

NEW FINANCIAL PRODUCTS AND CHALLENGES FOR CENTRAL BANKS

Edited by

Wahyu Dewati

The SEACEN Centre

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by Wahyu Dewati

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FOREWORD

New financial products are often defined as the emergence of new financial instruments in more sophisticated and developed financial markets. In the development of more complete markets, the existence of new financial products can improve resource allocation, thereby supporting longer term growth prospects. In more advanced markets, the existence of new financial products appear to reduce growth volatility, allow firms to have a more flexible financial structure and households to have smoother consumption in the face of temporary changes in their income. However, financial innovations pose new challenges for central bankers as they can make monetary analysis more complex by modifying the monetary policy transmission mechanism, and in some cases even endanger financial stability. In view of this, central banks need to track the trade mechanisms of new financial products and their roles in the financial markets.

The objective of this study is to review the status and development of new financial products and challenges for central banks in selected SEACEN economies. Three aspects are analysed in the study, namely (a) Development of new financial products; (b) Assessing market perception on current policy measures and regulations on new financial products in preventing financial crisis/ instability; and, (c) The merits and drawbacks of NFP, especially their implications on financial stability that pose challenges to central banks and to identify current practices with respect to cooperation/coordination arrangements between the central bank and other supervisory authorities, and among central banks in the region to support their supervisory function related to cross border transactions.

This collaborative research was led by Ms. Wahyu Dewati, Project Leader and Visiting Senior Economist of The SEACEN Centre (OY 2010/11) and concurrently Senior Economist, Head of Economics Research Team, Economics Research Bureau, Directorate of Economic Research and Monetary Policy, Bank Indonesia.

The SEACEN Centre wishes to express its sincere gratitude to the participating member central banks and their researchers for actively participating in this project and preparing the chapters of their respective economies. They are namely, Mr. Lun Sam Ol, Deputy Division Chief, Banking Supervision Department, National Bank of Cambodia; Ms. Wahyu Dewati, Ms. Trinil Arimurti and Ms. Tevy Chawwa, Senior Econmist and Junior Economists respectively, Directorate of Economic Research and Monetary Policy, Bank Indonesia; Mr. Sangjin Song, Economist, International Department, The Bank of Korea; Ms. Tin Aung, Assistant Manager, Accounts Department, Central Bank of Myanmar;

Mr. Mukunda Mahat, Deputy Director, Bank Supervision Department, Nepal Rastra Bank; Ms. Natalia W. Santos, Bank Officer IV, Office of Supervisory Policy Development; Bangko Sentral ng Pilipinas; Mr. Wei-Sheng Chiu, Assistant Specialist, Department of Foreign Exchange; Central Bank, Chinese Taipei; and, Mrs. D.V.S. Dayawansa, Deputy Director, Statistics Department, Central Bank of Sri Lanka.

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Dr. A.G. Karunasena
Executive Director
The SEACEN Centre
Kuala Lumpur

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Table of Contents

Pages

Foreword iii

Executive Summary xiv

Chapter 1
NEW FINANCIAL PRODUCTS AND CHALLENGES FOR CENTRAL BANKS: INTEGRATIVE REPORT
By Wahyu Dewati

1. Introduction 1
2. Literature Review – Description 2
   - 2.1 Interest Rate Products 4
   - 2.2 Currency Derivatives 6
   - 2.3 Commodity Derivatives: Commodity Swap 8
   - 2.4 Credit, Debt and Equity Derivatives 8

3. The Benefits and Drawbacks of New Financial Products 12
   - 3.1 The Benefits of the Existence of New Financial Products in the Financial Market 12
   - 3.2 The Drawbacks of New Financial Products 14

4. The Development of New Financial Products in Selected SEACEN Economies 15

5. The Challenges for Central Banks 33

6. Conclusion and Policy Implications 35

References 37

Chapter 2
NEW FINANCIAL PRODUCTS AND CHALLENGES FOR CAMBODIA
By Lun Sam Ol

1. Introduction 39

2. Literature Review 41

3. Current Structure of Financial Market and New Financial Products and Services 45
   - 3.1 Central Bank 46
   - 3.2 Performance of Commercial Banks 49
   - 3.3 Performance in the Microfinance Sector 52
   - 3.4 Non-Banking Sector (Insurance) 53
   - 3.5 Money/Inter-bank Market 55
   - 3.6 Capital Market 55
   - 3.7 Current Structure of Banks' Assets, Liabilities and Shareholders' Equity 56
   - 3.8 Emerging of Financial Products and Services in Cambodia 60

4. Findings of Survey of New Financial Product Developments in Cambodia 61

5. Conclusion 63

References 65

Chapter 3
NEW FINANCIAL PRODUCTS AND CHALLENGES FOR THE INDONESIAN CENTRAL BANK
By Wahyu Dewati, Trinil Arimurti and Tevy Chawwa

1. Introduction 67

2. Literature Review 69
   - 2.1 New Financial Product, Monetary Policy and Financial Stability 69
   - 2.2 Types of New Financial Product in Indonesia 71

3. Development of New Financial Products in Indonesia 78
3.1 Review of the Current Structure of Financial Markets in Indonesia 78
3.2 Review of New Financial Products in Indonesia 81
3.3 Review of New Financial Product Regulation in Indonesia 85

4. The Survey of the Current Status of New Financial Products in Indonesia 87
4.1 Objectives of the Survey 88
4.2 The Respondent and the Methodology of the Survey 88
4.2 The Profile of the Respondents 88
4.3 The Survey Result 90

5. Conclusion and Policy Implications 110

References 114

Appendix 1 114

Appendix 2 117

Chapter 4
NEW FINANCIAL PRODUCTS IN KOREA, AND CHALLENGES FOR THE BANK OF KOREA
By Sangjin Song

1. Introduction 123

2. Definition of New Financial Products, and Previous Studies 124
2.1 Definition of New Financial Products 124
2.2 Previous Studies 125

3. Survey of Status of New Financial Products in Korea 126
3.1 New Financial Products 126
3.2 Non-standard New Financial Products 128

4. Implications of New Financial Products for Financial Stability in Korea 133
4.1 Linkages between FX Market and KRW Markets 134

5. Financial Instability through Financial Linkages, and Challenges for Bank of Korea 140
5.1 Interest Rate Fluctuations during Global Financial Crisis 140
5.2 Some Challenges for BOK 142

6. Conclusion 144

References 145

Chapter 5
NEW FINANCIAL PRODUCTS AND CHALLENGES FOR CENTRAL BANKS
By Tin Aung

1. Introduction 147

2. Literature Review on Development of New Financial Products 148
2.1 Derivatives Products 148
2.2 Structured Financial Products (SFP) 150
2.3 Advantages and Disadvantages of Structured Products 151
2.4 The Need to Control New Financial Products 152
2.5 Development of Financial Markets in Myanmar 152

3. Current Financial System of Myanmar 152
3.1 Banking Sector 153
3.2 Non-Bank Financial Sector 154
3.3 Past Experience of Contagion Effect on Financial Sector of Myanmar 155

4. Importance of Secondary Market for Securities 157
4.1 Rationale for the Emergence of the Secondary Market for Securities 157
4.2 Overview of the Government Treasury Bond Market in Myanmar 158
4.3 Current Activities for the Development of Capital Market in Myanmar 161

5. Policy Suggestions for the Development of Secondary Market in Myanmar 163
5.1 Conclusion 167

References 168

Appendix-(1) 170

Appendix-(2) 171

Chapter 6
NEW FINANCIAL PRODUCTS AND CHALLENGES FOR CENTRAL BANK: NEPAL
By Mukunda Mahat

1. Introduction 173
1.1 Background 173
1.2 Scope 173
1.3 Objectives 174
1.4 Financial Stability 174
1.5 Concerns of Regulators 177
1.6 General Outline 177

2. Review of the Literature 178
2.1 Meaning 178
2.2 History and Development 178
2.3 Global and Asian Derivatives Markets 181
2.4 Hedging and Speculation 183
2.5 For and Against Use of Derivatives 184

3. Status of New Financial Products 186
3.1 Overview of Nepalese Financial Sector 186
3.2 Current Structure of Nepalese Financial Market 187
3.3 Overall Status of New Financial Products 191

4. Implications of New Financial Products to Financial Stability 193
4.1 Global Financial Crisis 193
4.2 Impact of Global Financial Crisis in Nepal 195
4.3 Merits and Drawbacks of New Financial Products to Financial Stability 200

4.4 Existing Policy Measures and Regulation 202
4.5 Coordination between Monetary and Supervisory Authorities 202
4.6 Cross-border Supervision and Coordination between Central Banks 202

5. Conclusion and Policy Implications 203
5.1 Summary 203
5.2 Policy Implication 204

References 206

Chapter 7
CHALLENGES IN DEVELOPING A MARKET FOR NEW FINANCIAL PRODUCTS
By Natalia W. Santos

1. Introduction 209

2. Literature Review 211

3. The Philippine Financial System 213
3.1 Institutions and Markets 213
3.2 Present Supervisory and Regulatory Framework over Derivatives 215
3.3 Derivative Transactions of Banks 219
3.4 Experience During the Financial Crisis 224

4. Future of the Derivatives Market 226
4.1 Banks' Product Preferences 226
4.2 Nurturing Development Within a Framework of Stability 226

5. Conclusion 229

References 231

Chapter 8
NEW FINANCIAL PRODUCTS AND CHALLENGES FOR CENTRAL BANKS: CASE OF SRI LANKA
By D.V.S. Dayawansa

1. Introduction 233
   1.1 BackgroundR 233
   1.2 General Outline of the Study 236

2. Literature Review 236
   2.1 Derivative Markets and their Growth 236

3. Current Structure of Financial System in Sri Lanka 241
   3.1 Financial Markets in Sri Lanka 242
   3.2 Financial Institutions in Sri Lanka 242
   3.3 Financial Infrastructure in Sri Lanka 245

4. Implications of Financial Crisis to Financial System Stability and Existing Regulations for New Financial Products in Sri Lanka 247
   4.1 Effects of Financial Turmoil on Financial System Stability in Sri Lanka 247
   4.2 Merits and Drawbacks of New Products to Financial System Stability 249
   4.3 Existing Policy Measures and Regulations of New Financial Products 250
   4.4 Current Practices: Coordination Between Monetary and Other Supervisory Authorities 252
   4.5 Current Practices: Coordination between Central Banks in the Region for Cross-border Supervision 254

5. Survey of the Status of New Financial Products in Sri Lanka 255
   5.1 Overall Status of New Financial Products in Sri Lanka 255
   5.2 Survey Findings 257

6. Concluding Remarks and Policy Recommendations 269

References 272

Appendix A 274

Appendix B 276

Appendix C 277

Appendix D 278

Appendix E 279

Chapter 9
NEW FINANCIAL PRODUCTS AND CHALLENGES FOR CENTRAL BANK
By Wei-Sheng Chiu

1. Introduction 281
   - 1.1 General Motivation of Study 281
   - 1.2 General Outline of Study 282

2. Review of Literature 282
   - 2.1 Investigation and Study of CBC 282
   - 2.2 Study of Relevant Literature 282

3. Profile of Derivatives and New Financial Products 283
   - 3.1 Major Participants in New Financial Product Market of Chinese Taipei: General Situation of Banking Industry 283
   - 3.2 Profile of Derivatives and New Financial Products of Chinese Taipei 284

4. Implications of New Financial Products to Financial Stability in Chinese Taipei 287
   - 4.1 Effect of Financial Tsunami on Financial Stability of Chinese Taipei 287
   - 4.2 Positive and Negative Impact of New Financial Products on Financial Stability 288
   - 4.3 Influence of Present Supervisory Policies and Statutes About New Financial Products on Financial Stability 292
   - 4.4 Cooperation Between CBC and Other Governmental Departments 297
   - 4.5 Supervisory Cooperation between CBC and Other Central Banks 298

5. Central Bank Policies and Conclusions 298
5.1 Establishment of Sound and Complete Regulations on New Financial Products to Respond to Market Changes 299
5.2 Introduce Customer Classification Management System and Complete Transaction Orders to Guarantee Investor's Rights 299
5.3 Correct Abnormal Salary Problem of Financial Institutions 300
5.4 Reinforce Market Infrastructure for New Financial Products 300
5.5 Improve Transparency of New Financial Product Transaction 302
5.6 Promote Reform of Credit Rating System 302
5.7 Strengthen Financial Supervision Cooperation between Economies 303

References 304

EXECUTIVE SUMMARY

New financial products (NFP) are often defined as the emergence of new financial instruments in more sophisticated and developed financial markets. In the development of more complete markets, the existence of new financial products can improve resource allocation, thereby supporting longer term growth prospects. In more advanced markets, the existence of new financial products appear to reduce growth volatility, allow firms to have a more flexible financial structure and households to have smoother consumption in the face of temporary changes in their income. However, financial innovations pose new challenges for central bankers as they can make monetary analysis more complex by modifying the monetary policy transmission mechanism, and in some cases even endanger financial stability.

New financial products can be used either for risk hedging purposes or for speculative transactions. The complexity of the products make them difficult to understand by most market participants leading to asymmetric information. To minimise information asymmetry, the markets must be efficient and transparent so that risks can be transferred to investors who are fully aware and informed. Reporting and disclosure to market participants as well as regulators are critical for enhancing market transparency.

There must be proper controls and regulations in place to prevent the products from being used for speculation purposes. However, there is a fine line to be drawn between too much regulations or too little regulations as both have dire consequences. Too much regulations will stifle the development of the market while the lack of regulations will lead to inadequate protection for investors and lack of confidence in the market. The main aim of regulations are to protect the interests of investors, infuse confidence in the market, prevent unfair practices, promote smooth functioning of the market and prevent undue speculation. A balanced and optimal amount of regulations promote the development of a healthy and efficient market. More importantly, there must be a fair degree of self-regulation on the compliance with the rules of the game, such as disclosures of the covered positions, open positions, volume of trade and losses and gains, etc., that would help the market to grow in the right direction.

There must, therefore, be adjustments made to the institutional and regulatory frameworks. This is important to accommodate the expansion of activities in a safe manner. Moreover, the regulatory environment must be clear with respect to jurisdictions and authorities. Authorities must be able to monitor transactions

and where the risks in the system lie, and there must be mechanisms to aid in reducing the risk that the system bears.

The global financial crisis has demonstrated its potential risks to the markets and poses challenges for central banks. In view of this, central banks need to track the trade mechanisms of new financial products and their roles in the financial markets. Central banks need to closely coordinate policies on new financial products and share information with the other financial authorities, based on its understanding of trades in new financial product and their linkage effects.

Chapter 1

NEW FINANCIAL PRODUCTS AND CHALLENGES FOR CENTRAL BANKS: INTEGRATIVE REPORT

By
Wahyu Dewati[1]

1. Introduction

New financial products (NFP) are often defined as the emergence of new financial instruments in more sophisticated and developed financial markets. In the development of more complete markets, the existence of new financial products can improve resource allocation, thereby supporting longer term growth prospects. In more advanced markets, the existence of new financial products appear to reduce growth volatility, allow firms to have a more flexible financial structure and households to have smoother consumption in the face of temporary changes in their income. However, financial innovations pose new challenges for central bankers as they can make monetary analysis more complex by modifying the monetary policy transmission mechanism, and in some cases even endanger financial stability.

The primary requirement for the success of any process or scheme for new financial products is that the market participants must be able to garner economic benefits from the products. New financial products are only initiated if issuers/agents expect to derive benefits in terms of cost reductions or higher returns. Investors are only motivated to take up these new products if they offer investment choices not available elsewhere.

New products are emerging from the traditional building blocks such as forwards and options and second and third generation derivatives have been spawned from earlier products to include complex hybrid, contingent, and path-dependent risks. New applications are expanding derivatives' use beyond the specific management of price and event risk to the strategic management of portfolio risk, balance sheet growth, shareholder value, and overall business performance. Derivatives are being extended beyond mainstream interest rate, currency, commodity and equity markets to new underlying risks including

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1. Author is currently Senior Economist, Head of Economics Research Team, Economics Research Bureau, Directorate of Economic Research and Monetary Policy, Bank Indonesia.

catastrophe, pollution, inflation and credit risks. Activity in credit derivatives is accelerating as users recognise the growing importance of managing credit risk and apply a range of derivatives techniques to the tasks. The tools are developed, ranging from credit default swaps to securitization vehicles, widely acclaimed as one of the most innovative financial structures in recent years.[2]

The objective of this study is to review the status and development of new financial products and challenges for central banks in selected SEACEN economies participating in this research study. For each economy, we describe 3 aspects as follows: (a) Development of new financial products; (b) Assessing market perception on current policy measures and regulations on new financial products in preventing financial crisis/instability; (c) The merits and drawbacks of NFP, especially their implications on financial stability that pose challenges to central banks and to identify current practices with respect to cooperation/ coordination arrangements between the central bank and other supervisory authorities, and among central banks in the region to support their supervisory function related to cross border transactions.

Due to the limited information source, the exact comparison among economies is not always provided.

The first section is the introduction that covers the motivation and the general outline of the study. The second section describes the literature review concerning definition of instruments covered under new financial products from past and current studies, both in Asian and globally. In the third section, a detailed description of the status of new financial products status in Korea, Chinese Taipei, Indonesia, Philippines, Sri Lanka, Nepal, Myanmar and Cambodia is given. This section presents a summary of the survey results on the characteristics and development stage of new financial products and reviews market perception towards the sufficiency of the existing regulations for NFP. In the fourth section, the impact of the financial crisis on the developmentof NFP and challenges to central banks is analyzed. Finally, section five summarizes the study and proposes policy recommendations for dealing with new financial products.

2. Literature Review – Description

New financial products are often defined as the emergence of new financial instruments in more sophisticated and complete financial markets. Derivatives are transactions whose values at any time depends on (and so, is derived from)

2. The J.P. Morgan Guide to Credit Derivatives, with contributions from the Risk Metrics Group.

the value of that "underlying" as measured in relevant market, or the value the market places on protection against an uncertain outcome involving the underlying. Derivatives in emerging markets are traded in almost equal proportions over the counter and on exchanges.

Over the Counter (OTC) are bundles of contractual rights and obligations embodied in the documents that set out their terms. The contracts generally include the following: procedures for normal scheduled payments, collateral, credit sensitive terms that govern when there can be early close out of a transaction, the payments to be made if close out settlement should occur, the parties understandings about the nature of their dealing relationship, the extent to which each of them assume exclusive responsibility for certain matters. In the usual OTC transaction, a party executes an agreement customized to reflect the results of its negotiations with its counterparty. This agreement is the vehicle for setting forth the particular financial terms of the transactions as tailored to fit its needs.

The OTC derivatives can be grouped into the following products: (i) Interest rate products, (ii) Currency Derivatives, (iii) Commodity Derivatives, (iv) Credit, Debt and Equity Derivatives.[3] From Table 1, new financial products can be summarized as OTC derivatives and exchange-traded derivatives.

Table 1
New Financial Instruments

OTC Derivatives						**Exchange-Traded Derivatives**			
Interest Rates	**Foreign Exchange**	**Equity**	**Commodities**	**Credit/ CDS**		**Interest Rates**	**Foreign Exchange**	**Equity**	**Commodities**
Interest Rate Swaps (IRS)	Foreign Exchange Options	Stock Options	Commodity Swap	Single-Name Instruments		Bond Futures	Currency Futures	Stock Options	Commodities Futures
Interest Rate Options (IRO)	Foreign Exchange Swaps	Exotic Instruments		Multi-Name Instruments		Options on Bond Futures		Equity Futures	
Interest Rate Caps	Currency Swaps								
Interest Rate Floors	Forward Foreign Exchange Contract (FX Forward0								
Forward Rate Agreements (FRA)	Non-Deliverable Forward (NDF)								
Exotic Instruments	Currency Options								

3. Gooch, Anthony C. and Linda B. Klein, (2002), Documentation for Derivatives, Fourth Edition, Volume 1, Euromoney Books, United Kingdom.

2.1 Interest Rate Products

This OTC products are used in many ways to transfer and assume risks associated with changes in the interest rate environment. The product descriptions relate to rate swaps, caps and floors, collars and corridors, options and swaps ("Swaptions"), and Forward Rate Agreements (FRA).

The motivation to manage interest rate vary considerably among users of these derivatives, and may vary for a particular end-user over time. Manufacturers may be most concerned with changes in the absolute level of domestic interest rate if they fund production with floating rate debt, because its ability to raise prices may not keep pace with rising interest rates. By way of comparison, a bank that depends on customer deposits to fund a mortgage lending business will have more complex concerns relating to changes in the interest rate environment. The bank's success will be closely tied to changes in the shape of the yield curve over time. The bank's profit margin on its mortgage assets will be directly linked to the difference between its cost of funding and the return on mortagages assets, and both of them will be sensitive not only on the changes of interest rate but also to where along the yield curve they seem most attractive. Interest rate products comprise of the following:

a. ***Interest rate swap:*** this is a bilateral agreement in which each party promises to make periodic payments to the other, calculated as one would calculate interest rate payments on the principal amount of a debt obligation, but no actual principal payments are involved and the periodic payment obligation of the parties are calculated using different rate bases and are made in the same currency. OTC rate swaps are commonly used as liability management tools by entities that raise funds by issuing floating rate debt and combining a swap. This mechanism is cheaper than it would be possible through the issuance of fixed rate obligations. Interest rate swaps are often used by firms to alter their exposure to interest rate fluctuations, by swapping fixed rate obligations for floating rate obligations, or vice versa. By swapping interest rates, a firm is able to alter its interest rate exposures and bring them in line with management's appetite for interest rate risk.

b. ***Rate caps*****:** in a conventional rate cap transaction, the seller agrees to make a series of payments to the other party, measured by the excess of an index rate over an agreed cap rate (or strike rate). For this protection against rate increases, the buyer pays a premium which takes the form of a single payment made at inception.

c. ***Floors*****:** in interest rate floor derivatives transaction, the seller agrees to make a series of payments to the buyer measured by the extent to which a given index rate drops below the agreed floor rate. The buyer pays a premium, usually in the form of a single upfront payment. The rate floor is used primarily by holders of floating rate assets to protect themselves against falling rate.

d. ***Collars*****:** a rate collar transaction can be understood as a combination of a cap and a floor in a single transaction. The seller of the cap element of the collar agrees to make a series of payments to the other party, measured by the excess of an index rate over an agreed cap rate (strike rate), and the buyer of the cap also sells back a floor. They agree to make a series of payments measured by the extent to which the same index rate drops below an agreed floor rate lower than the cap rate.

e. ***Corridors*****:** the term corridor is used to refer to various kind of derivative products but it is commonly applied to a transaction that consists of two rate caps in which the buyer of the first is also the seller of the second, set at a higher cap rate.

f. ***Swaptions*** are options to enter into swaps and similar derivatives, as well as options to terminate derivatives. The buyer of the swaption has the right, but not the obligation, to transact an interest rate swap during the life of the options. An option on swap where the buyer is the fixed rate payer is the termed a *call*swaption. In the case, the buyer becomes the floating rate payer is a *put* swaption. The writer of the swaption becomes the buyer's counterparty in underlying the transaction.They are particularly useful in cases in which a party is seeking to create a structure that requires combining a financing with one or more OTC derivatives. Swaption is designed to permit one party to lock in the economics without being comitted to go forward with the derivative if the financing transaction fails to close. The swaption involves the payment of a premium for the agreed protection at a cost that limited to the premium paid.Swaptions are also used in asset management, where their application include management by investors of portfolio duration.

g. ***Forward Rate Agreement (FRA)*** can be thought of as a cash-settled forward contract on a deposit. The seller agrees at the outset on the rate of interest rate at which the seller would place a deposit with the buyer at the specified time in the future. Instead of actually transfering the funds to be deposited and repaying them with interest at the end of its term, the

parties agree to a net settlement at the beginning of the deposit term. The net settlement is equal to the present value of the difference between the amount of interest that would have accrued on the deposit at the FRA rate and the rate prevailing in the market for such deposit just before the settlement date. FRA is an OTC contract between parties that determines the rate of interest, or the currency exchange rate, to be paid or received on an obligation beginning at a future start date. The contract will determine the rates to be used along with the termination date and notional value. On this type of agreement, it is only the differential that is paid on the notionol amount of the contract.

h. Interest Rate Structured Products: interest rate linked structured products are tailored solutions which are customised to customer risk profile and return expectation on the interest rate movements.

2.2 Currency Derivatives

Currency derivatives include Cross-currency rate swaps, Forward foreign exchange contracts, Currency options, Non deliverable currency options.

a. *Cross-currency rate swaps* can be used to hedge foreign currency debt into a selected currency to manage currency risk. A currency swap involves fixed amount of payments in one currency and floating amount payments in the other. A cross-currency basis swap agreement is a contract in which one party borrows one currency from another party and simultaneously lends the same value, at current spot rates, of a second currency to that party. Though the structure of cross-currency basis swaps differs from FX swaps, the former basically serve the same economic purpose as the latter, except for the exchange of floating rates during the contract term.Cross-currency basis swaps have been employed to fund foreign currency investments, both by financial institutions and their customers, including multinational corporations engaged in foreign direct investment. They have also been used as a tool for converting currencies of liabilities, particularly by issuers of bonds denominated in foreign currencies. Mirroring the tenor of the transactions they are meant to fund, most cross-currency basis swaps are long-term, generally ranging between one and 30 years in maturity.

b. *Forward foreign exchange contract (FX Forward)* is an agreement by one party to deliver of a specified amount in one currency on a specific future date against delivery of a specified amount in another currency. Forward contracts represent agreements for delayed delivery of financial

instruments in which the buyer agrees to purchase and the seller agrees to deliver, at a specified future date, a specified instrument at a specified price or yield. Forward contracts are generally not traded on organised exchanges and their contractual terms are not standardised. The reporting exercise also includes transactions where only the difference between the contracted forward outright rate and the prevailing spot rate is settled at maturity, such as non-deliverable forwards (ie forwards which do not require physical delivery of a non-convertible currency) and other contracts for differences. In its traditional form, the FX forward transaction is often referred to as a deliverable transaction, to distinguished it from non-deliverable forward (NDF).

c. *Non DeliverableForward* (NDF) is a FX contract in which the value of the parties' forward exchange rate bargain is settled on a net basis through a single payment in a settlement currency, rather than through gross payments in the currencies involved. In a deliverable FX transaction, one of the parties agrees to pay an amount of one currency in exchange for an amount of second currencies that is either stated or determined at a stated exchange rate – the forward rate.This settlement occurs on the agreed settlement date. To translate this bargain into a Non-Deliverable FX Transaction, one of the currencies is identified as a reference currency and the other is the settlement currency. One of the parties is identified as the seller and the other as the buyer of the reference currency. Settlement of the Non Deliverable FX Transaction involves payment of a settlement currency amount by the buyer to the seller or by the seller to the buyer, depending on whether the reference currency has increased in value relative to the settlement currency (the seller pays) or has declined in value relative to the settlement currency (the buyer pays). This settlement currency amount is determined using a spot exchange rate identified as the settlement rate, which is determined in respect of a valuation date (two business days before the settlement date for NDF).

d. *Currency options* give one party (the buyer) the right but not the obligation to enter into a transaction relating to that currency at a later date. In traditional currency option, the buyer aquires the right to buy or sell one currency for another at an agreed strike price or exchange rate. Currency options are an important tool for investors who want to take a position in a foreign currency or to hedge against foreign currency exposure.

e. Non-deliverable currency options:

a. A currency option gives the buyer, the right, but not the obligation, to enter into a transaction relating to that currency at a later date. A non-deliverable currency option is always settled at its "in-the-money" amount in a single settlement currency. In the money amount, the positive amount is determined by multiplying the call currency amount by the excess of the settlement rate over the strike price.

b. Non-deliverable currency options – like non Deliverable FX transactions - often entered into because one of the currencies in the currency pair – the reference currency – is not fully convertible (or if converted, may not be remitted from the jurisdiction where it is issued).

2.3 Commodity Derivatives: Commodity Swap

Commodity swap is one of the cash settled products used to manage or take on exposure to changes in commodity prices. Commodity swap treats a specified amount of the relevant commodity as the basis for calculating the parties' respective payment obligations but does not involve the delivery of the commodity. This products are used to manage the risks associated with commodity price volatility through customized transactions. Commodity swaps may be used as hedges by institutions that issue or invest in commodity price-indexed instruments or limited partnerships or funds created to enable investors to take on exposure to commodity prices. These index instruments(hybrid instruments) are designed in such a way that their coupon or their redemption value at maturity reflects commodity price change. As with interest rate derivatives, principally caps and floors and the combination of these transactions that are called collars and corridors also exist for commodity derivatives. They are generally used to enable a party to obtain some protection against adverse commodity price movements without giving up all the potential benefits of favorable movements.

2.4 Credit, Debt and Equity Derivatives[4]

Credit derivatives can be defined as bilateral financial contracts that isolate specific aspects of credit risk from an underlying instrument and transfer that risk between two parties. Credit derivatives separate the ownership and management of credit risk from other qualitative and quantitative aspects of ownership of financial assets. Credit derivatives bring efficiency gains arising

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4. Mihaljek, Dubravko and Packer, Frank, (2010), "Derivatives in Emerging Market", *BIS Quarterly Review*, December, pp 43-58.

from disaggregating risk through a process of market completion. By separating specific aspect of credit risk from other risk, credit derivatives permit even the most illiquid credit exposure from portfolio that have but do not want the risk to those that want but do not have that risk. Credit derivatives can isolate and transfer certain aspect of credit risk, rather than their economic substance, that distinguished them from more traditional credit instruments. The reference entity, whose credit risk is being transferred, need neither be a party to nor aware of a credit derivative transaction. This confidentiality enables banks and corporate treasurers to manage their credit risks discreetly without interfering with important customer relationships. The term of tenor, seniority, compensation structure of the credit derivative transaction can be customized to meet the needs of the buyer and seller of risk, rather than the particular liquidity or term needs of a borrower. By taking exposure to bank loans using a credit derivative such as a Total Return Swap, a hedge fund can both synthetically finance the position (receiving under the swap the net proceeds of the loan after financing) and avoid the administratitve costs of direct ownership of the asset, which are borne by the the swap counterparty.

a. *Credit Default Swaps* (CDS) is a bilateral financial contract in which one counterparty (the protection buyer) pays a periodic fee, typically expressed in basis points per annum, paid on the notional amount, in return for a contingent payment by the protection seller following a credit event with respect to a reference entity. The International Swap and Derivatives Association (ISDA) published a standardized credit swap documentation to reduce legal uncertainty that hampered the market's growth. A credit event is most commonly defined as the occurence of one or more of the following: failure to meet obligations when due, bankcruptcy for non-sovereign entities or moratorium for sovereign entity, repudiation, material adverse restructuring of debt, obligation acceleration or obligation default. Credit swaps, and all credit derivatives, are mainly inter-professional (non-retail) transactions. Averaging from $25 to $50 milion per transaction, they range in size from a few million to billions of dollars. For corporate or financial institutions credit risks, five-year tend to be the benchmark maturity where greater liquidity can be found. CDS with publicly rated credits enjoy greater liquidity but ratings are not necessarily a requirement. Since the early 2000s, CDS have been among the most liquid credit instruments available and maintained a modest degree of liquidity even during the crisis. By far, for Asian names outside Japan, the iTraxx Asia ex-Japan Index is one among the most actively traded CDS index contracts. Among the single-name CDS contracts, the most liquid ones have been those that are included in the CDS indices, for example, the iTraxx Asia ex-Japan Index is composed of 64 corporates and

6 sovereign names, 50 of which are investment grade and 20 high-yield.The CDS spreads which are quoted in over the counter markets, is largely influenced by the shifts in risk aversion, both global investors and investors with a regional focus.[5]

b. *Credit-linked Note*: a security, typically issued from a collateralised special purpose vehicle (SPV), which may be a company or business trust, with redemption and/or coupon payments linked to the occurrence of a credit event. Credit-linked notes may also be issued on unseccured basis directly by a corporation or financial institution.

c. *Total (Rate of Return) Swap or TRS* is a bilateral financial contract designed to transfer credit risk between parties. TRS is distinct from a credit swap in that it exchanges the total economic performance of a specified asset for another cash flow. Payments between the parties to a TRS are based upon changes in the market valuation of a specific credit instrument, irrespective of whether a credit event has occured.

d. *Equity Index Swaps*: In the equity swap, one party agrees to pay an amount equal to the appreciation if any of a hypothetical equity investment over a specified period, plus an amount equal to any dividends on the hypothetical investment during the period. This part is called the equity leg or the equity return payer.The notional investment may be in a basket of stocks that make up an equity index. The other party agrees to pay an amount equal to any decline in the value of the same hypothetical investment over the same period plus payment calculated at an annual rate on the notional amount of the investment. This second part of the transaction is called the interest rate leg or equity return receiver. The equity derivative products is combined with the conventional derivative to balance protection and cost objectives. Some of the variants have 'knock-in,' 'knock-out,' and 'variable' features. In a transaction with a knock-in feature, protection against higher or lower stock prices or index levels applies only if the price or level reaches an identified a knock-in barrier or level within an identified period. In a transaction with knock-out feature, the protection automatically ceases to apply if the price or level of an identified knock-out barrier or level at any time, or within a specified period. The variable feature signals that the number of underlying shares to be used for purposes of settlement will be determined at the end of the transaction term.

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5. Kim, Don H., Mico Loretan and Eli Remolona, (2010), "Contagion and Risk Premia in the Amplification of Crisis: Evidence From Asian Names in the Global CDS Market, *BIS Paper* No 52.

e. *Asset Backed Securities (Securitization):* In the case of securitization, the benefits arise to issuers and investors. For the issuer, the bottom line is to create a set of new securities that are worth more in aggregate than the value of the underlying assets. If the securitization process is to be viable, the cash flows derived from the issue of securities must exceed the cost associated with creating and carrying out the securitization process, in present value terms. Investors in capital market also welcomed the emergence of various new investment instruments in the form of asset backed securities, which have served to enlarge investment choices available to them and help toward more complete market.

Asset securitization techniques are now being applied to a wide range of different asset classes and by a variety of institutions ranging from financial institutions to trading and manufacturing firms and infrastructure project operators. Non financial institutions adopt asset securitization as a financing technique and as a means of enhancing corporate liquidity.

Structured financing is an extension of basic asset securitization which adds a degree of complexity to the basic process. In structured financing, the traded securities created by the securitization process are structured into several classes of derivative securities with different characteristics and sold to investors with investing needs matching those characteristics.

Asset securitization can play an important role for institutions in developing countries to gain access to long term funds in international capital markets. A negative aspect of securitization is, however, creating a disincentive for monitoring the asset pool by the originator. Monitoring loans play a key role in reducing the moral hazard problem where borrowers may be tempted to take excessive risks with their borrowed funds or sub-optimized their stated efforts. Since assets securitization separates the function of loan originators and loan funding, when a loan originator securitizes loan assets, the loan originator has a reduced incentive to monitor the loans. This is because monitoring is costly and the improvement of cash flows that may result from better monitoring accrues to the investors of the securitized debts and not to the loan originator. One should seek to optimize the trade off between the advantages of asset securitization versus the disadvantages of reduced incentive to monitor the loans by the originator.

With the advent of credit derivative products, the innovation in the asset securitization process has emerged in the form of synthetic securitization. In a synthetic securitization, a financial institution holding a pool of assets

transfers the credit risk attached to the asset pool to a third party by means of credit derivatives rather than by the direct transfer of ownership of the assets.

3. The Benefits and Drawbacks of New Financial Products

This section provides the benefits and drawbacks of NFP which are concerns for investors and central banks as one of the financial market regulators.

3.1 The Benefits of the Existence of New Financial Products in the Financial Market

3.1.1 Risk Management

Financial derivatives provide investors the opportunity to transfer or trade the risk components they do not want to other parties that are willing to accept them at the agreed cost. Provided this mechanism is used correctly, it reduces the overall cost of risk bearing and increases returns, thereby improving market efficiency.

3.1.2 Hedging Tool

Financial innovations can be used as a hedging tool or a kind of insurance against unexpected future outcome. Credit derivatives provide many investments and hedging opportunities that are impossible in the cash market. In the case of underdeveloped repo bond markets, emerging market investors find it attractive to hedge credit derivatives. By using credit derivatives to hedge loan portfolio exposure, banks use the credit lines and economic capital in a more efficient way.

3.1.3 Enhancing Investment Opportunities and Financing Choices

New financial products offer a wide range of new investment opportunities with lower investment and transaction costs. Choices of funding also increase with the existence of financial innovations, i.e. securitization allows loan originators to transform illiquid assets in the form of bank loans into cash market or more liquid tradable assets. Other examples such as CDO and index futures provide investors opportunities to diversify their portfolio at lower costs.

3.1.4 Enhancing Market Liquidity

NFP provides for more efficient markets, risks allocation and increased investment opportunities as well as increases the trading volume and thereby the market liquidity.

3.1.5 Arbitrage Opportunity and Speculation

The existence of New Financial Products provides ample opportunities to arbitrage in order to earn riskless financial return by taking positions in two or more markets. Financial innovations products such as futures and options not only allow arbitrage transactions but also speculative transactions by taking a position in the market and betting for a specific outcome.

3.1.6 Market Information Provision

Credit default swap (CDS) premium quoted in the inter dealer market reflect an accurate indicative measure of sovereign credit risk. The CDS premium can be used to assist in pricing new bond issues or measuring the fair value of new debt issue.

3.1.7 Credit Derivatives Provide an Objective Market Pricing Benchmark

The increasing use of credit derivatives by banks and by all institutions that routinely carry credit risk as part of their daily business are due to several factors. First is the absence of reference entity whose credit risk is being transferred. The reference entity need neither be a party to nor be aware of a credit derivatives transaction. This mechanism enables banks and corporate treasures to manage their credit risks discreetly without interfering with important customer relations. This contrasts with a loan assignment through the secondary market which requires borrower notification. Without the presence of the reference entity in the negotiation process allows the terms – such as the tenor, seniority, compensation structure - of credit derivative transaction to be customized to meet the needs of the buyer and seller of risk. Since credit derivatives isolate credit risk from relationship and other aspects of asset ownership, they enable institutions to make pricing and relationship decisions more objectively. Hence, credit derivatives provide an objective market pricing benchmark representing the true opportunity cost of a transaction.

3.1.8 An Active Credit Derivative Market Can Improve the Financial System Stability and Efficiency by Its Pricing and Credit Risk Diversification

It can be a tool to securitise credit risk that will contribute to the development of a bond market. The drawback is the potential moral hazard of protecting buyers and the difficulty in monitoring the activities.

3.2 The Drawbacks of New Financial Products

3.2.1 New Sophisticated Financial Products May Introduce New Threats to the Stability of Financial System

Due to the complexity of NFPs (especially for the more risky products) asset pricing of such sophisticated and complex new products may become more difficult and less accurate, thus creating the increased probability of unforeseen losses to investors. It is very important to thoroughly understand the structure and characteristics of new products including their embedded increased risks both during normal situations and in more volatile market conditions.

3.2.2 Difficulties in Assessing the Risks of New Financial Products

Credit rating agencies have difficulties in assessing risks of NFPs. To assess the risks of new sophisticated products such as CDO tranches, credit rating agencies have to rely on mathematical or quantitative models for claims emerging from cashflows of a portfolio of correlated assests. Ratings are influenced by expected losses that depend on some variables such as correlation structure and prepayment behavior in the past and also the position in the capital structure. Models can be imperfect thereby producing inaccurate calculations of expected losses. Also, the accuracy of information provided to them have to be carefully considered. Conflict of interest also emerges when a credit rating agency not only provide rating services but also securities issuance advisories.

3.2.3 New Financial Products Are Difficult to Regulate

As investors tend to exploit their benefits, they take excessive risks without really understanding the characteristics and structures embedded in these products. The excessive risk taking behaviour may endanger not only the investors but also financial stability.While new products help to deepen domestic financial markets and to allocate capital more efficiently, thereby promoting economic

growth, the dispersion of risks increases the financial system's and the economy's vulnerability to shocks.

4. The Development of New Financial Products in Selected SEACEN Economies

Over the past decade, daily turnover in the derivatives market in 33 emerging market economies (EMEs) - including some of the selected SEACEN economies - has expanded four times, to 6.2% of emerging market GDP. As stated earlier, derivatives in emerging markets are traded in almost equal proportions over the counter and on exchanges. FX derivatives is the most traded derivatives in EMEs amounting to 50% of total turnover while interest rate derivatives remain underdeveloped. FX derivatives turnover in emerging markets is becoming increasingly global, with a growing share of transactions being done cross-border and transactions in emerging market currencies increasingly taking place offshore. The largest derivatives in EMEs are located in Korea, Brazil, Hongkong SAR and Singapore. Trade, financial activities and per capita GDP are positively related to the growth of derivatives market in EMEs.

The daily average of the global foreign exchange market's turnover was recorded at US$4.0 trillion in April 2010. Foreign market activity became more global, with cross-border transaction representing 65% of trading activity in April 2010, while local transactions accounted for 35%, the lowest share since the year of 1998.

From 2001 to 2010 the number of banks, accounting for 75% of foreign exchange turnover (spot transactions, outright forwards and FX swaps), had been declining in Japan, Singapore, Hong Kong SAR. In contrast, Korea had experienced an increasing number of banks, from 14 to 16 banks, accounting for 75% of FX turnover reflecting less concentrated market than other advanced economies in Asia.

Based on the currency and instrument distribution of global foreign exchange market daily turnover in April 2010, the most actively traded instruments are varied. The foreign exchange swap is the most actively traded foreign exchange instruments for all currencies. This instrument is widely used by banks to raise liquidity across money markets for different currencies. In terms of currency distribution among Asian economies, the Hong Kong dollar currency foreign exchange swaps is the most actively traded compared to any other instruments with the same currency. Spot transaction is the most active daily transactions

in Korean won currency. For the currency of the NT dollar, Philippine peso, Indonesian rupiah, the most actively traded instrument is outright forward. Currency option transactions were declining over time from 2007-2010.

Table 2
Currency and Instruments Distribution of Global Foreign Exchange Market Turnover
(Percentage Shares of Average Daily Turnover in April 2010)

Currency	*Spot*	*Outright Forwards*	*Foreign Exchange Swaps*	*Currency Swaps*	*Options and Other Instruments*
Japanese yen	39.7	15.2	36.9	0.9	7.2
Hong Kong dollar	19.9	4.0	74.0	0.4	1.8
Korean won	35.1	29.9	27.5	1.6	5.9
Singapore dollar	27.7	7.8	59.6	0.1	4.8
New NT dollar	31.9	35.9	25.0	0.5	6.7
Thai baht	37.1	14.5	45.8	1.4	1.2
Malaysian ringgit	38.0	37.9	20.2	1.2	2.7
Chinese renmibi	23.7	41.6	19.9	0.2	14.6
Philippine peso	33.5	35.7	17.7	2.8	10.2
Indonesian rupiah	40.9	44.2	11.1	1.1	2.7
*All currencies**	*37.4*	*11.9*	*44.3*	*1.1*	*5.2*

* All currencies include any other currencies not represented in this table.
Source: BIS Trienial Central Bank Survey, Report on Global Foreign Exchange Market Activity in 2010.

The percentage share of selected Asian market turnover compared to the global foreign exchange are generally very small. In April 2010, Japan held the largest share of 6% of global foreign exchange market turnover. The share of Hong Kong SAR and Singapore was 5% respectively while Korea was 1%. The percentage share of other Asian economies such as Chinese Taipei, Thailand, Malaysia, Indonesia and Philippine were much less than 1%, rounded to 0%. These shares were very small compared to the 37% market share turnover of the United Kingdom and 18% of the United States.

Table 3
Geographical Distribution of Global Foreign Exchange Market Turnover in Selected Economies
(Daily Average in April 2010, in US$ billions and Percent)

Economy	*2001*		*2004*		*2007*		*2010*	
	Amount	*%*	*Amount*	*%*	*Amount*	*%*	*Amount*	*%*
China	...	...	5	0	9	0	20	0
Chinese Taipei	5	0	9	0	16	0	18	0
Hong Kong SAR	68	4	106	4	181	4	238	5
Indonesia	4	0	2	0	3	0	3	0
Japan	153	9	207	8	250	6	312	6
Korea	10	1	21	1	35	1	44	1
Malaysia	1	0	2	0	3	0	7	0
Philippines	1	0	1	0	2	0	5	0
Singapore	104	6	134	5	242	6	266	5
Thailand	2	0	3	0	6	0	7	0
UnitedKingdom	542	32	835	32	1483	35	1854	37
United States	273	16	499	19	745	17	904	18
*All currencies**	*1705*	*100*	*2608*	*100*	*4281*	*100*	*5056*	*100*

*All currencies include any other currencies not represented in this table.
Source: BIS Trienial Central Bank Survey, Report on Global Foreign Exchange Market Activity in 2010.

In Korea, the turn over of the FX swap market is much larger than that of the cross-currency swap market (Yu 2010). The transaction volumes of won-dollar FX swaps and won-dollar cross-currency swap market surged during 2007, mainly because of sharp increases in the orders received by Korean shipbuilders and foreign investment in Korean bonds. Foreign bank branches in Korea and foreign investors such as hedge funds are major players as suppliers of US dollars in both the FX swap market and the cross-currency swap market.

The short term FX swap market is best characterised as a funding market, while the long term cross-curency swap market is best characterised as bond portfolio investment (or bond arbitrage) market. Thus, the type of participants in these two markets and their motives for trading can be quite different. For example: exporting firms such as the Korean shipbuilders, as well as Korean investors in foreign stocks, sold a large amount of US dollar forwards to domestic banks to hedge their currency exposures. Korean banks sold these US dollar forwards to Korean branches of foreign banks, and at the same time borrowed US dollar from Korean branches of foreign banks in order to hedge currency risk. The won acquired from these FX swap transactions, were invested in short

maturity Korean Government and BOK papers by the Korean branches of foreign banks.

Kim (2009) found that there exist a structural problem of the FX funding market in Korea. Foreign bank branches in Korea have a monopoly status in supplying US dollar funds to Korean banks. As a result, foreign bank branches were able to enjoy persistent arbitrage profits. Lee (2010) points out that the systemic importance of foreign bank branches and the systemic vulnerability of domestic banks relied heavily on FX swap transactions with foreign bank branches to raise foreign currency funding until 2008. The use of derivatives – including offshore non-deliverable forwards or NDFs- to gain systhetic exposure to local currency markets may indicate that underlying exposures of non residents are considerably larger than the data on outright holding.

Derivatives markets in some Asian economies are mostly still at the very early stages of development except in Korea, Japan, Singapore and Hong Kong. The status of the infrastructure for derivatives markets varies among Asian economies with Korea at the advanced stage and Indonesia and the Philippines at a lesser extent of development. There are 5 main derivatives products traded in East Asian markets: foreign exchange products, interest rate derivatives, equity derivatives, commodity derivatives, and credit derivatives.

Table 4
The Status of Infrastructure for Derivatives Market

	Korea	*Indonesia*	*Phillippines*
Market status:			
- *Fixed income benchmarks*	Y	( )	X
- *Fixed income liquidity*	Y	X	( )
- *Equity market liquidity*	Y	( )	X
Regulatory aspects:			
- *Derivatives law*	( )	X	X
- *Securities lending*	Y	( )	X
- *Accounting standards*	( )	( )	( )
Exchanges:			
- *Clearing and settlement central counterparty*	Y	X	X
- *ISDA netting option*	Y	Y	Y
- *Demutualized exchange*	Y	X	X
Taxes:			
- *Tax harmonization*	Y	Y	X
- *Transaction cost & information technology*	Y	X	( )
Investor base and non-bank financial institutions	Y	( )	( )
Number of best practice elements	10	3	1

Source: Gosh (2006)
Note: y denotes best practice; ( ) denotes progress on existing deficiencies; and x denotes major problems. Fixed income liquidity indicators and benchmarks indicate weakness in Indonesia and the Phillippines; Equity market indicators reveal thin markets in the Phillippines and Indonesia.

The development of new financial products in the Asian emerging markets vary according to the depth of its domestic financial market and the degree of openness to the global financial market. There are 5 main derivatives products traded in East Asian markets such as foreign exchange products, interest rate derivatives, equity derivatives, commodity derivatives and credit derivatives. New financial products in the Korean and Chinese Taipei market are more advanced while the Philippines and Indonesia are experiencing a growing market. Conversely, Sri Lanka, Nepal, Myanmar and Cambodia are still at a very early stage of development.

Table 5
New Financial Products in Selected Asian Economies

	Korea	*China Taipei*	*Indonesia*	*Phillipines*	*Sri Lanka*	*Nepal*	*Myanmar*	*Cambodia*
Interest Rate:								
-Rate Swaps	√	√	√	√	√	-	-	-
-Caps&Floors	√	√	√	√	-	-	-	-
-Swaptions	√	√	√	√	-	-	-	-
-FRA	√	√	√	√	-	-	-	-
CurrencyDerivatives:								
-Currency Swaps	√	√	√	√	√	-	-	-
-Forward FX	√	√	√	√	√	-	-	-
-Currency Options	√	√	√	√	√	-	-	-
Credit Derivatives:	√	√	√	√	√	-	-	-
Commodities Derivatives	√	√	√	√	√	-	-	-
Equity Derivatives	√	√	√	√	-	-	-	-

This section describes the in detail the new financial products currently available and the survey results in Korea, Chinese Taipei, Philippines, Indonesia, Sri Lanka, Nepal, Myanmar and Cambodia.The survey was conducted using a structured questionnaire designed for a comprehensive understanding of available new financial instruments and market perception on the effectiveness of current regulations. The respondent of the survey are the banks and other financial institutions which issue and/or sell new financial products, and have exposures or investments in new financial products.

<table>
<tr><td colspan="2">1. Korea</td></tr>
<tr><td colspan="2">Besides the market for forwards, futures, swaps and options, Korea has developed (a) futures and options markets associated with stock trades, (b) futures and swap markets associated with interest trades, and (c) derivatives markets related with currencies. In addition, there are also many (d) customized non-standard derivatives products, which combine standard derivatives with conventional financial products such as deposits and bonds.</td></tr>
<tr><td colspan="2">Nonstandard NFP: small in terms of volume but have various kind of NFP. They are classified into: (i) Derivatives-linked products, (ii) Nonstandard derivatives products and (iii) Credit derivatives products.
The volume of standard derivatives and non standard NFP trading is growing rapidly in Korea, although it retreated a bit after the global financial crisis.</td></tr>
<tr><td>Derivatives-Linked Products combine option derivatives with conventional deposits or bond investments.</td><td>a) Equity-Linked Securities (ELSs)
● It combines stock options on the composite index or the selected stock index with a bond investment. ELSs have various structures in relation to guaranteed levels of principal, return targets, maturity, early redemption, etc.
● Trades are featured in the form of “back-to-back” trades with overseas financial institutions. Domestic securities companies resell ELSs which have the same return structures as the overseas ELSs. To resell, securities companies invest all ELS funds into overseas ELSs (“fully funded swaps,”) or swap the returns of overseas ELSs with their returns from domestic bond investments (“unfunded swaps”).
● The return structures are the Knock-out, the Bull Spread, the Digital,and the Reverse Convertible.
● The outstanding of ELS reached its peak in 2008 was 25.1 KRW trillion, after the crisis was declining to 16.9 KRW trillion in 2010.</td></tr>
<tr><td></td><td>b) Equity-Linked Warrants (ELWs)
● They are similar to call or put options, but take a security form by which they are listed on the stock exchange. The liquidity provider (LP), which is another proprietary trading securities company, buys ELW’s in bulk and sells them to individual investors.</td></tr>
</table>

	● ELWs involving FX mostly also involve back-to-back hedging with foreign financial institutions. Due to the large leverage effect, the current ELW trades in Korea are growing the most rapidly in the world. ● After the global financial crisis, ELW trading in Korea grew very fast and in 2009 reached its peak amounting to 115.6 KRW trillion comparing to 20.7 KRW trillion in 2006. This shows that individual investors, expecting a stock price rise, wanted to take advantage of the leverage effects of ELWs.
	c) Derivatives-Linked Securities (DLSs) ● ***DLSs*** band securities with derivatives on a basket index which contains a stock price, an interest rate, an exchange rate, a credit and a commodity price-- or one index of any of them other than stock prices. ● DLSs are not very liquid in Korea yet, and the structures of the DLSs traded are similar to those of unfunded ELSs.
	d) Equity-Linked Deposit (ELDs) are not very liquid.
Nonstandard Derivatives Products -bind multiple derivatives or modify the standard derivatives products. - designed to have caps/floors, links to other financial products,or certain structures related to the returns on trades.	***a) Currency-related Options*** ● A wide variety of different conditionsgiven their great popularity. ● The types used and well known in Korea are range forward, target forward, enhanced target forward, target redemption forward, caterpillar, barrier option (KI, KO and KIKO), seagull, Asian option, look-back option, compound option, dual currency structured forward, pivot forward and snowball forward. ● Currency related options are the most popular instruments for FX hedging demanded by export companies. ● In 2007 KIKOs were used by many export companies to hedge efficiently against expected appreciation of the Korean won. A KIKO has an upper exchange rate barrier, inside of which companies can gain profits at a contracted exchange rate but beyond which they suffer enormous losses. ● In 2008, KIKOs devastated many companies under the influence of the global financial crisis. Afterward, trading in currency-related options fell sharply i.e. the substantial fall in OTC FX options trades in 2009.
	b) Currency-Related Swaps (CRS) ● CRS are based on CRS or FX swaps, and put conditions or links on them. The products traded are KTB index swaps, FX-linked CRS, structured CRS and quanto CRS. ● The most liquid is the KTB index swaps, which are demanded mostly by the domestic branches of foreign banks in order to earn interest arbitrage profits. The KTB index swaps combine CDS conditions on KTBs using CRS or FX swaps. These swaps are the same as CRS or FX swaps in normal times, but when a credit event happens the contract terminates by swapping of the currencies for each other and the seller's compensating the buyer for his KTB investment losses.
	c) Other products: ● ***The interest rate-related swaps*** include capped swaps, KO swaps, range accrual swaps, quanto swaps, cancellable swaps and basket interest differential swaps are traded in Korea but not very actively. ● ***The interest-related options*** include cap/floor straddles and swaption straddles. ● ***Commodity-related products*** include commodity fixed price swaps (copper), stepped consumer collars (gas and oil), and forwards+options (grain).

Credit Derivatives Products	Credit derivative trading is small in volume but it has been growing rapidly. The rapid growth has benefited from the low interest rate trend in Korea. Domestic financial institutions contrive to trade credit derivatives to pursue higher returns. The Korean government put off deregulation of the credit derivatives trade for fear of big financial institution losses. In 2005, the legal foundation for credit derivatives began to be set up and in 2006 the residents' credit derivatives trades with nonresidents liberalized, to foster Seoul as a "Northeast Asian Financial Hub" and to support industries' overseas activities. On top of the late establishment of the market, the global financial crisis shrank the demand for these trades, by revealing the negative effects of credit derivatives on financial stability. (a) ***Credit Default Swaps:*** ● CDS trades in Korea are led by foreign financial institutions and on a US dollar basis. Domestic financial institutions generally sell protections designed by foreign financial institutions. ● CDSs are traded mostly by domestic banks, which sell protections to Korean, American and European industries. ● Increasing trend of CDS, the volume amounted to US$4.37 billion, more than five times its volume in 2007. (b) ***Total Return Swaps (TRS)*** ● TRS are mostly used by domestic branches of foreign banks, to hedge government bond investment risk and to realize interest rate arbitrage gains. (c) ***Credit Link Notes (CLNs) and synthetic Credit Debt Obligations (CDOs)*** ● CLNs are combination of swaps and bonds. ● traded by insurance companies, by selling protection on the credit risks of Korean and multinational industries and ABSs.
2. Chinese Taipei	
The Derivative Financial Products: *interest rate, foreign exchange rate, equity-linked, commodity and credit derivatives.*	The overall transaction in November 2010 was US$333 billion consisting of: ● FX derivatives (76%) ● Interest rate derivatives (19%) ● the equity-linked (4%), ● commodity derivatives (0,5%) ● credit derivatives (0,1%). NTD related derivatives transactions (44%) and the foreign currency transaction (56%). In September 2010, the outstanding on derivatives was 53.32 trillion NTD: ● 99% of these transactions are made through OTC market and 1% through the exchange traded. ● 62% consist of the interest rate derivatives ● 37% consist of exchange rate derivatives. The banking industry is the major participant and the CBC is the administrative authority of the banks. In November 2010, domestic banks accounts for 72% of the overall transaction volume and foreign banks accounts for 28%. Majority of the total transaction volume held by 5 banks.
3. Philippines	
Derivatives Transactions *- foreign exchange (FX) contracts -currency forwards,*	Based on a survey responses from 28 universal and commercial banks: ● derivatives transactions existed as early as the 80s. ● transaction volume reached its peak in 2008; US$86,24 billion as of June 2010. ● ***Foreign exchange (FX) contracts*** dominated banks' derivative

- foreign currency swaps, *- interest rate swaps* *- equity derivatives*	transactions due to the relatively more liquid and active FX spot market. A benchmark yield curve is not available, FX forwards are being priced based on the rates implied by FX swap transactions. ● ***Interest rate contracts***: the volume was low due to the infancy of the fixed income market. ● ***Equity derivatives***: the market has not improved well. ● Only small number of banks become major players. Foreign banks play a greater role in stand-alone derivative transactions, while domestic banks' represents an increasing presence in the market. ● ***Counterpartiesof domestic banks*** are Philippine-based banks for *foreign exchange forward* and swap transactions and an increasing number of retail clients. ● ***Counterparties of foreign banks*** include other units under their parent bank. All transactions are conducted over-the-counter (OTC) since there is no local exchange yet. The supporting documentation would differ depend on their nature: ● International Swaps and Derivatives Association (ISDA) agreements for transactions involve the exchange of the Philippine peso against foreign currency, or the counterparty is a foreign counterparty. ● ***Foreign exchange forward*** transactions are covered by Master Agreements. ● ***Interest rate swaps***are covered by agreements on a per transaction basis.
Structured Products	● First appeared in 2003, but most of the exposures were acquired in 2005 onwards, after the Banko Sentral of the Phillipines (BSP) issued initial guidelines covering banks' investments in CLNs, structured products, and securitization structures. ● The highest volume of transaction was US$ 3.34 billion or 1,5% of the total assets of the universal and commercial banks. Due to the crisis, structured products transaction volume was declining and as of June 2010 it reached US$1.8 billion. ● Prior to 2008, the BSP had put in place supervisory guidelines as follows: Investments were limited to principal protected structures whose revenue streams are linked to interest rate indices and/or foreign exchange rates other than those that involve the Philippine Peso. Issuers must be rated and meet a minimum threshold. Total investments should not exceed 20% of the bank's total investment portfolio. Risk weights were imposed a certain premium over what otherwise would be the credit rating of the issuer.
Credit-linked Notes (CLNs)	● CLNs has the majority share of the structured products. ● CLNs issued by off-shore issuers and held in the books of domestic banks. These products generally are issued or sold by foreign banks, some of them were originated domestically and the others are refered by the foreign parent banks/affiliates/co-branches to its client domestic banks. ● Supervisory guidelines: Universal and commercial banks were allowed to invest in CLNs if they hold an expanded derivatives authority ("EDA") as they were considered to have more sophisticated ability to manage their risk. Without EDA, banks were only allowed to invest in CLNs with one underlying credit from the Republic of the Philippines. ● Issuers must be rated and meet a minimum threshold. ● Total investments should not exceed 20% of the bank's total investment portfolio.

