Capital Adequacy and the Performance of Deposit Money Banks in Nigeria

Takon, Samuel Manyo., Eba, Augustine Okpaje., Akagha, Benedict Onyeoziri Matthias, Shadrach Alache

Department of Banking and Finance, University of Calabar- Calabar

Chukwuma, Cynthia Chisom

Department of Banking and Finance, Nnamdi Azikiwe University, Awka

Abstract

The impact of capital adequacy structure on the performance of deposit money banks in Nigeria is examined in this study. Objectives of the study were; to examine the impact of total assets of banks on the performance of deposit money banks in Nigeria and to investigate the role equity capital on the performance of deposit money banks. The methodology used for this study was the desk survey method and data were sourced from annual report of banks, CBN Statistical Bulletin and journal articles and the study was analyzed using the least square multiple regression technique. Empirical test indicated that, there was a significant relationship between total asset and the return on equity of Access Bank Plc, and also that, there was a significant relationship between equity capital and the return on fadequate capital regulation; the dragging effect that core capital has on profitability needs to be monitored and appraised constantly in order not to reduce shareholders' confidence in investing in the bank by way of a possible capital shore-up.

Keywords: Capital adequacy, total assets, deposit money banks, equity capital

Introduction

According to Onoh (2012), a bank capital fund is considered adequate if it is enough to cover the bank operational expenses satisfy customers with dual needs and protect depositors against total or partial loss of deposits in the event of liquidation or loss sustained by the bank. The essential characteristics of capital are that it should, represent a permanent and unrestricted commitment of funds, be freely available to absorb loses and thereby enable a financial institution to continue operating while the problems are solved. Also, it should not impose any unavoidable charge on the earnings of the financial institutions and rank below the claim of depositors and other creditors in the event of the winding up of a financial institution. Capital adequacy is the level of capital necessary or a bank as determined by the regulatory and supervisory authorities to assume the bank's financial health and soundness. Capital adequacy, the measure of the solvency of a bank, tells whether a bank has enough capital to support the risks in its balance sheet. Adequate capitalization is an important variable in business, and is more so in the business of using other people's money such as banking.

Banks as financial intermediaries obtain their capital through owners' funs, reserves and share capital. The profit earning capacity of banks depends on the prudent combination of assets and liabilities to meet the liquidity and solvency requirements imposed by the environment including the monetary and banking policies (Longe, 2015; Nnanna, 2015). The primary role of banks is to ensure the growth and development of an economy. To ensure availability of funds at any point in time (in meeting with customers' needs and demands), statutory requirements must be in place to regulate and measure banks capital. Capital adequacy, which is determined by capital asset ratio, is a requisite for banks' effective operation which is a function of the deposits and capital funds. Customers are getting increasingly concerned with the sufficiency of banks' capital for the safety of their deposits.

However, risk bearing is part of banks business operations but the level of risk depends on the capital adequacy. In the process of making returns, banks expose the capital and customers' deposit to risk due to the dynamism and uncertainty of the economy. It therefore becomes mandatory to control and regulate banks operations by an apex Bank to ensure customers' safety, strengthen and promote soundness, stability and efficiency of the banking system. This help to reduce the likelihood of banks becoming insolvent (Yudistira, 2013; Brash, 2011). In Nigeria, the Central Bank of Nigeria (CBN), as an apex bank, has the statutory obligation to regulate banks' capitalization as a way of mitigating their solvency problems which may destabilize the domestic and international financial system (Bernauer & Koubi, 2012; Brash, 2011).

Compliance with this statutory requirement has resulted in the adoption of different strategies in the banking industry such as, mergers and acquisitions, raising of funds through the capital market and consolidation as viable options for continuity. This exercise according to Soludo (2015) will protect banks customers' deposits and confer confidence on them in dealing with banks. In furtherance of his assertion, he explained that, the need for recapitalization arises from the fact that banks have not played their expected role in the development of the economy because of their weak capital base; hence, the decision to increase the capital base of bans is aimed at strengthening and consolidating the banking system.

