Banks Instability and Macro-Economic Variables, Nigerian Experience between 1996 and 2012

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Abstract
Banks in most economies are the principal depositaries of the public’s financial savings, the nerve centre of the payment system, the vessel endowed with the ability of money creation and allocation of financial resources and conduit through which monetary and credit policies are implemented. Nigeria has experienced some major banking crisis and some past studies have shown the effect of pre-consolidation and post consolidation effect of banks failure on Nigeria economy. However, most of these studies did not examine the role played by macroeconomic variables in banking crisis. Thus, the main thrust of this study is to identify and examine the role played by macroeconomic variables in banking crisis especially in the developing economy like Nigeria. Secondary data of macroeconomic variables (inflation rate, real exchange rate, real interest rate and Gross Domestic Product) for a period of seventeen years (1996 to 2012) were obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin. Multiple Linear Regression model was adopted to analyze the effect of Inflation Rate, Real Exchange Rate and Real Interest Rate on Gross Domestic Product (GDP) which was taken as dependent variable. The findings showed that Real Exchange Rate and Inflation Rate had a significant relationship with GDP while Real Interest Rate did not have a significant relationship with GDP.

Keywords
Banking crisis, Gross Domestic Product, Insolvency, Microeconomic and Inflation.

1. Introduction
Macroeconomic variables are the indices upon which economic growth is measured and these variables include GDP, inflation rate, price indices among others. In order to gain more insights into the understanding of these variables, it is important to understand the role played by banks in economic development. An efficient financial system is widely accepted as a necessary condition for an effective functioning of a nation’s economy. The state of development of the financial market in a country, serves as barometer for measuring the stage of development of the economy. The mix of these financial intermediaries varies from country to country reflecting the stage of economic development. In addition to the intermediation role, a nation’s financial system links the domestic economy with the rest of the world by providing the means for the settlement of international transactions. It has also been observed that growth in the financial industry, if transmitted well would result in the growth of real sector and the opposite is possible if the financial sector is repressed and inefficient. The component of the financial system that is at the centre of the intermediation role and the greasing of the engine of economic growth and development is the banking sector. Banking is the heart of every robust economy.

Financial intermediaries play a crucial role in the process of economic development and growth by channeling savers money to more productive uses in an economy, they do this by screening and selecting investment projects and transforming assets, usually from short term deposits to long term investments, but more generally from illiquid to liquid assets. The fact that banks overcome informational problems between lenders and borrowers and facilitate the creation of liquidity makes them vulnerable to
confidence crises and, therefore, susceptible to runs and liquidity crisis (Diamond 1984, Diamond and Dybvig 1983, Ramakrishman and Thakor 1984). There has been extensive research on the role of the banking sector in the macroeconomy and its importance in propagating and amplying business cycles. It has led to the conclusion that banks’ credits are not just monetary balances but they affect macroeconomic performance, far beyond what standard macroeconomic models suggest. In addition to amplifying the magnitude of the business cycle, a poorly regulated and supervised banking industry will tend to misallocate resources, increasing the economic cost of the boom-bust cycle in bank lending. Poorly capitalized and regulated bank may invest excessively in risky projects, such as a real estate, or in other sectors prone to suffer boom-bust cycle. Also, poorly managed banks operating under distorted incentives will not diversify their portfolios adequately, thus exacerbating financial sector vulnerability. These banks will suffer greater losses during the contractionary phase of the cycles. The weaker initial conditions in the banking sector are, the more vulnerable countries will be to large downturns and costly banking crises.

Bank crisis is said to occur when a bank or some banks in the system experience illiquidity or insolvency resulting in a situation where depositors fear the loss of their deposits and a consequent breakdown of contractual obligations. Banking crisis can be triggered by weakness in macroeconomic variables such as inflation rate, interest rate and exchange rate. Banking crisis could also be attributable to persistent illiquidity, insolvency, under capitalization, high level of non-performing loans and weak corporate governance among the management of the financial institutions. Banking crisis usually starts with inability of the bank to meet its financial obligations to its stakeholders, which usually results in bank run. The banks and their customers engage in massive credit recalls and withdrawals which sometimes necessitate Central Bank’s liquidity support to the affected banks. Some terminal intervention mechanisms may occur in the form of consolidation, recapitalization and the use of bridge banks. Nigeria has experienced some major banking crisis and some past study has shown the effect of pre-consolidation and post consolidation effect of banks failure on Nigeria economy. However, most of the past studies do not examine the role played by macroeconomic variables in banking crisis. Thus, the main thrust of this study is to identify and examine the role played by macroeconomic variables in banking crisis especially in the developing economy like Nigeria.