	● CLNs' risk weights depended upon the quality of the issuer and of the underlying credit.
The Impact of Financial Crisis	● Prior to 2008, banks with ample liquidity had invested in structured products that generated higher yields than Philippine debt papers and lending. ● From 2008 to 2009, the notional amount of foreign banks' transactions in stand alone derivatives fell considerably and banks also had some problems with derivatives through structured products. ● When the crisis unfolded, some banks had exposures to Lehman Brothers as well as other distressed institutions through structured products. The total exposures to Lehman alone were estimated to be between 0.3-0.4% of total assets and estimated exposures to "at-risk financial institutions" were estimated to be at 1% of total assets. ● Regulation was not able to help banks completely avoid losses arising from the weaknesses of the issuers of the structured products, the rules may have given sufficient incentives to reduce the exposures that banks incurred in the first place through the limits on holdings and the higher capital requirements.
4. Indonesia	
Derivative Transactions	● Banks are allowed to do derivative transactions in which the values are derived from foreign exchange and interest rate. Derivative transactions consist of forward, swap, option, currency futures, synthetics derivative, interest rate swap (IRS), interest rate option, FRAs, interest rate future, interest rate structured products, cross currency swap and asset backed securities (ABS). ● According to Bank Indonesia statistics, the outstanding derivative transactions as of December 2010 was Rp 51 billion ● ABS market has not been developed in Indonesia, only a small number of banks were involved in this product. In 2009, a state bank issued the first ABS amounting to Rp 111 billions. As of December 2010, the volume of ABS reached Rp 750 billions and in 2011 it reached Rp 2 trillion.
NFP - *structured products,* - *hybrid products,* - *credit derivatives*	● The development of new financial products is still in its early stage. ● Due to the impact of the global financial crisis, structured products which are the most popular type of NFP in Indonesia, experienced a declining activities since the year of 2008. ● As of December 2010, only very small numbers of banks have activities related to structured products, hybrid products, credit derivatives and asset back securities. In addition, a larger number of banks sell mutual funds and bancassurance to its customers in substantial amounts.
The Impact of the Crisis	● In light of the impacts of 2008 global financial crisis, Bank Indonesia, the central bank of Indonesia, issued prudential regulations on issuance, marketing, distribution and risk management of structured products. ● To prevent speculative transactions and excessive volatility in the exchange rate, Bank Indonesia prohibited banks from doing foreign exchange for rupiah transactions whenever the transactions are related to structured products. ● All of these regulations aimed to strengthen the market conduct of structured products and to increase consumer protection, however, these regulations in fact partly discouraged further development of the structured product market in Indonesia. ● From the period of December 2008 to December 2010, 21 banks reported sales of structured products amounting to IDR 126 trillion. The highest volume of structured product transactions

	was in December 2008 which reached IDR 35 trillion involving 17 banks. ● These activities gradually declined after the global financial crisis and the issuance of BI regulation regarding Structured Products. Banks which do not comply with the new regulations, started to reduce their activities in structured products. As a result, there was a significant decline, both in terms of the number of banks and the transaction volume. There were only 8 banks participating in structured product transactions as of December 2010.
The Survey Results	● The survey shows that NFP is dominated by structured products and mutual funds and its derivatives. Most players engage in active role both as issuers and sellers, only few of them own exposures/investments in NFP. ✓ 26 banks or 21% of the total number of banks in Indonesia involve in NFP transactions. ✓ 22 institutions or 12% of the total number of securities companies/financial investment entities in Indonesia have activities related to NFP. They plan to expand their activities in NFP particularly structured products, asset backed securities, mutual funds and their products variants. The reasons of expanding their business are due to high market demand and players competencies.
Concern on Regulations	● Most of NFP players (issuers, sellers, investors) view that regulations in place are moderately effective and expect improvement particularly in the sense of fostering market development and protecting consumers from excessive risks embedded in the NFP. ● The sellers' perception of the sufficiency of the existing regulation: securities companies perceive that regulations on structured products, asset backed securities, and mutual funds are effective.
Cross Border Coordination	● Most of issuers, sellers and investors of NFP recommend that cross border cooperation and coordination to support supervision is deemed important particularly to minimize excessive risks emerging from new financial products development or speculative actions, on dispute mediation, underlying assets, to prevent money laundering, to foster information sharing, to help with dispute mediation and in proving the legality of the products, to minimize the impact of NFP risk to financial stability.
Plan to Expand Activities Related to NFP	In December 2010 banks plan to expand their activities related to NFP: ● banks plan to issue credit derivatives in 2011 and 2012; ● banks invested in credit derivatives products.; ● 1 bank reported a small number of transaction of Credit Default Swap (CDS) corporation; ● 1 foreign bank issued hybrid products; ● 2 foreign banks registered as selling agents of hybrid products; ● 1 state bank issued an Asset Backed Securities (ABS)
Survey Results The View of NFP Issuer	● Issuing banks: structured products are the most popular type of NFP, followed by credit derivatives due to high demand. ● Demand for ABS asset and hybrid products are at medium level. ● Financial investment entities: mutual fund is the most desired to be issued followed by structured products due to its high demand.
Expansion Plans	● 20 banks plan to expand their current activities in NFP in terms of product variants related with structured products due to high market demand and easiness in offering the products. ● Less number of banks consider their main competence and risk management as their reasons for expansion. ● 19 securities companies plan to expand their activities in mutual

	fund market and other product variants due to high market demand and competencies.
Challenges	● Issuer banks view that regulation challenges and inadequate infrastructures as the potential constraints to expand their NFP activities, ● Securities companies see not only limitation of infrastructure but also limitation of its capital to cover the risk from issuing NFP and its employees competencies.
Respondents' Views on Existing Regulation	● In respondents' view, regulation challenges faced by banks are the length of time needed to complete the approval procedure for issuing structured product, tax regulations, and the regulations on customer criterion. Other challenges for securities companies are the impact of regulation changes, the difficulties in managing the timing of product launching, and the limited number of eligible customers. ● According to banks, regulations on structured product and hybrid products are considered to be less effective and too tight. ● Smaller number of banks state that regulations for credit derivatives have been effective, as well as in the case of bancassurance and mutual fund. ● Banks and securities companies perceive the current regulation of NFP as sufficient, some of the regulations discourages them to issuing more NFPs. Improvements in some areas are suggested to support market development in the future.
The View of Seller/Selling Agents of NFP	● 26 banks and securities companies as seller/selling agent of NFPs i.e. structured products, asset backed securities, bancassurance and mutual fund. ● The demand for structured products, credit derivatives and asset backed securities are at the medium level. ● Customers' demand for bancassurance and mutual fund are high.
Plan to Expand	● Half of the total number of securities companies do not plan to expand their current NFP and the other half plan to expand their activities in credit derivatives. ● The reasons for expanding their products activities and variants include market demand, ease in offering the products, competencies and return enhancement.
Challenges	● Regulation challenges and high competition in the market may become constraints for bank expansion in terms of NFP. ● The biggest constraints for securities companies are limited resources and infrastructures, pricing and risk measurements. Difficulties in product management, competencies and infrastructures are the challenges faced by banks.
The Views of NFP Investors	● 8 banks and 3 securities companies have exposures in NFP. ● Banks view that investing in structured product and credit derivatives are atractive.
Expansion Plans	● They plan to expand investment in structured products because of the products' high profits, easy access and good risk management.
Challenges Regulation Issues	● Securities companies consider the limited capital, complexity of the products and risk as the constraints in expanding their products. ● Regulations on products' approval process and the lack of specific regulation are the biggest challenge for investors. ● Regulations to safeguard structured products and hybrid products transactions are too tight and less effective. ● Effective regulations are perceived to be in place for structured products, credit derivatives and mutual fund. ● Most regulations are effective and encourage banks to invest more

	in NFP in the future, however less number of banks thought that regulations had discouraged them from investing more in NFP. ● Banks expect improvement on regulations in the future.
5. Sri Lanka	
Derivatives in Foreign Exchange Market	● Market for derivatives products still in its early stages. Instruments consist of: ● Forward in currency and interest rates; ● Swaps in currency and interest rates; ● Options in currency and commodities. ● Interests Rate Swaps and Forwards Rate ● Structured Products ● Derivatives are traded in OTC and used for hedging purposes. ● Interests Rate Swaps and Forwards Rate agreements are available in a very small magnitude. ● Only one primary dealer has exposure in Structured Products. ● Market for structured products operate on ad-hoc basis with lack of transparency and the absence of pricing method. ● No transaction on Futures.
Derivatives in the Government Securities Market	● There are hardly any derivative transactions related to government securities and no effective hedging mechanism. ● The repo market is very liquid and reverse repos are available.
Securitization	● Undertaken in the home mortgage and automobile sectors backed by lease/higher purchase receivables. ● The largest transactions was Rs. 1.4 billion (in October 2010) through the issuance of a hire purchase and lease receivables securitization. A premier investment bank acted as the placement agent and a LCB as the Trustee. ● Ownership of the securitized asset is not transferred from the originator.
Forward Sales Contract (FSC) in the Commodity Market	● Under the commodities hedging, the CBSL has introduced the Forward Sale Contract (FSC) in 1999. ● To help hedge against price fluctuations in the future market. Agricultural product is traded at a pre-determined reasonable price on a certain future date. ● Banks and certain organizations perform as facilitators. ● The underlying crops are maize, soya bean, kurakkan, black gram, tobacco, gherkins and ginger. ● true derivatives transactions cannot be observed. ● ***Commodity Option***: a public enterprise in the energy sector entered into two hedging arrangements with a private bank using the Zero cost collar mechanismfor the first time in February 2007. It entered into six hedging arrangements during the year to mitigate the oil price volatility in the international market.
FX Swaps as Monetary Policy Instrument	● Introduced by the CBSL in November 2009. ● Under the FX Swaps, one currency is purchased against another at an initial date and that transaction is reversed on a future date at a mutually agreed specified rate. ● 'Sell-buy FX Swaps'to absorb excess market liquidity, 'buy-sell FX Swaps' to inject liquidity to the market. ● The collateral of the transaction is the foreign currency i.e., US $. ● Transactions are carried out between commercial banks and the CBSL, on an auction basis. Bids are accepted in US $ and in swap points. ● The total amount sell-buy FX Swaps during 2010 was US $ 2,077 million (Rs. 235.5 billion).
The Survey Results Overall Status of NFP	● The total notional outstanding of derivatives increased from Rs. 112.7 billion at end 2009 to Rs. 129.3 billion in August 2010. ● The trend generally follows an upward movement since 2009 due

	to the increased contribution of Structured Products. ● Commercial banks continued to dominate the industry, contributing more than 95% of the total outstanding since 2008. Banks predominantly involved in selling NFP compared to issuing and having exposures in these instruments. ● Structured products and hybrid products held by the non-bank financial institutions since 2008 dropped substantially to Rs. 1,388 million in August 2010. There is a shifting of derivatives holdings from non-bank financial sector to the commercial banking sector. ● Sellers of structured products have been dominating the market since early 2008, three times of investment in structured products. The decline in investment of SP may be attributable to the loss of investor confidence on account of recent economic turbulence. ● The nominal outstanding values of ABS and Bancassurances in absolute terms registered an upward movement in the recent years. ● The most common instruments within the Structured Products are the Forwards (87%) and Swaps (10%).The notional outstanding values of NFP accounted for 2.34 % of GDP at end of 2009 compare to 3.41% in 2007. ● NFP outstanding as a percentage of total assets of the major financial institutions recording 2.01% at end 2009 compare to 1.38% in 2008.
The Survey Results	Respondents: 26 banks and financial institutions, 58% respondents involved in derivative transactions, 42% have never been involved in any derivatives transactions and do not have any intention to issue, sell or invest in derivatives instruments in the near future
Issuing or Planning to Issue NFP	There is potential for further development of the derivatives market. ● Only commercial banks issue NFP, they started to issue Structured Products during 2004 to 2007. ● 50% of banks issue Structured Products (Forwards, FX Options, and Interest Rate and Currency Swaps). ● 50% of banks issue ABS, Bancassurance and USD/LKR. ● The notional outstanding of NFP issuance in August 2010 were Rs. 3.09 billion or 2.4% of total outstanding held by banks. ● There is no hybrid product, credit derivatives or mutual funds.
Challenges	● Management of these products is challenged by available infrastructure of supporting systems, measurement of risks and lack of staff competencies on new products. ● Several market players do not have necessary systems in place to assess or analyze the movement of these products or they do not have competent staff to execute dealings effectively.
Prospects	● Majority of banks plan to continue issuing Structured Products and ABS. ● Market demand and the ease of offering these products motivate banks for further expansion. ● Banks plan to enhance product range to increase return. ● Inadequacy of capital and limitation in resources and infrastructure are the core obstacles to further expansion. ● Cross border supervision is imperative for future expansion of the industry.
Regulations	● Existing regulatory framework is relatively effective in preventing and reducing risks on financial system instability. ● Need improvement on regulations and guidelines in line with international accounting standards and industry-wise consistent mark-to-market practices.
Selling or Planning to Sell NFP	● 25% of commercial banks and a primary dealer in government securities are selling Structured Products.

	● Two banks have first sold Structured Products in 2002 while the others commenced their first sale between 2005 and 2008. ● The most popular products sold are Forward contracts, Interest Rate Swaps, Option Collar. Sales outstanding was Rs. 92 billion or 71% of the notional outstanding in August 2010. ● A state bank sold WTI TARN, a new instrument for commodity hedging in 2008. ● None of the institutions sold any Hybrid product, Credit derivatives or Mutual Fund. ● Only few banks sold ABS and Bancassurance.
Prospects	● Sellers plan to expand their portfolio with Structured Products (80%) and ABS (60%). ● Market demand is the driving factor in enhancing their future supply. Other factors: higher returns and ease of offering these products to the market. ● None of the respondents expect to use these derivatives for risk management purposes. ● None of the reported institutions has any preference for further expanding Hybrid products, Credit derivatives or Bancassurance.
Challenges	● The demand for derivatives products is relatively low. ● Inadequate infrastructure of supporting systems (especially the software systems), measuring risks and staff competencies in operating these products.
Regulations	● Current regulations related to new financial products are effective and sufficient in preventing and reducing risk. ● The requirement of adjusting regulations and guidelines to address the issues currently observed in the industry. ● Cross border coordination to support supervision is extremely important as financial institutions are externally exposed to shocks in the global environment.
Investments in or Exposure to NFP	● All commercial banks, finance and leasing companies, and a primary dealer in government securities have exposure in NFP. ● Structured Products dominate the market followed by ABS and Bancassurances. ● A state bank and a leasing company have exposures to Hybrid products.
	● None of the institutions invest in Credit derivatives or Mutual Funds.
Prospects	● Investing institutions plan to expand their current portfolio with Structured Products (87%)and ABS (75%). ● The preference for Hybrid products, Credit derivatives and Bancassurance, especially the Mutual Funds is limited. ● Further expansion of these products greatly depends on the expected higher returns. ● In future plans, the possibility of expanding both the number as well as the volume of the product will be considered.
Players' Concerns on Current Regulations	● Investing institutions (75%) view that existing regulations are the major constraint for expansion. ● 62% of institutions observe that current regulations discourage them from increasing their investments. ● An adjustment on regulations is needed. ● Immediate requirement of an Exchange. ● Cross border coordination to support supervision is important.
6. Nepal	
Survey Results of NFP	● Respondents 15 commercial banks: ● Most of the established and large sized sample banks having the potential to deal in NFP as well as some newly established banks with latest technologies and high degree of sophistication..

	● The market for NFP is still in the beginning stage of development. With liberalization of Nepalese financial service sector during early 1990s, commercial banks started dealing in "plain vanilla" FX derivative instruments mainly forward exchange contractd in relatively small volumes. ● In 2010, 11 banks or 42% of total number of banks provided forward covers in foreign exchanges to their prime costumers. ● Importers, exporters and remittance companies which frequently have open exposures in FX during normal course of their business use this product. ● Once the bank is exposed to an open position by virtue of a contract entered into with its customer, it enters into a contract with another party taking an opposite position so that the risk from the currency fluctuation is eliminated. (a back to back model). ● 11 banks have exposures in FX forward contracts in 2010. The ratio of outstanding forward contracts to total off balance sheet exposure ratio is very small from 4% in 2007 to 1.61% in 2010. ● Institutions having exposures in this product count for less than 50% of the total number. Volume of dealing is very insignificant both in terms of amount and its proportion to total off balance sheet exposures of banking system.This product does not pose any threat to the stability of financial system. ● No credit derivative instruments. ● Some newly established banks do not have any plan to trade in NFP.
Bankassurance	● An arrangement to sell insurance products through banks customers. ● The market is expected to grow rapidly as currently there are nearly equal number of commercial banks and insurance companies in the market.
Commodities Derivatives Market	● The transactions started with the establishment of the Commodities and Metal Exchange Nepal Limited in December 2006. ● The commodities traded are cash crops, food items, oils, metal and metal products. ● The transactions are carried out in the form of spot market, weekly market, forward market and future market. ● Three companies involved in commodities derivatives transactions. ● Securities Exchange Board of Nepal (SEBON) is responsible for regulating and supervising the activities of these companies.
7. Myanmar	
Government Treasury Bond Market	● On behalf of the government, on 1st December 1993, the Central Bank of Myanmar issued 3-year and 5-year government treasury bonds. On 1st January 2010, the 2-year treasury bond was introduced. ● The three types of government treasury bonds are 2-year, 3-year and 5-year, in denomination of ten thousand, hundred thousand, one million and ten million kyats in local currency. ● 15 percent tax on interest income for all fixed income securities and dividend has been exempted as of 1st July 1995. ● The current interest rates for treasury bonds are 10.5 percent for 2-year bond, 11 percent for 3-year bond and 11.5 percent for 5-year bond respectively. ● The outstanding volume of bond stood about 1.7% of GDP in March 2009. ● The sale volume of bonds contribute approximately 14% of budget deficit.

8. Cambodia	
Financial Market and Instruments	● Money market does not exist yet. ● Capital market is in the process of being established. ● Foreign exchange transactions conducted only by one bank out of 33 banks. ● Few of bond transactions existed in the past.
The Survey Results	● 2 banks plan to launch interest rate swap and cross curency swap in 2011. ● Obstacles: limited resources and infrastructure, limited software system and staff competencies. ● Players concern on current regulation: less efective, discourage banks to introduce NFP, need to be adjusted.
The Prospect	● Type of products: structured products, hybrid product, bancassurance, mutual fund, interest rate swap, cross currency swap. ● Potential high demand for structured products, hybrid product, bancassurance, mutual fund, ● High return, in line with comptency and market demand. ● Cross border coordination to support supervision is important.

5. The Challenges for Central Banks

An important factor to be addressed for the successful launch of new financial products is overcoming the psychological barriers that market participants may have towards them. This often stems from unfamiliarity and their seeming complexity. The central banks can cooperate with leading banks/financial investment entities to provide programs to educate and familiarize market participants with such new products. This is a necessary prerequisite to the implementation of new financial products.

Also important for the development of the securitized debt market is government willingness to develop their debt domestic market. In many developing economies, there are built in barriers to such developments. Alles (2001) states that the demand for private debt securities may be hampered because large institutional investors with government sponsorship such as provident funds and insurance companies are directed by the government to invest predominantly in debt instruments issued by the government treasury. This is often the case where government borrows heavily from the domestic debt market to finance fiscal deficits, crowding out private debt. Such policies would stifle competition and market growth, increasing market inefficiency. In the long run, such policies hurt both issuers and investors.

In the case of emerging markets, the development of the securitized debt market must follow the establishment and development of primary and secondary markets for trading of more basic financial instruments such as government bills and bonds. In some of emerging economies, central banks may use these instruments in the secondary market as monetary instruments, thereby fostering the development of the secondary market for goverment bills and bonds. A well developed and liquid government bond secondary market is generally instrumental for the development of new financial innovations such as credit derivatives and its variants.The transparency and liquidity of the bond market are also vital factors for the success of derivative markets. Accordingly, liquidity in plain vanilla derivatives markets is likely to drive the innovation of new financial products. Central banks can contribute by educating investors to the risk return characteristics of such basic instruments before they are exposed to instruments with added risk characteristics such as corporate bonds and assets backed securities.

The central banks can provide a yield curve for relatively risk free instruments, such as the medium term central bank bill, to serve as a benchmark for pricing and determining the yield for more risky instruments in the market.

An active credit derivative market can improve financial system stability and efficiency by pricing and credit risk diversification. It can be a tool to securitise credit risk, contributing to the development of the bond market. The potential moral hazard of the protecting buyers and the difficulty in monitoring the activities would also need to be considered.

Obtaining a satisfactory credit rating for the securitized debt sold in the market is a key success in the asset securitization process. The higher the credit quality, the lower will be the yield and the more successful will be the issue. An investment grade quality credit rating will be favorably viewed by investment funds or institutional investors.

In light of the severe impacts of 2008 global financial crisis in more advanced markets, partly due to inadequate regulation on structured products, central banks in emerging market economies generally put in place prudential regulations on issuance, marketing, distribution and risk management of new financial products. Central banks also implemented regulations to prevent speculative transactions and excessive volatilty in the exchange rate. In general, all of these regulations aimed at strengthening the market conduct of new financial products and to increase consumer protection. However, these regulations in fact partly discouraged further development of the new financial product market. Authorities need to improve existing regulations to foster the markets development and protect consumers from excessive risks embedded in the new financial products. Financial institutions including banks need to be governed by prudential regulations that are put in place to ensure that bank depositors as well as bank creditors are not exposed to undue risks. In this sense, prudential regulations must be implemented to ensure that banks do not run into a situation of illiquidity or insolvency that can potentially trigger a banking sector collapse and an economic crisis.

Central banks also need to facilitate the establishment of necessary infrastrutures to support the development of new financial products, including fixed income benchmark, derivatives law, and the clearing and settlement central counterparty.

Central banks also need to facilitate cross border cooperation and coordination to support supervision to minimize excessive risks emerging from the development of new financial products, aid in dispute mediation, clarify underlying assets, and mitigate excessive risk/speculative actions.

6. Conclusion and Policy Implications

New financial products can be used either for risk hedging purposes or for speculative transactions. The complexity of the products make them difficult to understand by most market participants leading to asymmetric information. To minimise information asymmetry, the markets must be efficient and transparent so that risks can be transferred to investors who are fully aware and informed. Reporting and disclosure to market participants as well as regulators are critical for enhancing market transparency.

Most markets in Asian economies are still at the very early stage of development except for Korea, Japan, Singapore and Hong Kong. The status of the development and availability of infrastructure for derivative markets varies among Asian economies with Korea and Chinese Taipei at the advanced stage, Indonesia and the Philippines at medium stage of development, while Sri Lanka, Nepal, Myanmar and Cambodia are at the very early stage of development. There are at least 5 main derivatives products traded in East Asian markets - foreign exchange products, interest rate derivatives, equity derivatives, commodity derivatives, and credit derivatives.

The survey conducted on banks and financial institutions (players) for this study shows the existence of new financial products in the markets. Most market players are engaged actively as both issuers and sellers. They also have plans to expand their activities in new financial products and their variants because of expected market demand and player competencies. Most players view that regulations in place are moderately effective and that regulations should be improved upon to foster market development. Respondents view that cross border cooperation and coordination to support supervision are important particularly to minimize excessive risks emerging from new financial product development. Cross border cooperation and coordination in the area of supervision are important especially for dispute mediation, underlying assets, and risk/ speculative activities.

Due to the impact of global financial crisis, the notional amounts of new financial products such as derivatives and structured products experienced a decline since the year of 2008. In light of the severe impact of the 2008 global financial crisis, partly due to insufficient regulations on structured products, central banks generally put in place prudential regulations to improve risk management and strengthen market conduct of structured products as well as to increase consumer protection. In one economy however, these regulations in fact partly discouraged further development of the structured product market.

Nonetheless, central banks need to track the trade mechanisms of new financial products and their roles in the financial markets. Central banks need to closely coordinate policies on new financial products and share information with the other financial authorities, based upon its understanding of trades in new financial product and their linkage effects.

Financial innovations pose new challenges for central banks in terms of regulation particularly in the area of sound risk management, infrastructures and financial stability. There must be proper controls and regulations in place to prevent the products from being used for speculation purposes. However, there is a fine line to be drawn between too much regulations or too little regulations as both have dire consequences. Too much regulations will stifle the development of the market while the lack of regulations will lead to inadequate protection for investors and lack of confidence in the market. The main aim of regulations is to protect the interests of investors, infuse confidence in the market, prevent unfair practices, promote smooth functioning of the market and prevent undue speculation. A balanced and optimal amount of regulations promote the development of a healthy and efficient market. More importantly, there must be a fair degree of self-regulation on the compliance with the rules of the game, such as disclosures of the covered positions, open positions, volume of trade and losses and gains, etc., that would help the market to grow in the right direction.

There must, therefore, be adjustments made to the institutional and regulatory frameworks. This is important to accommodate the expansion of activities in a safe manner. Moreover, the regulatory environment must be clear with respect to jurisdictions and authorities. Authorities must be able to monitor transactions and where the risks in the system lie, and there must be mechanisms to aid in reducing the risk that the system bears.

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Chapter 2

NEW FINANCIAL PRODUCTS AND CHALLENGES FOR CAMBODIA

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1. Introduction

Cambodia's financial institutions are not much developed like their counterparts in the developed countries but its financial system is integrated to the world. The development of the financial sector in Cambodia has faced many challenges since it started in 1954. Because of the civil war, the financial system was totally destroyed during the Pol Pot regime. In the early 1980s, the financial system was rebuilt from the ground up. From 1979 until 1991, the banking system was a one-tier system where the central bank performed the functions as the monetary authority, cashier of the government and provider of banking services to the general public (NBC, 2005)., The economy of Cambodia was transformed from a planned economy to a market economy in late 1991, and the banking system was converted from a one-tier system to a two-tier system where the central bank serves as the monetary authority, but no longer provides banking services to the public.

After the economy was opened to the world, foreign investors came to invest in Cambodia, including investment in the financial sector. Private Commercial Banks were allowed to operate as commercial banks. The National Parliament passed the law on banking and financial institutions in November 1999 which required the commercial banks to have a higher capital base, approximately US$13 million. Based on the banking law, the central bank had launched the bank restructuring campaign. As of 2000, 31 private commercial banks operated within the country. However, there were some weaknesses within the banking system that required correction. As the result, 16 of the commercial banks were liquidated.

The banking sector in Cambodia has been strengthened with the completion of the bank restructuring, with 17 banks and 3 licensed and 27 registered Microfinance Institutions (MFIs) remaining after the restructuring. The banking

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system expanded to 33 banks and 20 licensed and 26 registered MFIs as of December 2009 (see Figure 1). The reason for this rapid growth is due to the expansion of the Cambodian economy which registered double-digit growth over the last five years from 2003 to 2007. The financial institutions have since expanded their activities in terms of size and network across the country and overseas.

Despite the rapid development of the financial sector, the financial institutions still provide traditional financial products, mostly loans and deposits. The steady growth in the financial service market has encouraged banking institutions to innovate from offering simple products to more complicated products, such as letter of credit, credit card, bank guarantee, and so on. In addition, the opening of the economy to foreign banks provided the drive to push the development of financial products more rapidly. The entry of foreign banks brought with them new services and products. The presence of these new competitors challenged the local banks to compete spurring them to offer new products to their customers. As mentioned by International Financial Corporation (IFC, 2008), the banking services provided by the commercial banks in Cambodia are more dynamic today. The marketing of banking services have evolved from the main traditional focus on corporate customers to retail clients, including households.

The financial institutions perform a vital function allocating funds within the economy. Capital may not be efficiently allocated if there are not enough financial instruments or products to meet the needs of the market players. Since the demand for financial products is increasing, the financial institutions are trying to develop products according to the needs of their customers. However, there is no formal research study undertaken in this particular area according to IFC (2008). Thus, the purpose of this research paper is to study the introduction of new financial products by financial institutions in the Cambodian - the benefits and challenges - and discuss the role of the supervisory authority in monitoring these products in order to minimise the risks and maximise the benefits to the customers.

Following this introduction, Section 2 surveys the literature on new financial products in other countries as well as in Cambodia. The current structure of the financial market and overall status of new financial products in Cambodia will be discussed in Section 3. Section 4 presents the findings of the survey analysis to assess the overall status of new financial product developments in Cambodia as well as the assessment of their impact on financial stability. Section 5 concludes with a summary and some policy recommendations.

2. Review of Literature

Ho (2006) defined a financial innovation as a new financial product or service, a new organisational form, a new process that reduces costs and risks, or provision of an improved service that meets the particular needs of participants in the financial system, contributing towards a more developed and complete financial market. Financial products, as defined by EconomyWatch, are instruments that help investment, secure insurance or obtain a mortgage. These are issued by banks, financial institutions, stock brokerages, insurance providers, card agencies and government-sponsored entities. Financial products are categorised by type or underlying asset class, volume and return. Examples of financial products classified by type are shares, bonds, treasury bills, options, mutual funds, certificate of deposit and annuities.

Financial innovations stimulate economic development, but they also bring in tow challenges such as emergent new risks to the financial institutions. As mentioned by Ho (2006), financial innovations can reduce costs or increase revenue for financial institutions. On cost reduction, the paper talked about the role of information technology in reducing the cost of accounting-intensive products, such as mutual funds. For products that require speedy calculation and action, like portfolio insurance and index arbitrage transactions, the financial institutions have to upgrade their computer speed. Financial institutions like banks can reduce their operational cost through the installation of ATMs which reduce the volume of tellers' work. The technology revolution has encouraged banks to launch new services through the Internet as well as payments via plastic cards, like credit and debit cards. All the above services could reduce cost and provide more efficient banking services.

On the other hand, financial innovations have some drawbacks. Ho (2006) mentioned that financial innovations have direct impact on the structure of financial markets, the financial behavior of economic agents and the types of financial products traded, and they have influenced the monetary policy of the central bank. The paper classified the effects of financial innovation on the monetary policy via three channels. Firstly, the economic agents can hedge the current interest rate by using new products such as futures and options to maintain their income streams. The cost of capital and loanable fund will be affected if interest rate is changed and inflation subdued. He provided the example that, if the interest rate is low, the economic agents may borrow more for spending. However, if interest stays high, they will postpone their expenditure. Investment will move in opposite direction to the interest rate depending on the interest rate movement. Secondly, the value of certain assets such as property, equities or government

bonds will be affected if there is a change in the cost of finance. The subsequent effect is on the overall economic activity such as aggregate demand, consumption, investment and net exports. As a result, private consumption may decrease and investment may decline as capital becomes more expensive. Thirdly, if a nation implements a flexible exchange rate system and the interest rate increases, it could attract more capital inflows which will cause the domestic currency to appreciate and lead to a reduction in net export due to a higher exchange rate making the price of domestic goods more expensive.

On the regulatory side, in Cambodia the law on banking and financial institutions (Banking Law) 1999 allows banks to offer a broad range of products and services, including:

- All the financial operations referred to in Article 4, except insurance;
- Foreign exchange operations;
- Money market intermediation, and all operations in negotiable claims on said market;
- Transactions in derivatives;
- Spot or forward dealing in precious metals, raw materials and commodities; and
- Other services related to their core activities, subject to the agreement of the supervisory authority.

With reference to Article 4 of the banking law (1999), banks can carry out security transactions which constitute financial intermediation, such as:

- Taking deposits for the purpose of subscribing or purchasing securities, pursuant to instructions received from individual customers or from open-end investment companies,
- Subscribing in and trading securities,
- Custody of securities,
- Individual or collective management of securities,
- Underwriting of securities upon their issuance,
- Financial engineering,
- Trading in derivatives, and
- All manner of security transactions on their own behalf, in their capacity as commercial companies and in compliance with the laws and regulations in force.

Currently in the Cambodian financial market, the financial products are not well developed as yet. The IFC (2008) reported there is no formal study

conducted to date on the demand for financial services. Furthermore, the report mentioned that commercial banks are more dynamic and have moved from traditionally targeting only corporate clients to more diverse clients, including households. The products and services offered are electronic banking, foreign exchange, risk management services, and consumer finance. Other services like trade finance is growing, especially import finance. However, some local banks are still providing limited services such as lending products, basic checking and saving services, money transfer, and trade finance.

The Brothers Investment Group (BIG, 2009) illustrated that the top four major banks, namely, Canadia Bank Plc, ACLEDA Bank, Cambodia Public Bank, and ANZ Royal Bank, offer the range of traditional banking services and products.

BIG (2009) listed the services provided by the Canadia Bank as follows:

- Current Account, Saving Account, Fixed Deposit Account in US dollar, in Khmer riel or in Thai baht or in gold. Gold deposit is paid interest based on gold value;
- Trade Finance Service such as issue and advice of Letter of Credit, import/ export, advance drawn under Letter of Credit, Documentary Bills of Exchange, and clean bill collection;
- Travelers Cheques;
- Remittance;
- Foreign Exchange;
- Private Banking which offers one-stop service to VIP customers;
- Foreign Investors Consultancy Service on investment climate and incentives, regulations pertaining to company formation and factory establishment; and
- Real Estate Brokerage and Referee Services.

The second major bank, ACLEDA Bank, provides a broad range of banking products and services to personal and business customers:

- Deposit services: Deposit is classified into various account such as current account, demand deposit, savings account, fixed deposit, corporate deposit, and trust account for real estate, Euro flex account, and trust services;
- Credit services: There are various kinds of credit services being offered such as micro-business loan, small-business loan, medium-business loan, personal loan, overdraft, overdraft facility for depositors, revolving credit line, credit line, and housing loan;

- Trade finance including document collection on import and export, document credit on import and export, bank guarantee on shipping, bid, payment, advance payment, performance and retention money; and
- Other services including local and international fund transfer, payroll services, tax payment service, and so on.

Cambodian Public Bank, a subsidiary of Public Bank in Malaysia, is the third major bank. The financial and banking services it provides include:

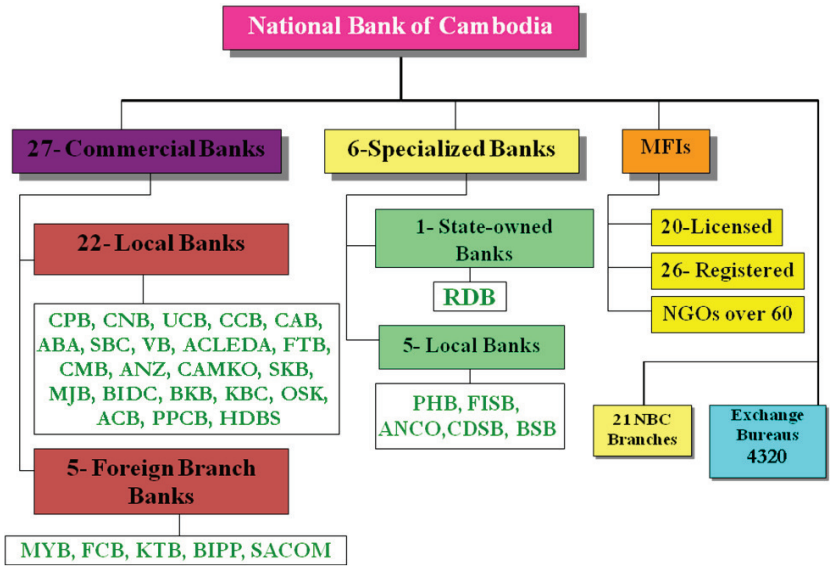
- Deposit accounts including interest-bearing deposit saving deposits and fixed deposit and non-interest-bearing deposit checking account;
- Credit facilities such as overdrafts, term loans, housing loans, letter of credit, trust receipt, bank guarantee;
- Trade financing which offer a complete range of import and export services and financing;
- Money transfer both domestic and international including telegraphic transfer and drafts;
- Foreign exchange transaction including encasement of travelers check and currency exchange;
- ATM Card Service; and
- Credit Card Service.

The fourth major bank, ANZ Royal, is the leader of ATM network and Point-of-Sale terminal and the only bank that provides Internet banking in Cambodia. The Bank also provides various banking services which target personal and small businesses. Its personal banking services include access account, saving account, term deposit, premier account, foreign currency account, credit service, and other services. The bank also offers services to businesses, namely, transaction banking, treasury and markets, and trade finance. First, transaction banking includes business cheque account, cash management account, foreign currency accounts, electronic banking, payroll services and point of sale. Second, treasury/market includes foreign exchange service, overseas telegraphic transfers and commodity trading risk management. Third, trade finance includes import letters of credit, export letter of credit, import and export documentary credits, trade finance loans, foreign currency accounts, export finance, forward exchange contracts, export collections, guarantees, standby letters of credit, and so on.

3. Current Structure of Financial Market and New Financial Products and Services

Since the economy was changed from a planned economy to a free market economy, banking system was transformed from a mono-banking system to a two-tier banking system. Currently, the banking system consists of a Central Bank, Commercial Banks, Specialised Banks, Licensed Microfinances, Registered Microfinances, Representative Offices, NGOs, and Exchange Bureau. The non-banking sector consists of six insurance companies and one re-insurance company.

Figure 1
Organisation Chart of Banking System in Cambodia as of December 2009



Source: NBC Banking Supervision Department 2009.

3.1 Central Bank

The National Bank of Cambodia (NBC) is the central bank which is the authority of the banking system as well as the monetary authority. Pursuant to Article 7 of the Law on the Organisation and Conduct of the National Bank of Cambodia, the central bank is responsible for carrying out the following functions and duties:

1. Determine monetary policy objectives, in consultation with the Royal Government and consideration of the framework of the economic and financial policy of the Kingdom;
2. Formulate, implement and monitor monetary and exchange policies aimed at the determined objectives;
3. Conduct regular economic and monetary analyses, make public the results, and submit proposals and measures to the Royal Government;
4. License, de-license, regulate and supervise banks and financial institutions and other relevant establishments, such as auditors and liquidators;
5. Oversee payments systems in the Kingdom and enhance interbank payments;
6. Act as the sole issuer of national currency;
7. Undertake and perform, in the name of the Kingdom, transactions resulting from the participation of the Kingdom in public international institutions in the banking, credit, and monetary spheres;
8. Establish the balance of payments;
9. Participate in the management of external debt and claims;
10. Participate in the formation and supervision of the money and financial markets;
11. License, de-license, regulate and supervise all those operating in the securities and foreign exchange markets, the market for precious stones and precious metals; and
12. Set interest rates.

3.1.1 Supervisory Authority

To achieve the goal of financial stability, especially the soundness of the banking system, and to protect the stakeholders' interest, the NBC has been given full powers to issue/revoke license, regulate, and supervise banks and financial institutions and other relevant institutions, such as auditors and liquidators.

The NBC is the sole authority to issue licenses to financial institutions in Cambodia. In order to obtain a license, financial institutions must fulfill a number of requirements, such as minimum capital, commitment to provide financial support

by shareholder, qualified management, human resource, information system, business strategy, operational building and network, requirement for the potential shareholder to have a certificate from police department to certify that he/she no criminal record, approval from home supervisory authority for a foreign branch, and so forth. The NBC is empowered to withdraw the license of a financial institution if it is not materially compliant with the requirements and prudential regulations. Moreover, it can revoke the license of a financial institution if the latter's solvency is seriously impaired or, in its judgment, that institution may affect the banking system.

A number of prudential regulations are enforced to supervise and monitor financial institutions' operation. Those prudential regulations focus mainly on capital adequacy, liquidity, loan concentration, assets quality, foreign exchange position, and so on. Firstly, the maintenance of a minimum solvency ratio is one of the prudential regulations required of banks to observe. The minimum ratio is at least 15%, calculated based on the bank's net worth divided by its risk- weighted assets. The bank's net worth must equal to its minimum capital. Second is the liquidity ratio that banks are required to maintain. This ratio defined as the difference between the bank's liquid assets and its weighted customers' deposit must be above 50%. Third is the regulation on large loan exposure. A large exposure loan is a loan to a single borrower which exceeds 10% of the bank's net worth. A single borrower cannot borrow from a bank more than 20% of the bank's net worth. Moreover, the total of single borrower lending cannot exceed 300% of institution's Net Worth. Fourth, a bank's asset classifications are classified into 5 categories, namely, standard, special mention, sub-standard, doubtful, and loss. The banks are required to classify their assets according to these categories and make minimum provision. In addition, the supervisory authority may be required to classify bank's other assets based on supervisors' judgment. Fifth, there are other prudential regulations related to net foreign exchange position, fixed assets ratio, related-parties lending, and so forth.

3.1.2 Monetary Policy

The ultimate goal of Cambodia's monetary policy is price stability. As Cambodia's economy is highly dollarised and the financial market is non-existent, the NBC has very limited tools to implement monetary policy to achieve the above objective. According to Pal (2009), there are three tools in place, namely, foreign exchange, reserve requirement, and standing facilities.

Foreign exchange rate stability is a prerequisite for achieving price stability in view of the high dollarisation of the economy which is approximately at 95%

level from January 2003 up to the present. The economy is cash-based and the amount of foreign currency in circulation cannot be determined. Therefore, the maintenance of exchange rate stability is very essential. Under the managed floating exchange rate regime introduced since 1992, the official exchange rate is determined by the NBC in parallel with the market rate which is freely floating in the market. Pal (2009) mentioned that the difference between the official exchange rate and market rate is less than 1%. Once the market exchange rate appreciates or depreciates more than 1%, the authority will take action. Foreign exchange intervention is undertaken to smoothen the exchange rate and prevent speculative attack. The most efficient way in stabilising the exchange rate is conducting US dollar auction against the local currency. Once the local currency is depreciated, the NBC will sell US dollar and, in contrast, buy US dollar back when local currency is appreciated.

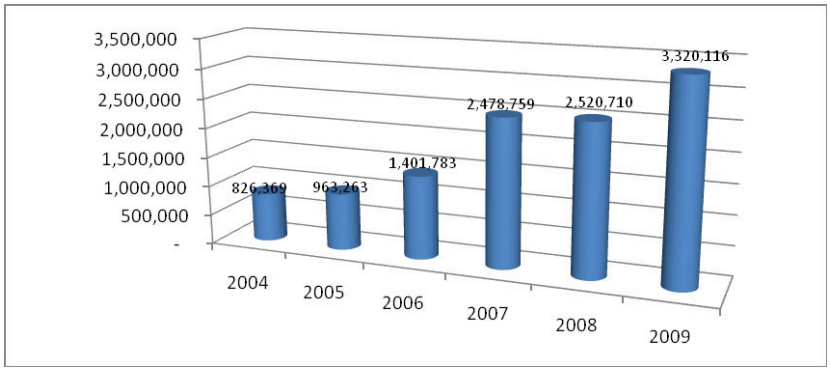
The second tool of monetary policy is the reserve requirement. A new system of reserve requirement has been introduced in early 2009. Under this new system commercial banks are required to maintain reserve requirement in the form of cash at the NBC. The level of reserve to be maintained for local currency is 8% and for foreign currencies is 12%. According to Pal (2009), the reason for increasing the reserve requirement from 8% to 16% for foreign currencies is due to the rapid increase in credit to the private sector and increase in money supply (M2) by 80% and 57%, respectively, from August 2007 to April 2008. However, this requirement was reduced to 12% from 16% in January 2009 when the credit and money supply (M2) declined to 4.8% and 55%, respectively, as of December 2008.

Standing facilities is the third tool of monetary policy. Pal (2009) stated that in the absence of interbank market in Cambodia, the NBC offers several facilities to financial institutions. Firstly, NBC provides fixed deposit facility in both US dollar and riel with the maturity of three months, six months and twelve months. Under the current regulations, banks are not allowed to do placements offshore. Thus, banks use this facility to manage their liquidity. Secondly, pursuant to the regulation issued in January 2009, NBC is empowered to offer a standing overdraft facility to a solvent bank that is temporarily faced with a short-term liquidity problem. This facility will be provided in US dollar to an eligible bank with secured collateral. Lastly, refinancing window is the third facility provided by the NBC. Banks and other financial institutions can get loan in local currency if they have US dollar deposit at the NBC. A financial institution that desires to apply for this facility must provide the NBC detailed information about the purpose of the loan.

3.2 Performance of Commercial Banks

Currently, the banking sector is predominant in the financial sector. As of December 2009, the total deposit of the banking sector amounted to $3.32 billion and total assets held represented approximately 47% of the GDP. The development of the Cambodian banking sector was affected by the global financial crisis. Credit growth was about 3% compared to 2008; however, customers' deposit increased by 32% over the same period which reflected strong of public confidence in the banking system.

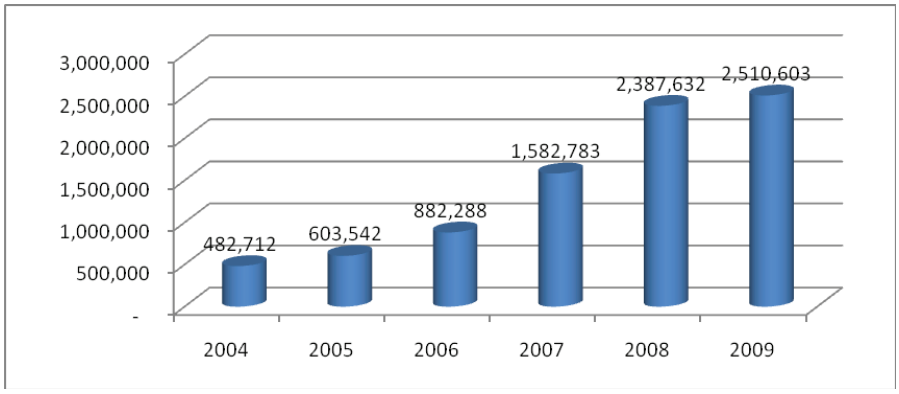
Figure 2
Deposit growth (in thousand US$)



Source: NBC Banking Supervision Department, 2009

As of December 2009, credit growth slowed down to 5% compare to the year ended 2008 as a result of the global crisis, and a new guideline on credit classification put pressure on banks to grant new loans.

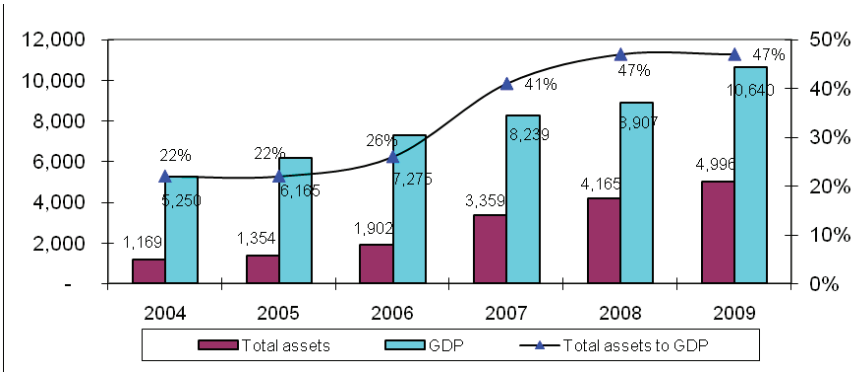
Figure 3
Loan growth (in US$ thousand)



Source: NBC Banking Supervision Department

The total assets of the banking system increased by 20% compared to December 2008. The growth was contributed by the three new banks entering market as well as by the increase in customer deposits.

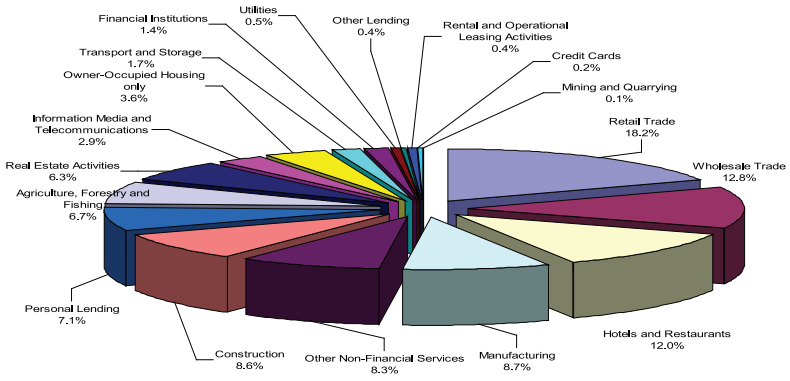
Figure 4
Total Asset Growth (in US$ million)



Source: NBC Banking Supervision Department

Loans extended to various economic sectors include construction, personal lending, agriculture, forestry and fishing, information media and telecommunications, transport and storage, owner-occupied housing, financial institutions, utilities, rental and operational leasing activities, credit cards mining and quarrying, retail trade, wholesale trade, hotels and restaurants, manufacturing, other non-financial services, and other lending.

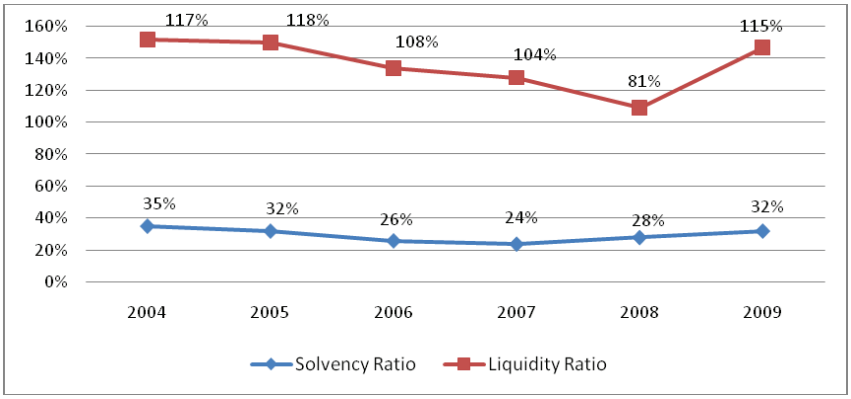
Figure 5
Loans by Economic Sector



Source: NBC Banking Supervision Department, 2009

The solvency ratio (Capital Adequacy Ratio – CAR) has improved from 28% in 2008 to 32% in 2009 as a result of banks' reluctance to grant more risky loans and investment. In contrast, banks' assets were invested in low-risk assets such as placements with the Central Bank. In addition, the improvement of the above ratio was also contributed by the injection of additional capital by existing and new banks. As for the liquidity ratio, the banking system maintained an average ratio of 115%, which is well above the minimum requirement of 50%.

Figure 6
Solvency and Liquidity Ratio

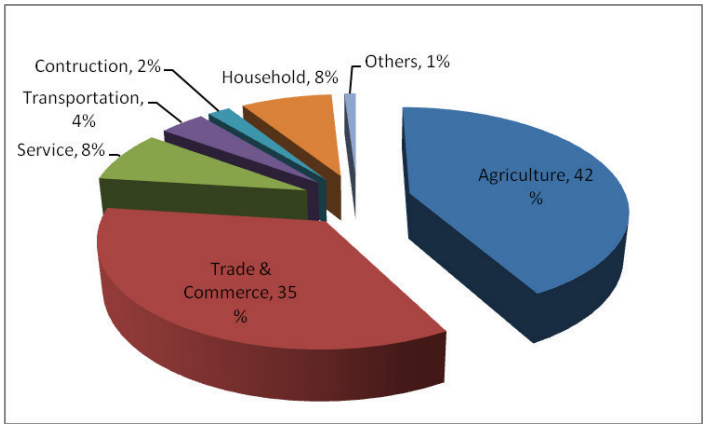


Source: NBC Banking Supervision Department

3.3 Performance in Micro-finance Sector

The micro-finance sector is part of the government's programme for poverty reduction. Loans provided to the rural credit operators increased by 10% for the year-ended 2009 and the NPL ratio was recorded at 2.8% which increased from 0.4% in 2008. The number of borrowers of micro-finance and rural operators increased by 6%. Most of the loans were granted to agricultural sector and small and medium businesses, which represent 42% and 35%, respectively, of the total loan.

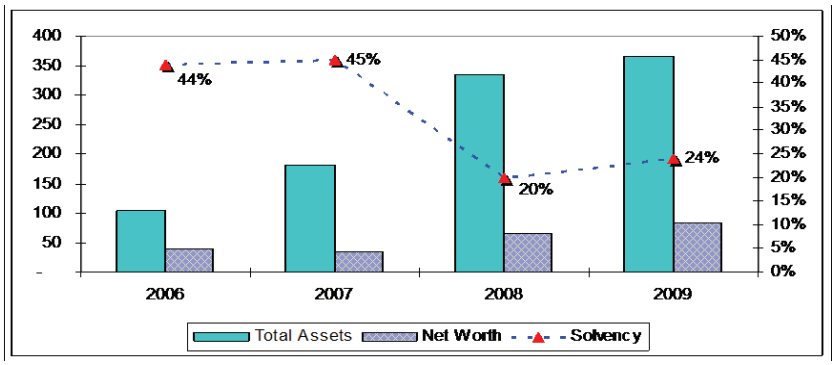
Figure 7
Loans Classified by Type of Business (As of December 2009)



Source: NBC Banking Supervision Department

On average the solvency ratio of the micro-finance was 24%, more than the minimum requirement of 15%. The improvement of this ratio is because of the restriction on the investment portfolio and infusion of additional capital in into the institutions. The net worth of micro-finance institutions increased by 33% as of December 2009. Yet, the growth of total assets slowed down to 12% in 2009, down from 87% increase in 2008. The reason for this decrease is due the decline in the number of borrowers.

Figure 8
Total Assets, Net Worth, Solvency Ratio (in US$ thousand)



Source: NBC Banking Supervision Department, 2009

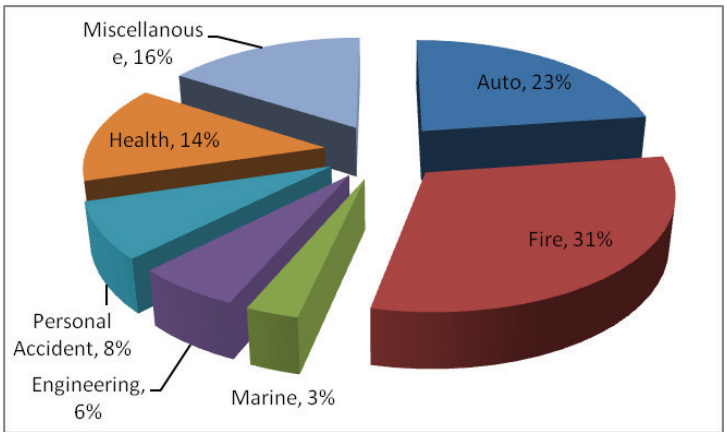
3.4 Non-banking (Insurance) Sector

Cambodia's insurance business was started in 1956. Unfortunately, this sector was totally destroyed during the Pol Pot regime. Under the government economic and financial reform, the government issued a Sub-decree in September 1990 addressing the organisation and functioning of the Ministry of Finance and the establishment of the Cambodian National Insurance Company. The Law on insurance was passed in October 2001. The Sub-decree and several Prakas and Circulars issued provided for the growth of the insurance market. The insurance business is not well developed. According to the Ministry of Economic and Finance, only one or two percent of the total population of 14 million have insurance. The government had set a long-term development programme for the insurance sector which was incorporated in the Financial Sector Development Strategy 2006-2015.

The insurance sector is under the supervision of the Ministry of Economy and Finance. All the insurance companies are examined every year off-site based on review of the annual audited report of the insurance companies. In addition, the insurance companies are examined on their operation on monthly basis. Besides off-site inspection, the insurance division is also empowered to conduct on-site examination in order to enhance the financial reporting. The on-site examination is concentrated on management, internal control, asset and liabilities management, underwriting, and legal compliance.

According to In Meatra (2010) and IFC (2008), as of 2009, six insurance companies and one reinsurance company were operating in Cambodia, namely: Forte Insurance, CAMINGO, Asia Insurance, Campubank Lonpac, Infinity Insurance, Cambodia-Vietnam Insurance and Cambodian Reinsurance Company. The general insurance gross premiums amounted to US$20.01 million which represented approximately 0.19% of Cambodia gross domestic product (In, 2010). In the first six month of 2010, the premiums increased by 35% to US$11.43 million from US$8.5 million in 2008. The insurance sector was affected by the global financial crisis which caused the gross premiums to decrease by 3.18%. The financial crisis resulted in several big construction companies delaying or cancelling their projects. In 2009, the insurance business recorded a profit of $5.8 million. In (2010) further mentioned that the total assets of the insurance market including Cambodian Re (Cambodian Reinsurance Company) amounted to US$75.5 million which represented about 0.73% of GDP. IFC (2008) also reported that the insurance industry is in the stage of development and is presently offering unsophisticated products. The main assets of the insurance companies are cash deposit and investment in property and trade receivable and claim recoveries from reinsurance companies. This means that the insurance sector in Cambodia is highly liquid.

Figure 9
Gross Insurance Premium by Line of Business in 2009



Source: MEF Financial Industry Department

3.5 Money/Inter-bank Market

While the banking and insurance sector has made progress, the money and inter-bank market, on the other hand, do not yet exist. The law on negotiation instruments and payment transactions was passed in 2005, but the wholesale electronic payment system is yet to be established. The absence of a payment system and lack of trust are obstacles hindering the launching of the inter-bank market in Cambodia. The IFC additionally pointed out other weaknesses such as lack of infrastructure, limited financial instruments in the market, and a weak regulatory framework and supervisory body (IFC, 2008).

Under the provision of the financial sector development plan of 2006-2015, the money market encompasses the securities exchange, securities depositories, pooled investment and pension funds. The money market is for short-term loans with the maturity less than one year. Whereas the inter-bank market will be dealing with short-term lending such as promissory notes between banks, and more developed financial markets and certain other financial institutions.

3.6 Capital Market

Cambodia is in the process of establishing a capital market with the assistance from the Korea Stock Exchange. Initially the capital market was planned to be launched in 2009. However, it was postponed to mid-2011 due to the global

financial crisis. The IFC (2008) highlighted some constraints in capital market development in Cambodia:

- Financial instruments: There are limited financial instruments and no government and non-government securities.
- Listed firms: Most of the Cambodian companies are lacking in corporate governance and transparency. Thus, few companies are qualified for listing. The majority of the companies do not publish their financial reports.
- Investors: Institutional investors are lacking. Life insurance companies, pension funds or investment trusts do not yet exist.
- Intermediaries: There are no securities firms or brokers in Cambodia.
- Infrastructure: To develop the secondary market, the infrastructure has to be developed.
- Regulation: There is inadequate regulation with regard to the financial market. Exchange and Securities Commission or other regulatory bodies have not been established.

It is in the long-term financial sector development plan of the government to develop this market. This market will cater for instruments with duration of one year or more. The instruments include bonds and equities of companies, and derivatives when the market is at a more developed stage. It will provide banks an option of engaging in lending and investing directly in the longer-term instruments. In the past, very few bonds were issued in Cambodia by government agencies.

3.7 Current Structure of Banks' Assets, Liabilities and Shareholders' Equity

On the assets side, the main assets are loans and advances followed by deposit with the central bank. Loans are concentrated on corporate loans backed by fixed assets as collateral. Due to the development and competition of the banking sector, banks are diversifying their loan portfolios to cover personal consumption. In the past, loans extended were on short-term basis approximately within three years. Now banks are providing long-term loans to their consumers, especially housing loans, as well as car loans and credit-card loans to their retail consumers. However, those loans are not securitised and cannot be sold in the financial market.

On the liabilities side, banks traditionally accept deposits in the form of current accounts, saving accounts and fixed deposits. The majority of banks' liabilities are fixed deposits, followed by saving accounts, current accounts and dues to banks. As of end 2009, fixed deposits, saving accounts and current accounts represent 31%, 22%, and 13%, respectively, of the total assets. Although banks can attract deposits from the general public by offering competitive interest rates, they cannot accept deposits by selling certificates of deposit in the market like in the developed countries.

As for banks' equity, the largest component is paid-up capital which represents about 15% of the total assets followed by retained earnings 5.36% (Figure 10). The paid-up capital of the bank is generated from its shareholders in the form of common stock. At present banks cannot raise capital via the capital market. The banks instead raise funds from new investors or from their existing shareholders.

Figure 10
Structure of Banks' Balance Sheet as at December 2009

Consolidated Balance Sheet					
All Banks					
In Million US Dollar					
Assets	2006	2007	2008	2009	% of TA
Cash	132.6	200.0	269.3	310.6	6.2
Gold	0.2	0.1	0.0	0.0	0
Deposits with NBC	453.0	773.7	959.2	1,435.2	28.7
Due from Banks	168.4	277.4	130.7	254.1	5.1
Deposits with, Loans and advance to Bank	204.4	420.3	250.5	334.0	6.7
Loans and advances to state enterprises	0.5	0.3	0.0	-	0
Loans and advances to private sector	839.1	1,547.0	2,353.7	2,428.9	48.7
Accrued interest receivable	8.7	7.4	14.7	15.2	0.3
Securities	-	-	0.3	0.3	0
Claims on Government	2.1	-	-	-	0
Prepaid expenses	13.5	20.9	25.7	21.7	0.4
Fixed Assets	72.2	94.6	143.5	175.1	3.5
Other Assets	7.1	17.1	17.0	21.4	0.4
Total	1,901.9	3,358.8	4,164.8	4,996.5	100

Liabilities					
Owed to NBC	5.9	10.0	9.8	-	0
Owed to Banks	14.0	202.2	589.2	413.1	8.3
Borrowed Funds	64.5	51.4	61.3	68.2	1.4
Demand Deposits	356.6	593.7	599.9	669.1	13.4
Saving Deposits	571.0	1,161.7	898.5	1,079.4	21.6
Fixed Deposits	453.2	696.2	994.9	1,532.7	30.6
Other Deposits	20.9	27.1	13.7	14.7	0.3
Other Liabilities	34.5	44.2	82.8	106.5	2.1
Sub Total	1,520.6	2,786.6	3,250.0	3,883.6	77.7
Shareholders' Equity					
Paid Up Capital	278.3	381.0	590.4	754.0	15.1
Reserve	0.6	3.2	3.3	3.0	0.1
Subordinated Loans (after NBC's agreement)	24.5	29.0	62.4	56.0	1.1
General Provisions and Other	10.6	11.1	17.3	31.9	0.6
Retained and Current Profit/(Loss)	67.3	147.8	241.4	268.0	5.4
Sub Total	381.3	572.1	914.7	1,112.9	22.3
Total Liabilities & Shareholders' Equity	1,901.9	3,358.8	4,164.8	4,996.5	100

Source: NBC Banking Supervision Department

The off-balance sheet activities are mainly focused on financing commitments, guarantees, foreign exchange commitments, and other commitments. Most of the banks' commitment are unused portion of overdraft facilities and trade finance, such as issuance of letter of credit, import/export advance drawn under letter of credit, clear bill collection, and so on. The bank guarantees are in respect of shipping guarantee, performance guarantee, standby guarantee, and so forth. There is only one bank that provides foreign exchange commitments such as forward exchange contract.