The need for the banking sector reform arises from the fact that banks play important role in any nation's economic growth and development. According to Soludo (2015), the banking sector in any economy serves as catalyst for growth and development. Banks are able to perform these roles through their central functions of financial intermediation. By which they, are involved in the mobilization of savings of surplus economic unit and channeling such funds to the deficit economic units for economic development. For effective performance of these functions, banks have to maintain proper liquidity to keep their doors open in the short run; this would require adequate profitability. The concept of operational efficiency is crucial for banks' survival; especially when we view banks as service organizations with overheads constituting the most significant costs. It is evident that banks generate a significant proportion of their income through interests on disbursed loans and customers' deposits constitute the larger source of this lending. Therefore, the need to be adequately capitalized is paramount.

The number of distressed banks has been on the increase since 1991 irrespective of the capital base of these banks. The report of Nigeria Deposit Insurance Cooperation (NDIC) and CBN showed that in 1991, only eight (8) banks were distressed, but this figure drastically increased to sixteen (16) in 1992 and has been on the increase until 2005 when it became obvious that reform in the banking industry is a necessity (Uremandu, 2010). Hence, the current reformation exercises for consolidation of banks is for competence and competitiveness. As Soludo (2015) affirmed, the strengthening and consolidation of banking system was designed to ensure a diversified, strong and reliable banking sector which will ensure the safety of depositors' money, play active development roles in the Nigerian economy and also become competent and competitive in the regional and global financial system.

Bank management need to employ the assets and capital of the bank judiciously for

positive results. The CBN Governor noted that, the vision or prospect of the CBN and the Federal Government of Nigeria is a banking system that is part of the global change, and which is strong and reliable. It is a banking system which must be efficient, depositors can trust and investors can rely upon. Capital adequacy is important for banks to absorb risks till banks are able to generate profit. It was suggested that banks that whose capital levels exceed the capital requirement stand a better chance of luring customers and instilling confidence in the system. However, it is not clear whether this is the case in reality. Has such banks shown any difference in performance.

Objectives of the study

The specific objectives of the study were:

- i. To examine the impact of total assets of banks on the performance of deposit money banks in Nigeria.
- ii. To investigate the role equity capital on the performance of deposit money banks.

Theoretical framework

Financial intermediation theory

The theory of financial intermediation as propounded by McKinnon and Shaw in 1973 proposes a debt intermediation hypothesis, whereby expanded financial intermediation between savers and investors resulting from financial liberalization (higher real interest rates) and development, increase the incentive to save and invest, stimulates investments due to an increased supply of credit, and raises the average efficiency of investment. The view stresses the importance of free entry into and competition within the financial markets as prerequisites for successful financial intermediation. McKinnon and Shaw (1973) argued that, policies leading to repression of financial markets reduce the incentives to save. They described the key elements of financial depression as: High reserve requirements on deposits, legal ceilings on bank lending and deposit rates, directed credit, restriction on foreign currency capital transactions, restriction on entry into banking activities. Though the McKinnon-Shaw framework informed the design of financial sector reforms in many developing countries, however, country experiences later showed that while the framework explains some of the quantitative changes in savings and investments at the aggregate levels, it glosses over the micro-level interactions in the financial markets and among financial institutions which affect the supply of savings and the demand for credit by economic agents, and the subsequent effect on economic growth.

The Robinson's School of Thought believes that, economic growth will lead to the expansion of the financial sector. He attributed the positive correlation between financial development and the level of real per capital GNP to the positive effect that financial development has on encouraging more efficient use of the capital stock. In addition, the process of growth has feedback effects on financial markets by creating incentives for further financial development. McKinnon and Shaw (1973) thesis is based on the complimentarily hypothesis, which in contrast to the neoclassical monetary growth theory, argued that there is a complementarily between money and physical capital, which is reflected in money demand. According to McKinnon and Shaw (1973), complementarily links the demand for money directly and positively with the process of physical capital accumulation because, the conditions of money supply have a first order impact on decisions to save and invest. In addition, positive and high interest rates are necessary to encourage agents to accumulate money balances, and complementarily with capital accumulation will exist as long as real interest rate does not exceed the real rate of return on investment. Furthermore, the lumpiness of investment expenditure implies that aggregate demand for money will be greater, the larger the proportion of investment in total expenditures.

