In this paper, we use the Augmented Dickey-Fuller (ADF) to test for the stationarity of the time series. The ADF test can be obtained by applying OLS to estimate the coefficients of the following relation:

$$\Delta X_t = \mu + \theta_t + X_{t-1} + \sum_{1}^{n} \lambda_i \Delta X_{t-1} + u_i \qquad \ldots 5$$

n is chosen to eliminate the autocorrelation. If a unit root exists, then $y = a - 1$ would not be statistically different from zero. The ADF test can be conducted by comparing the t-value on the coefficient of X_{t-1} with critical values.

The Granger representation indicates that if X_t and λ_t are integrated; they will have an error correlation representation as follow:

$$a(L)\Delta\gamma_i = a_0 - \lambda(y_t - a_i X_t) + b(L)\Delta\lambda_t + c(L)E_t \qquad \ldots 6$$

Where $a(L), b(L)\ and\ c(L)$ are stable and inveritible polynomials, respectively. Such models provide a more attractive way of presenting and modeling cointegrating series. The error correction models combine the long run $(y_t - aX_t)$ and the short run dynamics.

The second step of Engle and Granger methodology consist to estimate the following regression:

$$\Delta y_t = a + \sum a^{\tau} \Delta y_{t-1}^{\tau} \sum \beta_j \Delta X_{t-1} + bEC_{t-1} \qquad \cdots 7$$

Where A denotes the first difference and the EC represents the error term. The estimated error term coefficient must have statistically significant negative sign. This coefficient indicates the percentage of the disequilibrium in the dependent variable that would be adjusted from period to another. It is widely recognizable that Engle and Granger test for cointegration would be enough if we want to examine the effect of error correction mechanism on the dependent variable for two sequences periods such as t and t – 1.

The maximum Likelihood procedure (Johansen's test), suggested by Johansen (1988 and 1991) is particularly preferable when the number of variables in the study exceeds two variables due to the possibility of existence of multiple cointegrating vectors. The advantage of Johansen's test is not only limited to multivariate case, but it is also preferable than Engle-Granger approach even with a two-variable-model (Gonzalo, 1990).

To determine the number of cointegrating vectors, (Johansen, 1988 and 1991) and Johansen and Juselius (1990) suggested two statistic tests. The first one is the trace test (λ_{trace}). It tests the null hypothesis, that the number of distinct cointegrating vectors is less than or equal to (q) against a general unrestricted alternative (q = r). The second statistical test is the maximal eigenvalue test $(\lambda_{\max})$. This test concerns a test of the null hypothesis that there is (r) of cointegrating vectors against the alternative that there is (r + 1) cointegrating vectors.

IV. Results And Discussion

This section of the study involves the presentation and interpretation of the empirical result. It starts with the verification of the time series properties of the variables used in the model.

Table 1 Test for Statinarity

Variables	ADF Test statistics	5% critical level	Order of integration
D {GDP}	-5.9898523	-2.9422	1{1}
D{MS2}	-6.2465165	-2.9422	1{1}
D{INT}	-5.974069	-2.9422	1{1}
D{EXR}	-3.925125	-2.9422	1{1}
D{INF}	-6.238759	-2.9422	1{1}

Source: author's computation

The result of the augmented Dickey fuller {ADF} unit root test is presented above from the result, all of the variables are stationary at first difference. The hypothesis of non-stationary was therefore rejected.

Table .2 Summary of Johansen Co-integration Test

Eigen Value	Likelihood Ratio	5% Critical Value	1% Critical Value	Hypothesis No. of CS{S}
0.871350	133.1419	68.52	76.07	None **
0.611132	57.26740	47.21	54.46	At most 1 **
0.378225	22.32034	29.68	35.65	AT MOST 2
0.112297	4.738771	15.41	20.04	At Most 3
0.008917	0.331419	3.76	6.65	At Most 4

Source: Author's Computation

Note: {**} denotes reflection of the hypothesis at 5% {1%} level of significance

The result of the Johansen co-integration test presented above indicates two co-integration equations. Hence, the long run relationship between the variables will therefore be determined by Normalized co-integrating coefficient with the highest log likelihood in absolute value. The result is presented below:

Table 3 :Normalized Co-Integrating Coefficient {S}: One Co-Integrating equation {s}

Variables	coefficients	Std error	T value
Inf	2.07e+10	3.57e+10	0.58
Intr	-4.63e+11	2.83e+11	-1.64
Ms	2.002258	.3910817	5.12***
Exr	8.45e+10	1.91e+10	4.44***
Constant	1.04e+12	1.36e+12	0.77

Log likelihood – 1373.340

$R^2 = 0.88$, F(4, 35) = 64.54, Prob > F = 0.0000

Source: Authors computation

From table 3 inflation exhibits a positive relationship with the gdp. This is an indication that there exist a direct relationship between gdp and inflationary rate. The implication of this result on one hand is that growth in Nigeria is also accompanied with increase in the inflationary rate. This is similar to the findings of Iyoha (2002), Nnana (2004), Azeez and Ojo (2012) and Aurangzeb (2012). However, the statistical test of significance shows that inflationary rate does not have significant impact on the gdp. This limits the effects of inflation targeting policy of the monetary authority in Nigeria.