Figure 11/Table 2
Structure of Banks' Off-balance Sheet as at December 2009

Consolidated Off Balance Sheet				
All Banks				
In Million US Dollar				
	2006	2007	2008	2009
1- Financing Commitments	181.6	265.1	275.8	291.0
1-1 Received from Banks and Other Financial Instituions	16.5	18.0	1.0	1.0
1-2 In Favour of Banks and Other Financial Institutions	2.1	0.1	-	-
1-3 In Favour of Customers	163.0	247.1	274.8	290.1
1-3-1 Of which unused portion of overdraft and facilities extended	162.5	245.9	271.2	268.6
2- Guarantees	106.2	161.7	142.8	165.5
2-1 Guarantees Received (from Banks and OFIs)	0.2	3.8	6.9	0.7
2-2 Guarantees Issued (on Account of Banks and OFIs)	1.3	0.3	0.2	0.2
2-3 Issued on Account of Banks and OFIs)	104.6	157.5	135.8	164.6
2-3-1 Acceptances	3.9	6.0	0.6	3.0
2-3-2 Standby Letter of Credit	46.2	103.5	87.8	94.6
2-3-3 Bid Bonds	1.6	1.4	2.1	2.0
2-3-4 Performance Bonds	25.8	35.3	37.0	48.6
2-3-5 Warranty Bonds	0.6	1.0	0.7	0.5
2-3-6 Payment Guarantees	1.0	1.6	2.5	4.0
2-3-7 Endorsements	0.5	-	0.0	-
2-3-8 Other Guarantees	25.1	8.8	4.9	11.9
3- Foreign Exchange Commitments	0.7	1.5	2.4	8.0
3-1 Commitments ot buy Foreign Currency (Items receivable)	0.4	0.7	1.3	4.0
3-1-1 Spot Foreign Exchange	-	0.1	0.5	1.6
3-1-2 Forward Foreign Exchange	0.4	0.6	0.8	2.4
3-2 Commitments to Sell Foreign Currency (items deliver)	0.4	0.8	1.2	4.0
3-2-1 Spot Foreign Exchange	0.0	0.2	0.4	3.1
3-2-2 Forward Foreign Exchange	0.4	0.6	0.8	0.9
4- Derivative Instruments Positions	-	-	-	-
Please attach a detailed annex	-	-	-	-
4-1 Interest Rate Contracts/Futures	-	-	-	-
4-2 Interest Rate Swaps and Forward Rate Agreement	-	-	-	-
4-3 Foreign Exchange Futures	-	-	-	-
5 Other commitments	1.0	3.1	3.9	110.9
5-1 Commitments to Sell Precious Metals	-	-	-	-
5-2 Commitments to Purchase Precious Metals	-	-	-	-
5-3 Nonperforming Commitments	-	-	-	-
5-4 Assets Held as Custodian	1.0	3.1	3.9	110.9
5-4-1 Bills of Exchange	0.3	1.5	2.7	1.1
5-4-2 Securities	-	-	-	-
5-4-3 Others	0.7	1.6	1.2	109.8

Source: NBC Banking Supervision Department

3.8 Emergence of Financial Products and Services in Cambodia

The development of technology encourages banks to introduce new banking products such as Internet banking, mobile banking, plastic cards, remittances, and so on. The trend of those products has been increasing. The statistics show that the few big banks which introduced such products have attracted a number of users.

Internet banking is one of the emerging services in the Cambodian market. The service was introduced in 2005 by one of the foreign joint-venture banks. Although this service provides several benefits and convenience to customers, limited knowledge and limited access to the Internet has limited customers from using the service. As a result, only a few banks are now offering Internet banking to their customers.

Mobile banking is the latest service provided to bank and non-bank customers. In November 2008, one joint-venture bank introduced the new service of money transfer via mobile phone. This service enables the public to transfer local currency from one place to other within the country. So far, 100,000 people have been using this service and the number is expected to increase since the number of people using mobile phone is envisaged to increase to approximately 6.3 million out of 14.7 million population by 2009 (Xinhua, 2010). In 2010, another local bank introduced this service to its customers. The new service provider offers multi-currency money transfers from one account to another within the bank's nationwide network. In addition, it allows customers to check their bank's balance, bills payment, top up prepaid telephone cards and others services through the mobile phone. This new service makes it more convenient for customers to transfer money to their family wherever they are working and to facilitate payment of utilities bills.

Plastic cards were introduced by a number of banks. There are two types of plastic cards are being offered to customers, namely, debit card and credit card. Automatic Teller Machine (ATM) services are another new service offering to banks' customers. Saving account customers can use ATM card to make withdrawals twenty four hours a day, seven days a week. Now a few banks are offering ATM cash and cheque deposit service, which are convenient for their customers. Credit card is now accepted in most shopping centres, restaurants, stores and other places. More customers are gaining awareness about the benefits and convenience of using credit cards and it is reflected in the increasing number of banks offering credit cards to their customers. According

to the annual report of Banking Supervision Department (2009), credit card holders have increased from 5,279 in 2006 to 10,576 in 2009.

4. Findings of Survey of New Financial Product Developments in Cambodia

A survey was conducted to assess the overall status of new financial products in Cambodia and the current regulations for monitoring these products as well as assess their impact on financial stability. A survey questionnaire was sent to ten banks which represent about 75% of the banking system in terms of total assets. Two banks, namely, ACLEDA Bank and ANZ Royal Bank, reported that they plan to issue new products and services. Six banks reported they are not involved with new financial products, and two banks did not respond.

The ACLEDA Bank plans to issue new financial products in the near future. The Bank foresees a very high demand for structured products, hybrid products, bancassurance and mutual funds; and moderate demand for the other products, such as credit derivatives and asset-backed securities. It plans to issue bancassurance in the near future. Although these new products carry risks, the issuance of new products is justified on grounds of high returns and market interest/demand, and the products are in line with the main competencies of the bank. The Bank aims to enhance its products for higher return and desires to increase the number and volume of its products. However, it is faced with high competition and challenges such as the infrastructure of supporting systems, measuring risks, and asymmetric information about product risks to the customer. In addition, the Bank finds that the current regulations governing new financial products to be less effective and unduly restrictive. In the bank's opinion, the regulation should adjusted in response to the development of the financial market. Regarding the risk to financial stability from the development of new financial products, the bank is of the view that cross-border supervision is important.

Another commercial bank, the ANZ Royal Bank (Cambodia), is also planning to launch new financial products in the near future. The Bank plans to issue interest rate swap, cross- currency swap in 2011. Based on its observation, the demand for these products is presently very low. Nevertheless, the bank expects to expand the number and volume of its new financial products. However, the Bank is constrained by limitation of resources and infrastructures. In addition, the bank faces some challenges in managing their new products such as software system and staff competencies. With regard to the effectiveness and sufficiency of current regulations in relation to new financial products, the Bank finds that the regulations are less effective, too loose and discourage the Bank from

introducing more new financial products. The regulations on new financial products should be adjusted in the future to cover the introduction of new products in the financial market such as Interest Rate Swap, Cross-currency Swap, Bond, and so forth.

If the above financial products and services are launched in the market, what sort of regulation should be applied in reducing the potential risks, ensuring the soundness of the financial system, which is the main objective of the central bank; and what will be the impact on the monetary policy of the central bank?

Although the current regulations allow financial institutions to offer a wide range of financial products, the supervisory authority should seriously take stock of the emerging financial products and services and the potential products that may come on stream in the coming years. According to the survey, banks will be launching some new financial products and services, such as structured product, hybrid product, bancassurance, mutual fund, interest rate swap and cross-currency swap. These products are new in Cambodia's market. According to Ho (2006), financial innovation is a continuous phenomenon and it is difficult to foresee the adverse consequences and impact on financial stability. Ho (2006) added that the impact on stability can manifest in a number of ways:

- *Off-balance sheet items*: The transparency of the financial system is affected by the more innovative products, such as derivatives, and the surveillance of the banks' assets and liabilities is made more difficult for bank supervisors.

- *Increase in credit risk*: Banks offering new innovative products will be exposed to new risks. Subsequently, the situation of financial institutions will dubious and sensitive because of such risks.

- *Increase in the number of high risk products*: The new and sophisticated financial products may offer high return to the financial institutions but they could pose a threat to systemic stability.

Ho (2006) further mentioned that the development of electronic payment systems has direct impact on the monetary transmission mechanism by reducing the amount of traditional money or replacing the demand deposits and other types of highly liquid deposits which reduce the amount of reserves held by financial institutions with central bank. In addition, some financial innovations may affect monetary policy and the policy decisions may rebound on the economy**.** Furthermore, direct financing from the central bank may not be utilised efficiently

because the households and non-financial corporations can get financing from the market through the disposal of financial instruments such as corporate bonds or equities, impacting on the effectiveness of money supply. On the monetary aggregate side, some new financial instruments are not included in the monetary aggregate. It is necessary to redefine the monetary aggregate to reflect the true picture of the actual economic situation. Stability of financial system is the main objective of the central bank. However, when there is a rapid change in the financial market, financial institutions may accept greater risks and uncertainty with implications for financial system stability at national or even international level. If so, the central bank should review its prudential regulations in light of the new conditions.

Because of the high dollarization of the Cambodian economy, it is extremely difficult for the RBC to conduct an effective monetary policy. As mentioned earlier, if the new financial products are launched, they will be affect monetary policy especially monetary aggregate, lender of last resort, and reserve requirement. Thus, the main objective of the RBC's monetary policy of maintaining price stability may not be achievable. To maintain the goal of monetary policy, relevant revisions should be made on current laws on bank and financial institutions to provide a clearer mandate to bank supervisors because under the existing laws, this is not stated clearly. On the other hand, the stability of the banking system is very important so the regulations for monitoring the performance of the financial institutions should be reviewed accordingly especially in relation to the new financial products and services. Financial institutions seeking to introduce new financial products and services should be required to obtain prior approval from the authority before product launch.

5. Conclusion

The development of the financial sector, especially banking sector, progressed rapidly following the restructuring of the banking sector. The banks in Cambodia expanded in terms of size and network locally and overseas. However, most of the financial institutions are providing the traditional banking services, namely, loans, deposits and settlement instruments. Financial services improved significantly after Cambodia opened its door to the world. Foreign banks entered the Cambodian market and their presence spurred competition among the financial institutions. Competition and high market demand have stimulated those institutions to offer more sophisticated financial products such as trade finance services, electronic payment services, foreign exchange service, e-banking, and mobile banking.

The banking sector is predominant in the financial system. Under the current banking system, The NBC is the central bank authority to supervise and regulate the financial institutions. To maintain the safety and soundness of the banking system, central bank has issued a number of prudential regulations to control and monitor financial institutions' performance. As a result, the performance of financial institutions is generally satisfactory and compliant with the laws and regulations. Total assets are growing and the capital position of the financial institutions remains strong. On the monetary side, the goal of monetary policy is price stability. For the time being, there are three tools that the central bank applies to achieve the above goal, namely, foreign exchange rate stability, reserve requirement and standing facilities. The result of conducting monetary policy contributes to GDP growth and foreign exchange rate stability over the last decade.

Despite the significant development in the banking and insurance sector, Cambodia needs to further develop its financial infrastructure especially the money/inter-bank market and capital market. Several weaknesses hinder the establishment of the money/inter-bank market, such as lack of infrastructure, limited financial instruments in the market, and a weak regulatory framework and supervisory body. The development of capital market is also faced with constraints, such as dearth of financial instruments, listed companies, investors, intermediaries, infrastructure and regulations. The government has set its long-term strategy to develop the money and capital markets to resolve these issues. The money market will cover the securities exchange, securities depositories, and pooled investment and pension funds. The capital market will deal with long-term instruments such as bonds and equities of companies and derivatives.

When new financial products and services are introduced into the market, the stability of financial system and monetary policy will be affected. The central bank should revise its prudential regulations to monitor and control the performance of the financial institutions. Financial institutions that plan to issue new financial products and services must obtain the prior approval of the authority. On the monetary authority side, the new financial products and services will affect the monetary aggregate, direct lending, and reserve requirement. Thus, the monetary authority should consider adopting the relevant tools and techniques to cope with the new situation.

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Chapter 3

NEW FINANCIAL PRODUCTS AND CHALLENGES FOR THE INDONESIAN CENTRAL BANK

By
Wahyu Dewati[1], Trinil Arimurti and Tevy Chawwa[2]

1. Introduction

Through financial innovation, sets of broad new financial products have been created to meet the needs of customers. A vigorous financial market and the complexity of product innovation are considered to be one of several factors that encouraged economic growth through the most productive capital allocation. Besides benefitting the financial sector by encouraging the growth of the infrastructure investment market, it also leads to a more efficient market. Financial innovation also strengthens the linkages between markets. However, the challenge is amplified when a market is facing a shock. Through the linkages between markets, the impact of the shock will be transmitted quickly to other related markets. Consequently, the interdependence between markets becomes stronger. The risk involved from the impact of speculative actions, therefore, will be larger. In order to anticipate and mitigate the spread of potential risks, it is necessary to strengthen coordination between central bank and supervisory authorities in the country, and build cross border cooperation among the central banks in the region to support its supervisory functions.

Risk management failure faced by the big and individual players concurrently could potentially endanger market solvability and become a threat to financial system resiliency. The biggest challenges derived from the complexity of new financial instruments and the trading strategy, including the presence of illiquid market could magnify potential risks and its leverage. As an implication, the greater risk to the financial stability has challenged the central bank in conducting optimum monetary policy. According to Bernanke (2007), well designed and proper regulations should be in place in order to reap the benefits of financial

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product innovation development, in addition to the risk mitigation originating from those products. An assessment of the effectiveness of current policy measures and regulations on new financial products in preventing financial instability is a crucial step in enhancing comprehensive direction for the development of financial market.

The Indonesian financial market has been experiencing tremendous development over the past few years. On the process, new instruments or new innovations in the Indonesian financial market are partly utilized by speculators to gain higher profits with higher risks, thereby creating threats to financial stability. Therefore, domestic regulations, especially those related to the issuance of new financial products has to be improved sufficiently. Currently, several regulations for structured products and risk management for banking industry have been implemented to guide banks in executing their activities related to structured products in line with the prudential banking principles, risk management fulfillment, and transparency. Since the issuance of the regulations, significant decreases occurred in terms of volume of structured product transactions and derivative transactions in the Indonesian market during the year of 2008 to 2009.

There are three main objectives in this paper: (i) to review the development of new financial products in Indonesia, their merits and drawbacks, especially the implications to financial stability; (ii) to assess market perception on current policy measures and regulations on new financial products in preventing financial crisis/instability and (iii) to identify current practices with respect to cooperation/ coordination arrangements between the central bank and other supervisory authorities, and among central banks in the region to support their supervisory function related to cross border transactions.

This study covers several sections, starting with the introduction that covers the motivation and the general outline of the study. The second section describes the literature review, from the past and current studies in new financial products development both global and specific for Indonesia. Next, in the third section, a general overview of new financial products in Indonesia is presented through a review of the financial market condition, development of new financial products, and current regulations regarding new financial products. Section four will describe in detail our survey which was conducted to identify the characteristics and development stage of new financial products in Indonesia. The survey also reviewed market perception on the sufficiency of the existing New Financial Product Regulation. Finally, section five will summarise the study and propose

policy recommendations for dealing with new financial products especially at the national level.

2. Literature Review

2.1 New Financial Product, Monetary Policy and Financial Stability

The relationship between the existence of financial innovations, including new financial products, with central bank functions on monetary policy and financial stability had been studied by several researchers. Weber (2007) in his research about hedge funds explained that from a monetary policy perspective, hedge funds are likely to influence the transmission mechanism as well as the international linkages between interest rates and exchange rates. Moreover, the main concern with regard to financial stability is that failures of one or more larger hedge funds might jeopardize the stability of major complex financial institutions and/or create market liquidity crises. The most important line of defense in containing the potential risks to stability is adequate market discipline, which, in turn, requires hedge funds to be sufficiently transparent.

The impact of financial innovation to monetary policy transmission also is explained by Noyer (2007). In his opinion, the burgeoning of financial innovation might lead to instability in money demand. New products and new intermediaries tend to blur the distinction between monetary and non-monetary assets and to modify the financial behaviour of economic agents. Furthermore, financial innovation contributes to stronger wealth effects and thus probably also to strengthen the interest rate channel. Financial innovation fosters faster dissemination of information and its more rapid incorporation into financial market prices. This is of course particularly true for monetary policy decisions and can therefore increase the effectiveness of monetary policy, particularly via the interest rate channel. Financial innovation also contributes to an increased holding of financial assets by lowering transaction costs and facilitating arbitrage, hedging, funding and investment strategies. Financial innovation often relies on stronger leverage, increasing the effect of interest rate change by the central bank. Moreover, financial innovation results in greater integration of domestic and international financial markets, which should also strengthen the exchange rate channel as exchange rates become more sensitive to interest rate differentials between currency areas. Financial innovation has also probably weakened the credit channel by providing firms with broader access to securities markets, which may reduce information asymmetries at the source of the credit channel. Securitization by banks has reduced banks' liquidity constraints and thus further weakened the credit channel. Credit derivatives might also encourage banks to

monitor risks less carefully than in the past and thus mitigate the aforementioned effects that dampen the credit channel.

From the financial stability perspectives, Noyer (2007) wrote that financial innovation may in some cases, endanger financial stability and central banks should take appropriate action in order to mitigate potential systemic risks. The issues from micro perspective are among others: (i) the infancy of new products such as valuation difficulties, lack of market liquidity, possible lack of expertise of some traders, and so on; (ii) the emergence of new unregulated players whose default might have implications for systemic risk. Meanwhile, the issues from macro perspective are : (i) increased financial asset holding resulting from financial innovation is likely to result in higher sensitivity of households to asset price booms and busts; (ii) as links between markets are tightened by financial innovation, a shock occurring on one specific market may be more easily transmitted and possibly amplified on other markets

The relationship between financial innovation and macroeconomic was analyzed by Dynan et al., (2005). They found that financial innovation appears to reduce growth volatility. As regards firms, this seems to result from a more flexible financial structure. Meanwhile, with respect to households, this appears to stem from relaxed collateral constraints on borrowing, allowing households to better smooth consumption in the face of temporary changes in their income.

With regards to a better development of financial products in the future**,** Ghosh (2006) found that regional cooperation can be powerful means to deepen and diversify financial markets through integration, but it needs to be complemented by actions and measures at the domestic level. To further develop the derivatives markets in East Asia, cross-country experience suggests the following needs: (i) efficient, liquid, and integrated cash markets (for bonds, equities, commodities, and other assets) and (ii) suitable legal and regulatory framework to protect depositors, to secure the integrity of payments, and to maintain financial stability.

Jenkinson et al., (2008) elaborate the expectations for future financial market developments. In the future, it is expected that there will be additional focus on simpler and more standardized products. New products are expected to be more transparent in design and content in order to improve the ease of monitoring and hence lower information costs.Rating agencies will be expected to supply additional information on the risk characteristics of rated securities and the sensitivity and uncertainty attached to their ratings. End-investors will demand more explicit rules governing acceptable collateral for securitization and greater due diligence and risk-sharing by originators and issuers. Investment banks will

continue to offer tailored products to match specific risks. Banks and other financial institutions will provide more information on their exposures as pressures to improve market disclosure and transparency continue and there will be greater emphasis on the product's standard that may facilitate improvements in market infrastructure.

2.2 Types of New Financial Product in Indonesia

As the global financial market becomes more developed, innovation in financial products are continuing to grow. In Indonesia, the financial products offered by the banking industry have been more varied recently. Based on the type of financial products, previous studies categorize the financial products offered by the banking industry in Indonesia into several groups:

(i) Structured products
Structured products in Indonesia are classified into three major groups:
(a) Foreign exchange related products – Currency Derivatives:Currency Forward, Currency Option, Currency Option With Triggers (Knock-Out/ Knock-In Option), Currency Swap, Deposito US Dollar Swap, Dual Currency Deposit, Forex Accumulating Deposit (FAD), Foreign Exchange Linked Range Accrual Deposit, Multi Currency Deposit, Phoenix Deposit, High Yield Idr Notes Linked To Government Bond(HYNLGB), USD Extendable Deposit, Market linked Deposit
(b) Interest rate related products: Interest Rate Cap (IRC), Interest Rate Floor (IRF), Interest Rate Swap (IRS), Inverse Floater Deposit, Range Accrual Deposit, Step-Up Callable Deposit, Bond Option Linked Deposit (BOLD), Stripped Bond
(c) Index or commodity price related structured products: Equity Linked Deposit, Forward Bond Agreement, Target Buying Note/Bond Exchangeable Deposit, Murabahah commodity

(ii) Hybrid products: Convertible Bond (CB), Convertible Subordinated Bond (CSB)

(iii) Credit derivative: Credit Default Swap (CDS), Credit Linked Note (CLN), First to Default (FTD), Linear Basket Note (LBN), Second To Default (2TD), Total Return Swap (TRS), Leveraged Credit Linked Note/Loan (LCLN)

(iv) Asset Backed Securities (ABS).

More detailed explanation about structured products, hybrid products, credit derivatives and asset backed securities are as follows:

2.2.1 Structured Products

Definition

According to Bank Indonesia Regulation on structured products as stated in the PBI No.11/26/PBI/2009 dated 1 July 2009: "Prudential Principles in the Implementation of Structured Products Activities for Commercial Banks", structured products of commercial banks are those resulted from a combination of 2 (two) or more financial instruments, namely:

(i) A non-derivative financial instrument and a derivative financial instrument; or
(ii) A derivative and another derivative, and have at least the following characteristics:
   - The value or cash flow resulting from the product is linked to one or a combination of basic variables such as interest rates, exchange rates, commodities and/or equity.
   - The pattern of change in the value or cash flow of the product is not regular, compared to the pattern of change in the basic variables as referred to in point (a) above, thus resulting in a change in the value or cash flow which does not reflect the pattern of overall change in the basic variables in a linear way (asymmetric payoff), which is characterized by, among other things, the existence of: (i) optionality, such as caps, floors, collars, step up/ step down and/or call/put features; (ii) leverage; (iii) barriers, such as knock in/knock out; (iv) binary or digital ranges.

Eligibility Criteria for Structure Product Customers in Indonesia

According to PBI No. 11/26/PBI/2009 about Prudential Principles In Conducting Structured Product For Commercial Banks; Customers that allowed to be engaged in structured product transactions must be listed as professional customers and eligible customers.

Professional Customer

Customer is classified as a Professional Customer if the client has an understanding of the characteristics, features, and risk of Structured Products and consist of:

a. Companies engaged in financial market, which consist of:
   i. Banks;
   ii. securities companies;
   iii. finance companies; or
   iv. futures traders, as far as do not conflict with laws and regulations prevailing in the banking, capital markets, financing institutions and the prevailing commodity futures trading.

b. Companies (other than those mentioned above) which meet the following requirements:
   i. Have capital of at least greater than the 20,000,000,000.00 (twenty billion dollars) or its equivalent in foreign currency; and
   ii. had engaged in business at least 36 (thirty six) months in a row.

c. The Government of the Republic of Indonesia or other governments;

d. Bank Indonesia or another country's central bank;

e. multilateral development bank or institution;

Eligible Customer

Customer is classified as an eligible customer if the client has an understanding of the characteristics, features, and risk of structured products and consist of:

a. Finance company engaged in the form:
   i. pension funds; or
   ii. insurance companies, as far as do not conflict with legislation in the field of pension funds and insurance business in force.

b. Company (other than a company referred to in letter a. above) which meet the following requirements:
   i. has a capital of no less than 5,000,000,000, 00 (five billion rupiah) or its equivalent in foreign currency; and

ii. had engaged in business at least 12 (twelve) consecutive months; and

c. Individual customers who have a portfolio of assets in the form of cash, demand deposits, savings, and / or deposit of no less than 5,000,000,000, 00 (five billion rupiah) or its equivalent in foreign currency.

When customer decides to buy structured product e.g. dual currency deposit, then he/ she has to decide to use base currency, the amount of deposit, alternate currency, and maturity tenor. For example:

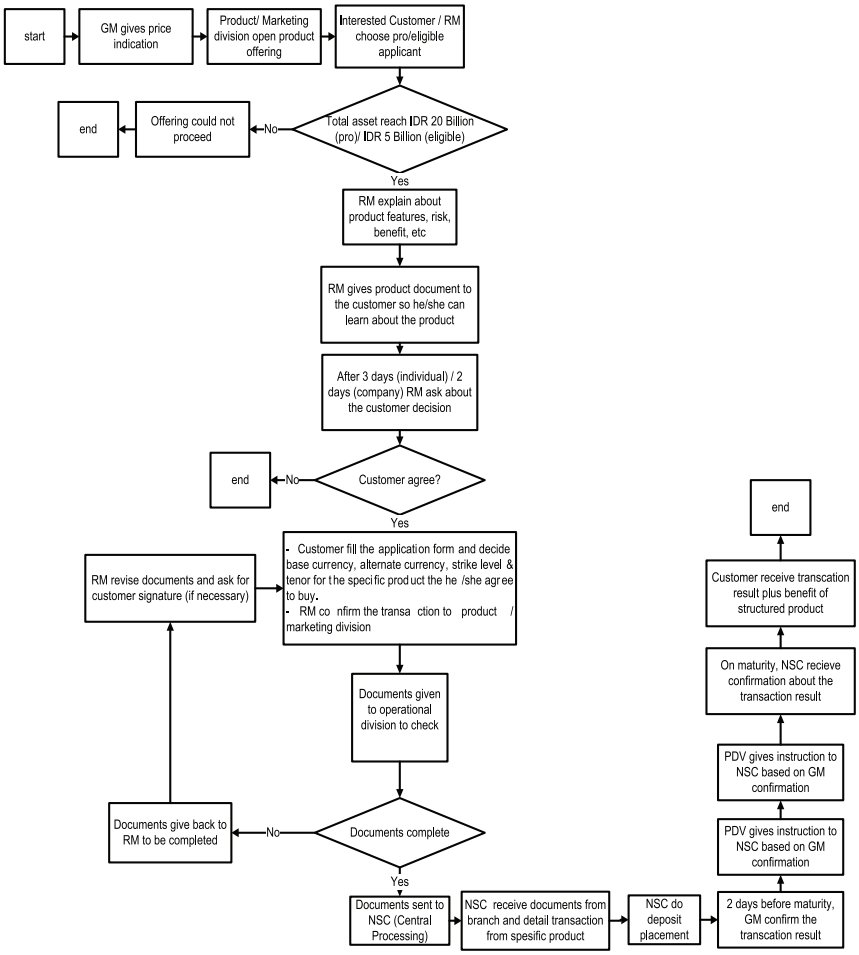
Customers have to decide that they going to buy dual currency deposit with:

- Base currency (Currency Investment Customers) : USD
- Amount of Deposit: USD 50,000
- Alternate currency (Currency Alternatives are willing to receive the Customer on Maturity Date) : AUD
- Spot Exchange rate : 0.8200
- Strike level (The exchange rate between the Base Currency and the Alternate Currency approved the Customer if the conversion occurs) : 0.8100
- Maturity tenor (The term of investment) : 3 months
- Interest rate: 8% p.a.
- With this information the customers will be able to find how much they will gain benefit at the maturity = ((50,000 x 8%)/360 x90) - 20% = USD 50,800.

Requirement for investment:

a. Minimum amount of placement: Professional Customer (IDR 20 Billion) or Eligible Customer (IDR 5 Billion)
b. Base currency and alternate currency could be in form of USD, AUD, EUR, NZD, GBP, JPY, CAD, SGD, and HKD.
c. Term of maturity 1 weeks, 2 weeks, 1, 3, 6,and 12 month
d. Strike level option is unlimited Options Strike levels are not limited to the level determined Spot On-line (depending on the rate of return).

Figure 1
Process Flow of Structured Product



2.2.2 Hybrid Products

Much of the fixed-income markets revolves around more complex instruments, designed to meet specific investor requirements. Hybrid products or hybrid securities basically consist of bonds that are made up of a combination of one or more securities, or which link their performance to the performance of another bond or asset, or an index. Floating Rate Notes (FRN), Convertible Bond (CB), Convertible Subordinated Bond (CSB)are some examples.

Convertible Bond (CB) represents bonds which are similar to ordinary bonds that have a nominal/par, a specific period, and giving the return/interest periodically (may be lower than other securities), with additional shares of derivative instruments (embedded stock option) berupa opsi yang memungkinkan obligasi dikonversi menjadi saham atau pemegang obligasi memperoleh dana investasi pada saat jatuh tein the in in the form of option to convert bonds into stock or bond holders could obtain the investment funds on the due date.

Convertible Subordinated Bond (CSB) Merupakan obligasi subordinasi yang mengandung derivatif (embedded stock/call option) sebagaimana convertible bond namun terdapat sifat ordinasi yaitu pembayaran pokok dan bunga pada saat bank mengalami likuidasi berada pada urutan setelah pembayaran pada deposan dan kreditur lainnya sebagaimana halnya pada subordinated loan.is subordinated bond comprising derivatives (embedded stock/call option) like the convertible bond, but with ordination nature which is payment of principal and interest when the bank is on liquidation or is on the ordinal after payment to the depositors and other creditors as well as the subordinated loan. Fitur call Call Features option yang terdapat dalam CSB umumnya juga disertai dengan fitur step-up coupon yaitu peningkatan suku bunga obligasi jika bank sebagai penerbit tidak mengeksekusi call option pada periode yang ditetapkan. Option contained in the CSB is generally accompanied by step-up coupon which is the increase of bond interest rate if the bank as issuer is not executing a call option on the specified period.

2.2.2.1 Credit Derivatives

A definition of credit derivatives is given by the International Financial Law Review[3], which stated that credit derivatives are, in essence, traditional derivatives (forwards and options, both on a stand-alone basis or embedded in the form of structured notes) re-engineered to have a credit orientation.

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3. www.iflr.com

Erwardes (2000), defines a credit derivative as a forward, swap or option or similar instrument, in which one or both parties' payments are based on payments under or reevaluation of a loan or bond. This definition can be extended to include payments on baskets of loans and bonds. It also includes a note or bond with embedded credit derivative

Das (2006) defined credit derivatives as a class of financial instruments, the value of which is derived from an underlying market value driven by the credit risk of private or government entities other than the counterparties to the credit derivative transaction itself.

Derivatives transactions are regulated under Bank Indonesia Regulation/ PBI No.7/31/PBI/2005 dated 13 September 2005, concerning "Derivative Transactions". As stated in the PBI, derivatives transactions are based on a contract or agreement for payment in which the value is a derivative of the value of underlying instruments, such as interest rates, exchange rates, commodities, equity and indices, whether accompanied by or not accompanied by notional amounts or instruments, but not including credit derivative transactions.

Some of the standard types of credit derivative are the following: Loan Portfolio Swap, Total Return Swaps (TRS), Credit Default Options, Credit Default Swap (CDS), Credit-Linked Note (CLN), First to Default (FTD), Linear Basket Note (LBN), Second To Default (2TD), Leveraged Credit Linked Note/Loan (LCLN)

2.2.2.2 Credit Default Swaps (CDS)

CDS are designed to isolate the risk of default on credit obligation. The essential ellements of a CDS are a series of payments in return for an indemnity against non performance of the reference entity and the concept of a credit event that triggers the payment to cover loss arising from default.

In view of the bond market development, the existence of CDS trading lower the cost of issuing bonds and enhance the liquidity in the bond market. Shim (2010), found that CDS also introduced a new source of risk. At the peak of the recent global crisis, firms included in CDS indices faced higher bond yiled spreads than those not included.

2.2.3 Asset Backed Securities

Asset Backed Securities(ABS) is mentioned in Bank Indonesia Regulation/ PBI No.7/2/2005 dated 20 January 2005: "Asset Quality Rating for Commercial Banks". It states that securities linked to or backed by underlying reference assets are defined as including but not limited to mutual fund certificates, credit linked notes, and asset backed securities.

Another definition is provided by the International Financial Law Review, which define asset backed securities (ABS) as an asset-based financing in which the financing (given by the holder of the ABS when issued) is secured with debt securities and receivables (the assets) of an originator (the initial creditor, that is, a financial institution or corporation). These assets usually comprise securities (bonds, notes or commercial paper) and receivables (consumer loans, trade receivables or leases) that can be structured or repackaged into liquid and profitable securities in the form of ABS.

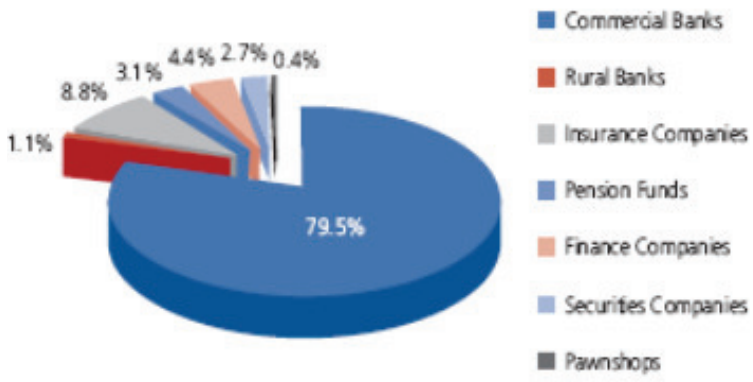
Under the ABS scheme, the value of the security and income payments are derived from and collateralized (or "backed") by a specified pool of underlying assets which commonly include payments from mortgage loans, credit cards, and auto loans, etc. Under this scheme, the investor pays the originator/issuer of the ABS, the face value of the security and is then entitled to receive the flow of future income generated by the underlying assets.

3. Development of New Financial Products in Indonesia

3.1 Review of the Current Structure of Financial Markets in Indonesia

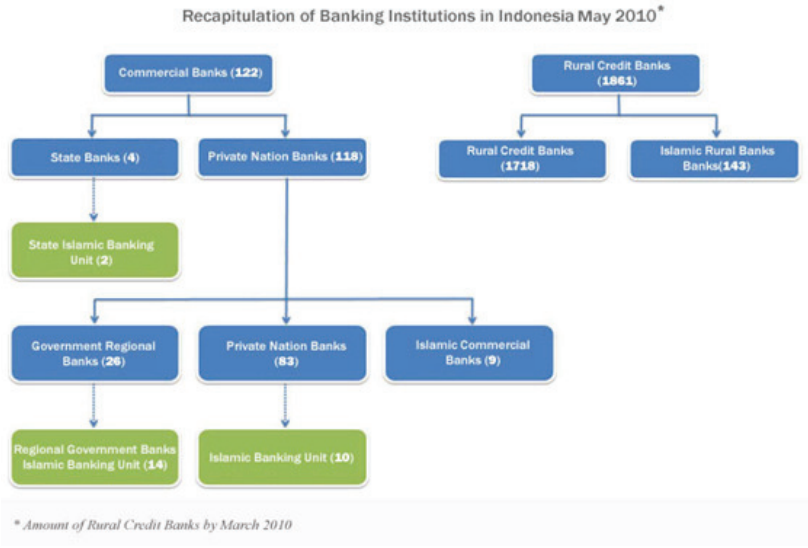
The financial system in Indonesia is dominated by the banking industry which includes commercial banks and rural banks (in terms of assets, with approximately 80% share of total financial sector assets). Market share of other financial institution such as insurance companies, pension funds, finance companies, securities companies and pawnshops are relatively small. As of December 2009, total assets of commercial banks grew by Rp224.3 trillion (9.7%) to Rp2,534.1 trillion. Fourteen large banks dominate the majority of industry assets.

Figure 2
Asset Composition of Financial Institution in Indonesia



According to Indonesian Banking Law, Indonesian banking institutions are typically classified into commercial and rural banks. Commercial banks differ with rural banks in the sense that the latter are not involved directly in the payment system and have restricted operational areas. In terms of operational definition, banks in Indonesia are classified into non-syariah and syariah-based compliant commercial banks.

Figure 3
Banking Institution in Indonesia[4]

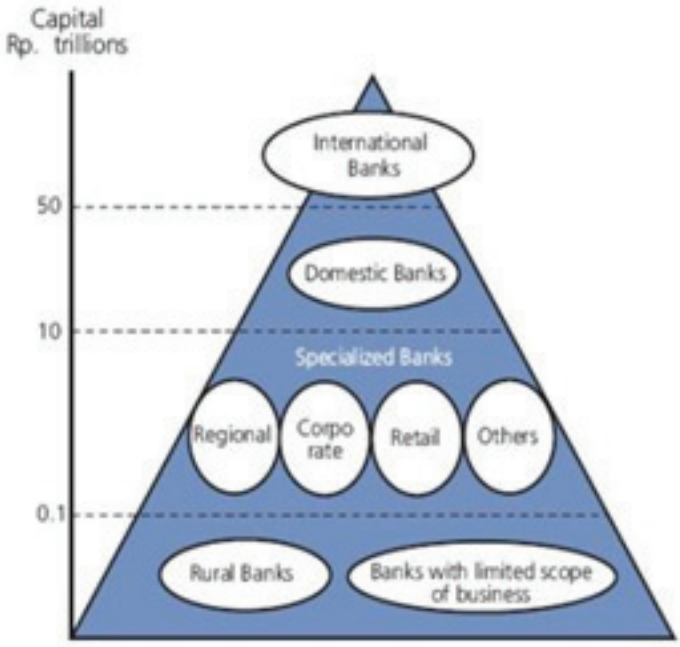


In the last two years, Bank Indonesia has initiated programmes and provided facilitation under the Indonesian Banking Architecture (API). To initiate improvements, Bank Indonesia has issued regulations to enable the banking industry to operate prudently, bring itself in line with international standards, and pay greater attention to customer rights. In the area of facilitation, Bank Indonesia has sought to build constructive cooperation with the relevant stakeholders in the API programmes in order to create a stimulus for the development of a sound, strong, and efficient banking industry.

One API programme is the structural reinforcement of the national banking system. It is aimed at building stronger capitalization for commercial banks (conventional and sharia bank), as part of the strengthening of bank capacity in business and risk management, development of information technology, and expansion of business scale to support the increased capacity for bank credit expansion. The programme for reinforced capitalization of commercial banks will be implemented in several stages. The structure of the Indonesian banking system in the next ten to fifteen years is depicted as follows:

4. On May 2010, taken from www.bi.go.id

Figure 4
Structure of Indonesian Banking System Envisaged in API



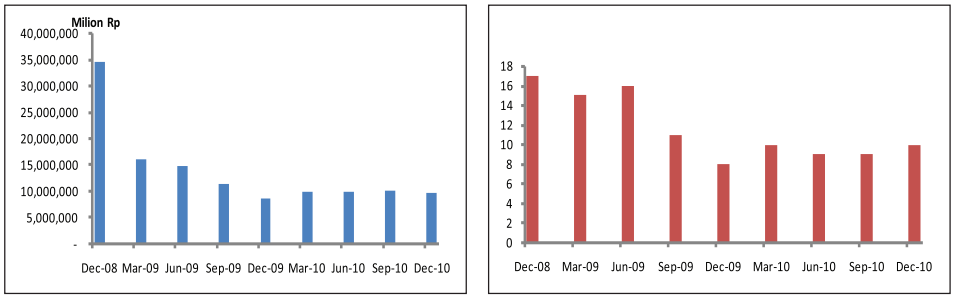
3.2 Review of New Financial Products in Indonesia

The most popular new financial product in the Indonesian financial market is the structured product. In general, structured products can be viewed as derivatives of conventional financial products with an asset structure which is expected to provide optimum returns or provide yield enhancement to clients, based on market perception on key indicators in the financial markets, such as market interest rates, Rupiah exchange rate and stock indices[5]. The type of structured products that have been developed in Indonesia are generally derivatives from time deposit options or hedging (usually forward) options. Recently, several banks, especially the branches of the foreign banks and also joint venture banks, have reduced their activities in offering structured products in Indonesia.

5. Financial Stability Review, Bank Indonesia March 2009.

Based on bank supervison statistical data, from the period of December 2008 to December 2010, there were 21 banks (consisting of 16 joint ventures and branch offices of foreign banks, 3 private owned banks, and 2 government owned banks) which reported the sales performance of structured products amounting to IDR 126 million[6]. The highest volume of structured product transactions was in December 2008 when they reached IDR 35 million involving 17 banks. These activities gradually declined after the issuance of the BI regulation regarding structured product. Banks which do not comply with the new regulation, started to reduce their activities in structured products. Due to the impact of the financial crisis, from December 2008 to March 2009, there was a significant decline, both in terms of the number of banks (12%) and the transaction volume (54%). Subsequently, the transactions decreased in volume during the period of March 2009 to December 2010. The number of banks participating in structured product transactions also declined from 16 banks in June 2009 to 8 banks in December 2010.

Figure 5
Structured Product Activities



In the past few years, increasing issuance of foreign denominated debt by emerging market countries including Indonesia, provide ample opportunities for credit market instruments such as CDS to increase in popularity. The investor who seeks for high yield bonds but does not want to accept the credit risk from those sovereign bonds, would become a protection buyer in the CDS market. When the Lehman bankruptcy brought systemic risks into the global financial market, there was increasing CDS spread in sovereign bonds, especially those of emerging market countries. During that time, Indonesia experienced the highest

6. Source: Bank Indonesia website: www.bi.go.id

CDS spread among those of Asian economies. The widening spread was closely related to market perception on the risk of rapid deterioration of the Indonesian balance sheet particularly on its foreign denomination assets. Market players also viewed Indonesia as likely to face higher liquidity risk than neighbouring countries. Market perception on the sustainability of Indonesia's fundamental macroeconomy became one of the driving factors behind the increasing CDS spread. Market players believe that CDS is a useful tool for assessing sovereign credit risk besides the yield curve.

Figure 6
Credit Default Swaps - Indonesia



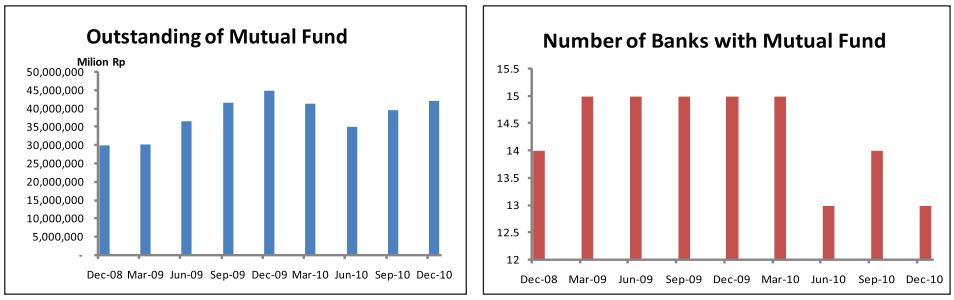
Source: Bloomberg

In the case of credit derivatives, as of December 2010, five banks planned to issue credit derivatives products in 2011 and 2012. Also, there were 4 banks which invested in credit derivative products. Only one bank reported a small number of transactions for Credit Default Swap (CDS). More data of CDS transactions are currently not available from the banking system.

As of December 2010, according to bank supervision data, only 1 private foreign bank issued hybrid products and 2 private foreign banks registered as selling agents of hybrid products. Asset Backed Securities (ABS) market has not been developed in Indonesia with only a small number of banks involved in this product. In early 2009, a state owned bank issued the first ABS namely KIK-EBA which was backed by some selected high quality mortgages amounting to Rp 111 billion.[7] As of December 2010, the volume of KIK-EBA reached Rp 750 billion.

With regard to the result of the survey on the status of new financial products in the the Indonesian financial market, mutual fund and bancassurance activities will be discussed briefly in this section. With regard to mutual fund transactions, the number of banks listed as participants selling mutual fund products were 17 banks, dominated by joint ventures and branch offices of foreign banks. The total transactions during the year of 2008 to 2010 amounted to around IDR 341 million and showed a relatively stable pattern. The mutual fund transactions reached its highest point at Q4-2009 at IDR 45million. The number of banks listed as players in the mutual fund transactions was 14 banks in Q4-2008 and 13 banks in Q4-2010.

Figure 7
Mutual Fund Activities

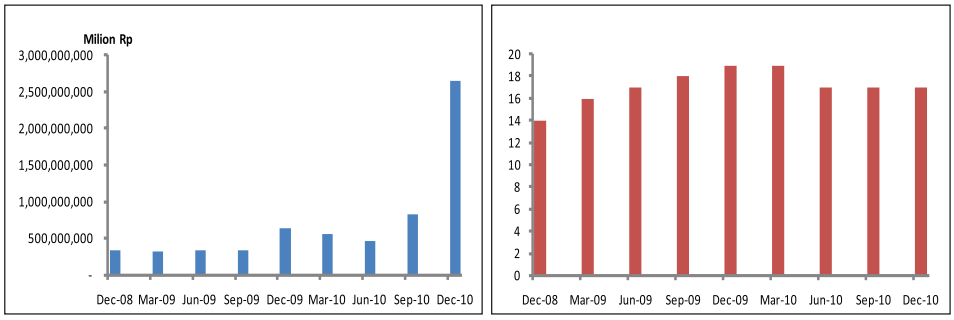


Concerning bancassurance, there were 19 banks (consist of 10 joint ventures and branch offices of foreign banks, 6 private owned banks, and 3 government owned bank) that actively traded bancassurance. The total transactions during the year of 2008 to 2010 amounting to IDR 6.4 billion with a fluctuating trend during the period. By the last quarter of 2010, the outstanding of bancassurance has increased significantly by 221% compared to the previous quarter.

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7. Bulletin of Treasury Division of Bank Tabungan Negara, Indonesia (2009), Sekuritisasi KPR Bank BTN, page 19.

Figure 8
Bancassurance Activities



3.3 Review of New Financial Product Regulation in Indonesia

There are several regulations on new financial products in Indonesia and some of them has been mentioned in the previous section. Several important regulations are among others:

a. Regulation No. 12/9/PBI/2010 on Prudential Principles in Conducting Agency Activities of Offshore Financial Products by Banks on 29 June 2010.

The regulation functions as a guideline for Indonesian banks to assess their risk management procedures when conducting agency activities in offering offshore financial products in Indonesia. This regulation allows Indonesian banks to conduct agency activities (including marketing activities) of offshore financial products by obtaining "inprinciple" approval from Bank Indonesia. Bank Indonesia defines "offshore financial products" as investment instruments issued by offshore issuer(s) that consist of offshore securities products and non-securities financial products. Bank Indonesia set out certain requirements on the types of offshore financial products that can be offered by Indonesian banks (as agent of the issuer).

The only offshore securities products that can be offered are those issued by offshore parties where the issuance has complied with the laws and regulations on capital markets in Indonesia. The only non-securities financial products that can be offered are structured products which are issued by offshore banks.

This regulation also specify that (i) banks are prohibited to act as sub-agents (therefore the agency relationship must be arranged directly by the banks with the issuer of the offshore financial products) and (ii) banks must obtain an

additional license from the authority namely Bapepam-Lembaga Keuangan (the Indonesian equivalent of the US Security Exchange Commission) to offer the offshore securities products. Offshore financial products that can be sold or marketed by Indonesian banks (as agent of the issuer) must (a) be registered at or fulfill the requirements of the relevant authority in the domicile of the issuer, and (b) be reporting to Bank Indonesia. Regulation No. 12/9 also sets out the criteria of the issuers of offshore financial products. In brief, issuers must be registered at, supervised by, and have a business license from, the supervising authority in its domicile. Moreover, Indonesian banks are only allowed to offer offshore financial products to non-retail customers.

b. Regulation No. 11/26/PBI/2009 regarding Prudential Principles in Structured Product Activities for Commercial Banks on 1 July 2009

This regulation issued in light of the financial crisis caused by insufficiently regulated trading of this type of financial products and consists of regulation on the issuance, marketing and distribution of structured products. By this regulation, Bank Indonesia basically requires banks to seek its approval before they conduct structured product activities, and to have a statement of effect to be issued for each type of Structured Product Activities. BIR No. 11/26 also imposes the following restrictions on banks in their foreign product activities: foreign exchange commercial banks may only sell structured products that are tied to a primary variable in the form of an exchange rate and/or interest rate, whereas non foreign exchange commercial banks are only allowed to sell structured products that are tied to a primary variable in the form of an interest rate. Banks planning to engage in structured product activities are required to include a Structured Product Activities plan in their business plan.

Among the important features of BIR No. 11/26 are the following:

- requirement for banks to require certain designated customers to place a deposit of at least ten percent of the notional value of the intended structured product transaction;
- requirement for banks, considering the highly complex nature of structured product Activities, to implement risk management in these activities;
- provision of comprehensive procedures, among others, for product risk assessment, customer identification (including their objective and risk appetite), and assessment of the product's suitability for the customer;
- requirement for banks to have appropriately skilled and knowledgeable human resources in their Structured Product Activities;

- classification of banks' customers on the basis of a combined assessment of their expertise and sophistication in dealing with the derivatives, their legal status, and their net asset. Customers are classified as (i) professional, or (ii) eligible, or (iii) retail customers;
- requirement for more detailed product disclosure. BIR No. 11/26 requires banks to provide customers with more detailed information on their structured products, covering the products' characteristics and features, illustration of the costs, risks, and returns, and the terms and conditions of the transaction;
- new concept for the marketing and offering of structured products. Banks, for instance, are allowed to use a variety of marketing instruments including advertisement and brochures. The new marketing concept introduces a 'cooling off period' following the offer of a product.

c. During the 2008 crisis, to reduce speculation and exchange rate volatility expectation, Bank Indonesia issued BI Regulation No 10/37/PBI/2008 concerning Foreign Exchange towards Rupiah Transactions. By this regulation, BI prohibited banks to perform Foreign Exchange for Rupiah Transaction if the transaction is related with a structured product. BI also issued Regulation No 10/38/PBI/2008 concerning Derivative Transaction. This regulation allows banks to perform derivative transactions in foreign exchange, interest rate and/or combination of foreign exchange and interest rate as long as they do not have any links with structured products in the form of foreign exchange toward rupiah transactions.

d. The latest regulation regarding new financial products is Bank Indonesia's Circular Letter No 12/35/DPNP regarding the Implementation of Risk Management for Banks with Bancassurance Activities on 23 December 2010.

4. The Survey of the Current Status of New Financial Products in Indonesia.

In order to have a comprehensive understanding on the existing new financial products in Indonesia, a survey was conducted on commercial banks and financial business entities in the Indonesian financial market.

4.1 Objectives of the Survey

The objectives of survey are as follows:

1. To identify the characteristics and development of new financial products in Indonesia's financial sector; and,
2. To review market perception on the sufficiency of the existing regulations on new financial products.

4.2 The Respondent and the Methodology of the Survey

The respondents of the survey are the banks and other financial institutions which perform one or more of the activities such as issuing new financial products, selling new financial product, and having exposure or investment in new financial products (only for banks).The sample size is determined by the number of banks/financial institutions which are involved in new financial products transactions in Indonesia. The questionnaire was compiled with the help of in-depth interviews with banks, securities companies and discussions with bank regulators from Bank Indonesia. The questionnaire was distributed by hand directly or by email to the respondents.

Table 1
Sample Size

Respondents	Sample size	Number of Population	Notes
Commercial Banks	74	122	
Financial investment business entities	127	185	*Dominated by securities companies. Source of data for total securities companies & investment management in Indonesia is BAPEPAM and APEI*

4.2 The Profile of the Respondents

Only a small number of banks and financial investment business entities have activities related with new financial products, as showed in Figure 5 and Figure 6. The analysis in this survey was based on the respondents who have activities related with new financial products. Out of 201 financial institutions in Indonesia, only 48 institutions have activities in new financial products – comprising 26 commercial banks and 22 financial investment business entities.

Figure 9
New Financial Product Activities - Commercial Banks

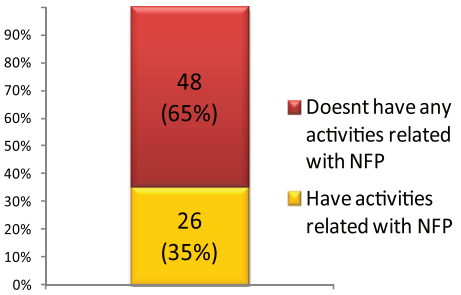


Figure 10
New Financial Product Activities - Commercial Banks

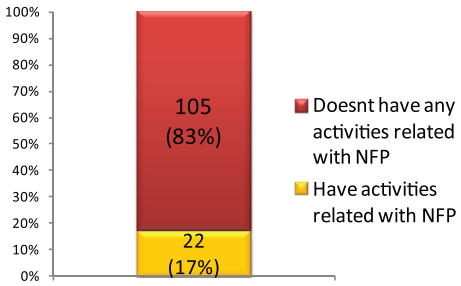


Figure 11
New Financial Product Activities

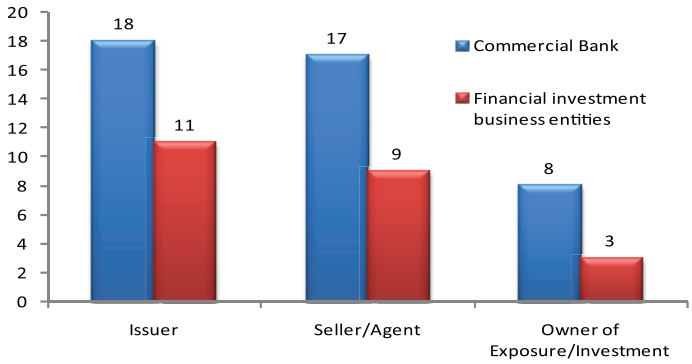


Figure 7 shows that the majority of the respondents opt to issue or sell financial products. Only few of them own exposures/investments in financial products. For each activity, more commercial banks participated in the survey. Since one institution can do more than one activitiy, it was revealed that 48 institutions engaged in 66 activities related to issuing, selling or owning investment in financial products.

Figure 12
New Financial Product Activities - Commercial Banks

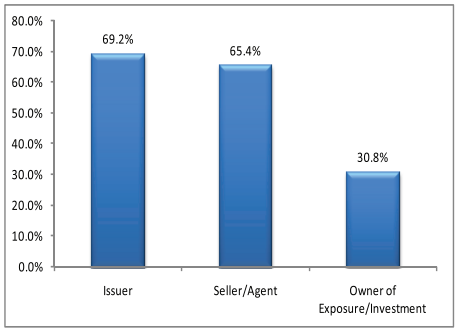
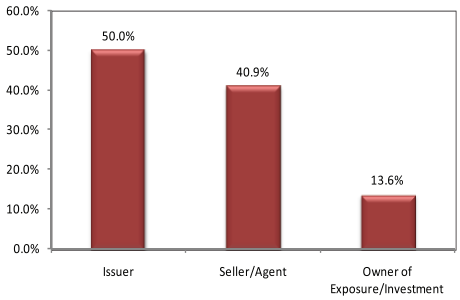


Figure 13
New Financial Product Activities – Financial Investment Business Entities



Based on the details of the data, both banks and financial investment business entities show similar pattern in their activities for new financial products. Figure 8 and Figure 9 show the financial activities in commercial banks and financial investment business entities respectively. The activities were dominated by those which issues and sells new financial products. Only a small number of activities in the form of owning exposures or investments in new financial products were disclosed by the respondents.

4.3 The Survey Result

4.3.1 The Issuer of New Financial Products

For commercial banks, structured products are the most popular type of new financial products. Figure 10 shows that 72.22% of commercial banks issued structured products, and only 27.78% of the commercial banks issued credit derivatives and bancassurance. A different pattern was shown by the financial investment business entities. Most of them (90.91%) issued mutual funds. The structured products for financial investment business entities are not as popular as those for the banks. Only 18.18% of the financial investment business entities issued structured products.

Figure 12 and Figure 13 show the market demand for each of the financial products. Most of commercial banks issued the structured products (13 banks), while most of the financial investment business entities issued mutual funds (10 banks). Commercial banks stated that there was a high demand for their structural products. Almost similar with commercial banks, the demand of this product for the financial investment business entities was also very high. Structured products

of financial investment companies are not as popular as those for the commercial banks, with only 2 financial investment companies issuing the products.

Figure 14
Types of New Financial Product - Commercial Banks

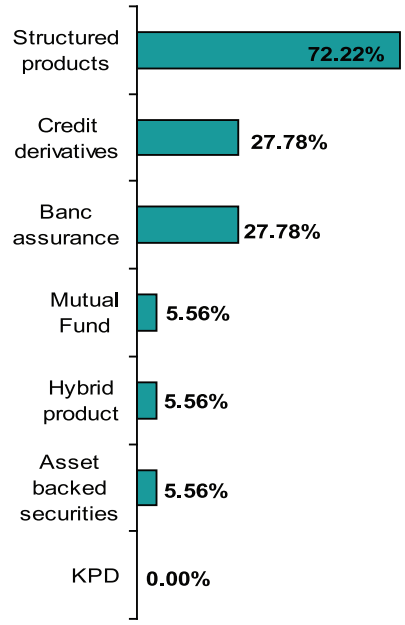
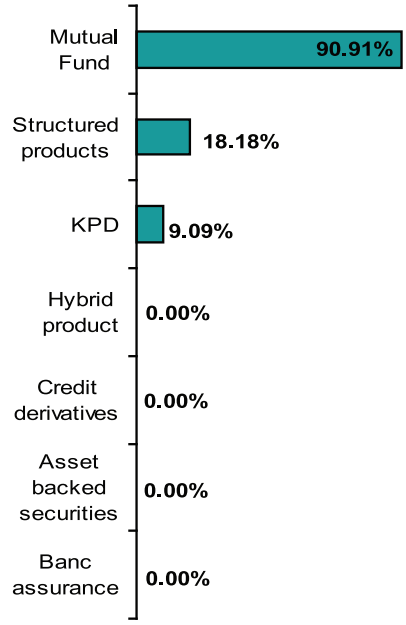


Figure 15T
Types of New Financial Product – Financial Investment Business Entities



For commercial banks (Figure 12), the demand level for asset backed securities, credit derivatives, and hybrid products are at a medium level. Similar with the structure products for commercial banks, a high level of demand from the market was shown for bancassurance. Only one bank issued mutual funds for which there was a high demand from its customers. The mutual fund is the most popular product for the financial investment business entities with 10 companies issuing the product and receiving high levels of demand. Even though the KPD is the least popular product and only issued by 1 company, this product garnered a high level of demand from the market.

Figure 16
Demand of New Financial Product - Commercial Banks

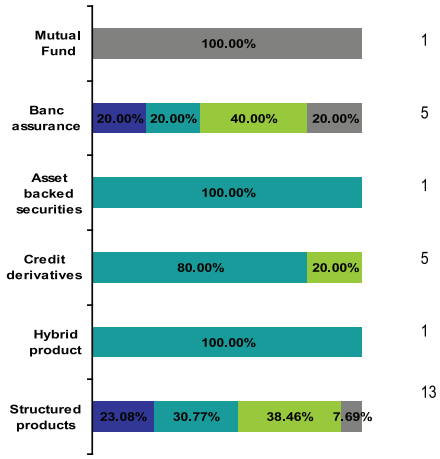
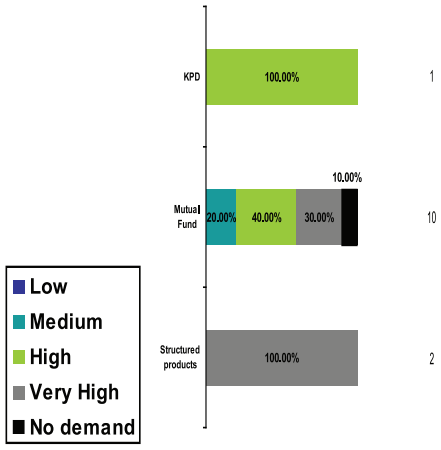


Figure 17
Demand of New Financial Product – Financial Investment Business Entities



This survey also captured the plan of financial product issuers in the near future. 78% of the commercial banks plan to expand their current financial products. Among those banks, 85.71% plan to expand their structured products. Similarly, most of the financial investment business entities also plan to expand their current products. This information came from 73% of the companies. The expansion would still involve mutual funds as their main products. 87.50% of the companies plan to expand their mutual funds in the future.

Figure 18
Plan to Expand Financial Products - Commercial Banks

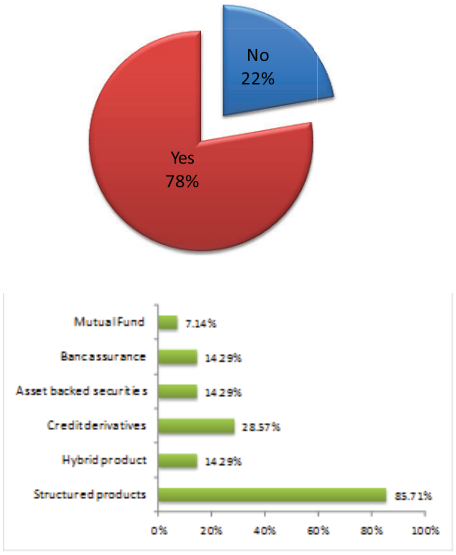
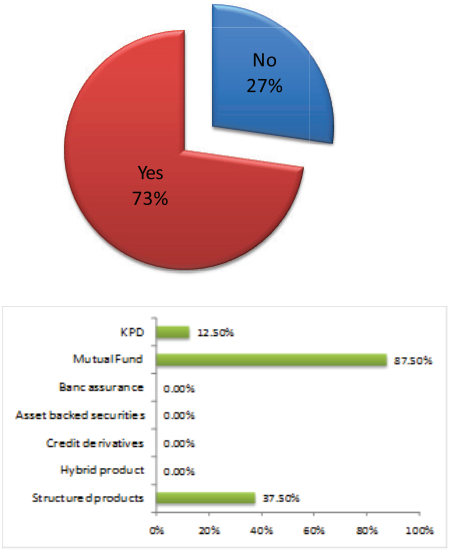


Figure 19
Plan to Expand Financial Products - Commercial Financial Investment Business Entities



The reasons for expanding financial products varies among banks. However, more than half of the commercial banks stated the main reason as the market interest/ demand, as shown in Figure 16. In Figure 17, besides the market interest/ demand, the products that are in line with main competencies of the companies are also the main reason for 50% of the financial investment business entities for product expansion in Indonesia.

