ISSN 1957-2968

# CENTRAL BANK OF NIGERIA

**PROCEEDINGS OF THE SEMINAR ON "Macro-Prudential Framework and Financial System Stability in Nigeria", FOR CBN EXECUTIVE STAFF AT GOLDEN TULIP HOTEL, FESTAC TOWN, LAGOS STATE, NOVEMBER 27 - 30, 2012**



**Economic and Financial Review**
*Volume 50, Number 4*
*December 2012*

**Editorial Committee**

**Editor-in-Chief**
Charles N. O. Mordi

**Managing Editor**
Banji S. Adebusuyi

**Editor**

**Associate Editors**
Abwaku Englama, Ph.D
Adeniyi O. Adenuga

Central Bank of Nigeria

# Economic and Financial Review

Volume 50, Number 4, December 2012

## Aims and Scope

The *Economic and Financial Review* is published four times a year in March, June, September and December by the Research Department of the Central Bank of Nigeria. The Review contains articles on research undertaken at the Bank, in particular, and Nigeria, in general, mainly on policy issues both at the macroeconomic and sectoral levels in the hope that the research would improve and enhance policy choices. Its main thrust is to promote studies and disseminate research findings, which could facilitate achievement of these objectives. Comments on or objective critiques of published articles are also featured in the review.

## Correspondence

Correspondence regarding the *Economic and Financial Review* and published articles should be addressed to:

Director of Research/Editor-in-Chief
CBN Economic and Financial Review
Central Bank of Nigeria
33 Tafawa Balewa Way
Central Business District
P. M. B. 0187 Garki
Abuja
Nigeria

Email: infor@cbn.gov.ng
Website: www.cbn.gov.ng

## Subscription

Subscription to the Central Bank of Nigeria *Economic and Financial Review* is available without charge to institutions, corporations, embassies, and development agencies. Individuals can send written request for any particular edition of interest, also without charge. Articles may be reprinted, reproduced, published, abstracted, and distributed in their entirety on condition that the author and the source—Central Bank of Nigeria Economic and Financial Review—are duly credited.

© Copyright 2012
Central Bank of Nigeria

ISSN 1957-2968

## Disclaimer

Any opinions expressed in the *Economic and Financial Review* are those of the individual authors and should not be interpreted to represent the views or policies of the Central Bank of Nigeria, its Board of Directors or its Management.

## Notes to Contributors

Information on manuscript submission is provided on the last and inside back cover of the Review.

*Contents*

**PROCEEDINGS OF THE SEMINAR ON "Macro-Prudential Framework and Financial System Stability in Nigeria", FOR CBN EXECUTIVE STAFF AT GOLDEN TULIP HOTEL, FESTAC TOWN, LAGOS STATE**
**NOVEMBER 27 - 30, 2012**

# Keynote Address

***Sanusi L. Sanusi, CON****

Deputy Governors,
Departmental Directors,
Branch Controllers,
Eminent Resource Persons,
Distinguished Executives,
Ladies and Gentlemen

It is my pleasure to be with the Executives of the Bank today as a Special Guest of Honour, and more especially to deliver the Keynote Address at the 2012 Executive Seminar jointly organized by the Research and Human Resource Departments of the CBN. This year is markedly different in the annals of the Executive Seminar, as it is the first time in the history of the Executive Seminar series that two seminars would be held within the same year. Ostensibly, this development has reaffirmed the possibility of hosting two editions of the seminar within a year, going forward. Ladies and Gentlemen, the CBN Executive Seminar provides a veritable forum for a reflection on contemporary financial and economic issues, particularly as they impact on our domestic economy broadly and our financial system specifically. Also, the seminar is an avenue for capacity building and human resource improvement through interactions and exchange of ideas with experts of different experience on economic and financial matters.

Let me reiterate that this year's seminar on **"Macro-Prudential Framework and Financial System Stability in Nigeria"** is thematically timely and appropriate in view of the fact that significant macro-prudential policy reforms worldwide are being designed to respond to the increasingly interconnected nature of financial institutions, markets and systems against the backdrop of the lessons from the global financial crisis (GFC). As you are all aware, the GFC exposed the outlandish financial innovations that outpaced risk management and supervisory practices, the weaknesses in self-regulation and market discipline as well as the incentives for regulatory arbitrage in all the world's major financial centres, with the spillover effects reverberating to the nooks and crannies of the global financial system. Specifically, the US sub-prime credit crisis, which built-up from early 2007, not only ravaged the American financial institutions and economy, but was in no time felt across many European and emerging economies. The spate of institutional collapses and bankruptcies that resulted from the crisis up till 2009 revealed the serious lax in regulatory and supervisory oversights by monetary authorities across the globe, and

hence their inability to regulate most of the big global financial institutions.
You will recall that the Nigeria financial system was not completely spared by the ravaging economic and financial meltdown as the second round effects rocked the stock market with about 70 per cent loss of value between 2008 and 2009, and many banks sustained huge losses due to unbridled exposure to margin-loans/capital market as well as the downstream oil and gas sector. Further inquiry also revealed critical gaps in the regulatory and supervisory frameworks as a major contributory factor to the crisis as the erstwhile universal banking practices had allowed many of our banks to evolve more complex structures by operating affiliates that engaged in businesses other than the core banking business. It is salutary to note that the aftermath of the crisis, as elsewhere, has continued to shape policy reforms to mitigate the impact of future occurrence.

Distinguished Participants, it is imperative at this point to remind ourselves what financial stability is all about. According to the Reserve Bank of Australia (RBA), "financial stability connotes a stable financial system in which financial intermediaries, markets and market infrastructure facilitate smooth flow of funds between savers and investors and, by so doing, help promote growth in economic activities". The stability of the financial system is critical because a material disruption to the intermediation process has potentially damaging implications for the real economy. Therefore, the task of ensuring financial stability is to identify the vulnerabilities within the financial system and take decisive mitigating actions, where possible.

Ladies and Gentlemen, let me reiterate that the global financial crisis has highlighted the need to manage the stability of the financial system as a whole by focusing on systemic risks. This is done through the introduction of macro-prudential policy measures across the global financial landscape to guarantee and ensure the safety and soundness of the financial system. The shift in paradigm was influenced, as noted earlier, by the realization that the traditional regulation, often referred to as micro-prudential, was insufficient to guarantee the health and safety of the financial system as a whole.

We all know that the traditional micro-prudential framework only seeks to enhance the safety and soundness of individual financial institutions, and by so doing, assumes the stability of the financial system as a whole. It also takes risks as exogenous by assuming that any potential shock triggering a financial crisis originates from outside the behavior of the financial system. Consequently, the approach does not take into cognizance that what constitutes prudent behavior from the standpoint of one institution may create broad problems for the system when all institutions engage in similar behavior. On the other hand, macro-prudential approach as a newly defined policy field focuses on the soundness and stability of the financial system as a whole. It

recognizes risk factors as a system phenomenon and thus, sets out to mitigate the systemic risks. However, it is imperative to note that macro-prudential policy framework does not seek to replace the traditional approach; rather it is essentially complementary to micro-prudential policy. Therefore, in practice macro-prudential policy often deploy traditional regulatory tools, and relies on traditional regulators for implementation and enforcement.

Though a coherent macro-prudential policy framework is still being developed by the International Monetary Fund (IMF), Bank for International Settlement (BIS) and the Financial Stability Board (FSB), many economies are starting to establish domestic macro-prudential frameworks, with varying degrees of coverage and authority. For instance, the US macro-prudential financial supervision, under the authority of the Financial Stability Oversight Council (FSOC) chaired by the US Treasury Secretary, has responsibility for identifying the risks to the financial stability and responding to emerging threats to the financial system. In the United Kingdom, the Financial Policy Committee (FPC) is saddled with the task of identifying and assessing systemic risks and selecting the most appropriate tools to address them.

The European Systemic Risk Board (ESRB) under the chairmanship of the European Central Bank (ECB) President has the responsibility, within the European Union, to prevent or mitigate systemic risks to the financial system and also to ensure sustainable financial sector. For emerging economies example, the Central Bank of Malaysia, through the Financial Stability Executive Committee, has broad powers to ensure stability of the Malaysian financial system. In the Philippines, the Financial Stability Committee under the chairmanship of the Bangko Sentral ng Pilipinas (BSP) is tasked with the mandate of monitoring financial stability.

With the IMF, BIS and FSB spearheading the development of comprehensive macro-prudential policy frameworks, there is the need to adopt a 'no one size fits all' model in formulating effective frameworks to address country/regional specific challenges. Let me stress that the cooperation of international and domestic regulatory institutions is essential given the interconnected nature of global financial institutions and cross-border systemic risks. Thus, it is pertinent for countries to adopt different mix/models based on the structure of their financial architecture and the nature/power of the regulatory authorities. And since there is no universally-accepted model, what remains paramount is the need for the supervisory institutions to rely on models that emphasise industry-wide approaches.

Distinguished Participants, you would all agree that a stable financial system is a sine-qua-non for the growth of a nation's economy. The use of distress mitigation approach would enhance the capacity of operators to facilitate the smooth delivery of financial services and safeguard the stability of the financial system. A risk-focused

banking supervision must, therefore, be anchored on an integrated and not fragmented regulation of financial institutions. Thus, the implementation of macro-prudential policies minimizes the risks of financial disruptions and engenders financial stability. A system-wide regulation and supervision will certainly impact the entire financial system and ultimately ensure an unfettered delivery of financial intermediation by banks and generally inspire public confidence in the banking industry.

Given the importance of macro-prudential regulation in overcoming the inherent weaknesses associated with the traditional micro-prudential regulation, the CBN has, thus, far embarked on far-reaching reforms, aimed at improving the supervision of the banking system in pursuance of its mandate of ensuring price and monetary stability as well as ensuring financial sector soundness and stability. First, in order to address the observed challenges of regulatory arbitrage, the universal banking model was reviewed to focus the banks toward the core banking business. Second, to promote sound risk management in the banking industry, the Bank adopted risk-based supervision and commenced the implementation of the Basel II Capital Accord.

In addition, the new macro-prudential guidelines based on forward-looking capital provisioning and driven by stress tests are being reviewed and implemented while a holistic macro-prudential framework is being designed. The Bank also places a high premium on transparency and accountability, which has necessitated the implementation of the Code of Corporate Governance with renewed vigour in order to significantly improve industry ethics, transparency and disclosure standards in the banking system. The Bank enforced uniform accounting year for all the deposit money banks and has taken steps to promote financial literacy and the protection of consumer rights. These efforts, in conjunction with other reform measures are yielding positive results and enhancing banking services in Nigeria.

Ladies and Gentlemen, in this new banking era that seeks to promote electronic transaction settlement system in order to minimize the use of cash in the economy, the adoption of macro-prudential supervision would, no doubt, induce banks to sufficiently manage their investment portfolios and foster risk management. Macro-prudential approach is expected also to elicit wide implementation of contingency plans by banks to strengthen internal controls and provide early warning signals for the quick resolution of problem areas. In addition, with supervisory authorities enhancing macro-prudential regulatory and surveillance, banks would be better able to pay more attention to issues of immediate and future threats to their operations.

Notwithstanding, the Bank hopes to continue to expedite actions in the implementation of the Basel Accords, particularly by moving towards Basel III which

provides for the strengthening of bank capital and the introduction of new liquidity requirements, a leverage cap as well as a countercyclical capital buffer in recognition of the systemic significance of financial institutions.

Let me re-affirm the commitment of the CBN in strengthening staff capacity in ensuring financial system stability. It is hoped that this Seminar would, among other issues, identify appropriate macro-prudential supervisory frameworks and tools that are capable of enhancing financial system stability and allow for more efficient and quality financial services delivery. I believe that the issues raised in this address would set the stage for further deliberations on the key issues.

Distinguished Participants, Ladies and Gentlemen, with the assemblage of experts and eminent scholars, I am very confident that the outcome of the discussions will help fashion out appropriate macro-prudential tools for robust supervision and surveillance that would stand the test of time in mitigating threats and distress in the Nigerian financial system.

Thank you very much for your attention and I wish you all great success.

# Welcome Address

***Chizoba Mojekwu****

The Special Guest of Honour,
Deputy Governors,
Departmental Directors,
Branch Controllers,
Distinguished Resource Persons
Esteemed Participants,
Ladies and Gentlemen.

I am delighted to welcome you all to the 2012 CBN Executive Seminar jointly organized by the Research and Human Resources Departments. This Seminar is carried out annually in pursuant to one of our core values as a learning organisation. As executives, you are expected at all times to be conversant with the rationale for and workings of all policies and actions of the Bank and also to be in a position to explain them clearly to the general public and other stakeholders whenever the need arises.

The theme of the Seminar; **"Macro-prudential Framework and Financial System Stability in Nigeria"** was carefully selected to keep you abreast of the new approach to a risk-based supervision of the banking system. We can still recall the debilitating impact of the 2008 – 2009 financial and economic crises, which the global economy is yet to recover from, particularly the attendant crisis experienced in the Nigerian banking sector. Given that the crises had their origin in the financial system and indeed, the banking system, financial system regulators have since embarked on setting up a comprehensive framework for effective regulation and monitoring of the system. Regulators have come to the realisation that micro-prudential tools were weak indicators of the health or otherwise of financial institutions. Hence, macro-prudential framework has come to the fore in the regulatory framework for financial stability. This current trend has underpinned the effort by the CBN to develop a framework that will facilitate the achievement of financial stability mandate of the Bank.

This Seminar and the theme for discussion, therefore, present a unique opportunity for us to understand and internalise the new approach for our benefit and that of the Bank. It is my sincere hope that we would optimise the opportunity offered by this Seminar to enhance our capacities within the framework of human capital development of the CBN.

On this note, I would enjoin all of us to take advantage of the ambience of this beautiful environment, the array of experienced resource persons and the magnanimity of the Management to ensure that we leave this Seminar better informed. Once more, distinguished ladies and gentlemen, I say WELCOME, 'NNO', 'EKABO', 'SANU DA ZUA'. I wish you successful deliberations and a rewarding experience in Lagos.

Thank you and God bless.

# Special Remarks

***Sarah O. Alade,Ph.D****

I am pleased to be in your midst this morning to make this Special Remark at the opening ceremony of the annual in-house Executive Seminar jointly organised by the Research and Human Resources Departments. Let me remind you that the purpose of this Seminar is for us, as Executives of the Bank, to share views on contemporary global economic issues relating to the financial services industry and in the process take advantage of the knowledge gained to chart the way forward in the country. The theme of this year's Seminar **"***Macro-Prudential Framework and Financial System Stability in Nigeria***"** could not have come at a more appropriate time, given our experiences with the recent crisis in the banking industry in particular, and the global financial crisis in general.

Distinguished ladies and gentlemen, let me state that this theme provides the opportunity for us, as Executives of the Bank, to engage in productive exchange of views and ideas on the subject, reflect on the increasing risks in our financial environment and articulate our views on how best such risks could be managed to ensure financial system stability in Nigeria. The theme is not only apt, but very timely, considering the importance of a strong financial services sector for economic growth, in particular and economic prosperity in general. I therefore commend the organisers of this Seminar for thinking along this line.

Prior to the global financial crisis of 2007 - 2009, the global banking landscape had gone through major changes, driven largely by technological development, deregulation and advances in information technology which increased competition in the industry. Global financial institutions had grown big both in size and scope and their organisational complexity had increased. The development generated a pro-cyclical willingness to take on additional risks and leverage, thus amplifying and propagating the boom and bust cycles. The vicious cycle of a collapse of confidence, asset fire sales, evaporation of liquidity, and deleveraging was the mirror image of the mortgage market crisis that preceded it. It is true that a more dynamic and sophisticated financial market has key benefits for sustainable economic development. However, the same can become a potential threat to domestic and global economic and financial stability, particularly when product innovations are

not clearly understood by the market operators. Recent global experience shows that complex structures and products, increased integration and the growing size of financial institutions led to opaque bank balance sheets. There was clearly lack of a systemic approach to banking supervision and regulation. Indeed, the objective of financial stability was taken for granted simply because it was rational and desirable and was thought to be a by-product of proper/appropriate macroeconomic and regulatory policies.

However, the recent global financial crisis has called the above views to question such that it is now generally accepted that a separate macro-prudential objective relating to overall financial system stability has become imperative. In particular, one of the main lessons from the crisis was the need for monetary authorities and managers of the economy to pay more attention to identifying early warning signals and vulnerabilities not just in individual institutions but more importantly in the financial system as a whole. The fall out of the crisis also brought to the fore, the need to understand and track relationship between the risks and vulnerabilities and the general macroeconomic developments.

To avoid a repeat of the experiences of the crisis, it is essential to change the global landscape of supervision and regulation. Effective arrangements to take preventive action are, therefore, strongly desirable for all countries, emerging or advanced. This is what macro-prudential policy framework is intended to help supervisors and regulators achieve.

**What is macro-prudential Policy framework all about? Is it separate from Micro-prudential Policy framework or is one a part of the other?**

The term macro-prudential policy first appeared in the internal documents of the precursor of the Basel Committee in the late 1970s. The Bank for International Settlement started using it publicly by the mid-1980s. The underlying philosophy was that prudential supervisors should adopt a system-wide approach in the way they supervise, bearing in mind that the actions of individual firms can collectively generate systemic risk, even if those actions are individually rational and permissible. In this regard, supervisors should avoid focusing narrowly on the safety of individual institutions without regard to the implication of the individual actions on the wider system. It should be recognized that risk can build over time, and that the distribution of risk matters, particularly with respect to its implications for the overall financial system stability.

To this end, the objective of a macro-prudential approach is to limit the risk of episodes of financial distress with significant losses in terms of the real output for the economy as a whole, while that of micro-prudential approach is to limit the risk of episodes of financial distress at individual institutions, regardless of their impact on the overall economy. The macro-prudential policy within the overall financial system stability interacts seamlessly by feeding into and drawing from the processes of other national policies, particularly monetary and fiscal policies. In other words, macro-prudential policy framework facilitates not only the identification and monitoring, but also ensuring proper analyses of risks and vulnerabilities that relate to ensuring stability of the overall financial system. Macro-prudential policies differ from micro-prudential polices in that they are intended to protect the financial system as a whole and, by extension, the broader economy. They are aimed at countering the pro-cyclical nature of credit and leverage, leaning against the wind when systemic risk is accumulating. In addition, they seek to stem risks related to interconnections and spillovers in the financial system. The Basel Committee on Banking Supervision is playing a key role in designing this new regulatory regime as part of the Basel III initiative.

Ladies and gentlemen, you would agree with me that the philosophy behind macro-prudential policy is a desirable one. Key aspects of it are effective flow of information across the market operators and macroeconomic departments of monetary and fiscal authorities. This presupposes, therefore, that financial stability and the associated macro-prudential processes will ordinarily involve different institutions (especially regulatory) from different areas of the economy. Regular meetings among the representatives of these institutions to focus on risks and vulnerabilities and to highlight warning signs can be very valuable. A culture of coordination among these groups is very important in a crisis because, in many instances, a stress situation is first evident in liquidity strains visible to the central bank, and the first responses may be calls on central bank liquidity. The second element is effective bank supervision, including the capacity of supervisors to understand and query the risks that are being taken to ensure that they are being appropriately managed. In recent years, a great deal of effort has gone into upgrading the prudential requirements on banks through revisions to the Basel standards and other measures.

**What are we going to be doing differently in the face of this new policy?**

Macro-prudential policy tools are in fact the usual prudential tools that have long been used for ostensibly "Traditional Microprudential Supervision". What is 'new' is the motivation behind their use. As I have mentioned earlier, the build-up to the recent

crisis resulted more from a micro-prudential than a macro-prudential failure. The easing in US mortgage lending standards, the growing reliance on short-term wholesale funding, the low risk weights attached to complex and highly leveraged structured securities were all things that dilegent micro-prudential supervisor could have- and – arguably should have – noticed and responded to. This could happen because many individual institutions are doing the same risky operations. Or it could happen because particular risks have become concentrated in few institutions. In the face of these developments, a more holistic (system-wide) perspective could, certainly, help supervisors see if risks are building up.

Without doubt, the role of macro-prudential policy frameworks is therefore to complement existing micro-prudential systems so as to identify and address emerging risks across the financial system as a whole. Designing such frameworks may encompass several aspects, including new institutional frameworks for coordination and decision making across supervisory agencies, frameworks for assessing systemic risk such as early warning systems and stress testing, and recognition that prudential regulations can also be actively used to help contain systemic risks. One major advantage of macro-prudential measures is that they can be targeted at specific risks. If potential bubbles are suspected, specific prudential actions such as debt to income limits can be taken to prevent consumer over-indebtedness or sector-dependent risk weights. At the very least, capital and liquidity buffers can be built to help shield the financial system from harm once the boom ends. Central banks around the world have adopted macro-prudential analysis as a method of detecting and evaluating the health, soundness and vulnerabilities in the financial system. It is also used in taking both preventive and resolution action in crisis management as well as identifying financial soundness indicators and methods used in analyzing them.

**Does Nigeria really need a macro-prudential framework and what is in it for the nation's financial system?**

Distinguished ladies and gentlemen, to answer these questions, I would simply say "Yes" to the first one. Today, a number of countries are reviewing their institutional frameworks for financial stability so as to support the development of a macro-prudential policy function and Nigeria cannot afford to be left behind.

The Nigerian banking sector had undergone series of reforms in the past 7-8 years with the aim of making the system more stable, safe, effective and resilient to shocks. The Bank introduced universal banking scheme in 2001 to create level-playing field for financial sector operators, encourage greater efficiency through economies of scale

and foster competition by opening up various lines of business to banks. Before then, in 1991, the government promulgated the Bank and Other Financial Institutions Decree (No. 24) and the Central Bank of Nigeria Decree (No.25) which spelt out comprehensive guidelines for bank regulation, supervision and liquidation. The supervisory role of the CBN, aimed at promoting sound banking and financial system, was also statutorily expanded to cover non-bank financial institutions. Consequently, activities of all the regulatory and supervisory authorities in the Nigerian financial services sector were brought under the coordination of the Financial Sector Regulation and Coordinating Committee (FSRCC), under the chairmanship of the CBN. The monetary authorities also adopted the Code of Good Practices in Monetary and Financial Policies, the International Accounting and Auditing Standards and initiated a private sector-funded "lifeboat" facility accessible to all DMBs in temporary liquidity problem. Again, in line with international best practice, the CBN adopted the Core Principles of the Basel Committee on Banking Supervision, including the prudential guidelines for licensed banks to promote banking soundness and financial sector stability.

However, recent happenings in the global financial services space have indicated that whatever success may have been recorded from the reforms does not suggest that the banking sector is now immune from crisis in the future. This informed the need to further introduce new measures in the Nigerian financial landscape to guarantee continued safety, soundness and stability of the financial system. In this regard, the Central Bank of Nigeria is on the verge of putting in place the new macro-prudential policy framework with the objective of mitigating and minimizing systemic risk and ensuring coordination with monetary policy. As stated previously, the philosophy behind this new policy framework involves strong scenario planning, development and implementation of macro-prudential ratios.

Distinguished participants, let me state clearly that macro-prudential supervisory frameworks alone cannot guarantee an end to financial instability. A macro-prudential supervisor trying to prevent instability will have an incentive to severely limit the financial system's capability to innovate and to take risks. This will prevent the financial sector from fulfilling its resource allocation responsibilities. Furthermore, when incipient instability appears, the macro-prudential supervisor (and likely its government) will be under greater pressure to engage in bailouts to prevent or limit the instability. As important as the objectives of macro-prudential policy are, their effects around the world will be only as good as the quality of implementation and the quality of supervision that builds on them. It is all about how prudential supervisors

should do their job and the perspectives of supervision. The policy tools are the tools of prudential regulation and supervision and so the process is as good as given but adequate attention should be accorded to the right attitude and motivation.

Before concluding my remarks, I will like to discuss some key issues that must be resolved before an effective policy regime for the containment of systemic risks can be established. First, we must understand the sources of systemic risks in the industry and design appropriate surveillance practices that would enable us detect threats to financial stability early enough. Second, we must develop a tool kit of supervisory policy instruments— macro-prudential policies—and guidelines on how and when to deploy them. And third, we must strive to avoid situations in which macro-prudential and monetary policies are working at cross-purposes, given that macro-prudential policies affect macroeconomic performance and that monetary policy may affect risk taking incentives. All of these issues raise complex questions of design and implementation.

To this effect, ladies and gentlemen, I would like to invite you to a productive debate- in which your input will be very important in coming up with valuable contributions that will help to ensure soundness of the financial system and at the same time mitigate any vulnerabilities to macroeconomic shocks.

Against this background, the organizers have carefully selected experts and seasoned professionals in the relevant fields as facilitators for this Seminar. I have no doubt in my mind that they will do justice to the issues at hand and by the end of their presentations, you will be better informed.

Once again, I urge you to make use of this opportunity by devoting maximum time and attention to all the deliveries and actively participate in all discussions.

I wish all of you a rewarding Seminar and fruitful deliberations.

Thank You.

# Macro-Financial Linkages: Implications or Monetary and Financial System Stability

*Frank Chikezie**

***Abstract***

*Monetary and financial stability are of central importance to the effective functioning of a market economy. They provide the basis for rational decision-making about the allocation of resources through time and therefore, improve the climate for savings and investment. The absence of stability creates damaging uncertainties that could lead to misallocation of resources and reduce the willingness to enter into inter-temporal contracts. In extreme cases, disruptions in the financial sector can have severe adverse effects on economic activity. Thus, maintaining stability is a key objective of monetary authorities.*

*In this paper, the implications of macro-financial linkages for monetary and financial system stability were examined. Based on the flow of income model and the contingent claim analysis (CCA) framework, the paper established major linkages among the four sectors of the economy. These linkages, which are built on the contingent claims of each sector on the other, create the economic balance sheet of the sectors, demonstrating the interdependence among the sectors. Based on these structures and linkages, the vulnerability and excess build-up in the financial sector and institutions could affect the wider economy, with some devastating impacts. By the same token, the health of the financial sector could be severely tested by the developments in the economy. These two way macro-financial linkages create potentially dangerous mechanism that could trigger deep and long-lasting economic downturns without rapid and effective policy intervention. The paper recommends the adoption of macro-prudential policy to address systemic risks generated by macro-financial linkages. The paper also recommends that financial institutions should be prevented from becoming too connected to fail.*

**Keywords:** Monetary Policy, Financial Stability, Macro-financial linkages, Monetary policy transmission channels, Micro-prudential policy, Macro-prudential policy, Systemic risk, Interconnectedness.

## I. Introduction

Analysis of macro-financial linkages provides a powerful framework for analysing risk and vulnerability in economies and for estimating the economic value of the risks posed by inter-linkages between sectors, as well

*Frank Chikezie is the President/Lead Consultant of the Global Heights Consulting Group. The usual disclaimer applies.*

as the risk of default of different sectors and markets, and the real economy on their outstanding debt obligations. Thus, an understanding of the linkages between the financial sector and the macro-economy, and the mechanisms through which financial regulation can help to stabilise the economic and financial system by financial policy makers will facilitate the effective formulation, design and implementation of financial stability and monetary policies.

In the last few years, efforts to review monetary and financial stability policies have focused attention on the interaction between the financial system and the macro-economy. The 2007-2008 global financial crisis demonstrated that the weaknesses in the financial system could have sudden and long-lasting macroeconomic effects.
This paper therefore focuses on the following objectives:

To understand the components of the financial system and the macro-economy, and how they interact and influence the overall behaviour of the economy, including all intermediaries, markets and infrastructures underpinning them;

To gain a truly systemic perspective of the financial system, including large and complex financial institutions;

To understand the likelihood of the failure, and the costs, of a significant portion of the financial system arising from systemic risks; and

To understand how important the individual viability and the multiple connections of large and complex financial institutions to other intermediaries and markets are for systemic stability, and therefore, for macro-prudential risk assessments and policies.

This paper is structured into two parts. Section I discuss the structure of the macro-economy and the financial industry, and the interactions between monetary policy and the financial system. The section also showed how monetary policy could create the condition for financial stability.

Section 2, on the other hand, discuss the implications of macro-financial linkages for monetary and financial system stability with emphasis on how the new credit risk transfer mechanism (securitisation and derivatives) had altered the nature of some macro-financial linkages, with considerable policy implications. The section concluded by referring to the new direction of macro-prudential regulation and the tools for managing risks created by macro-financial linkages. Reference was also made to the recent subprime financial crisis that started in the US economy with lessons for emerging market economies, such as Nigeria.

## I.1 Why Macro-financial Linkages?

Macro-financial linkages, as the term implies, refer to the interaction between the financial sector and the macro-economy. These linkages exist in the form of mechanisms that transmit the impact of macroeconomic activities to the financial sector and vice versa. It is known that vulnerabilities and excess build-up in financial markets and institutions can affect the wider economy, with sometimes devastating results. By the same token, the health of the financial sector can be severely tested by developments elsewhere in the economy. In fact, these two-way macro-financial linkages often create potentially dangerous feedback mechanisms that trigger long lasting economic downturns without rapid and effective policy intervention.

Financial market activities and transactions create reasonable amount of risks to the economy. Whereas the risk-taking behaviour of the participants drives the market performance, the risks become issues when they lead to excesses. Despite the high level of regulation of the financial system, there is still a lot to learn about the behaviour of financial institutions and their effects on systemic risks and the real economy. The ability to model the channels by which disruptions in credit and finance affect the real economy and the ways these effects transmit into the banking and financial system has become very sophisticated. Yet, our understanding of the key channels, their quantitative importance and the effects of policies for managing them, remain very important.

The overall objective of macro-financial linkage analysis is to analyse the impact of shocks, both domestic and external, on the macro-economy, using a framework based on the analysis of risk-adjusted and interlinked balance sheets of the major economic sectors. The framework measures non-linear risk transmission between the domestic economy and the global economy.

## II. Structure of the Macro-economy and the Financial System.

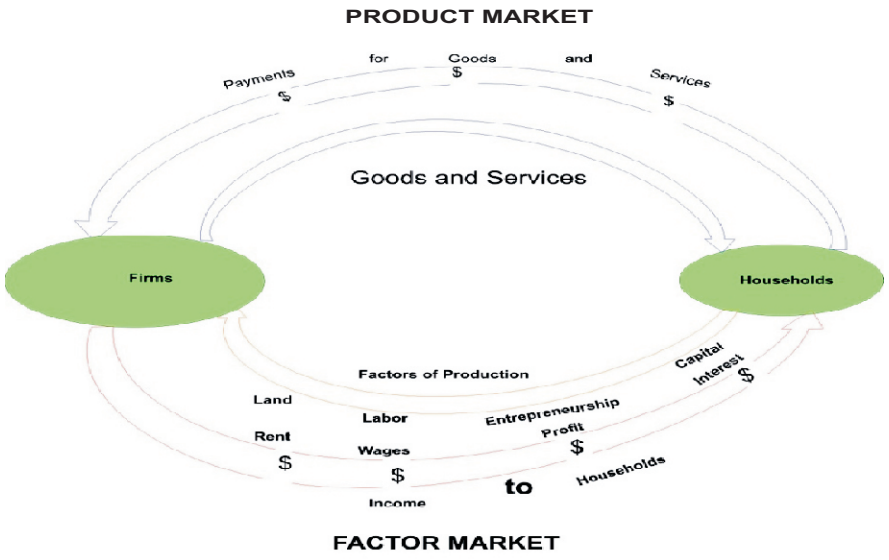
A healthy and vibrant economy requires a dynamic financial system that moves funds from people who save to people who have productive investment opportunities. The financial system is structured as part of the macro-economy so as to promote economic efficiency. Financial systems are fragile and vulnerable to crisis. When a country's financial system collapses, its economy goes with it. In particular, when government oversight fails, the cost can be enormous.

One basic way to visualise the macro-financial linkages is to consider the circular flow of income model in Figures 1-4. Figure 1 shows the circular flow of income and product with a credit market, government, and a foreign sector. Households supply

factors of production (land, labor, capital, and entrepreneurship) to businesses (firms), and purchase goods and services from the firms. Firms buy these factors of production and supply goods and services. In the product market, goods are exchanged; and in the factor market, factors of production (resources) are exchanged.

The factor market shows the flow of incomes received by households in the form of rent, wages, interest and profit, for the use of the four factors of production. The product market shows the flow of goods and services produced. The credit market allows savings (non-consumptions) by households to be converted into investment funds for firms. These investment funds are then spent on goods and services produced by firms. The government buys goods and services produced by firms and also buy factors of production from households by paying rent, interest, wage and profits. In addition, government reduces households' consumption by taxing the incomes of households. If government spends more than its taxes, thereby running a deficit, it must borrow the needed funds from the credit markets. Thus, government enters the circular flow of income and product model at a number of points. It takes funds out of the stream by taxing households and by borrowing from credit markets. It adds to the flow by purchasing goods and services from firms (see Figure 3).

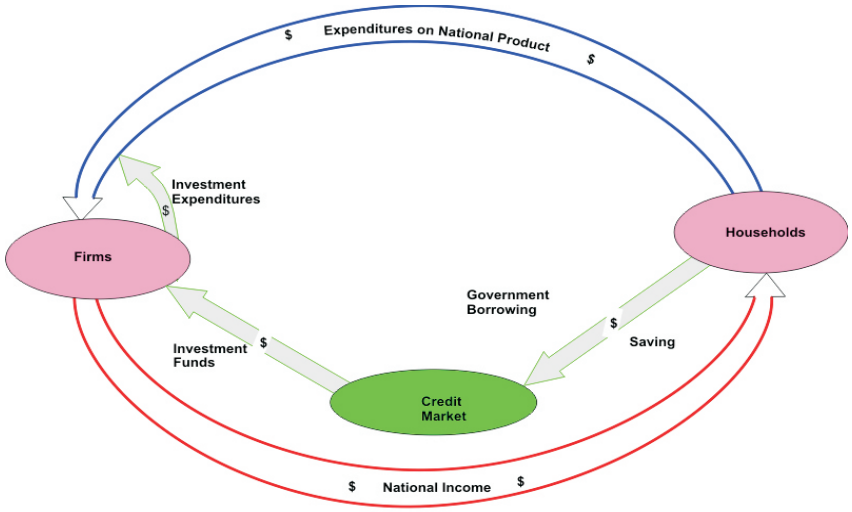
**Figure 1: Circular Flow of Income and Product**




*Source: Amacher and Ulbrich, 1986.*

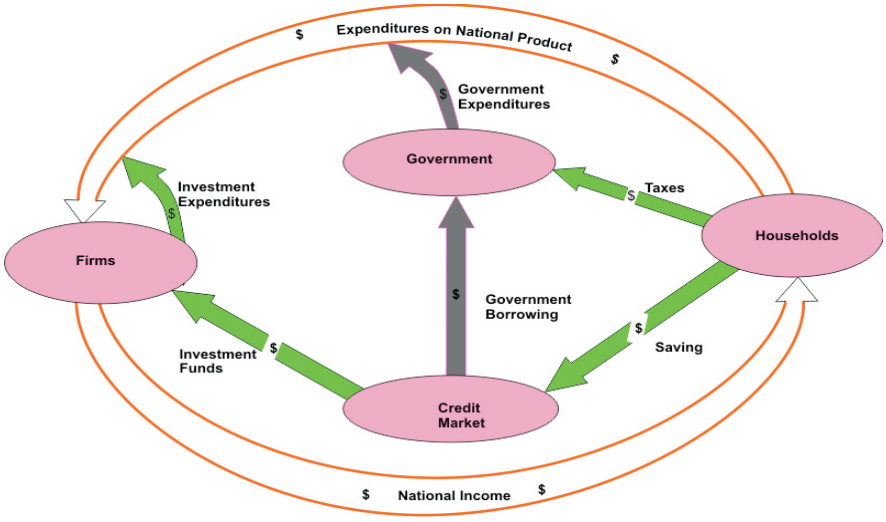
The last sector in the model is the foreign sector (Figure 4). A foreign sector allows the households to purchase from, and sell goods and services to, firms outside the country. The purchases from foreign firms are called imports, while goods and services sold to foreign buyers are called exports. As evident in Figure 1, the circular flow of income model of the aggregate economy emphasises output and income and their components.

**Figure 2: Circular Flow of Funds with a Credit Market**



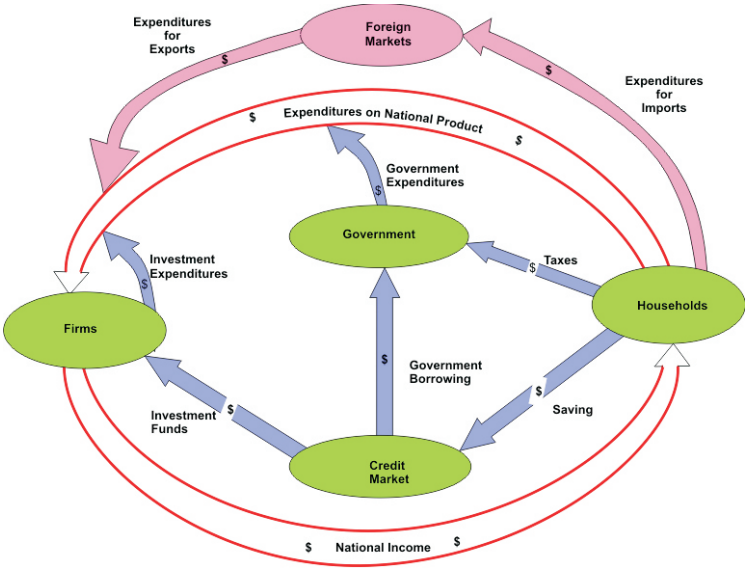

Source: Amacher and Ulbrich, 1986.

**Figure 3: Circular Flow of Income and Product with a Credit Market and Government**




Source: Amacher and Ulbrich, 1986.

**Figure 4: Circular Flow of Funds with Government and a Foreign Sector**



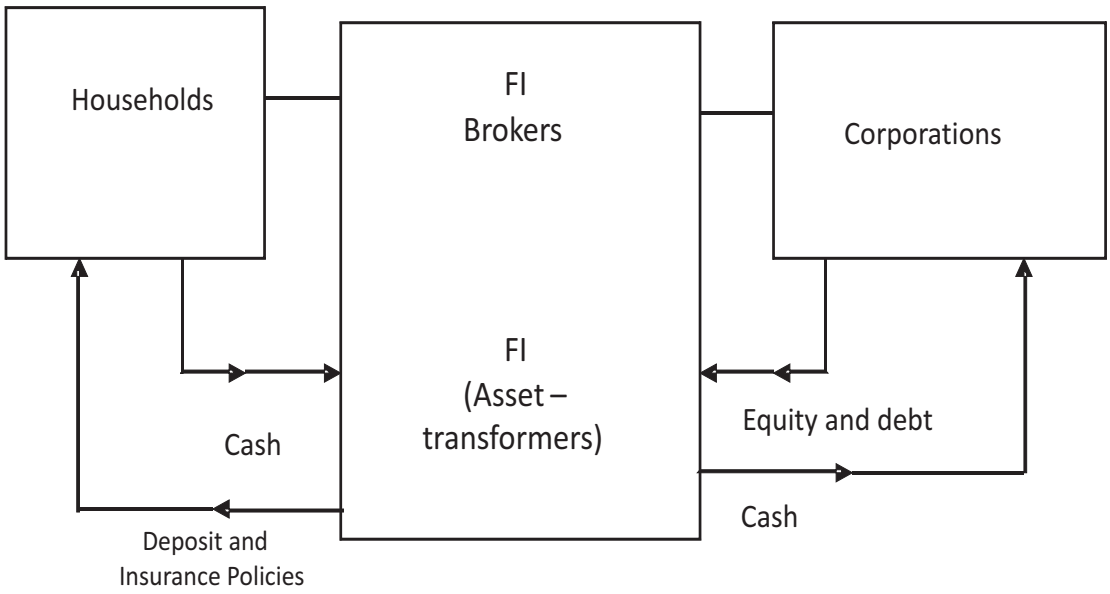

Source: Amacher and Ulbrich, 1986.

## II.1 The Role of the Financial Market (Credit Market)

Financial institutions (FIs) perform special function or services to the economy. Any major disturbances to, or interferences with, these functions can lead to adverse effects on the rest of the economy. Financial institutions fulfill two basic functions, namely, brokerage and asset-transformation. In the brokerage function, a FI acts as an agent for the savers in providing information and transaction services. By this service, the FI plays an extremely important role by reducing transaction and information costs or imperfections between households and corporation. In asset-transformation, FIs purchase the financial claims issued by corporations' equities, bonds, and other debt claims called primary securities –and finance these purchases by selling financial claims to households' investors and other sectors in the form of deposits, insurance policies, and so on. The financial claims of FIs may be considered secondary securities because these assets are backed by the primary securities issued by commercial corporations that in turn invest in real assets (see figure 5)

The financial claims issued by FIs are more attractive than the ones used by corporation due to lower monitoring costs, lower liquidity costs and lower price risk.

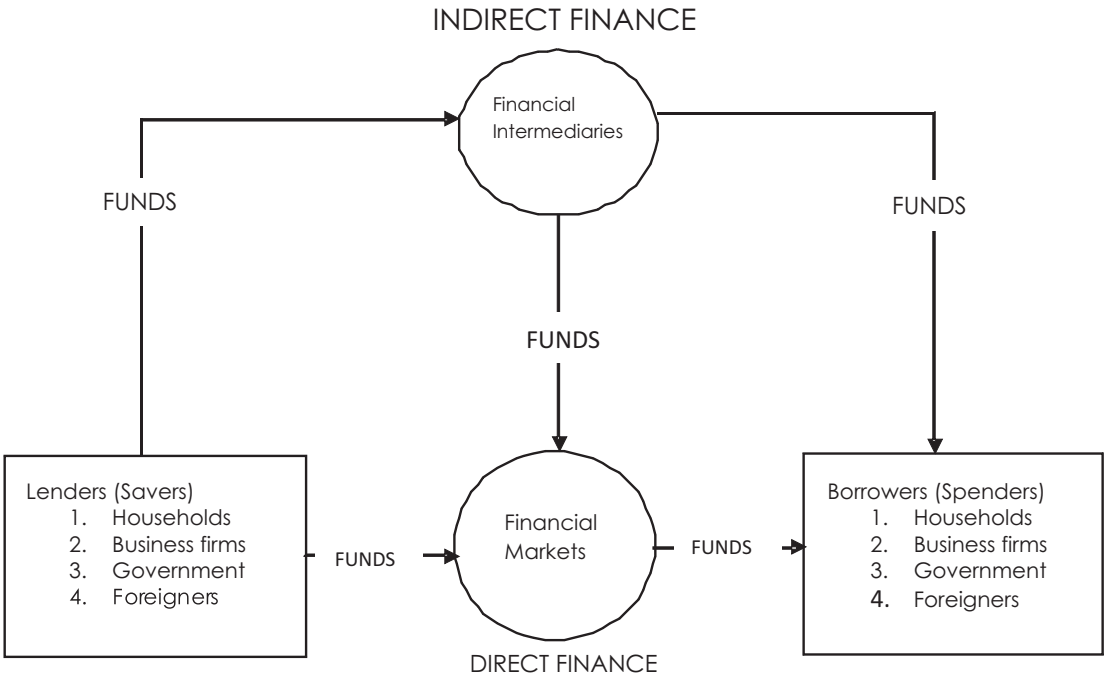
**Figure 5: Flow of Funds in a world with Financial Institutions**




Source: Saunders A., 1997.

By playing these roles, FIs contribute to higher production and efficiency in the overall economy. Figure 6 shows the two major processes by which funds are channeled from savers to those who have productive investment opportunities. Funds can flow from the savers direct to the users under direct finance channel when savers benefit directly in corporate sector investments. But when funds flow from the savers to the users through the financial intermediaries (a process called financial intermediation), it is said to be done through an indirect finance channel.

**Figure 6: Flow of Funds through the Financial System**




Source: Frederic S. Mishkin, 1992.

## II.2 Linkages in a Simple Four-Sector Framework

From the four-sector macro-finance model (flow of income model) shown in figures 1-4, we can define the contingent claim in each sector that demonstrates the interdependence among sectors. As we noted, the corporate sector borrows from banks (financial market) through loans and other forms of credits. The bank loans are the liabilities of the corporate sector, which are the assets of the banking sector. The banking sector also includes guarantees from the government as an asset, which is a liability to the government. The system's financial stability depends on the government's financial guarantee to the banks. The corporate sectors liability includes primary securities such as equity. The banking sector liabilities include deposits and equity. The assets of the household sector are made up of real estate and durables, present value of labour income and financial assets, which are liabilities to the banking sector. Household liabilities include real estate debts (mortgages which are borrowed from the banks), consumption as "dividend" and net worth. The assets of the government (public sector) include foreign reserves, net fiscal asset and value of monopoly on issue of money. The liabilities of the public

sector include financial guarantee, foreign debt and base money and local currency debt.

These linkages built on the contingent claims of each sector on the other create the economic balance sheet of the sectors, which demonstrates the interdependence among sectors. The patterns of value and default corrections across different asset classes, sectors and foreign debt values depend on these structures and links, unique to a particular economy.

**Table 1:Balance Sheet of a Simple Four-sector Framework**

| **Corporate sector balance sheet** | |
|---|---|
| Asset | Liabilities |
| Corporate assets | Debt (=Default -free value of debt minus implicit put option)<br>Equity (implicit call option) |
| | |
| **Banking sector balance sheet** | |
| Assets | Liabilities |
| Loans (debt of corporate sector) | Debt |
| Other assets | Deposits |
| Financial guarantee (implicit put option) | Equity (implicit call option) |
| | |
| **Household sector balance sheet** | |
| Assets | Liabilities |
| Real estate and durables | Debt (real estate and durables) |
| Financial assets | Consumption as "dividend" |
| Present value (PV) of labour income | Net worth of households |
| | |
| **Public sector balance sheet** | |
| Assets | Liabilities |
| Foreign reserves | Financial guarantee (implicit put option) |
| Net fiscal asset and other assets | Foreign debt (default - free value of debt minus implicit put option) |
| Value of monopoly on issue of money | Base money and local currency debt (implicit call options) |

Source: Gray and Malone, 2008.

## II.3 Risk Transmission among Sectors

We can use the four-sector framework to explain how the risks inherent in the interactions between the sectors can be transmitted from one sector to the other. The framework can also be used to show how the risk-transmission patterns can be dampened or magnified depending on the capital structure of the sectors and the linkages. When shocks affect the corporate sector, for example, the shocks feed into

the financial sector and could transmit risk to the government. These are explained in the sections below.

### II.3.1 Risk Transmission from the Corporate Sector to the Banking Sector and to the Government

The corporate sector's financial distress – possibly caused by stock market declines which reduce the value of corporate assets, recession, commodity prices drops, or excessive unhedged foreign debt accompanied by currency devaluation – can be transmitted to the financial sector.

**Corporate sector ⟶ Banking sector ⟶ Government**

The four-sector framework shows how the risk can be transmitted from the corporate sector to the banking sector and to the public sector through implicit and explicit guarantees. An example of a negative shock to the corporate sector is a drop in the assets as a result of recession; equity sell-offs; the combination of currency devaluation; and foreign debt that is not hedged. The value of the assets of the corporate sector declines. So does the value of the debt (and equity), which leads to a decline in bank assets and an increase in the implicit government guarantee. As the corporate assets decline, the government guarantees to the banking sector increase in a nonlinear way.

### II.3.2 Risk Transmission from Banking Sector to the Government

The banking sector's financial distress, such as systemic banking crisis, due to deposit runs and a decline in asset value or mismanagement can be transmitted to the government through guarantees.

**Banking sector ⟶ Government**

Risk in the banking sector due to financial distress (e.g. from bad loans, deposit run or mismanagement) means that the banking sector's implicit put option rises and this could lead to large increase in the implicit guarantee provided for the government. In the case of a systemic banking crisis, the government is most likely to provide guarantees. The cost of such crises to the government can be quite large, up to 30-50% of GDP in extreme cases.

### II.3.3 Risk transmission from the Government to the Banks and Feedback

The public sector's financial distress or default can transmit risk to the financial system. When the banking sector is holding a significant proportion of government securities, and there is a negative shock to the government financial position, it can have a detrimental impact on the banks. The government's implicit guarantee is also likely to increase. This, in turn, makes the government's financial position worse, creating a compounding effect, which may result in the government's failure to honour its guarantee obligations and cause a collapse of the banking system.

**Banking/Financial system ⟶ Government**

The impact of decline in government assets results in lower value of sovereign debt in the case where there is a sharp decline in government assets relative to its distress barriers. If the banking sector were to have a large portion of its assets in government debt, a vicious circle could arise, when the lower value of government securities lowers bank assets, and raises the implicit financial guarantee, which in turn, lowers government assets further. In some situations, this vicious circle can spiral out of control, eventually resulting in the inability of the government to provide sufficient guarantees to banks, and leading to a systemic financial crisis.

### II.3.4 Risk Transmission from the Pension System to the Government

The financial distress related to pension plans can result in the transmission of risk to the government.

**Pension ⟶ Government**

One example is the case when a pension system's assets contain corporate sector equity (in a defined benefit plan, which has an implicit government guarantee). A decline in corporate assets would cause the corporate equity value to drop. This, in turn, would increase the government guarantee to the pension system and the implicit guarantee to banks.

### II.3.5 Risk Transmission from the Public Sector to Holders of public Sector Debt

Fiscal, banking, and other problems can cause distress for the government, which can transmit risk to holders of government debt.

**Public sector⟶ Debt holders**

Holders of foreign currency debt have a claim on the value of the debt minus the potential credit loss, which is dependent on the level of assets of the public sector (in foreign currency terms) compared to the foreign currency default barrier.

## II.4 Financial Market Components and Interrelationships

### II.4.1 Components of Financial Markets

Financial markets bring participants together, discover prices, facilitate exchanges and disseminate information regarding products and prices. Accordingly, markets are communication networks among participants. As networks, they are constantly evolving to find more efficient ways to accomplish their functions. What causes these networks to be formed and constantly modified is the profit motive of participants.

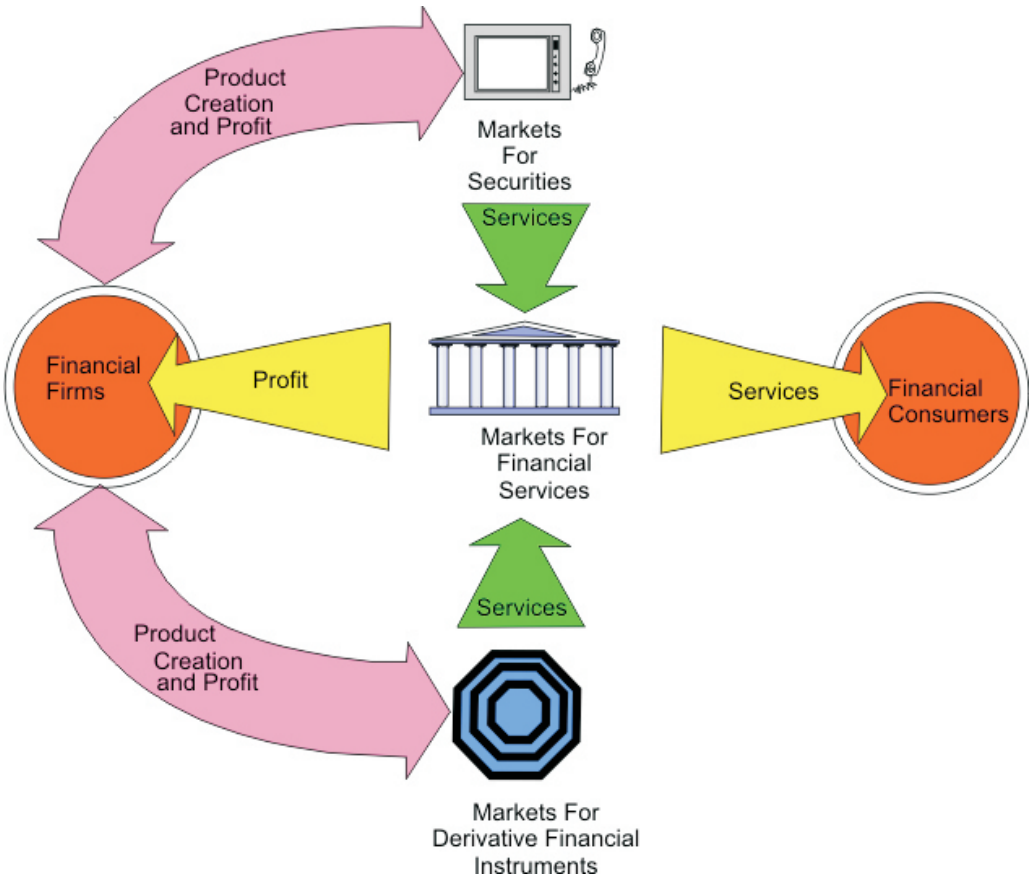
The organisational structure of financial markets is made up of three categories, namely; the markets for financial services, the markets for securities and the markets for derivatives financial infrastructures. This categorisation is based on three major needs for financial markets – the need for financial services such as funding and making payments, the need for liquidity and the need for risk management. All these major categories and their components operate together in what is called the Financial System. Financial markets, therefore, are a system of interconnected, yet differentiated markets as described below:

*Markets for financial services* are the "product" markets in finance. Institutions and firms in these markets identify the needs of consumers and offer the appropriate products. These services assist with borrowing, lending, investing, making payments, and managing financial risks. Interaction between firms and consumers determines the types of services offered and set their prices.