Aslic and Enrica (1998) from their study discovered that low GDP growth, excessively high real interest rates, and high inflation significantly increase the likelihood of systemic problems. This also confirms the evidence presented by Gorton (1988) on the determinants of bank runs. To determine the effect of these macroeconomic variables on Nigeria’s economy as a developing economy, this study will examine the following hypotheses: H1: Real Exchange Rate has effect on GDP, H2: Real Interest Rate has effect on GDP and H3: Inflation Rate has effect on GDP.

2. Literature Review and Theoretical Framework

2.1 Review of Theories on Banking Business

Diamond and Dybvig (1983) developed an influential model called Bank Run Theory to explain why bank runs occur and why banks issue deposits that are more liquid than their assets. According to the model, the bank acts as an intermediary between borrowers who prefer long maturity loans and depositors who prefer liquid account. In the model, business investment requires expenditures in the present to obtain returns that take time in coming. A business or entrepreneur that needs to borrow to finance...
investment will want to give their investments a long time to generate returns before full repayment, and will prefer long maturity loans, which offer little liquidity to the lender. The same principle applies to individuals and households seeking financing to purchase large ticket items such as housing or automobiles. The households and firms who have the money to lend to these businesses may have sudden, unpredicted needs for cash, so they are often willing to lend only to the condition of being guaranted immediate access to their money in the form of liquid demand deposits accounts, that is, accounts with shortest possible maturity. Since borrowers need money and depositors fear to make these loans individually, banks provide a valuable service by aggregating funds from many individual deposits, portioning them into loans for borrowers and spreading the risks both of default and sudden demands for cash. If only a few depositors withdraw at any given time, this arrangement works well. However, if many depositors withdraw all at once, the bank itself may run short of liquidity, and depositors will rush to withdraw their money, forcing the bank to liquidate many of its asset at a loss and eventually to fail. If such a bank were to attempt to call in its loans early, businesses might be forced to disrupt their production, while individuals might need to sell their home and/or vehicles, causing further losses to the larger economy.

Also, there is ‘The Commercial Loan Theory: Doctrine of Liquidity’ which centres on liquidity management was a result of the English Banking Practices during the 18th century. The proponents of these theory according to Anyanwu (1990) contended that; “the commercial bank liquidity would be assured as long as the assets were held in short term loan that would be liquidated in the normal course of business”. In other words, bank should finance the movement of goods through the successive process through consumption. Such financing of movement would be termed inventory or working capital loans. In his own contribution Anyanwu (1990), said that “aiming at the stabilization of the banking system, this theory holds that banks should lend only on short term, self liquidating, commercial papers”. The controlling factor is that a bank has liabilities payable on demand, and it cannot meet these obligations if its assets are tied up for long periods of time. Rather, a bank needs a continual and substantial flow of cash moving through it in order to maintain its own liquidity, and this cash flow can be achieved only if the bank limit its lending activities to short term maturities. Despite the fact that the proponents of this management theory has stated that it is useful and enables banks to manage their liquidity properly. Anyanwu (1990), is of the view that the theory is flawed by serious misconceptions, both analytically and historically.

With particular reference to Nigerian banks, commercial loan theory is the predominant banking theory, since 1892 when we had our first commercial bank. Equally, the philosophy of this theory is embodied in our banking legislations and its elements are reflected in the current Banking Decree as related to investment of bank funds and eligibility or instruments for discount.

