



Edited by
J P R Karunaratne



**BASEL III IMPLEMENTATION:
CHALLENGES AND OPPORTUNITIES**

**Edited By
J P R Karunaratne**



**The South East Asian Central Banks (SEACEN)
Research and Training Centre
*Kuala Lumpur, Malaysia***

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Published by The South East Asian Central Banks (SEACEN)
Research and Training Centre
Level 5, Sasana Kijang
Bank Negara Malaysia
No. 2, Jalan Dato' Onn
50480 Kuala Lumpur
Malaysia

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Basel III Implementation: Challenges and Opportunities
Edited By: J P R Karunaratne

ISBN: 978-983-9478-25-9

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Printed in Malaysia by Graphic Stationers Sdn. Bhd.

Foreword

One of the main reasons the economic and financial crisis, which began in 2007, became so severe was that the banking sectors of many countries had built up excessive on- and off-balance sheet leverage. This was accompanied by a gradual erosion of the level and quality of the capital base. At the same time, many banks were holding insufficient liquidity buffers. The banking system, therefore, was not able to absorb the resulting systemic trading and credit losses nor could it cope with the re-intermediation of large off-balance sheet exposures that had built up in the shadow banking system. The crisis was further amplified by a pro-cyclical deleveraging process and by the interconnectedness of systemic institutions through an array of complex transactions. During the most severe episode of the crisis, the market lost confidence in the solvency and liquidity of many banking institutions. The weaknesses in the banking sector were rapidly transmitted to the rest of the financial system and the real economy, resulting in a massive contraction of liquidity and credit availability. Ultimately the public sector had to step in with unprecedented injections of liquidity, capital support and guarantees, exposing taxpayers to large losses.

The effect on banks, financial systems and economies at the epicentre of the crisis was immediate. The crisis also spread to a wider circle of countries around the globe. For these countries, the transmission channels were less direct, resulting from a severe contraction in global liquidity, cross-border credit availability and demand for exports. Given the scope and speed with which the recent and previous crises have been transmitted around the globe as well as the unpredictable nature of future crises, it is critical that all countries increase the resilience of their banking sectors to both internal and external shocks.

To address the market failures revealed by the crisis, the Basel Committee introduced a number of fundamental reforms to the international regulatory framework popularly known as Basel III. The reforms strengthen bank-level or microprudential regulations which will help raise the resilience of individual banking institutions in periods of stress. The reforms also have a macroprudential focus, addressing system-wide risks that can build up across the banking sector as well as the procyclical amplification of these risks over time. Clearly these micro and macroprudential approaches to supervision are interrelated, as greater resilience at the individual bank level reduces the risk of system-wide shocks.

In the light of above, this paper examines issues, challenges and implications of implementation in Basel III in ten SEACEN member economies namely, Brunei Darussalam, Cambodia, Indonesia, Korea, Malaysia, Myanmar, Nepal, the

Philippines, Sri Lanka and Thailand based on studies carried out by ten project team members representing their respective central banks and monetary authorities. The integrative report provides an overview and summarizes the findings of individual team reports on different aspects of implementation, challenges and implications.

Accordingly the objectives of the study are to: (i) examine types of major banking risks and risk measurement indicators; (ii) assess the adequacy of present regulatory framework in implementing Basel capital framework and enforcing other regulatory action, (iii) conduct a preliminary assessment of current capital and liquidity levels, (iv) compare components of current capital structure with proposed categories of capital; (v) evaluate the current leverage structure and identify potential risks; (vi) make an assessment of ability of banks to meet Basel requirements at desired level; and (vii) identify major issues and challenges in implementing Basel framework at desired level and identify future strategies to address relevant constraints.

This collaborative research was led by the Project Leader, Mr. Janaka Priyantha Rupasinghe Karunaratne, Superintendent of Currency, Central Bank of Sri Lanka and concurrently Visiting Research Economist of The SEACEN Centre (OP 2012).

The SEACEN Centre wishes to express its sincere gratitude to the Project Leader and participating member central banks/monetary authorities and their respective researchers for actively participating in this project and preparing the chapters of their respective economies. They are Mrs. Maizatul Najibah Hj Awang Mohammad, Manager, Regulatory Department, Autoriti Monetari Brunei Darussalam; Mr. Ban Lim, Deputy Director, Legal Department, Directorate General of Banking Supervision, National Bank of Cambodia; Mr. Minar Iwan Setiawan, Bank Researcher, Department of Banking Research and Regulation, Bank Indonesia; Mr. Jinshik Son, Economist, Macroprudential Analysis Department, Bank of Korea; Mr. Muhammad Syukri Shamsuddin, First Level Executive, Prudential Financial Policy Department, Bank Negara Malaysia; Ms Cho Cho Lwin, Assistant Director, Financial Institutions Supervision Department, Central Bank of Myanmar; Mr. Chet Prasad Uprety, Deputy Director, Financial Institutions Regulation Department, Nepal Rastra Bank; Ms. Lucia C Laquindanum, Bank Officer V, Department of Economic Research, Bangko sentral Ng Pilipinas (the collaborative effort of the Supervision and Examination Sector and Department of Economic Research of Bangko Sentral ng Pilipinas (BSP) is also gratefully acknowledged for BSP's project paper); Mrs. Rukshana

Jayatillake, Senior Assistant Director, Bank Supervision Department, Central Bank of Sri Lanka; and last but not least, Ms. Maetinee Hemrit, Analyst, Financial Institutions Policy Group, Bank of Thailand.

The SEACEN Centre also thanks Dr. Johnny Noe E. Ravalo, Assistant Governor, Bangko Sentral ng Pilipinas, for his useful comments and suggestions in his review of the integrative report. Lastly, the assistance of staff members of SEACEN's Research and Learning Contents Department is acknowledged for the completion of this study. The views expressed in this study, however, are those of the authors and do not necessarily reflect those of The SEACEN Centre or the SEACEN member central banks and monetary authorities.

November 2013

Hookyu Rhu
Executive Director
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Executive Summary

All economies agree with the importance of implementing Basel III without argument. However, all the economies are not in a position to implement the framework as per the scheduled time table due to diversity of economic, political, market, infrastructure and regulatory conditions prevalent in respective economies.

The recent global financial crisis did not have a significant impact on the financial sectors of the 10 economies under study. The main reason for this in economies such as Brunei Darussalam (Brunei henceforth), Cambodia, Myanmar, Nepal and Sri Lanka was that most of them were not highly integrated with global financial system. Measures taken by the authorities in Indonesia, Korea, Malaysia, the Philippines and Thailand to strengthen the financial system consequent to Asian financial crisis in late 1990s, made them more stable during recent crisis. These reforms focused on strengthening prudential regulatory standards and aligning them with international norms to enhance risk management, promote good corporate governance and greater transparency and reduce moral hazard. These reforms have enabled domestic financial institutions to manage the risks arising from the banking and debt crisis in Europe and weak economic growth in the US.

The current status of application of the Basel capital adequacy framework differ among economies, with Brunei, Cambodia and Myanmar still at Basel I and others at either partial or full implementation of Basel II. In the case of Brunei, Cambodia, Myanmar, Nepal and Sri Lanka, the main focus is currently either on full implementation of Basel I or moving from Basel I to II or implementation of Basel II in full rather than focusing on Basel III, considering present regulatory environment, infrastructure and other conditions specific to the economies. There are no specific plans for implementation of Basel III in these economies at this stage. Indonesia, Korea, Malaysia, the Philippines and Thailand are in the process of implementing Basel III, mostly in line with the Basel Committee on Banking Supervision (BCBS) timeline with higher capital requirements in some economies than the BCBS standards. However, in the case of leverage and liquidity framework, specific plans are in place only in Indonesia.

The present Tier I and Total Capital Ratios in all economies are well above the minimum ratios set by their respective regulators. In all economies, Tier I Capital Ratios are more than 2 times the required minimum and even significantly higher than required minimum total capital ratio. This reflects

the strong capital position of banks which are much higher even in terms of currently applicable Basel II standards for international banks. One of the key observations is the significant improvement in capital levels of banks in all these economies compared to the levels that prevailed at the time of the global financial crisis. In terms of composition of capital, Tier I capital accounts for 72% to 101% of Total Capital while reliance on Tier II capital by the banking sector has been minimal and limited. Heavy reliance on Tier I capital is an indication of strong quality capital.

Even though an impact assessment on capital has not been done in Brunei, Cambodia, Myanmar, Nepal and Sri Lanka, it is observed that banking systems in these economies are capable of meeting Common Equity Tier 1 (CET I), Tier I and Total Capital Requirements in Basel III including capital buffers due to existing high level of core capital structure, quality of capital and regulatory requirements. Capital has been generated mainly through retained earnings and transfers made to the statutory reserve fund in these economies. Impact assessment of Basel III application on current capital levels has been done in Indonesia, Korea, Malaysia, the Philippines and Thailand. As shown in the results of the impact studies done, there is a negative impact on the current capital levels in Korea, Malaysia, the Philippines and Thailand. However, in Indonesia, Basel III capital reforms have a positive impact. Despite the negative effect in these four economies, CET 1, Tier 1 and Total Capital ratios remain well above the stipulated ratio in Basel III. In light of existing high capital levels, raising additional capital to comply with Basel III is not an urgent necessity in Indonesia, Korea, Malaysia, the Philippines and Thailand with banks meeting capital ratios comfortably.

In case of leverage, data has been provided only by Brunei, Myanmar, Nepal and Sri Lanka, Indonesia, Korea and Thailand with banks in these economies complying with the Basel requirements. Banks in all economies under analysis have maintained liquidity at comfortable levels, above the stipulated liquidity indicators set by the regulators. In terms of trends in liquidity ratio and loans to deposit ratio, no major liquidity risk is observed. Impact studies on banks' ability to comply with the Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR) has been carried out in Sri Lanka, Indonesia, Korea and Thailand. In the case of Indonesia, sample banks meet the LCR and NSFR requirements while in other economies, non-compliance by certain banking groups is observed. In the case of liquidity standards, the main concern is on the defining assets which fulfill criteria under LCR requirements in the respective jurisdictions. In some economies, regulators are in the process of gathering information on liquid assets to assess the

appropriateness of liquidity standards. Therefore, compliance with LCR and NSFR would be a major challenge for many economies.

Basel III can have several implications on financial markets and the economy as a result of reduction in credit and increasing interest spread. The demand for government securities could go up resulting in the lowering of government securities yields. However, banks in economies where the government securities market is not well developed, will find it difficult to meet Basel liquidity requirements due to non-availability of high quality liquid assets. Furthermore, implementation of liquidity standards could obstruct bond market development if banks' buy-and-hold investments increases and the free-float of government bonds is reduced leading to illiquidity in the market. The liquidity requirement is then ironically self-defeating in cancelling out its original intent. The need for liquidity profile adjustments potentially intensifies competition in retail deposit-taking banks.

Implementation of Basel III counter cyclical buffer has several implications. The calibration of booms and busts involves pervasive parameters of complex and dynamic macro-financial relationships that make it hard to predict policy feedbacks. The sequencing of policy execution is crucial, requiring close collaboration and careful alignment with monetary policy and other macroeconomic policies. Yet, even with the best foundation, the execution may remain uncertain in the politics of booms and economics of comparative advantage. This is even challenging for bank-based economies with relatively less developed financial markets.

More resources and commitment are required not only to further refine the boom-bust prediction and the buffer calibration, but also to incorporate these novel measures into the institutional setting. Besides, the work entails skillful public communication to put out the right messages so as to minimize unnecessary agitation in the financial system.

There are several alternate strategies for implementing countercyclical capital buffers already implemented by some regulators which are effective in times of high credit growth. These include increase of risk weight assets assigned on housing loans and other loans, increase in loan loss provisions, varied Statutory Reserve Ratio, maximum ceilings on credit to vulnerable sectors and overall credit ceilings. In the case of mortgage loans, Loan-to-Value (LTV) ratio has been used as a flexible preemptive tool to curtail credit growth.

No significant implications on cost and profitability are expected in the medium-term in the absence of major changes in assets and liability strategies of banks. In most economies, the current legal framework provided by the respective banking and other statutes provide adequate legal scope for the implementation of the Basel III capital adequacy framework.

Basel III implementation would not entail serious challenges for the 10 economies in the short-term. Issues of concern could be addressed over the medium-term in line with the Basel time plan.

Chapter 1

BASEL III IMPLEMENTATION: CHALLENGES AND OPPORTUNITIES INTEGRATIVE REPORT

By
J P R Karunaratne¹

1. Introduction

Many international financial crises have originated in weaknesses of the banking sector and through inadequate supervision. During the last 30 years, central banks and regulatory agencies have increasingly cooperated internationally to address these problems. They primarily aimed at creating a common framework for the valuation of bank assets with their associated credit risk. Later, this was expanded to capture other banking risks mainly market risk, operational risk and liquidity risk. The Basel I, II and III are outcomes of that effort of regulators around the world. These standards have achieved widespread acceptance in developed and developing countries.

1.1 Currency Volatility in 1970s

The end of the Bretton Woods System of fixed exchange rates brought about large volatilities in the currency markets. Companies increasingly turned to commercial banks to hedge against the currency fluctuations. For commercial banks, speculation in these markets could generate large gains but also large losses.

In order to meet the demands of customers for buying and selling foreign exchange, an interbank-trading system developed. This, however, made it more likely that a bank failure in one country would spread abroad. Two bank failures, the Herstatt Bank in 1974 and the Banco Ambrosio in 1982, convinced central banks that international cooperation and minimal standards were essential to prevent widespread distress in financial markets.

1. The author is the Superintendent of Currency at the Central Bank of Sri Lanka and Visiting Research Economist of The SEACEN Centre (OP 2012).

1.2 Basel I Capital Accord

As early as 1984, the G10 discussed harmonizing Capital Adequacy Standards. Lower requirements for minimum capital allowed banks to gain a competitive edge against banks from countries with higher requirements for capital because they could charge less for their services. Central banks wanted to avoid this “regulatory arbitrage” and create a level playing field for the commercial banks.

Basel I is the round of deliberations by central bankers from around the world, and in 1988, the Basel Committee on Banking Supervision (BCBS) in Basel, Switzerland, published a set of minimum capital requirements for banks. This is also known as the 1988 Basel Accord, and was enforced by law in the Group of Ten (G-10) countries in 1992

Basel I, that is, the 1988 Basel Accord, primarily focused on credit risk. In 1996 capital charge for market risk was introduced with banks being given the option to either adopt standardized approach or internal models approach for the computation of capital charge for market risk.

Basel I Accord was successful in many ways. However, it had a lot of deficiencies which only increased as time passes, bringing a constant flow of innovations in financial markets.

1.3 Evolution of Basel II Framework

Basel II, initially published in June 2004, was intended to create an international standard for banking regulators to control how much capital banks need to put aside to guard against the types of financial and operational risks, banks (and the whole economy) face. One focus was to maintain sufficient consistency of regulations so that this does not become a source of competitive inequality amongst internationally active banks. Advocates of Basel II believed that such an international standard could help protect the international financial system from the types of problems that might arise should a major bank or a series of banks collapse. In theory, Basel II attempted to accomplish this by setting up risk and capital management requirements designed to ensure that a bank has adequate capital for the risk the bank exposes itself to through its lending and investment practices. Generally speaking, these rules mean that the greater risk to which the bank is exposed, the greater the amount of capital the bank needs to hold to safeguard its solvency and overall economic stability.

The final objectives were:

1. Ensuring that capital allocation is more risk sensitive;
2. Enhance disclosure requirements which will allow market participants to assess the capital adequacy of an institution;
3. Ensuring that credit risk, operational risk and market risk are quantified based on data and formal techniques;
4. Attempting to align economic and regulatory capital more closely to reduce the scope for regulatory arbitrage.

Basel II uses a “three pillars” concept: Pillar 1- Minimum capital requirements, Pillar 2-Supervisory Review Process and Pillar 3- Market Discipline.

1.4 Global Financial Crisis and Evolution of Basel III Framework

One of the main reasons the economic and financial crisis, which began in 2007, became so severe was that the banking sectors of many countries had built up excessive on- and off-balance sheet leverage. This was accompanied by a gradual erosion of the level and quality of the capital base. At the same time, many banks were holding insufficient liquidity buffers. The banking system, therefore, was not able to absorb the resulting systemic trading and credit losses nor could it cope with the re intermediation of large off-balance sheet exposures that had built up in the shadow banking system. The crisis was further amplified by a procyclical deleveraging process and by the interconnectedness of systemic institutions through an array of complex transactions. During the most severe episode of the crisis, the market lost confidence in the solvency and liquidity of many banking institutions. The weaknesses in the banking sector were rapidly transmitted to the rest of the financial system and the real economy, resulting in a massive contraction of liquidity and credit availability. Ultimately the public sector had to step in with unprecedented injections of liquidity, capital support and guarantees, exposing taxpayers to large losses.

The effect on banks, financial systems and economies at the epicenter of the crisis was immediate. However, the crisis also spread to a wider circle of countries around the globe. For these countries, the transmission channels were less direct, resulting from a severe contraction in global liquidity, cross-border credit availability and demand for exports. Given the scope and speed with which the recent and previous crises have been transmitted around the globe as well as the unpredictable nature of future crises, it is critical that all countries raise the resilience of their banking sectors to both internal and external shocks.

To address the market failures revealed by the crisis, the Basel Committee is introducing a number of fundamental reforms to the international regulatory framework. The reforms strengthen bank-level or micro prudential regulations which will help raise the resilience of individual banking institutions to periods of stress. The reforms also have a macroprudential focus, addressing system-wide risks that can build up across the banking sector as well as the procyclical amplification of these risks over time. Clearly these micro and macroprudential approaches to supervision are interrelated, as greater resilience at the individual bank level reduces the risk of system-wide shocks.

1.4.1 Basel III Capital Reforms

The Basel Committee is raising the resilience of the banking sector by strengthening the regulatory capital framework, building on the three pillars of the Basel II framework. The reforms recommended in Basel III concentrate on five aspects for enhancement of capital.

1. Raising the quality, consistency and transparency of the capital base;
2. Enhancing risk coverage;
3. Supplementing the risk-based capital requirement with a leverage ratio;
4. Reducing pro-cyclicality and promoting countercyclical buffers; and,
5. Addressing systemic risk and interconnectedness.

1.4.1.1 Description of New Capital Rules

To strengthen minimum capital requirements, Basel III requires banks to maintain sufficient high-quality capital through increasing their CET 1 (common equity tier 1) capital, introduces qualifying criteria, and enlarges the scopes of deduction for goodwill, deferred assets, treasury stocks, etc.

Basel III includes two capital buffers, a capital conservation buffer and a countercyclical buffer. Banks must build up capital conservation buffers amounting to 2.5% of CET 1 during non-stress periods, and can draw their accumulated buffers down as losses are incurred. To ensure that banks set the buffer aside, capital distribution constraints will be imposed on banks whose capital levels fall within a specified range. The countercyclical buffer meanwhile aims to ensure that the banking sector capital requirements take account of the macro-financial environment in which banks operate. Banks are subject to accumulation of

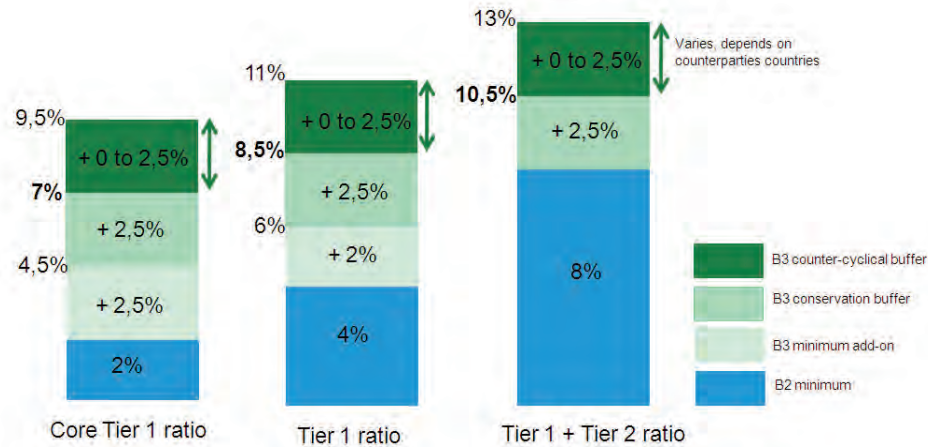
countercyclical buffers of from 0 to 2.5% of their total RWAs(risk-weighted assets) in normal times, which they then deploy in periods of stress.

A leverage ratio regulation (Tier 1 capital / Total assets > 3.0%) has also been implemented, to regulate the excessive accumulation of leverage by supplementing the existing risk-based capital regulation. This regulation is based on the recognition that financial institutions' excessive buildup of leverage worked as a major factor behind the global financial crisis.

Figure 1
Basel II and Basel III Capital Regulation Comparison

		(%)			
		Basel II	Basel III	notes	
Minimum Capital Requirements	Total Capital	≥ 8.0	≥ 8.0	• Enhancing quality of capital : deducting intangible assets, such as goodwill, from scope of capital	
	① Tier1	≥ 4.0	≥ 6.0		
	CET 1	≥ 2.0	≥ 4.5		
	② Tier2	②+③≤①	abolishing Tier3		
	③ Tier3				
Capital Buffers	Capital conservation	-	≥ 2.5	• normal periods : maintaining over a certain level • stressed periods : absorbing loss by using the accumulated buffer	
	Countercyclical	-	0~2.5		
	Leverage Ratio	Tier1/ Total Assets	-	≥ 3.0	• regulate excessive accumulation of leverage

Figure 2
Basel II vs Basel III Capital Ratios



1.4.2 Basel III Global Liquidity Standards

Strong capital requirements are a necessary condition for banking sector stability but by themselves are not sufficient. A strong liquidity base reinforced through robust supervisory standards is of equal importance. However, there have been no internationally harmonized standards in this area. The Basel Committee, therefore, introduced internationally harmonized global liquidity standards. As with the global capital standards, the liquidity standards will establish minimum requirements and will promote an international level playing field to help prevent a competitive race to the bottom.

During the early “liquidity phase” of the financial crisis, many banks – despite adequate capital levels – still experienced difficulties because they did not manage their liquidity in a prudent manner. The crisis again drove home the importance of liquidity to the proper functioning of financial markets and the banking sector. Prior to the crisis, asset markets were buoyant and funding was readily available at low cost. The rapid reversal in market conditions illustrated how quickly liquidity can evaporate and that illiquidity can last for an extended period of time. The banking system came under severe stress, which necessitated central bank action to support both the functioning of money markets and, in some cases, individual institutions.

Accordingly two standards for liquidity were introduced to achieve two separate but complementary objectives. That is Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR).

1.4.2.1 Description of New Liquidity Rules

1. Liquidity Coverage Ratio (LCR)

This standard aims to ensure that a bank maintains an adequate level of unencumbered, high-quality liquid assets that can be converted into cash to meet its liquidity needs for a 30 calendar day time horizon under a significantly severe liquidity stress scenario specified by supervisors. At a minimum, the stock of liquid assets should enable the bank to survive until Day 30 of the stress scenario, by which time it is assumed that appropriate corrective actions can be taken by management and/or supervisors, and/or the bank can be resolved in an orderly way.

$$\frac{\text{Stock of high-quality liquid assets}}{\text{Total net cash outflows over the next 30 calendar days}} \geq 100\%$$

2. Net Stable Funding Ratio (NSFR)

To promote more medium- and long-term funding of the assets and activities of banking organizations, the BCBS has developed the Net Stable Funding Ratio (NSFR). This metric establishes a minimum acceptable amount of stable funding based on the liquidity characteristics of an institution's assets and activities over a one year horizon. This standard is designed to act as a minimum enforcement mechanism to complement the LCR and reinforce other supervisory efforts by promoting structural changes in the liquidity risk profiles of institutions away from short-term funding mismatches and toward more stable, longer-term funding of assets and business activities.

$$\text{NSFR} = \frac{\text{Available amount of stable funding}}{\text{Required amount of stable funding}} \geq 100\%$$

1.5 Issues and Implications in the Implementation of Basel III in Global Banks

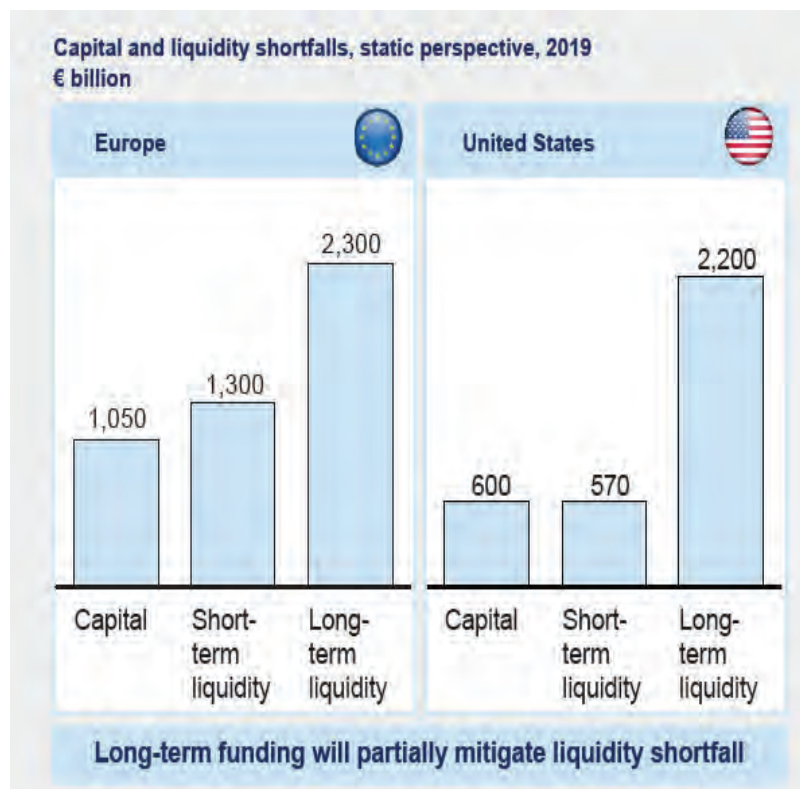
Implementation of Basel III in global banks is not an easy task given the diversity of economic, political and financial system conditions and legal background. Implications could be either quantitative or qualitative.

Banks may be subject to several issues, challenges and implications some of them are as follows:

1. Crowding out of weaker banks;
2. Pressure on profitability;
3. Change in demand from short-term to long-term funding;
4. Contraction in lending portfolio; and,
5. Reduced investor appetite for bank debt and equity

A comprehensive study done on quantitative impact on capital and liquidity requirements of banks in Europe and USA reveal significant shortfall in capital and liquidity to meet the targets in 2019.

Figure 3



Source: Moody's Analytics, Charles Stewart-GCC Risk Management Symposium, January 2012.

1.6 Objectives, Scope of the Study and General Outline of the Paper

In the light of above, this paper intends to examine issues, challenges and implications of implementation in Basel III in ten SEACEN member economies namely, Brunei Darussalam, Cambodia, Indonesia, Korea, Malaysia, Myanmar, Nepal, Philippines, Sri Lanka and Thailand, based on studies carried out by Ten Project Team Members of the respective central banks/monetary authorities. This integrative report intends to summarize the findings of individual project team reports on different aspects of implementation issues, challenges and implications and express an overall opinion.

Accordingly the objectives of the study are to:

- Examine types of major banking risks and risk measurement indicators;
- Assess the adequacy of present regulatory framework in implementing Basel capital framework and enforcing other regulatory action;
- Conduct a preliminary assessment of current capital and liquidity levels;
- Compare components of current capital structure with proposed categories of capital;
- Evaluate the current leverage structure and identify potential risks;
- Make an assessment of ability of banks to meet Basel requirements at desired level; and,
- Identify major issues and challenges in implementing Basel framework at desired level and identify future strategies to address relevant constraints.

1.7 Limitations of the Study

One of the key limitations is the significant diversity in level of application of Basel framework in the 10 economies due to different economic, political and financial system conditions and legal frameworks. For example, in the case of Myanmar and Cambodia, application of Basel capital framework is still at Basel I level covering only credit risk whereas in economies such as Korea and Indonesia, application is at Basel II with impact studies being done on implications of Basel III.

This study is mainly based on the information and data provided in the respective project team reports submitted by Project Team Members. In many

cases, micro data required for an in-depth analysis was not provided and even important, macro data was not available. However, certain macro data extracted from other sources were used in the analysis whenever possible to make relevant judgments.

This study only attempts to assess the adequacy of current level of capital in terms of currently applicable Basel framework in respective economies and make a qualitative judgment of ability to comply with Basel III capital requirements and identify potential gaps, risks and challenges. Therefore, no econometric or statistical model was used in the analysis.

It is also not possible to concentrate purely on the issues and challenges faced in implementing Basel III given the preliminary level of Basel application in certain countries. Therefore study tries to identify common issues faced by respective countries in moving to next level of Basel application and measures that are being taken to address them.

In case of liquidity standards, major emphasis is on the assessment of current level of liquidity in terms liquidity risk indicators used in respective economies since only three countries have carried out impact studies on Basel III liquidity standards.

In light of differences in the level of application on Basel framework, overall conditions of financial sector, readiness of implementing Basel III and limitations in data, it was agreed that the 10 economies be divided into two groups of Group A and Group B, purely for the purpose of analysis. Accordingly, Brunei Darussalam, Cambodia, Myanmar, Nepal and Sri Lanka represent Group A economies, while Indonesia, Korea, Malaysia, Philippines and Thailand represent Group B economies. In case of Group A economies, the level of application of capital framework is either at Basel I or intermediate level of Basel II without specific plans for implementation of Basel III. In case of Group B economies, application of Basel II is at a higher level with specific plans for implementing Basel III.

1.8 Structure of the Paper

Section 1 provides the basic introduction including historical development in the Basel capital adequacy framework, reasons behind the introduction of Basel III framework, broad issues and challenges in implementing Basel III in banks globally and the objective this paper. Section 2 provides the overview of the financial system and risk assessment. This section examines the overall financial

system of the respective economies, the banking system and their major risks and vulnerabilities.

Section 3 provides an assessment of impact of Basel standards at desired level of application in each economy. This section examines the present level of capital and liquidity in banks in terms of key performance indicators with an assessment of adequacy in terms of new Basel III requirements. It is also expected to examine leverage of banks in terms of Basel III definition and its compliance.

Section 4 examines issues, challenges and implications of implementation of Basel III. The broad areas that is covered include regulatory constraints , capital augmentation and related issues, review of asset and liability management strategies, implications on cost and profitability, implications on the financial markets/economy, infrastructure issues, human resources constraints, impact on cross border supervision, issues in implementation of counter cyclical buffer.

Section 5 examines the way forward and strategic options. The broad areas that are covered include actions taken on strengthening regulatory framework, capital and liquidity management strategies by banks, development of capital markets and instruments, development of infrastructure and address related issues, capacity building for staff of regulators and banks and the Road Map for implementation of Basel III. Section 6 concludes the paper highlighting final outcome.

2. The Overview of Financial System and Risk Assessment

2.1 General Overview of the Financial System

The financial system of both A and B economies consists of the banking sector and non-banking sector with banks at the core of the financial system. The non-banking sector consists of finance companies, microfinance institutions, insurance companies, superannuation funds and other specialized financial institutions such as primary dealers, leasing companies, securities companies, unit trust companies, venture capital companies, credit rating agencies, money exchanges and remittance companies and mutual funds.

Assets of the banking sector represent about 74-85% and 58-80% of financial system assets in group A and group B respectively. Further, commercial banks dominate the banking sector with more than 75% and 63% of market share of banking sector assets in group A and group B economies respectively.

Figure 4

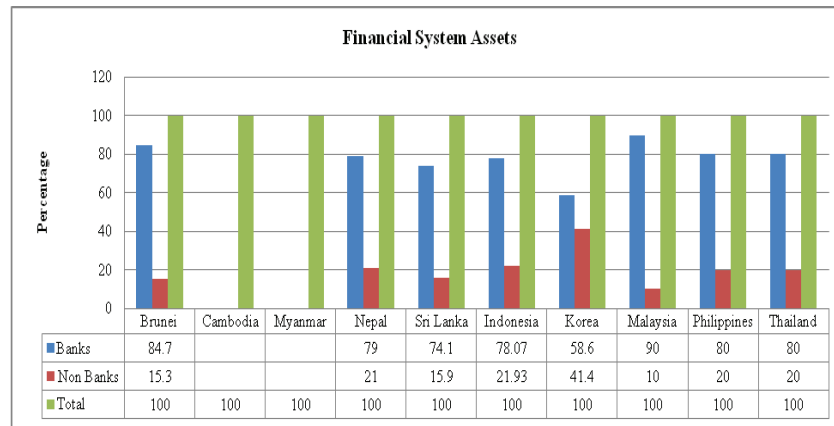
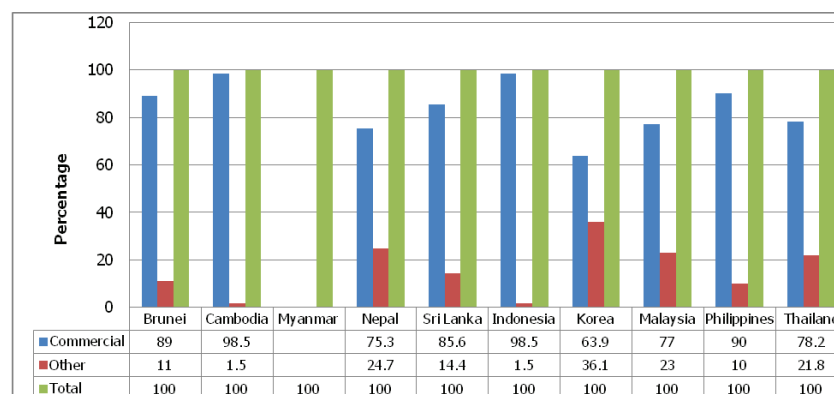


Figure 5
Banking System Assets



The Brunei Darussalam financial system is a dual financial system with Islamic and conventional financial institutions. The banking sector comprise of nine banks of which 3 are indigenous while the balance 6 are foreign banks. The Autoriti Monetari Brunei Darussalam (AMBD), being Brunei's monetary authority, is the licensing and regulatory authority for the financial system in Brunei Darussalam. The country's monetary discipline of having a currency board system has ensured the full convertibility of base money with the exchange rate pegged at par to the Singapore Dollar. This current exchange rate regime and the Currency Interchangeability Agreement (CIA) continue to serve Brunei Darussalam well. These arrangements provide a strong underpinning to the

macroeconomic stability of Brunei Darussalam. The country's monetary discipline and prudent fiscal policy has enabled Brunei Darussalam to exercise flexibility in dealing with potential disruptions to domestic economic stability.

In Cambodia, the banking sector comprise of 31 commercial banks and 7 specialized banks which include locally incorporated banks, foreign bank branches, subsidiary banks and a state owned bank. The National Bank of Cambodia (NBC), the central bank, is the authority for regulation and the supervision of the banking sector.

The banking sector in Myanmar includes four State-owned banks, 19 private banks and 23 representative offices of foreign banks. Assets of the private sector banks accounts for around 62% of banking sector assets while the balance 38% are held by state owned banks. In terms of the Central Bank of Myanmar Law 1990, the Central Bank of Myanmar (CBM) is empowered to regulate financial system and issue license, inspect and supervise financial institutions.

In the context of Nepal, banks are categorized into two categories namely, class "A" (Commercial Banks), and class "B" (Development Banks). The Nepal Rastra Bank (NRB) established under the Nepal Rastra Bank Act, 1955 is authorized to regulate, control and develop the banking system, issue license for new banks and financial institutions and to regulate and control foreign exchange operation.

The banking sector in Sri Lanka consists of 24 licensed commercial banks (LCBs) and 9 licensed specialized banks (LSBs) which include state banks, private domestic banks and foreign bank branches. Considering the asset size and the interconnectedness in the financial system at present, there are eight banks which have been identified as domestic systemically important banks (D-SIBs) accounting for around 85% of the total market share. The Central Bank of Sri Lanka (CBSL) is mandated with securing financial system stability and economic and price stability. The CBSL, in discharging its responsibilities for financial stability, is the licensing authority and regulator of licensed banks, finance companies, leasing companies and primary dealers. The regulation and supervision of banks is primarily governed by legislations, viz., Monetary Law Act and Banking Act. Licensed banks are also required to comply with the Exchange Control Act and laws on anti-money laundering, terrorist financing and financial transactions reporting and Payments and Settlements Act.

There are two types of banks in Indonesia, namely commercial banks and rural banks, both of which can operate based on either conventional or syariah

principles. There are 120 commercial banks and 1,667 rural banks in Indonesia as at end-June 2012.

Prior to the issuance of the Financial Service Authority (FSA) Act, Number 21, in 2011, there were two authorities having power to regulate and supervise financial institutions in Indonesia. Bank Indonesia (BI) has the authority to regulate and supervise commercial banks and rural banks, while Bapepam-LK under the Ministry of Finance has the authority to regulate and supervise other financial institutions and capital markets.

Currently, the supervision of financial institutions in Indonesia is under a transitional period and the Indonesian FSA is expected to be fully operational by 1 January 2014. non-Islamic commercial banks are subjected to regulations related to the Basel framework. For the purpose of this study, “banks” terminology will be used to describe the non-Islamic commercial banks in Indonesia.

Banks in Korea are divided into commercial banks and specialized banks. Commercial banks consist of 7 nationwide banks, 6 local banks and 38 branches of foreign banks. There are 5 specialized banks established under a special act rather than the Banking Act, and their main enterprises are banking businesses.

Malaysia operates a dual banking system (conventional and Islamic banking) consisting of 25 commercial banks, 15 investment banks and 21 Islamic banks. Islamic banking is conducted either through Islamic banking windows or via Islamic bank subsidiaries set up by conventional banks. The composition of banking institutions in the banking system is regulated by Bank Negara Malaysia (BNM).

The commercial and investment banks are governed by the Banking and Financial Institutions Act 1989. In addition, the Capital Market and Securities Act 2007 also govern investment banks. The governing legislation for Islamic banks, on the other hand is the Islamic Banking Act 1983. However, in mid-2013, the governing legislation would be amended and preceded by the Financial Services Act (for all financial institutions, including commercial and investment banks) and Islamic Financial Services Act (for Islamic banks).

Banks in the Philippines consist of universal, commercial, thrift, rural and cooperative banks. By banking classification, there are 38 universal and commercial banks (U/KBs), 71 thrift banks (TBs), and 614 rural banks (RBs) for a total of 723 banks. The Bangko Sentral ng Pilipinas (BSP) is the central monetary authority and at the same time, the supervisor of banks and their

financial allied subsidiaries and affiliates (except insurance companies), quasi-banks, non-stock savings and loan associations and pawnshops as provided for in its Charter (Republic Act (RA) 7653), General Banking Law (RA 8791) and other special laws. The Philippine Deposit Insurance Corporation shares some supervisory powers with the BSP over banks in line with its mandate as deposit insurer.

Banks in Thailand consist of 11 Thai banks, 4 hybrid banks, 16 foreign bank branches and subsidiaries regulated and supervised by the Bank of Thailand (BOT).

2.2 Risk Oversight Assessment and Vulnerabilities

The global financial crisis did not have a significant impact on the financial sectors of Group A and Group B economies. The main reason for this in Group A economies was that most of them were not highly integrated with the global financial system. Except for Brunei Darussalam and Nepal, growth in other economies in Group A was significantly high as reflected by GDP in 2011 which clearly indicate the minimum impact of the crisis. In the case of Nepal, lower growth rate has been due to the long-term internal conflict of the country. Except for Nepal, inflation has been maintained at single digit levels.

Figure 6
Economic Indicators in 2011

Indicator	Brunei	Cambodia	Myanmar	Nepal	Sri Lanka	Indonesia	Korea	Malaysia	Philippines	Thailand
GDP (%)	2.2	6.9	10.4	4	8.3	6.5	3.7	5.1	3.9	0.1
Inflation (%)	2.0	5.5	8.9	11.5	4.9	3.8	4.0	3.2	4.6	3.8

Measures taken by the authorities in Group B economies to strengthen the financial system consequent to the Asian financial crisis in late 1990s made them more resilient during recent crisis. These reforms focused on strengthening prudential regulatory standards and aligning them with international norms to enhance risk management, promote good corporate governance and greater transparency, and reduce moral hazard. These reforms enabled domestic financial institutions to manage the risks arising from the banking and debt crisis in Europe and weak economic growth in the US.

Indonesia's economy demonstrated considerable resilience amid increasing uncertainties in the global economy. These conditions were reflected in even

stronger growth performance of 6.5% in 2011, an all-time high for the past ten years, and a mild inflation of 3.79%. There was also an improvement in the quality of growth, reflected in the substantial role of investments and exports as sources of economic growth, and falling level of unemployment and poverty. In the financial sector, as a result of worsening crises in Europe and the United States, the decision made by some investors to liquidate and pull out foreign capital during second half of 2011, put pressure on the Rupiah, government yields and share prices. However, the stabilization measures pursued by Bank Indonesia and the Government, averted a breakout turmoil in the financial markets and thus they were able to minimize the impact of global financial crisis on Indonesia's real sectors. The Financial Stability Index (FSI) which measures the level of systemic risk in the Indonesian financial system, was quite stable from 1.65 in June 2011 to reach 1.63 in December 2011, below the forecast estimation of 1.68.

The resilience of the financial system in Korea was heightened as the soundness of banks improved, boosted by large-scale net profits, and as foreign exchange soundness improved, thanks to steps taken to enhance macroprudential soundness, including imposition of the Macroprudential Stability Levy on non-core foreign currency deposits. In response to the mounting uncertainties at home and abroad, the Bank of Korea prepared a wide range of policy initiatives for financial system stability and pursued them actively. As a first step, the Bank of Korea sought to heighten the macroprudential soundness of the foreign exchange sector. It took measures, in consultation with the government, to alleviate capital flow volatility – including those lowering the ceilings on the forward exchange positions allowed at foreign exchange banks and restricting institutions handling the foreign exchange business in their investments of foreign currency-denominated bonds issued domestically for Korean won funding purposes. The relevant regulations were, in addition, realigned to facilitate seamless implementation of the Macroprudential Stability Levy.

Financial stability risks in the Philippines remained manageable due to prudent regulatory measures taken by the authorities and strength of banks. Risks from the on-going deleveraging in Europe in line with European banks' efforts to build up their capital and strengthen their balance sheets are expected to have a limited effect on Philippine banks as their exposure to Europe remain minimal at 1.6% of total assets as of February 2012. Moreover, the relatively liquid local financial markets, alongside the country's substantial foreign exchange reserves, should provide reasonable buffer from a decline in the activities of European banks. Risk of asset bubbles and other financial imbalances from excess liquidity in the system brought about by continued foreign exchange inflows will be

mitigated by prudential tools that are in place which could help ensure the health of banks and guard against financial stability risks. These tools include ceilings on real estate exposure, loan-loss provisions, capital adequacy requirements, foreign currency liquid asset cover and regulations on derivatives.

In Thailand consolidation in the financial system brought the number of deposit-taking institutions down to 41 from 124 before the 1997/98 crisis, while the process of debt restructuring in the private sector was more or less complete, with the debt-to-equity ratio declining from 1.2 in 1998 to 0.7 at present. The domestic capital market has also grown rapidly in response to the funding needs of the Thai government and firms, further strengthening the system's resilience. Importantly, these improvements have resulted in much stronger balance sheets for firms and banks. The immediate impact of the global financial crisis on the Thai economy and the financial system has been thus limited, due to the funding structure of Thai banks and the low exposure of the Thai banking sector to subprime assets. This structure was based on domestic deposits that helped to insulate Thai banks from the tight liquidity conditions abroad.

Despite the ongoing issues related to global financial crises, Group B economies other than Thailand have been able to achieve satisfactory growth while maintaining inflation at stable levels in 2011. The Thai economy expanded well during the first three quarters of 2011 despite the natural disaster in Japan and the global economic slowdown. However, due to the worst flood in 70 years in the fourth quarter, the annual economic growth rate was brought down to 0.1% from 7.8% in 2010.

2.2.1 Risk Assessment

Credit Risk: Credit risk appears to be the most significant risk in all economies. The credit risk of the banking system is fairly low as reflected in Net Non-performing Loan (NPL) ratios. Credit risks in Korea, Malaysia, Philippines and Thailand have been entirely mitigated through provision coverage more than 100%. Credit risks in most other economies have also been mitigated to considerable extent through provision coverage of more than 50%. However, in the case of the Myanmar banking sector, there is exposure to credit concentration risk as 90% of lending is in the form of overdrafts.

It is further observed that credit risks of all economies are on a declining trend as reflected in declining NPL ratios (Figure 7) over past few years. Therefore, it is apparent that both regulators and banks have taken measures to maintain credit risk at a manageable level.

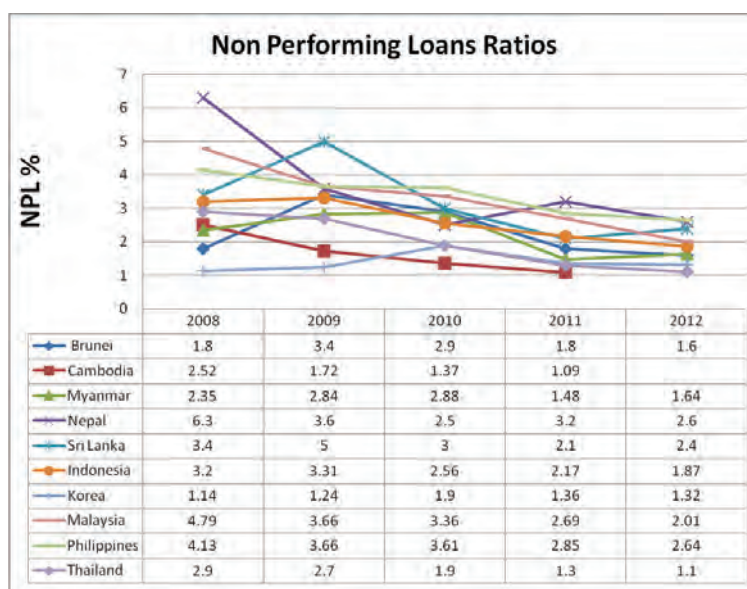
Figure 7
Non-performing Loans 2012

Country	Brunei	Cambodia*	Myanmar	Nepal	Sri Lanka	Indonesia	Korea	Malaysia	Philippines	Thailand
NPL (%)	1.6	1.09	1.64	2.6	2.4	1.87	1.32	1.4	2.7	1.1
Provision Coverage (%)	76.2	55	N/A	70.1	40.2	N/A	104.9	100.4	109.9	132.7

* Refers to 2011.

N/A: Not available.

Figure 8
Trends in NPL Ratio



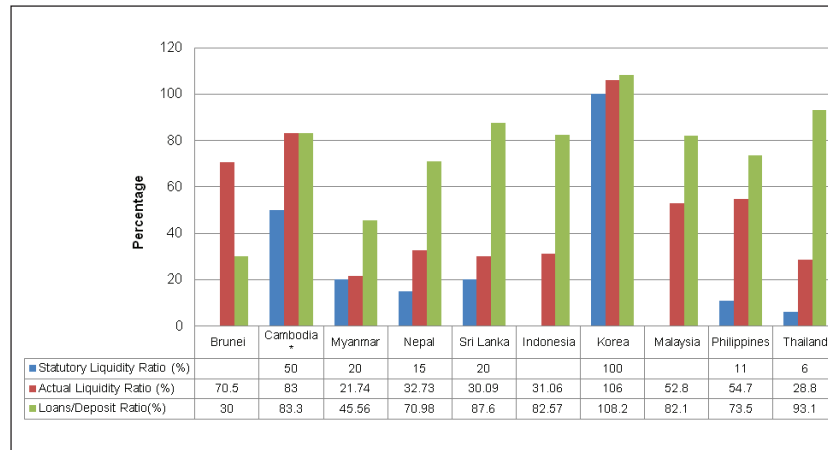
Liquidity Risk: Liquidity risk appears to be fairly low as measured by key liquidity indicators used in respective economies. Except in Brunei Darussalam, Indonesia and Malaysia, banks in other economies are required to comply with a minimum liquidity ratio as per the regulatory provisions. In addition, the loans to deposit ratio is also used as an indicator to measure liquidity risk

Figure 9
Liquidity Risk Measurement Indicators

Economy	Indicator
Cambodia	Minimum Statutory Liquidity Ratio (SLR) at 50 %.
Myanmar	<ul style="list-style-type: none"> • Minimum liquid assets ratio of 20% of the eligible deposits • Bank's deposits should not be more than 10 times of their paid-up capital; • Prohibition of inter-bank borrowing among banks • Loans to deposits ratio must be between 70% and 80%
Nepal	Statutory Liquidity Ratio (SLR) at 15% of domestic deposit liabilities.
Sri Lanka	Statutory liquid assets ratio at 20%, where LCBs maintain liquid assets to the value of at least 20% of the total liabilities less liabilities to shareholders and CBSL. LSBs maintain liquid assets on deposits.
Indonesia	Liquid Assets to Liquid Liabilities.
Korea	Current Liabilities to Current Assets less than 3 months is 100%.
Malaysia	Liquid Assets to Short-term Liabilities.
Philippines	Liquid Assets to Deposits at minimum 11%.
Thailand	Liquid assets on average of not less than 6% of total deposits and total borrowings with maturities not over 1 year.

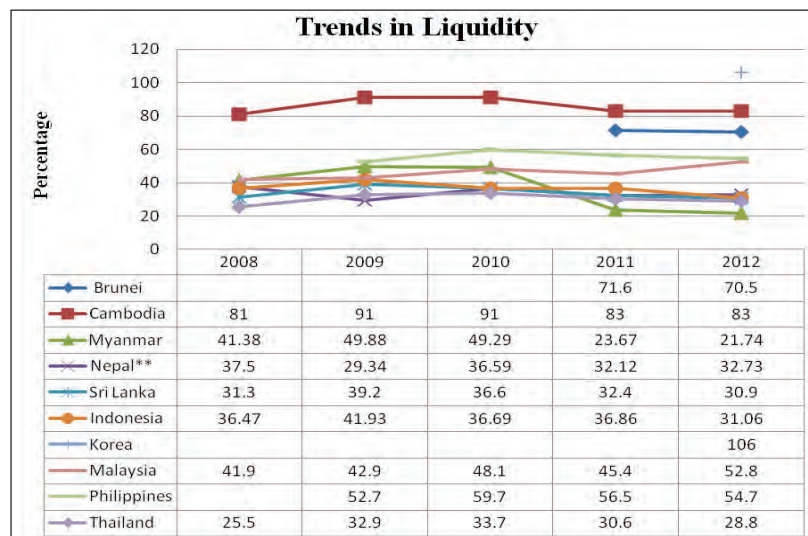
In terms of trends in liquidity ratios, liquidity of banks is at a comfortable level and above the minimum regulatory requirements. Liquidity reflected in the loan to deposit ratio does not indicate major liquidity concerns and no significant volatilities are observed in terms of trends. However, in case of Korea, liquidity needs to be carefully monitored in the context of higher loan to deposit ratio.

Figure 10
Liquidity Indicators – 2012



* Refers to 2011.

Figure 11
Trends in Liquid Assets Ratios (%)



** Refers to private banks.

Although banks in Myanmar were able to maintain statutory liquidity ratio above minimum requirement of 20%, the ratio declined to 21% in 2012 from 49% in 2009. This is mainly due to the decline in the proportion of liquid assets held by banks with the expansion in loan portfolio. The loans to total assets ratio increased to 38.2% in 2012 from 29.3% in 2010. The loan to deposit ratio also depicts an increasing trend even though at a comfortable level of 45.6%. In the light of above, banks in Myanmar may be exposed to liquidity risk in view of the changes that may place in the economy in the future. It is, therefore, necessary to closely monitor the risks emanating from business activities and improve the risk management framework.

In Indonesia, the loan to total asset ratio has been gradually increasing and reached 63% in 2012 from 56% in 2008. One key development in the banking sector is the increasing trend in derivative transactions (including transactions on behalf of customers and for proprietary trading purposes) during last 4 years from 0.99% of total assets in 2009 to 14.8% in 2012. However BI does not see this as a significant risk.

Banks were able to maintain liquidity at a comfortable level with liquid-asset-to-liquid-liabilities ratio of 31.1% in 2012 even though the ratio has declined during past three years. Decline in the ratio was reflected in the increasing trend in the loan to deposit ratio (LDR) during past three years. This is due to an increasing contribution from the banking sector to domestic economic growth through loan origination, albeit also increasing the level of liquidity risk being faced by banks. Under current regulation on monetary reserve requirement, Bank Indonesia imposed a disincentive for banks having LDR ratio under 78% or above 100%, subjecting them to higher reserve requirement than banks having LDR ratios between 78% to 100%. This policy aims to increase the intermediation process and reduce the monetary costs faced by Bank Indonesia because banks place their excess liquidity in monetary instruments.

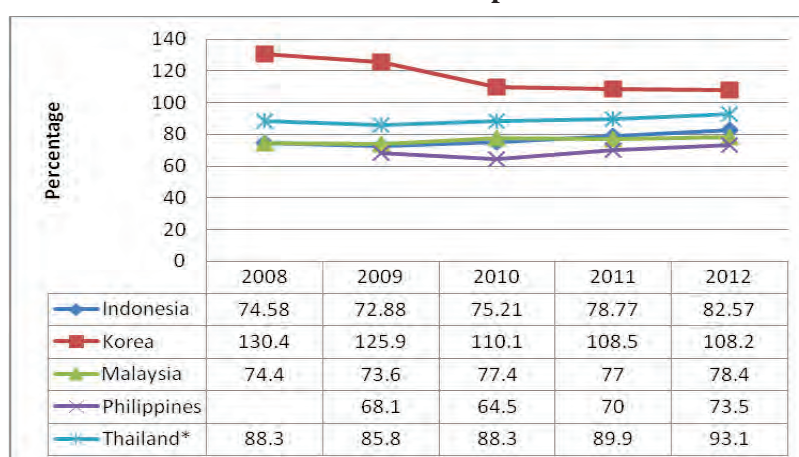
Deposits comprised of current accounts, saving accounts and time deposits which are the main source of funding for Indonesian banks and accounts for around 90% of banks' total funding, equal to an average of 76% of banks' total assets. Of the total funding, around 85% are in domestic currency.

In the case of Korea, banks have maintained liquidity ratio above the minimum of 100%. The loan to deposit ratio at 108.2 is considered high and may lead to liquidity concerns. However, this ratio has been on a declining trend since 2008 from a very high level of 130.4%.

Banks in the Philippines have a relatively steady core funding base made up of deposits, which accounted for 73.3% of total resources as of end-2011. More than 99% of total peso and foreign currency deposits and deposit substitutes are held by residents, reducing vulnerability to capital flight. Liquid assets to total assets remained high at 33.3%. Foreign currency liquidity risk is limited by a liquid asset cover requirement of 30% of foreign currency liabilities. Current regulations provide for the principles of sound liquidity risk management but do not impose specific measures.

In Thailand, commercial banks and foreign bank branches are required to maintain liquid assets on average of no less than 6% of total deposits and total borrowings with maturities of not over 1 year. Accordingly, liquidity is at a comfortable level with ratio at 28.8%. However, the loan to deposit ratio has shown an increasing trend in the past few years.

Figure 12
Trends in Loans to Deposit Ratio



* Refers to loans/(deposits+bills of exchange).

Market Risk: Market risk appears to be fairly low or insignificant in all Group A economies. The exposure of the banks to market risk in Brunei Darussalam was negligible due to the low trading portfolios and minimal exposure to foreign exchange risk, as a result of substantial foreign assets held in Singapore dollars by banks. Market risk in Sri Lankan banks remains low with risk weighted assets in relation to market risk being 3.2% of the total risk weighted assets.

There is no adequate information relating to operational risk of the banking systems. The preliminary data reported to the CBSL on internal loss data on operational losses do not indicate significant losses.

A number of prudential measures have been adopted to address the issue of operational risk in Cambodia including the regulation on governance, fit and proper test, and internal controls. Progress to date has proved satisfactory in terms of risk management including operational risk. Despite such progress, additional prudential measures especially capital charge for operational risk is under consideration for adoption in response to the growing scope and scale of operations of banking institutions.

The Banking Soundness Index based on selected financial soundness indicators representing capital, asset quality, profitability, liquidity and sensitivity to market risk indicates that the banking system in Sri Lanka has been sound and stable over the medium term.

In the light of above, no significant risks in terms of credit, liquidity and market were observed in the economies.

3. Assessment of the Impact of Basel Standards

3.1 Current Status of Application of Basel Capital Adequacy Framework

Application of the Basel framework differ significantly among economies with Myanmar and Cambodia still at a basic level of Basel I for only credit risk while Sri Lanka and Nepal has moved to Basel II partial application with future plans for full implementation. In the case of Brunei Darussalam, a hybrid of Basel I for credit risk modified with Basel II credit risk application and basic indicator approach for operational risk have been adopted.

In Indonesia, Korea, Malaysia, Philippines and Thailand, application of Basel is at a higher level with the adoption of Basel II almost in full and with some measures being taken to adopt Basel III at different levels.

Figure 13
Comparative Table of Basel Accord Implementation as at 31.12.2012

Economy	Basel Type	FIs Covered	Year Effective	Capital Cover			Risk Coverage			
				Pillar 1	Pillar 2	Pillar 3	Credit	Market	Operational	Others
Brunei	Basel I Basel II	Licensed Banks	2006-2010	√			√		√	
Cambodia	Basel I	Banks					√			
Myanmar	Basel I	Banks	1992				√			
Nepal	Basel II	Commercial banks	2008-2009	√	√	√	√	√	√	
Sri Lanka	Basel II	Licensed banks	2008-2013	√	2014		√	√	√	
Indonesia	Basel II	Banks	2008-2012	√	√	√	√	√	√	
Korea	Basel II	Banks	2009	√	√	√	√	√	√	
Malaysia	Basel II	Conventional Banks, Islamic FIs	2008-2010	√	√	√	√	√	√	
Philippines	Basel III	Universal & Commercial	01-01-14	√	√	√				
	Basel III	Universal & Commercial		√	√	√				
	Proprietary Basel 1.5	Rural banks & Stand-alone Thrift banks	01-01-11	√	Partial and forthcoming	√				
Thailand	Basel II	Banks	2008-2010	√	√	√	√	√	√	

The Basel 1 capital framework for credit risk for all licensed banks has been initially implemented in Brunei Darussalam in 2006 and the formulae for capital has been revised in 2010 under the Banking Order 2006 and 2010. Accordingly, banks are required to maintain a minimum core capital adequacy ratio (Tier 1) of 5% and total capital ratio of 10%. The revised CAR is based on a hybrid of Basel I and Basel II which is a combination of Basel I on credit risk and incorporates operational risk on the Basic Indicator Approach and the risk weights for external counterparties in Credit Risk from Basel II.

In terms of the market risk, the Banks in Brunei Darussalam have very small investment and trading portfolios which are very insignificant, and owing to the limited exposure, market risk has still not been incorporated into the Capital formula as authorities do not consider it a priority. The banks have little or no exposure to interest rate risk and even to exchange risk the exposure is minimal as the majority of foreign assets are held in Singapore dollars which eliminates the exchange risk since the Brunei dollar is at par with the Singapore dollar due to the convertibility arrangement with Singapore.

Banks in Cambodia shall at all times observe a solvency ratio in accordance with the existing regulations. This solvency ratio of their net worth to their aggregate credit risk exposure shall not be less than 15%. Total net worth consist of Tier 1 capital (core capital) and Tier 2 capital (supplementary capital). In the Tier II capital computation, discretion is given to the NBC, to allow the addition of revaluation reserves, subordinated debt and other items, based on the NBC's agreement. The calculation does not consider a market risk component, which is relevant, as dealing in precious metals, raw materials and commodities, are authorized activities. Although such activities are not widely conducted, industry representatives expressed interest in having their banks deal in precious metals, raw materials and commodities.

The Basel 1 capital framework was implemented in Myanmar in 1992 under the Central Bank of Myanmar Law 1990 and Financial Institutions of Myanmar Law 1990. Accordingly, banks are required to maintain a minimum, core capital ratio (Tier 1) of 5% and total capital ratio of 10%.

In the case of computation of risk weighted assets, fixed assets were assigned 20% risk weight as opposed to 100% recommended in Basel 1 standards which could overstate the capital ratios. However, it is not possible to compute the quantum of impact in absence of required data. The market risk, however, has not yet been incorporated into the framework.

NRB has fully implemented all three pillars of Basel II in commercial banks since financial year 2008-09. Pillar I of Basel II was adopted with simplified standardized approach on credit risk, net open position approach (NOP - only covers foreign exchange risk) on market risk and basic indicator approach on operational risk. Unless a higher minimum ratio has been set by NRB for an individual bank through a review process, commercial banks shall maintain at all times Tier 1 capital of 6% and total capital fund of 10%. Development banks are adopting Basel I and shall maintain at all times Tier 1 capital at 5.5% and total capital fund at 11%.

Commencing 1 January 2008, the Capital Requirements Directive was implemented in the Sri Lanka requiring all banks to adopt Pillar I of Basel II with standardized approach on credit risk, standardized measurement approach on market risk and basic indicator approach on operational risk. The minimum capital adequacy ratios currently in force for banks in Sri Lanka is 10%, with core capital not less than 5%, when compared with 8% and 4%, respectively, recommended by BCBS.

In 2011, an Exposure Draft was issued on the Implementation of Standardized Approach on Operational Risk and Guidelines for advanced approaches on collecting internal loss data of banks to facilitate moving to Advanced Measurement Approach, with a view to facilitate banks to commence tracking of internal loss data and mapping such data according to business lines. This will facilitate the development and functioning of a credible operational risk measurement system in banks.

In April 2012, a Consultation Paper on Implementation of Pillar 2 of Basel II on Supervisory Review Process was issued to banks. The requirements are due to be finalized and the Direction to be issued during 2013 requiring banks to maintain capital on all risks. Direction on Pillar 3 of Basel II on Market Discipline is scheduled to be issued in 2013 after reviewing the status of disclosure based on the International Financial Reporting Standards.

Banks in Indonesia were required to comply with Pillar I of Basel II in January 2012 with the standardised approach for credit risk, basic indicator approach for operational risk, and standard model for market risk. The usage of more advanced approaches are not mandatory and subject to a supervisory approval process. Bank Indonesia amended the regulation on market risk capital requirement in 2008 and 2012, allowing banks to use the internal model for the purpose of calculating the regulatory capital requirement.

Pillar 2 of Basel II has been implemented at end-2012. In terms of Pillar 2 regulation, Bank Indonesia will use the result of risk-based bank rating assessment (from supervisory process) into the calculation of minimum capital requirement. There will be an additional 1% up to 6% capital requirements, depending on the rating of bank's risk profile, from the current 8% minimum capital requirement.

Regarding implementation of Pillar 3 of Basel II, Bank Indonesia was in the process of revising the regulation on publication and transparency of bank financial conditions, to be issued in Q3 2012. Additional scope of disclosure in the Pillar 3 regulation are (i) qualitative and quantitative disclosure regarding capital level and (ii) qualitative and quantitative disclosure regarding exposure level and risk management quality. The disclosure will be available through the Bank's annual report and website.

In the capital aspect, since 2008, definition of capital has been based on Basel II framework but with several conservative adjustments, such as:

- "Current year profit and loss" is calculated considering only 50% of its value during profit condition, while considering 100% of its value during loss condition.
- "Revaluation reserve from fixed assets" being calculated considering only 45% of its value.
- Treatment of "deferred tax assets" is deducted from Tier 1 capital, instead of being part of risk weighted assets (RWA) calculation.

Korea adopted Basel I along with its introduction in 1988 and incorporated capital charge for market risk from 2002. Banks are required to maintain a minimum capital adequacy ratio of 8% on risk weighted assets as per regulations of Financial Services Commission (FSC) and the Financial Supervisory Service (FSS). Basel II with advanced approaches for credit and operational risk has been implemented from beginning 2009.²

In Malaysia, Basel I for conventional banks was introduced in 1989. For institutions only offering Islamic financial services, the capital adequacy framework only began in 2008. Malaysia adopted a 2 stage approach to Basel II; stage 1 in 2008 and stage 2 in 2010.

2. www.iflr.com: South Korea: A soft transition,, published 31 January 2012.

Pillar 1 Credit risk – Standardised Approach	2008
Credit risk – IRB Approach (foundation)	2010
Credit risk – IRB Approach (advanced)	2010
Operational risk – Basic Indicator Approach	2008
Operational risk – Standardised/Alternative Standardised Approach	2008
Operational risk – Advanced Measurement Approach	N/A
Pillar 2	2010
Pillar 3	2010

Pillar I and III of Basel II has been implemented from July 2007 in the Philippines. To address the second pillar, the BSP issued the guiding principles on 15 January 2009 and were adopted by banks on 1 January 2011. Stand-alone TBs, RBs and cooperative banks (Coop Banks), that are not subsidiaries of U/KBs, are covered by a separate risk-based capital adequacy framework referred to by the BSP as the Basel 1.5 framework which is a simplified version of Basel II in view of the simple operations of these covered banks.

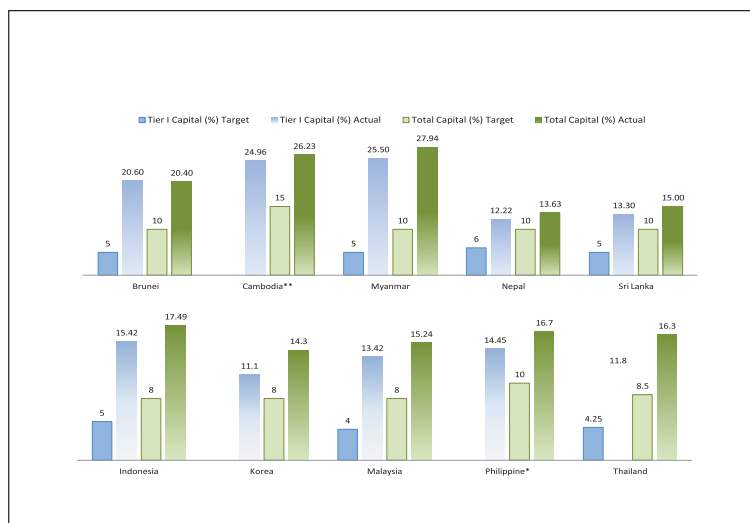
Basel II, Pillar I has been introduced in Thailand in 2008 with Standardized and FIRB Approach while AIRB Approach has been introduced in 2009. Pillar II and Pillar III has been introduced in 2010 and 2009 respectively.

3.2 Assessment of Impact on Current Capital Ratios

3.2.1 Status of Current Level and Adequacy of Capital of Individual Banks or Banking Groups in Terms of Key Performance Indicators for Capital

Both Tier I and Total Capital Ratios of all economies are well above the minimum ratios set by their respective regulators. In case of Brunei Darussalam, Cambodia and Myanmar, Tier I capital ratios are, more than 4 times and in other economies, more than 2 times the required minimum and even significantly higher than required minimum total capital ratio.

Figure 14
Capital Adequacy Ratios of Banks (%) – 2012



** Refers to 2011.

Figure 15: Trend in Tier 1 Capital

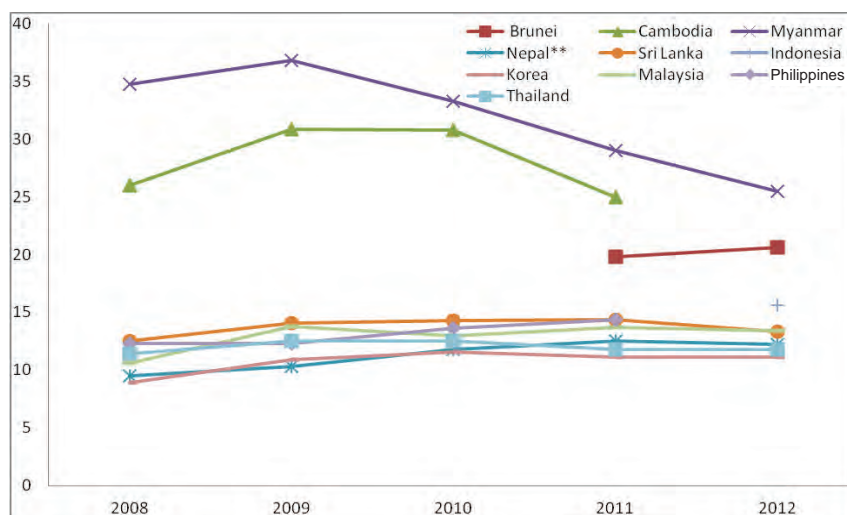
Tier 1 Capital (%)	2008	2009	2010	2011	2012
Brunei				19.8	20.6
Cambodia	26.0	30.9	30.8	25.0	
Myanmar	34.8	36.8	33.3	29.0	25.5
Nepal**	9.5	10.3	11.8	12.6	12.2
Sri Lanka	12.5	14.1	14.3	14.4	13.3
Indonesia					15.6
Korea	8.9	10.9	11.6	11.1	11.1
Malaysia	10.6	13.8	13	13.73	13.42
Philippines	12.3	12.3	13.6	14.4	
Thailand	11.4	12.5	12.5	11.8	11.8

** Refers to private commercial banks only.

Figure 16: Trend in Total Capital

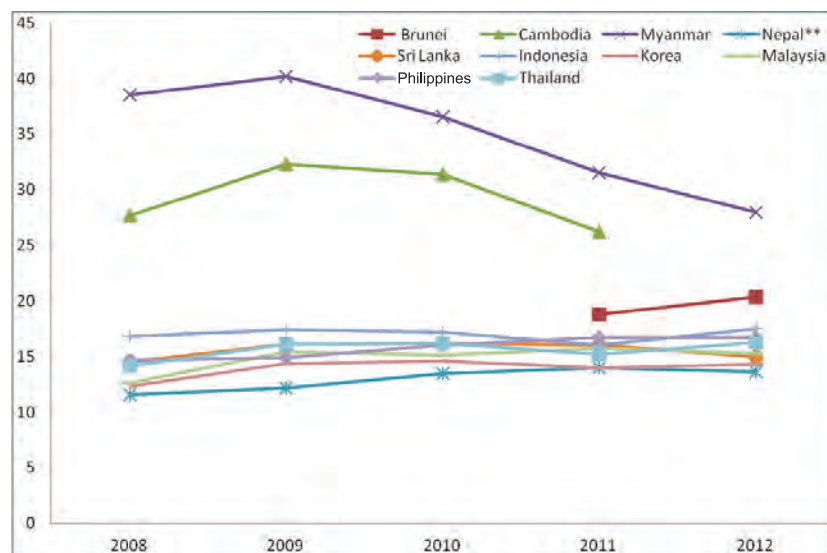
Total Capital (%)	2008	2009	2010	2011	2012
Brunei				18.8	20.4
Cambodia	27.6	32.3	31.4	26.2	
Myanmar	38.5	40.2	36.5	31.5	27.9
Nepal**	11.6	12.2	13.4	14.0	13.6
Sri Lanka	14.5	16.1	16.2	16.0	15.0
Indonesia	16.76	17.4	17.2	16.05	17.49
Korea	12.3	14.4	14.6	14	14.3
Malaysia	12.6	15.4	15.1	15.71	15.24
Philippines	14.7	14.9	16	16.7	16.7
Thailand	14.1	16.1	16.2	15.2	16.3

Figure 17
Trend in Tier 1 Capital



** Refers to private commercial banks only.

Figure 18
Trend in Total Capital



** Refers to private commercial banks only.

It is observed from the above graphs that both Tier I and Total capital ratios in Cambodia and Myanmar are significantly high and above the minimum requirements even though the ratios show a declining trend during the past 3 years. This decline is mainly due to rapid credit expansion and increase in risk weighted assets as a result of growing economic activities taking place in the two economies. Brunei Darussalam and Sri Lanka have been able to maintain the ratios at stable levels without significant fluctuations. In the case of Nepal, private commercial banks have been able to maintain the ratios at a stable level without significant fluctuations. Both Tier I and total capital ratios of state owned banks in Nepal were below the minimum levels due to the negative capital in two state banks.

Therefore, the capital levels of all Group A economies are well above the minimum ratios stipulated by their own regulators as well as Basel I or II requirements given the fact that credit risk is the most significant risk.

Banks in Indonesia, Malaysia and Thailand are required to comply with minimum regulatory capital ratios for both Tier I and total capital as per the respective regulations. However, in the case of Korea and the Philippines, banks are required to comply with only minimum total regulatory capital ratio as per the respective regulations

Capital levels in Group B are much higher even in terms of currently applicable Basel II standards for international banks. This reflects the strong capital position of the Group B banks.

As reflected in Figure 14, 15, 16, 17 and 18, all economies in Group B were able to maintain both capital ratios at stable levels and well above Basel standards without significant volatility during past five years. In terms of Tier I capital, banks in Indonesia reported the highest ratio of 15.6% while banks in Korea reported the lowest at 11.1%. In terms of total capital, banks in Indonesia reported the highest ratio of 17.5%, while banks in Korea reported the lowest at 14.3% in 2012. One of the key observations is the significant improvement in capital levels of banks in all economies compared to the levels prevailing at the time of the global financial crisis.

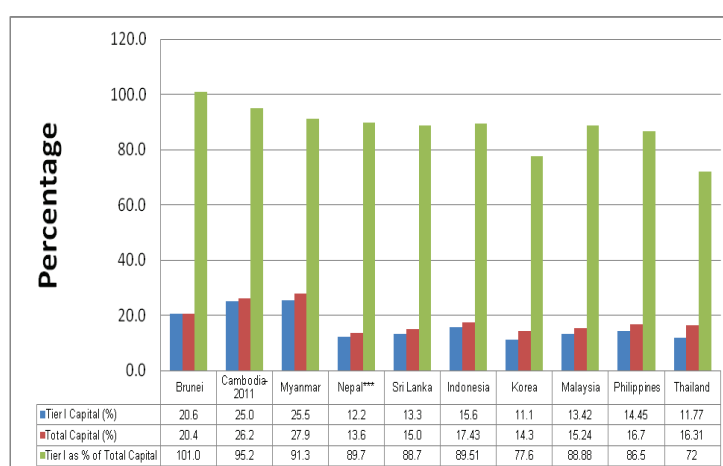
In the case of Indonesia, the capital-to-asset ratio is 11.98% which is above the average of middle income countries of 10.2%, high income countries at 7.15% and Euro area at 6.7%.

Excess capital has been the general trend for Malaysian banks over the past few years. 80% of the regulatory capital of banks comprised of high quality going-concern capital. This trend has been maintained over the years due to the prudent earnings retention employed by the Malaysian banks. Over the last decade, approximately 58% of new capital of banking institutions in Malaysia is attributable to increases in reserves and retained earnings. This effort may be partly credited to the Bank Negara Malaysia's practice of assessing capital adequacy and capital management practices under the risk-based supervisory framework. The supervisors have emphasized efforts at ensuring individual banking institutions operate at capital levels that commensurate with their respective risk profiles. In addition, the approval of dividend payouts by Bank Negara Malaysia would take into consideration the results of stress tests.

3.2.2 *Assessment of Capital Levels in Terms of Enhanced Capital Requirements under Different Capital Components and Quantification of Future Capital Requirements*

Figure 19 describes the composition of total capital in all economies. It is very clear that in all economies, Tier I capital accounts for more than 86% of total capital except in Korea and Thailand. The reliance on Tier II capital by banking sectors in these economies has been minimum and limited to less than 14%. Heavy reliance on Tier I capital is an indication of strong quality capital.

Figure 19
Comparison of Tier 1 and Total Capital



*** Refers to Private commercial banks only.

3.2.2.1 Impact Assessment in Group A

Tier I capital of Brunei Darussalam, Cambodia, Myanmar, Nepal and Sri Lanka primarily comprised of paid up share capital, retained profits, share premium and other disclosed reserves constituting more than 90% of Tier I capital.

No assessment of capital levels has been made in terms of enhanced capital requirements under different capital components and quantification of future capital requirements other than in Nepal and Sri Lanka.

In the absence of detailed information on structure of Tier I, Tier II and regulatory adjustments constituting total capital, it is difficult to describe the level of Common Equity Tier I capital (CET I) in terms of Basel III requirements. However, as per the available information more than 90% of Tier I capital constitutes of CET I.

In the case of Nepal, the Average CET 1 capital of private banks based on April 2012 data was 10.9% while it was 1.7% for state banks. Therefore, a majority of private banks in Nepal can comfortably meet CET 1 requirements and also have common equity to meet capital buffers. In the case of state banks, capital injection is required to meet even CET 1 requirement. In Basel III, the trading book exposures especially those having credit risk and re-securitization exposures in both banking and trading book attract enhanced capital charges. In the context of Nepal, banks are very small and they do not have any exposure to re-securities instruments, impact of these changes in capital insignificant.

In Sri Lanka, foreign banks maintain high capital adequacy ratios owing to extending credit to highly rated corporates and in the case of small foreign banks, the minimum capital requirements have not been fully utilized. The domestic banks maintain capital on the diversified loan portfolios and therefore, capital is used to a large extent.

In the case of Sri Lanka core capital or Tier I, capital predominately consists of going-concern capital instruments such as share capital, share premium, statutory reserve fund and the retained profits having capacity to unconditionally absorb losses as stress arise allowing the bank to remain in business. The Tier I capital consists mainly of ordinary share capital and share premium - 35%, retained profits - 30% and General reserves - 35%. Further Sri Lankan banks are required to maintain a statutory reserve fund in terms of the Banking Act where banks are required to transfer funds out of the net profits after the payment

of tax each year, before any dividend is declared or any profits are transferred to the head office or elsewhere. This is a sum equivalent to not less than 5% of paid up or assigned capital and a further 2% of profits until the amount of the said reserve fund is equal to the paid up or assigned capital of such bank. At present, no Sri Lankan bank has issued non-cumulative, non-redeemable preference shares. Therefore, CBSL preliminary assessment indicates that the Tier I capital maintained by banks under Basel II is equivalent to the common equity Tier I and Additional Tier I under Basel III. In terms of current capital structure, banks can comfortably meet the CET 1 requirement including capital buffers with CET 1 at 13.3%.

Considering the macroeconomic goal of increasing per capital income to USD 4000 by 2016, and the expected increase of banking assets to Rs. 10 bn, banks in Sri Lanka have been requested to increase their minimum capital by 2015 on a staggered basis to Rs. 5 bn by end 2015.

In case of Brunei Darussalam, 96% of Tier I capital of the banks is in the form of common equity, i.e., paid up capital and reserves. Therefore, banks in Brunei are already capable of meeting CET 1 capital requirements in Basel III. Banks have held capital conservation buffers in the form of statutory reserve funds to which, annually, all banks transfer a percentage of profits, since 2006.

In Cambodia, Tier I capital is 25%, showing a strong stable capital base of banks in 2011 and mainly consists of CET 1. Additionally, all covered entities must be able to prove that its assets minus related potential losses and intangibles exceed its liabilities to third parties by an amount at least equal to the minimum capital.

Tier 1 capital of Myanmar banks consist of paid up capital, retained earnings, share premium and disclosed reserves. Further, around 90% of total capital comes from Tier I capital in this case CET I. The overall capital of the banking system has increased significantly during past several years from Kyat 107.39 bn in 2008 to Kyat 475.74 bn in 2012. The increase is mainly due to increase in Tier I capital as a result of accumulation of retained earnings.

Figure 20 below presents a comparison of CET1, Tier 1 and total capital of banks in Group A in 2012 against the Basel III requirements. In the case of Myanmar and Cambodia, it is assumed that CET1 represents around 90% of Tier 1 capital as Tier 1 capital is substantially in the form of CET 1. Further it is observed from the information provided that regulatory adjustments to be made from CET 1 are negligible.

It is very clear that banks in Group A economies can comfortably meet CET 1 requirement with excess over minimum 4.5% ranging from 6.4% in Nepal to as high as 18.5% in Myanmar. Therefore, current CET 1 levels can also easily accommodate requirements under both capital buffers. In the case of Tier 1, capital excess over the minimum 6% range from 6.2% in Nepal to as high as 19.6% in Myanmar while in the case of total capital excess over minimum 8% range from 5.6% in Nepal to as high as 19.9% in Myanmar. One reason for this is the existing higher regulatory capital requirements than Basel and non-availability of complex capital and debt instruments and less developed financial markets. This has prompted banks to issue high quality capital, mainly common equity and build up of reserves through retained earnings.

Figure 20
Comparison of Capital Levels in 2012 in Terms of Basel III

Capital Ratios	CET1(%)			Tier I Capital (%)			Total Capital (%)		
	Basel III	Actual	Excess	Basel III	Actual	Excess	Basel III	Actual	Excess
Brunei	4.5	19.77	15.27	6.0	20.60	14.60	8.0	20.40	12.40
Cambodia**	4.5	22.46	17.96	6.0	24.96	18.96	8.0	26.23	18.23
Myanmar	4.5	22.95	18.45	6.0	25.50	19.50	8.0	27.94	19.94
Nepal	4.5	10.90	6.40	6.0	12.22	6.22	8.0	13.63	5.63
Sri Lanka	4.5	13.30	8.80	6.0	13.30	7.30	8.0	15.00	7.00

** Refers to 2011.

In the light of above, banking systems in Brunei Darussalam, Cambodia, Myanmar, Nepal (only private banks) and Sri Lanka are capable of meeting CET I, Tier I and total capital requirements in Basel III including capital buffers due to existing high level of core capital structure, quality of capital and regulatory requirements.

3.2.2.2 Impact Assessment in Group B

Impact Assessment in Indonesia

For the purposes of assessing the impact of Basel III framework on different types of banks, Indonesian banks were categorized into four types - State-owned banks (banks that are owned and controlled by Indonesian government), Regional Development Banks (banks that are owned and controlled by Indonesian local governments and generally operate in its regions or municipal areas), Foreign

Owned Banks (banks that are branches of foreign banks) and other locally Incorporated Banks(banks that do not fall into one of the above categories).

In terms of market share of assets, 4 state banks accounts for 36% while 80 locally incorporated banks accounts for 46%. All four categories of banks have been able to maintain total capital above 13.8% during past five years. As per June 2012, data on foreign owned banks reported the highest CAR ratio at 28.4%, followed by Regional Development Banks at 17.0%, State-owned Banks at 16.6% and Other Locally Incorporated Banks at 16.2%. Banks' capital is growing at a similar rate as their total asset, making them able to maintain the capital ratios of banks at a stable level. A major contributory factor to the growth in capital in Indonesian banking system is sustained Return on Assets (ROA) during past several years. As a result, the average CAR of Indonesian banks has been maintained above 16% during past six years.

The definition of Tier 1 capital under current capital regulation of Bank Indonesia meet the definition of Common Equity Tier 1 in Basel III framework since all Tier 1 instruments in Indonesian banks are same as CET1 instruments defined in Basel III framework. Further, certain elements of current regulation are more conservative than Basel III recommendations, e.g., current year profits, investment in capital instruments of other financial institutions, and deferred tax asset.

- “Current year profit and loss” is calculated considering only 50% of its value during profit condition, while considering 100% of its value during loss condition.
- “Revaluation reserve from fixed assets” being calculated only 45% of its value.
- Treatment of “deferred tax asset” is deducted from Tier 1 capital, instead of being part of risk weighted asset (RWA) calculation.

Tier I capital at 15.4%, which is equivalent to CET 1, indicates strong capital position of banks and is a reflection of their ability to comply with Basel III capital requirements without difficulty.

Indonesia is among five countries³ where Basel III implementation has a positive impact on bank's capital level and capital adequacy ratio. This result is based on a comprehensive quantitative impact study⁴ done globally by the Basel

3. Five countries where Basel III implementation have positive impact are Hong Kong, Indonesia, Luxemburg, Mexico dan Russia.