*Markets for securities* are the "exchange" markets in finance. Securities are negotiable financial instruments such as stocks and bonds, which may be exchanged among investors. Trading in securities markets sets the market prices and expected yields of securities, and indirectly, the yields on non-negotiable financial instruments such as bank loans and non-negotiable bank deposits.

*Markets for derivative financial instruments* are the "risk management" markets in finance. Derivative instruments include financial futures and options contracts, and other related risk management contracts. These contracts are termed derivative instruments because their existence and value derives from some underlying security, like a U.S. Treasury bond. Derivative instruments are not themselves securities, but simply contracts to exchange securities assist in managing the risk of unexpected changes in the future price of securities. The markets for derivative financial instruments create and exchange positions in these instruments and set their prices.

**Figure 7: Financial Market Components and Interrelationships**




Source: William Scott- 1991.

### II.4.2 Interrelationships among Financial Markets

The markets for financial services are the controlling forces among the three market components (see figure 7). In the "product" markets, firms offer financial services to consumers for a profit. This sets up the interaction among the three component markets.

Financial services firms use securities markets to create services for consumers and earn profit from dealing in these markets. They establish and maintain organised exchanges and trading networks in order to offer their customers access to open market financing (securities issues) and trading in securities (securities brokerage). Financial services firms also use securities markets for their own profit. For instance,

banks acquire bonds in securities markets, which they hold as earning assets, and securities firms trade in securities markets to earn profit as principals.

Financial services firms use derivative markets to create services for their customers and earn further profits. They have input into the creation of new types of financial futures and options contracts and so help their clients who trade on futures and option exchanges. Some financial services firms use derivatives markets to earn profits. For example, securities firms use computerised trading schemes to gain riskless profits from positions in both derivative and securities markets.

### II.4.3 Economic Functions of Financial Markets

Financial markets are different from most other types of markets, since they have macroeconomic as well as microeconomic functions. Most real goods and services markets have principally microeconomic functions: producing, pricing, and distributing goods and services. Financial markets have macroeconomic functions as well as microeconomic functions. These markets create nation's money supply, set interest rates in the economy, and evoke financial flows that determine the course of economic growth. As a result, dealing in financial markets can become challenging and perplexing. Dealing in other types of markets, for example, does not involve outguessing the current monetary policy of the CBN and the interest rate and foreign exchange policies of central banks in other jurisdictions.

#### II.4.3.1 Microeconomic Functions

Microeconomics refers to the economic forces that bring about the production and exchange of goods and services, and set their prices. The microeconomic functions of financial markets include producing financial services and facilitating financial flows.

*Producing Financial Services:* Like goods and services markets, financial markets produce and sell services that serve the needs of the economy. These services are largely associated with borrowing, investing, managing risks, and making payments and financial transactions.

*Facilitating Financial Flows:* Through offering services, financial markets are able to gather and package the savings of individuals and groups in society and transfer these funds to profitable business ventures and socially beneficial public investments. Interest rates and security prices serve as signals that cause financial markets to allocate savings for their most productive use in the economy.

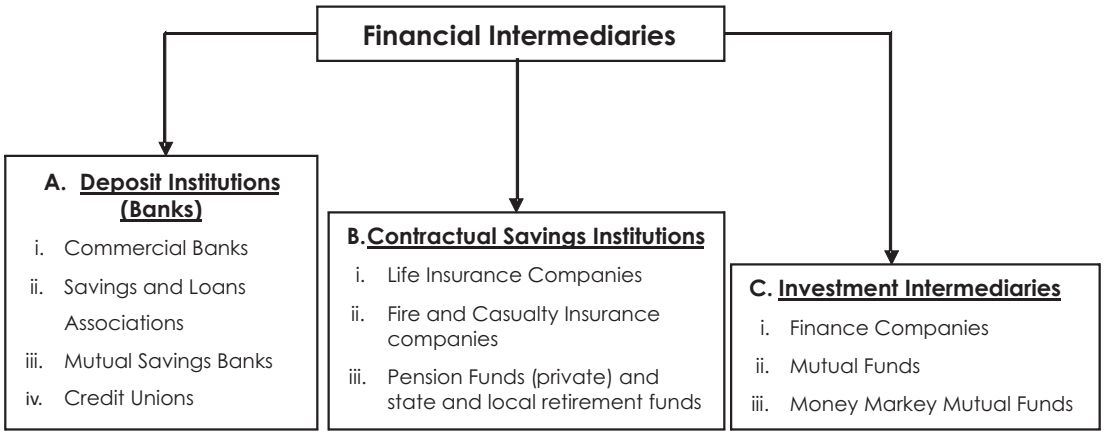
### II.4.3.2 Macroeconomic Functions

Macroeconomics refers to the economic forces that affect national income, employment, prices and productive capacity. The macroeconomic functions of financial markets are to create money and financial capital.

*Creating Money:* Banks and other depository institutions operating in financial markets create transactable deposits that serve as money. Instead of tendering cash for payments, depositors may issue cheques on their accounts in depository institutions. The payments system involves interrelationships among depository institutions that clear cheques and move funds from those who pay to those who receive. Payments services are the means that depository institutions use to help their customers make payments, such as cashier's cheques, electronic transactions, and so on. Being paper or magnetic entries in computer systems, deposits can be freely created to meet the monetary needs of the economy. The rate at which money is created directly influences the macroeconomic performance of the economy. Therefore, central banks are empowered to control the money-creating ability of the banking system.

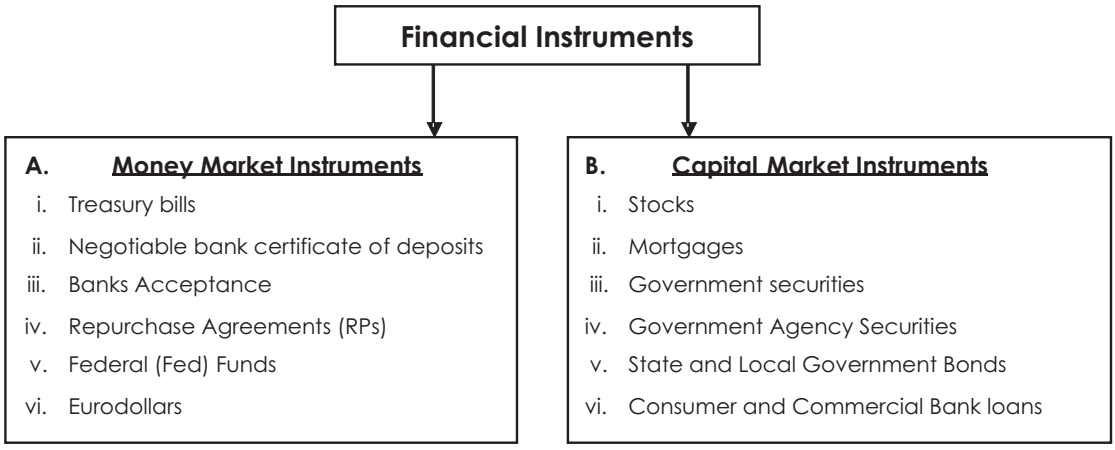
*Creating Financial Capital:* A nation must create real capital to experience economic growth and increase the standard of living of its citizens. Real capital is defined to include productive real assets such as machinery, plant, equipment, real estate, and direct ownership of physical business assets. Real capital allows efficient production and saves the time and effort of both employees and management. By possessing current technology, real capital is responsible for the increased production of goods and services. Business invests in real capital to gain returns from selling the goods and services that are efficiently produced and made available to consumers. Financial markets create financial capital to assist the development of real capital. Financial capital is simply financial instruments that provide investors with an indirect means to share in the returns generated by real capital. For example, when an automobile plant makes money from manufacturing and selling cars, this return can be passed on to investors in the form of bond interest and dividends on common stocks (e.g., returns on financial instruments). Investors need not directly own the car plant, and instead may own a claim upon its cash returns.

**Figure 8: Financial Intermediaries**




Ownership of financial paper presents investors with more flexibility than ownership of real capital. Financial instruments can be divided into small-denomination units, which can be easily transferred and sold; structured to manage risk in accordance with investors' needs; and have other attributes that make the instruments more attractive. Accordingly, the creation of financial capital encourages saving and investing and facilitates the formation of real capital in modern economics. Financial instruments allow investors to own a part of an enterprise for as long as they desire. For example, it is not necessary to own the whole car plant forever, to gain the returns it generates for owners.

**Figure 9: Financial Instruments**



## II.5 Monetary Policy and the Financial Markets: The Transmission Mechanism

Monetary policy is the act of increasing or decreasing the nation's money stock to influence the national economy. Monetary policy is implemented in an effort to achieve specific goals for the nation. The policy operates by having central banks employ financial tools, which have direct effect on the financial markets. Therefore, participants in the financial markets seek to formulate financial strategies that anticipate the outcomes of monetary policy on financial markets.

The transmission mechanism is the channel of monetary influence on economic activity and is used for policy analysis by central banks. The transmission mechanisms (channels) fall into three categories: namely, those operating through investment spending, through consumer expenditure, and through international trade. (see figure 10)

i. **Investment Spending:** According to Modigliani (1998), interest rate may not be the only driving factor for investment spending. The model discovered other factors such as credit rationing, prices of common stocks and net worth of firms.

a. **Credit Rationing:** When monetary policy is restrictive, bankers might start to ration loans to their customers instead of allowing the interest rate on these loans to rise, that is, they would not make loans available at the stated interest rate. An expansionary monetary policy might then increase the quantity of available loans, causing investment spending to rise, even though interest rates do not have much of a measurable decline systematically, the monetary policy effects is:

$$Money\ (M) \qquad \text{Loans} \qquad \text{Investment (I)} \qquad Income\ (\text{Y})$$

b. **Monetary Policy** can also affect investment spending through its effects on the prices of common stock. Tobin (1969) developed a theory of the link between stock prices and investment spending, referred to as Tobins q theory. Tobin defines q as follows:

$$q \quad \frac{\text{Market Value of Firms}}{\text{Replacement Cost of Capital}}$$

If q is high, the market price of firms is high relative to the replacement cost of capital, and new plant and equipment capital is cheap relative to the market value of business of firm. Companies can then issue stock and get a high price for it relative to

the cost of the plant and equipment they are buying. Thus, investment spending will rise because firms can buy a lot of new investment goods with only small issue of stock. The reverse is the case when q is low. The implication of this is that when money supply increases, the public finds it has more money than it wants and so gets rid of it through spending. One place the public spends is in the stock market, increasing the demand for stocks and consequently raises their prices. Combining this with the fact that higher stock prices (Ps) will lead to a higher q and thus higher investment spending (I) lead to the following transmission mechanism of the monetary policy:

$$M \qquad Ps \qquad q \qquad I \qquad Y$$

c. **Networth Firms:** The higher the networth of firms, the less severe are adverse selection and moral hazard problems. Higher networth means that lenders in effect have more collateral for their loans, and so losses from adverse selection are reduced. A rise in networth which reduces the adverse selection problem, thus encourages lending to finance investment spending. A rise in stock prices raises the networth of firms and so leads to higher investment spending because of the reduction in adverse selection and moral hazard problems. Thus

$$M \qquad Ps \qquad Adverse\ Selection \& Moral\ Hazard \qquad Loans \qquad I \qquad Y$$

ii. **Consumer Expenditure:** The link between monetary policy and consumer expenditure are divided in three areas: interest rate effect on consumer durable expenditure, wealth effects and liquidity effects:

a. **Interest rate effects on consumer durable expenditure:** The lower interest rates, which lower the cost of financing these expenditures would encourage consumers to increase their consumption of durable goods. The resulting channel of monetary policy influence on aggregate demand is as follows:

$$M \qquad I \qquad \text{Consumer durable expenditure} \qquad Y$$

b. **Financial Wealth Effects:** This considers how the balance sheet of a consumer might affect his spending decisions. An important component of a consumers lifetime resources, which determine his consumption spending is his financial wealth, a major component of which is common stocks. When stock prices rise, the value of financial wealth increases, thus increasing the lifetime resources of consumers and consumption. Thus, the monetary transmission mechanism is as follows:

$$M \qquad Ps \qquad Wealth \qquad Life\ time\ resources \qquad Consumption \qquad Y$$

**c.** **Liquidity Effects:** When consumers have a lot of financial assets relative to their debts (which implies highly liquid balance sheet), their estimate of the possibility of financial distress is low, and they will be more willing to purchase consumer durables. Thus, when stock prices rise, the value of financial assets rise as well, consumer durable expenditure will also rise which leads to the following transmission mechanism for monetary policy:

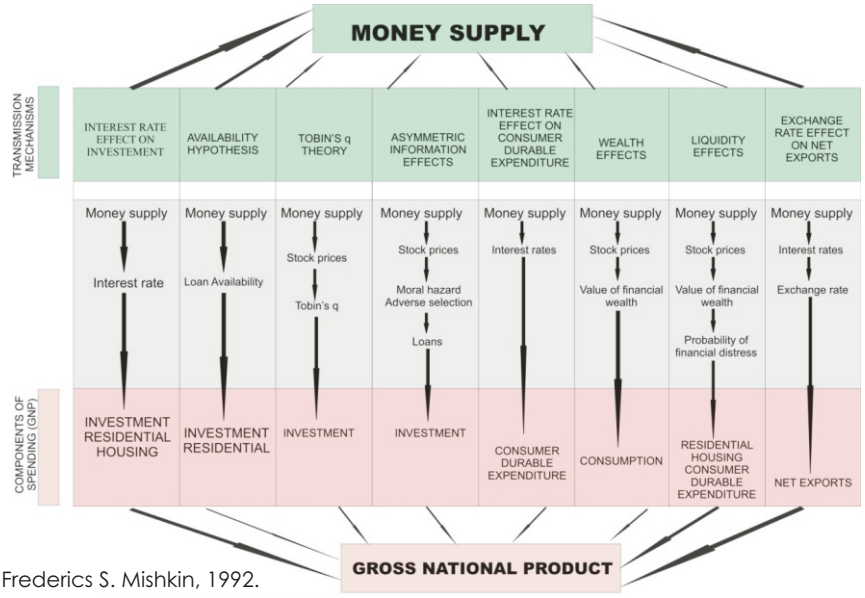
$$M \quad Ps \quad \textit{Value of Financial Assets} \quad \textit{Likelihood of Financial Distress}$$
$$\textit{Consumer Durable Expenditure} \quad Y$$

**iii.** **International Trade:** With the growing internationalisation of the economy and the advent of flexible exchange rate, an exchange rate effect on net experts has become an important monetary transmission mechanism.

When domestic interest rates fall (with inflation unchanged), domestic savings (deposits) become less attractive relative to deposits denominated in foreign currencies. The result is a fall in the value of dollar deposits relative to other currency deposits, that is, a fall in the exchange rate (denoted by E). The lower value of the domestic currency makes domestic goods cheaper than foreign goods thereby causing a rise in net exports and hence in aggregate output. The monetary transmission mechanism operating through international trade is thus

$$M \quad I \quad E \quad NX \quad Y$$

**Figure 11: The Link between Money and GNP - Monetary Transmission Mechanisms**




Source: Frederics S. Mishkin, 1992.

## II.7 Interactions between Monetary Policy and the Financial System

Monetary policy is the act of increasing or decreasing the nation's money supply to move the economy towards growth and stable places. The CBN, which is the principal regulator of the nation's money supply, utilises financial markets to conduct monetary policy. When the Bank conducts monetary policy, it influences the behavior of depository financial institutions operating in the market, financial services, as well as interest rates and the value of financial instruments. Thus, monetary policy decisions can influence the financial sector by influencing the risk-taking behavior of financial sector participants. Monetary policy can affect such behavior in three ways: (i) by affecting the overall level of leverage in the economy. (ii) by affecting the maturity structure of financial liabilities and (iii) by changing attitudes held by those in the financial sector about assuming risk.

A monetary policy designed to reduce growth in the money supply has a direct effect on financial markets. With less money (which implies less credit), interest rates rise and security prices fall in secondary markets. Therefore, a restrictive monetary policy has the potential to reduce availability of funds in credit markets and increase borrowing costs, decrease the value of investment portfolios, raise the interest cost of liabilities (deposits) of financial institutions if asset yields are more sensitive to changing market rates than liability costs or decrease the lending spreads of financial institutions. If asset yields are less sensitive to changing market rates than are liability costs, and reduces the liquidity of financial institutions as their financial assets fall in value. The substantial decline in lending will lead to a substantial decline in investment and aggregate economic activity.

On the other hand, expansionary monetary policies have the opposite effect. Interest rates fall and the prices of securities increase. Therefore, more funds are available to credit markets and borrowing costs decrease; the values of investment portfolios increase; the cost of liabilities of financial institution falls; if liability cost adjust more quickly than asset yields, the earning speeds of financial institutions increases and vice versa; and the liquidity of financial institutions increases.

**Table 2: Effects of monetary policy upon financial markets**

| Policy | Credit availability | Market rates | Security prices | Lending spread AR>LC | AR<LC | Liquidity of financial Institutions |
|---|---|---|---|---|---|---|
| Contractionary | Decrease | Increase | Decrease | Increase | Decrease | Decrease |
| Expansionary | Increase | Decrease | Increase | decrease | Increase | Increase |
| **Note: AR= Interest Sensitivity of Asset Returns; LC=Interest Sensitivity of Liability costs.** | | | | | | |

1. As Smaghi (2011) noted, the bulk of deposits for financial institutions, whether banks, broker-dealers, the so-called shadow banking system on hedge funds, is very much short-term. For example, broker-dealers fund themselves primarily in the repo market, mainly at overnight maturities while shadow banks fund themselves in the commercial paper market and the majority of the commercial banks rely on retail finance – chequeing and saving deposits – which usually consists of sight or short-maturity instruments. Wholesale funding for commercial banks is typically very short-term as well. So, when a central bank decides on the short-term interest rate, it directly affects the marginal price of leverage for virtually the entire financial sector. The problem arises when, due to low interest rates that make short-term funding cheap, the total debt raised by financial institutions goes beyond what may be considered socially optimal.

2. Low funding rates can inspire risky business strategies. For example, extreme forms of maturity transformation can be attractive, particularly if the risk adjustment calculus fails to make proper correction for the expected gains. In the search for higher nominal return on investment, financial institutions might be encouraged to buy assets typically with long-term maturity and possibility illiquid, financing them with short-term liabilities, thus, generating a large maturity and liquidity mismatch.

3. There is evidence that low short term interest rates induce banks to lend to borrowers with a poor credit history, or none at all. Low short-term interest rate policies generate an inflow of borrowers, which may reduce the probability of systemic financial distress. This is the negative aspects of the expansionary phases of the business cycle, periods during which more firms may be seeking credit. In this scenario, the proportion of unknown borrowers (or projects) in the market increases. The arguments is that banks may respond to the increased proportion of unknown borrowers by reducing their lending standards and expanding credit, which increases aggregate surplus but also increases the probability of a banking crises.

## II.8 Financial System Stability and Monetary Policy

The goals of financial stability policies can be broadly defined as:

(I) Preserving the stability of the financial system by reducing the pro-cyclicality of the financial sector; and

(ii) Improving its resilience to adverse shocks.

In order to achieve these objectives, the main tools used are those that tame pro-cyclicality and those that improve resilience of the financial sector. The main tool used to tame pro-cyclicality is the counter-cyclical capital buffer. The main idea of counter-cyclical capital buffer is to encourage banks to build up more capital per unit of risk during the uprising well above the minimum requirements mandated by micro-prudential supervision. This way credit would become more expensive during the upswing and therefore might slowdown. Also, banks would not need to reduce the loan supply during the downswing since they could run down this buffer before reaching the binding constraint of capital regulation. This instrument aims to limit supply-driven credit expansions, which may retard economic recovery.

The other tool for taming pro-cyclicality is a ceiling on the loan-to-value ratio for collaterised loans, which is designed for demand-driven credit booms, By forcing the borrower to put up more to its own funds, it makes credit more expensive and reduces demand. When the demand for loan heats up, the loan-to-value ratio can be decreased, thus, increasing the cost and slowing down or stopping its growth.

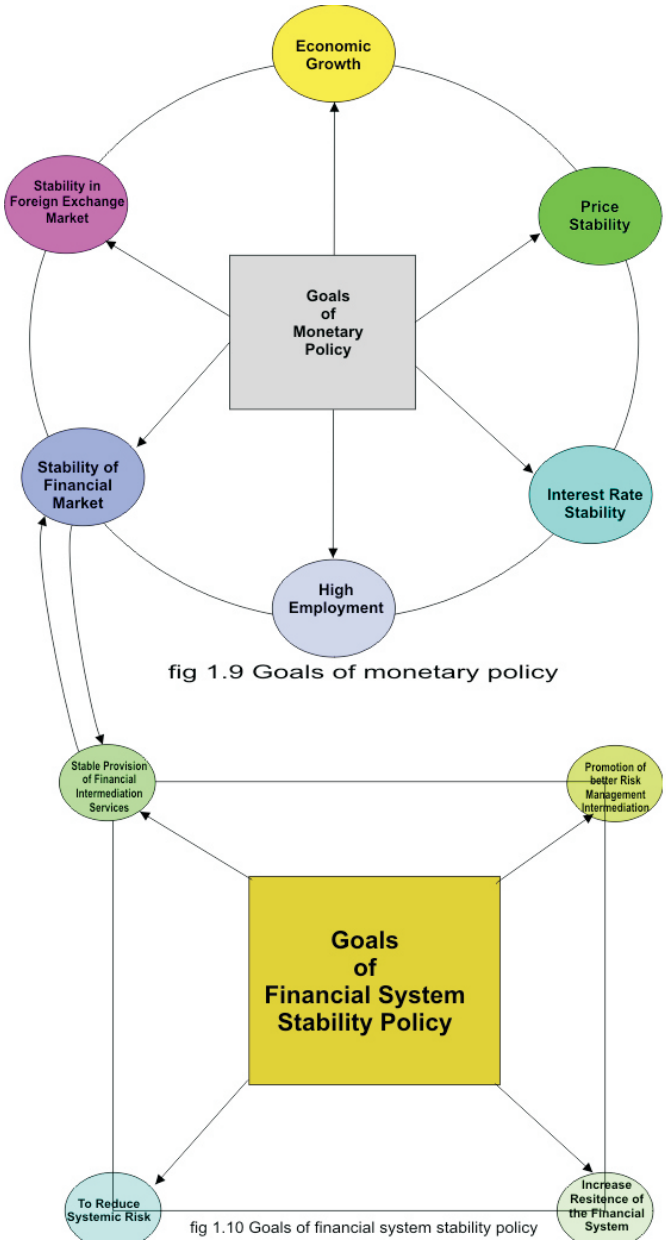
The tools that increase resilience of the financial system are also divided into two categories, namely: those that strengthen institutions; and those that seek to change the structure of the industry. The first category includes levies on Systemically Important Financial Institutions (SIFIs). The second category is market reforms such as a drive towards centralizing exchanges and structural reforms aimed at separating commercial banking from other activities.

Centralising transactions should reduce counter party risk and allow a better monitoring of financial flows, especially of derivatives, for which little data is available in general. The concentration of transactions also reduces uncertainty about who holds what – an uncertainty which, during a crisis, can end up freezing the entire markets and forcing central banks to intervene. Thus, the development of central clearing counter parties (CCPs) seem beneficial to the conduct of monetary policy.

The separation of commercial banking from other activities helps to protect deposit holders by insulating them from excessive risk-taking activities of banks. Such separation would reshape the financial industry and affect the transmission channels of monetary policy.

A lot of weight (pressure) is put on monetary policy tools during a crisis. In order to decrease such pressure, we use macro-prudential policies that reduce liquidity risk ex ante.

**Figure 12: Goals of Financial System stability Policy**



### II.8.1 Macro-financial Linkages and Systemic Risks

Systemic risk is the risk of a crisis in the financial sector and its spillover to the economy at large. Specifically, systemic risk can be broadly thought of as the failure of a significant part of the financial sector leading to a reduction in credit availability that has the potential to adversely affect the real economy.

Systemic risks arise because of the inter-linkages between the financial sector and the macro-economy and between financial institutions and markets. Systemic risks arise because of externalities between institutions- the risks of a given firm increase because of decisions made by other players. As these risks cumulate, they can pose a threat to the whole system through spillover and contagion effects. For instance, liquidity crisis can lead to downward pressure on asset prices, thereby impacting the entire market. In addition, the fact that some institutions are two big to fail, creates a bias towards firms that are too large and too highly leveraged, and have too much counterparty risk.

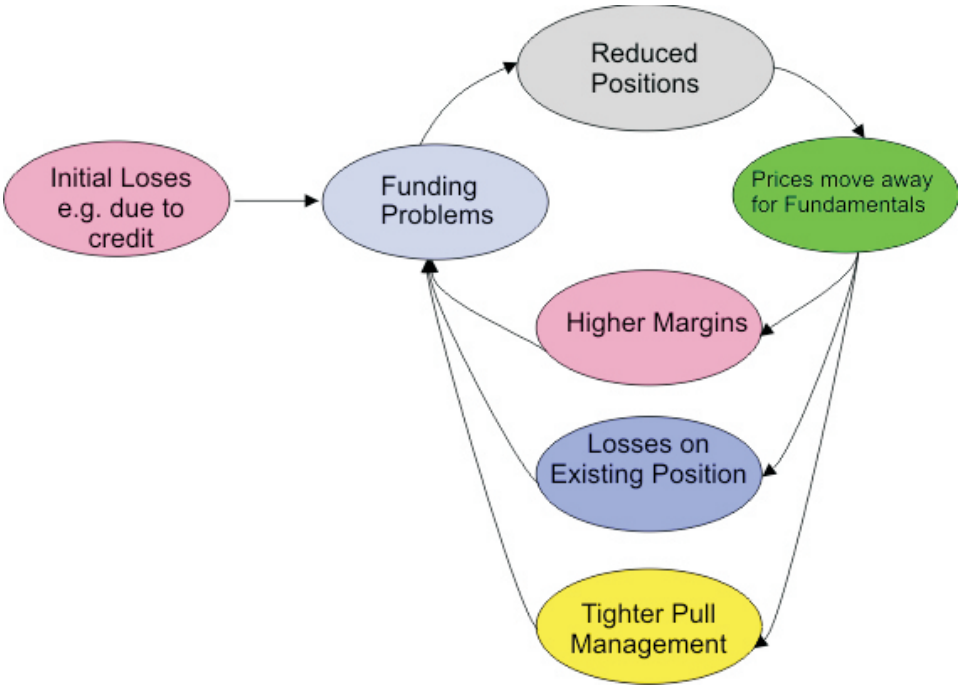
### II.8.2 The Nature of the Externality of Systemic Risk

Systemic risk arises from externalities between institutions. By its very nature, systemic risk is a negative externality imposed by each financial firm on the system. Each individual firm is clearly motivated to prevent its own collapse but not the collapse of the system as a whole. So when a firm considers holding large amounts of illiquid securities, or concentrate its risk into particular ones (e.g. subprime – based assets), or puts high amounts of leverage on its books (as a way to drive up excess returns), its incentive is to manage its own risk/return trade-off and does not take into account the spillover risk it imposes on other financial institutions. The spillover risk arises as one institutions trouble triggers liquidity spirals (see fig 12), leading to depressed asset prices and a hostile funding environment that pull others down and then lead to further price drops, funding illiquidity, and so on.

Another externality comes from the rescue of failed institutions. When banks fail individually, other healthy banks can readily buy them or otherwise take up most of their lending and related activities. Thus, real losses primarily arise when banks fail together and this collective failure cannot be readily resolved.

The suggested approach to financial externality is to give financial institutions an incentive to internalise this negative externality through taxes and surcharges. By doing so, banks are given incentives to limit their contributions to systemic risk.

**Figure 12: Liquidity Spirals – Financial linkage**




Source: Brunner Meser Pedersen, Garleany (2007).

### II.8.3 Systemic Risk Implications of Financial Linkages

#### i. Interconnectedness and Large Complex Financial Institutions

One of the most pervasive ways in which systemic risk manifests itself is through the too-interconnected-to-fail problem. The creation of large, complex financial institutions (LCFIs) engaged in some combination of commercial banking, investment banking, asset management, and insurance has led to stronger interconnections, innovation and growth. The operations of these LCFIs transcend national boundaries and engage in such activities as extensive interbank contracts, over-the-counter derivatives, equity, bond, and syndicated loan issuance, and trading activities globally.

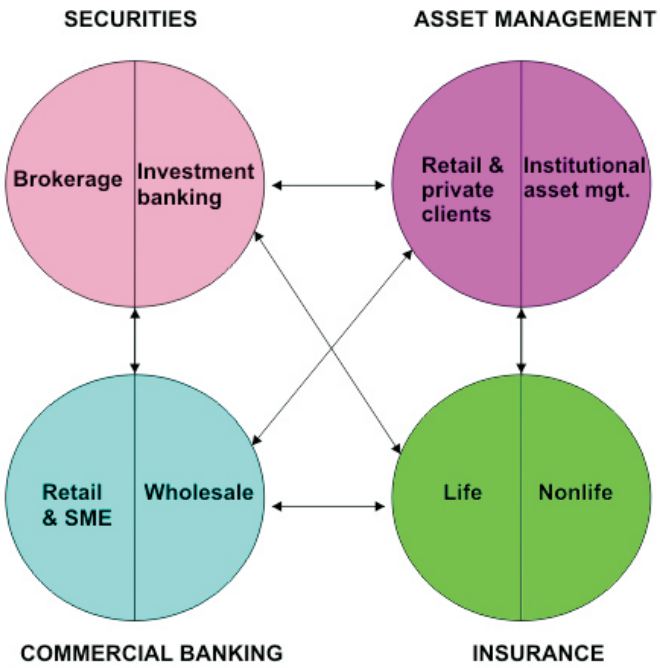
While these interdependence can increase the efficiency of the global financial system by smoothing credit allocation and risk diversification, they have also increased potential for cross-market and cross-border disruptions to spread swiftly. In addition, financial innovation, such as derivatives and securitisation, have enabled risk transfers that were not fully recognised by financial regulators and institutions themselves, and have complicated the assessment of counterparty risk, risk management, and policy response.

Interconnectedness means that difficulties in rolling over liabilities may spill over to financial system as a whole. Also, rollover risk associated with short-term liabilities is present not only in the banking sector, but equally importantly, in the non-banking financial sub-sector.

Factors that encouraged the development of LCFIs include the introduction of the universal banking regime, which expanded not only banks' powers to enter into securities services, but also their ability to enter into insurance and other financial services businesses, and vice versa. As a result, banks moved vigorously to build significant market share in investment banking, while certain large insurance companies acquired investment banking units to engage in capital market activities. Large scale mergers and acquisitions also contributed to the creation of LCFIs.

Furthermore, like their investment banking competitors, commercial banks increasingly relied on proprietary trading revenues as competitive pressure eroded intermediation margins. Some also expanded off-balance-sheet activities in swaps and other derivatives as well as special purpose, off-balance-sheet structured investment vehicles (SIVs) as a perceived profitable way of circumventing regulatory capital requirements and expanding their overall leverage.

**Figure 13: The Complexity of Large Complex Financial Institution**



### II.8.4 Approaches to Assessing Implications of Financial Sector Systemic Linkages

There are four complimentary approaches used in assessing financial sector systemic linkages. These are:

*The network approach:* This approach relies primarily on institutional data to assess network externalities. Network analysis, which can track the reverberation of a credit event or liquidity squeeze throughout the system via direct link in the interbank market, can provide important measures of financial institutions' resilience to the domino effects triggered by financial distress.

*The co-risk model*: This methodology draws from market data, but focuses on assessing systemic linkages at an institutional level. Such linkages may arise from common risk factors such as business models or accounting valuation practices.

*The distress dependence matrix:* This matrix is based on market data, but instead of looking at bilateral relationships as above, the pair wise conditional probabilities of distress presented are estimated using a composite time-varying multivariate distribution that captures linear (correlation) and nonlinear interdependence among a set of financial institutions.

*The default intensity model:* Based on historical default data, this methodology focuses on the time-series properties of banking defaults data to assess systemic linkages. It measures the probability of failures of a large fraction of financial institutions (default clustering) due to both direct and indirect systemic linkages.

Each approach by itself has considerable limitations, but together the approaches provide an important set of surveillance tools and the basis for policies to address the too-connected-to-fail problem.

### II.8.5 The Problem of Common Exposure

One major concern of interconnectedness is the problem of common exposure. When many institutions have an exposure to the same specific risk factor, it can make the system vulnerable to a shock to that factor. Also, intermediaries may be directly exposed to a frail institution through financial contracts. They may be exposed to indirectly and unknowingly, through their counterparts, who themselves are directly exposed to frail institutions. All institutions may also be vulnerable to the same underlying risk. The problem of common exposure may be related to the size of the institution. Large intermediaries usually are more interconnected, so they are typically a greater source of systemic risk.

### II.8.6 The Fall of Bear Steans, Lehman and AIG

#### II.8.6.1 A Case of Systemic Interconnectedness and Size

Bear Stearns had substantive systemic risk. Though, Bear Stearns was the smallest of the major investment banks, it had a high degree of interconnectedness to other parts of the financial system. In other words, it was a major counterparty risk. For example, as a major player in the US$2.5 trillion repo market, which is the primary source of short-term funding of security purchases, bankruptcy would have meant that the typical lenders in these markets – money market mutual funds and municipalities – would have received collateral rather than cash for their investment. Since some of this collateral was illiquid, it is quite possible that these lenders would have to pull their funds from other institutions, sparking a run on the financial system. In fact, in the week leading up to the date of Bear's collapse, Lehman Brothers' five-year CDS spread rose from 285 basis points to 450 basis points in anticipation of a run.

Also, Bear Stearns was the leading prime broker on the Wall Street to hedge funds. Failure of Bear Stearns would have put at risk any hedge fund securities hypothecated at the firm. Depending on the outcome of the failure, hedge funds might pull assets from other financial institutions that faced even slight bankruptcy risk, again leading to a run on the financial system and failures of other financial institutions. Further, Bear Stearns was a major participant in the credit default swap (CDS) market. Bankruptcy of Bear Stearns would have meant the closing out of all outstanding CDS contracts. Again, depending on how these contracts were netted out within the system, a number of these CDS contracts would have to be liquidated given the nature of the illiquidity of CDS contracts, the fire sales of these CDS could have had a ripple effect across the financial system.

#### II.8.6.2 Lehman Brothers

Over the weekend following Friday, September 12, the government failed in its attempt to engineer a purchase of Lehman Brothers by other financial institutions without any direct government support. In hindsight, Lehman Brothers contained considerable systemic risk and led to the near collapse of the U.S. financial system (though that may have occurred regardless). Ex-post, it is not clear whether: the government thought Lehman was no longer systemic because of the Fed's opening of lending facilities to financial institutions, or as the government now argues, Lehman could not be rescued because Lehman did not have adequate collateral to post to access these facilities. In any event, similar to Bear Stearns, Lehman was a major player in various parts of the capital market. Its bankruptcy opened up the possibility that similar firms could also go bankrupt, causing a potential run on their assets. This led to Merill Lynch selling itself to Bank of America. The other two institutions, Morgan Stanley and Goldman Sachs, saw the cost of their five-year CDS

protection rose from 250 and 200 basis points (bps) to 500 and 350 bps, respectively, from Friday, September 12, to Monday, September 15. Both of these institutions filed for bank holding company status soon after.

#### II.8.6.3 American International Group (AIG)

As yet another example of possible systemic risk, consider the government's injection of funds into AIG on September 15. AIG received an US$85billion loan secured against all its assets, including its insurance subsidiaries, as a way to meet the collateral obligations of its US$400 billion portfolio of credit default swaps (CDSs) against a variety of higher tranches of collaterised debt obligations (CDOs) and collaterised loan obligation (CLOs) of mortgages, bonds, and loans. AIG posed two forms of systemic risk. The first was that its exposure to CDSs was all on one side – the firm was receiving small premium to insure against large, yet highly unlikely, losses. Of course, the unlikely event that losses would occur would be systemic in nature, causing the CDSs to be highly correlated in these states. AIG would then have to look over large amounts of capital it would not have access to at the parent level. As this systemic event became even slightly likely, AIG's counterparts demanded collateral to protect themselves against further declines, caused AIG to be strapped for funds. As it became clear AIG could no longer post collateral, AIG's forced bankruptcy would mean that US$400 billion worth of securities on other financial institutions' balance sheets would no longer be safely insured, leading to substantial write-offs, which in turn, would cause a fire sale of assets that could ripple across the financial system. At the very least, the insurance market for financial claims could freeze up.

## III. Implications of Macro-financial Linkages for Monetary and Financial System Stability

### III.1 The Emerging Framework for Financial Stability

The goals of monetary policy include:

- Economic growth, price stability, interest rate stability, stability in the financial markets, and stability in the foreign exchange markets.

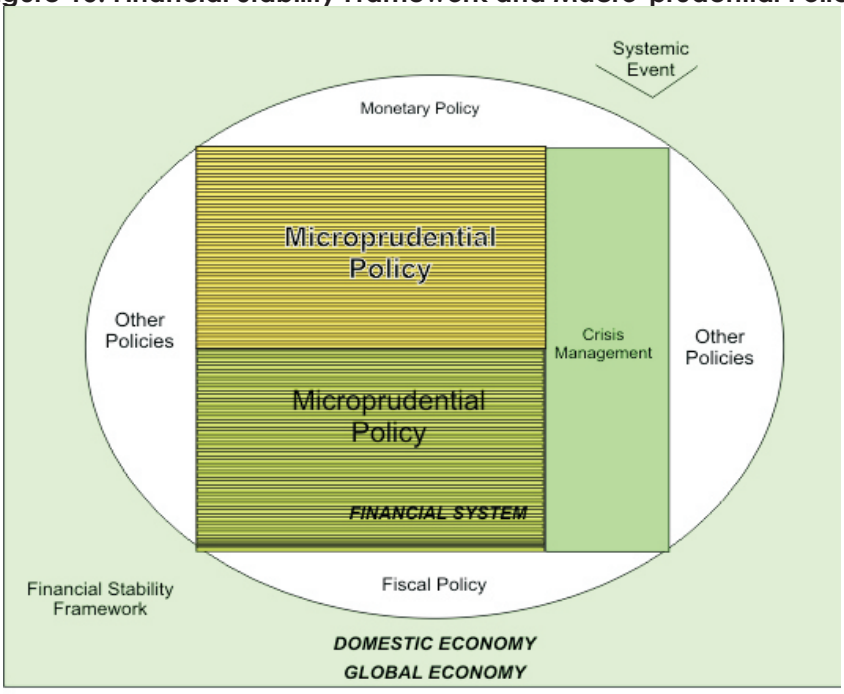
On the other, the goal of financial stability policy is the stable provision of financial intermediation services to the wider economy which include: payment services, credit intermediation and assurance against risk. Financial stability polices seek to avoid the type of boom and bust cycle in the supply of credit and liquidity, which usually lead to severe financial crisis. In other words, financial stability policies seek to increase the resilience of the financial system.

With respect to these goals, macro-financial linkages pose a basic challenge to policy makers: should the policy makers be concerned more with protecting the

banks (financial institutions) from the credit cycle or protecting the real economy from the banks. The resilience of the banking system affects the supply of credit, which in turn, affects the economic conditions influencing loan delinquencies and defaults.

Based on the emerging framework for financial stability (figure 15), while the primary responsibility of the financial system needs to rest with macro-prudential policy, other policies are required to complement it. No matter how different policy mandates are structured, addressing financial stability and systemic risk is a common responsibility. Prominent role can be played by micro-prudential and monetary policies, both of which impact on the cost of risk in the financial system and the economy. The larger the buffers created by the former, the smaller the need for macro-prudential policy to step in. Other policy areas such as accounting standards, corporate governance, disclosure, and crises management and resolution frameworks are required to work together with macro-prudential policies to achieve the desired stability in the financial system. Indeed, it is important to underline that macro-prudential policy cannot substitute for sound policies, involving, in particular strong micro-prudential regulation and supervision, and sound macroeconomic policies.

**Figure 15: Financial Stability Framework and Macro-prudential Policy**




Oval figure: financial stability framework. other policies involve, e.g., policies related to business con consumer protection, accounting rules, and competition

Source: Brockmeijer et al., 2011.

### III.2 Policy Responses to Address Macro-financial Risks

As we have seen from the analysis in the foregoing sections, macro-financial linkages are major sources of financial instability through contagion and spillover effects. Due to macro-financial linkages, vulnerability and excess built-up in financial markets and institution can affect the wider economy, with sometimes devastating results. By the same token, the health of the financial sector can be severely tested by developments elsewhere in the economy. In fact, these two-way macro-financial linkages all too often create potentially dangerous feedback mechanism that without rapid effective policy intervention can trigger deep and long-lasting economic downturns.

Addressing systemic risk generated by macro-financial linkages requires a broad framework of prudential tools that includes rules and mechanisms that promote better risk management on the part of intermediaries and also reforms that reduce the vulnerability of the financial system to the liquidation of any single financial firm. These rules are known as macro-prudential instruments. The aims of the policies would be to make intermediaries bear, or internalise, the costs that their behaviour imposes on others. Some of the macro-prudential policies that have been developed recently include:

*1.* *Systemic Capital Surcharge:* To be effective in limiting systemic threats, a systemic capital surcharge probably would be disproportionately larger for firms that contribute the most to systemic risk. This way, intermediaries would have an incentive to limit the systemic risks they create.

2. Macro-prudential regulators could also make capital requirements vary with the business cycle. For example, in good times, capital requirements would rise above the long-run average to create a capital buffer against adverse shocks and to discourage euphoria.

3. Regulators could require banks to buy catastrophe insurance or could ask banks issue so-called contingent convertible bonds that convert to equity in the event of a capital shortfall.

*4.* *Variable risk weight:* This would involve raising capital requirements against specific types of lending. If the authorities felt financial institutions' exposure to a certain asset class was too great, they could try to discourage it in this way.

*5.* *Leverage limits:* This would impose an overall limit on the amount of leverage financial institutions could hold. It would act as a "back-stop" to capital requirements which are typically risk-weighted.

6. *Forward-looking loss provisioning:* Banks would be forced to set aside provisions against prospective future losses on their lending. These are various ways this could be used as a macro-prudential tool, with Spain's 'dynamic provisioning' systemic offering a useful practical example. This system links loss provision to the credit cycle, so banks are forced to hold higher provisions when credit is growing strongly. Any such approach should, however, respect the integrity of international accounting standards.

7. *Collateral Requirements:* This would limit specific types of lending by imposing higher collateral restrictions during times of unsustainable growth in their lending., margin requirements on stocks/purchases or the imposition of haircuts on repurchase transactions for investment banks.

8. *Quantitative Credit Control and Reserve Requirements:* These would limit lending by imposing limits on lenders and/or increasing financial institutions' short-term liquidity requirements. Such a system was used in the UK until the early 1980s, although it is likely to lead to distortion if applied over an extended period.

9. *Capital Surcharge on Systemic Important Financial Institutions (SIFIs):* These include liquidity buffers, contingent capital, convertible bonds, insurance, etc.

### III.3 Policy Response to Macro-financial Crises

Many divergent approaches have been proposed and tried to resolve systemic crises more efficiently. The differences in approach reflect in part different policy objectives which include:

i. Reducing the fiscal cost of financial crises;
ii. Limiting the economic costs in terms of lost output;
iii. Accelerating Restructuring; and
iv. Achieving long-term structural reforms.

Central to understanding a sound policy approach to financial crisis is the recognition that policy responses that reallocate wealth toward banks and debtors and away from taxpayers face a key trade-off. Such reallocation of wealth could help to restraint productive investment, but they have large costs. These costs include taxpayer's wealth that is spent on financial assurance and indirect costs from misallocation of capital and distortion to incentives that may result from encouraging banks and firms to abuse government protection.

In reviewing crises policy responses, it is useful to differentiate between the containment and resolution phases of systemic restructuring. During the

containment phase, the financial crisis is still unfolding, government tend to implement policies aimed at restoring public confidence to minimise the repercussion on the real sector of the loss of confidence by depositors and other investors in the financial system. The resolution phase involves the actual financial, and to a lesser extent operational, restructuring of financial institutions and corporation.

**Table 3: Crisis Containment and Resolution Policies**

| S/N | Crisis Containment Policies | S/N | Crisis Resolution Policies |
|---|---|---|---|
| 1 | Supervision of convertibility of deposits, which prevent bank depositors from seeking repayment from banks | 1 | This entails the resumption of a normally functioning credit and legal systems, and the rebuilding of banks' and borrowers' balance sheets. |
| 2 | Regulatory capital forbearance, which allows banks to avoid the cost of regulatory compliance, e.g. by allowing banks to overstate their equity capital to avoid the costs of contraction in loan supply. | 2 | Government - subsidised work - outs of distressed balance sheets. |
| 3 | Emergency liquidity support to banks | 3 | Debt forgiveness. |
| 4 | A government guarantee to depositors | 4 | The establishment of government owned asset management company (AMC) to buy the resolved distressed loans. |
| 5 | Administrative interventions, including temporary assumptions of management powers by a regulatory official or closure, which may include the subsidised compulsory sale of a bank's good assets to a sound bank together with the assumption by that bank of all or most of the failed entity's banking liability. | 5 | Government - assisted sales of financial institutions to new owners, typically foreign. |
| | | 6 | Government assisted recapitalization of financial institutions through injection of funds. |

The appropriate containment policy response would depend on whether the trigger for crisis is a loss of depositors' confidence (triggering a deposit run), regulatory recognition of a bank's insolvency, or the knock-on effects of financial asset market disturbances outside the banking system, including exchange rate.

**IV. Summary**

1. Financial crisis occur as a result of financial excesses in the course of the interplay between economic and financial activities, inordinate financial market behaviour and improper structural changes in financial markets and their implications for official policies. Financial institutions play key intermediary roles in the economy. They finance a variety of demanders of credit. When they perform this roles as intermediaries well, our economy and society benefit. When they perform below expectations, our economy and financial markets suffer, and in extreme cases, crises may follow. Financial institutions therefore, need to balance their entrepreneurial drive with their fiduciary responsibility. In most cases, however, this balance is not maintained. When entrepreneurial risk becomes pervasive throughout financial markets, a financial crisis can take hold. Structural changes in the financial markets encourage excessive risk taking. Therefore, regulators should continually change how they supervise financial markets accordingly.

2. The credit intermediation service of banks is the main linkage of the financial sector to the real economy, while the money supply tool is the major linkage of the monetary sector to the financial sector. Also, the off-balance sheets transactions, the structured investment vehicles (SIVs) and conduits are the linkage between the traditional banking and shadow banking sectors. The separation of commercial banks from investment banking activities reduces the linkage between the regulated and unregulated (or less regulated) sector and in turn reduces the counterparty risk externality that can affect economy-wide intermediaries. It reduces ex post pressure o regulator to bail out even unregulated institution by rendering them systemically less imported (that is, not too intermediated to fail). The separation is a possible why of insulating the payments and settlement system from securities activities.

3. Monetary policies can affect systemic risk through a number of channels. First monetary policy has a direct effect on asset prices for obvious reason that interest rates represent the opportunity costs of holding assets. Indeed, an important element of the monetary mechanism works through the asset price channel. In theory, an increase in asset price induced by a decline in interest rates should not cause asset to keep escalating in bubble – like fashion. But if bubbles develop, perhaps because of an onset of excessive optimism, and, especially if the bubbles are financed by debt, the result may be a build-up of systemic risk. Second, accommodative monetary

policy could provide mechanism for a build-up of leverage and excessive risk taking in the financial system.

4. Macro-prudential intervention might also have macroeconomic spill-overs. For example, rigorous enforcement of supervisory standards for capital following real-estate related loan losses may slow the economy's recovery from a recession. The need for more stringent bank capital and liquidity requirements imposed by macro-prudential tools to stem systemic risk could lead to high unemployment. This type of spill-over cannot be offset by monetary policy.

In the light of the above, macro-prudential and monetary policy should be closely coordinated. The central bank has an important role to play in this coordination task for good reasons. The central bank has long experience in supervision, broad knowledge of financial markets, and an understanding of the linkages between financial markets and the economy. In addition, the insights derived from central bank's supervisory role benefit the conduct of monetary policy.

For effectiveness, the pursuit of macro-prudential supervision should involve other regulated agencies, other than the central bank. There are important reasons for this approach. First, systemic risk surveillance will benefit from the perspective of regulators with different windows on the financial system. Second, central bank independence in the conduct of monetary policy is widely accepted as vital to achieving optimal employment and price stability. So it is possible to attain good outcomes by carrying out monetary policy and macro-prudential policy separately and independently with the goals of each pursued using separate tool kits. It must be understood that fully optional policy generally calls for coordination between the two policies, especially when spill-over occurs.

5. Financial linkages and the problem of moral Hazard: Due to the linkages and interconnectedness of large complex financial institutions, they secure government support in case of crisis because of the too-connected-to-fail problem. This leads to moral hazard behaviour (undue risk-taking) by financial market participants.

## V. Recommendations

1. There is need to prevent institutions from becoming too connected to fail: The recent financial crisis underscored the problem of an institution that is too connected to be allowed to fail because it is linked to many other financial institutions. The demise of such an institution could thus trigger catastrophic failures within the financial sector and probably in other sectors of the economy. The growing complexity and globalisation of financial services can contribute to economic growth by smoothing

credit allocation and risk diversification, but they can also exacerbate the too-connected-to fail problem.

2. Pre-emptive not reactionary policy action: At the wake of every financial crisis, policy makers across the globe try to outpace each other in the roll out of a new set of regulations to deal with the smoking gun. Even in the face of new hopes and then eventual recovery, this post-mortem approach means that we are often left with irredeemable casualties. There is need for early identification and assessment of systemic risks. This requires identifying and measuring systemic risk in a forward – looking way in order to support improved policy judgments. New regulations must be forward-looking and must provide adequate cover for all foreseeable risks. In the absence of that, whistle blowers must blow it loud and clear for all to hear when it should be heard-before the fall. Let me state that this is not in any way, an easy task. The understanding of systemic risk and the fault like in the structure of the financial system that makes it prone to instability or failure is still incomplete. Moreso, there is still limitation in the analytical tools. So the challenges are formidable and require an all hands approach. Regulators must develop a comprehensive proposal for regulatory reforms that will restore confidence in the integrity of the financial system. A passion for unhealthy returns will drive us to the point of detrimental risks. There should be less emphasis on aggressive revenue growth and a focus on risk-adjusted profitability.

3. Fuller and more transparent disclosure levels: Regulatory oversight in Nigeria capable of preventing any systemic failure currently exists only in the Banking and Pension sectors, while Investment Banks and Insurance companies are relatively exposed. However, had the CBN adopted more robust disclosure standards on prior to the crisis, we might have averted our own version of the crisis. The disclosure levels in the Nigerian financial space lags behind acceptable international standards. We strongly support increased transparency, including all efforts to make financial products easily understood by both consumers and investors. Transparency also can be increased by the use of public enforcement tools such as cease and desist orders and the use of public rulemaking powers to prohibit specific practices or product features deemed unfair or deceptive. The poor disclosure levels and abuse of insider information in the Nigerian capital market encourages price manipulation, round tripping and often triggers panicky sell-offs. The abuse of insider information currently operates as the norm rather than the exception. The control of insider abuse should be placed at the fore-front and not be relegated as a non-issue. An efficient market should operate at some optimum levels at the transparency and disclosure levels of information and this should be available to all market participants.

4. Separation of Traditional Banking and Shadow Banking: We are aware of the adverse role of linkages from the unregulated sector to the regulated sector, that is, from the shadow banking sector to the traditional banking sector. The separation of the commercial banks from investment banking activities reduces the linkage between the regulated and unregulated sector (investment banks), and in turn reduces the counterparty risk externality that can affect economy-wide credit intermediation. It also reduces ex post pressure on regulators to bail out even unregulated institutions by rendering them systemically less important (that is, not too interconnected to fail). The separation is a possible way of insulating the payments and settlement system from securities activities.

5. Capital surcharges based on systemic linkages, limit on institutions' exposure and introduction of a liquidity risk insurance fund.

6. Establish centralised clearing systems which provide a means to reduce counter-party risk and the potential systemic implication of financial linkages. Central clearing house internalizes the risk externality and would thus impose efficient collateral and margin requirements on market participants. This ensures minimal, near-zero counterparty risk on all traders. Equally important, clearing members monitor each other, given their co-insurance arrangement.

7. Leverage Requirement: There is need to implement an overall leverage requirement that consolidates off-balance sheet exposures.

8. Compensation in the financial system: Compensation systems in the financial services industry should be aligned to the avoidance of system risk. A practice whereby executives of financial institutions are appraised based on the volume of credits generated (with no recognition of the quality of the credits and its associated systemic risk implications) which encourages the executives to take uncalculated risks, is to say the least, unacceptable. Such measures as compensation through stock (held for longer periods) and stricter protective rules for top management would probably make sense.

9. Adoption of global regulatory framework - there is a need to harmonise regulatory arbitrage between jurisdictions. Nigerian institutions have to adopt global best practices in all aspects of their operations. The CBN's introduction of IFRS accounting standards to bank's financial reporting is just the beginning of a long journey. New IASB and Basel II standards in the wake of global financial crunch need to be quickly adopted and implemented, and enforced to end the credibility crisis created by the abuse of insider related credits. The process of conflict resolution and

arbitration needs to be independent and enforceable to calm the nerves of foreign and local investors.