2.2 The Evolution of the Nigeria Banking Sector

According to Somoye (2008), banking operation began in Nigeria in 1892 under the control of the expatriates and by 1945, some Nigerians and Africans had established their own banks. The first era of consolidation ever recorded in Nigeria banking industry was between 1959-1969. This was occasioned by bank failures during 1953-1959 due mainly to liquidity of banks, as there was no well organised financial system with enough financial instruments to invest in. Hence, banks merely invested in real assets which could not be easily realized to cash without loss to value in times of need. This prompted the Federal Government then, backed by the World Bank Report to institute the Loynes Commission on September 1958. The outcome was the promulgation of the ordinance of 1958, which established the Central Bank of Nigeria(CBN). The year 1959 was remarkable in the Nigeria Banking history not only because of the establishment of Central Bank Nigeria(CBN) but that the Treasury Bill Ordinance was enacted which led
to the issuance of our first treasury bills in April, 1960. The period (1959–1969) marked the establishment of formal money, capital markets and portfolio management in Nigeria. In addition, the company acts of 1968 were established. This period could be said to be the genesis of serious banking regulation in Nigeria. With the CBN in operation, the minimum paid-up capital was set at N400,000(USD$480,000) in 1958. By January 2001, banking sector was fully deregulated with the adoption of Universal Banking system in Nigeria which merged merchant bank operation to commercial banks system preparatory towards consolidation programme in 2004. In terms of number of banks and minimum paid-up-capital, between 1952-1978, the banking sector recorded forty-five(45) banks with varying minimum paid-up capital for merchant and commercial banks. The number of banks increased to fifty-four(54) between 1979-1987. The number of banks rose to one hundred and twelve(112) between 1988 to 1996 with substantial varying increase in the minimum capital. The number of banks dropped to one hundred and ten(110) with another increase in minimum paid-up capital and finally dropped to twenty-five in 2006 with a big increase in minimum paid-up capital from N2billion in January 2004, to N25billion in July 2004 (Somoye, 2008).

2.3 Banking Crisis in Nigeria
Nigeria has witnessed major banking crises. The banking crisis of the 1950s, that of the 1990s and that of 2008. In the pre-independence era, it was only in Nigeria in the whole of British West Africa that indegeneous banking system grew alongside the expatriate banks. This arrangement was only peculiar to the Nigeria banking development. However, a defacto challenge was thrown at the ability of Nigerians to successfully manage banks. This is because as at 1954 about twenty five indigenous banks had failed within a period of twenty five years that the first indigenous bank was established in the country. The era was essentially characterized by an absence of a regulatory framework for banks in Nigeria. The causes of the failure were attributable to management problems, fraud, accounting competence, undercapitalization (or poor capitalization), conflict of interest, domineering expatriate banks, etc. The banking crisis of the 1990s was attributable to the prevailing macroeconomic instability, inhibitive policy environment, capital inadequacy, loan defaults, ownership structure and political interference, and the effects of deregulation and financial liberalization (Nwakoby, 2004 and Uche, 2001). More succinctly, below are the causes of Banking Crisis in Nigeria:

Fraud: The Association of Certified Fraud Examiners (1999), defines fraud as the use of one’s occupation for personal enrichment through the deliberate misuse, misapplication or employment of organization resources or assets. According to the ICAN study pack (2006), fraud consists of both the use of deception to obtain an unjust or illegal financial advantage and intentional misrepresentations, affecting the financial statements by the one or more individuals among management, employees, or third parties. Fraud is really eating deep into the Nigeria banking system.

Weak Corporate Governance: as a result of recruiting inexperience and incompetent personnel to hold key positions in the bank, deterioration of management culture and weak internal control system instigated by the squabbles among the high rank management decision making team, and non compliance with laws and prudential standards, mismanagement seemed to play a major role in bank failure. Many banks grant loans with no collateral or with little or no regard to the ability of the borrowers to repay the loans. In this regard, Ogunleye (2006), noted that the proportion of non performing loans the distressed banks had during the period 1989-2000, been consistently high, reaching about 80% of their loan portfolio. This ratio has significantly exceeded the prudential maximum ratio of 20%.
Weak Risk Asset Management and Inadequacy of Capital: Okpara (1997) noted that it is not uncommon to find securities being overvalued and sometimes fund are disbursed without securities. Odejimi (1992) also noted that the major factors responsible for the precarious financial condition of the banks were huge uncollectible loans and advances. In his observation, Ajani (1992), puts it that this maladministration of credit portfolio is one of the most lapses that can make a high flyer manager lose everything overnight. Capital inadequacy has been reoccurrent in the banking system that from time to time CBN continues to articulate on the increase of the capital base of the banking system. For instance, the recent N10 billion, 25billion and 50billion recapitalization exercise for regional, national and international respectively was meant to beef up the ailing banks capital base.