Figure 20
Reasons to Expand New Financial Products - Commercial Banks

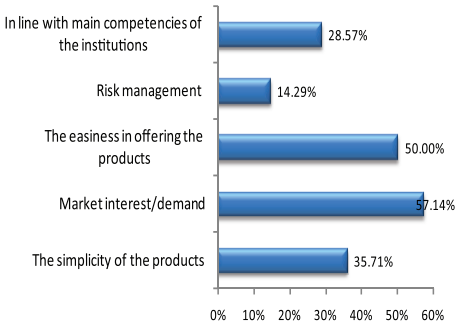
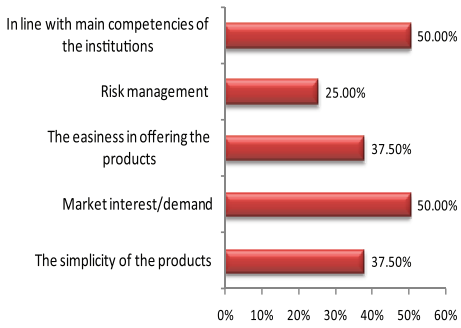


Figure 21
Reasons to Expand New Financial Products – Financial Investment Business Entities



Most of the commercial banks (85.71%) plan to expand their product variety. Similarly, all of the financial investment business entities plan to do the same as well. For both types of institutions, the expected expansion in volume is 35.71% for the commercial banks and 62.50% for the companies.

Figure 22
Aspects of New Financial Products to Expand - Commercial Banks

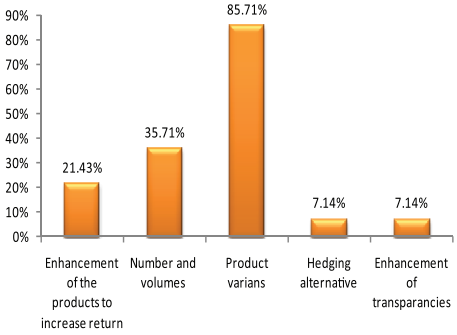


Figure 23
Aspects of New Financial Products to Expand - Financial Investment Business Entities

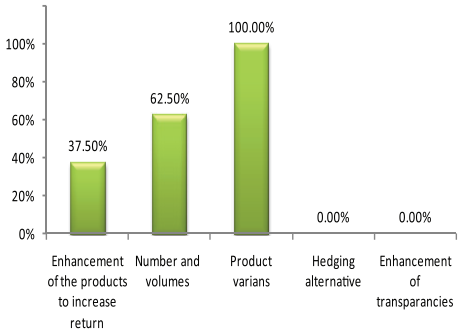


Figure 20 and Figure 21 describe the constraints faced by the commercial banks and financial investment business entities in expanding their financial products. 61.11% of the commercial banks stated that regulation is the main challenge, while the limitation of the capital to cover the risks product issuance

was the response from 54.55% of the financial investment business entities. Meanwhile, both types of institutions also experience limitations in infrastructures.

Regulation challenges faced by respondents, among others, are the procedure for approval of structured products (takes time), tax regulation, regulation of the central bank on customer criterion, and the coordination with other institutions in Indonesia, such as BAPEPAM.

Figure 24
Constraints to Expand New Financial Products - Commercial Banks

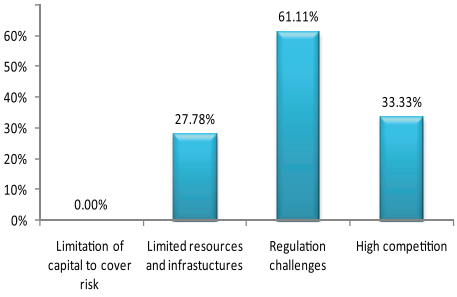
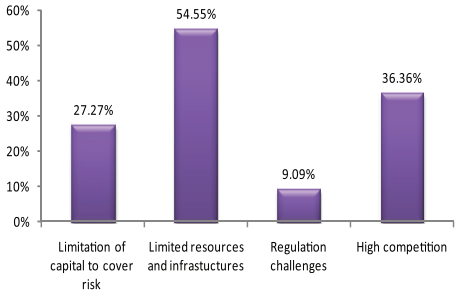


Figure 25
Constraints to Expand New Financial Products – Financial Investment Business Entities



Besides the regulation challenge, respondents also have to deal with the difficulty in product management. The main challenge for product management faced by the most commercial banks (27.78%) is the lack of supporting system infrastructures. In addition, 22.22% of commercial banks also face difficulty in increasing their employees' competencies. Like the commercial banks, 27.27% of financial investment business entities state that supporting system infrastructures as the main challenge as against product management.

Other challenges faced by respondents, among others, are the revision of marketing materials due to changes in regulation, difficulties in managing customer expectation about the time of product launch and the lack of eligible customers.

Figure 26
Challenge in Product Management - Commercial Banks

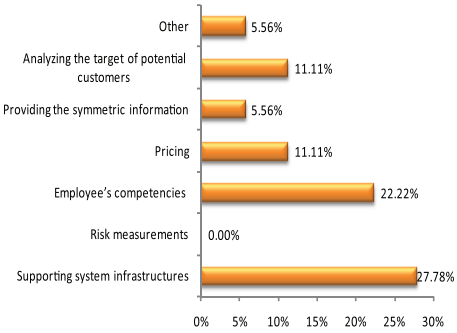
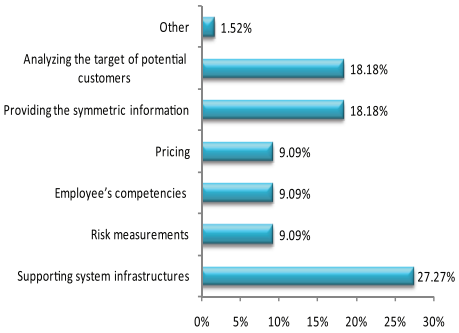


Figure 27
Challenge in Product Management - Financial Investment Business Entities



In order to fulfill the second objective of the research project, the respondents were also asked about their perception of sufficiency of the existing regulations for new financial products. The majority of the commercial banks (13 banks) found the regulations for structured product to be less effective because they are too tight. A similar opinion was obtained for the hybrid products. Five banks stated that regulations for credit derivatives is effective, as well as for bancassurance and mutual fund (Figure 24). From Figure 25, it can be seen that the financial investment business entities found that regulations for mutual funds are less effective because they are too loose.

Figure 28
Perception of Regulation Effectiveness - Commercial Banks

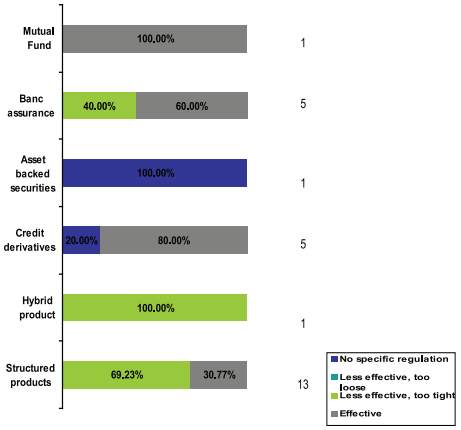
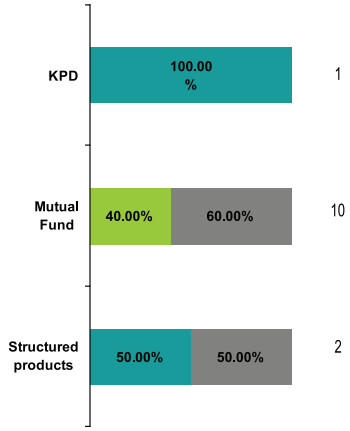


Figure 29
Perception of Regulation Effectiveness - Financial Investment Business Entities



For the existing regulations, more than half commercial banks (61.11%) perceive that regulations discourage them from issuing more new financial products. This is also the same perception for the financial investment business entities.

Figure 30
Perception of Regulation Effectiveness - Commercial Banks

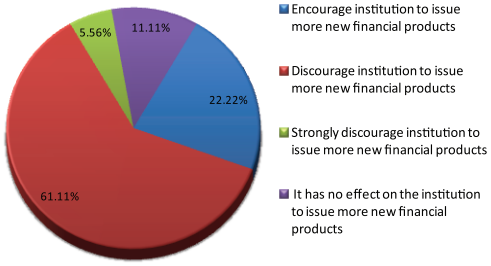


Figure 31
Perception of Regulation Effectiveness - Financial Investment Business Entities

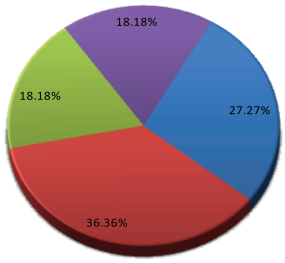


Figure 28 and Figure 29 show that the majority of commercial banks and the financial investment business entities are of the opinion that the current regulations are sufficient but need to be improved upon to encourage further financial market development.

Figure 32
Expectation of Regulation in the Future - Commercial Banks

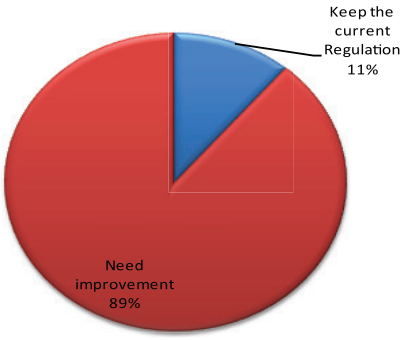
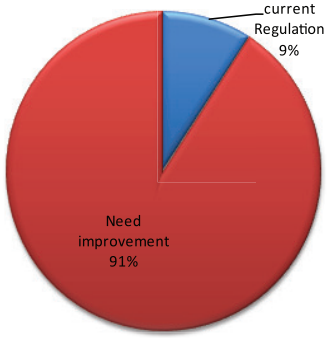


Figure 33
Expectation of Regulation in the Future - Financial Investment Business Entities



The last part of the survey is on the importance of the cross border coordination and cooperation to support supervision in order to minimize the risk in the financial stability due to the new financial products development. 50% of the commercial banks and 45.45% of the financial investment business entities stated that cross border coordination and cooperation to support supervision is important going forward.

Figure 34
The Importance of the Cross Border Supervision - Commercial Banks

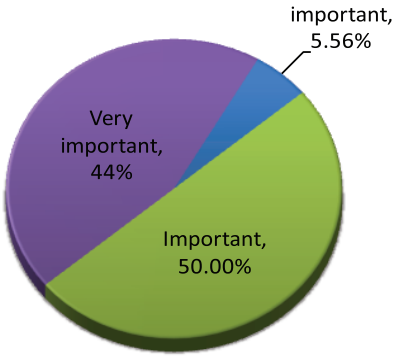
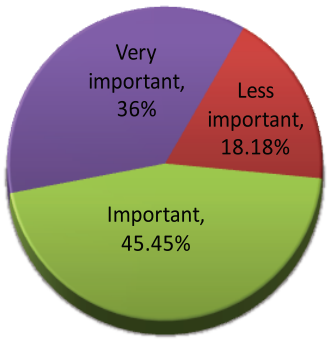


Figure 35
The Importance of the Cross Border Supervision - Financial Investment Business Entities



4.3.2 Seller/Agent of New Financial Products

For this survey, 17 commercial banks and 9 financial investment business entities (securities companies) stated that they act as sellers/agents of financial products. 94.12% of the commercial banks sell bancassurance while 88.24% sell mutual funds. Only 41.18% of the commercial banks prefer to trade in structured products. Meanwhile, the securities companies prefer to trade mutual funds and asset backed securities, as showed in Figure 37

Figure 36
Types of New Financial Product - Commercial Banks

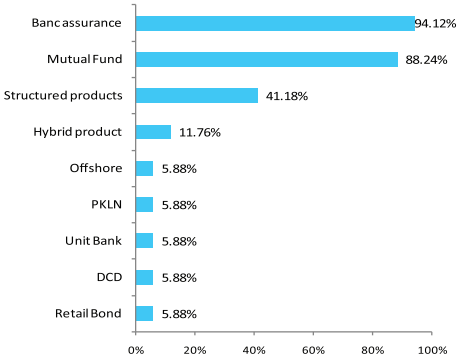
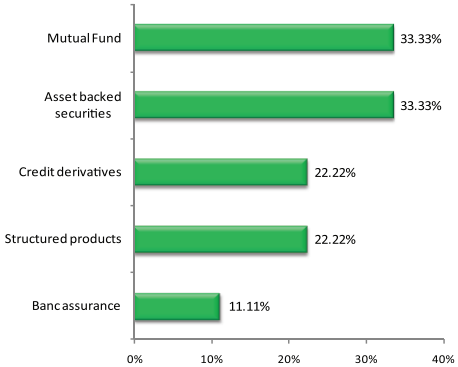


Figure 37
Types of New Financial Product - Financial Investment Business Entities



The demand for new financial products of commercial banks is showed in Figure 38. Of the 17 banks, there are 16 banks which trade in bancassurance due to the high demand. As with bancassurance, the 15 banks who sell mutual funds stated that their demand is high at 40%. Meanwhile, as showed in Figure 38, the demand for structured products is at a medium level. For securities companies, the demand for bancassurance and mutual funds is high as well.

Figure 38
Demand of New Financial Product - Commercial Banks

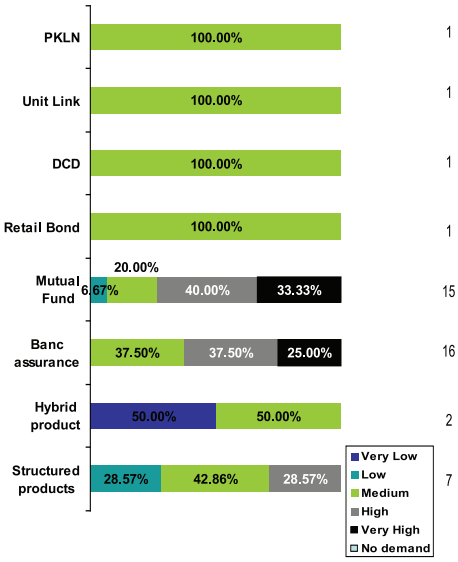
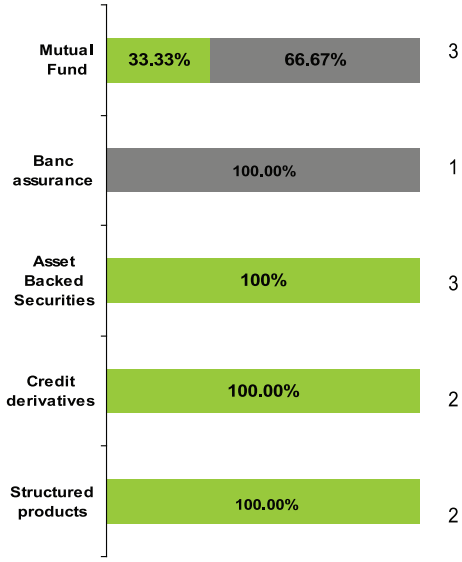


Figure 39
Demand of New Financial Product - Financial Investment Business Entities



Most of commercial banks (94%) plan to expand their current financial products (Figure 40). For those who plan to expand, 81.25% prefer mutual funds and bancassurance. A different profile is garnered from the securities companies. More than half stated that they do not plan to expand their current financial products. However, of the 44% who plan to, half prefer to expand in credit derivatives.

Figure 40
Plan to Expand Financial Products - Commercial Banks

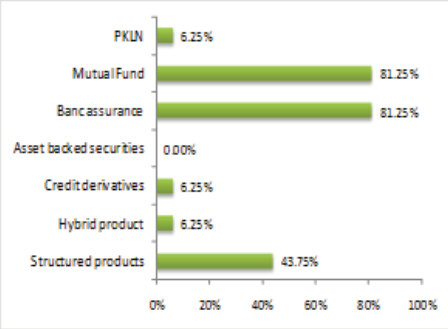
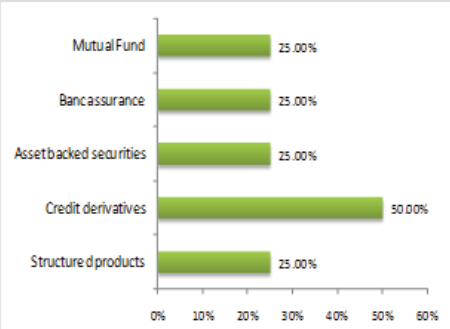


Figure 41
Plan to Expand Financial Products - Financial Investment Business Entities



For the banks which plan to expand their current new financial products, the main reasons for expansion are market interest/demand and the convenience in offering products. For the securities companies, the main reasons for expansion include the availability of the necessary competencies and market demand.

Figure 42
Reasons to Expand New Financial Products – Commercial Banks

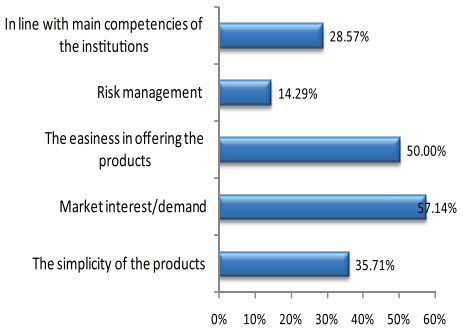
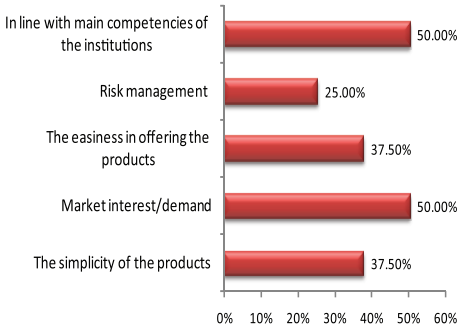


Figure 43
Reasons to Expand New Financial Products - Financial Investment Business Entities



Based on their expansion plans, the majority of commercial banks (93.75%) wanted to expand their product variances. The financial investment business entities shared the same view in their expansion plans, in addition to the enhancement of products to increase their returns.

Figure 44
Aspects of New Financial Products to Expand - Commercial Banks

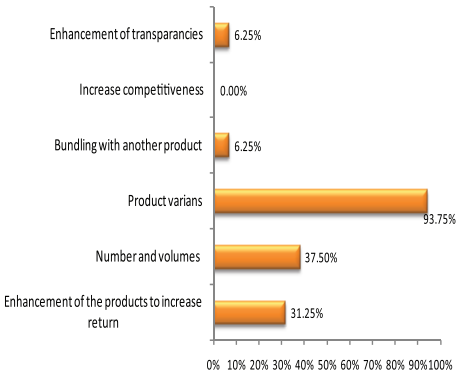
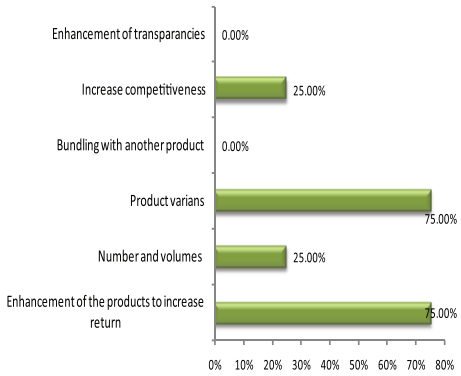


Figure 45
Aspects of New Financial Products to Expand - Financial Investment Business Entities



However there are some constraints that need to be considered in product expansion. Figure 46 describes the constraints for new financial products expansion of commercial banks. The most common constraints are regulation challenges, followed by the high level of competition in the market. As for the securities companies, limited resources and infrastructures were selected as the biggest constraints. Regulation challenges faced by respondents include among others the approval process, the lack of specific regulations, contradictory regulations, and limited access to the capital market.

Figure 46
Constraints to Expand New Financial Products - Commercial Banks

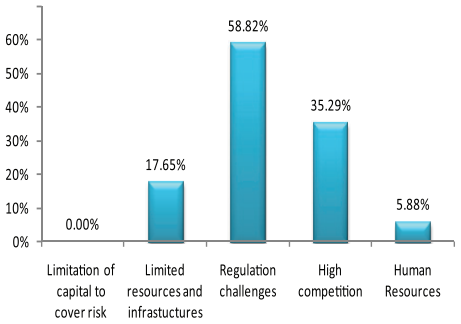
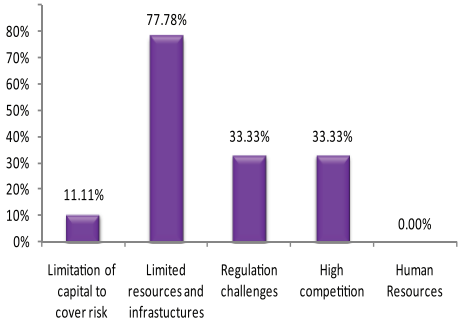


Figure 47
Constraints to Expand New Financial Products – Financial Investment Business Entities



The next challenge in financial product expansion faced by both types of institutions is the difficulty in product management, as shown in Figures 48 and 49. Employee competencies and infrastructures are the two top challenges selected by the commercial banks. In contrast, most of the securities companies found analyzing targeted potential customers as a substantial challenge.

Figure 48
Challenge in Product Management - Commercial Banks

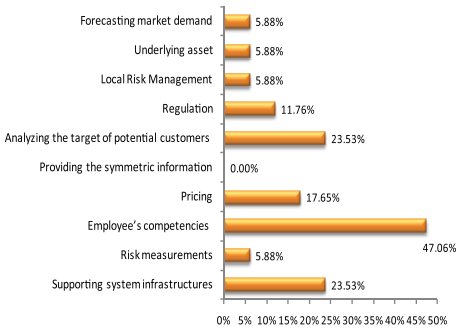
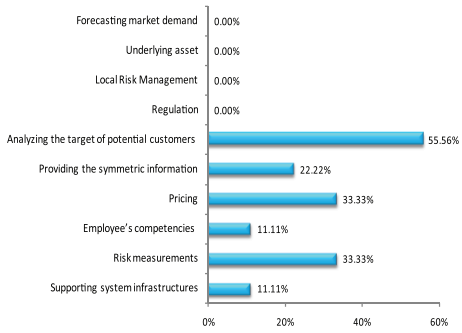


Figure 49
Challenge in Product Management - Financial Investment Business Entities



Since the regulations related to structured products are also a focus in this study, the sellers were also polled for their opinion on the perception of the sufficiency of existing regulations on new financial products. For the some of the financial products (i.e. structured products, hybrid products), the commercial banks declared that the regulations to monitor these products are less effective, since they are too tight. However, 16 banks (out of 17 banks) stated that the regulations for bancassurance are effective (Figure 50). An optimistic opinion also come from the financial investment business entities which perceive that regulations for structured products, asset backed securities, and mutual funds are already effective.

Figure 50
Perception of Regulation Effectiveness - Commercial Banks

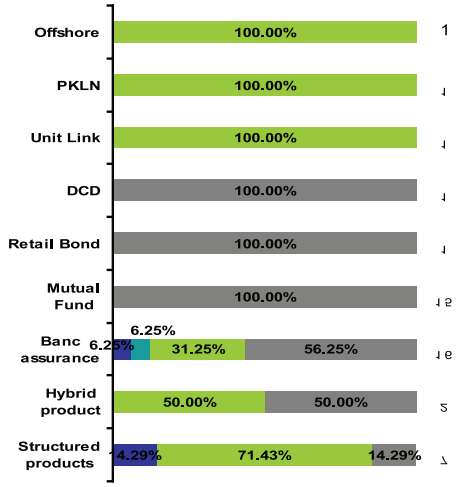
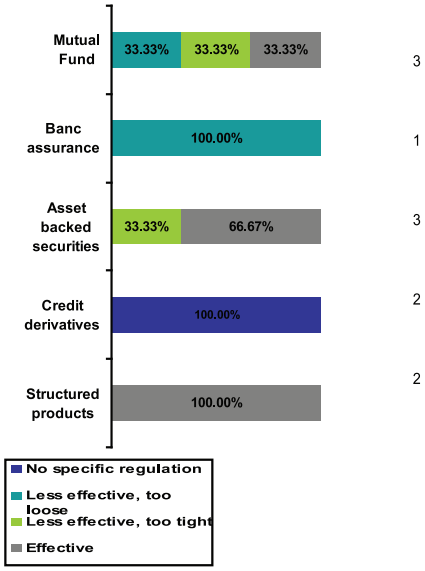


Figure 51
Perception of Regulation Effectiveness - Financial Investment Business Entities



As displayed in Figure 52 and Figure 53, more than half of the commercial banks (52.94%) and 44.44% of the financial investment business entities perceive the regulations as encouraging for the issuance of more new financial products.

Figure 52
Perception of Regulation Effectiveness - Commercial Banks

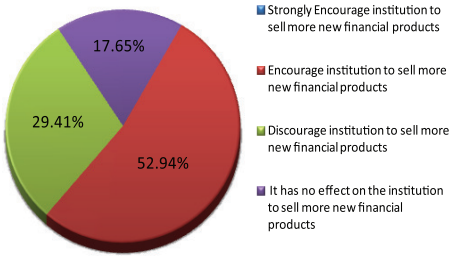


Figure 53
Perception of Regulation Effectiveness - Financial Investment Business Entities

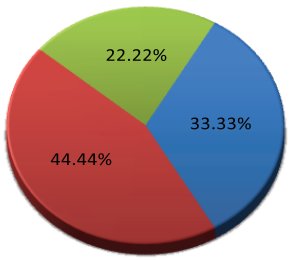


Figure 54 and Figure 55 present the expectation of regulations related to new financial products in the future for both commercial banks and financial investment business entities. Both types of institutions expect an improvement on the current regulations.

Figure 54
Expectation of Regulation in the Future - Commercial Banks

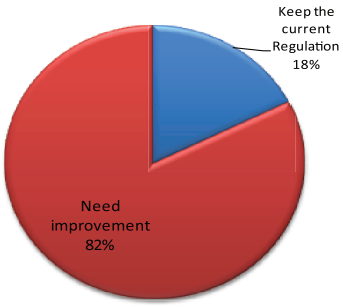
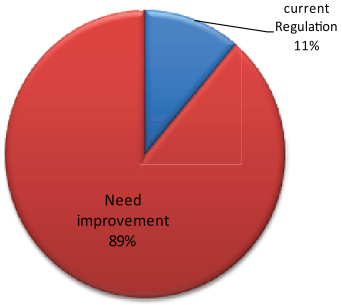


Figure 55
Expectation of Regulation in the Future - Financial Investment Business Entities



Related to the importance of the cross border supervision, both types of institutions stated that cross border supervision is very important to have in the future, registering 47.06% and 44.44% of the commercial banks and the financial investment business entities respectively. Cross border supervision is necessary for combating money laundering, improving information sharing, and in substantiating product legality.

Figure 56
The Importance of the Cross Border Supervision - Commercial Banks

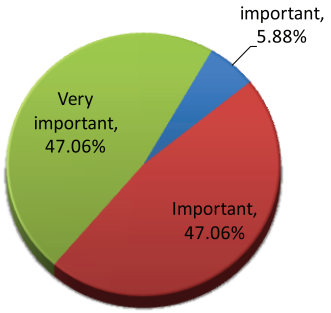
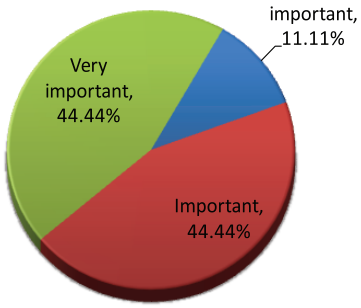


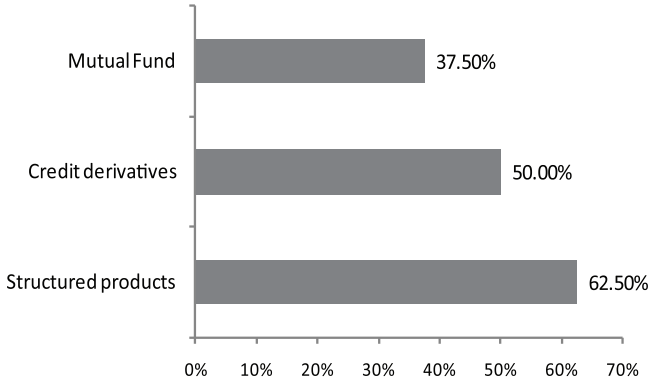
Figure 57
The Importance of the Cross Border Supervision - Financial Investment Business Entities



4.3.3 The Owner/Investor of New Financial Products.

There are 8 commercial banks and 3 financial investment business entities (securities companies) which have exposures or investments in financial products. For the commercial banks, investing in mutual funds is more attractive than structured products and credit derivatives, although all of the investments are perceived as attractive (Figure 59).

Figure 58
TheTypes of New Financial Products - Commercial Banks



Financial investment business entities invest in mutual funds which are perceived as highly attractive.

Figure 60 and Figure 61 show that half of commercial banks and 67% of financial investment business entities have plans to expand on their current products.

Figure 59
Plan to Expand Financial Products - Commercial Banks

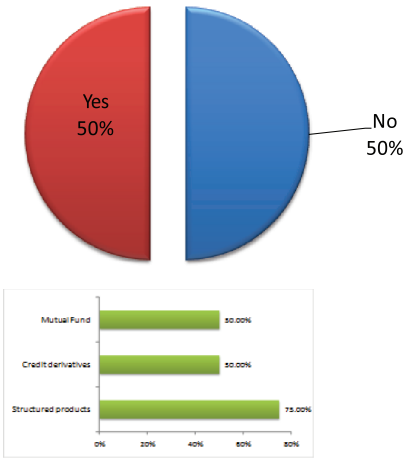
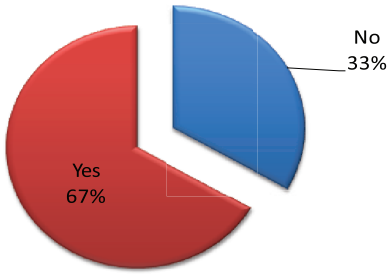


Figure 60
Plan to Expand Financial Products - Financial Investment Business Entities



Of the commercial banks which plan on product expansion, 75% said that the expansion will be in structured products. Unlike the commercial banks, the financial investment business entities plan to expand investments in mutual funds. The reasons to product expansion include provision of high profits, easy access and good risk management.

As showed in Figure 62, constraints for new financial product expansion faced by commercial banks (62.50%) include the complexity and risk of products.

Figure 61
Constraints to Expand New Financial Products - Commercial Banks

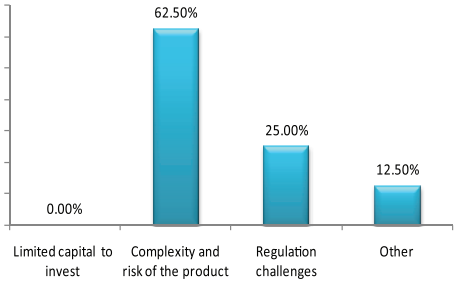
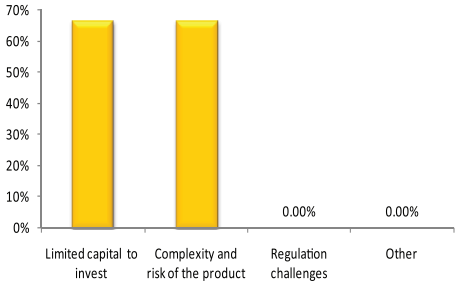


Figure 62
Constraints to Expand New Financial Products – Financial Investment Business Entities



For the 25% of the banks who are facing regulation challenges, the approval process was stated as the biggest challenge. Meanwhile financial investment business entities found that the main challenges (even at 66.67% each) are limited capital and the complexity and risks for product expansion.

Figure 63
Perception of Regulation Effectiveness - Commercial Banks

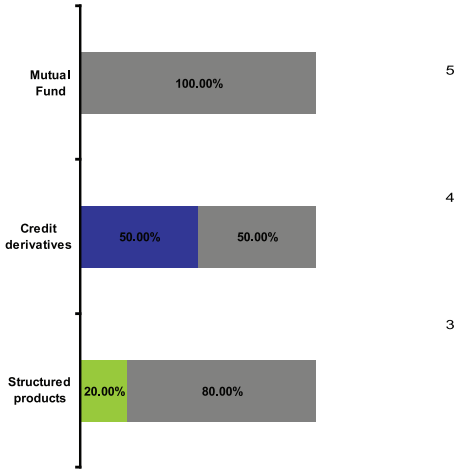
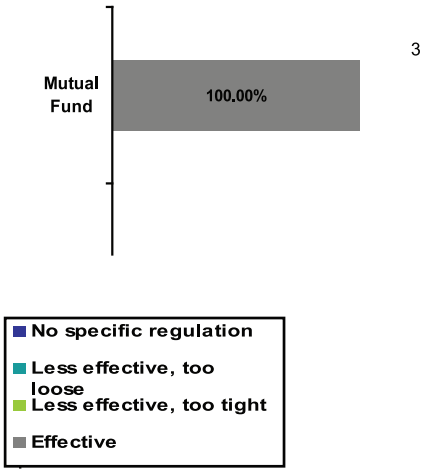


Figure 64
Perception of Regulation Effectiveness - Financial Investment Business Entities



For the investors of financial products, effective regulations are already in place for each type of investments: structured products, credit derivatives, and mutual funds. In the same way, the financial investment business entities perceive that regulations for mutual fund are effective as well.

Figure 65
Perception of Regulation Effectiveness - Commercial Banks

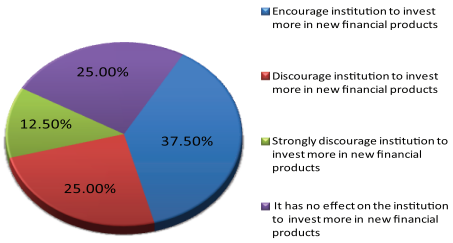
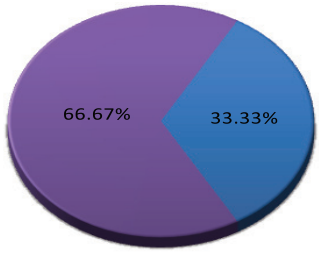


Figure 66
Perception of Regulation Effectiveness - Financial Investment Business Entities



While the commercial banks perceive most regulations as effective in regulating current financial products, and encouraging for future investments in new financial products, the financial investment business entities in contrast found them to be less effective.

Figure 67
Expectation of Regulation in the Future - Commercial Banks

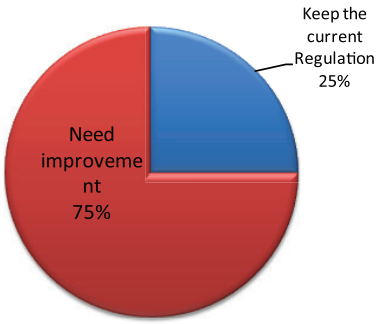


Figure 68
Expectation of Regulation in the Future - Financial Investment Business Entities

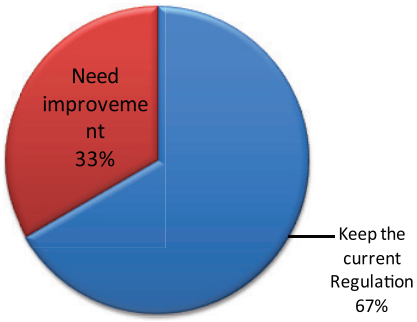


Figure 68 and Figure 69 describe the expectation of commercial banks and financial investment business entities on current regulations related to financial products. While they expect an improvement on future regulations, the securities companies prefer to maintain current regulations.

Figure 69
The Importance of the Cross Border Supervision - Commercial Banks

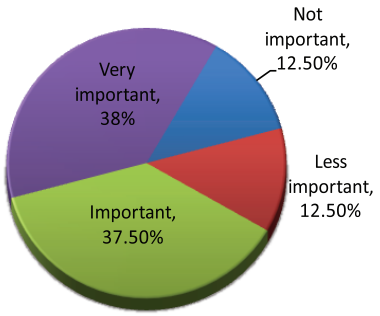
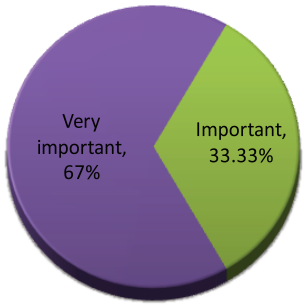


Figure 70
The Importance of the Cross Border Supervision - Financial Investment Business Entities



Related to the cross border coordination and cooperation to support supervision, the majority of the respondents for both commercial banks and financial investment business entities stated that supervision is very important to minimize risks that could jeopardize financial stability as a result of new financial product development. They mentioned that supervision is mainly needed for dispute mediation, analyzing underlying assets and risk/speculative actions.

5. Conclusion and Policy Implications

The literature survey shows that new financial products are defined as the emergence of new financial instruments in more sophisticated and complete financial markets. Previous research found that by creating more complete markets, the existence of new financial products improve resource allocation, thereby supporting longer term growth prospects. Research in more advanced markets show that the existence of new financial products appear to reduce growth volatility, allowing firms to have a more flexible financial structure and households to have increased consumption in view of temporary changes in their income. According to the literature survey, financial innovation poses new challenges for central bankers - it makes monetary analysis more complex, modifies the monetary policy transmission mechanism, and in some cases endanger financial stability.

The development of new financial products in Indonesia is still in its early stage. Based on bank supervision data, due to the impact of the global financial crisis, structured products which are the most popular types of new financial products in Indonesia, have been experiencing a declining trend since 2008.

As of December 2010, only very small number of banks have activities related to structured products, hybrid products, credit derivatives and asset back securities. In contrast, a larger number of banks have started trading in mutual funds and bancassurance in substantial amounts.

In light of the severe impacts of the 2008 global financial crisis, partly due to insufficient regulations on structured products, Bank Indonesia has issued prudential regulations on the issuance, marketing, distribution and risk management of structured products. Furthermore, in order to prevent speculative transactions and excessive volatilty in the exchange rate, Bank Indonesia prohibited banks to do foreign exchange toward rupiah transaction whenever the transaction is related to structured products. All of these regulations are aimed at strengthening the market conduct of structured products and to increase consumer protection. However, these regulations indirectly also discourage further development of the structured product market in Indonesia.

A recent survey for banks and financial institutions (players) in Indonesia shows that new financial products are dominated by structured products and mutual funds along with derivatives. Most players are actively engaged as both issuers and sellers. From the survey, it can be garnered that they have the desire to expand their activities in new financial products particularly in the form of structured products, asset backed securities, mutual funds as well as in the variety of products. The reasons of expansion include market demand and player competencies. Most players are of the view that regulations in place are moderately effective and expect improvements to be made to foster the development of the market. Respondents deem that cross border cooperation and coordination to support supervision is important particularly in minimizing excessive risks which can emerge from new financial product development. Cross border cooperation and coordination to support supervision is important for dispute mediation, analyzing underlying assets, and risk/speculative actions.

To cope with the challenges of new financial product development in the near future, authorities need to improve existing regulations, particularly for fostering market development and protecting consumers from excessive risks embedded in the new financial products.

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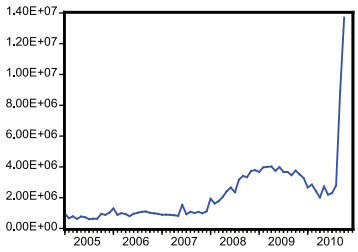
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Appendix 1

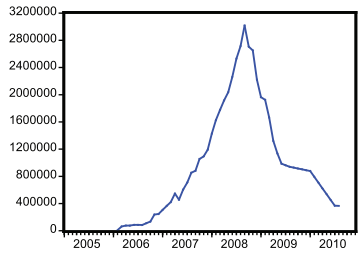
Outstanding of New Financial Product (on Average)

1. Outstanding of New Financial Product Issued by Respondents who are issuer of NFP (on average).

a. Structured Products

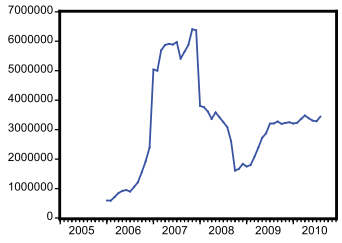


Structured product issued by Bank

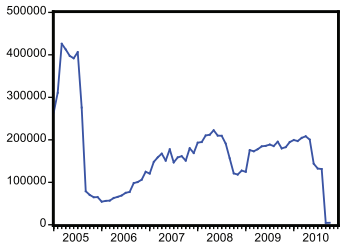


Structured product issued by Securities Company

b. Mutual Fund

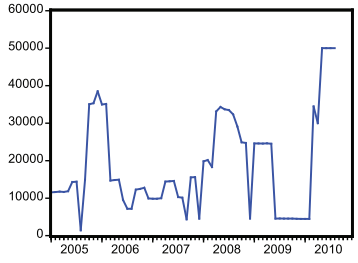


Mutual fund issued by Bank



Mutual fund issued by Securities Company

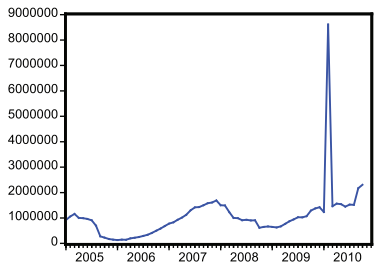
c. KPD (*Discretionary Fund)*



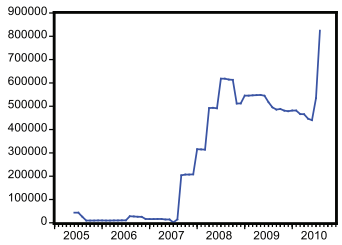
Discretionary Fund issued by Bank

2. Outstanding of New Financial Product Sold by Respondents who are agent of NFP (on average)

a. Mutual Fund

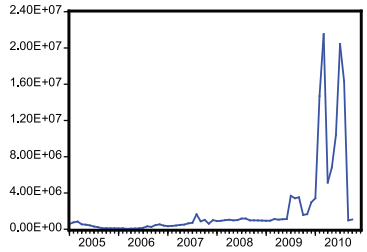


Mutual fund sold by Bank



Mutual fund sold by Securities Company

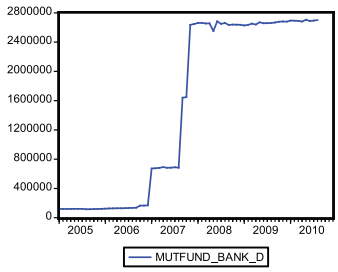
b. Bancassurance



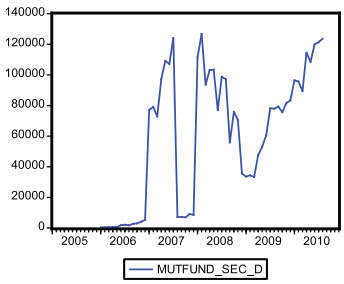
Bancassurance sold by Bank

3. Outstanding of New Financial Product Invested by Respondents who are investor of NFP (on average)

a. Mutual Fund

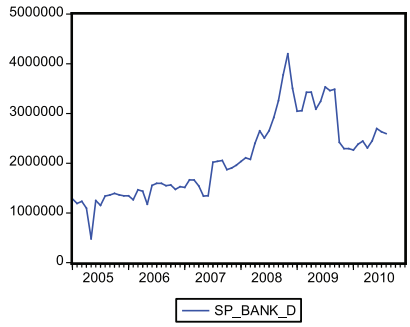


Mutual Fund Invested by Bank



Mutual Fund Invested by Securities Companies

b. Structured Product



Structured Product Invested by Bank

Appendix 2

Type and Definition of New Financial Product (Source : Product Codification and Banking Activities in Indonesia – DPNP Bank Indonesia (Unofficially Translated))

1. Structured Products:

1. 1. Interest Rate Related Products:

a. **Interest Rate Cap (IRC)**
An agreement between customers and banks where the banks are willing to pay the customer the differences of interest if interest rates rise above a specified interest rate (strike price) on a particular principal fund over a period of time agreed. For this strike price setting agreements, the customers are subject to premium. In IRC there were no movement on the principal fund. Payment only occurs when market interest rates higher than the strike price.

b. Interest Rate Floor (IRF)
An agreement between customers and banks where the banks are willing to pay the customer the difference of interest when interest rates fall below a specified rate (strike price) on a particular principal fund over a period of time agreed. For this strike price setting agreements, the customers are subject to premium. In IRF transactions there is no movement of the principal fund. Payment only occurs if interest rates lower than the strike price.

c. Interest Rate Swap (IRS)
An agreement between the customer and the bank where the customer will pay a fixed interest rate (floating) to the bank while the bank will pay a floating interest rate (fixed) to its customers on a particular principal fund over a period of time agreed. In IRS there were no movement of the principal but only the differences of interest.

d. Inverse Floater Deposit
Represents deposit which its interest payment based on the movement of the reference interest rate (e.g., USD LIBOR). Deposit interest payment at maturity using the formula (Fixed Rate - LIBOR) with a minimum of interest rate is nil. As long as the LIBOR lower than the fixed rate then the customer will receive interest income.

e. Range Accrual Deposit
Represents deposit which its interest payment is in accordance with predetermined interest rates as long as the market rate is still within the range of reference interest rates.

f. Step-Up Callable Deposit
Represents long-term deposits (one year or more) with increasing interest rates features each period according to the agreement. The Bank has the option to pay / terminate the deposit after the payment of interest on each interest payment period agreed.

1. 2. Foreign exchange related products:

a. Currency Forward

An agreement between customers and banks where customers sell (buy) an amount of currency against other currencies to (from) the bank with a delivery time of more than 2 (two) working days after the date of the transaction according to an agreed price.

b. Currency Option

An agreement between the bank and customer where the customer have right to sell / put option (buy / call option) an amount of currency against other currencies to (from) the bank at a specific future date at a price determined in the contract/strike price. Banks will charge a premium to its customers on these rights. The available options can be realized any time (American style) or only on maturity of the agreements (European Style).

c. Currency Option With Triggers (Knock-Out/ Knock-In Option)

Is a currency option with an additional feature with particular reference to the trigger level that would affect the continuity of contracts. For Knock-Out Option, option contracts expire if the price of the currency touched a trigger level while for the Knock-In Option, a new option contract will be valid if the price currency touched the trigger level

d. Currency Swap

Combination transactions between spot today with a forward, where the customer and the bank exchange some money in a particular currency against other currencies in accordance with spot rate at the beginning of the agreement and return the funds in the original currency at the end of the agreement. Customers pay a premium for certainty of nominal return.

e. US Dollar SwapDeposit

This deposit product has several characteristics as follows:

- Combination of today, forward and rupiah deposit transactions;
- Customer who own US Dollar sells today USD/IDR at the spot rate to be placed in time deposits 1-3 months and conduct a forward purchase contract in accordance with the term of deposits;
- After the maturity, customers receive back the initial amount of deposits in U.S. Dollars.

f. Dual Currency Deposit

Types of deposits in foreign currencies where at the maturity date the bank has the right to determine the principal and interest payments in two ways:

- in the home currency in the amount of principal and interest; or
- in another currency (Rupiah) equivalent to the principal and interest based on agreed conversion rates. As return for the option owned by the bank, customers obtain a higher deposit rate (premium) than the market interest rate.

g. Forex Accumulating Deposit (FAD)

Deposits in a particular currency accompanied by a contract to convert to other currencies in stages by using the strike rate specified at the beginning of the agreement. Strike rate is set lower than the spot rate. Conversions to other currencies is done in stages according to the specified period as long as the spot rate is below the upper barrier which specified at the beginning of the contract. Upper barrier is the highest rate as the reference to the conversion. The conversion process will be stopped (terminated) if the spot rate touch the upper barrier and depositors will receive the principal deposits of a certain currency from the currency conversion and the rest in the home currency with interest.

h. Foreign Exchange Linked Range Accrual Deposit

Is one variation of the deposits where the effective interest rate paid to customers is depend on the movement of a particular currency exchange rate. Calculation of the effective interest rate is influenced by the proportion of number of days in which a particular currency exchange rate is within a specified range of term deposits

i. Multi Currency Deposit

Type of deposits in foreign currencies where at the maturity date bank has the right to determine the principal and interest payments in two ways:

- In the original currencies in the amount of principal and interest; or
- In some alternatives other currency equivalent to principal and interest based on the agreed conversion rate (strike price)

In return for the option owned by the bank, customers obtain a higher deposit rate (premium) than the market interest rate. Payments to customers is done in the home currency when the strike price of the home currency conversions higher than the spot price and the bank has the option to pay in another currency options in the opposite event.

j. Phoenix Deposit

Is one variation of savings deposits in which the calculation of interest payments associated with the movement of certain currency exchange rate set at the beginning of the agreement. The range of exchange rate movements which become reference is divided into 2 (two) stages namely Primary and Secondary Range (if the movement touch the limit of Primary Range). Furthermore, the determination of deposit rates is depending on whether exchange rate movements are within or outside that range. Usually, the determination of deposit rates if exchange rate movements are in Primary or Secondary Range is higher than if the exchange rate movements outside that range.

k. High Yield Idr Notes Linked To Government Bond(HYNLGB)

This product is marketable securities with RI government bonds denominated in U.S. $. Return of this product is a combination of government bonds coupon with

a return of Non Deliverable Swap so that it can provide high returns 15.8% or 100 bps over 10-year government bond return (14.8%).

l. USD Extendable Deposit

Structure of deposits that allows customers to earn higher interest than normal deposit rate. The Bank has the option to extend or not extend the deposit on extending date that have been determined at the beginning. The currency used is the USD. Bank purchase the option from the depositor. Premiums earned from these options will be returned to the depositors in the form of additional interest. Customers have an obligation to continue the placement of deposits during the period that has been agreed from the beginning when the bank decided to extend the deposit on the extend noticed date

1. 3. Index/commodities related structured products:

a. Equity Linked Deposit

Is a funding product in the form of rupiah deposit that gives a certain return (fixed either for principal or interest) and the possibility of some additional results from the investment on option purchase with one/several mutual funds or selected stock indexes as underlying (for a while the index used still referring to the known index, such as the S & P, Nasdaq, Dow Jones). The consequences of using this international index is the conversion value of the rupiah deposits to foreign currency deposits. But this conversion is only associated with the option transaction between the bank and counterparty (equity-linked). For customers, the denomination of deposits is still in Rupiah. Basically, equity-linked deposits can be divided into three parts, namely a initial nominal deposit, fixed interest and interest on investments in the selected securities when producing a positive return that is higher than fixed rates.

b. Forward Bond Agreement

The structure of these products utilize the customer wants to buy bonds (eg, the recap bonds) at the future time with a more pre-determined price based on the index of bond prices for a certain period. At the maturity of forward contract, customer would exercise the purchase contracts in accordance with the predetermined price.

c. Target Buying Note/Bond Exchangeable Deposit

The structure of these products utilize the customer wants to purchase the notes /bonds (e.g., the recap bonds) with a certain price (strike price) from the price index note / bond for a certain period. Customers are required to place funds in the form of deposits by acquiring a premium interest rate (base rate plus a option premium). At maturity, the bank has the right to pay all customer deposits plus interest in cash or deliver the target note / bond in accordance with the strike price.

2. Hybrid products

a. Convertible Bond (CB) represents bonds which are similar to ordinary bonds that have a nominal/par, a specific period, and giving the return/interest periodically (may

be lower than other securities), with additional shares of derivative instruments (embedded stock option) in the form of option to convert bonds into stock or bond holders could obtain the investment funds on the due date.

b. Convertible Subordinated Bond (CSB) is subordinated bond containing derivatives (embedded stock/call option) like the convertible bond, but with ordination nature which is payment of principal and interest when the bank is on liquidation is on the ordinal after payment to the depositors and other creditors as well as the subordinated loan. Call Features option contained in the CSB is generally accompanied by step-up coupon which is the increase of bond interest rate if the bank as issuer not executing a call option on the specified period.

3. Credit derivatives

a. Credit Default Swap (CDS)

CDS is a modification of the traditional financial guarantee. The difference is that CDS are not only limited to actual defaults, but also includes conditions such as downgrading and the likelihood of default and others. In a CDS contract, protection sellers are agree to receive the premium at the beginning of the contract period or continuously as the compensation for the protection of the buyer in case of special conditions such as default, downgrading obligor, the default tendency, and others.

b. Credit Linked Note (CLN)

Issuance of securities (note) by one party /issuer (protection buyer) to another party /investor (protection seller), in which the securities are linked to the reference assets owned by protection buyer.

c. First to Default (FTD)

FTD structure is basically the CLN which accompanied by a credit risk transfer contract from the note issuer (protection buyer) to the note buyer (protection seller) for credit risk from one of the reference assets that firstly experienced credit events. Differences between FTD and CLN lies in the reference asset. CLN has only one reference asset, while FTD consists of a set of reference assets.

d. Linear Basket Note (LBN)

Linear structure Basket Note (LBN) is basically the same as FTD. The difference between LBN and FTD lies in the treatment when the credit event occurs on one of the reference asset. If the credit event occurs on one of the reference assets, the LBN nominal value is reduced proportionately at the amount of it initial value of reference assets that defaulted. Likewise, the coupon payments will be adjusted with a last nominal value of the LBN.

e. **Second To Default (2TD)**

FTD differences with the Second to Default lies in the definition of default of the reference asset. Credit event on FTD only require a default condition of one of the reference assets credit, but credit event on Second to Default requires two default conditions of the reference asset.

f. Total Return Swap (TRS)

TRSs contract is a bilateral financial contract between the total-return payer (protection buyer) with a total-return receiver (protection seller). Payer pay all the income from the reference asset and receive payments from the receiver (floating rate payment). Reference assets which can be used are indices, bonds, loans, stocks, accounts receivable or commodities.

g. Leveraged Credit Linked Note/Loan (LCLN)

Through the Credit Linked Notes (CLN) or five year plain vanilla Credit Linked Loan (CLL), where the underlying asset is the Indonesian government bonds, 6.75% yield gained. With CLN or CLL 2 x leveraged, investors will be exposed to the 2 times amount of notional CDS notional and also generates a higher return.

4. Asset backed securities

There are two types of asset securitization transactions that can be done by banks, (i) traditional asset securitization and (ii) synthetic.. Traditional asset securitization typically use loans as underlying assets, including credit card bills. While the synthetic asset securitization generally use government bonds, treasury bills or index as the underlying asset

5. Bancassurance

Marketing cooperation between the Bank and insurance company (bancassurance), which could be in these forms: 1.Distribution Agreement; 2. Strategic Alliance Agreement; 3.(Joint Venture; 4.Financial Services Group)

6. Mutual Fund

There are several mechanisms used by banks in the marketing of mutual funds.Banks could act as selling agent of mutual fund products issued by one or more Investment Managers or Bank could market the product mix (modification of mutual fund)

Chapter 4

NEW FINANCIAL PRODUCTS IN KOREA, AND CHALLENGES FOR THE BANK OF KOREA

By
Sangjin Song[1]

1. Introduction

The 1997 Asian currency crisis devastated the Korean economy, but also gave Korea the opportunity to open up and deepen its financial markets with new financial products (hereafter, NFPs), especially various derivative products, as numerous as in the advanced countries. The focus of the Korean government in the course of addressing the crisis was to secure foreign liquidity and to reconstruct the nation's financial institutions. To increase foreign liquidity continuously after adopting a free floating exchange rate regime, the government liberalised the foreign exchange market, including the NDF transactions of domestic banks, and completely opened its bond, stock and money markets to foreign investors. To save the troubled financial institutions, the government enacted the Asset Backed Security Act in 1998, and recapitalised them by actively securitising their toxic assets.

Due to the floating exchange rate and the open capital market, the financial institutions and the export industries had to seek NFPs to hedge their trading risks. Foreign investors also needed to hedge foreign exchange risk, and at the same time began to exploit arbitrage opportunities between markets. Participants in the Korean financial markets increasingly used FX forwards, swaps and futures or CRS for hedging, and as a result the FX derivatives markets also grew. Customised derivatives were also demanded and supplied in the markets for hedging and also for speculation. The growth in foreign capital movements did not stop at the FX market only. The domestic financial markets, especially the bond markets, became more linked with the FX market through derivative products, and the financial markets began to experience price fluctuations due to these capital movements.

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1. Economist, Research Department, Bank of Korea. The views expressed in this paper are that of the project team member and do not necessarily reflect the stance of the Bank of Korea or The SEACEN Centre.

Currently, financial derivatives trading in Korea is active mostly in the currency derivatives markets, the interest rate futures and swap markets, and the stock exchange futures and option markets. These trades have catalysed linkages between the FX market and the Korean won (KRW) financial markets, and also caused financial turbulence at times especially in the bond market. Since such turbulence from capital movements lessens the effectiveness of monetary policy, the Bank of Korea (BOK) is turning more attention to the financial price instability originating from the financial linkages. However, it arguably faces some difficulties, arising from its lack of comprehensive understanding of the risks of NFPs and of their roles in the markets.

In this paper, I will look first into what the NFPs in Korea are and review them. In addition, after examining how the NFPs play a role of linking the FX and KRW markets, I will deal with the serious challenges of these new financial products to the BOK.

2. Definition of New Financial Products, and Previous Studies

2.1 Definition of New Financial Products

The term NFPs in this paper refers mostly to derivative-related products[2]. There is no clear definition of NFPs, yet conventional financial products such as deposits, loans, bonds, securities, insurance, etc. are arguably not classified as these products. Cross-sector products such as bancassurance and beneficiary certificates sold at banks may be presumptively considered to be put into this category. However, these products will be excluded in this paper, as they do not have much meaning other than the sharing of bank counters with other non-bank financial institutions.

Securitised products, well represented by asset-backed securities (ABSs), are the next candidates. They are among the most important new financing methods for both financial institutions and industries in Korea, although their share in the bond market is declining as shown in Figure 1. Securitisation remained a preference of financial institutions and the government even after the financial reconstruction following the Asian currency crisis was completed, as it enabled issuers to lower their debt ratios and financing costs. Until the global financial crisis, the increase in housing prices motivated financial institutions to increase their housing loans and the PF financing associated with real estate development — mostly through the securitisation of their loan assets. After the crisis, the

2. In this paper, they are grouped into standard derivatives, derivative-linked products and credit derivative products.

government supported issuance of P-CBOs by small- and medium-sized enterprises, which have difficulties in funding through issuance of normal corporate bonds. Since securitisation increases the incentive for leverage, the BOK is concerned about the possible unintended effects on monetary policy due to it. However, securitisation in Korea has not revolutionised into leverage financing yet[3]. For this reason, securitised products are not discussed in this paper.

All that is left, therefore, is derivative-related products, and this paper defines them as NFPs.

Figure 1
ABS Issuance in Korea

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Bonds (A)	264.5	294.8	258.2	286.8	361.5	424.8	434.2	452.8	492.2	779.3	672.3
ABSs (B)	41.6	39.7	29.2	28.0	16.3	17.8	14.7	10.0	8.5	19.5	11.7
Share (B/A)	15.7	13.5	11.3	9.8	4.5	4.2	3.4	2.2	1.7	2.5	1.7

Source: Koscom Corp.

2.2 Previous Studies

Although the derivatives markets are growing rapidly in Korea, the literature on them is relatively rare or hard to find. However, materials released by the financial authorities[4] are not scarce. The BOK often releases statistics on derivatives trades, which are jointly worked out with the BIS, as well as working papers on specific derivatives markets or on the effects of derivatives market development centering on the swap market. It has also published a book (2009) covering the current domestic derivatives markets, in order to help the general public understand the financial markets in Korea. In addition, the Financial Supervisory Service (FSS) compiles most of the statistics on derivatives trades in Korea and releases them periodically, although it does not release working papers yet. The BIS has also released a survey on the hedging markets in Korea.

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3. However, these experiences rather enriched the financial institutions' abilities for dealing with securitisation, and nudged them into NFP trades for new sources of revenue.

4. They are the BOK, the Financial Services Commission, the Financial Supervisory Service, the Ministry of Strategy and Finance, the Korea Deposit Insurance Corporation, etc.

Researchers in Korea focus mostly on explaining the mechanisms of the Korean financial markets in which NFPs are introduced or in which foreign capital enters and exits freely. Yang and Lee (2008) found the causes of long-lasting arbitrage opportunities in Korea and their effects on foreign bond investment. Cho, et al. (2010) suggested the need to reduce arbitrage opportunities in the Korean financial markets, so as to reduce the possible negative effects of foreign bond investment on monetary policy. Lee and Jeong (2010) also found foreigners' domestic bond investment to have negative effects on the linkage between long- and short-term interest rates, and consequently on monetary policy. Park, et al. (2010) showed that capital is increasingly flowing into the emerging market countries, and introduced these countries' efforts to regulate short-term capital. However, none of this research deals directly with the roles of NFPs.

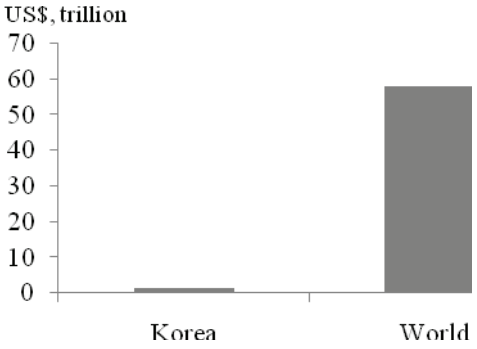
This paper, in contrast, will focus directly on the NFPs, using material from the authorities. The paper proceeds as follows. It provides a survey of the status of NFPs in Korea, and then identifies their roles in the financial markets and the challenges they pose for monetary policy.