10. Filling information gaps on cross-market, cross-currency and cross country linkages, to refine analysis of systemic linkages. This would require imposing additional disclosure requirements on financial institution, access to micro-prudential data from supervisors, more intensive contracts with private market participants, improved comparability of cross-country data, and better sharing of information on a regular and ad-hoc basis among regulators.

11. Macro-financial Research/Timing: In view of the centrality of macro-financial linkages in financial crisis events, there is need for a well-defined program of research in macro-finance by the CBN supported by a clear and enduring commitment by the executive management of the apex Bank. Some of the areas such research effort should focus include: what tools to be used in response to imbalances in real estate markets, impact of regulation of financial intermediation on the real economy, the potential conflicts of interest between monetary policy and financial stability or between micro-prudential supervision and financial stability, etc. Also, a detailed look at the training and recruitment program in the microfinance area is clearly of potential relevance.

12. Minimising Regulatory Arbitrage: Regulation should not be narrowly focused on a single ratio from the bank balance sheet such as capital requirement. It would be more prudent for regulators to regularly assess individual and collective bank health based on a variety of different aspects of their balance sheets, and indeed based on market indicators. Additional ratios to examine should include loans-to-deposit ratios, deposit-to-assets ratios, liquidity-to-assets-ratios, and so on.

13. Additional Responsibilities for FSRCC: The FSRCC is presently charged with the responsibility for coordinating regulatory issues among the agencies that regulate Financial Institutions in the country. The memorandum of understanding currently existing among the Financial Sector Regulation Coordinating Committee (FSRCC) should be reviewed or enhanced to facilitate Consolidated Supervision.

The recommended additional responsibilities for the enlarged body are as follows:

Maintaining a central database in respect of all the financial institutions supervised by the different regulatory bodies with restricted access as may be agreed in the memorandum of understanding (MOU);

Each Regulator should establish a nodal cell at its end to facilitate information sharing among all members of the financial services regulation coordinating

committee (FSRCC); and

The salient features of the outcome of the analysis done by each regulator and any development that may require the attention of any other regulator should be shared among regulators.

Although these measures could inspire additional demands and costs on financial institution, however, they are far better alternatives to waiting until a crisis begins and information become apparent as event un-fold.

**References**

Acharya, V. V. and M. Richardson (2009). "*Restoring Financial Stability: How to Repair a Failed System*", John Wiley & Sons, Inc. New Jersey.

Amacher, R. C. and H. H. Ulbrich (1986)."*Principles of Macroeconomics*", South-Western Publishing Co., Cincinnati, Ohio.

Bank of England, (2009). "The Role of Macro-prudential Policy" *A discussion paper*, November 19. Available at: www.http://www.bankofengland.co.uk/publications/news/2009/index.html

Bernanke, Ben, Mark Gertler, and Simon Gilchrist (1996). "The Financial Accelerator and the Flight to Quality," *Review of Economics and Statistics*, Vol. 78, No. 1,PP. 1-15.

Brockmeijer, J., M. Moretti, and J. Osinski (2011). "Macro-prudential Policy" An Organizing Framework" A paper prepared by the *monetary and capital markets department* in consultation with Research and other departments (Washington: International Monetary Fund, march 14. Available at: www.imf.org/external/np/pp/eng/2011/031411.pdf.

Caprio, G. (2011). "Macro-financial Linkages in IMF Research" *Independent Evaluation office* (Washington, International Monetary Fund). Available at: www.imf.org/external/NPIER/Bforums/2010/110510.htm.

Caruana, J. (2010). "Macro-prudential Policy: Working towards a new consensus" A speech at the high-level meeting on "*The Emerging Framework for Financial Stability Institute and the IMF Institute,* Washington DC, April 23. Available at: www.bis.org/speeches/sp100426.pdf.

Caruana, J. (2012). "Dealing with Financial Systemic Risk: the contribution of macro-prudential policies", Speech delivered at the *Central Bank of Turkey/G20 conference* on "Financial Systemic Risk" (Istanbull, September 27-28. Available at: http: www.bis.org/speeches/sp121002.html.

Crowe, C., S. J. Ostry, and J. Zethelmeyer, (2010). "*Macro-financial Linkages: Trends, Crises, and Policies",* (Washington: International Monetary Fund)

Kohn, D. (2011). "The Financial Policy Committee at the Bank of England", A speech delivered at *the US Department of the Treasury Conference*. December 2.

Available at: www.bankofengland.co.uk/publications/speaches.

Epinosa-Vega, M. (2009). "IMF: Prevent Institutions from becoming too connected to fail", A Global Financial Stability Report, *IMF Survey Magazine*: IMF Research, April. Available at: www.imf.org/external/pubs/ft/survey/so/2009/RES042109B.html.

Fight, A. (2004). "*Understanding International Bank Risk*", John Wiley & Sons Ltd, West Sussex, England.

Financial Stability Board (2011). "Macro-prudential Policy Tools and Frameworks", *Progress Report to G20,* October 27. Available at: www.financialstabilityboard.org/publicatons/r_111027b.pdf.

Financial Stability Board (2011). "Macro-prudential Policy tools and frameworks", Update to *G20 Finance Ministers and Central Bank Governors,* February 14. Available at: www.bis.org/publ/othP13.html.

Ciccarelli, M., E. Ortega, and M. T. Valderrama (2012). "Heterogeneity and cross-country spillovers in macroeconomic-financial linkages, A paper presented at *4th Bundes Bank-CFS-ECB workshop on macro and finance*, Frankfurt, march. Available at: www.wiwi.uni-frankfurt.de/professor/amir/team.html.

Goswani, M., A. Jobst, and X. Lang (2009). "An Investigation of some Macro-financial Linkages of securitization", *IMF Working paper* WP/09/29. (Washington: International Monetary Fund/February. Available at: www.imf.org/external/pubs/ft/wp/2009/wp0926.pdf.

Gray, D. and S. W. Malone (2008). "*Macro-financial Risk Analysis*", John Wiley & Sons Ltd West Sussex, England.

Gray, D. F., R. C. Morton and Zr, B. (2007). "New Framework for measuring and Managing Macro-financial Risk and Financial Stability", *NBER working paper* 13607, (Cambridge MA National Bureau of Economic Research) November. Available at: http//www.nber.org/papers/w13607.

Hirtle B. J., T. Schuermann, and K. J. Stiroh (2009). "Macro-prudential Supervision of Financial Institutions: Lessons from The SCAP", *Federal Reserve Bank of New York Staff Report* No. 409, November. Available at: www. Newyorkfed.org/research/staff reports/sr409.html

IMF (2009). "Assessing the Systemic Implications of Financial Linkages", *IMF Global Financial Stability Report*, Chapter 2, (Washington: International Monetary Fund) April. Available at:www.imf.org/external/pubs/ft/gfsr/2009/01/pdf/chep2.pdf

Modigliani, Franco, (1998). "The Role of Intergenerational Transfers and Life-Cycle Saving in the Accumulation of Wealth", *Journal of Economic Perspectives*, 2(2), 15–20.

Mishkin, F. S. (1992). "*The Economics of money, Banking and Financial Markets*", (3rd Ed), Harper Collins Publishers, New York.

Mwend, K. K., (2000). "*Banking Supervision and Systemic Bank Restructuring: An International and Comparative Legal Perspective*", Cavendish Publishing Limited, London.

National Commission on the causes of the Financial and Economic crisis in the United

States (2011). "The Financial Crisis Inquiry Report", *Public Affair, Perseus Book Group*, New York.

Tucker, P. (2009). "Banking Crisis: Regulation and Supervision – Macro-prudential Supervision", Speech delivered at *the British Bankers Association Annual International Banking Conference*. June 30. Available at: www.parliament.uk/treasury/committee publications

Scoth, W. L. (1991). "Contemporary Financial Markets and Services", West Publishing Company, St Paul, MN.

Smaghi, L. B., (2011). "Macro-prudential Supervision and Monetary Policy – Linkages and demarcation Lines", A speech delivered at *the OeNB Annual Economic Conference* on "The Future of European Integration: some Economic Perspectives" (Vienna: European Central Bank) May 23. Available at: www.–ecb.int/press/key/date/2011/html/sp110523_1.en.html

Sounder, A. (1997). "Financial Institutions Management: A modern perspective", Boston, Mass.: Irwin/McGraw Hill.

Tamirisa, N. T. and D. O. Igan (2008). "Are Weak Banks Leading Credit Booms? Evidence from Emerging Europe", *IMF Working Paper* No. 08/219 (Washington:

International Monetary Fund).

Tobin, J. (1969). "A General Equilibrium Approach to Monetary Theory", *Journal of Money, Credit and Banking*, Vol. 1, No. 1, February, pp. 15 – 29.

Wilson, G. P. (2011). "*Managing to the New Regulatory Reality: Doing Business Under the Dodd-Frank Act*", John Wiley & Sons, Inc. New Jersey.

Yellen, J. L. (2010). "Macro-prudential Supervision and Monetary Policy in the post-crisis world", A paper presented at *the NABE Annual Meeting* on the occasion of receiving NABE's Adam Smith Award for Leadership in Economic Profession and the use of ideas and knowledge in the workplace and policy arena, October 11. Original article: Business Economics (2011) 46, 3-12.

# Design, Institutional Arrangement and Implementation of Macro-Prudential Framework

*Charles Akoroda**

## I. Introduction

The design of policies to foster financial system stability and development has become a key area of focus among governments and international financial institutions. Policy focus reflects the growing evidence that financial sector growth and development can spur macroeconomics growth whereas financial instability can significantly harm growth and cause major disruptions as was seen in the financial crises of 1980s, 1990 and in 2007 to 2008.

The recognition of the need for stronger policies to foster financial stability and development, several entities around the world, including Governments, Multinational development agencies, regional development institutions and various standard setting bodies are focusing on further developing the tools and methodologies of financial sector analysis and assessment. A sound and well-functioning financial system is viewed as compromising three pillars that are necessary to support orderly financial development and sustained financial stability. The three (3) pillars include:

- Macro-prudential surveillance and financial stability analysis;
- Financial system supervision and regulation to help manage the risks and vulnerabilities protect market integrity and good governance of financial institutions'; and
- Financial system infrastructure including: legal infrastructure for finance; systemic liquidity infrastructure; and transparency, governance and information infrastructure.

## II. Overview- The Credit Crisis

The international credit crisis which started in 2007 evolved out of a classical boom and bust cycle in the US property markets, where lending decisions in many cases did not take into account the effects on systemic stability. In an economic downturn, externalities from uncoordinated lending may be just as severe. To decrease overall

* Mr. Charles Akoroda is the MD/CEO of Teriwyn-G Consulting Limited. The usual disclaimer applies.

riskiness and achieve sustainable capital ratios, banks may choose to cut back on new lending or sell off legacy assets. In both the boom and the bust phase, individual institutions do not take full account of the external effect of their lending decisions. Knock-on effects, such as the break-down of the interbank market following the collapse of Lehman Brothers, led to the crisis spreading internationally in 2008.

The "debt-deflation mechanism" refers to a process during which falling asset prices negatively impact on collateral value and availability of credit. A reduction in the availability of credit will drive asset prices down further and elevate delinquency rates among debtors. The "liquidity spiral", a channel through which the unwinding of financial imbalances can cause stress in the financial system.

Liquidity risk has also been a concern in the course of the European sovereign debt crisis Through Fannie Mae and Freddie Macus Government has helped to channel funds into the housing sector. Public sector support thus, contributed to excessive risk taking and rising asset prices. Also in Europe, mortgage financing enjoys implicit or explicit government sponsorship, either through the tax system or through the availability of otherwise subsidized funding. In Germany, public banks, and in particular the Landesbanken, contributed to excessive risk taking abroad.

The introduction of a macro-prudential policy framework is aimed at correcting blurred incentives and excessive credit growth and also scrutinise market distortions that arise as a result of public sponsorship or intervention. The priorities for effective macro-prudential policy framework are to provide better information on aspects where the absence of good information has proved very costly, and in particular:

- The inter-linkages between large, globally systemically important institutions;
- Emerging concentrations of risk in terms of both exposures and funding dependencies to certain institutions, countries and financial sectors;
- The transfer and ultimate holding of risk;
- System-wide leverage and maturity mismatches; and
- International financial integration through cross-border banking and investment flows.

In the Nigerian financial system the following interdependent factors led to the creation of a fragile system that brought the economy to the brink of collapse.

Macro-economic instability caused by large and sudden capital inflow;
Major failure in the corporate governance of banks;
Lack of investors and consumers sophistication;
Inadequate disclosure and transparency about the financial position of banks;

Critical gaps in the regulatory framework and regulation;
Uneven supervision and enforcement;
Unstructured governance& management processes at the CBN; and
Weakness in the business environment.

## III. Micro-prudential Regulation

Regulations in the financial sector are designed to limit the risk-taking behaviour of financial institutions and thus, prevent potential financial crises. With the failure of the investment bank Lehman Brothers in 2008, the financial system in the US and the EU came close to a complete meltdown.

Micro-prudential regulation examines the responses of an individual bank to exogenous shocks. It does not incorporate endogenous risk, and it neglects the systemic implications of common behaviour. Micro prudential regulation refers to Basel II type of regulation that focuses on risk taking behaviour of individual financial institutions. Loss spiral was a feature of: credit markets in 2007-08, the dotcom debacle of 2000-01, the Long-Term Capital Management crisis of 1998, the East Asian crisis of 1997-98, the stock market crash of 1987 and other modern financial crises.

Some critics argue that banks were not following micro-prudential rules strongly enough and so these rules must be deepened and made more comprehensive. We show below some financial soundness indicators.

**Table 1: The core set of financial soundness indicators**

| Indicator | Indicates |
|---|---|
| Regulatory capital to risk-weighted asset | Capital adequacy |
| Regulatory tier I capital to risk weighted asset | Capital adequacy |
| Nonperforming loans net of provision to capital | Capital adequacy |
| Nonperforming loan to total gross loans | Asset quality |
| Sectoral distribution of loans to total loans | Asset quality |
| Return on asset and return on equity | Earning and profitability |
| Interest margin to gross income | Earnings and profitability |
| Noninterest expenses to gross income | Earnings and profitability |
| Liquid asset to total asset and liquid asset to short-term liabilities | Liquidity |
| Net open position in foreign exchange | Exposure to FX risk |

Regulators must be careful about the application of micro-prudential rules, especially those on responding to market measures of value and risk, and ensure that they do not artificially create homogenous behaviour.

What went wrong with micro-prudential regulation? The general critique on micro-prudential regulation is that it failed to achieve the goal of maintaining the stability of the financial system as a whole. In other words, it failed to limit the systemic risk within the system. There are two particular dimensions of systemic risk which micro-prudential regulations could not handle. One was on the time dimension: with micro-prudential regulations, the evolution of risk-taking behaviour over time might result in a procyclicality problem. Micro-prudential regulations caused pro-cyclicality problems. The cross-sectional dimension caught attention as banks that were interconnected caused banking crises to occur simultaneously. This is regarded as a systemic risk on the cross-sectional dimension. The interconnectedness within the banking system are established from either a direct channel such as interbank lending or an indirect channel that banks share common exposures due to diversification at individual level.

A critical part of micro-prudential regulation in the last decade was the increasing use of market prices in valuation and risk assessment. This was done in the name of transparency, risk-sensitivity and prudence, but what it achieved was increasing homogeneity of market behaviour and as a result increased systemic fragility. The avenues through which market prices shaped behaviour include: mark-to market valuation of assets; regulator-approved market-based measures of risk, such as the use of credit spreads in internal credit models or price volatility in market risk models; and the use of credit ratings, where the signals are moving slowly, but positively correlated with financial markets. We believe that macro-prudential regulation is where the glaring deficit in regulation lies.

The microprudential perspective was therefore myopic in a period of credit contraction and deteriorating asset quality. There is a growing consensus that the most important manifestation of market failure in banking and financial markets through the ages is pro-cyclicality. The credit mistake is made during the booms even though it only becomes apparent in the bust. Loans made during booms have a higher probability of default than those made in periods of slow credit growth. Following the errors of prior regulation, counter-cyclicality has gained momentum as a regulatory principle.

A critical part of micro-prudential regulation in the last decade was the increasing use of market prices in valuation and risk assessment. This was done in the name of transparency, risk-sensitivity and prudence, but what it achieved was increasing homogeneity of market behaviour and as a result increased systemic fragility. Homogeneity in the financial system relates to funding and leverage.

### III.1 Vulnerability

Macro stress tests are employed to identify vulnerabilities in the wake of a simulated adverse outcome. In particular, macroeconomic imbalances and systemic vulnerabilities stemming from large inflows have long been of concern to policymakers. The macroeconomic effects of large inflows include overheating of the economy and appreciation of the currency, which can reduce competitiveness. From a macro prudential perspective, the relevant concern was the contribution of capital inflows to the build-up of systemic vulnerabilities.

### III.2 Types of Risk

There are different types of risk: credit risk, liquidity risk and market risk. They are different because they would each be hedged differently. Credit risks are best hedged by finding uncorrelated or negatively correlated credits: the credit of oil companies with inventories of oil may be inversely related to the credit of airlines. Liquidity risks are best hedged across time: the more time you have before you have to sell an asset, the more you can hold assets that are hard to sell quickly. Market risks, like the value of equity markets, are best hedged using a combination of time and diversification.

The success of macro-prudential supervision relies crucially on the quality of the analysis produced. The proper assessment of risks and systemic risks is important in two respects. On the one hand, supervisors need to be able to accurately identify and prioritise relevant threats to financial stability. Risk assessment needs to be forward-looking to give supervisors enough time to act upon the evidence produced. On the other hand, the evidence needs to be robust enough so that policy makers or market participants can be convinced to act upon it.

### III.3 Systemic Risk

**What is Systemic Risk?**

The Dodd-Frank Act addresses systemic risk in the context of avoiding financial instability. The Act created a Financial Stability Oversight Council (FSOC), which is made up of the heads of various Federal regulators.

The FSOC describes systemic risk as follows: Attempt to capture risk to the stability of the financial system as a whole, as opposed to the risk facing individual financial institution or market participant. In this approach, systemic risk includes all potential sources of instability in the financial system, not just the failure of a single large firm.

The direct links between market participants, e.g. securities houses, banks, hedge funds, money market funds etc. form a network of mutual claims and liabilities that constitute a possible channel for contagion. Forced asset sales provide for another channel of contagion. By driving down market prices, forced sales may affect other institutions that hold assets similar to those of the troubled institutions.

Systemic risk has its origin, in three important areas where risks need to be monitored:

- the build-up and unwinding of financial imbalances over time;
- shared exposures to macro risk factors; and
- Possible contagion effects and systemic risk contribution of individual institutions.

The proper assessment of systemic risks is important in two respects. On the one hand, supervisors need to be able to accurately identify and priorities relevant threats to financial stability. Risk assessment needs to be forward-looking to give supervisors enough time to act upon the evidence produced. Where systemic risk has its origin, we distinguish three important areas where risks need to be monitored:

- the build-up and unwinding of financial imbalances over time;
- shared exposures to macro risk factors; and
- possible contagion effects and systemic risk contribution of individual institutions.

Market-based information such as CDS spreads or spreads in the interbank market are used to determine the level of stress in the financial system. Data on delinquency rates, the amount of non-performing loans or market information on the value of securitised debt is used to assess the quality of financial institutions' loan portfolios. Survey data on banks' credit conditions and loan supply to corporates and households can help to assess the availability of credit to the non-financial sector. The identification of systemically Important financial institutions (SIFIs) also needs to take incentive effects into account. To exemplify, cross-border exposure is an important indicator when monitoring contagion risk. To the extent that financial institutions are exposed to foreign markets, either through cross-border funding or cross-border lending, problems can easily spill-over from one country to another. A macro-prudential approach to regulation and supervision will necessarily calibrate instruments based on some measure of systemic risk.

To inform and guide timely policy decisions, systemic risk measures should be able to capture the time and cross-sectional dimensions of systemic risk. This means that they should signal the gradual build-up of imbalances and vulnerabilities, including providing assessments of likelihood and potential impact of shocks, but that they should also flag concentrations of risk within the system. Countries have used a wide range of indicators and models to assess systemic risks. The main measurement approaches can be categorized as follows:

Metrics of concentration of risk within the system: The metrics relate to the cross-sectional dimension of systemic risk and focus on the channels of contagion and amplification.

Macro-stress testing: The importance of conducting top-down and bottom-up stress tests simultaneously to cross-check results is increasingly recognised.

Due to its system-wide perspective, macro prudential policy requires an ability to capture the build-up of systemic risk also in the shadow banking system. This is defined as 'the system of credit intermediation that involves entities and activities outside the regulated banking system'. Capturing the risks in the shadow banking system may require regulatory action or even legislation to enable collection of relevant data.

The Nigerian fragile financial system was the result of inadequate bank disclosures and transparency, inadequate legal and regulatory framework, poor risk management practices, among others. The poor state of affairs, the CBN conducted a diagnostic review of the banking industries to establish its true health and determine the way forward. The diagnostic reviews of the banks revealed the following defects:

- A high percentage of non-performing loans in some banks, which exceeded by far, the industry average. The poor asset quality was attributed to poor corporate governance practices, weak risk management practices, lax credit administration processes and non-adherence to the banks' credit risk management policies;
- The poor asset quality impacted negatively on the earnings and capital of some banks thereby threatening their going concern status;
- Huge exposure to the capital market and oil and the gas sector. Consequently, some banks were required to increase their provision for loan losses, which impacted negatively on their profitability and shareholders' funds;
- Some banks were significantly undercapitalized for their levels of operation and needed to urgently inject fresh funds, ranging from about N5.8bn to N109.23bn;
- The capital adequacy ratios recorded in some banks below the prescribed minimum threshold of 10.0 per cent, which implied that the capital of such banks were inadequate to support their levels of operation;
- The affected banks did not meet the minimum liquidity ratio of 25.0 per cent set for banks and could also not meet their maturing obligations without resorting to the CBN discount window, thereby providing proof of their illiquid status; and
- Pervasive poor corporate governance practices, especially in the areas of disclosure and financial reporting.

### III.4 Indicators of Systemic Risk

To measure systemic risk, macro-prudential regulation relies on several indicators. As mentioned in Borio (2003), an important distinction is between measuring contributions to risk of individual institutions (the cross-sectional dimension) and measuring the evolution (i.e. pro-cyclicality) of systemic risk through time (the time dimension).
Market price based measures of risk end up being highly pro-cyclical, falling in the build-up to booms and rising in the subsequent crashes. Micro-prudential behaviour

can endogenously create macro-prudential risks.

Risk is created by trying to match simple assets to complex liabilities. But perceptions and measures of risk are 'procyclical'. The idea of using regulatory and other policy measures to avoid systemic risk is not new and has been pursued by policy makers around the world for some time. A number of Asian countries, for instance, have long used restrictions on loan-to-value ratios, capital inflows and other ad hoc measures to limit internal or external vulnerabilities. More than ten years ago, the BIS called for "marrying the micro and macro-prudential dimensions of financial stability".

Government policies that aim to enhance the availability of credit to households and states can contribute to the build-up of systemic risk.

**III.5 Past crisis Evidence**

Historic evidence suggests that financial distress in many cases follows a boom and bust cycle in asset prices and lending volumes. Although for different reasons, the emerging market crises of the late 1980s and early to late 1990s in the Latin American countries and in South-East Asia, all followed similar patterns which involved a simultaneous boom in lending and asset prices before the crisis broke out. The US subprime crisis, but also the European sovereign debt crisis, provide more recent examples of how easy credit and a prolonged boom in asset prices laid the foundations for the subsequent problems in the financial sector.

The global crisis affected the Nigerian economy in two ways:

- The exit of portfolio investors from the Nigerian stock market; and
- A significant reduction in governance revenues.

**III.6 Long forecasts**

More recent approaches look at much longer forecast horizons of several years to give supervisors enough time to act upon signals of future distress. The models aim at detecting signs of exuberance in asset prices and credit volumes.

Market-based information such as CDS spreads or spreads in the interbank market are used to determine the level of stress in the financial system. Data on delinquency rates, the amount of non-performing loans or market information on the value of securitized debt is used to assess the quality of financial institutions' loan portfolios. Survey data on banks' credit conditions as well as loan supply to corporates and households can help to assess the availability of credit to the non-financial sector.

Cross-border exposure is an important indicator when monitoring contagion risk. To the extent that financial institutions are exposed to foreign markets, either through cross-border funding or cross-border lending, problems can easily spill-over from one country to another.

## IV. Macro-Prudential Regulation

Risk is taken as exogenous under the micro-prudential perspective, in the sense of assuming that any potential shock triggering a financial crisis has its origin beyond the behaviour of the financial system. The macro-prudential approach, on the other hand, recognises that risk factors may configure endogenously, i.e. as a systemic phenomenon. In line with this reasoning, macro-prudential policy addresses the interconnectedness of individual financial institutions and markets, as well as their common exposure to economic risk factors. It also focuses on the pro-cyclical behaviour of the financial system in the effort to foster its stability.

Macro-prudential regulation is an orientation or perspective of regulatory and supervisory arrangements. It means calibrating them from a system-wide or systemic perspective, rather than from that of the safety and soundness of individual institutions on a stand-alone basis. It means following a top-down approach, working out the desirable safety standard for the system as a whole and, from there, deriving that of the individual institutions within it. It means taking explicitly into account the fact that drivers of risk depend on the collective behavior of financial institutions (are "endogenous).

Macro-prudential regulation is any policy that promotes financial stability or limits systemic risk. Effective resolution frameworks reduce moral hazard and ex-ante risk taking and therefore support macro-prudential objectives. The framework for SIFI resolution has four building blocks:

- strengthened national resolution regimes;
- cross-border cooperation arrangements;
- improved recovery and resolution plans by financial institutions; and
- resolvability assessments.

Macro-prudential regulation also addresses the too-big-to-fail problem or that of SIFIs. The distinction between the time and cross-sectional dimensions of aggregate risk is critical under macro-prudential regulation. In the time dimension, the core issue is the extent to which prudential tools are calibrated with respect to aggregate variables (such as total credit) or sector-specific ones, such as credit to a particular part of the economy. In the cross-sectional dimension, it is primarily the issue of the breadth of institutional coverage, otherwise known as the "perimeter of regulation". The main advantage of cross sectional dimension is that it is less vulnerable to regulatory arbitrage. The main advantage of time dimension is that it can be more targeted and less blunt.

The key issue in the time dimension is to mitigate or dampen financial system pro-cyclicality, i.e., how financial system-wide risk could be amplified by interactions

within the financial system and between the financial system and the real economy, sometimes leading to financial crises.

The key issue in the cross-sectional dimension is to reduce systemic risk concentrations, which can arise from similar exposures across financial institutions (from assets, liabilities, dependence on common services) or because of the direct balance-sheet linkages among them (e.g., counterparty risk).

It would be an illusion to expect that a macro-prudential framework could ensure, on its own, the appropriate degree of financial stability. Other macroeconomic policies would have to play a role. In particular, monetary policy is key (e.g., Borio and Lowe (2002)). Monetary policy sets the universal price of leverage in a given currency area, and as such it is harder to circumvent.

## V. Macro-Prudential Design

Challenges in successfully implementing macro-prudential policies and institutional frameworks are:

- Design and collection of better information and data to support systemic risk identification and modeling;
- Design of techniques to identify and measure systemic risk that utilise this information and help inform the design of policies;
- Design of an effective macro-prudential toolkit of powers and instruments, including the criteria for the choice and calibration of the instruments and methods to assess their effectiveness, as well as the respective merits of rules versus discretion; and
- Design of appropriate governance arrangements for the exercise of the macro- prudential policy powers.

The design of a macro-prudential framework cannot escape the perennial question of the balance between rules and discretion. The main advantage of rules is that, once in place, they do not require continuous justification or explicit decisions. If well structured, they can thus, act as automatic stabilizers. Designing effective rules can be difficult. Rules should be simple and understandable. And a degree of discretion will be inevitable.

To assess vulnerabilities of the financial system, supervisors need to assume a holistic view of financial risks. Data availability remains an issue, in particular with respect to the so-called shadow banking system. The shadow banking system comprises entities that conduct bank-like activities, such as credit intermediation and liquidity transformation, but are not supervised as banks. Market infrastructures and utilities, i.e. payments system, clearing and settlement houses and central counterparties provide critical functions to the system and could be exposed to systemic risk factors. To gain a more complete picture of the vulnerabilities in the financial system, data on

non-bank financial institutions and households and cooperates should be included in the exercise.

The design choices open to authorities will depend on their economic and financial system structures as well as prevailing law and market practices.

### V.1 Macro-Prudential Challenges

We defined macro-prudential policy as a policy that uses primarily prudential tools to limit systemic or system-wide financial risk, thereby limiting the incidence of disruptions in the provision of key financial services that can have serious consequences for the real economy, by:

- dampening the build-up of financial imbalances and building defences that contain the speed and sharpness of subsequent downswings and their effects on the economy; and
- identifying and addressing common exposures, risk concentrations, linkages and interdependencies that are sources of contagion and spill over risks that may jeopardise the functioning of the system as a whole.

### V.2 Defining Element of Macro-Prudential Policy

The defining elements of macro-prudential policy are the objective (limiting systemic or system-wide financial risk), the scope of analysis (the financial system as a whole and its interactions with the real economy), a set of powers and instruments and their governance (prudential tools and those specifically assigned to macro-prudential authorities). Non-prudential instruments that are to be considered part of the macro-prudential policy toolkit, should: target explicitly and specifically systemic risk; and be underpinned by the necessary governance arrangements for the institutional framework chosen to conduct macro prudential policy to ensure there is no slippage in their use (clear mandate, necessary degree of operational independence and accountability).

### V.3 Steps to Address Pro-cyclicality

Key steps have been taken to address pro-cyclicality since the crisis of 2007 and 2009 are clearly macro-prudential issues, in the sense of being prudential in character and targeting systemic risk specifically. Basel III includes a number of provisions that should dampen pro-cyclicality. In addition to steps taken to reduce the pro-cyclicality of risk-weighted assets and the minimum requirement (e.g., the use of stress parameters for the trading book), Basel III put in place a specific macro-prudential overlay in the form of a counter-cyclical capital buffer.

The buffer is designed to be accumulated during periods when systemic risk builds up, as signaled for instance by excessive credit growth, and can be used without restrictions when risks materialize.

Banks with credit exposures to several jurisdictions would need to hold a buffer that reflects the weighted average of a bank's domestic and international exposures. Importantly, the buffer is activated by the host authorities (i.e., the authorities where the exposures are located) and the arrangements contain reciprocity clauses. This reciprocity agreement represents an important step towards achieving a better coordination between home and host authorities.

Margining practices are defined broadly to include the haircuts applicable to funding collateral as well as the mark-to-market and collateral requirements applicable to over-the-counter (OTC) derivatives. Accounting standards for loan loss provisioning, while not set to address procyclicality, can have a first-order impact on it.

International Accounting Standards Board (IASB) and the US Financial Accounting Standards Board (FASB) have issued exposure drafts for expected loss provisioning approaches that would facilitate earlier recognition of credit losses and thus, help to dampen pro-cyclicality. Such limits can be calibrated with respect to aggregate credit or specific exposures, e.g., by sector. Examples include time-varying, discretionary caps on loan-to-value (LTV), debt-to-income, loan-to-income ratios, or criteria for loans' eligibility. Liquidity requirements on foreign currency exposures have also been introduced recently to limit excessive credit growth (such as in Korea).

The first protection for the stability of the financial system is to enhance the resilience of each individual institution to adverse shocks. This should be expected to reduce spillovers from failures. Thus, the Basel III standards for increased bank capital and liquidity provided a strong anchor for macro-prudential policies. In addition, several provisions in Basel III would help to address systemic risk and interconnectedness among (global) systemic institutions by mitigating the risks arising from firm-level exposures.

### V.4 Systemically Important Financial Institution (SIFI)

In November, the G20 endorsed the FSB's policy framework to address the moral hazard risks and externalities posed by Systemically Important Financial Institutions (SIFIs). The key policy objectives of the FSB SIFI framework are to: increase their loss absorption capacity to reduce the likelihood of their failure; facilitate the orderly restructuring or unwinding of a failing SIFI to reduce the impact of its failure on the financial system; intensify supervisory oversight for SIFIs; and strengthen core financial market infrastructures to reduce contagion risk from failure. Effective resolution frameworks reduce moral hazard risk and ex-ante risk taking behaviour and therefore support macro-prudential objectives.

## VI. Difference between Micro-and Macro-Prudential Regulations

**The macro and micro prudential perspectives: understanding the difference.**

Following Borio (2003), the macro-and micro-prudential perspectives differ in terms of their objectives and understanding on the nature of risk. Traditional micro-prudential regulation seeks to enhance the safety and soundness of individual financial institutions, as opposed to the macro prudential view, which focuses on welfare of the financial system as a whole. Further, risk is taken as exogenous under the micro-prudential perspective, in the sense of assuming that any potential shock triggering a financial crisis has its origin beyond the behaviour of the financial system. The macro-prudential approach, on the other hand, recognises that risk factors may configure endogenously, i.e. as a systemic phenomenon. In line with this reasoning, macro-prudential policy addresses the interconnectedness of individual financial institutions and markets, as well as their common exposure to economic risk factors. It also focuses on the pro-cyclical behaviour of the financial system in an effort to foster its stability.

**Table 2: The Macro- and Micro-prudential Perspectives Compared**

| | **Macro-Prudential** | **Micro-prudential** |
|---|---|---|
| Proximate Objective | Limit financial system-wide distress | Limit distress of individual institutions |
| Ultimate Objective | Avoid output (GDP) costs | Consumer (investor/depositor) protection |
| Characterisation of Risk | Seen as dependent on collective behaviour ("endogenous") | Seen as independent of individual agents' behaviour ("exogenous") |
| Correlations and Common exposures across institutions | Important | Irrelevant |
| Calibration of prudential controls | In terms of system-wide risk; top-down | In terms of risk of individual institutions; bottom-up |

Source: C. Borio, 2003

Because of potential synergies and possible tensions between macro-prudential and other public policies, the main challenge is how to set up a framework to support policy consistency across the authorities responsible for macro-prudential and other policies. Solutions will need to be tailored to country-specific circumstances.

### VI.1 Macro-Prudential Framework

In November 2010, G20 Leaders called on the FSB, IMF and BIS to do further work on macro prudential policy frameworks, including tools to mitigate the impact of excessive capital flows, identification of best practices, which will be the basis for establishing in future international principles or guidelines on the design and

implementation of the frameworks. It traces the progress in implementing macro-policy frameworks along three broad lines:

advances in the *identification and monitoring* of systemic financial risk;
the designation and calibration of *instruments* for macro prudential purposes; and
building *institutional* and *governance* arrangements in the domestic and regional context.

G-20 leaders noted that effective macro-prudential frameworks require institutional arrangements and governance structures, tailored to national circumstances that can ensure an open and frank dialogue among policy-makers on policy choices that impact on systemic risk, resolve conflicts among policy objectives and instruments and mobilise the right tools to limit systemic risk.

Important progress has been made in understanding the origins of systemic risk and the recent developments in some highly indebted advanced economies have furthermore underlined the need for a truly macroeconomic perspective on systemic risk. As sovereign debt and balance-of-payments crises have returned to the developed countries, and a number of emerging markets are experiencing excessive capital inflows, macro-prudential supervisors are challenged to respond. The new Macro prudential framework aims to fill a perceived gap between monetary policy and micro prudential supervision. Monetary policy is traditionally dedicated to tackling price stability, while financial supervision has up to now been concerned with risk to individual financial institutions. What was missing prior to the financial crisis was a policy framework to ensure close coordination between the two policy realms, as well as a clear mandate for supervisors to tackle systemic risk at the macro level. A macro-prudential policy framework therefore must not ignore the effect of monetary policy on financial stability. Another area of concern for the European macro-prudential supervisor can be the link between government and bank finances. The strong exposure of European banks to their home sovereign, and other European sovereigns, has added to systemic risk in the euro area.

The micro-prudential supervisor may wish to raise capital standards to ensure that individual institutions survive in a stress situation, whereas the macro prudential supervisor may be concerned with the risk of a credit crunch. In most jurisdictions, the final say remains with the micro-prudential supervisor, which potentially limits the effectiveness of macro-prudential supervision.

Macro-prudential policies sometimes require controversial policy action, resistance may also come from outside. Raising prudential standards when markets are

booming, while encouraging the system to draw down on its buffers in a crisis situation might prove difficult, if the macro-prudential supervisor has no right to intervene directly and faces resistance from policy makers, market participants or other interest groups.

Regulatory and supervisory authorities not only have a different objective function than private sector financial institutions. They have also different tools and access to a much wider range of data enabling them to assume a system-wide perspective. Their primary goal is to ensure financial stability by assessing systemic risk and responding to upcoming threat.

### VI.1.1 Capital-related instruments

Basel III envisages a so-called capital conservation buffer, a countercyclical buffer as well as a SIFI surcharge, which can all be seen as macro-prudential tools.

#### Precautionary capital buffers

The primary goal of macro-prudential regulation should be to increase resilience of the financial sector, rather than to control the credit cycle or manage asset price risk. In other words, the macro prudential framework can only be one, albeit important, component of a broader framework designed to promote financial and macroeconomic stability.

Macro-prudential policy also interacts closely with other spheres of public policy because:

Other policies have an impact on systemic risk. For example, the stance of monetary policy can affect risk-taking incentives. Similarly, fiscal policy and public debt levels can be an important source of vulnerability for the financial sector.

Macro-prudential policy interventions, in turn, have macroeconomic effects. For example, raising capital requirements in a credit boom may to some extent dampen aggregate demand and, hence, influence the macroeconomic policy environment. Given these inter-linkages, effective macro-prudential frameworks require institutional arrangements and governance structures tailored to national circumstances, that can ensure an open and frank dialogue among policymakers on policy choices that impact on systemic risk, resolve conflicts among policy objectives and instruments, and mobilise the right tools to limit systemic risk.

Stronger macro-prudential policy framework centre on a three-step monitoring process. The first step comprises a broad review of non-bank credit intermediation that aims to identify the main trends and areas where additional scrutiny is warranted. In the second step, the authorities narrow down the focus onto the areas where systemic risks are most likely to be building, by drawing on a set of 'risk factors'

that highlight incipient problems. The third step involves a detailed assessment of the potential systemic risks identified, through an analysis of the possible impact on the system as a whole of severe distress or failure of the most vulnerable shadow banking entities and/or activities.

Monitoring should be regular, so that nascent risks are identified in time. It is vital that national authorities work together closely and effectively to assess the potential for cross-border spillovers and contagion of shadow banking risks, including regularly exchanging information and assessments. The identification and availability of relevant data is critical for an effective macro-prudential policy framework.

The principal interconnections and common exposures to shocks within the financial system. Priorities include:

Improving information on maturity and liquidity mismatch, and on leverage, for both the banking and shadow banking systems;

Improving information on common risk exposures and interconnections through;

Granular information on major international banks' main exposures to, and sources of funding from, key markets, sectors and instruments;

Consistent data on the principal bilateral exposures of the large systemically important banks and on their main individual funding providers;

Enhancements to data on sectoral balance sheets, international banking, portfolio investment and capital flows; and

Strengthening data on credit default swaps (CDS), over-the-counter (OTC) derivatives and complex structured products, and facilitating the reporting and aggregation of data collected by trade repositories.

Better data is an essential component of the macro prudential toolkit, but it is not a substitute for strong analysis and good policy judgment.

In some countries, the introduction of capital controls was primarily motivated by the desire to address systemic vulnerabilities associated with rapid domestic credit growth that was fuelled by capital inflows. Structural policies that promote robust market operations and resilient market infrastructures are aimed at reducing the risks associated with interconnectedness and contagion. The performance of macro prudential frameworks depends crucially on how well structural policies are designed

## VII. Macro-Prudential Tool Kit

### VII.1 Macro-Prudential tools

Most of these instruments are aimed to prevent the pro-cyclicality of the financial system on the asset and liability sides, such as:

a. Cap on loan-to-value ratio and loan loss provisions
b. Cap on debt-to-income ratio

The following tools serve the same purpose, but additional specific functions have been attributed to them, as noted below:

Counter-cyclical capital requirement - to avoid excessive balance-sheet shrinkage from banks in trouble;

Cap on leverage (finance) - to limit asset growth by tying banks' assets to their equity (finance);

Levy on non-core liabilities - to mitigate pricing distortions that cause excessive asset growth; and

Time-varying reserve requirement - as a means to control capital flows with prudential purposes, especially for emerging economies.

To prevent the accumulation of excessive short-term debt:

a. Liquidity coverage ratio
b. Liquidity risk charges that penalize short-term funding
c. Capital requirement surcharges proportional to size of maturity mismatch
d. Minimum haircut requirements on asset-backed securities

In addition, different types of contingent capital instruments (e.g., "contingent convertibles" and "capital insurance") have been proposed to facilitate bank's recapitalization in a crisis event.

## VII.1 Effectiveness of Macro-prudential Tools

For the case of Spain, Saurina (2009) argues that dynamic loan loss provisions (introduced in July 2000) are helpful to deal with pro-cyclicality in banking, as banks are able to build up buffers for bad times.

In the sphere of emerging markets, several central banks have applied macro-prudential policies (e.g., use of reserve requirements) at least since the aftermath of the 1997 Asian financial crisis and the 1998 Russian financial crisis. Most of these central banks' authorities consider that such tools effectively contributed to the resilience of their domestic financial systems in the wake of the late-2000s financial crisis. Tools must be developed to prevent systemic threats resulting from non-bank financial intermediation.

## VII.2 Choosing Effective Policy Tools

To reduce the risk of a systemic breakdown, supervisors may try to indirectly manage exposures over the cycle and amongst institutions. The authorities have a host of potential instruments to choose from. Policy tools under consideration range from rather indirect measures, which alter the cost of funding through capital and liquidity requirements, to very direct measures to control threats from excessive credit expansion" and "tools to address structural vulnerabilities and key amplification mechanisms of systemic risk expansion". The following are potential instruments to address threats to credit expansion and structural valuer abilities and system risk.

### VII.2.1 Capital-Related Instruments
Basel III envisages a so-called capital conservation buffer, a countercyclical buffer as well as a SIFI surcharge, which can all be seen as macro-prudential tools.

### VII.2.2 Precautionary Capital Buffers
The primary goal of macro-prudential regulation should be to increase resilience of the financial sector through capital buffers, rather than controlling the credit cycle or manage asset price risk.

### VII.2.3 Counter-cyclical Capital Buffers
The effectiveness of macro-prudential policy instruments critically hinges on both their ability to slow down credit growth in a boom phase and to avoid credit contraction in a crisis situation. Counter-cyclical risk-weights could be designed to fluctuate around a long-term average, which reflects through-the-cycle default probability. Reducing risk weights, however, would allow banks to strengthen their capital base, without having to reduce the size of their balance sheet or to go to the market for additional funding.

### VII.2.4 Dynamic Provisioning
Dynamic or statistical provisioning can be used to smooth reported profits over the cycle and to provide a further buffer in addition to equity capital. From a macro-prudential perspective, dynamic provisioning can be used to discourage banks from granting too much credit.

### VII.2.5 Credit-Related Instruments
Credit-related instruments such as loan-to-value or debt-to-income ratios, or outright lending limits, can be used to control lending more directly over the cycle.

### VII.2.6 Loan-to-Value Ratios
Standard loan-to-value ratios are a common instrument in the residential mortgage business.

### VII.2.7 Dynamic Haircut-Setting and Margining
Haircuts on collateral value and margin requirements limit the maximum exposure that market participants can take, i.e. analogous to LTV ratios in bank lending. Haircuts and margins are set by a dealer or central counterparty to manage and limit their exposure in dealing with clients. From a macro-prudential perspective it makes sense to reduce hair-cuts and margin requirements in a counter-cyclical manner to avoid a squeeze in market liquidity. As prudential tools are the key instrument in the framework, where tensions exist between their use from a micro-and macro-prudential perspective, mechanisms need to be in place to assess and ensure their consistency.

## VII.3 An Overview of the New Supervisory Bodies in EU, US &UK
Table below provides an overview of the new institutional framework at the European level, in the US and in the UK, respectively.

**Table 3: Macro-prudential Supervision in Comparison**

| | **EU**<br>**European Systemic Risk Board (ESRB)** | **US**<br>**Financial Stability Oversight Council (FSOC)** | **UK**<br>**Financial Policy Committee (FPC)** |
|---|---|---|---|
| Mandate | - Prevent or mitigate systemic risks to the EU financial system<br>- Contribute t o smooth functioning of the internal market and ensure sustainable financial sector growth | - Identify and respond to emerging threats to UD financial stability<br>- Promote market discipline, eliminate bailout expectations | - Identify and assess systemic risks in the UK financial system<br>- Select the most appropriate policy tools to address systemic risks |
| Instruments | - Systemic risk warnings and non-binding recommendations to EU member states<br>- No formal directive power but recommendations can be made public on a "comply or explain" basis | - Recommendations to supervisory authorities on heightened prudential standards<br>- Designation of systematically relevant non-bank financial institutions and financial market utilities<br>- Reporting to Congress on regulatory gaps | - Recommendations on systemic risks to the Financial Services Authority (FSA) and financial institutions<br>- Directive powers requiring micro - prudential authorities to implement specific tools |
| Governance structure | - Chair: ECB President<br>- Plus 37 voting members, including central bank governors and 28 non-voting members from supervisory agencies | - Chairs: US Secretary of the Treasury<br>- Plus nine voting and five non-voting members from supervisory agencies | - Chair: Governor of the Bank of England<br>- Plus 11 voting members (6 from BoE), one non - voting Treasury member |
| Information collection and analysis | - ECB,European Banking Authority, national central banks, Advisory Technical Committee (ATC), Advisory Scientific Committee (ASC) | - Office of Financial Research (OFR), Federal Reserve and other financial regulatory agencies | - Bank of England |
| Advantages | - Fills an institutional void in EU systemic risk monitoring and macro-prudential supervision | - All regulatory bodies under single watch; can bring institutions under the scope of federal oversight | - Can implement specific macro - prudential tools (e.g. minimum capital requirements |
| Challenges | - Supervision continues to be nationally based<br>- Complex governance structure | - Regulatory landscape remains complex; leadership effectively unchanged from pre -crisis set-up | - No direct supervision over financial firms or markets |

Note: for the UK, interim FPC, and Formal legislation for the FPC still in process.
Sources: Kern et al, (2012), FSOC, ESRB and Bank of England.

### a. The European Systemic Risk Board (ESRB)

In the EU, the European Systemic Risk Board (ESRB) complements three other supervisory agencies, which deal with securities markets (ESMA), banks (EBA), and insurance companies and occupational pension funds (EIOPA). While supervisory powers still lie with the national authorities, the role of the ESRB is to issue warnings and recommendations addressed at national policy makers. The ESRB's success will depend crucially on the quality of the analysis produced and persuasiveness of the recommendations issued.

### b. The Financial Stability Oversight Council (FSOC)

In the US, The Dodd-Frank Act assigned the task of monitoring systemic risk to the Financial Stability Oversight Council (FSOC). The FSOC is concerned with the identification of systemic risks, with a special focus on the monitoring of systemically important financial institutions. One of its main tasks is the designation of non-bank financial institutions and financial market utilities that are considered too big to fail and should be brought under heightened supervisory scrutiny. The FSOC is institutionally rather independent from the central bank, but closer to the US Treasury, with the Secretary of Treasury holding the chair and the Office of Financial Research (OFR).

### c. The Financial Policy Committee (FPC)

The macro-prudential supervisory body in the UK, i.e. the Financial Policy Committee (FPC), has been modeled after the Monetary Policy Committee, which determines the monetary policy stance; the FPC has the task of determining the macro-prudential policy stance. The FPC analyses excessive credit growth and systemic risk in the UK financial system.

## VII.4 Commonly used macro-prudential instruments

**Tools to address threats from excessive credit expansion in the system**

Time-varying capital requirements (e.g., risk weights);
Dynamic provisions;
Ceilings on credit or credit growth;
Caps, possibly time-varying, on loan-to-value (LTV) ratio;
Caps, possibly time-varying, on debt service-to-income (DTI) ratio;
Minimum, possibly time varying, margin requirements; and
Reserve requirements

**Tools to address key amplification mechanisms of systemic risk**

Limits on maturity mismatches;
Caps on foreign currency lending;
Limits on net open currency positions or mismatches; and
Levy on non-core funding.

**Tools to mitigate structural vulnerabilities and limit spillovers from stress**

Additional loss absorbency related to systemic importance;
Disclosure policy for markets and institutions targeting systemic risk; and
Resolution requirements for SIFIs.

The instruments are often used in combination. Calibrations are often based on discretion and judgment rather than rules, although some countries have used rule-based instruments. While rules have merits – they can help to overcome policy inertia, enhance accountability, and create greater certainty for the industry.

In respect of the time-dimension of systemic risk, the Basel III framework puts in place three elements to address pro-cyclicality: a maximum leverage ratio, a capital conservation buffer and a countercyclical capital buffer.

In both the build-up and release phase of the buffer, the exercise of judgment remains critical. Jurisdictional reciprocity principle is designed to protect banks from credit cycles outside the home country, and addresses incentive challenges to circumvention.

## VIII. Implementing Macro-Prudential Framework

### Implementation in Basel III

Basel III reflects a macro-prudential approach to financial regulation. Specifically, concretely, under Basel III, banks' capital requirements have been strengthened and new liquidity requirements, a leverage cap and a countercyclical capital buffer have been introduced. Also, the largest and most globally active banks are required to hold more and higher-quality capital, which is consistent with the cross-section approach to systemic risk.

Institutional strength of the supervisory system, effectiveness of the tools used as well as quality of the analysis produced represent key success factors. The criterion of success is strengthening the resilience of the financial system to deal with stressful conditions, credit and asset prices, and act as an effective speed limit. It can influence risk perceptions and attitudes – the price of risk – and as such complement closely macro-prudential tools.

The macro-prudential approach was originally designed with *private* sector sources of financial instability in mind; hence the prominence of booms and busts in private sector credit and asset prices. Most recent experience has reminded us that the public sector, too, can be a source of financial instability. This has implications for the design of the indicators of systemic risk and policy response. The review of the securitisation framework, including calibration, reliance on ratings and identifying arbitrage opportunities; and development of recommendations on re-launching sound securitisation markets would be required.

Macroeconomic and financial stability consequences of surges in capital inflows can be difficult to manage. Countries have been using a range of policy measures to address these challenges, including macroeconomic policies (e.g., exchange rate

appreciation, fiscal tightening and foreign exchange intervention). Macro-prudential policies have also been used to address financial stability risks associated with capital inflows.

In the area of system-wide global monitoring, significant progress is already being made. International efforts include those of the FSB Standing Committee on Assessment of Vulnerabilities, the IMF's regular bilateral and multilateral surveillance, the IMF-FSB Early Warning Exercise, the G-20 Mutual Assessment Process, and various work streams at the BIS, notably the regular monitoring by the CGFS that informs regular discussions among central bank Governors. A key concern is that macro-prudential tools may create the potential for cross-border regulatory arbitrage.

## IX. Institutional Arrangements for Macro-Prudential Policy Making

Institutional arrangements for macro-prudential policymaking should be conducive to effective mitigation of systemic risk. This involves several aspects: having a clear objective; providing incentives and tools for authorities to act commensurate with that objective; supporting accountability and transparency of decisions; and ensuring effective coordination across policy areas that have a bearing on financial stability.

The existing institutional design of macro-prudential policy is by discussing a set of common elements: mandate; powers and instruments; accountability and transparency mechanisms; composition of the decision-making body; and arrangements for domestic policy coordination.

### a. Mandate

A formal mandate can improve the clarity of decision making.

### b. Powers and instruments

The recent IMF macro-prudential survey suggests that emerging frameworks highlight the importance of information collection and decision-making powers. The power to request information directly from private firms is critical. Powers to communicate risk warnings and to recommend or direct the adjustment of regulatory instruments are quite common in existing and emerging frameworks. Examples include the ability to issue non-binding recommendations to other authorities—as established for the ESRB in the European Union, the Financial System Stability Council (FSSC) in Mexico, the Financial Policy Committee (FPC) in the United Kingdom, and the Financial Stability Oversight Council (FSOC) in the United States. The recommendations are often subject to a "comply or explain" mechanism (e.g., in EU, UK and US), or to publish recommendations.

### c. Accountability Arrangements

The case for clear accountability arrangements is strengthened given that 'costs' of macro-prudential measures (restrictions on certain activities) are felt immediately,

while 'benefits' (lower incidence of financial distress) accrue over the long-term and are hard to measure. Transparency and clear communication of policy decisions will include ex-ante statements of strategy, publication of records of meetings, Financial Stability Reports and annual performance statements with an ex-post assessment of policy effectiveness.

### d. Composition of the Decision-Making Body for Macro-Prudential Policy

In many countries, macro-prudential policy is conducted through committee arrangements. The creation of such committees is most obviously desirable when multiple bodies have a financial stability mandate, inter-agency committees can bring together different perspectives on the sources of systemic risk and the potential for regulatory arbitrage, as well as identifying the most appropriate tools. Central banks are always represented and often play a leading role. The central bank may have clear responsibility for both macro-prudential and micro-prudential policy (as in Malaysia and, prospectively, the UK), or account for a large share of the votes in the committee (as in the ESRB).