Capital Flight: at the broad extreme, capital flight has been defined to include all private capital outflows from developing countries (Kahn and UI Hague, 1987), while at the narrow extreme, it include only illegal capital exports (Lessard and Williamson, 1987). The case of Nigeria capital flight has been a recurrrent phenomenon and was estimated to be taking place even before the adoption of the Structural Adjustment Programme (SAP) in 1986 (Akanni, 2007).

2.4 The Costs of Banking Crises
According to Aslic and Enrica (1998), the rescue operations in terms of response to banking crisis have several setbacks such as its costs on the budget, it keeps inefficient banks to remain in business and it may also create the expectation of future bailouts thereby reducing incentive for enterprise risk management in banks. The rescue operation can be in the form of loose monetary policy to the bailout of insolvent financial institutions with public fund this as an inflationary effect which could trigger a speculative attack against the country’s currency where there is exchange rate commitment.

Also, policy makers must be concerned about banking crises because these crises are costly in terms of lower economic growth, and the political consequences of allocating losses among bank stockholders, creditors, depositors and taxpayers can be significant. It is important to note, however, that the direct economic cost of a banking crisis derives from the decrease in economic activity and growth that results from a reduction in the total volume, or a more inefficient intermediation of loanables funds, while the allocation of losses has primarily distribution effects (usually very important) but on its own does not imply an economic loss. Nevertheless, the allocation of losses is important because it changes the incentives of the different groups of economic agents and though this, can lead to lower investment and growth (World Bank Policy Research Report 1996).

Quantifying the economic losses associated with a banking crisis is a cumbersome task, mainly because it is not clear how to separate the decrease in economic activity due to the banking crisis per se from that which is due to other exogenous factors (such as a terms of trade shock). In fact, a banking crisis may result from a decrease in economic activity caused by other factors, with the banking sector playing a key role in amplifying the effect of the exogeneous shock on aggregate output. The allocation of losses, often used as a measure of the cost of banking crises, is also quite significant (World Bank Policy Research Report 1996).

2.5 Recent Banks Issues in Nigeria
The Central Bank of Nigeria said in December 2009, that the total non-performing loans (NPLs) of the eight banks that were found to be in grave situation after a special audit jointly conducted by the apex bank and NDIC was N1.52 trillion. The amount represented 60.75% of the industry’s total NPLs.
However, the Economic and Financial Crimes Commission recovered N171 billion from the eight banks whose management teams were sacked by Central Bank (EFInA Quarterly Review, 2009).

According to the study of Adegbaju and Olokoyo (2008), who studied recapitalization and bank’s performance using a case study of Nigerian banks with the aim of finding out if recapitalization is of any benefit, discovered difference between the mean of key profitability ratio of the banks before recapitalization and after it. Their study recommends that banks should improve on their asset turnover and to diversify their funds in such a way that they can generate more income on their assets. Whereas Somoye who studied the performance of commercial banks in post consolidation period in Nigeria, noticed that the consolidation programme has not improve the overall performances of banks significantly. But however, it has contributed marginally to the growth of the real sector for sustainable development. He concluded by saying that banking sector is becoming competitive and market forces are creating an atmosphere where many banks simply cannot afford to have weak balance sheets and inadequate corporate governance. Somoye was of the opinion that consolidation of banks may not necessarily be a sufficient tool for financial stability for sustainable development and this confirms Megginson (2005) and Somoye (2006) postulations. However, Godwin (2009) asserts the opinion of Somoye in his study “a synthesis of the critical factors affecting performance of the Nigeria banking system”. His study revealed that factors such as undue interference from board members, political crises, undercapitalization and fraudulent practices are the most critical factors inhibiting the efficient performance of Nigeria financial institutions and he contends that the recapitalization exercise of the Central Bank was a necessary but not a sufficient measure in the right direction and that the sufficient measure must be one that controls all the identified critical factors at the same time. Inspite of the recapitalization policy and the efforts of CBN and NDIC to combat banking crisis in the system, some banks still failed, which however, cannot be classified as a systemic crisis because not all banks are affected. This paper focus on the macro economic effect banking crisis on Nigeria economy, as most research conducted focused on the effect of fraud, under capitalization, non performing loan and weak corporate governance among other things affect banks before and after consolidation which is just a step in resolving financial crisis in Nigeria.