4. Bank for International Settlement, available at <http://www.bis.org/publ/bcbs231.pdf>

Committee on Banking Supervision (BCBS) using banks' financial data in December 2011. This is mainly due to more stringent capital treatments currently applicable to Indonesian banks in comparison to Basel III recommendations (Appendix 1).

As per the outcome of two Indonesian banks that participated in this study representing 24.1% market share of the Indonesian banking industry, the Basel III framework contributes to an increase in CAR ratio by 287 bps and 229 bps. The most significant factors that contribute to the increase in capital amount and capital adequacy ratio are more relaxed treatments in Basel III framework with respect to (i) current year profit and loss; and (ii) investment in other financial institutions where bank own more than 20% shares.

In a similar study conducted by Bank Indonesia for national level banks using regular financial reports submitted by banks during period of January 2012 until June 2012, Bank Indonesia observed similar results as in the case of BCBS study.

Implementation of Basel III contribute to an increase in RWA of around 3% while it also contributes to an increase in total capital around 9% - 11%, during the first half of 2012. As seen in Figure 21, the positive gap between Basel III CAR and current CAR ratio were increasing steadily from only 99 bps in January 2012 to become 152 bps in June 2012. This phenomenon was caused by an increasing amount of accumulated current year profit being included in the calculation of total capital for each reporting period.

Figure 21
Result of National Quantitative Impact Study
on Basel III Implementation

No	Basel III impact	Jan-12	Feb-12	Mar-12	Apr-12	May-12	June-12
1.	Increase in Capital (%)	9.23	9.63	10.01	10.86	11.36	11.62
2.	Increase in RWA (%)	3.68	3.39	2.96	2.89	2.87	2.72
3.	Increase in CAR (bps)	99	111	125	139	146	152

The impact of Basel III implementation by type of banks can be seen in Figure 22 below. Except in foreign banks, the CAR of all other types of banks will have a positive impact. In case of foreign banks, they do not receive the benefit of capital increase from current year profit accumulation because they usually transfer almost if not all, of their profits to their head offices.

Figure 22
Impact of Basel III Implementation by Type of Banks

in Million IDR

	State Owned Banks	Regional Development Banks	Foreign Owned Banks	Other Banks
Total Capital				
Current Capital	158,699,065	31,016,604	67,848,143	209,911,789
Basel III Capital	181,842,447	36,418,973	67,696,085	235,839,966
Tier 1 Capital	164,100,129	33,289,705	67,696,085	203,619,110
RWA				
Current Regulation	947,248,145	184,130,011	237,445,869	1,298,556,125
Basel III	983,600,891	186,735,575	238,721,567	1,330,905,767
CAR				
Current Regulation	16.75%	16.84%	28.57%	16.17%
Basel III	18.49%	19.50%	28.36%	17.72%
Tier 1 ratio	16.68%	17.83%	28.36%	15.30%
Increase in				
Capital	14.58%	17.42%	-0.22%	12.35%
RWA	3.84%	1.42%	0.54%	2.49%
CAR	1.73%	2.66%	-0.22%	1.56%

Impact Assessment in Korea

The results of a QIS (Quantitative Impact Study) implemented by the Basel Committee on Bank Supervision (BCBS) suggest that Korean banks' additional financial burdens that are needed to satisfy the enhanced capital regulations may not be sizable. As of end-2009, eight major Korean banks exhibited a CET 1 ratio of 10.3%, a Tier 1 ratio of 10.4%, and a total capital ratio of 13.5%, all much higher than the minimum Basel III requirements of 7.0%, 8.5% and 10.5% respectively. It is, however, expected that Korean banks may face additional capital burdens if the Korean supervisory authority enforces domestic rules stronger than the international ones, or imposes additional capital requirements on D-SIBs (domestic systemically important banks).

It is possible that the Korean supervisory authority will implement rules on Korean banks that are stricter than international rules. In this case, Korean banks may respond by either enhancing their capital or reducing their risk-weighted assets. The amounts of capital required in order for Korean banks to meet the possible enhanced capital regulations will vary depending on the target capital ratio. If the target ratio (Basel III basis) is set at 13.0%, including the countercyclical buffer, then the amount of required capital is estimated at 16.6 trillion won. If the ratio is set at 14.6%, which was the average total capital

ratio of Korean banks in 2010, the amount of required capital is estimated at 34.3 trillion won.

If banks procure this capital through internal reserves, it is expected that three to five years will be needed to reach the target level. Korean banks will usually procure capital through internal reserves rather than by issuance of new stock. New stock issuance costs much more than other funding methods, and is hard to do often as it requires the consideration of many factors such as stock market conditions and the possibility of declines in price of existing shareholders' stock holdings. If the capital regulations are enhanced, banks' TB (Treasury bill) investment is expected to increase due to their portfolio adjustments carried out to reduce risks.

Since the global financial crisis, the volume of Korean banks' risk-weighted assets has fallen steadily, while their total asset volume has exhibited stable behavior. This means that Korean banks have replaced some of their high-risk assets with lower-risk assets.

Impact Assessment in Malaysia

The Malaysian banking system as a whole continued to remain well capitalized with the Total Capital Ratio (RWCR) and Tier 1 Capital Ratio for year ending 2012 being 15.24% and 13.42% respectively. The excess capital has been the general trend for Malaysian banks over the past few years. The banks have been operating above the 15% capital ratio for the past 4 years. Even in 2008, during the global financial crisis, the capital ratio of Malaysian banks was well above the minimum requirement at 12.6%. This trend has been maintained over the years due to the prudent earnings retention employed by the local banks. Over the last decade, approximately 58% of new capital of banking institutions in Malaysia is attributable to increases in reserves and retained earnings. This effort may be partly credited to the Bank Negara Malaysia's practice of assessing capital adequacy and capital management practices under the risk-based supervisory framework. The supervisors have emphasized efforts at ensuring individual banking institutions operate at capital levels commensurate with their respective risk profiles. In addition, the approval of dividend payouts by Bank Negara would take into consideration the results of stress tests.

Figure 23 presents the results of impact study done on Malaysian banks based on 2011 capital levels in moving to Basel III. Accordingly CET 1, Tier 1 and Total Capital ratios would decline from present levels by 3.8%, 4.3% and 2.5% respectively to reach 9%, 9% and 13.2% respectively.

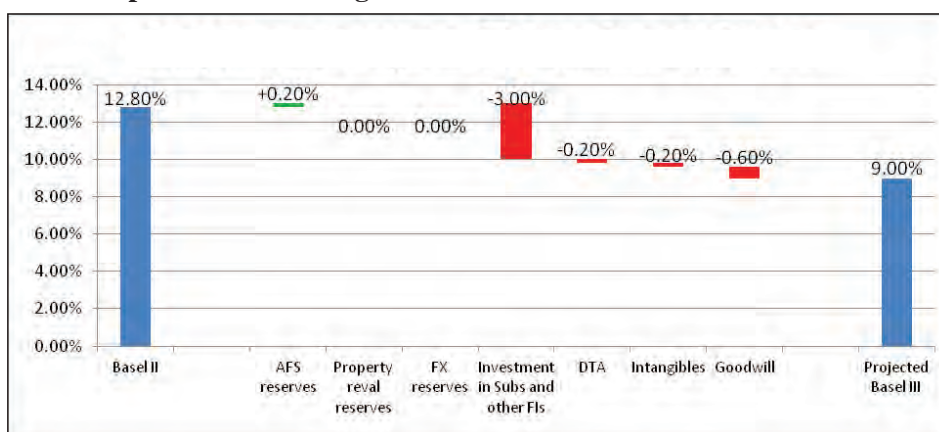
Figure 23
Impact on Capital on Malaysian Banks

	CET 1	Tier 1 Capital	Total Capital
Minimum requirement	4.5%	6%	8%
Minimum requirement + conservation buffer	7.0%	8.5%	10.5%
Malaysian banking system (Dec 2011) as per Basel II	12.8%	13.7	15.7
Malaysian banking system (Dec 2011) as per Basel III	9.0%	9.0%	13.2%
Impact	3.8%	4.3%	2.5%

The impact in the CET 1 ratio is due to the differences in treatment of reserves that are now recognized as capital (i.e., available-for-sale instruments, property revaluation reserves, and foreign exchange reserves) and the regulatory adjustments applied to capital. As shown in Figure 23 below, significant negative impact on CET 1 is a result of the regulatory adjustments, the most prominent one being the deduction in investment in subsidiary and other financial institutions from CET 1.

However, Malaysian banks are operating at comfortable capital levels and well above the minimum requirement as proposed by the Basel III framework despite the negative impact. Further estimates have shown that the capital ratios of most Malaysian banks would not fall below the minimum requirement even without transitional arrangements.

Figure 24
Composition of Changes in CET1 from Basel II to Basel III



Impact Assessment in the Philippines

Existing regulations in the Philippines requires a minimum capitalization based on the type of banking license and/or its location. In addition, the CAR of a bank, consolidated across the parent bank and its subsidiary financial allied undertakings (but excluding any insurance subsidiary or affiliate), must not be lower than 10% and these regulations on bank capital must be complied on daily basis. Since there are material consequences for any breach, there is the built-in incentive for banks to purposely set a buffer above the regulatory minima.

At end-2011, total capital ratio for the Philippine banking system is at 16.7% when banking institutions are taken on a stand-alone (“solo”) basis. The ratio rises to 17.6% if affiliates and subsidiaries are taken collectively with their parent bank (“consolidated”). With limited use of hybrid capital, the corresponding Tier 1 ratio is at 14.4% on a solo basis as given in Figure 25.

Figure 25
Capital Adequacy and Tier 1 Ratios (December 2011)

	Qualifying Capital	Risk-Weighted Assets	CAR	Net Tier 1 Capital	Tier 1 Ratio
<u>Solo</u>					
Phil. Banking System	803.6	4,825.4	16.7	697.1	14.4
Universal/Commercial banks	711.6	4,270.2	16.7	613.9	14.4
Thrift banks	61.2	385.9	15.9	55.3	14.3
Rural banks	28.2	152.9	18.4	26.0	17.0
Cooperative banks	2.6	16.5	15.7	1.9	11.8
<u>Consolidated</u>					
Phil. Banking System	884.3	5,012.6	17.6	725.8	14.5
Universal/Commercial banks	833.3	4,703.5	17.7	681.2	14.5
Thrift banks	61.2	385.9	15.9	55.3	14.3
Rural banks	28.2	152.9	18.4	26.0	17.0
Cooperative banks	2.6	16.5	15.7	1.9	11.8

Source: Bangko Sentral ng Pilipinas.

In terms of banking groups, universal and commercial banks which dominates the sector with a market share of 88.5%, both in terms of risk-weighted assets and qualifying capital, drives the systems CAR. However, the remaining groups have CARs within a range of 15.7% to 18.4% despite the vast difference in market size. A stress testing exercise for credit, market and liquidity risks has been run every semester since 2011 on 55 banks which cover all universal/commercial banks and the largest thrift banks in order to validate the strength of banks’ capital. These 55 banks represent 96.2% of the assets of the banking system and 96.8% of its capital base. The results show that the balance sheets of the tested banks are well able to absorb a considerable amount

of stress.⁵ Instead of simply relying on high CAR values, it is these results that provide the BSP with the comfort that the system as a whole is well-capitalized against the potential occurrence of financial risks. Accordingly, banks operating in the Philippines can take on increased risk exposures without compromising their ability to meet regulatory capital provisions.

In order to assess the impact of implementation of Basel III, a simulation has been conducted by Bangko Sentral ng Pilipinas using different scenarios: (i) with and without grandfather legacy capital instruments, (ii) phase-in of selected regulatory adjustments and (iii) alternative treatments for investments in non-financial allied and non-allied undertakings.

The results are given in Figure 26.

Figure 26
Simulation of Capital Position under Different Basel III Scenarios

	Current Framework	Full Deduction of Regulatory Adjustments		Full De-recognition of Ineligible Capital		Treatment for Selected Regulatory Adjustments ⁶	
		No grandfathering	With grandfathering	Full Deduction	Phase-in of Regulatory Adjustments	Deduction Approach	Risk-Weight Approach
Average CAR	17.2%	13.2%	14.3%	13.2%	13.2%	13.4%	13.4%
Tier 1 Ratio	13.7%	12.3%	12.3%	12.3%	13.5%	12.3%	12.5%
CET1 Ratio	15.0%	12.3%	12.3%	12.3%	13.5%	12.3%	12.3%
Banks < 10% CAR	0	2	2	2	2	2	1
Banks < 7.5% Tier 1	0	0	0	0	0	0	0
Banks < 6% CET1	0	0	0	0	0	0	0

Source: Bangko Sentral ng Pilipinas.

As per the results, banks can still maintain, on average, a significant buffer over the regulatory minima and the relatively limited use of hybrid instruments keeps the CET1 ratio well above the prudential threshold. However two banks will fall below the 10% Total CAR threshold but none will be below the 7.5% Tier 1 minimum. Even the choice between a full or staggered deduction creates at best only a 1.2 percentage point difference from a relatively high⁷ base.

5. For credit risk, up to a 50% write-off without recovery is considered. For market risk, interest rate shocks of 500 bps for both local and foreign interest rates are applied. In addition, the local currency was depreciated at 30% and combined with the interest rate shock. Liquidity tests are in the form of gapping analysis for both local and foreign currency exposures at various tenor buckets.
6. Applies to investments in non-financial allied and non-allied undertakings.
7. There are deductions which are imposed as part of the Basel II framework. The treatment is a 50% deduction from Tier 1 and a 50% deduction from Tier 2. Thus, the context of a full deduction at inception is actually an increment of 50%, minimizing the gains from a staggered deduction program.

Accordingly banks in the Philippines will not foresee significant challenges in meeting Basel III requirements.

Impact Assessment in Thailand

Based on results of the Quantitative Impact Study (QIS)⁸ that the BOT has conducted five times using data of December 2009, December 2010, June 2011, December 2011, and latest June 2012, the Thai banking sector is well capitalized and not much affected by the new minimum capital requirements, which raise both quality and quantity of the capital base. This is due to the fact that the current capital structures of Thai banks are mostly comprised of Common Equity (over 90%) with highest loss absorbing capacity. Only a trivial part contains different types of capital instruments that will be gradually phased out along the timeline of Basel III implementation. As of September 2012, the average Tier 1 Ratio (mostly Common Equity) for Thai-registered banks is equivalent to 11.1%, while the average Total Capital Ratio equals to 15.6%. For foreign bank branches, the average Total Capital Ratio⁹ amounts to 17.4%.

These figures clearly reflect strong profitability of the Thai banking sector that has buoyant since 2003. Evidently, these ratios are not only beyond the minimum capital requirements but also even sufficient to comply with conservation buffer. Results of the comprehensive quantitative impact study done based on 31 December 2010 data is given in Figure 27.

Figure 27
Results of the Comprehensive Quantitative Impact Study

Capital Ratio (%)	Basel Minimum	Thai Registered Banks		Foreign Bank Branches	
		Basel II	Basel III	Basel II	Basel III
CET 1	4.50		11.4		
Tier 1	6.00	11.9	11.4		
Total	8.00	16.1	12.3	16.8	16.7

8. The QIS results are based on the strong assumption set out by BCBS, i.e., full implementation of Basel III in 2013, meaning: (i) to fully exclude (instead of “phase-out”) capital instruments that no longer qualify as non-CET1 or Tier 2 capital and (ii) to fully deduct (instead of “phase-in) of the newly defined regulatory adjustments BIS Ratio.

9. Components of the regulatory capital of foreign bank branches differ from those of Thai-incorporated banks. It is thus a point of consideration on how to impose the Basel III capital requirements for foreign bank branches in the comparable way as those for Thai-incorporated banks.

In light of the above, capital levels in Group B economies are high and can comfortably meet Basel III requirements with no immediate requirements in raising new capital. In the case of Indonesia, Basel III implementation will also result in an increase in capital ratios.

3.3 Assessment of Current Level of Leverage

One of the underlying features of the crisis was the build-up of excessive on- and off-balance sheet leverage in the banking system. In many cases, banks built up excessive leverage while still showing strong risk based capital ratios. During the most severe part of the crisis, the banking sector was forced by the market to reduce its leverage in a manner that amplified downward pressure on asset prices, further exacerbating the positive feedback loop between losses, declines in bank capital, and contraction in credit availability.

Therefore, the BCBS agreed to introduce a simple, transparent, non-risk based leverage ratio that is calibrated to act as a credible supplementary measure to the risk based capital requirements. The leverage ratio is intended to achieve the following objectives:

- Constrain the build-up of leverage in the banking sector, helping to avoid the destabilizing deleveraging processes which can damage the broader financial system and the economy; and
- Reinforce the risk based requirements with a simple, non-risk based “backstop” measure¹⁰.

The basis of calculation is the average of the monthly leverage ratio over the quarter based on the definitions of capital (the capital measure) and total exposure (the exposure measure). The Committee will test a minimum Tier 1 leverage ratio of 3% during the parallel run period from 1 January 2013 to 1 January 2017.

In the case of economies in both Group A and Group B where data has been provided, banks can comfortably meet minimum leverage ratio of 3% defined in Basel III as given in Figure 28 below. However, in Nepal, the leverage ratio is negative in two state banks due to negative capital. Study on leverage ratio by type of banks in Indonesia indicates all of them are comfortable with a leverage ratio above 8%.

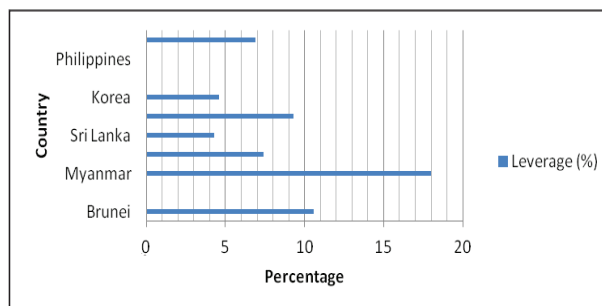
10. www.bis.org Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems.

**Figure 28: Leverage of Banks
2012**

Economy	Leverage (%)
Brunei	10.6
Cambodia	N/A
Myanmar	18
Nepal	7.4
Sri Lanka	4.3
Indonesia	9.3
Korea-2009	4.6
Malaysia	N/A
Philippines	N/A
Thailand-2010	6.9

N/A: Not Available.

**Figure 29: Leverage of Banks
2012**



3.4 Assessment of Liquidity in Terms of New Liquidity Ratios

3.4.1 Current Level and Adequacy of Liquidity of Individual Banks or Banking Groups in Terms of Key Performance Indicators for Liquidity

As discussed in the earlier section, liquidity of the banking systems in both Group A and Group B economies is satisfactory and above the respective statutory liquid assets ratios. Accordingly, no major liquidity concerns are observed in all economies which warrant immediate remedial action. However, specific issues highlighted need to be monitored and appropriate action is required.

Banks in Brunei Darussalam are characteristically highly liquid and therefore liquidity is not a regulatory concern in the short-term or in the long-term. However, there is adequate provision in the banking statutes to impose mandatory liquidity requirements, if the need arises. The high level of liquidity held by the banks in Brunei Darussalam is at the cost of low levels of credit in the economy. Therefore, the priority of the Authority is credit growth which it seeks to facilitate. To impose the Basel III liquidity requirements at the cost of credit growth is not the desire of the Authority. Authorities are satisfied that at the current level of liquidity in the industry, both the short- and the long-term liquidity requirements of Basel III can meet the LCR and the NSFR.

The issues related to liquidity are also less of a concern in Cambodia. Banking institutions are highly liquid which basically is maintained in the form of cash and placement with banks. The proposal by Basel III on liquidity that includes liquidity coverage ratio and net stable funding ratio is crucial but complex for implementation. The stress coverage within a one-month period for both cash inflow and outflow is almost impossible to identify due to the lack of reliable data and information. Long-term funding is not really available for most banks, which cause serious concerns for meeting the requirement of the net stable funding ratio.

Even though banks in Myanmar have complied with the minimum liquid assets ratio, it has declined during past two years. It is also noted that the Myanmar banking sector faced a liquidity crisis in 2003, mainly as a result of poor liquidity management. Therefore, liquidity risk may be of concern in the banking sector and close monitoring is required as stated in earlier.

Nepalese banks should maintain a Statutory Liquidity Ratio (SLR) of 15% of domestic deposit liabilities. Failure to meet such obligation results in monetary penalties, computed on the basis of bank rate. NRB has prepared and issued a liquidity monitoring framework to monitor the liquidity position of the banks. The framework requires banks to submit their short-term liquidity position (liquid assets to short-term liabilities position), deposit and credit concentration, interbank transaction, borrowing from NRB (SLF, Repo, refinance) and liquidity profile (short- and long-term assets liability position) with a given timeframe. NRB has incorporated liquidity risk in Basel II. According to these provisions, when the bank's net liquid asset to total deposit ratio is less than 20%, a risk weighted 1% of total deposit, for each percentage or portion of percentage shortfall in such ratio, is added to total of the RWE.

Liquidity risk remains at a comfortable level in Sri Lanka with the statutory liquid assets ratio being maintained at high levels. Liquid assets considered for the computation of the Statutory Liquid Assets Ratio are mainly cash, investments in government securities with maturities not exceeding one year, balances with banks and money at call in Sri Lanka. Banks maintain a Statutory Reserve Requirement of 8% on Rupee deposits with CBSL. As the Statutory Reserve Requirement is a monetary policy tool to control money supply, it is not considered for liquidity purposes.

3.4.2 Quantification of LCR and NSFR and Assessment of Future Liquidity Requirements

No assessment has been done on LCR and NSFR in the case of Brunei Darussalam, Cambodia, Myanmar and Nepal, Malaysia and the Philippines.

The preliminary assessment conducted by CBSL indicates that the Liquidity Coverage Ratio vary from 70% to 423% among the large banks. The high ratio is maintained by the large savings bank as it is mandated to invest 60% of its deposits in government securities which are Level 1 assets.

At present, however, it is observed that the unencumbered government securities form a significant portion of the assets and will be of use when computing the liquidity under new standards. Further, banks in Sri Lanka do not have Level 2 assets or its portion is insignificant. The Statutory Reserve Requirement (SRR) required to be maintained is presently 6% on Rupee deposits and the excess maintained in CBSL over the required level will be considered as Level 1 assets.

CBSL intends to maintain the same run-off factors of net inflows and outflows as specified by the Basel requirements. CBSL is yet to decide on the reporting format and currency. Banks will be required to commence the observation period in 2013.

Currently, Bank Indonesia does not have the required data structure needed to calculate and monitor LCR and NSFR of Indonesian banking system through the regulatory reporting system.

In the study conducted by BCBS involving two banks, it has been revealed that both banks meet Basel requirements with LCR at 240% and 487% and NSFR at 131% and 100% respectively. Further, in a national study conducted by BI covering nine banks, it has been revealed that all banks meet LCR and NSFR requirements in Basel III as given in Figure 30. Banks covered in both studies above represent 57% of total banking sector assets.

Figure 30
Basel III Impact on Bank's Liquidity Risk
Profile Based on National Study

	LCR	NSFR
Bank 1	597%	147%
Bank 2	597%	147%
Bank 3	528%	130%
Bank 4	334%	111%
Bank 5	300%	212%
Bank 6	234%	119%
Bank 7	209%	129%
Bank 8	109%	102%
Bank 9	100%	110%

As per the QIS on Korean banks at end-2009, it has been revealed that the average LCR and NSFR fall short of the minimum requirements of 100% respectively. The average LCR and NSFR at major Korean banks were lower than those of major international banks at 76% and 93% respectively.

Figure 31
Basel III Impact on Liquidity

Basel III Liquidity Ratios ¹¹ (%)		LCR	NSFR
Major banks ¹²	International banks (23 countries)	83	93
	Korean banks	76	93
Other Banks ¹³	International banks (23 countries)	98	103
	Korean banks	75	99

In Thailand, as per the results of the Quantitative Impact Study done as of 31 Dec 2010, Thai registered banks are short of LCR requirements while foreign bank branches comfortably meet the target ratio. In case of NSFR, both categories of banks meet the target ratio as given in Figure 32.

11. End-2009 basis.

12. Internationally active banks having more than 3 billion euros of Tier 1 capital, the Korean bank targeted by the QIS were Woori, Shinhan, Hana, KB and IBK.

13. The Korean banks targeted were Daegu and Busan.

Figure 32
Comprehensive Quantitative Impact Studies as of 31 Dec 2010

Liquidity Ratio (%)	Basel III Target(%)	Thai Registered Banks	Foreign Bank Branches
LCR	≥100%	75%	188%
NSFR	≥100%	114%	150%

4. Issues and Challenges of Implementing Basel Standards

In light of observations made in Section 3, banking systems in all economies are adequately capitalized and do not foresee significant short-term challenges in meeting Basel III capital reforms. However, there may be medium- to long-term issues and challenges in line with future business strategies to be adopted and growth path as a result of structural changes introduced for eligible equity and debt capital instruments. In the case of liquidity reforms, banks as well as regulators will be subject to many issues and challenges in identification of liquid assets to meet the criteria specified in the context of financial instruments and markets existing in their jurisdictions. While most of these issues and challenges are common, there are specific issues and challenges faced by individual economies as are discussed below.

4.1 Capital Augmentation and Related Issues

Banks in Group A as well as Group B economies may not require raising additional capital in the short-term given the adequate level of existing capital. The major source of capital generation in banks in these economies in past has been retained earnings and internal reserves. Going forward, especially with significant growth in these economies along with credit expansion and other business activities, banks may find it difficult to increase capital only through retained earnings. As a result, banks in these economies need to look for more avenues in raising equity and debt capital such as through capital markets.

In most of Group A economies, banks may find it difficult in raising capital through capital markets as they are neither active or developed. Also these markets are not liquid with low volumes of trading. Therefore, authorities in Group A economies need to focus on the development of domestic capital markets as a supplement to the banking sector which would also strengthen the financial system through the diversification of risk and funding sources.

Even though Group B economies have adequate capital, having set aside some part of existing capital to meet requirements under new capital buffers, excess capital which banks currently maintain over minimum capital will be reduced. This could restrict their future business expansion activities, ultimately affecting the economic growth. Hence, banks would need to increase its internal capital target level in order to maintain their previous level of excess capital. Additional capital required will further increase in economies where regulatory authorities have decided to adopt more stringent capital rules than BCBS standards. For example, in Thailand, commercial banks are required to maintain a total capital ratio of 8.5% while Philippine banks are required to maintain CET1, Tier 1 and total capital ratio at 6%, 7.5% and 10% respectively.

Banks may also be under pressure for issuing capital in the form of instruments that qualify for additional Tier 1 capital and Tier 2 capital in the context of Point of Non-Viability (PONV) feature and their pricing in the absence of benchmark for such pricing.

It is expected that, in aggregate, Indonesian banks would need a 18 months period to neutralise the impact of the additional 2.5% capital conservation buffer requirement on their loan originating capabilities, through accumulation of their current year profit¹⁴. The figure will double into 36 months if the 2.5% countercyclical capital buffer is considered. Hence, the 3-year transition period given by the BCBS to implement the capital conservation buffer and countercyclical capital buffer is adequate for banks in Indonesia, in order to assure that its implementation will not contribute negatively to banks' loan growth and domestic economic growth.

The amount of capital required for Korean banks to meet the possible enhanced capital regulations will vary depending on the target capital ratio. If the target ratio (Basel III basis) is set at 13.0%, including the countercyclical buffer, then the amount of required capital is estimated at 16.6 trillion won. If the ratio is set at 14.6%, which was the average total capital ratio of Korean banks in 2010, the amount of required capital is estimated at 34.3 trillion won. If banks procure this capital through internal reserves, three to five years will be required to reach the target level.

14. Based on profit and loss figure in 1st half of 2012.

4.2 Implications on the Financial Markets and Economy

In order to maintain capital at stable levels above the minimum standards, banks can either increase capital or reduce risk weighted assets. Reduction in risk weighted assets means that banks are required to restructure the balance sheets by moving away from high risk assets such as loans to low risk assets like government securities. This strategy will adversely affect the earnings of banks due to lower returns from low risk assets at the expense of high risk assets. In order to maintain earnings at current levels, banks are required to widen the spread between lending rates and deposit rates. This can be done by increasing lending rates, reducing deposit rates or by doing both.

Since Basel III implementation is expected to increase demand for securities and bonds meeting the definition of Level 1 and Level 2 assets, this increasing demand will reduce bond yields and lower economic cost for government and private sectors to finance their funding needs through future bond issuance. If the private sector responds to the yield reduction through shifting their funding sources from banks to capital market, this will increase the level of financial deepening and improve the efficiency of the financial system.

Considering that bonds issued by financial institutions are not recognized in the calculation of LCR and NSFR, there is a need to gradually increase the amount of bonds issued by non-financial corporates with good rating condition. This will be a cause of concern in countries like Indonesia where bonds issued by financial sector represent a higher share at 58.7% of total bonds issued by private sectors. Due to lower liquidity of bonds issued by non-financial corporates, banks in Indonesia certainly prefer investing in government bonds for meeting liquidity requirements. However, volumes of outstanding government bonds may not be sufficient to meet the demand of banks and hence Indonesian banks would probably meet the liquidity requirements through cash and placements in Bank Indonesia which generate much lower rates of return.

Korean banks may widen the spreads between lending and deposit interest rates to cover the costs of strengthening regulatory capital by increasing lending rates rather than reducing deposit rates. Considering this effect of Basel III, it seems reasonable to expect the trend of loan interest rate to increase and loan-to-deposit rate spread which has widened since early 2009, to persist for some time, barring any changes in external conditions such as occurrence of an economic boom. Loans mainly to SMEs are likely to be reduced due to a stiffening of banks' lending attitudes. This may lead to an increase in shadow

banking loan demand and efforts to boost this sector's share in the Korean loan market.

A study done in Korea to measure the impacts of the Basel III capital regulations on the Korean economy by applying the MAG¹⁵ (Macroeconomic Assessment Group) methodology revealed that lending spread rises by 0.25% (25bp) in response to a 1% increase in the regulatory capital ratio. Lending attitudes at the same time exhibit a stiffening tendency, with the lending attitude index falling from 0.0 to -7.74¹⁶. Due to the resulting changes in the price and volume of lending, it is estimated that the GDP level will fall by a maximum of 0.23% after 35 quarters, assuming that the regulatory capital ratio is increased steadily during the period of 2011 to 2018, by a total 1%.

In a similar study done in the Philippines, it has been found that a 1% increase in the regulatory capital ratio, increases the lending spread by 3.08 % while the GDP will fall by 0.01% four quarters after the shock. However, it has been shown that this negative effect on GDP is offset by positive effect of 0.02% derived from strengthening bank capital which allow them to weather future financial crisis and prevent the output losses attendant to these crises, ultimately resulting net positive impact of 0.01%.

It has been observed that capital regulation enhancement at the macroeconomic level may cause a slowdown in economic growth due to increases in lending interest rates and decreases in lending volume. Introduction of liquidity reforms could affect financial markets positively as well as negatively.

In the case of Korean money markets, it is expected that the commercial paper (CP) market will contract due to Korean banks' reductions in purchase commitments (on which a 100% run-off rate is applied) and shortening of maturities. Other money markets such as the call and certificate of deposits (CD) markets will, meanwhile, be stable. Demand will increase in the Treasury bond (TB) and Monetary Stabilization Bond (MSB) markets, as banks will convert their bond holdings to high-quality liquid assets to raise their LCRs. Korean banks' total bond holdings amounted to 215 trillion won as of end-2010 and they needed additional high-quality liquid assets worth 43.5 to 44.2 trillion won to

15. The FSB and the BCBS established the MAG in February 2012 to assess the Basel III regulations macroeconomic impacts.

16. The index has a value between -100.0 and +100.0, with 0.0 indicating maintenance of the status quo, -100.0 complete stiffening, and 100.0 complete easing

meet the LCR standard. In the case of the TB market, this increased demand may put downward pressure on TB yields. As a result of less demand for corporate bonds, the interest spread between TBs and corporate bonds tend to increase.

Banks in most economies need to invest in government bills and bonds to ensure compliance with LCR and NSFR. However, these investments may be constrained by the size, volume and liquidity of the government bills and bonds market. In economies such as the Philippines, this is a cause for concern as certain government securities are not actively traded and also not liquid.

Therefore, implementation of liquidity standards could obstruct bond market development with increases in the banks' buy-and-hold investments and reduction in the free-float of government bonds leading to illiquidity in the market. Ironically, the liquidity requirement is then self-defeating. The need for liquidity profile adjustments potentially intensifies competition in retail deposit-taking banks. As deposits from retail customers are currently considered as having relatively low run-off rate, the competition may make this type of funding less stable.

4.3 Regulatory Constraints

In most economies, the current legal framework of the respective banking and other statutes provide adequate legal scope for implementation of the Basel capital adequacy framework.

A common challenge faced by regulators is to define measures and calculate liquidity indicators of LCR and NSFR since a number of assumptions regarding banks' funding structure need to be made. Banks will continue to deal with this challenge until the data structures and information systems can be improved. At the same time, regulators should ensure that the banks' underlying assumptions regarding LCR and NSFR calculations are sound and commensurate with banks' business activities and funding risk profile. Regulators also need to improve the regulatory reporting system as a result of LCR and NSFR implementation.

However, in the case of Cambodia and Myanmar, the regulatory framework needs to be strengthened further to facilitate effective implementation of Basel framework. Some of the issues on supervisory framework remain significant in Cambodia, especially with regard to the enforcement of the prudential regulations relevant to the Basel III recommendations.

In line with changes that are taking place in the economy and financial sector, it is necessary for the Central Bank of Myanmar to develop its regulatory framework to ensure soundness of banks and stability of the financial system. There are areas of concerns to be addressed including - compliance on the Basel Accord on capital adequacy and liquidity, appropriate governance system and requirements for the bank-owners, board members and management authority, risk management and introduction of new regulations.

In the Philippines, changes to the legal provisions are needed in two areas, namely, the applicability of the capital provision to foreign bank branches and the emerging standards on domestic SIFIs.

4.4 Review of Asset and Liability Management Strategies

As there are no immediate plans to implement Basel III and in the light of high capital levels and high liquidity in banks in Group A economies, there is no immediate necessity to restructure balance sheets and review assets and liability strategies. The main issue in most of these economies is the reliance on limited funding sources. Therefore, they should focus on diversification of funding sources and development of financial markets and instruments enabling them to comply with Basel reforms in the future. There is sufficient space in the banking systems in Brunei Darussalam and Myanmar to expand loan portfolios and focus on strategies to increase revenue.

Although Nepalese banks adhere to a retail business model and do not depend on wholesale funds, they will, nevertheless, review their portfolio strategy and exit or re-pricing in certain areas of business and invest in their ongoing balance sheet management capabilities.

At present, Sri Lankan banks carry a large portion of their assets in government securities considering the attractive interest rates offered, low risks and recognition as a statutory liquid asset. Banks will be forced to maintain high quality liquid assets which may have a negative bearing on profitability and on pricing and margins.

As per the studies done on ability of Indonesian banks to meet capital and liquidity requirements, there is no necessity to redesign their business models or adopt new asset and liability strategies immediately. On the capital side, Indonesian banks have an adequate level of capital and Basel III framework will not lower their capital level due to more conservative regulation in their jurisdiction. Nevertheless, Bank Indonesia is expecting banks to accumulate their current

year profit for at least 3 years in order to increase their capital level by 500 bps and neutralize the impact of capital conservation buffer and countercyclical capital buffer requirements. Even if they choose to increase their capital level through an inorganic process, they still have enough time available and avoid the possibility of a tighter competition which contributes to higher cost of capital. As for the liquidity side, the implementation of liquidity parameters is expected to have no impact on banks' business models since all the banks in the study sample are able to meet the requirements with LCR and NSFR more than 100%. Korean banks are expected to try to attract retail and small and medium-size enterprise deposits, which are more favorable for LCR and NSFR calculation.

4.5 Implications on Cost and Profitability

Implementation of capital and liquidity reforms could affect cost and profitability of the banking sector in number of ways. The demand for capital by banks in order to comply with capital reforms will at the same time, increase the demand for equity or debt capital, resulting in the higher cost of capital. Banks may respond to this increase by either increasing lending rates or decreasing deposit rates. In a competitive market, both these options may have adverse impacts on the banking business. Accordingly, the most probable scenario that may be adopted by many banks is the absorption of the incremental cost, resulting in lower profitability.

In case of liquidity reforms, banks that are unable to meet liquidity standards need to restructure their balance sheets by moving to more liquid assets which generates lower returns. The impact may be severe if yields on more liquid assets such as treasury bonds declines due to higher demand. Further, interest cost of retail deposits and deposits of small business customers could increase due to higher demand by banks as they are eligible for favourable treatment in LCR and NSFR computations.

In order to capture data and information under the new reporting requirements, banks will have to invest substantial amounts of funds in modifying the present information systems. Indonesia, which has a diverse demography, efforts to improve banks' funding structure would require banks to increase the number of branches and improve their information systems to provide retail and wholesale services to customers. Hence, this effort will increase banks' overhead costs and lower banks' profitability levels.

As mentioned in Section 4.4, as there is room in the banking system in Brunei Darussalam and Myanmar to expand loan portfolios due to high volume

of liquid assets, an adverse impact on income and profitability is not expected in the medium-term. Instead, income and profitability may increase with the expansion in loan portfolio.

Under Basel III, the trading book exposure in both banking and trading books attracts enhanced capital charges. There will be an impact on Return on Equity (ROE), profitability and dividends. ROE, profitability and dividends pay ratio will decrease significantly in the context of current low dividends payout ratio, ROE and profitability in Nepal. Therefore, no significant implications on cost and profitability are expected in the medium-term in the absence of major changes in assets and liability strategies of banks.

4.6 Infrastructure Issues

In the absence of a developed capital market in Brunei Darussalam, a stock exchange and mandatory listing requirements, the information infrastructure necessary for Basel II is not available. Very few borrowers are able to produce audited financial statements and the credit culture in the market is, therefore, one built on relationships and knowledge of the borrower. Banks are unable to collate the aggregate data on borrowers upon which to build their internal ratings models which is the foundation on which Basel II is predicated.

The lack of infrastructure support for the implementation of the Basel II or Basel III is a major concern in Cambodia. The lack of credit rating and credit information limit the option on credit risk assessment and the capital charge on credit risk. There need to infrastructure such as credit bureau, credit rating agency, and accounting framework all of which require a lead-time for their development.

One of the critical issues faced by banks in Myanmar is the lack of customer data bases and financial information of borrowers. There is no culture among business entities to maintain financial statements. This has made evaluation of borrower creditworthiness by banks more difficult. In Nepal, most banks have weak IT infrastructure and therefore, it is necessary to modify the IT infrastructure. In the absence of a credit rating agency, it is not possible to implement advanced approaches.

The main challenges remain in the computation of risk weighted assets, where there is limited external ratings used to weigh risk assets. At present, only around 113 entities are rated by external rating agencies. The rated assets as against the total risk weighted assets are around 4% of the total assets in

Sri Lanka. Modification to existing IT and other information systems may lead to cost implications. Moving to advanced approaches under Basel II and computation of liquidity ratios under Basel III will require advanced data mining and suitable IT systems. Larger banks have already made significant commitments on upgrading their systems and purchasing new systems to facilitate the risk quantification.

4.7 Human Resources Constraints

Strengthening supervisory capacity is an important element in implementing Basel III including increasing the capacity of supervisors both in number and in quality. The supervisors need to be adequately trained and well equipped with necessary resources and tools for effective supervision.

Another constraint to the regulators and supervisors is enhancing the corporate governance in banks. To ensure sound practices of corporate governance in the banks, Board of Directors and senior management need to have adequate knowledge and experience in the banking sector. The Board of Directors of each bank shall be responsible for establishing and maintaining at all times, an adequate level of capital. The capital standards herein are the minimum acceptable amounts for banks that are fundamentally sound, well managed and which do not have material financial or operational weaknesses.

In the context of Nepal, the majority of the Board of Directors of banks is from a business background with no prior banking knowledge and experience which is a challenge in ensuring sound corporate governance. High staff turnover and mobility of employees among banks are common in the Nepalese banking sector.

4.8 Impact on Cross Border Supervision

In case of Myanmar and Nepal, there are no significant cross border supervision issues in the absence of limited cross border activities. Neither foreign banks nor local banks operate in Myanmar and overseas, respectively. Foreign exchange operations are limited and allowed only among a few banks.

Foreign banks are allowed to set up their branches in Nepal from the beginning of 2010. However, there are neither foreign bank branches nor Nepalese bank branches abroad to-date, and no huge cross-border banking activities. Thus, there are no major issues relating to either cross-border transactions or cross-border supervision.

In Sri Lanka, overseas operations of domestic banks are limited. The largest bank has a fully-fledged banking subsidiary outside the country whilst 2 other commercial banks maintain branches overseas. Banks prepare their capital adequacy requirement on a consolidated basis. Hence, the capital position and the risk taking of these operations are captured. A similar approach will be adopted going forward with the requirements under Basel III.

At present, there are 12 banks incorporated outside Sri Lanka operating in the country. These banks maintain high capital adequacy ratios in terms of Basel II. Many of the home countries of these banks have commenced the observation period and given guidelines on Basel III.

Under the current structure, Bank Indonesia generally acts as host supervisor and not as home supervisor as several banks in Indonesia are owned by foreign financial institutions. Indonesian banks having investments in foreign financial institutions, on the other hand, are negligible. Taking this situation into consideration, it is envisaged that the implementation of Basel III would not raise additional issues on cross border supervision from the current status.

Bank Indonesia will continue to enhance cooperation and coordination with foreign regulators through the Memorandum of Understanding (MoU) on cross border banking supervision. Currently, Bank Indonesia has signed the MoUs with Monetary Authority of Singapore (MAS), Bank Negara Malaysia (BNM), China Banking Regulatory Commission (CBRC), Financial Services Commission (FSC-Korea) and Australian Prudential Regulatory Authority (APRA).

4.9 Issues in Implementation of Counter Cyclical Buffer

The calibration of booms and busts involves pervasive parameters of complex and dynamic macro-financial relationships that are hard to predict for policy feedbacks. The sequence of policy execution is crucial, which requires close collaboration and careful alignment with monetary policy and other macroeconomic policies. Yet, even with the best foundation, the execution may remain skeptical in the politics of booms as well as of countries' comparative advantages. The challenge is also particular for bank-based economies with relatively less developed financial markets.

Much more resources and commitment are required not only to further refine the boom-bust prediction and the buffer calibration, but also to incorporate this novel measures to the institutional setting. Besides, the work entails skillful

public communication in order to put the right messages across and not cause any unnecessary noises in the financial system.

It also requires the national authority to publish its decision on countercyclical capital buffer one year prior to its effective implementation date, meaning that there is a possibility that the decision on the amount of capital buffer becoming obsolete due to changes in economic conditions and external factors during the one-year period. Recognizing that in the last decades, globalization and technology development have improved the ability of market participants to react and respond to public information and changes in economic condition, financial markets have become more volatile and quite unpredictable. Thus, this will provide a burden for regulators to decide on the amount of the countercyclical capital buffer that commensurate with the expected condition of banking industry in the next one-year period.

As Basel III aim to reduce the impact of cyclicity in an economy through the usage of countercyclical capital charge, regulators need to have the required ability to analyze whether the current level of aggregate credit growth in the domestic economy represent a build-up of system-wide risk that warrant such capital charge.

For developing economies such as Indonesia, which rely heavily on banking sector funding to support domestic growth, this requirement is expected to have a negative impact on loan growth and also economic growth. Thus, it will be more challenging to decide when an aggregate credit growth is considered to be excessive or otherwise. Also, even in cases where the excess credit growth is coming from non-banking sectors, banks will receive a “penalty” and be subjected to an increasing capital requirement that will limit their ability to support the Indonesian economy.

The risk management of Korean banks for maintaining their capital ratios at the regulatory level by adjusting their assets in response to capital fluctuations, may induce procyclicality. It is, therefore, possible to capture the factors causing procyclicality by examining the factors behind the fluctuations in capital.

Korean banks, during boom times, typically raise equity with retained earnings instead of through issuance of equity because they have a relatively low level of propensity to pay dividends and their profits usually serve as the main factor driving changes in their retained earnings. Profits move procyclically largely because of the strong inherent procyclicality of loan loss provisions. Provisions increase (decrease) during recessions (booms), with the resulting rises (declines)

in loan losses. These procyclical movements of the provisions feed into profits and retained earnings, causing equity and assets to accordingly reveal procyclicality.

For Korean banks, provisions contribute 71.8% on average to the increase in profits during boom times and 123.0% to their declines during recessions. The fluctuations in the real sector cause changes in bank profits. Banks try to maintain their capital ratios at the target level for risk management. This induces changes in bank assets that generate fluctuations in the aggregate credit supply, amplifying the business cycle. Due to this risk management behavior of banks, the effects of the countercyclical capital buffer may deviate from the supervisory authority's expectations. In response to countercyclical buffer imposition, banks can choose other options besides reducing assets, the option desired by the supervisory authority, depending upon the sizes of their adjustment costs. In this case, the effects of the countercyclical buffer can be limited. Three options are available for banks complying with an increased regulatory capital ratio imposed by the authorities to restrain credit supply during boom times, namely, capital expansion, risk weight reduction, or asset reduction.

Banks will choose the option that is least expensive in terms of their adjustment costs. A simulation based on 2010 shows that Korean banks may choose to expand their equity when the countercyclical buffer is imposed. Among the different adjustment costs, those required by this option are the lowest (0.46 trillion Won) - below those of reducing either assets (0.70 trillion Won) or risk weights (0.93 trillion Won)

In an effort to prepare for the use of countercyclical buffer, the BOT has preliminarily studied the robustness of the aggregate private sector credit-to-GDP growth, as recommended by the BCBS. The result shows that the recommended indicator is fairly reliable in triggering the buffer especially during the overheating period prior to the Asian financial crisis. However, the predictive power has become somewhat weaker in recent years, while lead-lag effects also vary. Further studies should be done on alternative indicators, of both quantitative and qualitative types, and their effectiveness.

The CBSL has yet to decide on the implementation of the counter-cyclical buffer as specified in the Basel III. However, in the past, CBSL has increased the risk weights of certain loans to ensure capital build-up and to increase its cost of funds, thereby dampening growth of such loans. Similarly, in the past, general loan loss provisions also were increased for the same purpose. The macro-prudential aspect has, hence, been addressed indirectly by CBSL.

5. The Way Forward and Strategic Options

5.1 Road Map for Implementation of Basel III

In the case of Brunei Darussalam, Cambodia, Myanmar, Nepal and Sri Lanka, the main focus currently is either on full implementation of Basel I or moving from Basel I to II or implementation of Basel II in full rather than focusing on Basel III, considering the current level of Basel application, regulatory environment, infrastructure and other conditions specific to the economies. Therefore, there are no specific plans for the implementation of Basel III in these economies at this stage. However, in Sri Lanka, it has been proposed to issue guidelines for commencement of the observation period, on requirements of capital and leverage ratios and liquidity risk management under Basel III in 2013.

Group B economies of Indonesia, Korea, Malaysia, Philippines and Thailand are in the process of implementing the capital framework mostly in line with the BCBS timeline with higher capital requirements in some economies (Figure 33) than BCBS standards.

In the case of Thailand, commercial banks are required to maintain a total capital ratio of 8.5% while in the case of Philippines, banks are required to maintain CET1, Tier 1 and total capital ratio at 6%, 7.5% and 10% respectively.

Figure 33
Basel II Implementation Plan in Group B Economies

Economy	Implementation of capital framework	Implementation of liquidity framework
Indonesia	Policy issued to implement in 2013	Consultative paper to be issued in 2013 Formal regulation to be issued by FSA in 2014
Korea	From 01.12.2013	-
Malaysia	In line with Basel Time line	-
Philippines	From 01.01.2014 for universal and commercial banks	-
Thailand	In line with Basel Time line with no transition period for capital components	In the process of collecting data

However, in the case of leverage and liquidity framework, except in Indonesia, no specific plans are in place in other Group B economies on the implementation. In Indonesia, liquidity regulations are expected to be issued in 2014.

In the case of liquidity standards, the main concern is on the defining assets which fulfill the criteria under LCR requirements in the respective jurisdictions. In some economies, regulators are in the process of gathering information on liquid assets to assess the appropriateness of liquidity standards.

In line with above road map, measures are being taken by all economies to address the future issues and challenges as described in Section 4. In the case of Group B economies, measures mainly focus on Basel III while in Group A, the focus is on the strengthening of the current regulatory framework and moving to the next level of Basel application. Impact studies have been done in all Group B economies. In most economies, banks would rely on retained earnings and reserves to comply with enhanced capital requirements with no intentions to issue new equity or debt capital considering the cost implications. Regulators have issued guidelines on strengthened liquidity risk management and monitoring framework of banks.

In the light of the current capital and liquidity levels, significant changes in business models, restructuring of balance sheets or divestments in investments are not expected.

5.2 Strengthening Regulatory Framework

Regulators in all economies have taken several measures to strengthen the regulatory framework and the financial system including legal amendments when necessary. In this regard, there are common as well as specific measures. These measures include:

- Amendments to existing regulations;
- Moving from rule-based supervision to risk-based and forward-looking supervision;
- Improvement to supervisory reporting system;
- Mandatory disclosure requirements by banks;
- Strengthening accounting frameworks including adoption of IFRS;
- Enhancing cooperation with other financial regulators in the country;
- Introduction of deposit insurance to protect depositors;
- Issue of specific guidelines on integrated risk management, stress testing, ICAAP and IT;

- Guidelines on liquidity risk management; and
- Strengthening Credit information bureaus.

The Central Bank of Sri Lanka recognizes the necessity for consolidation of small banks considering the enhanced capital and liquidity requirements. Accordingly, CBSL encourages such consolidation and considers granting approval if any merger, acquisition or consolidation is in the interest of promotion of a safe, sound and stable banking system and fair competition prevailing in the banking industry.

Capacity building programs have begun to improve skills and knowledge of staff of banks and regulators in line with changes taking place in the banking industry and financial system.

5.3 Measures to Address Countercyclical Capital Buffer

There may be several challenges to regulators in implementing countercyclical capital buffer in terms of its definition and application as described in Section 4. There are several alternate strategies for implementing countercyclical capital buffers already implemented by some regulators and effective in times of high credit growth. These include increase of risk weights assets assigned on housing loans and in other loans, increase in loan loss provisions, varied Statutory Reserve Ratio, maximum ceilings on credit to vulnerable sectors and overall credit ceilings

In the case of mortgage loans, the Loan-to-Value (LTV) ratio has been used as a flexible preemptive tool to curtail credit growth. The BOT has started implementing the LTV policy as a means to help moderate the growth of real estate sector since 2003. The use and adjustment of the LTV ratio has demonstrated its preventive quality and, more importantly, the flexibility to fine-tune policy in response to changing economic circumstances.

5.4 Development of Capital Markets and Instruments and Financial infrastructure

Measures are being taken in all the economies to develop capital and other financial markets and products as they are instrumental for implementation of Basel.

Brunei Darussalam is embarking on its capital market development plan and as soon as a level playing field is available with regard to borrower information

based on audited financial statements, the migration to full Basel II will be implemented in a phased-in manner from the basic approaches to the more advanced approaches.

The National Bank of Cambodia has recognized the importance of enhancing the existing infrastructure in the banking sector in order to further facilitate the role of banking sector in promoting economic growth. As a result, the NBC has undertaken extensive work to upgrade its national payment system, creating regulatory platform for an interbank market and has supported the creation of a private-owned credit bureau expected to be launched early in 2012 to enhance the intermediary function and risk management function of regulated entities. This credit bureau is expected to facilitate credit flow in the economy by reducing information asymmetry between banking institutions and their customers.

Measures have been taken to finalize the Securities and Exchange Law in Myanmar, the drafting of which was initiated in 1996. It is expected to be in place by end-2013. 2-year Treasury bonds were issued in the market in 2010 in addition to the 3- and 5-year bonds existing since 1993. The Central Bank of Myanmar is also in the process of developing the bond market with the technical assistance of the ASEAN Secretariat. A MOU was signed in 2012 between the Central Bank of Myanmar and Daiwa Institute of Research Ltd., Japan (DIR) and Tokyo Stock Exchange with a view to assist the development of the Yangon Stock Exchange by 2015. Another MOU was signed in 2012, enabling the Policy Research Institute of Ministry of Finance of Japan to provide assistance on the development of the Securities and Exchange Law and Rules and Regulations of Myanmar.

The Securities and Exchange Commission is at present in discussions with the CBSL, Colombo Stock Exchange and the Registrar of Companies to develop capital markets. This would facilitate especially the areas of financing development projects. While the Securities and Exchange Commission has in place a regulatory framework for listed corporate debt, the bulk of the debt issues take place or are likely to be in the Over-the-Counter (OTC) market. Hence, it is necessary to introduce a regulatory framework for the OTC market which will include disclosure requirements, a price information platform, a dealer-broker system, trading rules and depository and settlement arrangements.

The SEC intends to expedite the SEC Act Amendments to be in line with International Organization of Securities Commission (IOSCO) standards, encourage more public and private listings, attract new foreign and local funds, develop infrastructure such as trading back office, intensify education and

awareness, develop unit trust industry, strengthen risk management, develop new products and convert the Colombo Stock Exchange from a member owned company to a company owned by shareholders.

Bank Indonesia is expecting that Basel III liquidity requirement will increase demands from banks for high quality bond instruments, thus lowering the required yield in the bond market and providing an incentive for private sectors with good rating quality to seek financing from capital market. Considering that for private institutions seeking financing from the capital market will be subject to higher requirements set by capital market regulator, Bank Indonesia needs to increase its coordination with other regulatory authorities such as Bapepam-LK, to provide adequate incentives for private sector companies with high quality credit rating to issue securities in capital market.

A specific technical working group has been convened between the Bangko Sentral ng Pilipinas, the Securities and Exchange Commission, the Insurance Commission and the Philippine Deposit Insurance Corporation to explore the extent to which the different prudential frameworks can be harmonized. Whether this leads to a CRD or Solvency II framework remains to be seen but at least, the recognition of the value of a common prudential framework from a risk perspective, to the extent possible, has been made.

Measures are being taken by banks as well as regulators in all economies to develop related infrastructure including modifications to existing IT and information systems to facilitate adoption of new regulations.

6. Conclusion

All economies agree with the importance of implementing Basel III without argument. However, all the economies are not in a position to implement the framework as per the scheduled time table due to diversity of economic, political, market, infrastructure and regulatory conditions prevalent in respective economies.

The recent global financial crisis did not have a significant impact on financial sector of the economies under study. For example, economies such as Brunei Darussalam, Cambodia, Myanmar, Nepal and Sri Lanka are not highly integrated with global financial system. Measures undertaken by the authorities in Indonesia, Korea, Malaysia, Philippines and Thailand to strengthen the financial system consequent to Asian financial crisis in late 1990s, made them more resilient during recent crisis. These reforms focused on strengthening prudential regulatory standards and aligning them to international norms to enhance risk management,

promote good corporate governance and greater transparency and reduce moral hazard. These reforms have enabled domestic financial institutions to manage the risks arising from the banking and debt crisis in Europe and weak economic growth in the US.

No major risks were observed in the two risk areas of credit and liquidity as reflected by the relevant risk indicators. Credit risk has been maintained at low and comfortable levels and adequately mitigated with high provision coverage.

The current status of application of Basel capital adequacy framework differ among economies with Brunei Darussalam, Cambodia and Myanmar still at Basel I and others at either partial or full implementation of Basel II. In the case of Brunei Darussalam, Cambodia, Myanmar, Nepal and Sri Lanka, the main focus currently is either on full implementation of Basel I or moving from Basel I to II or implementation of Basel II in full rather than focusing on Basel III considering the present regulatory environment, infrastructure and other conditions specific to economies. Therefore, there are no specific plans for implementation of Basel III in these economies at this stage. Indonesia, Korea, Malaysia, Philippines and Thailand are in the process of implementing Basel III mostly in line with the BCBS timeline with higher capital requirements in some economies than BCBS standards. However, in the case of leverage and liquidity framework, specific plans are in place only in Indonesia.

The present Tier I and Total Capital Ratios in all economies are well above the minimum ratios set by their respective regulators. In all economies, Tier I Capital Ratios are more than 2 times the required minimum and even significantly higher than required minimum Total Capital Ratio. This reflects the strong capital position of banks which are much higher even in terms of currently applicable Basel II standards for international banks. One of the key observations is the significant improvement in capital levels of banks in all the economies compared to the levels prevailing at the time of global financial crisis. Heavy reliance on Tier I Capital is an indication of strong quality capital.

Even though an impact assessment on capital has not been done in Brunei Darussalam, Cambodia, Myanmar, Nepal and Sri Lanka, it is observed that their banking systems are capable of meeting CET I, Tier I and Total Capital Requirements in Basel III including capital buffers due to existing high level of core capital structure, quality of capital and regulatory requirements. In these economies, capital is generated mainly through retained earnings and transfers made to statutory reserve fund.

The impact assessment of Basel III application on current capital levels has been done in Indonesia, Korea, Malaysia, Philippines and Thailand. As per the results of the impact studies done, there is a negative impact on the current capital levels in Korea, Malaysia, Philippines and Thailand. However, in Indonesia, Basel III capital reforms have a positive impact. Despite the negative effect in these four economies, the Common Equity Tier 1 (CET 1), Tier 1 and Total Capital Ratios remain well above the stipulated ratio of Basel III. In view of existing high capital levels, raising additional capital to comply with Basel III is not an urgent necessity in Indonesia, Korea, Malaysia, Philippines and Thailand. Another prominent feature of banks in these five economies is that capital has been mainly generated internally through retained earnings. It is also observed that in case of capital required in the medium-term, this can be done through building up of internal reserves over a period of 3 to 5 years without issuing new equity or debt capital. In case of leverage, data has been provided only by Brunei, Myanmar, Nepal and Sri Lanka, Indonesia, Korea and Thailand and banks in these economies comply with the Basel requirements.

Banks in all economies have maintained liquidity at comfortable levels, above the stipulated liquidity indicators set by the regulators. In terms of trends in liquidity ratio and loans to deposit ratio, no major liquidity risk is observed. Impact studies on banks' ability to comply with LCR and NSFR has been done in Sri Lanka, Indonesia, Korea and Thailand. In the case of Indonesia, sample banks meet LCR and NSFR requirements while in other economies non-compliance by certain banking groups were observed. In the case of liquidity standards, the main concern is on the defining assets which fulfill criteria under LCR requirements in the respective jurisdictions. In some economies, regulators are in the process of gathering information on liquid assets to assess the appropriateness of liquidity standards. Therefore, compliance with LCR and NSFR would be a major challenge for many economies.

Banks in all economies may not be subject to many challenges in the implementation of Basel III in the short-term. However, these economies would be subject to medium-term challenges. In most of Group A economies, banks may find it difficult to raise capital through capital markets as they are not active or developed. Also these markets are not liquid with low volumes of trading. Therefore, authorities in Group A economies need to focus on the development of domestic capital markets as a supplement to the banking sector which would also strengthen the financial system through the diversification of risk and funding sources.

Even though Group B economies have adequate capital, having set aside

some part of existing capital to meet requirements under new capital buffers, the excess capital banks currently maintain over minimum capital will decrease. This could restrict their future business expansion such as credit in line with strategic plans, ultimately affecting the economic growth. Hence, banks would need to increase its internal capital target level in order to maintain their previous level of excess capital. Additional capital required will further increase in economies where regulatory authorities decides to adopt more stringent capital rules as opposed to BCBS standards. Banks may also be under pressure for issuing capital in the form of instruments that qualify for additional Tier 1 capital and Tier 2 capital in the context of Point of Non-Viability (PONV) feature and their pricing in the absence of benchmark for such pricing.

Basel III can have several implications on financial markets and the economy as a result of reduction in credit and increasing interest spread. In studies done in Korea and the Philippines, it has been shown that a 1% increase in capital ratio results in a decline in GDP by 0.23% and 0.01% respectively.

The demand for government securities could increase resulting in the lowering of yields for government securities. However, banks in economies where even the government securities market is not well developed will find it difficult to meet Basel liquidity requirements due to non-availability of high quality liquid assets. Further implementation of liquidity standards could obstruct bond market development since the banks' buy-and-hold investments increases while free-float government bonds decreases leading to illiquidity in the market. Ironically, the liquidity requirement is then self-defeating in its purpose. The need for liquidity profile adjustments potentially intensifies competition in retail deposit-taking banks. As deposits from retail customers is currently considered as having relatively low run-off rate, the competition, however, may make this class of funding less stable.

Implementation of Basel III counter cyclical buffer has several implications. The calibration of booms and busts involves pervasive parameters of complex and dynamic macro-financial relationships that are hard to predict for policy feedback. The sequencing of policy execution is crucial, which requires close collaboration and careful alignment with monetary policy and other macroeconomic policies. Yet, even with the best foundation, the execution might remain challenging in the politics of booms as well as of countries' comparative advantages. The challenge is also particular for bank-based economies with relatively less developed financial markets.

Much more resources and commitment are required not only to further refine the boom-bust prediction and the buffer calibration, but also to incorporate this novel measures to the institutional setting. Besides, the work entails skillful public communication in order to put the right messages across and not cause unnecessary noises in the financial system.

The robustness of the aggregate private sector credit-to-GDP growth, as an effective indicator triggering the buffer as recommended by BCBS is also a concern. There are several alternate strategies for implementing countercyclical capital buffers already implemented by some regulators and effective in times of high credit growth. These include increase of risk weights assets assigned on housing loans and other loans, increase in loan loss provisions, varied Statutory Reserve Ratio, maximum ceilings on credit to vulnerable sectors and overall credit ceilings.

In the case of mortgage loans, the Loan-to-Value (LTV) ratio has been used as a flexible preemptive tool to curtail credit growth. The use and adjustment of the LTV ratio has demonstrated its preventive quality and, more importantly, the flexibility to fine-tune policy in response to changing economic circumstances. No significant implications on cost and profitability are expected in the medium-term in the absence of major changes in assets and liability strategies of banks. In most economies, the current legal framework provided by the respective banking and other statutes provide adequate legal scope for implementation of the Basel capital adequacy framework.

In conclusion, Basel III implementation would not entail serious challenges on the 10 economies under study in the short-term. Issues of concern could be addressed over the medium-term in line the Basel time plan.

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Appendices

Appendix 1

No	Component of Capital	Basel III	Bank Indonesia Regulation	More Conservative
1.	Current Year Profit and Loss	Fully included (100%) in the capital calculation as Tier 1 capital, either during a profit or loss conditions.	<ul style="list-style-type: none"> Partially included (50%) during profit condition; and Fully included (100%) during loss condition, in the capital calculation as Tier 1 capital. 	Bank Indonesia
2.	Deferred Tax Assets (DTA)	<ul style="list-style-type: none"> DTAs relate to temporary differences will be deducted from CET1 for the proportion of DTAs exceeding 10% of bank's CET1 or threshold deductions (15% of bank's CET1); DTAs that rely on future profitability of banks to be realized are to be fully deducted from CET1. 	<ul style="list-style-type: none"> Same treatment for both (i) DTAs that relates to temporary differences and (ii) DTAs that rely on future profitability of banks to be realized. In the calculation of capital, retain earning (i.e. current year P/L and/or previous years P/L) need to be neutralized from the impact of DTAs. 	Bank Indonesia
3.	Investment in other Financial Institutions where Bank owned more than 20% share.	For investment in form of: 1. common shares : deducted from CET1 for the portion of investment exceeding 10% of bank's CET1 or threshold deduction (15% of bank's CET1); 2. other than common shares : fully deducted through a corresponding deduction approach.	For investment in form of: 1. common shares : fully deducted from Tier 1 (50%) and Tier 2 (50%); 2. other than common share : fully deducted through a corresponding deduction approach if banks also issued similar instruments. If not, will be subject to RWA calculation.	Bank Indonesia Basel III
4.	Investment in other Financial Institutions where Bank has 10% - 20% share.	For investment in form of: 1. common shares : deducted from CET1 for the portion of investment exceeding 10% of bank's CET1 or threshold deduction (15% of bank's CET1); 2. other than common shares : fully deducted through a corresponding deduction approach.	For investment in form of: 1. common shares : RWA; 2. other than common share : fully deducted through a corresponding deduction approach if banks also issued similar instruments. Subject to RWA if banks didn't issued similar instruments.	Basel III
5.	Investment in other Financial Institutions where Bank does not own more than 10% share.	Deduction from the capital using a corresponding deduction approach for the proportion of total investment exceeding 10% of bank's CET1.	Subject to RWA calculation.	Basel III

Appendix 2

- Brunei Darussalam adopts Basel I for credit risk along with operational risk capital charge under Basic Indicator Approach. However, no decision has been taken yet with regard to implementation of Basel II in full or III.
- Cambodia does not have plans to implement Basel III in the near future.
- In line with significant changes that are taking place in the banking industry and financial system, Central Bank of Myanmar has focused on moving to Basel I in full. However, no decision has been taken with regard to implementation of Basel II or III as yet.
- Nepalese commercial banks are adopting Basel II. Other banks and financial institutions are adopting Basel I. However, the policy has been adopted to implement Basel II in other institutions gradually. NRB has not finalized the Basel III implementation plan for commercial banks to date.
- In relation to implementation of Basel II and III in Sri Lanka, it is proposed to move forward in the following manner:
 - Implementation of Supervisory Review Process Pillar 2 of Basel II in 2013.
 - Implementation of Advanced Approaches on Pillar I Operational Risk in 2013.
 - Implementation of Advanced Approaches in Credit Risk commencing 2014 on an optional basis.
 - Issue of Guidelines for commencement of observation period on requirements of capital and leverage ratio under Basel III in 2013.
 - Issue of Guidelines for liquidity risk management and to commence observation period under Basel III in 2013.

Chapter 2

BASEL III IMPLEMENTATION: CHALLENGES AND OPPORTUNITIES IN BRUNEI DARUSSALAM

By

Maizatul Najibah Hj Awang Mohammad ¹

1. Introduction

1.1 Objective and Scope of Study

Banks are a vital part of a nation's economy. In their traditional role as financial intermediaries, banks serve to meet the demand of those who need funding. Banks therefore facilitate spending and investment, which fuel economic growth in the country. However, despite their important role in the economy, banks are nevertheless vulnerable to failure. However, unlike other businesses, the failure of banks, especially very large ones, can have far-reaching implications. During the global financial crisis and the ensuing recession, the health of the banking system triggered economic instability affecting people around the world. Consequently, it is imperative that banks operate in a safe and sound manner to avoid failure. One method of ensuring this is for the government to establish a strong regulatory and supervisory system over financial institutions. With the advent of globalisation, banking activities are no longer confined to the borders of any individual country. With cross-border banking activities rapidly increasing, the need for international cooperation in bank regulation has likewise increased.

In order to prevent the risk of bank failure and its effects on the economy, the Basel Committee on Banking Supervision (BCBS), comprising central banks and supervisory authorities of 10 countries, met in 1987 in Basel, Switzerland. Its main focus of attention was on matters related to bank supervision and regulation, addressing notably the regulation and harmonisation of the capital standards of a bank. In its role as the international trend setter on bank regulation, the committee has promulgated guidance on issues critical to ensuring a healthy banking system across the world. Addressing the regulation of bank's capital has been an on-going process for the committee over the past 20 years, and has resulted in the establishment of capital adequacy standards that national regulators can implement. These standards are known collectively as the Basel

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Accords. The Basel Accords have caused disagreement at times, but they are nevertheless important to the formulation of regulatory policy relating to bank capital. In all, the committee has created three such Accords. Basel III, published in 2010, is the most recent accord introduced. Each accord is intended to be an improvement over the previous one, and there are early indications that there will be a new accord after Basel III.

Basel I was finalised and approved by the committee in 1988. The committee has drafted a first document to prescribe an international 'minimum' amount of capital that banks should hold. This minimum is a percentage of the total capital of a bank, which is also called the minimum risk-based capital adequacy. In 1988, the Basel I Capital Accord (agreement) was created. The BCBS has no binding legal authority and countries had the option to adopt the Basel I standards. However, many countries ultimately applied Basel I requirements to all banks and it was not limited to international banks only.

The general purpose of Basel I was to strengthen the stability of the international banking system and to harmonise bank regulatory standards across the globe in the recognition that banking risks were uniform across the world and a common standard would eliminate the competitive inequality among international banks. The basic achievement of Basel I have been to define bank capital and the so-called bank capital ratio. For this purpose, a general definition of capital was required. Indeed, before this international agreement, there was no single definition of bank capital. The first step of the agreement was thus to define the components of bank capital. Basel I defines capital based on two tiers, which are Tier 1 (Core Capital) and Tier 2 (Supplementary Capital). Tier 1 capital consists of common stock (or shareholders equity) and declared reserves, such as loan loss reserves set aside to cushion future losses or for smoothing out income variations and represents a permanent source of capital, its main attribute being its high level of loss absorbency. Tier 2 capital was introduced to supplement Tier I capital with capital components which are less permanent and not so loss-absorbent and includes all other capital such as gains on investment assets, long-term debt with maturity greater than five years, and hidden reserves (i.e. excess allowance for losses on loans and leases). However, short-term unsecured debts (or debts without guarantees) are not included in the definition of capital. Credit risk is identified according to the risk-weight attached to the assets (RWA) of the bank, which are weighted in relation to their relative credit risk levels. According to Basel I, the total capital should represent at least 8% of the bank's risk weighted assets.

As Basel I was the first coherent international attempt at regulating bank capital, it may come as no surprise that Basel I had many shortcomings and was the target of criticism. The main criticism was the limited differentiation of credit risk, static measure of default risk, no recognition of term-structure of credit risk, simplified calculation of potential future counterparty risk and lack of recognition of portfolio diversification effects. These criticisms naturally led to the creation of a new Basel Capital Accord, known as Basel II which was implemented in 2007, which added operational risk and provided for risk differentiation in the calculation of credit risk.

Reflecting the changes in Basel I, Basel II proposals are based on three pillars which are:

Pillar I being the capital charge for credit, market and operational risk;

- Pillar II providing regulatory flexibility to require higher capital for a bank based on its individual risk profile; and
- Pillar III providing market discipline through maximum disclosure requirements by banks.

Pillars II and III supported Pillar I which addressed the issue of capital adequacy and which was revised specifically to correct the deficiencies in Basel I.

Basel II still requires that a bank's total capital ratio should be at least 8% of the bank's risk weighted assets and the computation of the ratio still remains the same - a bank's capital divided by the bank's risk weighted assets. Pillar I focused primarily on reforming the method of measuring credit risk that is inherent in the bank's assets. The goal of these reforms was to ensure that the calculation of risk in a bank's assets more accurately reflects the actual risk in those assets, through risk differentiation instead of the one-size-fits-all method used in Basel I.

Pillar I approach to measuring credit risk consists of two approaches, the standardised approach and the internal ratings based approach. The simplest approach to credit risk is the standardised approach. Instead of basing the risk weight on the category of borrower, the risk weight is now based on the borrower's rating. There are rules determining what kind of rating agency's approach can be used. The more sophisticated, internal ratings based (IRB) approach relies on bank estimates of the key determinants of credit risk. The main difference between the standardised approach and the IRB approach is

that with the latter approaches, banks can use their own internal methodology to determine the risk level of their assets, whereas with the standardised approach, banks must rely on their external rating guidelines to risk-weight their assets. There are also three approaches to operational risk which are the basic indicator approach, the standardised approach and the advanced measurement approaches.

The benefits of Basel II are that capital is linked to the overall risk management of banks; capital is more risk sensitive; banks are encouraged to strengthen and invest in risk management to economise their capital, promoting market transparency and discipline; and banks are provided the option of beginning with the simple framework and to moving towards the more advanced approaches as risk management improves. The ultimate benefit of Basel II is that it rewards good risk management as the lower risk weights that ensue would result in less capital having to be allocated. The higher the risk weight the higher the capital allocation, and vice versa. Lower capital allocation would lead to more competitive pricing of products, especially loans, and this was the incentive for the banks to improve risk management.

Just as with Basel I, the Basel II Accord, too, had several fundamental weaknesses. The faults in Basel II were beginning to become apparent to the members of the BCBS well before the global financial crisis erupted. When the crisis began, talks on how to improve Basel II were already underway. However, the severity of the crisis made it clear that Basel's II faults needed to be addressed sooner rather than later. In the aftermath of the financial crisis, the committee embarked on a programme of substantially revising its existing capital adequacy guidelines. The resultant capital adequacy framework is termed Basel III and the G20 endorsed the new Basel III capital and liquidity requirements during the summit in Seoul. There are many areas of detail needing further development, and worldwide debate and lobbying will inevitably continue, most notably in relation to the whole issue of systemically important financial institutions (SIFIs).

Basel III reflects the committee's attempts to apply the lessons learned from the global financial crisis and apply them to the existing framework of banking regulation. The new regulation aspires to make the banking system safer by redressing many of the flaws that became visible in the crisis. Improvement of the quality and depth of capital and renewal of the focus on liquidity management are intended to spur banks to improve their underlying risk management capabilities.

The primary goal of Basel III is to improve the ability of banks to absorb losses without affecting the rest of the economy. In terms of capital regulation, Basel III focuses mainly on the quantity and quality of capital held by banks. It specifies new capital target ratios, defined as core Tier 1 requirement of 7.0% (further specified as a minimum of 4.5% of core Tier 1 capital and a required capital conservation buffer of 2.5%). The broader requirement for all Tier 1 capital is set at 8.5%; this includes the core Tier 1 minimum of 7.0% and a minimum of additional (non-core) Tier 1 of 1.5%. Basel III also set new standards for short-term funding and sketches out requirements for long-term funding. The new capital requirements will strengthen the objective of sound supervision and bank governance and address the problem of bonuses and high dividends even in the face of deteriorating capital.

Brunei Darussalam's banking system is still in its early stage of development where Basel I was only introduced to the banks in January 2010, incorporating only operational risk from Basel II. The following are the objectives and scope of this study:

- Assess the impact of the Basel I Standards for Brunei Darussalam's system and economy; and
- Highlight the issues and challenges of implementing other Basel Standards in Brunei Darussalam.

1.2 General Outline of Paper

- a. Overview of the financial system of Brunei Darussalam
- b. Assessment of the impact of Basel I in Brunei Darussalam banking system
- c. Issues and challenges of implementing other Basel Standards in Brunei Darussalam
- d. Conclusion

2. Overview of Financial System and Risk Assessment

2.1 General Overview of the Financial System of the Country

Brunei Darussalam's financial system is a dual financial system with Islamic and conventional financial institutions operating side by side. The banks are at the core of the financial system with Islamic and conventional banks having equal market share. The banks are predominantly on-shore banks with two active

off-shore banks. The finance companies and insurance companies, both Islamic and conventional, are also an integral part of the financial system and on the periphery are the money exchange and remittance companies, all of which provide the basic financial services to the population. Total financial system assets stood at B\$23.2 billion as at end of December 2012. The banking system dominates the financial system with an asset base of B\$19.7 billion, accounting for 84.7% of the total assets of the financial system. At the apex of the financial system is the Autoriti Monetari Brunei Darussalam (AMBD) which, being Brunei's central bank is the licensing and regulatory authority for the financial system in Brunei Darussalam.

Table 1
Structure of Brunei Darussalam Financial System

Financial Institutions Regulated by the AMBD	No of Licences	2011		2012	
		Amount B\$ million	Share of Total Asset, %	Amount B\$ million	Share of Total Asset, %
Deposit Taking Institutions	16	23,177	94.5	21,822	93.9
Banks including TAIB	9	21,167	86.3	19,682	84.7
Conventional	7	13,316	54.3	11,981	51.5
Islamic	2	7,851	32.0	7,701	33.1
Finance Companies	3	1,912	7.8	2,041	8.8
Off-shore Banks	4	99	0.4	99	0.4
Other Financial Institutions	14	1,348	5.5	1,423	6.1
Insurance Companies & Takaful	13	1,185	4.8	1,246	5.4
Conventional	9	850	3.5	879	3.8
Takaful	4	335	1.4	367	1.6
Offshore Insurance Companies	1	163	0.7	177	0.8
Total	29	24,525	100.0	23,245	100.0

As of December 2012, together with the Trust Fund TAIB, which is set up under its own statute, there were 9 banks, of which 2 are Islamic Banks and 7 conventional banks. Another distinct market segment within the industry is the indigenous banks comprising 3 (including TAIB) and the foreign banks comprising 6.

With the banking system representing the core of the financial system, banking supervision and regulation has been strengthened to ensure that financial stability which is one of the core objectives of the AMBD, prevails in our financial system as a result of a strong regulatory and supervisory system which is continuously being strengthened by keeping abreast with international best regulatory practice and through enhancing our supervisory resources and capabilities.

2.2 Risk Oversight Assessment and Vulnerabilities

Brunei Darussalam's financial system was not subject to any significant shocks after the global financial crisis.

The real Gross Domestic Product (GDP) at the end of 2011 rose by 2.2% year-on-year from B\$11,846.5 million, compared to B\$12,108.1 million in the previous corresponding year. The contribution of the Oil and Gas sector was more than 60% and the non-Oil and Gas sector contributed less than 40%.

At end-2011, the Oil and Gas sector saw a slight 0.03% increase from B\$5,504.6 million 2010 to B\$5,542.5 million. The non-Oil and Gas sector reported a 3.5% increase from B\$6,341.9 million in 2010 to B\$6,565.6 in 2011. Significant positive growth rates were reported in Trade at 4.9% and Private Services at 6.9% compared to the previous corresponding year at 4.5% and 3.5%, respectively.

The annual inflation rate for 2011 was 2.0%, an increase of 1.6% points from the previous year. This increase was due to higher inflation reported for certain goods and services, especially Food and Non-Alcoholic Beverages (3.5%), Tobacco (93.4%), and Miscellaneous Goods and Services (6.4%).

The global economic slowdown had a minimal impact on Brunei Darussalam's overall economy in 2011. The financial sector remained highly liquid, well capitalised, and profitable. Nonetheless, Brunei Darussalam's oil-exporting economy will be affected by the global prices of oil and gas as well as the Brunei Dollar exchange rate versus the US Dollar.

Table 2
Economy of Brunei Darussalam

Items	2010		2011		% change
	Amount B\$ million	Market share (%)	Amount B\$ million	Market share (%)	
Real Gross Domestic Product	11,846.5		12,108.1		2.2
Oil & Gas Sector	5,504.6	46.5	5,542.5	45.8	0.03
Non-Oil & Gas Sector	6,341.9	53.5	6,565.6	54.2	3.5
Exports	12,117.6		15,648.1		29.1
Crude Petroleum	6,112.2	50.4	7,957.0	50.8	30.2
Natural Gas	5,415.5	44.7	7,006.4	44.8	29.4
Garments	8.2	0.07	6.3	0.04	-23.2
Imports	3,349.3		3,697.8		10.4
Food	493.7	14.7	559.9	15.1	13.4
Chemicals	305.4	9.1	293.1	7.9	-4.0
Manufactured Goods	685.8	20.5	857.4	23.2	25.0
Machinery and Transport Equipments	1,158.8	34.6	1,131.0	30.6	-2.4
Miscellaneous Manufactured Articles	366.9	11.0	331.7	9.0	-9.6
Others	338.7	10.1	524.7	14.2	54.9
Total Trade	16,096.9		19,345.9		20.2
Consumer Price Index	104.8		106.9		2.0

Source: Department of Economic Planning and Development, Brunei Darussalam.

The banking system continued to be resilient in the face of today's challenging environment in the aftermath of the global financial crisis and economic slowdown. As the regulator of the financial system and as part of its framework to assess financial system stability, the AMBD compiles aggregate micro-financial soundness indicators on the banking system.

Table 3 shows the key financial soundness indicators of the banking sector for 2011. The current mandatory regulatory capital to risk weighted assets ratio and Tier 1 Capital to risk weighted assets ratios for banks in Brunei Darussalam are prescribed to be at least 10.0% and 5.0%, respectively. This is well above the Basel I and Basel II requirements of 8.0% and 4.0%, respectively. In addition, all banks also meet and are in excess of the Basel III, Tier I common equity requirement of 7.0%.

Table 3
Selected Financial Soundness Indicators for Banks

	2011 %	2012 %
Capital Adequacy		
Regulatory Capital to Risk Weighted Assets	18.8	20.4
Tier I Capital to Risk Weighted Assets	19.8	20.6
Non-Performing Loans/Financing (Net of Specific Provisions) to Capital Funds	4.9	4.3
Assets Quality		
Non-Performing Loans/Financing to Total Loans/Financing (Include Interest in Suspense)	10.8	9.9
Non-Performing Loans/Financing to Total Loans/Financing (Exclude Interest in Suspense)	7.6	6.8
Net Non-Performing Loans (Net of Provisions) to Gross Loans	1.8	1.6
Provision Coverage (Specific Provisions to Non-Performing Loans/Financing)	76.3	76.2
Profitability		
Return on Assets (Before Tax)	1.1	0.9
Return on Equity (After Tax)	7.9	6.2
Interest/Profit Margin to Total Average Assets	2.0	1.8
Non-Interest/Profit Expense to Gross Income (Efficiency Ratio)	53.3	60.4
Liquidity		
Liquid Assets to Total Assets	64.0	62.1
Liquid Assets to Total Deposits	71.6	70.5
Liquid Assets to Demand and Savings Deposits (Short term)	137.5	142.4
Loans to Deposits Ratio	26.9	30.0

The banks in Brunei Darussalam are also highly liquid. Strong capital and liquidity levels, together with sustained earnings and improved risk management systems, have resulted in a stable financial system, despite a marginal, albeit temporary, deterioration in asset quality. The exposure of the banks to market risk was negligible due to the low trading portfolios and minimal exposure to foreign exchange risk, as a result of substantial foreign assets held in Singapore dollars by banks.

3. Status of Application of Basel Capital Adequacy Framework

The AMBD has adopted the Basel I capital adequacy standards for all licensed banks effective from January 2010. Accordingly, all the banks are required, in computing the capital charge for capital adequacy, to follow the revised capital adequacy format prescribed. The capital adequacy ratio (CAR) to be maintained is 10% of total risk weighted assets with a core CAR of not less than 5%.

The revised CAR is based on a hybrid of Basel I and Basel II which is a combination of Basel I on credit risk and incorporates operational risk on the

Basic Indicator Approach and the risk weights for external counterparties in credit risk from Basel II.

In the absence of a developed capital market in Brunei Darussalam, a stock exchange and mandatory listing requirements, the information infrastructure necessary for Basel II is not available in Brunei. Very few borrowers are able to produce audited financial statements and the credit culture in the market is therefore one built on relationships and knowledge of the borrower. Banks are therefore unable to collate the aggregate data on borrowers upon which to build their internal ratings models which is the foundation on which Basel II is predicated.

Therefore, credit risk is based on the Basel I formula. Since Basel II, through risk differentiation and lower risk weights, will provide for certain banks to benefit from lower capital requirements, we are satisfied that on a uniform application of Basel I across the industry all banks are at 100% risk weights for credit risk, except where Basel I permits lower risk weights for residential housing. This, therefore, entails higher capital requirements than if the banks were on Basel II.

In terms of the market risk, the banks in Brunei Darussalam have very small investment and trading portfolios which are very insignificant, and owing to the limited exposure, we have still not incorporated market risk into the capital formula as we do not consider it a priority. The banks have little or no exposure to interest rate risk and even to exchange risk the exposure is minimal. The majority of foreign assets are held in Singapore dollars and this eliminates the exchange risk since the Brunei dollar is at par with the Singapore dollar due to the convertibility arrangement with Singapore.

With regard to Pillar II of Basel II, the necessary legal amendments are currently being formulated to give the Authority the flexibility to require a bank to have more capital based on its risk profile, than the mandatory CAR. Even now, there is adequate provision in the AMBD Order, 2010 and in the Banking Order, 2006 and Islamic Banking Order, 2008 for this purpose, but we wish to make it more specific and relate it to the Basel requirements.