Buffer theory of capital adequacy

The buffer theory as propounded by Calem and Rob (2016) predicted that, a bank

approaching the regulatory minimum capital ratio may have an incentive to boost capital and reduce risk in order to avoid the regulatory costs triggered by a breach of the capital requirements. However, poorly capitalized banks may also be tempted to take more risk in the hope that higher expected returns will help them to increase their capital. This is one of the ways risks relating to lower capital adequacy affects banking operations. In the event of bankruptcy of a bank, the risks are absorbed by the bank, customers and Nigeria Deposit Insurance Corporation (NDIC). At present, NDIC pays a maximum of ¥200,000 to a customer in the event of banks are expected to insure and pay 15/16 of customers deposit liabilities multiplies by 1 percent to NDIC to enable their customers benefit from the scheme. The above practice of NDIC in Nigeria is applicable to other countries but varies in amount.

As a consequence, banks may prefer to hold a 'buffer' of excess capital to reduce the probability of falling under the legal capital requirements, especially if their capital adequacy ratio is very volatile. Capital requirements constitute the main banking supervisory instrument in Nigeria. By contrast, a breach of the capital requirements is considered a major infringement of banking legislation and is not tolerated by the CBN. Banks remaining undercapitalized for prolonged periods are closed. The withdrawal of some banking license at the expiration of the recent capitalization of banks in Nigeria in 2005 is a pointer to this fact. Banks will require more capital if deposits are not fully mobilize from the public. Capital is more reliable, dependable and can be used for long term planning. Ability of banks to mobilize enough deposits obviates the capital base from being eroded.

Literature Review

Bank capitals are those fund attributed to the proprietors as published in the balance sheet (Nwankwo, 2011). These funds perform a number of functions, but a consensus exists that the fundamental and overriding function is to provide a cushion against losses not covered by current earnings and to protect depositors and other creditors against loss in the event of liquidation. Opinion differs among experts in banking and finance as to what constitutes adequate capital but they all agree that it is an age long issue for which there do not seem to by any consensus in sight, thus as noted by Nwankwo (2011), the issue of what constitutes an adequate capital for banks has a long history. It is in fact, almost as old as banking itself.

According to Nwankwo (2011), adequate capital is that quantum of funds which a bank should have or plan to maintain in order to conduct its business in a prudent manner. Functionally, adequate capital was regarded as the amount of capital that can effectively discharge the primary capital function of preventing bank failure by absorbing losses. As these were related to the risks associated with banks effort to serve the legitimate credit needs of the community, adequate capital will provide the ultimate protection against insolvency and liquidation arising from the risk in banking business. Any company or bank with inadequate capital faces hidden constraints. Its management time is spent on the defensive, working out how to raise capital or how to guard against takeovers.

Naceur (2016) studied the effects of capital regulation on cost of intermediation and profitability. According to him, capital adequacy ratio contributed positively to banks profitability. White and Morrison (2011) argued that, capital requirements ensure that banks have enough of their capital at stake. Bichsel and Blom (2015) supported this proposition arguing that these regulations help in reducing negative externalities (e.g. general loss of confidence in the banking system) in addition to boosting the GDP. Cotter (2016) noted that, where shareholders interests are controlling, capital is an important managerial decision variable and the capital position of the wealth maximizing bank theoretically will affect its capital structure and the loan policy. To the extent that capital does affect lending, it has implications for the performance of banks as financial intermediaries and hence for the

allocation of real resources within the economy. Cotter (2016) concluded by pointing out that from this stand point, market determined capital position seemed preferable. A study by Hassan (2011) examined the performance of Islamic banks during 1994-2001. Variety of internal and external banking characteristics were used to predict profitability and the result indicated that high capital leads to high profitability. Abreu (2012) found that, high capitalized banks face lower expected bankruptcy costs and thus lower funding costs resulting into better profitability. in contrast, other studies argue that capital adequacy have negative effect on banks performance.

Majnoni (2011) argued that, the introduction of higher capital requirements induced and aggregate slowdown or contraction of bank credit. Bank credit being the major source of banks income implies that its contraction consequently affects negatively the banks performance. Haron (2014) asserted that the proposition that, there should be a negative relationship between a banks ratio of capital to assets and its return on equity may seem to be self-evident as to not need empirical evidence. Kim and Santamero (2013) using a mean variance framework to compare the bank portfolio choice with and without solvency regulation show that capital requirements will introduce changes in the composition of the risky part of the banks portfolio in such a way that risk is increased and the profitability of failure may be higher. Gordard (2014) investigated the profitability of European banks against the capital - Asset ratio and in his findings he concluded that a positive relationship exists between the profitability of the banks and capital-asset ratio. Mwega (2015) found that, capital requirements help lessen the chances banks will become insolvent if sudden shocks occur. He noted that, the higher the risk weighted capital adequacy ratio, the lower is the probability that commercial banks will be exposed to the risk of insolvency and therefore a negative relationship exists between the risks weighted adequacy ratio and insolvency of commercial banks.