3. Methodology
This study used secondary data obtained from CBN statistical bulletin for the period 1996 to 2012. Multiple linear regression model was adopted to analyse the data using real gross domestic product (GDP) as dependent variable, while real exchange rate, real interest rate and inflation rate as independent variable. These variables were also used by Aslic and Enrica (1998), who investigated the features of the economic environment that tends to breed banking sector fragility which ultimately results in systemic banking crises.

\[
GDP = \beta_0 + \beta_1 \text{RER} + \beta_2 \text{RIR} + \beta_3 \text{IR} + \epsilon_1
\]

Where
GDP = Gross Domestic Product,
RER = Real Exchange Rate
RIR = Real Interest Rate
IR = Inflation Rate
\(\beta_0\) = Constant Term
\(\epsilon_1\) = Error Term
• Real Gross Domestic Product is a macro-economic measure of the value of economic output adjusted for price changes (i.e. inflation or deflation). This adjustment transforms the money value measure, nominal GDP into an index for quantity of total output.
• Real Exchange Rate is the rate that have been adjusted for the inflation differential between two countries.
• Real Interest Rate is the lending interest rate adjusted for inflation as measured by the GDP deflation.
• Inflation is likely to be associated with high nominal interest rates and it may proxy macroeconomic mismanagement which adversely affects the economy and the banking system.

4. Analysis of Result

4.1 Model Summary

<table>
<thead>
<tr>
<th>Independent</th>
<th>Dependent</th>
<th>Person Correlation</th>
<th>R²</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>H₁ Real Exchange Rate (RER)</td>
<td>GDP</td>
<td>.543</td>
<td>.249</td>
<td>Accept</td>
</tr>
<tr>
<td>H₂ Real Interest Rate (RIR)</td>
<td>GDP</td>
<td>.076</td>
<td>.006</td>
<td>Reject</td>
</tr>
<tr>
<td>H₃ Inflation Rate (IR)</td>
<td>GDP</td>
<td>.536</td>
<td>.287</td>
<td>Accept</td>
</tr>
</tbody>
</table>

The coefficient of correlation R and co-efficient of determination R², measures the explanatory power of the regression model. From the results, there is a high co-efficient of correlation (81.5%) GDP and RER, RIR and IR. The implication is that the variables in the model from a holistic point of view are useful for explaining their effect on GDP. There is also a highly significant co-efficient of determination (66.4%). The standard error of the estimates also known as residual standard deviation and it has a value of 1.3379. The Durbin Waston (DW) statistic of .798 indicates that there is no problem of serial correlation in the regression model.

4.2 Hypotheses Testing

To test hypothesis 1, Pearson Correlation coefficient and simple linear regression was calculated between RER as independent variable and GDP as dependent variable, and it was equals to r(n=17)=.543, R²=.249, which means significant relationship exists between GDP and RER but, RER do not have significant effect on GDP singly.

To test hypothesis 2, Pearson Correlation coefficient and simple linear regression was calculated between RIR as independent variable and GDP as dependent variable, and it was equals to r(n=17)=.076, R²=.006, which means that there is no significant relationship between GDP and RIR neither does it has any effect on GDP.

To test hypothesis 3, Pearson Correlation coefficient and simple linear regression was calculated between IF as independent variable and GDP as dependent variable, and it was equals to r(n=17)=.536, R²=.287, which means there is a significant relationship exists between GDP and IF but, IF do not have significant effect on GDP singly.