3. Survey of Status of New Financial Products in Korea

3.1 New Financial Products

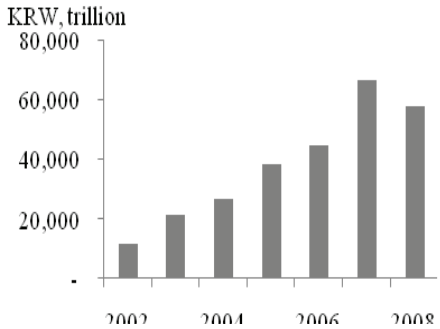
Derivative products take various forms to suit particular trades. First, forwards, futures, swaps and options are classified in this paper as standard derivatives. Thanks to the government's efforts, Korea has developed futures and options markets associated with stock trades, futures and swap markets associated with interest trades, and derivatives markets related with currencies. In addition to standard derivatives, there are also many customised non-standard derivative products, which combine standard derivatives with conventional financial products, such as deposits and bonds. They commonly have revenue structures such as the so-called digital, knock-out (KO), reset call, step-down, bull-spread, reverse convertible, target forward, knock-in-knock-out (KIKO), etc. These are not easily captured and compiled as individual statistics, and the authorities instead try to trace the standard derivatives trading overall, which includes them.

Figure 2
FX and Derivatives Market Activities in 2010



Source: BIS.
Note: Data are in amounts outstanding and adjusted for inter-dealer double-counting.

Figure 3
New Financial Product Trading in Korea



Source: FSS.
Note: Data are in volumes, and from banks, securities companies, insurance companies, credit card companies, asset management companies, etc.

Looking at the BIS's triennial central banking survey on NFPs in 2010, we find that the Korean market made up only a small portion of the world market, as shown in Figure 2. However, as shown in Figure 3 using statistics compiled by the FSS, the volume of NFP trades is growing rapidly in Korea, although it retreated a bit after the global financial crisis.

Figure 4 shows the NFP trading in Korea, captured through standard derivatives trades (but with non-standard NFPs also comprising them as key components). The prominent trades shown in Figure 4 are stock futures, stock options, interest futures, interest swaps, FX forwards, FX futures, and FX swaps.

Figure 4
New Financial Product Trading in Korea

		2002	2003	2004	2005	2006	2007	2008	2009
Stock	Total	9,302	17,558	21,280	32,150	37,769	54,375	41,058	33,210
	Forwards	-	-	-	-	-	2	2	1
	Futures	877	1,313	1,552	1,910	2,522	3,817	4,559	5,654
	Swaps	15	-	-	2	6	17	27	8
	Options	8,424	16,227	19,700	30,196	34,600	49,871	33,953	24,898
	Options (OTC)	1	17	28	42	105	77	126	100
	ELW	-	-	-	-	482	509	2,331	2,477
	ELW (OTC)	-	-	-	-	54	83	60	73
Interest Rate	Total	1,052	2,102	1,933	2,608	3,037	4,841	6,213	6,758
	Forwards	6	30	46	48	60	112	160	193
	Futures	822	1,803	1,546	2,059	1,954	2,933	3,539	3,900
	Swaps	208	240	281	471	934	1,667	2,260	2,482
	Options	1	2	0	0	0	0	2	0
	Options (OTC)	15	28	18	30	89	128	252	183
FX	Total	1,154	1,887	3,540	3,668	4,017	7,069	10,316	11,548
	Forwards	977	1,583	3,096	3,153	3,315	5,820	8,767	9,674
	Futures	72	119	197	252	268	547	721	1,462
	Swaps	67	112	125	139	248	377	538	349
	Options	-	-	-	-	-	-	-	4
	Options (OTC)	37	72	123	123	186	325	291	58
Credit	Total	-	-	-	-	2	3	6	5
	CDS	-	-	-	-	1	1	6	5
	TRS	-	-	-	-	1	2	-	-
Others		-	2	1	1	3	13	32	14
Total		11,508	21,548	26,755	38,427	44,828	66,301	57,625	51,535

Source: FSS.

Notes: Figures are in nominal volume, and from banks, securities companies, insurance companies, credit card companies, asset management companies, etc.

3.2 Non-standard New Financial Products

In spite of the relatively small market, yet in terms of volume, various kinds of new financial products are being introduced into Korea to customise individual trades. Currently, the BOK classifies these into three large groups: Derivatives-linked products, Non-standard derivative products and Credit derivative products.

3.2.1 Derivatives-linked Products

The group of derivatives-linked products is well-represented by Equity-Linked Securities (ELSs), Equity-Linked Deposit (ELDs), Equity-Linked Warrants (ELWs) and Derivatives-Linked Securities (DLSs), all of which generally combine option derivatives with conventional deposits or bond investments. Among them, ELSs and ELWs, which are associated with stock derivatives, are traded actively in Korea.

ELSs combine stock options on the composite index or the selected stock index with a bond investment, in order to pursue possible additional returns. To customise investors' needs, ELSs have various structures in relation to guaranteed levels of principal, return targets, maturity, early redemption, etc. The return structures frequently used in Korea are the Knock-out, the Bull Spread, the Digital, and the Reverse Convertible. As most domestic new financial product trades are featured in the form of "back-to-back" trades with overseas financial institutions in order to hedge, domestic securities companies generally resell ELSs which have the same return structures as the overseas ELSs, rather than designing their own ELSs. To resell, securities companies invest all ELS funds into overseas ELSs ("fully funded swaps," as in Figure 5) or swap the returns of overseas ELSs with their returns from domestic bond investments ("unfunded swaps," as in Figure 6).

Figure 5
Funded Swap ELS

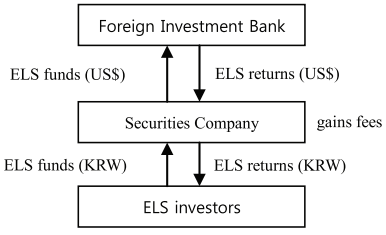
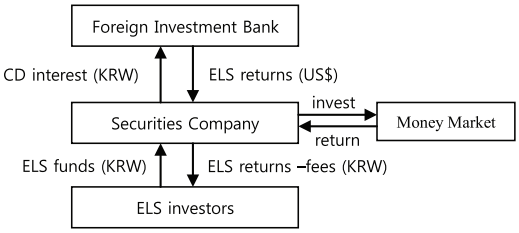


Figure 6
Unfunded Swap ELS



ELWs are similar to call or put options, but they take a security form by which they are listed on the stock exchange by the securities companies. The liquidity provider (LP), which is another proprietary trading securities company, buys ELWs in bulk and sells them to individual investors. ELWs involving FX

mostly also involve back-to-back hedging with foreign financial institutions. Due to the large leverage effect, like with options, the current ELW trades in Korea are growing most rapidly in the world.

DLSs band securities with derivatives on a basket index which contains a stock price, an interest rate, an exchange rate, a credit and a commodity price — or one index of any of them other than stock prices. DLSs are not very liquid in Korea yet, and the structures of the DLSs traded are similar to those of unfunded ELSs.

Looking at Figure 7, we see that ELW trading in Korea skyrocketed in 2009, as the world economy seemed to recover from the global financial crisis, while ELS trading declined. This shows that individual investors, expecting a stock price rise, wanted to take advantage of the leverage effects of ELWs.

Figure 7
ELS and ELW Amounts Outstanding of Securities Companies
Unit: KRW trillion

	2005	2006	2007	2008	2009	2010
ELS	9.3 (14.3)	15.0 (22.3)	17.5 (25.8)	25.1 (20.7)	18.4 (11.8)	16.9 (24.3)
ELW	-	20.7	42.6	26.0	115.6	-

Source: FSS.
Note: Figures in parentheses refer to the amounts issued during the periods.

3.2.2 Non-standard Derivative Products

Non-standard derivative products bind multiple derivatives together or modify the conditions of standard derivative products. These products are basically designed to have caps/floors, links to other financial products, or certain structures related to the returns on trades. Based on the underlying derivatives, they can be sub-grouped into currency-related options, currency-related swaps, interest-related options and commodity-related options and swaps. Among them, the most popular in Korea are currency-related options for FX hedging demanded by export companies and currency-related swaps (in particular, KTB index swaps) for interest rate arbitrage.

Currency-related options can have a wide variety of different conditions, given their great popularity. The types used and well known until now in Korea are range forward, target forward, enhanced target forward, target redemption forward, caterpillar, barrier option (KI, KO and KIKO), seagull, Asian option, look-back option, compound option, dual currency structured forward, pivot forward and snowball forward. Among these, in 2007, financial institutions supplied KIKOs to many export companies wanting to hedge efficiently against expected appreciation of the Korean won. A KIKO has an upper exchange rate barrier, inside of which companies can gain profits at a contracted exchange rate, but beyond which they suffer enormous losses. Unfortunately, these KIKOs devastated many companies in 2008 under the influence of the global financial crisis. Afterwards, trading in currency-related options fell sharply, as can be seen by the substantial fall in over-the-counter FX options trades in 2009 shown in Figure 4.

The currency-related swaps are based on CRS or FX swaps, and put conditions or links on them. The products traded in Korea are KTB index swaps, FX-linked CRS, structured CRS and quanto CRS. Among them, the most liquid are the KTB index swaps, which are demanded mostly by the domestic branches of foreign banks in order to earn interest arbitrage profits. The KTB index swaps combine CDS conditions on KTBs using CRS or FX swaps. These swaps are the same as CRS or FX swaps in normal times, but when a credit event happens, the contract terminates by swapping of the currencies for each other and the seller's compensating the buyer for his KTB investment losses.

Other products are also found in Korea, but not traded quite actively. The interest rate-related swaps traded include capped swaps, KO swaps, range accrual swaps, quanto swaps, cancellable swaps and basket interest differential swaps. The interest-related options traded include cap/floor straddles and swaption straddles. Commodity-related products traded include commodity fixed price swaps (copper), stepped consumer collars (gas and oil), and forwards + options (grain).

3.2.3 Credit Derivative Products

Credit derivative products separate the possible losses of a credit event from the underlying assets and hand them over from a protection buyer to a protection seller. The products traded in Korea include CDSs, TRSs, CLNs and synthetic CDOs. CDSs and TRSs are other forms of swaps, and CLNs and synthetic CDOs are combinations of swaps and bonds.

The trades in Korea are led by foreign financial institutions and on a US dollar basis. As shown in Figure 8, domestic financial institutions generally sell protections designed by foreign financial institutions. CDSs are traded mostly by domestic banks, which sell protections to Korean, American and European industries. TRS are mostly used by domestic branches of foreign banks, to hedge government bond investment risk and to realise interest rate arbitrage gains. CLN and synthetic CDOs are traded by insurance companies, by selling protection on the credit risks of Korean and multinational industries and ABSs.

Credit derivative trading is still small in volume, although it has been growing rapidly as shown in Figure 9[5]. Korean credit derivative product trades are also relatively small in the total world trade. Even compared with other NFP trades, they are small. This is because the government put off deregulation of the credit derivatives trade for fear of big financial institution losses. It was only in 2005 when the legal foundation for credit derivatives began to be set up. In addition, not until 2006 were residents' credit derivative trades with non-residents liberalised, to foster Seoul as a "Northeast Asian Financial Hub" and to support industries' overseas activities. On top of the late establishment of the market, the global financial crisis shrank the demand for these trades, by revealing the negative effects of credit derivatives on financial stability.

Figure 8
Credit Derivative Product Trades by Domestic Financial Institutions
Unit: KRW billion

	2007		2008		2009	
	Sell	Buy	Sell	Buy	Sell	Buy
CDS	874	665	4,084	2,799	4,899	3,468
TRS	44	16	38	7	0	6
CLN	2,728	299	3,311	864	2,736	1,785
Synthetic CDOs	1,353	0	1,733	0	1,353	1,354
Others	91	91	95	0	121	510
Subtotal	5,090	1,071	9,260	3,649	9,109	5,769
Total	6,161		12,909		14,877	

Source: FSS.
Note: Figures are the amounts outstanding at the ends of the periods.

5. Due to the low interest rate trend in Korea, domestic financial institutions contrive to trade credit derivatives to pursue higher returns.

Figure 9
Credit Derivative Product Trades in 2010
Unit: US$ billion

	New Financial Products	Credit Derivative Products
Korea (A)	13,530	19
World (B)	582,655	31,416
A/B (%)	2.3	0.1

Source: BIS.
Note: Figures are in nominal volumes, and from banks, securities companies, insurance companies, credit card companies, asset management companies, etc.

4. Implications of New Financial Products for Financial Stability in Korea

NFPs have both merits and drawbacks for the financial markets at the same time, which can be looked at as two sides of the same coin. The merits are those that make the financial markets more efficient by improving market linkages. However, because of these linkages, instability arising in one market can contaminate other markets in a short time. The large leverage effects by which financial users can efficiently hedge risk are another merit. However, these large leverage effects can also devastate the financial users, especially if not managed well. NFPs can be customised to individual needs of investors or customers, but on the other hand customisations complicate the trade structures. There are thus many pros and cons to NFPs.

Among these merits and drawbacks, the current concerns in Korea center on the instability arising through the financial market linkages. Ever since the Asian currency crisis, cross-border capital flows have increased and prices in the financial markets have become more strongly linked. Above all, foreign investment in domestic bonds has accelerated greatly since 2007, and these investments have involved various interest rate and FX derivative trades simultaneously. However, after the bankruptcy of Lehman Brothers, Korea experienced financial turmoil again as the sharp decline in foreign capital inflows and their increasing outflows shocked all the financial markets and financial institutions through these linkages. Hence, the BOK is keen to clarify the financial market linkages intensified by the NFPs, and to resolve some of the challenges arising from those linkages.

4.1 Linkages between FX Market and KRW Markets

The current Korean FX market is strongly connected with the bond, stock and loan markets, and at the center of the market linkages derivative products play an important role. Among these linkages, that through the bond market is complicated to understand due to the usages of various derivative products. On the other hand, the linkages through the stock and the loan markets do not involve many or complicated derivatives, and are relatively simple and easy to understand.

4.1.1 Linkage through Bond Market

The bond market linkage originates basically from the interest arbitrage trades. According to the interest rate parity theory, given no restriction on cross-border capital movements, capital moves freely to the country with a higher interest rate, until no higher return exists after calculating transaction costs, credit risk premium and tax differences. However, foreign capital has still been moving in and out of Korea, and this is mostly to exploit the prolonged arbitrage opportunities— as the imbalance between supply and demand in the FX forward market has kept the swap rate from adjusting to the cross-border interest rate differentials for a long time.

Arbitrage trades using FX swaps or CRS have simple structures, as shown in Figures 10 and 11[6]. To arbitrage using FX swaps, arbitragers firstly finance US dollars overseas. After exchanging the dollars into KRW through Sell & Buy swaps, they purchase bonds. At maturity or redemption of the bonds, they receive the principal and interest and exchange KRW back into US dollars at the contracted FX rate. By repaying the US debt, the arbitragers can obtain profits in proportion to the "bond interest rate – US$ interest rate – Swap rate".

To arbitrage using CRS, arbitragers finance US dollars overseas by paying interest (LIBOR) every three to six months. After exchanging the dollars into KRW through the CRS contract, they purchase (government) bonds and receive the interest generally every six months. At maturity or redemption of the bonds, they receive the principal and interest of the bonds. In addition, in accordance with the CRS contract, when exchanging the KRW back into US dollars they

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6. Arbitragers, mostly domestic branches of foreign banks or foreigners, generally choose one of these, depending upon their required hedge term. They enter into FX swaps for shorter than one year and CRS for longer than one year.

receive the interest for the US dollars and pay the CRS rate (KRW fixed interest rate). By honouring the US debt, the arbitragers can obtain profits in proportion to the "bond interest rate – CRS rate".

Figure 10
Bond Market Linkage: through FX Swap Market

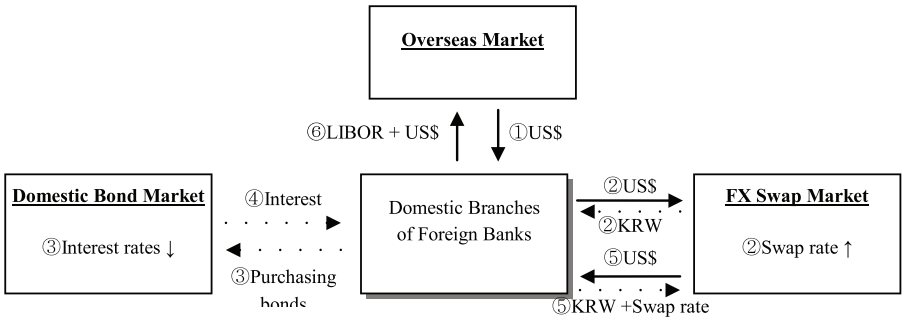
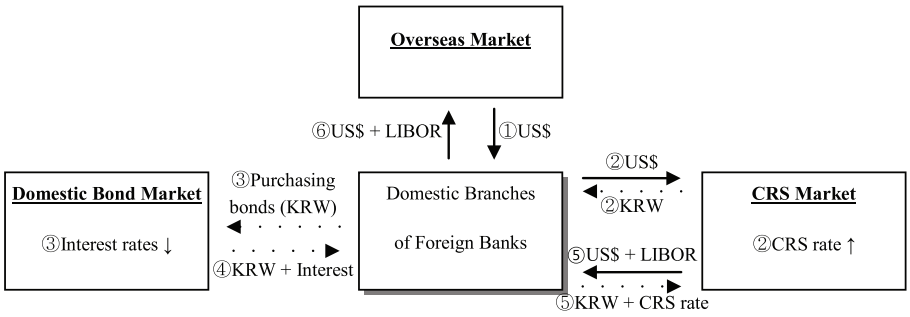


Figure 11
Bond Market Linkage: through CRS Market



4.1.2 Linkage through Stock Market

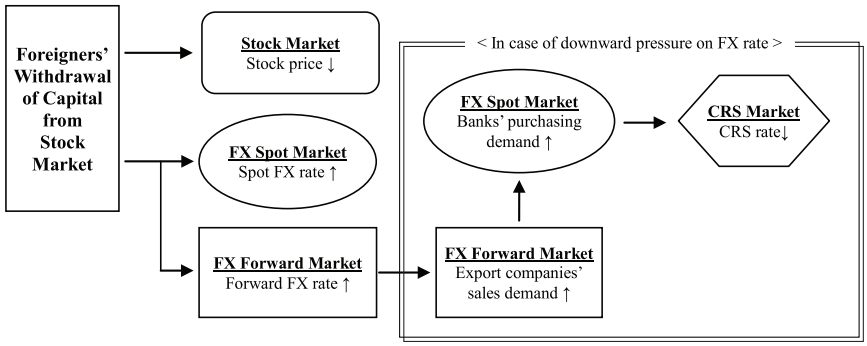
The stock market linkage involves FX derivative trades such as forwards, futures, swaps and CRS. This linkage is important with regard to two channels, especially when capital moves out, and they should therefore be explained[7].

7. The effects of the capital inflows can be understood as being the opposite of this.

The first channel is associated with foreign investment in the Korean stock market[8]. Given the foreign capital outflow from the stock market, the stock market first grows bearish and the FX market experiences excess demand for US dollars to repatriate from Korea. As a result, the foreign capital outflow from the stock market leads stock prices to fall and the spot and forwards/futures exchange rates to rise (depreciate). However, when there has been downward pressure on exchange rates, the outflow effect does not stop here. Korea's big export companies such as ship building and heavy industrial companies do not miss the chance to hedge the FX earnings they are soon to receive, and immediately sell FX forwards to banks at the risen exchange rate. To square their overbought FX positions, the banks need to sell spot US dollars, mainly by obtaining them through CRS trades. This will bring the CRS rate and the exchange rate down.

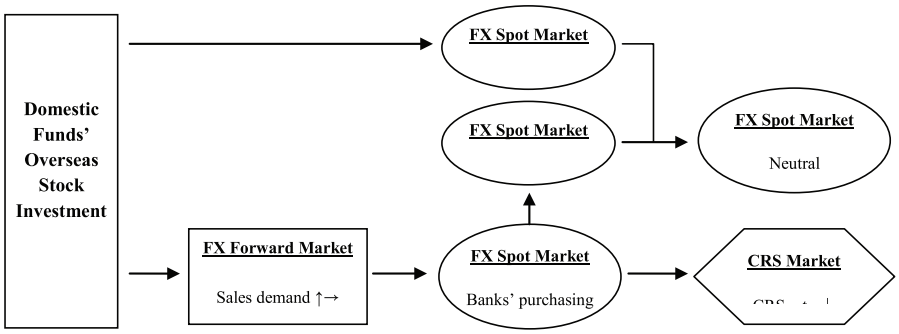
The second channel is captured by domestic funds' overseas stock investment, which reached a peak in 2007 against the backdrop of a fund investment boom and government encouragement of this investment. To hedge the related exchange rate appreciation risk, these funds combine overseas stock investments with FX forwards sales. The banks on the other side of the trades then sell spot US dollars obtained mainly from CRS trades. As a result, the CRS rate and the exchange rate fall.

Figure 12
Stock Market Linkage I: Foreigners' Domestic Stock Investment



8. Foreign capital movements through stock investment affect the stock market and the spot and forwards/futures FX markets directly, and also indirectly affect the CRS market.

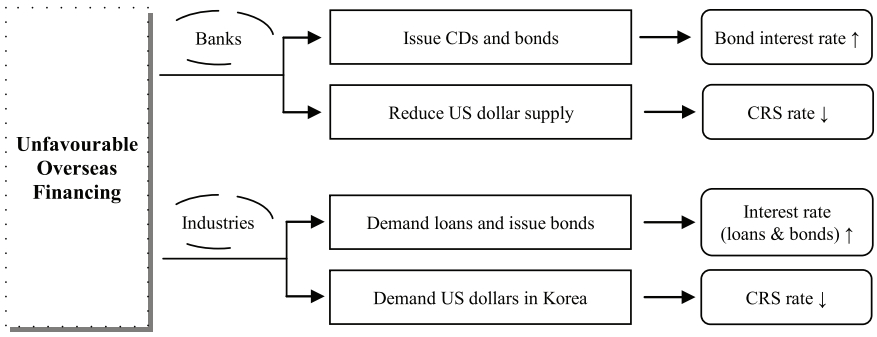
Figure 13
Stock Market Linkage II: Domestic Funds' Overseas Stock Investment



4.1.3 Linkage through Loan Market

Under an unfavourable environment for overseas financing, banks and industries often play important roles in linking the FX and KRW markets. To address FX shortages, banks prefer to trade CRS with the relatively FX liquid domestic branches of foreign banks. However, in the recent conditions of low interest rate trend and high loan competition, banks have had troubles raising sufficient deposits, and need to finance their shortages in the money and bond markets by issuing CDs and bonds. Meanwhile, industries in need of US dollars increasingly resort to the domestic FX market after raising funds in the domestic loan or bond markets. In the market, bonds are supplied excessively while US dollars are demanded excessively. This means that interest rates and exchange rates will rise and that the CRS rate will fall.

Figure 14
Loan Market Linkage



4.1.4 Linkage among Domestic Financial Markets

The prominent new financial product linking the domestic financial markets is the interest rate swap (IRS). An IRS transaction exchanges a fixed interest stream (IRS rate) for a floating interest stream (mostly the 91-day CD rate) periodically (mostly every three months), without the swapping of the related principals. IRS began to be traded in earnest during 1999~2000, and the amount has grown rapidly ever since then.

Domestic banks are increasingly demanding IRS, mostly in order to hedge downward interest rate risk as they competitively extend housing loans at floating interest rates while raising funds from time-deposits or long-term bonds with fixed rates[9]. On the other hand, domestic branches of foreign banks supply IRS as a major market-maker, and actively trade IRS for speculation based on their own interest rate forecasts.

The market linkage through IRS arises from the bond-swap spread trade. The spread used in this trade means the difference between the rate of return on a government bond and the IRS rate. Normally the IRS rate, due to its credit risk, is naturally higher than the rate of return on a government bond. However, in the Korean IRS market the IRS rate has frequently stayed lower than the government bond rate of return since 2004. This is because domestic banks' persistently high IRS demand has pushed the IRS rate downward, while the inactivity of RP transactions and bond lending among financial institutions[10] have kept the inverted spread from returning to normal.

There are thus plenty of chances for arbitragers to gain profits exploiting this spread[11], as shown in Figure 15. After raising funds in the money markets, bond-swap spread arbitragers purchase bonds. At the same time they enter into contracts to receive the IRS rate and pay the money market rate. They can then secure profits in proportion to the spread at the point of the swap initiation, as long as they keep holding the bonds. They can also realise profits or loss-cuts when the spread widens or narrows.

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9. In addition, asset management companies want to secure stable rates of return on their funds by receiving fixed interest, and credit card companies and public corporations make full use of IRS to convert their issued floating rate bonds and structured notes such as inverse FRNs, dual FRNs and range accrual notes into fixed rate bonds.

10. This results from the current withholding tax system and bankruptcy law.

11. Applying the structure of a bond-swap spread trade, banks have also issued "power spread bonds," which pay additional interest to investors.

The IRS market is also used by arbitragers by linking to the CRS market as shown in Figure 16. This transaction is called a "swap-basis trade". This trade involves the international financial market and the domestic FX and money markets, and arbitragers gain profits in proportion to the "received IRS rate – paid CRS rate."

Figure 15
Domestic Market Linkage I: Though Bond-Swap Spread Trade

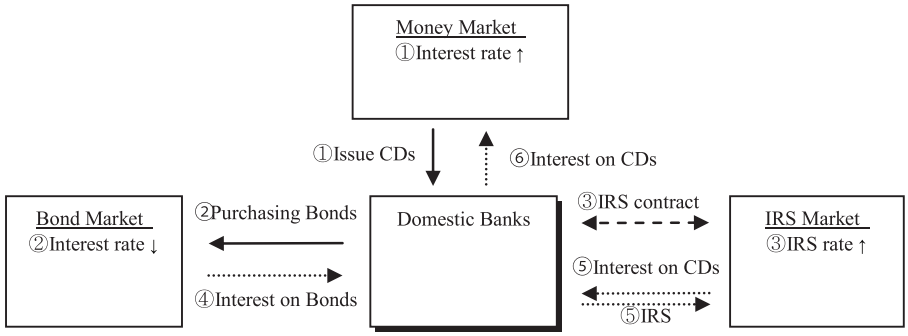
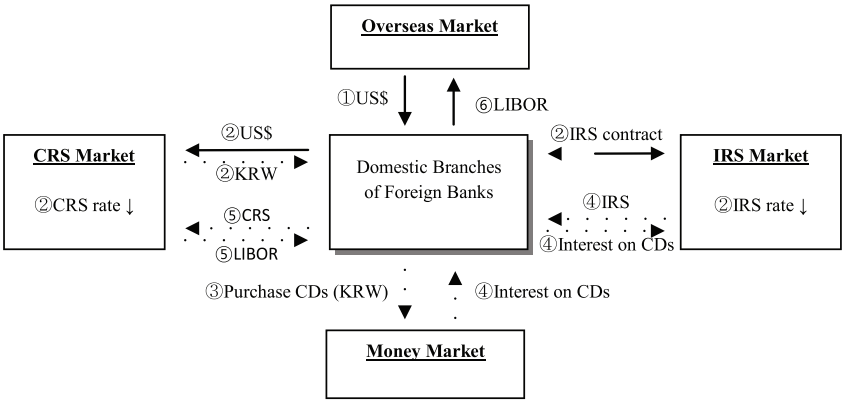


Figure 16
Domestic Market Linkage II: Through Swap-Basis Trade



5. Financial Instability through Financial Linkages, and Challenges for Bank of Korea

5.1 Interest Rate Fluctuations during Global Financial Crisis

The distresses in some advanced countries' financial markets did not cause direct shocks to Korean financial institutions. However, since the size of cross-border capital movements and various NFPs complicated the linkages among financial prices and markets, the Korean financial institutions and markets were also put under shocks from the crisis. In late December 2007, instabilities in the financial market began to occur through all of the linkages. Since the shocks hit the stock and FX markets first, and then drove foreign investors to sell bonds and withdraw money from Korea[12], the instabilities were ultimately due to the bond market linkage. The bankruptcy of Lehman Brothers in 2008 made the outflows worse than in 2007, and large capital outflows convulsed all of the financial markets through the linkages built-up by NFPs.

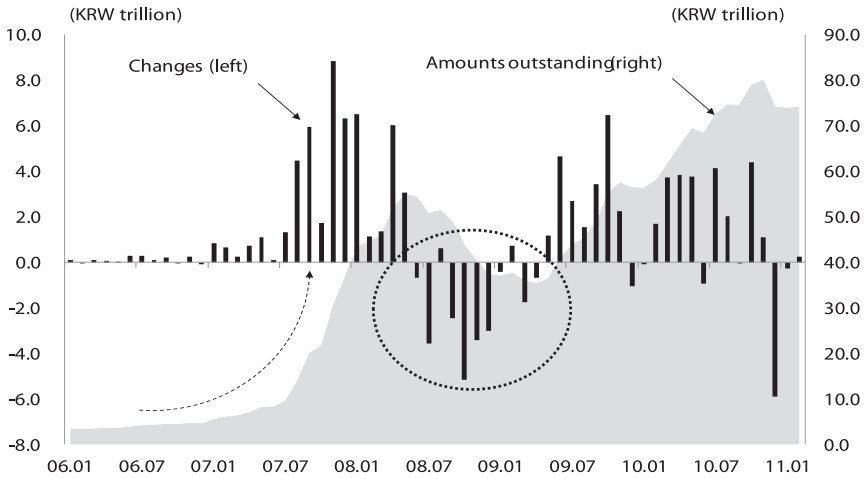
The remarkable Korean financial instability arising through the bond market linkage arose in three steps, as shown in Figure 20. First, the unfavourable overseas financing climate[13] pulled the CRS rate down, and the domestic branches of foreign banks consequently began to cut appraisal losses by selling bond and receiving the CRS rate. These trades put upward pressure on bond interest rates. Second, the fall of the CRS rate also widened the swap-basis spread. Expecting it to subsequently narrow, investors began to receive the IRS rate and pay the CRS rate. As a result, the IRS rate fell. Finally, the fall of the IRS rate and the rise of interest rates on bonds drove investors to cut their appraisal losses on bond-swap spread trades by selling bonds and receiving the IRS rate.

These interest rate fluctuations did not end there. The herd psychology caused further weakening of the bond markets and the IRS market, and the fluctuations reverberated across the financial markets through the linkages mentioned.

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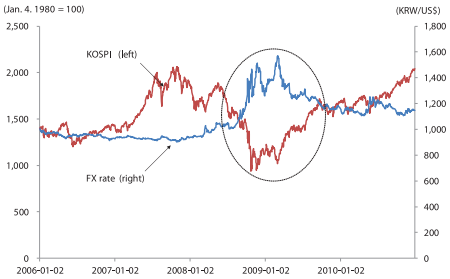
12. Foreigners began to invest in Korean bonds on a large scale and at a fast pace from the second half of 2007.
13. This definitely gives shocks to the FX and stock markets, and also provokes financial instabilities through other linkages.

Figure 17
Foreign Holdings of Korean Bonds



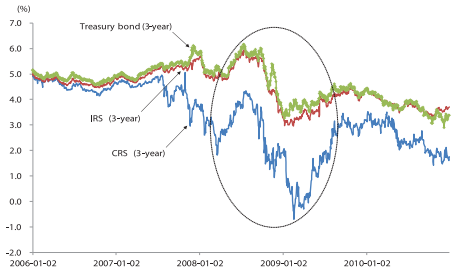
Source: FSS .

Figure 18
KOSPI and FX Rate Fluctuations



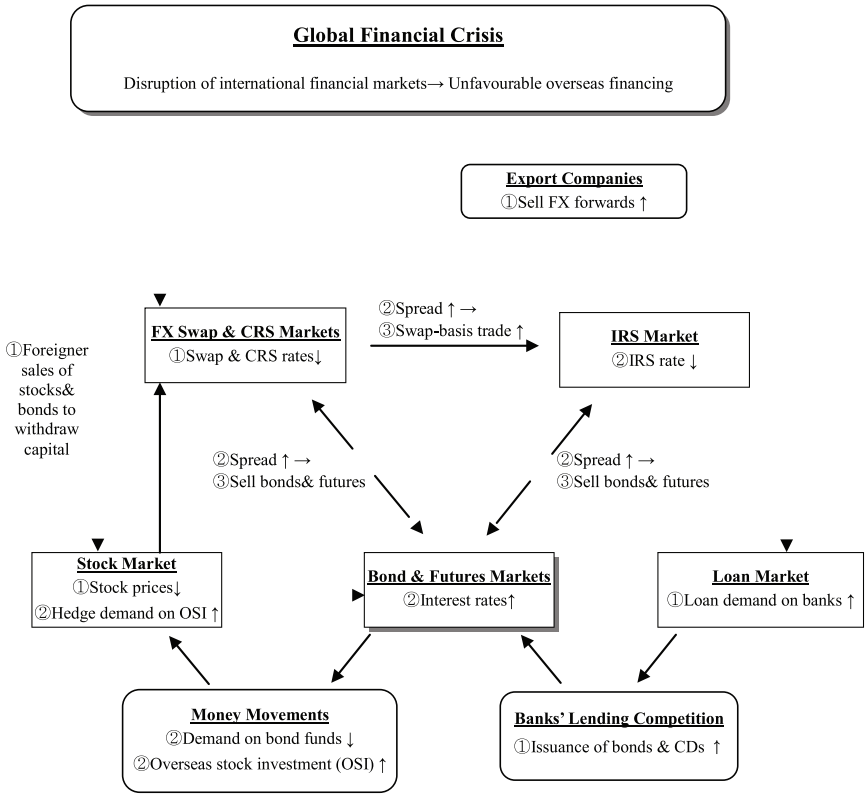
Sources: Koscom Corp., Korea Money Brokerage Corp., and Seoul Money Brokerage Services Ltd.

Figure 19
Interest Rate Fluctuations



Sources: Korea Financial Investment Association and Bloomberg.

Figure 20
Global Financial Crisis Effects through Market Linkages



5.2 Some Challenges for BOK

Interest rate volatilities may harm financial intermediation by increasing the uncertainties in the financial market and consequently cause deterioration in the effectiveness of monetary policy. Thus, when the foreign capital inflow to the bond market affected the financial markets increasingly through all the financial linkages in 2007, the BOK began to be concerned and to monitor the price fluctuations with care to prevent them from negatively impacting on the economy. It also tried to examine the mechanisms of NFP trades and the roles they played during the turmoil. When the first fluctuations began in late December 2007[14],

14. These fluctuations did not contaminate or damage the Korean economy seriously, but they shocked the BOK in that it was unable to thoroughly grasp them at first.

the Bank set up a policy response plan to address those of them arising from the NFP trades[15]. Based on this and from subsequent experiences, the BOK finds itself facing several challenges in dealing with the increasing NFP trade spin offs.

First, the Bank needs to set up and operate its monetary and FX policies more synthetically and organically. For better obtaining of information and more coordinated policies, it is also required to cooperate with private financial institutions and the other financial authorities. Since NFP trades link the financial markets closely, the BOK needs to pay heed to these linkages to prevent the unexpected adverse side effects stemming from uncoordinated policy operations.

Second, the Bank needs to take action in the financial and FX markets in ways that minimise moral hazard. The BOK, which aims to stabilise prices, needs to limit fluctuations in the financial markets in order to avoid damage to the monetary policy transmission channels. However, the central bank's money does not only stabilise the markets, but also saves financial speculators. To prevent the central bank intervention from fostering moral hazard among market participants, the market stabilisation policy should kick in based on a clear purpose and principle.

Third, the Bank needs to develop a combined system to monitor and/or examine the market linkages more efficiently. Its organisational structure has two departments which independently obtain and process financial and FX market information. They share their information frequently, but these kinds of information-sharing are not sufficient to ensure grasping of the increasingly complicated linkages. Other than regularising the departments' mutual consultations, the BOK needs to devise some organised system for gauging the cumulative risks arising from the NFP and linkage-related trades.

Fourth, the Bank needs to reduce the structural arbitrage opportunities in the financial markets. As long as structural opportunities are continuously generated from the chronic FX risk hedge trades by the ship builders and heavy industrial companies, the financial markets will remain potentially vulnerable to fluctuations[16].

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15. The bankruptcy of Lehman Brothers enlarged the sizes and pitches of fluctuations, but the policy responses at that time were mostly urgent supply of liquidity to stabilise the financial markets.

16. In 2010, the BOK and the government introduced regulation on the forwards and futures FX positions of banks, to reduce the fluctuations arising from these NFP trades.

Finally, the Bank needs to slow down sudden outflows of foreign capital. Although the NFPs enhance the efficiency of the financial markets, the capital outflows during the global financial crisis caused shocks to all financial markets in a short time, through the financial linkages built-up by the NFPs. It is required that the BOK explains to other countries the necessity of regulating sudden capital outflows, and then frames the appropriate measures for doing so[17].

6. Conclusion

As the Asian currency crisis gave the Korean financial markets opportunities to introduce and to promote various NFPs, the global financial crisis revealed their potential risks to the markets and some challenges for the BOK. The Korean financial markets were able to reap the fruits of the NFP trades through foreign capital inflows, but in contrast also reaped the whirlwind during the global financial crisis. Since the benefits of NFP trades are bigger than their costs if managed well, however, various NFPs will continue to show up and be traded in the Korean financial markets. This will arguably strengthen the financial market linkages more, and the linkages will make the markets more efficient and effective.

Hence, while taking advantage of the financial linkages in conducting its monetary policy, the BOK also has to cope with their development and respond in a timely manner to address the financial instability arising through them. To do this, it needs to keep track of the NFP trade mechanisms and roles in the financial markets and to closely coordinate policies on NFPs and share information with the other financial authorities, based upon its understanding of NFP trades and their linkage effects. It should also strengthen the coordination between the KRW and FX departments inside the Bank.

17. After building up consensus on this through G20 conferences, the BOK and the Korean government decided to introduce a bank levy in 2011, to address the problem of sharp capital outflows.

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Chapter 5

NEW FINANCIAL PRODUCTS AND CHALLENGES FOR CENTRAL BANKS

By
Tin Aung[1]

1. Introduction

In today's world, new financial products are being innovated along with the rapid development of financial systems of economies. As long as financial products are being developed, speculators will enter into the international financial markets as major players of those markets. In view of the interconnectedness of today's global financial markets, it is important to realize that there are both benefits and consequences to a global financial network. As new opportunities appear due to integration, so do the possibilities of contagion. This presents unique issues when attempting to penetrate a market, as a problem can ripple through the entire connected global network very quickly. For instance, a bank failure in one country can quickly spread to other economies. We can clearly seen this phenomena in the recent sub-prime mortgage turmoil in the U.S. and the Asian Financial Crisis in 1997.Therefore, rapid development of new financial products is a major consideration in maintaining financial stability.

New financial products have merits and drawbacks to an economy. According to the theory, new financial products can facilitate financial innovation and accelerate the growth of financial markets as well as contribute to the national economy. They can also be used as instruments for risk management and widen the source of financing for financial institutions. Without financial markets, borrowers would have to be faced with the difficulty of finding lenders themselves. On the other hand, new financial products lead to financial market instability when they are used as instruments for speculation. Since speculators take advantage of the leverage implicit in these products, investment failure may result in greater losses that can affect entire financial markets.

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The main objectives of this paper are as follows:

- To review the development of new financial products in Myanmar;
- To assess the effectiveness of current policy measures and regulations on selected new financial product; and,
- To identify some policy suggestions with respect to selected new financial products for Myanmar.

This paper consists of five sections. Section 2 provides the literature review on development of new financial products and their importance to financial stability. Section 3 reviews the current financial system of Myanmar and the past experience of contagion effect on financial sector of Myanmar. Section 4 looks at the identification of new financial products, emergence of the secondary market for securities in Myanmar and challenges to the Central Bank of Myanmar. Section 5 provides some policy recommendations and conclusion regarding to new financial products for Myanmar.

2. Literature Review on Development of New Financial Products

2.1 Derivatives Products

During the 1980s and 1990s, a major growth sector of the financial market is the trade in so called derivative products. In financial markets, stock prices, bond prices, currency rates, interest rates and dividends fluctuate thus creating many risks. Derivatives are financial products which are used to control risks or paradoxically exploit risks. In other words, derivatives are financial instruments whose value is derived from the value of something else. They generally take the form of contracts under which the parties agree to make payments between them based upon the value of an underlying asset or other data at a particular point of time. The main types of derivatives are futures, forwards, options and swaps.

The main use of derivatives is to minimise risk for one party while offering the potential for a high return (at increased risk) to another. The diverse range of potential underlying assets and payoff alternatives leads to a huge range of derivatives contracts available to be traded in the market. Derivatives can be based on different types of assets such as commodities, equities (stocks), bonds, interest rates, exchange rates, or indices (such as a stock market index, consumer price index (CPI) or even an index of weather conditions, or other derivatives). Their performance can determine both the amount and the timing of the payoffs.

The derivatives market is the financial market for derivatives which can be divided into two - for exchange traded derivatives and that for over-the-counter derivatives. The legal nature of these products is very different as well in the way they are traded, although many market participants are active in both.

Table 2.1
Types of Derivatives

UNDERLYING	INSTRUMENT TYPE				
	Exchange Traded Futures	**Exchange Traded Options**	**OTC Swap**	**OTC Forward**	**OTC Option**
Money market	Eurodollar future Euribor[2] future	Option on Eurodollar future Option on Euribor future	Interest rate swap	Forward rate agreement	Interest rate cap and floor Swaption Basis swap
Bonds	Bond future	Option on Bond future	-	Repurchase agreement	Bond option
Stocks	Single-share future	Single-share option	Equity swap	Repurchase agreement	Stock option Warrant Turbo warrant
Foreign exchange	FX future	Option on FX future	Currency swap	FX forward	FX option
Credit	-	-	Credit default swap	-	Credit default option

Source- Investopedia.com

2.1.1 Over-the-Counter Derivatives (OTC)

OTC derivatives are contracts that are traded between two parties directly, without going through an exchange. Products such as swaps, forward rate agreements, and exotic options are always traded in this way. The OTC derivatives market is huge.

2.1.2 Exchange-Traded Derivatives (ETD)

Exchange-traded derivatives (ETD) are those derivative products that are traded via specialised derivatives exchanges or other exchanges. A derivatives exchange acts as an intermediary for all related transactions, and takes initial margin from both sides of the trade to act as a guarantee. The world's largest derivatives exchanges (by number of transactions) are the Korea Exchange (which lists KOSPI Index Futures & Options), Eurex (which lists a wide range

2. Euribor is the rate at which banks in the European Union lend to other banks in the EU. This rate applies mostly to short-term interest rate.

of European products such as interest rate & index products), and CME Group (made up of the 2007 merger of the Chicago Mercantile Exchange and the Chicago Board of Trade).

Some types of derivative instruments also may trade on traditional exchanges. For instance, hybrid instruments such as convertible bonds and/or convertible preferred may be listed on stock or bond exchanges. Also, warrants (or "rights") may be listed on equity exchanges. Performance Rights, Cash xPRTs(tm) and various other instruments that essentially consist of a complex set of options bundled into a simple package are routinely listed on equity exchanges. Like other derivatives, these publicly traded derivatives provide investors access to risk/reward and volatility characteristics that, while related to an underlying commodity, nonetheless are distinctive.

The major benefits of exchange traded derivatives compared to OTC products are:

- No credit exposure with the settlement guaranteed;
- Transparency and anonymity;
- Lower transaction cost;
- Less severe information asymmetry as OTC derivatives activities tend to concentrate in major institutions.

2.2 Structured Financial Products (SFP)

The worldwide financial industry is a hotbed of innovation in financial product design. New financial products come about because people find them useful and they fulfill basic economic objectives. For these reasons, structured financial products are constantly initiated and innovated. In recent years, many financial markets have seen tremendous growth in the development of Structured Financial Products (SFP) offered to both institutional and private investors. Although these securities are generally nothing more than a bundle of traditional securities such as bonds and stocks, and derivatives (e.g., futures and different types of options), they offer investors the opportunity to purchase securities that provide more complex pay-off profiles. The two common elements in a Structured Product are: a bond product or another element of capital safeguard and an alpha generator[3] which is any financial instrument (i.e. a stock, currency, etc.).

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3. An alpha generator can be any security that, when added to an existing portfolio of assets generates excess returns or returns higher than a pre-selected benchmark without additional risk. This includes government bonds, foreign stocks, or derivative products such as stock options and futures.

Structured products are synthetic investment instruments specially created to meet specific needs that cannot be met from the standardised financial instruments available in the markets. Structured products can be used as an alternative to a direct investment; as a part of the asset allocation process to reduce risk exposure of a portfolio; or to utilise the current market trend.

Structured investments arose from the need of companies to issue debt more cheaply. Traditionally, one of the ways to do this was to issue a convertible bond, that is, debt that under certain circumstances could be converted to equity. In exchange for the potential for a higher return (if the equity value would increase and the bond could be converted at a profit), investors would accept lower interest rates in the meantime. However, this tradeoff and its actual worth are debatable, since the movement of the equity value of the company could be unpredictable. Investment Banks (financial institutions which help other companies issue bonds to borrow money) then decided to add features to the basic convertible bond, such as increased income in exchange for limits on the convertibility of the stock, or principal protection. These extra features were all based around strategies investors themselves could execute using options and other derivatives, except that they were pre-packaged as one product. The goal was again to give investors more motivation to accept a lower interest rate on debt in exchange for certain features. On the other hand, the goal for the investment banks was to increase profit margins since the newer products with added features were harder to value, such that it was harder for the banks' clients to see how much profit the bank was making from it. Typical examples of Structured Products include Flow through share limited partnerships; Funds of income trusts; Funds of hedge funds; High yield bond portfolios; Covered call writing and Split share corporations.

2.3 Advantages and Disadvantages of Structured Products

Benefits of structured products depend on the type of product such as principal protection, tax efficient access to fully taxable investments, enhancing returns within an investment and reducing volatility or risk within an investment. On the other hand, as structured products are unsecured debt from investment banks, credit risk may be encountered. Moreover, structured products are illiquidity because they are rarely traded after issuance and anyone looking to sell a structured product before maturity should expect to sell it at a significant discount. Therefore, there is no daily pricing for structured products and they are highly complex products.

2.4 The Need to Control New Financial Products

The initial purpose of investing in new financial products such as derivatives and structured products by financial institutions is to manage risks and as a source of financing. However, these products later were used by financial institutions as hedging instruments and for speculation purposes. Even though these products are off balance sheet items, their impact can lead to not only failure of the investors' businesses but also destabilisation of the financial system. A prime example of this was Enron which employed a range of vehicles to help finance the rapid expansion of the group, including limited partnerships that kept billions of debt off its balance sheet as well as the use of a structured private equity fund that invested in Enron's new ventures and allowed it to book income. In essence, these "sales" were transacted for the benefit of the company often without a genuine buyer on the other side of the table. Since the collapse of Enron in 2001, financial disclosure requirements for off-balance sheet transactions have been tightened considerably. Therefore, the regulatory structure for financial products is essential for the stability of the entire financial system.

2.5 Development of Financial Markets in Myanmar

In Myanmar, financial markets such as derivatives markets which provide instruments for the management of financial risks, foreign exchange markets which facilitate the trading of foreign exchange and money markets which provides short term debt financing and investment are not well developed so far, but it can be safely said that capital market especially bond market and insurance market are partly developed.

3. Current Financial System of Myanmar

Following the change of government in 1988 and adoption of a market-oriented policy, the structure of financial institutions was transformed by new bank laws passed in 1990, namely the Central Bank of Myanmar Law, the Financial Institutions of Myanmar Law, and the Myanmar Agricultural and Rural Development Bank Law. The Central Bank of Myanmar Law defines the responsibilities and the authority of the Central Bank of Myanmar (CBM), the Financial Institutions of Myanmar Law defines the activities of banking institutions and is the legal basis for the establishment of private banks, and the Myanmar Agricultural Development Bank Law defines the activities of the state-owned Myanmar Agricultural Development Bank.

The structure of the Myanmar financial system comprises of banking and non-banking financial institutions, on the one hand and informal financial market, on the other.

3.1 Banking Sector

The current banking sector consists of the Central Bank of Myanmar, four state-owned banks and fifteen private banks[4]. The Central Bank of Myanmar (CBM), which is under the Ministry of Finance and Revenue (MOFR), carries out the activities of the central bank like other economies. The main functions of the CBM are sole issuer of domestic currency, banker to the Government by maintaining the accounts of the Government, formulating and implementing monetary policy, inspecting, supervising and regulating the financial system, banker for the financial institutions, implementing the exchange rate policy of the nation and managing the international reserves of the state.

The Myanma Economic Bank (MEB), the strongest state-owned bank which mainly focuses on commercial banking as well as development banking services, has been quite successful in mobilising deposits throughout the whole country. The MEBs distribute local currency on behalf of the CBM through its local network of over 300 branches.

The Myanma Foreign Trade Bank (MFTB) has a long history and experience in foreign banking business with many customers which include the government, private (cooperate and individuals), diplomatic and non-governmental organisations. Although it does not perform domestic banking business, the MFTB is making some profit out of its foreign banking services in the form of commissions, service charges and exchange profits from buying and selling of foreign currencies. Moreover, the bank acts as the government's bank for foreign exchange affairs of the state. MFTB conducts its international banking services through its comprehensive network of over 370 banks in 50 countries.

The Myanma Investment and Commercial Bank (MICB) which is both commercial and investment oriented, has become stronger in the commercial banking area both domestically and internationally. This is due to two reasons – firstly, the bank receives only short term deposits which makes the bank unable to extend long term investment loans for development projects and thus deposits have been widely used for short term financing to commercial enterprises and

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4. However in July 2010, four new private banks were given licenses for commercial banking business. The list of the private banks are presented Appendix-1.

secondly, it has having no competitors except the MFTB in the foreign banking business. Banking services provided by MICB focus mainly on the private sector.

The Myanma Agricultural Development Bank (MADB) is a specialised bank for agricultural financing and it is stronger in extending agricultural credit in the form of seasonal loans of a short term nature. The bank provides its services through village banks and has over 200 branches. However, it still needs to expand on the development of financing activities of the agricultural sector of Myanmar. The bank was transferred from the Ministry of Finance and Revenue to the Ministry of Agriculture & Irrigation in 1996 to give more emphasis on agriculture development.

Private Banks came to be established in the early 1990s. Since the Financial Institutions of Myanmar Law came into force in 1992, 21 private commercial banks have been established initially. The strategy of the government regarding the financial development is to give a head start to local private banks ahead to become more efficient and competitive before incoming foreign banks upgrade their representative offices into full-fledged banks.

3.2 Non-Bank Financial Sector

The non-bank financial sector is relatively small in terms of being a major non-bank source of financing as a developed capital market is still non-existent in Myanmar. The non-bank financial institutions include the Myanma Insurance, Budget Department, Custom Department, Internal Revenue Department, Control Appellate Tribunal, the Myanma Small Loan Enterprise (the government pawn shop}, licensed private small loans enterprises (private pawn shops), credit societies, the Securities Printing Works which prints documents that are regarded as some security levels, the Myanma Securities Exchange Center (MSEC) and representative offices of foreign banks that do not conduct banking operations in Myanmar.

In Myanmar, the informal financial market exists in parallel with the formal financial market. Informal financial markets were becoming increasing important due to the emergence of the General Service Enterprises (GSE), the so called Akyoesaung in Myanmar. They induced the public to invest in their enterprises by giving high rates of return. That was one of the reasons for occurrence of the bank crisis in Myanmar in 2003.

3.3 Past Experience of Contagion Effect on Financial Sector of Myanmar

3.3.1 Origin of the Crisis

In 2003, some Myanmar local private banks were faced with a bank-run crisis and the Myanmar authority had to manage this crisis which started in the informal financial sector. As stated in the previous section, the General Enterprises Services (GES) induced public to invest in their firms. They guaranteed that they would give high rates of return for investment. The interest rate for savings account was a maximum of 12% per annum. Meanwhile, the GES provided 3-6 % per month return for investors who invested in their firms. The main business of the GES was investment in real estate and other fixed assets but these were sold to generate profits. On the other hand, Myanmar has had negative interest rates for a long time. Therefore, persons who were greedy and lacked banking knowledge invested a lot of money in GES firms. The rapidly increasing market size of these shady informal firms were estimated to have grown to a quarter of the market size of the formal financial institutions by the mid-2002. However, the real estate market later slowed down and the GES could not keep up with the interest payments leading to the withdrawal of funds by most of their investors. In such a situation, the GES could not pay back all deposits at once and their market size suddenly dwindled until many of them became incapable of repaying their debts and eventually collapsed completely by March 2003.The negative externalities of the GES collapse spilled over to the banking sector. The liquidity problems in banks began with the failure of the GES resulting from their illegal financial operations.

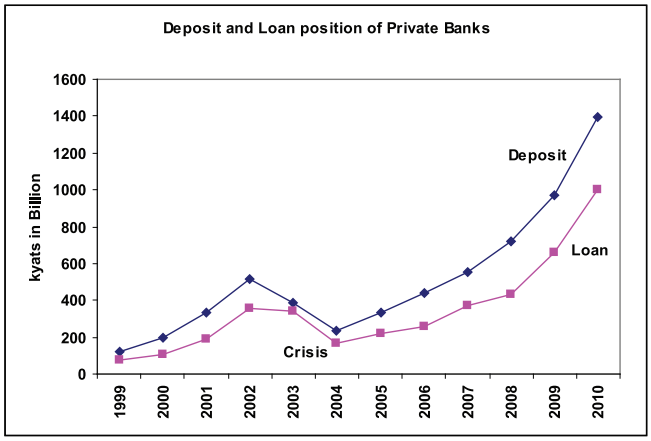
3.3.2 Responses to Banking Crisis

Due to the impact of the GES, the public started to lose confidence in private banks and the queues in front of private banks were getting longer and longer. As the trust or confidence in banks is valuable asset, the Banking Steering Committee was formed led by the Central Bank of Myanmar, including responsible personnel from private banks, at the commencement of the banking crisis. The committee initiated an overview of the condition of the private banks on a daily basis and gave necessary instructions. Measures taken to control the crisis included limitations on the amount of withdrawals and remittances to border areas and restricting the outflows of deposits to ensure bank liquidity. Secondly, emergency liquidity was provided by the Central Bank of Myanmar as the lender of the last resort of banks. Moreover, banks were urged to recover their loans from borrowers as quickly as possible. To limit the loss of confidence associated

with deposit restrictions and to minimise disruptions of the payment system, transaction accounts were allowed. With regard to deposit taking, banks were allowed to accept deposits up to seven times their paid-up capital. Banks were not permitted to provide loans without reliable and sufficient collaterals while the outstanding of loans must not exceed 70-80 % of their deposits. Thanks to the close supervision and guidance of the Central Bank of Myanmar and the Bank Steering Committee, these banks gradually recovered from the liquidity problem.

Consequently, both deposits and loans increased in the private banks as can be seen in the Chart 3.1.

Chart 3.1
Deposit and Loan Position of Private Banks



Source: International Financial Statistics & Central Statistic Organization of Myanmar

As shown in the chart, deposits and loans declined in the year 2003 and 2004 as a consequence of the liquidity crises. The recovery began in 2005 and by the end of the 2007 financial year, a full recovery was achieved both in terms of deposits and loans.

As the banks gradually regained the trust and confidence of the public, the regulatory authority relaxed the deposit taking restriction to some extent. In June 2006, the private banks were allowed to accept deposits up to ten times their paid-up capital. Thanks to this relaxation, the performance of banks has improved tremendously as reflected in the increase in deposits and loans.

4. Importance of Secondary Market for Securities

4.1 Rationale for the Emergence of the Secondary Market for Securities

An important aspect of the mandate of any central bank and particularly a central bank of a developing economy is the development of an active capital market as an efficient capital market is an indispensable requirement for sustainable economic transformation. For an active and efficient capital market, a liquid secondary market is essential.

The secondary market is the market where, unlike the primary market, an investor can buy a security directly from another investor in lieu of the issuer. It is also referred to as an "after market". The securities are initially issued in the primary market, and then entered into the secondary market. In other words, the secondary bond market is a marketplace for bonds that have already been issued in the primary market. Without the secondary market, any financial product newly issued in the primary market will not be successfully activated. Moreover, primary and secondary securities markets are mutually reinforcing. Therefore, a well functioning secondary market is essential for financial products and it has a pivotal role to play for the development of an efficient securities market. The systemic benefits of a secondary market in government securities are:

1. Secondary market trading provides a mechanism for government securities to move from investors in the primary market to a wider range of end-investors such as pension funds, insurance companies and retail investors.
2. By providing opportunities for more frequent trading, the secondary market improves the pricing process for government securities.
3. The development of a well-functioning secondary market in government securities may also act as a primer for other fixed-income securities markets. As the government securities market is virtually free of credit risk, its yield curve provides a benchmark for the pricing of other fixed income securities such as cooperate bonds.

As the government bond market is the basis for the overall development of the bond market, it is essential to improve the government bond issuance and secondary market for bonds. Only when these institutions are well established, can the corporate and municipal bonds market follow.

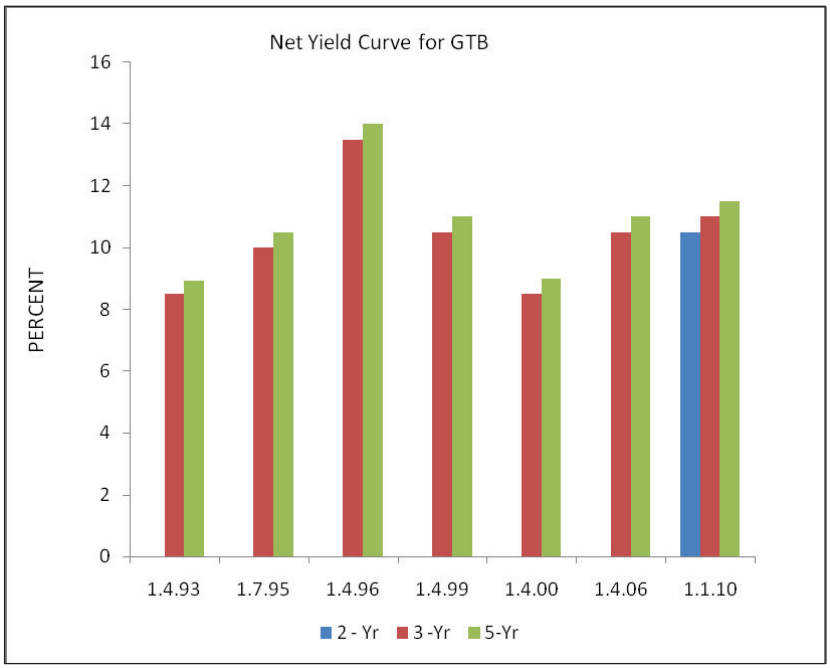
In Myanmar, Government Treasury bonds have been issued since 1993. Although the primary market for bonds has been established for nearly two decades, the substantial secondary market for government bonds cannot be implemented yet. As a part of the secondary market, the Myanmar Securities

Exchange Centre (MSEC) was jointly established by the Myanma Economic Bank (MEB) and the Daiwa Institute of Research of Japan in 1996. Although the MSEC has been formed, it is just as an OTC market without full secondary market functions. Therefore, to develop the government treasury bond market, the emergence of the secondary market for government securities is highlighted as a new financial product for this paper.

4.2 Overview of the Government Treasury Bond Market in Myanmar

The existence of a robust bond market reduces financial sector fragility. It also provides long term capital for business investment. As government treasury bonds are the main fixed income securities in Myanmar as in other developing economies, the development of a domestic bond market is essential. Therefore, the Central Bank of Myanmar has issued 3-year and 5-year government treasury bonds on 1 December 1993 in the denominations of ten thousand and hundred thousand kyats on behalf of the Government. On 1 April 1996, one million kyats worth of 3-year bonds were issued and one million kyats worth of 5-year bonds were issued on 1 January 1997. On 1 January 2010, 2-year treasury bonds were introduced to investors who are interested in short term investments and denominations were increased up to ten million kyats. In order to encourage the savings habit of the public and promote the domestic bond market, the 15% tax on interest income for all fixed income securities and dividends was exempted on 1 July 1995. At present, there are three types of government treasury bonds: 2-year, 3-year and 5-year, in denominations of ten thousand, hundred thousand, one million and ten million kyats in local currency The current interest rates for treasury bonds are 10.5% for 2-year bond, 11% for 3-year bond and 11.5% for 5-year bond respectively. The yield curve for bonds can be seen in the following chart.