Finance ministries are often involved in setting objectives and priorities for macro-prudential policy. Finance ministries are often involved in setting objectives and priorities for macro prudential policy, and have an important role if changes in legislation are expected to be needed to mitigate systemic risk. Regulatory and supervisory agencies play a key role in macro-prudential policy by adjusting the prudential tools under their control to meet macro-prudential objectives, and by intensifying micro-prudential supervision. The role of securities and market conduct regulators in monitoring and addressing systemic risk in capital markets should also be recognized.

### e. Mechanisms for Domestic Policy Coordination and Consistency

An essential function of any institutional arrangement is therefore to promote coherence in the application of all policies that have a bearing on financial stability. Committee-type arrangements can help to address possible frictions between the objectives of different policies, promoting the resolution of conflicts. For example, tension may arise over when to draw-down on counter-cyclical buffers.

Although monetary and fiscal policies remain formally outside the macro-prudential policy framework, there are nevertheless potential benefits in coordinating these and other policies with macro-prudential policy. Policy coordination typically relies on the overlapping membership of policy committees. Coordination arrangements also need to recognise that macro-prudential policy clearly cannot be a substitute for sound macroeconomic policy. Monetary and fiscal policies need to continue to focus on correcting macroeconomic imbalances, with macro-prudential policy focused on ensuring that systemic risk is well-contained. Such a clear division of labour helps protect the independence arrangements for monetary policy that are needed for maintaining price stability.

## X. Macro-Prudential Supervision

Macro-prudential supervision, aims to preserve financial stability by preventing the build-up of systemic risk and containing shocks to the financial sector and the real economy as a whole. To this end, macro-prudential supervision assumes a market-wide perspective: rather than being concerned with the viability of individual institutions. Macro-prudential policy looks at the viability of the financial system as a whole.

The macro-prudential policy instruments are mainly derivations of micro-prudential tools, such as capital requirements or loan-to-value ratios, which incorporate a perspective on systemic risk. Macro-prudential policy in a wider sense also includes measures that affect the legal, fiscal or monetary regime. The role of a forward-looking macro-prudential supervisor, moderating uncertainty and alert to the risks of financial innovation, is therefore justified.

The macro-prudential supervisor also collects and analyses data. Macro-prudential supervision operates mainly with two communication instruments, namely policy recommendations and risk warnings. By issuing policy recommendations, macro-prudential supervisors assume an indirect control over micro-prudential instruments. A conflict of interest can arise if the macro-prudential supervisor wishes to relax lending conditions as a countercyclical measure, while the micro-prudential supervisors are concerned with the quality of the credit portfolio of the affected institutions. The micro-prudential supervisor may wish to raise capital standards to ensure that individual institutions survive in a stress situation, whereas the macro prudential supervisor may be concerned with the risk of a credit crunch. In most jurisdictions, the final say remains with the micro-prudential supervisor, which potentially limits the effectiveness of macro-prudential supervision. Supervisory action is based on discrete decisions or on predetermined rules, depending on the policy framework and the instruments used. Micro-prudential supervisor is responsible for data gathering and maintaining the contact with financial institutions.

By issuing policy recommendations, macro-prudential supervisors assume an indirect control over micro-prudential instruments and as such have no direct control over these instruments. A conflict of interest can arise if the macro-prudential supervisor wishes to relax lending conditions as a countercyclical measure, while the micro-prudential supervisors are concerned with the quality of the credit portfolio of the affected institutions. The macro-prudential supervisory authority may be given to a single entity, existing (such as central banks) or new, or be a shared responsibility among different institutions (e.g., monetary and fiscal authorities). The management of systemic risk in the U.S. is centralised in the Financial Stability Oversight Council (FSOC), established in 2010. It is chaired by the and its members include the Chairman of the Federal Reserve System and all the principal U.S. regulatory bodies. In Europe, the task has also been assigned since 2010 to a new body, the European Systemic Risk Board (ESRB), whose secretariat is ensured by the European Central Bank. Compared with its U.S. counterpart, the ESRB lacks direct enforcement power.

## XI. The Role of Central Banks

In pursuing their goal of maintenance of price stability, central banks remain attentive to the evolution of financial markets. A complementary relationship between macro-prudential and monetary policy has been advocated. The organisational structure of institutions such as the Financial Stability Oversight Council and European Systemic Risk Board reflect that central bankers have a decisive participation.

The macro-prudential approach calls for a fundamentally different way in which threats to financial stability are addressed. Two issues are of major concern: preventing the build-up of systemic risk by managing credit and asset price cycles and increasing resilience of the financial system to systemic shocks.

In Nigeria, the CBN in 2009, ordered the diagnostic review of banks that were exposed to the capital market. The exercise revealed a lot defects. The CBN therefore implemented a number of initiatives in the interest of the banks and the depositors to safeguard the stability and soundness of the system. The initiatives are summarised below:

The CBN intervened in eight banks by removing the executive management teams and the board of directors and appointing new ones to run the affairs of the affected banks. It also injected N620 billion in the form of Tier 2 Capital (seven-year convertible bond) into the banks;

The Bank also established the Asset Management Corporation of Nigeria (AMCON) as a special purpose vehicle SPV to free banks of their toxic asset burden;

Established the Financial Stability Committee (FSC) to strengthen systemic stability in the financial system, through the formulation of monetary policy and macro-prudential rules. The FSC and the Monetary Policy Committee are at the core of the new macro-prudential framework;

Implemented a risk-based and consolidated supervision framework in line with international best practice;

Adopted a Common Year-End for Banks in Nigeria with effect from December 31, 2009. Furthermore, implemented the International Financial Reporting Standards (IFRS) in December 2012;

The CBN streamlined its organizational structure to ensure better supervision and regulation of the industry;

The CBN through the Financial Services Regulation Coordinating Committee (FSRCC), fostered collaboration and harmonized its policies with those of other regulatory agencies, such as SEC, NAICOM, PENCOM, etc., for better supervisory impact; and

The CBN has strengthened corporate governance in banks by limiting the tenure of managing directors to a maximum of ten years. Also, the former top management of the CBN and the NDIC are no longer eligible to hold offices in Nigerian banks, including their subsidiaries, for a maximum period of five years after their exit from service.

## XII. Financial System Stability in Nigeria

The CBN has established a Macro-prudential Division in March 2010 in its Financial Policy and Regulation Department to:

- Provide early warning signals that would protect the entire financial system from distress, rather than focusing only on individual institutions in the system;
- Avoid large and burdensome costs to the economy, by adopting more cost-effective distress resolution mechanisms;
- Identify the collective risks faced by the banking system rather than those faced by individual banks; and
- Examine risks that might arise from contagion as a result of the interaction of banks as part of the financial system, rather than only on a bank-by-bank basis.

Effort have been made by the CBN and other financial institutions in the system to drift the nation towards financial stability. The following are some of the issues that have been addressed to achieve the objective of financial stability;

- A comprehensive prudential guideline was put in place in 2010;
- Banks were to develop and implement a risk based pricing model;
- Review of the existing code of corporate governance for banks;
- Creation of a unit responsible for AML/CFT issues;
- Financial infrastructure; and
- Several measures to contain liquidity crisis which included:
  - Reduction of liquidity ratio from 30 per cent to 25 per cent
  - Injection of N620 into eight ailing banks
  - CBN guarantee of interbank market transactions
  - Adoption of Basel II and IFRS in 2012.

## XIII. Conclusion

In summary, macro-prudential issues are different from micro-prudential issues. They are about how interdependencies and endogeneities in the system lead individual firms to behave homogenously. The use of market prices in valuation and risk assessment is a major source of homogeneity, especially along the credit cycle.

Systemic resilience requires heterogeneity of views and behaviour. In the pursuit of standards, 'best-practices' and microprudence, regulation have artificially created homogeneity and systemic fragility. Where possible we must design micro-prudential regulations in a way that minimises their macro-prudential consequences and given that this will not always be possible, we must complement micro-prudential regulation with macro-prudential regulation.

The financial crisis, which started in 2007, has revealed a number of short-comings of the regulatory and supervisory regime. With the benefit of hindsight, it seems that the focus of prudential supervision had been too narrow and the instruments used to prevent systemic risk were insufficient.

In search of a truly macro-prudential response to systemic risk, supervisors would need

to break new ground. With the institutional framework already established, the search for suitable policies and instruments remains ongoing. Choosing adequate policy instruments and applying them in a sensible manner will be key to achieving the stated objectives of macro-prudential supervision. In the EU, US and other jurisdictions, new supervisory bodies have been established to fill the institutional gap between monetary policy, micro-prudential and macro-prudential.

The financial system has witnessed a rapid growth that has not been supported by appropriate measures designed to encourage prudent risk management practices. This fact, taken along with other issues, such as corporate governance failures, the absence of investor and consumer sophistication, inadequate disclosure and transparency, critical gaps in the regulatory framework and regulation, uneven supervision and enforcement by regulators, as well as macro-economic instability that was caused by large and sudden capital inflows, among others, has precipitated the crises that have negatively impacted the financial system.

The CBN, as part of its ongoing efforts to attain and promote financial stability, has recently articulated various policies aimed at addressing any likely constraint to the stability of the financial system.

## References


Allen, F. and D. Gale (2000a). "Financial Contagion", *Journal of Political Economy* 108, 1-33.

Bank of England (2009). "The role of macro prudential policy", *A Discussion Paper*, November.

Bank for International Settlements (2009a). The 79th *Annual Report*, June.

Borio, C., C. Furfine and P. Lowe (2001). "Pro-cyclicality of the financial system and financial stability: issues and policy options" in "Marrying the macro-and-micro-prudential dimensions of financial stability", *BIS Papers*, no 1, March, pp 1–57.

Borio C. (2009). "The Macro-Prudential Approach to Regulation and Supervision, What? How? Why?" Presentation to the Banque de France and Toulouse School of Economics Conference on "The Future of Financial Regulation", January 28.

Brunnermeier, M. (2009). "Deciphering the 2007/8 Liquidity and Credit crunch", *Journal of Economic Perspectives*, No. 23.

Calomiris, C. and J. Mason (2000). "Causes of U.S. Bank Distress during the Depression", *NBER Working Paper*, W7919.

Chang, R. and A. Velasco (1998b). "Financial Crises in Emerging Markets: A Canonical Model", *New York University Working Paper*.

Central Bank of Nigeria (2010). *Financial Stability Report*.

Cihak M. (2006). "How do central banks write about financial stability?", *IMF Working Paper* WP/06/163.

Crockett, A. (2000). "Marrying the micro- and macro prudential dimensions of financial stability", *BIS* Speeches, September 21.

Das U., M. Quintyn, and K. Chenard (2004). "Does regulatory governance matter for financial system stability?", *IMF Working Paper* WP/04/89

Davis, E. P. (1995). "Debt, financial fragility and systemic risk", Oxford University Press

De Bandt, O. and P. Hartmann (2000). "Systemic Risk: A Survey", *ECB Working Paper* No. 35, European Central Bank.

Financial Stability Forum (2009). Report of the Financial Stability Forum on addressing procyclicality in the financial system, Basel, April.

Goodhart C. A. E. (2005). "Financial regulation, credit risk and financial stability", *National Institute Economic Review*, 192, 70-79.

Goodhart, C. A. E., P. Sunirand, and D. Tsomocos, (2006). "A Model to Analyse Financial Fragility", Economic Theory, *Springer*, Vol. 27, Issue 1, pp. 107-142.

Huang X., H. Zhou and H. Zhu (2010). "Assessing the systemic risk of a heterogeneous portfolio of banks during the recent financial crisis", *BIS Working Papers*, no 296, January.

IMF (2009). "World Economic Outlook", October.

IMF and World Bank (2005). "Financial sector Assessment", A hand book.

Ioannidou, V., S. Ongena and J. Peydrò (2009). "Monetary policy and subprime

lending: a tall tale of low federal funds rates, hazardous loans and reduced loan spreads", *European Banking Centre Discussion Paper*, no 2009–04S.

Kindleberger C. P. (1978). "Manias, Panics and Crashes: A History of Financial Crises", Basic Books, New York.

Minsky H. P. (1977). "A Theory of Systemic Fragility", Altman E. I. and A. W. Sametz ed., Financial Crises, Wiley, New York.

_____(2009b). "Addressing financial system pro-cyclicality: a possible framework", note for the FSF Working Group on Market and Institutional Resilience, April.

# Systemic Surveillance and Use of Macro-Prudential Indicators

*Ik Muo**

## I. Introduction

The clamour for Macro-prudential (MP) paradigm did not start in 2008 although, it must be acknowledged that the recent global financial and economic crises re-ignited the interest for an MP approach to regulatory intervention as well as heightened its importance and urgency. As at 2003, Borio stressed the need to strengthen the macro- prudential orientation of the regulatory and supervisory framework (Borio, 2003). Other earlier writers like Crockett (2000a and 2000b), Borio, et al. (2001) and Tsatsaronis (2002). Mortinnen, et al. (2005), emphasised the importance of MP analyses, influenced by the lessons of the banking crises experienced in the 1980s and 1990s. They called for a proper appreciation of emergent potential sources of risks rather than concentrating on the extant sources. The 2008 crises were indications that the new sources of risks were not fully appreciated or if they were appreciated, they were not proactively managed or contained.

Two major lessons that emerged and were reinforced by the 2008/2009 crises(the ghosts of which are still hovering around the globe) are the speed and high impact of contagion (accentuated by innovations in technology) and the dangers created by institutions that are too big(and complicated) to fail and too big to save (systemically important financial institutions). The too-big syndrome is not a new development because Borio (2003) emphasised that larger institutions have greater system-wide significance and as such, from an MP perspective, they would be subject to tighter prudential standards. This is indeed consistent with the traditional practice of at least subjecting them to more frequent and intense supervision. Lehman was both an example of the dangers of contagion and the too-big syndrome. Prior to the collapse of Lehman, the US and global financial markets were already in crises but these were still of manageable proportion. But the fragile trust and credibility that still existed vanished on September 15, 2008 when Lehman collapsed. The failure of Lehman (or the decision not to save it) was catastrophic because it put at risk the US funds market worth US$3.5 trillion and the entire global financial architecture. It not only impacted on others who held securities 'manufactured' by the firm, but also had a panic effect. By that weekend, (following the collapse of Lehman), more than US$200 billion had been pulled out from money market funds by retail and institutional investors. When

*Ik Muo is with the Department of Business Administration of the Olabisi Onabanjo University, Ago-Iwoye. The usual disclaimer applies.*

other funds are included, the hemorrhage was up to US$400 billion (Duyn, et al, 2008). This was notwithstanding the fact that Lehman Brothers operated mostly from the US and that the sub-prime crisis was mostly a US/UK affair.

On the 'too-big-to-fail' issue, the combined assets of the BIG 5 in the UK are worth 4 times the GDP. Wolf (2008) estimated that a recapitalisation of 1.0 per cent of their assets would cost the British Government an increase in debt of 4.0 per cent of GDP, while 5.0 per cent recapitalisation would lead to 20.0 per cent of GDP in debts. Efforts to save the Citigroup were very difficult because of its size, complicated structure and operations (Muo, 2010). The contagion effect also relates to government policies. That is why up to this moment, the quantitative easing (QE3) programme of the US Fed is being criticised because of its impact on other countries. While Bernanke believes that it boosts US spending and growth and thus supporting the global economy (positive contagion), others like Guide Mantega (Brazil's Minister of Finance) and Masaaki Shirakawa (Governor, Bank of Japan) are concerned about the loose credit and volatile capital inflows into emerging markets.

This paper examines the practice of systemic surveillance through macro-prudential analyses and use of macro-prudential indicators. The rest of the paper is divided into 6 parts. Part 2 discusses macro-prudential (MP) surveillance; Part 3 covers the key methodologies and approaches while the MP indicators are x-rayed in Part 4. Part 5 reviews Nigerian experience with macro-prudential indicators (MPIs). Part 6 examines other issues in systemic surveillance and the paper is concluded in part 7.

## II. What is Macro-Prudential Surveillance?

MP surveillance refers to a holistic approach to surveillance that examine the entire financial system rather than the individual institutions (micro surveillance). Borio(2003) states that the objective of a macro-prudential approach is to limit the risk of episodes of financial distress with significant losses in terms of the real output for the economy as a whole. On the contrary, the micro-prudential approach emphasises limiting the risk of episodes of financial distress at individual institutions, regardless of their impact on the overall economy. Thus, the MP approach falls squarely within the macroeconomic tradition. MP analysis assesses the banking and financial systems as a whole and covers the threats to financial stability, stemming from common shocks affecting all (or a large part of) institutions or contagion of individual problems to the rest of the system. MP analysis complements the work of micro-prudential supervisors, as the risk of correlated failures, or the economic or financial market implications of problems of financial institutions are not directly covered under the micro-prudential perspective, which is best rationalised in terms of consumer (depositor or investor) protection. Table 1 compares macro and micro approaches.

MP policy frameworks address explicitly systemic risk, adopt a system-wide analytical perspective, and target tools at systemic risk. It subsumes its micro-prudential

counterpart, holds a better promise of economic performance and is more likely to deliver a safe and sound financial system. Indeed, the Financial Services Authority (FSA) (2009) holds that micro-prudential supervision is necessary but not sufficient to achieve a sound overall systemic stability and that is why the MP framework is imperative, a framework that goes beyond the micro issues to address the entire financial system.

**Table1: Macro Vs Micro Prudential Perspectives**

| | **Macroprudential** | **Microprudential** |
|---|---|---|
| **Proximate objective** | Limit financial system-wide distress | Limit distress of individual institutions |
| **Ultimate objective** | Avoid output(GDP) costs | Consumer( investor/ depositor )protection |
| **Model of risk** | In part, endogenous | Exogenous |
| **Correlations and common exposures across institutions** | Important | Irrelevant |
| **Calibration of prudential controls** | In terms of system-wide distress, top-down | In terms of individual institutions, bottom-up |

Source: Borio C. (2003). Towards a macroprudential framework for financial supervision and regulation? *Bank for International Settlement (BIS) Working Papers No 128, February*

MP policy is characterised by reference to three defining elements:

(i) Its objective: to limit systemic risk – the risk of widespread disruptions to the provision of financial services that have serious negative consequences for the economy at large.

(ii) Its scope: the focus is on the financial system as a whole (including the interactions between the financial and real sectors) as opposed to individual components (that take the rest of the system as given).

(iii) Its instruments and associated governance: it uses primarily prudential tools calibrated to target the sources of systemic risk. Any non-prudential tools that are part of the framework need to clearly target systemic risk.

MP perspective is concerned with the cross dimensions of scope, calibration, time and size. The scope of MP framework should be rather broad and should cover all institutions involved in fund intermediation and allocation of risks including non-bank financial institutions, financial markets, payment and settlement systems and market infrastructure. The prudential standards should be calibrated with respect to the marginal contribution of an institution to system-wide macro risk. It would make an

explicit distinction between the "systematic risk" (common exposure) charge and the "idiosyncratic risk" charge. Larger institutions, because of their greater system-wide significance, should be subject to tighter prudential standards. With regards to time dimension, cushions should be built up in upswings so as to be relied upon during burst cycle so as to strengthen the banks' ability to absorb deteriorating economic conditions, when access to external financing becomes more costly and constrained. Moreover, by leaning against the wind, it could reduce the amplitude of the financial cycle, thereby limiting the risk of financial distress in the first place. In other words, this strategy would add a welcome counterweight to the powerful *pro-cyclical* forces in the system.

MP policy also interacts closely with other spheres of public policy because those other policies impact on systemic risk. For example, the stance of monetary policy can affect risk-taking incentives. Similarly, fiscal policy and public debt levels can be an important source of vulnerability for the financial sector. MP policy interventions, in turn, have macroeconomic effects. For example, raising capital requirements in a credit boom may, to some extent, dampen aggregate demand and, hence, influence the macroeconomic policy environment. Because of these inter-linkages, effective MP frameworks require institutional arrangements and governance structures, tailored to national circumstances, that can ensure an open and frank dialogue among policymakers on policy choices that impact on systemic risk, resolve conflicts among policy objectives and instruments, and mobilise the right tools to limit systemic risk.

Even under the emerging financial architecture where the conventional roles of the central banks are being divided (as in the FSA model), it is argued and agreed that the central bank should monitor and regulate strategic risks because financial stability is closely aligned with the objectives of monetary policy and invariably requires a lender of last resort powers (Blinder, 2010). It is also noteworthy that the scope of Central bank responsibility is actually a continuum from micro to macro specifically as it moves from, consumer protection, supervision of non-systemically important financial institutions (SIFIs), supervision of systemically important financial institutions (SIFIs), financial stability to monetary policy (Goodhart, 2010).

## III. Key methodologies/Approaches of MP Surveillance

The joint progress report to the G20 (FSB, IMF and BIS, 2011) summarises the key approaches and methodologies used across countries as:

> *Aggregate indicators of imbalances*: These indicators use macroeconomic data or balance sheet indicators (e.g., bank credit, liquidity and maturity mismatch, currency risk, and sectoral or external imbalances) to signal the

build-up of risks in the financial system and the economy at large.. Measures of credit growth can be complemented by other indicators, for example unusually rapid asset-price growth, to form indicators of systemic risk build-up that reflect the characteristics of individual economies.

*Indicators of market conditions:* These indicators focus on developments in financial markets that may lead to generalised distress. They are typically observed at higher frequencies than the aggregate indicators mentioned above and behave more like coincident indicators of financial stress. Indicators of risk appetite (e.g., spreads, risk premia), and of market liquidity conditions are used extensively in some jurisdictions.

*Metrics of concentration of risk within the system:* These metrics relate to the cross-sectional dimension of systemic risk and focus on the channels of contagion and amplification. Beyond basic measures of size and concentration, they capture more specifically common exposures and interconnectedness among financial institutions (including non-bank financial institutions), sectors (e.g., public and private), markets (e.g., funding and credit markets), and countries.

*Macro stress testing*: Tools that have been developed to test the resilience of individual institutions are being adapted to stress test financial systems by augmenting the methodology in order to: incorporate market dynamics under extreme (tail-risk) scenarios and the amplification arising from network effects; and better assess the interactions between financial system distress and the real economy, including through multi-round adverse feedback effects. The importance of conducting top-down and bottom-up stress tests simultaneously to cross-check results is being widely recognised.

*Integrated monitoring systems*: While the metrics and approaches described above are useful on their own, they can often be combined into comprehensive monitoring systems and sometimes into composite indicators. This can provide a more coherent picture of conditions across the financial system, tailored to specific domestic circumstances. Various institutions have developed or are in the process of developing such frameworks for the analysis of systemic risk.

They warned however that, *the usefulness of specific metrics and indicators depends on a range of country and context-specific factors.... The analysis of signals provided by the indicators need to take account of the broader economic context. For example, the policy response to a credit boom would differ if strong growth could be attributable to productivity gains in the corporate sector or to a relaxation of lending standards. Quantitative indicators are often combined with qualitative information and intelligence gathered through regular contacts with market participants. Such information can provide timely insight into trends and identify areas that require a more systematic investigation.*

It is important to stress that in terms of broad framework, there are differences between the European Union (EU) and the International Monetary Fund (IMF).

The MP Framework by the European Central Bank has three building blocks (Morttinen et al, 2005).

1. Assessing current financial position of banks-their ability to withstand disturbances (profitability, liquidity and capital adequacy);
2. Analysing actual and potential sources of risk to which the banks are exposed and the size of those exposures. These may be from macroeconomic developments, sectoral developments or inter-linkages between institutions (credit risks, financial market risks, operational and legal risks, liquidity, infrastructure and contagion risks); and
3. The resilience of the banks vis-à-vis different sources of risk and vulnerabilities.

For the IMF, a MP analyses framework revolves around the following:

Assessing the risk of shock in the financial system.
Recourse to financial stability indicators.
Analysing micro-financial interactions.
Monitoring macroeconomic situation (IMF, 2006).

Beyond the broad framework, there are also differences in terminologies and even the number and measurement of the indicators. Thus, while ECB refers to it as macro-prudential indicators, the IMF refers to it as Financial Soundness Indicators (FSIs), which also subdivided it to two, namely, core and encouraged**.** Argesti, et. al (2008) undertook a comprehensive comparison of the two approaches, noting that the areas of differences have been greatly narrowed down and that countries should adopt what is most suitable to their context.

## IV. Macro-Prudential Indicators (MPI)

MPIs or FSIs are aggregated micro prudential indicators and they are used to assess different sources of risk to the financial sector: financial strength (capital ratio), vulnerabilities (asset qualities/liquidity); for non-financial sectors: assess risks from exposure to these sectors and for peer groups: identify exact sources of risks (Craig, 2002). Broadly, those most commonly used include:

(i) tools to address threats to financial stability arising from excessive credit expansion and asset price booms, particularly in real estate markets, both residential and commercial (e.g., dynamic capital buffers, dynamic provisions, loan-to-value (LTV) and debt service-to-income (DTI) ratios), but also the terms and conditions of transactions in wholesale financial markets (e.g., margins);

(ii) tools to address key amplification mechanisms of systemic risk linked to leverage (e.g. capital tools) and maturity mismatches (e.g., market and funding liquidity tools),including adjustments to take into account the prominent role played by ballooning intra-financial system exposures in the run-up to the current crisis (e.g., risk weights or limits on intra-financial system exposures); and

(iii) tools to mitigate structural vulnerabilities in the system and limit systemic spillovers in times of stress, such as additional loss absorbing capacity for SIFIs. Disclosure requirements that target common exposures, risk factors and interconnectedness (rather than the risk profiles of individual institutions on a standalone basis), and specific requirements for SIFIs in the context of effective resolution framework are also key supportive instruments in this area.

Infrastructure policies (robust payment and settlement systems, trading infrastructure, etc.) are systemic by definition and have always been a core policy strand, well before the crisis. Measures to enhance robustness of financial market infrastructure could help address the cross sectional dimension of systemic risk, and are considered complementary macro-prudential tools for the purposes of this paper, which focuses on changes in prudential standards.

Selialia, et. al (2010) highlighted three main approaches for identifying MPIs /FSIs. The first approach is to adopt the standards established by international organisations such as the IMF, BIS and ECB. The second approach is based on the underlying economic theories of financial instability as espoused by Davis (1999) that data requirements for MP analysis are dictated by the theories underpinning the concept of financial instability. Examples of the theories include the monetary approach and the concept of uncertainty and asymmetrical information and agency costs. The third approach is based on the linkages or interactions between the financial sector and other sectors of the economy. It is summarised with the aid of the circular flow of income and expenditure. The most important issue is that the indicators should be analytically and empirically relevant, that is, there should be a sensible basis for expecting a relationship between the indicator and financial instability, and indicators should have predictive power or be classified as leading indicators in the sense that changes in one variable precede changes in another.

**Table 2: Macro-prudential indicators derived from economic theories**

| Theories | Main Emphasis | Recommended Indicators |
|---|---|---|
| Theories of financial fragility | Debt accumulation: rising corporate and household debts relative to assets | Macroeconomic variables, real estate, economic sector growth, income gearing, corporate and household debts, sectoral balance sheet, credit markets and investment trends |
| Monetarist Approach | Growth of monetary aggregates; monetary policy in general | Monetary aggregates, interest rates, inflation, exchange rates |
| Risk of bank runs | Use of micro-data from balance sheet and P&L statements | Capital adequacy, overall interest rate margin, return on assets, share prices, interbank claims and liabilties |
| Uncertainty, credit rationing and Asymmetrical information | Disaster myopia. Summarise and emphasise other theories. Deviation from long-term averages are emphasised | Loan spreads, rapid growth of markets, sectoral distribution of credit, bank credit ratios, net worth of customers |
| International aspects | Vulnerability to external shocks, role of international capital flows | Foreign reserves, balance of payment transactions, foreign currency borrowing, capital inflows and contagion, commodity prices |

Source: Selialia et al (2010), p.13

Following the IMF classification, there are core indicators (essential to all countries, and covers the banking industry due to its critical role in financial stability and could be compiled for many countries) and encouraged indicators (relevant to some countries, depending on structure).

The core indicators are:

- Regulatory ratios (non-performing loans/total loans, distribution of loans and large exposures/capital)
- Earnings and profitability (return on equity, return of assets, interest margins and expenses ratio)
- Liquidity (liquid asset ratio, liquid assets/short-term liabilities)
- Market risks (foreign exchange net open position, duration (maturity mismatch)

The Encouraged indicators are

- Other banking sector FSI (leverage ratio, trading income, gross derivatives position)
- Liquidity in the security market (bid-ask spread, average daily turnover)
- Non-banking financial institutions (leverage)
- Non-financial sectors (corporate leverage, ROE, Foreign exchange, real estate)

The ECB on its own monitors scores of indicators categorised as:

Internal factors

- Profitability, balance sheet and capital adequacy
- Demand and supply (Competitive) position
- Risk composition
- Market assessment risk

External factors

- financial fragility
- asset price developments
- cyclical and monetary developments

Contagion factors

- Interbank market

The differences between the IMF's FSI and ECB's MPI are as follows. The FSI is a broad framework that covers the whole economy while the MPI covers other parts of the economy as counterparties to the financial sector and its compilation approach dwells comprehensively on the risks facing the banking industry. Furthermore, the MPIs were more aligned with accounting and supervisory standards and thus, little adjustments were made by authorities that adopted these standards, unlike the case of the FSIs. The origins of the two measures are also different; the FSIs are outcomes of the EU integration and in particular, the mandate to ensure smooth conduct of

policies for smooth prudential supervision and financial stability. The MPIs were the outcome of the global crises of 1980s and 1990s, especially the Asian crises where data and information gaps hindered detection and response to the crises, (Argresti et al, 2008).

The amendments to the IMF guide have significantly narrowed the gap between the two. It is also important to stress that both measures have the same goal: to provide quantitative benchmarks for banking soundness, they overlap significantly in the banking sector indicators and both measure capital adequacy, asset quality, earnings and profitability, liquidity and sensitivity to risks

## V. MPIs in Nigeria

Nigeria is a part of the globe and is affected by global developments. There is no doubt that CBN pays attention to financial stability and is engaged on MP regulations. It has a Deputy Governor for Financial Stability and a Financial Policy and Regulation Department with responsibility for MP regulation/supervision. This reflects a structural design indicating strategic redirection. The CBN Pillar Two revolves around ensuring financial stability under which the agenda are to establish financial stability committee, deal with macro prudential issues, engage in capital market development (as an alternative to bank funding) and the enthronement of countercyclical fiscal policies (the other three pillars: enhancing the quality of banks, enabling healthy financial sector evolution and ensuring that the financial sector contributes to the development of the real economy). The Financial Stability Committee is already functional, stress testing is a biannual affair, and like in other climes, efforts are being made to identify D-SIBs (domestically systemic important banks; the ones termed too big to fail!) for "bumper to bumper" monitoring. The Bank also has its bi-annual Financial Stability Report which gauges and publishes the health of the financial system. It has adopted and calculates a set of Financial Soundness Indicators. These FSIs for December 2010 and 2011 are shown in the Table below:

**Table 3: FSIs for December 2010 and December 2011**

| SN | Indicators | December 2010 | December 2011 |
|---|---|---|---|
| 1 | **Asset Based Indicators** | | |
| | *NPL/TL* | 17.2% | 4.9% |
| | *CLA/TA* | 18.7% | 25.7% |
| | *LA/STL* | 19.8% | 31.2% |
| 2 | **Capital Based Indicators** | | |
| | *RC/RWA* | 7% | 17.8% |
| | *T1C/RWA* | 4.1% | 18.1% |
| 3 | **Income and Expenses Based Indicators** | | 45.2% |
| | *IM/GI* | | 36% |
| | *PC/NIE* | 27.1% | 75.4% |
| | *NIE/GI* | | |

***NPL***-Non performing loan; ***TL***-Total loan; ***CLA-***Core Liquid Assets; ***TA***-Total Assets; ***LA***-Liquid Assets; ***STL***- Short-term liabilities; ***RC***-Regulatory Capital; ***RWA***-Risk Weighted Assets; ***T1C-***Tier One Capital; ***IM***-Interest Margin; ***GI*** Gross Income; ***PC*** Personnel Cost; ***NIE***-Non-Interest Expense

***Extracted from CBN Financial Stability Report, December 2010 and 2011.***

These MPIs or FSIs are useful and usable in ensuring MP surveillance but given our recent history and experiences, there is need to adopt and/or develop other indicators. This is because while the issue of MP surveillance and application of MPIs are global, local peculiarities should influence the scope and usage of these instruments. Indeed, FSA (2009) warned that *the usefulness of specific metrics and indicators depends on a range of country and context-specific factors.... The analysis of signals provided by the indicators need to take account of the broader economic context.* Furthermore, Kamgna et al (2009) undertook a study of the Central African States (CEMAC Zone) and concluded that Central banks in that region should focus on the following 6 indicators. Claims on the private sector, FDI and a combination of exports and credits to the private sector increase the risk of degradation in the banking sector; and increase in exchange rate, increase in the internal resources of the banks and the rate of inflation which reduce the risk of degradation in the banking system. Selialia, et al (2010) also did a study of the South African situation with context specific consideration.

Consequently, these indicators are to be considered as relevant for the Nigerian situation:

Sectoral exposure to stocks, oil and gas, real estate, aviation and government contracts;
Distribution and concentration of credits;
Rate of credit expansion relative to the growth of the economy;
The extent to which banks are dependent on the interbank market;
Foreign exchange trends: exchange rates and flows;
Quantum and terms of access of foreign funds; and
Exposure to non-banking financial institutions (NBFIs) which may indicate unwholesome fund flows.

Whether using the existing MPIs (as already discussed), designing a new set of 'local content' indicators, or adopting more from the basket of IMF/ECB FSIs/MPIs, it is important to remember that each indicator monitors different risks. Capital adequacy MPIs monitor financial strength; ability to absorb shocks. Asset quality MPIs – vulnerability to credit risk exposure; Market risk MPIs – vulnerability to currency and maturity mismatch and Liquidity MPIs- vulnerability to loss of access to funding. It should further be noted that these indicators should be analysed and utilised in combination; that stress testing is a critical element of MP analyses and supervision and that data should be sourced from various sources for proper analysis. Craig (2002), also emphasizes the need to enhance the role of these indicators by, among other things, strengthening their analyses by determining economic linkages between the MPIs, integrate them with stress testing, and identify relevant information from all possible sources, adopt the compilation guide and encourage its

dissemination.

The MPIs are meant to indicate threats to the financial system following which appropriate measures are taken depending on the nature, direction and seriousness of the threats. The commonly used instruments and when they are used are shown below.

**Table 4: Commonly used MP instruments**

| SN | Focus of Instruments | Examples of Instruments |
|---|---|---|
| 1 | Tools that address threats from excessive credit expansion in the system | Time-varying capital requirements (e.g., risk weights)<br>Dynamic provisions<br>Ceilings on credit or credit growth<br>Caps, possibly time-varying, on loan-to-value (LTV) ratio<br>Caps, possibly time-varying, on debt service-to-income (DTI) ratio<br>Minimum, possibly time varying, margin requirements<br>Reserve requirements |
| 2 | Tools that address key amplification mechanisms of systemic risks | Limits on maturity mismatches<br>Caps on foreign currency lending<br>Limits on net open currency positions or mismatches<br>Levy on non-core funding |
| 3 | Tools that mitigate structural vulnerabilities and limit spill over from stress | Additional loss absorbency related to systemic importance<br>Disclosure policy for markets and institutions targeting systemic risk<br>Resolution requirements for SIFIs |

Source: FSB, IMF and BIS, (2011).

It is important to take note of the following:

The instruments are often used in combination (e.g., some countries have varied LTV and DTI ratios jointly to tame real estate booms). The use of multiple instruments has advantages (it provides greater assurances of effectiveness by addressing different sources of risk) but may be difficult to coordinate and also harder to communicate than single tools;

Instruments to address excessive credit expansion in the system tend to target specific types of exposure. Differentiation by currency has been used in jurisdictions where growth in foreign currency-denominated lending was of concern. The flexibility of a more tailored and targeted approach is self-evident, but there are also limitations. For example, it requires more granular data, has higher administrative costs, may be more susceptible to circumvention and, if taken too far, could inadvertently result in intrusive credit allocation;

To contain the risk of unsustainable real estate booms, a number of jurisdictions have taken actions to restrict mortgage credit. Instruments include LTV, DTI and changing the terms on mortgage insurance; and

Calibrations are often based on discretion and judgment rather than rules, although some countries have used rule-based instruments. While rules have merits – they can help to overcome policy inertia, enhance accountability, and create greater certainty for the industry and designing them may be difficult, especially when multiple instruments are being used in combination. This is why rules are often complemented with discretion.

Some of these policies might have unintended consequences. The British Bankers Association (2012), identified some of the unintended consequences of some MP measures as follows:

**Table 5: Unintended Consequences of Some MP Instruments**

| S/N | MP Instrument | Unintended Consequences |
|---|---|---|
| 1 | Counter-cyclical buffer | Increased exposure to riskier sectors to maintain ROE |
| 2 | Sectoral capital requirements | Shift risk to other sectors |
| 3 | Maximum leverage ratio | Increase incentive to hold risky assets or complex off balance-sheet arrangements |
| 4 | Counter-cyclical liquidity buffer | May encourage riskier activities and inefficient use of liquidity which is a loss to the economy |
| 5 | LTV/LTI restrictions | May exclude some borrowers from the market. Drive activities to the shadow market |

Source: British Bankers Association (2012).

It is also important to note that some MP instruments are more effective under certain circumstances than the other as indicated in this work by Lim et. al (2011).

**Table 6: Effectiveness of Macro-prudential instruments**

| **Reductions in:** | **Pro-cyclicality of Credit** | **Pro-cyclicality of Leverage** | **Inter-connectedness Of Foreign funding** | **Inter-connectedness of wholesale funding** |
|---|---|---|---|---|
| Caps on LTV | Statistically Significant | Not statistically significant | | |
| Caps on DTV | Significant | Significant | | |
| Limits on Credit Growth | Significant | Significant | | |
| Limits on NOP | Significant | Significant | Statistically significant | Not significant |
| Limits on maturity mismatch | Significant | Significant | Not statistically significant | Statistically significant |
| Reserve requirements | Significant | Significant | | |
| Time varying/dynamic provisioning | Significant | Significant | | |
| Countercyclical/ time varying capital requirements | Not statistically significant | Significant | | |

LTV-Loan to value; DTI-Debt to Income; NOP: Net Open Position
*Source: Lim et al (2011) Macro-Prudential Policy: What Instruments and How to Use Them: Lessons from Country Experience. IMF Working Paper 11/238*

These instruments should also be regularly updated. The EU has already proposed a regulation to mitigate pro-cyclical effects of prudential regulations and most importantly, to ensure that banks accumulate capital during boom years to be applied as shock absorbers during recession. This involves the introduction of a fixed conservation buffer (graduated between 2016 and 2018), variable countercyclical buffer and an option to introduce a systemic buffer.

**Table 7: Proposed Capital Buffer under the Capital Requirement Directive (CRD) IV**

| Capital Buffer under the current CRD draft | Conservation buffer | Counter-cyclical capital buffer | Systemic buffer |
|---|---|---|---|
| Use | Permanent | Judgment based on European Systemic Risk Board (ESRB) guidelines | Judgment |
| Objective | Ensure sufficient capital to absorb losses during stress period | Mitigate risks due to excessive credit growth | Prevent and mitigate long-term noncyclical systemic or macro-prudential risks not covered by regulation |
| Level | 2.5%(built gradually between 2016-2018 | Up to 2.5% (but higher level can be imposed by national authorities) | Up to 5% as follows: 0-3% national discretion 3-5% with opinion from EC |
| Applicability | All banks | All banks | All banks or a subset |
| Authority | Competent authority or designated authority | Designated authority | Competent authority or designated authority |

Source: IMF (2012).

## VI. Other Issues in Systemic Surveillance

### VI.1 Managing the Too Big Institutions

Effort must be made to identify and pay special attention to too-big institutions and domestic systemically important banks. The ultimate goal is to reduce risk of systemic financial crises and the resulting damage. Big banks should be subjected to special prudential requirements so as to build confidence in the system and avoid instability, protect depositors and avoid the contagion of the impact of the collapse of one firm on the other, (FSA, 2009). Some of the options include:

subjecting the largest, systemically important financial institutions to higher capital and liquidity requirements, larger capital buffers/reserves and possibly tighter restrictions on leverage. The aim here would be to reduce the probability of such a firm getting to the point of failure and requiring public support. At the margin, higher capital and liquidity buffers would also reduce the impact of failure; and

restricting the range of activities that the largest financial institutions can engage in, or the extent to which they can engage in higher risk activities. This would be on the basis that in the last crisis the main source of many institutional difficulties was over-expansion into activities that are well beyond their core' business and the range of experience of their boards and senior managements. A further step on this path could include consideration of the creation of 'narrow banks' whose function would be to provide liquidity and payment services and whose activities would be limited to investing in 'safe' assets. This would be intended to create a clear barrier between utility banking and riskier, highly leveraged trading activities. Such approaches would again be intended to reduce the probability of failure of the banks at the core of any country's financial system. The new model might have addressed some of these concerns restricting the size of financial institutions, either in absolute terms or in relation to the size of the particular market or markets in which they are active. This might be achieved through regulatory or competition policy or some combination of the two. Such an approach would seek to avoid any institution becoming 'too big' in the first place, thereby allowing its failure to be absorbed in an orderly way.

FSA (2009) also itemises the drawback and challenges of some of these policy options. They are:

First, there is a difficult boundary issue – where does the regulator draw the line between those financial institutions that are to be subject to these requirements and those that are not? As noted above this may be obvious in some highly concentrated banking systems, but it is not in other, more diversified banking systems. Moreover, it is difficult to envisage how such a 'list' could be drawn up. While it might be felt appropriate, in certain circumstances, to allow a relatively large firm to fail, in other circumstances the correct response might well be to support a small firm. This illustrates the point that authorities need to have regard to the systemic nature of the situation as well as of the individual firm. The former cannot be predicted. That said, it might be misleading to think of the divide between 'systemic' and 'non-systemic' as being hard. It may be possible to develop a sliding scale approach, where supervisory requirements of a firm increase with the consequences of the spillovers from its failure.

Second, it is unclear whether the 'price' extracted ex-ante (e.g. through higher capital or liquidity requirements) will be sufficient to offset the impacts on incentives

(particularly on the part of management) that will come from knowledge that the institution falls into the category of too-big-too-fail. That said, boards and senior management of the largest firms – as well as their counterparties, rating agencies etc. – might well have already concluded that they fall into this category. Hence, any incentives effects might be marginal.

Third, setting higher requirements determined solely by a financial institution's size risks blunting the incentive for management to strengthen controls and risk management. Fourth, restrictions on the size of a financial institution or the range of activities it undertakes, while attractive in some respects, are difficult in practice to implement. As the current crisis demonstrates, today's markets are global, as are many of the customers of major financial institutions. Those customers need large, global banks capable of offering a broad range of services. Restrictions on banks' activities would reduce economies of scale and scope and limit diversification benefits for both banks and to some extent their customers. In addition, it is far from clear that specialisation in a relatively narrow field (e.g. mortgage lending) helped to avoid problems during the current crisis. Banks' high-risk activities are not confined to their trading books.

Finally, although theoretically attractive, it is difficult to see how any split between utility banking and investment banking could be implemented so as to avoid the risk of contagion between the two types of bank. However, the combination of higher capital requirements for trading risks, coupled with increased supervisory scrutiny of these risks, might well mean that some banks decide to reduce their activities in this area. But we can learn from the framework for global systemically important finance institutions as approved by FSB in 2011 as follows:

> Requirements for *resolvability assessments and for recovery and resolution planning* for global systemically important financial institutions, and for the development of institutions-specific cross-border cooperation agreements so that home and host authorities of G-SIFIs are better prepared for dealing with crises and have clarity on how to cooperate in a crisis;
>
> Requirements for banks determined to be globally systemically important to have *additional loss absorption capacity* tailored to the impact of their default, rising from 1.0 per cent to 2.5 per cent of risk-weighted assets (with an empty bucket of 3.5 per cent to discourage further systemicness), to be met with common equity;
>
> *More intensive and effective supervision* of all SIFIs, including through stronger supervisory mandates, resources and powers, and higher supervisory expectations for risk management functions, data aggregation capabilities, risk governance and internal controls (IMF, 2012).

Therefore, the CBN should: establish a methodology for identifying domestic systemically important banks and approve a specific list of entities; establish an approach for domestic systemically important institutions: a methodology for assessing the systemic importance of domestic institutions which should take into consideration the impact of a D-SIB's failure on the domestic economy (for example having regard to bank-specific factors such as size, interconnectedness, substitutability/financial institution infrastructure, complexity –including the additional complexities from cross-border activity); establish a list of these institutions and conditions for retaining the membership of that list (permanent or flexible membership?); and design a set of policy tools to be applied to contain the systemic risks posed by D-SIBs.

## VI.2 Moving Beyond the Mainstream Banking System

Financial stability concerns go beyond banks to non-bank financial institutions, financial markets, payment and settlement systems and market infrastructure. Until recently, there were little demarcations between these institutions and the banks. The new banking model tries to create the demarcation either absolutely or through the HOLDCO and ring-fencing mechanisms. There are also shadow and fringe operators even though it might be argued that their impact might not be enough to destabilise the system. While capturing the systemic implications of NBFIs requires institutional collaboration, the issue of fringe institutions ('the system of credit intermediation that involves entities and activities outside the regulated banking system') poses a different challenge. This is more so in Nigeria where their activities have created confidence crises for the banking system. The FSB recommended a three-point framework for capturing and managing the systemic implications of these shadow institutions.

The first step comprises a broad review of non-bank credit intermediation that aims to identify the main trends and areas where additional scrutiny is warranted. In the second step, the authorities narrow down the focus to areas where systemic risks are most likely to be building, by drawing on a set of 'risk factors' that highlight incipient problems. The set may include indicators of rising maturity and liquidity transformation, measures of increasing leverage, and signals of imperfect credit risk transfer practices. The authorities must also be alert to signs of regulatory arbitrage, which adds to systemic risk by undermining the effectiveness of financial regulation. The third step involves a detailed assessment of the potential systemic risks identified, through an analysis of the possible impact on the system as a whole of severe distress or failure of the most vulnerable shadow banking entities and/or activities.

### VI.3 The Issue of Stress-Testing

Stress testing (ST) is the process of:

Defining potential adverse future economic scenarios;

Measuring the sensitivity of the banks market, investment and operational risk portfolios to changes in economic variables resulting under extreme scenarios defined above;

Aggregating the results and quantifying the overall negative impact on planned profitability, capital levels and liquidity positions; and

Comparing the results to the board approved risk appetite levels and implementing risk reduction business strategies, policy changes if the result of the stress test exceeds the risk appetite.

Stress-testing may be top-down or bottom-up. Bottom up ST refers to the process where the stress loss impact is measured on each and every loan contract, trading or investment position, operational process, taking into account, the specific terms and conditions of that contract. It is top-down when it is done at the portfolio and not individual account level and an implicit assumption is made that the risk characteristics of each account in the portfolio is the same. ST is an inescapable aspect of MP surveillance and the CBN should not relent in its regular utilisation of this instrument

### VI.4. The Issue of Governance

MP policy interacts closely with other spheres of public policy because those other policies impact on systemic risk. For example, the stance of monetary policy can affect risk-taking incentives. Similarly, fiscal policy and public debt levels can be an important source of vulnerability for the financial sector. MP policy interventions, in turn, have macroeconomic effects. For example, raising capital requirements in a credit boom might to some extent dampen aggregate demand and, hence, influence the macroeconomic policy environment. Because of these inter-linkages, effective MP frameworks require institutional arrangements and governance structures, tailored to national circumstances, that can ensure an open and frank dialogue among policymakers on policy choices that impact on systemic risk, resolve conflicts among policy objectives and instruments, and mobilise the right tools to limit systemic risk. There exist monetary stability committee and the financial services coordinating council. But other countries have moved beyond the financial services authority to the establishment of the systemic risk board with membership drawn from a cross section of stakeholders in banking, finance, government, academia and statisticians. As the IMF report indicates, it involves a lot of institutional, legislative and institutional re-engineering.

## VII. Concluding Remarks

The ghost of 2008 crises is still very much around and evidences include the Europe wide protest of November 14, 2012 and the continuous worry about the future of the Euro and Eurozone; endless Greece bailout discussions, tensions and drama, miserable global growth rate in the past four years and the key issues that dominated the just concluded US Presidential elections. The key lesson of 2008 is that history repeats itself because men-and women-always ignore the lessons of history. If the wrenching experiences of 2008 are to be avoided, we must ensure systemic surveillance through macro-prudential analyses, application of MPIs and instruments and continually update the indicators and instruments, processes and governance issues must be ensured.

The CBN has already gone a long way in this direction, with a functional financial stability board, regular measurement and publication of MPIs and also regular stress testing. The scope of the MPIs should be improved to include some indicators that are particularly relevant to Nigeria's situation. The instruments should be adopted with caution, noting those that have worked and are likely to work given our peculiarities. Identifying and managing the too-big institutions requires serious attention and institutional building for systemic risk management continues to be a challenge.

Going forward, the challenges faced in the adoption and implementation MP analyses are numerous. Abolo (2012) identifies some of them as how the consuming institutions can manage micro- and macro-regulations, the independence and power to conduct effective MP analysis, coordination between institutions and authorities, the most effective instruments and frameworks and whether to be rule – based or discretionary in outlook as well as how to ensure harmony between monetary, fiscal and prudential policies. There are situations in which several international authorities take positions that are at times not exactly the same. Whatever the case, the CBN should continue to forge ahead on the MP roadmap, ensuring that it develops a globally attuned but locally relevant institutional and analytical framework as well as the international and local institutional collaboration necessary for the attainment of MP analyses and systemic surveillance.

## References


Abolo, E. (2012). "*Financial sector stability and macro-prudential regulation in Nigeria*. Welcome address at the 12th Annual Conference of Risk Managers Association of Nigeria", Sheraton Hotel ikeja, 26/7/12.

Argresti, A. M, P.Baudino, and P. Polini. (2008). "The ECB & IMF Indicators for the Macro-Prudential analysis of the banking sector: A comparison of the two approaches", *ECB Occasional Papers* 99, November.

Blinder, A. (2010). "How central should central banks be'? *Journal of Economic Literature"*, 48(1) 123-133.

Borio, C., C. Furfine and P. Lowe (2001). "Procyclicality of the financial system and financial stability: issues and policy options in marrying the macro- and microprudential dimensions of financial stability", *BIS Papers*, no 1, pp 1-57.

Borio, C. (2003). "Towards a macroprudential framework for financial supervision and regulation", *BIS Working Papers No 128*.

British Bankers Association (2012). "*Briefing on instruments of macro-prudential policy*, London, BBA, February.

Craig, R. C. (2002). "*Using Macro-Prudential Indicators for Surveillance",* Seminar for Senior Bank Supervisors from Emerging Markets, Federal Reserve Board, Washington DC, October 22nd .

Crockett, A. (2000a). "Marrying the micro- and macroprudential dimensions of financial stability", *BIS Speeches*, 21 September.

Crocket, A. (2000b). "In search of anchors for financial and monetary stability", *BIS Speeches*, 27 April.

David, K. (1999). "Governance and Australian Financial Institutions", Australian Japan Research Centre, Melbourne, Australia.

Duyn, A, D. Brewster and G. Tett (2008). "The Lehman Legacy", *Financial Times*, October 15th , p49.

Financial Services Authority (2009). "*A regulatory response to the global banking crises",* Discussion paper 09/02.

FSB, IMF and BIS (2011). "*Macro-prudential Policy Tools and Frameworks: Progress Report to G20",* 27 October.

Goodhart, C. (2011). "The emerging new architecture of financial regulation", *Proceedings of the South African Reserve Bank 2010 Conference series on Financial Stability in the post Crises Era* pp1-54.

Gray, D. (2011). "New architecture of financial regulation: Systemic risk measurement and integrating risk exposures into macro-prudential and monetary policies *Proceedings of the South African Reserve Bank 2010 Conference series on Financial Stability in the post Crises Era* pp55-68".

IMF (2006). *Indicators of financial stability: Establishment Guide*

IMF (2012). "*Republic of Poland: Technical Assistant Report: Macro Prudential Framework", IMF Country Report 12/276.*

Kamgna, S. Y., N. J. Tinang, and K. C. Tsombou, (2009). "Proposed Indicators of Macro-Prudential Supervision of the Banking System of the CEMAC Zone", *Bank of Central African States Research Paper*, July.

Lim C. (2011). "Macro-Prudential Policy: What Instruments and How to Use Them: Lessons from Country Experience", *IMF Working Paper* 11/238.

Morttinen, L., P. Polini, P. Sandras and J. Vesala (2005). "Analysing Banking Sector Conditions: How to use Macro-prudential indicators", *European Central Bank Occasional Paper* 26, April.

Muo, I. (2010). "*The Global Economic Crises: Lessons for the Nigerian Banking Industry*", 3rd Annual Conference of the Department of Finance, UNILAG on Global Economic Downturn and the Nigerian Economy May 5-6.

Selialia, F, T. Mbeleki, and K. Matlapeng, (2010). "Macro-prudential analysis of the financial system: the case of South Africa", IFC Bulletin, No 33, pp110-133.

Tsatsaronis, K. (2002). "Systemic financial risk and macro-prudential supervision", Paper presented at the Bocconi University Centennial conference on "Risk and stability in the financial system: what roles for regulators, management and market discipline?", *BIS Papers*, Basel.

Wolf, M. (2008). "It is Time for Comprehensive Rescue of Financial Systems", *Financial Times,* October 9.