Haron (2014) measured the impact of some determinants of profitability and in his study he considered variables such as asset structure, inflation, deposit items, liquidity and money supply as some of the factors affecting profitability of the banks and capital-asset ratio. Demiurge-Kunt (2012) in his research on bank profitability found that there was a positive relationship between capitalization and profitability. He however found out that, there was a negative relationship between reserves and profitability. Margarida and Mendes (2012) carried out a related study and in their findings they observed that, those banks that were well-capitalized faced lower expectancy costs and thus lower funding costs in addition to higher interest margins on assets. They also found that, stiffer minimum capital adequacy ratios are associated with stronger revenue generation. In their conclusion, they pointed out that the health of a bank is cushioned by higher capital to asset ratio.

Wanjohi and Magure (2013) in their study on factors affecting the growth of SMEs in rural Kenya focused on a number of profitability variables such as capital, interest rate, liquidity, asset base among others using time series data and the multiple regression techniques. They found out that the financial institutions with high capital base were more profitable than those with lower capital base relatively. Related studies concerning interest earning assets (loans) were carried out in order to investigate their relationship with profitability. Various scholars came up with different findings regarding the same. Dermiurge-kunt (2012) found out that, the interest earning assets are the reasons for low profit margins earned by banks and thus saw a negative relationship between the loans and banks profitability. They found out that loan as a component of assets contributes immensely to the profitability of banks. Margarida and Mendes (2012) also found that, loans to asset ratio has a positive relationship also reduces liquidity relation. Commercial banks essentially intermediate between the opposing liquidity needs of

depositors and borrowers. Ngetich (2013) in his study on the effects of interest rate spread on the level of non-performing assets in commercial banks as it increases the cost of loans charged to borrowers. This further decreases the profit margins of the banks. Fabozi (2013) pointed out that, the main function of a bank is to intermediate other parties in which process they operate with an underlying mismatch between highly liquid liabilities on one side and less liquid and long term assets on the other side of the balance sheet.

Capital adequacy

Capital adequacy is an important factor in banking; owing to the importance of capital adequacy, the regulatory activities in Nigeria, like what is obtainable in other countries, the monetary authorities specify from time to time, subject to economic dictates, the minimum capital requirements for licensed banks in the system. The ugly experience of the past as regards banks failure has convinced governments of the necessity of establishing minimum capital requirements for insured banks. Prior to the adoption of the international convergence of capital by CBN in 1990, CBN and the NDIC have applied some subjective measures in deterring banks capital adequacy. The process is usually implemented as part of the examination of a bank. It may be guided by some formulary that ultimately rests on all information developed in the process of the examination, including assessment of assert quality as well as management controls and capability.

Generally, the CBN and NDIC in determining bank capital adequacy have put certain factors into consideration. Including issues like applying the relevant section of the law. By the provision of section 13 of the Bank and Other Financial Institutions Act (BOFIA) of 1991, a bank, for example is expected to maintain at all times a capital fund unimpaired by losses in such ratio to all or any asserts, or to all or any liabilities, or to both such assets and liabilities of the bank and all its offices in and outside Nigeria as may be specified by the CBN. Some of the various measures include: Minimum paid up capital as stipulated by the CBN, capital adequacy figure obtained from deduction of the risk content of a classified asset from the adjusted capital, and the ratio of adjusted capital to total loans and advances.

Since the inception of banking regulation in Nigeria, the banking standard used has been that of minimum required paid-up capital. And this has over the years witnessed a steady growth. The 1952 banking ordinance, for example, stipulated a minimum capital of \$25,000 for indigenous and \$200,000 for expatriate banks. This rose to \$600,000 and \$1.5million for indigenous and expatriate banks respectively, while the minimum start-up capital for a merchant bank was put at \$2 million by the 1976 amendment of the banking act of 1968, it rose to \$20 million and \$12 million for commercial and merchant banks, respectively. By the provision of section 9(2) of the BOFIA of 1991, the minimum start-up capital for commercial and merchant banks were \$50 million and \$40 million, respectively. In 2005, the CBN increased the minimum capital requirement to \$25 million. Furthermore, the NDIC as the lead authority in the bank failure resolution mechanism had identified parameters like stock beta coefficient. The higher the beta coefficient deviation, the greater the risk exposure of the bank and the greater the need for additional capital injection to cover the bank against likely losses and vice-versa.