Brunei Darussalam is embarking on its capital market development plan and as soon as a level playing field is available with regard to borrower information based on audited financial statements, the migration to full Basel II will be implemented methodically from the basic approaches to the more advanced approaches.

Given the level of sophistication of our markets, it is our view that the current formula used by us is adequate to mitigate the basic, traditional banking risks our banks are exposed to. Moreover, with the mandatory ratio at 10%, 2% points higher than the international norm of 8%, there is adequate margin to cover any marginal risk exposures that the banks may have, like market risk.

With regard to Pillar III, the mandatory disclosure requirements are applicable to all banks in the prescribed format for the preparation and publication of the annual audited accounts of the banks, both to the Authority and to the shareholders, as well as to the public in the form of publication in the press. In addressing the information asymmetries in the market, the Authority increasingly requires banks to publish information on bank charges, interest rates and methods of computation and is continuing its efforts in this regard.

The current legal framework provided by the respective banking statutes for both conventional banks and Islamic banks is the regulatory framework for the regulation and supervision of all licensed banks in Brunei. They provide adequate legal scope for the Basel capital adequacy formulae.

Three domestic banks, two of which are Islamic and one conventional, have been identified as domestic systematically important banks (SIBs). Three international banks are global SIBs and two regional foreign banks are regional SIBs. The capital adequacy and all the prudential regulations apply equally to all licensed banks in Brunei on a level regulatory playing field.

The details of the adoption of Basel I and II framework in Brunei Darussalam to date are given below in chronological order:

- **Basel I**
 - ✓ Credit Risk - introduced in 2006
 - ✓ Revised Basel I Capital formula - introduced in 2010
- **Basel II**
 - ✓ Only operational risk was introduced in 2010
 - ✓ **Pillar I**
 - Credit Risk – Basel I formula with risk weights for external counterparties only from Basel II in 2010
 - Operational Risk – Basic Indicator Approach - introduced in 2010

✓ **Pillar II**

➤ Please see explanatory notes above.

✓ **Pillar III**

➤ Please see explanatory notes above.

4. Assessment of Impact of Current Capital Ratios

Brunei Darussalam's banks are already at Basel III common equity 7% requirements, well in excess of the requirement, as they only hold common equity. 96% of Tier I capital of the banks in Brunei is in the form of common equity, i.e. paid up capital and reserves.

They have held capital conservation buffers in the form of statutory reserve funds to which, annually, all banks transfer a percentage of profits, since 2006.

As explained above (Table 3 - Financial Soundness Indicators) which signify that at the current level of CAR - 10% which is well above the international norm, the banks in Brunei Darussalam are adequately capitalised against their risk profiles individually and on an industry basis.

No assessment of capital levels has been made in terms of enhanced capital requirements under different capital components and quantification of future capital requirements.

5. Implementing Other Basel Standards in Brunei Darussalam

It needs to be appreciated that Basel III was designed to enhance and strengthen the Basel II CAR which was found to be grossly deficient in the global financial crisis (GFC). With only a 2% common equity requirement in Basel II and the rest of capital contributed by exotic hybrids which failed to measure up in the GFC as they did not satisfy the basic requirements of loss absorbency, Basel III was introduced with a higher capital requirement. Thus, it is felt that with the Asian banks not exposed to the GFC and whose capital is largely made up of only Tier I capital consisting of common equity, Basel III is meant for the internationally active banks to which even the original Basel I and II accords were originally meant.

Moreover, the Asian banks after their exposure to the Asian financial crisis are much more resilient than their western counterparts to banking risks, and are considered to be strongly capitalised.

In terms of Basel III for the banks in Brunei Darussalam, they are already at Tier I - 7% common equity requirement and well over the 7%, with 96% of Tier I capital made up of only common equity. Traditionally, banks in Brunei Darussalam have only held common equity as capital in the form of paid up capital and reserves. We are therefore compliant well before the timelines set by Basel III.

All banks also meet the 2.5% capital conservation buffer and have held such buffers in the form of SRF since 2006. All banks in Brunei also meet the leverage ratio of 3 also well before the timelines stipulated by Basel III.

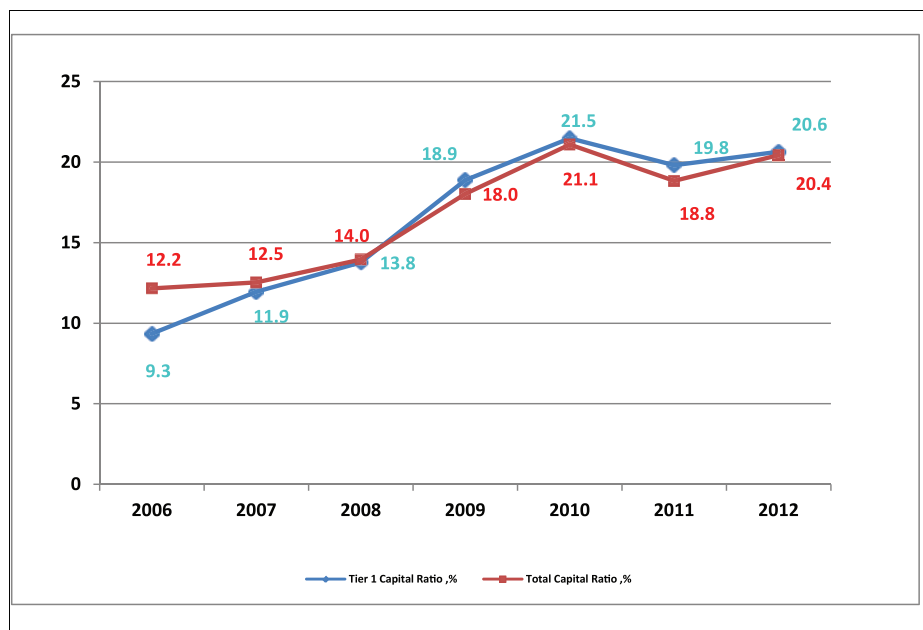
With regard to the Basel III liquidity requirements, the banks in Brunei are characteristically highly liquid and liquidity is not a regulatory concern in the short term or in the long term. However, there is adequate provision in the banking statutes to impose mandatory liquidity requirements, if the need arises.

The high level of liquidity held by the banks in Brunei is at the cost of low levels of credit in the economy. Therefore the priority of the Authority is credit growth which it seeks to facilitate. To impose the Basel III liquidity requirements at the cost of credit growth is not the desire of the Authority. We are satisfied that at the current level of liquidity in the industry, both the short- and the long-term liquidity needs of Basel III can be satisfied to be able to meet the LCR and the NSFR.

Table 4
Current Level and Adequacy of Capital as at 2012 – By Peers

	Tier 1 Capital Ratio %	Total Capital Ratio %
Basel Requirement	4	8
Brunei Darussalam Requirement	5	10
By Peers:		
• Domestic Banks	22.7	22.0
• Foreign Banks	17.6	17.0
• Islamic Banks	24.5	24.2
• Conventional Banks	16.8	16.7

Chart 1
Banking Industry: Capital Adequacy Ratios



Chapter 3

BASEL III IMPLEMENTATION: CHALLENGES AND OPPORTUNITIES IN CAMBODIA

By
Ban Lim¹

1. Introduction

1.1 Objective and Scope of Study

The Basel Agreement of 1993 explicitly incorporated the different credit risks of assets both on balance sheet and off-balance sheet into the calculation of capital adequacy. The revision of this accord in 1998 allowed the inclusion of market risk into risk-based capital in the form of an add-on to the ratio of 8% for the credit risk exposure. This certainly provided a fundamental framework for capital adequacy of the banks and financial institutions. The Bank for International Settlements (BIS) phased in and fully implemented these risk-based capital ratios on January 1993, under what has become known as Basel I.

Basel I has been criticised as having too little risk-sensitivity and it did not give bankers, supervisors, or the marketplace meaningful measures of risk. This is partly due to the complexity and sophistication of banking activities. Other criticisms included the broad risk weightings and there is no explicit capital requirement to include market risk and operational risk in the calculation of the capital adequacy ratio. Capital arbitrage has also been identified in light of the banks exploiting the difference between regulatory capital and economic capital.

Given the problem raised above, the Basel Committee for Banking Supervision (BCBS) revised Basel I in order to close the gap. The updated version is known as Basel II. Basel II definitely provides a more detailed and flexible framework to address the capital framework. The new Basel Accord consists of three mutually reinforcing pillars, notably, Minimum Capital Requirement, Supervisory Review Process and Market Disciplines, which together

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contribute to the safety and soundness of the financial system. Basel II better aligns capital requirements and the way banks manage their actual risk.

Pillar 1 covers the regulatory minimum capital requirements for credit, market, and operational risk. Basel II allows for a range of options for addressing credit, market risk and operational risk. There are two options for the measurement of credit risk. The first is the standardised approach, and the second is an internal ratings-based (IRB) approach. The standardised approach is similar to that of the 1993 accord, but is more risk-sensitive. Under the IRB approach, banks are allowed to use their internal estimates of borrower creditworthiness to assess credit risk in their portfolios. However, it is subject to methodological and disclosure standards approved by the regulator. Two different approaches are available for market risk: Standardised and Internal Ratings-based approach, and three different approaches are available for the measurement of operational risk: the Basic Indicator, Standardised, and Advanced Measurement approaches.

In Pillar 2, the BIS highlights the importance of the regulatory supervisory review process as a critical complement to the minimum capital requirements. Specifically, Basel II created procedures through which regulators ensure that each bank has sound internal processes in place to assess the adequacy of its capital and set targets for capital that are commensurate with the bank's specific risk profile and control environment.

In Pillar 3, the BIS encourages market discipline by developing a set of requirements for the disclosure of capital structure, risk exposures, and capital adequacy. Such disclosure requirements allow the market participants to assess critical information describing the risk profile and capital adequacy of banks.

In summary, Basel II brings a more coherent relationship between how supervisors assess regulatory capital and how they supervise banks. But the biggest win of the entire Basel II project is that it should make the financial system safer. It encourages continuous improvement in risk-measurement and risk management in banks.

Among the benefits of Basel II implementation, the allocation of bank capital is better matched to specific bank risks, resulting in more efficient pricing and allocation of funds. Banks are also encouraged to manage their risks more closely and avoid a build-up of unintended risk, reducing the opportunities for regulatory capital arbitrage. More importantly, the international banking system as a whole should face less systemic risk and regulators are accorded more flexibility at the national level. However, there are also disadvantages which affect some banks,

particularly the smaller banks and banks in the emerging economies, such as banks in Cambodia. Small banks and regulators find it difficult to implement the Basel standards because implementation is very costly and very complex for staff and regulators. In addition, the implementation requires a large amount of historical data. The most striking problem that was observed during the last financial crisis is that liquidity risk was not directly addressed.

The framework acknowledged that the winners in Basel II are large and active banks, particularly international banks with sophisticated and good risk management systems, large and low risk banks and the banks with large housing loan portfolios, while the losers are smaller banks with weak risk management systems, poorly capitalised banks, banks specialising in the high yield loan market, and retail banks with mainly non-mortgage loans.

The introduction of Basel III was driven by the failure of Basel II in preventing the global financial crisis. The new Basel framework responds to the comments and statement of the G20 as well as policymakers and commentators, and their collective assessment with regard to loopholes or weaknesses that may have contributed to the financial crisis. The goals of Basel III are strengthening global capital and liquidity regulations with the goal of promoting a more resilient banking sector; and improving the banking sector's ability to absorb shocks arising from financial and economic stress. The deployment of these goals, involves several objectives, which include increase in quality and quantity of capital, reduction in leverage, increase in short-term liquidity coverage, increase in long-term stable balance sheet funding and the strengthening of risk capture, most notably counterparty risk. Most of the Asian countries are in the early stages of implementing Basel III.

The Cambodian banking system is in the process of integrating with the rest of the world. Thus, it is necessary for Cambodia to adopt the international best practice and the Basel Accords, including the New Basel Accord (Basel III). Based on the evolution, rational, components and timelines of implementation, it is important for the regulatory authority, banks and financial institutions to make a strong commitment on this matter.

The scope and objectives of this study are to:

- Identify the opportunities and challenges in implementing Basel III for the Cambodian financial system and economy;

- Review the impact of Basel III on individual banks and financial institutions, and the implications and concerns for banking supervision; and
- Explore the options regarding the Basel III implementation.

1.2 General Outline of Paper

- Overview of financial system and risk assessment of the Cambodian banking system
- Assessment of the impact of Basel III on the Cambodian banking system
- Issues and Challenges of Basel III implementation in Cambodia
- The way forward and strategic options to implement Basel III
- Conclusion

2. Overview of Financial System and Risk Assessment

2.1 General Overview of Financial System of Cambodia

Historically, the banking system in Cambodia was completely destroyed in 1975 and there were no financial services from 1975 to early 1979. The banking sector was re-established with a mono-banking system, with the National Bank of Cambodia (NBC) as the only bank operating and performing central and commercial banking functions through a network of provincial branches. After its establishment, the NBC literally had to reconstruct the financial sector from ground up. The financial sector was subsequently liberalised and the liberalisation proceeded rapidly in Cambodia from 1993 onward. After the introduction of the Central Bank Law and Banking Law, together with a series of regulations, the banking system was successfully migrated to a two-tier system.

By the end of 2011, the banking sector consists of 31 commercial banks, 7 specialised banks and 32 microfinance institutions, of which 7 were licensed as Microfinance Deposit Taking Institutions, and 29 registered rural credit operators. In general, the banking sector grew significantly. Total asset increased by 24.39% year-on-year, while credit grew by 33%. Total asset to GDP reached 63% in 2011 (56% in 2010). Total credits and deposits to GDP both increased to 34% and 41%, respectively, from 28% and 37% in the previous year.

In line with the expansion of banking operations, the NBC, which is the regulatory and supervisory body of the banking sector, has put in place a number

of safeguard measures by constantly revising and updating its regulations, particularly fine-tuning the risk management framework to take into account the international best practice and the Basel Core Principles.

As a result, the financial health of banking institutions has been improving and has been proven to cope well with the effect of the global crisis. For example, the year 2009 proved to be a challenging one for the growth of the banking system. Nevertheless, despite the slowdown of credit and deposit growth, the impact of the global financial crisis was manageable for the banking sector. Public confidence in the banking sector remained moderate, with deposits chalking up growth of 32% in 2009.

2.2 Risk Oversight Assessment and Vulnerabilities

Risk-taking policies is the responsibility of the board of directors and they are reviewed in light of the prevailing financial conditions in the banking and financial institutions. Mandated by regulations, such policies shall establish the prohibited activities, risk tolerance and aversion principles, essentially in the form of minimum liquidity and solvency buffers, and overall risk concentration limits and policies aimed at dealing with crisis situations (contingency planning).

It is also the board's responsibilities to establish an appropriate general framework for an internal control system aimed at establishing an effective control system. The system approved by board is subject to periodic assessment. The board has the power to establish board level committees to closely monitor the internal control, audit and risk management functions.

The responsibility for safe and sound banking operations and for the bank's compliance with the applicable laws and regulations rests with management of the banks and financial institutions. In addition, adequate internal control is also required to be established to support management in the exercise of its responsibilities, allow for early identification, assessment and management of risk and support risk-awareness, and provide for responsive implementation of corrective actions. Internal control is set up at a consolidated level to effectively support risk identification, measurement, monitoring and control.

Currently, the risk management framework and internal control of the banks and financial institutions are monitored closely by the NBC. Foreign branch subsidiaries seem to have better risk management framework than the locally incorporated banks.

2.3 Status of the Application of Basel Capital Adequacy Framework

The key challenge for banks and financial institutions is deciding how best to implement a solution that will allow them to comply with Basel III, how to operate the systems and processes for improved operational effectiveness, and how to understand and ultimately reduce their capital requirements.

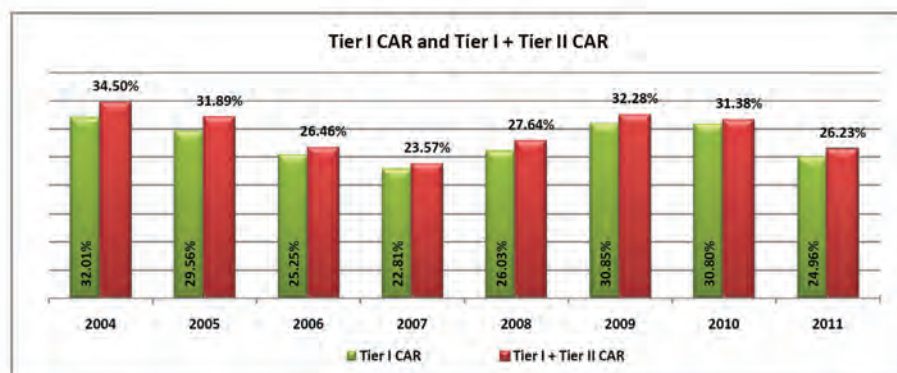
Cambodia is presently transitioning to Basel II. Its long-term goal is to be in full compliance with the Basel II requirements. While the Basel III requirements are complimentary to the Basel II requirements, Cambodia is opting for both Basel II and III as a long-term goal. Some of the requirements under Basel II and III have been fulfilled. However, there is still much to be done for the financial sector to achieve full compliance. Under Pillar I, the calculation of the capital adequacy ratio in relation to the minimum capital requirement has been simplified according to the Basel III requirement, but still lacking behind is the capital charge for credit risk, market risk, and operational risk. With regard to Pillars II and III, the requirements have been partially adopted.

3. Assessment of Impact of Basel Standards

3.1 Current Level and Adequacy of Capital of Individual Banks or Banking Groups in Terms of Key Performance Indicators for Capital

Implementing the Basel III is not a priority for financial sector development in Cambodia. Given the stage of Cambodia's development, the coverage of the Basel III is somehow irrelevant. The main idea proposed by the Basel III such as capital buffer, leverage, and liquidity rule are not the key issues for the safety and soundness of the banking sector as well as for the financial sector in Cambodia. The banking sector in Cambodia is already highly capitalised. The minimum capital adequacy ratio is 15% compared with the international standard of 8%.

Figure 1



The solvency ratio dropped from 31.38% as of end-2010 to 26.23% as of end-2011, but still remained above the prudential limit and the early-warning threshold. This decrease is mainly due to rapid credit expansion, thus an increase in risk-weighted asset. Tier I Capital is 24.96% showing a strong stable capital base of banks in 2011.

The average capital adequacy ratio in the system is almost double the minimum requirement. The component of the capital is not even an issue given that the capital contains largely common equity and Tier I capital. Complex financial instruments accounted in the capital are not eligible. Average equity in relation to total assets is around 30% which is another reflection of strong capital base and low degree of leverage. Without a well developed financial market and capital market, complex financial instruments are absent in Cambodia and investment in such instruments in overseas market is implicitly prohibited.

3.2 Assessment of Capital Level in Terms of Enhanced Capital Requirements of Basel under Different Capital Components

Under the Law on National Bank of Cambodia (LNBC) and the Law on Banking and Financial Institutions (LBFI), all banks are required to establish and maintain a minimum capital level. Foreign bank branches must have a fully paid-up capital endowment of at least equal to the minimum capital for locally incorporated covered entities. Additionally, all covered entities must be able to

prove that their assets minus related potential losses and intangibles exceed their liabilities to third parties by an amount of at least equal to the minimum capital. And all banks shall meet a solvency ratio in compliance with international standards.

The regulation on Banks' Solvency Ratio requires that all banks shall have a net worth to aggregate credit risk exposure of not less than 15%. This exceeds the Basel requirement for internationally active banks. By the regulation on calculation, Banks' Net Worth consisting of the Tier I equivalent is called 'Base Net Worth', and the sum of the Tier I and Tier II equivalent is called 'Total Net Worth'. In the Tier II capital computation, discretion is given to the NBC, allowing the addition of revaluation reserves, subordinated debt and other items, based on the NBC's agreement. The calculation does not consider a market risk component, which is relevant, as dealing in precious metals, raw materials and commodities, are authorised activities. Although such activities are not widely conducted, industry representatives expressed interest in having their banks deal in precious metals, raw materials and commodities. Further, the calculation does not require the deduction of subordinated debt issued by a Cambodian bank or financial institution, which would avoid 'double leveraging' of the capital in the industry.

3.3 Current Level and Adequacy of Liquidity of Individual Banks or Banking Group in Terms of Key Performance Indicators for Liquidity

The issues related to liquidity are also of less concern to Cambodia. Banking institutions are highly liquid. They maintain their liquidity basically in the form of cash and placement with banks. The idea proposed by Basel III on liquidity which includes liquidity coverage ratio and net stable funding ratio, is crucial, but it is somewhat complex for implementation. The coverage of one-month stress period for both cash inflow and outflow is almost impossible to identify due to the lack of reliable data and information. Long-term funding is less available for most banks, which cause serious concern for them to comply with the requirement of net stable funding ratio.

4. Issues and Challenges of Implementing Basel Standards

The most significant challenge facing banks in the implementation of Basel III is the need of balancing the interests of banking business against the needs of the regulator. Of course, the implementation has an impact on risk and finance and there are also implications among the different countries taking different approaches to Basel III. There are many issues surrounding the management

of data quality and stress testing, auditing of the regulatory data, the complexities of managing Basel I, II and III side-by-side, and the challenges of integrating disparate back office banking systems into a cohesive Basel III management framework. In this section, an attempt is made to examine the regulatory constraints, level of coverage, profitability, liquidity requirement and other issues, such as cross-border transactions, and to inquire how to achieve the economic growth objective.

4.1 Regulatory Constraints

As mention earlier, Cambodia is not opting for the Basel III implementation in the near term. However, some of the recommendations under Basel III have been taken into account. The main part of the regulatory framework has been revised to reflect the concept of Basel III. This includes regulatory framework on capital, liquidity, assets quality, governance, and also the regulatory framework. The supervisory framework has now moved from rule-based supervision to risk-based supervision. This completely revises both the supervisory approach and supervisory technique. The function of onsite and offsite examination has been integrated to further enhance risk assessment capacity and understand more the risk profile of the institutions. Data and information flow have also been upgraded to provide a complete picture of the institutions' position on a timely basis. Supervisory resources have also been enhanced through the recruitment of new staff to cope with the growing number of financial institutions and the scale of banking operation in the country. Despite this progress, some issues in respect of the supervisory framework remain as major issues, especially with regards to the enforcement of the prudential rule relevant to the Basel III recommendations. The requirements for capital surcharge and leverage ratio have been adopted, but the enforcement of these requirements involves political considerations. On the other hand, enforcement of the liquidity requirements under Basel III is more a technical issue as liquidity is of less concern to Cambodian banks. Supervisory capacity is another major concern. Capacity building in gearing up for the Basel III requirements remains limited for the supervisors as well for the bankers. Extensive capacity building is needed to ensure effective enforcement of the prudential regulations under Basel III.

4.2 Level of Coverage

In the case of Cambodia, some but not all of the requirements under Basel III are adopted and/or will be adopted in the long term. Recommendations inappropriate to Cambodia will not be considered. Basel III provides ground for

further development of the financial system and offers some main tools for safeguarding the stability of the financial system.

- Effects of Basel on different types of institutions
- Whether the framework to be standardised

4.3 Attract New Capital and Challenges for Enhancing Capital Level

- Lower dividends, ROE and profitability

4.4 Adaptation with New Liquidity Requirement

- Availability of instruments and risks
- Short-term vs. long-term funding
- Increased cost and impact on profitability
- Impact on pricing and margins
- Impact on lending

5. Way Forward and Strategic Options

5.1 Discussion with Banks on Impact Assessment and Examine Possible Strategies

- Capital and liquidity management strategies
- Divestments/wind-downs
- Redesign of business models and portfolio focus
- Active balance sheet management

5.2 Readiness for Implementation of Basel at Desired Level and Time Plan

Some challenges remain in the implementation of Basel II and III in Cambodia. The implementation is heavily dependent on the availability and quality of the data, resources, and infrastructure support. The transformation of Cambodia from a centrally planned economy to a free market economy and the transformation of the banking sector from mono- banking to a two-tier banking

system in the 1990s saw the emergence of the banking sector. From there to the new millennium, the banking sector operated without proper legal and regulatory support. The banking law was promulgated in November 1999 and it led to a complete restructuring of the banking sector. The banking sector entered a new era upon completion of the restructuring exercise in 2002 with the banking institutions coming under the oversight of a regulatory and supervisory authority. From 2005, the banking sector expanded rapidly, and consistent and more reliable data started coming on-stream. Both the regulatory authority and the banking institutions are continuing their efforts in organisational restructuring and are reporting steady progress.

The banking institutions in Cambodia are extremely pragmatic. Of the 39 banks, six banks cover more than 80% of the banking system. Compulsory implementation of Basel II for large banks can be a good option. However, banks are constrained by their unique circumstance and conditions in their adoption of Base II. Resources in some banks prove to be adequate while in some others, that is not the case. This requires a proper assessment of the condition of individual banks for the implementation. Foreign banks with parent banks which have implemented the Basel II have a competitive head-start, compared with the local banks which need to labour from ground up. This may give rise to competitive issues and charge of unequal treatment.

The lack of infrastructure support for the implementation of the Basel II and III is a major concern. The lack of credit rating and credit information limit the option on credit risk assessment and the capital charge on credit risk. The development and implementation of infrastructure, i.e. credit bureau, credit rating agency, and accounting framework require a long lead-time. In addition, the regulatory and supervisory frameworks need to be ready for the implementation of the Basel II and III. Currently, the legal frameworks are being modified to accommodate the adoption of the Basel Accord requirements. Supervisory capacity building is also taking place to address all the implementation issues.

6. Conclusion

No one would deny that the financial system needs to be strengthened to deal with the new challenges Cambodia faces. It is all the more surprising, therefore, that we are again hearing proposals to slow the speed of adjustment so as to not jeopardise the recovery. To achieve the stated goals of the reform, sufficient resources will be needed on the part of banks, supervisors and auditors.

This effort is necessary as another crisis could turn out worse. There is no alternative to strengthening the system. And that will only be possible if we implement Basel III and other reforms globally, fully, and consistently.

Chapter 4

CHALLENGES AND OPPORTUNITIES OF BASEL III IMPLEMENTATION: CASE OF INDONESIA

By
Minar Iwan Setiawan¹

1. Introduction

1.1 Objective and Scope of Study

As a response to the recent global financial crisis of 2007/08, the Basel Committee on Banking Supervision (BCBS) issued a publication widely known as Basel III in December 2010. Through the Basel III framework, the BCBS aims to improve the banking sector's ability to absorb shocks arising from financial and economic stress, thus reducing the risk of spillover from the financial sector to the real economy.

The Basel III publications were triggered by the realisation that the recent financial crisis which began as a subprime mortgage crisis in the United States had subsequently spread and morphed into a sovereign crisis in Europe and contributed to a lower economic growth for many countries around the globe. An increasing interconnectedness between financial institutions, financial products, financial markets and trading activities across countries was one among several other reasons behind this condition. The crisis had contributed to an economic contraction (-2.24%) for the world economy in 2009, and the developed countries in Europe and Central Asia were the ones which experienced the biggest impact (-6.01%)². The crisis also had cost tax payer's money in the form of government intervention, bail-out funds for the too-big-to-fail financial institutions, and austerity measures, such as lowering of government expenses and increasing income tax.

The main benefits of the Basel III implementation in reducing the probability of occurrence and severity of financial crisis are well acknowledged. We also

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1. Minar Iwan Setiawan is a Bank Researcher at the Department of Banking Research and Regulation, Bank Indonesia. The views expressed in this paper are solely of the author and do not necessarily represent the position of Bank Indonesia or The SEACEN Centre.
 2. World Bank data available at www.worldbank.org

need to take into consideration its implementation to what cost. In order to meet the Basel III requirements, banks most likely need to increase their liquid asset position and their capital level which translates to a lower profitability level (i.e. current year profit) and lower performance indicators (i.e. return on equity ratio). Assuming that banks' management will be striving to maintain their performance indicators in the eyes of their shareholders, they have an incentive to increase lending rates as a way to balance the negative impact of lower income from (i) rising liquid assets and (ii) lower loan volumes due to an increase in minimum capital and liquidity requirement.

For most of the emerging countries, such as Indonesia, which rely heavily on the banking sector as the source of funding for investment activities in both public and private sectors, the decision to adopt Basel III framework should also take into consideration its impact on the role of the banking sector in supporting the country's domestic economic growth. The primary objective of this study therefore is to:

1. Identify the challenges of implementing Basel III for the Indonesian economy, both for individual banks and financial system, as well as the implications for bank supervision;
2. Review the impact of Basel III on the supervisory concerns and its potential impact; and
3. Assess the interconnectedness of the domestic financial system in the regional and global contexts in view of Basel III and its impact on cross-border supervision.

1.2 General Outline of Paper

This paper will be divided into six sections. Section 1 provides the background and objective of this study. Section 2 presents an overview of the Indonesian financial system, risk assessment and the status of the Basel framework. Section 3 discusses and analyses the impact of the Basel III implementation, while Section 4 covers the issues and challenges of implementing the Basel III framework in Indonesia. In Section 5, we explore the way forward identifying the strategic options for supervisory authority in the implementation of the Basel framework, followed by the conclusion in Section 6.

2. Overview of Financial System and Risk Assessment

2.1 General Overview of Indonesian Financial System

Indonesia is the third largest emerging country in the world. It has a population size of 242 million which makes it becomes the fourth largest country by population³. In terms of economic output, Indonesia's gross domestic product is only the 16th biggest in the world at US\$846 billion, or far below all the other larger countries by population, such as India (US\$1,847 billion), China (US\$7,289 billion) and USA (US\$15,094 billion)⁴.

Based on the Indonesian Banking Act⁵, there are two types of banks in Indonesia, namely commercial banks and rural banks, both of them operate based on either conventional or syariah principles. By the end of June 2012, there were 120 commercial banks (15,372 branches) and 1,667 rural banks (4,286 branches) in Indonesia. In terms of total asset, the non-Islamic banks still dominate Indonesia's banking industry by 95.97% compared to 4.03% of the Islamic banking. Table 1 below provides further details on the structure of the banking industry in Indonesia.

Table 1
Composition of Indonesian Banking Industry⁶

No	Type of Banks	Number	Number of Branch	Total Asset (billion IDR)	% share
1.	Commercial Banks	120	15,372	3,891,116	98.48
	a. Non-Islamic Banks	109	13,843	3,735,704	94.55
	b. Islamic Banks*	11	1,529	155,412	3.93
2.	Rural Banks	1,667	4,286	60,034	1.52
	a. Non-Islamic Banks	1,511	3,908	55,973	1.42
	b. Islamic Banks	156	378	4,061	0.10
	TOTAL	1,787	19,658	3,951,150	100.00

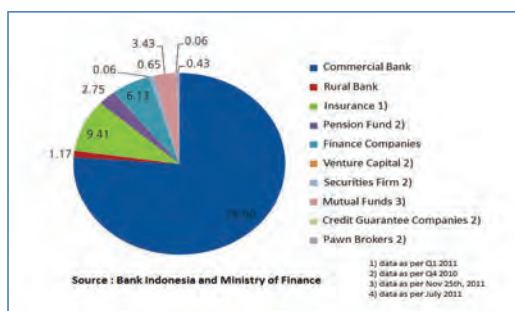
* There are 11 Islamic commercial banks and 24 non-Islamic commercial banks having an Islamic business unit.

3. The other three bigger countries by population in 2011 are China (1,344 million), India (1,241 million) and United States of America (311 million). Source: World Bank, available at www.worldbank.org
4. See Table 1 in Appendix 1 for more detailed data on GDP and population in year 2011 for all countries in the world.
5. Act of Republik Indonesia Number 7 of 1992 Concerning Banking As Amended by Act Number 10 of 1998, available at www.bi.go.id/web/en/tentang+BI/Undang-undang+BI
6. Bank Indonesia, Indonesian Banking Statistics, June 2012, Table 1, available at <http://www.bi.go.id/web/en/Statistik/Statistik+Perbankan/Statistik+Perbankan+Indonesia/>

The banking industry plays a critical role in the Indonesian economy because banks have been the primary source of funding for the Indonesian real sectors. As in other developing countries, the banking industry dominates the financial institutions in Indonesia. The total assets of the banking industry (commercial banks and rural banks) represent 78.07% of the total assets of the Indonesian financial institutions (see Figure 1). Even after we take into consideration the contributions from the equity market and bond market as a source of funding for the Indonesian real sectors, the banking industry still provides the highest contribution equal to 40.3% of the total Indonesian financial system, while the contribution of equity market and bond market are 38.4% and 9.5% respectively (see Figure 2).

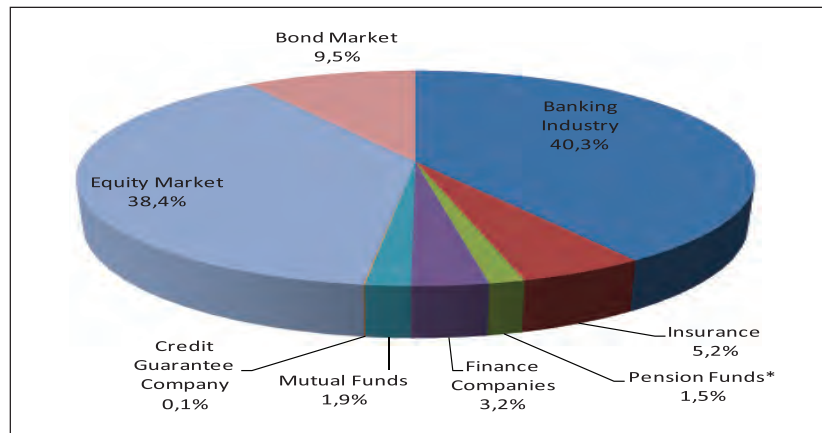
Figure 1
Composition of Indonesia's Financial Institution Assets⁷

Institution	Numbers
Commercial Bank	120
Rural Bank	1.669
Insurance	141
Pension Fund	272
Finance Company	194
Venture Capital	71
Securities Firm	147
Mutual Fund	647
Credit Guarantee Company	4
Pawn Broker	1
TOTAL	3.266



7. Bank Indonesia, Financial Stability Review, No.18 March 2012, available at www.bi.go.id

Figure 2
Composition of Indonesia's Financial System⁸



Prior to the legislation of the Financial Service Authority (FSA) Act, Number 21 in 2011, there were two authorities having power to regulate and supervise financial institutions in Indonesia. Bank Indonesia (BI) has the authority to regulate and supervise the commercial banks and rural banks, while Bapepam-LK (BLK) under the Ministry of Finance has the authority to regulate and supervise the other financial institutions and capital markets.

Under the FSA Act, the BLK will be transferring its power to the Financial Service Authority (FSA) by the end of 2012 while the deadline for BI is by the end of 2013. Currently the supervision of financial institutions in Indonesia is under transition and the Indonesian FSA is expected to be fully operational by 1 January 2014.

BI prescribes different regulations for banks categorised as (i) non-Islamic commercial banks, (ii) Islamic commercial banks and Islamic rural banks and (iii) non-Islamic rural bank, taking into consideration the differences in how they do their business. The non-Islamic commercial banks are the banks that fall under the regulations related to the Basel framework. For the purpose of this study, “banks” terminology will be used to describe the non-Islamic commercial banks in Indonesia.

8. Compiled from (i) Bank Indonesia, Indonesian Banking Statistics, June 2012, Table1, available at www.bi.go.id and (ii) Bapepam-LK, Annual Report 2011, available at www.bapepam.go.id

2.2 Risk Oversight Assessment and Vulnerabilities

During 2011, the Indonesian economy demonstrated considerable resilience amid the increasing uncertainties in the global economy. Its economic performance was reflected in strong growth at 6.5%, an all-time high for the past ten years, and mild inflation at 3.79%. There was also an improvement in the quality of growth, reflected in the substantial role of investment and export as sources of economic growth, and a falling level of unemployment and poverty. In the financial sector, as a result of the worsening crises in Europe and United States, the decision made by some investors to liquidate and pull out the foreign capital during the second half of 2011, putting pressure on the rupiah, government yield and share prices. However, the stabilisation measures pursued by BI and the government averted a turmoil in the financial market and cushioned the impact of the global financial crisis on Indonesia's real sectors and reduced it to a minimal degree⁹.

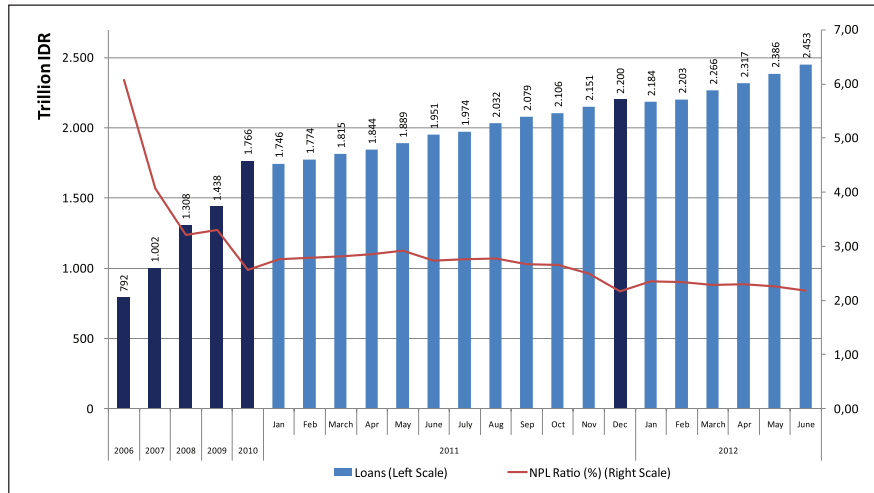
A relatively similar conclusion is mirrored by the Financial Stability Index (FSI) which measures the level of systemic risk in Indonesian financial system; the FSI was quite stable and stood at 1.65 in June 2011 and at 1.63 in December 2011, below the forecast estimation at 1.68. This level is far below the level of the FSI during the Asian financial crisis 1997/1998 at 3.23, or during the mini-global crisis in November 2008 at 2.43¹⁰.

In terms of non-performing loans, in the last six years since 2006, the Indonesian banks have been successful in improving their loans quality and in maintaining non-performing loans at a low level, as shown by a declining trend of NPL ratio, even in the midst of the global financial crisis which was occurring over the same period (see Figure 3). Loans had been growing at 22.66% CAGR (Compound Annual Growth Rate) while non-performing loans relatively in stable position with 0.12% CAGR, making it possible for the NPL ratio to reach its lowest level of 2.18% in the past six years.

9. Bank Indonesia, 2011 Economic Report on Indonesia

10. Bank Indonesia, Financial Stability Review No.18, March 2012.

Figure 3
Loans and Non-performing Loans Ratio, 2006 - 2012¹¹



The majority of banks in Indonesia can be considered as conservative and less complex financial institutions. Intermediation and loan origination have been the major business activities in the Indonesian banking system, as shown by the following indicators. First, third-party funds consisting current accounts, saving accounts and time deposits are the main source of funding for Indonesian banks. It dominates and contributes to an average of 90% of bank's total funding, or equal to an average of 76% of bank's total asset (Figure 4). Second, loans are the main financial assets in banks' balance sheet, as shown by an increasing trend of loans-to-total asset ratio since 2006, reaching the level of 63.04% as of June 2012 (Figure 5). Third, interest income has been the main income for Indonesian banks and contributes an average of 61.91% of the banks' total income (Figure 6).

11. Bank Indonesia, Banking Statistics, June 2012, Table 1.34, Table 4.9.a, available at www.bi.go.id

Figure 4
Liabilities Composition of Indonesian Banks¹²

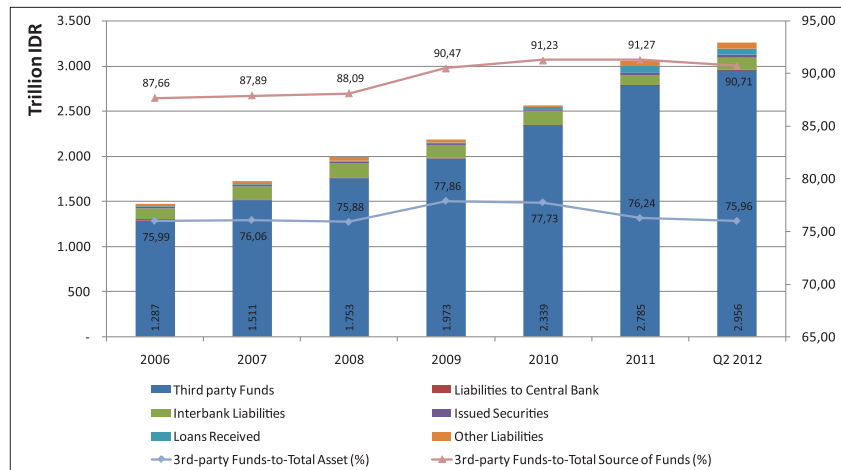
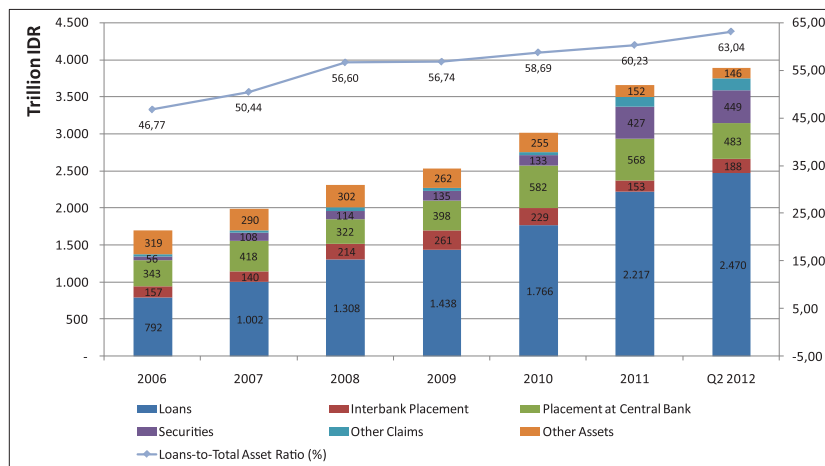


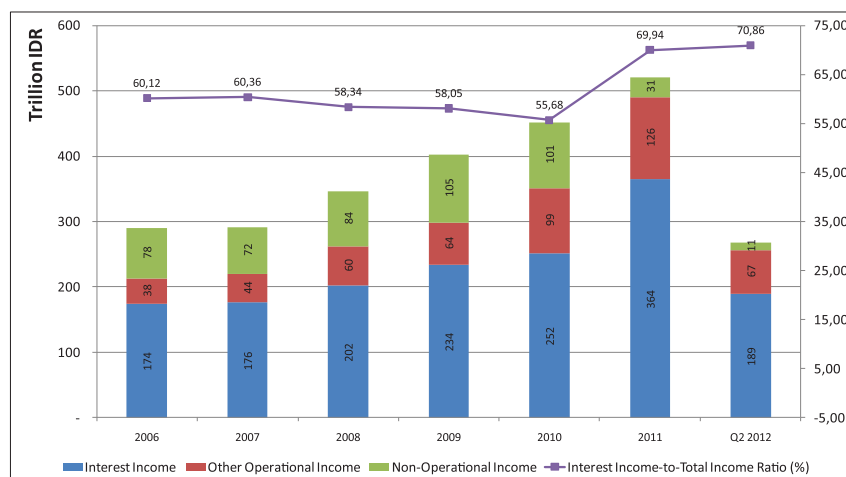
Figure 5
Asset Composition of Indonesian Banks¹³



12. Bank Indonesia, Indonesian Banking Statistics, Table 1.1 and Table 1.1.a available at www.bi.go.id

13. Bank Indonesia, Indonesian Banking Statistics, Table 1.1 and Table 1.1.a available at www.bi.go.id

Figure 6
Income Composition of Indonesian Banking Industry



Taking a closer look at the loan composition of Indonesian banks, the majority of the bank loans are used for productive activities, such as working capital purposes (50.27%) and investment activities (20.09%), and only 29.63% is used for consumption purposes¹⁴. By economic sector, (i) trade, hotel and restaurant, (ii) manufacturing industry, and (iii) financial, ownership and business services are the three largest sectors that received funding from banks, with share of 20.04%, 15.60% and 8.44%, respectively, as of June 2012.

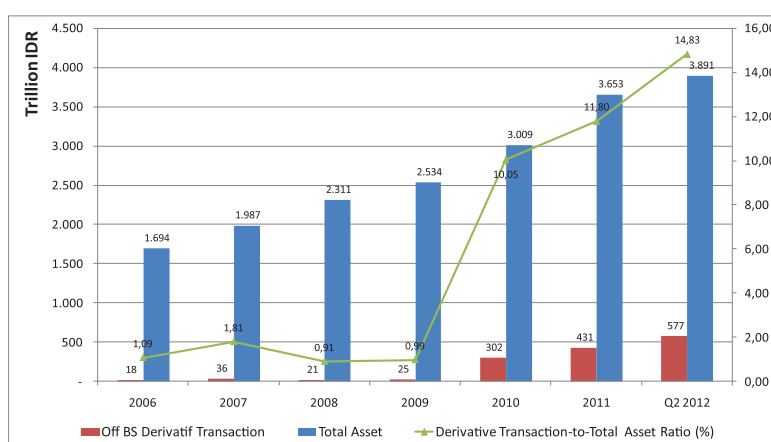
With regard to foreign exchange exposure, the Indonesian banks have learned valuable lessons from the Asian crisis of 1997/1998 when an exchange rate shock and an interest rate shock caused the insolvency of many bank borrowers in Indonesia. Currently only 16.4% of the total loans of Indonesian banks are in foreign currency denomination while the other 83.6% are in domestic currency. The same condition applies in the funding structure side, foreign currency funding only constitutes 14.9% of bank's total third-party fund while the others is in domestic currency.

In terms of complex financial instruments such as derivatives, there is an increasing trend on the usage of derivative transactions (including transactions on behalf of customers and for proprietary trading purposes) in Indonesian banks

14. Bank Indonesia, Indonesian Financial Statistics, Table I.6, Table I.8 and Table I.10, available at www.bi.go.id

for the last 2.5 years (Figure 7). Nevertheless, this figure is still in line with BI's expectation of increasing financial market deepening especially in foreign currency money market and reducing banks' dependence on the spot market to fulfill their foreign currency need. Another factor contributing to a significant increase in derivative transactions during 2009 – 2010 (more than a ten-fold jump) was due to the implementation of a new regulatory reporting system which enables BI to better capture derivative transactions than the previous regulatory reporting system.

Figure 7
Development of Derivative Transactions in Indonesian Banks

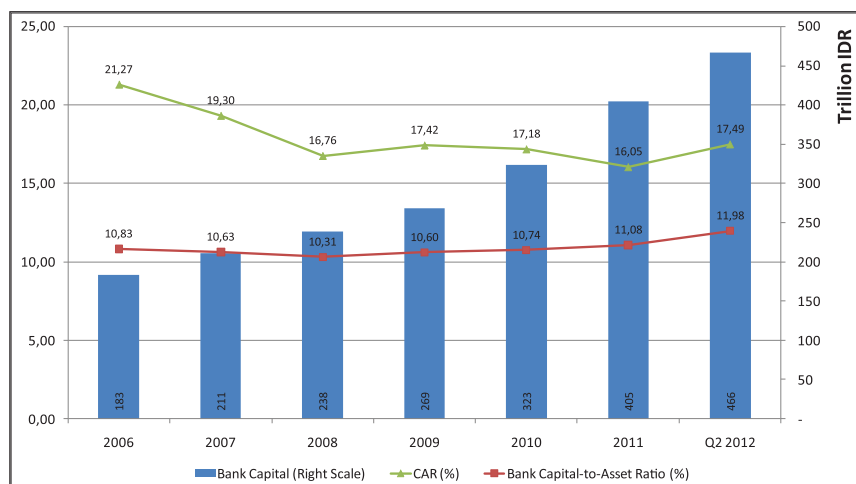


Having the ability to maintain Net Interest Margin (NIM) at 3.47% and Return on Asset (ROA) at 2.77% in June 2012, the Indonesian banks did not face any difficulties in maintaining their capital level above the regulatory requirement which is 8% of the risk weighted asset (RWA). Since 2006, the aggregate CAR level of Indonesian banks are above 16% level at all times, with an average of 17.68% level (Figure 8). Indonesian banks are considered to be well capitalised going by this CAR level. Their capital-to-asset ratio is 11.98% which is above the average of middle income countries at 10.2% level, high income countries at 7.15% level and euro area countries at 6.7% level¹⁵. Nevertheless, Indonesia's capital-to-asset ratio is still lower compared with countries such as Serbia (21%), Armenia (19.3%), United Arab Emirates (17.2%), Saudi Arabia (12.9%) and Hong Kong SAR, China (12.2%)¹⁶.

15. Definition of middle income countries, high income countries, euro area countries is based on World Bank publication. Source: World Bank's data, indicator available at www.worldbank.org

16. World Bank statistics, available at www.worldbank.org

Figure 8
Capital, CAR Ratio and Capital-to-Asset Ratio of Indonesian Banks



Under the current regulation, the calculation of RWA and CAR ratio, is based on the Basel II framework which covers a standardised approach for credit risk, a basic indicator approach for operational risk, and either a standardised or an internal model method for market risk. Specifically for credit risk RWA, the standardised approach was implemented since January 2012. In terms of values, credit risk is the highest contributor for RWA (84.92%) compared with operational risk (14.05%) and market risk (1.03%). This condition is in line with the fact that Indonesian banks rely on intermediation activities and interest income as a source of their performance. On the capital side, the definition of financial liabilities and equities instruments that could be considered as regulatory capital has been based on the Basel II framework since 2008.

2.3 The Status of Application of Basel Capital Adequacy Framework

In 1993, BI adopted the 1988 Basel I framework for the Indonesian banking system, both in relation to capital definition and calculation of credit risk RWA. This framework had been applied for 10 years until 2003. By then, BI introduced a standard model for calculation of market risk capital requirement as an adoption of the 1996 Basel I amendment.

Unlike credit risk capital requirement which applied to all banks, market risk capital requirements only applied to banks in meeting certain thresholds. The thresholds for market risk capital requirements are as follows:

1. Banks as an individual entity meet one of the following criteria:
 - a. Banks with total assets of IDR 10 trillion or more;
 - b. For banks categorised as foreign exchange bank, having financial instruments such as securities and/or derivative transactions in trading book by IDR 20 billion or more;
 - c. For banks categorised as non-foreign exchange bank, having financial instruments such as securities and/or interest rate derivative transactions in trading book of IDR 25 billion or more.
2. Banks as a consolidated entity with its subsidiaries meet one of the following criteria:
 - a. For banks categorised as foreign exchange bank, having (i) financial instruments such as securities including equity related securities, and/or derivative transactions in trading book and/or (ii) commodity risk related financial instruments in trading and banking book, by IDR 20 billion or more.
 - b. For banks categorised as non-foreign exchange bank, having (i) financial instruments such as securities including equity related securities, and/or derivative transactions in trading book and/or (ii) commodity risk related financial instruments in trading and banking book, by IDR 25 billion or more.
3. Banks having a branch(s) and/or subsidiary(s) in foreign country(s), as well as a branch office(s) of foreign banks located overseas.

Banks meeting any of the requirements above during one point in time are obligated to continuously calculate market risk capital charge even though the banks no longer meet the required conditions in future time. Considering that the banks need a preparation period for implementing the market risk capital requirement, BI provided a two-year transition period prior to its effective implementation in 2005. By June 2012, there are 73 banks out of 120 banks that are subject to market risk capital requirements in Indonesia.

Related to the Basel II implementation, BI initiated a preparation process for the implementation of Basel II framework in Indonesia since 2006 with the establishment of Working Group Basel II (WGB II)¹⁷. Prior to its establishment,

17. WGB II's member are representatives from the 15 biggest banks and representatives from all banking associations in Indonesia.

BI (in collaboration with the “future” members of WGB II) conducted a survey in August 2004 to ascertain bank perceptions of Basel II and the expectations and preferences of banks for the implementation of Basel II in Indonesia. The survey also sought information on levels of preparedness, obstacles and constraints faced by the Indonesian banks with regard to the planned implementation of Basel II. Based on results of the survey¹⁸, BI decided that the Basel II framework will be implemented for all banks¹⁹ using the most simplest approaches, such as a standardised approach for credit risk, a basic indicator approach for operational risk, and a standard model for market risk. The usage of more advanced approaches are not mandatory and subject to a supervisory approval process.

As part of the Basel II implementation process, BI ammended the regulation on market risk capital requirement in 2008 and 2012, allowing banks to use the internal model for the purpose of calculating the regulatory capital requirement. Afterward in 2010, BI issued the regulation on the basic indicator approach for the calculation of operational risk capital requirement. There was a transition period of 18 months for the gradual implementation of operational risk capital charge²⁰, thus allowing the banks to fulfill the new capital requirement through current year profit accumulation. As for credit risk, the standardised approach was implemented in 2011 with a one-year transition period allowing banks to enhance their management information system. This regulatory enforcement by BI enabled Indonesia to comply with Pillar 1 of Basel II by 1 January 2012.

Regarding Pillar 2 - Basel II, the relevant regulation is expected to be issued by the end of Q3:2012. Through the impending Pillar 2 regulation, BI will use the result of risk-based bank rating assessment (from the supervisory process) for the calculation of minimum capital requirement. There will be an additional 1% up to 6% capital requirements, depending on the rating of bank’s risk profile, from the current 8% minimum capital requirement.

18. The results of the survey are as follows:

1. Most banks expressed the preference for Basel II to be applied to all commercial banks. However, 34.7% of the banks wanted Basel II to be mandatory for banks meeting certain criteria as internationally active banks, while compliance with Basel II for other commercial banks should be voluntary.
2. Concerning the expected time needed to implement Basel II, the time frames put forward by banks varied widely from 2005 to 2012, depending on the approach to be followed.
19. For the purpose of this study, the definition of banks is non-Islamic commercial banks.
20. During the transitional period, capital requirement for operational risk was based on 5%, 10% and 15% of bank’s gross income as at January 2010, July 2010 and January 2011, respectively.

Regarding the implementation of Pillar 3 – Basel II, BI is in the process of revising the current regulation on the publication and transparency of bank financial condition, which is expected to be issued in Q3:2012. The additional scope of disclosure in the Pillar 3 regulation covers: (i) qualitative and quantitative disclosure regarding capital level, and (ii) qualitative and quantitative disclosure regarding the exposure level and risk management quality. The disclosure is to be available through the bank's annual report and website.

As regards the capital aspect, since 2008, the definition of capital has been based on the Basel II framework but with several conservative adjustments, such as:

- “current year profit and loss” is calculated only 50% of its value during profit condition, while during loss condition is calculated 100% of its value.
- “revaluation reserve from fix assets” being calculated only 45% of its value.
- treatment of “deferred tax asset” is deducted from Tier 1 capital, instead of being part of risk weighted asset (RWA) calculation.

3. Assessment of the Impact of Basel III Standards

3.1 Definition and Type of Banks

For the purposes of assessing the impact of the Basel III framework on the different type of banks, this study will categorise Indonesian banks under the following types:

- (1) State-owned Banks: banks that are owned and controlled by the Indonesian government;
- (2) Regional Development Banks: banks that are owned and controlled by the Indonesian local governments and generally operate in its regions or municipal areas.
- (3) Foreign-owned Banks: banks that are branch of foreign banks.
- (4) Other Locally Incorporated Banks: banks that do not fall into one of the above categories.

The market share of each type of the banks in terms of total asset and number of branches, based on the June 2012 data, are shown in Table 2. The state-owned banks play the most significant role in the banking industry where four banks contribute up to 36.33% of share of the industry total asset. This means that each of the state-owned banks in average contributes around 9%

of the market share. This contribution is more than 10 times higher than the average contribution of each bank in the category of foreign-owned banks (0.759%), other locally incorporated banks (0.579%) and regional development banks (0.376%).

Table 2
Total Asset and Total Branch for Each Bank Type in Indonesia

No	Type of Banks	Number of Banks	Total Asset		Total Branch	
			Value (Billion IDR)	Share (%)	Number	Share (%)
1.	State-owned Banks	4	1,369,752	36.33	4,781	31.10
2.	Regional Development Banks	26	368,804	9.78	1,518	9.88
3.	Foreign Owned Banks	10	286,262	7.59	191	1.24
4.	Other Locally Incorporated Banks	80	1,745,616	46.30	8,882	57.78

3.2 Assessment of Impact on Current Capital Ratios

3.2.1 Description of Current Capital Rules

Under the current regulations, BI has been implementing the definition of capital in line with the BCBS documents preceding the Basel III framework. Generally, the regulation on capital instruments is in accordance with the Basel II framework where banks' capital instruments consist of three types of capital, i.e. Tier 1, Tier 2 and Tier 3. Also, there are certain thresholds related to Tier 2 and Tier 3 instruments, such as the amount of Tier 2 plus Tier 3 capital being limited up to 100% of Tier 1 capital. Under the current regulations, the minimum regulatory requirements for the Tier 1 ratio is 5% of RWA, while for the total capital is 8% of RWA.

Although BI's regulation on capital is not Basel III compliant, there are certain elements in our current regulation which are more conservative than the Basel III recommendations, e.g. the current year profit, investment in capital instruments of other financial institutions, and deferred tax asset. In the near future, BI is going to adopt the Basel III recommendation on capital definition by amending its regulation in 2013, prior to the deadline in transferring its supervisory and regulatory authority over the Indonesian banking sector to the newly-established FSA.

Similar to the previous policy being made regarding the implementation of the Basel I and Basel II framework, the framework of Basel III is going to be implemented for all non-Islamic commercial banks. Through the implementation of identical framework for all non-Islamic commercial banks, BI aims to reduce the burden which may occur in our supervisory process, for instance the need

to further differentiate banking supervisors and its supervisory approach based on the bank segments. As of June 2012, the non-Islamic commercial banks represent 94.55% of the total Indonesian banking assets.

3.2.2 Status of Current Level and Adequacy of Capital of Individual Banks or Banking Groups in Terms of Key Performance Indicators for Capital

As shown in Figure 8, in the last 6 years, the aggregate CAR level of Indonesian banks is above 16% at all times. In terms of the nominal value, the banks' capital has been growing rapidly and more than tripled their value from IDR 183 trillion (2006) to IDR 466 trillion (Q2: 2012). Banks' capital is growing about the same rate as their total asset, enabling them to maintain the ratio of banks' capital to total asset at a stable level around 11%.

Based on the June 2012 data, by type of banks, the foreign-owned banks have the highest CAR ratio at 28.36%, followed by the regional development banks at 17.00%, state-owned banks at 16.58% and other locally incorporated banks at 16.24% (Figure 9). All types of banks are able to maintain their "ratio of capital to total asset" at a relatively stable level, or, in other words, their capital is growing at the same pace as their total asset growth, with the exception of foreign-owned banks. Foreign-owned banks were able to increase their capital at a higher growth rate than their total assets, contributing to a higher "capital to total asset ratio" from 14.77% in 2006 to 23.56% in Q2:2012 (see Figure 10).

Figure 9
Aggregate CAR Ratio by Type of Banks

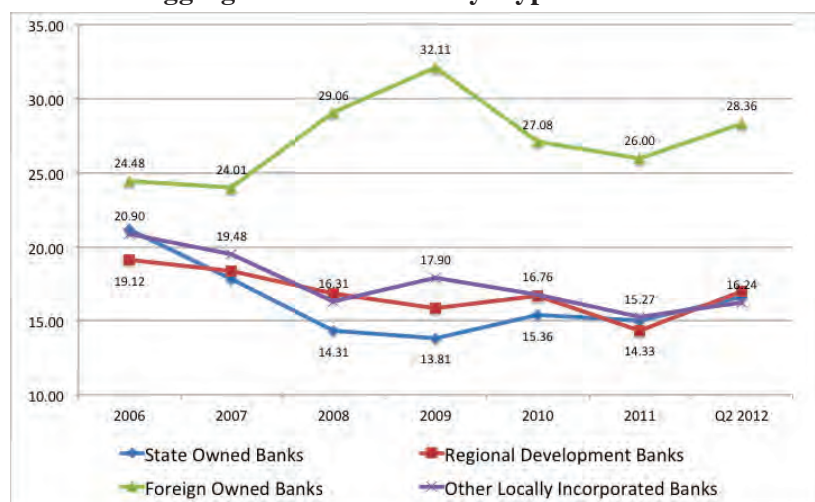
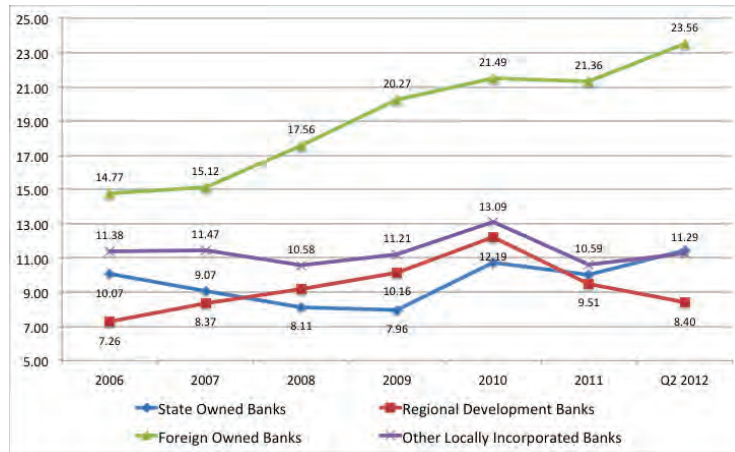
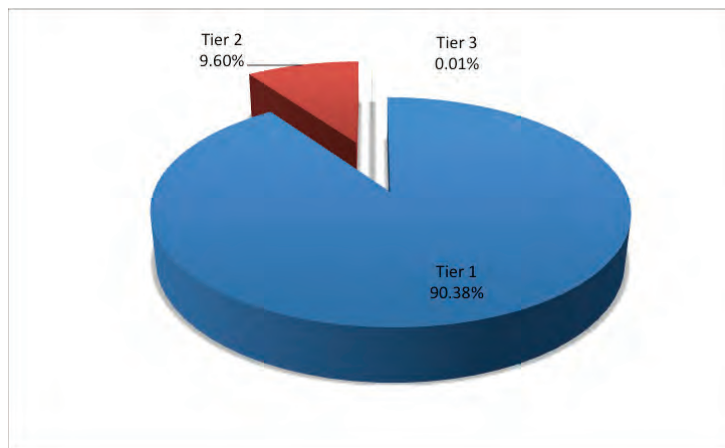


Figure 10
Capital-to-Total Asset Ratio by Type of Banks



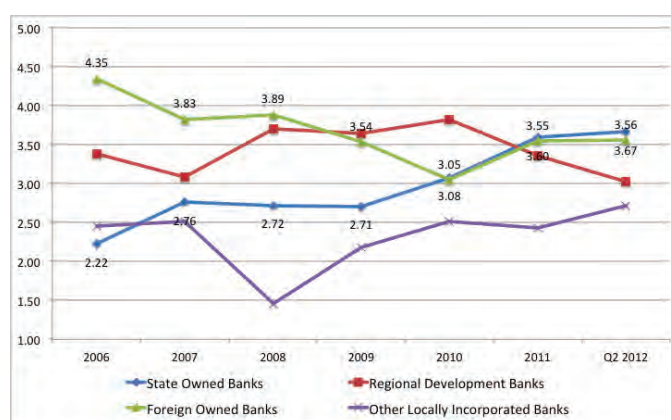
Looking deeper into the capital structure of Indonesian banks using the banks' financial data in June 2012, Tier 1 capital significantly dominates all other capital types at 90.38%, compared with Tier 2 capital at only 9.60% and Tier 3 capital at 0.02% (see Figure 11). This made the aggregate Tier 1 ratio stand at 15.42%, or slightly below the aggregate CAR ratio at 17.49% level. This level of Tier 1 ratio was far above the Basel III requirement of 4.5%, or 7% after the calculation of conservation buffer, or 9.5% after the calculation of conservation buffer plus the maximum amount of countercyclical capital buffer.

Figure 11
Composition of Capital in Indonesian Banking Industry



The definition of Tier 1 capital under the “current” BI regulation meets the definition of Common Equity Tier 1 in the Basel III framework. In other words, all Tier 1 instruments in the Indonesian banks are also CET1 instruments in the Basel III framework. This condition constitutes the basis for BI to assume that the Indonesian Banks will not face difficulty in meeting the higher capital requirements and the new Common Equity Tier 1 requirement in the Basel III framework.

Figure 12
Return on Asset (ROA) by Type of Banks



Another factor supporting the conclusion is related to the revenue generating power of the Indonesian banking system. As we can gather, the current year profit and losses (current P/L) is included in the calculation of capital, making the indicator of revenue generating power, such as the ROA, reflect the banks’ natural ability in increasing their capital level through normal operating activities. The foreign-owned banks have the highest revenue generating power as indicated by their average ROA during the period of 2006 to 2012, at 3.68%, followed by the regional development banks at 3.43%, state-owned banks at 2.97% and other locally incorporated banks at 2.33%. Although the foreign-owned banks have the highest average ROA, they experienced a declining trend from 4.35% in 2006 to 3.56% in Q2:2012. Whereas the state-owned banks experienced a significant trend increase in their revenue generating power since 2010 from 2.71% to 3.67% in 2012 (see Figure 12).

3.2.3 Assessment of Capital Levels Based on Basel III Enhanced Capital Requirements

Although Basel III's implementation aims to increase the quality and quantity of banks' capital, there are certain elements in the Basel III framework that are more loose compared with BI's current regulation on capital definition and regulatory adjustments as shown in Table 3 below.

Table 3
Comparative Analysis between Basel III Framework and Bank Indonesia's Regulation Regarding Component of Capital and Regulatory Adjustment

No	Component of Capital	Basel III	Bank Indonesia Regulation	More Conservative
1.	Current Year Profit and Loss	Fully included (100%) in the capital calculation as Tier 1 capital, either during a profit or loss conditions.	<ul style="list-style-type: none"> Partially included (50%) during profit condition; and Fully included (100%) during loss condition, in the capital calculation as Tier 1 capital. 	Bank Indonesia
2.	Deferred Tax Assets (DTA)	<ul style="list-style-type: none"> DTAs relate to temporary differences will be deducted from CET1 for the proportion of DTAs exceeding 10% of bank's CET1 or threshold deductions (15% of bank's CET1); DTAs that rely on future profitability of banks to be realised are to be fully deducted from CET1. 	<ul style="list-style-type: none"> Same treatment for both (i) DTAs that relates to temporary differences and (ii) DTAs that rely on future profitability of banks to be realised. In the calculation of capital, retained earnings (i.e. current year P/L and/or previous years P/L) need to be neutralised from the impact of DTAs. 	Bank Indonesia
3.	Investment in other Financial Institutions where Bank owned more than 20% share.	For investment in form of: 1. Common Shares : deducted from CET1 for the portion of investment exceeding 10% of bank's CET1 or threshold deduction (15% of bank's CET1); 2. Other Than Common Shares: fully deducted through a corresponding deduction approach.	For investment in form of: 1. Common Shares: fully deducted from Tier 1 (50%) and Tier 2 (50%); 2. Other Than Common Shares: fully deducted through a corresponding deduction approach if banks also issued similar instruments. If not, will be subject to RWA calculation.	Bank Indonesia Basel III
4.	Investment in other Financial Institutions where Bank has 10% - 20% share.	For investment in form of: 1. Common Shares: deducted from CET1 for the portion of investment exceeding 10% of bank's CET1 or threshold deduction (15% of bank's CET1); 2. Other Than Common Shares: fully deducted through a corresponding deduction approach.	For investment in form of: 1. Common Shares: RWA 2. Other Than Common Shares: fully deducted through a corresponding deduction approach if banks also issue similar instruments. Subject to RWA if banks do not issue similar instruments.	Basel III
5.	Investment in other Financial Institutions where Bank does not own more than 10% share.	Deduction from the capital using a corresponding deduction approach for the proportion of total investment exceeding 10% of bank's CET1.	Subject to RWA calculation.	Basel III

As a result of a more conservative approach on the regulation of capital definition, Indonesia is among five countries²¹ where the Basel III implementation has a positive impact on banks' capital level and capital adequacy ratio. This result is based on a comprehensive quantitative impact study²² conducted globally by BCBS, using the banks' financial data in December 2011.

There are two banks from Indonesia that participated in this study as Group 2 banks²³. These two banks represent 24.14% of the market share of the Indonesian banking industry. Individually the Basel III's framework contributes to an increase in capital amount by 21.24% and 21.21%, an increase in RWA by 0.74% and 5.50%, and an increase in the CAR ratio by 287 bps and 229 bps. Among several aspects of the Basel III framework that provide a more relaxed treatment, (i) current year profit and loss and (ii) investment in other financial institutions where bank own more than 20% share, are the most significant factors that contribute to an increase in capital amount and capital adequacy ratio.

BI also conducted a similar study at national level using financial data reported by banks through the regulatory reporting system. Based on this study, BI found similar results concerning the impact of the Basel III implementation on banks' capital level in the Indonesian banking industry. This study was conducted regularly using banks' financial data during period of January 2012 to June 2012. Most of the Indonesian banks would experience an increase in CAR ratio if the Basel III framework was implemented on the reporting date.

The implementation of Basel III contributes to an increase in RWA by around 3% while it also contributes to an increase in total capital around 9% to 11%, during the first half of 2012. As seen in Table 4, the positive gap between the Basel III CAR and current CAR ratio was increasing steadily from 99 bps in January 2012 to 152 bps in June 2012. This phenomenon is caused by an increasing amount of accumulated current year profit being included in the calculation of total capital for each reporting period.

21. Five countries where Basel III implementation have positive impact are Hong Kong, Indonesia, Luxemburg, Mexico and Russia.

22. Bank for International Settlement, available at <http://www.bis.org/publ/bcbs231.pdf>

23. Group 1 banks are those that have Tier 1 capital in excess of •3 billion and are internationally active. All other banks are considered Group 2 Banks

Table 4
Result of National Quantitative Impact Study
on Basel III Implementation

No	Basel III impact	Jan-12	Feb-12	Mar-12	Apr-12	May-12	June-12
1.	Increase in Capital (%)	9.23	9.63	10.01	10.86	11.36	11.62
2.	Increase in RWA (%)	3.68	3.39	2.96	2.89	2.87	2.72
3.	Increase in CAR (bps)	99	111	125	139	146	152

Using banks' financial data in June 2012, the impact of Basel III implementation by type of banks can be seen in Table 5. Foreign Banks is the type of bank that did not show the benefit of capital increase from current year profit accumulation, because they usually transfer most, if not all, of their profit back to their corporate headquarters.

Table 5
Impact of Basel III Implementation by Type of Banks

in Million IDR				
	State Owned Banks	Regional Development Banks	Foreign Owned Banks	Other Banks
Total Capital				
Current Capital	158,699,065	31,016,604	67,848,143	209,911,789
Basel III Capital	181,842,447	36,418,973	67,696,085	235,839,966
Tier 1 Capital	164,100,129	33,289,705	67,696,085	203,619,110
RWA				
Current Regulation	947,248,145	184,130,011	237,445,869	1,298,556,125
Basel III	983,600,891	186,735,575	238,721,567	1,330,905,767
CAR				
Current Regulation	16.75%	16.84%	28.57%	16.17%
Basel III	18.49%	19.50%	28.36%	17.72%
Tier 1 ratio	16.68%	17.83%	28.36%	15.30%
Increase in				
Capital	14.58%	17.42%	-0.22%	12.35%
RWA	3.84%	1.42%	0.54%	2.49%
CAR	1.73%	2.66%	-0.22%	1.56%

3.3 Assessment of Current Level of Leverage

Through usage of the leverage ratio, the BCBS introduced a simple, non-risk based indicator aimed at constraining the build-up of leverage in the banking sector. Learning from the lesson of the latest financial crisis, in the effort to stem losses faced by them, banks were forced by the market to reduce their leverage level in a manner that amplified downward pressure on asset prices,

further exacerbating the positive feedback loop between losses and triggering declines in banks capital and contraction in credit availability.

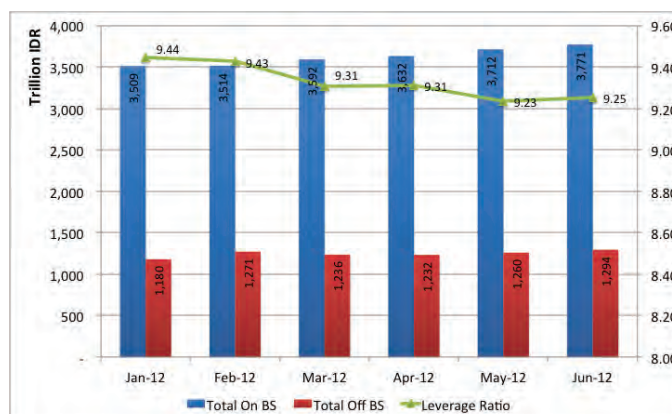
Based on a study conducted by BI using its regulatory reporting system, in aggregate the Indonesian banks have a leverage ratio of 9.25%, well above the Basel III minimum requirement of 3%. Under this simulation, BI applied higher weight for unconditionally cancellable line of credit (“uncommitted line of credit”) at 100% compared with the Basel III recommendation of 10%. There is no significant difference in the leverage ratios by type of banks, with foreign-owned banks having the highest leverage ratio at 10.15%, based on the June 2012 data (see Table 6).

Table 6
Basel III Impact on Bank’s Leverage Ratio by Type of Banks

No	Type of Banks	Tier 1	On and Off BS	Leverage Ratio (%)
1.	State-owned Banks	164,100,129	1,672,482,212	9.81
2.	Regional Dev. Banks	33,289,705	395,878,067	8.41
3.	Foreign-owned Banks	67,696,085	666,696,180	10.15
4.	Other Locally Inc. Banks	203,619,110	2,329,859,410	8.74
	TOTAL BANKS	468,705,029	5,064,915,870	9.25

For the Indonesian banking sector, the off balance sheet exposure is not too significant. The off-balance sheet exposure represents one-third or around 33% of the on-balance sheet exposure (see Figure 13). Thus, the Indonesian banks are not conducting the leveraging process through off-balance sheet exposure like other international banks in the more advanced economies. As shown in Figure 7, the value of the notional amount of derivative transactions comprises approximately 15% of banks’ total assets which means the other form of off-balance sheet exposure, such as undrawn line of credits, represents around 18% of banks’ total assets.

Figure 13
On-BS Exposure, Off-BS Exposure and Leverage Ratio
during 1st Half of 2012



3.4 Assessment of Liquidity in Terms of New Liquidity Ratios

3.4.1 Description of Current Liquidity Rules

Basel III introduced and formalised the usage of two indicators for measuring the level of liquidity risk in the banking sector. The indicator of Liquidity Coverage Ratio (LCR) serves to promote the short-term resilience of a bank's liquidity risk profile by ensuring that the bank has sufficient high-quality liquid asset to survive a significantly stressed scenario lasting for 30 days. Whereas the indicator of Net Stable Funding Ratio (NSFR) serves to promote longer term resilience by creating additional incentives for banks to fund their activities with more stable source of funding on an on-going basis.

The ultimate objective of Basel III's liquidity measures are understandable for all supervisory authorities, including BI. Nevertheless, under the current supervisory framework, BI still uses the other tools to measures banks' liquidity risk profile, such as liquid-asset-to-liquid-liabilities ratio and loan-to-deposit ratio.

- (a) **Liquid-asset-to-liquid-liabilities ratio.** This ratio is used to measure whether a bank has sufficient high-quality liquid asset to meet its short-term or liquid liabilities. The definition of "liquid asset" consists of cash, placement to BI (in form of current account and BI Certificate), and placement to other banks (in form of current account and deposit). The definition of "liquid liabilities" consists of third-party fund (in form of current account,

saving account and time deposit), and liabilities to other banks (in form of interbank call money and deposit on call). Going by this ratio, a higher ratio means a lower liquidity risk, and vice versa.

- (b) **Loan-to-deposit ratio.** This ratio is used to measure whether a bank was using third- party funds as a stable source of funds to provide loan originating activities. Going by this ratio, a higher ratio means higher liquidity risk, and vice versa.

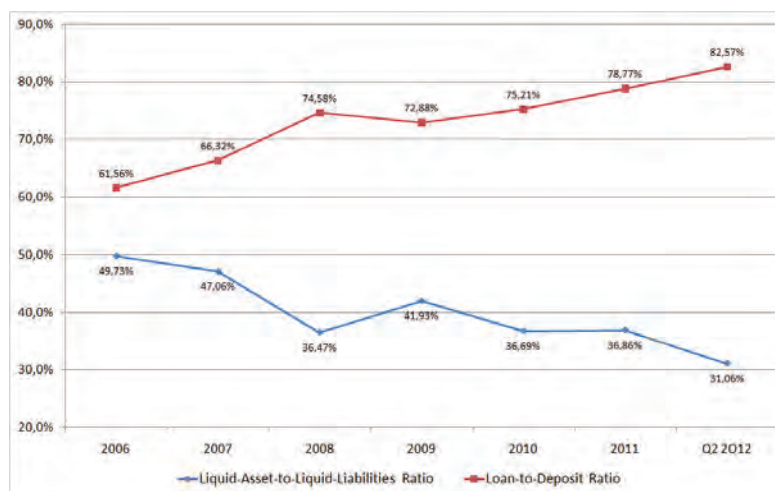
In view the BCBS has not finalised the recommendation on liquidity parameters of LCR and NSFR, BI has not yet issued any relevant consultative paper or regulation on the same. During the monitoring period set by the BCBS, BI will continue to monitor the level of LCR and NSFR in the banking sector though regular study.

3.4.2 Current Level and Adequacy of Liquidity of Individual Banks or Banking Groups in Terms of Key Performance Indicators for Liquidity

Using the indicator of liquid-asset-to-liquid-liabilities ratio during period of 2006 until Q2:2012, there is a declining trend of this ratio from 49.73% in 2006 to 31.06% in Q2:2012. This trend is in line with a increasing trend of loan-to-deposit ratio (LDR) over the similar period (Figure 14). This condition can be explained by the increasing contribution from the banking sector to domestic economic growth through loan origination, albeit it also increased the level of liquidity risk faced by the banks. Under the current regulation on monetary reserve requirement²⁴, BI imposed a disincentive for those banks having LDR ratio under 78% or above 100% which made them subject to a higher reserve requirement than banks having LDR ratio between 78% to 100%. This policy aims to enlarge the intermediation process and reduce the monetary cost faced by BI because banks place their liquidity excess in monetary instruments.

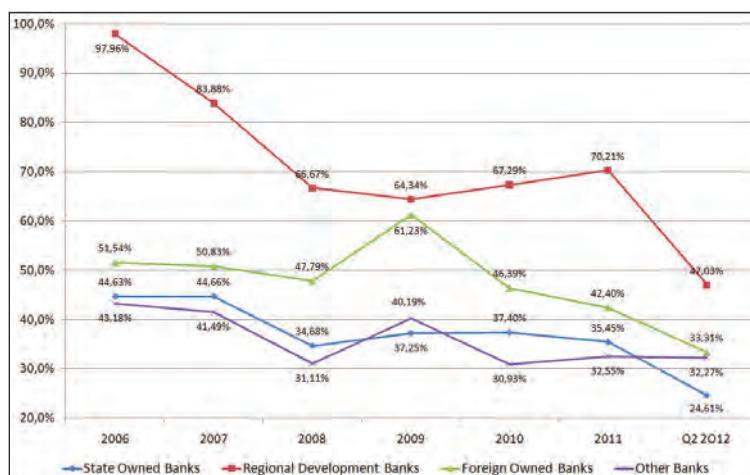
24. Bank Indonesia Regulation Number 13/10/PBI/2011, available at www.bi.go.id

Figure 14
Aggregate Liquid-Asset-to-Liquid-Liabilities Ratio and LDR Ratio



As seen in Figure 15, , the regional development banks which have the highest liquid-asset to liquid-liabilities ratio, faced the lowest liquidity risk, followed by the foreign-owned banks, other locally incorporated banks and state-owned banks, based on the June 2012 data.

Figure 15
Liquid-Asset-to-Liquid-Liabilities Ratio by Types of Banks



In proportion to bank's total asset, as of June 2012, the amount of liquid asset owned by banks is around 11% - 27%, depending on the bank type (Table 7). In the last six years, the ratio declined from 27.44% in 2006 to 13.29% in Q:2012. Although in value terms, the volume of liquid assets expanded and recorded a 11.26% growth from IDR 464,735 billion in 2006 to IDR 517,071 billion, but the banks' total assets grew at a faster pace. During the same period, the growth rate of third-party funds, which grew at 16.32% CAGR, was unable to catch up with the loan originating growth rate at 22.81% CAGR, thus contributing to lower the level of the banks' liquid asset coverage.

Table 7
Liquid Asset-to-Total Asset Ratio, by Type of Banks

Type of Banks	2006	2007	2008	2009	2010	2011	Q2 2012
State Owned Banks	23.64%	24.02%	19.16%	20.58%	22.01%	18.13%	12.39%
Regional Development Banks	56.29%	46.10%	34.91%	27.87%	31.78%	28.14%	27.10%
Foreign Owned Banks	24.78%	27.30%	19.90%	26.28%	20.05%	16.77%	14.25%
Other Banks	25.02%	23.53%	17.74%	22.36%	19.74%	15.93%	11.07%
ALL BANKS	27.44%	25.98%	19.86%	22.42%	21.60%	17.81%	13.29%

3.4.3 Quantification of LCR and NSFR and Assessment Of Future Liquidity Requirements

Currently, BI does not have the required data structure needed to calculate and monitor the LCR and NSFR of the Indonesian banking system through its regulatory reporting system. Even in case of the two banks participating in the comprehensive quantitative impact study of the BCBS, they have to make certain assumption about their funding structure to enable them to calculate the LCR and NSFR.

The banks' information systems currently are inadequate in providing the requisite data needed to calculate both the liquidity indicators as required by Basel III, for them to differentiate their funding structure based on certain definitions, e.g. stable vs less-stable, retail vs wholesale, operational relationship vs non-operational relationship. Although the banks may use these terms for their daily risk monitoring and risk management in relation to liquidity risk, the definitions may differ from the Basel III definitions.

Using data from the two banks which participated in the quantitative impact study of the BCBS, both of them meet the Basel III requirement with their LCR levels at 240% and 487% and their NSFR levels at 131% and 100%.

Table 8
Basel III Impact on Bank's Liquidity Risk Profile
Based on National Study

	LCR	NSFR
Bank 1	597%	147%
Bank 2	597%	147%
Bank 3	528%	130%
Bank 4	334%	111%
Bank 5	300%	212%
Bank 6	234%	119%
Bank 7	209%	129%
Bank 8	109%	102%
Bank 9	100%	110%

BI is also conducting a national study to measure the impact of Basel III on the banks' liquidity risk profile. This study purposes to cover the 14 biggest banks (excluding the two banks which have participated in the comprehensive impact study done by the BCBS) and use the banks' financial data of December 2011. However, due to certain conditions, e.g. data limitation and capabilities, the result only covers nine banks as seen in Table 8. All the Indonesian banks in this study meet the requirements of Basel III and have LCRs and NSFRs of more than 100%. The study on the impact of the liquidity framework, taking together both the studies by the BCBS and BI, covers 11 banks and represents 57.38% of the Indonesian bank total assets.

4. Issues and Challenges pf Implementing Basel III Standards

4.1 Regulatory Constraints and Infrastructure Issues

The Basel III document covers the recommendations for strengthening the global capital framework and introducing a global liquidity standard. There are several recommendations in Basel III that have to be implemented effectively by 1 January 2013. As a member of the G20, Indonesia has confirmed its commitment to implement Basel III in line with its time schedule. Nevertheless, there are certain issues and constraints faced by BI concerning its implementation.