# Regulation and Supervision of Financial Institutions-The Nigerian Experience

***Samuel A. Oni****

## I. Introduction

The financial system in any economy serves as a catalyst for growth and development. Financial institutions (FIs) are able to perform this critical role through financial intermediation, provision of an efficient payments system and facilitating the implementation of monetary policies. It is not surprising, therefore, that governments globally strive to evolve an efficient and stable financial system for efficient intermediation, and maintenance of public confidence.

In recognition of the financial services industry's role in economic growth and development, regulation and supervision of FIs has long been established due to market imperfections and widespread failure of the market system to recognise social costs. There is also the tendency for market participants to take undue risks that had often resulted in unexpected losses and consequent impairment of the solvency of financial institutions. In addition, excessive risk appetite can also threaten the stability of the financial system and its continued capacity to support the real sector of the economy.

In Nigeria, the financial system comprises the regulatory and supervisory authorities, the money and the capital markets operators, and the infrastructure that facilitate the efficient and effective financial intermediation and payments services in the economy. The financial institutions include deposit money banks, microfinance banks, primary mortgage banks, development banks, Islamic banks, finance companies, bureau de change, securities & brokerage firms, fund managers and private equity firms, insurance companies and insurance brokerage firms and pension fund administrators and custodians sub-sectors. In the past five decades of independence, the Nigerian financial system had passed through various phases of developments, sometimes accompanied by far reaching reforms in terms of regulatory architecture, ownership, structure, scope and depth of market.

This paper focuses on the Nigerian experience, with regulation and supervision of financial institutions and is structured into nine sections. Following the introduction, section two discusses the reasons for FIs regulation and supervision, while section three dwells on the meaning and general principles of banking regulation. Section four

---

*Samuel A. Oni is the former Director of Banking Supervision Department of the Central Bank of Nigeria. The usual disclaimer applies.*

gives an overview of the legal basis of supervision and the supervisory framework for Nigeria, while section five addresses the structure, organisation and methodology of FIs supervision with particular reference to the Central Bank of Nigeria (CBN). Section six highlights CBN's experience in the regulation and supervision of FIs. In section seven the recent CBN initiatives at strengthening the regulatory architecture are presented. Section eight highlights the resolution mechanisms for distressed and failed banks and section nine offers some recommendations and concludes the paper.

## II. Meaning and General Principles of Bank Regulation

Bank regulations are government controls (exercised by a central bank or a regulatory authority) subjecting banks to certain requirements, restrictions and guidelines.

Regulations create transparency between banking institutions and the persons with whom they conduct business. Given the interconnectedness of the banking industry and the reliance that the national and indeed, the global economy place on banks, regulatory agencies maintain control over the operations of these institutions. Supporters of such regulation often hinged their arguments on the "too big to fail" notion. This holds that many financial institutions (particularly investment banks with a commercial arm) have too much control over the economy, to fail without enormous consequences. This is the premise for government bailouts, in which financial assistance by the government is provided to banks that appeared to be on the brink of collapse. The belief is that without this aid, the crippled banks would create rippling effects throughout the economy.

### II.1 General Principles of Bank Regulation:

Banking regulation is guided by the following principles:

**Minimum Requirements:** Banking regulations can vary widely across nations and jurisdictions. Generally, regulatory requirements are imposed on banks in order to promote the objectives of the regulator. Often, these requirements are closely tied to the level of risk exposure for a certain sector of the bank. The most important minimum requirement is maintaining minimum capital adequacy ratios.

**Supervisory Review:** Banks are required to be issued with a license by the regulator in order to carry on business as a bank, and the regulator conducts supervisory oversight on the licensed banks for compliance with the requirements and responds to breaches of the requirements through obtaining undertakings from the bank, giving directives, imposing penalties or revoking the bank license.

**Market Discipline:** The regulator requires banks to publicly disclose financial and other information so that depositors and creditors can use this information to assess the level of their risks and to make investment decisions. Regulators can also use market pricing information as an indicator of the banks financial health.

## II.2 Instruments for Bank Regulation:

**Capital Requirement:** the capital requirement sets a framework on how banks must handle their capital in relation to their assets. In 1988, the Bank for International Settlements (BIS) Basel Committee on Banking Supervision decided to introduce a capital measurement system commonly referred to as the Basel Capital Accords. The latest capital adequacy framework is commonly known as Basel III which is more risk sensitive than the original one but also a lot more complex.

**Reserve Requirement:** the reserve requirements sets the minimum reserves each bank must hold to (demand) deposits and banknotes. The purpose of minimum reserve ratios is liquidity rather than safety. In Nigeria, for instance, banks are required to maintain a cash reserve requirement and a retention of Net open position of the bank's shareholders funds.

**Corporate Governance:** corporate governance requirements are intended to encourage banks to be well managed, and is an indirect way of achieving other objectives.

**Financial Reporting and Disclosure Requirements:** Among the most important regulations that are placed on banks is the requirement for full disclosure of their financials. The CBN and Securities and Exchange Commission (SEC) require banks to prepare annual financial statements according to the International Financial Reporting Standard (IFRS), have them audited, filed and published.

**Credit Rating Requirement:** Banks may be required to obtain and maintain a current credit rating from an approved credit rating agency and disclose it to investors. These ratings are designed to provide comfort for prospective clients or investors regarding the relative risk that one assumes when engaging in business with the bank.

**Large Exposure Restrictions:** Banks are usually restricted from having imprudently large exposures to individual counterparties or groups of connected counterparties. Such limitation may be expressed as a proportion of the bank's assets or equity and different limits may apply based on security held and / or the credit rating of the counterparty. Restricting disproportionate exposure to high-risk investment prevents banks from placing their capital at an unnecessary risk.

**Activity and Affiliation Restrictions:** A recent case is the repeal of the universal banking model in Nigeria, which requires banks to divest from non-banking firms or activities, prompting some banks to establish a non-operating Holding Company.

## III. Why do we regulate banks and other financial institutions?

Regulation and supervision of banks remain an integral part of the mechanism for ensuring safe and sound banking practices. FIs regulation and supervision is required for three primary objectives:

promote soundness and stability of the financial system;
ensure protection of consumers of financial services; and
reduce financial crimes (anti-money laundering/counter financing terrorism)

### III.1 Safety, soundness and stability of the financial system

Regulation and supervision of FIs are intended to assure the financial well-being of individual FIs and financial stability for the economy. As financial intermediaries, the operations of FIs involve very high inherent risks, while the collapse of an FI could trigger multiple runs on other FIs with systemic consequences. Banks trade in money and credit and so are susceptible to various risks which require that they be effectively supervised to adhere to good corporate governance practices.

### III.2 Protect consumers of financial products and services

Regulation and supervision assist the government in ensuring that consumers of financial products and services are protected from predatory fees and charges, especially small depositors who rely on the financial system to save. It also attempts to ring-fence customers' short-term deposits from being applied to high risk activities by FIs as only capital and long-term loans are suitable for such purposes. In addition, the provision of safety net through deposit insurance guarantees ensures that the payment of minimum amount to depositors in the event of failure of an FI is enforced.

### III.3 Combat financial crimes

Fis regulation is also designed to combat money laundering and financing of terrorist activities. An effective regulatory framework and supervisory practices will detect money laundering and terrorist financing activities and assist in the tracking and prosecution of offenders.

In addition, to the primary objectives enumerated above, bank regulation and supervision seeks to:

i. Promote financial inclusion and check undue concentration of economic power by providing incentives to specialized FIs such as MFBs to lend to the active poor.
ii. Enhance healthy competition in the financial system by creating level playing fields for operators;
iii. Ensure effective implementation of government's monetary and credit policies;
iv. Credit allocation – to direct credit to favoured sectors.

## IV. Legal Basis of Financial Institutions Regulation and Supervision in Nigeria

As a starting point, some background on the Central Bank of Nigeria's supervisory authority may be helpful. The powers to regulate bank and other financial institutions in Nigeria are as stipulated in the Central Bank of Nigeria (CBN) Act 2007 and the Banks and Other Financial Institutions (BOFI) Act 1991, as amended. Section 2(d) of the CBN Act 2007 vested on the CBN the statutory responsibility of promoting a sound financial system in Nigeria. Also, Section 33(1) (a) (b) empowers the Bank to require certain information from and issue guidelines to FIs on matters relating to their activities and the economy, while Section 42(1)(b) mandates the Bank to ensure high standards of conduct and management throughout the banking system.

Section 30 of the BOFI Act requires the Governor of the CBN to appoint an officer of the Bank known as Director of Banking Supervision or by such other title as the Governor may specify who shall have the power to carry out supervisory oversight on banks and other financial institutions. Sections 31-34 further empowers the Bank to conduct both routine and special examination of banks and to either impose sanctions for contraventions or take remedial actions on banks in grave financial conditions.

At the apex of the regulatory and supervisory framework for the Nigerian financial system is the Central Bank of Nigeria (CBN). The Nigerian Deposit Insurance Corporation (NDIC) however, exercises shared responsibility with the Central Bank of Nigeria for the supervision of insured banks. Active co-operation exists between these two agencies on the focus and modality for regulating and supervising insured banks. This is exemplified in the coordinated formulation of supervisory strategies and surveillance on the activities of the insured banks, elimination of supervisory overlap, establishment of a credible data management and information sharing system. Other regulatory/supervisory agencies in the Nigerian financial system include:

**Securities and Exchange Commission (SEC)**
The SEC derives its power to regulate all quoted companies, including FIs, and other capital market operators from the Investment and Securities Act (ISA) 2007.

**National Insurance Commission (NAICOM)**
The Insurance Act 2003 vested the responsibility to regulate and supervise insurance businesses on NAICOM. Section 4(1) of the Act states that "subject to the provisions of the Act, no insurer shall commence business in Nigeria unless the insurer is registered by NAICOM". Also, NAICOM Act 2007 empowers it to license and supervise the operations of all classes of insurance business in Nigeria.

**National Pension Commission (PenCom)**
PenCom is charged, under the Pension Reform Act 2004 as amended, to regulate

and supervise the operations of Pension Fund Custodian (PFC), Pension Fund Administrators (PFA) and any other operators in the pension sub-sector.

**Nigeria Deposit Insurance Corporation (NDIC)**
DIC Act 2006 vested it with supervisory powers and responsibilities over deposit taking Financial Institutions (FIs) in addition to the deposit insurance and orderly liquidation of failed Fis.

**Financial Services Regulation Coordinating Committee (FSRCC)**
The CBN Act 1994 and 2007 as amended provided for the creation of the FSRCC to coordinate and harmonise the activities of the various regulators and supervisors in the financial system with a view to minimising regulatory arbitrage. The Committee is chaired by the Governor of the CBN.

**Economic and Financial Crimes Commission (EFCC)**
The Nigeria Financial Intelligence Unit of the EFCC is charged with the mandate of receiving, collating and analysing currency transaction reports (CTRs) and suspicious transactions reports (STRs) from FIs with a view to checkmating money laundering and countering financing of terrorism.

## V. Structure, Organisation and Methodology of Supervision in the Central Bank of Nigeria (CBN)

### V.1 Structure and Organisation of Supervision

The supervision of banks and OFIs has traditionally been segregated into on-site and off-site activities, which ensure regular contact with the management of the institutions. This categorisation is consistent with the Basel Core Principle No. 20 on effective banking supervision.

From 1992 to 2005, the CBN operated separate departments for on-site and off-site supervision functions. The on-site examination and surveillance was domiciled in the Bank Examination Department, while Banking Supervision Department was responsible for policy development, collation and review of statutory returns and approval of requests of regulatory nature from the banks and discount houses. The mandatory returns include: monthly balance sheet and profit and loss accounts, sector by sector breakdown of credit portfolio including insider related facilities, schedule of non-performing loans, breakdown of other assets and other liabilities. Others include: prudential ratios, particularly capital adequacy and liquidity ratios computation and key financial performance indicators. Regulatory approval requests include board and top management staff appointments, branch expansion and rationalisation, annual and half-year financial statements, mergers and acquisitions, and recapitalisation.

Following the enactment of the Banks and Other Financial Institutions Act (BOFIA), 1991, as amended, the regulation and supervision of other financial institutions including microfinance banks (MFBs), primary mortgage banks (PMBs), development financial banks (DFBs), finance companies (FCs) and bureau de change (BDCs) were brought within the powers of the CBN. Consequently, the Bank created the Other Financial Institutions Supervision Department (OFISD) formerly Other Financial Institutions Department (OFID) in 1993 to carry out the on-site and off-site regulation and supervision of Other Financial Institutions (OFIs).

In 2005, Banking Supervision and Bank Examination Departments were merged into Banking Supervision Department. This was to foster better coordination of on-site and off-site supervisory activities and speed up the monitoring and enforcement of on-site supervisory recommendations. The merger was also consistent with the practice in several other jurisdictions, including the USA, UK, India, Malaysia and Canada.

Consequently, examiners were trained to handle both on-site and off-site examination functions. Some off-site examiners were often deployed to participate in on-site examinations, while the off-site continuous review of mandatory returns from banks was transferred to the on-site examination division which was situated in Lagos for administrative purposes.

However, while the Banking Supervision Department retained its power to grant routine approvals to banks, other off-site functions including licensing, policy development and regulation, macro-prudential analysis and surveillance, financial consumer protection and anti-money laundering/counter terrorism financing were transferred to a new department named Financial Policy and Regulation Department (FPRD) created in March 2010. In furtherance of its reforms to strengthen regulation and supervision and protect consumers of financial services, the CBN carved out an independent Consumer Protection Department (CPD) from the FPRD in April 2012.

**V.2 Supervisory Methodology: Risk-Based versus Compliance Supervision**The supervisory authorities recently migrated from the compliance-based supervision to a risk-based supervision (RBS) approach in 2009/2010. This enables supervisors to focus attention on high risks areas that could threaten the achievement of supervisory objectives and to devise an appropriate risk mitigation programme for supervised institutions. The on-site process involves on-site examination of significant activities and the inherent risks; the existence and effectiveness of management control functions designed to mitigate the identified risks; and the availability of capital/earnings to absorb unexpected losses. The off-site aspect reviews and analyses the financial conditions of banks using prudential reports, statutory returns and other relevant information.

The RBS on-site examination procedures are used to evaluate the adequacy of the bank's policies and procedures, and the adequacy of its internal controls. It also reviews the work performed by internal and external auditors, the performance and activities of management and the board of directors. Furthermore, the process documents the basis of an FI's risk rating, the examiners' comments and overall conclusion regarding the condition of the bank and the quality of its management.
The implementation of RBS is expected to help solve the problems associated with transaction and compliance-based supervision technique, found to be largely reactive, narrow in scope and uniformly applied to all supervised institutions irrespective of size or complexity of operations.

### V.3 Macro-Prudential Regulation/Supervision

The term macro-prudential regulation characterizes the approach to financial regulation aimed to mitigate the risk of the financial system as a whole (or systemic risk). In the aftermath of the late – 2000s financial crisis, there has been a growing consensus among policy makers and economic researchers about the need to re-orientate the regulatory framework towards a macro-prudential perspective.

A fundamental lesson from the crisis was that effective supervision at the individual bank level, while necessary, was not sufficient to safeguard the soundness of the financial system. Thus, the need for regulators, supervisors and central bankers to supplement strong micro-prudential regulation with a macro-prudential overlay became evident. This was to effectively monitor and address the build-up of risks arising from excess liquidity, leverage risk-taking and systemic concentrations that have the potential to cause financial instability.

Therefore, macro-prudential regulation aims at reducing the risk and the macroeconomic costs of financial instability. It is recognised as a necessary ingredient to fill the gap between macroeconomic policy and the traditional micro prudential regulation of financial institutions.

More so, given that the risk of distress to the financial system was not simply the sum of the risks of its individual components, but the impact of the collective behaviour of economic agents on aggregate risk needs to be accounted for explicitly. While it may be individually appropriate for banks to take more risks during benign economic times, e.g. by increasing lending, when this behaviour becomes widespread, the overall leverage of the banking sector may create the potential for financial instability.

The comprehensive approach to macro-prudential regulation and supervision followed three aspects:

1. Recognising the separate treatment of micro – prudential and macro – prudential issues i.e. identification of concentration risk.

2. Bringing together the major international institutions and key national authorities involved in financial sector stability i.e. consolidation on group basis (community referred to as consolidated supervision).
3. Integrating emerging markets more in this process i.e. feedback loop between financial sector and the real sector.

Furthermore, macro and micro–prudential perspectives differ in terms of their objectives and understanding on the nature of risk. Traditional micro-prudential regulation seeks to enhance the safety and soundness of individual financial institutions as opposed to the macro-prudential view which focuses on welfare of the financial system as a whole. Also, risk is considered as exogenous under the micro-prudential perspective in the sense of assuming that any potential shock triggering a financial crisis has its origin beyond the behaviour of the financial system. The macro-prudential approach on the other hand, recognises that risk factors may configure endogenously i.e. as a systemic phenomenon. In line with this reasoning, macro-prudential policy addresses the inter-connectedness of individual financial institutions and markets as well as their common exposure to economic risk factors. It also focuses on the pro-cyclical behaviour of the financial system in the effort to foster its stability.

## Macro and Micro Prudential Perspectives Compared

| | **Macro prudential** | **Micro prudential** |
|---|---|---|
| Proximate Objectives | Limit financial system – wide distress | Limit distress of individual institutions |
| Ultimate Objectives | Avoid Output (GDP) Costs | Consumer (Investor/ depositor) protection |
| Characterisation of risk | Seen as dependent on collective behaviour (endogenous) | Seen as independent of individual agents' behaviour (exogenous) |
| Correlations and common exposures across institutions | Important | Irrelevant |
| Calibration of prudential controls | In terms of system – wide risk: top – down | In terms of risk of individual institutions: bottom-up. |

In view of the above, close adherence to micro-prudential rules (which leads to common behaviour by financial firms) ultimately, result in build-up of systemic risks. A central element of on-going reforms across jurisdictions is the requirement that financial regulatory authorities adopt the macro-prudential supervisory approach, with explicit considerations to threats to the stability of financial systems as a whole. Therefore, macro-prudential regulation succinctly put, requires that policies be focused on the entire financial system; consider aggregate risk as endogenous to the behaviour of individual financial institutions; and be used to limit distress in the financial systems in order to avoid the enormous costs associated with financial instability.

The CBN had attempted to establish policies that would minimise some of the factors that contribute to macro-economic instability, particularly, limiting the build-up of financial imbalances and their effects on the economy. Also, they must identify and address the issues of common exposures, risk concentrations, linkages and interdependencies that are principal sources of contagion that may jeopardise the functioning of the financial systems.

The increased emphasis on the macro-prudential approach has been attributed to the rapid expansion of credit during economic upswings and the withdrawal of same in periods of downturns as well as the highly interconnected nature of the financial system. This underscores the new thinking that a macro-prudential policy should be focused on identifying systemically important financial institutions, on the basis of well thought out criteria, and imposing capital surcharges and stricter liquidity requirements on them.

Notable amongst the developments at the international level in this direction is the Basel III framework, which contemplates the accumulation of a countercyclical capital buffer during periods of systemic risk build-up, while it is released when the risks materialise thus, serving as a stabiliser during both the expansion and contraction phases of the financial cycle. Other provisions of the Basel III framework that help in dampening pro-cyclicality include: additional minimum leverage ratio and new liquidity standards that help to check the build-up of financial imbalances during the expansion phase of the financial cycle. Other areas in this respect is the adoption of a framework for systemically important financial institutions (SIFIs) and the adoption of expected loss provisioning regimes, an idea that is being championed by the International Accounting Standards Board (IASB). The Basel Committee on Banking Supervision (BCBS) is also collaborating with IASB to issue guidance that will include

principles for supervisory review processes to reinforce robust provisioning practices in ways that would mitigate pro-cyclicality.

## VI. Experience with Regulated/Supervised Financial Institutions in Nigeria

### VI.1 General Issues

#### VI.1.1 Poor Risk Management Practices by Banks

The dearth of robust and effective risk management framework and practices had been a common denominator for most banks in Nigeria, with subsidiaries of foreign banks the only exception. Both off-site and on-site examination procedures and reports had often indicated the inadequacy of the risk management framework in FIs and dearth of human capacity in the area of credit appraisal and administration, market, liquidity, operational and regulatory risks.

#### VI.1.2 Poor or Weak Corporate Governance

Poor corporate governance has been a regular feature in most FIs off-site and on-site supervisory reports as well as that of special examinations and investigations carried out over the past decade. Poor governance, which could be as a result of board failure to exercise its oversight function or collusion by board members and principal shareholders, which have become manifest as insider non-performing loans and diversion of FI's assets.

#### VI.1.3 Data Integrity

A major challenge that confronts FI supervisors is the rendition of false, inaccurate and/or leading returns by FIs, which makes the outcome of surveillance unreliable for the purposes of decision making. False or inaccurate returns often defeats the purposes for which they were collated and could delay early detection of unsoundness and the initiation of appropriate remedial actions.

#### VI.1.4 Late rendition and late review of banks returns

Late rendition and analysis of returns were also part of the regular experiences with the regulated institutions. As a consequence the regulatory authorities were often precluded from taking timely and proactive decisions on affected FIs, which could endanger the financial system.

#### VI.1.5 Negative perception and attitude towards supervision

Perhaps, due to lack of appreciation of the purpose of supervision, there was general apathy towards implementation of supervisory advice and guidelines. Often, the Management of FIs adopt defensive posture towards examiners failing to engage

supervisors on the merits and demerits of such recommendations. Hence, the FIs failed to conscientiously develop internal policies and procedures to address regulatory concerns.

### VI.1.6 Low level of collaboration among regulators in the financial system

At the domestic level, despite the creation of FSRCC in 1994, there had been very limited interaction by way of information sharing and collaboration in on-site and off-site examinations between the CBN and securities, insurance and pension regulators. The gap resulted in regulatory/supervisory arbitrage which the operators exploited to the detriment of financial system stability. On the international scene, the situation was not different, until in 2010 with the creation of the College of Supervisors of the West African Monetary Zone to promote collaboration in bank supervision in the zone. Also, a number of MoUs have been entered into with the WAMZ member states and other countries including the China Banking Regulatory Commission on supervisory cooperation, information sharing and crisis management.

### VI.1.7 Skill gap on the part of operators and regulators

Skill gaps in the financial services industry had been endemic and particularly worrisome in the banking sector resulting in constant poaching of staff among FIs. Poaching had two negative outcomes (i) promoting people above their technical and managerial capacities; and (ii) unhealthy compensation practices exacerbating put bank management's financial pressure. At the regulator side, considerable skill gaps in terms of information technology and product innovation had been noted as they often trail behind the operators.

Closely related to the skill gap, was the reluctance of banks and other financial institutions to invest in capacity building for their workforce. Due to the incessant movement of staff from one institution to another, most FIs preferred to poach from the limited pool of skilled manpower within the industry and sometimes resort to recruiting from abroad.

### VI.1.8 Low examiners morale/fear of uncertainty

Partly, due to the low remuneration structure of the regulatory authorities compared to the regulated FIs, especially DMBs, the morale of bank examiners reached an alarming low in the 1990s and 2000s. The situation led to some incidences where bank supervisors were found to have compromised in the discharge of their duties. On the other hand, fear and uncertainty on the part of staff of FIs arising from unrealistic deposit targets, intimidation and long work hours set by Management adversely

affected their psyche, emotional stability and commitment to the institutions. These factors impacted negatively on the effectiveness of supervision during these periods.

### VI.1.9 Slow and/or inappropriate regulatory response

Slow response to examination findings and sometimes unintended outcomes of regulatory actions were observed in the past as regulatory bodies attempt to balance between regulatory imperatives and economic and political realities. For instance, while handing over undercapitalized banks to NDIC for possible turnaround might seem expedient and supported by extant laws, the reality is that taking such actions will trigger a run on the bank and could create undue panic in the banking system.

### VI.1.10 Managing Unrealistic High Stakeholders Expectations

One of the critical factors that shaped the risk behaviour of FIs in Nigeria during the past two decades have been heightened stakeholders expectaions. The shareholders, board and management as well as staff raised their expectations of FIs in terms of returns on investments, bonuses and emoluments, while government and society demanded for higher tax returns and better corporate social responsibility. This had implications for supervision as the banks and OFIs engage in high risk behavior and unethical practices to enhance their financial performance in order to sastisfy various stakeholders' expectation.

### VI.1.11 Basel 2 Accord implementation

A major challenge encountered in the supervision of FIs was the absence of data on risk ratings of credit obligors and inadequate data on operational risks for the implementation of BASEL II.

### VI.1.12 Asset Quality

Deteriorating asset quality was a permanent characteristic of FIs in Nigeria. This was not unconnected with weak credit policies and practices, insider abuses and unstable macroeconomic environment. Non-performing loans (NPLs) reached alarming levels in the late 1990s, sometimes in excess of 50 per cent of gross credits. This, led to the collapse of more than 30 banks in 1998 and several community banks and primary mortgage institutions and finance companies. Recently, in 2009, the NPL ratio of 10 banks, including the intervened banks averaged 54.2 per cent.

### VI.1.13 Frauds and Forgeries

Frauds and forgeries constituted a major threat to banking regulation and supervision

in Nigeria, especially from the early 1990s when the menace of advance fee fraud pervaded the financial system. The CBN requires banks and OFIs to put in place adequate internal control, including proper recruitment policies and practices to ensure that only fit and proper individuals are employed. In addition, FIs submit monthly/quarterly reports on frauds and forgeries to the CBN and NDIC for monitoring purposes. The experience in this regard is that banks often tended to conceal some frauds in order not to expose themselves to reputational risk, thus making the information of limited value for regulatory decision making. In spite of these measures, the number and value of reported frauds and forgeries in FIs had trended upwards.

### VI.2 The 2009 Special Examination of Banks

Prior to the CBN-NDIC special joint examination of deposit money banks (DMBs), the CBN had adopted various palliative measures to minimise the pressure on DMBs arising from the global financial crisis and these included the reduction of the monetary policy rate (MPR) from 10.25 per cent to 9.75 per cent and later to 6.0 per cent in July 2009, reduction in Cash Reserve Requirement (CRR) from 4.0 per cent to 1.0 per cent, and reduction in Liquidity Ratio from 40.0 per cent to 30.0 per cent and later to 25.0 per cent. These measures did not, however, fully resolve the problems as there doubts as to the strength and resilience of the financial system. The situation was ascribed to several interdependent factors, key among which were macro-economic instability caused by large and sudden capital inflows, failures in corporate governance, lack of investor and consumer sophistication, inadequate disclosure and transparency, gaps in the regulatory framework and regulations, uneven supervision and enforcement, unstructured governance and weaknesses within the CBN as well as weaknesses in the business environment.

In recognition of the urgent need to restore public confidence in, and accord credibility to, the financial system, the CBN embarked on a special examination of the 24 DMBs which revealed substantial non-performing loans, poor corporate governance, capital inadequacy and illiquidity in some banks. It was against this background that the CBN moved decisively to strengthen and safeguard the integrity of the industry as well as restore financial stability. The actions taken by the CBN included:

The replacement of the chief executives/executive directors of the banks identified as the source of instability in the industry,

Injection of the sum of N620.0 billion ($4.13 billion) into the banks, and guaranteeing all foreign credits and correspondent banking commitments of some of the affected banks, in an effort to prevent a systemic crisis.

**VII. Recent Efforts at Ensuring Effective FI Regulation and Supervision**Some of the recent efforts aimed at effective FI regulation and supervision are highlighted below:

The establishment, on March 1, 2010, of a Financial Policy and Regulation Department, provides a policy research base for its financial stability function. The new Department articulates broad regulatory and supervisory policies as well as reviews, on a continuous basis, the existing policies in order to enhance the effectiveness of its regulatory and supervisory roles. The macro-prudential unit within the FPRD is the policy research and data analysis center for the co-ordination of the Bank's financial stability mandate. Other objectives of the unit include: (i) limiting distress in the entire financial system rather than distress in individual institutions; (ii) identifying the risks faced by the banking system collectively, rather than those faced by individual banks; and (iii) examination risks that may arise from contagion as a result of interaction of banks with other parts of the financial system rather than on a bank-by-bank basis.

In 2012, the CBN created a Consumer Protection Department to handle complaints from customers of banks and other FIs and serve as an anchor for a national financial literacy programme to educate and empower consumers of financial services.

TChampioned the establishment of the College of Supervisors of the West African Monetary Zone (WAMZ) made up of Nigeria, Ghana, The Gambia, Liberia, Sierra Leone and Guinea in 2010, to collaborate and share information on banks with cross border presence in the zone. Also, it signed MOUs with other jurisdictions where Nigerian banks were present or which have their banks' subsidiaries in Nigeria to strengthen cross border consolidated supervision.

Under the auspices of FSRCC, the CBN has been collaborating with the Securities and Exchange Commission (SEC), the Nigerian Stock Exchange (NSE), Nigeria Deposit Insurance Corporation and National Insurance Commission on inter-agency cooperation on the implementation of Consolidated Supervision for the banking sector. The FSRCC has assisted in the evaluation of banking groups as a whole, through stress-testing and other methods. Once risks which the operations of each of the component entities in portend to the group one identified, the relevant stakeholders

are alerted to take proactive remedial actions before such risks crystallize.

In collaboration with the Federal Ministry of Finance, an Asset Management Corporation of Nigeria (AMCON) was established. The AMCON Act 2010, which was signed into law on July 19, 2010, served as a veritable vehicle to free the banks from the weight of their non-performing assets. The Corporation played a key role in the recapitalisation of the rescued banks and the post-2010 special examination acceleration of the process of financial revitalisation of the banking sector where over N737billion and N1.4 trillion was injected as equity and financial accommodation into the three bridge banks and five merged/acquired banks, respectively. As at the end of September 2012, AMCON had acquired over N3.5 trillion eligible bank assets (EBAs) for a consideration of N2.2 billion.

The CBN approved a new banking model in 2010 with the following features and requirements:

- ✓ Classification of banks into Commercial, Merchant and Specialised categories;
- ✓ Classification of their operations into International, National and Regional;
- ✓ Banks' divestment from non-bank subsidiaries or transfer of such subsidiaries to Holding Companies by May 2012; and
- ✓ Banks with real estate subsidiaries to divest from such subsidiaries by June 2013.
- ✓ Part of the new banking model is the review of the licensing requirements for all categories of institutions under the regulatory and supervisory purview of the CBN. One of the objectives of the review was to ensure that banks maintain adequate capital relative to the scope and the level of risks in their operations.

The CBN has strengthened the implementation of the Code of Corporate Governance released in 2006 in various ways. The enforcement of the tenure limit for non-executive directors and external auditors of banks and the requirement for a performance appraisal of the board are cases in point. Also, tenure limit of a maximum of 10 years was prescribed for the MD/CEOs of banks, while former governors/deputy governors of the CBN and the MD/CEO and executive directors of NDIC were barred from taking up appointments in regulated institutions until after five years of their exit from office. A three years ban was imposed on ex- departmental directors of the CBN and NDIC. To further address the challenges of weak corporate

governance, a new Approved Persons Regime for financial institutions in Nigeria was issued. The policy ensures that only credible persons of impeccable financial, personal and professional characters are allowed as major shareholders, directors and managers of banks.

In consultation with the Institute of Directors of Nigeria (IoD) and the Financial Institutions Training Centre (FITC), efforts have been intensified at educating directors of financial institutions in various areas to enhance their abilities to discharge their responsibilities as directors.

The Prudential Guidelines remains one of the supervisors' potent tools in credit review. However, that tool was considered non-supportive of the current supervisory framework in Nigeria, on account of its obsolescence. The CBN has consequently reviewed the Guidelines in May 2010 to take cognisance of the cash flow features of various sectors of the economy. Banks are expected to make dynamic provisions for loan losses, based on counter-cyclicality of performance as against the former guideline in which provisions were pro-cyclical.

The CBN has achieved compliance with most of the BASEL Core Principles and had also commenced the transition to BASEL II with the appointment of a Project consultant in 2011. Also, the IFRS was to be adopted in December 2012.

DMBs had been directed to adopt December 31 as a common accounting year- end and this has eliminated unhealthy accounting practices among banks, which tended to boost their financial performance at their different individual year-ends. To this end, banks as a requirement publish disclosure statements over and above that of other non-bank companies for the following reasons:

- ✓ To provide adequate information for the users of banks financial statements and reports, particularly high net-worth individual and corporate depositors and investors to assess and make informed decisions and judgments on the financial and operating conditions of the banks.
- ✓ Enable stakeholders to evaluate the risk management practices, the degree of board and management appetite for risk taking, adequacy of board oversight and understanding of the significant activities of the banks.

The CBN have been collaborating with the Nigerian Financial Reporting Council, international consultants and the World Bank on the implementation of the International Financial Reporting Standards for Nigerian banks by December 2012. This was consistent with the global best practice and growing agitation from informed stakeholders of banks, particularly international investors and financial analysts.

## VIII. Resolution Mechanism for Distressed Financial Institutions

The provision of safety-net for FIs depositors became imperative to protect small, unsophisticated depositors and engender continued confidence in the financial system, following the liberalisation of banking and other financial institutions licensing requirements. It was anticipated that with the withdrawal of government explicit support for FIs following the emergence of private sector banks, there was need to provide explicit deposit insurance protection for banks depositors. The Nigeria Deposit Insurance Corporation (NDIC) was established in 1989 and provided limited coverage to only DMBs depositors until 2006 when it was extended to microfinance banks and primary mortgage banks. In addition, the NDIC had jurisdiction for distress resolution.

In 1998, the NDIC liquidated 33 commercial and merchant (DMBs), following the resolution of their operating licences by the CBN. Depositors were paid the prevailing maximum insured deposit of N50,000, while the net incomes generated from the assets of banks in liquidation were subsequently shared in respect of uninsured balances on pro-rata basis.

Though distress resolution options could be aggregated under a broad spectrum, their application would usually be driven by the financial condition and peculiarity of each institution and the banking system. The focus of a good resolution option would be to maintain public confidence and stability in the banking system; ensure fairness, equity, transparency and accountability; instil market discipline while discouraging moral hazards; achieve minimum disruption of banking services (both in the problem bank and the system at large); and be cost-effective.

In addition, the resolution threshold adopted should minimise the likelihood of having to 'bail out' uninsured depositors and creditors. This is because such bail-outs tend to undermine market discipline and encourage undesirable risk-taking. It is therefore, important to balance the conflicts inherent in these factors in order to adopt the most optimal strategy in the particular circumstance. For example, the desire to consider the least costly method might be outweighed by the need to maintain public

confidence in the banking system. Another cardinal issue in restructuring an insolvent bank, by a government agency, is for the erstwhile shareholders to lose their investments, and managers to lose their jobs. This is to prevent a situation whereby you throw good money after bad money or allow monkey to watch over bananas, especially where the resolution strategy is aimed at rehabilitating the distressed bank. Some of the resolution strategies are highlighted below.

### 1. Pay-Off

This involves the payment of insured deposit up to the insurable limit to the depositors of the liquidated deposit money bank and other insured deposit taking institutions. The insurance limit is currently set at N500, 000 for DMBs, up from N50,000 in 2005. Microfinance and primary mortgage banks were brought under the deposit insurance coverage from 2006 with a ceiling of N200,000. The depositors of 103 MFBs liquidated in 2010 benefited from the insurance premium.

### 2. Insured Deposit Transfer

This involves the transfer of insured deposit of the failed bank to another bank or other banks, preferably within the same locality. The acquiring bank(s) will be given enough cash and/or riskless assets to cover the insured deposits transferred from the failed bank. Like in the pay-off, only insured deposits are fully covered and therefore, it is generally viewed as a variation of the pay-off option. The acquiring bank(s) may also purchase some or all the bad assets of the failed bank.

### 3. Bridge Bank

Under this option, the assets and liabilities of the failed bank are assumed by a new bank specifically set up for that purpose. The bridge bank would be operated for about two (2) years after which it would be sold to fresh investors. The shareholders of the failed bank would be given little or no monetary consideration since they would have lost their investments in the failed bank. The major advantage of this option is that it would permit continuity of banking services to all customers and fully protect all the depositors and creditors of the failed bank. This method was applied in August 2011 to resolve the distressed Afribank Nigeria Plc, Bank PHB Plc and Spring Bank Plc which metamorphosed into Mainstreet Bank Ltd, keystone Bank Ltd and Enterprise Bank Ltd following the revocation of the former's operating licences and takeover by the NDIC on August 5, 2012.

### 4. Purchase and Assumption (P&A)

This is akin to an acquisition by which a healthy institution offers to purchase the assets and assume the liabilities of a distressed bank. A failed bank could be split to make it attractive to banks that wish to enhance market penetration or establish new

branches where the failed bank had branches. This option was used in the resolution of 11 of the 14 banks that failed in 2006 following their inability to meet the minimum regulatory capital of N25 billion for DMBs. The NDIC had not been able to obtain Final Court Order to wind-up two of the defunct banks (Fortune and Triumph), while one had its licence restored and would soon recommence banking operations as a commercial bank with regional authorization. It would be noted, however, that the CBN funded over 98 per cent of the entire costs of P & A transactions because of the peculiar circumstances under which the licenses of the failed banks were revoked.

A major advantage of P&A is that it ensure that all depositors are protected, thereby, giving added credibility to the deposit insurance scheme. Also, it ensures continuity in rendering banking services, thereby, engendering confidence in the banking system. The P & A arrangement has proven to be the most efficient and least cost resolution strategy for failed banks in Nigerian history.

### 5. Open Bank Assistance

Allowing a failed bank to continue to operate in the same name as a going concern is called open bank assistance. It could involve change in ownership and management of the bank, injection of fresh funds in the form of equity and/or loan capital; and re-organisation and overhauling of the bank including rationalisation of staff and branches. This option was adopted in resolving the legacy Bank of the North (now Unity Bank Plc).

The Regulatory Authorities in Nigeria have had to employ a combination of strategies available under this option to resolve many distressed banks in Nigeria, especially where pay-off option appeared to threaten the erosion of public confidence in the banking system.

## IX. Recommendations on the Way Forward

To sustain and consolidate on the achievements recorded so far at ensuring financial stability by building sound, safe and resilient financial institutions and markets, the future regulatory and supervisory architecture should be centered on the following:

1. Establishment of Financial Stability Board (with or without legal responsibility) to monitor macroeconomic developments and manage systematic risks to financial stability. Its specific functions will include:
   Identification of systematic risks as the basis of monitoring and data collection process;
   Development of a common set of quantitative and qualitative indicators (Risk dashboard);
   Prioritisation of risks on the basis of an impact assessment and probability

analysis;
Issuance of risk warnings and proffer appropriate policy response or recommendation (for remedial measures of general or specific). Public disclosure may be decided on a case by case basis; and
Monitor the follow up to its recommendations and undertake stress testing.

The CBN should provide the leading role as the chair, while the governance structure should consist of the Board, Steering Committee, Secretariat and Advisory Technical Committee. Membership should include the CBN Governor, 2 Deputy Governors (DGs) (FSS & EP), NDIC, SEC, NAICOM, PENCOM, National Bureau of Statistics (NBS) and Ministry of Finance (MOF).

2. It is also essential to emphasize the critical role of liquidity in the attainment of financial stability as financial crisis is also often triggered by liquidity problems in the money market. Thus, it is necessary to identify sources of liquidity pressure in the markets, and which firms are under stress, to identify and respond proactively and effectively to liquidity problems;

3. Continue to evolve and deploy more robust and risk-sensitive supervisory framework in line with global best practice to proactively supervise the banks and their non-bank subsidiaries to nip-in-the-bud potential crisis;
4. Full and effective implementation of BASEL II and III, including liquidity management tools;

5. Creation of a Financial Soundness Technical Committee with membership from Banking Supervision Department, Financial Policy and Regulation Department, Monetary Policy Department, Research Department, Risk Management Department, Other Financial Institutions Department and Statistics with clearly defined mandate;

6. Ensure that compensation structure for the staff and management of regulatory institutions are at least at par with those of their peers in the regulated and/or supervised institutions;

7. Insist on continuous and compulsory capacity building for the regulators and operators at all levels, including the engagement and training of specialists in key supervisory areas;

8. Muster the political will to implement the prompt corrective action framework;

9. Split OFISD into two departments with one in charge of Microfinance Bank Supervision, while the other would supervise the other financial institutions. This would enable the CBN to focus more effort on MFBs, which have over time witnessed higher distress rate compared to others; and

10. Develop a broad-performance based compensation and incentive schemes for staff and executive management of FIs that will accord higher reward to long-term rather short-term performance measures. To this end, executive compensation could be structured in a manner that performance based bonuses will be in shares rather than cash payments. In addition, such shares should not be eligible for transfer/sale either privately or through Stock Exchange until a minimum of five years so that executives who take undue risks with the aim of reaping immediate benefits are put in check.

## X. Conclusion

The CBN had been the lead in FI regulation and supervision in Nigeria over the past five decades with the overall goal of promoting financial stability and economic growth. The effective discharge of the regulatory and supervisory responsibilities had been hampered by both internal and external factors. The performance of the regulatory authorities had been a mixed-one, with periods of financial stability and rapid growth in FIs being interrupted by periods of financial crisis and collapse of several FIs and regulatory interventions.

Nevertheless, in spite of the aforementioned negative experiences, the CBN and the other regulatory agencies in the financial sector had recently undertaken significant initiatives and efforts aimed at further strengthening supervision, including the introduction of risk-based consolidated supervision, a robust corporate governance framework and macro-prudential regulation of FIs.

## References

Abolo, M. E., (2012). "Financial Sectors Stability and Macro- prudential regulation in Nigeria", published by Business Day August.

Borio, C. (2003)." Towards a macro-prudential framework for financial supervision and regulation", *BIS working papers* No. 128 February.

Clement, P. (2010). "The term Macro-prudential Origins and Evolution", BIS Quarterly Review, March.

Lim, C., F. Columba, A. Costa, P. Kongsamut, A. Otani, M. Saiyid, T. Wezel, and X. Wu, (2011). "Macro-prudential Policy: What Instruments and How to use them", *IMF working paper* WP/ 11/238, October.

Miyoshi, T. (2009). "Enhancing sound Regulation and Strengthening Transparency – A case for Macro –Prudential Supervision, paper presented at the 10th IMF Seminar on Monetary and Financial Law, December 2009.

Oni, S. A., (2012). "Banking Sector Reforms-The Journey So Far", Paper presented at a seminar on the theme: "*Towards the Actualization of CBN Banking Reforms*" June.

Sanusi, S. L. (2010). "Nigeria's Banking Sector Reforms: challenges and Prospects", Paper delivered at the National Defence College, Abuja, "Macro-prudential measures and challenges for central banks". Published in SUNS No. 6929 May 25, 2010.

# Financial System Stability Framework: The Emerging Economies Experience

***Mudasiru. A. Adegbite ****

## I. Introduction

The 2007- 2008 global financial crisis and the resultant recession led to a profound re- examination of macroeconomic policy and financial regulation. The focus on financial stability had triggered regulatory reforms such as the Basel III accord which envisions more stringent capital regulation and other prudential tools. Macro-prudential policy was motivated by the fact that micro-prudential regulation is necessary but not sufficient to deal with systemic risk. Micro-prudential regulation as amplified in Basel I and II capital accords tends to view financial institutions in isolation and aims mainly to ensure that each is individually solvent. Beyond traditional micro-prudential regulation, the 2007-2008 crisis has led to a new focus on macro-prudential policy to address systemic risk and its consequences on the economy (Bernanke, 2009) .

Macro prudential analysis gained its prominence since the economic meltdown. It is different from traditional macroeconomic policies but addresses issues of financial stability in a more holistic manner. Prior to the global financial crisis, the primary purpose of traditional market policy was price stability with the belief that this would eventually lead to financial stability. Also, financial supervision had focused more on individual financial institutions with the expectation that this would guarantee the stability of the entire financial system. Since the crisis ,it is now clear that financial stability would be difficult to achieve based on the traditional monetary and micro - prudential policies. The macro prudential analysis is ,therefore ,aimed at preventing the accumulation of systemic risk within the financial system and the need to promptly address issues relating to the systems' stability.

The objective of this paper is to review the macro-prudential framework, its tools and its nexus with financial stability. The experience of the emerging market economies in

---

*Mudasiru Adegbite is a Deputy Director in the Other Financial Institutions Department of the Central Bank of Nigeria. The usual disclaimer applies.*

designing macro prudential framework would be highlighted .The remaining sections of the paper are divided into six. Following this introduction, section 2 contrasts macro - prudential policy issues against micro prudential issues. Section 3 discusses macro - prudential framework in different jurisdictions ,particularly in the emerging market economies vis-à-vis developed economies. Section 4 discusses the experience of some emerging economies in the implementation of macro prudential policies, while section 5 reviews major benefits of macro-prudential policy analysis. Section 6 presents the challenges and prospects of macro prudential analysis in relation to its linkage with the traditional monetary and fiscal policies. Section 7 concludes the paper.

## II. Macro-Prudential Vs Micro-Prudential Policy Analysis

Macro prudential policy is underlined by three main elements. These are:

to limit systemic risk;

to focus on the financial system as a whole as opposed to singular components; and

to adopt instruments and associated governance including prudential tools calibrated to target the sources of systemic risk.

The framework seeks to address broad issues which include:

identification and monitoring of systemic risk;

identification and calibration of instruments for macro prudential purposes- e.g. introduction of counter cyclical capital buffers, attention to systemically important institutions, etc;

building of institutional and governance structures in the domestic and regional context; and

focus on financial stability in the domestic and regional context .

### II.1 Micro-Prudential Policy

Micro prudential policy on the other hand focuses on:

Individual institution's health and soundness;

Individual institution's risk factors including operational risks;

Use of traditional supervisory and regulatory tools;

Price stability within the domestic economy; and

Issues of inter-connectedness and contagion.

It is important to emphasise that effective macro prudential framework requires institutional arrangements and governance structure that allow for effective

interaction among policy makers on policy choices that impact on systemic risk, resolution of conflicts among policy objectives and instruments as well as and deployment of tools to limit systemic risk. Furthermore, many jurisdictions still lack specific institutional arrangements for the conduct of macro prudential policy and will require time to fine tune existing structures to the requirements of macro - prudential policy framework.

## III. Macro-Prudential Policy Tools, Framework and Financial Stability.

Macro-prudential policy tools had relied on the traditional micro prudential tools of capital, liquidity and leverage ratios but with adjustments to contain potential sources of systemic risk such as pro cyclicality and interconnectedness. This calls for the development and use of additional policy instruments as recommended in both Basel II and III, especially issues of capital buffers and conscious efforts of preventing financial crisis. This would extend beyond the traditional role of a central bank. The use of capital buffers and reserve requirements by central banks would provide effective tools for controlling systemic liquidity if their targets are expanded from bank deposits to liabilities of other financial institutions. The effectiveness of monetary and fiscal policies when regional policy coordination is sub-optimal remains to be adequately understood. The experience of the European Union countries had highlighted the dangers in ineffective macro -and micro prudential policy outcomes and ineffective banking supervision. In the Economic Community of West African States (ECOWAS) block, the banking environment has been characterised by uncoordinated supervision amongst relevant agencies. In Nigeria, there is growing importance of the Financial Sector Regulation Coordinating Committee (FSRCC) in the area of policy coordination to prevent regulatory arbitrage even in the absence of formal macro prudential policy arrangement to drive the process. There is therefore an increasing need for the Central Bank of Nigeria, Ministry of Finance, National Planning Commission and other members of FSRCC to provide clear guidelines for a formal Committee on macro prudential policy which could be independent of the Central Bank. Whatever the framework that is adopted , however, the Central Bank of Nigeria will have to play a key role in assessing systemic risks ,as it has the expertise and analytical capacity to undertake such a task.

### Macro-prudential framework institutional arrangements in other jurisdictions:

As a result of the economic crisis in major economies, several developed countries have in recent times established separate bodies for macro prudential policy as distinct from micro prudential supervisory arrangements. This is aimed at

strengthening oversight of systemically important financial institutions and correcting the global market failures that abounded during the period.

Three distinct types of frameworks are currently in place:

Type 1: Countries in this category have an integrated micro-prudential supervisory framework with a macro prudential committee under the aegis of the Central Bank. The United Kingdom and Belgium are examples of this arrangement where the Governors of the Bank of England and the National Bank of Belgium chair the committees

Type 2: These set of countries have a diversified micro-prudential supervision framework and independent macro prudential policy committee chaired by the political head in the Ministry of Finance or the Treasury. Examples include the United States of America and the 27 countries in the European Union (EU) .

Type 3: These consist of countries with integrated micro-prudential supervisory arrangements and independent macro prudential committee where chairmanship of the committee is rotated amongst the members including the Central Bank, Treasury and the supervisory authority. Hungary is an example in this arrangement.

The merits and demerits of the arrangement where chairmanship is rotational or where the central bank drives the committee as the chair are varied. The advantages of a Committee chaired by the central bank include:

- faster decision making process;
- clearer lines of responsibility; and
- political and fiscal neutrality .

In some cases, independent committees could offer a better option for the following reasons:

- better focus on financial stability;
- protection of central bank credibility; and
- better financial and policy accountability .

The emerging economies have keyed into the arrangement in their various variants. In some cases, there are integrated micro prudential supervisory frameworks in place and independent macro prudential committees where the central banks play the major role of driving macro prudential policy. In other countries including Nigeria, the arrangement in place consists of diversified micro prudential supervisory arrangement but with central bank and the treasury driving the process of an

emerging macro prudential policy framework. While the process in Nigeria is still emerging, it is important to note that the issue of financial stability has assumed a prominent focus in public policy formulation and the Central Bank of Nigeria remains a key element in this arrangement.

## IV. Experience of Some Emerging Economies in Macro-Prudential Policy Framework Implementation

### IV.1 IMF Financial Stability and Macro-Prudential Survey

In a survey conducted by the Monetary and Capital Market Department of the International Monetary Fund (IMF) in 2010 , aimed at assessing the international experience with financial stability and the evolving macro prudential framework, three areas were identified for study. These included the institutional setup for macro - prudential policy, the analytical approach to systematic risk monitoring and the macro prudential toolkit. The survey covered 63 countries and European Central Bank (ECB) including all countries in the G.20 and those subject to mandatory Financial Sector Assessment Programs (FSAPs)

Major findings of the survey were:

1. Macro prudential policy is becoming an overarching public policy in the wake of the global financial crisis;
2. Conduct of macro prudential policy is a multi-agency consensus process;
3. A variety of indicators and quantitative tools are used for systemic risk identification, monitoring and assessment; and
4. Macro prudential policy is viewed as having a wide range of instruments. The tool kit contains most notably ,prudential and monetary tools as well as fiscal and competition policies.

### IV.2 Some Specific Country Experiences

#### IV.2.1 Nigeria

Nigeria's macro prudential policy framework is nascent. The initial steps involved increased policy coordination through the activities of the financial sector regulation coordinating committee chaired by the CBN. Also the Bank had facilitated the publication of half-yearly financial stability report ,though the legislation on financial stability as a key objective in the central bank Act has not been ratified. A directorate for financial stability within the central bank had since been created to drive the necessary policy initiatives for macro prudential policy framework and financial stability as a key policy objective through the establishment of financial system stability committee.

### IV.2.2 South Korea

Huo-kyu Rhu ,in a seminar paper that reviewed the progress of Macro-Prudential Policy Framework in South Korea noted that "there has not yet been a full-blown discussion of the macro-prudential policy framework, rather we are just taking steps to improve the current policy coordination framework". He stated that amongst G-20 member countries only South Korea and Australia do not state "financial stability" as an explicit objective in their central banks Acts.

### IV.2.3 South Africa

The Reserve Bank of South Africa has a full-fledged Financial Stability Department which coordinates activities relating to macro-prudential policy analysis. Macro-prudential analysis has been used in detecting vulnerabilities in the financial system. This involves, amongst other things, the identification of financial soundness indicators (FSIs) and the methods used to analyse them. The main method of identifying macro-prudential indicators within the South African context are outlined as ensuring compliance with international best practice, making use of economic theories and taking into account the linkages between various sectors of the economy. The analytical methods include monitoring trends of macro-prudential indicators and developing models to assist in the analysis. Stress testing remained one of the most popular modeling techniques used by most institutions.

### IV.2.4 Thailand

The Bank of Thailand coordinates matters relating to macro-prudential policy. In a keynote address, Watanagase (2004), at a workshop on Macro-prudential policy framework, opined that "no institutional framework of macro-prudential policy fits all countries alike, yet we know now that central banks should play a leading role for its expertise- albeit ,it is still important to involve the Ministry of Finance in a careful manner". This further underscores the need for inter-agency cooperation in operationalising an effective macro-prudential policy framework.

## V. Benefits of Macro-Prudential Policy

In most jurisdictions macro prudential policy framework has gained acceptance amongst policy makers ,especially the managers of the economy. The framework offers some distinct benefits when compared with micro prudential framework and other policies. These benefits include the following:

**Issues of systemic risk and financial stability**

Apart from its comprehensiveness, macro-prudential policy analysis addresses the systemic issues rather than individual institutions ,thus ,providing

a holistic overview of the entire financial system. The focus on financial stability rather than the solvency of individual institutions is a distinct advantage. Financial stability provides a more realistic measure of policy effectiveness rather than price stability or institutional solvency.

**Policy consistency**

The growing awareness amongst public policy advisors for policy consistency and coordination underscores the benefit of macro prudential policy analysis where inter-agencies cooperation and support are key elements of its implementation.