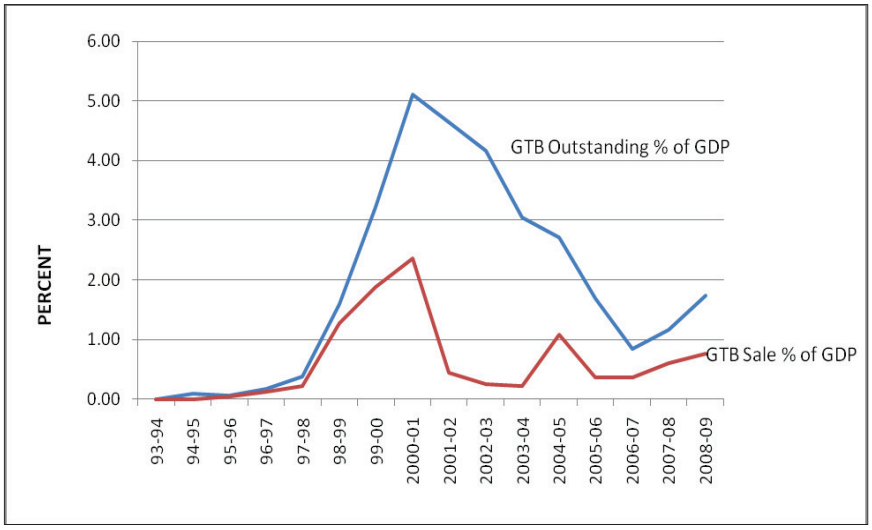
Chart 4.1
Yield Curve for Government Treasury Bonds (Net)



Source: Central Statistical Organization of Myanmar

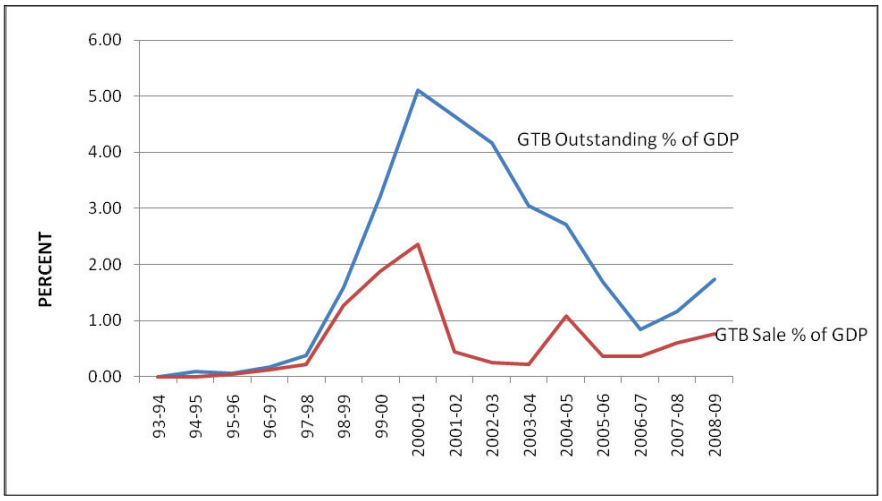
Although government treasury bonds have been issued continuously since 1993, their sales only contribute to a very small proportion of GDP and the budget deficit. Therefore, the outstanding volume of bonds stood at about 1.7% of GDP in March 2009.

Chart 4.2
Sale of Government Treasury Bond (% of Budget Deficit)



Source: Central Statistical Organization of Myanmar

Chart 4.3
Sale and Outstanding Position of Government Treasury Bonds (% of GDP)



Source: Central Statistical Organization of Myanmar

4.3 Current Activities for the Development of Capital Market in Myanmar

In order to support the long term capital of economic enterprises, companies and government projects and also to develop the financial market, a Study Group was organised on 19 October 2006 led by the Deputy Governor of the Central Bank of Myanmar. The Study Group has submitted their findings and drafted the Road Map for the Development of the Capital Market in Myanmar. As a result of this effort, the Capital Market Development Committee was created on 1 July 2008, led by the Minister for the Ministry of Finance and Revenue with six sub-committees formed on 17 September 2008 to provide effective and efficient assistance to the main committee.

Those sub-committees include the following:

1. Sub-committee for the development of domestic securities market;
2. Sub-committee relating to establishment and encouragement of public companies;
3. Sub-committee regarding the enactment of the Securities Exchange Law;
4. Sub-committee concerning with the establishment of securities companies;
5. Sub-committee for training, educating and information relating to the capital market; and,
6. Sub-committee to upgrade the existing accounting and auditing standards for the development of Securities Market.

In addition, the Road Map for the Development of the Capital Market in Myanmar were drawn up in accordance with the time frame for the development of the ASEAN Integrated Capital Market. There are three phases to be implemented in that Road Map for the Capital Market in Myanmar. The first phase must be carried out between 2008 and 2009. The second phase will be started from 2010 to 2012. The third phase will be implemented from 2012 to 2015.

The main responsibilities to be carried out in those phases are:

Phase I

1. To promote the issuance of various types of government treasury bonds by the Central Bank of Myanmar.

2. To allow the MEBs and MSEC to act as underwriters for government treasury bonds.
3. To coordinate with the external organisations for technical assistance.
4. To encourage the establishment of public companies.
5. To organise the committee for the development of public companies.
6. To upgrade the existing accounting and auditing standards to international levels.
7. To educate the public about the securities market through media, training and workshops.
8. To coordinate with the ASEAN Capital Market Forum in compliance with the ASEAN Economic Community Blue Print.

Phase II

1. To enact the Securities Exchange Law.
2. To establish the Securities Exchange Commission.
3. To issue municipal bonds.
4. To issue stocks and shares of State Owned Enterprises which are appropriate to constitute public companies.
5. To encourage the promotion of institutional investors.
6. To allow insurance and pension funds in securities financing.
7. To establish the Repo market, Broker-Dealer Association, Investment Funds, Securities-Dealer Association and Underwriting Association.

Phase III

1. To establish Stock Exchanges in Yangon and Mandalay cities.
2. To upgrade the clearing and settlement system for securities market.
3. To allow the establishment of foreign investment banks, foreign securities companies and branches.
4. To organise the Credit Rating Agencies, Association of Securities Companies and Central Securities Depository.
5. To establish the online trading system.
6. To make the linkages with the ASEAN Stock Exchanges.

In order to develop an efficient market infrastructure and secondary market for government treasury bonds, the MSEC and MEB have been conscripted as underwriters for government bonds and 2-year bonds, extensively issued to provide more investment opportunities for the public since 1 January 2010. Meanwhile, the Securities Exchange Law, one of the main work plan for the development of the capital market, is being drafted.

Most of the work plans included in the first phase have already been implemented successfully in 2008 and 2009. Moreover, technical assistance for the development of the domestic bond market has been requested from Japan – ASEAN Financial Technical Assistance program especially through the ASEAN Secretariat Office.

5. Policy Suggestions for the Development of Secondary Market in Myanmar

In trying to improve the secondary market for securities, developing the reference yield curve of Government Treasury Bonds should be given priority because it serves as a reliable basis for pricing corporate bonds. The term structure of interest rates also known as the yield curve is a very common bond valuation method and it is a measure of the market's expectation of future interest rates given the current market conditions. Treasury bonds issued by the Government are considered risk-free and their yields are often used as the benchmarks for fixed-income securities with the same maturities.

A well-established yield curve for government bonds facilitates government debt management as well as development of the private debt market, particularly towards the long-end of the market. It encourages issuers by enabling them to price borrowing instruments more competitively in the domestic debt market. Similarly, it provides pricing guidance to investors, particularly to long-term investors, facilitating their portfolio management. Thus, the yield curve promotes economic growth prospects through its impact on savings promotion, investment expansion and improving resource allocation efficiency.[5]

Development of the yield curve requires extending the maturity from short-term to the medium-term as well as to the long-term. Moreover, as the government increases the maturity of the bonds; it lowers the interest rate risk on its debt portfolio.

In Myanmar, government bonds are issued up to the medium-term (up to 5 years). Therefore, the issuance of government bonds should be extended up to ten years so as to establish a benchmark yield curve. When investors generally believe that there will be no significant changes in the economy, such as inflation rates and that the economy will continue to grow at a normal rate, investors expect higher yields for fixed income instruments in such a situation with long-

5. Dr. A. G. Karunasena (2004), op.cit.

term maturities occurring farther into the future. In other words, the market expects long-term fixed income securities to offer higher yields than shorter-term fixed income securities.

On the other hand, the market appetite for long-term maturities over five years might be low due to the high volatility in inflation and longer time investment period. Thus the monetary authority needs to combat high inflation as it is the source of negative interest rate and erodes returns on equity for long period. With respect to the longer investment period, the government should establish the buy-back system such as the repo market. The existence of a repurchase agreement (Repo) market is essential for permitting the development of an active government securities market.

Deregulation of interest rate controls leads to interest rate structures that reflect the opportunity cost of capital more accurately and regulating interest rate at low levels only encourages borrowing rather than securities financing. Moreover, the change in interest rate is a major risk that occurs in bond investment. Interest rate movements also affect the secondary market. The interest rate and value of bonds are inversely proportional to one another. With the rise or fall of the interest rate, the value of bond also rises or falls accordingly. When interest rates rise, the prices of bonds in the secondary market fall, thereby raising the yield of older bonds, bringing them in line with newer bonds issued with higher coupons. When interest rate falls, the prices of bonds in the secondary market rise, thereby lowering the yield of older bonds bringing them in line with newer bonds being issued with lower coupons. Therefore, interest rate fluctuations may depend on the volatility of the bond market and also on monetary policy. Thus, stable interest rate is crucial for the development of the secondary market for securities.

Taxation of financial instruments has significant implications for financial market development. Taxation of capital gains and income from securities affects consumption, saving and investment decisions. In Myanmar, interest income for all fixed income securities and dividends are already exempted from taxation since 1995 but for capital gains tax, it is necessary to amend the Stamp Act in order to foster the secondary market. Currently, a 2.5% stamp duty is charged for the transfer of properties from one person to another. This can be one major hindrance for the development of a secondary market. Among the ASEAN economies, there is no capital gains tax for listed shares and government securities in Malaysia, Philippines, Singapore and Thailand. Exemption from taxes on the

transfer of shares for shareholders of a listed company plays a crucial role in lowering the transaction cost. This will induce more investors to go into the secondary market for securities.

One major prerequisite for a sound secondary market development is the legal, regulatory and supervisory framework. The legal framework should be cohesive and comprehensive for the development of a secondary market in securities. This should include the rules of trading, intermediation, information disclosure and regulation of takeovers. The investors need to be protected from stock market manipulation. Brokers and underwriters must follow professional codes of conduct. Government must avoid over-regulating markets to protect small investors. Economies where the money and capital markets are well-developed often have comprehensive money and capital market laws which should at least cover the establishment of a capital market authority, definition of key terms, such as "securities", "brokers", "underwriters", etc; provision of incentives for companies to go public; requirements for information flows and disclosure; auditing and accounting standards, and clear prohibitions of activities in the market such as fraud, insider trading, market manipulation, requirements for the protection of investors; and sanctions for violations, legislation governing the commissions.[6]

Besides, the transaction costs involved in securities transactions is also one important factor. Since the main purpose of the secondary securities market is for liquidity or cash convertibility, the easier the securities can be converted into cash, the more investors will come into the secondary market. Therefore, the clearing system must be fast and efficient.

The main function of intermediaries in the government securities market is to place securities with investors and provide liquidity to secondary markets. One of the more important intermediaries in the secondary market is, in many cases, the primary dealer which often acts as a market maker in government securities. Primary dealers are financial intermediaries selected by the government typically to promote investment in government bond and activity in the government securities market. Having a group of primary dealers to buy and distribute government securities entails advantages and risks. Setting up a primary dealer system can facilitate the change to a market-based funding environment. It may also improve the government's ability to tap potential investors and develop market liquidity. In addition, in countries where the technology infrastructure is not well developed and where the potential investor base can only be accessed via

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6. Popiel (1988), loc. cit.

intermediaries, the use of primary dealers may initially be needed. The primary dealer system may also be difficult to implement in markets which do not provide liquidity generating tools such as repos.[7]

Therefore, Myanmar should establish a primary dealer system instead of using direct selling to private banks. Moreover, the issuance of government bonds should be made according to the issuance calendar rather than on a regular basis. On the other hand, most institutional investors in Myanmar are private banks and their purpose for investing in bonds is to fulfill their liquidity requirements through treasury bonds as collateral at the central bank. Thus, in order to satisfy this situation, central securities depository system should be implemented. Many countries have developed the securities depository for government securities in the central bank at a relatively reasonable cost. However, in some countries it is a separate entity. Organising the central depository as a separate agency, even if located within the central bank, allows for a clear delineation of responsibilities, the possibility of independent oversight and at a later stage, full independence of the system. If custody is fully or in part privately provided, the governance arrangements and oversight must be sound. In Myanmar, custodian arrangement for treasury bonds has been set up at the Central Bank of Myanmar since 1993. It can thus be upgraded as a central securities depository system as only then, not only treasury bonds but also other securities can be deposited.

Encouraging the establishment of public companies is one of the tasks included in Phase I. At present, there are twenty public limited companies[8] in Myanmar of which only two are listed in the MSEC. These include the Myanmar Citizen Bank Limited and the Union of Myanmar Forest Products Joint Venture Corporation Limited. Fundamental issues to form a public company include tax evasion and disclosure of information. Most of the companies lack transparency and are reluctant to be instituted as public companies. Therefore, Myanmar authorities should enthusiastically encourage potential companies to become public.

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7. ADB: Hand Book of Government Securities Market Development, op.cit.
8. List of public companies are presented in Appendix-II.

5.1 Conclusion

Although the objectives of monetary and fiscal policies differ, both require treasury bonds as an important tool. Central banks use treasury bonds to conduct open market operations for the management of liquidity and interest rates in the financial system to manage money supply. Likewise, the Ministry of Finance (Budget Department) relies on bonds to finance the country's medium and long term domestic funding for the budget deficit to reduce the cost of public debt. Therefore, treasury bonds play an indispensible role for monetary and fiscal policies of a developing economy and are crucial for the development of the bond market. However, there are some basic prerequisites for the development of a government securities market such as a credible and stable government, sound monetary and fiscal policies, and liberalised financial system with competitive intermediaries, effective legal, tax and regulation infrastructure and smooth and secure settlement arrangement.

By developing the secondary securities market, there can be some impact on the economy and monetary policy of the nation. A positive impact of developing the secondary market is the ability of the monetary authority to implement the monetary policy instrument of open market operations via the secondary securities market. On the other hand, destabilisation of the financial system can occur because of the speculators. Therefore, monetary authorities should be very careful in managing the secondary securities market.

For Myanmar, the 3-phase Road Map for the Development of the Capital Market is quite precise and would be even more comprehensive if further points are added for developing the securities market. From the issuer standpoint, it is indispensable to establish the benchmark yield curve, repo market and gradual development of the primary market for corporate issuers. From the investor perceptive, there is a need to broaden the institutional investor base and for intermediaries, it would be more expedient to establish the primary dealer system. In addition , infrastructure such as an efficient and effective legal, supervisory and settlement system is requisite.

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Appendix-(1)

Lists of Private Banks

Name of the Banks	Date of Commencement
1.Myanmar Citizen Bank Ltd.	2.6.92
2. Cooperative Bank Ltd.	25.5.04
3. Yadanabon Bank Ltd.	11.9.92
4. First Private Bank Ltd.	6.10.92
5. Myawaddy Bank Ltd.	4.1.93
6. Yangon City Bank Ltd.	1.4.93
7. Yoma Bank Ltd.	14.8.93
8. Myanmar Oriental Bank Ltd.	18.11.93
9. Tun Foundation Bank Ltd.	14.6.94
10. Kan Baw Za Bank Ltd.	1.7.94
11. Asia Yangon Bank Ltd.	18.10.94
12. Myanmar Industrial Development Bank Ltd.	15.2.96
13. Myanmar Live stocks and Fisheries Development Bank Ltd.	15.2.96
14. Si Bin Thar Yar Ye Bank Ltd.	4.7.96
15. Innwa Bank Ltd.	28.11.97
16. Asia Green Development Bank Ltd.	2.7.10
17. United Amara Bank Ltd.	2.7.10
18. Ayerawady Bank Ltd.	2.7.10
19. Myanma Apex Bank Ltd.	2.7.10

Source: Doing Business in Myanmar Hand Book and Daily Newspapers.

Appendix-(2)

Lists of Private Companies

1. Tavoy Trading Company Limited.
2. Rakhine Trading Company Limited.
3. Okkalar Company Limited.
4. First Private Bank Limited.
5. First Myanmar Investment Company Limited.
6. Cooperatives Bank Limited.
7. 21 Brothers Company Limited.
8. Pioneer Myanmar Holding Limited.
9. Myanma Livestock and Fisheries Development Bank Limited.
10. Myanma Industrial Holding Limited.
11. Myanma Industrial Development Bank Limited.
12. National Development Company Group Limited.
13. Manadalay Industrial Zone Development Company Limited.
14. Gold Triangle Hydro Power Public Company Limited.
15. Myanmar Information and Communication Technology Development Corporation Limited.
16. Myonywa Zone Company Limited.
17. Golden Land East Asia Development Company Limited.

Public Joint Venture Company Limited

18. The Union of Myanmar Economic Holding Limited.
19. Myanmar Citizen Bank Limited.
20. The Union of Myanmar Forest Products Joint Venture Corporation Limited.

Chapter 6

NEW FINANCIAL PRODUCTS AND CHALLENGES FOR CENTRAL BANK: NEPAL

By
Mukunda Mahat[1]

1. Introduction

1.1 Background

In the present context of globalisation, the entire world has become a single market and the financial market is no exception. The revolutionary development in technologies has made quick and easy access to market possible. As a result, the activities of a person residing in any corner of the world can have significant effect on the overall market environment. With the advancement of technology, the structure of the financial market has become more sophisticated and its size is rapidly expanding worldwide. This has transformed modern banking into a crucial and complex business and has rendered the traditional financial intermediation model of banking obsolete. With rapid development in financial techniques and financial engineering, new financial products are constantly being developed and introduced into the financial market. Innovation in complex financial products, like derivatives, confers benefits. The opportunities the new products offer also entail challenges for modern banking. It is essential to unpack the nature of these products for us to understand their positive and negative effects on the development of the financial market and their implications for financial supervision.

1.2 Scope

The research paper is confined exclusively to the study of the status and development of foreign exchange derivatives and credit derivative products in the Nepalese financial market. As the markets for commodity derivatives do not come under the regulatory and supervisory framework of the central bank, the study of these markets and products are not covered in this paper.

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1. Deputy Director, Bank Supervision Department, Nepal Rastra Bank.

1.3 Objectives

The objectives of the study on new financial products and challenges for the central bank are as follows:

1. Review and analyse the overall status and role of new financial products in the financial development of the country;
2. Review the overall financial market structures and analyse the potential merits and drawbacks of introducing new financial products; and
3. Identify appropriate policy measures and regulations needed to minimise the risks involved in the introduction of new financial products.

1.4 Financial Stability

The experience of the recent financial turmoil confirms the strong inter-relationships between macroeconomic instability and financial instability. Financial stability requires both macroeconomic stability and structural policies and conditions consistent with a sound and efficient domestic financial sector. As such, increased attention is needed for monitoring the governance, health and efficiency of financial institutions and markets as well as the macroeconomic and institutional developments that pose potential threat to financial stability.

There is as yet no generally accepted definition of financial stability. Nonetheless, financial stability is understood to apply to both institutions and markets. Financial stability[2] requires that:

1. The key institutions in the financial system are stable, in that there is a high degree of confidence that they can continue to meet their contractual obligations without interruption or outside assistance; and
2. The key markets are stable, in that participants can confidently transact in them at prices that reflect the fundamental forces and that do not vary substantially over short periods when there have been no changes in the fundamentals.

Stability in financial institutions means the absence of stresses that have the potential to cause measurable economic harm beyond a strictly limited group of customers and counterparties.

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2. Andrew Crockett 1997(a), "Why is Financial Stability a Goal of Public Policy"; and (b) "The Theory and Practice of Financial Stability", Essays in International Finance, Princeton University.

In the definition given above, the author has talked about stability of two things as the prerequisite of financial stability. The first prerequisite mentioned is *"the key institutions in the financial system are stable"*. Now, obviously a question comes to mind as what are the key institutions in the system? The answer is certainly banks. Banks as the key financial institutions are central to the smooth functioning of the financial system and their failure would cause a systemic crisis via greater susceptibility to runs and the operation of the payments system. Their obligations to counterparties are so large that failure to discharge them would cause widespread contagion. His second condition is *"the key markets are stable"*. Here again a question comes into mind as what are the key markets? In the context of financial stability "key markets" include the money and foreign exchange market, government securities and corporate bond markets, and equity and derivative markets. Owing to the broad linkages of financial markets with saving and investment decisions, they have a greater potential impact on other macroeconomic variables than do developments in markets for goods and services. The rapid growth of the financial market in Nepal may pose greater susceptibility to the stability. Financial markets impact through wealth effects as financial asset prices change, changes in the expected returns on saving and investment, or through a more generalised impact on consumer and business confidence.

As a rule of thumb, the absence of price movements that cause wider economic damage denotes the existence of stable financial markets. Price movement in a system should reflect changes in economic fundamentals. When prices in the financial markets move by amounts that are much greater than can be accounted for by fundamentals, they have the potential to result in resource misallocation with damaging economic consequences. This phenomenon has been reflected by the Nepalese stock market in the past, which has declined by more than 500 points during the past one year, and the market condition experienced is considered as bearish as ever.

Sustained price volatility generates uncertainty, leading to unwillingness of economic agents to enter into long-term contracts, which hamper economic performance by discouraging the mobilisation and allocation of saving through the financial system. This is well evidenced by the withdrawal of deposits from the Nepalese banking industry during the past one year or so. Further, sudden or sharp price movements that place the liquidity or solvency of prudently run financial institutions at risk have more immediate damaging consequences. When price movements have such damaging economic consequences, one can justifiably draw a conclusion about the instability or crisis in the system.

The concept of financial stability has also been explained through its "mirror image" approach – i.e., by defining the state of financial market instability. The thrust of this approach is that if the system is free of such symptoms that characterise market instability, then there is stability in the system. Irregularity in information has long been recognised as a source of failure of financial markets, as evidenced from America to Asia, Europe to Australia. The theoretical literature has attempted to explain the institutional structure of financial markets by recognising that this structure has evolved to reduce the asymmetric information problems of adverse selection and moral hazard. From this perspective, the underlying rationale for financial intermediaries is that they have the ability and the economic incentive to address the problems of asymmetric information.

Financial instability occurs when shocks to the financial system interfere with information flows so that the financial system can no longer do its job of channeling funds to those with productive investment opportunities. Indeed, if the financial instability is severe enough, it can lead to almost a complete breakdown in the functioning of financial markets, a situation, which is then classified as a financial crisis (Mishkin, 1999)[3]. This is a more precise way of explaining the generalised loss of confidence that lies behind the rush for "secure" assets and the dis-intermediation that characterise periods of extreme financial stress in the banking system. It identifies the channel by which financial markets can "seize up", potentially causing a cumulative decline in economic activity.

The recent global financial crises have indeed increased international financial instability. The increasingly globalised nature of financial markets, coupled with the rapid development in financial techniques and engineering, advancement in information technology and the liberalisation of international capital transactions have increased the volatility and mobility of capital flows across borders. This has made financial institutions more interdependent and externally exposed and, in the process, provided an additional perspective into the relationship between financial liberalisation and systemic stability.

Financial system is important in the functioning of an economy to pool and utilise resources, reduce costs and risks, expand and diversify opportunities, increase the efficiency of resources, and promote the productivity and economic growth. A healthy and well-regulated financial system contributes as a facilitator for achieving sustainable economic growth, fostering a robust and vibrant financial market. On the contrary, uncertainty and fragility in the financial system adversely

3. Mishkin, Frederick 1999, "Asymmetric Information and Financial Crises: A Developing Country Perspective". Paper prepared for the World Bank Annual Conference on Development Economics, Washington, D.C.

affect the objectives of economic development in general and poverty reduction in particular. This is evidenced by the recent financial crises witnessed in different parts of the world over the years.

1.5 Concerns of Regulators

As explained in the preceding paragraphs, the innovation of new financial products offer both opportunities and threats to the market, it is very important for the regulators to have a thorough understanding of the characteristics of the products, qualifications and experience of the people dealing in the products, transparency of the transaction and process so that threats are minimised and opportunities are capitalised in the best possible way. Like in many SEACEN economies, the market for new financial products in Nepal is in its infancy, with very few banks using the simplest "plain vanilla" variety FX derivative products such as FX Forward, that, too, as risk-hedging tools and not for trading/speculative purposes. In view of the present low volume of such products in use and the nature of their use in Nepal, they do not pose any problem or challenge to the financial market and its stability. Rather, it is still important to understand them because one of the most prominent phenomena observed in modern financial markets is the development of new financial products, and global players are progressively involved in the emerging markets. In due course complex financial products like structured credits (Credit Derivatives) may come into existence that can be intelligently used to:

1. Overcome credit limit constraint on a borrower;
2. Reduce concentration risk and to optimise credit portfolio management; and
3. Reduce regulatory capital charge.

The Nepalese financial market has been opened to foreign financial institutions as from 2010. It is particularly crucial for Nepal that appropriate regulations are in place to preserve financial stability relating to the emergence of new financial products.

1.6 General Outline

This research paper is divided into several sections. The introduction in Section 1 highlights the background, scope and objectives of the study on new financial products. It also briefly explains the concept of financial stability and covers the concerns of the central bank in assessing and monitoring the impact of these products on financial stability of the country. Section 2 is a review of the available literature. In this section, various aspects relating to derivative

products and its markets including meaning, history and developments, global market, hedging vs. speculative motive of its use, etc., are discussed.

Section 3 gives a brief review of the current structure of financial markets of the country. It also provides information on the overall status of new financial products in the country. Section 4 studies the implications of new financial products to financial stability of the country. In this section the phenomenon of the recent global financial crisis and its impact on the economy of the country are discussed. The merits and drawbacks of new financial products to financial stability as well as the status of existing policy measures and regulations relating to such products are highlighted in this section.

Section 5 concludes by summarising the various aspects of the study and proposing the policy recommendation considered necessary for dealing with such products.

2. Review of the Literature

2.1 Meaning

A derivative is an instrument whose value is dependent upon or "derived" from the value of one or more underlying assets or another security or economic variable. The derivative itself is merely a contract between two or more parties. Its value is determined by fluctuations in the value of the underlying assets. The most common underlying assets include stocks, bonds, commodities, currencies, interest rates and market indexes. In finance, a derivative is a financial instrument, or more simply, an agreement between two parties that has a value based on the expected future price movements of the asset to which it is linked to – called underlying asset. The dependence of the derivative's value on other prices or variables makes it an excellent vehicle for transferring and managing risks. Most derivatives are characterised by high leverage.

2.2 History and Development

Risk is inherent in all types of business which need to be managed sensibly. The term risk management can mean many things, but in business it involves identifying events that can have adverse financial consequences and then taking actions to prevent and/or minimise the damages caused by these events. Years ago corporate risk managers dealt with insurance for this purposes. More recently the scope of risk management has broadened to include such things as controlling the cost of key inputs like petroleum, by purchasing oil futures or protecting

against changes in interest rate or exchange rates through transaction in the interest rate or foreign exchange market. Derivatives allow risk related to the price of the underlying asset to be transferred from one party to another. A wheat farmer and a miller could sign a futures contract to exchange a specified amount of cash for a specified quantity of wheat in the future. By doing so both the parties have reduced a future risk: for the wheat farmer, the uncertainty of the price, and for the miller, the uncertainty of availability of wheat. From another perspective, the farmer and the miller both reduce a risk and acquire a risk when they sign the futures contract: the farmer reduces the risk that the price of wheat will fall below the price specified in the contract and acquire the risk that the price of wheat will rise above the price specified in the contract, thereby losing additional income that he could have earned. The miller, on the other hand, acquires the risk that the price of wheat will fall below the price specified in the contract, thereby paying more in the future than he otherwise would have paid, and reduces the risk that the price of wheat will rise above the price specified in the contract. So, risk managers try to ensure that actions intended to hedge against risk are not actually increasing risks. Thus, derivatives were first put into use as a measure to manage risks.

The next step in its development was the entry of intermediaries who established the trading in futures. The Chicago Board of Trade was an early market place for such dealings and futures dealers helped make a market in future contracts. A third group, speculators soon entered in the scene. At the outset, one might think that appearance of speculators would increase risk. But this is not always true. Speculators add capital and players in the market as well as bear much of the risk which makes the derivatives market stable for hedgers.

2.2.1 Commodity Derivatives

Forward contracts are probably as old as international trade. When merchants sent consignments to far-off countries, they often entered into agreement for the sale of the goods to be delivered as and when the goods reached the destination. These can be regarded as the forerunners of modern forward contracts and, on this basis, derivative markets can be traced back to probably as early as 2000 BC. Many ordinary commercial transactions are forward contracts in the strict sense, but the term is typically reserved for situations where the time period involved is beyond normal commercial terms. For example, a standard dealing between a manufacturer and its suppliers in which a shipment is made one or two weeks after the receipt of the order is a one or two weeks forward contracts in the strict sense. However, as the time

period is very short and is the norm in this market, these are not conventionally described as forward contracts.

It has been claimed that the world's first organised futures exchange was the Dojima rice futures market officially set up in 1730 in Osaka, Japan. When the feudal landlords in Japan needed money for their annual tribute to Tokyo, they sold 'rice tickets' representing rice in the warehouse or in the fields. These tickets were bought and sold in the Dojima market and could be regarded as the forerunners of the modern exchange traded future contracts. Futures in commodities have thus been around in various forms for several centuries. However, the futures exchanges set up in Chicago and elsewhere in the United States in the nineteenth century are often regarded as the first modern futures markets. Another market for commodity derivatives was the futures market for wheat. Farmers were concerned about the price they would receive for their wheat when they sold and millers were concerned about the price they would have to pay. The risks faced by both parties could be reduced if they could establish a price earlier in the year. Both parties benefitted from the transaction in the sense that their risks were reduced. By doing this the farmers could concentrate on growing their crops without worrying about the price and the millers could concentrate on their milling operations. Thus, hedging with futures lowered aggregate risk in the economy.

2.2.2 Financial Derivatives

The futures markets were mainly confined to commodities even as late as 1960. Agricultural commodities like soya, eggs and wheat accounted for the bulk of trading. The first financial derivatives were created only in the 1970s, but within a couple of decades, they grew rapidly to dominate the global derivatives market. By around 1990, financial derivatives accounted for three-fifths of derivative trading and financial contracts. Presently, there are many kinds of derivatives, most common being swaps, futures, options, etc.

The derivatives markets have grown more rapidly and explosively than any other major market in recent years, for a numbers of reasons:

1. There has been an increase in macroeconomic instability and associated increase in risk and volatility since the 1970s.
   a. After the collapse of the Bretton Woods System, the major countries adopted free floating exchange rates that led to a sharp rise in currency risk for businesses and financial institutions. As a result, in order to manage this risk, there was an explosion on the demand of derivatives.

b. The two oil price shocks in the 1970s highlighted the risk faced by businesses from volatile commodity prices and increased the demand for instruments that could hedge these risks.
c. Rising uncertainty in interest rates also increased the demand for interest rate derivatives to manage these risks.

2. Businesses at the same time became more global in their activities. Increased foreign trade meant greater exposure to exchange rate risks for exporters and importers. In the 1980s, the major countries started opening up their economies to international capital flows. As institutional investors built up global portfolios in response to these new opportunities, they needed new instruments to manage the associated risks.

3. While the above factors no doubt increased the demand for risk management products, developments on the supply side were equally important.
a. The early 1970s saw the emergence of the first option pricing formula by Black and Scholes. This was followed by a series of refined and increasingly complex models for pricing more sophisticated derivative instruments.
b. The spread of cheap computing power in the 1980s made these models accessible to a wide range of financial users.

4. Financial deregulation in the meantime led to product innovation and lower transaction costs. These developments continue right up to this day with newer products being designed to hedge risks that were previously very difficult or expensive to hedge.

In view of the all factors cited above, the recent trends and developments are envisaged to continue, if not accelerate, so the use of derivatives as risk management tool is bound to grow.

2.3 Global and Asian Derivatives Markets

At the global level, the BIS reports that typical derivative instruments based on interest rates and foreign exchange rates have been growing rapidly over the past 10 years. This is due to the expansion of trade and capital flows. The size of the global derivatives market has been getting much bigger since the Asian financial crisis. It is noticeable that the volume of credit default swap (CDS) has also mounted progressively to US$50 trillion from 2005 onward. Another fast growing financial product is the collateralised debt obligation (CDO). The IMF reports that the CDO situation reached its peak of around US$3 trillion in

2006, half of which amount were mortgages. With a lack of legislative restrictions, the number of CDO and CDS issuance multiplied during the period of 2005-2007.

The CDO volume largely dropped in mid-2007, starting from the collapse of the housing market and following the sub-prime crisis in the U.S. This implies an increase in the credit default rate that led to the recent global financial turmoil. The crisis directly hit the U.S. financial markets thoroughly with the severe credit and liquidity crunch, and inevitably expanded to the real sector. The domino effect then spread to the other developed countries as well. The European banks and individual investors who invested heavily in the U.S. capital market have, in turn, come to be affected from the crisis. The European real sectors are concurrently affected as banks and industries in Europe are closely linked.

The derivatives markets in the Asian countries are mostly in the early stage of development. The infrastructure for derivatives markets varies among the Asian countries, with Singapore and Korea at the advanced stage and Thailand, China and Philippines at a lesser extent of development. The derivative products traded in the Asian countries are: foreign exchange products, interest rate derivatives, equity derivatives, commodity derivatives and credit derivatives. Commodity derivatives are mostly traded in the Chinese and Japanese specialist commodity exchanges, but they count for only less than 10 % of the turnover of the exchanges. Deals in CDOs in Asia were relatively small and focus more on synthetic arbitrage CDOs and more lately turning to single-tranche CDOs. By the end of 2005, the CDS volume was about US$1.4 billion, accounting to 7.6% of the global CDSs. There were only 921 CDS trading in Asia in early January 2008. Although the data on the volume traded are not available because the CDSs are traded OTC, it is expected that the number is not much larger.

Concerning the location of trade in the Asian countries, the availability of derivative products depends mainly on the status of the markets and financial sector openness. The derivatives markets in Asia can be divided into 3 groups of countries by their advancement. The first group comprises the two financial hubs of Asia - Singapore and Hong Kong where varieties of derivatives products are traded. The second group is defined as the emerging financial hubs, which includes Korea and Malaysia. Other countries are not so active to allow for derivative trading. Thus, to some extent, derivatives markets have already become important in the region, though still limited to a few countries.

2.4 Hedging and Speculation

Hedging of a transaction exposure is covering up the exposure by a suitable method of avoiding the risk arising out of currency or interest rate changes differing from the contractually fixed positions. Hedging for protecting from the uncovered position to covered position is different from speculation. Speculation refers to taking risks with uncovered positions, hoping to gain from the change. Hedging requires a transaction to start with, while speculation does not need any transaction, to take up open positions, such as buying a currency with the hope that it will appreciate for selling at a profit. Speculation, in fact, refers to taking positions deliberately with a view to book profit by changes in exchange rate or interest rate. It is a high-risk and high-reward scenario. One way of looking at it is that not hedging a position in an interest rate or currency is speculation. Another way of looking at it is to take deliberate position, to profit from it. The speculator may gain or lose, depending on the future changes.

Most of the news stories about derivatives are related to financial disasters. Much less is heard about the benefits of derivatives. A 1998 survey reported that 83% of US firms with market value greater than $1.2 billion use derivatives on a regular basis. In today's market, sophisticated investors and analysts are demanding that firms use derivatives to hedge certain risks. For example, a shareholder group sued Compaq Computer for failing to properly hedge its foreign exchange exposure. The shareholders lost the suit, but Compaq Computer got the message and now uses currency futures to hedge its international operations. The absence of derivative markets make the domestic firms less competitive locally and globally and the domestic market less attractive and imperfect.

In the emerging markets, there is a greater need for these instruments/ markets for risk reduction from the high volatility of financial markets. Increasing globalisation and operations of foreigners in domestic market necessitate the development of certain facilities like hedging. The domestic markets will improve asset diversification, deepen the financial structure and promote the sophistication of the markets through the route of derivative markets. These new financial products promote the superior allocation of resources so as to maximise return and minimise risk and, ultimately, facilitate better capital formation and higher economic growth.

There can, however, be a downside to the use of derivatives. The authorities invariably cite hedging as GOOD use of derivatives, whereas speculating with derivatives is often cited as a BAD use. These instruments are highly leveraged and liquid, so small miscalculations can lead to huge losses. These same

characteristics make derivatives attractive to rogue traders and aggressive investors seeking high returns with only marginal investment through high-risk strategies. The complexity of derivatives makes it difficult for senior management and external stakeholders to fully understand the strategies being used. This potential for miscalculation, misuse and unawareness had led to some highly publicised losses for large and well-respected companies in the past several years. Procter and Gamble, Gibson Greetings, Long Term Capital Management, Barings Bank, and Enron all experienced losses, some of them were either attributed to, or associated with, defective or inappropriately implemented hedging strategies, while others were because of rogue traders who exploited the failure of internal control system. It has not been the use of derivatives as a tool which has lead to the downfall of these companies - but rather, the misuse and compromise of such instruments. Speculative trading in derivatives gained a great deal of notoriety in 1995 when Nick Leeson, a trader at Barings Bank, made poor and unauthorised investments in futures contracts. Through a combination of poor judgment, lack of oversight by the bank's top management and regulators, and unfortunate events like the Kobe earthquake, Leeson incurred a US$1.3 billion loss that bankrupted the centuries-old institution. The principal lesson to be learned from the disasters is that management must understand these characteristics and ensure that they have well designed internal control systems to ensure that derivatives are appropriately used. Some people or organisations can afford to bear the risks involved in speculating with derivatives, but others are either not sufficiently knowledgeable about the risks, or else should not be taking those risks in the first place. Most would agree that the typical corporation should use derivatives only for hedging risks, not to speculate in an effort to increase profits. Hedging allows a manager to concentrate on running core business. Disasters can be done away with if these measures are firmly entrenched in a company.

2.5 For and Against Use of Derivatives

There are, however, lot of comments and critics from prominent personalities about this latest financial innovation. Some of them are in total disagreement with the opportunities offered by derivatives, while other advocates are in favour of the opportunities that derivatives provide. Those who are not in favour say derivatives are purely speculative and highly leveraged instruments. Citing that the loss of a party to the contract is gain for the other in the derivatives market, they do not even hesitate to say that it is a fancy name of gambling. Some of the observations or remarks made by the prominent personalities about this financial innovation are highlighted below:

"We view them as time bombs both for the parties that deal in them and the economic system... In our view... derivatives are financial weapons of mass destructions, carrying dangers that, while now latent, are potentially lethal." – Warren Buffet, March 2003

"Risk Management or Risk?" – Fitch Ratings, March 2003

"These increasingly complex financial instruments have especially contributed, particularly over the past couple of stressful years, to the development of a far more flexible, efficient and resilient financial system than existed just a quarter century ago." (Alan Greenspan, 2002)

"Derivatives do not pose threat to country's financial system and benefits have far exceeded costs." (Alan Greenspan, 2003)

"My nomination for the most significant financial innovation of the last 20 years is the financial futures." – Metron H. Miller.

"Derivatives instruments undoubtedly have contributed to economy's resilience because they offer firms means for managing risks. Certainly derivatives instruments pose challenges to risk managers and to supervisors, but these risks are manageable and thus far have been managed quite well." – Ben Bernanke, Federal Reserve Chairman, March 2006.

Mr. Thomas F. Siems, a senior economist and policy advisor at the Federal Reserve Bank of Dallas, has given his views on derivative instruments in article titled *"10 Myths about Financial Derivatives"*. He has pointed out ten criticisms made against these instruments and according to him all these are misconceptions. He says believing just one or two of the myths could lead one to advocate tighter legislation and regulatory measures designed to restrict derivative activities and market participants. A careful review of the risks and rewards derivatives offer, however, suggests that regulatory and legislative restrictions are not the answer. According to him, to blame organisational failures solely on derivatives is to miss the point. A better answer lies in greater reliance on market forces to control derivative-related risks. He, in his way to substantiate his argument, has given prominent explanations and strongly advocated that financial derivatives have changed the face of finance by creating new ways to understand, measure and manage risks. Ultimately, financial derivatives should be considered part of any firm's risk management strategy to ensure that value-enhancing investment opportunities are pursued. He further argues that, derivatives also help to improve market efficiencies because risks can be isolated and sold to those who are

willing to accept them at the least cost. Using derivatives breaks risk into pieces that can be managed independently. Corporations can keep the risks they are most comfortable managing and transfer those they do not want to other companies that are more willing to accept them. From a market-oriented perspective, derivatives offer the free trading of financial risks. The viability of financial derivatives rests on the principle of comparative advantage – that is, the relative cost of holding specific risks. Whenever comparative advantages exist, trade can benefit all parties involved.

3. Status of New Financial Products

3.1 Overview of Nepalese Financial Sector

The Nepalese Financial Sector is composed of the Banking sector and Non-Banking sector. The Banking sector comprises Nepal Rastra Bank (NRB) and Commercial Banks. The Non-Banking sector includes Development Banks, Finance Companies, Micro Credit Development Banks, Co-operatives, Non-governmental Organisations performing limited banking activities and other financial institutions not licensed by the NRB, such as Insurance Companies, Employees Provident Fund, Citizen Investment Trust, and Nepal Stock Exchange.

With the initiation of economic liberalisation in the late 1980s and early 1990s, the Nepalese Financial Service Sector has also been liberalised and it saw significant developments in terms of increase in the number of financial institutions in the country. The financial system consisted of only two commercial banks and few other financial institutions before liberalisation. The story is totally different today. During the post-liberalised regime spanning almost two decades, the financial system has reasonably developed, diversified, and enriched. [4]As of mid-July 2010, the financial system consisted of 27 Commercial Banks – 5 in joint collaboration with foreign financial institution, 79 Development Banks, 79 Finance Companies, 18 Micro Finance Development Banks, around 10,000 Co-operatives (16 Saving and Credit Co-operatives involved in limited banking activity are regulated by NRB), 45 Non-governmental Micro Credit Institutions, 1 Stock Exchange with the network of brokers and securities dealers, 25 Insurance Companies, 1 Employee's Provident Fund and 1 Citizen Investment Trust. Of these institutions, the Commercial Banks, Development Banks, Finance Companies, Micro Finance Development Banks, some 16 Co-operatives and NGOs are under the regulatory and supervisory framework of the NRB. While

4. Nepal Rastra Bank (2010). Current Macroeconomic Situation, Mid-August 2010, Kathmandu.

the Insurance Board regulates the Insurance Companies and the Securities Board regulates the Stock Exchange, the other institutions are under the overall regulation of the government.

3.2 Current Structure of Nepalese Financial Market

As of mid-July 2010, the Nepalese financial market consists of 264 Banks and Non-Bank Financial Institutions licensed, regulated and supervised by NRB, 25 Insurance Companies (both life and non-life) licensed, regulated and supervised by Insurance Board, 1 Stock Exchange under the regulation of Securities Board of Nepal, Employee's Provident Fund and Citizen Investment Trust regulated and supervised by Government of Nepal. Nepal Stock Exchange is the only capital market of Nepal with less than 30 broker houses, while NRB with the help of few numbers of market makers and counterparties BFIs conduct money market activities. The market for commodity derivatives has just began with the establishment of three commodity exchanges, yet the market for advanced financial products like financial futures has not began.

During the last two and half decades the Nepalese Financial System has grown significantly. At the beginning of 1980s, there were only two commercial banks and two development banks in the country. The adoption of economic liberalisation policy, in particular financial sector liberalisation, paved the way for the establishment of new banks and non-bank financial institutions in the country. The growth trend of financial institutions can be seen from Table 3.1 below.

Table 3.1
Growth Trend of Financial Institutions

Types of Financial Institutions	Mid-July										
	1980	1985	1990	1995	2000	2005	2006	2007	2008	2009	2010
Commercial Banks	2	3	5	10	13	17	18	20	25	26	27
Development Banks	2	2	2	3	7	26	28	38	58	63	79
Finance Companies				21	45	60	70	74	78	77	79
Micro Credit Development Banks				4	7	11	11	12	12	15	18
Saving & Credit Co-operatives with limited banking activities				6	19	20	19	17	16	16	16
NGOs (Financial Intermediaries)					7	47	47	47	46	45	45
Total	**4**	**5**	**7**	**44**	**98**	**181**	**193**	**208**	**235**	**242**	**264**

The relevant statistics relating to banks and financial institutions as of mid-January, 2010 are presented in Table 3.2 below. Due to the unavailability of current statistics and also due to the fact that the market shares of Co-operatives and Non-governmental Organisations (NGOs) are miniscule, they not considered for analysis.

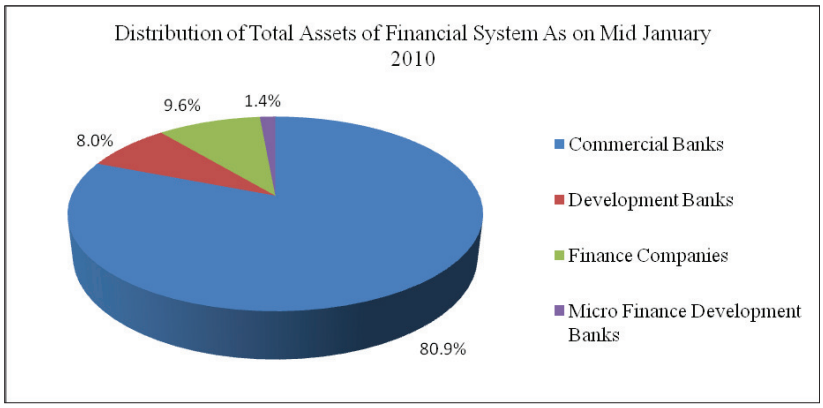
Table 3.2
Relevant Statistics Relating to Banks & Financial Institutions

(NRs. in million)

Banks and FIs Licensed by NRB	Number	Deposits	Credits	Total Asset
Commercial Banks	26	586,356.8	466,570.6	849,412.4
Development Banks	73	59,332.2	57,107.7	83,998.9
Finance Companies	78	67,946.1	73,337.2	101,062.5
Micro Finance Development Banks	17	2,223.9	9,418.7	15,164.3
Co-operatives Licensed for Limited Banking	16	-	-	-
NGOs Licensed for Limited Banking	45	-	-	-
Total	**255**	**715,859.0**	**606,434.2**	**1,049,638.1**

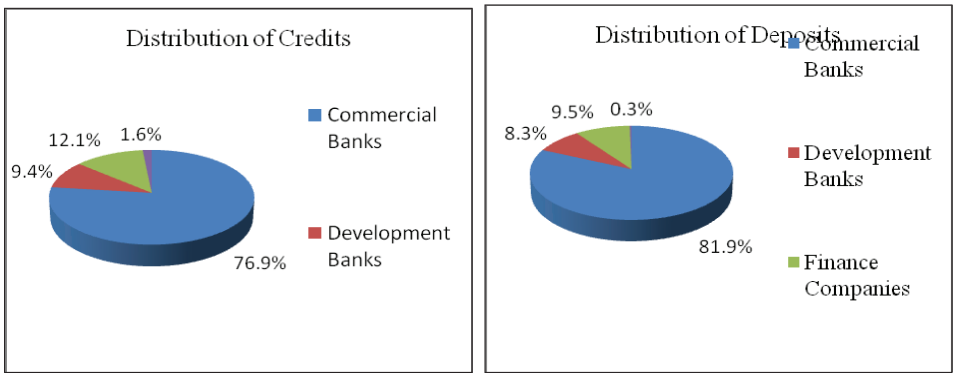
Commercial Banks are key institutions in the financial system. They hold more than 80% of the total Assets and Liabilities of the system. As of mid-January, 2010 Commercial Bank group occupied 80.9% of total Assets/Liabilities followed by Finance Companies 9.6%, Development Banks 8.0% and Micro Credit Development Banks 1.4%.

Chart 3.1
Distribution of Total Assets of Financial System as of Mid-January 2010



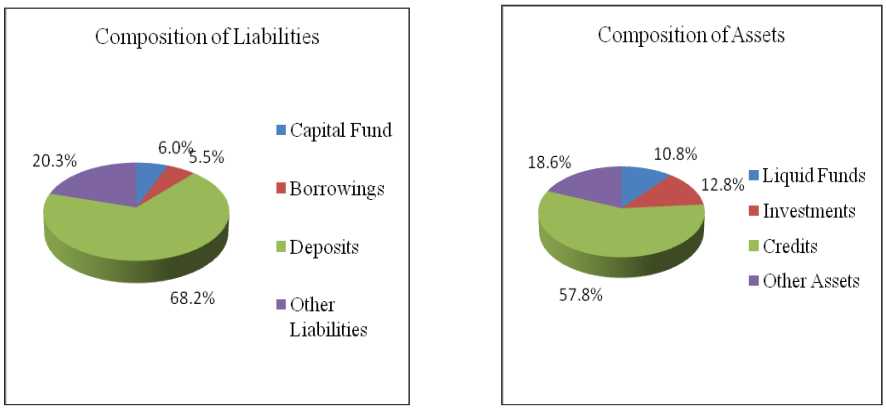
Similarly, the distribution of Credits and Deposits displays much the same trend. On the credit side, Commercial Banks occupied 76.9% followed by Finance Companies 12.1%, Development Banks 9.4% and Micro Credit Development Banks 1.6% share. On the deposit side, too, Commercial Banks occupied 81.9% followed again by Finance Companies 9.5%, Development Banks 8.3% and Micro Credit Development Banks 0.3% share.

Chart 3.2
Distribution of Credits and Deposits of Financial System as of Mid-January 2010



Looking at the composition of total liabilities, deposit holds dominant share of 68.2% followed by capital fund 6.0%, borrowings 5.5% and other liabilities 20.3% respectively. Likewise, on the asset side, credits accounted the largest share with 57.8% followed by investments 12.8%, liquid funds 10.8% and other assets 18.6% respectively.

Chart 3.3
Composition of Assets/Liabilities of Financial System as of Mid-January 2010



From the above facts and figures, it is undoubtedly true that commercial banks are the key institutions in the financial system of the country with dominating market share in all respect even though these institutions are not much in number. Therefore, the financial stability of the country is largely dependent upon the stability of these institutions.

The capital fund witnessed a growth of 20.03% during the six month period and reached Rs. 63,232.2 million in mid-January 2010 from Rs. 52681.8 million in mid-July 2009. The borrowings and deposit increased by 63.16% and 6.12% respectively, while other liabilities decreased by 28.12% compared to mid-July 2009. Similarly, loans and advances including bills purchased, the major component of assets, increased by 18.5% and reached Rs. 606,434.2 million in mid-January 2010 from Rs.511,752.8 million in mid-July, 2009. However, the liquid fund and investment decreased by 20.01% and 13.73% respectively in mid-January 2010 compared to mid-July 2009.

Table 3.3
Growth of Major Balance-Sheet Indicators (%)

Particulars	Mid-July									Mid – Jan
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Capital Fund	26.56	43.97	26.56	-107.36	-516.43	17.90	192.50	273.5	104.36	20.03
Borrowings	-	-	-	12.46	23.77	34.61	22.32	17.55	12.73	63.16
Deposits	21.95	3.96	11.51	13.12	9.81	15.42	19.28	30.10	32.55	6.12
Liquid Funds	16.20	-5.90	-20.59	22.08	-14.32	4.23	21.66	68.64	45.18	-20.01
Investment	40.59	43.36	31.00	8.64	18.95	33.76	14.53	18.11	17.46	-13.73
Credits	15.94	19.54	11.35	11.67	13.38	10.22	26.55	34.27	30.70	18.50

3.3 Overall Status of New Financial Products

A survey was conducted of 15 commercial banks to find out the level of development of new financial products in the Nepalese financial market. The sample comprises most of the established and large-sized banks which have potential to deal in such products, and some newly established banks. The objective behind including the newly established banks in the sample was to see if these banks have the intention or plan to start dealing in such products as they have emerged in the market with the latest technologies and have the advantages of high degree of sophistication. The survey result showed that the market for new financial products in Nepal is in the nascent stage of development. With liberalisation of the Nepalese financial service sector during early 1990s, the FX market was also liberalised to some extent. As a result, some of the institutions, particularly commercial banks, started taking positions in foreign exchanges. Banks subsequently started dealing in "plain vanilla" variety FX derivative instruments, mainly forward exchange contract, but the strategy is not trading or speculative. The total size of dealing is also very much negligible as evidenced from the figures presented below.

From the response of the survey as well as from the regular returns submitted to the central bank, it is observed that a fairly large number (42% of total number in 2010) of banks are providing forward cover in foreign exchanges. But the strategy is not of trading, rather it is provided on selective basis to their prime customers only. Once the bank is exposed to an open position by virtue of a contract entered into with its customer, it enters into a contract with another party taking opposite position so that the risk from the currency fluctuation is eliminated. In fact it is almost a back-to-back model deal. Importers, exporters and remittance companies who frequently have open exposures in FX during the normal course of their business, basically use this product. The statistics of

the outstanding foreign exchange forward contract of commercial banks during last four years (balance sheet date) are presented in Table 3.4 below.

Table 3.4
FX Forward Contract Outstanding

(NRs. in millions)

Particulars	Mid-July			
	2007	2008	2009	2010
Outstanding contract	2239	939	1797	2179
Total off balance sheet exposures	55093	75567	109874	135657
% of O/S contract over off B/S exposures	4.06	1.24	1.64	1.61

The number of banks having exposures in FX forward contract in 2007, 2008, 2009 and 2010 were 13, 10, 10, and 11, respectively. These numbers count less than 50% of the total number. In terms of volume, as evidenced from the given table, the percentage of outstanding forward contract to total off-balance sheet exposure ratio is very insignificant in all the four years. It counts about 4% in 2007 but has significantly dropped to 1.24%, 1.64% and 1.61%, respectively, in 2008, 2009 and 2010. In view of the fact that institutions having exposures in this product count less than 50% of the total numbers as well as volume of dealing being very insignificant both in terms of amount and its proportion to total off-balance sheet exposures of banking system, this product does not pose any threat to the stability of financial system.

Another product newly introduced in the Nepalese financial market is the bankassurance. In fact, it is not a derivative product. It is simply an arrangement to sell insurance products through banks – especially to bank customers. Banks and insurance companies enter into an agreement whereby the former sells insurance product to its customers and get commission from the later. The experiences so far have been quite encouraging as both banks and insurance companies have benefited from such arrangement. In view of the outright positive response, the market for this product is expected to grow rapidly as currently there are nearly equal number of commercial banks and insurance companies in the market.

As far as credit derivatives are concerned, we do not have credit derivative instrument. In the past, the practice of using Credit Swap (for making balance sheet clean on the reporting date) was in place. In view of the fact that this instrument is being misused, the central bank imposed a stringent policy directing

that the status (classification) of credit should not be changed in the books of the institution that swaps the credit from another institution. Because of this policy, it is rarely practiced now.

The survey conducted of the newly established banks revealed that they do not have any plan or intention to trade in such relatively complex products though they are in the market with latest technologies having high degree of modernisation and sophistication.

Apart from this, the commodity derivatives market has been in place since late 2006. First commodity derivatives market was started with the establishment of the Commodities and Metal Exchange Nepal Limited in December 2006. In this market, commodities like cash crops, food items, oils, metal and metal products are normally traded. The transactions are normally carried out in the form of spot market, weekly market, forward market and future market. By now there are three companies involved in commodity derivative transactions. These institutions are not in the regulatory and supervisory purview of the central bank. In fact, in the beginning they were not regulated at all by any authority. Rather they were purely on self-regulation. Later on the Securities Exchange Board of Nepal (SEBON) was entrusted with the responsibility of regulating and supervising the activities of these companies. Since these markets are not under the regulatory and supervisory framework of the central bank, the statistical data and other aspects relating to their dealing are not covered in this research paper.

4. Implications of New Financial Products to Financial Stability

4.1 Global Financial Crisis

The financial crisis of 2007 up to the present is a crisis triggered by a liquidity shortfall in the United States banking system. It has resulted in the collapse of large financial institutions, the bailout of banks by national governments and downturns in stock markets around the world. In many areas, the housing market has also suffered, resulting in numerous evictions, foreclosures and prolonged vacancies. It is considered by many economists to be the worst financial crisis since the Great Depression of the 1930s. According to International Monetary Fund, the current crisis in the world's financial markets is the worst in 75 years. Most significantly, it is the 21st century's first global financial crisis that is putting financial capitalism, ideologically, to its first acid test. It contributed

to the failure of key businesses, declines in consumer wealth estimated in the hundreds of trillions of US dollars, substantial financial commitments incurred by governments, and a significant decline in economic activity.

The immediate cause or trigger of the crisis was the bursting of the United States housing bubble which peaked in approximately 2005-2006. Incentives such as easy initial terms and a long-term trend of increasing housing prices had encouraged borrowers to take out on difficult mortgages in the belief that they would be able to quickly refinance their properties at more favourable terms. However, once interest rates began to rise and housing prices started to drop moderately in 2006-2007 in many parts of the United States, refinance became more difficult. Defaults and foreclosure activity increased dramatically as the easy initial terms expired, home prices failed to go up as anticipated and adjustable rate mortgages interest rate reset higher. With dramatic increase in defaults and foreclosures, the sub-prime mortgage crisis was transformed into a financial crisis in 2007 as banks and financial institutions faced a grave liquidity crisis with dramatic drop in cash flows and their own asset value.

Lower interest rates encouraged borrowing. From 2000 to 2003, the Federal Reserve Board lowered the federal funds rate target from 6.5% to 1%. This was done to soften the effect of the collapse of the dot-cum bubble and the September 2001 terrorist attacks, and to combat the perceived risk of deflation. Between 1996 and 2004, the US current account deficit increased by US$650 billion, from 1.5% to 5.8% of GDP. Financing these deficits required the US to borrow large sums from abroad, much of it from countries running trade surpluses, mainly the emerging economies in the Asian oil-exporting nations. A “flood” of funds reached the US financial markets. Foreign governments supplied funds by purchasing US Treasury bonds and thus avoided much of the direct impact of the crisis.

Lower interest rates and massive inflows of foreign funds created easy credit conditions for a number of years prior to the crisis, fueling a housing construction boom and encouraging debt-financed consumption. The combination of easy credit and money inflow contributed to the United States housing bubble. Many US lenders began to access sub-prime borrowers under two assumptions: (a) that housing prices would continue to rise and hence refinance would be available to these borrowers, if need be; and that (b), to an American, his home is castle and he will do anything, even to the extent of cutting other consumption expenditures to keep his hearth and home intact. Loans were easy to obtain and consumers assumed an unprecedented debt burden. In the process, the number of financial agreements called mortgage-backed securities and collateralised debt

obligation, which derived their value from mortgage payments and housing prices, greatly increased. Such financial innovation enabled institutions and investors around the world to invest in the US housing market. As house prices declined, the major global financial institutions that had borrowed and invested heavily in the sub-prime mortgage-backed securities reported significant losses. Defaults and losses on other loan types also increased significantly as the crisis expanded from the housing market to other parts of the economy.

While the housing and credit bubbles grew, a series of factors caused the financial system to both expand and become increasingly fragile, a process called financialisation. Policymakers did not recognise the increasingly important role played by financial institutions such as investment banks and hedge funds, also known as the shadow banking system. These institutions had become as important as commercial banks in providing credits to the US economy, but they were not subject to same regulations. These institutions as well as certain regulated banks had assumed significant debt burdens while providing the loans, but did not have a financial cushion sufficient to absorb losses resulting from loan defaults. The losses impacted the ability of the financial institutions to lend, slowing down economic activity. Concerns regarding the stability of the key financial institutions drove central banks to provide funds to encourage lending. Governments also bailed out the key financial institutions and implemented economic stimulus programmes, assuming significant additional financial commitments.

4.2 Impact of Global Financial Crisis in Nepal

Nepal has not encountered any direct impact, so far, from the global financial crisis. This is because its financial market is not open to short-term portfolio investments from abroad. On the contrary, it has benefited, to some extent, from the drastic fall in global oil prices as the government was incurring huge losses adding to the fiscal deficit that was near to wiping out the entire surplus of its internal revenue after meeting the government's regular expenditure. However, it will indirectly affect economic growth, revenue collection and development initiatives carried out by the non-governmental organisations. The economy could experience the impact of global financial crisis through four different channels – a slowing down in remittance inflows; a recessionary tourism sector; decline in foreign aid; and a demand-deficient manufacturing sector.

4.2.1 Impact on Foreign Employment and Remittance Inflows

Remittances, which currently contribute a significant proportion (21.2% in 2008/09) of gross domestic product (GDP), have been extending the economy

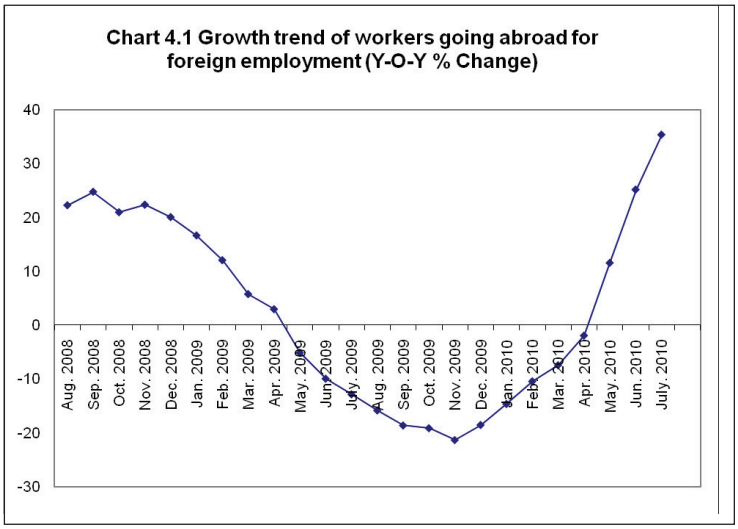
a lifeline for almost a decade. It is chiefly due to these remittances that the balance of payments is still in surplus despite a huge balance of trade deficit. From the statistics of Department of Foreign Employment, Government of Nepal, the number of Nepali workers going abroad for foreign employment crossed the 1.7 million mark as of July 2010. It is reckoned that the people going through unofficial channels are nearly equal in number to that of the official figure. This figure will be much larger if Nepali workers going to India are included. Of the 108 countries opened so far as destinations for Nepali workers, Malaysia, Qatar, Saudi Arabia and United Arab Emirates are the major destinations. These countries absorb more than 90% of Nepali workers working abroad. Roughly estimated, about 30% of the households in Nepal receive remittances.