The first issue is the result of challenges faced by the banks in measuring and calculating the liquidity indicators of LCR and NSFR. As previously mentioned, certain assumptions regarding banks' funding structure need to be

made in order for the banks to measure and calculate the LCR and NSFR. The banks will continue to deal with this challenge until they improve their data structure and information system. Meanwhile, it is incumbent upon BI to ensure that the banks' underlying assumptions regarding the LCR and NSFR calculations are based on sound basis and commensurate with the banks' business activities and their funding risk profile.

The second issue relates to the ability of BI to improve its regulatory reporting system as a result of LCR and NSFR implementation. The implementation of the Basel III liquidity parameters requires both the banks and BI to improve their information systems. Enhancement of the regulatory reporting system is a prerequisite for improving BI's capability in analysing the consistency of the banks' underlying assumptions and their calculation over time, through its offsite supervision process. As BI is in the process of transferring its authority over to the newly established FSA, BI is restricted in overhauling its reporting system in view of the jurisdictional change.

The third issue relates to the concept of countercyclical capital buffer about how it may burden the banks to support domestic economic growth. As Basel III aims to reduce the impact of cyclicity in economic condition through the usage of countercyclical capital charge, it is essential that BI has the required ability to analyse whether the current level of aggregate credit growth in the domestic economy represents a build-up of system-wide risk that warrants a capital charge. Also, in the case where the excess of credit growth is coming from the non-banking sectors, the banks will receive a "penalty" and subjected to an increasing capital requirement that will limit their ability in supporting the Indonesian economy.

4.2 Capital Augmentation and Related Issues

As shown in Tables 4 and 5, the Indonesian banks can be considered well capitalised with their current CAR ratio well above the Basel III requirements. Assuming Basel III was implemented in June 2012, their aggregate CAR ratio did not decline as a result of the implementation. On the contrary, there would be an increase in the CAR ratio around 152 bps in aggregate, with the regional development banks experiencing the highest benefit at 266 bps, followed by the state-owned banks at 173 bps and other banks at 156 bps. This would register the CAR ratio "after Basel III implementation" for foreign-owned banks, regional development banks, foreign owned banks and other locally incorporated banks at 18.49%, 19.50%, 28.36%, and 17.72%, respectively. On individual basis, using

the banks' financial data as of June 2012, each of the Indonesian banks has:

- Tier 1 ratio above 4.5% or 7% of RWA (after considering a capital conservation buffer);
- CAR above 8% or 10.5% of RWA (after considering a capital conservation buffer).

Although none of the banks in Indonesia need to issue capital instruments either in the form of common equity or subordinated obligation for meeting the Basel III capital requirements, it does not mean that the banks “still” have the same capability to support their strategic plans related to loan growth. The Basel III requirements on the capital conservation buffer and countercyclical capital buffer would reduce the level of excess capital they have above the minimum requirement. Hence, the banks would need to increase their internal capital target level in order to maintain their previous level of excess capital.

It is expected that, in aggregate, the Indonesian banks would need a period of 18 months to neutralise the impact of the additional 2.5% capital buffer requirement on their loan originating capabilities, through the accumulation of their current year profit²⁵. The period will be double to 36 months if we consider another 2.5% capital requirement for the countercyclical capital buffer. Hence the 3-year transition period given by the BCBS to implement the conservation buffer and countercyclical capital buffer is adequate for the banks in Indonesia, in order to assure that the implementation will not negatively contribute to the banks' loan growth and domestic economic growth.

4.3 Review of Asset and Liabilities Management Strategies

Although the impact of Basel III on Indonesian banks' capital adequacy level is quite clear, it is not the case with regard to the banks' liquidity risk profile. Even though the results of (i) the comprehensive quantitative impact study done by BCBS and (ii) the national quantitative impact study done by BI have shown that the sample banks are able to meet the requirements, the assessment is yet to cover all the banks in Indonesia.

25. Based on profit and loss figure of the first half of 2012.

Hence, more studies are required to measure its accurate impact. A more comprehensive study is currently underway and the results will be available no sooner than the end of this year. Nevertheless, there is good reason to assume all the other banks will also be able to fulfill the LCR and NSFR requirements, just like the current sample banks.

4.4 Implication on Cost and Profitability

For banks which are unable to meet the increased minimum capital requirements from the Basel III framework, they need to raise new capital instruments either through the issuance of common shares, additional Tier 1 or other Tier 2 instruments, in order to meet the new requirements. Assuming that the shortfall in the capital amount is happening to several banks, it will increase the competition in the market to attract new investors, thus increasing the cost of capital for these banks. These banks have two options available to them. First, transfer this additional cost of capital to their debtors through an increase in the interest rate for loans, as a way to maintain the banks' current level of profitability. Second, the banks may choose to maintain their competitiveness by maintaining the current loan rates and absorbing the additional cost, albeit this will lower their net interest margin and profitability level.

The same consequences apply to the banks which are unable to meet the liquidity requirements of the LCR and NSFR. For the banks that are incapable of meeting the LCR requirement, they need to set aside more cash and liquid assets. Since liquid assets generally yield a lower level of return compared with the more-illiquid asset, this will reduce the banks' rate of return and their profitability.

As for the banks that are unable to meet the NSFR requirements, they need to adjust their funding structure by increasing the composition of retail deposit and tapping into wholesale funding with operational relationship or longer term funding, for their sources of funds. Considering that Indonesia has a quite diversified demography, an effort to better improve the banks' funding structure will require the banks to increase the number of branches and improve their information systems in order to provide more services to retail and wholesale customers and maintain operational relationship with them. Hence, this effort will increase the banks' overhead cost, lowering their profitability level.

On the other hand, if the banks' effort in adjusting their funding structure through increasing the composition of retail deposit to total deposit and improving operational relationship with their wholesale depositors is successful, they will

gain a benefit in the form of lower interest cost for funding, because of two reasons. First, the retail depositors generally have lower bargaining power compared with wholesale depositors, thus the banks will be able to lower their funding cost without having to worry about their retail depositors defecting and transferring their funds to the other banks. Second, wholesale depositors with operational relationship usually place their funding in the form of current account to service their operational and business activities. This type of account will have bear a lower interest rate and is more stable, compared with time deposits. Thus, the implementation of the Basel III liquidity framework may have different impact among the banks, depending on how successful are the banks in adjusting their funding structure and in competing for more retail depositors as well as wholesale depositors and to increase their operational relationship with.

Fortunately, several banks participating in our study do not face the above conditions and difficulties. On the capital side, the Indonesian banks have an adequate level of capital and the Basel III framework will not lower their capital level due to enforcement of more conservative regulation in our jurisdiction. Nevertheless, BI is expecting the banks to accumulate their current year profit for at least three years in order to increase their capital level by 500 bps and neutralise the impact of the capital conservation buffer and countercyclical capital buffer requirements. Even if the banks choose to increase their capital level through the inorganic process, they still have ample time and can avoid tight competition which contributes to higher cost of capital. On the liquidity side, the implementation of the liquidity parameters is expected to have no impact on the banks' business model since all the banks in our sample are able to meet the requirements of the LCR and NSFR more than 100%.

4.5 Implication on Financial Markets/Economy

Since the Basel III implementation is expected to increase the demand from the banks for securities and bonds meeting the definition of Level 1 and Level 2 assets, the increase in demand will reduce bond yield and lower the economic cost for the government and private sectors in the financing of their funding needs through future bond issuance. Assuming that the private sectors respond to the yield reduction shifting their funding sources from the banks to the capital market, it is expected that the Basel III framework will increase the level of financial deepening in the Indonesian economy and improve the efficiency of our financial system.

However, some challenges still remain. The non-financial sectors in Indonesia still rely heavily on the banks as their funding sources. This is shown by the data of Bapepam-LK²⁶. Out of 203 bonds issued and traded in the Indonesian capital market up to June 2012, the financial sector dominates all the other sectors with 82 issuance, representing share of 40.39%. In value terms, the share of the financial sector is even higher at 58.65% (IDR 173.64 trillion out of the total bonds of IDR 296.04 trillion issued by the private sectors). Considering that the bonds issued by the financial institutions are not recognised in the calculation of the LCR and NSFR, there is a need to gradually increase the amount of bonds issued by the non-financial corporates with good rating condition.

Due to the low level of liquidity assets from non-financial institutions in the bond market, the banks have to increase their liquid assets through accumulation of government bonds as the source of Level 1 and Level 2 assets. In June 2012, the amount of government bonds outstanding is IDR 786.49 trillion. Even though the amount of government bonds outstanding is more than 4.8 times the total bonds outstanding from private sectors at IDR 162.10 trillion, it is still far from being considered as adequate since it only represents 21.05% of the Indonesian banks' total assets. Even if we take into consideration the amount of BI's Certificate at IDR 101.44 trillion²⁷ as a tradeable and liquid instrument, the amount of government bonds and BI's certificate only represent 23.46% of the Indonesian banks' total assets. Hence, the Indonesian banks probably meet the liquidity requirements through cash and placement in BI which generate much lower rates of return.

4.6 Human Resource Constraints

The implementation of the Basel III framework will require BI and the banking industry to improve the skill of their human resources to understand the essence of the Basel III recommendations, with the purpose of improving risk management practices in the banks and supervisory practice in BI. The Basel III recommendations not only attempt to formalise standards to measure liquidity risk and increase quality and quantity of capital, but also to enhance risk coverage for more complex and structured products in the calculation of RWA, e.g. the calculation of credit valuation adjustment (CVA). Although most of the Indonesian

26. Bapepam-LK, Capital Market Statistic, 4th week June 2012, available at www.bapepamlk.depkeu.go.id

27. Bank Indonesia, Indonesian Financial Statistics, June 2011, available at www.bi.go.id

banks are not deeply involved in these types of transactions, there are several foreign-owned banks which are heavily involved, thus raising the need for BI to improve and provide the requisite training for its supervisors.

For BI as a regulator, this training gap will be reduced and fulfilled through regular training programmes for its banking supervisors arranged by its human capital development department. This approach is similar with the approach taken by BI during the preparation process for the Basel II implementation. As for the banks, they can improve the skills of their employees through training given and provided by the banking associations and by several training providers in Indonesia.

4.7 Impact on Cross Border Supervision

Under the current structure, BI generally acts as host supervisor and not as home supervisor where banks in Indonesia (and there are several) are owned by foreign financial institutions. Indonesian banks having investments in foreign financial institutions are not material. Taking this into consideration, it is believed that the implementation of Basel III will not raise additional issues on cross-border supervision than from the current status.

BI will continue to enhance cooperation and coordination with foreign regulators through signing of Memorandum of Understanding (MoU) on cross-border banking supervision. Currently BI has signed the MoUs with the Monetary Authority of Singapore (MAS), Bank Negara Malaysia (BNM), China Banking Regulatory Commission (CBRC), Financial Services Commission (FSC-Korea) and the Australian Prudential Regulatory Authority (APRA).

4.8 Issues in Implementation of Countercyclical Capital Buffer

The Basel III framework requires the national authority to monitor and measure the indicator of aggregate credit growth in the domestic economy. That indicator represents a build-up of system-wide risk which warrants a countercyclical capital charge. For the developing countries, such as Indonesia, which rely heavily on banking sector funding to support domestic growth, this requirement is expected to have a negative impact on loan growth as well on economic growth. Thus, it will be more challenging for BI to decide when an aggregate credit growth is considered to be excessive.

Also, the document requires the national authority to publish its decision on the countercyclical capital buffer one year prior to its effective implementation, meaning that there is a possibility the decision on the capital buffer amount may

become obsolete due to changes in economic conditions and external factors during that one-year period. Over the past decades, globalisation and technology development have improved the ability of market participants to react and respond to public information and changes in economic condition, making the financial market more volatile and hard to predict. Thus, the regulators will be burdened to decide on the amount of countercyclical capital buffer commensurate with the expected condition of the banking industry in the next one-year period.

5. The Way Forward and Strategic Options

5.1 Strengthening the Regulatory Framework

Under the current legal framework, BI is vested with adequate power to implement the Basel III framework. The Banking Act and Bank Indonesia Act provide a legal basis for the authority exercised by BI to set the minimum regulatory requirements in the Basel III framework, such as the minimum CET1 ratio, minimum Tier 1 ratio, minimum LCR ratio and minimum NSFR ratio, through the issuance of BI Regulations without prior need to amend the current law and acts.

Specifically, for the implementation of the Basel III liquidity framework, BI will conduct analysis and research in order to provide more detailed guidelines in defining several key terms used in the calculation of the LCR and NSFR, such as stable vs. non-stable, retail vs. wholesale, operational relationship vs. non-operational relationship. These guidelines are to ensure that the banks' approach in calculating the LCR and NSFR are consistent with the characteristic of the funding risk profile in our domestic market.

A lesson learned from the latest global financial crisis is that a high level of capital is not a substitute for lack of risk management and corporate governance practices. Under the current supervisory framework, BI requires the banks to have in place a risk management process for eight types of risk, namely credit risk, market risk, operational risk, liquidity risk, strategic risk, legal risk, compliance risk and reputational risk. This risk management framework has been implemented since 2003 and recently revised in October 2011 to reflect the current progress in risk management practices in the global environment, including the practices in liquidity risk management.

5.2 Development of Capital Markets and Instruments

As mentioned, the Indonesian economy is heavily reliant on the banking industry where the bond market share only represents 9.5% of total Indonesian financial system. Currently, there is a lack of high quality bond issuance in our capital market. This will make the Indonesian banks rely solely on the Indonesian government bonds and BI's certificate as their liquidity instruments, since the Basel III framework requires the liquidity instruments to be of high quality grade and low price volatility.

BI expects the Basel III liquidity requirement to increase the demand from banks for high quality bond instruments. This may lower the required yield in the bond market and provide an incentive for the private sectors with good rating quality to seek financing from the capital market. Considering private institutions seeking financing from the capital market will be subjected to higher requirements set by the capital market regulator, it is necessary for BI to step up its coordination with the other regulatory authority such as Bapepam-LK, to provide adequate incentives for the private sectors with high quality credit rating to issue securities in the capital market.

5.3 Balancing Between Conservativeness and Competitiveness of Indonesian Banking Industry

As previously stated in Section 3, although Basel III aims to improve the quality, quantity and transparency of capital in the banking sector, there are certain elements in the current regulations that are more conservative than the Basel III recommendations. Two of these elements play a significant role in the treatment of (i) current year profit and (ii) investment in other financial institutions where banks own more than 20% share.

Under the current regulation, all investment in the other financial entities where banks own more than 20% share will be deducted from the bank's capital amount²⁸. From the study of BI, for most of the Indonesian banks, the amount of the total investments in other financial institutions is less 10% of bank's CET1. Hence the investments will not become a regulatory adjustment in the calculation of bank's capital, but instead become subject to the RWA calculations. While adopting this treatment of Basel III for the Indonesian banks can increase the banks' capital and CAR level, it may reduce the quality of capital in the Indonesian banking sector.

28. 50% from Tier 1 capital and 50% from Tier 2 capital.

The above impact is also valid if BI is going to adopt Basel III's treatment on banks' current year profit. This implementation will contribute to higher volatility in the value of banks' capital and also their capital ratios. On the other hand, if BI chooses not to implement this recommendation, it will make the Indonesian banks less competitive compared with other banks in the regions, due to their lower level of capital. Also for the purpose of increasing market transparency, it is easier for the market participants to assess the quantitative aspect of capital, e.g. CAR ratio, than the quality aspect of it, e.g. higher requirement for capital instruments.

The implementation of the ASEAN Banking Integration Framework (ABIF) starting in 2015 is also another factor that needs to be considered by BI in its way of adopting the Basel III framework and balancing between conservativeness and competitiveness of the Indonesian banking industry.

5.4 Roadmap for Implementation of Basel III

BI has issued its policy to implement Basel III's capital framework in 2013 prior to the deadline of transferring its authority to the Indonesian FSA in December 2013. As for the Basel III liquidity framework, BI is going to conduct a research and issue a consultative paper on the Basel III liquidity framework during 2013. It is expected that the formal regulation on the Basel III liquidity requirements will be issued by the newly-established FSA not earlier than 2014.

6. Conclusion

Without any doubt, BI is encouraging the implementation of the Basel III framework in an effort to further improve the ability of Indonesian banks to absorb losses from their business activities, thus reducing the risk of bank failure that can have a negative effect on the stability of the Indonesian financial sector and real sector economy. The Asian financial crisis of 1997/1998 had provided valuable lessons for BI about how banks' failure can have a significant negative impact on the economy and the long period of time needed by Indonesia to recover from it.

Although in terms of capital amount, the Basel III's definition of capital will have a positive impact on the capital level of Indonesian banks, BI expects that the implementation of the capital buffers, e.g. capital conservation buffer and countercyclical capital buffer, will have negative impact on the level of excess capital needed to support the banks' future loan growth and Indonesian economic growth. Nevertheless, based on our study, the period of time needed by the

Indonesian banks to neutralise this negative impact is approximately three years and still in line with the Basel III transitional period for its implementation. Hence, we can expect the Indonesian banks will balance the implementation of the capital buffers through the accumulation of current year profit from their normal business activities.

The implementation of the Basel III capital framework also raises issues regarding the conservativeness and competitiveness of Indonesian banks due to its implementation. In contrast to the developed countries where the Basel III implementation will increase the quality of banks' capital, its implementation in Indonesia - in certain aspects - will reduce the capital quality of Indonesian banks, due to the more conservative requirements of the current regulation. On the other side, if BI decides to maintain its conservative regulation, this will result in a lower capital level for the Indonesian banks, thus lowering the competitiveness of Indonesian banks vis-à-vis their competitors. Hence, BI needs to carefully consider this consequence prior to issuing its final regulation on the Basel III capital framework.

BI views the implementation of the liquidity standards on LCR and NSFR as the most challenging aspect of the Basel III implementation. It will require adequate capability on the part of BI in analysing and monitoring the consistency of the banks' assumption in the calculation of the LCR and NSFR, including the need to improve the infrastructure of its current regulatory reporting system.

Concerning the impact of the Basel III liquidity framework, more studies need to be done in order to measure its impact on all the banks in Indonesia. Based on the current impact study that covers the 11 biggest banks, representing 57.38% of the market share, all the sample banks meet the minimum requirement of the liquidity standards. Going forward, BI should conduct similar study for the remaining banks and harmonise the assumptions made by the banks on their funding structure, thus maintaining the comparability of the LCR and NSFR measurements among the Indonesian banks.

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Chapter 5

THE EFFECTS AND POLICY IMPLICATIONS OF BASEL III IN KOREA

By
Jinshik Son¹

1. Introduction

Since the recent outbreak of the transatlantic financial crisis, there have been various responses aimed at preventing another shock and remedying the deficiencies in the existing financial system. As part of these efforts, the Basel Committee on Banking Supervision (BCBS) decided in 2010 to implement a new international regulatory framework for banks (also called Basel III) from 2013.

It is said that the new regulatory framework has two core tasks: enhancing the micro-prudential rules in Basel II and adopting a macro-prudential overlay. For its micro-prudential purpose, Basel III introduces liquidity standards, enhances capital regulations, and implements leverage ratio regulations. And for its macro-prudential purpose, Basel III introduces a countercyclical capital buffer, as well as the regulation for systemically important financial institutions (SIFIs).

These rules are designed to affect the levels of bank liquidity and capital in accordance with certain specific priorities. Considering the roles and positions of banks in their economies, it is easy to expect that the regulations may not only directly affect banks but also indirectly affect the overall financial and economic conditions.

It is thus necessary to examine the effects of this global regulatory innovation on bank management, the financial markets and the real economy in order to minimise the side-effects of the regulations. This paper purposes to analyse the effects in implementing Basel III in Korea, especially with regard to the liquidity standards and capital regulation, and attempts to

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measure the impacts of the countercyclical buffer. It also makes several policy suggestions based on the findings of the analysis.

Section 2 provides a summary of the Korean financial system and evaluates recent potential risks from a macro-prudential point of view. Section 3 describes the current status of compliance with the global financial regulations in Korea from the aspects of the capital regulation and liquidity standards. Sections 4 and 5 are devoted to analysing the effects of capital regulation and the liquidity standards from the standpoints of the Korean banks' behaviour, the financial markets and the real sector. Section 6 then suggests several policy recommendations on the basis of the above analysis.

2. Overview of Korean Financial Systems and Risk Assessment

2.1 Financial Institutions

Financial institutions serve mainly as intermediaries for savings and investment between savers and borrowers, and are commonly divided into six categories: banks, non-bank depository institutions, financial investment business entities, insurance companies, other financial institutions, and financial auxiliary institutions.

To elaborate on the financial institutions making up each category under this classification, banks are divided into commercial banks and specialised banks. Commercial banks consist of nationwide and local banks and branches of foreign banks. Specialised banks are financial institutions established under a special act rather than the Banking Act, and their main enterprises are banking businesses. Specialised banks include the Korea Development Bank, the Export-Import Bank of Korea, the Industrial Bank of Korea, the National Agricultural Cooperative Federation, the National Federation of Fisheries Cooperatives, and others.

The non-bank depository institutions mainly concern themselves with taking deposits and lending, similar to banks, but are established for more limited purposes. This makes them subject to different regulations concerning the raising and management of funds than those of banks. That is, the scope of their business activities is narrower than that of banks, payment and settlement services are either non-existent or provided for in a limited manner, and the focuses of their businesses are restricted in advance in accordance with each financial institution's unique features. Non-bank depository institutions comprise mutual savings banks, credit cooperatives, including credit

unions, community credit cooperatives and mutual banking entities, merchant banks and the postal savings.

Financial investment business entities include all the financial institutions that primarily conduct the business of trading marketable securities in the direct financing markets. These consist of investment traders and brokers (securities and futures companies), collective investment business entities, investment advisory and discretionary investment business entities, and trust business entities.

Insurance companies are those institutions that underwrite and operate insurance against death, disease, old age, or a variety of accidents, including fires. Based on the features of the institutions and their businesses, they are categorised into entities providing life insurance, non-life insurance, postal insurance, mutual aid, and others. Non-life insurance companies consist of property and casualty insurance companies, reinsurance companies, and guarantee insurance companies.

Other financial institutions include institutions mainly operating financial businesses that are difficult to classify among the financial institutions in the four aforementioned categories. They consist of specialised credit financial companies (leasing, credit card, installment financing, and new technology venture capital companies), venture capital companies (small- and medium-sized enterprise establishment investment companies), securities finance companies, the Korea Deposit Insurance Corporation, public financial institutions, and others.

Financial auxiliary institutions are those institutions that, rather than directly taking part in financial transactions, mainly provide the conditions necessary for the smooth operation of the financial system. They span institutions carrying out businesses related to financial infrastructure, such as the Financial Supervisory Service, the Korea Financial Telecommunications and Clearings Institute and the Korea Securities Depository; the Korea Exchange; credit guarantee institutions, including the Korea Credit Guarantee Fund and the Korea Technology Finance Corporation; credit information companies; financial brokerage companies; and others.

2.2 Financial Markets

Financial markets are organised venues where the economic players may raise the needed funds and operate residual funds through transactions in financial instruments. Firstly, the financial markets are divided into direct and indirect financing markets, depending whether the transactions are conducted through financial intermediaries. The indirect financing markets are exchanges where funds are brokered through deposits and loans; the deposits and loans market is a good example. Financial transactions are carried out by banks, non-bank depository institutions, collective investment business entities, trust business entities, etc., that provide funds by lending money or by buying direct securities with funds raised through indirect securities, such as certificates of deposit and beneficiary certificates. Financial transactions in the direct financing markets are undertaken as the fund providers purchase direct or primary securities issued by the end consumers of the funds, such as financial debentures or corporate bonds. Accordingly, the direct financing markets, which do not depend on financial intermediaries, play more active roles and are more diversified than the indirect financing markets.

Table 1
Financial Institutions in Korea
(As of end-September 2011)

Classification		Number
Banks	Nationwide Banks	7
	Commercial Banks	6
	Local Banks	38
	Branches of Foreign Banks	5
Non-bank Depository Institutions	Specialized Banks	KDB / EXIM Bank of Korea / IBK / NACF / NFFC
	Mutual Savings Banks	106
	Credit Unions	957
	Credit Cooperatives	Community Credit Cooperatives
		1,463
		Mutual Banking
Financial Investment Business Entities		1,389
	Postal Savings	1
	Merchant Banking Corporations	1
	Investment Traders and Brokers	Securities Companies
		62
		Futures Companies
Insurance Companies		7
	Collective Investment Business Entities	81
	Investment Advisory and Discretionary Investment Business Entities	153
	Trust Business Entities	Bank / Securities / Insurance / Real Estate Trust
		57
Other Financial Institutions	Life Insurance Companies	23
	Property and Casualty Insurance Companies	20
	Non-life Insurance Companies	Reinsurance Companies
		9
		Guarantee Insurance Companies
		1
Financial Auxiliary Institutions	Postal Insurance	1
	Mutual Aid Associations	Agricultural Cooperatives / Community Credit Cooperatives / Fisheries Cooperatives / Credit Unions
		4
	Financial Holding Companies	Bank Holding Companies
		9
		Non-bank Holding Companies
Financial Auxiliary Institutions		3
	Credit-specialized Financial Companies	Leasing / Credit Card / Installment Financing / New Technology Venture Capital Companies
		64
	Venture Capital Companies	SME Establishment Investment Companies
		109
	Securities Finance Companies / Korea Trade Insurance Corporation / Korea Housing Finance Corporation / Korea Asset Management Corporation / Korea Investment Corporation / Korea Finance Corporation	6
Financial Auxiliary Institutions	Financial Supervisory Service / Korea Deposit Insurance Corporation / Korea Financial Telecommunications and Clearings Institute / Korea Securities Depository / Korea Exchange	5
	Credit Guarantee Institutions	2
	Credit Information Companies	36
	Financial Brokerage Companies	9

In accordance with the maturities of the financial instruments involved, the direct financing markets are generally divided into the money markets and the capital markets. Additionally, they can be divided into the foreign exchange markets and the financial derivatives markets, based on the features of the financial instruments concerned.

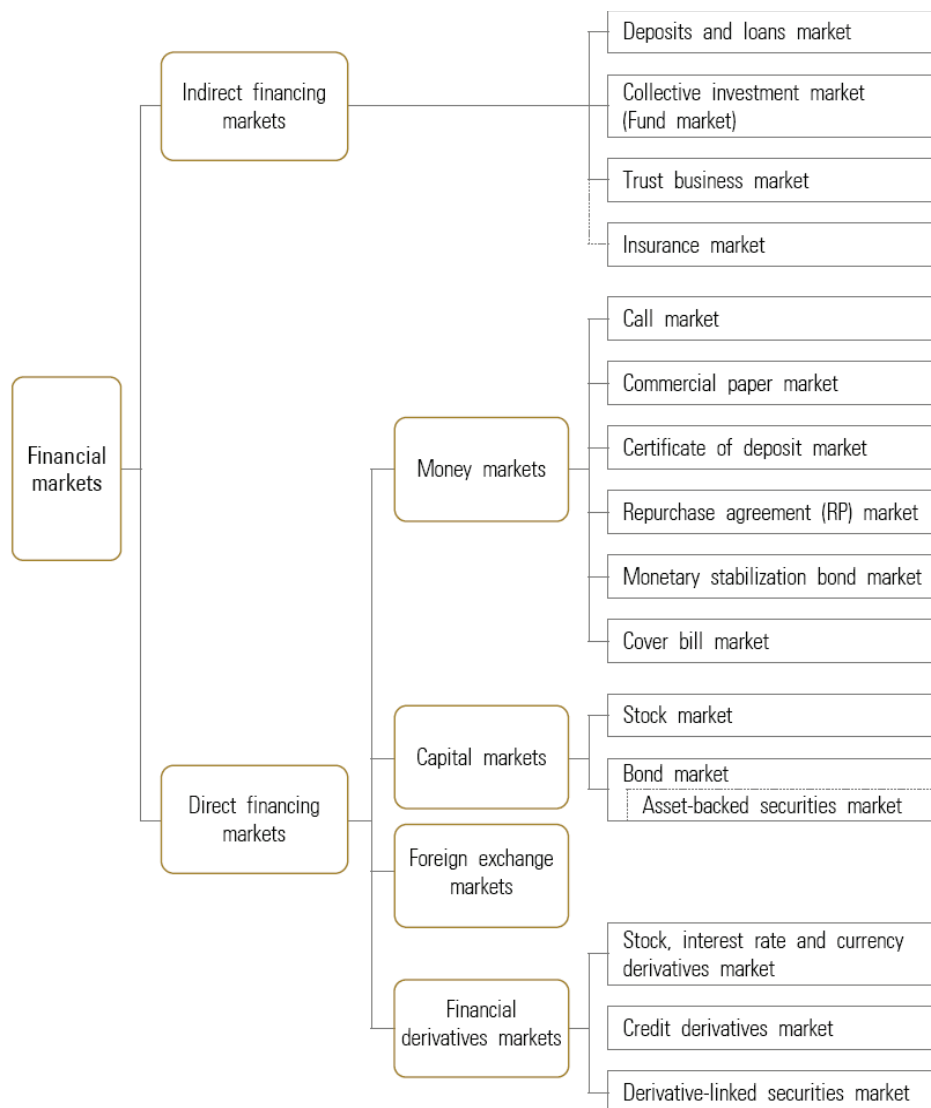
The money markets are those markets where financial instruments that expire within one year are commonly transacted in order to maintain the balance of supply of and demand for short-term funds. The money markets in Korea embrace the call market, as well as a wide range of other financial markets including those for commercial paper (CP), certificates of deposit (CDs), repurchase agreements (RPs), monetary stabilisation bonds (MSBs) and cover bills (CBs).

The capital markets are the markets where the means to raise long-term funds, such as stocks and bonds, are issued and transacted. These are usually categorised into the stock market and the bond market. The secondary stock market is further divided into the marketable securities market and the KOSDAQ, where listed stocks are traded, and the Free Board for unlisted stocks. The bond market is where long-term bonds with maturities greater than one year are issued and traded. The secondary bond market is divided into the face-to-face market (marketable securities market) where listed bonds are traded, and the off-board market where all bonds including unlisted bonds can be transacted. The capital markets include the newly emerging asset-backed securities market, which is seen as a means for companies and financial institutions to mobilise funds. This market is where asset-backed securities (ABSs) issued based on illiquid assets such as properties, accounts receivable and mortgage-backed securities, are traded.

The foreign exchange market is the place where the regular or continuous trading of foreign currencies takes place between foreign currency purchasers and suppliers. The foreign exchange market is divided between the customer market, where foreign currency is traded between general consumers and foreign exchange banks, and the inter-bank market, where foreign currency is transferred between foreign exchange banks. However, the foreign exchange market most commonly refers to the inter-bank market, as this is where the basic exchange rate is determined.

The financial derivatives market is the place where financial derivatives designed to reduce the risk of changes in the value of underlying assets can be traded. The financial derivatives market in Korea consists of the market for stock, interest rate and currency derivatives, together with the credit derivatives market and the derivative-linked securities market.

Chart 1
Structure of Financial Markets in Korea



2.3 Risk Oversight Assessment and Vulnerabilities

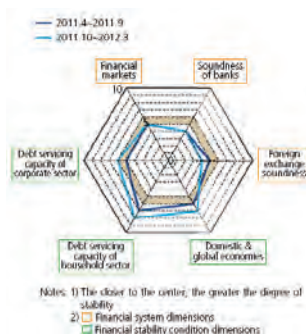
The Korean financial system remained generally stable, although conditions at home and abroad worsened mostly due to the accumulation of household debt and the fallout from the sovereign debt crisis in Europe. The resilience of the financial system was heightened as the soundness of banks, which make up the backbone of the financial system, improved, boosted by large-scale net profits, and as foreign exchange soundness remained on a trend of improvement, the result of the steps taken to enhance macro-prudential soundness, including imposition of the Macro-prudential Stability Levy on non-core foreign currency deposits. In addition, the volatility of financial market price variables stabilised at a low level. This stable state of the financial system is well-represented in the financial stability map.

In the international financial markets, instability appears to have eased since the beginning of 2012, primarily on the back of the progress made in discussions on resolving the sovereign debt problems in Europe and the ongoing expansive monetary policy stances on the parts of the ECB and other central banks of major countries. As the tendency toward risk aversion has moderated in line with the ample global liquidity, the VIX, an indicator of global financial market volatility, has maintained a downward trend and the Euribor-OIS spread, a measure of credit risk in the European money markets, has also narrowed.

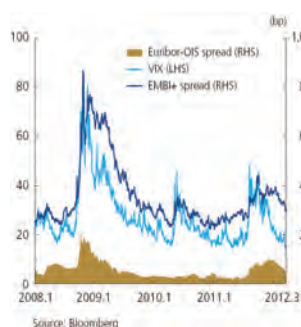
Long-term interest rates in the major countries have remained at low levels after falling sharply in August 2011 on concerns about a weakening of the business recovery, but more recently they have risen slightly. Stock prices shifted to an uptrend upon the ECB's supply of long-term liquidity in December 2011 and the consequent soothing of market unrest.

Chart 2

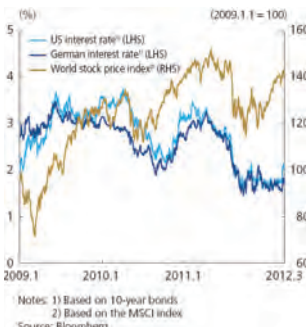
Financial Stability Map



VIX, EMBI+ Spread, and Euribor-OIS Spread



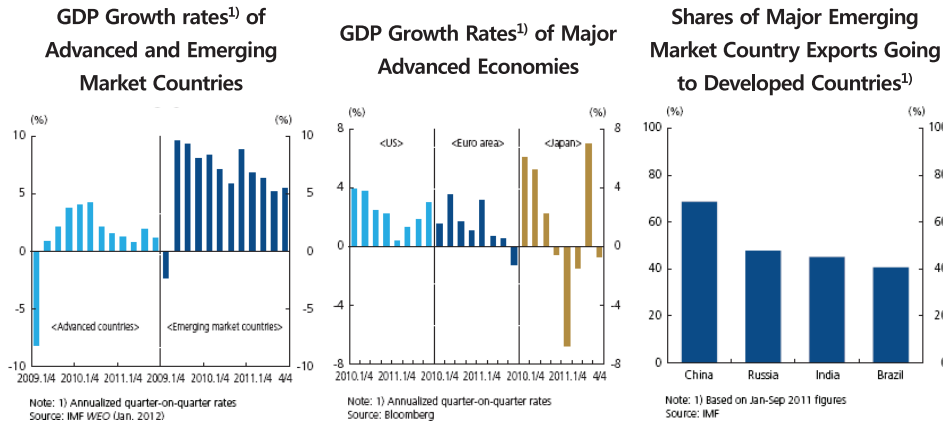
Interest Rates and Stock Prices in Major Countries



World economic growth is slowing down, as the business recovery in the advanced countries weakens and the impact of this development spread to the emerging market countries. The US economy is sustaining a moderate trend of recovery, helped mostly by an increase in corporate investment. However, factors such as the increase in long-term unemployment, the continued housing market slump, and worries over snags in the pursuit of fiscal consolidation are preventing the recovery from gaining traction. The euro area economy appears set on a low growth path for a considerable period, as the effects of the sovereign debt crisis feed through to the economies of the core euro area countries, including Germany, by way of financial market unrest and the waning confidence of economic agents.

The economies of the emerging market countries, including China, have seen their pace of growth slacken markedly since the second half of 2011, due to the deteriorating export climate brought about by the weakening trends of recovery in the advanced economies. There are concerns about growth slowdown in the coming months as well, owing mostly to continuation of the low growth trend of the euro area economy and to an additional run-up in the international oil prices.

Chart 3

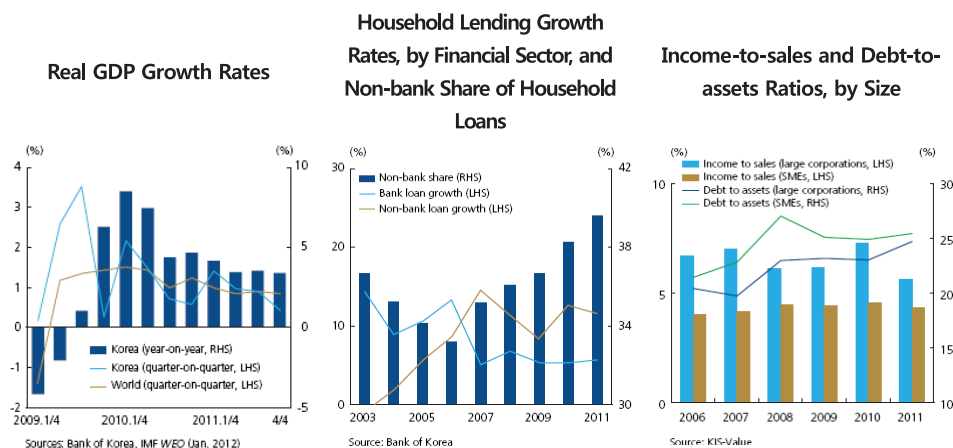


In the Korean economy, the trend of growth appears to be slackening, owing chiefly to continued uncertainty in the external conditions and the consequent erosion of investment and consumer confidence. The domestic economy is expected to post quarter-on-quarter growth rates of around 1% in the first half of 2012, pulling out of its sluggishness in the fourth quarter of 2011. It is forecasted to subsequently show a rising trend from the second half onward, albeit modestly, as external uncertainties moderate. Uncertainty as to the growth path remains, however, stemming mostly from the run-up in international oil prices and slowing growth in China and other emerging market countries.

Household debt continues to rise, led by non-bank lenders and low-income borrowers. The possibility of household loans turning sour on a large-scale in the short term does not seem high, however, given that the overall level of delinquency rates on household loans is still low (0.7% for banks, as of year-end 2011) and that the loan-to-value (LTV) ratios of mortgage loans are also low. Meanwhile, in line with the mounting debts of borrowers in the low income brackets, amid the intensifying polarisation of household incomes, the risks of these households with their low debt-servicing capacities going into distress could rise.

In the corporate sector, financial soundness is found to have declined on the whole, with profitability falling and cash generating capacity also weakening due to the slowdown in world economy activity and to lackluster domestic demand.

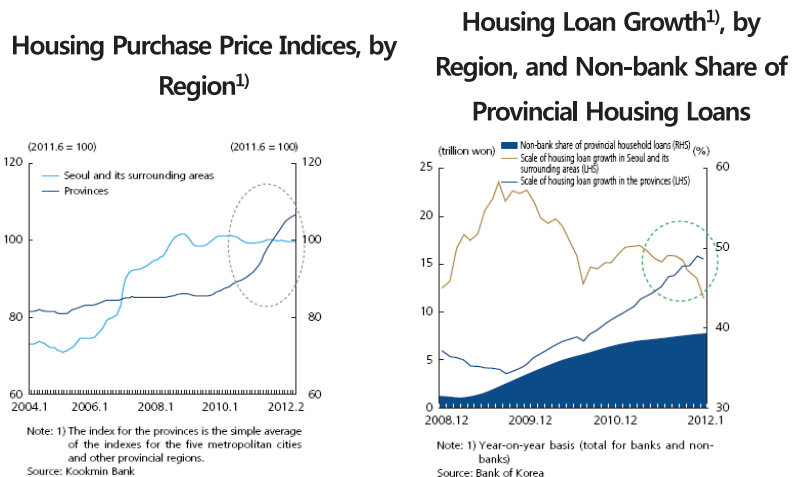
Chart 4



In the real estate market, the divergent movements across the regions continued, with housing prices appearing to weaken in Seoul and its surrounding areas, centering round large housing units, while in contrast exhibiting a steep upward trend in the provinces. This rapid housing price rise in the provincial areas is considered to be attributable mainly to a contraction in the supply of available housing and to the translation of demand for housing on a leasehold deposit basis into demand for outright purchases following the steep run in leasehold deposit prices. Downside risks to housing prices in Seoul and its surrounding areas predominate, including the limitations on incomes due to the business slowdown and the weakening of home-buying sentiment. Under these conditions, housing prices could fall steeply in a short period of time in case of any unexpected shock. There are fears in the event of such a case about insolvencies among households that have borrowed excessively relative to their incomes in anticipation of rising prices.

The household debts of borrowers have been increasing in the provinces, centering around borrowings from the non-banking sector, in tandem with the huge rise in housing prices there. The household debt problem consequently appears to be spreading from the Seoul metropolitan area to the provinces and from the banking to the non-banking sector.

Chart 5

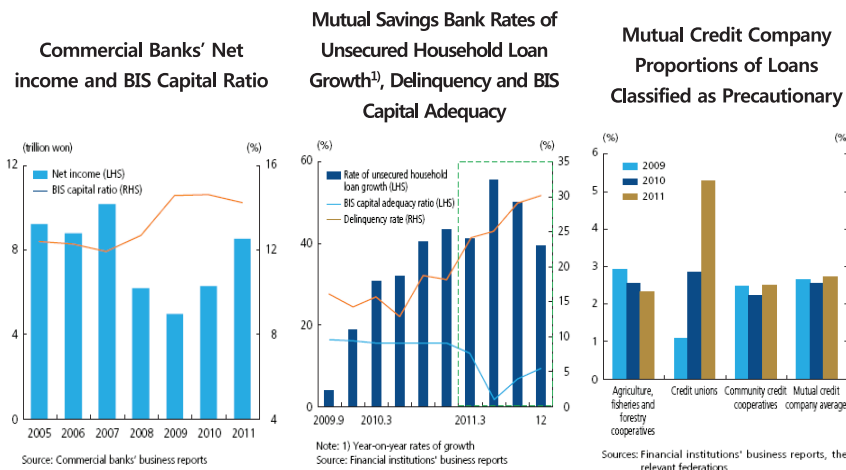


In the banking sector, asset soundness has been enhanced by the large-scale sales and write-offs of troubled assets amid smooth funding conditions. In addition, as profitability improved, capital adequacy also maintained a comparatively favourable level.

In the non-banking sector, there are concerns about a deterioration of management soundness in certain sub-sectors. Mutual savings banks are experiencing difficulties because of their lackluster business performances. In the event of a further souring of real estate project financing (PF) loans, coupled with deterioration in the soundness of unsecured household loans which have recently been surging, insolvency problems at savings banks could once again come to the fore.

The household loans of mutual credit companies (agricultural, fisheries and forestry cooperatives, credit unions and community credit cooperatives) are increasing rapidly, facilitated for instance by cutback of the banking sector in household lending. There is a possibility of these loans becoming distressed on a large scale if the improvement in household incomes is delayed, since some mutual credit companies are showing signs of worsening asset soundness.

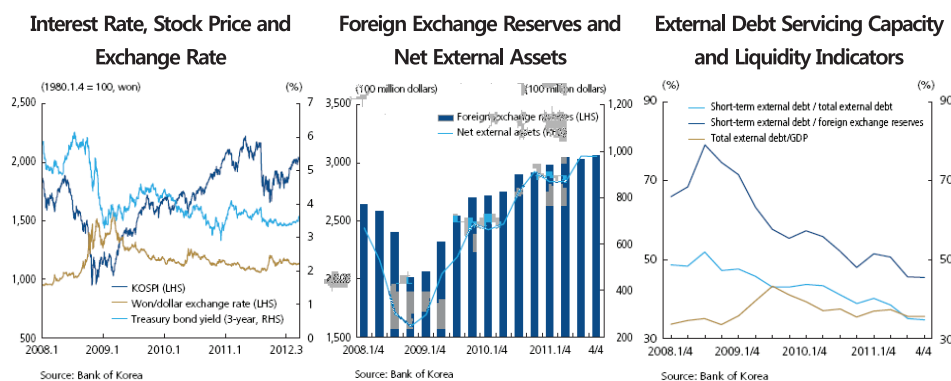
Chart 6



The Korean financial markets have presented a relatively stable picture, with reduced price variable volatility for example, as the international financial market unrest has eased entering 2012. Treasury bond (3-year) yields have been fluctuating within a narrow range at around the mid-3% level, influenced chiefly by global financial market conditions and foreign investor transactions. The main stock price index (KOSPI) fluctuated, after having fallen sharply from August 2011 in response mostly to the US sovereign credit rating downgrade and the resurfacing of the euro area sovereign debt crisis, but then shifted to an upward track from the beginning of 2012. The won/dollar exchange rate showed an upward trend from September 2011 due to the international financial market unrest, but has since early 2012 maintained a downward trend by and large.

Foreign exchange soundness appears favourable on the whole, with foreign exchange reserves and net external assets increasing and the external debt servicing capacity rising. The ability to repay short-term external debt has been enhanced as the ratio of short-term external debt to foreign exchange reserves has declined, while the ratio of total external debt to GDP, indicative of a nation's external debt servicing capacity, has been maintained at a stable level. Meanwhile, with the fall in short-term external debt, the external debt profile has also improved, as seen for instance in the declining weight of short-term total external debt.

Chart 7



In response to the mounting uncertainties at home and abroad, the Bank of Korea (BOK) prepared a wide range of policy initiatives for the maintenance of financial system stability and pursued them actively. As a first step, the BOK sought to heighten the macro-prudential soundness of the foreign exchange sector. It took measures, in consultation with the government, to alleviate capital flow volatility – including lowering the ceilings on the forward exchange positions allowed at foreign exchange banks and restricting the institutions handling foreign exchange business in their investment in foreign currency-denominated bonds issued domestically for Korean won funding purposes. The relevant regulations were in addition realigned to facilitate seamless implementation of the Macro-prudential Stability Levy. Along with this, in order to heighten the capacity for responding to overseas shocks, the currency swap arrangements with Japan and China were also enlarged.

Although financial system stability is being maintained in Korea, thanks mostly to the policy efforts of the BOK and the government, the latent risk factors are as ever present – including the possibility of the euro area sovereign debt crisis resurfacing, the existence of downside risks to the world economy, and the accumulation of household debt. Policy efforts, as set out below, must therefore be strengthened to secure the stability of the financial system even more firmly.

3. Current Status of Global Financial Regulation

3.1 Contents of Global Financial Regulations

3.1.1 Capital Regulations

In order to enhance loss absorption and reduce procyclicality, Basel III has strengthened the minimum capital requirements, introduced capital buffers, and implemented leverage regulation.

To strengthen the minimum capital requirements, Basel III requires banks to maintain sufficient high-quality capital through increasing their common equity tier 1 (CET 1) capital; introduces qualifying criteria; and enlarges the scope of deduction for goodwill, deferred assets, and treasury stocks, etc.

Basel III includes two capital buffers, a capital conservation buffer and a countercyclical buffer. Banks must build up capital conservation buffers amounting to 2.5% of CET 1 during non-stress periods and can draw down their accumulated buffers as losses are incurred. To ensure that banks set aside the buffer, capital distribution constraints will be imposed on banks whose capital levels fall within a specified range. The countercyclical buffer meanwhile aims to ensure that the banking sector capital requirements take account of the macro-financial environment in which banks operate. Banks are subject to accumulation of countercyclical buffers from 0 to 2.5% of their total RWAs (risk-weighted assets) in normal times, which they then deploy in periods of stress.

A leverage ratio regulation (Tier 1 capital/Total assets \leq 3.0%) has also been implemented to regulate the excessive accumulation of leverage by supplementing the existing risk-based capital regulation. This regulation is based on the recognition that financial institutions' excessive build-up of leverage worked as a major factor behind the global financial crisis.

Table 2
Basel II and Basel III Capital Regulation Comparison

				(%)
		Basel II	Basel III	notes
Minimum Capital Requirements	Total Capital	≥ 8.0	≥ 8.0	Enhancing quality of capital : deducting intangible assets, such as goodwill, from scope of capital
	① Tier1	≥ 4.0	≥ 6.0	
	CET 1	≥ 2.0	≥ 4.5	
	② Tier2			
		③ Tier3	②+③≤① abolishing Tier3	
Capital Buffers	Capital conservation	—	≥ 2.5	normal periods : maintenance above a certain level
	Countercyclical	—	0-2.5	stressed periods : absorption of losses using accumulated buffer
Leverage Ratio	Tier1/ Total Assets	—	≥ 3.0	regulate excessive accumulation of leverage

3.1.2 Liquidity Regulations

To enhance global consistency in liquidity management and banks' resilience to a liquidity crisis, Basel III introduces two new liquidity regulation criteria: the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR).

The LCR “aims to ensure that a bank maintains an adequate level of unencumbered, high-quality liquid assets that can be converted into cash to meet its liquidity needs for a 30-calendar-day time horizon under a significantly severe liquidity stress scenario specified by supervisors. As a minimum, the stock of liquid assets should enable the bank to survive until Day 30 of the stress scenario, by which time it is assumed that appropriate corrective actions can be taken by management and/or supervisors, and/or the bank can be resolved in an orderly way”². This standard will be implemented in 2015 after a period of monitoring from 2011 to 2014.

$$LCR = \frac{\text{Stock of high-quality liquid assets}}{\text{Total net cash outflows over next 30 calendar days}} \geq 100\%$$

2. “Basel III: International Framework for Liquidity Risk Measurement, Standards and Monitoring,” BCBS, Dec. 2010.

There are two categories of assets that can be included in the stock of high-quality liquidity assets. Assets to be included in each category are those that the bank is holding on the first day of the stress period. “Level 1” assets can be included without limit, while “Level 2” assets can only comprise up to 40%³ of the stock. All high-quality liquid assets should ideally be central bank eligible for intraday liquidity needs and overnight liquidity facilities in a jurisdiction and currency where the bank has access to the central bank.

The term total net cash outflows⁴ is defined as the total expected cash outflows⁵ minus total expected cash inflows⁶ in the specified stress scenario for the subsequent 30 calendar days.”

-
3. The calculation of the 40% cap should take into account the impact on the amounts held in cash or other Level 1 or Level 2 assets caused by secured funding transactions (or collateral swaps) maturing within 30 calendar days undertaken with any non-Level 1 assets. The maximum amount of adjusted Level 2 assets in the stock of high-quality liquid assets is equal to two-thirds of the adjusted amount of Level 1 assets after haircuts have been applied. (“Basel III: International Framework for Liquidity Risk Measurement, Standards and Monitoring,” BCBS, Dec. 2010).
 4. Where applicable, cash inflows and outflows should include interest that is expected to be received and paid during the 30-day time horizon.
 5. Total expected cash outflows are calculated by multiplying the outstanding balances of various categories or types of liabilities and off-balance sheet commitments by the rates at which they are expected to run off or be drawn down.
 6. Total expected cash inflows are calculated by multiplying the outstanding balances of various categories of contractual receivables by the rates at which they are expected to flow in under the scenario up to an aggregate cap of 75% of total expected cash outflows.

Table 3
High-Quality Liquid Assets

Categories	Items
Level 1 (0% haircut)	<ul style="list-style-type: none"> ■ Cash ■ Central bank reserves to the extent that the reserves can be drawn down in times of stress ■ Marketable securities representing claims on or claims guaranteed by sovereigns, central banks, non-central government PSEs, the Bank for International Settlements (BIS), the International Monetary Fund (IMF), the European Commission (EC), or multilateral development banks, and satisfying all of the following conditions: <ul style="list-style-type: none"> ● assigned 0% risk-weights under the Basel II Standardised Approach; ● traded in large, deep and active repo or cash markets characterised by low levels of concentration; ● having proven records as reliable sources of liquidity in the markets (repo or sale) even during stressed market conditions; and ● not being obligations of financial institutions or any of their affiliated entities. ■ For non-0% risk-weighted sovereigns, sovereign or central bank debt securities issued in domestic currencies by the sovereign or central bank in the country in which the liquidity risk is being taken or in the bank's home country; and, ■ For non-0% risk-weighted sovereigns, domestic sovereign or central bank debt securities issued in foreign currencies, to the extent that the holding of such debt matches the currency needs of the bank's operations in that jurisdiction.

<p>Level 2 (15% over haircut)</p>	<ul style="list-style-type: none"> ■ Marketable securities representing claims on or claims guaranteed by sovereigns, central banks, non-central government PSEs or multilateral development banks that satisfy all of the following conditions: <ul style="list-style-type: none"> ● assigned 20% risk weights under the Basel II Standardised Approach for credit risk; ● traded in large, deep and active repo or cash markets characterised by low levels of concentration; ● having proven records as reliable sources of liquidity in the markets (repo or sale) even during stressed market conditions (i.e. of maximum declines in price or increases in haircuts over a 30-day period during a relevant period of significant liquidity stress not exceeding 10%); and ● not being obligations of financial institutions or any of their affiliated entities. ■ Corporate bonds and covered bonds that satisfy all of the following conditions: <ul style="list-style-type: none"> ● not having been issued by financial institutions or any of their affiliated entities (in the case of corporate bonds); ● not having been issued by the bank itself, or any of its affiliated entities (in the case of covered bonds); ● assets having credit ratings from recognised external credit assessment institutions (ECAIs) of at least AA-12, or not having credit assessments by recognised ECAIs and being internally rated as having probabilities of default (PD) corresponding to credit ratings of at least AA; ● traded in large, deep and active repo or cash markets characterised by low levels of concentration; and ● having proven records as reliable sources of liquidity in the markets (repo or sale) even during stressed market conditions (i.e., of maximum declines in price or increases in haircuts over a 30-day period during a relevant period of significant liquidity stress not exceeding 10%).
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The NSFR has been introduced to promote more medium- and long-term funding of the assets and activities of banking organisations. This standard establishes a minimum acceptable amount of stable funding based on the liquidity characteristics of an institution's assets and activities over a one-year horizon.

In particular, the NSFR standard is structured to ensure that long-term assets are funded with at least a minimum amount of stable liabilities in

relation to their liquidity risk profiles. The NSFR aims to limit over-reliance on short-term wholesale funding during times of buoyant market liquidity and encourage better assessment of liquidity risk across all on- and off-balance sheet (OBS) items. The NSFR is defined as the ratio of the available amount of stable funding to the required amount of stable funding:

$$NSFR = \frac{\text{Available amount of stable funding (ASF)}}{\text{Required amount of stable funding (RSF)}} \geq 100\%$$

Available stable funding (ASF) is defined as the total amount of a bank's: (a) capital; (b) preferred stock with maturity of equal to or greater than one year; (c) liabilities with effective maturities of one year or greater; (d) that portion of non-maturity deposits and/or term deposits with maturities of less than one year that would be expected to stay with the institution for an extended period in an idiosyncratic stress event; and (e) the portion of wholesale funding with maturities of less than a year that is expected to stay with the institution for an extended period in an idiosyncratic stress event.

The required amount of stable funding is calculated as the sum of the value of the assets held and funded by the institution, multiplied by a specific required stable funding factor assigned to each particular asset type, added to the amount of OBS activity (or potential liquidity exposure) multiplied by its associated RSF factor.

The RSF factors assigned to various types of assets are parameters intended to approximate the amount of a particular asset that could not be monetised through sale or use as collateral in a secured borrowing on an extended basis during a liquidity event lasting one year. Under this standard, such amounts are expected to be supported by stable funding.

3.2 Current Status of Compliance by Korean Banks

3.2.1 Status of Capital Regulation Compliance

Korean banks exhibit good capital conditions considering that their BIS ratios stood at 13.8% on average as of the end of June 2012. The Korean banks' BIS ratio have maintained a stable trend since rising sharply from 10.9% to 14.7% in the September 2008 to March 2010 period, due to risk-weight reductions and capital enhancement through capital increases, and

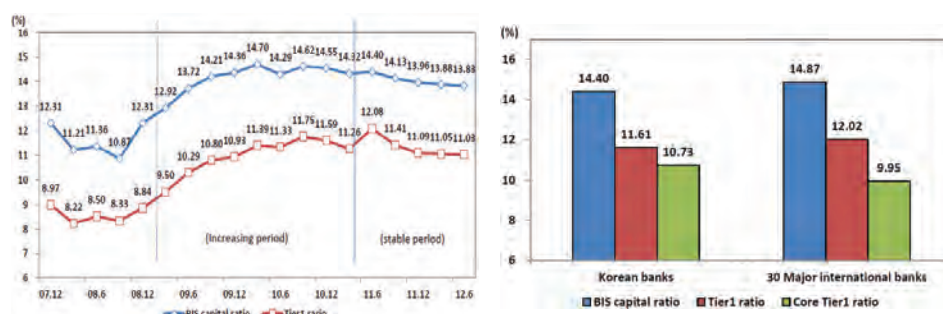
internal reserves. Their Tier 1 capital ratio has also risen to 11.03% at end June 2012 after recording 8.33% as of end June 2008.

From the standpoint of capital composition, the Korean banks can be assessed as in good condition due to their high ratios in Tier 1 capital of common capital. The Korean banks exhibit a higher Core Tier 1 capital ratio at 10.73%, than the average among the major international banks of 9.95%, while their BIS and Tier 1 capital ratios are a bit lower than those of the major international banks.

Chart 8

Korean Bank BIS and Tier 1 Capital Ratios

Capital Adequacy Comparison



Source: The Banker.

The results of a quantitative impact study (QIS) executed by the BCBS suggest that Korean banks' additional financial burdens needed to satisfy the enhanced capital regulations may not be sizable. As of end 2009, Korean banks⁷ exhibited a CET 1 ratio of 10.3%, a Tier 1 ratio of 10.4%, and a total capital ratio of 13.5% - all are much higher than the minimum Basel III requirements of 7.0%, 8.5%, and 10.5%, respectively. Their average leverage ratio, at 4.6%, was also much higher than the 3.0% minimum requirement.

It is however expected that Korean banks may face additional capital burdens if the Korean supervisory authority enhances the domestic rules and makes them stronger than the international rules, or imposes additional capital requirements on D-SIBs (domestic systemically important banks).

7. Eight major Korean banks.

3.2.2 Status of Liquidity Regulation Compliance

The QIS also found that the Korean banks' average LCR and NSFR fall short of the minimum requirements of 100%. The average LCR and NSFR of the major Korean banks were 76% and 98%, respectively, a bit lower than that of the major international banks.

Table 4
Basel III Liquidity Ratios (%)

		LCR	NSFR
Major banks ¹⁾	International banks (23 countries)	83	93
	Korean banks	76	93
Other banks ²⁾	International banks (23 countries)	98	103
	Korean banks	75	99

Notes: 1) Internationally active banks having more than 3 billion euros of Tier 1 capital; the Korean bank targeted by the QIS were Woori, Shinhan, Hana, KB, and IBK.

2) The Korean banks targeted were Daegu and Busan.

3) End 2009 basis.

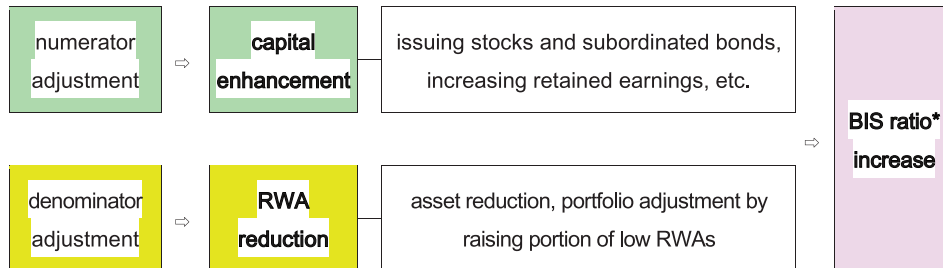
Source: Financial Supervisory Service.

4. Effects of Basel III Capital Regulations

4.1 Effects on Banks' Behaviour

It is possible that the Korean supervisory authority will impose stricter ruling on the Korean banks than the international rules. In this case, Korean banks may respond by either enhancing their capital or reducing their risk-weighted assets:

Chart 9
Banks Options for Raising BIS Ratio



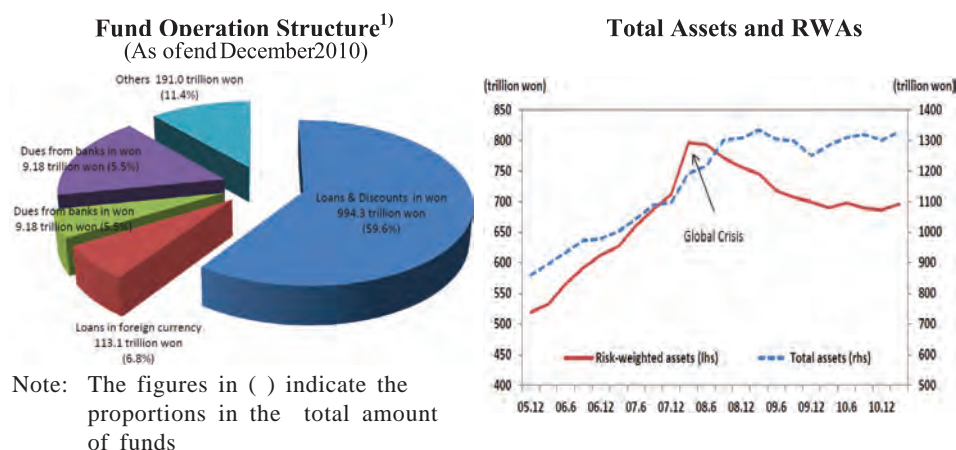
* BIS capital ratio = Regulatory capital / Risk-weighted assets.

The amounts of capital required in order for the Korean banks to meet the possible enhanced capital regulations will vary depending on the target capital ratio. If the target ratio (Basel III basis) is set at 13.0%, including the countercyclical buffer, then the amount of required capital is estimated at 16.6 trillion won. If the ratio is set at 14.6%, which was the average total capital ratio of the Korean banks in 2010, the amount of required capital is estimated at 34.3 trillion won.

If banks procure this capital through internal reserves, it is envisaged that the banks need three to five years to reach the target level. The Korean banks will usually procure capital through internal reserves rather than by issuance of new stocks. New stock issuance costs much more than other funding methods, and is hard to do often as it requires consideration of many factors, such as stock market conditions and the possibility of declines in the price of the existing shareholders' stock holdings.

If the capital regulations are enhanced, the banks' Treasury Bill (TB) investments is expected to increase due to their portfolio adjustments carried out to reduce risks. Since the global financial crisis, the volume of Korean banks' risk-weighted assets has fallen steadily while their total asset volumes have exhibited stable behaviour. This means that the Korean banks have replaced some of their high-risk assets with lower-risk ones.

Chart 10



Source: BoK.

Source: BoK.

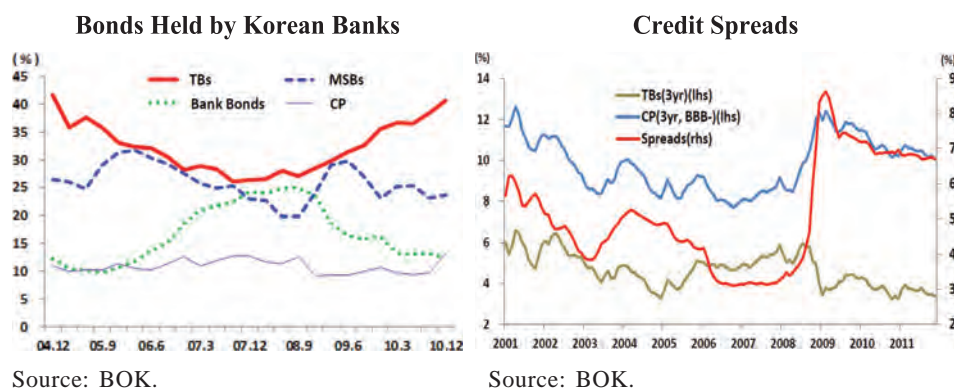
4.2 Effects on Financial Markets

Given banks' expected responses to the capital regulation enhancement, such as, for example, increases in capital and reductions in RWA, several developments in the Korean financial markets can also be anticipated, including a widening of the spread between the lending and deposit rates, a contraction in loans, and an expansion of the credit spreads.

Korean banks may widen their spreads between their lending and deposit interest rates to reflect their costs due to the capital regulatory strengthening. In such a case, they will try to do so by hiking the lending interest rates rather than by cutting the deposit interest rates. Considering this effect of Basel III, it seems reasonable to expect the trends of loan interest rate increase and loan-to-deposit rate spread enlargement since early 2009 to continue for some time, barring any changes in external conditions, such as occurrence of an economic boom.

Loans mainly to SMEs are likely to be reduced due to stiffening in banks' lending attitudes. This may lead to an increase in shadow banking loan demands, and work to boost the sector's share in the Korean loan market.

Chart 11



The credit spread between safe assets such as TBs and risky assets may also widen, in line with increasing downward pressures on the TB interest rates stemming from the banks' preference for safe assets.

4.3 Effects on Economic Growth

The existing literature analysing the effects of capital regulation enhancement at the macroeconomic level generally concludes that capital regulation enhancement may cause a slowdown in economic growth due to increases in lending rates and decreases in loan interest rates and decreases in loan volume.

In its analysis, the Macroeconomic Assessment Group (MAG)⁸ assessed the impact of the capital regulation enhancement on the global economy as likely to be modest. Assuming a steady increase in capital requirements amounting to a total 1%p after eight years, it expected the level of global GDP to fall by a maximum of 0.15% after 35 quarters, compared to that before the capital regulation enhancement.

8. The FSB and the BCBS established the MAG in Feb. 2012, to assess the Basel III regulations' macroeconomic impacts.

Table 5
Global Macroeconomic Impacts

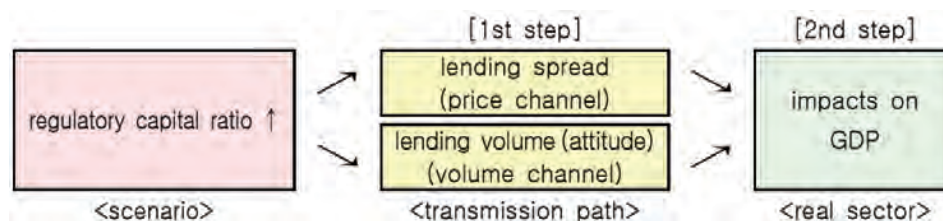
	Loan Amount (%)		Spread (bp)		GDP (%)	
	35 quarters	48 quarters	35 quarters	48 quarters	35 quarters	48 quarters
Median	-1.38	-1.47	15.5	12.2	-0.15	-0.10
Median (GDP-weighted)	-1.11	-1.11	16.6	12.8	-0.21	-0.18
Average	-1.29	-1.46	18.6	17.6	-0.20	-0.16
Average (GDP-weighted)	-1.85	-1.89	17.9	16.7	-0.26	-0.22

* Macroeconomic impacts of 1%p increase in regulatory capital ratio.

There are other approaches besides that of the MAG to measure the impacts of capital regulation enhancement on the economy. Barrell et al. (2011) showed, from an analysis of 713 banks in the OECD countries between 1993 and 2007, that a rise in the minimum regulatory capital ratio induces a bank propensity for risk aversion. Cosimano and Hakura (2011) suggested after analysing 100 major international banks that, the long term, the loan interest rates will rise by 16bp and loan volumes decrease by 1.3% owing to the Basel III capital regulatory enhancement. Angelini et al. (2011) estimated that the level of the global GDP will fall by 0.09% from its baseline projection due to a 1%p increase in the minimum regulatory capital ratio.

In this paper, an attempt to measure the impacts of the Basel III capital regulations on the Korean economy by applying the MAG methodology has been tried. The MAG used a two-step approach to assess these impacts – first, estimating the changes in lending spread and volume caused by a regulatory capital ratio increase, and then measuring the impacts on GDP using these estimated changes:

Chart 12
Macroeconomic Impact Analysis Process



The results of the estimation applying the MAG methodology to the Korean economy established that the GDP can fall by 0.23% compared to its baseline due to a 1%p increase in the regulatory capital ratio. The changes in the lending spread is calculated as the range of the lending interest rate increase necessary to offset the decline in ROE due to the regulatory enhancement⁹, while the changes in lending volume is estimated through a regression analysis between the regulatory capital ratio and the lending volume. The changes in GDP, lastly, are estimated using BOKDPM, a macroeconomic analysis model of the BOK.

The lending spread rises by 25bp in response to a 1%p increase in the regulatory capital ratio. The lending attitude at the same time exhibits a somewhat stiffening tendency, with the lending attitude index falling from 0.0 to -7.74¹⁰. Due to the resulting changes in the price and volume of lending, it is estimated that the GDP level will fall by a maximum of 0.23% after 35 quarters, assuming that the regulatory capital ratio is increased steadily during the period of 2011-2018 by a total 1%p:

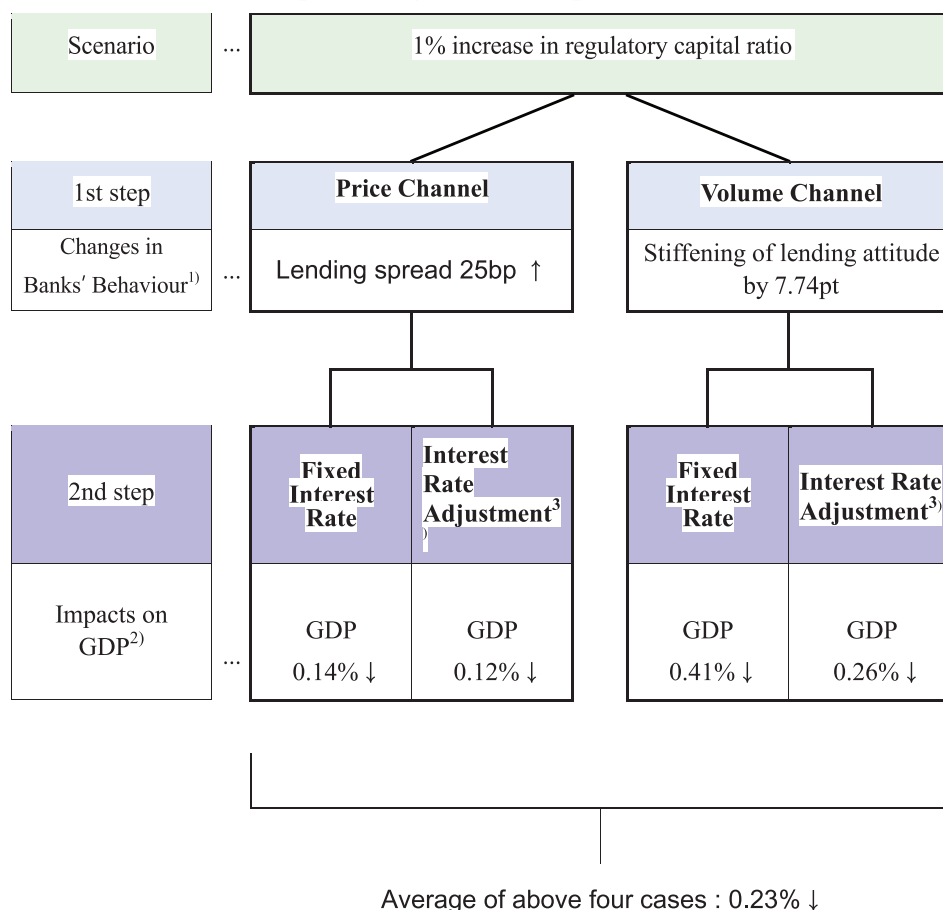
9. “The impact of changing capital and liquidity requirements on lending rates: some estimates based on accounting identities”, MAG, 2010.3.

$$ROE = ROA \times leverage$$

Banks will try to raise their ROAs to offset decreases in ROE caused by reductions in leverage due to regulation enhancement. While ROA can also be increased by cutting funding costs through a reduction in leverage, this analysis does not consider that effect.

10. The index has a value between -100.0 and +100.0, with 0.0 indicating maintenance of the status quo, -100.0 complete stiffening, and 100.0 complete easing.

Chart 13
Estimation of Capital Regulation Impacts on Macroeconomy



- Notes: 1) Assuming gradual adjustments of lending spread and volume.
 2) The numbers given are the largest decreases in GDP level (gap ratio) following the regulation strengthening (after 35 quarters).
 3) Assuming policy rate adjustment by the monetary authority in response to business fluctuations due to capital regulation enhancement.

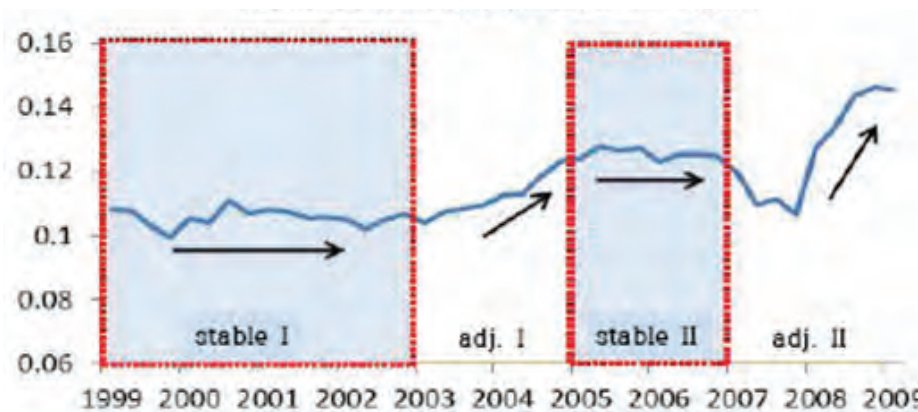
4.4 Banks' Risk Management Behaviour and Effects of Countercyclical Capital Buffer

The estimation conducted above did not consider variation in banks' responses to capital regulation enhancement would depend on their financial situation. Naturally banks will of course respond differently to the regulations depending on their financial states and market conditions, and the resulting policy effects may thus diverge from the authorities' intent. This situation can be verified by measuring the effects of the countercyclical capital buffer, newly implemented under Basel III, in consideration of the banks' responses.

A look at the trend of Korean banks' regulatory capital ratio ($K = E / A$) shows that, unless changes occur in external conditions, such as regulatory policy, they adopt a risk management behaviour of generally maintaining a certain consistent level¹¹ of K ($K = K^*$) except for the period 2004 to 2005 when banks reset their target regulatory capital ratios in response to the capital regulation tightening. K remained stationary near to the minimum requirements of 10% prior to 2003 and 12% after 2005. After 2007, the Korean banks then experienced sharp up and down fluctuations in K , due to the global financial crisis and to their preparations in advance for the Basel III implementation:

11. If a bank has a capital ratio higher than the regulatory level, it must pay the opportunity costs of holding excessive capital. On the other hand, if the actual capital ratio is below the regulatory level, the bank will be penalised by the supervisory authority. Thus, there are sufficient reasons for banks to maintain their capital at the required level.

Chart 14
Trend of K of Korean Domestic Banks



Source: Financial Supervisory Service, BOK.

These tendencies of the Korean banks can be confirmed by a hypothesis test. In this test, the null hypothesis is accepted for the stable periods but rejected in the adjustment periods, with significance level of 5%. It is thus possible to expect that the Korean domestic banks will maintain their K at the target level of K^* - unless unanticipated events arise. Note that when banks keep their capital ratios at the target level, a stable relationship between

$$\begin{cases} H_0 : K = K^* \text{ or } \dot{K} = 0 \\ H_1 : K \neq K^* \text{ or } \dot{K} \neq 0 \end{cases}$$

Table 6
Hypothesis Test Results

	1 st stable period (‘99.4q~’03.4q)	1 st adjustment period (‘04.1q~’05.4q)	2 nd stable period (‘06.1q~’07.4q)	2 nd adjustment period (‘08.1q~’09.4q)
t-statistic	-0.316	3.216	-1.095	1.875
p-value	0.756	0.020	0.315	0.049

* When $P = 5\%$, the null hypothesis (H_0) is rejected.

regulatory capital and assets exists because the risk weight remains stable:¹² These risk management behaviours may induce procyclicality. If K deviates from its target level, K^* , with changes in its components (E , ω , A), banks adjust the components to meet the condition again. In this process banks' assets, A , fluctuate; and fluctuations in ω will cause fluctuations in A the volume of credit provision to the real sector by the banks, which may ultimately induce procyclicality and amplify fluctuation of the business cycle in the real sector.

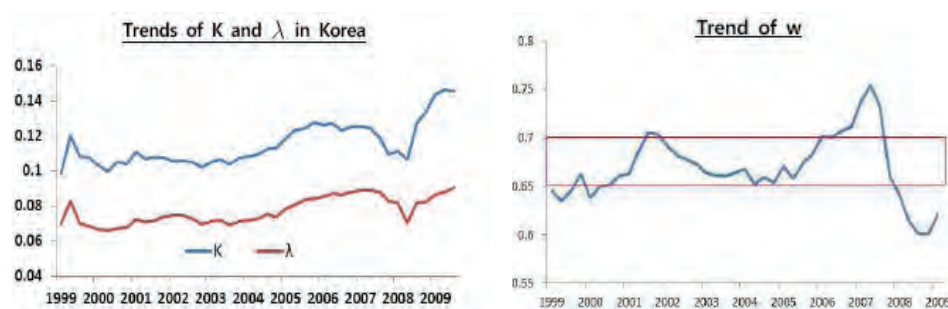
To examine this process in more detail, it is necessary to check the correlations among the components of the regulatory capital ratio, K , E and A , the major factors causing K to fluctuate, exhibit a nearly perfect positive correlation with a coefficient of 0.98. A Granger causality test between \dot{E} and \dot{A} changes in E and A , respectively, shows that \dot{E} causes \dot{A} with a one-year lag while there is no causality in the opposite direction:

12. Because the regulatory capital ratio K consists of equity, assets and risk weight ($K = E / \omega A$), the stable relationship between changes in equity and assets holds only when the risk weight is also stable:

$$K = E / \omega A \quad (\text{where } E: \text{equity}; \omega: \text{risk weight}; A: \text{assets})$$

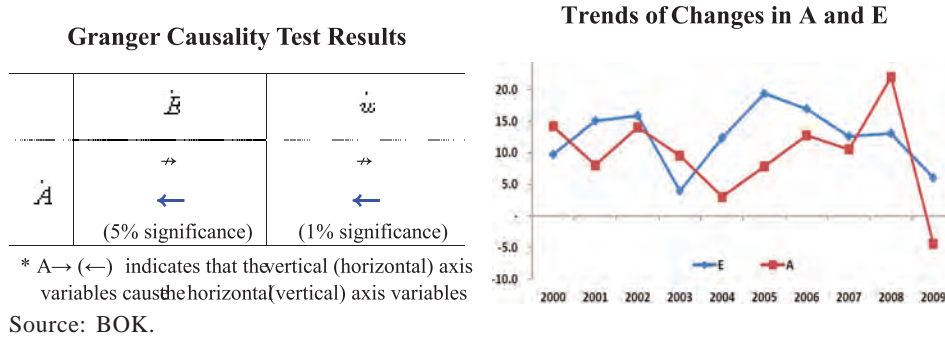
$$K = \frac{1}{\omega} \frac{E}{A} = \frac{1}{\omega} \lambda; \quad \lambda: 1 / \text{leverage}$$

$$\dot{K} = \dot{E} - \dot{\omega} - \dot{A}; \quad \dot{K} = 0 \text{ and } \dot{\omega} = 0 \rightarrow \dot{E} = \dot{A} \quad (\dot{x}: \text{percentage change in } x)$$



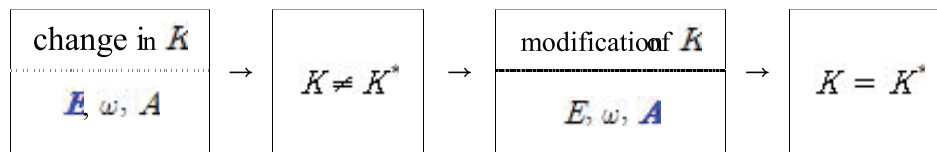
* The correlation between K and λ is a comparatively high 0.87.

Chart 15



These results imply that changes in K are generally induced by E , while adjustments K in are made mainly through modifications of A :

Chart 16
The Transmission Process of Change



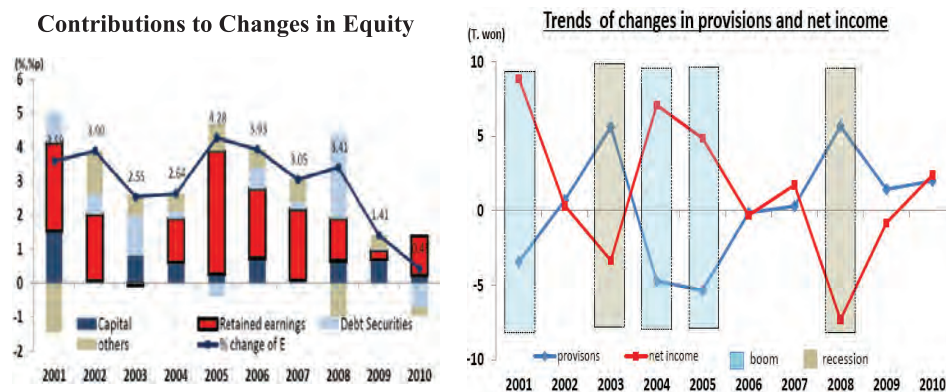
Based on the results of this analysis, it is understood that the risk management behaviours of the Korean banks, of maintaining their capital ratios at the regulatory level by adjusting their assets in response to capital fluctuations, may induce procyclicality. It is therefore possible to capture the factors causing procyclicality by examination of the factors behind fluctuations in capital.

Korean banks, during boom times¹³, will typically raise E with retained earnings instead of through issuance of equity. Because the Korean banks

13. A boom time is a period during which the rate of growth in profits exceeds its long-term average.

have a relatively low level of propensity to pay dividends¹⁴ their profits usually serve as the main factor driving changes in their retained earnings. And profits move procyclically largely because of the strong inherent procyclicality of loan loss provisions. Provisions increase (decrease) during recessions (booms), with the resulting increases (decreases) in loan losses. These procyclical movements of the provisions feed into profits and retained earnings, causing and to accordingly reveal procyclicality:

Chart 17
Contributions to Changes in Equity



For Korean banks, provisions contribute 71.8% on average to the increases in profits seen during boom¹⁵ times and 123.0% to their decline during recessions. Among the other components, interest incomes shows a

14

Comparison of Propensities to Pay Dividends¹⁾

	05	06	07	08	09	10
Korea	18.1	36.4	25.6	2.7	26.9	63.6
U.S. ²⁾	43.9	42.6	78.6	181.4	46.0	5.3
U.K. ²⁾	52.7	52.0	50.1	173.9	84.2	44.7

Notes: 1) Dividends / Profit

2) Top three banks of each country

15. The boom and recession is decided by the sign of growth rate to the previous year.

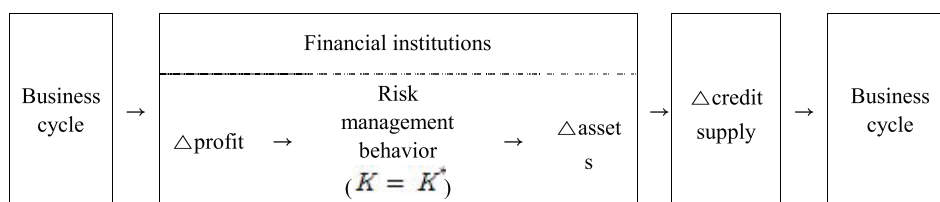
continuous rise irrespective of the business cycle, and so while it may thus contribute to the increase of profits in a boom, it has a negative contribution during recession. Fees and valuation profits meanwhile do not contribute much to profit variation:

Table 7
Contributions to Changes in Profits (%)

	Boom			Recession	
	2001	2004	2005	2003	2008
LLDs	38.5	66.7	110.1	168.3	77.6
Interest income	4.4	16.6	80.6	-92.2	-44.9

The mechanism that generates procyclicality in bank assets can thus be summarised as follows. First, fluctuations in the real sector cause changes in bank profits. Banks try to maintain their capital ratios at the target level in response for risk management. This management behavior induces changes in bank assets that generate fluctuations in the aggregate credit supply, amplifying the business cycle:

Chart 18
Mechanism of Procyclicality Inducement by Risk Management



Due to the risk management behavior described above, the effects of the countercyclical capital buffer may deviate from the supervisory authority's expectations. In response to the imposition of the countercyclical buffer, banks can choose other options besides reducing assets, the option desired by the supervisory authority, depending on the size of their adjustment costs. If such is the case, the effects of the countercyclical buffer can be limited.