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From the above table, it can be deduced that RER and IR have a significant relationship with GDP while RIR do not have a significant relationship. It therefore implies that a 54.3 percent increase in RER will cause GDP to increase by 1 percent holding RIR and IR constant. Similarly, a 53.6 percent increase in IR will cause GDP to increase by 1 percent. However, RIR has no significant effect on GDP.

5. Conclusion and Recommendation

For the fact that crisis in the banking system does not affect the system alone, but affects every part of the economy, it can then be said that the impact of banking crisis on developing economy is immeasurable. Apart from the variables considered, the crisis in the banking system are also, attributable to poor management, weak governance, capital inadequacy, fraud and non performing loans. Inflation rate had generally been on the increase in Nigeria even when there is small volume of money in the circulation, which in a way affects interest rate, the increase or decrease in exchange rate affects the demand for money. The demand for money affects the banking system negatively especially when it is cash outflow. Increased outflow of cash from the bank results in liquidity problem and if not controlled results in bank run. From the analysis, it can be deduced that increase in exchange rate and inflation rate affects the economy and this can degenerate to banking crisis. Government intervention in banking crisis is costly and also has a major impact on the financial position of the nation and a practical example is the nationalization of some banks in Nigeria, three out of these bank’s toxic asset was later bought by AMCON. Banking crisis slows down the growth of the economy, therefore, the soundness of the banking system in any economy is germane and important to the development and growth of such economy, which gives rise to effective monitoring and control of exchange rate and inflation rate.

Banks in most economies are the principal depositories of the public's financial savings, the nerve centre of the payment system, the vessel endowed with the ability of money creation and allocation of financial resources and conduit through which monetary and credit policies are implemented. Consequently, the development and growth of the economy to a large extent, depends on the health of the banking institutions through which the government monetary policies are implemented. It is therefore essential to ensure their soundness because of the multiplier negative impact a crisis in that sector will have on the economy of the country. In the light of this the following recommendations are pertinent for the soundness and stability of Nigeria banks:

- CBN should closely monitor the inflation rate by using Treasury bill and cash reserve ratio to control the volume of money in circulation which will invariably reduce inflation. The cashless policy by CBN will also help in a greater way in controlling inflation, as it will reduce the volume of cash transaction which will help to checkmate the surge of inflation. CBN should strictly enforce compliance with the cashless policy in all States and put in place adequate sanctions on banks and customers that do not comply.
- Monetary policy should be set up, which will focus on the growth and financial stability issues in order to minimize the impact of shocks to the economy.
- Putting in place good and strong corporate governance in the banking system, as it can be said that good governance is good business. Good corporate governance in banks will ensure that things are done the way it should be done, which will minimize poor management and indiscipline in the banking sector.
- Measures should be put in place to reduce fraud to the bearable minimal if not completely eradicated, as most customers lose faith in banks to properly secure their money and in addition, eradication of fraud will reduce the level of capital flight because most staff that commit fraud
deposit the stolen funds in foreign account. Bank staffs that commit fraud should be handed to the respective arm of government for adequate punishment. By doing this, the government can create fear in banks staff which will reduce drastically the trends of fraud.

- Consumer protection should be put in place to ensure that customers are treated fairly in all their dealings which will restore customers confidence and trust.
- Activities of banks should be closely monitored by Central Bank to avoid poor management and there should be heavy sanction on staff or management of banks that is found guilty of financial crime. The sanctions in place on financial crime convict can be said to be insufficient.
- Weaking banks should further be absorb by sound banks in the system and the activities of absorbing banks should be closely monitor after the takeover.
- Non performing loans should be reduced to the bearable minimal with adequate provisions for such loans. The non performing loan should be reported in annual reports in detail. Banks should obtain sufficient and adequately evaluated collateral from customers seeking loan which should be closely monitored and frequently be reevaluated. Banks should also monitor the use of funds borrowed by customers to avoid fund diversification and misuse.
- Finally, CBN should institute and enforce policy to control the sales of foreign currency by banks to individuals who in turn sell the foreign currency in black market in order to have adequate and effective control over exchange rate.

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