Due to the worsening political conflict and the shrinking of economic opportunities, the number of Nepali workers going for foreign employment had, until late 2008, dramatically increased. As this sector was identified as the potential sector where the effect of global crisis can be experienced indirectly, the NRB conducted a study, "Impact of Global Financial Crisis in Foreign Employment and Remittance Trends". The study revealed a marked deceleration in the growth of workers going abroad for foreign employment from late 2008, which could be considered as the delayed and indirect effect of the global financial crisis. The y-o-y growth rate of workers going abroad for foreign employment actually declined from May 2009 to until April 2010 though a gradual recovery is witnessed since December 2009 (see Table 4.1 and Chart 4.1 below).

Table 4.1
Trends in Foreign Employment

Mid-month	No. Of Workers				% Change (y-o-y)	
	2006/07	2007/08	2008/09	2009/10	2008/09	2009/10
August	15823	18623	23100	19397	22.3	-15.8
September	18982	19369	25011	22636	24.8	-18.6
October	14981	19603	17391	14249	21.0	-19.1
November	12796	14950	20514	19164	22.4	-21.3
December	17847	20458	18687	24605	20.1	-18.5
January	16051	20089	17378	25280	16.7	-14.6
February	15986	21800	18278	26000	12.1	-10.4
March	11888	21592	17500	21158	5.8	-7.4
April	16429	20546	18099	29555	3.0	-1.9
May	18753	24885	11105	29140	-5.1	11.6
June	21588	23138	12718	31636	-9.9	25.2
July	23409	23998	17383	31274	-12.8	35.4
Annual	**204533**	**249051**	**217164**	**294094**	**-12.8**	**35.4**

Source: Department of Foreign Employment, Government of Nepal.

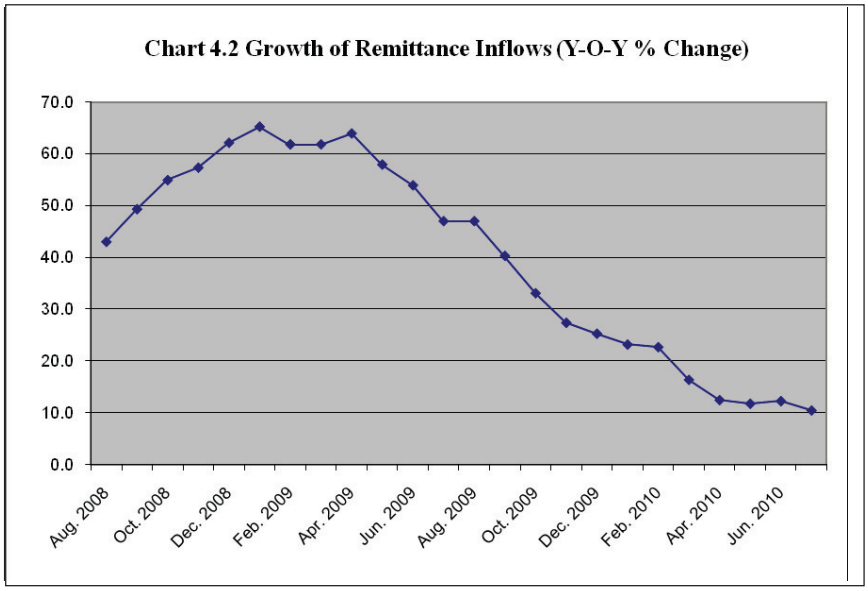


Coming to the remittance inflows, it reached Rs. 209.70 billion in fiscal year 2008/09, a rise by 47.0% compared to that of fiscal year 2007/08. This rise in remittances had led to a surplus of Rs. 41.44 billion in the current account, thereby strengthening the overal balance of payments position. Consequently, the balance of payments was in significant surplus equivalent to Rs. 41.28 billion and so was the gross foreign exchange reserves. However, right from the begining of fiscal year 2009/10, the trend of remittance inflows started to decline gradually and the trend persisted throughout the year to end up with a growth rate of 10.5% in July 2010 (Table 4.2 and Chart 4.2).

Table 4.2
Trend of Remittance Inflows

Mid-month	NRs. in Billion				% Change (y-o-y)	
	2006/07	2007/08	2008/09	2009/10	2008/09	2009/10
August	7.7	9.4	12.3	16.6	43.0	47.0
September	7.9	9.0	16.9	18.4	49.3	40.3
October	8.1	9.5	17.3	16.8	54.9	33.1
November	7.9	10.4	16.9	15.9	57.3	27.4
December	8.6	9.1	15.1	19.1	62.1	25.3
January	8.0	9.7	15.8	19.4	65.2	23.2
February	7.7	11.9	15.1	18.1	61.8	22.7
March	8.4	13.4	21.6	19.6	61.8	16.4
April	8.0	11.4	19.4	21.0	63.9	12.5
May	7.9	14.9	18.8	21.5	57.9	11.8
June	10.8	16.3	19.7	24.8	53.9	12.3
July	9.0	17.6	20.8	20.5	47.0	10.5
Annual	**100.0**	**142.6**	**209.7**	**231.7**	**47.0**	**10.5**

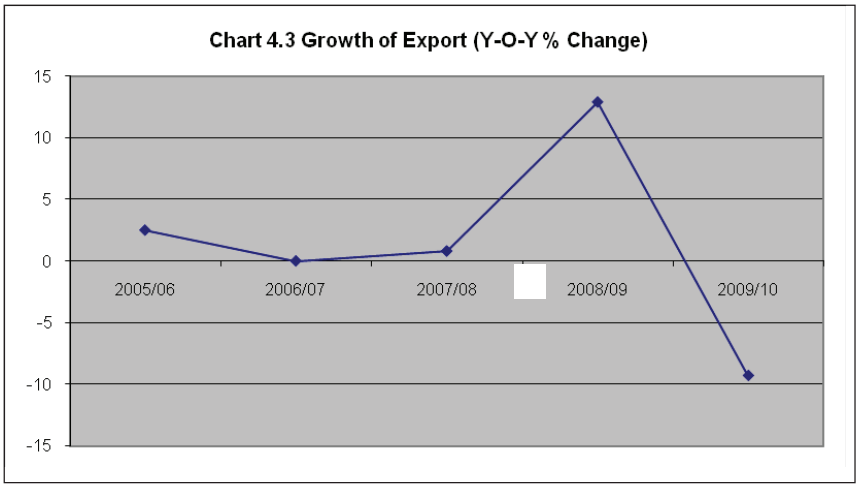
Source: Nepal Rastra Bank and Department of Foreign Employment, Government of Nepal.



The y-o-y growth of remittance inflows accelerated rapidly during the first half of fiscal year 2008/09 and reached a peak in January 2009. The trend remained somehow stable during February–April 2009 and started to decelerate continuously from May 2009 onwards. From the tables and charts presented above, it can be observed that the remittance growth began to decelerate when growth of foreign employment became negative. In this way the global financial crisis has affected the Nepal's foreign employment and remittance inflows.

4.2.2 Impact on Exports

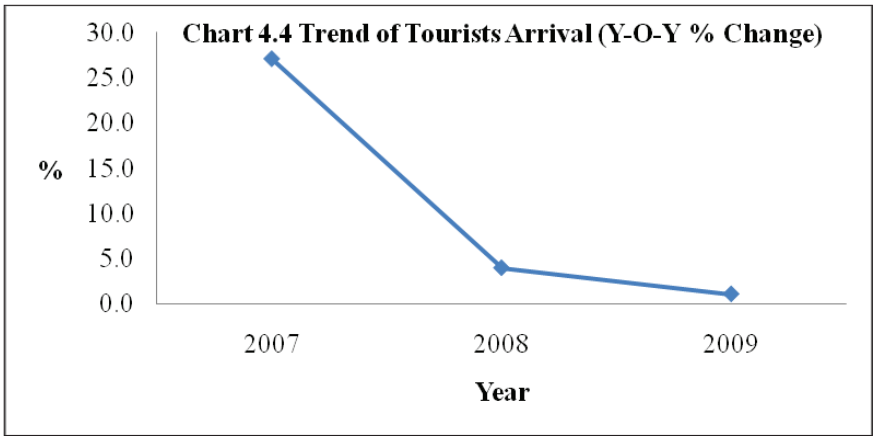
The export figures for the last couple of years have not been so encouraging. During fiscal year 2005/06 to 2007/08 exports witnessed a growth of less than 3%. A sign of recovery was observed in 2008/09 with a growth rate of 12.8%. However, this did not sustain and a decrease of 9.2% in exports registered in fiscal year 2009/10.



The balance of payments posted a loss of Rs. 2.62 billion in the fiscal year 2009/10 as against a surplus of Rs. 44.76 billion in 2008/09. The slowdown in the growth of remittance inflows coupled with a rising trade deficit resulted in significant current account and balance of payments deficit during 2009/10. Consequently the gross foreign exchange reserves declined by 7% to Rs. 266.57 billion as against 34.8% rise in 2008/09. The current level of foreign exchange reserves is sufficient for financing merchandise imports for 8.6 months and merchandise and service imports for 7.3 months. Normally the level used to be for 10 to 12 months.

4.2.3 Impact on Tourism

The tourism sector has since long been the major contributor of Nepalese GDP. However, a global slowdown and recession in the western economies has ultimately resulted in a downward trend in the growth of tourist arrivals in Nepal following the postponement and cancellation of travel plans by potential tourists. The y-o-y growth rate of tourist arrivals in 2007 was 27.1%. During 2008 and 2009 the growth rate was almost negligible, though in first nine months of 2010 signs of a gradual recovery in this sector have been observed with 19.83% increase in tourist arrivals compared to the corresponding previous period.



4.2.4 Other Possible Impact

Experts and economists argue that the aid industry will also be affected by the crisis. Non-governmental organisations operating in Nepal receive funding from corporate donors, governments and large foundations in the west. The global slow-down will limit this funding, forcing the organisations to scale back development initiatives. This will have a negative impact on the fight against poverty and other developmental challenges. Similarly, the downward pressure on the total foreign exchange reserves held by the central bank due to decelerating balance of payments surplus will have a propensity to tame inflation by raising interest rates.

4.3 Merits and Drawbacks of New Financial Products to Financial Stability

Much of the publicised stories about derivatives are related to the financial disasters. Such negative publicity has driven the public sentiments against such products. Much less is heard about the benefits offered by derivatives. However, it is necessary to understand that such products themselves are not the problem. The problem is the way in which they are used. In fact, if these products are sensibly put in use, they offer lots of advantages by providing a firm means for risk management. Therefore, the merits and drawbacks of the new financial products to financial stability depend upon the strategies taken while using such products, i.e. hedging vs. speculation. Authorities have cited 'risk hedging' as good use of derivatives and 'speculation' as bad use of it.

4.3.1 Merits

The innovation of new financial products accelerates growth of efficient financial market. They provide investors with various access channels to the capital market. These products deepen the financial structure and promote superior allocation of resources so as to maximise return and ultimately facilitate better capital formation and higher economic growth. They can also be widely used as the tools for risk management. Hedging allows a manager to concentrate on running the core business. In emerging markets, there is a greater need for these instruments/markets for risk reduction amidst the high volatility of financial markets. Increasing globalisation and operations of foreigners in the domestic market necessitate the development of certain facilities like hedging. Thus, using new financial products (derivatives) as risk hedging tool is often cited as good use of derivatives which ultimately contributes to the promotion of the financial stability.

4.3.2 Drawbacks

There are varieties of derivative products ranging from the simplest plain vanilla variety to much complex, poorly designed and less transparent products. Such complex products, if mis-used or not managed properly, can trigger systemic risk by transferring risk to investors, who may not be capable of dealing with it. As these instruments are highly leveraged and liquid, small miscalculations can lead to huge losses. These very characteristics make derivatives attractive to rogue traders and aggressive investors seeking high returns with only marginal investment through high-risk strategies. The complexity of derivative products makes it difficult for senior management and external stakeholders to fully understand the strategies being used. The potential for miscalculation, misuse and unawareness had led to some highly publicised losses for some large and well-respected companies in the past several years. Such publicity has driven the sentiments of the public against this new financial innovation. However, it is necessary to consider that it has not been the use of derivatives as a tool which has lead to the downfall of these companies - but rather, the misuse, compromise and speculative use of such instruments. Thus, speculative use of new financial products (derivatives) with intent to earn more in a short span of time is often cited as bad use of derivatives which can destabilise the financial market and ultimately pose a real threat to financial stability.

4.4 Existing Policy Measures and Regulation

As the market for new financial products in Nepal is not so developed, our banking institutions have nil or negligible exposures in such products. As such not much regulatory and supervisory concern is called for. With the liberalisation of the financial service sector during early 1990s, the FX market in Nepal was also liberalised to some extent. As a result, some of the banking institutions, particularly commercial banks, started taking positions in foreign exchange, thereby exposing them to exchange rate risk. Taking this in view, the central bank issued a directive to restrict the banks' net open position in foreign exchange at 10% of core (Tier I) capital and started monitoring the banks on monthly basis. With this regulation still in force, the central bank in the recent past also issued a directive allowing the commercial banks and national development banks to deal in derivative instruments like Forwards, Futures, Options, Swap, etc., within the guidelines set by their respective board of directors. However, except forward in FX, transactions in other instruments are not yet started.

Given the size of exposures taken in such instruments, nature of their use and level of development of market, the policy measures and regulation currently being taken seems to be adequate and effective.

4.5 Coordination between Monetary and Supervisory Authorities

There is no separate authority for monetary policy function and supervisory function in Nepal. The NRB, being the central bank, assumes both the responsibilities. Immediately after the budget announcement by the government, the central bank announces its monetary policy so that the objectives taken by the fiscal policy of the government is achieved. Policy amendments and structural adjustments relating to the financial sector required by monetary policy are then addressed by the issuance of the various regulations and directives. As both the responsibilities are discharged by the same authority, the issue of coordination between authorities does not arise in the case of Nepal.

4.6 Cross-border Supervision and Coordination between Central Banks

The Nepalese financial market was opened up to allow foreign financial institutions to enter Nepal beginning of 2010. The central bank has formulated a policy defining the scope of operations and the terms and conditions to be fulfilled by the foreign financial institutions seeking to open and operate branch offices in Nepal. Pursuant to the policy, the scope of operation is limited only to wholesale and not the retail banking. However, as of October 2010, no foreign

financial institutions have come forward with any proposal to open branch offices in Nepal.

Similarly, local Nepali commercial banks that meet the eligibility criteria set are allowed to open branch offices outside the country. There are no takers to date. In view of this fact, the issue regarding coordination between the central banks in the region for cross-border supervision presently does not arise.

Nonetheless, given the open policy we have adapted, it is necessary to start with some preparedness. Towards this end, a template home-host Memorandum of Understanding (MOU) has already been drafted and approved at the governor's level. This MOU has been forwarded to the Reserve Bank of India for its consideration as the probability of cross-border banking between Indian banks and Nepalese banks is considered high for a number of reasons, notably, Nepal and India share an open border and the people of these two countries share commonalities in terms of common religious, cultural and social values. The next step in the plan of the NRB is to forward the template MOU to all the regulators in the SAARC region.

5. Conclusion and Policy Implications

5.1 Summary

Modern banking has become much more crucial and complex. The revolutionary development in technologies has resulted in the rapid development of financial techniques and engineering. New financial products are being constantly developed and introduced into the financial market. Such innovations have been driven by deregulation, information technologies and the evolution of investor preferences. As discussed, the innovation of such products has offered both opportunities and challenges to the market as well as to investors.

Like in many SEACEN economies, the market for new financial products in Nepal is not so developed and is in its infancy. Nevertheless, it is still important for us to understand them because one of the most prominent developments observed in the modern financial markets is the emergence of new financial products and the progressive involvement of global players in the emerging markets. In light of the recent sub-prime turmoil and the highly publicised losses suffered by some large and well-respected companies, even the collapse of some of them, it is necessary to scrutinise the merits and drawbacks of these new financial products closely to mitigate potential losses while maximising the positive contributions of introducing such products.

5.2 Policy Implication

New financial products can be used either for risk hedging purposes or for speculative transactions. The rising complication of the products makes them more difficult to understand by most market participants leading to asymmetric information situation. The best way to minimise information asymmetry is to make markets efficient and transparent where risk will be transferred to fully aware and willing investors. Reporting and disclosure to market participants as well as regulators are critical for enhancing market transparency.

As long as these products are used as a risk management tool, there is very little room for worrying about them. But when investors use such products for speculative trading, then it must be properly controlled and regulated. Too much regulation and too little regulation are both bad in respect of these products. While the first will have a throttling effect and prevent the establishment and growth of the market, the latter will lead to lack of adequate protection to investors and fear of failures in the market. The purpose of regulation is to protect the interests of investors, infuse confidence in the market, prevent unfair practices, promote smooth functioning of the market and prevent undue speculation. Our policy environment should not discourage constructive financial innovations, but rather should encourage it. At the same time our policymakers must be vigilant on stopping destructive innovations and the misuse of constructive innovations, either or both of which can lead to future financial bubbles that expose the economy to financial crises. It is now well accepted that only optimal level of regulation promotes a healthy and efficient market. This is more so in the developing countries and emerging markets. More importantly there must be a fair degree of self- regulation regarding the compliance with the rules of the game, like disclosures of the covered positions, open positions, volume of trade and losses and gains, etc., that would help the market to grow in the right direction.

Banking regulators also should emphasise more disclosure of derivative positions in the financial statements and be certain that the institutions trading huge derivatives have adequate capital. In addition, because derivatives could have implications for the stability of the financial system, it is important that users maintain sound risk management practices. In particular, regulators should ensure that banking institutions with substantial trading on derivatives have following systems in place so that risks are effectively controlled and limited to levels that do not pose a serious threat to their capital position:

1. Active board and senior management oversight of trading activities;
2. Establishment of an internal risk management audit function that is independent of the trading function;
3. Thorough and timely audits to identify internal control weaknesses;
4. Risk measurement and risk management information system that includes stress tests, simulations and contingency plans for adverse market movements; and
5. Additional capital charge for exposures in derivatives.

Banking regulators should also prepare themselves for this challenging responsibility. Appropriate regulations are crucial to preserve financial stability relating to emergence of new financial products. In order to achieve this goal, regulators should possess the appropriate information gathering and analytical capabilities and evolve at the same pace as the development of new financial products.

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Chapter 7

CHALLENGES IN DEVELOPING A MARKET FOR NEW FINANCIAL PRODUCTS

By
Natalia W. Santos[1]

1. Introduction

The market for new or non-traditional financial products in the Philippines is by no means at a mature stage. Nonetheless, such products have been in existence in the country for quite some time. In the mid-80s, the Manila International Futures Exchange was launched and enjoyed some activity. Commodities traded in the exchange included sugar, soybean, copra and coffee. In 1997, however, the exchange was ordered closed by the Securities and Exchange Commission (SEC) due to governance issues, particularly fraud and irregularities committed by brokers and officials of the exchange[2]. In the meantime, the banking industry increasingly pursued transactions in derivatives.

The present study reviews the state of new financial products in the country. Loosely, "new financial products" may be taken to mean a number of products, including derivatives, mutual funds and bancassurance products. However, in order to narrow the focus of the study, the discussion will be limited to derivatives and related products, such as structured products. This is chosen as it is an activity that is increasingly taken up by banks, which comprise the majority of the Philippine financial system. Derivatives likewise give rise to institutional and systemic safety and soundness issues, as was shown during the recent crisis. On both fronts, the Bangko Sentral ng Pilipinas (BSP) has an interest as the bank supervisor and the institution that has primary responsibility for maintaining financial stability.

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1. Bank Officer at the Office of Supervisory Policy Development, Supervision and Examination Sector, BSP. The author would like to thank colleagues at the Quantitative Support Staff and Capital Markets Specialist Group of the BSP for their valuable inputs, especially Ms. Jocris Sabac for excellent assistance. This paper is the sole responsibility of the author. It does not reflect the views of the Bangko Sentral ng Pilipinas.

2. See "Manila Futures Exchange Awaits Govt Approval" on the Philippine Headline News Online, 7 Jan 2004. Available on <http://www.newsflash.org/2000/01/be/be001038.html>

As bank supervisor, the BSP has quite a history in respect of regulating derivatives. In December 1995, it articulated the first regulations on derivatives.[3] The BSP's initial regulatory framework for derivatives took cognizance of the different ways that derivatives may be used by banks. Derivatives can be employed to hedge exposures and manage risks. They also allow banks to generate profits by making markets in the different products; through arbitrage, i.e., exploiting differences between the derivatives and cash markets; or by speculating on the direction of the market.[4] The main theme of the regulation, then, was that banks were required to obtain prior approval from the BSP in order to engage in derivative transactions. Moreover, such transactions could only be entered into if either the bank or its counterparty is hedging.[5]

The BSP would subsequently update its guidelines on derivatives, in line with its policy to aid the development of the Philippine financial markets. As an underlying theme, the frameworks adopted by the BSP essentially encourage its supervised institutions to participate in the markets and transact in products that are made available to them so long as they do so in a prudent manner. Alongside its regulatory issuances, the BSP also lends support to initiatives that will deepen the markets for the products, such as the creation of the appropriate infrastructure and the passing of related legislative agenda.

In 2001, new guidelines on derivatives were issued[6] that effectively made a distinction between the sophistication and capacities of banks. As such, they were allowed to undertake derivative activities according to their perceived ability to take on and manage risks. The universal and commercial banks (U/KBs), which are deemed the most sophisticated, could be granted expanded derivative authority upon application with the BSP. This allowed them to take positions in derivatives for their own account or on behalf of clients. While the 2001 amendment was an improvement over the initial rules, the increasing pace of developments in the financial markets led by the emergence of structured products prompted another review of regulations.

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3. Circular No. 102 dated 29 December 1995

4. "Risk Management Guidelines for Derivatives", Basel Committee for Banking Supervision, July 1994.

5. According to Lamberte and Yap (1999), the last time the BSP granted authority to engage in derivatives transactions under these guidelines was in March 1998, so that banks could adequately prepare for engaging in such activity.

6. Circular No. 297 dated 17 September 2001.

In late 2007, the BSP approved a revised framework for banks' derivative authorities[7], which aims to enable banks to take full advantage of the benefits of derivative transactions. The revised guidelines are also geared toward reducing the supervisory burden by streamlining the licensing process, and simplifying the approval process for banks' transactions. The guidelines address the aim of developing the derivatives market by encouraging the financial institutions to take on derivative activities on a graduated basis, i.e., by allowing them to take on simple transactions initially and then maturing to more complex transactions as they gain expertise.

While it may appear that the BSP is continuously liberalising its stance on new products, it has not lost sight of the developments in the international markets, where the use of derivatives and structured products have caused widespread problems for both large and small financial institutions. The larger financial institutions, in particular, which were deemed to be more sophisticated in terms of risk management capabilities, were more badly hit. Thus, this illustrates that even with prudential regulation in place, the threat to the stability of institutions and markets still remains. Taking cognizance of these points, the study will attempt to provide some insights on how to further develop the derivatives market in the Philippines.

The next section will cover the very limited literature that has been written about the Philippine markets for new financial instruments. Section 3 will give an overview on the financial system today – the structure, the players, their roles and the products that are available to them. It will discuss in detail the market for derivatives including the regulatory environment and the present state of the market. Section 4 discusses the effects of the recent crisis on Philippine institutions and the central bank's response, as well as the implications for the future of the market for derivatives. Section 5 concludes.

2. Literature Review

The literature on Philippine financial markets, especially on new financial products, is quite limited. The domestic market is often reviewed and described as part of a cross- section review of Asian countries. It is also characterised as being in its nascent stages.

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7. Circular No. 594 dated 8 January 2008.

Fratzscher (2006) points out that growth in Asian markets in general is rapid, with foreign exchange products dominating the over-the-counter (OTC) markets, while equity derivatives are mostly traded on exchanges. The development of exchanges is divided into three tiers, the top one being composed of jurisdictions with demutualised exchanges, such as Australia, Hong Kong and Singapore. The second tier consists of Korea, India, China, and Malaysia, where the exchanges have experienced growth. The Philippines belongs to the third tier, along with Indonesia and Thailand. Among the three countries, however, only the Philippines had no plans yet to establish exchanges, while the other two had already done so or were in the process of doing so. In 2008, however, there was news that a derivatives exchange would be set up in the Philippines,[8] although this has yet to materialise.

On the other hand, it has also been pointed out that there exists a strong cash market for equities in the Philippines, but no market for equity derivatives (Jobst, 2007).

Hohensee and Lee (2006) characterise the Philippine derivatives market as one of the least sophisticated and one of the most restricted in Asia. With respect to foreign exchange markets, corporates are able to hedge their loan exposures, but liquidity in the spot and forward markets is low; moreover, there was yet no market for options. The paper likewise mentions that interest rate swaps began trading onshore with the participation of six foreign banks. The market has since broadened to include local banks, as pointed out by Yap and Bagsic (2008). They observe that foreign exchange activity has expanded in the spot market, but not much in the swap and forward market. It also notes the presence of on- and off-shore markets for non-deliverable forwards (NDFs), although the turnover is small compared to the Asian counterparts. Moreover, notwithstanding the capital market reforms that have been put in place in recent years, (improvement in infrastructure through the real-time gross settlements system (RTGS) and the Fixed Income Exchange (FIE), which is also the platform for spot FX trading, and the development of hedging financial instruments for dealers to introduce securities lending, tax reforms, providing impetus for banks to strengthen risk management) the BSP can play a key role in implementing initiatives to make the FX market more efficient. One of these is assisting the development of FX hedging instruments by supporting the development of an active money market and fixed income market to develop a reliable yield curve that can be used as a basis for pricing forwards and swaps.

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8. "Philippines to Set up Derivatives Exchange", 20 February 2008. Viewed at: <http://in.reuters.com/article/idINMAN12697820080220>

3. The Philippine Financial System

3.1 Institutions and Markets

The Philippine financial system is composed of various types of institutions and markets. Institutions have been traditionally distinguished by the products and services they offer and the public to which these are made available. Figure 1 shows the different types of financial intermediaries and their share in total resources.

Figure 1
Resources of the Philippine Financial System (On Solo Basis)
As of 31 December 2009
(In Php Million)

Type of Institution	Amount
Banks	***6,192,284***
Universal and commercial banks	5,483,541
Thrift banks	536,123
Rural and cooperative banks	172,620
Insurance companies	***506,207***
Life	419,525
Non-life (including reinsurers)	86,682
Investment houses/fund managers	83,879
Financing companies	130,224
Securities dealers brokers	32,143
Investment companies	58,394
Pre-need companies	98,863[9]
Non-stock savings and loan associations	90,515
Pawnshops	24,130
TOTAL	**7,216,639**

Source: Supervisory data

The foregoing illustrate that the Philippines remains very much bank-based. Compared to other institutions, banks hold the greatest share of resources, with its P6.19 trillion assets as of end December 2009, representing 12 times the assets of the entire insurance industry, which is the next largest financial sector. Compared to GDP, the resources of the banking system represented 75%.

9. Figure is based on AFS as of 31 December 2008.

Among banks, however, there are also substantial differences. Universal and commercial banks (U/KBs) are the largest institutions, with authorities to offer a wider range of services to the public, and own financial allied subsidiaries wholly. They take up the lion's share of the banking system's assets, regardless of the fact that there are only 38 head offices, as against thrift banks' 73 and rural banks' 674. There is also a significant presence of foreign banks among the U/KBs. Out of the 38 head offices, 3 are subsidiaries of foreign banks, while 14 are foreign bank branches. Together, they contribute 18.6% of the total assets of U/KBs. In fact, one foreign bank branch – Citibank NA – belongs to the top 10 banks in the system in terms of asset size. Universal banks, however, differ from commercial banks in that they are allowed to perform the functions of an investment house either in-house or through a subsidiary created for that purpose.

As for financial markets, the following exist in the Philippines apart from the derivatives market: equity market, debt securities market, money market, and the foreign exchange market.

The Philippine equities market, whose tradings are executed at the Philippine Stock Exchange (PSE), has a market capitalisation of P7.75 trillion as of end October 2010. As of end 2009, market capitalisation represented 78% of GDP. The debt market, on the other hand, is still in its nascent stages, with issuances dominated by government securities. The establishment of the Fixed Income Exchange, however, has improved secondary trading, especially for corporate issuances. There are currently 14 corporations whose debt issuances are listed on the exchange. Money market[10] transactions, meanwhile, usually have the BSP as one of the counterparties.

There is an active foreign exchange market, but its size is still small compared to other jurisdictions. In a recent publication of the Bank for International Settlements (BIS)[11], the average gross turnover in April 2010 was US$7,649 million, much lower than neighbours Singapore's US$ 278 billion, or Thailand's US$9,649 million.

The lack of depth in the capital markets reflects the reality that banks remain the main source of funds both for corporate and individuals. Similarly, banks

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10. Market for short-term instruments such as treasury bills, commercial papers and securities with maturities of one year or less.

11. "Triennial Central Bank Survey: Report on Global Foreign Exchange Market Activity in 2010", December 2010. Available at <www.bis.org>

are key players in the fixed income and money markets, foreign exchange and derivatives markets. Thus, in focusing on the development of new financial products, the discussion in this paper is directed towards banks, more particularly the universal and commercial banks and their transactions in derivatives.

3.2 Present Supervisory and Regulatory Framework over Derivatives

The supervisory and regulatory framework over derivatives is mostly comprised of rules and regulations issued by the BSP. The framework encompasses authorisation, risk management, capital adequacy and reporting. There are also regulations promulgated by the Philippine Securities and Exchange Commission (SEC), given its oversight role over financial markets.

3.2.1 Authorisation and Risk Management

The present framework for authorisation of derivative activities for banks was conceived in late 2007, when it was approved by the BSP's Monetary Board. The implementing guidelines were embodied in Circular No. 594 dated 8 January 2008, where the key policy thrust aims at enabling banks to take full advantage of the benefits of derivative transactions while at the same time ensuring that they do so in a prudent manner. The guidelines, which revised the guidance issued in 2001, are also geared towards reducing the supervisory burden by streamlining the licensing process, and simplifying the approval process for banks' transactions. (Recall that it was the practice for banks to obtain prior BSP approval to enter into transactions involving new products). The guidelines address the aim of developing the derivatives market by encouraging financial institutions to take on derivative activities on a graduated basis.

The Circular defines the three roles a bank may take with respect to derivative activities. An *end-user* enters into transactions for its own account, such as hedging, position-taking, trading, yield-enhancement, managing capital or funding costs; a *broker* facilitates derivative transactions between a dealer and its client for a fee or commission; while a *dealer* originates derivative products or acts as market-maker for these and can likewise act as end-user or broker.

The Circular divides banks' derivative activities into those that (1) are *generally authorised*, or those that can be undertaken by a bank without prior authority from the BSP, and (2) require *additional derivative authority*. General authorities differ for different types of banks. For instance, the U/KBs may serve as dealers for/take positions on FX forwards/swaps and currency swaps

with a tenor of three years or less and, interest rate swaps and forward rate agreements with a tenor of ten years or less. They may enter into transactions for hedging purposes, invest in principal-protected structured products and plain vanilla credit-linked notes subject to prudential limits. Lastly, they can act as brokers for derivative transactions. Thrift and rural banks, on the other hand, are allowed to engage in derivative transactions for hedging purposes provided they are able to account for this in accordance with the requirements of Philippine Financial Reporting Standards/Philippine Accounting Standards (PFRS/PAS).

Additional derivative authority are of four types and will be granted only if the BSP deems that the applicant bank complies with the requirements that escalate according to the extent of business that each licence allows the bank to undertake. U/KBs may apply for *expanded dealer* or *limited dealer* licences. Expanded dealers may transact in any derivative as a dealer, end-user and broker. Thus, they require a bank to have a comprehensive and integrated risk management system, adequate sales and marketing practices, a CAMELS/ ROCA[12] rating of "4". Limited dealers can transact in specific types of derivatives (which they also have to apply for) as a dealer, end-user and broker. Any bank may apply for a *limited user* licence, which allows the bank to transact in specific types of derivatives (which they also have to apply for) as end-user. Lastly, thrift and rural banks may apply for *special broker* authority to allow them to facilitate transactions between the U/KBs that are dealers and counterparties with sufficient knowledge, expertise and experience in dealing with financial products.

At present, there are 7 expanded dealers, 9 limited dealers, 7 limited end-users, and 1 bank that is a special broker. All of the 7 expanded dealers are foreign banking institutions.

The revised derivative regulations likewise include Risk Management Guidelines for derivative activities and Sales and Marketing Guidelines. The latter must be adhered to by those banks that take on the roles of dealers or brokers. The Sales and Marketing Guidelines highlight the possible complexity of derivative products and the necessity for clients to be adequately informed of the risks inherent in their transactions. Non-sophisticated clients must be provided the greatest protection.

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12. The CAMELS rating system is used to assess a bank's overall level of soundness. The scale is from 1 to 5, with 5 being the highest. The ROCA is the counterpart rating for foreign banking institutions.

Under the guidelines, the BSP may curtail activities, including those that are generally authorised, or revoke authorities granted if a bank is found to be engaged in unsafe and unsound practices or it does not have the necessary systems in place to manage the risks attendant to its derivative activities.

3.2.2 Capital Adequacy

The capital adequacy guidelines for derivatives are embodied in the BSP's risk-based capital adequacy framework for banks. When the BSP initially adopted the Basel standards in 2001, the capital adequacy requirements for derivative transactions only covered counterparty credit risk. The market risk requirement was put in place in 2002, and this required banks to allot capital for market risks related to their trading book and foreign exchange exposures, which include derivative transactions. As a default, banks must compute market risk capital in accordance with the standardised approach of Basel. Capital computation using internal value-at-risk models are allowed with the prior approval of the BSP.

The market risk requirement initially applied to universal and commercial banks only, given that these institutions are those that are most active in trading. When the BSP began implementing Basel 2 in 2007, the market risk requirement was extended to the subsidiary banks and quasi-banks of universal and commercial banks.

3.2.3 Reporting

The BSP, in 2005, adopted the Philippine Accounting Standards (PAS) and Philippine Financial Reporting Standards (PFRS) based on the International Accounting Standards (IAS) and the International Financial Reporting Standards (IFRS), respectively.[13] These required banks to prepare financial statements in accordance with international standards that are comparable with the statements issued by banks and other firms elsewhere.

More importantly, however, the BSP overhauled the prudential reports submitted by banks in order to align these with PAS and PFRS. The product is the Financial Reporting Package, which yields a comprehensive information set. Among others, it collects data on banks' derivative transactions, both notional and mark-to-market values, as of reporting dates. Derivatives are classified by type of underlying such as interest rate, foreign exchange, and equity, and by

13. Memorandum to All Banks dated 11 January 2005.

the type of transaction such as forwards, swaps and options. Information on structured products is likewise included in the package.

3.2.4 Foreign Exchange Guidelines

Banks that conduct derivative activities must likewise abide by BSP rules and regulations covering foreign exchange transactions. The most apparent among these rules that banks must fulfill are the procedural and documentary requirements relating to the sale of foreign exchange, as well as the cap on their overbought and oversold positions ("the net FX position"), which must be maintained on a daily basis. Forward and option positions are included in the computation of the net FX position.

In 2007, the BSP began a phased liberalisation of foreign exchange rules. This recognised that the increasing integration of markets and economies warranted an adjustment in the existing framework, in particular with regard to access to foreign exchange for legitimate economic reasons. The first phase included an increase of banks' overbought limit to the lower of US$50 million or 20% of unimpaired capital from US$10 million or 5% of unimpaired capital. Moreover, the oversold limit was reinstated, in an amount equal to the overbought limit. The most recent phase involved an increase in the limit of over-the-counter FX purchases by residents from authorised agent banks with no documentary requirements to US$60 thousand.[14] Prior to the amendment of the rules, the limit had been set at US$10 thousand since after the Asian crisis.

3.2.5 Provisions of the Securities Regulation Code (SRC)

The Securities Regulation Code (SRC), which is the governing law over the capital markets, includes derivatives in its definition of securities. As such, under the same law, derivatives sold and offered for sale or distribution in the Philippines must be registered with and fall under the oversight of the Securities and Exchange Commission (SEC). In a specific provision, the SEC is likewise tasked to prescribe rules governing commodity futures contracts. In this regard, the SEC has suspended public trading in such instruments until further notice. Moreover, the SRC has specific implementing rules regarding the requirement for the registration of warrants and options, the latter particularly when it relates to shares of stock.

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14. This is for current account non-trade transactions. From US$10 thousand, the limit was initially increased to US$30 thousand as part of the phased liberalisation of rules. It was again increased to US$60 thousand in October 2010.

Indeed, it is also the SRC that sets forth rules on the establishment of exchanges. This implies that any infrastructure that shall facilitate the trading of derivatives in the future will necessarily be subject to registration with the SEC, and its oversight.

Under the SRC, the SEC has already issued guidelines for over-the-counter (OTC) securities markets. These set out the requirements for participating in an OTC market, where securities can be traded in an OTC market, the need to institute a quotation system and the requirements for its operation, and trade reporting obligations, capital requirements of participants, among others. Participants in an OTC market are likewise required to be members of a self regulatory organisation (SRO).

3.3 Derivative Transactions of Banks

3.3.1 Stand-alone Derivatives

Existing central bank regulations[15] define a derivative as "a financial instrument that primarily derives its value from the performance of an underlying variable. For purposes of the guidelines, a financial derivative is any financial instrument or contract with all of the following characteristics:

(1) Its value changes in response to a change in a specified interest rate, financial instrument price, commodity price, FX rate, index of prices or rates, credit spread, credit rating or credit index or other variables not prohibited under existing laws, rules and regulations (the "underlying");

(2) It requires either no initial net investment or an initial net investment that is smaller than would be required for other types of contracts that would be expected to have a similar response to changes in market factors; and

(3) It is settled at a future date.

The definition of financial derivative activities extend to "transactions in cash instruments with embedded derivatives that reshape the risk-return profile of the host instrument, such as credit-linked notes ("CLNs") and other structured products ("SPs")."

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15. Circular No. 594 dated 8 January 2008.

Based on a survey conducted for this study,[16] Philippine banks have been engaged in derivative transactions as early as the 1980s. The first products to be transacted were foreign currency forwards and foreign currency swaps. A foreign bank reported its first transaction in 1980, while a domestic bank commenced derivative business in 1984. In the second half of the 1990s, there were more banks – both domestic and foreign – that were involved in similar activities. Activity in other stand-alone derivative products such as currency swaps and interest rate swaps began to increase in the second half of the recent decade.

One can observe that the growth of derivative transactions is largely dependent on the presence of a regulatory framework for such activities. The increase in activities in the 1990s can be associated with the first Circular released by the BSP that directly addressed banks' derivative activities. The next came in the middle of the past decade, after the issuance of Circular No. 297 paved the way for the grant of expanded derivative licences.

According to prudential data collected by the BSP, the total notional amount of stand-alone derivatives transacted by universal and commercial banks as of June 2010 stood at P3.76 trillion. This amount represents a growth of 86% compared to its level in June 2008. Foreign exchange contracts comprised more than 83% of the amount, with the forward leg of swaps accounting for the majority of the said contracts.

The dominance of foreign exchange contracts among banks' derivative transactions can be traced to the relatively more liquid and active FX spot market. This can be contrasted with the lesser volume of interest rate contracts, which can likewise be attributed to the infancy of the fixed income market. In fact, the country has yet to produce a benchmark yield curve that can be used to price debt issues and related derivatives. As a result of this scenario, FX forwards are presently being priced based on the rates implied by FX swap transactions instead of the yield curve.[17] What is also quite notable is that even with the presence of an established equity market, the market for equity derivatives has not taken off.

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16. The survey was conducted among universal and commercial banks (U/KBs). Two of the 38 banks were taken out of the sample for structural reasons. The BSP received replies from 28 respondents.

17. As swaps are used for funding, there have been instances when the implied rate has turned negative.

Figure 2
Notional Amount of Stand-alone Derivatives
As of 30 June 2010
(Amounts in PhP)

Stand-alone Derivatives – Total	**3,757,033,902,819**
1. Interest Rate Contracts	604,976,880,612
Interest Rate Swap	537,798,393,728
OTC Options Contracts	63,879,526,884
Bond Options Contracts	3,298,960,000
2. Foreign Exchange Contracts	3,150,776,222,207
Forward Foreign Exchange Contracts	2,936,183,876,544
(1) Outright Forwards	278,223,068,644
(2) Forward Leg of Swaps	1,965,860,058,032
(3) NDF	692,100,749,868
Currency Swap	174,503,163,596
OTC Foreign Exchange Options Contracts	40,089,182,067
3. Credit Derivatives	1,280,800,000

Source: Supervisory data

While all the universal/commercial banks are authorised to undertake generally authorised activities, there are only a few that can be considered major players with an even number of foreign and domestic banks. Based on the outstanding notional amounts of transactions, however, foreign banks have a greater share of the volume of transactions in stand-alone derivatives, although that of domestic banks' represents an increasing presence in the market (see Figure 2a). This can be attributed to a number of factors, including the fact that more domestic banks are applying for special authorities which gives them more flexibility. It is notable, too, how the notional amount of foreign banks' transactions fell from 2008 to 2009.

Figure 2a
Foreign and Domestic Banks' Outstanding Stand-alone Derivative Transactions
(Amounts in PhP)

1. 30 June 2010

	Foreign Banks	Domestic Banks
Total	**1,977,646,527,050**	**1,779,387,375,769**
1. Interest Rate Contracts	464,513,655,218	140,463,225,394
2. Foreign Exchange Contracts	1,513,132,871,832	1,637,643,350,375
3. Credit Derivatives	-	1,280,800,000

2. 30 June 2009

	Foreign Banks	Domestic Banks
Total	**1,163,521,979,160**	**1,085,942,756,057**
1. Interest Rate Contracts	408,104,737,528	125,589,913,546
2. Foreign Exchange Contracts	755,417,241,632	959,534,542,511
3. Credit Derivatives	-	818,300,000

3. 30 June 2008

	Foreign Banks	Domestic Banks
Total	**1,398,911,123,506**	**617,061,909,123**
1. Interest Rate Contracts	250,446,976,666	68,362,855,962
2. Foreign Exchange Contracts	1,148,464,146,840	544,962,253,160
3. Credit Derivatives	-	3,736,800,000

Source: Supervisory data

Counterparties of domestic banks are more often than not also other Philippine-based banks, particularly for foreign exchange forward and swap transactions. The number of retail clients is also growing. Counterparties of foreign banks, on the other hand, are likely to include other units under their parent bank, i.e., branches as well as subsidiaries.

All banks' transactions are conducted over-the-counter.[18] Forwards are executed using telephone, brokers, or treasury systems, conversation slips, or via email. Some banks are able to transact through their systems. The supporting documentation for these transactions would differ depending on their nature. Ideally, banks enter into ISDA[19] agreements with their counterparties when transactions involve the exchange of the Philippine peso against foreign currency,

18. There is no prohibition for the banks to transact in exchanges, but they would have to do so overseas, given the local absence of an exchange.

19. International Swaps and Derivatives Association

or the counterparty is a foreign counterparty. Foreign exchange forward transactions are usually covered by Master Agreements. Interest rate swaps, on the other hand, are covered by agreements on a per transaction basis.[20] In addition, transactions must likewise comply with the necessary requirements under the regulations on the sale of foreign currency. As to settlement, this is usually communicated through phone calls or via emails. Payments are made either through managers' checks, checking/savings or nostro accounts, or the banks' demand deposit accounts (DDA) with the BSP.

3.3.2 Structured Products

Structured products, on the other hand, amount to PhP82 billion (see Figure 3). The majority of exposures are comprised of credit-linked notes (CLNs). Save for less than 1%, these products are all held in the books of domestic banking institutions. Foreign bank activity in this area is usually limited to the issuance or sale of the products. At least three banks originate the products domestically, while the other foreign banks refer products of their parent banks/ affiliates/co-branches to their client domestic banks. Domestic banks likewise hold products from off-shore issuers. Moreover, while some domestic banks are allowed to issue structured products, they have not actually done so, as they have yet to build expertise in this area.

Figure 3
Outstanding Investments in Structured Products
30 June 2010
(Amounts in PhP)

Structured Products – Total	**82,521,042,523**
a. Credit linked notes (CLNs)*	69,845,611,375
b. Other structured products	8,676,482,348
c. Securitisation	3,998,948,800

*Banks are the protection sellers in these exposures.
Source: Supervisory data

20. Supervisory personnel have observed that ISDA are executed for all stand-alone derivative transactions.

According to the survey, structured products first appeared in the books of Philippine banks in 2003, but most of the exposures were acquired in 2005 onwards, after the BSP issued initial guidelines covering banks' investments in CLNs, structured products, and securitisation structures.

The total value of structured products reflected in Figure 3a shows a sizeable decline from the PhP158 billion level registered two years ago. Moreover, the amount invested in structured products only represents 1.5% of the total assets of the banking system.[21] The reduction in balances is likely to have been spurred by the fall of Lehman Brothers, as some banks' structured products were issued by the failed investment banking firm.[22]

Figure 3a
Outstanding Structured Products

	End-2008	End-2009	June 2010
Notional amount in PhP Bn	158.08	94.62	82.52
Number of contracts	414	280	239

3.4 Experience During the Financial Crisis

Given its limited experience with derivatives, the stress events related to such instruments have been few. Perhaps the most noted is the failure of the futures exchange. However, during the 2008 global financial meltdown that was marked by the failure of Lehman Brothers in September of that year, the banking system had some problems with derivatives through structured products.

By that time, banks had already incurred exposures to structured products, as the crisis was preceded by a period of high liquidity even in the Philippines. Banks had looked to park their funds in instruments that generated higher yields than Philippine debt paper, which was the main alternative to lending.

On the other hand, the BSP had also put in place corresponding supervisory guidelines to govern banks' exposures to such instruments. This was even before the overhaul of the derivative regulation in 2008. At that time, the U/KBs were delineated into banks with expanded derivative authority ("EDA"), or those with more sophisticated ability to manage their risk and those that did not have such authority.[23] As such, banks that did not have an EDA were only allowed to

21. The banking system in this discussion refers to universal and commercial banks only.

22. Refer also to discussion in the next section.

23. Circular No. 297 dated 17 September 2001.

invest in CLNs with one underlying credit, which was the Republic of the Philippines.[24] With regard to other structured products, investments were limited to principal protected structures whose revenue streams are linked to interest rate indices and/or foreign exchange rates other than those that involve the Philippine peso.[25] Moreover, issuers of the structured products must be rated at least "A", while total investments in such products should not exceed 20% of the bank's total investment portfolio. Corresponding capital charges were likewise put in place. CLNs' risk weights depended upon the quality of the issuer and of the underlying credit. Structured products' risk weights, on the other hand, were imposed a certain premium over what otherwise would be the credit rating of the issuer. Instruments issued by AAA to AA- rated firms received a 50% risk weight; those that were below investment grade were required to be deducted from capital.

When the crisis unfolded, some banks had exposures to Lehman Brothers as well as other distressed institutions through structured products. The total exposures to Lehman alone were estimated to be between 0.3 - 0.4% of total assets.[26] The ensuing losses from these instruments were disclosed by publicly-listed banks to the Philippine Stock Exchange while other banks' losses were published in dailies. These amounts are shown in Figure 4.

Figure 4
Losses on Structured Products
September 2008
(Amounts in PhP Million)

Bank	**Provisions for losses**
1. Banco de Oro Unibank	3,800
2. Metropolitan Bank and Trust Co.	648
3. Rizal Commercial Banking Corporation	980
4. Development Bank of the Philippines	~3,000
Memo: Other disclosures a. Security Bank - $10M exposure to Merill Lynch b. United Coconut Planters Bank - $10M exposure to Lehman c. Bank of Commerce –$15M exposure to Lehman	

Source: Company disclosures, Philippine Daily Inquirer articles

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24. Circular No. 417 dated 28 January 2004.

25. Circular No. 466 dated 5 January 2005.

26. Meanwhile, estimated exposures to "at-risk financial institutions" were estimated to be at 1% of total assets. From "Recent Market Developments: Impact on Banking and Finance Sector", speech of BSP Governor Amando M. Tetangco, Jr. on 3 October 2008.

While regulation was not able to help banks completely avoid losses arising from the weaknesses of the issuers of the structured products, the rules might have given sufficient incentives to reduce the exposures that banks incurred in the first place through the limits on holdings and the higher capital requirements.

4. Future of the Derivatives Market

4.1 Banks' Product Preferences

The previous section illustrated the growth in derivative transactions, especially during the recent past. Such growth can be expected to continue, based on responses to the survey. Most of the respondents stated their intentions to expand their use of derivatives, with the most preference expressed for FX forwards, FX swaps, and currency swaps. Interest rate swaps were the next preferred instrument, followed by options, credit default swaps, CLNs, and structured products. FX forwards and FX swaps are also seen as products with the highest demand among the menu of derivatives.

Added motivation for expanding activities lies in the use of derivatives as risk management tools as well as alignment with institutions' business strategies. On the other hand, banks' perceived hindrances to the expansion of their derivative activities centered on regulation, competition, and the lack of infrastructure and resources to appropriately manage the risks involved in such instruments. Moreover, some foreign banks specified as limitations the lack of customer sophistication, country risk limits, the need to educate the market on the instruments, as well as the need to train local teams on best practices, while two local banks cited limited credit lines and eligible counterparties.

With regard to regulation, most banks deem that the current regulations are adequate and may be maintained. However, some cited the need for adjustments based on existing market demand. Still others observed that there was a need to setting the appropriate regulatory jurisdiction for derivative activities.

4.2 Nurturing Development Within a Framework of Stability

While derivative transactions have clearly increased over the years, mainly through the activities of foreign and domestic banks, the market is clearly still at a young stage. The types of products traded are quite limited, while transactions are concentrated in a number of institutions. There is still reason to push for the development of the market, despite the negative perception that has been attached to derivatives as a result of the recent crisis. When properly

used, derivatives offer legitimate economic benefits by enhancing the ability to manage risk or reducing funding costs.

In determining the prerequisites for the development of the market, it is instructive to refer to the report of Ghosh (2006) on East Asian markets, which identified two key factors that are necessary for derivative activities to flourish.

The first of these is "efficient, liquid, and integrated" cash markets for underlying assets, meaning stocks, bonds and other assets. As stated in Section 3, cash markets exist for equities and fixed income instruments as well as foreign exchange. Of the three, the equities market is the most established and has the longest history; however, market capitalisation is still lower compared to its regional peers. The same applies to the foreign exchange market, while the fixed income market still enjoys limited trading despite the establishment of the exchange.

For the Philippines, this means that capital market development initiatives that are geared toward making cash markets more robust should be the priority of policy makers. This would likewise address the pricing issues raised in the previous section. One way that this could be addressed is through broadening the investor base. As it is, banks already dominate the fixed income market and they may likely be the top players in the equity markets as well, through their subsidiary or affiliate broker-dealer institutions. Thus, efforts must be directed at encouraging the greater participation of the non-bank financial sector as well as retail investors.

The involvement of small investors will require initiatives on at least two fronts. One is the education of the market. Potential investors must be made knowledgeable on alternative investment instruments, how the market works and the risks that they may be exposed to, and how they can obtain redress when they are treated unfairly by financial institutions. The second initiative has to do with establishing the appropriate infrastructure that will facilitate retail investors' access to the market. As it is, trading is limited to the main business centers; thus, there should be a way that those who are not located in the metropolis can still conduct transactions without entailing substantial costs.

The second factor cited by Ghosh (2006) is the suitable legal and regulatory framework over derivatives.

The existing regulatory framework over derivative transactions of banks is largely oriented towards the supervision of individual institutions. The regulations

promulgated by the BSP focus on proper authorisation, risk management, as well as curtailment or removal of authorities in the event that a bank is found to be engaged in unauthorised activity or does not have the commensurate skills to manage the risk of derivatives. These regulations have served the system well thus far, and have promoted the stable growth of derivative activity.

That said, the framework leaves room for improvement, which will become even more necessary in the face of a growing market. For instance, there is a lack of information with regard to the size and the activity that goes on in the market. This is a problem that has manifested in large economies even if their trading systems are already far advanced. Moreover, the bilateral nature of trading and settlement leaves the counterparties exposed to significant risk should one party default.

On the international front, this is being cured with the initiatives to move transactions into an exchange and the use of central counterparties (CCP) for settlement. This is seen to make trading more transparent by allowing the capture and reporting of transactions. Moreover, the use of CCPs is likely to yield significant benefits in terms of reducing losses and preventing contagion effects, as long as the CCPs adhere to high standards of governance and have adequate resources[27] (Ghosh, 2006). Indeed, the use of CCPs is likely to entail additional transaction costs because of collateral and margin requirements and its costs of operation. However, the benefits are seen to be greater in terms of reducing counterparty risks and avoiding of losses due to contagion within the financial industry, as was experienced during the crisis.

Another aspect that bears thought is the possibility of "unintended consequences". The intensive monitoring and oversight of banks' derivatives may provide perverse incentives for business to be undertaken by less or un-regulated institutions. Banks themselves may push the business into affiliated companies; or other institutions that are not covered by BSP supervision may choose to undertake such activity by themselves. Such a possibility implies two things: first, policies concerning the development of the market must take cognizance of the broader interest of the financial system, and not only the banking system. Ensuing regulation must therefore ensure a level playing field among all players. This will help ensure that activity that can potentially impact on the stability of the financial system will not shift to venues that are least able to manage and bear the risk associated with these transactions, and those that

27. It is widely recognised that central counterparties are not riskless and would naturally concentrate transactions in a single entity (even under Basel III, the revised international capital standards).

impede efforts to promote transparency in markets. Second, there is much reason to establish coordination with other supervisory agencies such as the SEC and the Insurance Commission (IC)[28]. Such coordination may begin with defining the regulatory ambit for supervised activities, establishing supervisory jurisdictions that are in line with the legal mandates of the supervisors for instance, as embodied in the provisions of the Securities Regulation Code, and finally agreeing on supervisory approaches.

There already exist structures for supervisory cooperation which may be exploited for this purpose. Key to these is the Financial Sector Forum (FSF), which is chaired by the BSP and has for its co-members the SEC, the IC, and the Philippine Deposit Insurance Corporation. The rationale for its creation includes the promotion of harmonisation of supervision policies and methods among the member agencies. As such, it is the appropriate venue for discussing and acting upon issues that relate to common activities of financial institutions under their collective ambit. More recently, it has been suggested that the FSF can likewise take a more active role in addressing systemic risk. The latter may involve broadening the coordination mechanism to include other agencies of the National Government, primarily the Department of Finance, especially in addressing concerns that relate to crisis management.[29]

5. Conclusion

Part of the reason why the Philippines was not so badly hit by the recent crisis was the fact that its institutions had not engaged in complex transactions that lack transparency that had become prevalent in more advanced economies. Nonetheless, there is a strong rationale for supporting the development of a derivatives market domestically, given that this provides opportunities for better risk sharing.

However, the warnings of the recent crisis should not be ignored. Developing derivatives markets must necessarily strike a balance between satisfying the legitimate economic needs that the instruments serve and ensuring the continued stability of the financial system. In this light, the sequencing of priorities is important. First, there is a need to develop the cash markets which will

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28. The Insurance Commission has jurisdiction over life and non-life insurance companies, as well as pre-need firms.

29. From the IMF's Financial System Stability Assessment Update on the Philippines, April 2010.

complement the development of the derivatives market. Sufficient attention must be paid to the needs of investors, which will aid in deepening.

There must also be adjustments to the institutional and regulatory frameworks. This is important to accommodate the expansion of activities in a safe manner. Moreover, the regulatory environment must be clear with respect to jurisdictions and authorities. Authorities must be able to monitor transactions and where the risks in the system lie, and there must be mechanisms to aid in reducing the risk that the system bears.

Through all these, the Bangko Sentral ng Pilipinas has a significant role to play. First, as the country's bank supervisor, it has the responsibility for creating a regulatory environment that balances growth and the safety of those under its ambit. Over and above this, the BSP has the responsibility – albeit implicitly – to ensure the continuous functioning of the financial system. In this respect, it should serve as a catalyst for bringing about institutional changes that will support initiatives to broaden financial markets.

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Chapter 8

NEW FINANCIAL PRODUCTS AND CHALLENGES FOR CENTRAL BANKS: CASE OF SRI LANKA

By
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1. Introduction

1.1 Background

The innovation of a wide range of financial instruments has gained considerable significance in recent years with the integration of economies and markets with globalisation. The financial systems, which evolve faster constantly, are complex in structure and functions throughout the world. The integration of financial markets worldwide has made financial institutions to be interdependent and externally exposed to shocks in the global environment. At present, the global players are progressively involved in financial activities in the emerging markets. As a result, the modern financial sector has become more and more challenging, as any shock in the international markets could pose some threat to the financial system stability. Meanwhile, financial intermediaries continue to offer many novel products in order to manage financial risks and to serve customers better. Hedging instruments or derivative products emerged in this background to face the uncertainties and volatilities of the future exchange rates, interest rates and/or prices. They are important tools that help organisations to meet their risk management objectives. With the expansion of economies, the derivatives market has become increasingly important, as it provides impetus to accelerate the growth of the financial market. However, these instruments have both positive and negative outcomes, depending on the characteristics of the instrument and the way it operates. The recent financial crisis is an obvious example which teaches us good lessons relating to possible threat to financial stability due to the excessive use of financial derivatives. The derivatives, if used properly, would help organisations to meet their risk management objectives. However, without a clearly defined risk management strategy, the use of derivative products could increase systemic risk and pose some threat to the financial system stability.

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The derivative product is a risk shifting agreement, the value of which is derived from a value of an underlying asset. The underlying asset could be interest rates or currencies, stocks, a stock index, a commodity, or any other tradable instrument. Derivatives, in general, fall into two categories. One consists of over-the-counter (OTC) derivatives while the other category consists of exchange-traded derivatives. In addition, there are various types of products within each of the two categories. They are relatively simple in plain vanilla form and more complex in exotic form. Over the last few decades, derivative transactions have grown considerably while introducing a wide range of products. They include interest rate caps, collars and floors, swap options, commodity swaps, equity swaps, credit derivatives, weather derivatives and other financial derivative products.

In the global financial market, derivatives are used for hedging purpose and/or for speculative purpose. Hedging helps people to cover their risk exposure. This is the most common factor considered in the usage of derivatives. The other major purpose is the speculative purpose under which people generally try to benefit from the arbitrage opportunities available in the market. However, this is riskier compared to the former usage. But derivatives are predominantly used for speculative purpose in the financial markets, due to its added advantages.

The derivatives market is not well developed in Sri Lanka. However, their usage should be monitored carefully, as the institutions in the financial sector would be exposed to a risk of huge losses and/or solvency unless their possible risk factors are managed cautiously. The past experiences from the global perspective suggest that unanticipated price fluctuations would impact adversely on the stability of the financial system, unless appropriate risk management strategies are put in place.

Similarly, the incidence of the recent financial crisis reiterates the need of having stable macroeconomic conditions with a sound and efficient domestic financial system. It was observed, that the global market for securitisation slumped since September 2007 due mainly to the lack of liquidity, weaknesses in corporate governance and failure to measure counterparty risk, etc. These difficulties were activated by the sub-prime crisis. Rising interest rates in the US burst the housing bubble, as the borrowers' debt servicing capabilities declined. It resulted in high default rates on sub-prime mortgages. It affected adversely both mortgage lenders and investors who were holding Mortgage Backed Securities (MBS) and Collateralised Debt Obligations (CDO).[2] As most of these products were with

2. Central Bank of Sri Lanka, Annual Report, 2007 (Box 18, pages 156-157).

higher leveraging and maturity mismatches, both lenders and investors were confronted with liquidity problems. The collapse of mortgage giants (Freddie Mac and Fannie Mae) and major investors such as Lehman Brothers compounded the impact on the financial stability. It led to a serious damage on the confidence of people in the financial instruments. The biggest challenge was the extension of its repercussion to other markets abroad. It led to a run on a British bank, Northern Rock. Accordingly, it spread from America to Europe and then to the developing world. The Sri Lankan financial sector has not experienced a pronounced threat to economic stability, mainly due to its non-exposure to toxic assets.[3]

However, Sri Lanka also experienced some difficulties, though its direct impact on the financial sector was limited. The domestic financial markets in Sri Lanka turned somewhat volatile especially at the beginning of 2009. There were failures of a few unauthorised financial institutions as well. However, the government and the Central Bank of Sri Lanka (CBSL) had taken prudent policy measures immediately to mitigate the adverse impact on the financial sector. As a result, the financial system became stable since the second half of 2009. Stronger capital positions, prudential measures and enhanced risk management infrastructure were the contributory factors towards this endeavour.[4]

However, recovery of the world economy from the financial crisis is still slower than expected. In addition, the growing fiscal problem in Europe is also a matter of concern. This crisis could result in spillover risks into other markets as well. Sri Lanka could also be affected badly to some extent, through exports and tourism. These volatilities could pose some pressure on the financial system stability. In this context, central banking has become a challenging job day by day. As a stable financial system is essential to build the confidence of the public, the CBSL has a key role to play in promoting both price and financial system stability by putting the required infrastructure in place.