Three options are available to the banks for complying with an increased regulatory capital ratio imposed by the authorities to restrain credit supply during boom times: ① capital (*E*) expansion; ② risk weights (*W*) reduction; or ③ assets (*A*) reduction.

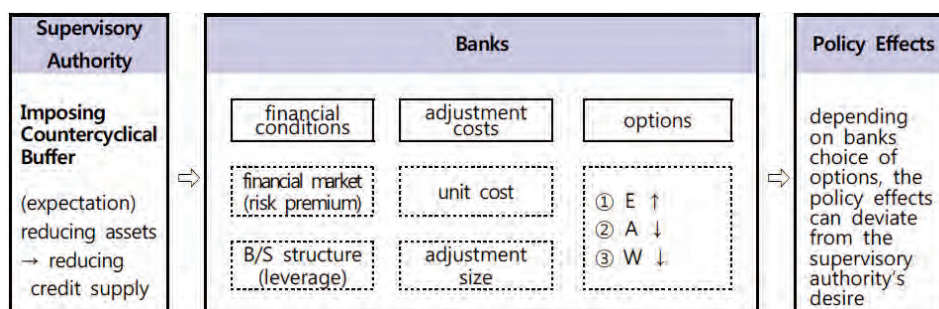
Banks will choose the option that is least expensive in terms of their adjustment costs. The adjustment costs can be measured as the differences between the optimal economic value added (EVA) before introduction of the countercyclical buffer and the changed EVA due to the options taken in response to the buffer. They are calculated by adjustment size (i.e. the degrees of deviation of the B/S items from their optimal levels due to the regulations) and by unit costs, (i.e. the costs of adjusting individual units of the balance sheet items concerned):

- $EVA = \text{Operating Profits} - \text{Liability Costs} - \text{Capital Costs}$

$$= (\text{Assets} \times \text{Rate of Return}) - (\text{Liability} \times \text{Funding Costs}) - (\text{Capital} \times \text{Funding Costs})$$

- $\text{Adjustment costs} = \text{Optimal EVA (before regulation)} - \text{Optimal EVA (after regulation)}$
 $= \text{Adjustment size} \times \text{Unit Costs}$

Chart 19
Effects of Imposing Countercyclical Buffer



A simulation based on the banks' position as of end 2010 shows that the Korean banks may choose to expand their equity when the countercyclical buffer is imposed. Among the different adjustment costs, those required by this option are the lowest (0.46 trillion won), below the cost of reducing either (0.70 trillion won) or risk weights (0.93 trillion won):

Table 8
Adjustment Costs of Options for Responding
to Countercyclical Buffer Imposition
(End-2010)

	ΔE	∇A	∇u
Adjustment size (a)	11.4 trillion won	-136.1 trillion won	-100.6 trillion won
Unit costs (b)	4.0%p	0.5%p	0.9%p
Adjustment costs (a × b)	0.46 trillion won	0.70 trillion won	0.93 trillion won

In 2003, following the supervisory authority's recommendation to raise the capital ratio from 4.5% to 5.5%, the Korean banks actually responded by enlarging equity and reducing the rates of increase in their assets simultaneously.

5. Effects of Basel III Liquidity Standards

5.1 Effects on Banks' Behaviour

Korean banks are expected to try to attract retail, and small- and medium-sized enterprise deposits, which are more favourable for LCR and NSFR calculation¹⁶. Especially, they are likely to try to attract stable deposits linked to incomes, since the run-off rate applied to these deposits in the calculation of the LCR is applied the lowest rate at 5%. Among the large enterprises deposits, "deposits having operational relationships" will be preferred due to their comparatively low run-off rate of 25%. The incentive for issuance of financial debentures, on the other hand, whose issuance amounts have decreased due to the Korean supervisory authority's regulation of the deposit-to-lending ratio since December 2009, will decline as they are not be admitted as high-quality liquid assets in the calculation of the LCR¹⁷.

16. Retail, small- and medium-sized enterprise deposits are applied low run-off rates of 5% or 10% in calculation of the LCR, and high ASF factors of 80% or 90% in calculation of the NSFR.

17. Under Basel III "CPs over AA-" are recognised as high-quality liquid assets, while bank bonds are not included because they can cause spillovers in a crisis due to interconnectedness among financial institutions.

Table 9
Effects of Liquidity Regulation on Funding Through Deposits

(%)

Run-off rate in LCR calculation		ASF factor in NSFR calculation	
■ Retail/SME stable deposits	5	■ Over one year ³⁾	100
■ Retail/SME unstable deposits	10		
■ Deposits having operational relationships ¹⁾	25	■ Retail/SME stable deposits	90
		■ Retail/SME unstable deposits	80
■ Large Enterprises, Sovereigns, Central Banks, Public Entities ²⁾	75	■ Large Enterprises, Sovereigns, Public Entities	50
■ Financial Institutions (Banks, Securities Companies, Insurance Companies, etc) ²⁾	100	■ Financial Institutions	0

Notes: 1) Including deposits for custody, clearing and settlement, cash management, etc.

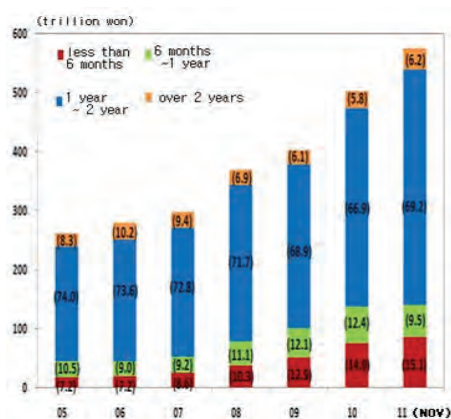
2) Non-collateral wholesale funding basis

3) Existing maturity basis

While trying to attract SME deposits, which are advantageous in calculation of the NSFR due to their comparatively stable character, the Korean banks will also attempt to extend their funding maturities to meet the NSFR requirements. To this end, the banks will try to raise the proportions of their longer-maturity time and periodic deposits relative to demand deposits, like MMDAs, and the demand for issuance of long-term bank bonds will increase.

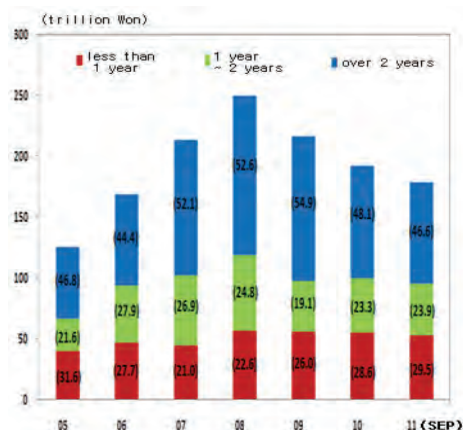
Chart 20

Deposit Volumes by Maturity



Notes: 1) Contract basis
2) Figures in () represent the proportions in total deposits (%).

Bank Bonds by Maturity

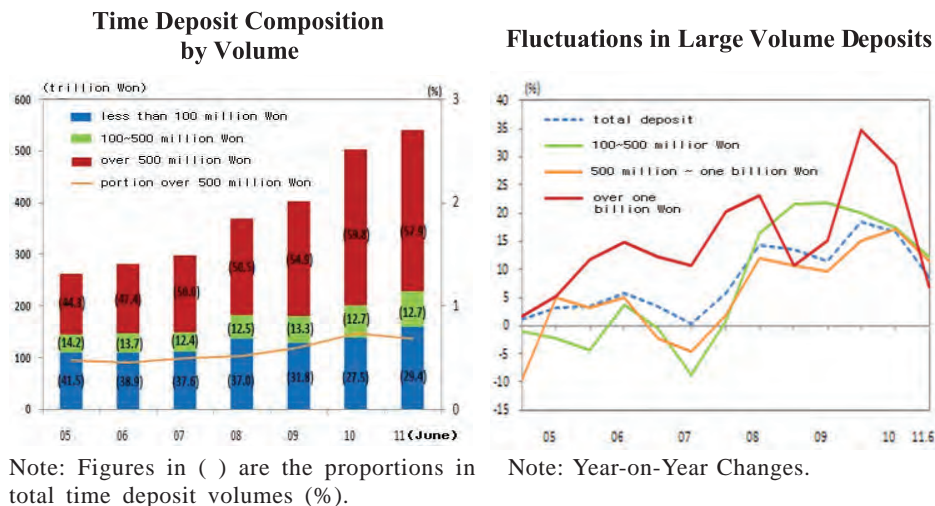


Notes: 1) Issue maturity basis
2) Figures in () represent the proportions in total bank bonds (%).

Due to saturation in the personal, small deposit market, the Korean banks will also try to attract large volume deposits from enterprises and households which are more favourable in NSFR calculation. Between enterprises and households, banks may in this regard prefer deposits by enterprises, which are usually much larger¹⁸ than those of households. And among households, banks will work to enhance their business services for wealthy customers, such as private banking.

18. The cash amounts including cash equivalents deposited by Korean enterprises registered in the Korean stock market had risen to 109 trillion won by 2010, from 53.2 trillion won in 2005.

Chart 21



To raise their LCR ratios to the minimum required 100%, the Korean banks will in addition expand their fund operations in TBs and Monetary Stabilisation Bonds (MSBs), to which 0% haircuts are applied, while reducing their investment in bank bonds and CP rated below AA-, which are excluded from high-quality liquid assets. In the case of New Zealand, which introduced its own liquidity regulation preparatory to implementation of Basel III, banks' TB holdings increased sharply from 0.7% at the end of 2008 to 4.2% as of end November 2011.

To satisfy the regulatory standards, the Korean banks may also try to reduce their lending to SMEs. If they expand their holdings of high-quality liquid assets such as TBs to enhance their LCRs, the share for lending in total capital operations will be relatively reduced. And in this case, the banks will first reduce their loans to SMEs, which are unfavourable in NSFR calculation. For NSFR denominator calculation, SME loans, which have a RWA of 35% are given a 85% RSF factor, while the RSF factor applied to housing mortgage loans is 65%.

5.2 Effects on Financial Markets

Looking at the Korean money markets, it is expected that the CP market will contract due to Korean banks' reductions in purchase commitments on which a 100% run-off rate is applied and shortening of maturities. Other money markets, such as the call and CD markets will meanwhile be stable.

Call operations are executed mainly for the purpose of reserve adjustment and the CD market has contracted already due to the loan-to-deposit ratio regulation. Demand will increase in the TB and MSB markets as banks will convert their bond holdings to high-quality liquid assets to raise their LCR. Korean banks' total bond holdings amounted to 215 trillion won as of end-2010, and they needed 43.5 to 44.2 trillion won of additional high-quality liquid assets to meet the LCR standards.

Table 10

Estimated Korean Banks' HQLA Amounts (Trillion won)		Korean Banks' Capital Operations (Trillion won)	
High-Quality Liquid Assets (A)	182.5	Items	
■ Level 1 Assets	164.1	■ Loans	1,080
Cash and Reserves	49.5	Enterprises	541
TBs	46	Households	427
MSBs	47.9	Public and others	112
Others	20.8	■ Cash and Deposits	76
■ Level 2 Assets	18.4	■ Bonds	215
Net Cash Outflow (B)	226.0	■ MMs, Funds (bond-type)	17
Shortage of High-Quality Liquid Assets (B-A)	43.5	Others ²⁾	280
		Total	1,669

Note: End-2010.

Source: BOK.

Notes: 1) End-2010.

2) RPs, Stocks, Bills bought in won.

Source: BOK.

In the case of the TB market, meanwhile, when the liquidity standards are implemented, demand may come to predominate and this increased demand may put downward pressure on TB yields.

The bank bond markets are expected to contract due to a decline in banks' investment demand, while demand discrimination between prime and non-prime CP in the CP market is also anticipated. The reduced investment demand for bank bonds may work as a factor widening credit spreads between bank bonds and TBs, and the bank bond yield curve may steepen due to the issuance of bank bonds mainly on a long-term basis. Meanwhile, banks' preference for prime CP may induce an expansion in spreads based on credit ratings. Additionally, if MSBs issued by the Korea Housing Finance

Corporation are admitted as high-quality liquid assets, Korean banks will find it easier to raise their LCRs through MSB securitisation, and the KHFC will come to increase its MSB issuance as a result.

6. Policy Implications and Conclusions

The global financial regulatory reform encourages changes in banks' business models, and these changes may affect the financial markets and ultimately the real sector. By increasing Korean banks' preference for safe assets, the Basel III liquidity standards are expected to lead to declines in TB/MSB interest rates and expansions in credit spreads. As Korean banks try aggressively to expand their capital due to capital regulatory enhancement, increases in lending rates and a contraction in the loan market are expected. Especially, if competition among banks to attract deposits increases after the introduction of the liquidity standards, the stability of the monetary policy transmission channel may erode due to increases in deposit interest rates and to expanded financial market volatility. It will thus be necessary for central banks to examine these changes in the monetary policy transmission channel carefully and consider them in their policy decisions. Given the expected SME difficulties in obtaining bank financing post-reform, it will also be necessary to arrange plans to stimulate financial support for the SMEs, for example by allowing issuance of P-CBOs based on SME CP and arranging recognition of them as high-quality liquid assets.

A countercyclical capital buffer has been newly introduced in Basel III. Detailed plans for its implementation, however, including on the method of its accumulation and guidance on its use is left to each jurisdiction's decision. For effective application of the countercyclical buffer, it is of utmost importance that reference indexes be developed concerning the beginning point of accumulation, the proper buffer level, etc. Cooperation and division of roles between the central banks and supervisory authorities are in addition necessary for effective buffer operation. This is because for successful implementation of the countercyclical capital buffer, harmonisation of judgement and management are required from both the micro and the macro perspectives. A recommendable division of roles is for central banks to take charge in macro-prudential areas and for the supervisory authorities to handle the micro-prudential regulations and follow-up management. The countercyclical buffer's policy effects may meanwhile deviate from those expected or be limited by banks' responses to it, as well as by the financial and economic conditions. In developing a model for countercyclical buffer operation model, it is therefore necessary to set a device for considering

financial and economic conditions. And given the evidence in the example of the Korean banking sector that the loan loss provisions work as a core factor inducing procyclicality, dynamic provisioning can be an alternative when the capital buffer's effects are limited by banks' responses. Policy measures to control banks' assets, such as the LTV ratio regulation, and to directly affect banks' profits, such as the reserve ratio, are meanwhile also available to supplement the countercyclical capital buffer.

Excessive bank competition for deposits due to the liquidity regulation can cause deposit interest rates to rise and induce increases in lending rates, or encourage more aggressive risk-taking behavior on the part of the banks. Deposits attracted by the raising of interest rates, such as large volume deposits by enterprises, are however apt to run off more easily than retail deposits, a propensity that may work as a potential risk factor during crisis. Proper monitoring of excessive competition is thus needed to prevent the related financial risk in advance.

Because the Basel framework is applied only to the banking sector, the appearance of regulatory arbitrage between the banking and shadow banking sectors is possible. To prevent systemic risks, it is thus needed to monitor potential risk factors from the perspective of the system as a whole and to identify the channels of risk transmission between the banking and shadow banking sectors.

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Chapter 6

BASEL III IMPLEMENTATION: CHALLENGES AND OPPORTUNITIES IN MALAYSIA

By
Muhammad Syukri bin Shamsuddin¹

1. Introduction

In December 2010, the Basel Committee on Banking Supervision (BCBS) issued a regulatory reform package in a document entitled “Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems”. The reform package, commonly known as Basel III, is designed to raise the resilience of the banking sector by, among others, strengthening the regulatory capital framework and introducing liquidity rules.

This reform is part of BCBS’s broader measures to improve the banking sector’s ability to absorb shocks arising from financial and economic stress by addressing key lessons learnt during the global financial crisis. The BCBS also aims to improve risk management and governance as well as strengthen banks’ transparency and disclosure.

In the context of capital adequacy, Basel III raises the minimum capital ratio that banks need to observe, outlines stricter eligibility criteria for recognizing capital and introduces other measures that ensure loss absorbency of capital. BCBS also introduces a non-risk-based leverage ratio, which would serve as a backstop to the risk-based capital measures that aims at reducing the risk of build-up of excessive leverage in the institution and financial system as a whole.

The capital framework is complemented by the introduction of a new liquidity framework, which is comprised of the Liquidity Coverage Ratio to promote short-term resilience to potential liquidity disruptions and the Net Stable Funding Ratio (NSFR) to encourage banks to use stable sources to fund their activities.

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These reform measures have been developed based on the lessons learned during the global financial crisis, which had mainly affected advanced economies. While some have argued that these recommendations may not be directly relevant, too complex and onerous for emerging economies, nonetheless, there are merits in implementing these measures in emerging economies such as Malaysia as the measures will foster higher standards of risk management practices of banking institutions and placing banks on a stronger footing against future crises.

The objective of this research report is to assess the potential impact of the Basel III capital reforms in the Malaysian context and whether there would be any significant issues for banking institutions in Malaysia to comply with the rules. This report paints the landscape of the Malaysian banking system and the prudential regulation applied to banking institutions with respect to capital adequacy in Section 2. Section 3 assesses the implications of applying the Basel III capital requirements in Malaysia in contrast to the current capital standard. Section 4 provides an understanding of the issues faced by the Malaysian banks in applying the rules while Section 5 explains how the country would move forward in terms of enhancing the capital framework. The research conclusion is in Section 6.

2. The Overview of Banking System and Risk Assessment

2.1 General Overview of the Malaysian Banking System

Malaysia has a comprehensive banking system that continues to evolve in response to the changing domestic and international landscape. Malaysia operates a dual banking system whereby conventional and Islamic banks operate alongside each other. Conventional banks consist of commercial banks and investment banks. Islamic banking activities are carried out either directly by Islamic banks (some of which are subsidiaries and affiliates of conventional banks) or through Islamic banking windows of conventional banks. The composition of banking institutions in the banking system regulated by Bank Negara Malaysia (BNM) as at June 2012 is given below:

Table 1
Number of Banking Institutions as at June 2012

Banking Institutions	Number
Commercial	27
Investment	15
Islamic (including international Islamic banks)	21
Total	63

Source: Bank Negara Malaysia.

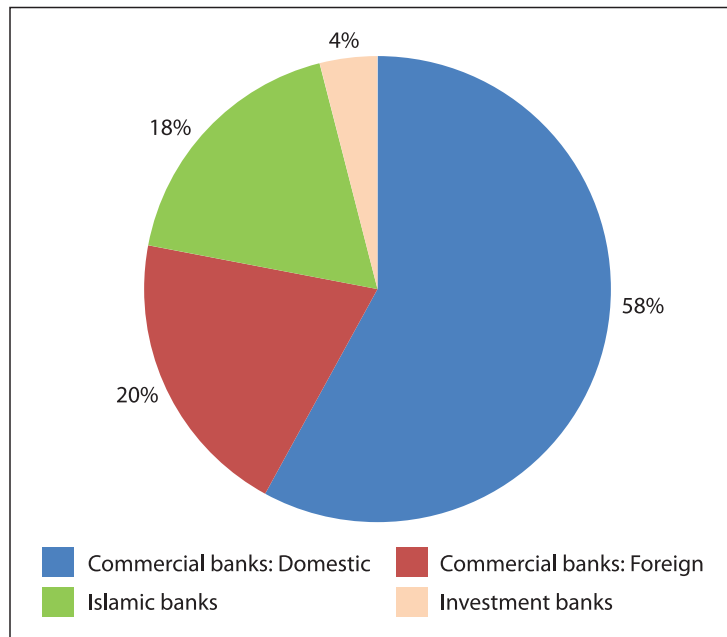
The most prominent type of institution in the industry is the commercial bank, whose main activities are accepting deposits, providing loans and advances, issuing of credit cards to consumers, providing leasing facilities and underwriting the issuance of private debt securities. There are eight domestic commercial banks and 19 foreign commercial banks which are locally incorporated. The domestic commercial banks account for 58% of the banking system assets while the locally incorporated foreign banks such as United Overseas Bank (Singapore), Standard Chartered (UK), BNP Paribas (France), and Deutsche Bank (Germany) in total make up 20% of the banking sector assets or RM353 billion. Islamic banks account for 18% of the banking sector assets and operate similarly as the commercial banks, with the difference being that their activities must be in compliance with the Shariah principles. Meanwhile, investment banks, mainly deal in bonds and equities underwriting, provide corporate finance services and provide financing necessary to complement investment banks' fee-based activities. Investment banks accept deposits as well, but only in amounts above RM500,000. A number of banking institutions and their affiliates have formed financial groups and operate across various financial sectors. For example, the eight domestic commercial banks have affiliates which are investment banks and Islamic banks, as well as affiliates conducting insurance, takaful and other financial activities.

Table 2
Total Assets of Malaysian Banks by Institution Types, 2011

	As at end-2011	
	RM million	\$US million
Commercial Banks	1,387	437
<i>Domestic</i>	1,034	325
<i>Foreign</i>	353	111
Islamic Banks	327	103
Investment Banks	69	21
Total Banking Sector	1,782	560

Source: Bank Negara Malaysia.

Figure 1
Total Assets of the Banking Industry by Type
of Banking Institution, 2011



Source: Bank Negara Malaysia.

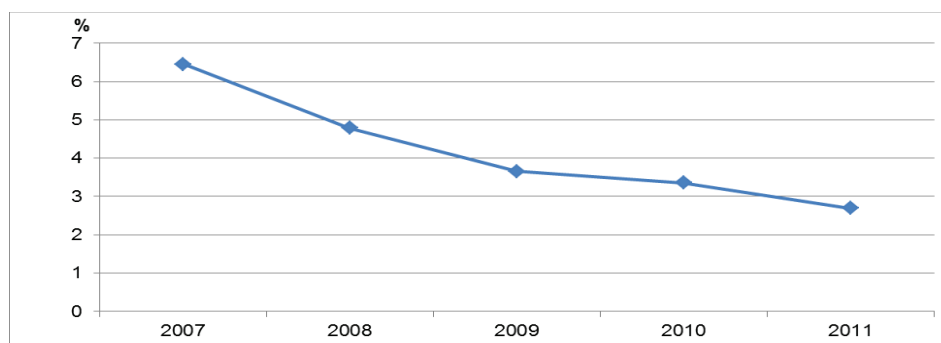
At the point this research is written, the commercial and investment banks are governed by the Banking and Financial Institutions Act 1989. However, investment banks are also subject to the Capital Market and Securities Act 2007, which is administered by the Securities Commission Malaysia. The governing legislation for Islamic banks, on the other hand is the Islamic Banking Act 1983. Moving forward, the governing legislation will be replaced by the Financial Services Act (for all conventional financial institutions, including commercial and investment banks) and Islamic Financial Services Act (for all Islamic financial institutions) in the middle of 2013.

The Malaysian banking institutions are commercially oriented and professionally managed and subject to prudential regulations and supervision. None of the banking institutions are directly owned by the Government, although several government-linked investment corporations (such as the Employment Provident Fund) are key investors. Banks in Malaysia are also complemented by development financial institutions (DFI) which are specialised lending

institutions mandated to promote socio-economic goals and to finance and serve certain strategic sectors such as agriculture, small and medium enterprises, infrastructures and capital intensive industries. DFIs are governed by the Development Financial Institutions Act 2002 (DFIA) and the Malaysian Government is a major shareholder in a number of these institutions. Some of these banks include the SME Bank, Exim Bank and Agro Bank.

Banking institutions in Malaysia have long operated with strong capital levels well above the regulatory minimum. The Risk Weighted Capital Ratio (RWCR) as at end of 2011 stood at 15.7 percent and Core Capital Ratio (CCR) at 13.7 percent. In addition, the capital issued by banks mostly consists of high quality Tier 1 capital, comprising paid-up capital and reserves. Capital in excess of the minimum regulatory requirement remained high at RM84 billion. The resilience of the banking sector was further reinforced by the sustained availability of ample liquidity to meet loan growth, demands for deposit withdrawals and other liquidity obligations.

Figure 2
NPL Ratio of Malaysian Banking System, 2007-2011



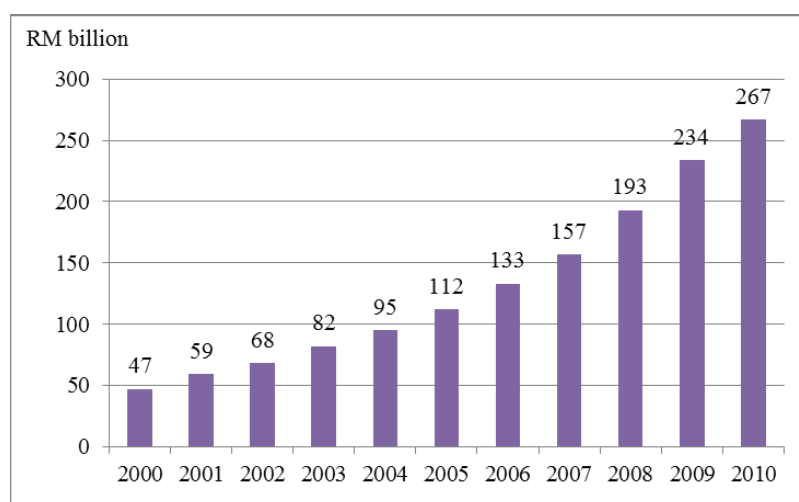
Source: Bank Negara Malaysia.

In terms of the banking activities in Malaysia, net financing amounts to RM1,325 billion, which reflects a significant increase over the past five years. Non-performing loans (NPL) have been also been on a downward trend in recent years, with the industry reporting a gross NPL ratio of 2.69 percent in 2011. Since 2007, the ratio has been decreasing with the NPL ratio in 2011 being less than half of the ratio in 2007.

Malaysian banking institutions are continuing their effort to expand their presence within the region. At present, Malaysian banking institutions operate in 19 countries globally, with most of them within the region. The overseas assets of these banking institutions and their affiliates grew from RM3.3 billion in 2002 to RM258 billion in 2010. The ability of Malaysian banks to increase their international presence and the increased range of products, services and distribution channels has been due to the continuous capacity building initiatives such as strengthened corporate governance and risk management practices.

Malaysia has also shown strong commitment to develop the Islamic finance sector and the prominence of Islamic finance has grown significantly over the years. The share of total assets of Islamic banks have grown more than two-fold in a decade, from 7.1 percent at the end of 2000 to 17.8 percent at the end of 2010.

Figure 3
Islamic Banking Total Assets, 2000-2010



Source: Bank Negara Malaysia.

2.2 The Application of Basel Capital Adequacy Framework in Malaysian Banks

The Basel capital framework was first implemented in Malaysia in 1989 and was later revised in 2007 to incorporate the Market Risk Amendment. The

framework was subsequently reviewed in 2008 to incorporate The Standardised Approach for Credit Risk, Basic Indicator Approach and Standardised Approach for Operational Risks of the Basel II package. In 2010, other parts of the Basel II capital framework were introduced which include the Internal Ratings-Based approach for Credit Risk, Internal Models Approach for Market Risks, the Pillar 2 (Supervisory Review Process) and the Pillar 3 (Disclosure Requirements).

In December 2011, BNM announced its commitment to implement the Basel III regulatory reforms package in line with the globally-agreed levels and timeline²(i.e., beginning January 2013). The first element of the Basel III reform package was rolled out with the issuance of the Capital Adequacy Framework (Capital Components) in November 2012 for implementation in January 2013. The paper sets out the components of eligible regulatory capital and aims to promote higher level and quality of regulatory capital that banks must hold. The requirements proposed by BNM are mostly in line with the proposals of the BCBS. The following section discusses in detail the assessment on the impact of Basel III standards on domestic banks.

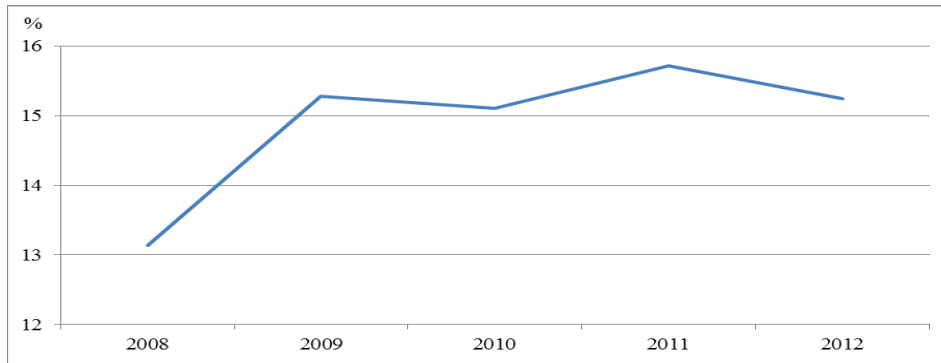
3. Assessment of the Impact of Basel III

3.1 Current Level and Adequacy of Capital of Individual Banks or Banking Groups in Terms of Key Performance Indicators for Capital

The Malaysian banking system as a whole continued to remain well capitalised with the aggregate RWCR and CCR for the year ending 2012 at 15.2 percent and 13.4 percent respectively. In effect, banking institutions are operating at levels well above the minimum RWCR requirement of 8 percent. This also translates to total capital in excess of the minimum requirement amounting to more than RM86 billion.

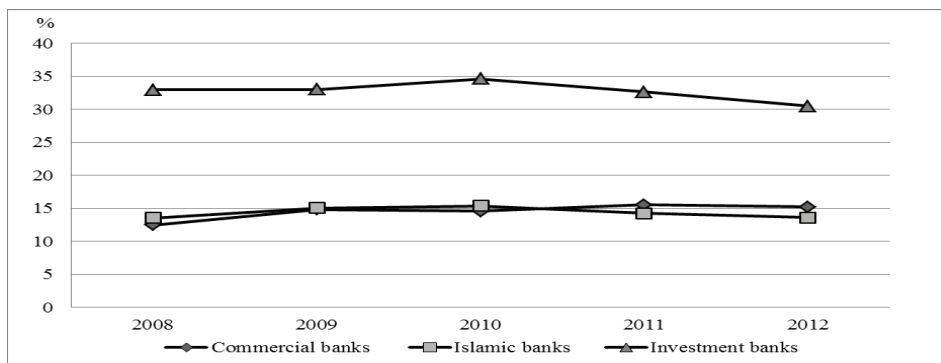
2. BNM notification to industry on Basel III implementation.
http://www.bnm.gov.my/guidelines/01_banking/01_capital_adequacy/12_nt_007_25.pdf.

Figure 4
Risk Weighted Capital Ratios of the Malaysian
Banking System, 2008-2012



This excess capital has been the general trend for Malaysian banks over the past few years. The banking system as a whole has been operating above the 15 percent capital ratio for the past 4 years, which is almost double the minimum requirement of 8 percent. Even in 2008, at the height of the global financial crisis, the Malaysian banking system recorded an average RWCR of 13.1 percent, or in nominal terms, translates to approximately RM47 billions of additional capital buffer above the minimum requirement.

Figure 5
Risk Weighted Capital Ratios According to
Banking Sectors, 2008-2012

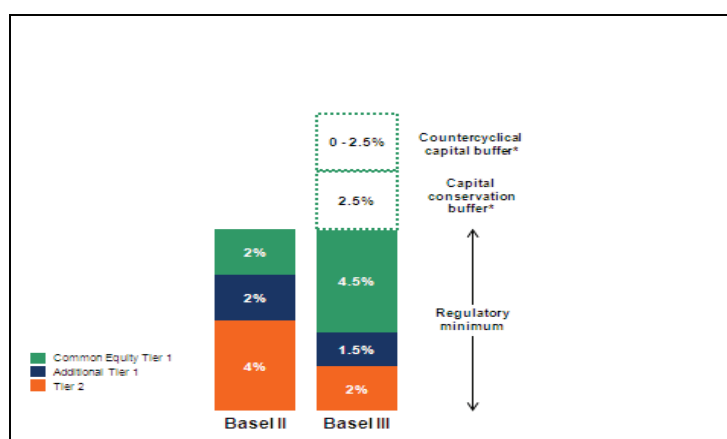


Source: Bank Negara Malaysia.

This trend has been maintained over the years due to the prudent earnings retention by banks. Over the last decade, approximately 58 percent of new capital of banking institutions in Malaysia can be attributed to increases in reserves and retained earnings. This effort may be partly credited to BNM's dividend approval regime which takes into consideration the results of stress tests as well as supervisory focus on capital adequacy, capital management practices and under the risk-based supervisory framework that ensures individual banking institutions operate at capital levels that are commensurate with their respective risk profiles and business growth strategies.

3.2 Assessment of Capital Levels in Terms of Enhanced Capital Requirements of Basel

Figure 6
Capital Requirements under Basel III



For Malaysian banks, there does not seem to be a significant challenge to meet the required levels under Basel III as their ratios, on average, are well above the minimum requirement. As the general trend, the current capital ratios show that most of the capital held by banks are of Tier 1, most of which are in the form of common equity.

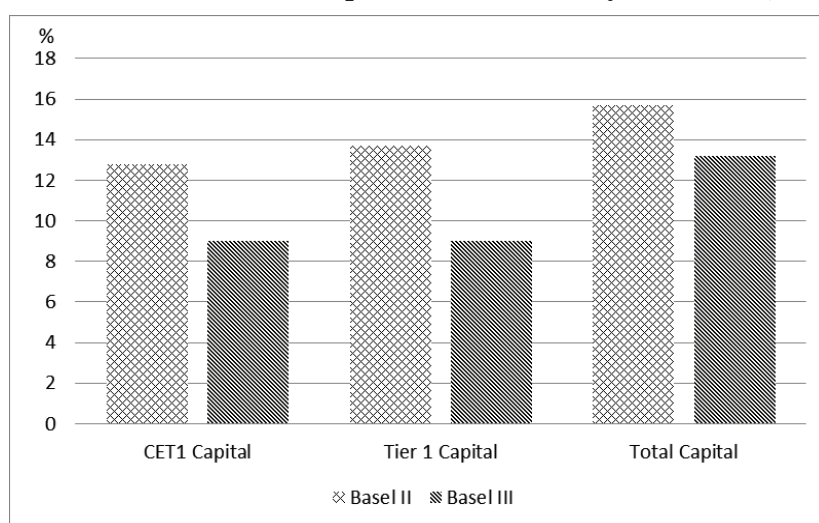
Table 3
Minimum Requirements and the Level of
Capital Ratio in Malaysia, December 2011

	Common Equity	Tier 1 Capital	Total Capital
Minimum Requirement	4.5%	6.0%	8.0%
Minimum Requirement + Conservation Buffer	7.0%	8.5%	10.5%
Malaysian Banking System (estimate) ³	9.0%	9.0%	13.2%

Source: Bank Negara Malaysia and author's estimates.

Based on the author's estimates, Malaysian banks are currently operating at levels double the amount required in terms of Common Equity Tier 1 (CET1) due to conservative profit retention. The ratio is higher than the minimum requirement even after including the conservation buffer. Hence in terms of meeting regulatory requirements of Basel III, the Malaysian banks are well positioned to meet the higher regulatory minimum.

Figure 7
Basel II and Basel III Capital Ratio of Malaysian Banks, 2011



Source: Bank Negara Malaysia.

Note: Basel III figures are author's estimate.

3. Assuming no transitional arrangement.

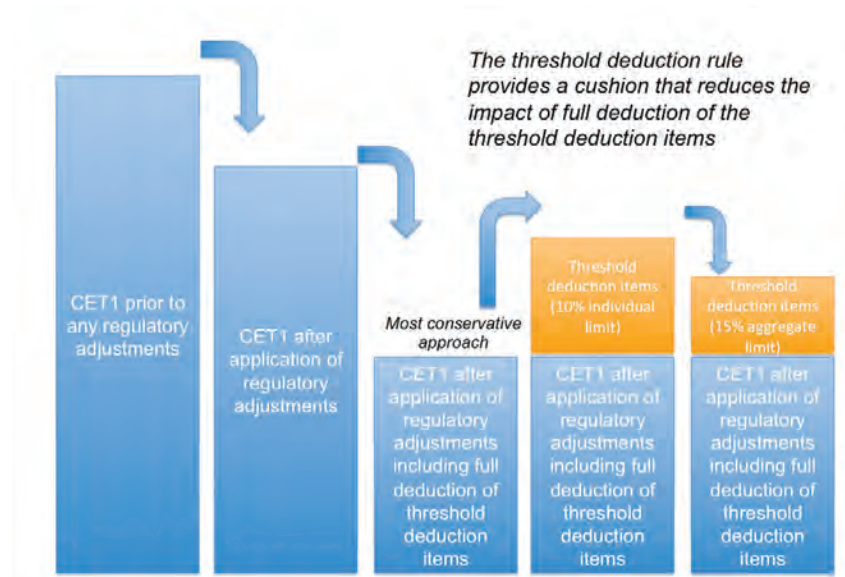
However, in comparison with the previous capital standard, the capital ratios of banks are expected to decrease especially in terms of the Tier 1 capital. Based on the author's estimates, the CET1 ratio of Malaysian banks is expected to decrease by 3.8 percentage points under Basel III, assuming no change to their business activities or balance sheet profile (e.g. through the raising of new capital instruments, reduction in risk-weighted assets). This is largely on account of investments in subsidiary and other financial institutions and unrealized fair value gains being deducted from CET1 capital as compared with Basel II where the deductions are mostly taken out of Total Capital. This challenge will be more significant for banks with a low Tier 1 ratio.

4. Issues and Challenges of Implementing Basel III Standard on Malaysian Banks

In terms of compliance to the minimum requirement, Malaysian banks are operating at comfortable levels and well above the minimum requirement as proposed under Basel III. Estimates show that most Malaysian banks will continue to report capital ratios in excess of the minimum requirement even if no transitional arrangement were provided.

Despite the above, there are several parts of the Basel capital rules which appear to run counter to the intention of strengthening capital resilience. For example, the BCBS, as part of the "threshold deduction rule" allows for three items, which include significant investments in the common shares of unconsolidated financial institutions, mortgage servicing rights, and deferred tax assets that arise from temporary differences, to receive limited recognition when calculating the CET1 capital ratio. This appears to go against the spirit of Basel III, which is to reduce any double leveraging in the financial industry.

Figure 8
Threshold Deductions



Source: Financial Stability Institute.

In this regard, BNM has taken a more conservative view and requires banks to fully deduct these items. While this may seem more punitive for banking institutions, BNM believes that the implementation of such a prudential requirement is essential to ensure the integrity of the capital framework. In mitigating any adverse impact, BNM has provided for sufficient transition period for these deductions to be gradually phased in.

The Basel III reform introduces a requirement to enhance the loss absorbency of Tier-2 capital instruments through Non-viability Loss Absorption (NVLA) trigger that would require the instruments to be converted to common equity or to be written off. The objective of the NVLA is to minimise the use of taxpayers' money when financial institutions are hit with financial distress. It would also avoid any implicit expectation of government support at times of stress. In the past, the notion of shareholders absorbing bank losses has been generally academic, as taxpayers' money have on many occasions been provided to support failing banks.

However, operationalizing this requirement remains a challenge as it is difficult to identify definitive trigger in determining the point of non-viability of a banking institution. The relevant authority may exercise the discretion in determining the point where without the conversion or write-off of the instrument the bank may cease to be viable or when a public sector injection is deemed necessary. An automatic or objective trigger such as when regulatory ratios decreases below certain level, may have the advantage of transparency but it would be difficult to design NVLA triggers that are robust to all possible crisis scenarios. In order to reduce the uncertainty of the discretionary trigger, the Capital Adequacy Framework (Capital Components) outlined some circumstances in which BNM and Malaysia Deposit Insurance Corporation (PIDM) may consider a banking institution as being non-viable.

The operationalization of the NVLA trigger could also create tension between regulators where the capital is issued and recognized in different jurisdictions. The new capital adequacy regime provides that the relevant jurisdiction which may have discretion in determining the NVLA trigger is the jurisdiction in which the capital is being given recognition for regulatory purposes. Therefore, where a banking institution is part of a wider banking group and issues capital instruments that the bank wishes for its Tier-2 capital instruments to be recognized in the consolidated group's capital, in addition to its solo capital, the discretion to trigger must additionally be given to the home regulator. In such circumstances, potential tension between home and host regulators may arise as there might be two or more regulators involved in determining the NVLA trigger for a particular capital instrument, especially when both authorities have a different view as to the viability of a bank.

5. The Way Forward and Strategic Options

The Basel Accord requirements are compulsory for the BCBS member countries, of which Malaysia is not. While Malaysia has no formal obligation to adopt the Basel III requirements, given that it is not a member of BCBS, there are compelling grounds for Malaysia to voluntarily adopt the Basel capital standard requirement. In general, the merits of the Basel III capital standards are that, the key weaknesses in financial regulations revealed during the financial crisis, are addressed. The standards increase the ability of the banking system to absorb shocks through higher capital requirements and buffers.

Besides that, the increased presence of Malaysian banks in the global market raises the need for them to comply with international standards to compete effectively with regional and global players. Malaysian banking institutions operate in 19 countries, with total assets amounting to RM258 billion, of which approximately 65 percent are in BCBS member countries. In this respect, various stakeholders such as investors, analysts and other market participants would expect Malaysian banks to operate on the same prudential standards as other internationally active banks.

Banking institutions in Malaysia have always operated at capital levels well above the minimum requirements. Most Malaysian banking institutions are also adequately maintaining their capital ratios beyond the Basel III minimum requirements, including the capital conservation buffer. The BCBS projects that the capital standard would have minimal long-run impact on global economic output and the benefit of having a more resilient banking system outweighs the cost. Given the strong capital levels and the positive economic outlook, banking institutions in Malaysia are well positioned to transition into Basel III, well-ahead of the 2019 timeline, while also moving to higher capital levels beyond the minimums prescribed by the Basel Committee.

While there is greater emphasis on common equity in the new regime, it must be stressed that Malaysian banks already hold most of their capital in the form of common equity due to the prudent earnings retention practiced by Malaysian banks. Approximately 58 percent of new capital of banking institutions in Malaysia over the last decade is attributable to increases in reserves and retained earnings. Therefore, it is unlikely for Malaysia banks to face significant challenges for maintaining high capital levels even in the highest quality form of capital.

The conservative capital management and prudent earnings practices of banking institutions may also, to a certain extent, be credited to the supervisory practice of assessing capital adequacy and capital management practices under the risk-based supervisory framework. Emphasis is directed at ensuring that individual banking institutions operate at capital levels appropriate to their respective risk profiles, and that dividend payouts appropriately consider the results of stress tests.

Notwithstanding the capital strength of Malaysian banks, BNM does not view it necessary to apply an accelerated implementation time frame, or a higher capital standard in Malaysia. This is given the fact that Basel III already significantly strengthens the capital requirement, with minimum common equity

requirements effectively rising more than three-fold, from 2 percent to 7 percent (including the capital conservation buffer). Meanwhile, the gradual phasing-in of the higher capital requirements will allow banking institutions to further strengthen their capital position in a comfortable manner. This gradual approach would also facilitate lending activities in the economy notwithstanding any potential economic challenges moving forward. The approach to phasing-in adopted by Malaysia would be similar to the proposed timeline by BCBS as outlined in Table 4.

Table 4
Timeline for Implementation of Capital Levels

	2013	2014	2015	2016	2017	2018	2019
Minimum Common Equity Capital Ratio	3.50%	4.00%	4.50%	4.50%	4.50%	4.50%	4.50%
Capital Conservation Buffer				0.625%	1.25%	1.875%	2.50%
Minimum Common Equity plus Capital Conservation Buffer	3.50%	4.00%	4.50%	5.125%	5.75%	6.375%	7.00%
Minimum Tier 1 Capital	4.50%	5.50%	6.00%	6.00%	6.00%	6.00%	6.00%
Minimum Tier 1 plus Capital Conservation Buffer	4.50%	5.50%	6.00%	6.625%	7.25%	7.88%	8.50%
Minimum Total Capital	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
Minimum Total Capital plus Capital Conservation Buffer	8.00%	8.00%	8.00%	8.625%	9.25%	9.875%	10.50%
Capital Instruments that No Longer Qualify as Non-Core Tier 1 or Tier 2 Capital	Phased-out over 10 year horizon beginning 2013						

6. Conclusion

The Basel III regulatory reforms package has outlined proposals that are intended to increase the banking sector's ability to absorb shocks by addressing key lessons learnt during the global financial crisis. The minimum requirement has been significantly raised with great emphasis on raising the quality of capital and ensuring the loss absorbency of capital. The standard also encourages the build-up of buffer at times of economic upturn and drawing down the buffer during times of stress.

The urgency of implementing the reform in Malaysia may not be as critical as advanced economies, and the benefits of implementing all elements of the capital standard may not be directly and immediately evident in the context of Malaysia. Nonetheless, there are compelling grounds for Malaysia to apply the standard as the country continues to develop the financial system and its economy. As the major domestic banking groups expand their presence globally and regionally, adopting an international standard such as Basel III would be critical for ensuring that this development is pursued in a sustainable manner.

Malaysian banking institutions have been operating at capital levels well above the minimum requirements of the previous capital standard and the new Basel III framework. Although some reduction in capital ratios is expected, the ratios would nonetheless remain above the minimum requirement including the conservation buffer. Even though the Basel III proposals are demanding, Malaysian banks are well positioned to adopt the proposals without significant difficulties.

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Chapter 7

BASEL III IMPLEMENTATION: CHALLENGES AND OPPORTUNITIES IN MYANMAR

By
Cho Cho Lwin¹

1. Introduction

1.1 Objectives and Scope of Study

The aim of this study is to examine how the Myanmar financial system can comply with the Basel I, II and III accords in the financial sector and how the banks can protect depositors and underline the role of qualified capital as collateral for deposits.

The following are objectives of this study which purposes to:

- Study the soundness of the banking system in Myanmar;
- Identify the issues in banking sector development in general and assess the need for Myanmar banks to be in compliance with the Basel Accord requirements;
- Highlight the opportunities and challenges in implementing Basel I, II and III; and
- Assess the impact of implementing Basel on economic development.

Reviewing Myanmar's financial system over the past 60 years, the main players in the country's centrally planned economic system, established in 1962, have the state-owned banks and semi-government banks. The financial system contributed to the development of the national economy guided by government-planned targets. The Central Bank of Myanmar (CBM) - the monetary authority, controls the monetary system, such as interest policy,

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reserve requirement, capital adequacy measurement and liquidity ratio, to facilitate the smooth functioning of the financial system.

Although Basel I was intended to be implemented in the emerging economies, its application in these economies was made under the pressure of international institutions and the policy-originating countries which created foreseen and unforeseen distortions within the banking sectors of these emerging economies. However, in response to the banking crisis of the 1990_s and the criticisms of Basel I, the Basel Committee adopted the Basel II. It is known as “A Revised Framework on International Convergence of Capital Measurement and Capital standards.” Under Basel II, the minimum capital requirement under the Basel I is expanded. Basel II provides banks with risk-weighted assets and tries to eliminate the loopholes in Basel I that allow banks to take on additional risk. Its first mandate is to broaden the scope of regulation to include assets of the holding company of an internationally active bank. This is done to avoid the risk that a bank will hide risk-taking by transferring its assets to other subsidiaries, and to incorporate the financial health of the entire firm in the calculation of capital requirements for its subsidiary bank.

The recent global financial crisis has revealed weakness in the risk management process of Basel II. Because Basel II did not adequately anticipate such as a collapse in market liquidity, investor confidence disappeared and banks faced severe losses in the market value of securities held by them. The Basel Committee adopted Basel III in late 2010. It is imperative for Myanmar to adopt the Basel accords step by step in line with the Myanmar financial system.

This paper focuses on the Basel Accords I, II and III implemented by the banks in Myanmar in accordance with the Bank for International Settlement (BIS)’s adopted schedule. As Myanmar is not yet integrated into the global financial and business community, it is not much affected by the world financial crises. The financial institutions and banks are practicing partially the requirements of Basel I in their daily operation. If the financial sector implements Basel II and III, the financial institutions are expected to face opportunities and challenges.

1.2 Outline of Paper

This concept paper outlines the proposal to strengthen the capital adequacy standards of the banking institutions in Myanmar, in line with the

requirements set under the Basel Accord, focusing to raise the quality, consistency and transparency of regulatory capital.

Many countries initiated financial reforms to develop the banking sector. In the context of Myanmar, its economic system was changed to a market-oriented system in 1988 and the Central Bank of Myanmar Law, the Union of Myanmar Foreign Investment Law and a host of other rules and regulations were promulgated in line with the market requirements.

The government allowed the private sector to establish and operate domestic and foreign banking business with the enactment of the Central Bank of Myanmar Law 1990 and Financial Institutions of Myanmar Law 1990. The private banks played an important and substantial role in the development of the banking sector by facilitating the intermediation of funds in the economy and contributing also to regional economic development. These private banks provide a full range of commercial banking services while expanding their branch network and offering additional services such as underwriting and trade financing facilities.

The CBM introduced Basel I to Myanmar banks in 1990 and the Capital Adequacy Ratio requirement of 10 percent. Banks are required to comply with the Liquidity Ratio, Reserve Ratio, and Loans to Deposit Ratio. The CBM closely monitors the banks by analysing their daily returns and financial positions in addition to on-site examination and off-site monitoring. The financial sector in Myanmar, particularly the banking sector, is currently in a stable position and has gained much progress. In order to establish a sound and efficient financial system functioning in harmony in the market economy, various financial reform measures have been undertaken to lay down the foundation of a modern financial system in Myanmar.

Therefore, the CBM has to review the existing regulations to minimise the possibility of regulatory arbitrage and assess the need for additional prudential regulations in implementing Basel II. Moreover, Myanmar needs to have sufficient human resource skills and technology. In order to improve and optimise the quantity and qualification of its human resources, a capacity-building programme is essential.

The paper is organised in six sections. Section 1 provides the introduction and the scope of study. Section 2 describes the overview of the financial system in Myanmar. Section 3 provides an assessment of the impact in the

implementation of the Basel standards. Section 4 presents the issues and challenges of implementing the Basel Standards in the context of the current national economic goals. Section 5 points the way forward and outlines the strategic options available covering capital and liquidity management. Finally, Section 6 concludes with some suggestions.

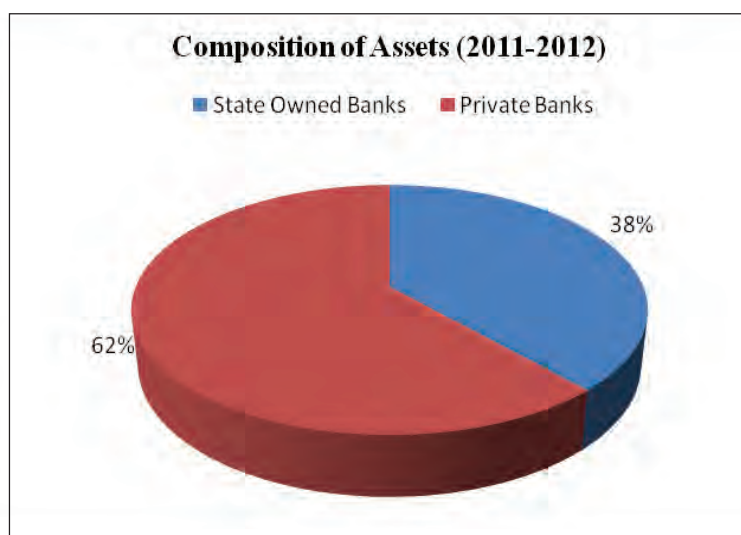
2. Overview of Financial System and Risk Assessment

2.1 General Overview of the Financial System

2.1.1 The Financial System in Myanmar

The relevant new laws and regulations were promulgated in 1990 to facilitate the intermediation of funds in the market economic system. The financial system of Myanmar consists of the banking sector and the non-banking sector. The banking sector includes the CBM, 4 state-owned banks, 19 private banks and 23 representative offices of foreign banks. The non-banking sector includes insurance corporation, Securities Exchange Centre, small loans enterprise and a financing company. The private banks and state-owned banks hold 62 percent and 38 percent, respectively, of the total assets of the banking sector.

Chart 1



Source: Central Bank of Myanmar.

2.1.2 Regulatory Regime in Myanmar

The government of Myanmar promulgated the following laws to liberalise the financial system;

- The Foreign Investment Law, 1988;
- The Central Bank of Myanmar Law, 1990;
- The Financial Institutions of Myanmar Law, 1990;
- The Myanma Agricultural and Rural Development Bank Law, 1990;
- The New Savings Bank Law, 1993; and
- The Myanma Insurance Law, 1993.

The draft of the new Central Bank of Myanmar law has been submitted to the Hluttaw for approval, and the Foreign Exchange Management Law has been enacted on 10 August 2012.

Under the Central Bank of Myanmar Law, 1990, the CBM is empowered to carry out the following functions:

- Advising the government on economic development policies and plans and on the state budget;
- Sole issuance of local currencies and notes;
- Licensing, inspection and supervision of the financial institutions;
- Regulating the financial system;
- Formulating and implementing monetary policy;
- Implementing exchange rate policy and controlling foreign exchange transactions; and
- Managing the international reserves.

The CBM needs to take the necessary actions to assure the soundness of the banking system and to regulate domestic and foreign banking operations systematically by applying the laws, rules and regulations which are in line with the international standard.

The CBM's role in promoting economic development is regulating the operations of the banks to create a financial environment conducive towards the achievement of balanced and sustainable economic development. At present, the banks are complying with the rules and regulations adopted by the CBM in accordance with the Basel I Accord.

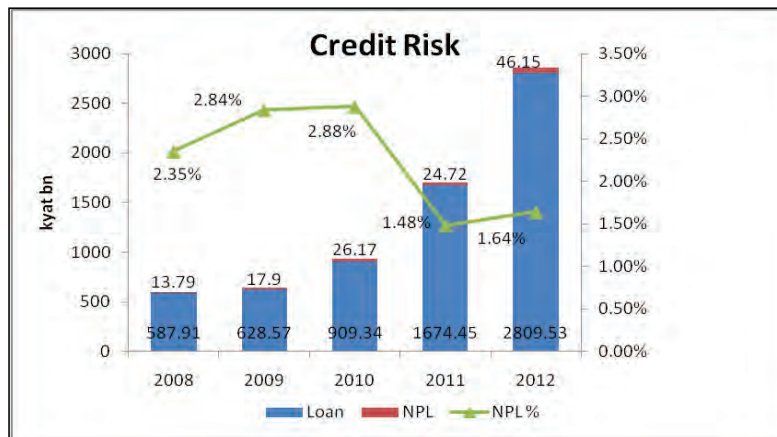
2.2 Risk Oversight Assessment and Vulnerabilities

The banking system in Myanmar faces minimal risk as Myanmar has yet to conduct foreign banking business. Only four banks are engaged in remittance business with Malaysia, Singapore and Thailand. However Myanmar banks will be conducting foreign banking business in the near future. With the development of the banking sector and implementation of foreign banking business, banks are envisaged to face more risks, such as operational risk, credit risk and liquidity risk.

2.2.1 Credit Risk

Credit risk is one of the major problems of the banks. The CBM issued instructions on assets classification. Banks advance loans against security. In Myanmar, all banks are required to set aside a general provision of 2 percent of the total amount of loans and maintain a provision of 50 percent for doubtful loans and 100 percent provision for bad loans in accordance with Instruction No. (6) of the Internal Audit and Bank Supervision Department. Almost loans of the banks are collateralised. Moreover, banks are not permitted to lend more than 20 percent of their capital plus reserves to a single individual, an enterprise or an economic group.

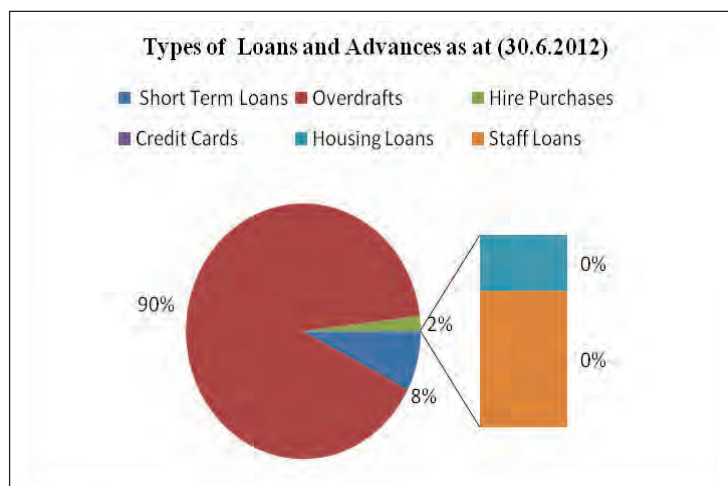
Chart 2



Source: Central Bank of Myanmar.

Chart 3 below shows the types of loans and advances of the private banks as at 30 June 2012. Short-term loans of duration not more than a year, are predominant, followed by mortgage loans.

Chart 3



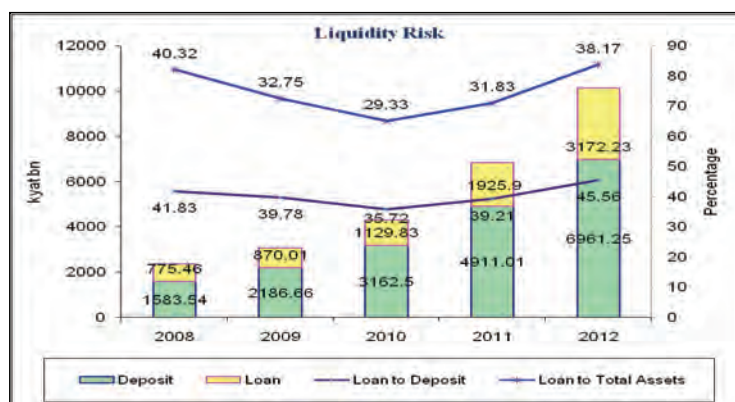
Source: Central Bank of Myanmar.

2.2.2 Liquidity Risk

In Myanmar, the banking sector faced a liquidity crisis in 2003. It was triggered by rumors and caused loss of public confidence in the banks. It prompted people to withdraw their deposits from the banks. The CBM injected the needed funds by obtaining government treasury bonds and securities and accepting banks' mortgages. Banks' poor liquidity management in maintaining inadequate liquidity was one of the major causal factors.

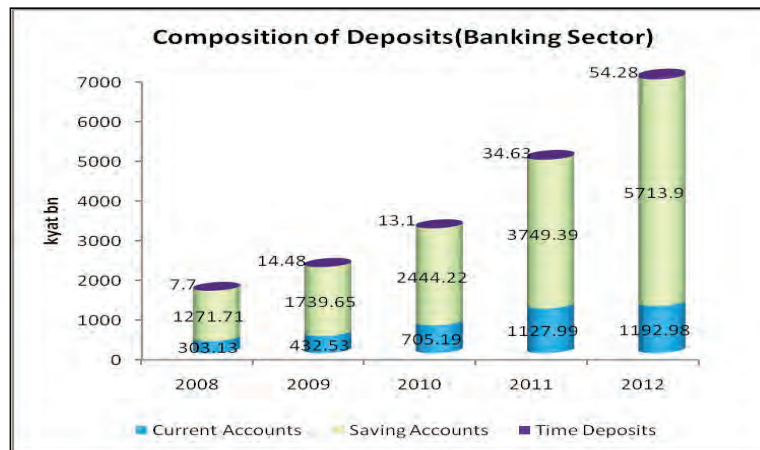
The chart below shows the profile of liquidity risk. Although loans and deposits of the private banks increased yearly, the loans-to-deposits ratio does not increase yearly because the banks are afraid of generating non-performing loans. The result was that the loan growth rate fell below the deposit growth rate. The increase in total assets yearly, as shown in the graph, was due to the operation of four new banks. However, the liquid assets held by banks are very low, decreasing by about 18 percent over the last two years. The decline in the liquidity ratio from 49 percent to 21 percent is not a good sign although it is still within the prescribed limit at 20 percent.

Chart 4



Source: Central Bank of Myanmar.

Chart 5



Source: Central Bank of Myanmar.

Regarding the composition of private bank deposits, depositors prefer to operate saving accounts which attract interest, while business enterprises are required to open current accounts. The last two years saw the rapid growth of saving deposits but the current account deposits only expanded marginally. As the political situation becomes more stable, there will be more foreign investment in the country. Banks will extend more loans and advances to the business sector for investment purposes. They will need to increase their time deposit base where the funds can be rolled as they are placed under fixed maturity periods. Although the banks do not have market risks and operational risk, facing external uncertainties, they need to prepare for all types of risks.

2.3 Status of Application of Basel Capital Adequacy Framework

There are two types of capital, Tier 1 and Tier 2, in Basel I. Tier 1 capital consists of two types of funds—disclosed cash reserves and other capital paid for the sale of bank equity, i.e. stock and preferred shares. Tier 2 Capital includes reserves created to cover potential loan losses, holdings of subordinated debt, hybrid debt/equity instrument holdings, and potential gains from the sale of assets purchased through the sale of bank stock. To follow the Basel Accord, banks must hold the same quantity of Tier 1 and Tier 2 capital.

In Myanmar, the banks, operating under the Central Bank of Myanmar Law and Financial Institutions of Myanmar Law, 1990, have adopted Basel I since 1992. However, the banks cannot fully comply with the requirements of Basel I because the banks' total capital includes Tier 1 Capital and general provision of the total loans, which is one of the components of Tier 2 Capital.

The banks calculate the risk-weighted assets as follows:

- Mortgage Loans = 50 percent
- Secured Loans (machinery, gold, etc.) = 50 percent
- Unsecured Loans = 100 percent
- Due from Banks (excluding the state-owned banks) = 20 percent
- Internal Drafts, Cheque Purchase and Debit Note Issues = 20 percent
- Fixed Assets = 20 percent
- Other Assets = 100 percent

The Banks for International Settlement (BIS) and the Basel Committee prescribed the Capital Adequacy Ratio (CAR) of minimum 8 percent. But the CBM imposed a minimum CAR of 10 percent for the banks. All the banks maintain their paid-up capital of not less than 10 times their risk-weighted assets. The lenders are sufficiently well capitalised to protect depositors and the financial system.

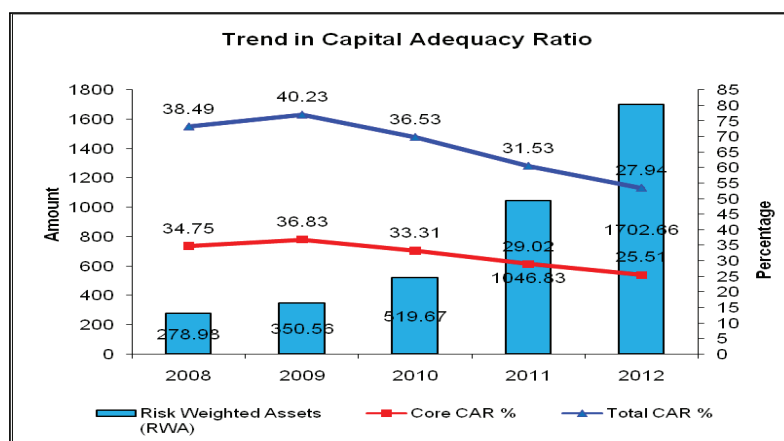
3. Assessment of Impact of the Basel Standards

3.1 Assessment of Impact on Current Capital Ratios

Financial institutions have the responsibilities to the depositors. They need to hold sufficient capital because they accept deposits from the savers and lend to the borrowers. As lenders, banks face the risk that some borrowers would be unable to repay their loans. It is therefore essential for the financial institutions to have sufficient capital in order to protect their depositors from the risk of losing their money.

In Myanmar, there are four state-owned banks and 19 private banks under the CBM's control. The 19 private banks submit their monthly statements reporting their CAR to the Financial Institutions Supervision Department (FISD) of the CBM.

Chart 6



Source: Central Bank of Myanmar.

In 2008, there were 15 private banks in Myanmar. Four new banks were established bringing the total to 19 private banks in 2010. The above chart shows the capital adequacy position of the private banks from 2008 to 2012. Although their core capital increased year by year, their risk-weighted assets increased more rapidly than their core capital. Therefore, their CARs declined from 40 percent to 25 percent from 2008 to 2012, which is still above the prescribed limit of 20 percent.

3.1.1 Description of New Capital Rules

According to the Basel Core Principle No (6), “Banking supervisors must set prudential and appropriate minimum capital requirement for all banks. Such requirements should reflect the risks that the banks undertake, and must define the components of capital, bearing in mind their ability to absorb losses. At least for internationally active banks, these requirements must not be less than those established in the Basel Capital Accord and its amendments.” In the Basel 1 Accord, lenders must hold Total Capital equal to at least 8 percent of risk-weighted assets and Tier 1 Capital of at least 4 percent of risk-weighted assets.

The Basel Committee has set a minimum capital adequacy ratio of 8 percent for banks to observe. The banks in Myanmar are mandated by the CBM to maintain their total capital at 10 percent of their risk-weighted assets. Banks are required to calculate their capital position at every month-end. The risk-weighted assets of a bank shall not exceed 10 times the combined total of its Capital and Reserves.

The following new rules in relation to liquidity were issued by the Bank Supervision Committee in 2003:

- Banks are to maintain 50 percent of their fully paid-up capital as free capital; and
- Provide the appropriate provision for reserve for both bad debts and contingencies.

3.1.2 Status of Current Level and Adequacy of Capital of Individual Banks or Banking Groups in Terms of Key Performance Indicators for Capital

The first Basel Accord was adopted in 1988. It is credited with providing stability to the international banking system, by prescribing consistent safety and soundness standards and by promoting better coordination among the regulators and financial supervisors in the participating countries. To raise the quality, consistency and transparency of regulatory capital, the Basel Committee stipulated that Tier 1 Capital shall consist of common equity and retained earnings.

Consequently, banks can hold strong Tier 1 Capital containing a limited amount of tangible common equity. The financial crisis demonstrated that the resources that served to cushion against the credit losses and write-offs came out of retained earnings, which is part of a bank's tangible equity base.

In the Myanmar banking sector, all the financial institutions are required to comply with the requirement of Section 31 of the Financial Institution of Myanmar Law: "The relation between the risk weighted assets and the capital and reserves of a financial institution shall not exceed (10) times". The banks have no holdings of subordinated debt, hybrid/equity instruments, and holdings of potential gains from the sale of assets purchased through the sale of bank

stock. The two private banks issue shares to the public. The subscription volumes are low because the majority of the public do not invest in bank shares due to their low return.

The Basel Accord prescribed 8 percent for the CAR while the CBM imposed a minimum CAR of 10 percent. The private banks maintain CARs above the mandated level. Myanmar presently does not have a capital market. Most of the resources held by bank are not for investment purpose. Its means the capital available exceed the market requirement. Banks got less profit from the actual market.

Table 1
Current Level and Adequacy of Capital as at 31 March 2012

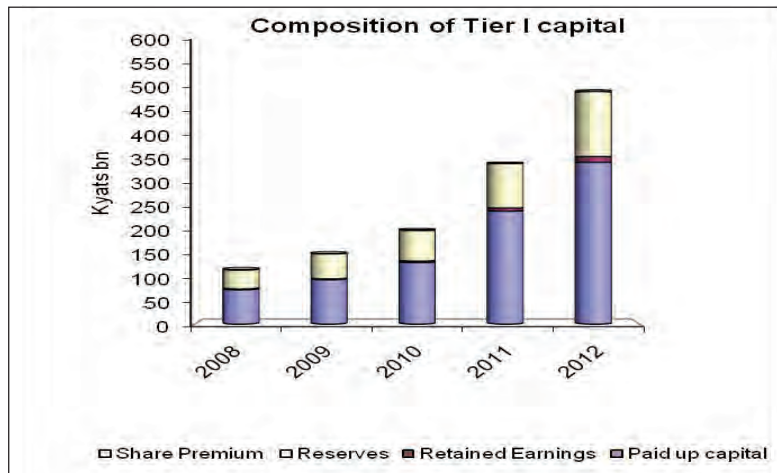
	Tier I Capital Ratio (%)	Total Capital Ratio (%)
Basel Requirement	4	8
Country Requirement (If differs from Basel requirement)	5	10
Actual (Private Banks)	25.51%	27.94%

Source: Central Bank of Myanmar.

3.1.3 Assessment of Capital Levels in Terms of Enhanced Capital Requirements under Different Capital Components and Qualification of Future Capital Requirement

Chart 7 shows the composition of Tier 1 Capital. The paid-up capital of the banks increased yearly because of their business profitability, so did their reserve provisions.

Chart 7



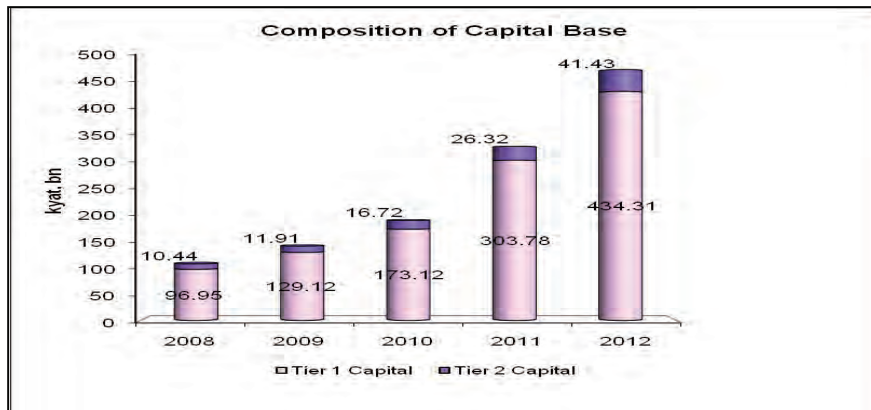
Source: Central Bank of Myanmar.

Table 2

	2008	2009	2010	2011	2012
Tier 1 Capital	96.95	129.12	173.12	303.78	434.31
Tier 2 Capital	10.44	11.91	16.72	26.32	41.43

In Myanmar, the total capital in the banking sector increased yearly. This is due to opening of new branches and banks venturing into the international banking business. As the profits of private banks increased, their reserves and retained profits provisioning also increased.

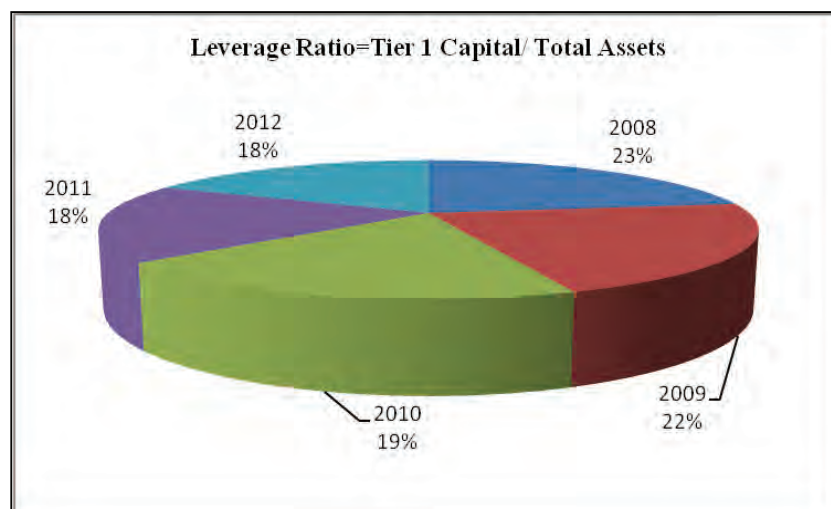
Chart 8



Source: Central Bank of Myanmar.

3.2 Assessment of Current Level of Leverage

Chart 9



Source: Central Bank of Myanmar.

From the chart above, it is evident that the increase in Tier 1 Capital is not as fast as the growth of bank total assets. Consequently, the leverage ratio declined from 23 percent in 2008 to 18 percent in 2012.

3.3 Assessment of Liquidity in Terms of New Liquidity Ratios

3.3.1 Description of New Liquidity Rules

In the Myanmar banking system, the CBM imposes a minimum liquidity ratio for financial institutions at 20 percent of their eligible liabilities. To date, two banks are unable to meet this requirement. Banks failing to comply are required to pay a penalty for their liquidity shortfall.

In accordance with Sections 58 and Section 59 of the Central Bank of Myanmar Law, the CBM may impose on and collect from any bank or financial institution which fails to maintain required reserves or specified liquid assets in the appropriate ratio determined, a levy, not exceeding one-fifth of one per centum per day on the shortfall of liquid assets or required reserves in such bank or financial institution, as the case may be, until the shortfall is corrected.

The new liquidity rules issued by the Bank Supervision Committee (BSC) in 2003 are as follows:

- Banks' deposits should not be more than 10 times the amount of their paid-up capital;
- Inter-bank borrowing among banks is prohibited; and
- Loans-to-deposits ratio must be between 70 percent and 80 percent.

At present, Myanmar banks do not have much difficulty meeting their liquidity requirements. The CBM may revise its liquidity requirement in the near future as the economy is liberalised and opened for the banks to engage in the international banking business, and when the banks are required to increase their capital in line with the Basel Accord.

3.3.2 Current Level and Adequacy of Liquidity of Individual Banks or Banking Groups in Terms of Key Performance Indicators for Liquidity

In Myanmar, 19 private banks submit their weekly statements of liquidity ratio to the FISC of the CBM. According to the statement of liquidity position, all banks are to maintain a minimum liquidity ratio of 20 percent. The eligible liabilities of the banks are more than 2, 3 or 4 times the value of their liquidity assets. The liquidity ratio of the banks ranges from more than 20 percent to nearly 50 percent.

Currently, banks' liquid assets are classified as follows:

- Cash + Balance with CBM
- Gold (but not yet determined)
- Cheques, drafts and all receivables
- Bills, discounted with maturities up to 3 months
- Government securities
- Due from domestic banks (on net basis)
- Due from bank abroad

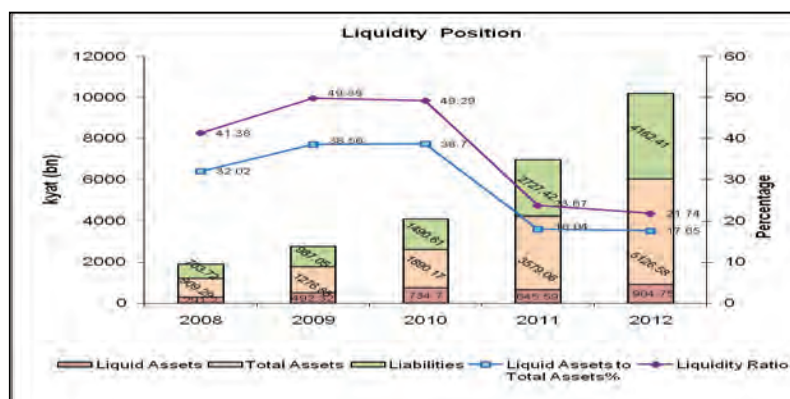
However, borrowing using the above assets as collateral is deducted from their liquidity holding when the banks borrow treasury bonds from the Central Bank.

In Myanmar, the eligible liabilities of the banks are as follows:

- Cheque bills and payables
- Due to domestic banks on net basis
- Due to bank abroad
- Deposits
- Demand Deposits
- Time Deposits

The liquidity position of the private banks in Myanmar is shown in the chart below:

Chart 10



Source: Central Bank of Myanmar.

The above chart shows the liquidity position of the private banks from 2008 to 2012. Liquid assets have been increasing steadily year by year, with eligible liabilities increasing at a faster rate than liquid assets, causing the liquidity ratios to decline. Including the liquid assets in total assets, although total assets have been increasing rapidly year by year, the growth of liquid assets is slower from 2008 to 2012.

The low liquid asset holding of banks is primarily due to their preference in investing mostly in safe and secure assets. The banks expect low risk and high return for their investments.

3.3.3 Quantification of LCR and NSFR and Assessment of Future Liquidity Requirements

The banks currently fulfill the minimum liquidity ratio of 20 percent. When they banks are permitted to conduct foreign banking operations, they will be required to meet the new liquidity requirements, such as LCR and NSFR, to comply with the international standards in accordance with the Basel Accords.

3.4 Impact on Different Peer Groups and the Banking System

The impact on different peer groups and the banking system in Myanmar are as follows:

- Liquidity standards and liquid assets can increase.
- New capital and new types of financial instruments can increase.
- The quality, consistency and transparency of the capital can increase.
- The banking sector can be protected from risks, such as liquidity risk and credit risk.

Banks in Myanmar are allowed to operate foreign banking business and, in the near future, foreign banks will be allowed to operate in Myanmar. The banking sector will be much larger and the banks need to raise additional capital to meet the liquidity requirements under the Basel Standards. If the banks have adequate additional capital and more liquid assets, they can be protected from all types of risks and from financial crises in the banking sector. Moreover, not only can the banks contribute to the development of the banking sector, but they can also stimulate the development of the economy and help achieve sustainable growth and stability.

4. Issues and Challenges in Implementing the Basel Standards

4.1 Regulatory Constraints

Most of the country exercises use the macro-prudential analysis which focuses on the health and stability of the financial system, whereas micro-prudential analysis deals with the condition of individual financial institutions. This analysis is based in the context of the Financial Soundness Assessment Programme (FASP) and the related Financial System Stability Assessments (FSSAs) which are adopted by the International Monetary Fund (IMF). In this regard, the health of the banking sector is analysed by looking at the levels and trends in the selected Financial Soundness Indicators (FSIs), typically consisting of capital adequacy, asset quality, profitability, liquidity and exposure to market risks and the linkage between these indicators and changes in the macroeconomic environment. This framework is also known as the CAMELS - capital adequacy, asset quality, management soundness, earnings, liquidity and sensitivity to the market risk - analysis.

From time to time, the IMF and the Bank for International Settlement (BIS) adopted policy guidelines for financial sector stability and strengthened the framework of measures to safeguard the use of the financial resources of member countries. Pursuant to the basic aim of a central bank to achieve and maintain a country's monetary stability, the CBM keeps track of the banking sector development and regulates banks in the financial system so that they may not deviate from the path of financial stability.

The CBN regulates the domestic and foreign banking operations systematically by applying the laws, rules and regulations which are in line with international standard. It is necessary for the CBM to address the following key regulatory and supervisory issues to strengthen and assure the soundness of the banking system:

- Define a clear set of rules and penalties to enforce the regulation on the new capital and liquidity requirements;
- Ensure adequate legal and management authority and capacity to enforce the existing rules and regulations;
- Develop the operational system for intervening and resolving the weak banks;
- Analyse the possible impact of weak banks on the banking system and the whole economy;
- Set appropriate governance system and requirements for the bank-owners, board members and management authority;
- Enforce compliance with the Basel Accord on capital adequacy and liquidity;
- Define clearly the loans classification and plan for better provision;
- Develop the internal governance structure, including the wider functions of the internal auditing process;
- Identify the banks which are in a risky position and monitor them closely;
- Regulate and supervise the foreign exchange activities, including money laundering;
- Develop the bond market and trading activities in line with the market needs;

- Establish regulatory and supervisory framework for foreign banks, if they are allowed to operate in Myanmar; and
- Issue the necessary laws and instructions for the adoption of Basel II.

4.2 Capital Augmentation and Related Issues

According to Basel II, the Minimum Capital Requirement is expanded further than under Basel I. Basel II creates a bank's risk-weighted assets and tries to eliminate the loopholes in Basel I that allow banks to take on additional risk. Its first mandate is to broaden the scope of regulation to include assets of the holding company of an internationally active bank. This is done to avoid the risk that a bank will hide risk-taking by transferring its assets to the other subsidiaries, and also to incorporate the financial health of the entire firm in the calculation of the capital requirements for its subsidiary bank.

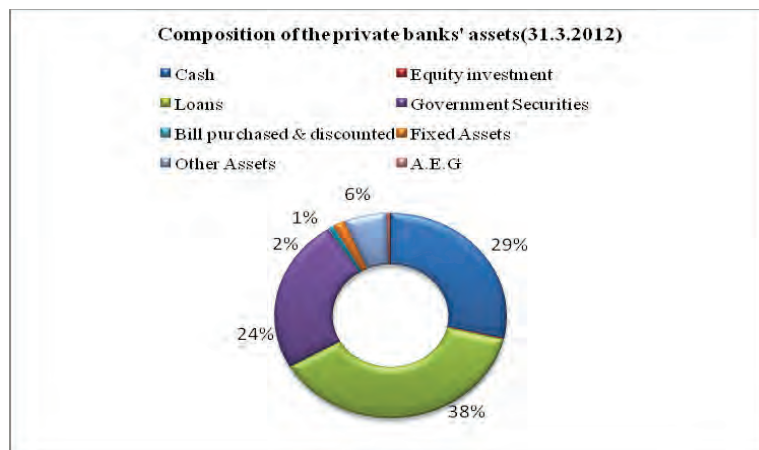
The recent global financial crisis has revealed weakness in the risk management process of Basel II. Because Basel II did not adequately anticipate a collapse in market liquidity, investor confidence disappeared and the market value of securities held by banks suffered drastic losses. The Basel Committee subsequently adopted Basel III in 2010. The Basel accord needs to be carefully implemented step-by-step for it to be in line with the Myanmar financial system.

The Myanmar Securities Exchange Centre (MSEC) was established in 1996 to sell government treasury bonds to public. However, the Centre failed to take off due to low return. Today the country is without a capital market. It is a major challenge for raising Myanmar's capital level.

4.3 Review of Assets and Liability Management Strategies

Based on the latest banking statistics, the major assets of the banks are composed of loans and advances 38 percent, followed by cash holdings 29 percent, and investments in government securities 24 percent. Banks' cash holdings is the second largest component of their assets which means that the banks have cash reserves and are able to overcome liquidity squeeze to meet the liquidity needs of their customers. If the banks can manage and adopt effective asset management strategies in combination with the marketing of the latest products and services, they can generate maximum income with minimum risk.

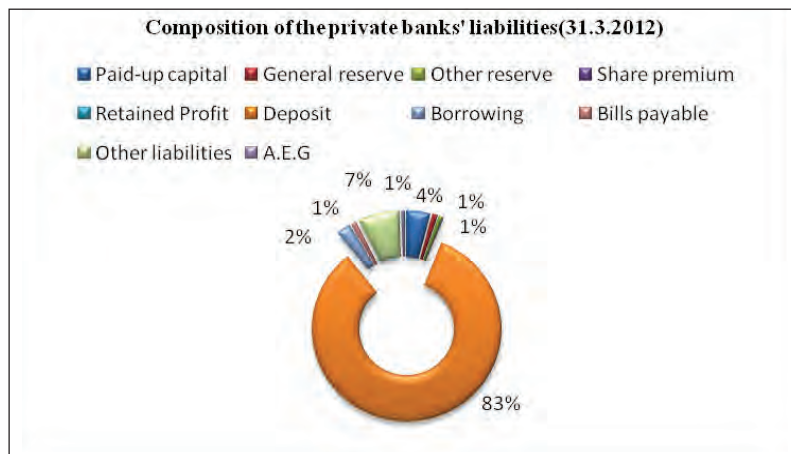
Chart 11



Source: Central Bank of Myanmar.

Liabilities management is one of the important factors for financial institutions. For gain trust and confidence with the customers and stakeholders, banks must fulfill their obligations. Most banks' liabilities are deposits which make up 83 percent of the total liabilities. The management of liabilities needs to be conducted carefully as mismanagement can cause bank runs. For instance, if a bank is faced with a case of money laundering, the bank's reputation, public trust and legal status will be ruined, causing the bank to fail. It is thus vital for the top management and the Board of Directors to be aware of the bank condition and the bank business environment, domestically and internationally.