The other measures of banks capital adequacy is the equity to total assets ratio (EQTA). Equity capital is the immediate source of funds or banks covering by the stipulation of the 1998 based accord, equity capital are the sum of common stock, perpetual preferred stock, surplus funds, bonus issue reserves, capital reserves and contingencies, and minority equity interest in subsidiary companies. Bank assets consists of investment, bills discounted, short term funds, loans and advances, cash equipment or lease, fixed assets and other assets. The ratio of equity capital to assert is a good measure for the capital adequacy of a bank. The higher the ratio in favour of equity capital, the better it is for bank capital to absorb losses in excess of loan reserves provided in the period.

Measurement of bank's performance

Bank capital form a small percentage of the financial resources of the banking institutions and its plays a crucial role in their long-term financial and solving problem (Barrios & Blanco, 2010). As banks' capital are subjected to the regulation of the apex bank which centers on increasing banks capital, faced with high degree of competition within the banking sector in their attempts to make up with the requirement. Furlong and Keeley (2012) listed the factors that may affect bank's capital; these include competition, more depositors, less fund costs, risk in portfolio interests, high return on equity, less distress incidences, profit maximization, avoidance of bankruptcy and their negative externalities on the financial system and incentive to increases risky asserts. The effect of capital adequacy on bank's performance depends highly on these factors and the regulatory body prevailing in the country.

Since banks' capital accounts for over 30 percent and 44 percent of the banks' total assets and deposits, respectively, determining capital adequacy of banks in isolation (without consisting its performance) might be misleading. In line with this, Barrios and Blanco (2010) opined that determining bank's performance in relation with its capital adequacy; some variables must be considered. These variables include: Bank's managerial quality and productive efficiency which depends on much on the degree of competition in the industry. The ability of the bank management to ensure that banks' capital is effectively managed, determines how adequate the capital is. Having capital adequacy ratios about the minimum levels recommended by the Basle capital accord, does not guarantee "safety" of a bank, as capital adequacy ratios is concerned primarily with credit risks.

Determinants of capital adequacy

In the banking industry, capital is usually regulated by an apex bank to mitigate bank solvency problem (Bernaver & Koubi, 2012). In Nigeria, the CBN regulates banks' capital. The theory of capital adequacy has its focus on measures and regulations from the apex bank towards ensuring that banks have enough capital to take care of their numerous financial obligations. With capital adequacy, it is assumed that a bank will be able to absorb its losses and finance its business operations. Bank's capital therefore depends on a number of factors such as: The bank's size, the level of risk involved in its operations, the market forces, the lending policy, its management capabilities, its portfolio (assets and cash), CBN requirement on reserves and its growth rate (Bernaver & Koubi, 2012; Barrios & Blanco, 2010).

All these factors act to determine the appropriate capital requirement of banks. For instance, if a bank is to grow, with increased deposits and earning assets, it must expand its capital base but at the same time keep the risk level in check (Uremadu, 2010). However, irrespective of the factor that determines the amount of capital a bank has, it must be adequate and in line with the apex bank's statutory requirement. The relationship between capital adequacy and other business factors guides the overall performance of a bank. Profit is the ultimate goal of commercial banks. All the strategies designed and activities thereof are meant to have a relationship that realizes this grand objective (Alexandru, 2016; Murthy & Sree, 2013).

Empirical Review

The research covered previous studies that had been done in Europe, Asia and USA on capital adequacy, and the financial performance of commercial banks and other financial investigated institutions. Kosmidou 2010) the impact of banks characteristics. macroeconomic conditions and financial market structure on bank's net interest margin and return on average assets in the UK commercial banking industry over the period of 1995-2002 using the desk survey method. The results showed that capital strength was one of the main determinants of UK banks performance providing support to the argument that well capitalized banks face lower costs of going bankrupt which reduces cost of funding or that they have lower needs for external funding which results in higher profitability. According to Alexandre, 2016), a bank with a sound capital position is able to pursue business opportunities more effectively and has more time and flexibility to deal with problems arising from unexpected losses thus achieving increased profitability.