Again, interest rate has a correct sign in line with theoretical postulations i.e it exhibits negative relationship with the GDP. This shows that there is an inverse relationship between interest rate and growth. This is similar to the result from the studies of Azeez and Ojo (2012) and Aurangzeb (2012) In other words it implies that increase in interest rate may not promote growth in Nigeria. Similarly the result shows that interest rate fails to have significant impact on growth despite the correct sign. In the same vein this also limits the effectiveness of Taylor rule as a means of controlling the direction of monetary policy in Nigeria. This is an indication that monetary policy relying solely on Taylor principle might not have any significant impact on the growth . The result is in line with Alexey (2011) and Sosunov and Zamulin (2007) who found in their DSGE models that Taylor principle based monetary policy might not impact significantly on growth.

The studies have also shown that money supply has positive and significant impact on growth of the Nigerian economy. This also underscores the importance of expansionary monetary policy approach. The result is in line with the findings of Anthony and Mustafa (2011), Gul, Mughal and Rahim (2012) and Ditimi, Nwosa and Olaiya (2011). These sets of past studies have recommended that policy makers should embark on prudent and aggressive process of boosting money supply in other to accelerate the growth the affected economies.

The result have also shown that exchange rate has a siginifcant and positive relationship with growth. This is an indication that on one hand an increase in exchange rate will lead to increase in growth. Theoretically, increase in exchange rate is synonymous to devaluation of currency which has the implication of discouraging importation and thus promoting encouraging domestic output. This trend is the growth path through which exchange rate influences growth positively. Studies of Somoye (2000)

Finally, the R square indicates that about 88% variation in growth is explained by the model. In addition, the F test which is a verification of overall significance shows that the model is statistically siginifcant. The implication of this result is that, the whole variables used to capture bank reforms namely; exchange rate, inflationary rate and interest rate show a that collectively they will have significant impact on growth.

Error Correction Model (Short Run Analysis)

The result of the error correction model is presented in equation 3.

D(GDP)=0.651167*D(GDP)(-1)+6.523712*D(MS)(-1)- 37674.94*D(INT)(-1} + 7072.219**D(EXR)(-1)-4591.296*D(INF)(-1) -0.341395*ECM (-1)……..Eqn (3)

The short run analysis of the relationship between bank refoprms and the growth of the Nigerian economy shows that the variables are all individually statistically significant. This is an indication that bank reforms in

Nigeria appears to have more of transitory impact than permanent impact since the variables are more significant in the short run analysis equation than in the long run equation.

Again, the ECM co-efficient is correctly signed and statistically significant at 5% level of significance. The error correction term, which is otherwise referred to as the speed of adjustment is correctly. Signed which implies that about 34% of the short run inconsistencies are being corrected and incorporated into the long run equilibrium relationship.

The short run equation shows that money supply and exchange rate have a positive relationship with gross domestic products. Also, interest rate and inflation rate have a negative relationship with gross domestic products. It should be noted that interest rate and inflationary rate that were not significant in the long run are now significant in the short run. Hence in Nigeria, as we move into long run the significant effects of inflationary rate and interest rate on the economy dies off. But money supply and exchange rate sustained their significance on the economy from the short run through the long run.

V. Conclusion And Recommendation

The results from our findings have shown that bank reforms in Nigeria have diverse impacts on the growth of the Nigerian economy. Firstly the study has shown that bank reforms do have a long run relationship with the growth of the Nigerian economy. Again, bank reforms also exhibit a significant short run impact on the Nigerian economic growth. But relatively, the study have shown that the impact is more in the short run than in the long run. This is an indication that bank reforms in Nigeria are most likely to have more of transitory effect than permanent effect. In addition, money supply and exchange rate have been shown to be the strongest variables in the bank reforms in Nigeria. Though, interest rate and inflationary rate are also important, but their impact on the economy are felt more in the short run than in the long run while exchange rate and money supply effects on the economy are felt both in the short and long run.

Based on the foregoing, it is recommended that monetary authorities in Nigeria should incorporate bank reforms that we have susutainable effect on the economy. Again, money supply and exchange rate should be given more attention in the bank policy mix in Nigeria due to their importance among bank reforms variables as shown from the study.

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