Chart 12



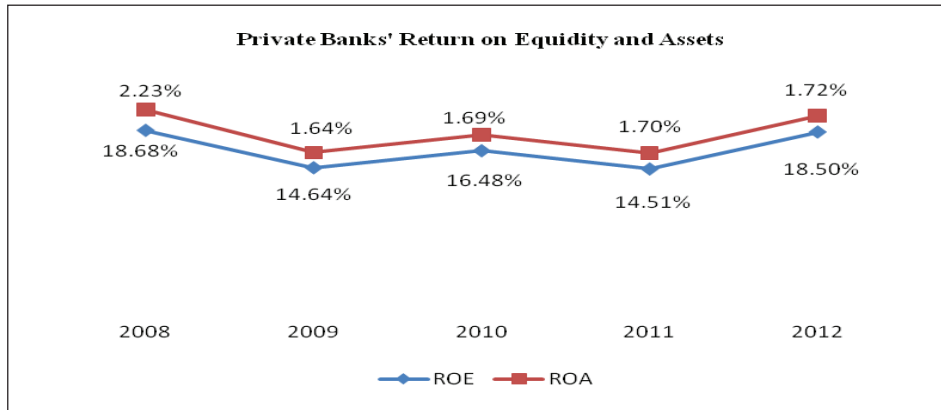
Source: Central Bank of Myanmar.

4.4 Implications on Cost and Profitability

In Myanmar, banks are free to acquire assets or open new branches and can offer other services to satisfy their customers. Therefore, the owners, board of directors and management committee ought to exercise due diligence in the introduction of new banking products and instruments, undertaking of short-term vs. long-term funding in the management of cost and profitability, and be mindful of the impact of their decisions on pricing, lending and margins.

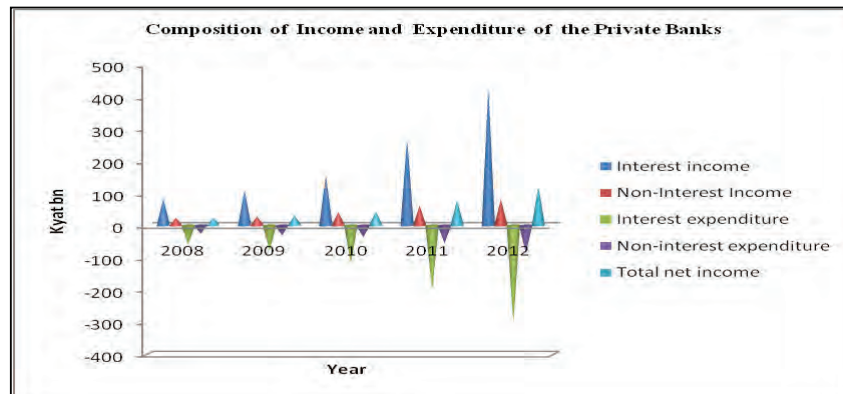
The gap between private banks' return on equity and assets has been increasing. In 2008, the return on equity was 18.68 percent while the return on asset was 2.23 percent. In 2012, these were 18.50 percent and 1.72 percent, respectively, indicating that although there were fluctuations during these years, in general it was more beneficial buying banks' share instead of investing.

Chart 13



Source: Central Bank of Myanmar.

Chart 14



Source: Central Bank of Myanmar.

The private banks' income and expenditure depend on the strategic management of their assets and liabilities. As shown above, the chart indicates that interest income increased and non-interest income increased every year in an upward trend, accompanied by proportionate increase in interest expenditure and non-interest payments. The Myanmar banks are doing good banking business. They are systematically controlled and comply with the international best practices and guidelines adopted by the CBM.

4.5 Implications for the Financial Markets/Economy

In Myanmar, the economic system was changed from a centrally planned economy to a market economy in 1989. Since then, the government implemented annual economic plans, four-year short-term plans, and also 20-year long-term plan for national economic development. The government is taking step to promote the development of a market-based economy and is initiating reforms in many sectors consistent with the political and economic climate. The financial sector is also included in the reform process for it to be competitive in the global marketplace.

4.6 Infrastructure Issues

In Myanmar, lack of business information, such as Balance Sheet, Profit and Loss Account and Income Statement, is one of the problems that hinder commerce. Market players do not have much access to information for them to obtain a true and accurate picture of firms in the marketplace. These two factors are to be considered for the development of the banking industry:

- Bankers have limited information on borrowers, their creditworthiness, investment opportunities, and return on investment.
- If a bank should select a risky project with a high probability of default, it will be costly for the bank to supervise and monitor the project closely to track the performance of the project.

4.7 Human Resource Constraints

Human resource management has become more important and essential for the acquisition of technical know-how on new products, software system and settlement procedures. In this regard, to fill the resource gap, the banking authorities have to make plans to not only conduct the appropriate training for their staff, but also to update the existing IT hardware and software system to accommodate Basel.

The management of banks are generally aware of the need for capacity building and staff development. The banks conduct seminars and training programmes to equip their staff with the latest technical know-how, new product knowledge and customer service skills to satisfy their customer needs.

Moreover, as the banking industry develops, foreign institutions in Myanmar are providing technical assistance and collaborating for the future development besides negotiations for joint-venture banks.

In addition, the Myanmar Banks Association (MBA) contributes to the development of the banking sector by conducting full-time and part-time Diploma in Banking (DB) and Master of Banking and Finance (MBF) programmes, and by raising the awareness of the public on the banking products and instruments.

The CBM, the main controller of the Myanmar financial and banking system, has conducted numerous training seminars and programmes for the officials of the private banks in subject areas such as the Basel Accords, Money Laundering, Trade Financing facilities, foreign exchange business, and other topics. The attendees, in turn, are expected to disseminate the knowledge gained to their own bank staff through in-house training.

4.8 Impact on Cross-border Supervision

At present only the state-owned bank, Myanmar Economic Bank (MEB), can conduct transactions and settlement with foreign banks overseas. Some private banks are licensed to operate international banking business, such as foreign exchange trading and inward remittance. They have recently been allowed to engage in trade financing. Therefore, issues relating to cross-border transactions have not yet surfaced for attention. However, Myanmar private banks which operate branches near the border of China, India, and Thailand have to prepare the cross-border supervision procedures with the neighbouring countries for challenges issues such as payment and settlement systems. Myanmar banks would also need to meet other challenges on cross-border supervision such as trade and settlement transactions in preparation for foreign banking business in the near future.

5. The Way Forward and Strategic Options

5.1 Strengthening the Regulatory Framework

In line with the market economy, the CBM allowed the private banks to adopt modern banking systems for domestic and international banking operations. The reform factors in the banking system are as follows:

- Banks to set their own interest rates (loan = 13 percent, deposit = 8 percent);
- Foreign banking business opened to banks (Inward remittance);
- Introduction of Hire Purchase operation, ATM, Myanmar Payment Union (MPU) card operation;
- Banks allowed to open new branches;
- Collateral for loans to include not only land and buildings, but also deposits, gold, and exportable commodities;
- Revision of the foreign exchange law and regulations
- Protection of depositors and introduction of deposit insurance;
- Operation of Foreign Exchange Auction to issue reference rate from the CBM.

5.2 Capital and Liquidity Management Strategies of Banks

Effective prudential regulation and supervision of banks are essential for financial stability. The task of the regulation and supervision is to ensure that banks operate in a prudent manner and hold sufficient capital and reserves to support their business. The Bank Supervisory Committee (BSC) closely monitors the daily financial statements of the banks. The CBM controls the banking industry by applying the following prudential regulations to the banks.

5.2.1 Credit Management

Credit risk management is very important. Banks are required to maintain operating ratios in line with the prudential regulations of the CBM. The banks are mandated by law to set aside for general provision 2 percent of their total loans and maintain 50 percent provision for doubtful debts and 100 percent provision for bad loans. Loans of the banks which have collaterals are categorised as quality loans. Banks have low non-performing loans. Their on-performing loan ratio is under 2 percent. The banks are required to comply with the prescribed ruling that “Bank shall not lend more than 20 percent of their Capital plus Reserves to a single individual, an enterprise or an economic group.

5.2.2 Liquidity Management

In order to prevent liquidity and systemic crises, the CBM closely supervises the operation of the banks and has established the BSC to assure the smooth and sound operation of the banking system.

5.2.3 Liquidity Ratio

Banks are required to maintain a liquidity level of not less than 20 percent of their eligible liabilities. If the banks fall short of the requirement, the penalty is 1/5 of 1 percent of the shortfall.

5.2.4 Reserve Ratio

According to prudential regulations of the Central Bank of Myanmar, 10 per cent of total deposits are required to be maintained by each bank as the minimum reserve requirement. It means each bank has to deposit 75 per cent of the required reserve at the Central Bank of Myanmar and 25 per cent of the reserve may be maintained in the form of cash at the bank. The required reserve for a bank to be maintained with the Central Bank of Myanmar must not exceed 35 per cent of the total liabilities of the bank. However, in the event of serious inflationary pressure, the Central Bank of Myanmar may increase the 35 per cent ceiling requirement.

Overall Reserve Ratio = $\text{Cash in hand} + \text{Account with CBM} / \text{Total Deposit}$ = 21.77 percent

These statements are submitted by banks to the CBM:

- Weekly - Reserve Position, Liquidity Ratio
- Monthly - Balance sheet, Income and Expenditure Statement, Capital Adequacy Ratio
- Quarterly - Non-performing Loan Statement
- Annually - Annual Report

The FISC monitors the banks' operations from their submissions and takes actions, where necessary, to enforce compliance by banks with the applicable laws, rules and regulations in their banking operation. The measures include conduct of on-site examination. All the financial institutions observe

the prescribed regulations which are imposed for preserving financial stability, and banks perform their banking functions in an orderly manner.

The CBM is empowered to implement the banking sector development strategy and approaches the implementation in three phases:

- Phase I**
 - (a) Promoting institutional development
 - (b) Promoting skills and efficiency among the domestic banks in the medium term, while allowing foreign banks to establish representative offices in Myanmar. The foreign banks are initially allowed to open representative offices serving only as liaison offices of their corporate headquarters;
- Phase II** Permitting selected domestic banks to establish joint-venture banks with foreign banks; and
- Phase III** Permitting foreign banks to open bank branches and conduct banking business in Myanmar.

The CBM is organised in 12 departments. One of these departments, the FISC, is responsible for the examination and supervision of the financial institutions and is tasked with four main objectives:

- Protection of Depositors;
- Maintenance of Monetary Stability;
- Efficiency of the Financial Institutions; and
- Progress of the national economy.

The FISC has two approaches; on-site examination and off-site monitoring. On-site examination assists in the monitoring of the financial institutions through inspection of banking operations and contact. Off-site supervision examines the financial statements for compliance by banks with the prescribed rules, regulations, guidelines, the CBM Law and the Financial Institution of Myanmar Law. The examiners of the FISC visit the various private banks and interview the Chairman and Management Committee to collect information and analyse the data. The performance of the bank is compared with other banks in the peer group. The criteria for evaluation include profit trends and strategies, balance sheet management, divestments

and wind-downs, redesign of the business development models and portfolios focus, capital and liquidity management strategies, training and development plan for staff, modifications to IT infrastructure in line with the market needs, and assessment of readiness for implementation of Basel at desired level or time plan.

5.3 Development of Capital Market Instruments

At present Myanmar's financial market instruments consists of bank loans, equity shares, and treasury bonds issued by the CBM. While Myanmar's banking sector is relatively small compared with other ASEAN countries, bank loans are still important in contributing to national economic development. The CBM has issued three types of government Treasury Bonds: two-year treasury bonds, three-year treasury bonds and five-year treasury bonds, in denominations of Kyat 10,000/, Kyat 100,000/, and Kyat 1,000,000/, with effect from 1993 and 2010. The interest rates of these treasury bonds are presently at 8.75 percent, 9 percent, 9.5 percent, respectively. Because of the low rate of return, these bonds are not tradable in the market and the large amount of government bonds are mostly held by the private banks.

At present, Myanmar is without a capital market. To launch the capital market, the MSEC was established in 1996 with 50-50 percent joint venture between the MEB, one of the state-owned banks, and the Daiwa Institute of Research Ltd., Japan (DIR).

The MSEC's objectives are to:

- Plan the development of a securities market in Myanmar;
- Support the privatisation and internationalisation of the Myanmar economy.

The MSEC also purposes to provide the following services:

- Assisting companies to become public companies;
- Brokering, dealing, and underwriting securities;
- Publishing investment information;
- Providing investment consultancy services;

- Managing venture capital funds and acting as an agent for joint ventures;
- Selling government treasury bonds as an agent of the CBM; and
- Selling shares of listed companies in Myanmar as an agent of those companies.

5.3.1 Legal Framework

The drafting of the Securities and Exchange law was started in 1996 but it is not promulgated until now for several reasons. The final draft law was passed by Amyotha Hluttaw on 22 August 2012. It is subject to approval by Pyithu Hluttaw in the next session of Hluttaw probably in October/November of this year. It is envisaged that the Law will be in place by the end of this year. The by-laws, rules and regulations are to be formulated in the next two years. The other related laws, rules and regulations also need to be revised, amended or supplemented to meet the needs of the market.

5.3.2 Bond Market

A new two-year Treasury Bond was issued on 1 January 2010 adding to the existing three-year and five-year Bonds issued since 1993 with a view of promoting the Treasury Bond market. A new Treasury Bond selling system was introduced appointing the MSEC and MEB as Selling Agents. The MSEC and MEB were allowed as trading floor for the secondary market. The interest rates were reformed in 1 September 2011 and 1 January 2012. Treasury Bonds are allowed as mortgage in taking loans up to 80 percent of its value from the commercial banks. The proposal to allow Inter-bank Bond Trading is in the final stage of deliberation.

5.3.3 Equity (Share) Market

Two public companies were listed in the MSEC, one in 1996 and other in 2005. Share market trading is rather active, with demand exceeding short supply. Even though there are more than 22 public listed companies, only a few of them are thought to be qualified in share trading. The emergence of qualified public companies is a real challenge.

5.3.4 Others

Educational programmes like training, seminars and workshops have been continuously provided. Technical assistance for development of bond market

was provided by AESAN Secretariat funded by JAFTA (Japan-ASEAN Finance Technical Assistance) and undertaken by DIR. A Memorandum of Understanding (MOU) was signed on 29 May 2012 between the CBM and DIR and the Tokyo Stock Exchange with a view to assisting the development of the Yangon Stock Exchange by 2015. Another MOU was signed on 14 August 2012 between the CBM and the Policy Research Institute of the Ministry of Finance, Japan, for assistance in the development of the Securities and Exchange Law and Rules and Regulations of Myanmar.

5.3.5 Weaknesses

Weaknesses include the following:

Education, particularly low financial literacy,

- Infrastructure (electricity, communication, information technology),
- Lack of knowledge in the securities business at all levels,
- Weakness in corporate culture and corporate governance,
- Comprehensive legal framework is lacking far behind
- Poor infrastructure for the development of the securities market.

5.4 Development of Infrastructure and Addressing of Related Issues

The MPU was established by the CBM comprising members from the state-owned and private banks. It is an interbank network service provider which provides shared ATM network service for the customers of its member banks to conveniently access their funds anywhere from any of the participating banks' ATMs; and provides a payment system for the member banks to do interbank settlements for their customers' ATM transactions. This system is centralised, maintained and controlled by the CBM.

The private banks which are licensed to engage in the international banking business are eligible to apply to join the Society for Worldwide Interbank Financial Telecommunication (SWIFT), a network service that enables financial institutions worldwide to send and receive payment orders in a secure and reliable environment. In this regard, the private banks are presently in the process of upgrading their IT hardware and software systems to comply with the international standards for the transmission of payment instructions and settlement. The international organisations and non-

governmental organisations are currently working out the needs of IT infrastructure, software applications and computer equipment for the banking sector.

5.5 Capacity Building for Staff of Regulator and Banks

Human capital and skills are important for the development of a modern financial sector. Personnel in the banks and services industry, to be service oriented, must be aware of the concept of internal and external customers. The financial institutions should train and upgrade the banking knowledge and skills of their staff to raise their professionalism and competence. The CBM staff are expected to be familiar with all the banking policy instruments and methods for them to perform. It is also incumbent on them to be well equipped if they are to impart their knowledge and experience to the banking sector. Much training is needed for the regulators of the CBM. Myanmar has decided to approach the implementation of Basel II step-by-step to facilitate the financial sector's transition to the international standard.

5.6 Road Map for Implementation of Basel III

The CBM is responsible for the financial stability and soundness of the banks. Bank supervision, prevention of bank failures and enforcement of the Basel standards for the banking sector to comply with the Basel Accord are some of the CBM's core duties. Given the rapid transformation of the economy and the modernisation of the banking sector in Myanmar, the CBM should replace or substitute direct control with prudential supervision and risk management, and advocate the introduction of sound banking practices, raising the bar for banks to practise risk-based capital requirement and liquidity control in accordance with the standards of Basel II and III. The officials of the CBM are currently taking steps to provide education and training for the staff of all the financial institutions with the view of assisting the institutions to comply fully with Basel I and to gear up the organisations for the adoption of Basel II and III. The time frame for the adoption of Basel II is not yet been finalised. The officials of the CBM are discussing with international organisations to draw up an appropriate implementation plan for the Myanmar financial system.

6. Conclusion

The banking industry plays a key role in financial sector development and economic development with the adoption of the market economy.

Financial sector stability is crucial for sustained economic growth and cannot be achieved without a strong financial system. A stable financial system commands strong public confidence in the financial institutions and is efficient in financial intermediation, mobilising funds from savers (depositors) and channeling the same to investors (borrowers).

In Myanmar, macroeconomic stability and political stability have still plenty of room to improvement for financial system development. The reform measures on the banking and economic system must be in line with the international best practices. These financial reforms should be put in place to prepare Myanmar for the ASEAN Free Trade Area and other similar initiatives. In this regard, the financial sector needs to mobilise and channel available financial resources for national economic development and provide the best banking services and instruments to stimulate trade and business development.

To develop the banking sector, the following major weaknesses need to be addressed:

6.1 Capital Deposit Ratio

The equity-to-deposit ratio regulation, promulgated by the BSC, restricts the volume of deposits to be not more than ten times the paid-up capital. This causes a contraction of the bank deposits. International practices like deposit insurance system which is more effective than equity-to-deposit ratio should be introduced to prevent bank-runs.

6.2 Unattractive Interest Rates

The interest rates are lower than the inflation rate of the country and discourage people from the saving. Even though the per capita income of Myanmar is low, the incentive to save and invest would be increased if there are high rates of return. Therefore, international method of inflation targeting should be exercised as the monetary policy instrument.

6.2 Lack of Banking Services

As compared with the trading partner countries' banking services, the banking products and services in Myanmar do not meet the requirement of markets and customers. Myanmar has an estimated population of sixty million, but only people living in urban centres have access to banking services.

People in the rural sector have limited or no access to banking services because of poor coverage of the banking network in the interior.

6.3 Narrow Range of Banking Products

Apart from the traditional banking products and services, such as deposits, loans and advances, banks can provide credit card, debit card, ATM services, hire purchase, remittance, and many other financial products and services. Banks should extend banking facilities to include foreign exchange and international trade financing facilities to service the growing needs of the economy. When private banks are allowed to participate in the banking system, business competition will spur improvement and innovation in financial products and services and will raise standards in the banking sector.

6.4 Delay to Establish Capital Market

In order to ensure that banks can raise funds effectively in the market, it is necessary to establish a capital market without further delay. Banks hold Treasury Bonds in the absence of financial market instruments. The money market, equity market, bond and security market are not developed leaving bankers with no choice but to hold treasury bonds to cover for the interest payment for deposits. To increase financial resources, the financial system has to encourage not only indirect financing through the banks but also direct financing from the financial markets.

In conclusion, the banking and financial sector reforms should be approached step by step. The CBM should replace or substitute direct controls with prudential supervision and market-based instruments. A sound financial system can facilitate the mobilisation of financial resources and the channeling of these resources to the productive sectors efficiently. Strengthening the supervision of the banking sector calls for the intensification of training and development for the staff and regulators of the CBM, investment in computer and telecommunication infrastructure, enforcement of new capital and new liquidity requirements, and formulation of a time frame for the implementation of Basel II.

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Appendix 1

Key Information Sheet (2007-2008 to 2011-2012)

Kyats Bn

	2008	2009	2010	2011	2012
Macro Economic Data					
GDP	12.00	10.30	10.60	10.40	-
Inflation	28.80	9.20	7.10	8.90	5.0
Interest rates (CBM)	12	12	12	12	8
Exchange rates (officials) Kyat per \$	5.20	5.80	5.70	5.40	5.20
Banking Sector					
Total Assets	1922.84	2656.51	3825.24	6050.16	8309.60
Total Liquid Assets(Cash+ A/c + Bills with CBM Bonds)	870.00	1165.54	1574.14	2512.92	2456.14
Investments in Liquid Government securities	168.50	485.19	926.05	1291.43	2021.97
Total Credit	775.46	870.01	1129.83	1925.90	3172.23
Total Deposits	1583.54	2186.66	3162.50	4911.01	6961.25
Total borrowings	21.02	23.28	47.71	275.81	198.73
Private Banks					
Tier I capital	96.95	129.12	173.12	303.78	434.31
Total capital	107.39	141.03	189.84	330.10	475.74
Total Risk Weighted Assets	278.98	350.56	519.67	1046.83	1702.66
Tier I capital Ratio	34.75 percent	36.83	33.31	29.02	25.51
Total capital Ratio	38.49 percent	40.23	36.53	31.53	27.94
Private Banks					
Liquidity Ratios					
Liquid Assets/Total Assets Ratio	32.02 percent	38.56	38.70	18.04	17.65
Liquid Assets/Eligible Liabilities Ratio	41.38 percent	49.88	49.29	23.67	21.74

Appendix 2

Kyats Bn

	2008	2009	2010	2011	2012
Composition of Liquid Assets (Private Banks)					
Cash in hand + A/c with CBM	112.13	164.47	158.52	335.58	114.08
Cheque drafts & all receivable	1.23	6.23	1.09	1.99	3.80
Bill discounted with maturities up to 3 months	1.72	28.89	109.24	230.90	437.70
Government Securities	168.50	284.95	476.05	177.00	469.97
Due from domestic banks(net)	12.77	15.18	24.70	163.00	50.90
(-) Borrowing		(7.40)	(34.90)	(262.90)	(171.70)
Liquid Assets	291.20	492.32	734.70	645.59	904.75
Composition of Deposits (banking sector)					
Current Accounts	303.13	432.53	705.19	1127.99	1192.98
Saving Accounts	1271.71	1739.65	2444.22	3749.39	5713.90
Time Deposits	7.70	14.48	13.10	34.63	54.28
Total Deposits	1583.54	2186.66	3162.50	4911.01	6961.25
Composition of Borrowings					
Short term Borrowings	21.02	23.28	47.71	275.81	198.73
Long term borrowings	-	-	-	-	-
Other	-	-	-	-	-
Total	21.02	23.28	47.71	275.81	198.73
Composition of Tier I capital					
Paid up capital	72.94	94.28	130.81	240.46	344.40
Retained Earnings	2.17	1.95	3.37	6.56	12.13
Reserves	39.74	53.05	64.81	94.58	138.19
Share Premium	1.62	1.37	2.22	2.67	3.59
Total	116.47	150.65	201.21	344.27	498.31
	2008	2009	2010	2011	2012
Composition of Tier II capital					
General Provision	10.44	11.91	16.72	26.32	41.43
Total	10.44	11.91	16.72	26.32	41.43
Composition of Earnings (Private banks)					
Interest on loans	84.76	111.23	157.94	272.38	430.98
Non-Interest Income	23.20	28.59	41.72	62.13	82.07
Interest expenditure	(59.07)	(78.28)	(118.23)	(202.30)	(302.96)
Non-interest expenditure	(25.34)	(30.25)	(36.74)	(55.73)	(87.06)
Total net income	23.55	31.29	44.69	79.48	123.03

Chapter 8

BASEL III IMPLEMENTATION: CHALLENGES AND OPPORTUNITIES IN NEPAL

By
Chet Prasad Uprety ¹

1. Introduction

1.1 Objectives and Scope of Study

Before 1988, there was no uniform international regulatory standard for setting bank capital requirements. In 1988, the Basel Committee on Banking Supervision (BCBS) developed the Capital Accord, which is popularly known as Basel I, to align the capital adequacy requirements applicable especially to banks in the G-10 countries. Basel I introduced two key concepts. First, it defined what banks could hold as capital, as well as designating capital as Tier 1 or Tier 2 according to its loss-absorbing or creditor-protecting characteristics. The second key concept introduced in Basel I was that banks in relation to the risks that they face should hold capital. The major risks faced by the banks relate to assets held on the balance sheet. Thus, Basel I calculated banks' minimum capital requirements as a percentage of assets, which are adjusted in accordance with their riskiness and assigning risk weights to the assets. Higher weights are assigned to riskier assets, such as corporate loans, and lower weights are assigned to less risky assets, such as exposure to the government.

The BCBS released the "International Convergence of Capital Measurements and Capital Standards: Revised Framework", which is known as Basel II, in 2004. This framework was updated in 2005 and a comprehensive version of the framework was issued in 2006. The BCBS' recommendations on capital accord is an important guiding framework for the regulatory capital requirement of the banking industry, building on the three pillars of the Basel II framework. Basel II builds significantly on Basel I by increasing the sensitivity of capital to key bank risks. In addition, Basel II recognises that banks can face a multitude of

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risks, ranging from the traditional risks associated with the ups and downs of the local and international economies. As a result, the Basel II more explicitly associates capital requirements with the particular categories of major risks that banks face.

This framework also recognises that large, usually internationally active banks have already put into place sophisticated approaches to risk measurement and management based on statistical inference rather than on judgment alone. Thus, the framework allows banks, under certain conditions, to use their own internal models and techniques to measure the key risks that they face, the probability of loss, and the capital required to meet those losses. In developing the framework, the Basel Committee wanted to incorporate many elements that help to promote a sound and efficient financial system over the setting of minimum capital requirements. But Basel II was not adequate to capture risks like securitisation, derivative transactions and repurchase agreement, or take into account the systemic risks associated with the increase of leverage in the financial system. Learning from the recent global financial crisis of 2007/2008, the stakeholders at various levels mooted a multitude of proposals for a fundamental restructuring of the approach to risk and regulation in the financial sector. With this in view, the BCBS reached an agreement on reforms to “strengthen global capital and liquidity rules with the goal of promoting a more resilient banking sector” which is popularly known as Basel III. The BCBS published the Basel III rules (2010) introducing a number of macro-prudential elements into the capital framework to help contain systemic risks arising from procyclicality and from the interconnectedness of financial institutions. It also introduced micro-prudential elements such as liquidity standards, and enhanced capital quality and quantity and leverage ratio regulation. The new accord also raises the standards of Pillar 2 (supervisory review processes) and strengthens Pillar 3 (disclosures). Most of the world including the major Asian countries have already announced an implementation timetable and action plan for Basel III, or are making preparations for implementation.

The banking business is turning into a global network of complex financial relationships. The Nepalese banking system is integrating into the global financial system day by day. In this context, it is necessary for the country to adopt the established principles and best practices developed in the global financial system. This study is thus important for the Nepalese economy, and for the individual banks and financial institutions that make up the financial system as well as for the oversight of the financial system. The objectives and scope of this study are as follows:

- a. To identify the opportunities and challenges of implementing Basel III for the Nepalese economy, banks and financial system, including the supervisory aspects;
- b. Review the impact of Basel III on supervisory concerns and its potential impact; and
- c. Explore the options and opportunities regarding the Basel III implementation.

1.2 General Outline of the Paper

- Objectives of the study
- Overview of the financial system and risk assessment in the Nepalese banking system
- Assessment of the impact of Basel III on the Nepalese banking system
- Issues and challenges in implementing Basel III in Nepal
- The way forward and strategic options
- Conclusion

2. Overview of Financial System and Risk Assessment in Nepalese Financial System

2.1 General Overview of Nepalese Financial System

Nepal had only a few financial institutions up until 1990. The financial institutions operated in the traditional manner and were very limited in their product offerings and delivery channels. Following the decade of 1990, Nepal entered into globalisation and adopted a financial liberalisation policy that created a conducive environment for the private sector to invest in the financial sector. As a result, many banks and financial institutions have been established extending their financial activities. With the expansion of banking entities and activities, the risk factors have also increased. The risk is growing with the globalisation of financial services, financial diversification and integration, evolution of new financial instruments and technology, and increased volatility of the business environment in a globalising economy.

The banking sector in Nepal has a long history starting from the establishment of the Nepal Bank Ltd., the first formal banking institution as a state-owned commercial bank in 1936. Until 1984, when the government initiated financial

reforms and adopted a liberalisation policy, the Nepalese financial sector was dominated by two state-owned commercial banks, namely, the Nepal Bank Limited (NBL) and the Rastriya Banijya Bank (RBB). The post-liberalisation period was marked by the rapid expansion of the banking sector, with active participation of the private sector comprising various types of institutions.

2.1.1 Types of Institutions, Structure and Ownership of Nepalese Financial System

The central bank of Nepal, Nepal Rastra Bank (NRB) was established under the Nepal Rastra Bank Act, 1955 on April 26, 1956. It was established as an autonomous body tasked with the objectives of economic development, currency management, growth and expansion of banking activities, etc. It serves as banker and advisor to the government by maintaining government deposits and providing the government with other banking services as well as advisory service on monetary and fiscal policy. The NRB has the authority to regulate and control foreign exchange operation and is authorised to regulate, control and develop the banking system and license opening of new banks and financial institutions. It is mandated to supervise, regulate and monitor all commercial banks, development banks, and finance companies as well as licensed NGOs (engaged in micro-finance) and co-operatives (engaged in limited banking).

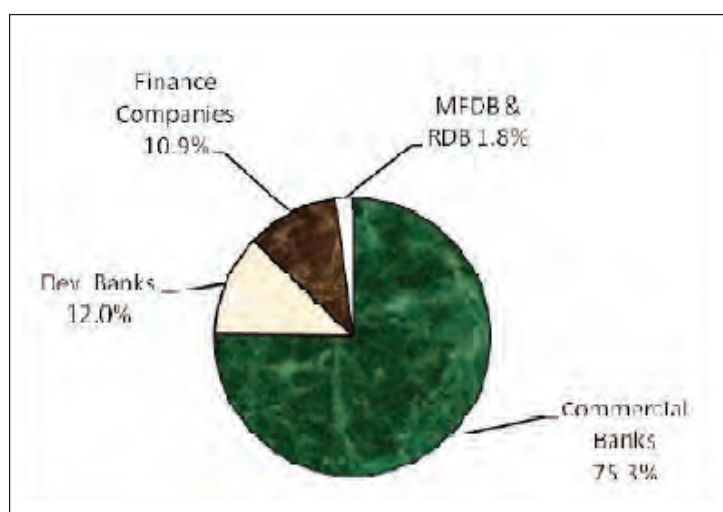
In Nepal, banks and financial institutions are categorised into four categories, namely, class “A” (Commercial Banks), class “B” (Development Banks), class “C” (Finance Companies), and class “D” (Micro-finance Institutions). Financial institutions differ according to their capital base and operations. For instance, class “A” institutions (Commercial Banks) can do all types of foreign exchange operations whereas class “B” (Development Banks) can not do all types of foreign exchange operations (i.e. letter of credit transactions). As of mid-July 2012, there are 32 commercial banks, (3 state-owned, 5 joint venture and 24 other private banks), 88 development banks, 70 finance companies (1 state-owned, 2 joint venture, 67 private companies), 24 micro-finance institutions, 16 cooperative societies involved in limited banking activities and 36 financial institutions non-government organisations (FINNGOs) involved in micro-finance activities, which are presently within the ambit of NRB’s regulation and supervision. There are two large state-owned banks which have negative capital and are currently under restructuring. A large segment of the population still do not have access to formal financial services in Nepal.

The other active participants in the financial sector that mobilise savings on contractual basis include 30 insurance companies, one employee’s provident fund

and one citizen investment trust. The employees' provident fund and citizen investment trust are owned and managed by the Government of Nepal. The insurance companies are regulated and supervised by the insurance board. Similarly, the Security Exchange Board (SEBO) is the regulator of the securities markets. The total number of companies listed on the NEPSE increased from 209 in mid-July 2011 to 216 in mid-July 2012. The banks and financial institutions dominate the number of listed companies. Of the total listed companies as of mid-July 2012, banks and financial institutions (including insurance companies) numbered 184, followed by production and processing industries 18, hotels 4, business entities 4, hydropower 4 and other companies 2.

As of mid-July 2011, the commercial bank group held 75.3% of total assets/liabilities followed by the development banks 12%, finance companies 10.9% and micro-finance development bank 1.8%. As of mid-July 2010, their shares were 76.7%, 10.6%, 10.9% and 1.8%, respectively, as presented below:

Chart 1
Total Assets / Liabilities Structure



Source: Bank and Financial Institutions Regulation Department, NRB.

The total liabilities is made up of the following as of mid-July 2011: deposits took up the dominant share at 74.9% followed by other liabilities 12%, capital fund 9.1% and borrowings 4%. Likewise in the same period, on the assets side, loan and advances accounted for the largest share at 61.6% followed by investments 14%, liquid fund 13% and others 11.4%. See the figures below.

Chart 2
Composition of Assets / Liabilities of Financial
System as of mid-July, 2011

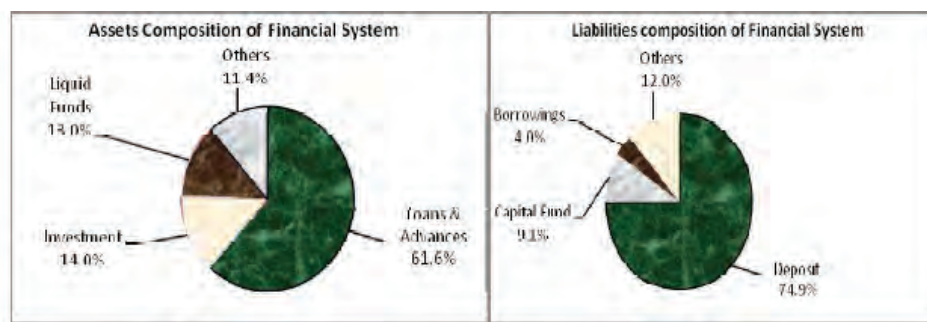


Figure 2 (a)

Figure 2 (b)

Source: Bank and Financial Institutions Regulation Department, NRB.

The structure of the Nepalese financial system is as follows:

Table 1
Structure of the Nepalese Financial System (Total Assets)

Types of Institutions	As of end-Dec 2011 (Rs. million)	Percentage
Nepal Rastra Bank	321760	19
Commercial Banks	867269	51.4
Development Banks	140100	8.3
Micro-finance Institutions	21508	1.3
Finance companies	126617	7.5
Financial co-operatives	7995	0.5
Financial NGOs	4938	0.3
Employees Provident Fund	108796	6.4
Citizen Investment Trust	26905	1.6
Insurance Companies	61213	3.6
Postal service	1153	0.1
Total	1688254	100

Source: Research Department, NRB.

US\$1 = Rs. 87.23, September 2012.

At present, Nepal has been following two sets of policies regarding the fixing of the exchange rates: one is convertible currencies and the other standard is Indian rupees (INR).

a. Convertible Foreign Currency

Convertible foreign currency means foreign currencies designated as convertible foreign currencies by the NRB through the publication and public broadcast. Dealers determine the rate of the convertible foreign currency. The banks and financial institutions are free to determine the selling and buying rate. Where there is over-pressure from the demand and supply of convertible foreign currency, the NRB has the authority to intervene in the market to stabilise the exchange rate.

b. Indian Rupees (INR)

India is the largest trading partner of Nepal. Nepal's trade with India accounts for more than 65% of the total external trade. Due to the open, boarder and excessive concentration of trade with India, Nepal has to keep the NPR/ INR rate fixed. Presently, 1 INR = 1.6 NPR.

Supervisory assessments are based on the CAMELS (Capital, Assets Quality, Management, Earning, Liquidity and Sensitivity to Market Risk) rating system. The NRB is planning to move towards Risk-based Supervision (RBS).

2.2 Risk Oversight Assessment and Vulnerabilities in Nepal Banking System

The risk management function is regarded as the prime responsibility of the Board of Directors of the banks and financial institutions. The principles of risk management require that a bank should be adequate in the practices of its board and senior management oversight and sound in its policies, procedures, limits, internal control and risk management practices. Banks with sound practice in risk management can promote self-regulation in banking. The Nepalese banks still depend on the NRB for the adoption and implementation of the international best practices. It is expected that banks should initiate the process of applying the international best practices in areas such as corporate governance, risk management process, and corporate social responsibility beyond the minimum standard set by the prudential regulations. The standard of risk management practices in the Nepalese banking sector is very low.

The Nepalese financial system remained generally stable in the global context as the financial system is not highly integrated with the global financial system as yet. The real GDP at basic price grew by 4.6% in FY 2011/12 compared to 3.9% in the previous year. The Nepalese economy is expected to grow around 5% in the coming years. Appendix 2 presents the details on the GDP ratio.

The major banking risks include credit risk, market risk, liquidity risk, operational risk, legal risk and reputation risk. Because of the various risk inherent in banking business, the responsibility of NRB for supervision of banks and financial institutions has increased immensely. The non-performing loans (NPL) of commercial banks decreased by 2.63% in FY 2011/12 compared to an increase of 3.19% the previous year while the provision coverage is 70.05%. In the context of Nepal, banks should be maintaining at least a 20% net liquidity ratio. As of mid July 2012, the average net liquidity ratio of banks was 42.4%, loan-deposit ratio 68.7% and statutory liquidity ratio, 31.2%.

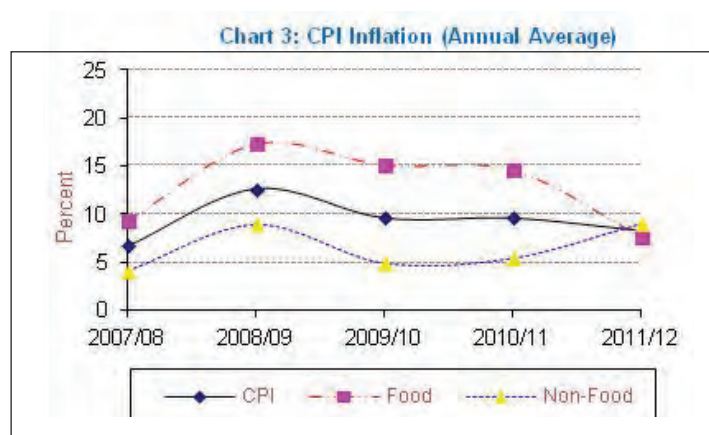
The short-term interest rates remained lower in FY 2011/12 compared to those in FY 2010/11. For example the weighted average 91-day Treasury bill rate remained at 1.3% FY 2011/12 compared to 7.4% in the previous year. Similarly, the weighted average inter-bank rate remained at 1.3% in review year compared to 8.4% in the previous year. The overall BOP recorded its highest ever surplus of Rs.128 billion in the FY 2011/12 compared to a surplus of Rs. 2.18 billion in the previous year. The current account posted a surplus of Rs. 76 billion in FY 2011/12 compared to a deficit of Rs.13 billion in the previous year.

The Nepalese currency vis-à-vis the US dollar depreciated by 19.9% in mid-July 2012 from the level of mid-July 2011. It had appreciated by 4.9% in the corresponding period of the previous year. The exchange rate of one US dollar stood at Rs. 88.60 in mid-July 2012 compared to Rs. 70.95 in mid-July 2011.

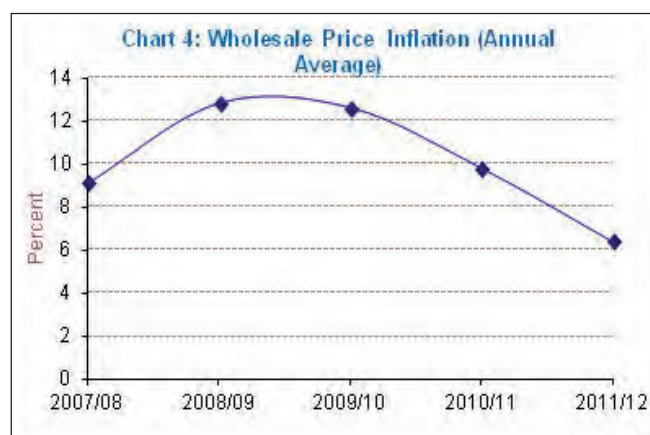
The NEPSE index, on y-o-y basis, increased by 7.4% to 389.74 points in mid-July 2012. The index had dropped by 24% in the previous year and stood at 362.85 points as at mid-July 2011. The y-o-y stock market capitalisation increased by 13.8% to Rs.368.26 billion in mid-July 2012. The ratio of market capitalisation to GDP stood at 23.6% in mid-July 2012. The ratio was also 23.6% a year ago. Banks and financial institutions constituted the biggest share in the total market capitalisation of the stock market. As of mid-July 2012, the share of banks and financial institutions stood at 68.9% while that of manufacturing and processing companies, hotels, business entities, hydropower

and other sectors stood at 3.2%, 1.8%, 0.3%, 5.3%, and 20.5%, respectively.

The annual average consumer price inflation increased by 8.3% in FY 2011/12 compared to an increase of 9.6% in FY 2010/11. The price index of food and beverage group increased by 7.7% whereas the index of non-food and services group increased by 9%, witnessing relatively lower price rises in the review period as compared to the previous year. The indices of food and beverage and non-food and services had increased by 14.8% and 5.4% respectively in FY 2010/11.

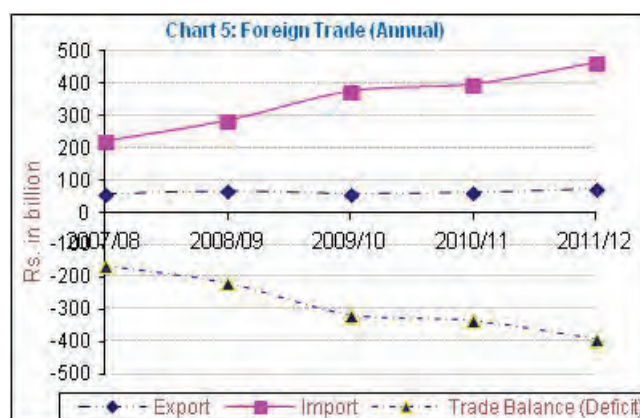


The annual average wholesale price inflation increased by 6.4% in the FY 2011/12 compared to a rise of 9.9% in the previous year. Appendix 2 presents the details for CPI.



Source: Research Department, NRB.

Merchandise exports which had increased by 5.8% in the previous year, recorded a growth of 15.4% to Rs. 74.26 billion in the FY 2011/12. Exports had amounted to Rs. 64.34 billion in the FY 2010/11.

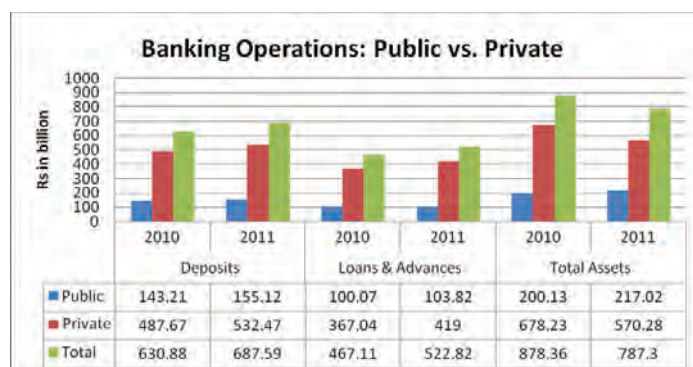


Source: Research Department, NRB.

Nepal's public sector banks control a sizable chunk of deposit, loans and advances and total assets of the banking sector. Total deposits of the banking sector increased by 9% to Rs. 687.59 billion in mid-July 2011 compared to a deposit of Rs. 630.88 billion in the previous year. Loans and advances of banking sector increased by 11.93% to Rs. 522.85 billion compared to total of Rs. 461.11 billion in mid-July 2010. The total assets of the banking sector in mid-July 2011 increased by 11.6% to Rs. 876.36 billion compared to Rs. 787.3 billion in the

previous year. The chart presented below shows the deposits and loans and advances and total assets of the banking sector of the public and private sectors:

Chart 6
Banking Operations: Public vs. Private as at Mid-July 2011



Source: Bank Supervision Department, NRB.

Deposit mobilisation of banks and financial institutions increased by 22.9% (Rs. 188 billion) in FY 2011/12. Such deposit mobilisation had increased by 12.9% (Rs. 94 billion) in the previous year. In the FY 2011/12, deposit mobilisation of commercial banks and development banks increased by 26.7% and 34% respectively whereas deposit mobilisation of finance companies decreased by 7.5%. The deposit structure of banks and financial institutions are as follows:

Table 2
Deposit Composition

Types of Deposit	Rs. billion
Saving deposit	401
Fixed deposit	372
Call deposit	188
Current deposit	96
Others	14
Total	1071

During the fiscal year, loans and advances of banks and financial institutions increased by 13.2% (Rs.113 billion) which had risen by 15.1% (Rs.112 billion) in the previous year. As of FY 2012/13, the total loans and advances of banks and financial institutions stood at Rs. 790 billion. The real estate loans of the

banking sector is not high relative to the global context. Productive sector lending increased slightly in recent years.

The NRB, being the central bank, understands the importance of maintaining financial stability as this has been expressed explicitly as one of the objectives in the NRB Act. The NRB has issued various prudential regulations (micro and macro regulation) for the banks and financial institutions in order to ensure financial stability. A separate financial stability index has not been developed for Nepal. Recently, the NRB established a high-level financial stability committee chaired by a senior deputy governor as well as a financial stability unit. With a view to addressing the emerging challenges posed by the forces of globalisation, financial liberalisation and integration of financial markets, the NRB has been working on the implementation of a five-year strategic plan since 2006. There is progress achieved with maintenance of financial stability.

2.3 Status of Application of Basel Capital Adequacy Framework in Nepal

In order to comply with the best practices, the NRB has formulated and issued various prudential regulations for the banks and financial institutions in 2001. These regulations are being strengthened and implemented gradually in order to ensure a safe, sound and efficient financial system. Most of the directives issued on March 2001 were based on the Basel Accord of 1988 and they are gradually being updated and enhanced to adopt the international best practices and review documents of the BCBS. Presently, other Nepalese financial institutions, except commercial banks, are adopting Basel I in Nepal. With a view of adopting the international best practices, the NRB implemented fully Basel II for the commercial banks since financial year 2008-09. All the three pillars were implemented at the same time, namely, the minimum capital requirements, supervisory review process and market discipline. The Nepalese banks and financial institutions are required to maintain at all times the capital requirements as stipulated below:

Table 2
Minimum Capital Fund Requirements

(%)

Bank & Financial Institutions	Tier 1 Capital	Capital Fund
"A" class under Basel II (Commercial Banks)	6	10
"B" class under Basel I (Development Banks)	5.5	11
"C" class under Basel I (Finance Companies)	5.5	11
"D" class under Basel I (Micro-finance Institutions)	4	8

2.3.1 Regulatory Capital Requirements under Basel II

Unless a higher minimum ratio has been set by the NRB for an individual bank through a review process, every bank shall maintain at all times, the capital requirement as set out below:

- a. Tier 1 (core) capital not less than 6% of total risk-weighted exposure (RWE).
- b. Total capital fund not less than 10% of total risk-weighted exposure.

2.3.2 Current Approach of Basel II Implementation in Nepal

Under the minimum capital requirements (Pillar 1) for credit risk, the NRB has adopted the Simplified Standardised Approach (SSA) as given in Annexure 11 of the Basel Accord. Given the complete absence of credit rating agencies in Nepal, the above option uses country rating for assigning risk weight requirements. In the absence of credit rating agencies, it is not possible to implement the advanced approach. Under this approach, banks are required to assign a risk weight to their balance sheet and off-balance sheet exposure. These risk weights are assigned a fixed weight that is broadly aligned with the likelihood of a counterparty default. Claims of foreign governments, their central banks as well as foreign corporates shall be generally risk weighted on the basis of the consensus country-risk scores of the Export Credit Agencies (ECA). In order to be consistent with the Basel II framework, credit risk for the regulatory capital purpose shall be computed by segregating the exposure in the following 11 categories:

- Claims on government and central bank
- Claims on other official entities
- Secured claims on banks

- Claims on corporate and securities firms
- Claims on regulatory retail portfolio
- Claims secured by residential properties
- Claims secured by commercial real estate
- Past due claims
- High risk claims
- Other assets
- Off-balance sheet items.

Likewise, for operational risk, the *Basic Indicator Approach* (BIA) is adopted. Under the BIA, banks must hold capital for operation risk equal to the average over the previous three years of fixed percentage (denoted alpha) of positive annual gross income.

The capital charge for operation risk may be expressed as follows:

$$KBIA = [\Sigma(GI_{1..n} \times \alpha)]/N$$

Where as:

KBIA = capital charge under the Basic Indicator Approach

GI = annual gross income, where positive, over the previous three years

N = number of the previous three years for which gross income is positive
= 15%.

The figure for the year in which annual gross income is negative or zero, should be excluded from both the numerator and denominator while calculating the average. In the case where the gross income for all of the last three years is negative, 5% of the total credit and investment, net of specific provisions, shall be considered as the capital charges for operation risk. For this purpose, investments shall comprise of money at call, placement, investment in government securities and other investments irrespective of currency. Similarly, in the case of new banks which have not completed a year of operation and hence whose average gross income cannot be measured reliably, they shall also be required to compute their capital charge for operational risk vide the same approach as

prescribed for banks with negative gross income. These banks may use the gross income approach from the second year onwards. But, based on the reasonableness of the so computed capital charge for operation risk, during the first three years of operation, the review process may require additional proportion of capital charge, if deemed necessary.

For market risk, the *Net Open Position Approach* (NOP) for foreign exchange risk is adopted. This approach only addresses the risk of loss arising out of adverse movements in the exchange rates. This approach will be consolidated over time to incorporate the other forms of market risks as they start to gain prominence. The designated NOP approach requires banks to allocate a fixed proportion of capital in terms of their net open position. The banks should allocate 5% of their net open position as capital charge for market risk.

The supervisory review process (Pillar 2) has been divided into three parts:

- a. Internal Capital Adequacy Assessment Process (ICAAP);
- b. Supervisory Review Process; and
- c. Supervisory Response.

Under the disclosure requirements (Pillar 3), banks should at minimum disclose the following information at the stipulated time intervals:

- a. Banks should provide the following disclosures at the end of each financial year along with their annual financial statements:
 - Capital structure and capital adequacy (details),
 - Risk exposure (details),
 - Risk Management Function: for each separate risk area (credit risk, market risk and operation risk), banks must describe their risk management objectives and policies.
- b. Banks should make the following disclosure on a quarterly basis on their respective websites:
 - Tier 1 and Tier 2 capital and a breakdown of its components,
 - Capital adequacy ratio, RWE for all risks and deduction from capital,

- Amount of NPAs, ratio (both gross and net) and movement of NPA,
- Segregation of investment portfolio into Held for Trading, Held to Maturity and available for sale category,
- Summary of the terms, conditions and main features of all capital instruments, especially in the case of subordinated term debts, including hybrid capital instruments and so.

2.3.3 Challenges of Implementing Basel II in Nepal

Ensuring compliance with the Basel Framework is a bit of a challenge in Nepal. The major challenges in implementing Basel II are as follows:

- Implementation of Basel II in other financial institutions,
- Implementation of the Advanced Approach,
- Full implementation of the Basel Core Principles,
- Competency of human resource,
- Weak management information system,
- Lack of rating agency,
- Enhancing corporate governance in banks.

3. Assessment of the Impact of Basel III

3.1 Assessment of Impact on Current Capital Ratio

3.1.1 Description of New Capital Rules

Basel III requires the banks to hold minimum 6% of Tier I, 8% of total capital fund and minimum 4.5% of common equity of total RWE. Under Basel III, the trading book exposures, especially those having credit risk and re-securitisation exposures in both the banking and trading book, attract enhanced capital charges. Basel III also requires capital conservation of 2.5% buffer. The capital conservation buffer will be phased in between January 2016 and year-end 2018, becoming full effective on January 2019. Basel III also introduced a minimum Tier 1 leverage ratio of 3%.

3.1.2 Status of Current Level and Adequacy of Capital of Individual Banks or Banking Groups in Terms of Key Performance Indicators for Capital

As at mid-July 2012, the average capital fund of commercial banks was 11.5%. The average capital fund of private sectors banks was 13.7%. Except for two state owned banks, all banks have comfortable capital positions. All institutions have more than minimum regulatory capital requirements.

The table below shows the capital ratio of commercial banks:

Table 4
Capital Adequacy Ratio

Banks	Tier 1 Capital (%)	(Mid-July 2012)
		Capital Fund (%)
State owned	2.64	4.39
Private	12.22	13.63

Note: Appendix 7 presented the details of CAR.

Source: Bank Supervision Department, NRB.

$$\text{Tier 1 capital} = \frac{\text{Total Tier 1 capital}}{\text{Total RWE}} \times 100$$

$$\text{Capital fund} = \frac{\text{Total capital}}{\text{Total RWE}} \times 100$$

The table below shows the trend of Tier 1 capital and total capital ratio:

Table 5
Trend of Capital Ratio

Capital (%)	2008	2009	2010	2011	2012
Tier1	1.81	5.24	7.88	9.05	10.00
Total Capital	4.04	7.22	9.62	10.59	11.50

The trend of Tier 1 capital and Total capital ratio is increasing.

The table below shows the percentage of common equity to total RWE of commercial banks:

Table 6
The Common Equity to Total RWE

(Mid-July 2012)

Banks	% of common equity to total RWE
stateowned banks	1.70
private banks	8.22

Source: Bank Supervision Department, NRB.

$$\text{Common equity ratio} = \frac{\text{Common equity}}{\text{Total RWE}} \times 100$$

3.2 Assessment of Current level of Leverage

The table below shows the Tier 1 capital to total assets of commercial banks:

Table 7
Tier 1 Capital to Total Assets

(Mid-July 2012)

2008	2009	2010	2011	2012
1.33 %	4.02 %	6.40 %	7.00%	8.10 %

Source: Bank Supervision Department, NRB.

$$\text{Tier 1 capital leverage ratio} = \frac{\text{Tier 1 capital}}{\text{Total Assets}} \times 100$$

As of mid-July 2012, the average Tier 1 capital to total assets was 8.10%. The trend of Tier 1 capital to total assets is increasing.

3.3 Assessment of Liquidity in Terms of New Liquidity Ratios

3.3.1 Description of New Liquidity Rules

Basel III has developed two liquidity standards, namely, the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR). The LCR requires a bank to hold sufficient high quality liquid assets to survive an acute stress scenario lasting for a month.

$$\text{LCR} = \frac{\text{Stock of high quality liquid assets}}{\text{Net cash outflows over a 30 days time period}} \geq 100\%$$

Total net cash outflows = total expected cash outflows minus total expected cash inflows for the subsequent 30 days in the specified stress scenario.

The LCR aims to ensure that a bank maintains adequate, high quality liquid assets that can be converted into cash to meet its liquidity needs for a duration of 30 days. The NSFR requires the available amount of stable funding to exceed the required amount of stable funding over a period of extended stress. It provides a sustainable maturity structure of assets and liquidity.

$$\text{NSFR} = \frac{\text{Available amount of stable funding (i.e. source)}}{\text{Required amount of stable funding (i.e. uses)}} \geq 100\%$$

3.3.2 Current Level and Adequacy of Liquidity of Individuals Banks or Banking Groups in Terms of Key Performance Indicator for Liquidity

Liquidity is the ability of a bank to fund increase in assets and meet obligations as they come due, without incurring unacceptable losses. Liquidity risk is considered as a major risk for banks. It arises when the cushion provided by the liquid assets are not sufficient to meet its obligation. The Nepalese banks and financial institutions generally have comfortable liquidity positions.

The table below shows the net liquid assets, credit/deposit and statutory liquidity ratio of commercial banks:

Table 8
Liquidity Ratio

(Mid -July 2012)

Net Liquidity Assets	Loans/Deposit	Statutory Liquidity
42.39 %	68.65 %	31.15%

Note: Net liquid assets include cash and bank balance, money at call and short notice, placement up to 90 days and investment in govt.securities. Borrowing repayable up to 90 days is deducted from liquid assets to obtain net liquid assets.

Source: Bank Supervision Department, NRB.

At the mid -July 2012, the average net liquid assets, loan to deposit and statutory liquidity ratio of banks was 42.4% , 68.7% and 31.5% respectively.

$$\text{Net liquid assets ratio} = \frac{\text{Total net liquid assets}}{\text{Total local currency deposit}} \times 100$$

$$\text{Total loan to total deposit ratio} = \frac{\text{Total loan}}{\text{Total local currency deposit} + \text{core capital}} \times 100$$

$$\text{SL Ratio} = \frac{\text{Cash balance} + \text{NRB balance with CRR purpose} + \text{gove.securities}}{\text{Total local Currency deposit}} \times 100$$

3.3.3 Qualification of LCR and NSFR and Assessment of Future Liquidity Requirements

The Basel III liquidity requirements change demand from short-term to long-term funding arrangement that impact on the pricing and margins that are achievable. They reduce the lending/investment capacity of the banking sector. The significant increase in the capital and liquidity requirements may lead to a reduction in the capacity for banking activity and a significant increase in the cost of providing of such lending. Thus, the Nepalese banks should raise their focus on light capital products and attract more stable funding from retail and

Small and Medium Size Enterprises (SME) deposits. Banks can increase the proportion of short maturity lending to minimise funding cost. Banks will have to allocate to segments that generate higher returns - adjusted for risk capital and funding cost - provided that these segments can be efficiently served by the banks.

3.4 Impact on Different Peer Groups and Banking System

In the context of Nepal, the capital ratios (Basel II) exceed the Basel requirements, i.e. Tier-1 capital not less than 6% and total capital fund not less than 10 % of its total RWE. As of mid-July 2012, all the commercial banks and financial institutions, other than two state-owned banks, have maintained capital at a level above the minimum regulatory requirements. (The two state-owned banks are under the restructuring process). As of mid-July 2012, the average Tier 1 capital of the Nepalese commercial banks is 12.2% (except for the two state-owned banks), and the average capital fund (Tier 1 & Tier 2) of the Nepalese commercial banks is 13.7% (except for the two state-owned banks). Similarly, the portion of tier 1 capital of total capital was 87%. In Basel III, the trading book exposures, especially those having credit risk and re-securitisation exposures in both banking and trading book, attract enhanced capital charges. In the context of Nepal, the banks are very small and, as they do not have any exposure to re-securities instruments, the impact of these changes on capital is insignificant. Appendix 5 presented the details composition of capital.

Basel III requires banks to hold a minimum 4.5% of common equity of total RWE. At of mid-July 2012, the state-owned banks have below 4.5% of common equity of total RWE. Most of the private sector banks (except two banks) have above 4.5% of common equity of total RWE. The average common equity of total RWE of the Nepalese private sector commercial banks is 8.2%.

Basel III introduced a minimum Tier 1 leverage ratio of 3 %. The Nepalese banks are generally not as highly leveraged as their other global counterparts. As of mid-July 2012, the average Tier 1 capital to total assets of Nepalese commercial banks was 8.1%. Thus, the leverage ratio of the Nepalese commercial banks would be comfortable.

Basel III also requires capital conservation of 2.5% buffer. The capital conservation buffer will be phased in between January 2016 and year-end 2018, becoming fully effective on January 2019. This transition arrangement allows sufficient time for a smooth transition to the new regime.

Liquidity management is important in the banking sector because a liquidity shortfall in a single institution can have system-wide repercussions. The NRB has incorporated liquidity risk in Basel II. According to these provisions, where a bank's net liquid asset to total deposit ratio is less than 20%, a risk-weighted 1% of total deposit for each percent or portion of percent shortfall in such ratio, is added to total of the RWE. Similarly, the Nepalese banks should maintain a Statutory Liquidity Ratio (SLR) at 15% of their total domestic deposit liabilities. Failure to meet such obligations results in monetary penalties, computed on the basis of the bank rate. Similarly, the NRB has prepared and issued a liquidity-monitoring framework to monitor the liquidity position of the banks. The framework requires banks to submit their short-term liquidity position (liquid assets to short-term liabilities position), deposit and credit concentration, interbank transaction, borrowing from the NRB (SLF, Repo, refinance), and liquidity profile (short- and long-term assets liability position) subject to a given timeframe.

As of mid-July 2012, the average net liquid assets of the Nepalese commercial banks are 42.4%. Thus, the liquidity position of the Nepalese banks is comfortable. Similarly, the total loan/total deposit ratio is 68.7%. In the context of Nepal, the banks have high net liquid assets and also are comfortable with regard to their total loan/total deposit position. The Basel III liquidity standards are expected to be a factor of Treasury Bill interest rate decrease.

The weaker Nepalese banks will likely face difficulty in raising the required capital and funding, reduction in business models and potential competition. So, the weaker Nepalese banks risk being crowded out. This encourages the merger and acquisition of the Nepalese financial institutions. Most of the Nepalese banks can be expected to experience significant pressure on profitability, ROE and dividend. Thus, the Nepalese investors may be less attracted to debt and equity of the banks. It reduces the Nepalese investors' appetite for bank debt and equity. The enhanced capital and liquidity buffers, together with the focus on enhanced risk management standards and capability, may lead to reduced risk of individual bank failures and reduced interconnectivity between the Nepalese financial institutions.

4. Issues Challenges and Implications of Implementing Basel III

4.1 Regulatory Constraints

With the promulgation of the Nepal Rastra Bank Act, 2002, the NRB was granted greater autonomy in its operations with respect to the formulation of regulations and initiation of remedial steps that NRB may take without reference

to the government or the need to obtain its prior approval. It may be necessary to amend the current NRB Act to strengthen its intervention capacity. The NRB has issued the Risk Management Guidelines based on the Basel core principles in setting the minimum standards for risk management in banks. However, the effective risk management practices in the Nepalese banking sector remain low.

Stress testing is a risk management tool used to evaluate the potential impact on a firm of a specific event and/or movement in a set of financial variables. It is widely used in the global context. The NRB has issued the stress-testing guidelines. According to these guidelines, the commercial banks are required to conduct stress test on a regular basis. The results of the stress test should be discussed by the board and top-level management of banks. Banks should also report to the Bank Supervision Department, NRB, on a quarterly basis.

The regulators and supervisors are constrained by the lack of common understanding of the interlinked problems. Many issues are emerging that are of common interest to the different regulators. Therefore, it is crucial for the regulators to have shared understanding of such concerns for them to act in the same direction towards maintaining a sound, prudent and functioning financial system. In the context of Nepal, there is no significant co-operation among the relevant authorities (e.g. bank regulator and securities regulator).

4.2 Capital Augmentation and Related Issue

Basel III is a global regulatory standard prescribed for bank capital adequacy that was developed in response to the deficiencies revealed by the financial crisis. Basel III introduced capital conservation of 2.5% and countercyclical buffer up to 2.5% capital during the period of high credit growth. It significantly increases the required level of capital and quality of capital. Under Basel III, the trading book exposure in both banking and trading book attracts enhanced capital charges. There will be an impact on the Return on Equity (ROE), profitability and dividends. The ROE, profitability and dividends pay ratio of banks will decrease significantly. In the context of Nepal, the dividends pay ratio, ROE and profitability are low. It will further reduce the Nepalese banks' dividends pay ratio, ROE, and profitability.

4.3 Review of Assets and Liability Management Strategies

By the new accord, banks will have to review their current portfolio and business model. This should be done thoroughly, understanding how new capital, liquidity, funding and leverage requirement affect each segment and product,

including changes in funding and deposit structures, such as shift from short-term to long-term funding, volatile funding to non-volatile funding. Banks can increase the proportion of short maturity lending to minimise their funding cost. Banks will have to allocate to segments that generate higher returns - adjusted for risk capital and funding costs - provided that these segments can be efficiently served by the banks. Basel III reduces the investment/lending capacity of the banking sector. It requires banks to hold more capital against their assets, thereby decreasing the size of their balance sheet and their ability to invest with borrowed capital. Under the new accord, banks will have to review their current portfolio and business model of each segment. The Nepalese banks mostly follow a retail business model and do not depend on wholesale fund. Nevertheless, the Nepalese banks will be required to review their portfolio strategy and to exit or re-price certain areas of business as well as invest in their ongoing balance sheet management capabilities.

4.4 Implications on Cost and Profitability

Basel III introduced capital conservation of 2.5% and countercyclical buffer up to 2.5% capital during the period of high credit growth. It significantly increases the required level of capital and quality of capital. Under Basel III, the trading book exposure in both banking and trading book attracts enhanced capital charges. It will likely impact on income moving from loans to more liquid assets, and on funding cost due to the change in the funding structure. It will also impact on loan pricing and on margin (spread between lending and deposit policy).

4.5 Implication on Financial Market/Economy

The Nepalese economy is experiencing weak performance as indicated by the overall macro-economic variables. Low economic growth, high inflation, high proportion of consumption in gross domestic products (GDP) and low rate of saving are some of the challenges for the Nepalese economy. The various sectors of the Nepalese economy, such as agriculture, industries, are achieving a low level of growth. Currently, the GDP growth rate is around 4.6%. The country is undergoing a transformation process. It is challenging for the country to channel more resources towards economic activities. Basel III reduces the investment/lending capacity of the banking sector. It will also have adverse impact on the monetary policy transmission channel due to deposit rate increase as a result of competition and due to the liquidity standards. It requires banks to hold more capital against their assets, thereby decreasing the size of their balance sheet and their ability to invest with borrowed capital. The commercial bank's credit/GDP ratio of Nepal is around 40%, which is relatively lower as compared with

that of many developed countries. Higher interest rates and a lower volume of loans may impact on economic development to cause a slowdown. The Nepalese economy is expected to grow around 5% annually for the coming years ahead. This will necessitate a growth in the banks' equity capital.

4.6 Infrastructure Issues

The data management requirement of the new accord is significant. To achieve compliance with the new accord, banks must ensure that their risk and finance teams have quick and easy access to centralised clean and accurate data. Supervisory strength depends on timely collection, analysis and interpretation of the financial data. In the context of Nepal, most of the banks have weak IT infrastructure. Therefore, it is necessary to modify the IT infrastructure to adopt the new accord. There is no credit rating agency in Nepal to date. In the absence of a credit rating agency it is not possible to implement the advanced approach.

4.7 Human Resources Constraints

One of the key challenges in implementing Basel III is developing and retaining human resources. Human resources are vital for any organisation. The rapid growth of the banking system in Nepal calls for competent human resources to cope with the challenges of the modern, dynamic environment. As banking activities in terms of number and volume of the transactions expand, there is a high demand for skilled and competent manpower. High staff turnover and mobility of employees from one bank to another are commonplace in the Nepalese banking sector.

4.8 Impact of Cross-border Supervision

Cross-border banking has become an important structural feature of global banking. It provides a major avenue for banks to realise their optimal size, reap economies of scale, and scope to diversify their banking activities and spread risk and revenues. It has impact on financial stability. Regulators thus need to support and provide banks with an adequate framework for their banking activities. Nepal has opened up its financial sector to foreign banks for them to establish branches in the country since the beginning of 2010. To date, there are no foreign bank branches operating in Nepal or any Nepalese bank branches operating abroad. Cross-border banking activities are not significant, hence there is no pertinent issue arising from cross-border transaction and cross-border supervision.

4.9 Issue in Implementation of Counter Cyclical Capital Buffer

Basel III introduced countercyclical buffer up to 2.5% capital during the period of high credit growth. This buffer is expected to be imposed at a national level only during the times of excessive credit growth and will be allowed to be released during the times of credit contraction. For the implementation of the countercyclical capital buffer, the regulator should be developing the mechanism for calculating the countercyclical buffer. Successful implementation of the countercyclical capital buffer requires the proper harmonisation of the micro and macro perspectives.

5. The Way Forward and Strategic Options

5.1 Strengthening Regulatory Reforms

It requires firm commitment from top-level management of both the NRB as well as banks. For effective implementation of the new framework, the following legislative reforms/ framework should be developed in Nepal:

- Amendment of the NRB Act to strengthen its intervention capacity.
- Implementation of the enhanced Prompt Corrective Action (PCA) framework.
- Decisive treatment of problematic banks (orderly resolution including liquidation of non-viable banks).
- Complete resolution framework, such as formulation of government bailout schemes for systemically important banks and enhancement of coverage of deposit guarantee.
- Further improvement of supervision, such as more frequent and rigorous on-site and risk-based supervision.
- Strengthening of the Credit Information Centre (CIC).
- Restructuring of the two large, systemically important state-owned banks should be completed.
- Effective implementation of the recently issued guidelines covering such areas as risk management, stress testing, ICAAP, and IT.

The NRB has already developed the Prompt Corrective Action (PCA) by-laws that are triggered by capital shortfalls. The NRB has also realised the

need to incorporate additional provisions for triggering action based on liquidity and NPA in the PCA by-laws.

Supervisory capacity is a constraint in the implementation of Basel III. It calls for an increase in the capacity of supervisors both in numbers and quality. The supervisors need to be adequately trained and well equipped with the necessary resources and tools for effective supervision.

The challenge to regulators and supervisors is enhancing the corporate governance in banks. The Board of Directors and senior management need to have adequate banking knowledge and experience to ensure sound practices of corporate governance in the banks. The Board of Directors of each bank shall be responsible for establishing and maintaining an adequate level of capital at all times. The capital standards herein are the minimum prescribed for banks that are fundamentally sound and well managed, and which have no material, financial or operational weakness. In the context of Nepal, the majority of the Board of Directors of the banks have business background but no prior banking knowledge and experience. Almost half of the directors are from the business sector.

5.2 Capital and Strategic Liquidity Management by Banks

The responsibility for the implementation of the new accord does not only rest on the regulator. The Board of Directors, top-level management and risk managers of the banks also play a distinctive role in adopting the Basel framework. The internal auditors are required to have understanding of the bank business to recommend improvements to the internal control system of the banks. It is necessary to balance the interests of the business and the need of the regulator in the implementation of the new accord. Commitment is required from the top-level management of the banks. Active dialogues are to be held with the banks regarding risk management practices, divestment, active balance sheet management, capital and liquidity management strategies, redesign of business models and portfolio focus, etc., and impact assessment carried out on the new capital and liquidity requirements. The Nepalese banks will procure capital through internal resources instead of new equity share. Issuance of new equity share is much more costly than other funding sources. The Nepalese banks may respond either by enhancing their capital or by reducing their RWE. The Nepalese banks will be reviewing their portfolio strategy and exit or re-price certain areas of business as well as invest in their ongoing balance sheet management capabilities.

The NRB has already introduced the liquidity monitoring framework. Now, the Nepalese banks maintain short-term liquidity (net liquid assets) by holding cash balance, central bank reserves, and sovereign debt issued in domestic currencies, foreign sovereign debt, call deposit in foreign banks, etc. For the purpose of the NSFR, the Nepalese banks should focus their investment on foreign corporate bonds having a minimum rating of AA, certificate of deposit in foreign banks and such instruments. To extend funding maturity, the Nepalese banks will try to raise the longer-maturities fixed deposits to demandable deposits ratio. The LCR will be introduced on 1 January 2015. The NSFR will move to the minimum standard by 1 January 2018. Ample transition time is provided for the banking sector to implement the new liquidity framework and meet the standards.

5.3 Development of Capital Markets and Instruments

The successful implementation of the new accord also depends on the proper development of capital markets and their instruments. Capital market deals with long-term securities such as bonds, stock, etc. Shares are associated with financial resource mobilisation on a long term basis. They are instruments for borrowing and lending of funds for periods longer than a year. The capital market is to channel savings for investment in order to enhance economic growth of the country. The capital market is slowly growing in Nepal. It is not well developed and operates with limited instruments. In fact, due to the lack of financial literacy, there is low public confidence in the Nepalese capital market. It is necessary to develop the Nepalese capital markets and associated instruments for successful implementation of the new accord.

5.4 Development of Infrastructure and Address Related Issues

Strong management information system is required to detect problems on a timely basis and develop early warning signals for the banks to take prompt corrective action. In the context of Nepal, most of the banks have weak IT systems. Presently many of the computations of Basel II require manual intervention by banks due to inadequacies in their software. While investment in IT will be huge, the challenge is to invest and make improvements to the quality of customer service at an affordable cost. To implement Basel III, banks should upgrade their IT systems.

5.5 Capacity Building for Staff of Regulators and Banks

The effective implementation of the new accord also depends on the quality and competency of the NRB. There is a need for capacity building for both supervisors and bankers. The supervisory capacity of the NEB is to be strengthened and the human resources of banks working on the new accord are to be adequately developed through training and development programmes.

5.6 Road Map for Implementation of Basel III

The Nepalese financial institutions, except commercial banks, are adopting Basel I. The decision has been made to implement Basel II in other institutions gradually. To date, the NRB has not finalised the Basel III implementation plan for commercial banks. Most of the developed world including the major Asian countries have already announced an implementation timetable for Basel III or are consulting on the implementation process. The policy approach to the financial sector in Nepal purposes to have banks conform to the international best practices through the process of gradual harmonisation.

6. Conclusions

Basel III aims to improve the banking sector's ability to absorb shocks from any source, impose risk management and governance, strengthen bank's transparency and disclosure, and reduce risk spillover to the real economy. The BCBS has issued the more detailed Pillar 3 disclosure requirements. The attainment of financial stability necessitates specific macro-prudential elements. Basel III seeks to address the issues relating to systemic risk through various measures, including the leverage ratio, capital conservation buffer, countercyclical capital buffer, procyclicality and provisioning.

Basel III provides a good opportunity to further improve the Nepalese banking sector's ability to absorb shocks arising from financial and economic stress, enhance transparency and resilience of the Nepalese financial system, promote integration of the financial system and boost public confidence in the Nepalese banking system. The implementation period of Basel III will be from 1 January 2013 to 1 January 2019. The transitional arrangements are to facilitate the implementation of Basel III in the Nepalese financial system.

Basel III is an opportunity to further enhance the resilience of the Nepalese financial system. It enhances the Basel II capital accord and the new global micro- and macro-prudential banking standards. It may help strengthen the

Nepalese financial system and provides a good platform for Nepal to achieve the following:

- Enhance risk management practices, market discipline and the supervisory review process in the Nepalese financial system;
- Enhance capital quality, quantity and liquidity standards which makes the Nepalese financial system more resilient, further improving the shock absorbing capacity of each and every Nepalese bank;
- Implement a macro-prudential approach to regulation and supervision, improving the oversight of system-wide risk to reduce systemic risk in the Nepalese banking system; and
- Learn from the past global financial crises to reduce the likelihood and impact of future ones.

The major changes and implications of Basel III can be categorised are as follows:

- Increased quality and quantity of capital of the banks;
- Increased short-term liquidity coverage and stable long-term balance sheet funding of the banks;
- Reduced leverage through the introduction of the backstop leverage ratio; and
- Strengthening risk captures, especially counterparty risk.

One of the key challenges in implementing Basel III in the Nepalese banking system is raising capital. As transformation of the Nepalese economy gains momentum, credit is set to rise sharply. The key challenge is finding the capital under Basel III which is likely to be huge. Additional capital will be required for each Nepalese bank to maintain the 10% CAR. The two systematically important and problematic state-owned banks which are currently under restructuring, should be resolved. Enhancing corporate governance in banks is also a challenge implementing Basel III in the Nepalese banking system. The international best practices of corporate governance are not fully complied with in the Nepalese banking system. Insider lending, weak internal control system, lack of sound risk management practices, low level of transparency are some of the common weaknesses of the Nepalese banking system, though Basel III may further strengthen the Nepalese financial system.

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Abbreviations

BCBS	- Basel Committee on Banking Supervision.
NRB	- Nepal Rastra Bank.
SSA	- Simplified Standardised Approach.
BIA	- Basic Indicator Approach.
NOP	- Net Open Position.
RWE	- Risk Weighted Exposures.
LCR	- Liquidity Coverage Ratio.
NSFR	- Net Stable Funding Ratio.
CD Ratio	- Credit/ Deposit Ratio.
ROE	- Return on Equity.
GDP	- Gross Domestic Products.
MIS	- Management Information System.
IT	- Information Technology.
CAR	- Capital Adequacy Ratio.
PCA	- Prompt Corrective Action.
ICAAP	- Internal Capital Adequacy Assessment Process.
SME	- Small and Middle Size Enterprises.
NPR	- Nepalese Rupees.
NPA	- Non-performing Assets.
IMF	- International Monetary Fund.
ECA	- Export Credit Agencies.

Appendix

Table 1

Non-Performing Loan Ratio (NPL) of Banks

2008	2009	2010	2011	2012
6.08 %	3.64 %	2.48 %	3.19 %	2.63 %

Table 2

Major Economic Indicators

Indicator	2008	2009	2010	2011	2012
GDP (%)	6.1	4.5	4.8	3.9	4.6
Inflation (%)	6.7	12.6.	9.6	9.6	8.3

Table 3

Trends of Statutory Liquidity Assets Ratio of Banks

2008	2009	2010	2011	2012
NA	NA	14.54 %	25.56 %	31.15 %

Table 4

Comparison of Tier 1 and Total Capital of Banks (mid -July 2012)

Tier1 capital (%)	Total capital (%)	Tier 1 of Total capital
10	11.5	87.02

Table 5**Composition of Capital of Banks**

Components	Percent
Tier 1	87.02
Share capital	71.46
Share premium	0.22
Retained rarning	-17.37 (Due to huge loss of two state owned banks)
Statutory general Reserve	20.72
Other disclosed Reserve	14.10
Less-miscellanies expenses not write-off	0.12
Less- Investment in equity of institutions in excess limit	0.25
Less-DOSORI loans (insider lending)	0.80
Less- investment in equity in financial institutions	0.93
	12.98
Revaluation Reserves	0
Reserves	1.11
Subordinated Debt	5.37
Other	6.50

Table 6**Leverage Ratio of Banks**

2008	2009	2010	2011	2012
1.33 %	4.02 %	6.4 %	7.0 %	8.10 %

Table 7**Capital Adequacy Ratio of the Banks****State Owned Banks**

Capital	2007	2008	2009	2010	2011	2012
Tier 1	-20.88	-17.64	-10.71	-3.09	-2.01	2.64
Capital fund	-20.88	-17.64	-10.71	-3.09	-2.01	4.39

Private Banks

Capital	2007	2008	2009	2010	2011	2012
Tier 1	8.41	9.53	10.32	11.77	12.56	12.22
Capital fund	10.52	11.57	12.18	13.42	13.95	13.63

Source: Bank Supervision Department, NRB.

Table 8**Net Liquid Assets and Total Loan to Total Deposit of Commercial Banks****State Owned Banks**

Particulars	2007	2008	2009	2010	2011	2012
Net liquid assets	34.24	44.01	35.82	30.45	31.51	42.39
Total loan to total deposit	60.50	60.49	60.59	72.62	68.69	68.14

Private Banks

Particulars	2007	2008	2009	2010	2011	2012
Net liquid assets	30.87	37.50	29.34	36.59	32.12	32.73
Total loan to total deposit	72.86	77.12	75.02	74.88	76.81	70.01

Source: Bank Supervision Department, NRB.

Table 9**Others Economic Indicators**

Particulars	2007	2008	2009	2010	2011
Exchange rates (1 us dollar)	63.25	77.35	74.35	71.82	84.99
Total Borrowing (Rs. in million)	26704	31391	35388	38074	47096
Total capital fund (Rs. in million)	6901	25778	52682	77264	105816
Liquid fund (Rs. in million)	58064	97918	142159	152590	151266
Investment (Rs. in million)	101888	120336	141347	147744	162870

Source: Bank and Financial Institutions Regulation Department, NRB.

Table 10**Tier 1 Capital and Capital Fund of Banks and Financial Institutions**

Banks & Financial Institutions	2007	2008	2009	2010	2011	2012
Commercial Banks:						
State owned:						
Tier 1 capital-	-20.88	-17.64	-10.71	-3.09	-2.01	2.64
Capital Fund-	-20.88	-17.64	-10.71	-3.09	-2.01	2.64
Private banks:						
Tier 1 capital -	8.41	9.53	10.32	11.77	12.56	12.22
Capital fund-	10.52	11.57	12.18	13.42	13.97	13.63
Finance Companies:						
Tier 1 capital-			18.31	20.41	18.93	15.77
Capital fund-			19.36	21.26	19.75	16.51
Development Banks:						
Tier1 capital-			20.81	20.39	20.61	18.20
Capital fund-			21.72	21.28	21.45	19.05
Micro finance Institutions:						
Tier 1 capital-					13.35	11.76
Capital find-					14.35	12.77

Source: Bank Supervision Department and Financial Institutions Supervision Department, NRB.