**Prevention of market failures**

The use of macro-prudential policy framework could help in preventing market failures and financial crisis. The institutional arrangements in macro-prudential policy analysis provided safeguards for appraising the financial system in a more robust manner by employing economic modeling which relied on a wide range of data to identify the systemic risks and the factors responsible for these risks as well as measures to prevent or ameliorate the risks.

**Credible alternative to monetary and fiscal policiesMacro prudential policy framework provides credible alternative to monetary and fiscal policies.** Monetary and fiscal policies are directed at addressing issues of interest rates, credit, taxes and subsidies ,among others ,whereas macro-prudential policy takes a broader perspective in addressing issues of financial stability, systemic risks, interactions with the institutions and effective coordination to achieve a common objective. Macro-prudential policy analysis without undermining the relevance of traditional economic policies provides additional tools to policy-makers for effective and proactive management of the economy.

## VI. Challenges and Prospects of Macro-Prudential Policy Framework

### VI.1 Challenges

As macro-prudential policy analysis is gaining traction over micro-prudential analysis, there are some challenges facing the full scale implementation of the policy in most jurisdictions. These challenges include the following:

**Systemic risk identification**

The identification of systemic risk is a nascent field. No common paradigm exists yet. Applied research is required in this area to ensure effective collection and analysis of economic and financial data on a domestic and global scale.

**Macro prudential tools and their effectiveness**

Macro prudential tools will need to be tested in different circumstances and their performance evaluated against expectations. In the emerging markets , the progress in implementing Basel II and III had been slow and this needs to be addressed to enhance policy effectiveness.

**Poor governance and institutional arrangements**

Most jurisdictions still lack effective governance and institutional structures for the implementation of macro prudential policies. There are potential conflicts between the new macro prudential policy framework and the traditional monetary and fiscal policies. Also political influence could be an issue where the Treasury and Ministry of Finance are saddled with the task of driving the macro prudential framework implementation.

**Data collection and data integrity**

Collection of accurate data remained a challenge especially in emerging economies where adequate and comprehensive data collection mechanisms are still problematic. Also, data integrity issues emanating from quality and quantity of information in economic and financial statistics ,could adversely impact on the performance and outcome of macro-prudential policy analysis. For developed economies, the challenge of data overload could affect focus on key elements that influence systemic risk and the overall effectiveness of macro prudential analysis.

## VI.2 Prospects

Macro prudential policy is assuming a prominent position in public policy formulation considering its focus on financial system stability. The prospects of an integrated policy framework that would address issues of financial stability in a more comprehensive manner looks bright given the growing awareness of many countries in the establishment of appropriate institutional arrangements for macro prudential policy. For the fact that the key economic and financial players in the economy agree to work together to ensure policy consistency, lends credence to growing relevance of

macro prudential policy framework. The slow progress in the implementation of Basel II and III capital accords in most emerging economies notwithstanding with appropriate incentives, macro prudential policy should enhance the overall policy environment and provide appropriate response to issues of financial crisis in both emerging and developed economies.

## VII. Conclusion

The importance of macro-prudential policy framework and its usefulness in addressing financial stability is increasingly manifest. Also, the inter agencies cooperation for the achievements of effective policy outcomes can no more be neglected. While the use of macro prudential policy framework is still evolving in most emerging economies, lessons from matured markets are central to policy formulation and implementation in the emerging economies. The need for further study on the effectiveness of macro - prudential policy in addressing systemic risks and ultimately ensuring financial stability should be given adequate priority. This will help to sustain the current achievement and extend the frontier of knowledge in public policy formulation .

The contemporary issues of systemic risk analysis, the strict capital requirements including capital buffers in Basel III and the establishment of strong institutional arrangements are key critical success factors in implementing effective macro - prudential policy both at individual country and regional levels. Emerging economies also needed to focus strategically on systemically important banking institutions as well as other components of the financial system in order to properly identify the sources of systemic risk and the actions to be taken to mitigate these risks. There is an urgent need to properly articulate action plans in emerging economies to address issues relating to Basel III capital accord for its effective implementation before the 2019 deadline.

## References

Acharya, V. (2009). "A Theory of Systemic Risk and Design of Prudential Bank Regulation", *Journal of Financial Stability*, Vol. 5, PP 224-55.

Allen, F. and D. Gale (1994). "Financial Contagion", *Journal of Political Economy*, Vol. 108, No. 1, PP. 1-33.

Bank for International Settlements (2011). "Global Systemically Important Banks: Assessment Methodology and the Additional Loss Absorbency requirement", Basel Committee on Banking Supervision, (November).

Bernanke, B. (2009). "Letter to the US Senator Corker", http: Blogs wsj.com/ economics/2009/11/18/Bernanke.

Blanchard, O., G. Dell Ariccia, P. Mauro (2010). "Rethinking Macroeconomic Policy", *IMF Staff position Note* 10/ 03, Washington.

Financial Stability Board (2011). "Macro Prudential Policy Tools and Frameworks: Progress Report to G20", Basel, Switzerland, October.

International Monetary Fund (2010). "Systemic Risk and Redesign of Financial Regulation", *Global Financial Stability Report*, (September).

----------(2011a). "Macro Prudential Policy: An Organizing Framework", *Board Paper*, April.

----------(2011b). "Towards Operationalizing Macro Prudential Policies: when to act?", *Global Financial Stability Report*, (September).

---------(2012). "Externalities and Macro Prudential Policy", *IMF Staff Discussion Note* (June).

Watanagase, T. (2004). "Thai Financial Sector and the Challenges Ahead", Address at the Conference on Asian Finance and Capital Markets, Bangkok, July 8.

# Macro-Prudential Regulation and Effective Monetary Policy

**Moses K. Tule***

## I. Introduction

The recent global financial and economic crisis exposed the fragilities, risks, interconnectedness, and structural rigidities inherent in domestic financial systems and how these can impact on global financial stability. The crisis also highlighted the inadequacies of the price stability objective and micro-prudential regulation in guaranteeing a healthy financial system, and the fact that regulators must worry about the systemic issues underlying the stability of the financial system. As a result, excessive leverages leading to build-up of financial imbalances provided a barometer for measuring financial instability. Financial deepening, complex innovative financial instruments and the integration of markets created the ease of financial contagion in fragile economies across borders to economies with overtly strong financial markets and economic fundamentals.

In the build-up to the recent global financial and economic crisis, anecdotal evidence suggests that poor monetary policy, complemented by a reliance on micro-prudential supervision could lead to a crisis of enormous dimensions, unless checked by more encompassing complementary policies. The set of these complementary policies, developed following the 1997 Asian financial crisis, provided the rationale for rethinking micro-prudential supervision as a pragmatic framework for financial stability, especially within a globalized financial system. Thus, Crockett (2000) reasoned that micro-prudential supervision, which hitherto, had been traditionally directed to protect depositors and investors, could be redesigned towards maintaining financial stability by "marrying the micro and macro- prudential dimensions of financial stability". Following this, the World Bank in a series of seminar papers examined the viability of macro-prudential regulation in ensuring financial stability. The solution toolkit of the recent global financial crisis enveloped macro-prudential policy as forming the nucleus in discussions on the assessment of health and safety of the financial system as well as the prevention of future crises. Consequently, the IMF programme for the assessment of systemic financial stability now relies more on macro-prudential policy in determining financial system stability.

*Moses K. Tule is the Director of the Monetary Policy Department of the Central Bank of Nigeria. The usual disclaimer applies.*

Institutional macro-prudential policy elicits a number of pertinent questions. These questions relate to concerns about the appropriate institutional framework for implementing macro-prudential policy, the level of interaction of a macro-prudential policy with other policies, especially, monetary policy, and the optimisation of the relationship between monetary and macro-prudential policy and the point of inflexion at which interaction is maximised.

This paper makes a bold attempt to examine some of these issues within the narrow context of monetary policy. Following this introduction, Section 2 examines some conceptual issues including the institutional framework for monetary and macro-prudential policy. Section 3 discusses the objectives and instruments of monetary and macro-prudential policy including indicators of systemic risk, while Section 4 examines at the interaction of macro-prudential with monetary policy and how this could be enhanced. In Section 5, the experiences of other countries with macro-prudential regulation are presented and lessons drawn for Nigeria. Section 6 concludes the paper and provides insights for an effective macro-prudential policy framework for Nigeria.

## II. Conceptual Issues and Institutional Framework for Monetary Policy and Macro-Prudential Regulation

### II.1 Some Conceptual Issues

Monetary and macro-prudential policies are an integral part of the macroeconomic and financial system management framework. The task involves a delicate mix of policies with significant overlaps. Since the objectives are not mutually exclusive, substantial conflicts exist as well as complementarities, requiring close coordination and collaborations with other stabilisation policies.

The task of regulating the financial system to ensure its safety, soundness and viability has always been done within a micro-prudential framework in which financial stability is seen as the sum of the health of individual institutions. However, the global financial crisis revealed the inadequacy of this approach to financial stability. The key weakness of the existing supervisory framework is that it is largely micro-static (Crockett (2000); Borio (2003) and uses a partial-equilibrium framework to regulate individual financial institutions to prevent their costly failure. In contrast, macro-prudential regulation recognizes the importance of general-equilibrium effects, and seeks to safeguard the financial system as a whole. Macro-prudential policy is, therefore, the approach to financial regulation aimed at mitigating the systemic risk within the financial system. The consensus around this view is that the overarching orientation of financial regulation should tilt towards the financial system as a whole and not just the well-being of individual institutions.

### II.2 Institutional Frameworks for Monetary Policy

**Model 1:** Full and complete responsibility lies with the central bank which sets the policy rate, targets and independently chooses the instruments.

**Model 2:** Responsibility is shared with the fiscal authority, but the central bank carries out operations – jointly sets targets and consult on policy rate and choice of instrument.

**II.3 Institutional Framework for Macro-Prudential Policy**

To be effective, macro-prudential policy should be anchored on a well-developed institutional framework with specific mandate and structures for accountability. Authority must also be provided with adequate incentives to enable an alignment of the macro-prudential instruments and objectives.

Three essential characteristics of macro-prudential policy are particularly critical in defining the institutional mandate. Firstly, Macro-prudential measures for fighting cyclical risks are unpopular and likely to meet resistance from the market. Since macro-prudential regulation suffers from "inaction bias" stemming from the high cost of macro-prudential measures, the benefits of such measures can only be observed in the long-run and may not be apparent.

Secondly, macro-prudential regulations must operate alongside other policies such as micro-prudential, monetary and fiscal policies. There is need for coordination and cooperation among the different institutions responsible for these policies, particularly in areas of information sharing. The macro-prudential authorities also need powers to collect data from both financial and non-financial institutions and to designate certain institutions as systemically important and subject them to additional macro-prudential scrutiny.

Thirdly, the recent financial crisis highlighted concerns about the capacity of central banks to adequately monitor all the different risk components within the economy, in particular when bank subsidiaries, products and functions cut across the entire spectrum of financial services, with some outside the regulatory purview of the central bank. Consequently in some jurisdictions, the scope of banking operations was reviewed and scaled down to core banking functions.

In the post-crisis era, emphasis has shifted to stronger coordination and cooperation amongst regulators across the financial services. As a result there is a rethink and review of the regulatory framework for the entire financial sector. This clearly delineates regulatory domain, coordination areas and mechanisms to facilitate inter and intra agency, collaboration with a view to ensuring effective macro-prudential regulation. As a consequence of the above, the institutional boundaries between central banks and other financial regulatory agencies have been remapped. Besides, several models have emerged as institutional arrangements for macro-prudential policies and regulation vary substantially across countries.

## Table 1

## Stylized Models for Macro-Prudential Policy

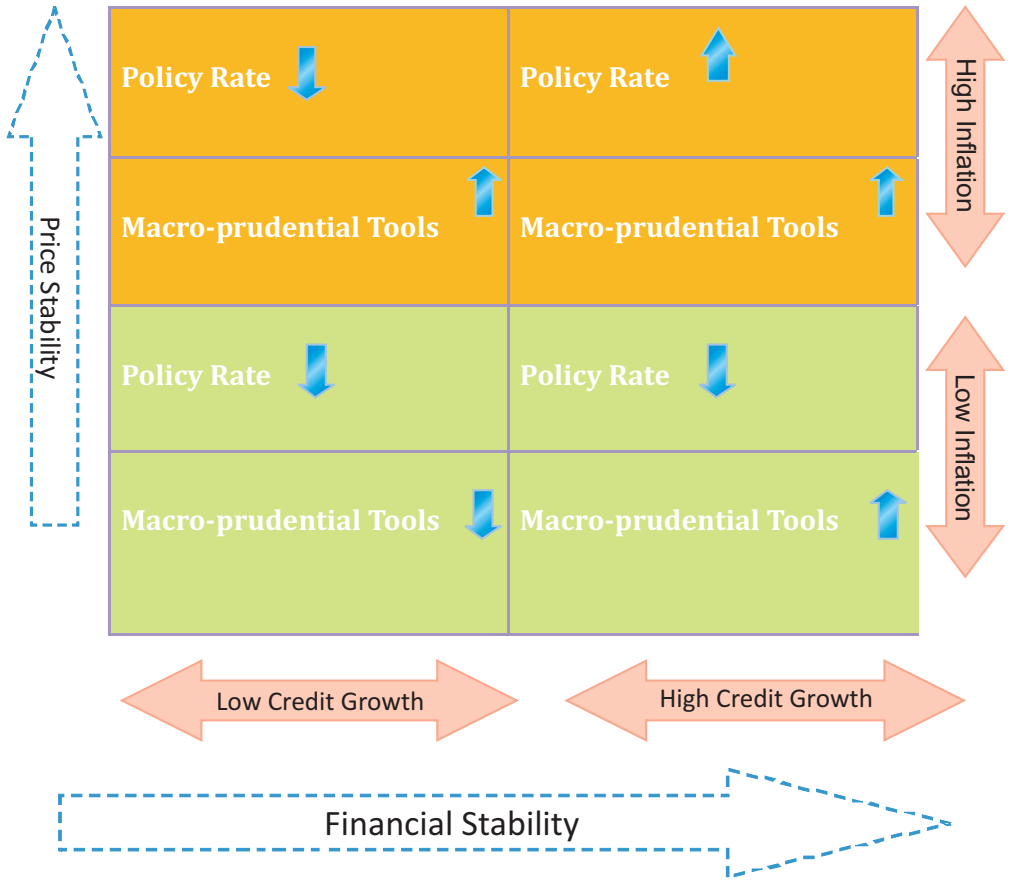
| Features of the Model | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 |
|---|---|---|---|---|---|---|---|
| The locus of financial regulation and supervisory functions and extent of integration with the central bank | Full (at a Central Bank) | Partial | Partial | Partial | No | No (Partial*) | No |
| The ownership of the macro-prudential mandate | Central Bank | Committee "related to central bank" | Independent committee | Central Bank | Multiple agencies | Multiple agencies | Multiple agencies |
| The role of the fiscal authority and policy in macro-prudential policy | No (Active*) | Passive | Active | No | Passive | Active | No (Active) |
| The degree to which there is organizational separation of decision making and control over instruments | No | In some areas | Yes | In some areas | No | No | No |
| Existence of a coordinating committee tasked with the coordination of the institutions responsible for macro-prudential regulation | No | No | No (Yes*) | No | Yes | Yes (de Facto**) | No |
| Examples of specific model countries/ regions | Czech Republic, Ireland (new), Singapore | Malaysia Romania Thailand United Kingdom (new) | Brazil* France (new) United States (new) | Belgium (new) The Netherlands Serbia | Australia | Canada Chile Hong Kong SAR* Korea** Lebanon Mexico | Iceland Peru Switzerland |

Source: Adapted from - Towards effective Macro-prudential Policy Frameworks: An Assessment of Stylized Institutional Models, Page 15 by *Jácome, P. M., Nier, E. W. and Osiński, J. (2011).*

## III. Objectives and Instruments of Monetary and Macro-Prudential Policy and Indicators of Systemic Risk

Macro-prudential policy requires a stable macroeconomic environment dictated by a combination of coordinated policies to deliver optimal results (Crockett, 2000; Borio, 2003). Figure 1 illustrates a coordinated optimal macro-prudential and monetary policy framework.

**Figure 1**
**Effective Monetary and Prudential Policy Integration**



Macro and micro-prudential supervision differ in terms of their objectives and treatment of risk (Borio, 2003). Traditional micro-prudential regulation seeks to enhance the safety and soundness of individual financial institutions, as opposed to the macro-prudential policy, which focuses on the entire financial system. In micro-prudential supervision, risk is deemed an exogenous factor because it is assumed that triggers of financial crises has its origin emanate outside the financial system. In macro-prudential policy, however, risk is endogenous and derives within the system. In line with this reasoning, macro-prudential policy addresses the interconnectedness of individual financial institutions and markets, and their common exposure to risk factors focusing on the pro-cyclical behaviour of the financial system to engender stability. Borio (2003) suggested some stylized characterisation of the different nature of the two perspectives.

**Table 2: A Comparison of The Macro and Micro Prudential Regulation**

| Characteristics | Macro-prudential | Micro-prudential |
|---|---|---|
| **Proximate Objectives** | Limit financial system-wide distress | Limit distress of individual institutions |
| **Ultimate Objectives** | Avoid output gap cost | Consumer (investor/depositor) protection |
| **Characterization of Risks** | Dependent on collective behaviour (endogenous) | Independent of "individual agent's" behavior |
| **Correlation and common exposure across institutions** | Important | Irrelevant |
| **Calibration of prudential controls** | In terms of system-wide risk, i.e. top-down | In terms of risks of individual institutions i.e. bottom-up |

Source: Borio (2003).

## III.1 Monetary Policy: Objectives and Instruments

Monetary policy is the combination of measures designed to regulate the value, supply and cost of money in line with the level of economic activity (CBN, 2009).

### III.1.1 Objectives of Monetary Policy

The objectives of monetary policy for most central banks include any or a combination of price stability (inflation, interest and exchange rates); low

unemployment; balance of payments viability; and achievement of economic growth and development. In recent times, however, a good number of central banks have tended towards price stability as the primary goal of monetary policy.

### III.1.2 Instruments of Monetary Policy

The key instruments of monetary policy include: open market sales/purchases of financial securities; reserve requirements, interest rate adjustments; foreign exchange market interventions; and discount window operations. Typically, monetary policy is designed to influence interest rate, exchange rate and its expectations as intermediate variables, to impact on the ultimate goals of inflation, output or moderation of the business cycle in general.

## III.2 Macro-Prudential Regulation Policy: Objectives and Instruments

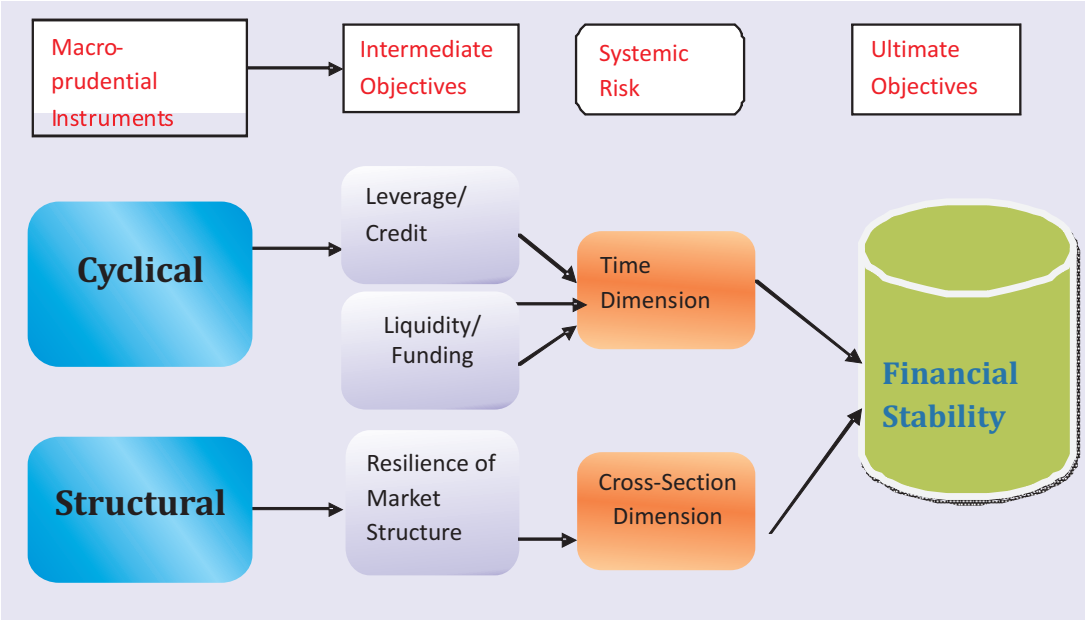
### III.2.1 Objectives of Macro-Prudential Regulation

There is currently no consensus on the objectives of macro-prudential policy. However, the general view is that it involves a reduction in the risks and macroeconomic costs of financial instability. A more explicit rendition is that macro-prudential policy moderates systemic risks by explicitly addressing the inter-linked exposures of financial institutions, and the pro-cyclicality of the financial system (Caruana, 2010). Thus, macro-prudential regulation is an approach to financial regulation aimed at mitigating the risk of the financial system as a whole otherwise called "systemic risk" or the reduction in the accumulation of financial risks, so as to reduce the probability of a financial crash or mitigate the impact of a crash if it does occur (Jacome and Nier, 2012). Following the European Systemic Risk Board (ESRB), we define systemic risk as the risk of disruption in the financial system with the potential to have serious negative consequences for the real economy. An example of such a disruption is a credit crisis, in which losses suffered by banks and other lenders cause a curtailment of credit to households and firms that in turn depress overall economic activity.

Aggregate weaknesses arise when the financial sector as a whole becomes overexposed to the same risks such as credit, market or liquidity. Also, the failure of an individual institution can create systemic risk when it impairs the ability of other institutions to continue to provide financial services to the economy. Systemic institutions include not only large banks, but also those institutions that provide critical payment and insurance services to other financial institutions. All leveraged providers of credit, regardless of size, are included in the purview of macro-prudential policy because it is their collective weakness that can affect the provision of credit to the economy as a whole (Jacome and Nier 2012).

The intermediate objectives of macro-prudential policy are constructed to address the time and cross section dimensions of systemic risk. The time dimension deals with the evolution of aggregate risk in the financial system over time and refers to the tendency for financial agents to take excessive risks in economic boom and become overly risk averse during recessions. This behaviour manifests in the cyclical patterns in the leverage and maturity mismatch positions in the financial system. The cross section dimension refers to the distribution of risks across the financial system at any point in time, i.e. the interconnectedness and resilience of the market structure. Based on these two dimensions, the following intermediate objectives could be identified:

**Figure 2: Objectives and Instruments of Macro-Prudential Regulation**




### III.2.2 Instruments of Macro-Prudential Policy

Most macro-prudential policy instruments such as loan-to-value ratio, dynamic loan loss provisioning and debt-to-income ratio were designed to prevent the pro-cyclicality of the financial system on pivotal assets and liabilities. Other instruments like counter-cyclical capital requirement is designed to avoid excessive balance-sheet shrinkage from banks in trouble while time-varying reserve requirements is used to control capital flows with prudential purposes, especially for emerging economies. Time-varying leverage ratio, cyclically-dependent funding liquidity requirements, Foreign Exchange (FX) reserve requirements, and currency mismatch are also in the policy toolbox.

Instruments to prevent the accumulation of excessive short-term debt include: liquidity coverage ratio; liquidity risk charges that penalize short-term funding; capital requirement surcharges proportional to size of maturity mismatch; minimum haircut requirements on asset-backed securities; limits on open foreign exchange positions; and constraints on the type of foreign currency assets. To ensure the resilience of the infrastructure of the financial system, concentration limits and changes in sectoral risk weights are used.

Using **Dynamic Capital Buffer,** financial institutions are required by regulators to maintain a certain amount of capital (normally equity and retained profits) to enable them absorb losses on loans or securities. They are further required to add to their capital when there are signs of unusually strong credit growth or when there are signs of a credit-driven asset price boom.

Under **Variation in Sectoral Risk Weights**, regulators compel systemically important financial institutions to add capital to cover new loans in sectors that are building up excessive risks. For example, Turkey recently increased requirements for new lending to households to stem high loan growth in that segment.

**Dynamic Provisions** require banks to set aside money to cover loan losses when credit losses are relatively low to position bank balance sheets to absorb losses that build during downturns. A dynamic provisioning regime was introduced in Spain in 2000 and more recently in Chile, Colombia, Peru and Uruguay (Jacome and Nier, 2012).

**Measures Targeted at Foreign Currency Lending** are designed to mitigate the negative impact of currency appreciation on foreign loans to unprotected customers. The danger of a rise in foreign currency value heightens credit risk for lenders because repayment becomes more expensive. Macro-prudential measures to reduce these risks include portfolio limits on foreign currency lending and other targeted restrictions, such as requiring more capital and tighter loan-to-value and debt-to-income ratios for foreign currency loans.

**Liquidity Requirements** are especially useful when funding is easy to obtain, an increase in required buffers of liquid assets (those that can be easily and quickly converted to cash) provides cash reserves that can be drawn on when funding dries up. New Zealand and Korea, recently introduced such measures

***Loan to Value and Debt Service to Income ceilings*** are very handy when monetary policy is tight. Administrative rules that limit bank lending such as caps on loan-to-

value ratios and debt service to income ratios are added to traditional tools in banking regulation.

***Leverage ceilings*:** are designed to limit asset growth by tying bank assets to equity. The rationale for a leverage cap rests on the role of bank capital as a constraint on new lending rather than the Basel approach of bank capital as a buffer against loss. Korea's leverage maxima on bank foreign exchange derivative positions introduced in June 2010 is aimed at limiting the practice of banks hedging forward dollar positions with carry trade positions in Korean won funded with short-term US dollar debt (Shin, 2011).

***Levy on Non-core Liabilities*** is designed to mitigate pricing distortions that cause excessive asset growth. The stock of non-core liabilities reflects the stage of the financial cycle and the extent of under-priced risk in the financial system. The financial stability contribution recommended by the IMF in its report on the bank levy to the G20 leaders is an example of such a corrective tax (Shin, 2011). The levy on non-core liabilities has many desirable features because the base varies over the financial cycle. The levy bites hardest during the boom when non-core liabilities are large and it has properties of an automatic stabiliser even if the tax rate remains constant over time (Shin, 2011).

***Systemically Important Financial Institutions***

Authorities need to be in a position to address the risk of failure of individual systemically important financial institutions. Most tools currently under consideration in this regard are designed to reduce the likelihood of failure of institutions that are too important to fail. The Financial Stability Board, an international body of regulators set up in 2009, recently announced that a number of financial institutions important to the global economy - mainly banks and large investment banks with worldwide operations - would be subjected to additional capital requirements commensurate with the level of risk the institutions pose to the global financial system. While these additional capital requirements would assist in restraining the growth of such institutions and better prepare them to absorb losses, additional tools to ease the impact of failure of individual systemic institutions would also help (Jacome and Nier, 2012).

## III.3 Indicators of Systemic Risk in a Macro-Prudential Policy Framework

In order to measure systemic risk, macro-prudential regulation relies on several indicators. As mentioned in Borio (2003), an important distinction is made between measuring contributions to risk of individual institutions (the cross-sectional dimension)

and measuring the pro-cyclicality of systemic risk through times. The cross-sectional dimension of risk can be monitored by tracking balance sheet information, total assets by their composition, liability (financial accounting) and capital structure-as well as the value of the institutions' trading securities and securities available for sale. Additionally, other sophisticated financial tools and models have been developed to assess the interconnectedness across intermediaries and each institution's contribution to systemic.

The time dimension refers to the evolution of aggregate risk in the financial system over time. It deals with the tendency of financial agents to assume excessive risk in the upswing and then to become overly risk averse in the downswing. This reveals itself in cyclical patterns in the leverage and maturity mismatch in the financial system such as the credit and liquidity cycles. To address the time dimension of risk, a wide set of variables are typically used, for instance: ratio of credit to GDP, real asset prices, ratio of non-core to core liabilities of the banking sector, and monetary aggregates. Some early warning indicators have been developed encompassing these and other pieces of financial data (Borio and Drehmann, 2009). Furthermore, macro stress tests were employed to identify vulnerabilities in the wake of identified build-up of risky assets and portfolios.

## IV. Interaction between Monetary Policy and Macro-Prudential Regulation

The primary objective of monetary policy is price stability while that of macro-prudential policy is financial stability. In recognition of their close linkages and interdependencies, some central banks are enabled by law to pursue and achieve both objectives. Even in jurisdictions where other agencies have statutory responsibility for financial stability like the United Kingdom, close collaboration and coordination between the regulatory institutions is imperative[3].

Given the conflicting objectives of monetary and macro-prudential policy, there are two sides to the relationship:

(1) A mutually reinforcing relationship in which monetary policy sets the overall conditions for demand and supply of credit and other assets wherein lies a major source of financial system vulnerabilities, and macro-prudential policy facilitates financial system stability and improves the transmission of monetary policy impulses and;

---

[3] The current interest in macro-prudential regulation actually stemmed from the recognition that a regulatory gap-no particular authority had responsibility for monitoring and managing systemic risks-contributed significantly to the recent wave of financial crises.

(2) An independent pursuits of price stability through monetary policy and financial stability using macro-prudential policy resulting in conflicting actions that weakens or prevent the realization of either of the objectives.

## IV.1 The Economy's Loss Function[4]

Thinking in terms of an economy's loss function enables us to demonstrate the nexus between monetary and macro-prudential policy. Consider a loss function in which price stability and financial stability measures are the key variables, respectively as the rate of inflation (π) and a composite index of financial soundness (s). Our loss function may be stated as:

$$L = \alpha(s - s^*)^2 + \sigma(\pi - \pi^*)^2;$$

Where: α and σ are weights attached to financial stability and price stability, respectively, and s* and π* are the corresponding targets or desired levels.

Macroeconomic management is about minimising the deviations of both variables from their targets. That is using macro-prudential policies to minimise (s - s*) and monetary policy to minimise (π - π*). The core issues include:

1. Minimising either (s - s*) or (π - π*) contributes to moderating cyclical fluctuations and so both policies must overlap in terms of the variables they influence-interest rate, liquidity, credit, asset prices-opportunity for synergy in which both macro-prudential policy and monetary policy seek to minimise a common loss function

2. The weighting of the objectives, however, does matter. The overall loss is a sum of two minimums and so if objectives differ, but ultimate goals coincide, conflict may result leading to sub-optimal results. The loss function cannot be optimised if weights do not add up to one. This is possible if; either independent agencies are responsible or two non- cooperative units of the same agency are separately responsible. The reason is simple; each sets its own agenda and policy recommendations taking the other as given-the weights will not add up to one.

---

4 A loss function is a disutility function of policymakers which typically contains the squared deviation between the actual and desired value of each target variable multiplied by a weight associated with that variable (Mayer, 2003)

5 We think of this loss function as a composite one for an economy drawing from two separate ones – a monetary loss function in which a central bank seeks to minimize the deviations of inflation and output from their targets and a macro-prudential loss function in which the financial stability authority (which could also be a central bank) seeks to minimize deviations between a measure of financial soundness and output from their targets. The economy's loss function approximates both.

3. The third relates to the choice of instruments-this presents potentially both opportunity for synergy and conflict. Let us consider the use of capital buffer as an instrument of macro-prudential policy. During a credit boom, this instrument may be deployed as a countercyclical safeguard against a possible burst. It works in two ways: (1) raising additional capital is costly and the transfer of such cost should moderate demand for credit thereby moderating accumulation of assets by financial institutions and; (2) should a burst occur, financial institutions would be able to absorb losses. Now, if the deployment of this instrument coincides with a period of tight monetary policy, then it works for both. Likewise, by setting interest rates (discount window operations), monetary policy can alter liquidity conditions that may work for the financial stability or against it depending on the direction and the orientation of macro-prudential policy. An alternative scenario results in a conflict of interest.

4. Sources of deviations overlap. For example, excessive build-up of assets (credit) leads to the composite index of financial stability (s) deviating from its target (s*). Likewise, excessive credit creation leads to overheating money supply expands and more inflation results leading to higher deviation between inflation ($\pi$) and its targets ($\pi^*$).

5. Ultimately, the effectiveness of monetary policy depends on the stability of the financial system, which in a bilateral sense, depends on monetary or macroeconomic stability. This summarises the case for close coordination of both monetary and macro prudential policy.

### IV.2 Models of Interaction

Monetary policy and macro-prudential policy are closely linked to other stabilization policies in terms of their objectives, instruments, transmission mechanism, ultimate goals and sources of shocks. Regardless, this close connectedness as a double edged sword can be a basis for synergy or a recipe for conflict. Two models of interaction are considered here viz: a cooperative solution and a non-cooperative game.

### IV.2.1 The Cooperative Solution Model

This reformulates the problem of optimal interaction between monetary and macro-prudential policy in terms of the minimisation of a common loss function where both policies aim to generate an anti-cyclical shield. Macro-prudential policy tends to take a preventive course while monetary policy assumes greater corrective stance.

In times of a financial crisis, for example a negative shock to the supply of loans, monetary policy comes handy under a cooperative game through measures such as reduction in bank reserves, policy rate, and establishment of a special discount operation and repurchase of financial securities. At such times, most macro-prudential instruments, especially those that are crisis preventive, like capital buffers (or any form of countercyclical capital requirements) or Loan to Value Ratio (LVR) can no longer be freshly deployed. By lowering, capital requirements, macro-prudential policy can insulate economic growth by averting deleveraging. In normal times, however, macro-prudential policy plays a nominal role.

The prospective orientation of macro-prudential policy also compliments monetary policy such that adjustments in normal times when the economic cycle is driven by supply shocks may be possible without jeopardising the price stability objective. The basis for complementarity under the cooperative solution is the pursuit of a 'common objective' represented by the economy's loss function. Information sharing and policy coherence are two indispensable elements. This approach yields optimal solution to the minimisation problem.

### IV.2.2 The Non-cooperative Model

This formulates the problem in terms of two independent actors, both seeking to find a solution to the minimisation problem independently. The two are not necessarily in a competitive or zero-sum styled game, yet, since they do not cooperate, each takes the others actions simply as given and proceeds to optimise its own narrow objective function. It is observed that lack of cooperation between agencies could increase the volatility of policy instruments. Monetary policy continues to focus on price stability ignoring the consequences for financial stability even in the face of a financial shock. By pushing in opposing directions, policy instruments like interest rate in the case of monetary policy and capital requirements in the case of macro-prudential policy become excessively volatile. This volatility of tools leads to a crisis and prevents an optimal solution to the minimization of the economy's loss function.

## IV.3 Interaction with Other Stabilisation Policies

The use of macro-prudential policy raises the question of how the instruments relate with other stabilization policies such as the micro-prudential, fiscal and monetary policies that impact on financial stability. Countercyclical macro-prudential policy is linked to other policies that moderate cyclical fluctuations, particularly monetary policy, which bears on such macro-prudential variables as asset prices and credit.

---

Note that policy coherence is achieved through the choice of instrument and the orientation of policy at any particular time

Since macro-prudential policy has direct or indirect effects on these variables, it influences the transmission mechanism of monetary policy. Under this perspective, the key question is the extent of complementarity between the two policies and whether the likely interactions between these policies create risks of conflicts in the pursuit of price and financial stability.

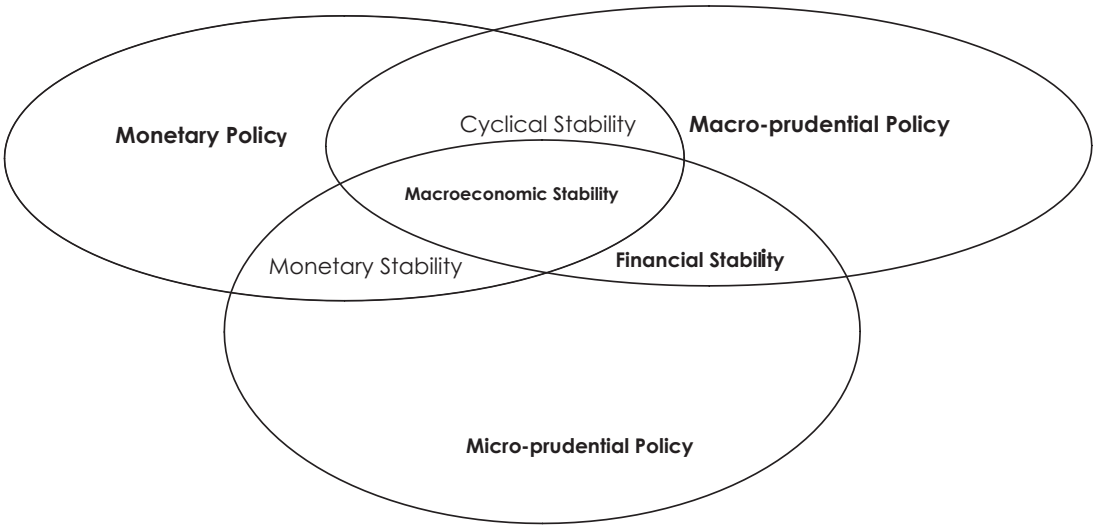
However, as both policies ultimately affect the availability and cost of funds, they can also be viewed as substitutes. In particular, it can be shown that interest rates and macro-prudential tools may both be adjusted to deal with the same macroeconomic or financial shock-for instance, the authorities can raise interest rates or reserve requirements. How much interest rates and macro-prudential instruments would be used would depend in part on the extent to which macroeconomic and financial stability considerations coincide, and the relative effectiveness of these instruments.

A typical example of a conflicting impact would be a situation in which an asset bubble has been identified, while there are strong risks to price stability on the downside. In other words, supply and demand are misaligned in both the credit markets and real economy, in opposite directions. In that case, macro-prudential policy should aim at restricting credit and liquidity growth, but this could lead to an undesired contraction in aggregate output, and to increased downside risks to price stability. The macro-prudential policy would then contribute positively to meet the financial stability objective, but would have an adverse impact on the price stability objective, calling for a policy response, possibly a loosening of the monetary policy stance. Such a loosening of monetary policy, however, may have an adverse impact on the financial stability objective. Lower interest rates could indeed contribute to the build-up of financial imbalances via the so-called 'risk taking' channel. Simply put, very low interest rates may create incentives, for banks, to take on more risk, through the interplay of various channels including asset substitution, pro-cyclical leverage and risk shifting, when banks operate under asymmetric information. Lower interest rates may also contribute to excessive credit growth, with the resulting creation of asset price bubbles.

Lower interest rate leads investors to perceive banks as comparatively less risky and in particular, imply lower credit standards including credit availability to customers who are perceived as representing a higher credit risk. When the regulatory environment is not transparent, a decrease in the level of real interest rate increases banks' risk-taking behaviour, partly because it may facilitate the underpricing of risks which is typical when asset prices rise.

In general, the effectiveness of macro-prudential tools may vary depending on the circumstances in which they are implemented. When the consumer price index (CPI) and asset prices move in the same direction, it is likely that the stance of both monetary and macro-prudential policy would be mutually reinforcing to restore both price and asset market stability. On the other hand, when movements of consumer and asset prices diverge, the two policies become conflicting. In particular, the conflict between the two policies appears to be more severe if rising consumer prices are accompanied by stagnation in the asset market, as shown by the experiences of some countries during the recent global financial crisis.

From Figure 3, it can be shown that the three policies are not orthogonal but when properly coordinated can complement each other for the maintenance of macroeconomic stability. The three policies have their ultimate objective as macroeconomic stability. In that sense, there is agreement on objective. Sound monetary and micro-prudential policy can ensure monetary stability but not the ultimate objective. In the same way, sound macro-prudential and monetary policy only ensures countercyclical resilience but not the ultimate objective. Only well-coordinated set of the three policy measures ensure the attainment of the ultimate objective of macroeconomic stability.



The likelihood of an interaction between macro-prudential and monetary policy originates from the focus of macro-prudential policy-on monetary and financial institutions. These institutions are the central banks' counterparts in their provision of liquidity to the economy and play key roles in the monetary policy transmission mechanism. More importantly, most of the counter-cyclical macro-prudential instruments work through changes in the availability of credit and are akin to reserve requirements. That is, macro-prudential tools operate through effects on bank lending given that changes in bank loans cause investment and consumer spending to change.

**Table 3: Macro-Prudential Instruments and Monetary Policy Transmission Channels**

| **Vulnerability** | **Financial System component** | | **Envisaged macro-prudential Instrument** | **Transmission channels** |
|---|---|---|---|---|
| Leverage | Bank/Deposit taker | Balance sheet | Capital ratio<br>Risk weights<br>Provisioning<br>Profit distribution restrictions<br>Credit growth cap | - Bank lending<br>- Broad credit<br>- Balance sheet |
| | | Lending contract | LTV cap<br>Debt service/income cap<br>Maturity cap | - Bank lending |
| | Non-bank investor | | | |
| | Securities market | | Margin/haircut limits | - Collateral |
| | Financial infrastructure | | | |
| Liquidity or market risk | Bank/Deposit taker | Balance sheet | Liquidity/reserve requirements<br>FX lending restrictions<br>Currency mismatch limit<br>Open FX position limit | - Bank lending<br>- Balance sheet |
| | | Lending contract | Valuation rules | - Balance sheet<br>- Collateral |
| | Non-bank investor | | Local currency or FX reserve requirements | - Balance sheet |
| | Securities market | | Central banks' balance sheet operations | - Collateral<br>- Portfolio |
| | Financial infrastructure | | Exchange trading | |
| Inter-connectedness | Bank/Deposit taker | Balance sheet | Capital surcharge for SIFIs | - Bank lending |
| | | Lending contract | | |
| | Non-bank investor | | | |
| | Securities market | | | |
| | Financial infrastructure | | Central counterparty | - Interest rate |

## V. Country Experiences with Macro-Prudential Regulation

In the US, the Financial Regulation Bill, created a new Financial Stability Oversight Council (FSOC), independent of the Federal Reserve, headed by the Treasury Secretary. The FSOC is in charge of identifying, monitoring and addressing systemic risks posed by large and complex financial firms, and of making recommendations to regulators. It is also tasked with responsibility for monitoring domestic and international regulatory proposals, facilitating information-sharing among financial services regulators, designating non-bank financial companies as systemically important, and providing recommendations to the Federal Reserve Board on prudential standards (Beau et al., 2012).

In the UK, following the failure of the tripartite regulatory system, the authorities transferred operational responsibility for prudential regulation from the Financial Services Authority (FSA) to a new subsidiary of the Bank of England. In addition, a new Financial Policy Committee was created within the Bank of England with the responsibility for maintaining financial stability. This committee works with similar international systemically focused bodies such as the European Systemic Risk Board (ESRB) to coordinate macro-prudential policies. The aim of the reform was to bring together responsibility for macro and micro-prudential regulation within a single institution-the Bank of England (Beau et al., 2012).

Following the recommendations of the de Larosière Committee, the European Commission created a European Systemic Risk Board (ESRB) in December 2010 which, like its US counterpart, is independent of the European Central Bank. In contrast, however, the ESRB is not provided with full control of its macro-prudential tools (Beau et al., 2012). As in the US, the ESRB is an inter-agency council, independent of the ECB and only focused on macro- prudential policy. A major difference between the US and the UK is the lack of effective and autonomous regulatory tools. In effect, the ESRB would issue warnings and recommendations. The institutional arrangement which brings together central bank governors and heads of supervision in the EU since January 2011 should ensure both effective coordination and information sharing.

In Paraguay, Brazil and South Korea, central banks have established structures for macro-prudential regulation and supervision, since the global financial crisis. The Central Bank of Paraguay implemented the payment system project aimed at minimizing systemic risk. The measures took effect simultaneously with the migration to an inflation targeting monetary policy framework under which the efficiency of the financial system is a key element in optimizing monetary policy (Jorge and Corvalan, 2011).

Beginning in June 2011, South Korean authorities introduced a sequence of macro prudential measures aimed at building resilience against vulnerability to capital reversals following the associated disruptions to domestic financial conditions.

Between February 2010 and March 2011, the Banco Central Do Brazil adopted some macro-prudential tools to achieve financial stability and reduce macroeconomic uncertainty. The measures were chiefly designed to moderate credit growth i.e. increase in reserve requirements over demand and time deposits and also of capital requirements over Basel II & III recommendations. Others were new consumer credit operations, measures to moderate exchange rate appreciation through FX interventions and excessive capital inflows e.g. tax on financial operations (Correa, 2012).

**Table 4: Loan-to-Value and Debt-to-Income Ceiling in Asia's Emerging Markets**

| Type of Macro-prudential Instrument | Country Applied |
|---|---|
| Countercyclical Capital Buffers | China |
| Countercyclical Provisioning | China; India |
| Loan-to-Value Ratio (LTV) | China, Hong Kong SAAR, Korea, Singapore |
| Limits on Lending to Specific Sectors | Korea Malaysia, Philippines, Singapore |
| Capital Surcharge for SIBs | China, India, Philippines, Singapore |
| Liquidity Requirements/Funding | India, Korea, Philippines, Singapore |
| Limits on Currency Mismatches | India, Malaysia, Philippines |
| Loan-to-Deposit Requirements | China, Korea |

Source Caruana (2010)

On the other hand Table 5 shows the adoption of dynamic provisioning by country and year of adoption.

**Table 5: Dynamic Provisioning in Some Selected Countries**

| | SPAIN | PERU | COLOMBIA |
|---|---|---|---|
| DATE OF INTRODUCED | Jul-00 | Nov-08 | JUNE 2007 (COMMERCIAL) JUNE 2007 (COMMERCIAL) |
| BASED ON | RULE: CREDIT (STOCK AND GROWTH) | RULE: GDP | RULES BASES IN 4 INDICATORS |
| DISCREET/CONTINOUS | CONTINOUS | DISCREET (ON/OFF) | Continuous |
| SYSTEM VS INSTITUTIONS | INSTITUTION - SPECIFIC | SYSTEM-BASED | INSTITUTIONS SPECIFIC |
| THRESHOLDS | FUNDS LIMITS: 10% - 125% | POTENTIAL GDP (5%) IMPLICIT MINIMUM THRESHOLD. CHANGE IN GDP GROWTH ALSO PLAYS A ROLE | IMPLCIT THRESHOLD IN THE PROVISIONING COEFFICIENTS SET BY THE AUTHORITIES |
| SYMMETRY | YES, GENERIC PROVISION CAN INCREASE OR DECREASE | YES, "PRO-CYCLICAL PROVISIONS CAN INCREASE OR DECREASE | THE USE OF PROVISIONS IN THE DOWNTURN IS SUBJECT TO CONSIDERABLE CONSTRAINTS |
| USE: INDIVIDUAL OR GENERAL | GENERAL. CAN SMOOTH PPROFITS IN THE DOWNTURN | GENERAL. CAN SMOOTH PROFITS IN THE DOWNTURN | INDIVIDUAL |
| AMOUNT | DEPENDS ON SPECIFIC PROVISIONS, CREDIT LEVEL, CREDIT GROWTH AND RISKINESS OF PORTFOLIO | DEPENDS ON RISKINESS OF PORTFOLIO | DEPENDS ON SPECIFIC (INDIVIDUAL) PROVISIONS AND RISKINESS OF PORTFOLIO |
| TAX DEDUCTABLE | YES (1% LIMIT) | NO | YES |

## V.1 Lessons of Macro-Prudential Regulation for Nigeria

The Central Bank of Nigeria Act 2007 locates the mandate of ensuring both price and financial system stability under the purview of the CBN. This presents an excellent opportunity for close coordination of monetary and macro-prudential policies and strengthening the case for a CBN-led framework for macro-prudential regulation in Nigeria. However, since the crisis, macro-prudential regulation has emerged as a cardinal issue in financial stability requiring the establishment of independent institutional structures with a definite mandate to deliver.

Even though the most recent global economic crisis was triggered by events in the housing sector, there have been occasions in the past in which financial system crashes had their origins in monetary developments, due to the failure of monetary and macro-prudential supervision, in particular, exchange rate management. The authorities based on existing mandate must front-load macro-prudential regulation on its agenda and design a framework that takes into account existing institutional structures for monetary and fiscal policy coordination at policy and institutional levels. This is especially compelling, given the spread of Nigerian banks offshore. Systemic liquidity is critical to financial stability, and it is driven mainly by the monetisation of oil receipts.

Monetary policy therefore has a great leverage on managing system liquidity which could have very important consequences on the effectiveness of macro-prudential policy and for the stability of the financial system. *Nigeria obviously needs a financial stability framework that promotes synergy between macro-prudential policy and monetary policy.*

**Table 6: Lessons of Financial Stability Framework: Objectives and Tools**

| Objectives and Tools | Micro and Macro-Prudential Policy | Monetary Policy | Fiscal Policy |
|---|---|---|---|
| **Current** | **Limit Distress of Individual banks (micro-prudential)**<br>Quantity/Quality of Capital<br>Leverage ratio<br>Counterparty credit risk<br>Strengthen risk management | **Maintain price stability**<br>Policy rate<br>Standard repos<br>Interest on reserves<br>Policy corridors | **Manage aggregate demand**<br>Taxes<br>Automatic stabilizers<br>Countercyclical (discretionary) approach |
| **Macro-prudential** | **Limit Systemic Risk (Macro-prudential)**<br>Countercyclical capital change<br>Forward looking provisioning<br>Systemic Capital change<br>Leverage ratio<br>LTV caps<br>Robust infrastructure | **Lean against booms**<br>Increase policy rate<br>Raise reserve requirements<br>Mop up liquidity<br>**Provide Support on Downside**<br>Decrease policy rate<br>Inject liquidity<br>Quantitative easing<br>Emergency liquidity assistance | **Build fiscal buffers in good times**<br>Reduce debt levels<br>Introduce taxes/levies on financial sector<br>**Provide Financial Sector Support in times of stress**<br>Capital injection<br>Deposit and debt guarantees<br>Bank rescue packages<br>Discretionary stimulus |

Macro-prudential policy must deploy a range of tools to address systemic weakness and individual failures. This is because a single tool is unlikely to be sufficient to address the various sources of systemic risk. The monetary authorities or institutions responsible for macro-prudential regulation must be able to tailor specific macro prudential instruments to the particular identified vulnerabilities.

Also, macro-prudential policy framework should encompass a system of early warning indicators that signal increased vulnerabilities to financial stability and a set of associated policy tools that can address the increased vulnerabilities at an early stage. Its pursuit would require the macro-prudential authority to adjust policy tools dynamically, to counter the build-up of risks during upswings and attenuate credit contraction and excessive risk-aversion in downturns.

## VI. Concluding Remarks

From a macro-prudential view, the overriding goal of financial regulation goes beyond just protecting insured depositories/investors and maintaining price stability. The task involves mitigating the fire-sales and credit-crunch effects that can arise as a consequence of excessive leverage in the financial system. Containing these effects with just micro-prudential supervision will be difficult. In this paper, we highlighted the need for macro-prudential framework for financial regulation, the objectives and instruments required to implement such a framework, pointing out the importance of policy coordination among the macroeconomic stabilizing policies. Analysis of country experiences show that different jurisdiction adopt different institutional structure for macroprudential regulation. The lessons for Nigeria include the need for a counter-cyclical macro-prudential policy which is adequately aligned with micro-prudential and monetary policies so as to ensure optimal results.

## References

Beau, D., L. Clerc and B. Mojon (2012). "Macro-prudential Policy and the Conduct of Monetary Policy", in Macro-prudential Policies beyond Basel III.

Borio, C. and M. Drehmann, (2009). "Assessing the Risk of Banking Crises Revisited", *BIS Quarterly Review*, March.

Borio, C. (2003). "Towards a Macro-prudential Framework for Financial Supervision and Regulation", *BIS working Paper* No.128, February.

Caruana, J. (2010). "Macro-prudential Policy: Working Towards a New Consensus", Remarks at the high-level meeting on "The Emerging Framework for Financial Regulation and Monetary Policy" jointly organised by the BIS's Financial Stability Institute and the IMF Institute Washington DC, 23 April.

Correa, A. (2012). "Macro-prudential Instruments and Monetary Policy: The Brazilian Experience", VIII Meeting of Central Bank Monetary Policy Managers Lima – Peru, 25 – 26 June.

Crockett, A. (2000). "Marrying the Micro and Macro-prudential Dimensions of Financial Stability".

*Jácome P. M., E. W. Nier, and J. Osiński (2011).* **"**Towards effective Macro-prudential Policy Frameworks: An Assessment of Stylized Institutional Models" *IMF Working Paper WP/11/250* –, November.

Jacome L. I. and E. W. Nier (2012). "Macro-prudential Policy: Protecting the Whole", http://www.imf.org/external/pubs/ft/fandd/basics/macropru.htm.

Jorge, R. and M. Corvalan (2011). "Monetary Policy and Macro-prudential Measures", Central Bank of Paraguay, http://www.imf.org/external/np/seminars/eng/2012/macro/pdf/corvalan.pdf, FSAP, Paraguay, May.

Mayer, T. (2003). "The Macroeconomic Loss Function: a Critical Note", Applied Economics Letters 10(6), 347-349 BIS *Quarterly Review*, March.

Mordi, C. N. O. (2009). "Overview of Monetary Policy Framework in Nigeria", *CBN Bullion*, Vol. 33 Number 1. January – March.

Shin, H. S. (2011). "Macro-prudential Regulation and Policy", *Proceedings of a joint conference organised by the BIS and the Bank of Korea in Seoul* on January 17 - 18.