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Methodology

The design for this study was the expost-facto research design. This is appropriate because the event studied had already taken place. The research study used secondary source of data collected from various issues of the Central Bank Statistical Bulletin. The data used was purely secondary data using the data survey method. These were particularly that which have been summarized and tabulated.

The functional model for the study is as follows: ROE = F(total assets, equity capital) $ROE = A_0 + B_1TA + B_2EC + e$ Where;

ROE = Return on equity as a proxy for deposit money banks

TA	=	Total assets
EC	=	Equity capital
A_0	=	Constant intercept which shows the level of GDP
B_1 - B_2	=	The parameter
e	=	Error term

The paper employed the multiple regression statistical techniques. This technique allows empirical assessment of the impact of the independent variable on the dependent variable. The choice of this technique was based on the fact that the computational procedure of ordinary lease square is fairly simple as compared with other econometric techniques and it has minimal bias. Also, ordinary least square is an essential component of most other econometric techniques and widely used in research.

Result

The regression results of capital adequacy and the performance of deposit money banks in

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Variable	Coefficient	Std.error	t-stat	Prob.
С	2.080533	7.762449	0.268025	0.7917
LTA	0.33853	0.046223	7.323976	0.0000
LEC	0.597596	0.182470	3.275032	0.0045
Source: E-view				

Nigeria

(Regression result)

Dependent variable: LROE

 $R^2 = 0.967376$

 $R^2(adj) = 0.961938$

SER = 0.288026

DW = 1.744505

f-stat = 116.8394

The coefficient of multiple determination (R^2) is 0.967376 and on adjusted R^2 of 0.961938. The later indicates that 96 percent of variations in the observed behaviour of ROE is jointly explained by the independent variables namely; total assets and equity capital. This shows that the model fits the data well and has a tight fit. Also, the f-statistic is used to test for the significance of such good or tight fit. The model reports on effectively high f-statistic value of 116.8394 which when compared with the table value. This indicates that the high adjusted R^2 value is better than would have occurred by chance; therefore the model is statistically robust. Using this criterion, therefore, total asset and equity capital are significant at one percent and 10 percent specifically a one percent increase in all the explanatory variables will prop up the performance more than proportionate percentage point. The constant term indicates that if all the variables held constant, the performance will be improved by 2.080. The DW statistic (1.744) is used to test for the serial correlation is the residuals of the model. The decision rule is that if the calculated DW falls outside du and 4then there is a serial correlation in the residuals. This shows that our calculated du DW=1.272 falls and this indicates that the estimates should be taken with caution. The

goodness of fit of the model as indicated by the adjusted R-squared shows a good fit of the model that the model fits the data well. To test for the individual statistical significant of the parameters, the t-statistic of the respective variables were considered considering their probability values, computer software shows the constant term is positive while independent variables are statistically significant at one percent. The aprior expectations about the signs of the parameter estimates are confirmation to economic theory.

Findings

- 1. There is a significant relationship between total asset and the performance of the banks.
- 2. There is a significant relationship between equity capital and the performance of banks

Conclusion/Recommendations

From the findings of the study, it is pertinent to note that supplementary capital which is a type of capital reviewed in Basel I, II and III plays a pivotal role in the performance of banks (Access Bank Plc) which aids towards its profitability while core capital does not have a significant relationship with its profitability. However, capital adequacy of banks (Basel III Review) has a crucial role to play in the performance of DMBs, from Access Bank Plc point of view, which aids their efficiency and effectiveness with respect to granting of credit and giving out of loans and advances. Finally, the banking sector has always received upper attention on protection due to the vital role it plays in an economy. That's why the stability of the banks is of utmost importance to the regulatory body so as to stabilize the economy which will eventually aid towards the growth and development of the nation. The study recommended that:

- 1. Banks needs to beef up its supplementary capital as this has a significant relationship with her profitability.
- 2. The central monetary authority should make provisions for adequate capital regulation to reduce the chances of banking distress. This should be on a quarterly basis. Government should make banking environment more enabling by provision of adequate basic infrastructures to support banking services.

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