Table 11

Key Macroeconomic Indicators

Indicator	Annual Percentage Change						
	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10 ^R	2010/11 ^P
Real GDP at Producers' Price	3.5	3.4	3.4	6.1	4.4	4.6	3.5
Nominal GDP at Producers' Price	9.8	11.0	11.3	12.1	21.1	18.6	14.9
Nominal GDP at Basic Price	9.5	11.4	10.6	11.7	20.4	16.7	14.9
GNI at Current Price	10.5	11.5	11.6	12.0	21.4	18.1	14.6
Total Consumption	10.1	14.2	10.3	12.1	21.7	21.3	15.8
Total Investment	18.4	12.7	18.9	18.4	26.5	31.3	-0.9
Gross National Saving	14.5	13.4	9.5	30.3	30.7	6.8	10.1
Gross Domestic Saving	8.0	-13.7	21.6	12.2	16.0	-6.9	3.5
Gross Fixed Capital Formation	7.7	15.3	13.1	16.4	18.3	12.3	2.5
Gross National Disposable Income	11.1	14.0	10.1	16.5	24.1	17.2	14.3
National Consumer Price Index	4.5	8.0	5.9	6.7	12.6	9.6	9.6
National Wholesale Price Index	7.3	8.9	9.0	9.1	12.8	12.6	9.8
National Salary and Wage Rate Index		3.9	9.8	9.7	15.3	17.2	18.0
Money Supply (M1)	6.6	14.2	12.2	21.6	27.3	11.0	4.5
Broad Money (M2)	8.3	15.6	14.0	25.2	27.3	14.1	9.5
Domestic Credit	13.8	11.7	16.7	21.3	27.1	17.2	12.9
Domestic Credit to Private Sector	14.2	14.4	18.9	24.3	29.0	14.2	11.7
Time Deposits	9.2	16.4	14.9	27.0	27.3	15.5	11.7
Total Exports	8.9	2.6	-1.4	-0.2	14.2	-10.2	6.1
Total Imports	9.7	16.3	12.0	14.0	28.2	31.6	5.5
Gross Forex Reserves	-0.2	27.0	0.1	28.8	34.8	-6.2	1.2
Government Revenue	12.5	3.1	21.3	22.7	33.3	25.4	14.7
Government Tax Revenue	12.3	6.1	23.9	19.7	37.5	33.5	13.2
Government Expenditure	14.7	8.1	20.5	20.8	36.1	18.2	17.9
As % of Nominal GDP at Producers' Prices							
Total Consumption	88.4	91.0	90.2	90.2	90.6	92.6	93.3
Total Investment	26.5	26.9	28.7	30.3	31.7	35.0	30.2
Gross National Saving	28.4	29.0	28.6	33.2	35.9	32.3	30.9
Gross Domestic Saving	11.6	9.0	9.8	9.8	9.4	7.4	6.7
Gross Fixed Capital Formation	19.9	20.7	21.1	21.9	21.4	20.2	18.0
Gross National Disposable Income	116.9	120.0	118.7	123.4	126.4	124.9	124.3
Money Supply (M1)	17.0	17.3	17.4	18.9	19.8	18.4	16.9
Broad Money (M2)	51.0	53.0	54.3	60.7	63.6	60.8	58.5
Domestic Credit	47.5	49.3	49.5	53.6	56.1	55.0	54.6
Domestic Credit to Private Sector	33.4	37.2	37.6	41.7	44.2	42.3	41.5
Time Deposits	34.0	35.7	36.9	41.8	43.8	42.4	41.6
Total Exports	10.0	9.2	8.2	7.3	6.9	5.2	4.8
Total Imports	25.4	26.6	26.8	27.2	28.8	31.9	29.3
Trade Balance	-15.4	-17.4	-18.6	-19.9	-21.9	-26.8	-24.5
Current Account Balance	2.0	2.2	-0.1	2.9	4.2	-2.4	-0.9
Gross Forex Reserves	22.0	25.2	22.7	26.1	29.0	23.0	20.2
Government Revenue	11.9	11.1	12.1	13.2	14.5	15.4	15.3
Government Tax Revenue	9.2	8.8	9.8	10.4	11.8	13.3	13.1
Government Expenditure	17.4	17.0	18.4	19.8	22.2	22.2	22.7
Government Budgetary Deficit	3.1	3.8	4.1	4.1	5.0	3.5	3.8
Gross Domestic Borrowing	1.5	1.8	2.5	2.5	1.9	2.6	2.5
Net Domestic Borrowing	0.5	0.7	1.1	1.5	1.0	1.9	2.1

R = Revised

P = Preliminary estimates

Source: Central Bureau of Statistics and Nepal Rastra Bank

Table 12

Real Sector

	(Rs. in million)						
	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10 ^R	2010/11 ^P
Nominal GDP at Producers' Price	589412	654084	727827	815658	988053	1171905	1346816
Nominal GDP at Basic Price	548485	611118	675859	755257	909309	1060881	1219116
Agriculture	199368	211704.4	226823	247191	309553	383093.9	449675.9
Non-agriculture	367211	418626	470541	532251	629118	712943	811534
Gross Capital Formation	155907	175633	208779	247272	312810	410725	406919
Gross Fixed Capital Formation	117539	135532	153337	178446	211039	236894	242931
Government	17213	17509	24645	32993	44278	53023	51443
Private	100326	118023	128692	145453	166761	183871	191488
Change in Stock	38368	40101	55442	68826	101771	173831	163988
Total Consumption	521301	595327	656374	735470	895042	1085292	1257179
Government Consumption	52453	56794	66949	80663	106527	124268	136860
Private Consumption	459330	527814	576911	641085	772762	942979	1099657
Non-profit Institutions	9319	10719	12515	13721	15753	18045	20663
Gross Domestic Saving	68110	58757	71453	80188	93011	86613	89636
Gross National Saving	167451	189858	207876	270952	354247	378378	416416
Real GDP at Producers' Price							
(Base Year : 2000/01 = 100)	497739	514486	532038	564517	589419	616257	637730
Real GDP at Basic Price							
(Base Year : 2000/01 = 100)	463165	480435	493651	522260	541964	563488	583046
Agriculture	179810	183015	184796	195559	201464	204014	212404
Agriculture and Forestry	177304	180260	181958	192514	198257	200682	208845
Fishery	2507	2755	2838	3045	3207	3332	3558
Non-agriculture	300535	316525	330331	349744	364225	383961	395707
Industry	79925	83499	86792	88305	87095	89987	91241
Mining and Quarrying	2169	2348	2383	2513	2531	2610	2665
Manufacturing	38136	38898	39891	39545	38443	38909	39481
Electricity Gas & Water	11117	11562	13065	13204	12750	13434	12894
Construction	28503	30690	31453	33043	33371	35034	36201
Service	220609	233026	243539	261438	277130	293874	304466
Wholesale & Retail Trade	65694	68099	64292	66962	70481	75183	75007
Hotels & Restaurant	7525	8001	8278	8851	9056	9712	10428
Transport, Storage & Communications	40985	42001	44094	48226	51585	54750	58662
Financial Intermediation	15957	19843	22103	24142	24632	25332	26317
Real Estate, Renting & Business	34700	36900	41240	45544	46421	48111	49361
Public Adm. & Defence	8551	9139	9262	9319	10012	10449	10761
Education	27606	28640	30738	32716	36233	38863	39988
Health & Social Work	6109	6470	6888	7474	8191	8542	9044
Other Community, Social & Personal Services	13483	13933	16643	18204	20520	22933	24898
Per Capita GDP (USD)	328	350	390	464	465	556	642
Per Capita GNDI (USD)	383	420	464	573	588	695	797

R = Revised estimate

P = Preliminary estimate

Source: Central Bureau of Statistics.

Table 13

Structure of Interest Rate
(Percent per annum, mid-July)

Year	2005	2006	2007	2008	2009	2010	2011
A. Policy Rates							
CRR	5.0	5.0	5.0	5.0	5.5	5.5	5.5
Bank Rate	5.5	6.3	6.3	6.3	6.50	6.5	7.0
Refinance Rates Against Loans to:							
Sick Industries	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Rural Development Banks (RDBs)	3.0	3.5	3.5	3.5	2.0	2	1.5
Export Credit in Domestic Currency	3.0	3.5	3.5	2.5	3.5	2	1.5
Export Credit in Foreign Currency	2.0	3.3	3.3	3.3	LIBOR+0.25	LIBOR+0.25	LIBOR+0.25
Standing Liquidity Facility (SLF) Penal Rate*	1.5	1.5	1.5	2.0	3.0	3.0	3.0
B. Government Securities							
T-bills (28 days)*	-	2.40	2.13	5.16	4.94	8.70	8.08
T-bills (91 days)*	3.94	3.25	2.77	5.13	6.80	8.13	8.52
T-bills (182 days)*	4.42	3.86	3.51	5.16	5.91	8.28	8.59
T-bills (364 days)*	4.79	4.04	4.00	6.47	6.55	7.28	8.61
Development Bonds	3.0-8.0	3.0-6.75	3.0-6.75	5.0-8.0	5.0-9.0	5.0-9.0	5.0-9.5
National/Citizen SCs	6.5-13.0	6.0-8.5	6.0-8.5	6.0-7.75	6.0-8.0	6.0-10	6.0-10
C. Interbank Rate	4.71	2.13	3.03	3.61	3.66	6.57	8.22
D. Commercial Banks							
1. Deposit Rates							
Savings Deposits	1.75-5.0	2.0-5.0	2.0-5.0	2.0-6.50	2.0-7.5	2.0-12.0	2.0-12.0
Time Deposits							
1 Month	1.75-3.5	1.5-3.5	1.5-3.5	1.5-3.75	1.5-5.25	1.75-8.0	1.75-8.0
3 Months	1.5-4.0	1.5-4.0	1.50-4.0	1.50-6.75	1.50-6.0	1.75-9.5	1.75-9.5
6 Months	2.5-4.5	1.75-4.5	1.75-4.5	1.75-6.75	1.75-7.0	2.75-10.0	2.75-10.5
1 Year	2.25-5.0	2.25-5.0	2.25-5.0	2.5-6.0	2.5-9.0	4.75-11.5	4.75-11.5
2 Years and Above	2.5-6.05	2.5-6.4	2.5-5.5	2.75-6.75	2.75-9.5	5.0-13.0	5.0-12.5
2 Lending Rates							
Industry	8.25-13.5	8.0-13.5	8.0-13.5	7.0-13.0	8.0-13.50	8.0-13.5	8.0-13.5
Agriculture	10-13	9.5-13	9.5-13	9.5-12	9.5-12.0	9.5-13.0	9.5-13.0
Export Bills	4.0-12.0	5.0-11.5	5.0-11.5	5.0-11.5	6.50-11.0	4.0-18.0	4.0-15.5
Commercial Loans	8.0-14	8.0-14	8.0-14.0	8.0-13.5	8.0-14.0	8.0-14.0	8.0-14.0
Overdrafts	5-14.5	6.5-14.5	6.0-14.5	6.50-13.5	6.50-13.5	7.0-18.0	7.0-18.0

The SLF rate is determined at the penal rate added to the latest weighted average discount rate of 91-day Treasury Bills or bank rate whichever is higher

* Weighted average discount rate

Source: Research Department, NRB.

Chapter 9

BASEL III IMPLEMENTATION IN THE PHILIPPINES: CHALLENGES AND OPPORTUNITIES¹

1. Introduction

The Basel Committee on Banking Supervision (BCBS) in the mid-80s saw the need to align regulatory capital regulations across countries to encourage an international convergence of financial standards. Contagion risk concerns following the failure of the German-based Bank Herstatt resulted in the establishment of BCBS and eventually the formulation of the Basel Accord. Thus, in 1988, the BCBS issued the original “International Convergence of Capital Measurement and Capital Standards,” also known as Basel I. Basel I was the first international supervisory effort to relate capital requirements to, initially, credit risk. In 1996, the BCBS issued an amendment to the Basel Capital Accord to incorporate capital requirements for market risks arising from banks’ open market positions in foreign exchange, traded debt securities, equities, commodities and options. Another important aspect of the amendment was that, as an alternative to a standardised measurement approach, banks were allowed, under strict standards, to use internal value-at-risk models as a basis for measuring their market risk capital requirements.

Despite Basel I’s attempt to make capital requirements risk-based, the main criticism of Basel I is that the assignment of risk weights is rather crude and not based on any measurement, whether quantitative or qualitative, of probability of default. For example, all corporate loans – whether loans to a blue-chip company or to a fledgling enterprise – are all given a risk weight of 100%. In addition, Basel I only accounts for credit risk (albeit crudely) and market risk, but not other forms of risk that may also be important.

1. Collaborative paper prepared by the Supervision and Examination Sector and Department of Economic Research of the Bangko Sentral ng Pilipinas.

In June 1999, the BCBS issued Basel II capital framework to revise Basel I. The new framework made regulatory capital requirements more risk sensitive and reflective of all, or at least most of the risks faced by banks. In addition, Basel II also puts emphasis on banks' own risk assessment, supervisory review, and the importance of disclosures as a tool to strengthen market discipline. As such, Basel II consists of three-pillars: (1) minimum capital requirements; (2) supervisory review process; and (3) market discipline. These three pillars are based on the principles that: (1) banks should have capital appropriate for their risk-taking activities; (2) banks should be able to properly assess the risks they are taking and supervisors should be able to evaluate the soundness of these assessments; and (3) banks should disclose pertinent information necessary to enable market mechanism to complement the supervisory oversight function.

On 16 December 2010, the BCBS released the Basel III rules which strengthen global capital and liquidity rules to address weaknesses in the Basel II framework, such as flaws in the composition of capital that compromise quality and pro-cyclicality which amplified and propagated financial shocks more rapidly as what was witnessed in the 2007 global financial crisis. The Basel III reform package also seeks to improve risk management and governance and strengthen banks' transparency and disclosure practices.

1.1 Objective and Scope of the Study

- To assess risks and vulnerabilities of the financial system;
- To give a status and assessment of the impact of Basel Standards; and
- To identify opportunities and challenges of implementing Basel III for the Philippine financial system and the economy as well as supervisory aspect of the implementation.

1.2 General Outline of the Paper

The paper is organised as follows: Section 1 gives a brief introduction on the evolution of the Basel capital rules and the scope and objectives of the study. Section 2 presents an overview of the Philippine financial system and identifies, in particular, the risks and vulnerabilities of the banking system. This section also describes the status of the adoption of the Basel capital adequacy framework in the banking system. Section 3 provides an assessment of the impact of the implementation of the Basel capital rules, followed by Section 4 which discusses the issues and challenges of implementing Basel III. Finally,

Section 5 describes what to expect in terms of changes in legislation, risk management frameworks, capital markets, training and development for staff of banks and information technology infrastructure. Strategic options of banks to implement Basel III will also be discussed before drawing conclusions.

2. Overview of Financial System and Risk Assessment

The Philippine financial system is dominated by banks, consisting mostly of universal and commercial banks. The resilience of banks to the financial and economic shocks drew strength from sustained efforts to pursue reforms in the 1990s and in the aftermath of the 1997 Asian financial crisis. These reforms focused on strengthening the BSP's prudential regulatory standards and aligning them with international norms to enhance risk management, promote good corporate governance and greater transparency, and reduce moral hazard. These reforms are seen to help enable domestic financial institutions to manage the risks arising from the banking and debt crisis in Europe and weak economic growth in the US.

2.1 General Overview of Financial System of the Country

Banks are the primary intermediaries in the Philippine financial system as they accounted for close to four-fifths of total assets at end-June 2012, while non-banks contributed the remaining balance. Banks consist of universal, commercial, thrift, rural and cooperative banks. Non-banks include investment houses, finance companies, pre-need companies and insurance companies. The number of financial institutions (head offices) totaled 7,440 as of March 2012. By banking classification, there were 38 universal and commercial banks (U/KBs), 71 thrift banks (TBs), and 614 rural banks (RBs) for a total of 723 banks. The number of non-bank financial institutions (NBFIs) reached 6,717, made up mostly of 6,464 pawnshops.

Table 1
The Philippine Financial System: Resources and Number

	Resources, In PhP millions May 2012	Number of Offices March 2012
Banks	7,670.6	723
Universal and Commercial Banks	6,877.6	38
Thrift Banks	606.2	71
Rural Banks	186.8	614
Non-Banks	1,955.4	6,717
Total	9,626.0	7,440

Source: Bangko Sentral ng Pilipinas.

Financial institutions in the country are supervised by four agencies. The Bangko Sentral ng Pilipinas (BSP) is the central monetary authority and at the same time the supervisor of banks and their financial allied subsidiaries and affiliates (except insurance companies), quasi-banks, non-stock savings and loan associations, and pawnshops as provided for in its charter (Republic Act (RA) 7653), General Banking Law (RA 8791) and other special laws. The Philippine Deposit Insurance Corporation (PDIC) shares some supervisory powers with the BSP over banks in line with its mandate as deposit insurer. The Securities and Exchange Commission supervises self-regulatory organisations (SROs), investment houses, securities broker/dealers, investment companies, finance companies and pre-need companies. The Insurance Commission supervises insurance and reinsurance companies, insurance brokers and mutual benefit associations. In 2004, these four agencies formed the Financial Sector Forum (FSF) to harmonise policies and discuss matters of common concerns. The key objectives for establishing the FSF include the improvement of the supervision of financial conglomerates and emergence of firms operating in “regulatory grey areas.”²

In terms of regulation and supervision, the BSP has embarked on an aggressive and wide-ranging reform process in the past decade to promote a sound, stable and globally-competitive banking system. This reform process is geared towards greater commitment to risk management, strengthening of supervisory framework, restructuring of the local banking system and the promotion of corporate governance and raising domestic regulations to international standards such as the International Accounting Standards and Basel Capital Adequacy Framework.

2.2 Risk Oversight Assessment and Vulnerabilities

Philippine financial institutions are beset by risks arising from the still unresolved debt and banking crisis in Europe and the fragile economic and fiscal conditions in the US. Buffers that will help cushion the impact of these external risks on these institutions are their relatively healthy balance sheets and country’s strong macroeconomic fundamentals.

2. Espenilla, Nestor A., “Banking Supervision and Examination in the Philippines”, Paper presented during the IMF-FSA Conference on Financial Stability and Financial Sector Supervision: Lesson from the Past Decade and Way Forward, Tokyo, Japan, 17 December 2007.

2.2.1 Risks to Global Financial and Economic Stability Intensify

The resurgence of uncertainties in the global financial environment starting May 2012 intensified market stress as it reverted to, and in some cases surpassed the levels seen during the worst period in November in the previous year. Risk aversion among investors intensified due to the potential exit of Greece from the euro zone and rising concerns about the health of the Spanish banking system. Meanwhile, the recession in the euro area, the fragile recovery and fiscal concerns in the US and the slowdown in China have dimmed prospects for economic growth for both advanced and emerging markets. Further, weak growth prospects of emerging economies leave them less able to weather the spillover effects of sovereign and banking crises in the euro zone. Given the worsening global and economic environment, threats to domestic financial stability are seen to emanate from three factors % deleveraging, capital flows and protracted slowdown in global growth.

European bank recapitalisation plan, announced in October 2011, exerted pressure on European banks to shed assets and cut exposures to emerging market economies. Strong deleveraging pressures during the final quarter of 2011 led to weak or negative growth in the volume of credit extended by many European banks. Specifically, their consolidated foreign claims on emerging Europe, Latin America and Asia had already started to fall in the third quarter of 2011. New syndicated and large bilateral loans from EU banking groups to emerging market borrowers subsequently fell in the fourth quarter of 2011. The latest turbulence in the euro zone has kept the deleveraging process elevated.

Capital flows to emerging markets like the Philippines were sustained following the bold monetary policy measures adopted at the end of 2011 to address sovereign and banking funding pressures in the euro area. Foreign capital flows were also driven by the country's strong fundamentals and the successive credit upgrades of sovereign ratings and outlook by major credit agencies in 2011 and 2012. This could fuel imbalances in the credit and asset markets that could threaten financial stability of the country. On the other hand, a sudden stop or negative reversal in capital flows could result in a global liquidity squeeze and higher financing costs. Dollar liquidity could tighten and adversely affect unhedged foreign exchange position of banks.

Given the trade and investment linkages of the country to the global economy, a continued slowdown or recession in advance economies could have a dampening effect on the growth outlook of the Philippines and subsequently on the overall stability of the financial system. A protracted global slowdown could weaken

exports and overseas Filipino deployment and subsequently affect repayment of debt by corporates and households, respectively. Exports to mature economies, in particular the US and Europe, account for 28% of total exports in 2011 while remittances from the US and Europe comprise 42% and 16.7%, respectively, of the total as of March 2012. In terms of investments, the US, along with Japan, are the top sources of gross foreign direct investments in the Philippines, while Europe made up only 3% of the total. Portfolio investments in 2011 showed that a sizeable 41% came from Europe.

2.2.2 Financial Stability Risks Remain Manageable

Risks to the banking system arising from the foregoing developments are manageable given that banks will be facing these challenges of the external environment from a position of strength.

2.2.2.1 Deleveraging Risks

Banks' risks from the ongoing deleveraging in Europe in line with European banks' efforts to build up their capital and strengthen their balance sheet is expected to have a limited effect as banks exposure to Europe remained minimal at 1.6% of total assets as of February 2012. Moreover, the relatively liquid local financial markets, alongside the country's substantial foreign exchange reserves, should provide reasonable buffer from a decline in the activities of European banks.

2.2.2.2 Financial Imbalance Risks

Risk of asset bubbles and other financial imbalances from excess liquidity in the system brought about by continued foreign exchange inflows will be mitigated by prudential tools that are in place which can help ensure the health of banks and guard against financial stability risks. These tools include ceilings on real estate exposure, loan-loss provisions, capital adequacy requirements, foreign currency liquid asset cover and regulations on derivatives.

The BSP remains vigilant in the developments in lending, including the real estate sector which has shown robust activity. Nonetheless, banks remain compliant with prudent real estate loan limits, with universal/commercial banks' exposure to the real estate sector reaching only 15.2% of their total loan portfolio as of end-March 2012. This is well within the 20% ceiling on real estate loans. In September 2012, the BSP issued new guidelines to provide a more comprehensive measure of a bank's real estate exposure. One of the changes

involved the definition of real estate exposure which now includes loans as well as investments in debt and equity securities, the proceeds of which shall be used to finance real estate activities. Previously, only real estate loans were covered. Furthermore, all loans are counted as part of banks' real estate exposure, amending the previous policy of excluding loans granted to individuals to finance the acquisition and/or construction of residential real estate for own-occupancy and those extended to land developers/construction companies for the development of socialised- and low-cost housing, among other things.

Anecdotal evidence points to an increase in vacancy rates and softening of rents in certain niche segments, suggesting excess supply. The build-up in real estate exposures of the non-bank financial institutions, and of property developers could be an emerging vulnerability that requires close surveillance and coordination among regulators.³

2.2.2.3 Credit Risk

The non-performing loans (NPL) ratio of the banking system fell to 2.7% as of June 2012, below the 3.5% level seen prior to the Asian crisis. The banking industry's NPL ratio got better overtime from the passage of the Special Purpose Vehicle Act (SPAV) in 2002. The SPAV offered fiscal incentives such as the exemption from documentary stamp tax and capital gains tax for banks and non-banks with quasi-banking functions that intend to transfer or sell their non-performing assets (NPAs) to SPVA. In addition, the continued reduction in NPL ratio may be attributed to the sustained growth of the economy which helped reduce NPL levels and replenished banks' loan portfolio. The industry's provisioning against potential credit losses remained adequate with the NPL coverage ratio (loan loss reserves to NPLs) reaching 109.9%.

The prolonged weakness in the global economy could translate to a gradual slowdown in the domestic economy, which could pose latent credit risks. Sluggish economic activity could reduce debt servicing capability of corporate and individual borrowers resulting in delayed loan repayments, if not debt defaults resulting in an increase in NPLs. An increase in NPLs would require additional provisions, which will affect profits and potentially capital.

3. International Monetary Fund, The Philippines: 2011 Article IV Consultation, March 2012.

2.2.2.4 Interest Rate Risks

Financial assets of banks other than loans were issued mostly by residents at 83.8%, with the National Government accounting for 63.2% of financial assets. Given the relatively low risk nature of these securities, the manageable fiscal position and the ample liquidity in the system, the likelihood of a sharp reversal in interest rate on these securities appears moderate in the short term.

2.2.2.5 Liquidity Risks

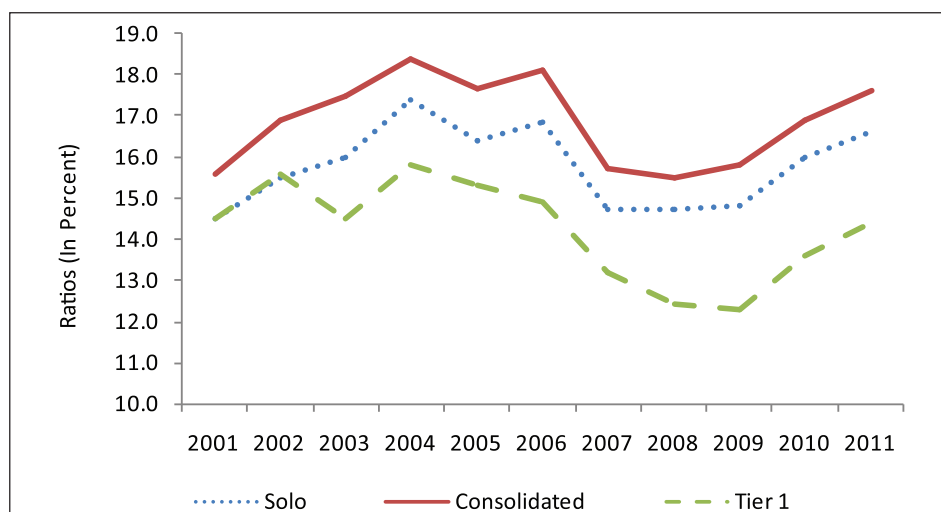
In the event of a sudden stop or reversal in capital flows arising from a tightening of global liquidity, the substantial holdings of government securities of banks provide collateral that enables them to access liquidity under the BSP's repurchase facility. Banks also have a relatively steady core funding base made up of deposits, which accounted for 73.3% of total resources as of end 2011. More than 99% of total peso and foreign currency deposits and deposit substitutes are held by residents, reducing vulnerability to capital flight. Liquid assets to total assets remained high at 33.3%. Foreign currency liquidity risk is limited by a liquid asset cover requirement of 30% of foreign currency liabilities.

2.2.2.6 Solvency Risks

Despite continued global difficulties, the capital adequacy ratios (CARs) of the Philippine banking system remain healthy and above the BSP's minimum ratio of 10% and the Basel Accord's standard ratio of 8% in the last ten years. The system-wide average CARs stood at 16.65% on solo basis and 17.64% on consolidated basis as of end 2011. Similarly, the Tier 1 (T1) capital ratios remained well above international norms at 14.45% and 14.48% on solo and consolidated bases, respectively.

A map of the banking system's risk weighted assets (RWA) indicated the general decline of credit and market risks as a percentage of total RWA in the last six years. Credit RWA declined to 84.9% in 2011 from 90.5% in 2005 and market RWA dropped to 4.8% from 9.5%.

Chart 1
Capital Adequacy Ratio of Philippine Banks
as of End-December 2011



Source: Bangko Sentral ng Pilipinas.

2.3 Status of Application of Basel Capital Adequacy Framework

2.3.1 *Basel I*

The enactment of the General Banking Act in 2000 finally gave the BSP the legal basis to adopt the risk-based international capital standards.⁴ In February 2001, the BSP issued the implementation guidelines for the Basel Capital Accord in the Philippines which were set to take effect on 1 July 2001. The minimum capital adequacy ratio prescribed was 10%, higher than the 8% required under international standards. The guidelines initially covered only capital requirements for credit risks. In the following year, the guidelines were released on the adoption of the 1996 amendments to the Basel Accord for market risk. The market risks covered were interest rate risk and equity price risk in the trading book, and foreign exchange risk throughout the bank.

4. The General Banking Act of 2000 repealed the 52-year old General Banking Law. The new law was geared towards meeting the challenges of and providing additional safeguards for new risks associated with globalisation and financial innovation.

2.3.2 *Basel II*

On 2 June 2006, major revisions to the risk-based capital adequacy framework were approved and were scheduled to take effect on 1 July 2007. The Basel I-compliant framework was aligned with the new Basel II standards. The revisions were put in place following the release by the BCBS of the New Capital Framework in June 2004. Under the revised framework, the BSP maintained the present minimum overall capital adequacy ratio (CAR) of banks and quasi-banks at 10%. However, consistent with Basel II recommendations, the BSP effected major methodological revisions to the calculation of minimum capital that universal banks, commercial banks and their subsidiary banks and quasi-banks should hold against actual credit risk exposures. The guidelines for allocating minimum capital to cover market risk were also amended, primarily to align specific market risk charges on trading book assets with the revised credit risk exposure guidelines. A completely new feature was the introduction of bank capital charge for operational risk. The required disclosures to the public of bank capital structure and risk exposures were also enhanced to promote greater market discipline in line with the so-called Pillar 3 of the Basel II recommendations.

To address the second pillar, the BSP issued the guiding principles on 15 January 2009 and they were adopted by banks on 1 January 2011. The guidelines which were made applicable to U/KBs at a consolidated level contain the guiding principles that banks should follow in designing their Internal Capital Adequacy Assessment Process (ICAAP); and BSP supervision and examination personnel should consider in assessing a bank's ICAAP. In July 2011, the BSP came up with supplemental guidelines on the ICAAP submission of Philippine branches of foreign banks which were expected to be designed in accordance with the nature, size and complexity of their businesses in the Philippines.

2.3.3 *Basel 1.5*

Stand-alone TBs, RBs and cooperative banks (Coop Banks), which refer to TBs, RBs and Coop Banks that are not subsidiaries of U/KBs, are covered by a separate risk-based capital adequacy framework referred to by the BSP as the Basel 1.5 framework which is a simplified version of Basel II in view of the simple operations of these covered banks. Changes to the framework include:

- Credit risk, the foreign currency denominated credit exposures to the Philippine National Government and the BSP will carry a 100% risk weight

based on the country's sovereign rating of "BB-" from the existing 0% to be phased in over a 3-year period.

- Exposures to government corporations which carry an explicit guarantee from the National Government shall be 0% risk weighted only if peso-denominated.
- Assignment of 150% risk weight (from 100%) on Real and Other Property Acquired to be phased-in over a 3-year period.
- Capital requirement for operational risk using only the Basic Indicator Approach (modified) at 12% of the average positive annual gross income during the last three years of a bank.
- Market risk capital charge for derivatives transactions will be calculated.

2.3.4 *Basel III*

The BSP has already laid down the groundwork for the implementation of Basel III through the issuance of Circular No. 709 dated 10 January 2011, which amends the existing risk-based capital adequacy framework by adopting the minimum eligibility criteria for inclusion of non-common equity regulatory capital instruments in qualifying capital.

In early 2012, the BSP announced that U/KBs will be required to adopt the capital adequacy standards under Basel III, starting 1 January 2014. The broad proposals on the adoption of Basel III standards on capital adequacy are contained in Memorandum No. M-2012-002 dated 10 January 2012. This, likewise, contains the timelines for the drafting and finalisation of the implementation guidelines on capital adequacy.

3. Assessment of the Impact of Basel III

The BSP has long put a premium on the capitalisation of banks operating in the Philippines. In the 1990s, the imposition of a regulatory minimum capital adequacy ratio (CAR) was incompatible with the prevailing banking law at that time, i.e., the General Banking Act of 1948. In its stead, the central bank set the minimum level of banks and adjusted the same upward periodically. With the passage of the General Banking Law of 2000, the Basel I framework was soon institutionalised through capital charges, initially for credit risk and subsequently for market risk. Such capital charges were in addition to the minimum levels of capital set by regulation. This effectively created a dual-level capital regulatory regime which combines risk-based operating capital with a mandatory capital

floor. Such a capital framework has been preserved through the introduction in the Philippines of the Basel II framework in 2006 and continues up to today with the impending commencement of Basel III.

3.1 Current Level and Adequacy of Capital of Individual Banks or Banking Groups

The existing regulations call for a minimum capitalisation based on the type of banking license and/or its location (Table 2). In addition, the CAR of a bank, consolidating across the parent bank and its subsidiary financial allied undertakings (but excluding any insurance subsidiary or affiliate), must not be lower than 10%. The grant of authority for branches likewise involves a theoretical capital per branch (Table 3), the approval of which is premised on a higher minimum CAR of 12%.

Table 2
Prescribed Minimum Capital by
Type of New Bank

Type of Bank	Prescribed Minimum Capital
1) Universal Banks	4,950.0
2) Commercial Banks	2,400.0
3) Thrift Banks	
a) Metro Manila	1,000.0
b) Cities of Cebu and Davao	500.0
c) Other Areas	250.0
4) Rural Banks	
a) Metro Manila	100.0
b) Cities of Cebu and Davao	50.0
c) All other cities	25.0
- 1st - 4th class municipalities	10.0
- 5th - 6th class municipalities	5.0
5) Cooperative Banks	10.0

Source: Bangko Sentral ng Pilipinas.

Table 3
Theoretical Capital per Branch

Location/Type of Bank	In Million Pesos		
	UB/KB	TB/ Nat'l Coop	RB/ Local Coop
Metro Manila	100.0	25.0	10.0
Cities of Cebu and Davao	50.0	15.0	5.0
All other cities	25.0	10.0	2.5
1st - 3rd class municipalities	20.0	5.0	1.0
4th - 6th class municipalities	10.0	2.5	0.5

Source: Bangko Sentral ng Pilipinas.

Foreign bank branches operating in the Philippines are governed by a specific law (Republic Act No. 7721). Under the said law, foreign bank branches must have a capital base of Php210 million and for which the bank is entitled to three branches. An additional capital of Php35 million is required for each branch up to a maximum of three other branches. The same 10% CAR applies as the regulatory minimum but the calculation itself of the CAR of foreign bank branches

involves a fairly nuanced process that includes permanently assigned capital, a multiplier set by regulation and the “Net Due To” position of this foreign bank branch.

These regulations on bank capital must be complied with on any given day. Since there are material consequences for any breach, there is the built-in incentive for banks to purposely set a buffer above the regulatory minima. This is in fact the case as can be seen in Chart 1.

Two facets from Chart 1 are important to highlight. Firstly, the majority of bank capital is accounted for by Tier 1 capital instruments. This is material since the Basel III agenda is geared towards shifting away from so-called hybrid capital into the more fundamental forms of capital. And secondly, the dip in CAR between 2006 and 2009 is itself not related to the global difficulties. Instead, this was the period wherein the BSP opted to increase the risk weight on foreign currency denominated sovereign paper from 0% to 100%. Phased in over a three year window, it is this factor that is captured by the cyclical trend.

Numerically, end-2011 CAR for the Philippine banking system is at 16.7% when banking institutions are taken on a stand-alone (“solo”) basis. The ratio rises to 17.6% if affiliates and subsidiaries are taken collectively with their parent bank (“consolidated”). With limited use of hybrid capital, the corresponding Tier 1 ratio is at 14.4% on a solo basis (Table 4).

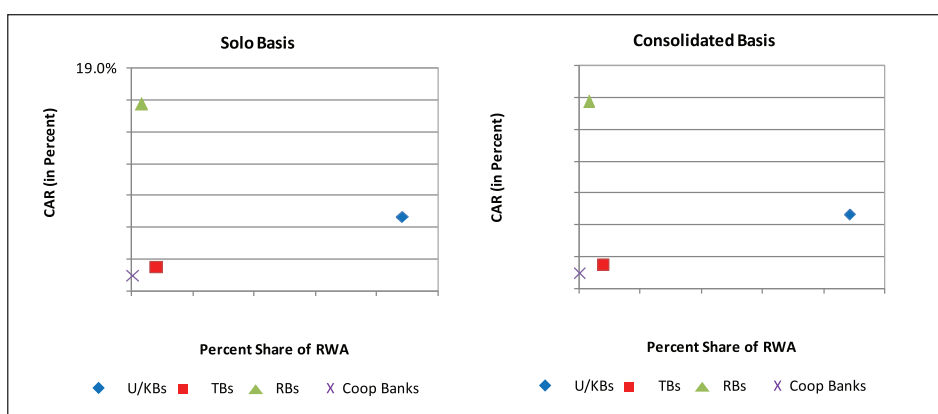
Table 4
Capital Adequacy and Tier 1 Ratios
(December 2011)

	Qualifying Capital	Risk-Weighted Assets	CAR	Net Tier 1 Capital	Tier 1 Ratio
<u>Solo</u>					
Phil. Banking System	803.6	4,825.4	16.7	697.1	14.4
Universal/Commercial banks	711.6	4,270.2	16.7	613.9	14.4
Thrift banks	61.2	385.9	15.9	55.3	14.3
Rural banks	28.2	152.9	18.4	26.0	17.0
Cooperative banks	2.6	16.5	15.7	1.9	11.8
<u>Consolidated</u>					
Phil. Banking System	884.3	5,012.6	17.6	725.8	14.5
Universal/Commercial banks	833.3	4,703.5	17.7	681.2	14.5
Thrift banks	61.2	385.9	15.9	55.3	14.3
Rural banks	28.2	152.9	18.4	26.0	17.0
Cooperative banks	2.6	16.5	15.7	1.9	11.8

Source: Bangko Sentral ng Pilipinas.

Taken by banking groups, one observes from Table 4 and Chart 2 that universal and commercial banks are by far the most dominant group by market share (88.5% both in terms of risk-weighted assets and qualifying capital). This group “drives” the system’s CAR. However, the remaining groups have CARs within a range of 15.7% to 18.4%. This is comforting since it suggests that the CAR values of the banking subgroups are within reasonable proximity despite the vast difference in market size.

Chart 2
Share of RWA versus CAR per Banking Group (in %)



Source: Bangko Sentral ng Pilipinas

At face value, the system CAR appears to reflect a well-capitalised banking system. Stated differently, banks operating in the Philippines can take on increased risk exposures without compromising their ability to meet regulatory capital provisions. It is understood that this increased risk-leveraging while operating at the minimum acceptable CAR is not the intended market conduct since the Basel principles indicate the need for operating above the set regulatory minima.

To better validate the strength of banks’ capital, a stress testing exercise has been run every semester since 2011. At present, the tests for credit, market and liquidity risks are run for 55 banks which cover all of the universal/commercial banks and the largest thrift banks. These 55 banks represent 96.24% of the assets of the banking system and 96.79% of its capital base.

The results show that the balance sheets of the tested banks are well able to absorb a considerable amount of stress.⁵ Instead of simply relying on high CAR values, it is these results that provide the BSP with the comfort that the system as a whole is well-capitalised against the potential occurrence of financial risks.

3.2 Assessment of Capital Levels in Terms of Enhanced Capital Requirements of Basel III under Different Capital Components

The shift to Basel III presents a different challenge for bank capitalisation. The popular belief is that Basel III forces banks to increase their capital levels given the relatively lax structure under the previous Basel Accord. This is, however, not likely the case with banks operating in the Philippines since these banks are starting from respective CARs that are already at a premium over the regulatory minimum. Thus, the impending challenge lies with the way Basel III shifts the emphasis onto CET1 and Tier 1 capital.

To have a better handle on this challenge, banks were asked to simulate the effect of the Basel III framework on their capital position. By their own calculations, all would not find difficulty in meeting the new standards except for a couple of outlier banks.

On the part of the regulator, we conducted independent simulations as well. We had different scenarios under consideration and these involved (1) whether or not we grandfather legacy capital instruments, (2) the phase-in of selected regulatory adjustments and (3) the alternative treatments for investments in non-financial allied and non-allied undertakings (Table 5).

5. For credit risk, we take up to a 50% write-off without recovery. For market risk, interest rate shocks of 500 bps for both local and foreign interest rates are applied. In addition, the local currency was depreciated at 30% and combined with the interest rate shock. Liquidity tests are in the form of gapping analysis for both local and foreign currency exposures at various tenor buckets.

Table 5
Simulation of Capital Position under Different Basel III Scenarios

	Current Framework	Full Deduction of Regulatory Adjustments		Full Derecognition of Ineligible Capital		Treatment for Selected Regulatory Adjustments ⁶	
		No grandfathering	With grandfathering	Full Deduction	Phase-in of Regulatory Adjustments	Deduction Approach	Risk-Weight Approach
Average							
CAR	17.2%	13.2%	14.3%	13.2%	13.2%	13.4%	13.4%
Tier 1 Ratio	13.7%	12.3%	12.3%	12.3%	13.5%	12.3%	12.5%
CET1 Ratio	15.0%	12.3%	12.3%	12.3%	13.5%	12.3%	12.3%
#Banks < 10% CAR	0	2	2	2	2	2	1
#Banks < 7.5% Tier 1	0	0	0	0	0	0	0
#Banks < 6% CET1	0	0	0	0	0	0	0

Source: Bangko Sentral ng Pilipinas

The results are not unexpected. They reflect the same points made in the preceding section, i.e., that banks maintain, on average, a significant buffer over the regulatory minima and that the relatively limited use of hybrid instruments puts the CET1 ratio well above the prudential threshold. This is likewise evident in the finding that two banks will fall below the 10% CAR threshold but none will be below the 7.5% Tier 1 minimum. Even the choice between a full or staggered deduction creates at best only a 1.2 percentage point difference from a base that is, to begin with, relatively high.⁷

3.3 Assessment of Future Capital Requirements in Terms of Business Models of Banks and Identification of Gaps

The capital requirements of banks over a projected five-year period can be ascertained from the banks' submission of their ICAAP document.⁸

In general, banks believe that their respective current capital positions are adequate relative to the risks that will be taken onto the balance sheet over the immediate 5-year period. This is not particularly surprising considering that there

6. Applies to investments in non-financial allied and non-allied undertakings.

7. There are deductions which are imposed as part of our Basel II framework. The treatment is a 50% deduction from Tier 1 and a 50% deduction from Tier 2. Thus, the context of a full deduction at inception is actually an increment of 50%, minimising the gains from a staggered deduction programme.

8. ICAAP for banks and the corresponding Supervisory Review Process (SRP) for the BSP reflect the adoption in the Philippines of Pillar 2 of the Basel II Accord. These were institutionalised in 2008 and provided a two-year window within which banks could submit "trial" documents and engage in active discussions with the BSP. Since 2010, the banks have been submitting their "final" ICAAP document which is updated/re-submitted annually. Currently, our ICAAP covers all universal and commercial banks, including foreign bank branches.

is a significant buffer between their actual CAR and the 10% minimum CAR that they have to maintain by regulation. At the level of qualifying capital of Php711.6 billion for universal and commercial banks (Chart 2), these banks can hypothetically take on an additional load of Php2.84 trillion worth of risk-weighted assets before reaching the regulatory threshold of 10% CAR. This represents a significant capital buffer of 66% over the required minimum before banks are forced to increase capital to take on further risk exposures.

The above notwithstanding, banks are “hedging” against any pressure on CAR under a Basel III regime. As such, the universal and commercial banks have identified a number of options. These include the following:

1. Outright issuance of Basel III-compliant capital instruments – in a market where private capital is relatively scarce *vis-à-vis* to labour, there will be some premium to being able to access capital markets ahead of others;
2. Manage the balance sheet to reduce the strain on capital – several measures have been identified which include:
 - a) Reducing dividends or opting for stock dividends instead of cash dividends
 - b) Introducing more operational efficiencies to cut costs
 - c) Managing risk exposures
3. Improve overall financial performance – boosting profitability is ultimately the ideal outcome because the bank has the leeway to retain earnings and build up capital while bank management is more confident of their handling of financial risks.

Likewise, foreign bank branches generally do not expect the need for capital infusion from their head office given their short-term business plans. If needed, however, a global process is in place for this contingency. Nevertheless, they have identified a variety of other contingency options to ensure their capital stays above the minimum regulatory capital, such as increased borrowings from the head office and other branches and subsidiaries, reduced profit remittance to head office, or registered unremitted profits as part of permanently assigned capital.

3.4 Current Level and Adequacy of Liquidity of Individual Banks or Banking Groups in Terms of Key Indicators for Liquidity

While the numbers suggest that capital take-up is not going to be a constraint at the inception of the Basel III framework in the Philippines, liquidity will pose more of a challenge. Current regulations provide for the principles of sound liquidity risk management but do not impose specific measures. The Basel III formulation not only establishes liquidity management as a centerpiece prudential measure, it does so by identifying specific parameters that must be met on prudential grounds. It is this jump from the purely principles-based guidelines to a prescriptive standard which is at issue.

This prescriptive standard raises a related but often overlooked issue. Liquidity is not perfectly inter-changeable across tenors and needs to be more “localised”. In the normal nature of banking, short-term financial liabilities are expected to exceed short-term financial assets. This reflects the term transformation function where banks mobilise short-term deposits and intermediate the same as longer-term credits or exposures.

Results from the periodic stress testing exercise suggest that the banking and trading books maintain a positive gap⁹. Furthermore, the expectation of a negative gap for shorter-term tenors is, indeed, validated as well. This is the case whether in local currency or foreign currency terms as well as when those accounts with “open maturity” are segregated from those with fixed/known terms (Table 6).

9. That is, financial assets slotted across 5 tenor buckets on the aggregate exceed the sum of financial liabilities over the same tenor buckets.

Table 6
Consolidated Stress Test Results – Gap Analysis

	Detailed Gap Analysis RBU (In Billion Pesos)		
	< 1 year	> 1 year	TOTAL
FINANCIAL ASSETS	2,816.6	2,094.3	4,910.9
FINANCIAL LIABILITIES	4,096.6	462.0	4,558.7
Net Gap	(1,280.0)	1,632.2	352.3
Cumulative Gap	(1,280.0)	352.3	352.3

	Gap Analysis FCDU (In Million Dollars)		
	< 1 year	> 1 year	TOTAL
FINANCIAL ASSETS	16,552.0	17,748.0	34,301.0
FINANCIAL LIABILITIES	25,912.0	3,920.0	29,833.0
Net Gap	(9,360.0)	13,828.0	4,468.0
Cumulative Gap	(9,360.0)	4,468.0	4,468.0

Source: Bangko Sentral ng Pilipinas

The preceding Table is interesting and can be read in different ways. At one level, it shows that longer term tenor will not be an issue with respect to liquidity and that the main problem will be tenors less than one year. On further thought, this is not too surprising when one considers that banks heavily source short-term deposits to fund long-term asset positions. This is exacerbated in the Philippines since the absence of an outright market for long-term funding means that banks have to continuously gap negatively to fund exposures.

One can very well argue that the magnitudes are a cause of concern. Should a systemic need for liquidity arise, it would appear that Philippine banks are particularly vulnerable on the short-end. However, there is reason to believe that the negative gap for shorter term tenors may be exaggerated at least in terms of day-to-day operations. The data does not capture what is euphemistically referred to as the “churn”. That is, for as long as liquidity demand is neither instantaneous nor for long periods, short-term liquidity can actually be provided repeatedly within a given period. There are other sources of liquidity as well through contingent lines between banks or through high-turnover accounts like swaps and interbank loans. In general, the “as of” balance for these accounts will not be indicative of the actual activity within a given period.

3.5 Assessment of Current Liquidity in Terms of New Liquidity Requirements of Basel and Identification of Additional Requirements

Unfortunately, “churn” can be useful for sporadic needs but once the liquidity pressure is systemic then the absolute gas matter. It is in this context that the Liquidity Coverage Ratio (LCR) presents a formidable challenge for most jurisdictions. To cover expected short-term outflows with enough assets that are either already in cash form or can readily be liquidated is not just an Asset-Liability Management (ALM) issue. It will likely impact on the term transformation function because *incrementally* short-term inflows and outflows must be matched at least one-to-one. That will suggest that short-term funding liquidity must take precedence before longer-term credits can be pursued.

For the Philippines, liquidity will be the immediate issue rather than capital build up. Based on the stress test results, we may see increased demand for liquid short-term assets. With the fiscal authorities exchanging shorter-term liabilities for longer-term obligations, the relative scarcity of instruments that would comply with the LCR requirement will become more pronounced moving forward.

The depth of such demand (i.e., the nominal peso amount of the liquidity gap) will be a concern since only government securities can possibly cover such extent.¹⁰ This will obviously imply an increase in the fiscal imbalance. It forces a stalemate between the prudential liquidity norms set under Basel III as against the prudent management of the fiscal position.

4. Issues and Challenges in Implementing Basel Standards

Basel III will fundamentally restructure the banking landscape. The required changes not only cover new grounds but also extensively re-assess existing facets of the longstanding landscape. While there is no debating the intent of the reform agenda, there are substantial operational challenges that lie ahead.

4.1 Regulatory Constraints

Of all the challenges ahead, the limit of regulatory and supervisory oversight is fortunately not among the major constraints. As the central monetary authority as prescribed in the Philippine constitution, the BSP is empowered to set the

10. The extent of the corporate bond market is quite limited at this stage. Aside from funding liquidity, it is not obvious that corporate issues will command market price liquidity. Thus, there will have to be a heavy reliance on the GS market, at least in the immediate term.

minimum standards that are fundamental to any Basel Accord, particularly that of Basel III. Section 34 of Republic Act No. 8791, otherwise known as the General Banking Law of 2000, provides for the specific legal basis that grants the Monetary Board of the BSP the power to prescribe minimum ratios for risk-based capital. Furthermore, the law specifically addresses conformity, to the extent possible, to internationally accepted standards including those of the Bank for International Settlements.

The two facets where additional legal work is needed are: (1) the applicability of the capital provision to foreign bank branches; and (2) the emerging standards on domestic SIFIs (Systematically Important Financial Institutions).

The former may present some concern because – as was mentioned in the initial portion of Section 3.1 – foreign bank branches are covered by a specific law. The said specific law outlines what are treated as “bank capital” for foreign bank branches. The challenge is to align the intended prudential provisions of Basel III with the specific language of the law. A legal review is currently in progress and the initial opinion is that there would not be any issue.

With regard to D-SIFIs (Domestic Systematically Important Financial Institutions), the issue is the requirement that banks deemed to be systemically important shall be prescribed a higher CAR. Where this becomes an issue is the same Section 34 of RA No. 8791 which provides, among others, that the prescribed regulatory CAR “*shall be applied uniformly to banks of the same category*”. The literal implication is that all universal and commercial banks, for example, must have the same minimum CAR, regardless of whether some of these are deemed “systemically important”. As with the issue with foreign bank capital, this matter is currently under legal review.

4.2 Level of Coverage

The preceding reference to universal and commercial banks is not coincidental. As designed, the Basel III framework will be applicable to universal and commercial banks, including their subsidiary banks and quasi-banks. This is in recognition of the level of risk complexity that is typically embedded in the balance sheets of these banks. On the other hand, the fact that subsidiary banks and quasi-banks are likewise covered only reinforces the consolidated risk approach that we have been espousing. This means that thrift banks that are subsidiaries of universal and commercial banks will be consolidated on a risk-basis with their parent bank.

We should take cognisance that thrift banks that are not “linked” with either universal or commercial banks are governed under a different version of the Basel Accord which we refer to as “Basel 1.5”. The same framework applies to rural banks and cooperative banks and this policy prerogative on introducing Basel 1.5 is premised on applying the same core ideas of the risk-based framework for a more limited coverage on balance sheets that tend to have simpler risk exposures.

In addition, our coverage of the Basel III framework is currently limited to the capital component. Aspects such as counterparty risk, trading books, liquidity and Basel 2.5 will be applied but in stages and at later stages. This staggered application is deliberate since it is the belief of the BSP that the application and extent of change needs to be managed as well.

4.3 Attract New Capital and Challenges for Enhancing Capital Level

This staggered application then suggests that the immediate focus is on capital. For purposes of compliance, we do not see that there is a pressure for universal and commercial banks to top up on their capital. However, the difference between one bank and next depends on the chosen business strategy and whether expanding balance sheets in the near term must mean soliciting new capital today.

Where there will be some added pressure is in the area of the general terms of instruments that qualify as bank capital. Specifically, the Point of Non-viability (PONV) feature is now a requirement for Tier 2 instruments as well as for Additional Tier 1 instruments. Since this is a new facet, its pricing is not well established.

The absence of a reliable and recurring benchmark for such pricing is itself causing an added challenge for soliciting new capital. While yields have considerably declined in the global market over the past two to three years, the benefit of reduced coupon rates is being matched against the potential of a scarcity premium for PONV pricing.

4.4 Adaption of New Liquidity Requirements

As argued previously, it is with liquidity where more challenges may arise. However, it should be made very clear that bankers will not have any issue with the need for suitable liquidity risk mitigants. Liquidity risk management is, in fact, basic practice among banks. The real issue then is the prescriptive mode

of the Basel III guidelines on liquidity and the relative scarcity of short-term liquid assets that could meet the needs of all universal and commercial banks with respect to LCR.

This is not a trivial concern and will require some intervention, most likely as a financial stability issue. For most of Asia and certainly for the Philippines, government securities will be the default liquid instrument. But requiring increased issuance of 91-day Treasury Bills as a means to plug any LCR gap creates its own “fiscal cliff”. In this case, the National Government is essentially forced to create and roll over short-term debt that it may not really need for purposes of funding.

This is not to suggest that there will be no issues in complying with the NSFR (Net Stable Funding Ratio). However, the LCR creates both a timing and volume concern while the NSFR will at least be principally a volume issue. It is not clear that current levels of outstanding Treasury bonds are sufficient in both form and substance to provide all universal and commercial banks with enough supply to meet the NSFR requirement.

In fact, the issuance of treasury paper is at best a necessary condition for addressing both the LCR and NSFR. If liquidity is to be properly addressed, what is required is a deep and active secondary market that can liquidate securities without substantially moving prices. This is certainly not the case today in the Philippines, and certainly for most of Asia, where some government securities do not regularly trade and are thus by definition illiquid.

There are other potential complications. If, as we posited earlier, liquidity matching will take precedence over term transformation, there may be an impact on the pricing of credit. Specifically, if banks need to set aside more from sourced funds to meet the liquidity requirements, then there will be less available incrementally for loans. This puts upward pressure on the pricing spread between sourced funds (withdrawable deposits) and the use of funds (typically fixed term loans). At fixed deposit rates, this can only be accommodated by higher loan rates.

The higher loan rates *ceteris paribus* presents added complications. That means that there will be less projects that can qualify against the higher hurdle rates to justify the credit decision. In the same light, higher loan rates creates increased moral hazard and self-selection problems which underpin higher default rates. At the extreme then, the pursuit of a more structured liquidity mitigant can potentially lead to credit quality issues. The gains from liquidity then come

at the expense of a smaller pool of credit which is itself more prone to default.

4.5 Enforcement Capabilities Assessment

One area that is often overlooked in the Basel III discussions is the ability of regulatory authorities to enforce the framework. Often, the view is whether banks can comply with the higher bar when in fact regulators are faced with as much challenge in keeping the bar at a credible higher level.

For the BSP, the challenges of enforcement are at several levels. In particular, we face the following key operational concerns:

4.5.1 Separate Technical Groups to Address Basel III Key Elements

Recognising the extent of the reform, the Supervision and Examination Sector formed various working groups to review and formulate the appropriate courses of action on several fronts of the Basel III reforms. Specifically, we have groups for:

- Capital component including Leverage and Buffers
- Liquidity Framework
- Counterparty Risk
- OTC Derivatives Reforms
- Systemically Important Financial Institutions
- Basel 2.5 Market Risk Reforms
- Reform on Trading Books

The challenge lies in the deployment of a number of individuals who generally have other office deliverables and who may not necessarily have a prior background on the Basel Accord. Resource gaps need to be addressed swiftly. This in turn requires considerable organisation and discipline, particularly given the period within which the BCBS documents are reviewed and the appropriate Philippine implementation is designed.

4.5.2 Related Working Groups

In addition, there are other technical working groups which are focused on issues related to banking system reforms. These are effectively auxiliary to the Basel III agenda but are nonetheless critical to ensure that the Basel III framework itself is successful in generating holistic change. These include:

- Financial market infrastructure
- Foreign bank capitalisation
- Shadow banking
- Internal ratings based approaches to credit risk

These involve a different set of personnel from those in the working groups above. Thus, the organisational challenge is exacerbated because of the need to coordinate the different parts of the Basel III guidelines as well as across related-but-different reform tracks.

Information Dissemination within BSP

Along with the issuance of the Basel III consultative document to banks, there was a parallel need to apprise colleagues within the BSP. This required a *de facto* capacity building exercise where examiners, specialists and technical staff are provided sufficient information to address their own execution queries.

4.5.3 Modifications to Existing IT and Other Information System

Just as Basel III will require banks to invest in technology to meet the information and reporting needs, the banking regulator needs to likewise make adjustments with respect to information that will be monitored and reports that will be received from the market. This will not be trivial since this will involve new information and/or new reports. As a corollary, these new data must be processed accordingly and this may require fundamental changes in the regulator's own infrastructure. The key tenet is to ensure that the right information is received by the right party and reviewed appropriately so that any supervisory concern can be acted upon expeditiously.

4.6 Macroeconomic Impact

A number of studies have attempted to estimate the macroeconomic impact of the Basel III reform agenda. Perhaps the most often cited is the report of the Macroeconomic Assessment Group (MAG)¹¹ which finds that GDP growth could be reduced as Basel III is implemented. Slovik and Cournede of the Organisation for Economic Cooperation (OECD)¹² find similar results. Empirically, Slovik and Cournede suggest that GDP growth will be reduced by 15 basis points per annum in the medium term. In contrast, the MAG reports a 19 basis points reduction off the GDP baseline which would occur four and a half years after the start of implementation of the Basel III, but this will be subsequently followed by a recovery towards the baseline. In another study, Angelini, et.al, of the Federal Reserve Bank of New York find that a percentage point increase in the capital ratio causes a median decline of only 9 basis points in the level of steady-state output relative to the baseline.

In the Philippines, a similar study has been conducted by Santos and Bernabe. The authors suggest that a one percentage point increase in capital requirement is estimated to increase the lending wedge by 3.08 percentage points, four quarters after the shock. This subsequently has a negative impact on real GDP in the magnitude of roughly 1 basis point. Santos and Bernabe pointed out, nonetheless, that this may be negated by the benefit of strengthening banks which allow them to weather future financial crisis and prevent the output losses attendant to these crises. Table 7 summarises the benefit, cost and net impact on GDP of meeting Basel III capital requirements.

Table 7
Macroeconomic Effect of Basel III in the Philippines

Period	Benefit	Cost	Net Impact to GDP
Q1-Q4	0.10%*21% = 0.02%	-0.01%	0.01%

Source: Santos and Bernabe, 2012. "The Macroeconomic Effects of Basel III Implementation in the Philippines: A Preliminary Assessment."

11. The Macroeconomic Assessment Group was established in February 2010 by the respective chairpersons of the Financial Stability Board and the Basel Committee on Banking Supervision to coordinate the assessment of the macroeconomic implications of the reforms set out by the Basel Committee. The MAG issued a final report in December 2010 detailing the results of its various simulations.
12. The study was conducted by economists from the OECD Economics Department. Its main objective is to estimate the medium term impact on economic output of the Basel III capital requirements across the three main OECD economies: United States, Euro area and Japan.

The above studies consistently show a transmission from higher capital requirements to higher lending rates and lower GDP growth. In the Philippine context, however, there is reason to argue that the Basel III reform will not automatically mandate banks to increase their capital positions. With a capital adequacy ratio for the banking system as a whole at roughly 17 percentage points – of which 14 percentage points are Tier 1 capital – the simulations cited in other sections of this SEACEN paper suggest that banks operate at a considerable buffer above the regulatory minimum. Should banks choose to increase their capital levels, this is generally in the context of increased risk exposures in line with their preferred business trajectory. In this sense, therefore, we believe that the implementation of the Basel III in the Philippines does not create immediate cost-of-capital implications. If at all, the ICAAP exercise of the banks suggest that more activity is anticipated over the medium term which should induce improvements in the macroeconomy.

5. The Way Forward and Strategic Options

The structure and content of the Basel III Accord may have been in response to specific dislocations in the US and European financial markets. However, the main tenets of this reform agenda are actually much more generic than a reaction to specific shocks. This does not make its enforcement any easier principally because different jurisdictions are coming from different circumstances. Complying with a common-and-higher bar of financial governance and market conduct will therefore have its own issues. If the global community accepts its long-term benefits, it is important that we do not get lost in the shorter-term complications of execution. On this point, three issues stand out.

5.1 Introduction of Legislative Reforms and Preparation of Necessary Guidelines/Directions

The Basel III Accord is not the type of reform that can be initiated from the top. Instead, there has to be ownership from the bottom-up.

One key challenge moving forward is whether the policy roadmap is clear to those in the local jurisdiction. As different regulatory authorities make adjustments to the timeline proposed by the BCBS, expectations will diverge from what the Basel Committee has been publicly espousing and what local regulators envision. This gap needs to be clarified and communicated to affected stakeholders.

In addition, there is that risk that some stakeholders may believe that the “critical final date” of Basel III implementation is still on January 01, 2019 and thus there is no immediate urgency with any of the reforms. This mindset has in fact been evident on a case-to-case basis and therefore needs to be addressed well.

The communication programme involves both the policy issues and the staggered application of the different parts of the Accord. Different jurisdictions are likely to face differentiated key challenges in the execution of the Accord in its entirety and therefore expectations need to be managed well. One has to achieve “buy-in” at the principles level before specific discussions on details can be started.

For the specific case of the Philippines, the implementation of the Basel III framework will, generally, not require any legislative amendment. The caveat on the term “generally” needs to be provided because there are still at least two legal reviews that are on-going, one on foreign bank capitalisation and the other on domestic SIFIs. On these two points, the prevailing view is that the BSP has the regulatory space to implement the Accord.

5.2 Discussions with Banks on Impact Assessment and Examination of Possible Strategies

Making the case with the banks for the policy objectives is primordial since affected institutions will invariably see Basel III as change that is either “costly” or “unnecessary”. The costs may be financial (i.e., investment in technology, consulting and advisory fees, etc.) but mostly in the change that must be effected upon the status quo. This transition cost is likewise related to the view that Basel III is genuinely the solution to the specific problems of the US and European excesses. By construction, it is an “unnecessary” recourse for those jurisdictions which operated conservatively and did not encounter the same difficulties.

The flip side of this challenge is that banks will push back on the reform while using arguments that are more appropriate for the US and the euro zone. For example, the “early adoption” of the Accord by Asia is often frowned upon because “other jurisdictions” have until 2019 to put everything in place. The preference for a prolonged “trial run” belies the very point of the reform agenda, that is, to improve the handling of risk at the bank level regardless of one’s current standing.

Increased financial cost from the “requirement” of more capital is another often-cited case. The corollary point is that the more stringent requirements will “force” intermediation to decline, effectively impairing the real economy. We have heard as much among banks in the Philippines who seem to forget the fact that their capital suggests CAR at levels well above the required minimum and is composed largely of core equity. The subsequent argument of “deleveraging” is therefore *non-sequitor* since there is no immediate capital shortfall against which banks need to deleverage.

5.3 Improved Risk Management Framework

Where there will be real change is in the way the menu of identified risks will now be handled. This is the only “exit strategy” available for banks because its application is universal and its value proposition unquestionable.

But this is not likely to be similar to the case when the first Basel Accord was introduced. By now, banks hold a view of which risks matter and how regulators wish to approach these from the standpoint of general principles. The new Basel framework changes the risk management game by: (1) extending the specific risks that are covered; (2) providing for a prescriptive manner of managing these risks; and (3) introducing newer aspects that can fundamentally alter the way the business of banking is conducted.

With the first point, this is evident, for example, in the introduction of securitisation and re-securitisation risks. The second is clear with the prescribed framework on liquidity risk and the way conversion and write-off provisions are now the norm for debt securities which qualify as bank capital. And as for the third, the very fact that a business premised on leverage is being told to refrain from lending on an up-cycle or is being mandated to trade over-the-counter (OTC) derivatives on an organised exchange are themselves game-changers.

This is not to say these aspects of the reform or the reform in its entirety is incorrect. On the contrary, there is considerable value in them. But the transition from where the market was to where Basel III wants to take it is *the* issue at hand.

5.4 Development of Capital Markets and Instruments

Although Basel III is supposed to be a banking reform, it should be clear that the extent and impact of the changes goes well beyond banking. As it is structured, the Basel III agenda will have an impact on the operations of the

capital market because of its emphasis on price discovery, the reform of financial market infrastructures, the prudential guidelines on securitisation, and the handling of the trading books.

This matters to the Philippines because we have long been under a universal banking regime. Combining commercial banking and investment banking, Philippine universal banks are the biggest players in the securities market. Thus, reforming the banking architecture will change banks and by doing so affect the way the Philippine capital market operates.

This increased regulatory pressure on the business of banking may actually have a beneficial side-effect. That is, the bank-dominated financial markets that are prevalent in Asia may see a shift towards the securities market. This relieves the risks that have been concentrating on the funding side of the banking market while moving the securities market forward.

The danger, however, is that such a shift may not be developmental but may be more of an arbitrage move. This cannot be a net gain for the financial market unless the securities market itself moves forward. This suggests that the Basel III framework will likely be more effective if the prudential framework for managing financial risks is more neutral across market categories, i.e., banking, securities, asset management, and insurance.

This will require a conscious effort to align the various prudential frameworks. In Europe, this is already work in progress through the Capital Requirement Directive IV (CRD-IV). For their insurance market, there is the Solvency II framework. All of these are Basel-like in nature and provide a natural venue for harmonisation.

In the case of the Philippines, this harmonisation effort is just at its nascent stages. A specific technical working group has been convened between the central bank, the Securities and Exchange Commission, the Insurance Commission and the Philippine Deposit Insurance Corporation to explore the extent to which our different prudential frameworks can be harmonised. Whether this leads to a CRD or Solvency II framework remains to be seen but at least the recognition of the value of a common prudential framework from a risk perspective, to the extent possible, has been made.

5.5 Addressing Resource Constraints and Challenges (Capacity Building and Modifications to the IT Infrastructure)

At the end of the day, however, the reform agenda cannot be implemented unless the resource constraints and challenges discussed in Section 4.5 are addressed. But while banks look to their banking regulator for guidance and mentoring, it is not obvious to whom regulators look to for guidance.

It is understood that each jurisdiction will implement the Basel III framework differently. Even when the pronouncement is that a jurisdiction will adapt *en toto* the December 2010 BCBS document, there are enough nuances from one jurisdiction to another to make the implementation not as straightforward as one would hope.

As a repository of the experiences of others, regional training hubs such as the SEACEN take on increased importance. Those who have some experience with Basel III implementation or the infrastructure required to operationalise the work environment can share their insights with those looking to learn and implement soon after. This transfer of technology is important because it may well be the only source of experience. Surely, there will be many consulting or training institutions that will offer such capacity building. However, there appears to be considerable value in tapping the opportunities of an organisation formed by Asian jurisdictions specifically to assist other Asian jurisdictions for research and training.

6. Some Final Thoughts

Basel III fundamentally restructures the architecture of prudential regulation for banking. Rather than being the next progression of the Basel Accord, this third installment is a direct response to the difficulties we have witnessed at the global stage since the mortgage-driven crisis of 2007 and continuing with the protracted crisis in the euro zone.

The prescribed changes are not meant to be palliative but are an attempt at remodeling the risk-return mindset. It would be a serious lapse in judgment if we believe that the banking market is “suddenly more risky” today than in the past. Finance has always been risky and more so for banking where leverage and gapping strategies are at the core of the business. In reality then, the risks that we address under Basel III have long been in play but the international community now faces them with a different war chest.

The main difficulty with Basel III however is that it is more prescriptive than previous Accords in areas that traditionally were left to the discretion of the banks themselves. Having finite thresholds on liquidity, the introduction of countercyclical buffers or mandating OTC instruments to trade on exchanges are some of the more glaring examples. This does not suggest that we absolutely disagree with the changes. The prudential intent is quite clear and easy to accept. It is the execution of the intended change that is problematic under this new regime where a single bar set high enough is the new normal.

This is an issue because different jurisdictions are coming from different situations, both in relation to the international difficulties and with respect to domestic requirements. If financial markets are to perform their mandate as a market for savers and borrowers, one has to assume that interests are best served from within borders and extending beyond. This will require a clear recognition of idiosyncratic conditions in each jurisdiction but without losing sight of the international norms.

In the end, the drive to address universal concerns over risk moves us closer towards a single albeit higher bar of financial governance. Drawing the line in the sand is going to be a problem if we have to divide between a concerted common approach and falling into the trap of one-size-fits-all.

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Chapter 10

BASEL III IMPLEMENTATION CHALLENGES AND OPPORTUNITIES IN SRI LANKA

By

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1. Introduction

1.1 Objective and Scope of Study

Basel I, the framework of minimum capital standards introduced in 1988 by the Basel Committee on Banking Supervision (BCBS), was designed to increase the safety and soundness of the international banking system and set a level playing field for banking regulation. Basel I was equipped with just a minimum capital requirement rule considering initially only credit risk. Subsequently, in 1996, the introduction of market risk was incorporated. Although praised for achieving its initial goals, it has been criticised as the low risk sensitiveness of its capital requirements may lead to greater risk taking and regulatory capital arbitrage by banks.

Therefore, Basel II, its successor, was issued for adoption by the banking community in 2004. Basel II relies on three pillars viz., minimum capital requirements, supervisory review, and market discipline, to attain the safety and soundness of the financial system. Basel II was intended to create an international standard for banking regulators to control the level of capital the internationally active banks need to put aside to safeguard against the types of financial and operational risks that banks face. One focus was to maintain sufficient consistency of regulations so that this does not become a source of competitive inequality among banks.

The financial crisis that began in 2007 highlighted a number of weaknesses in banks' capital and liquidity. In the aftermath of the crisis, the BCBS, in consultation with the Leaders of G20 countries and Governors of Central Banks took steps to address these weaknesses by improving capital adequacy standards reducing pro-cyclicality, and strengthening the liquidity management of banks. The BCBS's reforms to the international regulatory framework seek to increase

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the banking sector ability to absorb shock arising from financial and economic stress and thus reducing the spillover effects from the financial sector to the real economy. The BCBS's reforms known as 'Basel III', is an enhancement to the existing Basel II framework. A revised definition of capital and enhanced minimum capital requirements are the two cornerstones of these reforms.

The implementation of Basel III is subject to extensive transitional arrangements to ensure that the banking sector can meet higher capital standards through reasonable retention of earnings and the raising of capital, while still supporting lending to the economy.

The objective of this study is to assess the need to move to Basel III, its implications, challenges and opportunities in the context of the banking sector in Sri Lanka.

1.2 General Outline of Paper

This paper aims to present an overview of the financial system, the critical risks faced by the banking sector, and the level of application of the Basel standards; and to examine the impact of the Basel Capital Standards, the implementation issues and challenges and the way forward for Sri Lanka.

1.2.1 Financial System of Sri Lanka

- (i) The financial sector asset base stood at Rs. 7,651.8 billion or US\$67.1 million, and is approximately 117.8 percent to Gross Domestic Product (GDP) as at end 2011. The financial system in Sri Lanka is dominated by the banking sector with 55 percent of the assets of the financial system concentrated in the banking sector. The contribution of the banking, insurance and real estate accounts for 8.8 percent of GDP. The banking sector assets accounted for Rs. 4.9 trillion as at September 2012.
- (ii) Sri Lanka's GDP is to reach a US\$100 billion economy by 2016. The assets of the banking sector are expected to double by 2016 to reach Rs. 10 trillion in view of the expected doubling of per capita income to US\$4,000 by 2016. With a view to facilitating such growth, banks were required in 2010 to increase the minimum capital aligned to Tier I capital on a staggered basis.

1.2.2 Status of Application of Basel Standards

- (i) In late 2007, the Central Bank of Sri Lanka (CBSL) issued a Direction on maintenance of capital, based on the requirements under Basel II, equally applicable across the banking sector. Currently the banking sector adopts Pillar I of Basel II and applies the standardised approach on credit risk, the standardised measurement approach on market risk and the basic indicator approach on operational risk. The Direction also required banks to commence collecting data to enable the adoption of the advanced approaches of Pillar I in five years.
- (ii) All banks are required to maintain a core capital ratio of 5 percent and total capital ratio of 10 percent. The average core capital ratio and total capital ratio maintained by the banking sector remained high at 13.3 percent and 15.0 percent, respectively, as at 30 September 2012.
- (iii) Exposure Drafts were issued in 2011 on moving to the Standardised Approach on Operational Risk and giving guidance to move to the Advanced Approach on Operational Risk. At present, banks are preparing to move to the Standardised Approach under operational risk.
- (iv) A Consultation Paper was issued on the implementation of Pillar 2 of Basel II in April 2012 and a few banks have submitted their own Internal Capital Adequacy Assessment Process (ICAAP). The CBSL is in the process of reviewing and evaluating the ICAAPs already received.
- (v) Disclosures on capital and risks have been improved with the introduction of the Integrated Risk Management Direction (IRMD) and with the reporting formats released for compliance with the Sri Lanka Accounting Standards on financial instruments, presentation, measurement and disclosures.

1.2.3 Preparatory Work Related to Basel III

- (i) The preliminary assessment under Basel III requirements reveals that almost all banks are able to meet the Basel III capital requirements. Adoption of the new capital standards and banks meeting such requirements is not a material concern to the CBSL as banks already maintain an industry-wide Tier I ratio of 13.3 percent as at September 2012. The CBSL will, however, commence detailed studies of the new capital requirements in 2013. The CBSL has already carried out a preliminary assessment on the requirements under the regulatory leverage ratio, based on Tier I capital as against total

on balance sheet and off-balance sheet assets and at present the banking sector ratio is 4.3 percent which is above the acceptable norms of 3 – 4 percent. The main challenge for the CBSL will be on the implementation of the liquidity standards viz., Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR).

- (ii) The CBSL considers it pertinent for the banking sector to adopt Basel III capital requirements and liquidity standards early to ensure further strengthening of the resilience and risk management of banks in Sri Lanka. Considering the present level of achievement in terms of capital and risk management, the CBSL is confident of its ability to guide the banking sector with the implementation and that the banking sector will be able to achieve the requirements well before the required time target for implementation of the regulatory requirements under Basel III.

2. Overview of Financial System and Risk Assessment

2.1 General Overview of Financial System of Sri Lanka

2.1.1 The Financial System

The financial system of Sri Lanka comprises the banking sector, non-bank deposit-taking financial sector, specialised financial institutions, and contractual savings institutions. The total assets of the financial system are Rs. 7,651.8 billion or US\$67.1 billion. The financial assets to GDP ratio stood at 117.5 percent as at end 2011.

(i) Composition of the Financial System

- (a) Assets of the CBSL, licensed commercial banks (LCBs) and licensed specialised banks (LSBs) account for around 74.1 percent of the total assets of the financial system. The following Chart and Table indicate the components of the financial system and share of the assets:

- (b) The banking sector is 55 percent of the total financial system with assets amounting to Rs. 4.9 trillion as at end September 2012.
- (c) The non-bank deposit-taking financial institutions consisting of licensed finance companies, co-operative rural banks and thrift and credit co-op societies account for 5.6 percent of the total assets of the financial system as at end 2011.
- (d) Contractual Savings Institutions such as Employees Provident Fund, Employees' Trust Fund, Private Provident Funds and Insurance Companies account for 20.5 percent as at end 2011.
- (e) Other specialised financial institutions consisting of primary dealers, leasing companies, stock broking companies, unit trust companies, venture capital companies, credit rating agencies account for 4.4 percent of the financial system as at end 2011.

(ii) Regulatory Regime in Sri Lanka

- (a) A multiple regulatory regime is prevalent in Sri Lanka with the CBSL being the main financial sector regulator, regulating approximately 62.2 percent of the assets of the financial system and 98.2 percent of the deposit taking institutions.
- (b) The CBSL is mandated with securing financial system stability and economic and price stability. The CBSL in discharging its responsibilities for financial stability is the licensing authority and regulator of licensed banks, finance companies, leasing companies and primary dealers.
- (c) At present, the CBSL supervises and regulates 33 licensed banks, 47 licensed finance companies, 13 leasing companies and 12 Primary Dealers. The CBSL is also mandated to operate the Employees Provident Fund.
- (d) The Insurance Board of Sri Lanka (IBSL) presently supervises and regulates insurance companies accounting for 3.4 percent of the total assets of the financial system and the Securities and

Chart 1
Constituents of the Financial System
and Share of Assets, as at 31 Dec. 2012

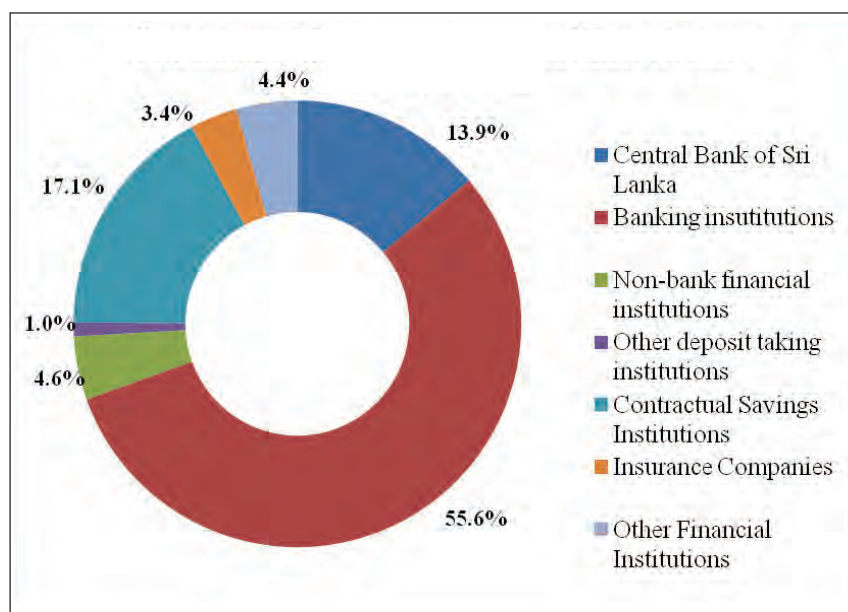


Table 1
Composition of the Financial Sector

Type of Institution	Total Assets as at 31.12.2011		Market share percent
	Rs. bn	US\$ mn	
Central Bank of Sri Lanka	1,064.1	9,342.0	13.9
Banking Institutions	4,252.2	37,332.7	55.6
Non-bank Financial Institutions	352.1	3091.3	4.6
Other deposit-taking Institutions	75.0	658.5	1.0
Contractual Savings Institutions	1,305.7	11,463.5	17.1
Insurance Companies	261.8	2,298.5	3.4
Other Financial Institutions	340.9	2,992.9	4.4
Total Assets	7,651.8	67,179.4	100.0

Exchange Commission (SEC) regulates market intermediaries such as Margin Providers, Underwriters, Credit rating Agencies, Stock brokers, Managing Companies of unit trusts accounting for 0.4 percent of the total assets of the financial system.

(iii) *Legislative and Regulatory Framework of the Banking Sector*

- (a) The regulation and supervision of banks is primarily governed by legislations, viz., the Monetary Law Act and Banking Act. The CBSL issues two types of licences for LCBs and LSBs.
- (b) The main distinction being that LCBs are permitted to accept demand deposits from the public and engage in a full range of foreign exchange transactions.
- (c) Licensed banks are also required to comply with the Exchange Control Act and laws on anti-money laundering, terrorist financing and financial transactions reporting, and Payments and Settlements Act.
- (d) The regulatory and supervisory framework currently applicable is based on international best practices grounded on the Basel Core Principles for Effective Banking Supervision set out by the BCBS.
- (e) The CBSL strictly monitors compliance with Directions issued in relation to inter alia Corporate Governance, Capital Requirements under Basel II, Integrated Risk Management, assets quality, foreign exchange activities, liquidity risk, customer charter, ownership of bank shares carrying voting rights, credit risk, internal audit and disclosure.
- (f) The Banking Act, the main legislation governing banking operations and the regulatory framework, empowers the CBSL to direct banks to maintain capital in terms of the Guidelines issued by the Bank for International Settlements (BIS). Also, the CBSL is empowered to issue Directions to banks regarding the manner in which any aspect of the business of such bank is to be conducted to ensure soundness of the banking sector.

(iv) Banking Sector in Sri Lanka

- (a) The banking sector remains the main financial service provider in the absence of an active corporate debt market. Banks meet the financial needs of corporates, small and medium enterprises, housing and the retail sector.

(b) Composition of the Banking Sector

At present, the banking sector in Sri Lanka consists of 24 LCBs and 9 LSBs accounting for 85.6 percent and 14.4 percent, respectively, of the total assets of the banking sector.

The banking business of LCBs is diversified whereas the LSBs predominately operate as savings, housing and development banks. The state-owned banks account for nearly 50 percent, whilst the domestic private banks and foreign banks account for 37.1 percent and 11 percent, respectively, of the market share in assets.

There are 12 foreign banks operating in Sri Lanka, out of which 3 are global systemically important banks.

Table 2
Composition of Banking Sector, as at end Sept. 2012

Type of Bank	Number of Institutions	Number of Banking Outlets	Total Assets	
			Rs. bn	Market Share (percent)
Licensed Commercial Banks	24	5,464	4,207	85.6
State banks	2	3,844	1,829	37.2
Private domestic banks	10	1,400	1,828	37.2
Foreign banks	12	220	550	11.2
Licensed Specialised Banks	9	795	709	14.4
State banks	3	698	604	12.3
Private domestic banks	6	97	105	2.1
Total	33	6,259	4,916	100.0

- (c) Considering the asset size and the interconnectedness in the financial system at present, there are eight banks which have been identified as domestic systemically important banks (D-SIBs) accounting for around 85 percent of the total market share.

- (d) 11 banks operate as financial conglomerates having invested in at least two financial subsidiaries, such as in insurance companies, finance companies, merchant banks and stock broking companies.
- (e) All banks and finance companies are required to be rated by external rating agencies and listed in the Colombo Stock Exchange (CSE) to facilitate greater transparency as to the financial condition and the soundness of banks.

(v) Financial Markets in Sri Lanka

- (a) The Interbank Call Money Market is the overnight market that mainly assists commercial banks in meeting their immediate liquidity requirements by facilitating lending and borrowing among banks. In 2012, the CBSL adopted a policy to limit the repo standing facility, thus facilitating banks to lend among themselves before reverting to the CBSL. The CBSL was able to maintain the money rate within the policy rate corridor. The transaction volumes recorded an average of Rs. 13.1 billion during the year.

- (b) Inter-bank Foreign Exchange Market

In 2012, Sri Lanka changed its exchange rate policy from a managed floating rate system to a market-based system permitting currencies to float freely responding to demand and supply. In 2012, a decline in foreign exchange market was observed and excessive volatility was imminent from time to time in the domestic exchange market, mainly due to the demand arising from the oil import bills.

- (c) The Treasury bill market continued to be the most liquid and largely traded instrument operating in the financial market.
- (d) In the Corporate Debt Securities Market, the commercial paper market has been relatively active with many listing of corporate debentures by two banks. The development of the corporate bond market is still in a nascent stage and several measures are being taken to address the impediments to develop the corporate bond market. Foreign investors are now allowed to invest in the corporate bond market and incentives given in the Budget 2013 will enhance the activities of the corporate bond market.

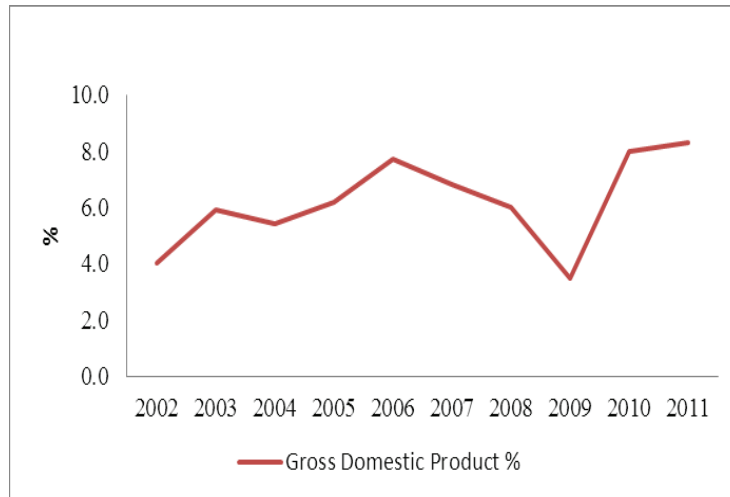
- (e) The size of the CSE is still small both in terms of market capitalisation and the number of companies listed on the CSE, compared with other countries in the region. Market capitalisation at the end of 2012 was Rs. 2.2 trillion, equivalent to 29 percent of GDP. Banking, Finance and Insurance remain the largest in terms of market capitalisation with 22.6 percent.
- (f) The SEC has taken several measures to reduce the volatility in the market. The credit extension by stock brokers was further relaxed by the SEC. Several measures were also introduced to mitigate settlement risk in the market, prohibiting employees and directors of all market intermediaries to trade their shares until after 6 months of holding such shares. The establishment of a central counterparty clearing corporation would mitigate settlement risks enabling moving to a delivery versus payment mechanism. This will facilitate introduction of new products such as exchange traded derivative.

2.2 Risk Oversight Assessment and Vulnerabilities

2.2.1 Growth Trend

The GDP of the country has been increasing during the years 2010 and 2011 recording over 8 percent of growth for two consecutive years as it recovered consequent to the end of the 30 year conflict period, despite the spillover effect of the financial crisis. Sri Lanka's GDP declined during the period 2007 to 2009 as this was the period where the conflict was intense and in certain ways the economic activities of the county were hampered due to the financial crisis. Although the banks in Sri Lanka were not significantly impacted, the exports, remittances and tourism sector showed some adverse impact.