# Banking Regulation and Risk Management: An Assessment of the BASEL Market Risk Framework

*Emmanuel M. Abolo, Ph.D**

## I. Introduction

Bank regulations are generally intended to subject banks to certain requirements, restrictions and guidelines and, in the process, create transparency between banking institutions, individuals and organizations with whom they interact in a business context.

Banking regulation originates from microeconomic concerns over the ability of bank creditors (depositors) to monitor the risks originating on the lending side and from micro and macroeconomic concerns over the stability of the banking system in the case of a bank crisis. In addition to statutory and administrative regulatory provisions, the banking sector has been subject to widespread "informal" regulation to influence outcomes in the sector.

Banks, in one form or another, have been subject to the following set of regulatory provisions, inter alia (Wikipedia):

- restrictions on branching and new entry;
- restrictions on pricing (interest rate controls and other controls on prices or fees);
- line-of-business restrictions and regulations on ownership linkages among financial institutions;
- restrictions on the portfolio of assets that banks can hold (such as requirements to hold certain types of securities or requirements and/or not to hold other securities, including requirements not to hold the control of non-financial companies);
- compulsory deposit insurance (or informal deposit insurance, in the form of an expectation that government will bail out depositors in the event of insolvency);
- capital-adequacy requirements;
- reserve requirements (requirements to hold a certain quantity of the liabilities of the central bank);
- requirements to direct credit to favoured sectors or enterprises (in the form of either formal rules, or informal government pressure);

* Emmanuel Abolo is the Chief Risk & Compliance Officer at the Nigerian Export-Import Bank. The usual disclaimer applies.

expectations that, in the event of difficulty, banks will receive assistance in the form of "lender of last resort";

special rules concerning mergers (e.g., liquidation, winding up, insolvency etc}

Other rules affecting cooperation within the banking sector (e.g., with respect to payment systems or shared services).

## Objectives of Bank Regulation

The objectives of bank regulation which vary across jurisdictions include the following:

Prudential—to reduce the level of risk to which bank creditors are exposed (i.e. to protect depositors);

Systemic risk reduction—to reduce the risk of disruption resulting from adverse trading conditions for banks causing multiple or major bank failures;

Avoid misuse of banks—to reduce the risk of banks being used for criminal purposes, e.g. laundering the proceeds of crime and financing of terrorism;

Protect banking confidentiality;

Credit allocation—to direct credit to favored sectors; and

Provide the best customer service in the face of increasing competition.

## Instruments and Requirements of Bank Regulation

**Capital requirement:** the capital requirement sets a framework on how banks must handle their in relation to their assets. Internationally, the Bank for International Settlements' Basel Committee on Banking Supervision ( BCBS) influences each country's capital requirements. In 1988, the Committee introduced a capital measurement system commonly referred to as the Basel I Capital Accord. The latest framework is commonly known as Basel III . This updated framework is intended to be more risk-sensitive than the previous two but is also a lot more complex;

**Reserve requirement:** The reserve requirement sets the minimum reserves each bank must hold to demand deposits and banknotes. This type of regulation has lost the role it once had, as the emphasis has moved toward capital adequacy, and in many countries there is no minimum reserve ratio;

**Corporate governance:** Corporate governance requirements are intended to encourage banks to be well managed, and is an indirect way of achieving other objectives:

**Financial reporting and disclosure requirements;**

**Credit rating requirement:** Banks may be required to obtain and maintain a current credit rating from an approved credit rating agency, and to disclose it

to investors and prospective investors. Also, banks may be required to maintain a minimum credit rating. These ratings are designed to provide color for prospective clients or investors regarding the relative risk that one assumes when engaging in business with the bank.

**Large exposures restrictions:** Banks may be restricted from having imprudently large exposures to individual counterparties or groups of connected counterparties; and

**Activity and affiliation restrictions:**

## II. Bank Regulation and Risk Management

The last decade has witnessed major changes in the financial sector: New banks, new financial institutions, new instruments, new windows, and new opportunities and, along with all this, new challenges. The most prominent on our minds in the context of banking these days, perhaps, are the implications arising out of the Basel Accords.

### II.1 Basel I Capital Accord

In recent years, regulation in banking has become less pervasive and has shifted from structural regulation to other more market-oriented forms of regulation.

Bank regulation is now increasingly getting risk-centric. This process had its origin in the Cooke Committee or the Basel I proposals which, for the first time, prescribed a risk-based capital adequacy framework for banks by recognizing that different counterparties had different risks and, therefore, had to be risk-weighted, differently.

These proposals were path-breaking considering the credit risk management capabilities of the banks in the 1980s. More than 100 countries implemented Basel I which indicates the widespread impact it had on bank regulation and risk management.

Basel I proposals forced banks to look at credit risk and regulatory capital more closely than they had done earlier. As banks found ways to arbitrage regulatory capital, some of the provisions of Basel I became less relevant. Simultaneously, banks in the G-10 countries developed newer approaches to manage credit risk by building portfolio models for pricing, provisioning and allocating economic capital for the credit portfolios.

These developments made the weaknesses in the Basel I framework more apparent which set the stage for the creation of "International Convergence of Capital Measurement and Capital Standards: A Revised Framework", popularly known as Basel II.

Concurrently, there has been a realization that the traditional supervisory practices were out of step with the sophisticated risk management techniques being employed by the complex financial institutions and a risk-based approach to supervision was required to capture the various risks that the firms were undertaking and the controls built for addressing these risks.

Although there are key differences in the design and methodology of risk-based supervision framework in countries like America, Canada, UK and Australia, yet the underlying principles remain the same: the supervisory processes and tools are reoriented in accordance with the risks in the supervised firms; specific tools of supervision are targeted to the areas of greatest risk and concern in individual firms and this resulted in a cost-effective allocation of the finite supervisory resources across the regulated entities.

## II.2 Basel II Capital Accord

The Basel Committee on Banking Supervision (BCBS) noted that the fundamental objective in revising the 1988 Accord was "to develop a framework that would further strengthen the soundness and stability of the international banking system while maintaining sufficient consistency that capital adequacy regulation will not be a significant source of competitive inequality among internationally active banks. The (Basel) Committee believes that the revised Framework will promote the adoption of stronger risk management practices by the banking industry, and views this as one of its major benefits".

Basel II has brought regulation and risk management to the centre stage: the regulatory capital is more closely aligned to the risks in banks; and there is a trend towards convergence of the regulatory and economic capital, especially in the advanced approaches.

Basel II rests on three pillars: Pillar I - minimum capital requirements; Pillar 2 - supervisory review process; and market discipline as Pillar 3.

**Pillar 1** has to do with the calculation of the minimum capital requirements. There are different approaches:

The standardised approach to credit risk: banks rely on external measures of credit risk (like the credit rating agencies) to assess the credit quality of their borrowers.

The Internal Ratings-Based (IRB) approaches to credit risk: banks rely partly or fully on their own measures of counterparty's credit risk, and determine their capital requirements using internal models.

Banks have to allocate capital to cover the operational risk (risk of loss because of errors, fraud, disruption of IT systems, external events, litigation etc.).

The Basic Indicator Approach links the capital charge to the gross income of the bank. In the Standardised Approach, the bank is split into 7 business lines, and with 7 different capital allocations, one per business line. The Advanced Measurement Approaches are based on internal models and years of loss experience.

**Pillar 2** covers the Supervisory Review Process. It describes the principles for effective supervision. Supervisors have the obligation to evaluate the activities, corporate governance, risk management and risk profiles of banks to determine whether they have to change or to allocate more capital for their risks.

**Pillar 3** covers transparency and the obligation of banks to disclose meaningful information to all stakeholders. Clients and shareholders should have a sufficient understanding of the activities of banks, and the way they manage their risks.

### II.3 Basel III Capital Accord

In November 2010, the member states of the Group of Twenty (G20) officially endorsed Basel III, representing a marked departure from the philosophy and substance of Basel I and II. Basel III aims to increase the quality and quantity of capital that banks must hold. Alongside this development is the BCBS's extensive reassessment of risk coverage assumptions and guidelines. The overarching objectives of the Basel III Accord is to strengthen global capital and liquidity regulation with the goal of promoting a more resilient banking sector.

The Accord has four main components as follows:

1. Quality, consistency and transparency of the capital base
   - Greater emphasis placed on the common equity component of Tier 1 capital;
   - Simplification of Tier 2;
   - Elimination of Tier 3; and
   - Detailed regulatory capital disclosure requirements.
2. Enhancement of risk coverage through enhanced capital requirements for counter party credit risk
   - Enhanced risk coverage will address issues that arise in connection with the use of derivatives, repos, and securities financing arrangements
3. Changes to non-risk adjusted leverage ratio
   - This ratio will supplement the Basel II risk capital framework
4. Measures to improve countercyclical capital framework

What may prove to be the most innovative (and controversial) component of

Basel III, however, pertains to the creation of a set of system-wide macroprudential measures. While the reforms introduced in Basel I and II were almost exclusively made at a microprudential or bank-specific level, Basel III introduces a set of tools and standards at the macroprudential level—such as a countercyclical buffer and a universal leverage ratio—to address systemic risk within the global financial system.

Basel III will require banks to hold 4.5% of common equity (up from 2% in Basel II) and 6% of Tier I capital (up from 4% in Basel II) of risk-weighted assets (RWA). Basel III also introduces additional capital buffers, (i) a mandatory capital conservation buffer of 2.5% and (ii) a discretionary countercyclical buffer, which allows national regulators to require up to another 2.5% of capital during periods of high credit growth.

In addition, Basel III introduces a minimum 3% leverage ratio and two required liquidity ratios. The Liquidity Coverage Ratio requires a bank to hold sufficient high-quality liquid assets to cover its total net cash outflows over 30 days; the Net Stable Funding Ratio requires the available amount of stable funding to exceed the required amount of stable funding over a one-year period of extended stress.

**Overall, the proposed changes of the Basel III Accord are:**

First, the quality, consistency, and transparency of the capital base will be raised.

- Tier 1 capital: the predominant form of Tier 1 capital must be common shares and retained earnings
- Tier 2 capital instruments will be harmonized
- Tier 3 capital will be eliminated.

Second, the risk coverage of the capital framework will be strengthened.

- Promote more integrated management of market and counterparty credit risk;
- Add the (credit valuation adjustment) CVA risk due to deterioration in counterparty's credit rating;
- Strengthen the capital requirements for counterparty credit exposures arising from banks' derivatives, repo and securities financing transactions;
- Raise the capital buffers backing these exposures;
- Reduce pro-cyclicality;
- Provide additional incentives to move over-the-counter (OTC) derivative contracts to central counterparties (probably clearing houses);
- Provide incentives to strengthen the risk management of counterparty credit exposures; and

- Raise counterparty credit risk management standards by including wrong-way risk

Third, the introduction of a leverage ratio as a supplementary measure to the Basel II risk-based framework.

- Introduce a leverage ratio requirement that is intended to achieve the following objectives:
  - Put a floor under the build-up of leverage in the banking sector; and
  - Introduce additional safeguards against model risk and by supplementing the risk based measure with a simpler measure that is based on gross exposures.

Fourth, introduction of a series of measures to promote the build-up of capital buffers in good times that can be drawn upon in periods of stress.

- Introduce a series of measures to address procyclicality:
  - Dampen any excess cyclicality of the minimum capital requirement;
  - Promote more forward looking provisions; and
  - Conserve capital to build buffers at individual banks and the banking sector that can be used in stress; and
- Achieve the broader macro-prudential goal of protecting the banking sector from periods of excessive credit growth.
  - Requirement to use long term data horizons to estimate probabilities of default;
  - Downturn loss-given-default estimates, recommended in Basel II, to become mandatory;
  - Improved calibration of the risk functions, which convert loss estimates into regulatory capital requirements; and
  - Banks must conduct stress tests that include widening credit spreads in recessionary scenarios.
- Promoting stronger provisioning practices (forward-looking provisioning):
  - Advocating a change in the accounting standards towards an expected loss (EL) approach (usually, *EL amount* = loss given default (LGD)*probability of default (PD)*exposure at default (EAD)).

Fifth, introduction of a global minimum liquidity standard for internationally active banks that includes a 30-day liquidity coverage ratio requirement underpinned by a longer-term structural liquidity ratio called the Net Stable Funding Ratio.

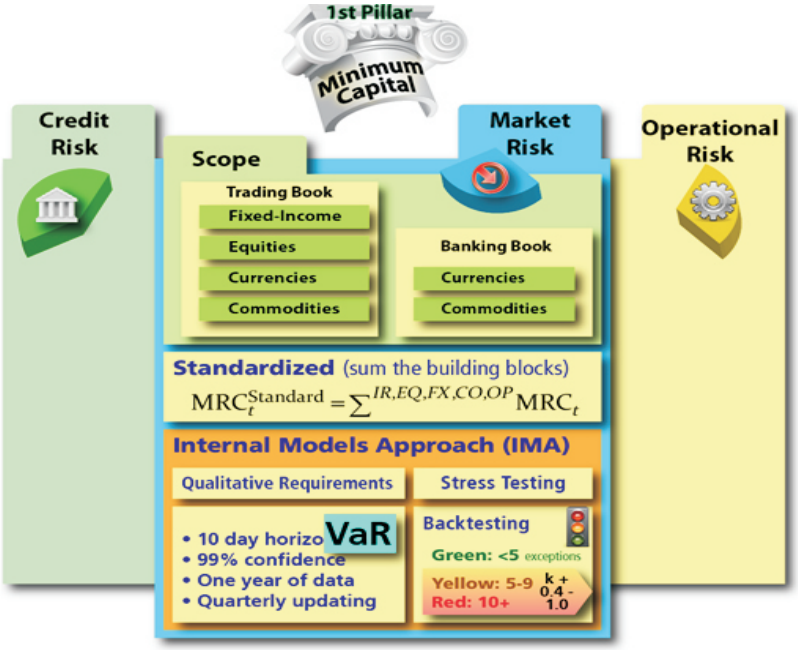
The Committee also is reviewing the need for additional capital, liquidity or other supervisory measures to reduce the externalities created by systemically important institutions.

## III. Basel Accord and Market Risk Framework

The 1988 Basel Accord (otherwise known as Basel I) did not account for market risk. Market risk was only marginally recognized as a magnifier of credit risk (risk weight of 100% for foreign exchange-denominated claims on central governments, e.g. eurobonds). In 1993, two alternative approaches were proposed by the Basel Committee:

Standardised approach (SA)
Internal-models approach (IMA)

**Figure 1: The Framework at a Glance**

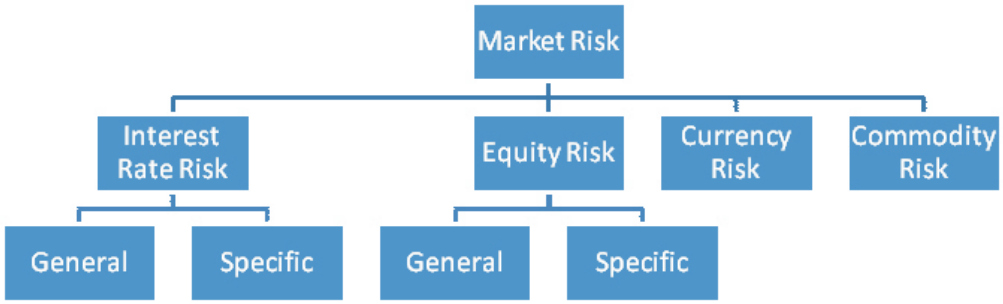



In 1996, the Amendment to the Basel Capital Accord led to the adoption of both SA and IMA by the Basel Committee in order to incorporate market risk . In 1998, implementation of SA and IMA commenced in G-13 countries.

---

Market risk refers to the risk of losses in a bank's trading book due to changes in equity prices, interest rates, credit spreads, foreign exchange rates, commodity prices and other indicators whose values are set in a public market (Amit Mehta, Mckinsey & Coy)

### III.1 Standardised Approach




For interest rate, equity positions and their derivatives, the minimum capital requirement is expressed in terms of two separately calculated charges:

**Specific risk of each security**. The capital charge for specific risk is designed to protect against an adverse movement in the price of an individual security owing to factors related to the individual issuer. The approach involves computation of marked-to-market values, V, and percentages, F, thereof: C = F*V.

**General market risk on offset positions**. The capital requirements for general market risk are designed to capture the risk of loss arising from changes in market factors.

For the foreign exchange, two processes are needed:
measure the exposure in a single currency position.
measure the risks inherent in a bank's mix of long and short positions in different currencies.

For commodities, the methodology used encompasses:
**Directional risk**, to capture the exposure from changes in spot prices arising from net open positions;

**Forward gap and interest rate risk,** to capture the exposure to changes in forward prices arising from maturity mismatches; and

**Basis risk**, to capture the exposure to changes in the price relationships between two similar, but not identical, commodities.

8 Specific risk represents the potential move in prices/rates due to events particular to that underlying issuer (also known as idiosyncratic risk).
9 General risk represents the potential move in prices/rates due to a move in the market as a whole, as represented by market index or government yield curves.

- Capital requirements for market risks only apply to the trading book
- Building block approach: individual requirements are added

**Equity positions**

**Specific risk**: 8% of the *gross general position*, (except for portfolios that are liquid and well diversified) i.e. the sum of all long and all short positions in equities and similar securities.

**Generic risk**: 8% of the net overall position (NOP), computed as the difference between the sum of the long positions and the sum of the short positions.

**Interest Rates Specific Risk:** The standard model calculates the general market risk charge arising from the impact on debt instruments of interest rate volatility. In principle, rising interest rates are the primary concern since it is these that cause mark-to-market (MTM) losses. A specific risk capital charge factor must first be determined based on the type of issuer and issue. Long and short positions in instruments may be netted for identical maturities, coupon rates and call features. The factor is applied to the market value of the instrument. The charge for portfolio of interest rate instruments is simply the sum of the charges applied to the instruments in the portfolio.

**Foreign Exchange requirement**

$$k_{FX} \quad 8\% \quad Max \quad \sum_j NP_j \, , \left| \sum_j NP_j \right|$$

**Example of net exchange positions**

| *Currency* | *US dollar* | *British pound* | *Japanese yen* | *Swiss franc* | *Australian dollar* | *Canadian dollar* | *Total* |
|---|---|---|---|---|---|---|---|
| $NP_j$ (€ mns) | 30 | -15 | 25 | -30 | 5 | -3 | 12 |
| $NP_j^+$ | 30 | | 25 | | 5 | | 60 |
| $\lvert NP_j^- \rvert$ | | 15 | | 30 | | 3 | 48 |

$$k_{FX} = 8\% \cdot Max(60,48) = 4.8$$

## SA-Main points of criticism

"Building blocks" approach - summing of the capital requirements computed separately for the different risk categories;

Break down of risk by type of financial instrument rather than by type of underlying risk; and

No recognition of internal models developed by banks: two different measures of risk.

Rigid 'one-size-fits-all' framework

Aggregation of risks using simple summing: Non-perfect correlations inside and

across risk types are not recognized

Interest rate risk in the banking book is not covered by regulatory capital

**In Summary: Standardised approach** to setting market risk capital charge:

- Interest risk rate in the trading book (sum of general and idiosyncratic 'name' risk)
- Equity risk in the trading book (sum of general and idiosyncratic 'name' risk)
- Currency risk across the bank
- Commodity risk across the bank

Equity risk in the banking book is covered either through deductions from total capital (for non-consolidated equity holdings in subsidiaries) or by credit risk capital charge (100% risk weight for other equity investments)

## From Standardised to Internal Models

Banks may use an internal model, typically based on value-at-risk (VaR) methodologies. Banks must receive a waiver before they are able to use a VaR model and must demonstrate that they meet certain quantitative and qualitative minimum criteria. Such models typically cover general risk and may also cover specific risk. Where specific risk is not covered, then the standard rules apply. Unlike the standard rules, these models also allow the correlation between different risk types and the resulting diversification benefits to be taken into account.

Banks which start to use models for one or more risk factor categories will be expected to extend the models to all their market risks. A bank with internal models will not be able to revert to measuring by a Standardised approach.

During a transition period, combination of internal models and the standardised methodology will be authorised before move to full internal models.

In the case of VaR models in calculating capital charge due to market risk, the preferred approach is value-at-risk (VaR) i.e. F*VaR. Banks will have flexibility in

devising the precise nature of their models, but the following minimum standards will apply for the purpose of calculating their capital charge.

"Value-at-risk" must be computed on a daily basis;
A 99th percentile, one-tailed confidence interval is to be used;
An instantaneous price shock equivalent to a 10 day movement in prices is to be used;
The historical observation period is a minimum length of one year; and
Banks should update their data sets no less frequently than once every three months.

**The VaR Cushion**

The Basel Committee has decided to establish a cushion of this type by requiring a multiplication factor of 3 to be applied to the VaR calculation.

Banks using proprietary models must compute VaR daily, using 99th percentile, one-tailed confidence interval with a time horizon of ten trading days using a historical observation period of at least one year.

Use of 'back testing' (ex-post comparisons between model results and actual performance) to arrive at the 'plus factor' that is added to the multiplication factor of three.

### III.2 The IM Approach

| |
|---|
| Quantitative criteria<br>Confidence level of at least 99%;<br>10 days holding period (2 weeks), taking the bank's trading positions as fixed for this interval;<br>At least 1 year of historical data<br>Volatilities & correlations updated monthly |
| Qualitative criteria<br>Independent RM Unit<br>VaR model used in day-to-day risk mgmt<br>Board of Directors highly involved<br>VaR model integrated by stress testing |

$$MRC_t = Max\left( VaR_{t-1}; MF \cdot \frac{1}{60} \cdot \sum_{i=t-61}^{t-1} VaR_i \right)$$

MF (multiplying factor) ranges from 3 to 4 according to the internal model quality.

This is measured through **back-testing.**

- If VaR 99% = 100, then the bank should loose more than 100 only 1% of the times
- N. of exceptions (loss>VaR) in one year (250 trading days) should be approximately 2.5
- If n. of exceptions > 4, MF > 3
- If n. of exceptions > 9, MF = 4
- An accurate VaR model will produce more than 5 exceptions over a 250-day or scaling trading period 4.12% of the time i.e. the cumulative probability (%).

**Basel Committee Internal Models Multiplying Factor**

| *Area* | *Number of exceptions* | *Increase* | *Multiplying factor* |
|---|---|---|---|
| Green | 0 | 0.00 | 3.00 |
| | 1 | 0.00 | 3.00 |
| | 2 | 0.00 | 3.00 |
| | 3 | 0.00 | 3.00 |
| | 4 | 0.00 | 3.00 |
| Yellow | 5 | 0.40 | 3.40 |
| | 6 | 0.50 | 3.50 |
| | 7 | 0.65 | 3.65 |
| | 8 | 0.75 | 3.75 |
| | 9 | 0.85 | 3.85 |
| Red | ≥ 10 | 1.00 | 4.00 |

*Source: Basel Committee (1996)*

*Number of exceptions (out of 250 Trading Days using binomial distribution)

10 The MF is to provide a means of adjusting the VaR numbers to provide enhanced capital coverage against losses in the event of severe market movements. It is, however, not meant to substitute for regular stress testing. The MF is to be set by individual supervisors on the basis of their assessment of the quality of a bank's risk management system subject to a minimum of 3.

**What does the minimum multiplier (3x) reflect?**

Objective' model risk: Estimation error due to the high confidence level?
Subjective' model risk: 'Penalty' imposed to counterbalance incentives to underestimate VaR and minimize regulatory capital?
Long-run historical average ratio of stress-test results to average VaR (Monet 2001): *Capital cushion to absorb losses from sharp market movements or prolonged periods of high volatility?*
Scaling up to 1-year returns volatility? (strong mean-reversion presumed?)
Market liquidity risk?
Absent or ineffective corrective action of bank's management to reduce its exposure to market risk (e.g. missing or lax stop-loss limits)?

**Is the multiplier 3x–4x too high or too low?**

**Kupiec and O'Brien (1997)**: Multiplier is redundant under the precommitment approach

**Lucas (1998)**: Maximum multiplier should be *at least* 8 to mitigate 'gaming' incentives

**Monet (2001)**: In the 'real-world', the multiplier should be perhaps 12

Both SA and IMA in 2004 incorporated into Basel II some technical amendments:
If specific risk on interest rate and equity positions in the trading book is not fully captured by VaR model, banks must calculate it using standardised methodology and add it to the VaR based capital charge as a surcharge (without scaling)
To capture specific risk, the model MUST (BCBS, 2006):

- Explain the historical price variation in the portfolio (e.g. in-sample $R^2$ ³ 90%)
- capture concentrations (magnitude and changes in composition)
- be robust to an adverse environment (e.g. full-cycle historical observation period, simulation, scenario worst-case analysis)
- capture name-related basis risk (idiosyncratic differences between similar but not identical positions)
- capture event risk (e.g. migration risk for debt, mergers/takeovers for equity)
- be validated through backtesting

Event risk beyond 99% confidence level and 10-day holding period not captured by the model must be factored in e.g. through stress-testing

Market liquidity risk must be reflected through scenario analysis and conservative proxies

New capital requirement for 'incremental' risk (regulatory capital default risk of trading book)

**IV. Stress Testing**

Banks that use the IMA for meeting market risk capital requirements must have in place a rigorous and comprehensive stress testing program.

Stress testing to identify events or influences that could greatly impact banks is a key component of a bank's assessment of its capital position.

Understanding and protecting against the vulnerabilities of a bank's risk-taking activities is of course one of the major responsibilities of the board of directors and senior management. Banks' stress scenarios need to cover a range of factors that can create extraordinary losses or gains in trading portfolios, or make the control of risk in those portfolios very difficult. These factors are due to low-probability events.

Stress scenarios need to shed light on the impact of such events on positions that display both linear and non-linear price characteristics (i.e. options and instruments that have options-like characteristics).

Banks' stress tests should be both of a quantitative and qualitative nature.

Quantitative criteria should identify plausible stress scenarios to which banks could be exposed. Qualitative criteria should emphasise that two major goals of stress testing are to evaluate the capacity of the bank's capital to absorb potential large losses and to identify steps the bank can take to reduce its risk and conserve capital.

This assessment is integral to setting and evaluating the bank's management strategy and the results of stress testing should be routinely communicated to senior management and, periodically, to the bank's board of directors. The Basel Committee recognises the difficulty associated with identifying standardised stress scenarios that will have a consistent impact across all banks. In general, the impact of any given set of market movements will depend crucially on the particular positions held in a bank's trading portfolio.

In this regard, the Committee has carefully considered the trade-offs between standardisation of the stress scenarios that banks would be required to evaluate and the difficulties of permitting some degree of bank-specific analysis while ensuring a common degree of rigor.

The Committee believes that the best way to address these difficulties is to combine the use of supervisory stress scenarios with stress tests developed by individual banks to reflect their specific risk characteristics. Specifically, supervisors may ask banks to provide information on stress testing in three

broad areas:

- Supervisory scenarios requiring no simulations by the bank
- Scenarios requiring a simulation by the bank
- Scenarios developed by the bank itself to capture the specific characteristics of its portfolio.

## *V. Basel III Supplemental Market Risk Capital Requirements*

he heart of Basel III is the continuation of existing Value-at-Risk-based capital requirement plus the imposition of four supplemental capital requirements for market risk. These are:

- A Stressed Long-Term Capital Requirement (Stressed VaR focuses on high volatility periods to better capture tail or stress events);
- A Long-Term Incremental Risk Charge (closely related to marginal VaR and measures the impact of small changes in position weighting. These are meant for positions for which it will take more than 10 days to defease the default risk);
- A Comprehensive Risk Capital Requirement; and
- A Specific Risk Charge;

## *VI. The Basic Value-at-Risk-based Market Risk Capital Charge*

The supplemental capital requirements are in addition to the existing Value-at-Risk (VaR) -based capital charge. The existing charge is based on the 99% one-tail confidence interval of potential loss from imposing the instantaneous equivalent of a 10-day move in underlying market rates or prices.

More specifically, it is the maximum of the latest daily VaR metric for the previous business day and the average of these metrics over the previous 60 business days. This value is multiplied by a bank specific regulatory factor, with a minimum value of 3.0, to arrive at the resulting capital charge.

### *VI.1 A Stressed Long-Term Capital Requirement*

he Stressed Long-Term Capital Requirement is structurally identical to the Basic VaR-based charge except that the underlying factor model must be calibrated to historical data from a continuous 12- month period of significant financial stress relevant to the bank's portfolio.

### *VI.2 A Long-Term Incremental Risk Charge*

The Long-Term Incremental Risk Charge (LTIRC) *explicitly addresses the need to reflect*

*default and migration risk over a longer time horizon than* the 10-day holding period implicit *in charges 1 and 2*. Under Basel III, the LTIRC represents an estimate of the *default and migration risk* of unsecured credit products over a one-year capital horizon at a 99.9% confidence level. The calculation take into account the liquidity horizon (the time to liquidate or hedge a given exposure) applicable to individual positions assuming maintenance of a constant level of risk over the one-year capital horizon. The liquidity horizon is to be that which would prevail in stressed market conditions and cannot be less than the smaller of three months or the contractual maturity of the position.

In essence, calculating the LTIRC is equivalent to modeling the impact of changes in issuer specific credit spreads over each liquidity horizon and then, rebalancing the portfolio to restore the original level of risk exposure.

### *VI.3 A Comprehensive Risk Capital Requirement*

The Comprehensive Risk Capital Requirement represents an estimate of *all price risks* of the bank's portfolio *correlation of trading positions over a one-year time horizon at the 99.9% confidence level*, again assuming maintenance of a constant level of risk over the one-year capital horizon. Correlation positions include:

> A securitisation position for which all or substantially all of the value of each of the underlying exposures is based on the credit quality of a single actively traded company, or
> A non-securitisation position that hedges a securitisation position described above. Calculation of the capital requirement of correlation positions *requires detaile analysis of the default adjusted performance of each underlying exposure*, with special attention to the degree of co-variation in such performance.

### *VI.4 A Specific Risk Charge*

Specific risk is the risk of losses on market risk exposures caused by factors other than broad market movements, including event risk and idiosyncratic risk. If a bank applies the Internal Modelling Approach (IMA) to the derivation of its Long-Term Incremental Risk Charge (item 3 above), default risk can be excluded from its specific risk calculation. Other types of event risk may give rise to a capital charge if they are material sources of potential loss.

### VI.5 Modelling Market Risk Portfolios

Under the Basel III market risk measurement framework, market risk is defined as the

risk of losses in on and off-balance-sheet positions arising from movements in market prices. The risks, subject to this requirement are the risks pertaining to interest rate related instruments and equity securities in the trading book; and foreign exchange risk and commodities risk throughout the bank on a worldwide net consolidated basis, irrespective of where the instruments are booked.

The trading book consists of positions in financial instruments and commodities held either with trading intent or in order to hedge other elements of the trading book. Positions held with trading intent are those held intentionally for short-term resale and/or with the intent of benefiting from actual or expected short-term price movements or to lock-in arbitrage profits, and may include for example, proprietary positions, positions arising from client servicing (e.g. matched principal broking) and market making.

Securitisation positions are covered by the Basel III market risk measurement framework. Securitisation positions include securitisation tranche instruments created by a securitisation transaction in which:

I. All or a portion of the credit risk of one or more underlying exposures is transferred to one or more third parties;
II. The credit risk associated with the underlying exposures has been separated into at least two tranches that reflect different levels of seniority;
III. performance of the securitisation exposures depends upon the performance of the underlying exposures;
IV. All or substantially all of the underlying exposures are financial exposures (such as loans, commitments, credit derivatives, guarantees, receivables, asset-backed securities, mortgage-backed securities, other debt securities, or equity securities); and
V. (v) for non-synthetic securitisations, the underlying exposures are not owned by an operating company. Securitisation positions also include market risk exposures that reference underlying securitisation tranche instruments.

The market risk capital requirements for securitisation positions that are correlation trading positions are addressed by the IMA. A correlation trading position is: (i) a securitisation position for which all or substantially all of the value of the underlying exposures is based on the credit quality of a single company for which a two-way market exists, or on commonly traded indices based on such exposures for which a two-way market exists on the indices, or (ii) a position that is not a securitisation position that hedges a securitisation position described in (i). Correlation trading positions may include CDO index tranches, customized CDO

tranches, and nth-to-default credit derivatives, and hedges of these positions may include standardized CDS index and single-name CDS positions.

The market risk capital requirements for securitization positions that are not correlation trading positions are addressed under the SMM, so these securitization positions are not modelled and analyzed under the IMA.

Since VaR and LTIRC amounts are calculated in the bank's domestic currency under the Basel III IMA guidelines, any net position denominated in a foreign currency introduces foreign exchange risk. Thus all foreign currency denominated positions held in either the trading or the banking books are subject to the IMA market risk capital requirement.

A financial instrument is any contract that gives rise to both a financial asset of one entity and a financial liability or equity instrument of another entity. Financial instruments include both primary financial instruments, i.e. cash instruments, and derivative financial instruments.

A financial asset is any asset that is cash, the right to receive cash or another financial asset; or the contractual right to exchange financial assets on potentially favorable terms, or an equity instrument. A financial liability is the contractual obligation to deliver cash or another financial asset or to exchange financial liabilities under conditions that are potentially unfavorable.

Under the IMA, the consolidated collection of trading book, foreign exchange, and commodity market risk exposures is modeled as a portfolio of financial instruments where each instrument represents a market risk exposure to one or more sources of market risk.

The IMA requires that each financial instrument describing a market risk exposure be modeled in sufficient detail so that its current and future economic value, future cash

In summary, Basel III capital enhancement:

$$MRC = \max\left(k_1 \cdot \frac{1}{60}\sum_{i=1}^{60} VaR_{t-i}, VaR_{t-1}\right) + \max\left(k_2 \frac{1}{60}\sum_{i=1}^{60} SVaR_{t-i}, SVaR_{t-1}\right)$$

… subject to the following requirements:

- Same VaR-model, confidence level and holding period are used, various techniques can be used to translate the 'normal' VaR-model into a 'stressed' model (e.g. 'antithetic' data, absolute instead of relative volatilities etc.)
- Stressed VaR computed at least weekly
- Multipliers k1 and k2 are set by national supervisors subject to an absolute minimum of 3
- Backtesting of Stressed-VaR model not performed!

Specific risk interest rate and equity risk should be captured by VaR model

Default and migration risks need not be captured for positions subject to incremental risk capital charge

Event risk beyond 99% confidence level and 10-day holding period need not be captured

Incremental' risk (default & migration risk for positions with specific interest rate risk) must be captured

**VI.6 Key concerns:**

Both k1 and k2 are obviously NOT a long-run historical average ratio of stress-test results to average VaR (as per Monet 2001);

Restrictions on eligible model types: Marginal sensitivity-based models (e.g. delta-normal, delta-gamma, delta-gamma-vega) applied to non-linear positions are NOT suitable for calculating stressed VaR under large increments of risk factors);

Minimum value of 3 for k2 seems arbitrary and is apparently NOT well-reasoned;

Banks get incentives to select a period of financial stress with lower volatility for calculating 'stressed' VaR; and

Internal models method for calculating capital for equity risk in the banking book has NOT been changed:

$$MRC \quad \max \; VaR \; 99\%, \; r \quad rf \;, E \quad k$$

r – quarterly returns on equity

rf – long-term risk-free rate

A – exposure at risk

k – minimum risk weight (200% for publicly traded equity, 300% for other equity holdings)

### VI.7 External Validation

An independent review and validation of banks' market risk measurement systems is essential if supervisors are to be assured that banks' measurement systems not only meet the required standards but also that the models are well designed and implemented with integrity. The main focus of this review should be on the adequacy of the internal validation process and of the documentation of the bank's policy and procedures.

The Committee has considered a number of ways of enhancing the ability to validate the output of banks' internal risk measurement models. This discussion has focused on determining what sort of information would be useful in understanding the factors determining a bank's estimate of its market risk exposure; and in gaining comfort that the estimates are a reasonable representation of the actual risks arising from the banks' trading activities.

It is important that the regulator should ensure that banks' models produce reasonably consistent results.

The Committee believes, it is essential that banks conduct back-testing, and that they make the results and the underlying inputs to the value-at-risk calculation available to their supervisors and/or external auditors on request.

Such comparisons would provide the supervisors with a useful tool for evaluating how accurately banks' internal models are able to measure the market risk of their portfolio over time.

The development of rigorous stress tests is a key element of a meaningful validation scheme, since it is important to ensure that the capital generated by the market risk capital charge is sufficient to withstand losses that might result from unanticipated market movements (for instance, when correlation assumptions break down). It is a deliberate objective of the Basel Committee to encourage banks to develop stress tests that are tailored to their individual risk profiles.

## VII. Concluding Remarks

The Basel Framework lays emphasis on the relevance of risk management and tries to link the minimum capital requirements of internationally active banks with the amount of tail risk in their trading books. The framework is applicable to all banks, including Nigeria.

## References

Montoro, A. (2011). "The New Market Risk Framework: Approaching the deadline".

Basak, S. and Shapiro, A. (2001). "Value-at-Risk Management: Optimal Policies and Asset Prices", Review of Financial Studies 14, 371-405.

Basel Committee on Banking Supervision (2011). "Revision to the Basel II Market Risk Framework".

Basel committee on Banking Supervision (2008b). "Guidelines for computing capital for Incremental Risk in the Trading Book". Available at: www.bis.org/publ/bcbs141.pdf

# Macro-Prudential Policies and Financial Stability: A Theoretical Background

*Yusuf B. Duniya**

## I. Introduction

The regulation and supervision of financial institutions has for long concentrated on the traditional micro-prudential approach, which seeks to ascertain the state of health of individual financial institutions with the belief that once the institutions are healthy, financial stability would be attained as a matter of routine. However, the global financial and economic crises of 2007/2008 made it imperative to reexamine the whole process of banking regulation and supervision. The idea of macro-prudential framework has been to complement micro-prudential regulation and supervision in the desire to efficiently and effectively ensure soundness/stability of individual FIs and the whole system by moderating threats to FIs and financial stability. While micro-prudential regulation is a bottom up approach, and concentrates on individual financial institutions, macro-prudential regulation is more appropriate for determining vulnerabilities and threats to financial stability. Although the debate on the effectiveness of macro-prudential regulation is ongoing, there appears to be a consensus that it provides the most 'cornerstone solution' to financial instability by minimizing impacts of systemic risk events. It is agreed that both micro-and macro-prudential regulation should be strengthened with emphasis on complementarity relationship between them, which may result in more robust framework for financial regulation and supervision.

The paper is organized as follows: section two and three contains conceptual issues and theoretical perspectives, respectively, while section four looked at complementarity and differences between macro-prudential and micro-prudential regulation. Thereafter, section five reviewed objectives and rationale for macro-prudential regulation vis-à-vis its institutional framework and scope. Section six looked at instruments of macro-prudential regulation and the implication of the new Basel III, while section seven focused on institutional and governance structure as key elements of macro-prudential regulation. The paper further gave a general insight on how macro-prudential policy framework should be structured in section eight and later concluded in section nine.

* *Yusuf B. Duniya is a Deputy Director in the Financial Policy and Regulation Department of the Central Bank of Nigeria. The usual disclaimer applies*

## II. Macro-prudential Regulation: Conceptual Issues

The concept of macro-prudential was first used in a paper prepared by BIS for discussion by Euro-Currency Standing Committee in July 1978 on the implications of rising oil prices for international bank lending and the stability of the international banking system. In June 1979, Cooke Committee underscored the issue as micro-prudential concerns began to emerge as macro-economic problems (macro-prudential), highlighting precisely the link between prudential regulation and macroeconomy. Subsequently, in a background paper written by Bank of England in 1979, macro-prudential regulation was proposed as a complimentary wider perspective prudential regulation with focus on issues that mainly focus on the market as a whole as distinct from an individual bank or financial institutions, which could not be obvious nor addressed at the micro-prudential level. Thereafter, awareness continued to rise on the insufficiency of micro-prudential regulation in ensuring financial stability. The financial crises in the late 1990s, particularly the Asian financial crisis, drew more attention to the growing interdependence between the macroeconomy and the financial system, and emphasized the need to build resilience to systemic shocks. Since then, application of the concept, macro-prudential, has become more common in banking policy sphere.

In 2005, the International Monetary Fund (IMF) Handbook described a sound and well-functioning financial sector as one having macro-prudential surveillance and financial stability analysis, which was described as monitoring the effect of potential macroeconomic and institutional factors on the soundness (risks and vulnerabilities) and stability of financial systems as one of the key pillars.

Following the onset of the global financial crisis in 2008, the term macro-prudential became central in research related to strengthening regulatory and supervisory frameworks (Aaron Brandenburg Oct., 2011). Although the concept is often commonly used, a precise definition of macro-prudential policy remains ambiguous. This is partly because the objective of macro-prudential policy is largely informal, as there is neither a common framework nor a consensus on the indicators and instruments to be considered (Hannoun, 2011, Aaron Brandenburg, 2011, Jaime Caruana, 2011). In the IMF survey of 63 countries and the European Central Bank conducted in December 2010, not one respondent had a formal definition of macro-prudential policy. In a comment in the *Financial Times* of May 19, Howard Davies (director of the London School of Economics) and David Green (former head of international policy at the UK Financial Services Authority) said, "No one is yet clear, nationally or internationally, quite what this term (macro-prudential) involves."

## III. Macro-Prudential: Theoretical Perspectives

On theoretical grounds, it has been argued that a reform of prudential regulation should integrate three different paradigms: the agency paradigm, the externalities paradigm, and the mood swings paradigm. The role of macro-prudential regulation is particularly stressed by the last two.

The agency paradigm highlights the importance of principal-agent problems. The main argument is that in the role of lender-of-last-resort and provider of deposit insurance, the government alters the incentives of banks to undertake risks, thereby inducing principal-agent problem (moral hazard). On the other, however, the coexistence of deposit insurances and insufficiently regulated bank portfolios induces financial institutions to take excessive risks. This paradigm, however, assumes that risk arises from individual institution, and hence, it is inappropriate to place emphasis on the system as a whole, which characterizes the macro-prudential approach.

In the externalities paradigm, the key concept is called monetary externality. This is defined as an externality that arises when one economic agent's action affects the welfare of another agent through effects on prices. As argued by Greenwald and Stiglitz (1986), when there are distortions in the economy (such as incomplete markets or imperfect information) policy intervention can make everyone better off in a Pareto efficiency sense. Indeed, a number of authors have shown that when agents face borrowing constraints or other sorts of financial frictions, pecuniary externalities arise and different distortions appear, such as over borrowing, excessive risk-taking and excessive levels of short-term debt. The International Monetary Fund policy study in 2010 argued that risk externalities between financial institutions and from them to the real economy tend to trigger market failures which justify macro-prudential regulation. In the mood swings paradigm, rationality and greed critically influence the behaviour of financial institutions' managers, causing excess of optimism in good times and sudden risk retrenchment on downturn. As a result, pricing signals in financial markets may be inefficient, increasing the likelihood of systemic trouble. A role for a forward-looking macro-prudential supervisor, moderating uncertainty and alerting to the risks of financial innovation, is therefore justified.

## IV. Macro-Prudential vs. Micro-prudential Regulation

As a starting point, it is useful to distinguish between "micro-prudential" and "macro-prudential" approaches to financial regulation. A micro-prudential approach is one in which regulation is partial-equilibrium in its conception, and is aimed at preventing the costly failure of individual financial institutions. Many have argued that the weakness of the existing framework is that it is largely micro-prudential (Crockett 2000; Brio, Furfine and Lowe 2001; Borio 2003; Kashyap and Stein 2004; Kashyap, Rajan and Stein 2008; Brunnermeier, et al., 2009, Bank of England 2009, French et al 2010). It evaluate each firm independently and in isolation, largely without regard to spillover and feedback effects, and form the basis of traditional supervision and bank examination, e.g., the "supervisory review process" that constitutes Pillar II of Basel (BIS, 2001).

Micro-prudential supervision's focus on the risk of insolvency or distress at individual firm level reflects goals such as protecting consumers and taxpayers (via the deposit insurance fund) and reducing distortions from the safety net. In this way, micro-prudential supervision takes the economy as given and thus, exogenous to the supervisory decision-making process (Beverly Hirtle, TilSchuermann, and Kevin Stiroh, 2009). As a result of the important nexus and complementarities between micro- and

macro-prudential regulation and supervision, care is usually taken to ensure proper mix towards the attainment and sustenance of financial stability.

By contrast, a Macro-prudential approach recognises the importance of general-equilibrium effects, and seeks to safeguard the financial system as a whole.

There seems to be agreement among both academics and policymakers that the overarching orientation of financial regulation needs to move in a macro-prudential direction. For example, Bernanke (2008) states: "Going forward, a critical question for regulators and supervisors is what their appropriate 'field of vision' should be. Under the current system of safety-and-soundness regulation, supervisors often focus on the financial conditions of individual institutions in isolation. An alternative approach, which has been called system-wide or macro-prudential oversight, would broaden the mandate of regulators and supervisors to encompass consideration of potential systemic risks and weaknesses as well." The combination of micro- and macro-prudential supervision is necessary for effective and efficient framework for establishing financial stability through stress testing and scenario analysis.

The current global financial crisis, which exposed gaps in public policy tools to deal with systemic risk, has given rise to the need for macro-prudential supervision and regulation to, among others, strengthen links among key components of a financial system, examine carefully how systemic risk varies over time, and determine the robustness of the system when hit by shocks or systemic risk. Excessive risk-taking, combined with lack of prudential supervision and loose monetary policy, is generally viewed as important contributors to the last financial crisis. The central banks and regulators have a fundamental role in ensuring financial stability by monitoring the performance of banks and other institutions, but their collective actions were clearly not enough to prevent the crisis. The global financial crisis, which has also become an economic crisis, has accentuated the importance of systematically introducing a macro-prudential approach for assessing soundness in financial systems as well as in individual financial institutions.

Regulators need to identify banks that do not manage their risks well. However, such monitoring should not only be concerned with the stability of individual institutions, but should also include a macro prudential orientation that comprises monitoring, regulation, and supervision to examine how risk is distributed across a financial system at any given point in time and identify as well as understand how aggregate risk evolves over time. Although the need for a macro-prudential approach has heightened over the past 15 years, the macro-prudential toolbox is still in the process of development and its concepts are as complex as they are poorly understood.

## V. Macro-prudential Regulation: Objectives and Rationale

There appears to be a consensus among policy makers, theorists and academia on the main objective of macro-prudential regulation. As put by Bank of England in 2009, the main goal of macro-prudential regulation is to reduce the risk and the

macroeconomic costs of financial instability. It is therefore often recognised as a necessary ingredient to fill the gap between macroeconomic policy and the traditional micro-prudential regulation of financial institutions. In other quarters, macro-prudential regulation is aimed at examining trends in the financial system and the economy as a whole that can impact financial stability and trigger large-scale financial crisis. Macro-prudential regulation thence focuses on the financial system as a whole to limit the chances of system-wide distress and avoid significant losses in terms of real output.

Macro-prudential regulation may also aimed at limiting the risk of widespread disruptions to the provision of financial services and thereby minimizing the macroeconomic cost of financial instability and disruptions on the economy as a whole; bearing in mind that systemic risk is driven largely by fluctuations in economic and financial cycles over time, and the degree of inter-connectedness of financial institutions and markets (Borio, 2003).

The justification for macro-prudential regulation therefore could be found in its perspective of ensuring stability of the financial system as a whole as opposed to individual firms within the system. This perspective also ensures monitoring of conjectural and structural trends in financial markets so as to give warning of the approach and potential impact of financial instability.

The goal of macro- prudential supervision and regulation is to reduce the probability of distress for the entire financial system when the distress has the potential to adversely impact on the real economy. This link incorporates a host of potential channels, including interdependence and linkages among large financial firms through clearing and settlement systems, common exposures, collective or "herd" behaviour, and market failures such as externalities or moral hazard, all of which have the potential to amplify shocks and spillover to the real economy. Supervisors have an incentive to "lean against the wind" of broader destabilising forces with counter-cyclical pressures. This approach takes the stability of both the financial system and the real economy as explicitly endogenous with respect to supervisory action, so supervisors have a clear objective to influence the path of the economy by acting on the banking system (Beverly Hirtle, TilSchuermann, and Kevin Stiroh, 2009).

## VI. Macro-Prudential Instruments

A large number of instruments have been proposed, however, there is no agreement about which one should play the primary role in the implementation of macro-prudential policy.

Most of these instruments aim to prevent the pro-cyclicality of the financial system on the balance sheet (asset and liability sides) of the FIs. These include:

Cap on loan-to-value ratio and loan loss provisions

Cap on debt-to-income ratio

The following tools serve the same purpose, but additional specific functions have been attributed to them, as noted below:

Countercyclical capital requirement - to avoid excessive balance-sheet shrinkage from banks in trouble;

Cap on leverage financing - to limit asset growth by tying banks' assets to their equity (finance);
Levy on non-core liabilities - to mitigate pricing distortions that cause excessive asset growth; and
Time-varying reserve requirement - as a means to control capital flows with prudential purposes.

To prevent the accumulation of excessive short-term debt, the following instruments are considered:

Liquidity coverage ratio;
Liquidity risk charges that penalise short-term funding;
Capital requirement surcharges proportional to size of maturity mismatch; and
Minimum haircut requirements on asset-backed securities

In addition, different types of contingent capital instruments (contingent convertibles and capital insurance) have been proposed to facilitate bank's recapitalization in a crisis event.

## VII. Basel III

Several aspects of Basel III reflect a macro-prudential approach to financial regulation. Indeed, the Basel Committee on Banking Supervision acknowledges the systemic significance of financial institutions in maintaining financial stability. Under Basel III, banks' capital requirements have been strengthened and new liquidity requirements, a leverage cap and a countercyclical capital buffer have been introduced. Also, the largest and most globally active banks are required to hold more and higher-quality capital, which is consistent with the cross-section approach to systemic risk.

Other traditional instruments include:

Financial Soundness Indicators (FSIs): This covers capital adequacy, asset quality, earnings and profitability rates, liquidity and sensitivity to market risk as well as indicators of market liquidity, corporate and household financial health, and real estate prices. The Indicators are set out below according to IMF compilation guide;
Conduct of Stress Testing: This is used to determine the impact of shocks on the various indicators; and
Early Warning Models: These models, among others, analyses the sectoral and market vulnerabilities, country risk arising from spillover and contagion in the financial system.

## VIII. Institutional and Governance Structure

The institutional architecture is a core element of macro-prudential policy. The choice of a specific institutional setup depends on myriad of conditions, and international best practices are yet to emerge. However, there appear to be two (possibly overlapping) key elements: an authority with a clear mandate for macro-prudential policy; and a formal mechanism of coordination or consultation across policies aimed at financial stability.

The need to identify an authority that oversees systemic risks and decides or recommends policy actions reflects: the need for clarity of responsibility for containing systemic risk, with appropriate incentives to act; the need for clarity of responsibility over policy instruments; and the complexity of identifying and monitoring systemic risk, given the breadth of analyses required and the underlying data needs. Such an authority could be a body (e.g., a committee or council) or institution (e.g. a central bank, supervisory agency); and an existing or a new one.

The need for coordination arises because macro-prudential policy interacts with other policies, as noted above. Because financial stability may not be an objective of these other policies, policy conflicts may arise, hence the need for more formal coordination or consultation mechanisms. These may take an institutional form, such as committee or council, or other forms, such as a requirement for the macro-prudential authority to be consulted or offer advice on key decisions affecting the financial system. Coordination is especially important when formal authority over tools affecting specific sources of systemic risk rests with bodies other than the macro-prudential authority. The financial services regulatory coordinating committee (FSRCC) in Nigeria is an example of such coordinating body.

## IX. How Should the Macro-Prudential Policy Framework be structured?

The discussion under the appropriate structure is defined by three key elements of the macro-prudential policy framework: The analytical framework to identify and monitor systemic risks; processes to identify and collect the necessary data; and the ongoing assessment of risks to the stability of the financial system as a whole (e.g., trends, scale, probability, timing, system resilience) and their prioritization. The operational set of instruments to contain risks and prevent them from becoming systemic; rules governing the use of these instruments; and assessments of policy effectiveness. The institutional architecture of macro-prudential policy, including mechanisms of governance, accountability, and transparency; and coordination of macro-prudential policy with other public policies aimed at preserving financial stability.

## X. Some Unanswered Questions

The arguments for and the merits of macro-prudential notwithstanding, there are questions still begging for answers which include:

- What conflict can arise between macro-prudential and other policy objectives?

- In broad term, stability of the financial system and macro-prudential designed to achieve it should be consistent with other desirable economic goals;
- Instability in the financial system is likely to mean that the economy as a whole is unable to function efficiently; and
- At the margin, however, there may be trade-offs.

- How far is it possible or sensible to 'silo-size' macro-prudential policy making?
- What actually failed?
  - Was it the inappropriate or insufficient use of existing instruments or the inability of those instruments to deliver financial stability?
- How should the objective of macro-prudential policy be defined? How broad or narrow should it be?

## XI. Conclusion

As the stability of the financial system often has regional and global dimensions, the multilateral aspects of macro-prudential policy will need to be fully considered, by ensuring that frameworks in individual countries are mutually consistent, while taking into account, country-specific circumstances. Whatever the mechanism, recent experience has demonstrated that financial stability, and macro-prudential policy, needs to be given higher priority than in the past.

## References

Aaron Brandenburg (2011). "The Emerging Role of Macro-Prudential Surveillance in Insurance Supervision", Economist, NAIC Actuarial and Statistical Department.

Bank of England (2011). "Instruments of Macro-prudential Policy", *Discussion Paper*.