Chart 2
Gross Domestic Product (Percent)



2.2.2 Risk Profile of the Banking Sector

(i) Resilience of the Banking Sector

The banking sector in Sri Lanka continues to be resilient with strong capital adequacy ratios and liquidity position. The asset quality of the banking sector has shown a steady improvement, although during the year 2012, the non-performing ratio has increased marginally. The profitability ratios indicate an improvement supported by improvement in the bank efficiency ratio. The key indicators of the banking sector during the period 2008 to 2012 are as follows:

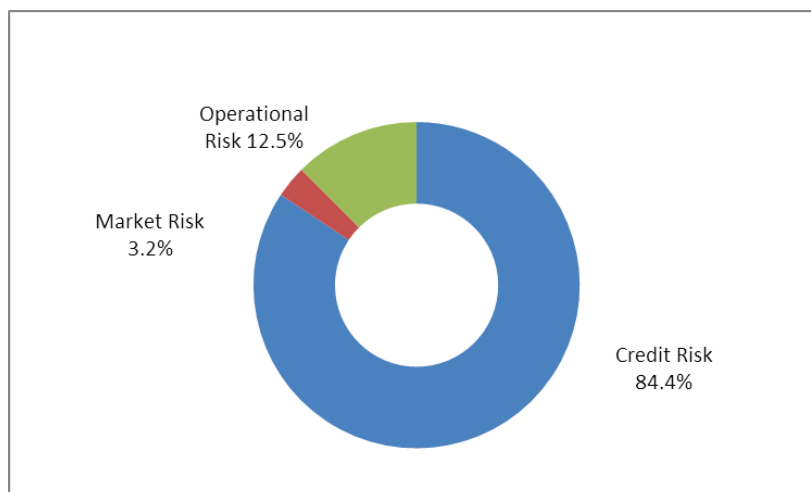
Table 3
Key Indicators of the Banking Sector

Indicator (Percent)	2008	2009	2010	2011	Q3-2012
Capital Adequacy					
Core (Tier 1) Capital Ratio	12.5	14.1	14.3	14.4	13.3
Total Capital Ratio	14.5	16.1	16.2	16.0	15.0
Net Non-performing Loans to Capital Funds	18.5	26.2	15.2	11.5	14.1
Assets Quality					
Gross Non-performing Loans (NPL) ratio	6.3	8.5	5.4	3.8	4.0
Net Non-performing Loans (NPL) ratio	3.4	5.0	3.0	2.1	2.4
Provision Coverage (specific provisions to Gross Non-performing Loans)	47.6	42.8	45.3	46.0	40.2
Liquidity					
Statutory Liquid Assets Ratio	31.3	39.2	36.6	32.4	30.9
Loans to Deposits Ratio	87.0	71.5	76.4	84.7	87.6
Profitability					
Return on Assets (Before Tax)	1.9	1.8	2.7	2.4	2.5
Return on Equity (After Tax)	13.4	11.8	22.0	19.7	20.5
Efficiency Ratio	55.6	56.3	47.2	52.3	48.8

(ii) Credit Risk

(a) Credit risk remains the largest risk where 60 percent of the assets of the banking sector constitute loans and advances and around 84 percent of the risk weighted assets is concentrated in credit as at 30 September 2012.

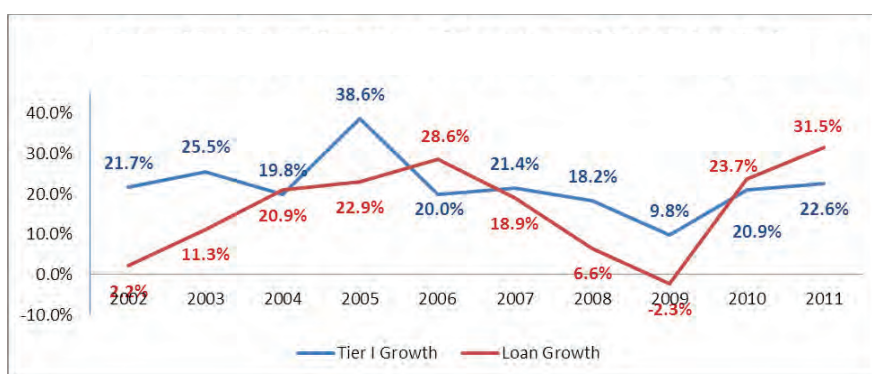
Chart 3
Composition of Risk Weighted Assets



(b) Credit growth on average during the ten year period 2002 to 2011 was 16 percent. Credit growth during the year 2009 was negative against the back drop of uncertainties in the global arena. The increase in credit has been rapid during the year 2011 at 31.5 percent on a 23 percent loan growth in 2010.

(c) During the period 2002 to 2012 the average growth in Tier I capital was 22 percent, indicating a higher growth in capital compared to credit growth.

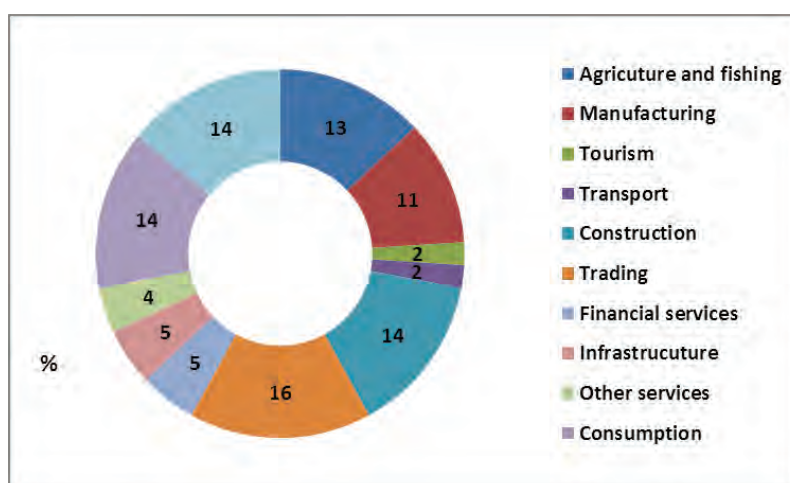
Chart 4
Trend in Growth Rates of Loans and Tier 1 Capital



(d) Sri Lanka has in the past adopted macro-prudential measures to address rapid credit growth. In 2006, the CBSL increased the risk weights of loans for housing and other types of loans as the credit growth in these sectors was increasing at a rapid rate. In 2010, observing a high credit exposure to stock market activities, the CBSL introduced limits and required bank Board of Directors to put in place own internal limits and risk management procedures to address such high exposure. Similarly, considering the need to address high credit growth and the implications thereof on the country's balance of trade position, the CBSL, during the first quarter of 2012, imposed a credit ceiling of 18 percent on its rupee credit and permitted banks with foreign sources of funds to increase credit up to 23 percent.

(e) Economic sectoral analysis of credit reveals that credit has flown to sectors such as agriculture, construction and trading. Since 2007, licensed banks in Sri Lanka are required to maintain credit to the agriculture sector at above 10 percent of total credit.

Chart 5
Sectoral Analysis of the Credit Portfolio



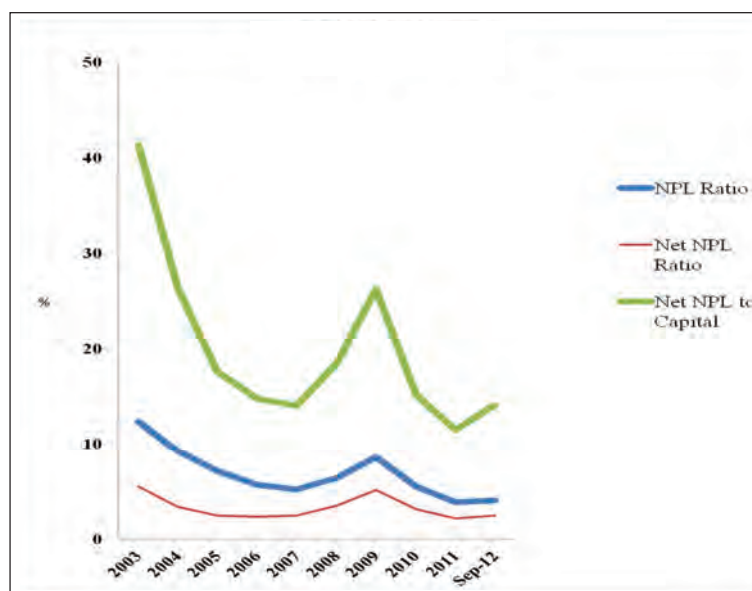
(f) Constituents of credit risk indicated that 35.7percent of total claims for credit risk are concentrated in claims on Central Government and the CBSL, which requires no capital allocation.

Table 4
Claims on Credit Risk

Claims on Credit Risk	Percent of Claims Externally Rated	Share of Credit to Total Credit Related Assets
Claims on Central Government and CBSL	n/a	35.7
Claims on Corporates	8	21.2
Retail Claims	n/a	16.0
Claims on Bank Exposure and Financial institutions	82-91	9.8
Claims on Public Sector	0	2.0
Claims on Foreign Sovereign and their Central Banks	78	0.4
Other Claims		8.2
Claims secured by residential property and commercial real estate		6.8
Total Claims for credit risk weighted assets		100.0

(g) Improvement in the credit quality, however, watchful of position. Non-performing loan (NPL) ratio of the banking sector has steadily reduced from 8.5 percent to 4.0 percent during 2009 to September 2012. The increase in net non-performing ratio to capital also indicates a declining trend from 26.2 percent in 2009 to 14.1 percent in September 2012, thus reflecting an improved asset quality. The trend in the asset quality of banking sector during the period 2003 to September 2012 is as follows:

Chart 6
Assets Quality



(iii) Liquidity Risk

(a) Liquidity risk remains at a comfortable level with the statutory liquid assets ratio being maintained at high levels. Banks at present are required to maintain the statutory liquid assets ratio at 20 percent, where LCBs maintain liquid assets to the value of at least 20 percent of the total liabilities less liabilities to shareholders and the CBSL. LSBs maintain liquid assets on deposits. The liquid assets predominantly constitute treasury bills and bonds accounting for 22 percent of the total assets of the banking sector.

Table 5
Key Liquidity Indicators as at 30 September 2012

	Statutory Liquid Assets Ratio¹	Credit Deposit Ratio	Liquid Assets to Total Assets
Banking Sector – average	30.9	87.6	27.0
Licensed Commercial Banks	25.8	93.3	23.9
Licensed Specialised Banks	61.0	56.5	45.2

(b) The liquid assets to total assets ratio is 27 percent. The maturity profile reveals a declining trend in the mis-match in the less than 30-day bucket and the cumulative gap as a percent of total liabilities being 20 percent.

(c) The composition of liabilities reflects heavy reliance on deposits amounting to 70 percent whilst time deposits account for 60 percent of the deposits as at 30 September 2012.

Chart 7
**Composition of Liabilities, as at
30 Sept. 2012**

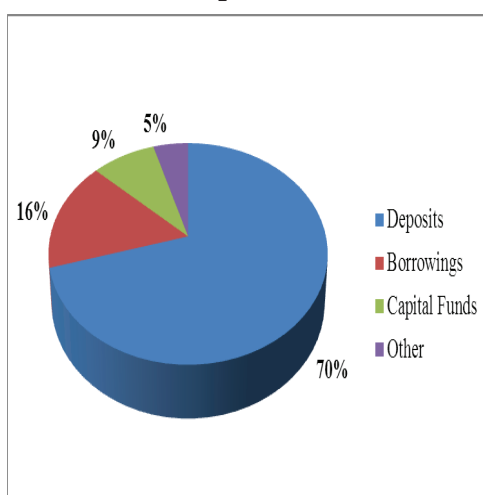
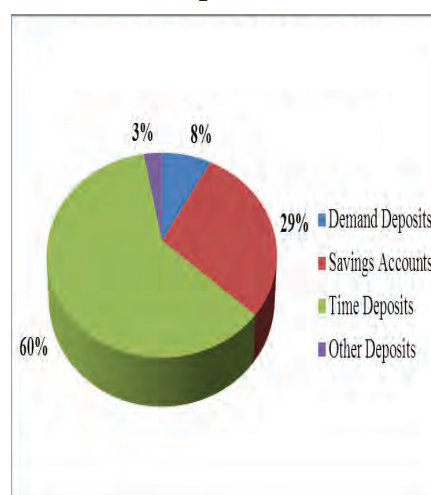


Chart 8
**Composition of Deposits, as at
30 Sept. 2012**



(d) The CBSL considers it pertinent to further strengthen liquidity risk management through the Basel III framework as a matter of priority as liquidity risk management is considered to be one of the most important areas to address.

(iv) Market Risk

(a) Market risk remains low with risk weighted assets in relation to market risk being 3.2 percent of the total risk weighted assets, ranging from a minimum of 0.1 percent to 15 percent in a few banks. The high ratios were due to high concentrations in market risk related instruments and to a state-owned bank which is required to invest significant amounts in government securities in terms of its own legislation.

(b) The trading investments are 24 percent of total investments and government securities constitutes of 95 percent of such securities, thereby the specific interest rate risk is zero. As the concentration on investments in equities is also minimal, the related market risk is negligible. 52 percent of the risk weighted assets on foreign exchange and gold is due to the foreign exchange positions held by banks however, such exposures are monitored on a daily basis and are within the stipulated Net Open Positions of foreign exchange.

(v) Operational Risk

(a) The operational risk weighted assets constitute 12.5 percent of the risk weighted assets. The capital charge based on the basic indicator approach is considerably high. The preliminary data reported to the Central Bank on internal loss data on operational losses do not indicate significant losses. The share of risk weighted assets in credit risk, market risk and operational risk remain at 84.4 percent, 3.2 percent and 12.5 percent, respectively.

(b) Banks have established or are in the process of formalising their own business continuity plans. The disaster recovery plans form an integral part of the business continuity plan and are regularly checked.

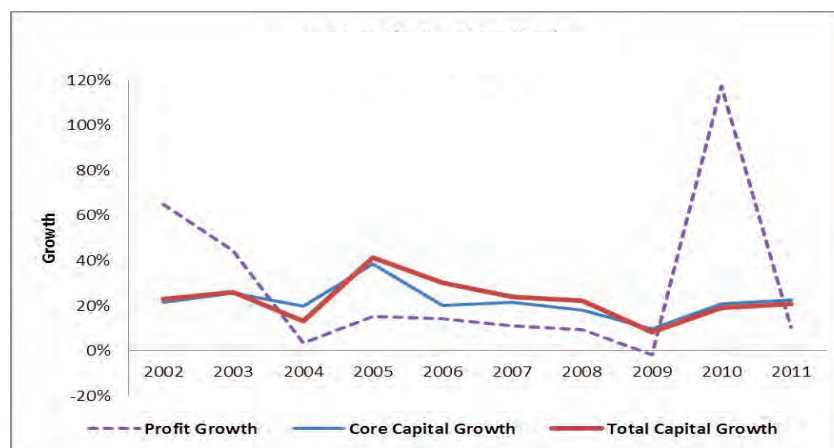
(vi) Capital Position of Banking Sector Remains High

(a) The core capital ratio and total capital ratio of the banking sector remain high at 13.3 percent and 15 percent as at 30 September 2012.

A significant portion (more than 90 percent of Tier I capital constitutes share capital and reserves).

(b) Capital growth during the 10-year period has taken place with the accumulation of profits and through new share issues. Average growth in profits during the period has been 29 percent. The corresponding growth in Core Capital and Total capital is 22 percent and 23 percent.

Chart 9
Growth in Capital



(c) The recently concluded financial sector assessment programme also reveals that the banking sector's governance and risk management practices and capital position has improved.

(vii) Soundness of the Banking Sector

The Banking Soundness Index (BSI) indicates that the banking system has been sound and stable over the medium term. The CBSL formulates the BSI which is an aggregate indicator that can be used to assess the soundness of the banking sector over time. The BSI is based on selected financial soundness indicators representing capital, asset quality, profitability, liquidity and sensitivity to market risk. The financial indicators are weighted based on the market share of each bank. The BSI declined marginally in 4Q/2010 to 100.55 in 3Q/2011 mainly due to a decrease in capital adequacy, liquidity and profitability ratios on account of the greater credit growth and a slight decline in interest margins. The BSI indicates that the soundness of the banking sector has improved from mid-2009.

Chart 10
Banking Soundness Index (2006
Q3=100)

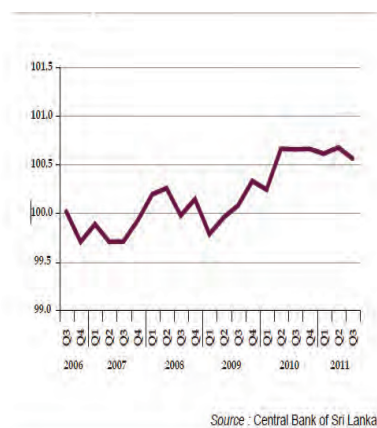
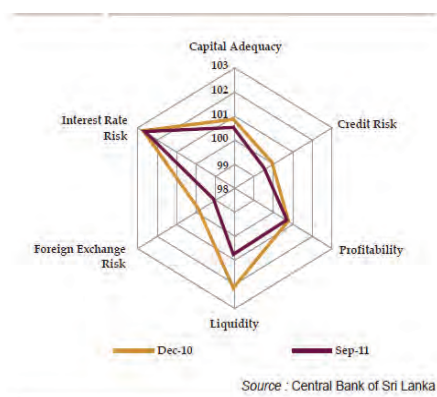


Chart 11
Partial Indicators of
the Banking
Soundness Indicators



2.3 Status of Application of Basel Capital Adequacy Framework

2.3.1 Adoption of Basel I

- (i) Basel I was adopted in 1993 for LCBs and in 1998 for LSBs in Sri Lanka, in line with the Capital Adequacy Accord recommended by the BCBS. Taking into account the credit risk in various types of assets on the balance sheet as well as off-balance sheet, on the basis of risk weights specified in the Accord, to determine the minimum capital required.
- (ii) The capital charge for market risk, as recommended by the BCBS in 1996, was introduced in March 2006.

2.3.2 Adoption of Basel II with the Simplest Approach, Commencing 2008

- (i) In 2005, the CBSL announced its intention to adopt Basel II initially beginning with the simplest approach (viz. the Standardised Approach) under Pillar I, with the intention of moving to the advanced approaches and other two pillars in the medium term when the banks' information and risk management systems are ready.
- (ii) This was in line with the new Capital Adequacy Accord (Basel II) introduced in June 2004 for internationally active banks providing banks

with stronger incentives to improve risk management and to economise capital funds accordingly. Basel II provides for the maintenance of capital adequacy ratios on a more risk sensitive focus covering credit risk, market risk in the trading book and operational risk, under various options, varying from simple options to model-based advanced options.

(iii) Commencing 1 January 2008, the Capital Requirements Directive was implemented in the Sri Lanka requiring all banks to adopt Pillar I of Basel II with the standardised approach on credit risk, standardised measurement approach on market risk and basic indicator approach on operational risk. This Direction also required banks to commence collection of data and establish data warehouse to facilitate adopting the advanced approaches in 2013. The minimum capital adequacy ratios currently in force for banks in Sri Lanka is 10 percent, with core capital not less than 5 percent, when compared with 8 percent and 4 percent, respectively, recommended by the BCBS.

2.3.3 The Way Forward on Basel II

(i) In 2011, an Exposure Draft was issued on the Implementation of the Standardised Approach on Operational Risk and Guidelines for the advanced approaches on Collecting Internal Loss Data of Banks to facilitate moving to the Advanced Measurement Approach, with a view of facilitating banks to commence tracking of internal loss data and mapping such data according to business lines. This will facilitate the development and functioning of a credible operational risk measurement system in banks.

(ii) In April 2012, a Consultation Paper on the Implementation of Pillar 2 of Basel II on Supervisory Review Process was issued to banks. The requirements are due to be finalised and the Direction will be issued during 2013 requiring banks to maintain capital on all risks.

(iii) The Direction on Pillar 3 of Basel II on Market Discipline is scheduled to be issued in 2013 after reviewing the status of disclosure based on the International Financial Reporting Standards (IFRS). Banks in Sri Lanka are required to comply with the Sri Lanka Accounting Standards corresponding to the IFRS for financial reporting and disclosure.

2.3.4 Adoption of Basel III

The CBSL is currently reviewing the requirements under the Basel III framework. Preliminary assessments on the capital requirements and leverage ratio have been carried out.

3. Assessment of Impact of Basel Standards

3.1 Assessment of Impact on Current Capital Rules

3.1.1 New Capital Rules

(i) Banks are required to hold higher quantity and quality of capital in terms of common equity as its ability to absorb losses is higher. In order to ensure higher quality and quantity of capital, the minimum regulatory capital adequacy ratios (excluding the conservation buffer) which are to be met at all times, are as follows:

Table 6
Higher Quantity and Quality of Capital under
Basel III Requirements

Capital Ratio	Main Capital Components	Requirement as a Percentage of Risk Weighted Assets		Basel III Requirements with Capital Conservation Buffer ¹ of 2.5 %
		Basel II	Basel III	
Common Equity Capital ratio	Share capital, retained profits and disclosed reserves	2.0 %	4.5 %	7.0 %
Tier I Capital ratio	Common equity plus other capital instruments which are subject to strict eligibility criteria and which encompass a loss absorption mechanism	4.0 %	6.0 %	8.5 %
Total Capital ratio	Tier I capital and capital instruments subordinated to depositors and general creditors of the bank subject to strict eligibility criteria	8.0 %	8.0 %	10.5 %
Counter Cyclical Buffer	Common Equity		2.5 %	

Note 1: Capital conservation buffer constitutes common equity.

(ii) Considering the negative externalities created by systemically important banks which are not fully addressed by current regulatory requirements, SIBs will be required to maintain more capital with higher loss absorbency.

3.1.2 Status of Current Level and Adequacy of Capital of Individual Banks or Banking Groups in Terms of Key Performance Indicators for Capital

(i) All banks presently maintain capital based on Pillar I of Basel II and are required to maintain a 5 percent core capital and 10percent total capital ratio. As at end September 2012, the core capital ratio and total capital ratio of the banking sector was 13.3 percent and 15.0 percent, respectively, on average. Similarly, banks are required to maintain capital based on the consolidated position of banks. Licensed Banks are compliant as indicated below:

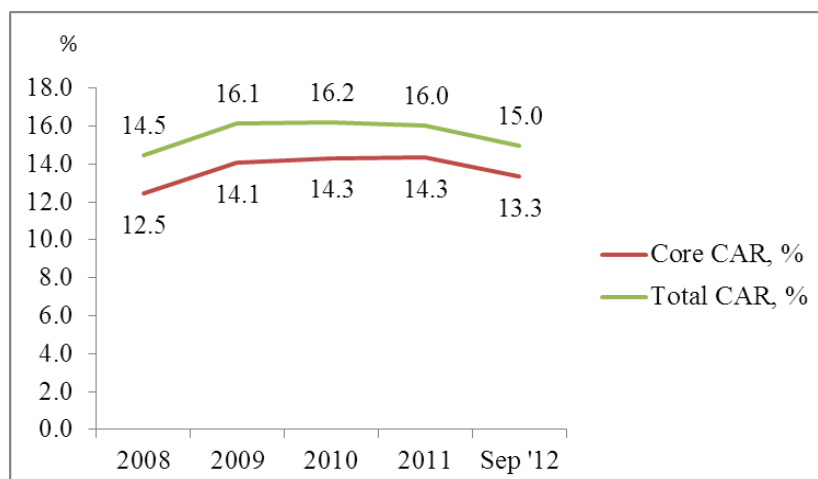
Table 7
Key Indicators for Capital, as at 30 Sept. 2012

Type of Bank	Core Capital Ratio (%)	Total Capital Ratio (%)
Banking Sector Average	13.3	15.0
Licensed Commercial Banks	12.5	14.5
Licensed Specialised Banks	21.1	19.4

(ii) Meeting Economic Objectives/Economic Growth: Considering the macro-economic goal of increasing per capital income to US\$4,000 by 2016, and the expected increase of banking assets to Rs. 10 trillion, banks have been requested to increase their minimum capital by 2015 on a staggered basis to Rs. 5 billion by end 2015.

During the past five years, the capital adequacy ratios have been maintained at high levels. The following chart indicates the trend in the core capital ratio and total capital ratio.

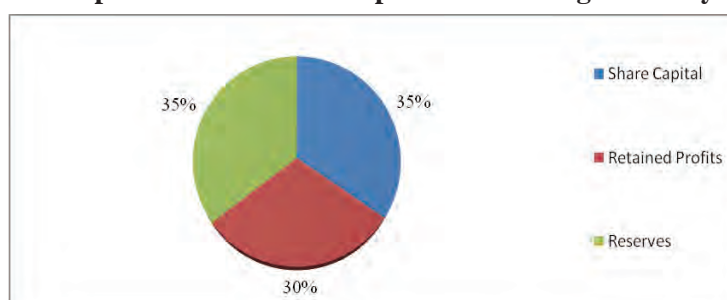
Chart 12
Trend in Capital Adequacy Ratios



3.1.3 Assessment of Capital Levels in Terms of Enhanced Capital Requirements under Different Capital Components and Quantification of Future Capital Requirements

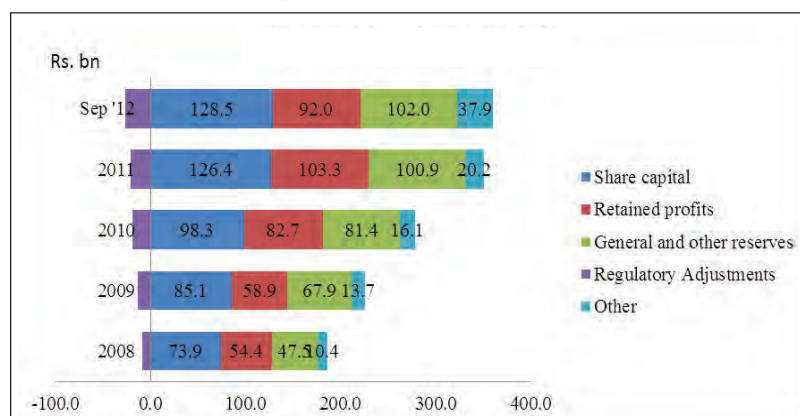
(i) The core capital or Tier I capital predominately consists of going-concern capital instruments such as share capital, share premium, statutory reserve fund and the retained profits having capacity to unconditionally absorb losses as stress arise allowing the bank to remain in business. The Tier I capital consists mainly of ordinary share capital and share premium (35 percent), retained profits (30 percent) and general reserves (35 percent).

Chart 13
Composition of Tier I Capital of Banking Industry



In terms of growth in share capital, retained profits and reserves over the period 2008 to September 2012, a gradual increase has been observed as in the Chart below.

Chart 14
Composition of Core Capital



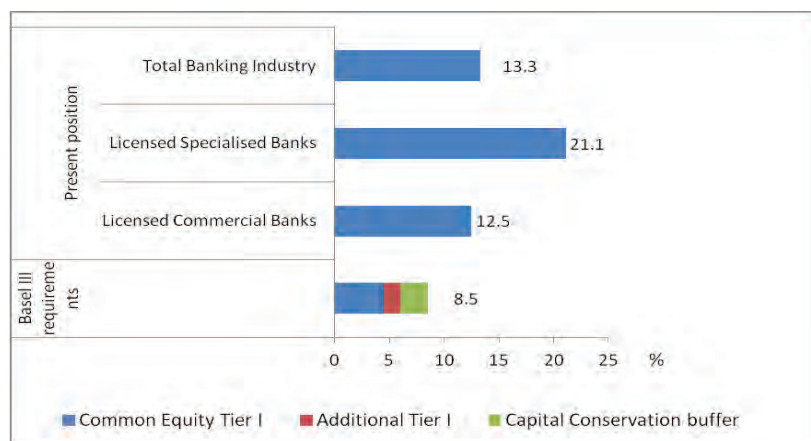
(ii) The statutory reserve fund is maintained under the Banking Act where banks are required to transfer funds out of the net profits after the payment of tax each year, before any dividend is declared or any profits are transferred to the head office or elsewhere. This is sum equivalent to not less than 5 percent of paid-up or assigned capital and a further 2 percent of profits until the amount of the said reserve fund is equal to the paid-up or assigned capital of such bank.

(iii) At present, no bank has issued non-cumulative, non-redeemable preference shares, therefore our preliminary assessment indicates that the Tier I capital maintained by banks under Basel II is equivalent to the common equity Tier I and Additional Tier I under Basel III.

(iv) Considering that banks' strategy of raising capital is through share issuance and internal generation and accumulation of profits, it is observed that banks maintain a high level of core capital.

(v) A comparison of the current levels of capital with the Basel III requirements is as follows:

Chart 15
Core Capital in Banks vs. Basel III Requirements,
as at 30 Sept. 2012



3.1.4 Assessment of Current Level of Leverage

(i) With effect from 2018, the Tier I capital should be 3 percent to 4 percent of the total balance sheet assets, including on-balance sheet and off-balance sheet assets. This ratio known as the leverage ratio is introduced to complement the new capital standards and will curtail excessive expansion of a bank's balance sheet.

(ii) The CBSL carried out an assessment of Leverage Ratio based on the current performance of banks in terms of capital and exposure. Considering Tier I capital as against total on-balance sheet and off-balance sheet assets, the leverage ratio of the banking industry is at 4.3 percent, above the norm of 3 percent. As explained above, the current Tier I capital is similar to the Tier I capital under Basel III requirements. The total assets represent the on-balance sheet assets net of specific provisions and valuation adjustments. Physical or financial collateral, guarantees or credit risk mitigation purchases are not allowed to reduce on-balance sheet exposures, and loans and deposits have not been netted.

Table 8
Leverage Ratios of Banks

Type of Institution	2008	2009	2010	2011	Q3/2012
Licensed Commercial Banks percent	4.3	4.5	4.4	4.5	4.0
Licensed Specialised Banks percent	9.0	8.3	8.5	8.8	7.0
Banking Industry percent	4.8	4.9	4.8	4.9	4.3

Note: Tier I Capital/Total On and Off-balance Sheet Assets.

3.1.5 New Framework for Liquidity Risk Management

Banks will need to maintain adequate levels of high quality liquid assets to ensure that short-term and long-term liquidity requirements are met. For this purpose, quantitative liquidity standards namely, the LCR and NSFR were introduced. The definitions and the requirements are as follows:

Table 9
New Liquidity Requirements

Liquidity Ratio	Definition	Requirement
Liquidity Coverage Ratio	Stock of high quality liquid assets/ Total net cash outflows over the next 30 calendar days	$\geq 100\%$
Net Stable Funding Ratio	Available amount of stable funding/ Required amount of stable funding	$\geq 100\%$

(i) **LCR** aims at covering possible short-term mismatches, through the comparison of expected cumulative net cash outflows for a 30 calendar day time horizon with high quality unencumbered liquid assets at the bank's disposal.

(ii) **NSFR** aims at coping with possible structural mismatches in the composition of balance sheet assets and liabilities over a one-year horizon. It compares the total sources of funds with maturity greater than one year with the portion of stable non-maturity deposits and the less liquid assets.

(iii) Both ratios must be at least 100 percent and, LCR and NSFR will come into force by 1 January 2015 and 2018, respectively.

3.1.6 Current Level and Adequacy of Liquidity of Individual Banks or Banking Groups in Terms of Key Performance Indicators for Liquidity

(i) At present, all the licensed commercial banks are required to maintain statutory liquid assets ratio of 20 percent over total liabilities less liabilities to shareholders and the CBSL, whereas in the case of licensed specialised banks the liability bases include only deposits. The liquid assets considered for the computation of the Statutory Liquid Assets Ratio are mainly cash, investments in government securities with maturities not exceeding one year, balances with banks and money at call in Sri Lanka.

(ii) Banks maintain a Statutory Reserve Requirement (SRR) of 8 percent on Rupee deposits with the CBSL. As the SRR is a monetary policy tool to control money supply it is not considered for liquidity purposes.

(iii) The maturity gap analysis during the period less than 30 days remains within the 0-20 percent negative maturity mismatch as at 30 September 2012.

3.1.7 Assessment of Current Liquidity in Terms of New Liquidity Requirement of Basel Standards and Identification of Additional Requirements

(i) Assessment of liquidity requirements of Basel III is being carried out. A team of officers of the Bank Supervision Department (BSD) is currently working on the guidelines and definitions for the computation of the LCR and NSFR. The preliminary assessment indicates that the LCR vary from 70 percent to 423 percent among the large banks. The high ratio is maintained by the large savings banks as it is mandated to invest 60 percent of their deposits in government securities which are Level 1 assets.

(ii) At present, however, it is observed that the unencumbered government securities form a significant portion of the assets and will be of use when computing the liquidity under new standards. Further, banks in Sri Lanka do not have Level 2 assets or its portion is insignificant. The SRR required to be maintained is presently 8 percent on Rupee deposits and the excess

maintained in the CBSL over the required level will be considered as Level 1 assets.

(iii) The CBSL intends to maintain the same run-off factors of net inflows and outflows as specified by the Basel requirements. The CBSL is yet to decide on the reporting format and currency. The banks will be required to commence the observation period in 2013.

3.2 Impact of Different Peer Groups and the Banking System

(i) The foreign banks maintain high capital adequacy ratios owing to extension of credit to highly rated corporates and, in the case of small foreign banks, the minimum capital requirements have not been fully utilised.

(ii) The domestic banks maintain capital on the diversified loan portfolios and therefore, capital is used to a large extent.

(iii) Considering the above, the adequacy of capital based on the Basel III requirements remains satisfactory. With regard to the current requirement, the CBSL will monitor closely, with the forthcoming implementation of Pillar 2 - Supervisory Review Process, the capital planning process of banks and will assess the level of capital that banks are required to maintain to cover all risks. Under this process, the CBSL will expect banks to maintain capital above the minimum requirement and through off-site surveillance and examinations monitor the ICAAP. The CBSL plans to implement the observation period under Basel III commencing 2013.

(iv) On assessment of future capital requirement in terms of business models of banks and identification of gaps; considering the need to facilitate the doubling of per capita income and the doubling of banking assets, the minimum capital requirement will be increased on a staggered basis to Rs. 5 billion by 2015.

4. Issues and Challenges of Implementing Basel Standards

4.1 Regulatory Empowerment

4.1.1 Adequacy of Laws and Regulations

(i) The implementation of the Basel requirements is facilitated by the following provisions in the Banking Act, the legislation governing the banking operations:

(a) The Banking Act No. 30 of 1988 as amended empowers the Monetary Board (of the CBSL) to issue Directions to banks regarding the manner in which any aspect of the business of such bank or banks is to be conducted.

(b) The Banking Act also requires all banks to maintain capital adequacy ratio as may be determined by the Monetary Board, which shall in determining such ratio to be maintained, as far as practicable adopt guidelines for capital adequacy set out by the BIS in Basel.

(ii) Considering the above empowerment, the CBSL is in a position to implement all the requirements under Basel II and Basel III.

4.1.2 Enforcement Capabilities

(i) If any variation in the capital adequacy requirement is to be effected, the Monetary Board shall do so by informing in writing to the bank which is required to augment its capital, and shall be afforded a period of twelve months or such longer period as may be granted by the Monetary Board, in which to comply with such requirement.

(ii) If the capital of the bank has become deficient, the Monetary Board will grant a reasonable period of time for the rectification of such deficiency. During the period of deficiency banks are not permitted to declare dividends or repatriate profits.

4.1.3 Risk Management Framework

In 2011, the CBSL issued a Direction on Integrated Risk Management requiring banks to adopt an integrated approach to risk management. The

implementation of this Direction is monitored and banks have made satisfactory progress to strengthen their risk management framework.

4.2 Capital Augmentation and Related Issues

In Sri Lanka, the equity capital market is active; however, the corporate debt market is still in a nascent stage. All the domestic private banks are required to list their equities, and bank equities are frequently traded. Further, banks are also required to list their debt capital and in the recent past many state and private domestic banks have been in a position to list their long-term corporate debt to raise Tier II capital.

The corporate debt securities market is small in comparison with the government securities market. There is a need to develop both the short- and long-term segments of this market to provide alternate funding for financial institutions, corporates and private and public sector institutions to mobilise funds for medium- and long-term investment. Furthermore, the development of a domestic capital market as a supplement to the banking sector would also strengthen the financial system through the diversification of risk and funding sources. The decision to permit foreigners to invest in corporate debt securities will broaden the investor base and add liquidity to the market.

Banks have been able to generate and accumulate profits as Tier I capital. In the recent past, many banks have been able to raise capital through Rights Issue and through the issue of subordinated debentures for Tier II purposes. The large banks enjoy high credit ratings which have enabled them to mobilise capital from both the domestic and international financial markets. Further, high Tier I capital position has led to the increase in capacity to raise debt capital.

4.3 Review of Asset and Liability Management Strategies

At present, banks carry a large portion of their assets in Government securities and considering the attractive interest rates offered, the low risk and as it is recognised as a statutory liquid asset, banks prefer investing in Government securities compared to other forms of liquid assets. Banks will be forced to maintain high quality liquid assets which may have a negative bearing on profitability and on pricing and margins.

4.4 Human Resource Constraints

- (i) At present, around 8 members of the BSD (total staff in the department is 60) have attended international workshops on Basel III. However, at present there is a resource gap and the resources of the BSD are strained due to other priorities.
- (ii) The CBSL is facilitating the implementation of the corresponding Accounting Standards of International Accounting Standards on financial instruments and resources are tied up.
- (iii) Also, the frequency of examination of banks has been stepped up. With the issue of the Directions on Integrated Risk Management Guidelines, the banks were required to strengthen their integrated risk management. This Direction was issued as a precursor to the Direction on Pillar 2 of Basel II - Supervisory Review Process, which will be issued during the first half of 2013.
- (iv) The Central Bank has recognised the need for training on Basel III requirements and on the advanced approaches of Basel II.
- (v) Banks too are undertaking capacity building in the area of risk, however, we see that a few banks are yet to fully implement systems and improve their risk management practices.

4.5 Infrastructure Issues

- (i) The main challenges remain in the computation of risk weighted assets, where there is limited external ratings used to risk weight assets. At present, only around 113 entities are rated by external rating agencies and the rated assets as against the total risk weighted assets is around 4 percent of the total assets.
- (ii) Modification to existing IT and other information systems - cost implications. Moving to the advanced approaches under Basel II and computation of liquidity ratios under Basel III will require advanced data mining and suitable IT systems. The larger banks have already made significant commitment on upgrading their systems and purchasing new systems to facilitate the risk quantification.

(iii) Commencing 1 January 2012, banks are required to adopt the Sri Lanka Accounting Standards corresponding to the International Accounting standards IAS 32, 39 and International Financial Reporting Standards IFRS 7. Through this it is envisaged that banks will have the required data to proceed with the advanced approaches under Basel II Pillar I. Also, when the banking industry is ready with the disclosure requirements under IFRS 7, the CBSL intends to issue Directions on Pillar III, thus harmonising the requirements.

4.6 Impact on Cross-border Supervision

The overseas operations of domestic banks are limited. The largest bank has a fully-fledged banking subsidiary outside the country whilst two other commercial banks maintain branches overseas. Banks prepare their capital adequacy requirement on a consolidated basis, hence the capital position and the risk taking of these operations are captured. Similar approach will be adopted going forward with the requirements under Basel III.

At present, there are 12 banks incorporated outside Sri Lanka operating in the country. These banks maintain high capital adequacy ratios in terms of Basel II. Many of the home countries of these banks have commenced the observation period and given guidelines on Basel III.

4.7 Issues in Implementation of Countercyclical Buffer

The rationale of the countercyclical buffer much more linked to the need to introduce a genuine macro-prudential view in banking regulation. The buffer is to be deployed when the national authorities consider aggregate credit growth to be excessive, thus determining an unacceptable build up of system-wide risk. The main goal of implementing the buffer is not to manage the credit cycle, but to ensure that the banking system accumulates a buffer of capital in good time to protect it against future potential losses.

The CBSL has not yet decided on the implementation of the countercyclical buffer as specified in the Basel III. However, in the past, the CBSL has increased the risk weights of certain loans with a view of ensuring capital build-up and of increasing the cost of funds, thereby dampening growth of such loans. Similarly, in the past general loan loss provisions also were increased for the same purpose. Hence, indirectly the macro-prudential aspect has been addressed by the CBSL.

Further, the CBSL has the necessary statutory powers to introduce countercyclical buffer if the need arises.

5. The Way Forward and Strategic Options

5.1 Strengthening Regulatory Framework

Considering the importance of ensuring the soundness of the banking system, the Monetary Board is empowered to issue Directions regarding the manner in which any aspect of the business of such bank is to be conducted.

Accordingly, the existing provisions in the Banking Act permit the Monetary Board of the CBSL to require banks to maintain capital at higher levels, the required liquidity coverage ratio and the net stable funding ratio, and the leverage ratio.

The Banking Act requires that any variation in the capital adequacy ratio to be communicated to all banks in writing and to afford such banks a period of twelve months or such period as may be granted by the Monetary Board.

The CBSL issued a Direction on Integrated Risk Management in banks requiring banks to maintain an integrated risk management framework. This Direction inter alia requires banks to develop and use risk management techniques for monitoring and managing their risks and to assure the CBSL that adequate capital is held to meet various risks to which they are exposed.

In relation to liquidity risk management and liquidity risk assessment measurements such as stock approach, flow approach, net funding requirement, and assessing liquidity risk based on stress testing on alternate scenarios and maintaining contingency plans, have been made mandatory.

This Direction was issued as a precursor to the Pillar 2 of Basel II. The Direction sets out the responsibilities of Board of Directors and senior management in understanding the risks assumed by the banks and ensuring that the risks are appropriately managed. The requirement of policies, systems and procedures, limits, monitoring of risks, relating to credit, market, operational, liquidity and interest rate risk in the banking book are also specified. Banks are also required to use stress testing to assess the risks encountered by banks.

Considering the enhanced capital and liquidity requirements, the need for consolidation of small banks has now become a necessity. The Central Bank

recognises that facilitating mergers may not be easy due to different cultures of staff, views of the Boards of Directors and lack of skilled people, mergers can also take place between finance companies and banks. The CBSL will consider granting approval if any merger, acquisition or consolidation is in the interest of promotion of a safe, sound and stable banking system, and with fair competition prevailing in the banking industry.

5.1.1 The Alternate Strategies for Implementing Countercyclical Capital Buffers

- (i) The CBSL in 2006 adopted several measures in view of high credit growth in certain sectors as follows:
 - (a) Increase in risk weighted assets on housing loans and in other loans.
 - (b) Increase in general provisions
- (ii) The CBSL has also adopted the following macro-prudential measures during the past.
 - (a) Varied the net open position limits on foreign exchange of banks
 - (b) Varied SRR
 - (c) Introduced limits on exposures to stock market
 - (d) Curtailment of credit growth

5.2 Capital and Liquidity Management Strategies by Banks

- (i) The CBSL continuously reviews the capital position both on silo and group basis. The Banks Boards are required to monitor closely. The regulatory requirement is maintained considering the audited profits of the bank and in the event that dividends are declared or losses are incurred, such adjustments are taken into consideration when computing the Capital Adequacy Ratio (CAR). As discussed earlier, no bank is permitted to declare dividends if such deplete the CAR of the bank.
- (ii) Banks capital augmentation plans based on the current regulatory requirements are obtained as and when necessary. With the proposed implementation of the Supervisory Review Process, banks will be required to submit the ICAAP programme annually, indicating banks capital planning process, including the level of risks undertaken, risk mitigation process, systems, controls and governance procedures.
- (iii) The Bank Boards of Directors will be required to review the process on a quarterly basis. The CBSL will assess the adequacy of capital during

the periodic examinations of banks and through the off-site surveillance.

(iv) The liquidity management strategies will be assessed based on the maintenance of the statutory liquid assets (SLA) ratio and the Direction on integrated risk management. The SLA ratio is monitored on a monthly basis and banks are required to maintain the requirement on a daily basis on both the Domestic Banking Unit in local currency and in the off-shore banking unit in USD terms. The banks tend to strictly maintain this ratio considering that a monetary penalty will be imposed on failure to comply with the requirement. The Director of Bank Supervision is empowered to require banks to disclose such penalties in the Annual Report and hence banks generally are determined to avoid such situations considering its adverse implications.

(v) The strategies will be assessed by the Bank Supervisors during the on-site examinations. The assessment of liquidity management strategies on a consolidated basis needs improvement and the proposed amendments to the Banking Act will empower CBSL to issue regulations pertaining to governance, risk management and internal controls.

(vi) Divestments/wind downs: At present there is no deliberation on such areas. However, the CBSL expects to see more consolidation of banks to strengthen the banking sector.

(vii) Redesign of business models and portfolio focus: The CBSL currently adopts a stringent policy in permitting banks to carry out other types of business and expects banks to either stay away from such investments or carry them out through a subsidiary.

(viii) With the enhancement of capital requirements under Basel III, it is expected that banks will redesign their business models. However to remain mindful of regulatory arbitrage.

(ix) Active Balance Sheet Management: This may once again be a gradual process for banks operating in Sri Lanka as enhancing capital requirements will not be an urgent priority as already the maintained levels of regulatory capital are high.

(x) Banks will need to maintain adequate levels of high quality liquid assets to ensure that short-term and long-term liquidity requirements are met.

5.3 Development of Capital Markets and Instruments

- (i) The SEC is at present discussing with the CBSL, CSE and the Registrar of Companies on developing the capital markets. This will also facilitate especially in the areas of financing development projects.
- (ii) While the SEC has in place a regulatory framework for listed corporate debt, the bulk of the debt issues take place or are likely to be in the over the counter (OTC) market. Hence it is necessary to introduce a regulatory framework for the OTC market which will include disclosure requirements, a price information platform, a dealer-broker system, trading rules and depository and settlement arrangements.
- (iii) The SEC intends to expedite the SEC Act amendments to be in line with International Organisation of Securities Commission (IOSCO) standards; encourage more public and private listings; attract new foreign and local funds; develop infrastructure, such as trading back office; intensify education and awareness; develop unit trust industry; strengthen risk management; develop new products; and convert the CSE from a member-owned company to a company owned by shareholders.

5.4 Development of Infrastructure and Related Issues

- (i) The banks are at different stages in relation to the modification of IT infrastructure. Many large banks have already committed resources to ensure that the IT needs to facilitate the requirements in the Integrated Risk Management Direction, the ICAAP, and Basel II advanced approaches under Pillar I.
- (ii) Specific modifications will be on quantification of risk and aggregation.
- (iii) The acquisition cost for these banks remain high.

5.5 Capacity Building for Staff of Regulators and Banks

- (i) The CBSL will facilitate training of all staff of BSD in the areas of Risk Management, Basel II and Basel III, Corporate Governance and Internal Controls and Audit.
- (ii) The CBSL has already commenced discussions on the requirements under Basel III. The impact assessment on capital requirements and leverage

ratios based on the current capital position has been revealed to the banks.

(iii) During regular meetings with the Bank Chairmen and Chief Executive Officers and at the annual bank directors' symposium the broad implications have been discussed. The CBSL also regularly organises banking regulation programmes during which time the impact assessment is discussed.

5.6 Road Map for Implementation of Basel II and III

In relation to the implementation of Basel II, it is proposed to roll out the road map in the following manner:

- (i) Implementation of the Supervisory Review Process Pillar 2 of Basel II in 2013
- (ii) Implementation of the Advanced Approaches on Pillar I Operational Risk in 2013
- (iii) Implementation of the Advanced Approaches in Credit Risk commencing 2014 on optional basis.

5.6.1 Implementation of Basel III

- (i) Issuance of Guidelines for commencement of the observation period on the requirements of capital and leverage ratio under Basel III in 2013.
- (ii) Issuance of Guidelines for liquidity risk management and commencement of the observation period under Basel III in 2013.

6. Conclusion

The CBSL remains committed to implement the advanced approaches of Basel II in the near future. It does not see a significant challenge in meeting the capital requirements under Basel III, and the commencement of the observation period for liquidity risk will begin in 2013.

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Chapter 11

PECKING ORDER MACRO-PRUDENTIAL TOOLS: BOT'S EXPERIENCE FROM TAILORED POLICY MEASURES TO BASEL III'S COUNTERCYCLICAL BUFFER

By
Maetinee Hemrit¹

1. Introduction

1.1 Objective and Scope of the Study

Basel Accords have evolved over decades as the international standard for banking supervision applicable to anchor viability and resilience of internationally active banks. Starting from a limited group of advanced countries with complex financial systems and expanding to include countries with open economies, Basel III - the latest release of regulatory reform in response to the global financial crisis in 2008 – has inevitably affected most countries to some varying extent. Thailand as a small open economy has complied with Basel I since early 1990s and it gradually adopted Basel II since 2008.

For Basel III, the Bank of Thailand (BOT) has resolved to speed up the implementation of the minimum capital requirement ratio to be fully enforced in 2013, instead of following the Basel Committee on Banking Supervision (BCBS)'s phase-in arrangement between 1 January 2013 and 1 January 2015. This is undoubtedly achievable as Thai banks have maintained their BIS ratio above the international standards and weathered through the global financial crisis with trivial impacts. Nonetheless, Basel III also contains a number of innovative measures that are designed to address various aspects of financial stability, such as procyclicality and systemic risk. For example, it features the introduction of non-risk based and add-on capital measures like leverage ratio and conservation buffer, as well as the first international framework for liquidity risk. Some of these newly conceived measures, however, are not so straightforward in implementation and are still under refinement, while a certain degree of contextualisation may also be required.

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This paper focuses on the implementation challenges and opportunities of Basel III's countercyclical buffer which is one of the add-on capital measures and the first international attempt to put forward the standardised macro-prudential policy framework. The proposed measure is distinct not only in concept but it is also complicated in practice, as it entails existing micro-prudential measures as well as other macroeconomic policies. Moreover, many countries including Thailand have more or less been devising different measures – specific to certain sectors and/or time periods – to preempt procyclicality on the basis of macro-prudential policy. This practice is quite apparent in countries that have learned the lessons from the previous financial crisis. It is thus worth exploring in the context of Thailand such issues as to whether and how Basel III's countercyclical buffer is to be incorporated, given the existing mix of policies.

1.2 General Outline of the Paper

The paper is organised in six parts. Section 1 lays out the background and structure of the paper. Section 2 presents an overview of Thailand's financial system and risk assessment. Then, Section 3 articulates the emergence of macro-prudential policy after the global financial crisis in relation to the conventional micro-prudential policy. Section 4 explains the logic and mechanism of Basel III's countercyclical buffer. Section 5 demonstrates the BOT's experience in macro-prudential policy choices in terms of motivations, mechanisms, and effectiveness. Last but not least, Section 6 argues the BOT's reflection on the use of countercyclical buffer.

2. Overview of Financial System and Risk Assessment

2.1 General Overview of the Financial System of the Country

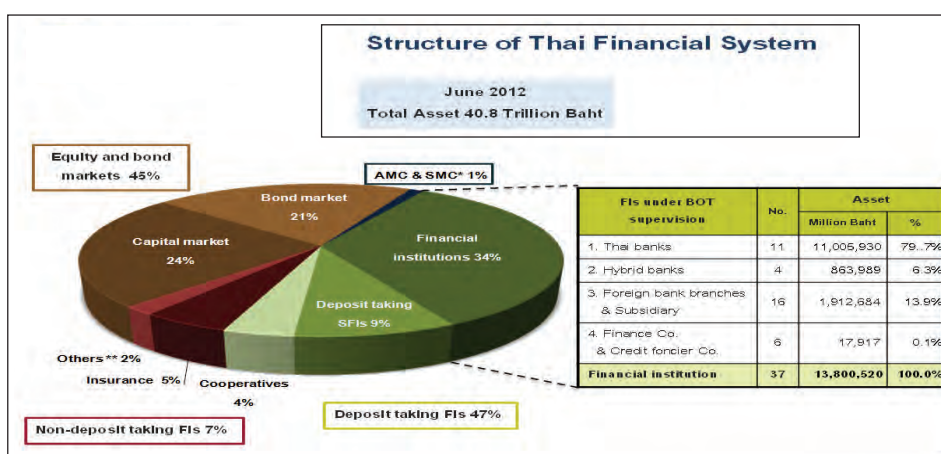
The development of Thailand's financial sector has been a story of restructuring, adjustment and renewal, following the severe effects of the Asian financial crisis in the late 1990s. At the peak of the crisis in 1998, the Thai banking sector was afflicted with large net losses, a declining net interest margin, low capital levels, and a non-performing loan ratio at 43% of total loans. To tackle such a devastating systemic banking crisis, the government embarked on a comprehensive restructuring of the financial sector, intervening in weak banks and focusing on recapitalisation, debt restructuring, reform of the regulatory and supervisory framework, strengthening of the corporate governance of banks, and introduction of initiatives to deepen and broaden the capital market.

Regarding the regulatory and supervisory reforms, it has helped in moving Thailand's financial regulation and supervision towards a risk-based framework on par with international best practice. The key elements of the reforms centered on risk-based supervision under the Basel Accord, consolidated supervision, and the phased implementation of IAS 39. The financial institutions were also restructured to rationalise and consolidate the financial system under 'One Presence' policy. These reform efforts were coordinated under the broad agenda of the Financial Sector Master Plan I (FSMP) (2004 – 08) which aimed to improve the financial system's efficiency, broaden access to finance and improve consumer protection.

By mid-2007, when the global financial crisis erupted, many weaknesses in Thailand's regulatory and supervisory framework had been addressed. Consolidation of the financial system brought the number of deposit-taking institutions down to 41 from 124 before the 1997/98 crisis, while the process of debt restructuring in the private sector was more or less complete, with the debt-to-equity ratio declining from 1.2 in 1998 to 0.7. The domestic capital market also grew rapidly in response to the funding needs of Thailand's government and firms, further strengthening the system's resilience. Importantly, these improvements resulted in much stronger balance sheets for firms and banks.

Chart 1
Structure of Thai Financial System

Total Asset 40.8 Trillion Baht as of June 2012



The immediate impact of the global financial crisis on the Thai economy and the financial system was thus limited, due to the funding structure of Thai banks and the low exposure of the Thai banking sector to subprime assets. This structure was based on domestic deposits that helped insulate Thai banks from the tight liquidity conditions abroad. The second-round effects from the decline in economic activity and deleveraging were slightly more pronounced, and a policy response was required at the macroeconomic- and financial-sector levels. The key challenge for Thailand has been to help small and medium enterprise adjust to the impact of the global slowdown while maintaining confidence and ensuring a normally functioning financial sector.

Lessons from the global financial crisis point clearly towards the importance of having a sound and resilient financial system to prevent the risk of crisis and help the economy adjust to shocks. Along this line, reforms to strengthen the financial sector continue under the broad agenda of the Financial Sector Master Plan Phase II (2010 – 2014). The plan focuses on improving the financial system's efficiency through greater competition, reducing the financial system costs, expanding access to financial services, and enhancing banks' risk management capacities by developing better and more sophisticated financial markets and infrastructure.

2.2 Risk Oversight Assessment and Vulnerabilities

The continuous adjustment also helps Thailand's financial sector in adapting to the new global regulatory reform, i.e. Basel III. Based on results of the Quantitative Impact Study (QIS)² that the BOT had conducted five times using data of December 2009, December 2010, June 2011, December 2011, and latest June 2012, the Thai banking sector is well capitalised and not much affected by the new minimum capital requirements, which raise both quality and quantity of the capital base. This is due to the fact that the current capital structures of Thai banks are mostly comprised of Common Equity (over 90%) with highest loss absorbing capacity. Only a trivial part contains different types of capital instruments that will be gradually phased out along the timeline of Basel III implementation. Note that as of September 2012, the average Tier 1 Ratio (mostly CE) for Thai-registered banks equals to 11.1%, while the average Total Capital

2. The QIS results are based on the strong assumption set out by BCBS, that is, full implementation of Basel III in 2013, meaning: (1) to fully exclude (instead of "phase-out") capital instruments that no longer qualify as non-CET1 or Tier 2 capital; and (2) to fully deduct (instead of "phase-in") of the newly defined regulatory adjustments BIS Ratio.

Ratio equals to 15.6%. For foreign bank branches, the average Total Capital Ratio³ amounts to 17.4%.

These figures clearly reflect strong profitability of the Thai banking sector that has buoyed up since 2003. Evidently, these ratios are not only beyond the minimum capital requirements but also they are even sufficient to comply with the conservation buffer. In terms of the non-risk-based approach, these solid levels of core capital together with relatively low levels of off-balance sheets items also yield satisfactory results. That is, the average Leverage Ratio for both Thai-registered bank and foreign bank branches are well above BCBS's minimum requirement.

Accordingly, the BOT is supportive of the objective of the Basel III and intends to adopt the capital standards under the Basel III following the BCBS's implementation timeline. In formulating the Thai regulations and implementation plan, the BOT has taken into account not only QIS results, but also the Thai financial environment and feedbacks from the Thai banking industry in order to ensure the main purpose of maintenance of the stability and resilience of Thai financial system is achieved while the negative or unintended impacts are kept to a minimum. As a result, the BOT notification on capital framework is to be issued and binding from 1 January 2013.

For the liquidity standards, whilst the principle is generally well accepted, the exact implementation of such principles must be carefully carried out to prevent any unintended consequences. Based on the QIS results thus far, some of the Thai banks may need to adjust their liquidity profiles, but keeping in mind that the standards is still under BCBS's recalibration that may lead to less stringency, such as lowering the run-off rate of certain items or expanding the list of high-quality liquid assets. In the meantime, the BOT will keep abreast with the development and carry out the impact studies on a regular basis to further address any "unintended consequences" and fine-tune the regulation best suited for the financial system of Thailand.

To date, three concerns are raised. Firstly, the rules may lead to higher loan rates and reduction in bank lending and, as a result, smaller profits due to the need to hold more safe and liquid instruments. This is a concern particularly for

3. Components of the regulatory capital of foreign bank branches differ from those of Thai-incorporated banks. It is thus a point of consideration how to impose the Basel III capital requirements for foreign bank branches in a comparable way as imposed for Thai-incorporated banks.

any bank-based economy. Secondly, the rules may also obstruct bond market development. As the banks' buy-and-hold investment increases, the free-float of government bonds is reduced which leads to illiquidity in the market. Ironically, the liquidity requirement is then self-defeating its own propose. Lastly, the need for liquidity profile adjustments potentially intensifies competition in retail deposit-taking banks. As deposit from retail customers is currently considered as having relatively low run-off rate, the competition however may make this class of funding less stable.

Along this line, the challenges thus lie in implementing some of Basel III's new measures. The focus of this paper is on the countercyclical buffer that advocates imposing additional common-equity ranging between 0 – 2.5% of risk-weighted assets, corresponding with the buildup of system-wide risk as a macro-prudential measure to alleviate the procyclicality of the banking sector. This novel concept is yet uncertain and debatable in practice. For instance, how can we actually monitor the situation and identify the size of the buffer? How reliable are the macroeconomic indicators (e.g. Credit-to-GDP) and models in determining when the country is at risk of excessive credit growth?

3. Why Macro-prudential?

The evidence of the 2008 financial crisis and its severe impact on the real economy has incidentally drawn attention to the studies of macro-financial linkages. The main argument is the need for better handling of systemic risk that is endogenous to individual institutions via their collective actions, fundamentally as a consequence of excessive credit growth. Along this line, a number of macro-prudential tools have thus been increasingly advocated for regulating two externalities incurred in the build-up of system risk: (i) *common exposures* across institutions that contribute to their joint failures and (ii) *procyclicality* between the financial system and the real economy that is conducive to the amplitude of booms and busts.

Table 1
The Macro and Micro-prudential Perspectives Compared

	Macro-prudential	Micro-prudential
Proximate objective	Limit financial system-wide distress	Limit distresses of individual institutions
Ultimate objective	Avoid output (GDP) costs linked to financial instability	Consumer (investor/deposit) protection
Characterisation of risk	Endogenous	Exogenous
Correlations and common exposures across institutions	Important	Irrelevant
Calibration of prudential controls	Contribution to system-wide risk; top-down	Risks of individual institutions; bottom-up
Likelihood of failure of individual institutions	Maybe different	Same

Note: Based on Borio (2009). The two perspectives are intentionally stylised. They are intended to highlight two orientations that inevitably coexist in current prudential frameworks.

In the favour of the macro-prudential approach is the underlying assumption that the existing micro-prudential measures are insufficient and unintentional to address systemic risk and ensure the resilience of the financial system as a whole. The distinction between the two approaches is discussed in the reviewed literature – e.g. BIS working paper No. 337 (2011) and Borio (2009) – see Table 1 for the summary. Principally, it claims that the conventional micro-prudential approach may not account for interconnectedness and macro-financial responses; and what is rational for an individual institution does not always optimise the aggregate outcome. Say, the collapse of asset prices, margin calls, liquidity drain, and financial melt-down may be triggered by a prudent motive of an individual bank that becomes uncomfortable with the risk profile of certain assets and its actions could drive other institutions to also sell, realize losses, and eventually paralyse the entire system. Hence, such self-interested behaviour could worsen the situation when institutions are highly correlated.

On the contrary, the micro-prudential approach's proponents would counter that the recent financial collapse in fact boiled down to the undermined risk management of troubled banks as well as governance issues of related parties like investment banks and credit rating agencies. Concerning the regulatory gaps and ability of financial institutions to circumvent measures, the correction of micro-prudential practices could hypothetically hamper the over-indulgent lending coupled with the surge of leverage especially via non-core liabilities, e.g. securitised notes, which had basically tied up different institutions. With less of the interconnectedness, the chance of systemic spiral would thus decline and the financial resilience would also be strengthened indirectly.

Despite this line of argument, the current policy discourse has clearly established that the conventional micro-prudential approach is necessary but not sufficient. The latest regulatory reform of Basel III has not only elevated the demand on core capital for ensuring loss absorption along with the improvement of risk coverage calculations, but also proposed a number of newly innovated measures that is partly of systemic concern. For example, the leverage ratio is to constrain total exposures of banks' balance sheets; the liquidity ratios are to ensure better liquidity risk management with sufficient high quality assets to cover short-term outflows as well as more reliance on stable funding; and the countercyclical buffer is to help reduce procyclicality and stabilise the banking sector by means of supervisory discretion to impose further requirements on core capital in relation to excessive credit growth. Altogether, the reform aims to reduce the vulnerability of the financial system and prevent, or at least lessen, the likelihood of financial crises that would invariably save the society from enormous costs.

Nonetheless, it is worth emphasising that there have been practices of different macro-prudential tools in various countries prior to the introduction of the countercyclical buffer framework. Dynamic provisioning has long been advocated by Banco de España to smooth out total provisions required over the cycle, based on historical loss experiences of different lending types (Saurina, 2009). In East Asia, measures like loan-to-value (LTV) and debt-to-income (DTI) caps are often used to tackle excessive growth in particular sectors. For instance, a limit on LTV of mortgage loans basically reduces the pool of borrowers that can obtain funding and thus lower demand pressures of real estate booms (Hong Kong Monetary Authority, 2011). Likewise, DTI ratio sets a ceiling on the spending power of individuals, especially to restrain speculative investment. A number of empirical studies have shown the merit of elective macro-prudential tools often specifically designed to address different kinds of potential financial distress and thus yield more resilience in the banking sectors (e.g. Bank of England, 2009; Hyun Song Shin, 2011). These existing tools are thus distinct from the broad-based nature of Basel III's countercyclical buffer.

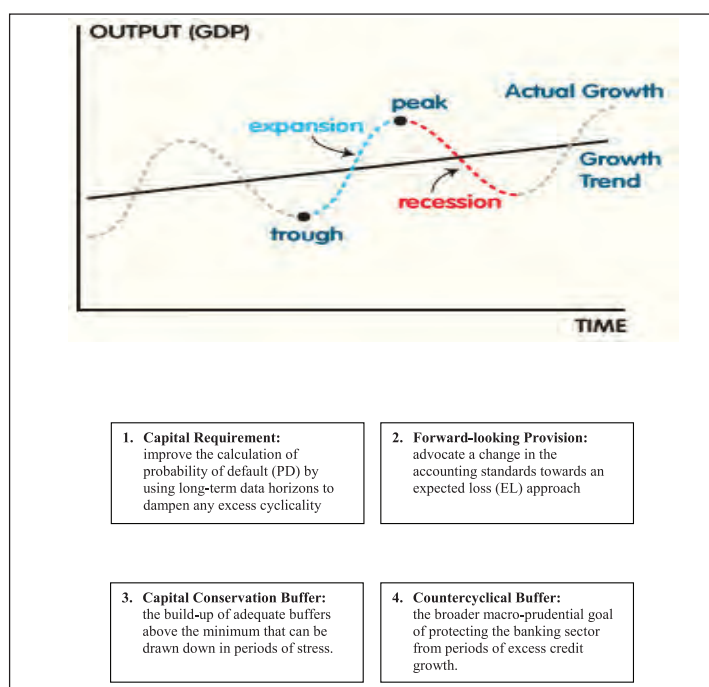
4. Basel III's Countercyclical Buffer

To correct the procyclical implications of Basel II, the BCBS by the mandate of G-20 has worked on four regulatory elements of Basel III, which are: (1) capital requirement; (2) forward-looking provision; (3) capital conservation buffer; and (4) countercyclical buffer. The first three element are commonly related to capital standards and provisioning, yet with the anticipation that stretches over

business cycle. Particularly, the capital conservation buffer that asks for additional core capital of 2.5% of risk weighted assets on top of the minima, otherwise subject to constraint on earning distributions, is to ensure sufficient level of capital can be used during stress and thus lower the transferred impact on the real sector.

The fourth and distinct element is the countercyclical buffer that is designed to achieve the broader macro-prudential goal. With the highlighted interactions between banking and the real sector, banks should take into account the macro-financial environment in which they operate. The notion is for the banking sector to build its capital defense in periods where the risk of system-wide stress is markedly growing. The primary aim is to protect the banking sector from the credit cycle, so it would still be well capitalised in any case and able to maintain the flow of credit in the economy without undermining its solvency. In addition, the measure may contribute to “lean against the wind” as a positive side effect in moderating the build-up phase of the credit cycle. That is because the cost of credit presumably increases with higher level of capital required, which being more expensive than other forms of funding, would dampen the demand.

Chart 2
Basel III's Procyclicality Measures



In terms of operation, the relevant authority in each jurisdiction is expected to monitor the sustainability of credit growth in relation to the level of system-wide risk and to apply judgment whether and to what extent a countercyclical buffer requirement should be imposed. The aggregate private sector credit-to-GDP growth is recommended by BCBS as the common reference guide. Given that, authorities are free to apply any other variables and qualitative information that are best suited in their jurisdictions to gauge the build-up of system-wide risk. The key is to be able to clearly explain to all stakeholders the rationale underpinning the decisions, which information is used and how it has been considered in the process. Moreover, it is important that the buffer decisions have thoroughly accounted for possible implications in the conduct of monetary, fiscal, and other public policies.

Varying by their concern over system-wide risks, authorities would promptly require the buffer, which also demands the best capital form of common equity, within the range of zero to 2.5% of risk-weighted assets. For any increases in the countercyclical buffer, pre-announcement periods of 12 months are expected to give banks time to meet additional capital requirements before they take effect. Also, it is recommended that the authorities should advise and comfort the industry with estimated durations of the buffer releases. On the contrary, any decrease in the buffer would take effect immediately for the purpose of freeing the capital constraint on credit growth.

Furthermore, it is worth stressing that the range of zero to 2.5% is of BCBS' design, binding with the international reciprocity provisions. In accordance with Basel III, each bank is subject to its own specific level of the buffer as the weighted average of the buffers imposed in jurisdictions to which it has a private credit exposure. That is, a specific bank's buffer is the reflection of the geographic composition of its portfolio of credit exposures. The larger exposures to buoyant economies with high levels of the buffer being declared, the higher level of capital is required for that particular bank. Given that, it is still possible for authorities upon their discretions to apply the buffer in excess of 2.5%. However, the application is restricted only to domestically incorporated banks.

Along this line, the countercyclical buffer is developed to serve as the internationally harmonised macro-prudential measures at the disposal of authorities. With fair judgment on the calibration of booms and busts, the buffer should thus be deployed, possibly along with other macro-prudential tools, when excess credit growth is judged to be associated with a build up of system-wide risk. Distinctly, the buffer aims to ensure that the banking system has a sufficient level of capital to protect it against future potential losses, noting that other alternative tools,

such as LTV and DTL, tend to focus on addressing problems arising in specific sectors.

5. Macro-prudential Policy Choices: BOT's Experience

Overseeing financial stability has been one of the main central banking roles of the BOT when it was established in 1942. Its mandate for macro-prudential policy, along with micro-prudential policy, was asserted in the Commercial Banking Act B.E. 2505 (1962). Nonetheless, policy implementation on its part had not been so rigorous in the past, especially during the long decades of fast-growing economic miracles. It was in fact due to the financial crisis of 1997 that the awareness of macro-financial linkage was seriously raised. Poor lending practices intertwined with heavy flow of short-term foreign borrowing had propelled the growth of speculative non-productive sectors and weakened the fundamentals that eventually triggered the crisis – job losses, economic contraction, and financial bailout as a consequence.

As a result of the lessons learned, the BOT has become more conscious of the intertwined financial stability, system risk, and macroeconomic development. The practice of macro-prudential policy was set in motion. A number of measures were initiated with the objective of limiting potential systemic risk and with the focus on the financial system as a whole, including the interactions between the financial and real sectors. In parallel, institutional and governance arrangements were established. The Bank of Thailand Act B.R. 2485 (1942) was amended and modernised in 2008 to formalise and support the routine operation of the macro-prudential approach. As a result, the financial stability committee was set up, together with an operational definition of macro-prudential policy, specifically,

“a policy used to mitigate and contain risks that the financial system could pose a systemic risk by exacerbating macroeconomic imbalances, vulnerabilities such as excess leverage, over indebtedness of household and corporate sector, as well as asset price bubble”.

In terms of policy coordination, it is worth noting that the BOT as the responsible agent for the conduct of macro-prudential policy is also in charge of monetary policy and the payment system. However, the capital market and insurance industry are subject to other agencies' oversight, which are routinely engaged in the policy discussion through cross-directorship in the committee of each regulatory agency, i.e., the BOT, the Securities and Exchange Commission (SEC) and the Office of Insurance Commission (OIC). This helps facilitate

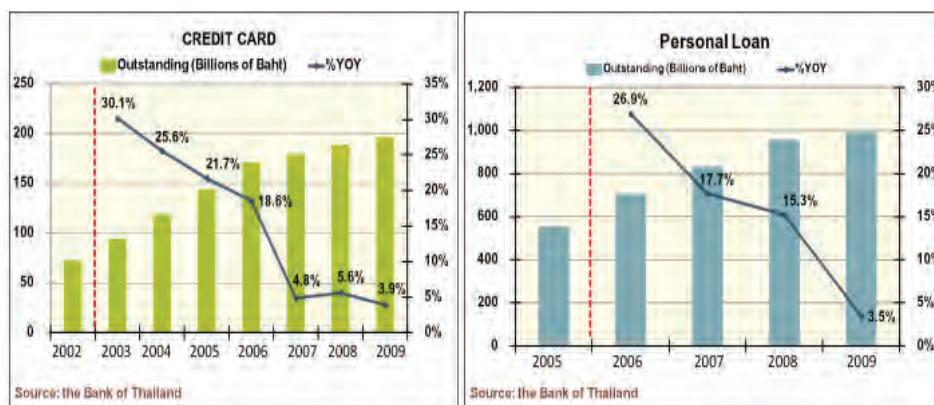
different views and feedbacks, contributing towards the joint aim of maintaining financial stability.

Accordingly, this section purposes to explain the policy formulation process – from identifying potential systemic risk to designing appropriate tools – and the effectiveness of various macro-prudential tools being applied in Thailand. In addition, the ongoing process of further developing the macro-prudential policy framework in Thailand is discussed with regard to the changing international financial environment after the global crisis.

5.1 Tightened Restrictions on Credit Card and Personal Loan: Addressing Sectoral Imbalance

Prior to early 2000s, the market for consumer loans was rather under-developed. Apart from the traditional housing loans, credit cards were restricted to only high-income earners, while personal loans barely existed in the regulated financial sector. Regarding the growth potential, a lot of resources thus went into this market, partly to help diversify banks from the burdensome industrial sector that was heavily hit in the 1997 crisis. Commercial advertisements were used to stimulate private consumptions, which however were largely unnecessary and exceeding the capacity to repay. Both bank and non-bank institutions were engaged in intense competition. The focus initially was on expanding credit card business to lower-income earners. Then, it extended to personal loans capturing a larger group of borrowers with and without (secured) jobs, as there was no restriction imposed on this segment at that time. As a result, household debt figures shot up, as is evident also of the increasing presence of loan sharks in the black markets, which could in effect undermine the stability of financial sector as a whole. This development reveals how systemic risk and vulnerability could arise from sectoral imbalance where overheating appears in specific sector(s).

Chart 3
Sectoral Imbalance in Credit Card and Personal Loans
Subsided in Response to Macro-prudential Policy



In response to the rising concern, a series of measures were issued in a timely manner to moderate growth, ensure consumer protection, and promote borrowers' credit discipline. Starting with the credit card business, a minimum income of at least 15,000 Baht (about US\$500) per month was set as the main entry criterion. In addition, the credit line was capped at no greater than five times the average monthly income. This kind of debt-to-income (DTI) caps as a quantitative measure, along with other qualitative measures, is used to ensure that people could reasonably pay back their credit card debts or are less likely to default. Later, as the concern shifted towards personal loans luring low-income earners to overly spend, e.g. extension of loans for procurement of electronic appliances and other lavish items, and generating heavy fees and interest charges on the past due amount, the restrictions were then extended to certain types of personal loans. Note that personal loan under supervision refers to uncollateralised personal loans, hire purchases, and leasing loans on goods which the licensed lenders are usually not in the business of selling. For such personal loans, the credit line is also capped at no greater than five times the average monthly income, while there are other restrictions on fees and effective interest rate.

The tightening of the regulations on credit card and personal loans has been effective through the close collaboration between the BOT and the Ministry of Finance, as the authority covers not only banks but also non-bank credit card and personal loan companies in the scope of supervision. Consequently, these measures have curbed the growth of credit remarkably in the specific market segments, while maintaining financial discipline of people – not to be spoiled with easy credit and future money. This experience shows that macro-prudential

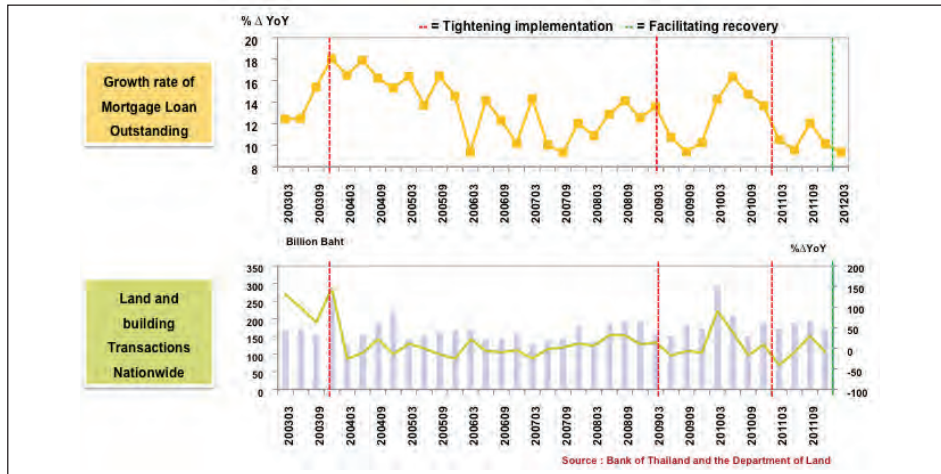
policy, when implemented properly, can tackle the sectoral imbalance directly rather than resorting to the use of conventional monetary tightening that might have broad-based effects, with unintentional, undesirable results on other economic sectors.

5.2 Loan-to-value (LTV) Ratios on Mortgage Loans: A Flexible Preemptive Tool

Likewise, another type of concern gave rise to the use of another sectoral-specific measure. The Loan-to-value (LTV) ratio is recognised for its effectiveness based on the empirical evidence of countries like Hong Kong and Singapore. The LTV ratio is also not new in Thailand. The BOT has started implementing the LTV policy as a means of moderating the growth of real estate sector since 2003. Drawn from experience, the use and adjustment of the LTV ratio demonstrates its preventive nature and, more importantly, the flexibility of its use to fine-tune the policy in response to changing economic circumstances.

Back in 2003, the real estate sector showed strong recovery with double-digit growth rate, especially on high-value residential properties, corresponding to the substantial surge in mortgage loans. With the lessons learned from the Asian financial crisis, the 70% LTV limit for mortgage with value of at least 10 million baht was thus introduced to preempt speculation in luxury real estate as well as quell the unsustainable real estate booms. Besides, other qualitative measures were imposed to strengthen the lending practices of banks, such as passing of feasibility studies for certain loan types. As a result, land and construction transactions calmed down.

Chart 4
Implementation of LTV Ratio on Mortgage Loan –
Effective and Flexible



Later, in 2009, as Thai economy was affected by the global downturn, the BOT made adjustment on the LTV ratio on the high-value mortgage in order to support activities in the real estate market. The 70% LTV limit was removed and instead replaced with a more risk-sensitive rule in line with the international supervisory standard. That is, the risk weight for calculation of capital charge is set at higher rate (75%) for mortgage with LTV above 80%, while it is only at 35% for less risky loans. Having seen its effectiveness, in late 2010 the BOT extended the LTV policy also to mortgage with value less than 10 million baht. This additional measure was precautionary in response to the significant rise in housing demand and the intense competition in bank lending to this sector that may pose a higher risk to the financial system, even though there was no obvious sign of asset price bubble.

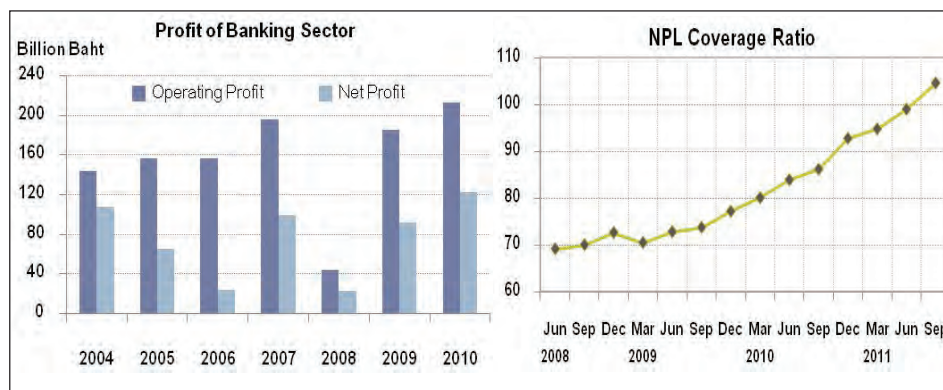
In the design, the policy was divided into two phases for the two different housing types, vertically and horizontally. In comparison, the high-rise building segment, i.e. condominiums, is more prone to speculation than the low-rise building segment where most house buyers tend to buy for their own living. To first tackle the more risky market, a higher risk weight for high-rise building mortgage with LTV above 90% was imposed in January 2011. Supposedly, one year later in January 2012, a similar rule would then be applied for mortgage on low-rise building with LTV above 95%. However, due to the severe flooding in late 2011,

the implementation was postponed. Given that, the policy effectiveness is still quite apparent. The growth rate of mortgage loans for condominiums gradually slowed down, so did the proportion of mortgage loans with LTV ratio higher than 90%.

5.3 Tightened Loan-loss Provisioning: Leaning against the Wind

The last example of Thailand's experience in macro-prudential policy implementation concerns the development of the loan-loss provisioning rule in the context of leaning against the build-up of vulnerabilities. Following the extended period of profitability in mid-2000s, the BOT decided to tighten the loan-loss provisioning rules in line with the International Accounting Standard 39 (IAS 39). That is, the impairment of asset quality is recognised in a more forward-looking basis, i.e. by taking into account the expected cash flows and other qualitative criteria, rather than waiting for the overdue figures to show up on the balance sheets. The timing of implementation was essential as the change would lead to a large one-time increase in the provisioning buffer. The period of strong profitability in the banking system was chosen to ensure that an adequate cushion was made in such a way that it would not distort economic activities. Afterwards, the banks' provisioning gradually accumulated, as evidenced by the rising NPL coverage ratio.

Chart 5
Loan-loss Provisioning:
Another Type of Buffer to be Built up during Good Times



In light of the wider perspective in determining the loan-loss provision not simply based on static (point-in-time) estimates of probability of default that gear towards procyclicality, the BOT is currently in the process of developing

its own policy framework for provisioning. Broadly speaking, the notion is similar to the so-called “dynamic provisioning” policy of Spain (Saurina, 2009), that is, the level of provisioning is calibrated from historical data of impaired loans through the cycle. However, the calculation of asset impairment and provision requirement is somewhat different. The dynamic provisioning looks at the historical loss experiences of different types of lending across institutions. As a result, immediately when a certain type of loans, say, mortgage, is issued, the bank has to set aside a general provision based on the average likelihood of mortgage impairment regardless of the character of that specific loan.

For the BOT, the level of provision is tailor-made using bank-level data on probability of default and loss given default. Close collaboration with the Thai-registered banks is obtained via moral suasion to enlarge and refine the data coverage further. On purpose, this more granular approach, namely “conservative provisioning” is to be systemically used as extra cushion against the expected future losses as well as incurred losses. The attempt is not only to increase the banking resilience but also to smooth out economic cycles, similar to what Basel III’s countercyclical buffer is advocated for. In a way, the distinction is simply between elevating the loan-loss provision as the cushion for expected losses and strengthening the capital level as the backup for unexpected losses, while the line drawn between expected and unexpected losses becomes blurred.

6. BOT’s Reflection on Use of Countercyclical Buffer

The BOT recognises the Basel III’s countercyclical buffer as the first international attempt to put forward a standardised macro-prudential policy tool. It is deliberately intended to regulate banks to internalise the externalities incurred from their procyclical behaviour. That is, the need to raise extra capital is expected, once the economy seems to be overly boosted possibly by a highly leveraged banking sector. For the buffer to be well capitalised and able to be drawn down in periods of stress is conceptually prominent. In practical terms, its implementation is likely to be challenging.

The goal is to sustain the flow of credit in the economy and perhaps moderate the business cycle without hurting growth. How is this to be achieved? The calibration of booms and busts involves pervasive parameters of complex and dynamic macro-financial relationships that are hard to predict from policy feedbacks. The sequence of policy execution is crucial, which requires close collaboration and careful alignment with monetary policy and other macroeconomic policies. Yet even with the best foundation laid, the execution might remain skeptical in the politics of booms as well as of countries’

comparative advantages. The challenge is striking for bank-based economies with relatively less developed financial markets. Hence, it is still an open question whether and how the countercyclical buffer would evolve in an internationally harmonised way.

In an effort to prepare for the use of countercyclical buffer, the BOT made a preliminary study of the robustness of the aggregate private sector credit-to-GDP growth, as recommended by BCBS. The result shows that the recommended indicator is fairly reliable in triggering the buffer especially during the overheating period prior to the Asian financial crisis. However, its predictive power becomes somewhat weaker in recent years, while the lead-lag effects also vary. This induces further studies on the alternative indicators, of both quantitative and qualitative types, and their effectiveness.

Without doubt, much more resources and commitment are required not only to further refine the boom-bust prediction and the buffer calibration, but also to incorporate these novel measures to the institutional setting. Besides, the work entails skillful public communication in order to put the right messages across and not cause any unnecessary noises in the financial system. In this regard, the BOT has some experience in devising other macro-prudential tools, as described in Section 5.

Altogether, an inference can be drawn from the BOT's experience. Given differences in the merits and practicalities of existing policy choices, it is very important for the authorities to appropriately select different tools for different circumstances. For sectoral imbalances or overheating in particular industrial sectors / loan types, measures such as LTV and DTI are well tailored to address specific issues with a rather simple process. Timely identification of sectoral concerns is thus essential to curb the build-up of system-wide risk. Yet, in the event that the expansionary pressure becomes pressing for the banking sector as a whole, it is preferred to assign extra loan-loss provisioning requirements to those lucrative banks in order to soothe the procyclicality and ensure the resilience of main financial intermediation. Lastly, where economic upsurges arise from the various financial channels bringing about system-wide risk, the use of countercyclical capital buffer would then be appropriate to protect the banking sector from the swing of business cycles. Accordingly, the introduction of Basel III's countercyclical capital buffer is certainly not a replacement of other macro-prudential tools. It is up to national discretions to accommodate the old and the new and the pecking order of the different tool kits for best use in their respective economic contexts.

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