Bernanke, B. S. (2008). "Reducing Systemic Risk", Speech at the Federal Reserve Bank of Kansas City's Annual Economic Symposium, Jackson Hole, Wyoming, August 22.

Borio, C., C. Furfine, and P. Lowe (2001). "Pro-cyclicality of the Financial System and Financial Stability: Issues and Policy Options In Marrying the Macro- and Micro-Prudential Dimensions", of Financial Stability, BIS Papers.

Borio, C. (2003). "Towards a Macro-prudential Framework for Financial Supervision and Regulation?" BIS Working Paper 128.

Clement, P. (2010). "The term macro-prudential: origins and evolution", BIS Quarterly Review, March.

Crockett, A. (2000). "Marrying the Micro and Macro-prudential Dimensions of Financial Stability", BIS Speeches, September 21.

Galati, G. and M. Richhild (2011). "Macro-prudential policy – a literature review", BIS Working Paper No. 337.

Goodhart, C. (2011). "The macro-prudential authority: powers, scope and accountability", LSE Financial Markets Group. Special Paper 203, October.

Hannoun, H. (2010). "Towards a global financial stability framework", Speech at the 45th SEACEN Governors' Conference, Siem Reap province, Cambodia.

Hannoun, H. (2011). "Sovereign Risk in Bank Regulation and Supervision: Where Do We Stand?", Financial Stability Institute presentation at Abu Dhabi, 26 October.

Hirtle B. J., T. Schuermann, and K. J. Stiroh (2009). "Macro-prudential Supervision of Financial Institutions: Lessons from The SCAP", *Federal Reserve Bank of New York Staff Report* No. 409, November. Available at: www. Newyorkfed.org/research/staff reports/sr409.html

Kashyap, A. K. and J. C. Stein (2004). "Cyclical Implications of the Basel-II Capital Standards", Federal Reserve Bank of Chicago Economic Perspectives, Vol. 28.

Kashyap, A. K., Raghuram Rajan and J. C. Stein. (2008). "Rethinking Capital Regulation", In Maintaining Stability in a Changing Financial System, 431–71. Federal Reserve Bank of Kansas City.

Samuel G. H., K. K. Anil and C. S. Jeremy (2011). "A Macro-prudential Approach to Financial Regulation", Journal of Economic Perspectives, Volume 25, Number 1.

Turner, P. (2012). "Macro-prudential policies in EMEs: theory and practice", BIS Papers No 62.

# Leadership and Corporate Governance: Challenges for Bank Regulators

*Dr. (Mrs.) Lucy Surhyel Newman* *

***Abstract***
The role of bank regulators seems to have expanded in the wake of the recent global financial meltdown in the domestic and international banking industry. About a decade ago, issues such as bank capitalisation, liquidity ratios, banking models and product related variables were the central focus of bank regulation. However, increasing attention to more systemic issues such as risk modeling, corporate governance, sustainability, the quest for leverage and synergies as well as business ethics within local, regional and global competition spheres appear to be engaging most domestic and regional discussions on bank regulation, in recent times. Corporate governance has ranked high amongst such discussions and as such, bank regulators now face the new challenge of developing and incorporating sustainable corporate governance polices within a larger macro prudential framework, to guide industry practices. Given likely challenges to obtaining legislative approvals on acceptable behaviour as foundational to good corporate governance practices, this paper recognizes the attendant challenges for bank regulators and recommends measures that Nigerian bank regulators can explore in enhancing their effectiveness in advocating for and where necessary, enforcing good corporate governance practices, based on universally defined pillars and elements of corporate governance.

**Keywords:** Leadership, corporate governance

## I. Introduction

Following the global financial crisis that began in late 2007 and subsequently impacted the Nigerian economy the following year, most financial experts have recognised that in order to ensure effective regulatory regimes for the banking sector, it require stronger corporate governance frameworks for banks and financial institutions. This view is reinforced by the fact that even though the factors that were responsible for the financial crisis in Nigeria were varied, empirical evidence have clearly shown that the major singular underlying reasons for the crisis was gross failures in corporate governance practices in financial institutions and sub-optimal regulatory oversight.

This problem was exacerbated because Nigerian banks had just completed consolidation as universal banks, with pending and unresolved issues from the exercise. However, developments in the global and domestic financial services

* *Dr. (Mrs.) Lucy Newman is the Managing Director/CEO of Financial Institutions Training Centre (FITC). The usual disclaimer applies.*

sector have shown that re-capitalisation is only a means to an end and not the end in itself. Therefore, consolidated banks with robust balance sheets but lacking sufficient corporate sustainability framework and guidelines, only created an illusion of financial muscle. The illusionary financial muscle intoxicated some banks' management and boards, whom were under increasing pressure to report impressive performances. Such banks abdicated risk management ethos in a bid to ensure that they delivered higher returns to their shareholders, who had just provided the funds for the consolidation exercise.

These lapses somehow undermined the stability of the domestic banking industry, such that when the effects of the global crisis finally trickled down to the domestic scene, a systemic collapse was imminent. The Central Bank of Nigeria (CBN) led some of the interventions from late 2009 to date. These developments tend to reinforce the importance of leadership and corporate governance in the on-going national discourse on how to develop a more stable financial system that will support sustainable economic growth and development, within a macro prudential regulatory policy framework.

The paper seeks to: (a) enable consensus on the essentials of leadership for effective corporate governance practices within the industry; (b) establish more clarity on the role of regulators in promoting good governance within a Macro-Prudential Framework for financial system stability; (c) enhance an understanding of effective ways to advocate for systematic corporate governance policies and practices; (d) leverage the CBN's overall objective of being an effective ambassador of good governance practices; and (e) attempt to align issues in context of providing leadership in bank regulation, within the region and beyond. The focus is to support the bank regulator overcome traditional and systemic challenges, while establishing effective leadership in terms of corporate governance principles and practices, as a precursor for developing frameworks for sustainable regulation of banking institutions.
The paper is presented in six sections. Following this introduction, section two establishes conceptual basics in terms of macro prudential regulatory framework, governance, leadership and regulations as well as inter-connections between them. Section three provides a diagnosis of the Nigerian banking industry along a globally accepted corporate governance practice progression matrix. Section four describes where the Nigerian banking industry should aspire to be, on corporate governance practices, while section five addresses the role of the CBN as a bank regulator. Section six concludes and makes recommendations to enhance industry practice.

## II. The Basics

### II.1 Regulation via Macro-Prudential Framework

Many observers have argued that the regulatory framework in place prior to the global financial crisis was deficient, because it was largely "micro-prudential" in nature. A micro-prudential regulation is one in which regulation is viewed from a partial equilibrium approach in its conception and is therefore, aimed at preventing

the costly failure of individual financial institutions. By contrast, a "macro-prudential" approach recognizes the importance of general equilibrium effects, and seeks to safeguard the financial system as a whole.

System-wide or macro-prudential oversight broadens the mandate of regulators and supervisors to encompass considerations of potential systemic risks and weaknesses. Macro-prudential specification also calls for higher level rethinking and interface between key stakeholders on how to regulate industry operational issues, with ripple effect on related industries and sectors. Notwithstanding, macro-prudential supervision is a complement to micro-prudential supervision, because both institution specific and systemic perspectives ultimately matter, for system stability and sustainability.

In context of the subject matter, macro-prudential framework calls for an effective balancing of the bigger systemic picture, as well as industry cluster patterns, while maintaining vigilance on institution specific performance and compliance indices. Ultimately, the goal of macro-prudential supervision and regulation is to minimize the risk of financial disruptions that are sufficiently severe to inflict significant damage on the broader economy.

### II.2 Corporate Governance with Macro-Prudential Framework

Corporate governance involves a set of relationships between an organization's management, its board, its shareholders, and other stakeholders. Corporate governance is about the process and structures by which the objects and affairs of an institution are directed and managed in order to improve long-term shareholder value. It entails enhancing corporate performance and accountability, while taking into account the interest of other stakeholders.

According to the OECD's 2004 definition, corporate governance provides the structure through which the objectives of the organisation are set, and its means of attaining the defined objectives and monitoring performance, are determined. Thus, principles of corporate governance are; (a) protection of the rights of shareholders, (b) ensuring equitable treatment of shareholders, (c) appropriately clarifying the role of stakeholders, (d) ensuring effective disclosure and transparency; and (e) clarifying the responsibilities of the board. In view of this, the four pillar of corporate governance are accountability, transparency, fairness and independence.

Externally, corporate governance at the regulated entity perspective involves the allocation of authority and responsibilities as well as the manner in which the business and affairs of a bank are governed by its board and senior management. It also includes how they: set the bank's strategy and objectives; determine the bank's risk tolerance/appetite; operate the bank's business on a day-to-day basis; protect the interests of depositors, meet shareholder obligations, and take into account the interests of other recognised stakeholders. It also aligns corporate activities and behaviour with the expectation that the bank will operate in a safe and sound manner, with integrity and in compliance with applicable laws and regulations.

Internally to the bank regulator, viewed from a regulated entity perspective, corporate governance at the bank regulator institution involves the allocation of authority and responsibilities as well as the manner in which the processes and affairs of the regulator are governed by its board, committee of governors, directors and senior management. This also includes how they: set the regulator's strategy and objectives; determine its internal processes and risk tolerance in mediation/regulation; operates on a day-to-day basis; balances the interests of the society, depositors and regulated entities, meet its shareholder obligations, and takes into account, the interests of other regulators within the financial services sector and the wider economy. It also addresses how it aligns its corporate activities and behaviour of its key persons/principals with the expectations that it will operate in a safe and sound manner, with integrity and in compliance with the broader needs of the economy in which I operates.

There are six key elements required for good corporate governance practices, as adapted from the Corporate Governance and Board Leadership Training Resources Kit of the Global Corporate Governance Forum of the International Finance Corporation9:

**Element 1 - Good Board Practices, which stipulate that:**

- There should be clearly defined roles and authorities;
- The duties and responsibilities of directors should be clearly understood;
- There should be a well-structured board;
- There should be an appropriate composition and mix of skills on the board;
- There should be clearly defined and appropriate board procedures;
- Director remuneration should be in-line with best practice; and
- There should be regular board self-evaluation and training.

**Element 2 - Transparent Disclosure, which stipulates that:**

- Financial information should be disclosed;
- Non-financial information should be disclosed;
- Financial reports should be prepared according to International Financial Reporting Standards (IFRS);
- Published Annual reports should be of high quality; and
- There should be web-based disclosure.

**Element 3 - Control Environment, which stipulates that:**

- Independent audit committee should be established;
- Banks should ensure that a robust risk-management framework exists;
- Robust and transparent internal control procedures should exist;
- There must be a bank-wide internal audit function;
- There should be regular audits by an independent external auditor;
- There must be established management information systems; and
- Compliance function should be established.

**Element 4 - Relationships with Stakeholders (including well defined shareowner rights), stipulate that:**

- There should be adequate identification of stakeholders and their legitimate interests and expectations;
- There should exist constructively ways of engaging with key stakeholders;
- There should be a balancing of the interests of the company with the legitimate interests and expectations of stakeholders; and
- There should be well defined shareholder rights, especially for minorities.

**Element 5 - Good Citizenship, which stipulates that banks should:**

- Develop an ethical culture based on shared values;
- Develop a clear and practiced code of ethics;
- Reward ethical behaviour;
- Consider the economic, social and environmental factors when managing the organisation; and
- Take the long-term view.

**Element 6 - Board Commitment, which stipulates that:**

- The board should discuss corporate governance issues and create corporate governance committee;
- The bank should designate a corporate governance champion;
- The bank should ensure that a corporate governance improvement plan exists;
- The bank commits appropriate resources;
- The bank should ensure that policies and procedures have been formalized and distributed to relevant staff;
- The bank should ensure that a corporate governance code has been developed; and
- The bank should ensure that it is publicly recognized as an organisation that practice good corporate governance and actually earns that status

Corporate governance as a tool for the macro-prudential supervisor arises from the fact that the success of any macro-prudential policy is dependent to a large extent, on a system-wide adherence to good corporate governance practices. Corporate governance in banks is largely concerned with reducing the social costs of bank risk-taking and the regulator is uniquely positioned to balance the relevant stakeholder interests, by devising governance standards for financial institutions that achieve economic development objectives, while minimising the externalities of systemic risk. Systemic risk arises because banks have an incentive to under-price financial risk, because they do not incur the full social costs of their risk-taking. These sources of systemic risk demonstrate the fragility of the banking sector and the need to develop adequate corporate governance arrangements to incentivise bank management and owners to undertake a level of risk that does not create substantial social costs for the economy.

The main function of bank prudential regulation is to address the social costs which bank risk-taking creates, by adopting controls and incentives that induce banks to price financial risk more efficiently. Corporate governance plays an important role in achieving this objective in two ways; (a) to align the incentives of bank owners and

managers so that managers seek wealth maximisation for owners, while not jeopardising the bank's franchise value through excessive risk-taking; and (b) to incentivise bank's management to price financial risk in a way that covers its potential and actual social costs.

## II.3 Leadership and Corporate Governance

Leadership has been described as a process of social influence in which one person can enlist the aid and support of others in the accomplishment of a common task. A quote attributed to Joanne Ciull says "Leadership is not a person or a position; it is a complex moral relationship between people based on trust, obligation, commitment, emotion, and a shared vision of the good". The 3C's of good leaders are Character, Competence and Commitment. This explains why good leadership is paramount in achieving good corporate governance practice.

Unfortunately in Africa, leadership has been widely considered as one of the recurring factors hindering development, but it is also a major basic component for delivering effective corporate governance, both in private and public institutions. The World Economic Forum's 2011-2012 Global Competitiveness Report scored Nigeria 4.3 from a possible 7.0, for efficacy of corporate boards with a rank of 89 from a list of 142 countries. This national ranking is worrisome and shows how much the country has to do in fostering the right leadership culture, model and personalities for the required national transformation.

Values are becoming the preferred mode of decision-making in business and following the financial meltdown, they have become particularly so in government, healthcare and finance. It is not surprising therefore, to find ample research showing that adaptable and values-driven companies are the most successful organizations across the globe. This is because shared values build trust, and trust is the glue that enhances individual and corporate performance.

Characteristics of values-based leadership include; a strong desire to do what is right and to treat others within self-need; that the leader's values are not imposed, as values-based leaders tend to critically examine their values (personal & organisational) and make conscious decisions to live by them, privately and officially; and (c) that such leaders tend to lead based on a way of living that feels good (and right) after the fact. Values-based leaders expect positive consequences if they embrace and live these values, as well as negative consequences if they reject and do not follow them.

A review of the components of the four pillars of corporate governance as earlier inferred, and detailed below, provides insights into the link between effective leadership and corporate governance. Most values-based leaders actually practice the four pillar of corporate governance listed below, in varying formats and degrees. The pillars underpin the basic principles of management and transformational leadership. The four pillars of corporate governance and their components are:

**Pillar 1 – Accountability requires that banks ensure that:**
- Management is accountable to the Board; and
- The board is accountable to shareholders

**Pillar 2 – Fairness requires that banks:**
- Protect shareholders' rights;
- Treat all shareholders including minorities, equitably; and
- Provide effective redress for violations

**Pillar 3 – Transparency requires that banks:**
- Ensure timely, accurate disclosure on all material matters, including the financial situation, performance, ownership and corporate governance

**Pillar 4 – Independence requires that bank:**
- Procedures and structures are in place so as to minimise, or avoid completely conflicts of interest; and
- Directors and Advisors are independent i.e. free from the influence of others

In corporate governance, the board, management and staff in corporate organizations are agents, while the shareholders are the principals. The agents are expected to act in good faith, in the interest of the principals (shareholders) within clearly defined boundaries of responsibility. However, this is usually not the case as shareholding structure could transcend the agent/principal boundary. For example, management could tend to assume the authority of the Board which in turn could abdicate its responsibilities. In other situations, the Board could assume the authority of management, which by implication could also abdicate responsibility. Thus, confirming the views of Mark Goyder, Director of Tomorrow's Company that; "Governance and leadership are the most sustainable fibre of successful organisations. If you have leadership without governance you risk tyranny, fraud and personal fiefdoms. If you have governance without leadership you risk atrophy, bureaucracy and indifference."

## II.4 Challenges for Bank Regulators

CBN's vision is "To be the model Central Bank delivering price and financial system stability and promoting sustainable economic development" by 2015. In view of this, let us reflect on the CBN's role as a regulator on corporate governance, to include; (a) providing guidance to banks on expectations for sound corporate governance, (b) regularly performing a comprehensive evaluation of a bank's overall corporate governance policies and practices, c) evaluating banks' implementation of the principles of corporate governance for the banks as entities, (d) taking effective and timely action to address banks observed to be deficient in corporate governance policies and practices, and (e) cooperating with other relevant institutions, in Nigeria and other jurisdictions as may be required, regarding the supervision of corporate governance policies and practices.

Nigeria's financial services' sector has expanded rapidly and increasingly dominating Africa, with Nigerian banks leading. The challenge for the CBN as an apex regulator in

line with its stated vision is to devise corporate governance standards for financial institutions that achieve economic development objectives, while minimising both institution specific and banking system externalities of systemic risk. This includes unravelling complex or opaque corporate structures that veto transparency, in order to institute an industrial culture of full disclosure and transparency, as well as monitoring board practices. However, the question is "how can the CBN achieve this as a regulator"?, given what Mervyn King S.C. (Chairman: King Report) had said, that you cannot legislate good behaviour?

In a similar perspective, the CBN has the challenge of managing factors outside the scope of banking supervision, but with potentials of affecting market integrity, consumer protection and system stability (business laws, trade and exchange rules as well as accounting standards). There is also the issue regarding adequacy of resources (quantity, quality, and in particular, expertise and their effective deployment versus cost of banking services.

On the other hand, the challenges for macro-prudential regulation, especially following the global financial crises of 2007-2009, is developing substantive standards of governance and process-oriented as well as outcome-oriented risk management guidelines that incentivise bank management and directors to take into account, the overall economic and operational risks posed by financial institutions. This requires the adoption of robust governance structures that balance the various interests within and outside the banking organisation, so that the social costs of banks' risk-taking are minimised. This means that regulators are not only concerned with creating an incentive framework to induce management to achieve the objectives of the bank owners (e.g. shareholders' wealth maximisation), but also look to balance the interests of the various stakeholder groups in the economy that are affected by banks' risk-taking and reduce the social costs that are inevitably associated with poorly regulated banking activity.

Another important challenge that has attracted recent public and regulatory attention is the issue of whether to regulate the financial compensation provided by banks to their employees and shareholders. Indeed, the risk-taking strategies of senior management and directors are significantly influenced by their compensation arrangements and by their exposure to civil and criminal liability for their risk-taking practices. The challenge then for regulators is how to align the incentives of shareholders, depositors and creditors. In other words, they must be required to incur the costs of their risk-taking activities. However, controlling or limiting compensation for senior management invariably leads to talent flight to other industries and jurisdictions. Within an external perspective and in view of increasing international presence of Nigerian banks, the CBN has the challenge of keeping to various memoranda of understanding for collaborative supervision of group entities that operate in other jurisdictions regulated by the CBN while keeping a close tab of country specific regulatory requirements on emerging reporting standards and anti-money laundering issues, for instance. In view of the requirements of the macro-prudential framework, concepts of corporate governance, emerging leadership requirements and

expanding scope of the role of bank regulators, meeting all these challenges requires regulators to tackle several issues including:

- Monitoring board practices ;
- Ensuring the capability and integrity of senior management in ensuring that the bank's activities are consistent with the business strategy, risk tolerance/appetite and policies approved by the board;
- Developing a dynamic and effective risk management framework and instituting a culture of effective internal controls;
- Developing a viable compensation and tenure policy for management and board members;
- Unravelling complex or opaque corporate structures;
- Instituting a culture of full disclosure and transparency;
- Managing factors that are often outside the scope of banking supervision but can affect market integrity and system stability, including the system of business laws, stock exchange rules and accounting standards;
- Adequacy of resources (quantity, quality, and in particular, expertise) and their effective deployment;
- Change the focus of the supervisory process from 'processes' to 'outcomes';
- Identifying and increased supervision of Systematically Important Financial Institutions (SIFIs);
- Supervising complex financial products which are not adequately understood by the public;
- Inadequate information technology systems and data architectures in financial institutions; and
- Developing value based leadership across the financial services sector.

## III. Where We Are On Corporate Governance

### III.1 Global Perspectives

Three recent contemporary developments dwelling on the issue of corporate governance, leadership and the role of regulation in context of the emerging global financial system and related need for more effective risk mitigation for sustainability are explored.

The first contemporary development is the 2010 release of the documentary video titled The Inside Job, which is a documentary film about the late-2000s financial crisis directed by Charles H. Ferguson. The film is described by Ferguson as being about "the systemic corruption of the United States by the financial services industry and the consequences of that systemic corruption." In five parts, the film explores how changes in the policy environment and banking practices helped create the financial crisis. The documentary is split into five parts and begins by examining how Iceland was highly deregulated in 2000 and the privatisation of its banks. When Lehman Brothers went bankrupt and AIG collapsed, Iceland and the rest of the world went into an economic recession.

The second contemporary development is the April 2012 last speech by Hector Sants, as Chief Executive, FSA at Merchant Taylors' Hall. Hector Sants used his last speech as head of the regulator to lay the blame for the financial crisis at the door of the financial services sector. He left the FSA June 2012, after nearly five years as chief executive from 2007 to 2012. Sants was of the view that from a regulatory perspective, it is paramount that the right set of rules exists, even though experience has shown that the old Basel standards, subscribed to by the international regulatory community, were completely inadequate. Sants suggested that a great deal of progress has been made in addressing these deficiencies, which should go a long way towards dealing with the symptoms of the crisis, the changes did not affect the underlying key issue of effective corporate governance. Sants noted that ultimately, management is responsible for running firms and firms fail because of the decisions taken by their boards and their management within the firm's corporate governance framework. He underscored the fact that the crisis exposed significant shortcomings in the governance and risk management of firms and the culture and ethics which underpinned them. He opined that though not principally a structural issue, it is a failure in behaviour, attitude and in some cases, competence. So while the issue of poor governance is primarily for firms and shareholders to address, events have demonstrated that regulators should play a role by ensuring pursuit of larger systemic good.

The third and final contemporary issue of reference is the 2012 publication of the book titled Bull by the Horns: Fighting to Save Main Street from Wall Street and Wall Street from itself, by Sheila Bair, the former Chairman of the Federal Deposit Insurance Corporation (FDIC) in the US. Christopher Whalen, who wrote one of the book reviews said; "Former FDIC Chairman Sheila Bair accurately describes the conflicted world of bank regulation in our democracy. Her well-written narrative of the Basel II mess, for example, and how these supposed "capital adequacy" rules, in fact, enabled vast securities fraud and criminality by the largest American and EU banks, is very well done. Indeed, the book provides another authoritative view of the degree to which fraud was the root problem on Wall Street". A quote by Christie Lagarde, then French Finance Minister in the documentary and now IMF Managing Director, says "The financial industry is a service industry. It should serve others before it serves itself".
All the three contemporary references presented tend to have a similar thrust – the role of governance in managing micro- and macro-prudential issues; the need for effective leadership culture and behaviour of bank executives; and the role of regulation in both institutional and systemic environments.

## III.2 Initiatives by CBN

The Nigerian banking industry has made remarkable progress from the 2007 financial crisis. In the wake of the financial crisis, the CBN took some decisive steps to protect the banking industry from systemic collapse. Some of these include:

- The issuance in 2006 of the Code of Corporate Governance for Banks, now overdue for a review to address the identified gaps and aligning it with contemporary realities and global best practises;

- The move towards the implementation of the New Capital Accord (Basel II);
- The introduction and implementation of risk based supervision aimed at promoting sound risk management in Nigerian banks;
- Policy limiting the tenure of Chief Executive Officers of banks to a maximum of 10 years, Non-Executive Directors (NEDs) to a 4-year tenure up to 3 times (12 years). The review and implementation of the new prudential guidelines based on forward-looking capital provisioning, driven by stress tests;
- The comprehensive review of the 'Fit and Proper Persons' rule and introduction of an Approved person regime;
- Introduction of tenure limit of 10 years for external auditors of banks;
- The adoption of common accounting year-end for all banks (end-December 31st);
- The adoption of the International Financial Reporting Standards (IFRS) by all banks in Nigeria;
- The issuance of a Draft Whistle Blowing Guidelines;
- The enforcement of compliance with sanctions/penalties for regulatory breaches; and
- Exposure drafts on competency framework, bank tariff, financial literacy, etc.

### III.3 Nigerian Banking Industry and IFC Corporate Governance Progression Matrix

The Global Corporate Governance Forum of the International Finance Corporation (IFC) has a tool for assessing progression in corporate governance practice in different types of organisations. The progression matrix ranks practices based on a standardised criteria which assesses practices in terms of: commitment to good corporate governance (CG) practices,; structure and functioning of the board of directors; control environment and processes; transparency and disclosure; and treatment of minority shareholders. These criteria are then ranked as Level 1 – acceptable CG practices, Level 2 – extra steps taken to ensure good CG practices, Level 3 – major contributions made to improving CG nationally, and Level 4 – leadership.

Table 1 below presents author's opinion on the level of practice of corporate governance within the Nigerian banking environment as at November 2012, along the IFC Corporate Governance Progression Matrix.

It should be noted that two areas requiring more attention of operators and regulators are in terms of transparency and disclosure; and treatment of minority shareholders. It is anticipated that the introduction of universal year end, IFRS, risk based and off-site supervision, as well as financial literacy will positively impact these.

## Table 1: IFC Corporate Governance Progressive Matrix

| ATTRIBUTES | LEVELS | | | |
|---|---|---|---|---|
| | 1. Accepatable CG Practices | 2. Extra Steps to ensure good CG practices | 3. Contributions to improving CG Nationally | 4. Leadership |
| | Commitment to Good Corporate Governance | | x | |
| | Structure and Functioning of Board of Directors | | x | |
| | Control Environment and Processes | | x | |
| | Transparency and disclosure | x | | |
| | Treatment of Minority Shareholders | x | | |

Source: IFC Corporate Governance & Board Leadership Kit)

## IV. Where We Should Aspire to Be on the Progression Matrix

The author strongly recommends that Nigerian banking industry operators and regulators should target having all existing and future interventions for enhancing corporate governance practice, in order to extend the achievements so far recorded in terms of corporate governance practices as reported in Table 1 and its narrations, to level 4 – leadership status on the progression matrix, as indicated in Table 2.

Some of the recommendations are extensions of existing policies, while some are innovations that should make operators see effective corporate governance cultural shifts with implications for institutional competitive positioning in the industry, than mere compliance. It is when such cultural shifts occur, that leadership in corporate governance practices can be attained. This suggested aspiration becomes even more instructive, as it is observable that almost all industries and thematic institutions within the Nigerian financial services sector have continued to chart their respective paths to creating vibrant industries. It is as such, anticipated that these reforms could lead to a financial services sector that not only provides a platform for national development, but actively acts as a trigger to reforms in other sectors, by various permutations of coercion, collaboration and advocacy.

In view of these and other factors, a thrilling yet unsettling time in modern history is witnessed, because despite diversity issues across geographic regions of the world, the global financial crises appears to be highlighting unparalleled opportunities for success, especially for developing economies. It is worthy of note that some of the reform models implemented in Nigeria are becoming benchmarks, and there is increased dominance of the African landscape, by financial institutions of Nigerian origin. The Nigerian banking industry has been in the vanguard of leading decisions

and interventions on corporate governance practices. Given the contribution of the industry to the Nigeria's Gross Domestic Product (GDP) relative to other industries and sectors, it is expedient that the regulator aspires to make happen, the progression depicted in Table 2 for the Nigerian banking industry.

**Table 2: Leadership Status on the Progressive Matrix**

| ATTRIBUTES | LEVELS | | | |
|---|---|---|---|---|
| | 1. Accepatable CG Practices | 2. Extra Steps to ensure good CG practices | 3. Contributions to improving CG Nationally | 4. Leadership |
| | Commitment to Good Corporate Governance | | X | |
| | Structure and Functioning of Board of Directors | | X | |
| | Control Environment and Processes | | X | |
| | Transparency and disclosure | X | | |
| | Treatment of Minority Shareholders | X | | |

**LEVELS**

| ATTRIBUTES | | 1. Acceptable CG practices | 2. Extra Steps to ensure good CG practices | 3. Major Contributions to improving CG nationally | 4.Leadership |
|---|---|---|---|---|---|
| | Commitment to Good Corporate Governance | | X | | |
| | Structure and Functioning of the Board of Directors | | X | | |
| | Control Environment & Processes | | X | | |
| | Transparency and disclosure | X | | | |
| | Treatment of Minority Shareholders | X | | | |

Table 2 Recommended industry corporate governance practice to be achieved
(Matrix concept adaptation from The IFC Corporate Governance & Board Leadership Kit

## V. The Regulator Component in the Equation

Some of the actions required to make improvement in industry practice will require a self-assessment by the regulator, extension of competency definitions by certain staff categories of the regulator and the need for the regulator to lead by example on the issue of corporate governance. This could be achieved by taking a look at its internal processes and systems. This is in the spirit of *nemo dat quod non habet*, literally meaning "no one gives what he doesn't have". As such, for effective regulation of applicable leadership behaviours and corporate governance practices, the regulator's employees with applicable scope of examination and supervision practices, must not only appreciate the principles, but also, have a grasp of the application of the principles of leadership and corporate governance, both for industry regulation and for operation of the regulator institution, in a manner that the regulated can lead by example.

### V.1 The Leadership Journey Focus for the Regulator

Prior to the 2007 financial crisis, there were examples of corporate governance failure with Enron and WorldCom being two of the most notable on the global stage. Internally, there were examples of the failed banks. The response to these and earlier failures was a universal public outcry and new legislation - Sarbanes Oxley for USA companies and a flood of codes of best practice, as well as the Basel II and III principles for banking institutions.

One would have thought that with all these insights, understanding and attention, the recent global financial crisis could have been averted. Unfortunately, that was not the case and one has to wonder why. It would appear that there was a disconnect between the mechanisms used in the internal governance system and the external governance mandates and recommendations, which focused primarily on the boardroom.

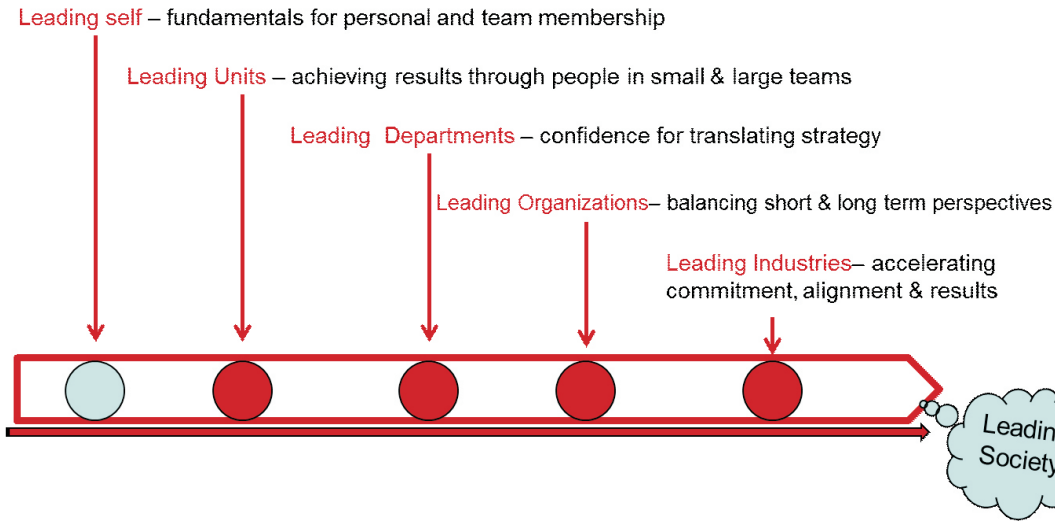
So, although the work on improved legislation and codes of best practice is well meaning and may have improved matters, the initiatives may have overlooked an important area - how external mandates translate into internal governance mechanisms. In other words, the connection between internal governance and the achievement of the objectives intended by the external governance framework has to be addressed, satisfactorily.

There are many issues involved with the management of internal governance, but none is more important than the role of leadership, which is the prime responsibility of "the Board of Directors". It is the leadership's responsibility to ensure that the objectives of the organization are achieved, while behaving in a way that is acceptable to the society at large. This means that the board and senior management of industry operator institutions need to provide effective leadership, based on an ethical foundation. Similarly, the staff of the regulator, involved in the act of regulation and

management of the regulator, need to have structured ways of leadership experience through the ranks. This for the reason that by the time they are in positions of establishing and updating policies that impact the industry, they would exude the essence of leadership from the powers bestowed on them as employees of the regulator. In addition, they can appreciate related issues and are in a vantage position to demonstrate sufficient leadership on issues of corporate governance.

Table 3 is an adaptation of a variant of the 2010 Leadership Development Roadmap Concept of the Centre for Creative Leadership (CCL) 4 for the purposes of this paper. It highlights the focuses of leadership development initiatives for the bank regulator employees, at the levels represented in red circles and explained in the legend above the progression path, from leading units to leading industries. Each of these levels have a different thrust and focus on appreciation, application and supervision of corporate governance practices within the regulator entity and externally, within the industry via both micro- and macro-prudential perspectives.

**Table 3: Leadership Journey**
**(An adaptation of concept from CCL's 2010 Leadership Development Roadmap)**




In view of the implications of establishing effective leadership culture as a basis for effective corporate governance within regulated entities in context of the macro prudential framework thinking, competencies for bank regulators on self-leadership in terms of corporate governance, include: being an expert in task fields; demonstrating effective interviewing and listening skills; having personal integrity as a leader; inculcating an achievement orientation; effectively managing personal and corporate information; effective system mining and reporting skills; having both conceptual and analytical thinking skills; demonstrating initiative and creativity on

tasks; having sufficient self-confidence and comprehension of issues; demonstrating genuine concern for supervisory processes and systems; cooperation across departments, and demonstrating sufficient patriotism.

This is because to be effective in their increasingly expanding supervisory role, regulators need to articulate and emphasise acceptable and result-oriented ideological values. It is imperative for regulators to foster a values-full culture, by setting a values-based tone and attitude that establishes the right mind set. When supervisors espouse and practice good corporate governance, it encourages the institutions under their supervision to inculcate these values and provides the regulator with the moral high ground to sanction erring institutions.

### V.2 The Corporate Governance Principle Internalisation for the Regulator

After the signing of the MoU between the Global Corporate Governance Forum of the International Finance Corporation and the Financial Institutions Training Centre (FITC) in March 2011, the partners have jointly developed a corporate governance curriculum for directors and senior managers of banks in Nigeria. The Nigerian curriculum is a customisation of the global Corporate Governance and Board Leadership Toolkit, incorporating Nigerian laws and cases. It has been tailored to the Nigerian market needs and specific regulatory and institutional regimes.

In view of this development, bank directors now have a structured curriculum that is customised to the environment, yet in line with global practices. Many operators are now on various stages of the curriculum, which is delivered based on a hybrid of the Adult Learning Concepts and Experiential Learning Cycle. It is ideal that the bank regulator and its affiliated institutions allow their employees of manager and above grades, in roles that entail bank examination and supervision and policy formulation on matters relating to corporate governance, participate in this curriculum in a structured manner, over a 2-3 year period. Thus, it will allow them "having a taste of the medicine", which could positively impact regulation of corporate governance practices and effective sustainable progression of industry practice along the progression matrix as recommended.

Finally, it is a truism that behaviour cannot be regulated. Adherence to corporate governance policies require a leadership orientation that is values centred. To make sure that corporate governance reforms take root, regulators will need to encourage the creation of value-based leadership programmes within financial institutions. It is important for financial institutions to choose leaders based not only on competence but also based on personal leadership style, behavioural profile and personal integrity, derivable from the application of system generated psychometric profiling tools.

## VI. Conclusion and Recommendations

About a decade ago, issues such as bank capitalisation, liquidity ratios, banking models and product related variables were the central focus of bank regulation.

However, increasing attention to more systemic issues such as risk modeling, corporate governance, sustainability, the search for leverage and synergy as well as business ethics within local, regional and global competition appear to be engaging most domestic and regional discussions on bank regulation, in recent times. Corporate governance has assumed immense importance. As such, bank regulators now face the challenge of developing and incorporating sustainable corporate governance polices within a larger macro prudential framework, to guide industry practices and institutional models. It has been observed that every financial crises so far witnessed in human history, and when banking activity go wrong, it portends serious problems with snowballing effect, for the economy and the society at large.
In terms of macro-prudential supervision, the basic concerns for supervisors are promotion of good risk management practices, especially at large institutions that pose systemic risks or that may be considered "too big to fail", and to ensure that supervisory policies do not have adverse or ill-timed effects over the economic cycle. It has as such, been severally advised that supervisory policies and rules should have consistent and appropriate effects over the business cycle including accounting rules, risk management practices, and supervisory attitudes and approaches; and assert stakeholder interests while ensuring that the bank's governance practices do not undermine the broader goals of macroeconomic growth and financial stability.

An assessment of the Nigerian banking industry's corporate governance practice, show that the Nigerian banking industry has done remarkably well despite wider social system constraints. However, there is a lot more to do, in order to maintain a competitive positioning of banks in Nigeria and with Nigerian origins, given increasing global banking regulations in terms of governance, risk management regimes and anti-money laundering initiatives in G20 countries and wholesale banking group global franchises.

The popular opinion is that even though legislation of executive behaviour remains a challenge, especially in jurisdictions where there are sub-optimal appreciation and application of relevant laws, a lot is expected of bank regulators, even as their roles appear to be experiencing some degree of scope expansion post the recent global financial meltdown.

The following recommendations are given within the perspective of the five variables of the adapted Corporate Governance Practice Progression Matrix for Financial Institutions, proposed by the Global Corporate Governance Forum of the International Finance Corporation (IFC). This was provided in Figure 1.0, and proposes some suggestions that could be helpful in making the required progress.

### VI.1 Commitment to Good Corporate Governance

- Review and update rules or guidelines consistent with the principles of good corporate governance, incorporating developments since the last version was published in 2006;
- Regularly perform a comprehensive evaluation of the banks' overall CG policies and practices and evaluate banks implementation of the stated

policies;
- Develop a good understanding of the key risks and controls that supervisors would like the board to oversee;
- Make the current capacity development and continuous education program for bank directors mandatory as a structured capacity building plan that can be monitored and measured vis-a-vis board roles and board evaluation outcomes;
- Adopt effective tools for evaluating a bank's corporate governance policies and practices e.g. conduct surveys and assessments on CG practices; and
- Encourage banks that have demonstrated effective internalization and practice of good corporate governance principles to demand same of their suppliers and major users of funds, as well as non-bank financial institutions that clear instruments through them, including their agent banks, as a way to extend practice to related industries and positively impacting other sectors.

### VI.2 Structure and Functioning of the Board of Directors
- Ascertain that bank boards are aptly structured and appropriate composition and mix of skills;
- Ensure effective personal profile analysis and background check for new board directors as a predictor of propensity to commit fraud;
- Recommend a baseline framework for directors remuneration with certain variables indexed to certain balance sheet and role definitions, in line with practice in other jurisdictions; and
- Encourage the establishing of value-based leadership development programs for financial institutions.

### VI.3 Control Environment and Processes
- Close monitoring of the implementation of initiatives like risk-based supervision, Basel II & III;
- Encourage banks to have practical and not paper-based disaster recovery systems in place;
- Employ techniques to build industry capacity for media management;
- Banks should be encouraged to have business continuity procedures in place
- The CBN should cooperate with other relevant regulatory and supervisory bodies in related industries and sectors in experience sharing and promoting CG;
- Expand the focus of the supervisory process from just compliance reporting and 'processes' to also include 'outcomes';
- Establish and maintain regular communication with bank senior management, board, those responsible for the internal control functions, as well as external auditors in themes and patterns of interfaces; and
- Encourage a culture of self-regulation for competitive advantage, amongst operators.

### VI.4 Transparency and Disclosure

- Evaluate whether banks have in place, effective mechanisms for boards and senior management teams to execute their oversight responsibilities;
- Initiate and maintain an active and verifiable programme of on-site supervision
- Encourage financial and non- financial disclosure;
- Encourage web-based disclosure and create structures to track and address issues flagged within specified time limits with discretion;
- Enforce high-quality annual report publication using industry standardised templates as minimum standards;
- Ensure effective enlightenment of board audit committees and full boards on the implications of the adoption of IFRS by banks in preparing financials; and
- Enforce industry wide safe and secure on-line based whistle blowing policy.

### VI.5 Treatment of Minority Shareholders

- Demand for and enforce easily verifiable reporting of minority shareholders' rights protection action plans and outcomes;
- Enforce well-organized shareholder meetings that recognise and accommodate diversity of shareowners and employees;
- Promote documented, demonstrated and verifiable business sustainability; and
- Foster information- sharing platforms in terms of asset registry, credit bureau, frauds and forgeries, employees terminated on basis of fraud, delinquent suppliers and service providers, etc.

Financial crisis are by their nature, difficult if not almost impossible to fully anticipate with any high degree of certainty. For instance, Milton Friedman and Anna Schwartz argued that the initial economic decline associated with the crash of 1929 and the bank panics of the 1930s would not have turned into a prolonged depression if it had not been reinforced by monetary policy mistakes on the part of the Federal Reserve. However, instituting good corporate governance practices and applicable leadership culture can make our financial services sector more resilient to foreseeable systemic shocks, when they occur. Most importantly, to accomplish the objectives, the bank regulator, along with supervisory authorities from all other parts of the financial system will have to work together to share information about risks developing in the institutions and markets under their purview. More than ever before there will be need for better communication and coordination to ensure financial stability needed to support sustainable economic growth. Just like the known effects of violent acts of the weather in certain times over human history, it is a fact that the next financial crisis cannot be prevented, but developed systems for absorbing the shocks via effective governance and leadership, in order position the system to hold out during the storm when it comes, based on domestic, regional and global lessons of yesterday and today.

## References

Alexander, K. (2006). "Corporate Governance and Banks: The role of regulation in reducing the principal-agent problem", *Journal of Banking Regulation, 7* (1/2), 17-40.

Briault, C. (1999). "The Rationale for a Single National Financial Services Regulator", Occasional Paper Series 2, May, Financial Services Authority, p. 7.

Dewatripont, M. and Tirole, J. (1994). "The Prudential Regulation of Banks", MIT Press, Cambridge, MA; Norton, J.J. (1995) 'Devising International Bank Supervisory Standards', Kluwer, Dordrecht, The Netherlands.

Central Bank of Nigeria (n.d.). CBN Vision. Retrieved from http://www.cenbank.org/AboutCBN/mission.asp

Center for Creative Leadership, (2010). CCL Leader Development Roadmap.

Coglianese, C. Healey, T. J., Keating, E. K. and Michael, M. L. (2004). "The Role of Government in Corporate Governance", Regulatory Policy Program Report RPP-08. Retrieved from http://www.hks.harvard.edu/m-rcbg/research/rpp/reports/RPPREPORT8.pdf

Eatwell, J. and L. Taylor (2000). "Global Finance at Risk", Polity Press, Cambridge, UK.

Fairhurst, K. (2011). "Can good corporate governance exist in the absence of good leadership", COMENSAnews.

Friedman, M. and A. Schwartz (1971). "A *Monetary History of the United States", 1867–1960*. Princeton University Press, ISBN 0-691-00354-8. Retrieved from http://en.wikipedia.org/wiki/Financial_crisis on November 11, 2012.

Frisell, L., K. Roszbach, and G. Spagnolo, (2008). "Governing the Governors: A Clinical study of central banks", CEPR Discussion Paper Retrieved from http://ssrn.com/abstract=967357.

Global Corporate Governance Forum (2009). "Corporate Governance Progression Matrix", Adopted from the *Corporate Governance Board Leadership Training Resources Kit*

Guidelines on Corporate Governance for Licenced Institutions (n.d.). Retrieved from http://www.bnm.gov.my/guidelines/01_banking/04_prudential_stds/16_corporate_governance.pdf

Hanson, S. G., A. K. Kashyap, and J. C. Stein (2011). "A Macroprudential Approach to Financial Regulation", *Journal of Economic Perspectives,* 25 (1), 3–28. Retrieved from http://www.economics.harvard.edu/faculty/stein/files/AMacropurdenital-final.pdf

Hoenig, T. M. (2004). "Exploring the macro prudential aspects of financial Sector Supervision Intensity and Effectiveness of SIFI Supervision : Progress report on implementing the recommendations on enhanced supervision", Financial Stability Board. Retrieved from http://www.bundesbank.de/Redaktion/EN/Downloads/Core_business_areas/Banking_supervision/basel3_intensity_and_effectiveness_of_sifi_supervision.pdf?__blob=publicationFile

Kasekende, L. and M. Brownbridge (2011). "Post-crisis Monetary Policy Frameworks in sub-Saharan Africa", *African Development Review,* 23 (2), 190-201.

Kasseeah, H., J. M. F. Weng, and K. P. Moheeput (2011). "Central Bank Independence: Evidence from Africa", *Journal of Emerging Trends in Economics and Management Sciences,* 2(4), 325-332. Retrieved from http://jetems.scholarlinkresearch.org/articles/Central%20Bank%20Independence.pdf

Macroprudential Policy: An Organizing Framework (2011). International Monetary Fund. Retrieved from http://www.imf.org/external/np/pp/eng/2011/031411.pdf

Macro-prudential measures and challenges for central banks (2010). Retrieved from http://www.twnside.org.sg/title2/finance/2010/finance100505.htm

Mehran. H. and L. Mollineaux (2012). "Corporate Governance of Financial Institutions", Federal Reserve Bank of New York Staff Reports. Retrieved from http://www.newyorkfed.org/research/staff_reports/sr539.pdf

Mohamed, A., A. Saidi and F. Zakaria (2012). "Financial Stability: Definitions, theoretical foundations and roles of the central banks", *International Research Journal of Finance and Economics*. 84. Retrieved from http://www.internationalresearchjournaloffinanceandeconomics.com/ISSUES/IRJFE_84_08.pdf

Moreno, R. (2011). "Policymaking from "macroprudential" perspective in emerging market economies", BIS working papers 336. Bank for International Settlement. Retrieved from http://www.bis.org/publ/work336.pdf

Newman, L. S. (2009). "*The CEO's triple dilemma of compensation, employee and corporate performance",* A one chapter manuscript along with 9 other authors in the book, "The Refractive Thinker: an anthology of higher learning" published by the Lentz Leadership Institute of Las Vegas, Nevada USA. ISBN 978-9823036-0-3. Spring 2009.

Newman, L. S. (2011). "Good Governance: A process for ethical practice and networking (PowerPoint Slide)", Paper presented at the New Partnership for Africa's Development (NEPAD) Annual State Coordinators' Conference.

Ojo, A. T. (2010). "The Nigerian Maladapted Financial System: Reforming tasks and development dilemma" Ota.

Ojo, M. (2011). "The Changing Role of Central Banks and the Role of Competition in Financial Regulation during (and in the Aftermath of) the Financial Crisis", *European Law Journal*, 17 (4), 513–533. Retrieved from http://ssrn.com/abstract=1886104.

Oni, B. (2005). "Corporate Governance: A Leadership Challenge in Nigeria, Text of the 5th Adetunji Ogunkanmi Lecture". Retrieved from http://openwells.org/uploads/Corporate%20Governance%20%20A%20leadership%20Challenge%20In%20Nigeria.pdf

Overview of the regulatory and Corporate Governance Framework ( n.d., Chapter 5). Retrieved from http://www.pc.gov.au/__data/assets/pdf_file/0007/93598/08-chapter5.pdf

Prudential Framework of Corporate Governance for Insurers (n.d.). Retrieved from http://www.bnm.gov.my/guidelines/02_insurance_takaful/03_prudential_stds/11_corp_governance.pdf

Regulatory and Supervisory Framework (2011). "Financial Stability and Payment

Systems Report". Retrieved from http://www.bnm.gov.my/files/publication/fsps/en/2011/cp03.pdf

Sants, H. (2012). "Delivering effective corporate governance: the financial regulators role", Financial Service Authority Chief Executive's Speech delivery. Retrieved from http://www.fsa.gov.uk/library/communication/pr/2012/040.shtml

Sanusi, L. S. (2012). "Advancing Corporate Governance from Compliance to Competitive Advantage", Paper presented at the 2012 Edition of the Annual Continuous Education Program for Directors of Banks and Financial Institutions, Oriental Hotel, Lekki, Lagos.

Sanusi, S. L. (2010). "Global Financial Meltdown and the Reforms in the Nigerian Banking Sector", *CBN Journal of Applied Statistics 2 (1*). Retrieved from http://www.bis.org/review/r110124c.pdf?frames=0

Schoenmaker, D. and Wiert, P. (2011). "Macroprudential Policy: The need for a coherent policy framework", (DSF Policy Paper Series, 13). Retrieved from http://ssrn.com/abstract=1876595

Schooner, H. M. and Taylor, M. W. (2010). "Global Bank Regulation: Principles and policies", Amsterdam: Elsevier

Siregar, R. Y. and V. C. S. Lim (2010). "The Role of Central Banks in Sustaining Economic Recovery and in Achieving Financial Stability", *Journal of Advanced Studies in Finance* 1 (1)

The Basel Committee's response to the financial crisis: report to the G20 (2010). Bank for International Settlements. Retrieved from http://www.bis.org/publ/bcbs179.pdf

Y. Bhg, T. S. Dato', S. Zeti and A. Aziz (2003). "Corporate Governance: Towards preserving financial stability and sustainable growth". The Fifth Asian Roundtable on Corporate Governance Special Dinner Address. Retrieved from http://www.bnm.gov.my/files/publication/qb/2003/Special. Features.pdf

**SUBMISSION OF MANUSCRIPT TO CBN ECONOMIC AND FINANCIAL REVIEW**

1. Three (3) hardcopies and a softcopy of the original manuscript should be addressed to the:

   **Editor-in-chief**
   **CBN Economic and Financial Review**
   **Research Department**
   **Central Bank of Nigeria**
   **P.M.B.0187, Garki, Abuja**

   The softcopy of the papers can also be submitted via email as electronic document, preferably Microsoft word document to either of the following email addresses: cnomordi@cbn.gov.ng; aoadenuga@cbn.gov.ng

   The article should not be more than 30 pages on A4 size paper and should be typed double-spaced with a margin of 1.5 inches on all sides. The manuscript **must** be accompanied with a letter of submission written in English. Submission of a paper is assumed to imply that its contents represent original and unpublished work and is not under consideration elsewhere for publication. Normally, the review process is expected to take not more than three months. There is neither a submission charge nor page fee. A return address (postal/email) should be indicated.

2. Papers may be accepted or returned for specified revisions. A paper is expected to be published approximately six months from the date of acceptance.

3. *Comments on published article/notes* and *reviews* of up to 2,000 words will also be considered for publication. Notes deal with relevant topics not meeting full length articles. Reviews may be about articles published recently by this journal or elsewhere. A copy of the review/comments should be sent to the articles' author for clarification of any points or misunderstandings.

4. All submitted manuscripts are referred to an Editorial Board comprising of an in-house editorial committee and external referees. All comments by the referees will be sent to the author(s) together with a decision of the Editorial Board.

5. The purpose and scope of the article should be clearly stated in an abstract summarizing the article's essential points. The abstract should be typed on a separate page and should be between 80-100 words in length. In addition, the JEL classification code (s) as well as keywords should be clearly indicated on the abstract page.

6. The author's institutional affiliation and necessary background information on the article should appear at the foot of the first page. Footnote to the text should be listed at the end, followed by the list of references

7. References for quotations or statements should be in parentheses in the text, not as

notes. E.g. Hess (1906:20) or Cagan (1958) or Majer (1975:35). Where more than three authors are involved, cite senior author and use *et al.*, E.G. Johnson *et al.* (1988).

8. Citations listed under the reference sections must begin on a new page. All entries must be typed double-spaced, listed alphabetically by last name of senior author and chronologically for two or more articles by the same author. The typed layout must conform to the following examples:

   Nnanna, O. J. (2003). "Promoting Savings and Investment Culture for National Development." *CBN Economic and Financial Review*. Vol 41. No. 3 pp. 1-10

   Oresotu, F. O. and C. N. O. Mordi (1992). "The Demand for Money Function in Nigeria: An Empirical Investigation." *CBN Economic and Financial Review*. Vol.30, No.1 pp.32-69.

   Croxton, F. E.; F. E. Cowden; and S. Klein, (1968). *Applied General Statistics*. London: Sir Isaac Pitman and sons.

9. All tabular materials should be separated from the text in a series of tables numbered consecutively in Arabic numerals preferably in Microsoft Excel. Each table should be typed double-spaced and identified by a short descriptive at the top. Notes for table should be at the bottom of each table, before the source, and marked by lower case superscript letters. Appropriately placed tables should be indicated in the text.

10. Diagrams, graphs, charts, etc. must be separated from the text and clearly drawn in black ink on a white paper with all axes clearly positioned. They should be submitted in a form suitable for reproduction without redrawing, preferably in camera-ready artwork.

11. Where mathematical equations and formulae are used, they should be typed clearly. Notations, exponents, etc, which are simple to reproduce should be used. The equations should be numbered consecutively in Arabic numerals. The full mathematical workings necessary for justifying each step of the argument should accompany all the articles of a mathematical nature. This is meant to assist the reviewers and will not be published.


**CENTRAL BANK OF NIGERIA**

ISSN 1957-2968