Accordingly, the Central Bank has to act decisively to protect the financial markets and other segments of the economy. It needs to encourage productive innovation, not wild speculation. The creation of new financial products without a proper mechanism to manage the emerging risk exposure would no doubt affect the public, who deal with such instruments and institutions. Therefore, it is pivotal to assess the potential risks to financial system stability, arising from

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3. Central Bank of Sri Lanka, Annual Report, 2008 (page 15).
4. Central Bank of Sri Lanka, Annual Report, 2008 (pages 161-162).

such instruments. It needs to take protective measures to avoid any unexpected incidence that could occur during the process of development of the derivatives market. In this respect, the Central Bank has to play a critical and dynamic role in order to serve the growing needs and innovations of the financial sector.

Therefore, we have reached the stage where it is essential to evaluate the development of such new financial instruments and the potential risk exposure on the stability of the financial system, in order to take appropriate policy measures to maintain financial system stability of the country.

1.2 General Outline of the Study

This Report is organised into 6 sections. Section I provides the background information. Section 2 presents a review of the literature, mainly summarising the theoretical and empirical literature covering the past experiences on hedging. However, there is lack of empirical studies, specially focused on Sri Lanka. The next section focuses on the current structure of the financial system in the country. Section 4 examines the implications of these financial products on financial system stability in Sri Lanka. It also discusses the coordination between the monetary and other supervisory authorities; and the coordination with central banks in the region for cross-border supervision. Section 5 analyses the survey findings and the status of new financial products in Sri Lanka. It also contains explanations regarding the data collection and the procedures employed for the study. Finally, the conclusion and policy recommendations in dealing with new financial products are presented in the last section of the study.

2. Literature Review

2.1 Derivative Markets and their Growth

A derivative transaction is a financial contract whose value depends on the values of one or more underlying assets, rates or indices. As its return is derived from another instrument, it is named as derivatives. Derivatives have been traded for centuries. Organised trading was in forward contracts in the 17th century in the rice market of Japan. Futures markets were originally developed to meet the needs of farmers and merchants. Traditionally, futures contracts use what is known as the open-outcry system. Accordingly, two parties entered into a trade without meeting through an organised exchange. Today, standardised exchanges have been increasingly used. A computer is being used to match buyers and sellers. All derivative trades in the exchanges are well structured and transparent, and the trades are guaranteed. OTC products are mostly tailor-

made to suit counterparty requirements. Exchange- traded instruments usually are Futures and Options while OTC products are Swaps and Forwards.

There has been a spectacular growth in derivatives markets with the evolvement in economic conditions. The volatility of interest rates and exchange rates made it essential for firms and investors to find ways to hedge risks arising from these price movements. The growth in international trade and finance also increased the demand for financial products to manage risk further. Derivative instruments, which have been developed within this background, are used to hedge any type of risk exposure in any market.[5] Accordingly, these products have been developed to generate liquidity, mitigate risks and raise the depth of the market.

The literature has provided various definitions for "hedging". In simple terms, hedging helps protect buyers and sellers of commodities from adverse spot market price volatility. It is done by taking an opposite position in the derivatives market. Through entering into a hedging agreement, nobody can prevent the negative event from happening. However, if it is properly hedged before the adverse incident happens, the impact of the event could be reduced[6]. Accordingly, derivatives help managers to cover their risk exposures and concentrate on running their core business. The other reason is the speculative and arbitrage purpose. In this case, the investors would take positions to profit from risks of some other underlying assets. They add liquidity to the market and facilitate the hedging process. As this is riskier than the former usage, those who are not in favour of these products say derivatives are highly leveraged instruments. However, speculators help develop the market. Both hedgers and speculators play a very crucial role in the market. It is important to note that derivative trades should be kept simple. If they get too complex, the risks associated with these instruments are too difficult to monitor.

As the recent global financial crisis was rooted in the securitisation market, it is important to examine the structure and operation of securitisation. Securitisation is the pooling of cash flows and the issuance of securities backed by underlying assets. It is widely used by financial institutions to raise capital instead of using the traditional methods of borrowing. Securitisation helps transform non-tradable debts (illiquid assets) such as future cash flow receivables into a security. These securities can be traded in a capital market. These underlying assets include residential and commercial mortgages, leases, auto loans,

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5. Weinberg Ari, 2003.
6. Central Bank of Sri Lanka, *Annual Report*, 2006 (page 47).

student loans, tea sale receivables and electricity bill receivables, etc. There are different types of securities, which include MBS, Asset-backed Securities (ABS), CDO and commercial mortgage-backed securities (CMBS). A typical securitisation involves the creation of Special Purpose Vehicle (SPV), through which securities are issued to investors. Accordingly, the underlying asset is securitised. Thus, securitisation provides a higher risk adjusted return to the investor. Moreover, there is lower default risk due to credit enhancement such as cash cover, haircuts and underlying securities.

However, there are some awful stories about derivatives that are related to financial disasters. In 1995, Nick Leeson, a derivative leader caused the failure of the Barings Bank of England. It was due to the substantial leverage of the trades of these instruments. Similarly, one of the first hedge funds, Long-Term Capital Management, leveraged its money with debt and speculated in interest rate derivatives. When Russia was about to default, it came near collapse[7]. It is also well known that the recent financial turmoil originated from the sub-prime mortgage crisis in the US. The collapse of the securitisation market was mainly due to the low quality lending, off-balance sheet exposure of banks, and lapse of the credit rating agencies. The failure of the market was not merely due to the weaknesses of the instrument itself but the manner in which it was operated. However, it is evident that any financial innovation in the absence of sufficient disclosure and safeguards for risk management could cause instability in the financial system. Therefore, these products should be used and managed prudently.

There are a number of comments and critiques made by prominent personalities, both for and against this novel financial innovation. Warren Buffett, Chairman of Berkshire Hathaway, [8] a much noted investor stated, "I am against the use of derivatives and expect that they will lead to eventual failure for anyone who uses them." He further said, "We view them as time bombs, both for the parties that deal in them and the economic system." Similarly, Dr. A. Michael Spence[9], Nobel Laureate wrote: "Financial innovation, intended to redistribute and reduce risk, appears mainly to have hidden it from view. An important challenge going forward is to better understand these dynamics as the analytical underpinning of an early warning system with respect to financial instability."

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7. Mills Daniel Quinn, 2009 (pages161-162).

8. Weinberg Ari, 2003.

9. Hennayaka Bandara, H.M., 2009.

Meanwhile, Alan Greenspan, [10] Chairman of Governors of the Federal Reserve System stated, "Although the benefits and costs of derivatives remain the subject of spirited debate, the performance of the economy and the financial system in recent years suggests that those benefits have materially exceeded the costs." Accordingly, it is important that the user understands the intended function, benefits and associated risks of these instruments first. Then it could take necessary safety precautions for effective management of these instruments.

Accordingly, for proper conduct of derivative transactions, dealers require the trades be documented. It could be done by using a master agreement. It is advisable to make sure that they have timely, accurate and comprehensive information on their counterparty credit exposures to major participants. In order to minimise risk, the key terms of a transaction need to be verified[11]. In general, credit reporting system is developed in Sri Lanka for keeping track of every individual's credit situation based on their credit history. This information is available for the member institutions of the Credit Information Bureau (CRIB) on request. The CRIB is established to collect credit related information on borrowers and to provide credit reports to member institutions. This information is expected to facilitate the lending institutions to make better credit decisions impartially.

In 2008, an Austrian court found that the executives and directors of a bank guilty of speculating with other people's money when they were buying securities.[12] The manner they responded indicated the lack of knowledge about what they were doing. Therefore, it is important to establish a sound environment of transparency and corporate governance within the institution. Since most of the derivative products are complex, both parties of the derivative transaction should be well informed of the risks faced by each party. According to the principle of hedging, the buyer of the product was expected to take required protective measures to cover him from possible losses of the transaction. However, today, the long established legal principle[13] relating to derivative transaction is not the 'caveat emptor' ('let the buyer beware') but 'suitability'. Accordingly, the seller has the responsibility of educating the buyer of the product and associated risks. It would help the buyer to ensure the suitability of entering into the deal beforehand. In this effect, the CBSL has issued directions to banks

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10. Weinberg Ari, 2003.
11. Committee on Payment and Settlement Systems, BIS 2007.
12. Mills Daniel Quinn, 2009 (page173).
13. Central Bank of Sri Lanka, *Annual Report*, 2008 (page 66).

or authorised dealers specifying the need for educating their clients of the pros and cons and risks involved in the deal.

Meanwhile, in certain cases dealers take collaterals to mitigate credit exposure arising from derivative transactions. Collateralisation mitigates credit risk to some extent. However, it may create legal, liquidity, custody and operational risks. In order to address the risk of market liquidity of securities, they keep adequate haircuts and mark to market valuations. However, it is required to establish an effective risk management framework to manage risks associated with such collaterals. The use of collateral to mitigate counterparty credit risks has increased dramatically[14] over the years.

The agreement signed by the G20 leaders in Pittsburgh on 25th September 2009, stipulates that "all standardised OTC derivatives contracts should be traded on exchanges or electronic trading platform, where appropriate, and cleared through central counterparties by end-2012 at latest. Non-centrally cleared contracts should be subject to higher capital requirements".[15] In view of the current level of development of Sri Lanka's derivatives market, the Colombo Stock Exchange (CSE) in Sri Lanka is going through a process of building the capacity and infrastructure to expand the product range. It would enable an effective hedging while adding liquidity to the financial system in Sri Lanka. Accordingly, the establishment of a Clearing Corporation is considered as a prerequisite for introducing derivatives. The CSE is currently working towards this goal. Through this initiative, the CSE expects to address the settlement and systemic risk and to build confidence among local and foreign investors.

Data on the trading activities of the derivatives market in Sri Lanka are not published at present. However, the available information under the CBSL reporting system by the authorised dealers and commercial banks suggest that the derivatives market in Sri Lanka is too small. The findings of the survey on new financial products carried out for this study, show that the end-year values of notional derivatives outstanding are on the rise, in general since 2009, after the temporary slowdown experienced at end 2008. Accordingly, the notional outstanding amounts in Sri Lanka's new financial products market increased to Rs.129,287 million in August 2010 from Rs.112,719 million at end 2009.

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14. Committee on Payment and Settlement Systems, BIS 2007 (page 21).
15. http://srilankastockpicks.blogspot

Meanwhile, the performance of global derivatives markets reveals its fast evolvement over the period. The 2006 ISDA Survey[16] shows that the total deal volume in 2005 had more than doubled over that in 2002 while that for credit derivatives had increased by more than 600%. According to the Wikipedia, the notional outstanding value of OTC derivatives contracts rose by 40% from US$298 trillion at end 2005 to US$415 trillion at end 2006.

Similarly, at the end of June 2009[17], the notional amounts of all types of OTC contracts stood at US$605 trillion, 10% higher than 6 months before. Interest rate derivatives, which contributed to the increase in outstanding amounts, were at US$438 trillion, 13% above the end 2008 level. As a result of very low and stable policy rates in many of the largest economies, derivative transactions on interest rates declined slightly. Accordingly, a healthy market infrastructure is vital for the effective operation of a derivatives market.

3. Current Structure of Financial System in Sri Lanka

The financial system of the country comprises financial markets, financial institutions and financial infrastructure[18]. Major financial markets are the money market, government securities market (primary and secondary markets), foreign exchange market, corporate debt securities market and the equity market (Figure 1).

Figure 1
Financial Markets



16. Committee on Payment and Settlement Systems, BIS 2007 (page 17-18)).
17. *BIS Quarterly Review*, December 2009 (pages 22-26).
18. Central Bank of Sri Lanka, *Financial System Stability Review*, 2009 (page vii).

3.1 Financial Markets in Sri Lanka

The call money market in which the commercial banks trade their day-to-day liquidity requirements is one of the most active segments in the money market in Sri Lanka. The Government Securities market, which provides a liquid trading platform for government securities, consists mainly of the Treasury bill and Treasury bond markets. Treasury bills and Treasury bonds are also reflecting their popularity as repo market instruments. They are used by the CBSL to implement monetary policy through open market operations. Meanwhile, commercial paper and corporate bonds (debentures) are available in the Corporate Debt Securities market. Activities in these two markets have been limited. Following the end of the war in mid-2009, Sri Lanka's equity market became one of the best performing markets in the world, in terms of stock market indexes. As at end 2009, the market capitalisation of the Colombo Stock Exchange (CSE) also increased to Rs.1,092 billion[19] from Rs.489 billion at end 2008, which was about 23% of the country's GDP.

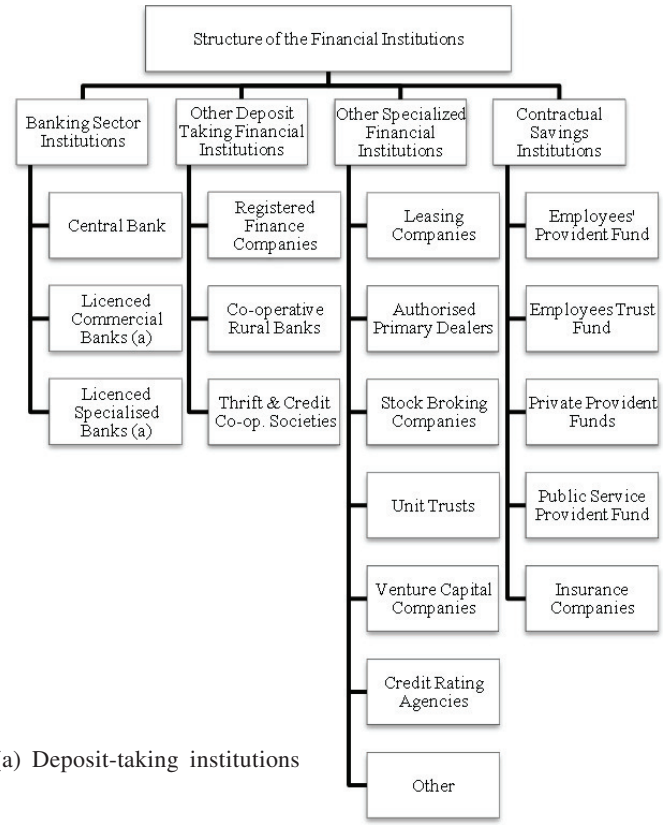
3.2 Financial Institutions in Sri Lanka

The financial system could also be categorised in terms of the types of institutions, i.e., banking sector, other deposit-taking financial institutions, specialised financial institutions and contractual savings institutions. The structure of the financial sector is illustrated in the Figure 2 below.

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19. Central Bank of Sri Lanka, *Annual Report*, 2009 (page 183).

Figure 2
Financial Institutions in Sri Lanka



(a) Deposit-taking institutions

Accordingly, the CBSL, Licensed Commercial Banks (LCBs) and Licensed Specialised Banks (LSBs) are categorised under the banking sector. LCBs and LSBs are also considered as deposit-taking institutions. The other deposit-taking financial institutions include the registered finance companies, co-operative rural banks, and thrift and credit co-operative societies. There are other specialised financial institutions as well. They include specialised leasing companies, primary dealers, stock broking companies, unit trusts, venture capital companies and credit rating agencies, unit trust management companies and market intermediaries, etc. The Insurance companies, Employees' Provident Fund, Employees' Trust Fund, private provident funds and public service provident funds come under the category of contractual savings institutions. In addition, there are also a large number of micro-finance institutions within the financial system. However, they

are not at present supervised. With the introduction of the Micro Finance Institution Act, these institutions will also be supervised. All these market players are integrated with each other.

Overall, the financial sector has continued to grow strongly supporting the financial needs of the economy. Figure 3 depicts the total assets of Sri Lanka's financial system as at end of the period indicated. Total assets of financial institutions at Rs. 5,615 billion in 2009 (which increased by 16% compared to the previous year) accounted for 1.2 times the country's GDP. The banking sector, including the CBSL, account for around 68% of assets of the financial system.

Figure 3
Total Assets of Major Financial Institutions

	2007 (a)		2008 (a)		2009 (b)	
	Rs. bn	Share in Total %	Rs. bn	Share in Total %	Rs. bn	Share in Total %
Banking Sector	**3,065.6**	**71.1**	**3,294.6**	**68.1**	**3,832.0**	**68.2**
Central Bank	561.4	13.0	597.1	12.3	819.8	14.6
Licensed Commercial Banks (c)	2,098.3	48.7	2,259.9	46.7	2,503.1	44.6
Licensed Specialised Banks	405.9	9.4	437.6	9.0	509.1	9.1
Other Deposit Taking Financial Institutions	**175.4**	**4.1**	**285.8**	**5.9**	**315.1**	**5.6**
o/w Registered Finance Companies	142.0	3.3	175.6	3.6	185.3	3.3
Other Specialised Financial Institutions	**180.7**	**4.2**	**239.7**	**5.0**	**264.6**	**4.7**
o/w Specialised Leasing Companies	53.9	1.3	109.9	2.3	111.9	2.0
Primary Dealers	95.5	2.2	84.4	1.7	97.8	1.7
Contractual Savings Institutions	**889.5**	**20.6**	**1,019.8**	**21.1**	**1,203.5**	**21.4**
Total	**4,311.2**	**100.0**	**4,840.0**	**100.0**	**5,615.2**	**100.0**

Source : Central Bank of Sri Lanka.

(a) Revised
(b) Provisional
(c) Consolidated assets of both DBUs and OBUs of LCBs

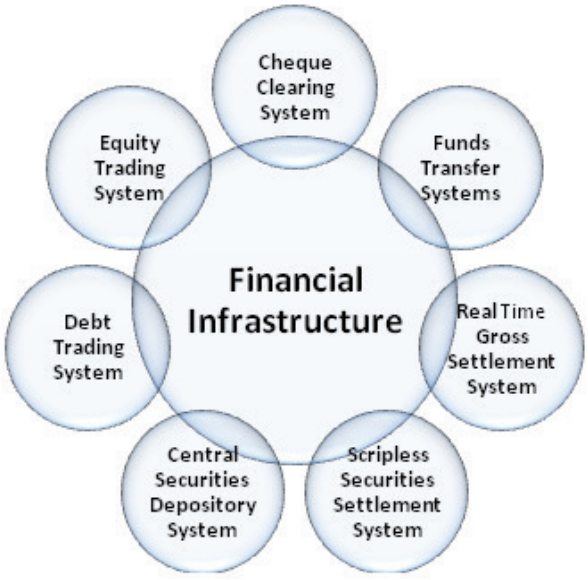
Of the main institutions in the financial sector, LCBs and LSBs accounted for more than half (54%) of the assets in the financial system. LCBs continued to be the single most important category of financial institutions, accounting for 45% of total financial assets in 2009. However, its share in the total assets in the industry has decreased over the last few years.

The stability of the financial system in Sri Lanka is primarily dependent on the six largest systemically important LCBs. These LCBs represented 76% of LCB sector assets and 64% of the banking sector assets, as at end August 2010. In terms of deposits, the systemically important banks held a market share of 81% of LCB sector and 67% of banking sector deposits. A failure in any of these institutions would have a great impact on the entire financial system. Therefore, maintaining soundness of financial institutions, particularly that of the systemically important banks, is essential in ensuring financial system stability.

3.3 Financial Infrastructure in Sri Lanka

The financial infrastructure consists of the payment and settlement system and the legal framework. Accordingly, there are two systematically important payment systems in Sri Lanka, namely, the LankaSettle System operated by the CBSL and the Cheque Imaging and Truncation System operated by LankaClear (Pvt.) Ltd. There are two main systems operated under the LankaSettle System. They are the Real Time Gross Settlement (RTGS) System and the LankaSecure System. RTGS system settles high value payments on a real time gross basis while the LankaSecure system settles securities transactions on DvP basis.

Figure 4
Financial Infrastructure



In addition, the Sri Lanka Inter-bank Payment System (SLIP) is used to transfer funds directly by the CBSL and commercial banks to their customers. It is an inter-bank retail payment system. There are standard S.W.I.F.T. message facilities for confirmation of foreign currency transactions. In addition, the Credit Information Bureau (CRIB) provides credit information reports of borrowers to member lender institutions.

Moreover, automated teller machine facilities, card-based payment modes (debit cards, credit cards, charge cards and stored cards) and non-cash payment modes, such as Internet and mobile phone banking, have been developed significantly during the last few years. Actions have also been taken to regulate electronic payment instruments through the Service Providers of Payment Cards Regulations No.1 of 2009. It has been effective since August 2009.

At present, the Colombo Stock Exchange (CSE) in Sri Lanka has facilities mainly for the secondary trading of equities, corporate bonds and government securities. A separate Trading system (DEX) and a separate settlement mechanism have been established to facilitate debt market operations. However, a centralised exchange for derivative transactions is so far not available in Sri Lanka. The SEC is at present in the process of introducing a separate central clearing corporation, inter alia, to facilitate derivative transactions.

Sri Lanka's financial institutions are regulated by a number of different agencies. The CBSL influences the various segments of the financial market in various degrees. The CBSL regulates and supervises the banks, registered finance companies and leasing companies, and primary dealers. Figure 5 shows the country's multiple regulator system. However, venture capital companies and micro-finance companies are not regulated at present.

Figure 5
Regulatory Authorities of the Financial System

Financial Institution	Regulatory Authority
Licensed commercial banks, Licensed specialised banks, Registered finance companies, Registered leasing companies, Authorised Primary Dealers	Central Bank of Sri Lanka (CBSL)
Stock exchange, Stock brokers, Stock dealers, Unit trust management companies, Margin providers, Investment managers, Underwriters and Credit rating agencies	Securities and Exchange Commission (SEC)
Insurance companies and their agents and Insurance brokers	Insurance Board of Sri Lanka (IBSL)
Employees' Provident Fund (EPF)	Administered by the Commissioner of Labour and funds managed by the Monetary Board of CBSL
Employees' Trust Fund (ETF)	Managed by a Board of Trustees

4. Implications of Financial Crisis to Financial System Stability and Existing Regulations for New Financial Products in Sri Lanka

Consequent to the recent financial turmoil, financial institutions in the emerging and developing countries were under severe stress and exposed to a substantial increase in liquidity risk, credit risk, and market risk. The Sri Lankan economy also experienced certain challenges, which, however, were managed prudently through timely intervention by the government and the CBSL. Therefore, it is more appropriate to review the effects of the financial turmoil on the financial stability in Sri Lanka and to examine the existing regulations for new financial products as it would be helpful for market participants and regulators for their efforts in the future policy considerations.

4.1 Effects of Financial Turmoil on Financial System Stability in Sri Lanka

In order to protect the financial system, the main sources of financial risk and vulnerabilities must be identified. Being the apex institution of the financial system, maintaining financial system stability is a core objective of the CBSL. Accordingly, the CBSL plays a critical role in the maintenance of financial system stability in the country.

Financial institutions in the country were not directly affected by the volatilities of the recent financial crisis and remained stable in general. This was mainly due to the strong regulatory framework, prudential measures adopted by the CBSL before the inception of the crisis and partial closure of the capital account. In addition, non-exposure of local financial institutions either to the US mortgage-linked securities or to failed foreign financial institutions also contributed.

However, the survey findings reveal that there was a slowdown in the notional value of derivative holdings in 2008. The off-balance sheet exposure of the banking institutions too has reported a deceleration at a noticeable pace during 2008 and 2009. It may be attributable to the uncertainties created in the market, on account of the collapse of the securitisation market in the USA. Similarly, as evident from the reporting system by authorised dealers in foreign exchange, the volume of foreign exchange involved derivative transactions decreased by about 60% in 2009 compared to that in the previous year. However, there was a substantial increase over 130% during the first half of 2010 compared to the total volume of transactions during the entire year of 2009, indicating a fast resurgence in derivative transactions. In fact, the total foreign exchange involved derivative transactions during the first half of 2010 was 94% of the total transactions during the year 2008.

Although, Sri Lanka's financial markets were relatively stable in the first three quarters of 2008, the financial system came under stress, albeit with a time lag, in the last quarter of 2008. A systemically important commercial bank faced liquidity problems with the failure of a credit card company associated with the conglomerate. The failure of certain unauthorised finance businesses had a negative effect on some regulated financial institutions and specialised leasing companies too. Accordingly, towards the last two months of 2008, some regulated finance companies were experiencing high deposit withdrawals. As a result, these companies were confronted with liquidity constraints. The government and the CBSL took preventive measures to assist the troubled institutions. These measures helped regain customer confidence. This enabled the CBSL in turn to maintain the stability of the financial system.

Meanwhile, the Government Securities market and equity markets experienced some difficulties due to net capital outflows. There was a pressure on the domestic foreign exchange market and on the domestic inter-bank money markets as well. The survey findings also suggest the adverse impact on the derivative transactions. Despite the maintenance of key financial indicators at the desired levels, the financial institutions were confronted with a challenge due mainly to lower private credit expansion. However, the financial markets

became more stable, especially since the second half of 2009, with increased foreign investor participation, easing of monetary policy, improved liquidity in the domestic market, and the deceleration in inflation rates and interest rates, etc.

Similarly, the equity market, which fell sharply in 2008, also surged upwards since 2009. The CSE has been recorded as one of best performing stock markets globally, in terms of the index movement.[20] The bullish market situation was largely driven by the positive investor sentiment following the end of the internal conflict and lower interest rates. The unit trust industry also recovered with the upturn in the equity market. However, it is worth considering carefully the lessons that can be learnt from the recent global financial crisis in order to come up with prudential policies and strategies to address possible issues that could affect the financial system stability. Since the recent crisis is rooted in the securitisation market, it is important to examine the pros and cons of these products and their impact on the financial system stability.

4.2 Merits and Drawbacks of New Products to Financial System Stability

Financial derivatives have been very successful innovations in capital markets. They are important tools that can help organisations to meet their risk management objectives. The types of derivative instruments and most appropriate trading strategies should be selected after careful investigation of the market conditions, risk management objectives of the organisation, etc. Financial derivatives should be used with a clearly defined risk management strategy. If used properly, financial derivatives would better control their risk exposures. Therefore, it is crucial to be mindful about the pros and cons of these products and be watchful about the movement of these instruments. It would enable the financial institutions and respective supervisory authorities to take appropriate pre-emptive measures in order to minimise any adverse impact on the financial system.

4.2.1 Benefits

- Help organisations in diversification of their portfolio.
- Deepen and broaden the financial market; improve market liquidity.
- Activate the capital market using these products for different purposes:
  - Hedgers: to reduce or eliminate risk
  - Speculators: to get extra leverage

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20. Central Bank of Sri Lanka, *Financial System Stability Review 2009* (page 40).

- Arbitrageurs: to take advantage of a discrepancy in prices in two different markets
- Make the capital market more vibrant

- Facilitate transferring risks and improve risk management framework. Thus, it helps meeting risk management objectives of the organisation.
- Used mainly for reserve management purposes by central banks.

4.2.2 Drawbacks

- Create more complex and sophisticated instruments. More risky as their movements and risks are impossible to assess, control or monitor.
- Create counterparty risks. There is possible high risk, especially for small and inexperienced investors. There is possibility of large losses if not properly used.
- Large notional value would create unexpected risk exposures.
- Derivative transactions are subject to many types of risks as of any other financial transaction. They are: credit risk, liquidity risk, market risk, legal risk, operational risk and custody risk. Possible losses due from these risks would pose systemic risks to financial markets or payment systems, unless these risks are adequately managed.

Therefore, it is pertinent to note that, continuous vigilance and use of risk mitigation techniques, including good governance, transparency and disclosure requirements, etc., are required to prevent any possible downside risks arising from these transactions.

4.3 Existing Policy Measures and Regulations of New Financial Products

It is essential to ensure that adequate policies, procedures and systems are in place to identify, assess, control and manage the risks financial institutions are faced with due to the sophisticated new financial instruments. Solid micro-prudential regulations and supervision aimed at developing new financial products are essential in this respect. Similarly, it should be supplemented with macro-prudential policies.

Having considered the importance of developing the derivatives market in Sri Lanka, action has been taken to amend the Securities and Exchange Commission (SEC) Act to regulate derivatives and bring financial derivatives under its ambit. Currently, the CSE is in the process of establishing a clearing corporation, which is a prerequisite for developing a derivatives market.

As far as the existing regulations are concerned, the Finance Leasing (Amendment) Act No. 24 of 2005 stipulates certain provisions to engage in securitisation. In order to enable the issuance of asset-backed securities through an SPV, a new securitisation law has been drafted in 2007 for the regulation of structured financial products. These efforts to introduce relevant laws aimed at removing the impediments to securitisation in Sri Lanka should be commended.

The CBSL has issued a number of directions over the period, emphasising the requirement of maintaining sound risk management practices by financial institutions. It has been expected, among other things, to alleviate possible risk exposures arising from the new financial instruments. Accordingly, the Department of International Operations and Exchange Control Department of the CBSL issued a Direction[21] on 'Financial Derivative Products' to all LCBs, appointed to act as Authorised Dealers in foreign exchange, to deal in foreign exchange involved derivative transactions in August 2009. These Directions have revised and superseded the previous Directions on Financial Derivative Products (Revised) dated December 21, 2005 and Directions issued to LCBs on LKR-based FX Options dated November 28, 2006. The products covered under this Direction include Interest Rate swaps (IRS), Interest Rate Options (IRO), Forward Rate Agreements (FRA), Cross-currency Swaps (CCS) and Commodity Swaps (CS), Currency Options and Commodity Options (Gold, Copper and Oil are identified as commodities for possible derivative transactions). Accordingly, Authorised Dealers are required to ensure that adequate measures are taken to mitigate risks and to maintain capital adequacy requirements pertaining to derivative transactions. These directions also include reporting requirements and accounting treatment and valuation standards as well.

Accordingly, derivative products shall only be used by Authorised Dealers for hedging the risks arising from its own assets or liabilities or altering its risk profile. Further, these products could be used for making the market for such instruments. In order to involve in Derivative Market Maker Deals, an LCB has to maintain a capital adequacy ratio of more than 11%. They are expected to formulate sound policies and maintain prudent risk management systems. In addition, the derivative transactions are expected to be based on individual transactions (back to back) and not on pooling of several transactions into one contract. The maturity period of the instrument should be less than 10 years. According to the legal principle of "suitability", it is required that the client is

21. http://www.cbsl.gov.lk/pics_n_docs/09_lr/_docs/directions/iod/circulars_issued_iod_%2028112006.pdf

fully educated on the pros and cons and the risks involved in the hedging deal. All Authorised Dealers are further expected to follow the International Swap and Derivative Association (ISDA) agreement with the counterparty.

In terms of these directions, Authorised Dealers could hedge their foreign exposure with their correspondent overseas banks or with any other Authorised Dealer. However, the Authorised Dealer should not facilitate any derivative transaction on behalf of its overseas partners to domestic customers. For any such deal, the bank should obtain specific approval of the Controller of Exchange. Such deals should be properly accounted in his books. Authorised Dealers are further expected to monitor the transactions of non-resident banks.

Similarly, the Public Debt Department of the CBSL issued Directions[22] on Forward Rate Agreements (FRAs) and Interest Rate Swaps (IRS) to Primary Dealers (PDs) in the Government Securities market in April 2003, as these products are useful for managing interest rate risks. They can use these products for their own balance sheet management and for market making. However, they are permitted to undertake basic types of FRAs/IRS only. Swaps having explicit/implicit option features such as caps/floors/collars are not permitted. PDs are expected to use ISDA documentation with suitable modifications.

In addition, the CBSL has issued several directions on corporate governance and risk management. The CBSL monitors the compliance of selected financial institutions to those directions. As learnt from the global financial crisis, these practices are essential to maintain financial system stability.

Accordingly, directives and prudential measures issued and adopted by the CBSL to improve the soundness of these specified financial institutions are expected to be instrumental in preserving financial system stability. The proposed new law relating to securitisation would also enable further development of the derivatives market and thereby the local capital market in Sri Lanka.

4.4 Current Practices: Coordination Between Monetary and Other Supervisory Authorities

The CBSL is considered as an integral part of the financial system. Pursuant to the Monetary Law Act No. 58 of 1949, it is mandatory for the CBSL to administer, supervise and regulate the monetary, financial and payment system

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22. http://www.cbsl.gov.lk/pics_n_docs/09_lr/_docs/directions/iod/circulars_issued_iod_%2028112006.pdf

of the country. Accordingly, it is expected to achieve financial system stability, one of the core objectives of the CBSL. Therefore, the CBSL directly regulates LCBs, LSBs, Registered Finance and Leasing Companies and PDs in government securities. As the financial institutions are exposed to various types of risks, the CBSL has developed prudential norms in line with the local requirements and international best practices. Currently, the CBSL through the Bank Supervision Department carries out continuous supervision and periodic examination of all licensed banks. The purpose of this supervision is to ensure the safety and soundness of the banking system. It also expects to safeguard the interest of depositors and other stakeholders. Since banks are the most dynamic, vibrant and dominant source of the financial system, failure of a bank would adversely affect financial system stability. Therefore, supervision of banking institutions has been strengthened with the issuance and application of several prudential directions and guidelines. Further, there are monthly meetings with the Chief Executive Officers of the licensed banks for exchanging views on prudential regulations, policies and other issues pertaining to the banking industry. In order to further strengthen the supervisory framework for banks, it is proposed to amend the Banking Act and to introduce consolidated supervision of banks.

In addition, the Director of the Bank Supervision Department of the CBSL is a member of the Inter Regulatory Institutions Council (IRIC). At IRIC meetings, the regulatory agencies are provided an opportunity to exchange information, particularly in connection with financial system stability, with a view to strengthening the risk management framework and facilitating the systematic development of financial markets.

Further, the CBSL, through the Department of Supervision of Non-Bank Financial Institutions supervises and takes necessary actions to strengthen the other financial institutions, e.g. finance and leasing companies. Primary Dealers in the Government Securities market are also supervised through on-site examinations and off-site surveillance to ensure stability in the PD system, through the Public Debt Department of the CBSL. Further, as the micro-finance institutions which are spread over the island are not regulated at present, it is planning to set up an authority to regulate and supervise micro-finance institutions in the country, under a separate legislation.

Moreover, the CBSL has board representation with other regulatory authorities such as the SEC, Insurance Board of Sri Lanka (IBSL), and Accounting and Auditing Standard Monitoring Board, etc., which have bearings on the effective operation of the financial sector. Accordingly, the CBSL being an integral part of the financial system has close coordination with the financial institutions and

other supervisory authorities in the country, with a view to ensuring the soundness and stability of the financial system.

4.5 Current Practices: Coordination between Central Banks in the Region for Cross-border Supervision

As financial systems have become more globally integrated, there is an increasing importance of having cross-border cooperation and coordination among regulators and monetary authorities. Such relationship would contribute to the development of the financial sector in the country. However, new and complex products that are offered, especially by foreign financial institutions could generate cross-border risks. Therefore, an appropriate regulatory mechanism is pivotal to address any potential risks that would expose the country's financial markets in the context of globalisation.

In respect of foreign banks in Sri Lanka, it is important that there is harmonisation in regulations and procedures amongst the host and home country regulators. In practice, more stringent rules and regulations adopted by a banking institution either in a host country or in the home country are expected to be followed by the respective bank located in Sri Lanka.

Recently, central banks from five major countries of ASEAN (Indonesia, Malaysia, Singapore, Thailand and the Philippines) committed to sign a multilateral cross border financial supervision agreement.[23] It was expected to safeguard the nations from the negative impacts of the recent capital inflow. They further seek international cooperation and coordination from other countries in the region, including Sri Lanka to reach a regional agreement on this.

Since there is an increasing presence of international banks in Sri Lanka and local bank branches outside Sri Lanka, the CBSL in its Strategic Plan for 2011-2015 has indicated that the Memorandum of Understanding (MOU) with home regulators of foreign banks and host regulators of local banks in the Asian region, be developed by end 2012.

Overall, in the context of the growing complexity of financial instruments and under the current globalised financial environment, close cross-border co-operation and coordination is of paramount importance to ensure a stable and resilient financial system.

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23. http://www.thejakartapost.com/news/2010/12/10/major-asean-countries-commit-cross-border-financial-supervision.html

5. Survey of the Status of New Financial Products in Sri Lanka

A survey was carried out mainly to identify new financial products and issues related to their development, and to gather information on current regulations in connection with new financial products and their effectiveness for financial system stability. Before looking at the measures needed to develop the derivatives market based on these survey findings, it may be appropriate at this juncture to examine the overall status of the new financial products in Sri Lanka.

5.1 Overall Status of New Financial Products in Sri Lanka

As in many SEACEN economies, there is no well-developed market for derivative products in Sri Lanka. This may be mainly attributed to the lack of knowledge about the operations and benefits of these instruments. According to the available information, derivatives are traded in the OTC markets in the country. Here, derivatives are used for hedging purposes, as formal financial institutions are not permitted to use them for speculative purposes. In order to identify the overall status of the derivatives market in Sri Lanka, it may be appropriate to examine the various segments of this market. They may differ in their characteristics in terms of risk, operational arrangements and market participants.

5.1.1 Derivatives in the Foreign Exchange Market

According to the feedback to the survey questionnaire, the available OTC foreign exchange derivatives are Forward contracts in currency and interest rates; Swaps in currency and interest rates; and Options in currency and commodities, etc. However, no transaction on Futures is reported at present in the forex market. The product-wise derivative transactions of commercial banks are reported by the authorised dealers in foreign exchange, under the directions issued by the CBSL on a regular basis.

5.1.2 Derivatives in the Government Securities Market

In comparison, the derivative transactions in Government Securities are hardly any. There is no effective hedging mechanism in the Government Securities market and only Interest Rate Swaps and Forwards Rate agreements are available, in a very small magnitude. According to the survey findings of the reported 4 primary dealers, only one primary dealer has exposure in Structured Products, but the values were not reported. This market operates on an ad-hoc basis with lack of transparency and absence of a price discovery mechanism. The repo market, which is highly liquid, provides some cover. However, in order

to minimise the risk of volatility in interest rates, a more effective hedging mechanism is needed.

5.1.3 Securitisation

As informed by a leading dealer at an individual interview with him, securitisation transactions are undertaken particularly in the home mortgage and automobile sectors backed by lease/higher purchase receivables. Most securitised transactions were structured by the non-banking financial service sector. In October 2010 a leading finance leasing company raised Rs.1.4 billion through the issuance of a hire purchase and lease receivables securitisation. It was one of the largest securitisation transactions in the industry to date in Sri Lanka.[24] A premier investment bank in the country was the placement agent to the issue and a LCB was the trustee. Usually in the Sri Lankan securitisation market, the ownership of the securitised asset is not transferred from the originator (issuer). In certain instances, these transactions could be described as collateralised lending rather than securitisation.

5.1.4 Forward Sales Contract (FSC) in the Commodity Market

Under the commodities hedging, the CBSL has introduced the Forward Sale Contract (FSC) in 1999. Accordingly, the selected agricultural produce is traded at a pre-determined reasonable price, on a certain future date. Banks and certain organisations perform as facilitators. The underlying crops, which are traded under the FSCs are maize, soya bean, kurakkan, black gram, tobacco, gherkins and ginger. These arrangements basically help hedge against price fluctuations of these products in the future market. However, true derivative transactions cannot be observed.

In addition, under the commodities hedging (commodity option), a public enterprise in the energy sector in Sri Lanka entered into two hedging arrangements with a private bank for the first time in February 2007[25]. It used the Zero cost collar mechanism. It entered into six hedging arrangements during the year. Through this hedging arrangement, it was expected to mitigate any undesirable effects on the oil prices, due to the price volatility in the international market.

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24. Daily News, Business Market, October 29, 2010.
25. Central Bank of Sri Lanka, *Annual Report*, 2006 (pages 46-47).

5.1.5 FX Swaps as a Monetary Policy Instrument

A new financial product called, FX Swaps (foreign exchange swap) has been introduced by the CBSL in November 2009 as a monetary policy instrument. The conventional instruments (i.e., Repos and Reverse Repos on Government Securities) were insufficient to mop up excess liquidity in the system and the Central Bank Securities (which is used as a monetary policy tool) were not accepted as a popular instrument for trading by market players at that time. Therefore, the CBSL introduced FX Swaps as an alternative measure to absorb excess liquidity that continued to prevail in the system.

Under the FX Swaps, one currency is purchased against another at an initial date and that transaction is reversed on a future date at a mutually agreed specified rate. The collateral of the transaction is the foreign currency i.e., US dollar. These transactions are carried out between commercial banks and the CBSL, on an auction basis. Bids at the auctions are accepted in US dollar and in swap points. In order to absorb excess market liquidity, 'sell-buy FX Swaps' auctions are carried out, while to inject liquidity to the market, 'buy-sell FX Swaps' auctions are conducted. The total amount accepted at these auctions under sell-buy FX Swaps during 2010 was US$ 2,077 million (Rs.235.5 billion).

5.2 Survey Findings

5.2.1 Methodology and Participants

A survey was conducted through the e-mail, using a structured questionnaire. It was designed mainly to have a clear and comprehensive understanding of the available new financial instruments (such as Structured and Hybrid Products, Credit derivatives, ABS, Bancassurance, Mutual Funds, etc.) and the effectiveness of current regulations, policies and procedures adopted in the Sri Lankan derivatives market for managing the associated risks.

A sample of 51 financial institutions from commercial banks (25), registered finance (10) and leasing companies (10), and primary dealers in Government Securities market (6) was selected for the survey. Of them, 26 financial institutions (51%) responded. Out of the respondents, 42% institutions have never been involved in any derivative transaction. These institutions do not have any intention to issue, sell or invest in derivative instruments in the near future.

Figure 6
Survey on New Financial Products
Summary Information of the Survey Coverage

Type of Institutions	No of institutions as at end 2009	Sample Selected	No of Respondents	Response rate (%) (a)	Participation in activities % (a)
Commercial Banks	36	25	15	60.0	80.0
Primary Dealers	11	6	4	66.7	25.0
Non Bank Financial Institutions	57	20	7	35.0	28.6
Finance Companies	*36*	*10*	*4*	*40.0*	*25.0*
Leasing Companies	*21*	*10*	*3*	*30.0*	*33.3*
Overall	104	51	26	51.0	57.7

(a) As a % of the selected sample.

The response rate, as a proportion of the selected sample, was higher among commercial banks (60%) and primary dealers (67%) than finance and leasing companies. Out of six systemically important commercial banks in the financial system, five banks responded to the questionnaire. The response rate of finance/ leasing companies was 35%. However, a few unreported finance companies informed that they do not involve in derivative activities at present while having no plans to issue such instruments in the near future.

In addition, interviews with leading dealers and expertise in the financial sector were also conducted. Overall, the results of the interviews indicated that there is more potential for further development of the derivatives market.

Since most of the major financial institutions are basically covered under the survey to a certain degree, the outcome could be considered as a representation of the perspective of the market. The reported values represent notional/nominal outstanding of the new financial products. As informed by a major foreign bank, outstanding values of new financial products reported by them do not include those transactions with their head office, abroad. In addition, a primary dealer who has exposure in derivative transactions did not indicate the outstanding values of derivative transactions; as such, values are comparatively insignificant. Some institutions, which started these transactions before 2005, did not report outstanding values of new financial products for 2005 at all. Similarly, a commercial bank which is actively involved in these transactions informed that data prior to 2008 is not available, due to a system migration. Therefore, on aggregate terms, there could be an underestimation in the total notional outstanding values reported by institutions. However, there could be a double counting problem since the same transaction is reported by both parties.

In general, the data in this report is analysed on an aggregate basis and not on an individual basis. Responses by individual institutions in this survey are considered confidential. Responses to the selected survey questions are depicted graphically in Appendix A.

5.2.2 Results of the Survey

The responses of the market players by type of activity (i.e., issuing, selling or investing) are analysed in detail below.

5.2.2.1 Issuing or Planning to Issue New Financial Products

According to the feedback on the survey, only commercial banks issue these instruments. More commercial banks (40%) issue these products compared to their participation in selling of (27%) and investing in (33%) new financial instruments (Appendix A, Chart A.1). The notional outstanding issues of new financial products in August 2010 were estimated at Rs.3,089 million, (Figure 7) which represents merely 2.4% of total notional outstanding and is entirely held by commercial banks.

Of the commercial banks, one of the state banks started issuing Structured Products in 1978, while the rest of the respondents commenced their issues between 2004 and 2007. Out of them, 50% of banks issue Structured Products, while the others issue ABS, Bancassurance and USD/LKR. However, none of the reported institutions issue any Hybrid Product, Credit derivatives or Mutual Funds. Accordingly, the Structured Products are the most popular instruments issued in the market. They include mainly Forwards, FX Options, and Interest Rate and Currency Swaps, etc., which are available in the foreign exchange market.

Moreover, the majority of banks (83% of issuing banks) are also planning to continue their issues with Structured Products, followed by ABS (50% of issuing banks) in the near future as well. However, Hybrid Products and Credit derivatives are the least preferred instruments among the respondents even in their future plans. According to many respondents (47%), market demand and the ease of offering these products to the market are the main factors, which motivate them for further expansion of new products. In line with the demand from the market, they would enhance their product range through which some banks expect to increase their return in the future. However, they have concerns on regulations, inadequacy of capital and limitation in resources and infrastructure, which were expressed as core obstacles that affect the decision on further

expansion of these products. As indicated by some issuing banks, product management of these products is challenged by available infrastructure of supporting systems, measuring risks and lack of staff competencies on products.

The participants of the survey believe that the existing regulatory framework relating to new financial products is relatively effective in preventing and reducing risk and financial system instability. However, in order to act immediately upon the new developments in the financial system that are taking place especially in the region, an adjustment of the regulation is suggested. In this respect, the requirement of having specific regulations and guidelines were highlighted. Similarly, the importance of international accounting standards and industry-wise consistent mark-to-market practices were indicated.

In fact, several market players indicated that they do not have necessary systems in place to assess or analyse the movement of these products or they do not have competent staff to execute the dealings effectively. This issue should be addressed immediately through well focused comprehensive awareness and skill development programmes. Moreover, within the context of the globally integrated current financial environment, cross-border supervision is considered as imperative for future expansion of the industry.

5.2.2.2 Selling or Planning to Sell New Financial Products

According to survey findings, both commercial banks and a primary dealer in Government Securities are involved in selling these products. However, the primary dealer did not report the trading values. Of the total respondents, 25% participated in selling these products and all of them sell only Structured Products. Two banks have first sold Structured Products in 2002 while the other respondents commenced their first sale between 2005 and 2008. A state bank sold a new product called WTI TARN, which is an instrument for commodity hedging, in 2008. However, the rest of the financial institutions have not commenced their first sale after 2007.

Meanwhile, none of the institutions has sold any Hybrid Product, Credit derivatives or Mutual Fund throughout the reference period while only a few banks sold derivatives such as ABS and Bancassurance. However, the outstanding values of these products were not reported. Similar to the issuers' preference, the most popular product used by many sellers in the derivatives market is the Structured Products which include FWD contracts, Interest Rate Swaps, Option

Collar, etc. Total sales outstanding in nominal terms at Rs. 91,989 million accounted for 71% of the total notional outstanding of the market in August 2010 (Figure 7).

When future plans for expanding their current products are examined, similar to the issuers, 80% of the selling institutions are planning to expand their current portfolio with Structured Products followed by the ABS (60%). In this endeavour, 80% of the selling institutions identified market demand as the driving factor in enhancing their future supply. Further expansion of these products also depends on factors such as expected higher returns and ease of offering these products to the market. However, none of the respondent institutions has expected to use these derivatives for risk management purposes. It is also noted that none of the reported institutions has any preference for further expanding Hybrid Products, Credit derivatives or Bancassurance. In general, the demand for derivative products in terms of value seems to be relatively low. In the context of the product management, most banks are confronted with a number of major challenges mainly due to the inadequate infrastructure of supporting systems (especially the software systems), measuring risks and staff competencies in operating these products.

Similar to the issuer's view, the financial institutions who sell these products feel that inadequate resources and infrastructure and the existing regulatory environment have been the major obstacles for further expansion of these products. However, they believe that current regulations related to new financial products are more effective and sufficient in preventing and reducing risk and financial system instability. In contrast, they mentioned the requirement of adjusting regulations and guidelines to address the issues currently observed in the industry. While emphasising the importance of new financial innovations for the development of the financial market, they indicated that cross-border supervision is extremely important as financial institutions are externally exposed to shocks in the global environment.

5.2.2.3 Investments in or Exposure to New Financial Products

In terms of the survey findings, all three categories of commercial banks, finance and leasing companies, and a primary dealer in Government Securities have exposure or investments in new financial products. As observed from the issuing and selling standpoint, Structured Products have continued to dominate the derivatives market in Sri Lanka, proving its popularity for investment (88%) as well. Similarly, the ABS (63%) has achieved its second dominance in investments among the respondent financial institutions followed by

Bancassurances (50%). However, it should be noted that Hybrid Products are used only for investment purposes by 25% of the respondent financial institutions in Sri Lanka. Accordingly, a state bank and a leasing company have exposures to Hybrid Products. Meanwhile, none of the institutions has invested in any Credit derivatives or Mutual Fund throughout the period.

When future plans for expanding the investment profile are examined, more than 87% of the investing institutions are planning to expand their current portfolio with Structured Products, followed by ABS (75%). Meanwhile, the preference for Hybrid Products, Credit derivatives and Bancassurance, especially the Mutual Funds is limited. Further expansion of these products greatly depends on the expected higher returns. Moreover, the possibility of using these instruments as a risk management tool and ease of offering the product also matters. In future plans, the possibility of expanding both the number as well as the volume of the product will be considered.

Although there are plans for further expansion of investments, more investing institutions (75%) feel that the existing regulations are the major constraint for such expansion. Similarly, 62% of them also observe that current regulations discourage increasing their investments in these products. Further, more institutions perceive that the current regulations relating to new financial products are relatively more effective while a few institutions indicate these regulations are less effective. The majority, however, believe that an adjustment is needed for the future development of the financial market. In order to activate the derivatives market with standardised exchange traded instruments, they highlighted the immediate requirement of an exchange. As the financial markets are interconnected worldwide, cross- border supervision is considered as an important requirement from the investor's perspective as well.

Based on the above detailed discussion, the findings of the survey are summarised for quick reference in Appendix B.

5.2.2.4 Overall Status of New Financial Products in Sri Lanka

On the basis of the survey outcome, the total notional outstanding value of derivatives increased from Rs.112,719 million at end 2009 to Rs.129,287 million in August 2010, reflecting a recovery since 2009, after the temporary set-back recorded in the industry in 2008 (Figure7). The drops in 2008 (Figure 9) were more significant in February (by 51% compared to the previous month) and in November (by 22% compared to October). Similarly, declines in notional outstanding values were further recorded in February and September 2009 and

in January 2010 as well. Despite these fluctuations within the course of the period, the trend generally follows an upward movement, especially since 2009. The expansion was mainly attributable to the increased contribution of Structured Products, especially by commercial banks. The improvement is commendable in the face of the global financial turbulence.

Figure 7
Notional Outstanding Values of New Financial Products
Institutional-wise and Activity-wise

Rs.million

Product	Dec-06	Dec-07	Dec-08	Dec-09	Aug-10
Commercial Banks	**143.98**	**63,943.08**	**64,537.03**	**111,305.26**	**127,898.74**
Issuers	**72.98**	**142.87**	**46.83**	**3,105.66**	**3,089.29**
Structured Products	72.98	142.87	46.83	435.66	829.29
Asset Backed Securities	-	-	-	2,670.00	2,260.00
Sellers	**-**	**56,696.99**	**55,104.68**	**92,780.26**	**91,989.03**
Structured Products	-	56,696.99	55,104.68	92,780.26	91,989.03
Investors	**71.00**	**7,103.22**	**9,385.52**	**15,419.34**	**32,820.41**
Structured Products	-	6,860.35	8,978.97	14,052.08	31,097.26
Asset Backed Securities	-	0.87	0.55	750.26	580.16
Bancassuarance	71.00	242.00	406.00	617.00	1,143.00
Non Bank Financial Institutions	**54,865.00**	**58,235.50**	**2,428.50**	**1,413.33**	**1,388.29**
Investors	**54,865.00**	**58,235.50**	**2,428.50**	**1,413.33**	**1,388.29**
Strucured Products	54,865.00	57,898.00	2,241.00	651.93	683.14
Hybrid Products	-	-	-	686.40	686.40
Other (a)	-	337.50	187.50	75.00	18.75
Grand Total	**55,008.98**	**122,178.58**	**66,965.53**	**112,718.60**	**129,287.03**

(a) Includes the aggregated values of SWAPS, Daily Range SWAPS, Daily Range Approved & Target Approved Redemption Forward. Notional outstandindg values with breakdown of each product is not available.

Note:End Period values

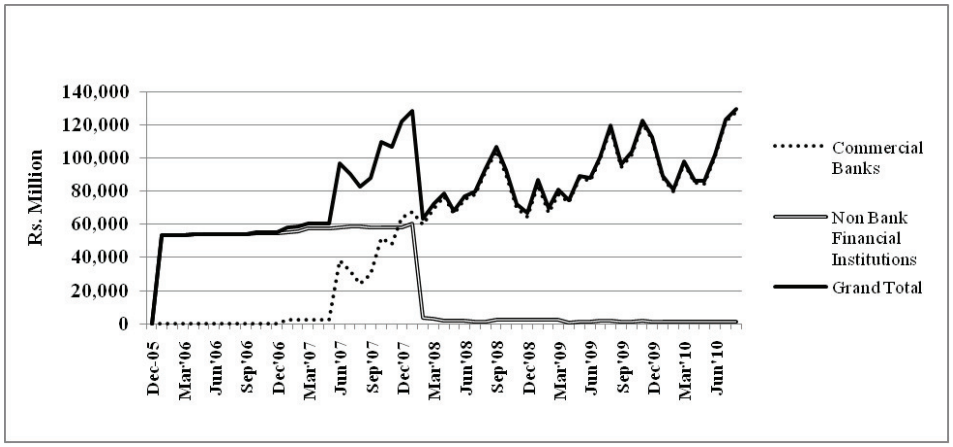
Meanwhile, the composition of the notional outstanding amount of new financial products between commercial banks and non-bank financial institutions recorded a shift between each of these institutional categories since 2007, with a significant decline registered in the shares of the non-bank financial sector from 99.7% at end 2006 to 1.1% in August 2010 and a remarkable increase of the commercial banks from 0.3% to 98.9% respectively, between the two corresponding periods (Figure 8). Accordingly, commercial banks continued to dominate in the industry, contributing more than 95% of the total outstanding since 2008.

Figure 8
Notional Outstanding Values of New Financial Products
Institutional Holdings as a % of Total Outstanding

Product	Dec-06	Dec-07	Dec-08	Dec-09	Aug-10
Commercial Banks	0.26	52.34	96.37	98.75	98.93
Non Bank Financial Institutions	99.74	47.66	3.63	1.25	1.07

Moreover, according to the end-year nominal outstanding values, the commercial banks' participation in the derivatives industry moved to an accelerating path since 2009, after experiencing a momentary slowdown in end 2008. As indicated in Figure 7, total outstanding of new financial products held by commercial banks at Rs.144 million at end 2006 increased dramatically to Rs.63,943 million by end 2007 and recorded a marginal increase of 0.9% to reach Rs.64,537 million in December 2008. The increasing trend continued in December 2009 and August 2010 as well, recording 1.7 times sizeable increase by end 2009, compared to that in 2008. Further, commercial banks are predominantly involved in selling the new financial products compared to issuing and having exposures in these instruments, in terms of value.

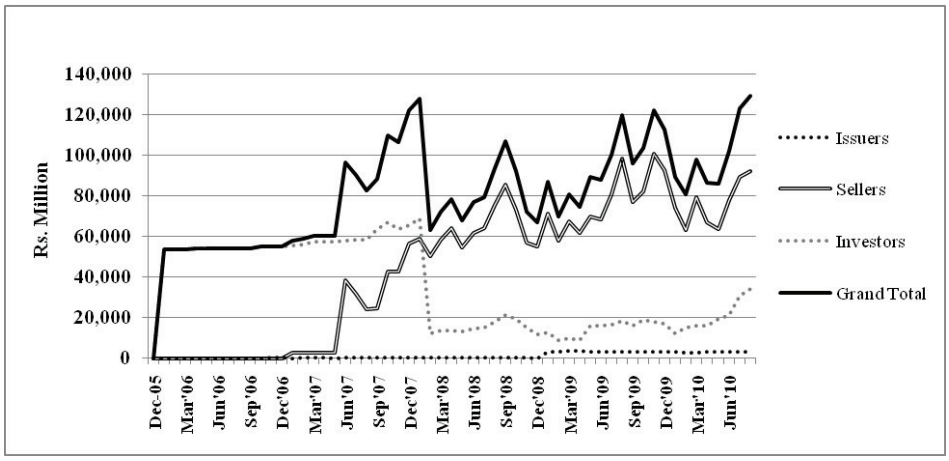
Figure 9
New Financial Products Institution-wise



Note: End month Notional Outstanding Values.

In contrast, new financial products held by the non-bank financial institutions dropped substantially to Rs.1,388 million in August 2010, recording a continued decline in the year-end values from 2008 (Figure 7). The drop was entirely due to the sharp deceleration in Structured Products held by the non-bank financial institutions from its peak level at Rs.57,898 million in December 2007 to Rs.683 million in August 2010. Accordingly, the most notable feature in the market is the continued deceleration in the notional values of derivative holdings of the non-bank financial institutions during the recent years. Accordingly, it shows a shifting of derivative holdings from the non-bank financial sector to the commercial banking sector, registering nearly a two-fold increase of commercial bank holdings in nominal terms between December 2007 and August 2010.

Figure 10
New Financial Products Activity-wise



Note: End month Notional Outstanding Values.

When new product holdings by type of activity (i.e., issuing, selling or investing) are taken into account, sellers have been dominating the market since early 2008 (Figure 10) replacing the dominance so far held by investors in the industry. The remarkable drop in investors' contribution to these products may be attributable to the loss of investor confidence on account of the recent economic turbulence.

Figure 11
Significance of Each Product
As a % of Total (Notional) Outstanding Values

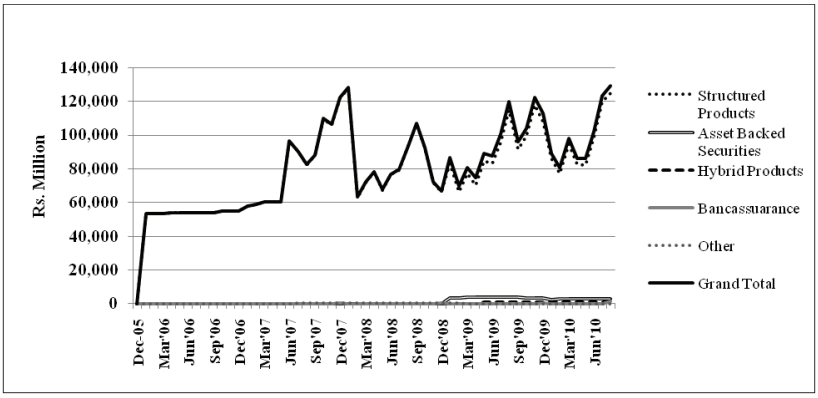
Product	Dec-06	Dec-07	Dec-08	Dec-09	Aug-10
Grand Total	**55,008.98**	**122,178.58**	**66,965.53**	**112,718.60**	**129,287.03**
Structured Products	54,937.98	121,598.21	66,371.49	107,919.93	124,598.73
Hybrid Products	-	-	-	686.40	686.40
Asset Backed Securities	-	0.87	0.55	3,420.26	2,840.16
Bancassuarance	71.00	242.00	406.00	617.00	1,143.00
Other (a)	-	337.50	187.50	75.00	18.75

Share of Product %	Dec-06	Dec-07	Dec-08	Dec-09	Aug-10
Grand Total	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
Structured Products	99.87	99.52	99.11	95.74	96.37
Hybrid Products	-	-	-	0.61	0.53
Asset Backed Securities	-	0.00	0.00	3.03	2.20
Bancassuarance	0.13	0.20	0.61	0.55	0.88
Other(a)	-	0.28	0.28	0.07	0.01

(a) Includes the aggregated values of SWAPS, Daily Range SWAPS, Daily Range Approved & Target Approved Redemption Forward. Notional outstandindg values with breakdown of each product is not available.

When examining the composition of the new financial products outstanding, the most common products in the industry in terms of value of holdings are the Structured Products, which have a major share of 96.4% of the total outstanding at end August 2010 (Figure 11). As can be seen in Figure 12, total notional outstanding of new products almost follow the trend in the Structured Products and it overlaps each other. Their popularity as a derivative product has been persistent throughout the reference period, despite its significance in the total outstanding having dropped marginally from 99.9% in December 2006 to 96.4% in August 2010 (Figure 11).

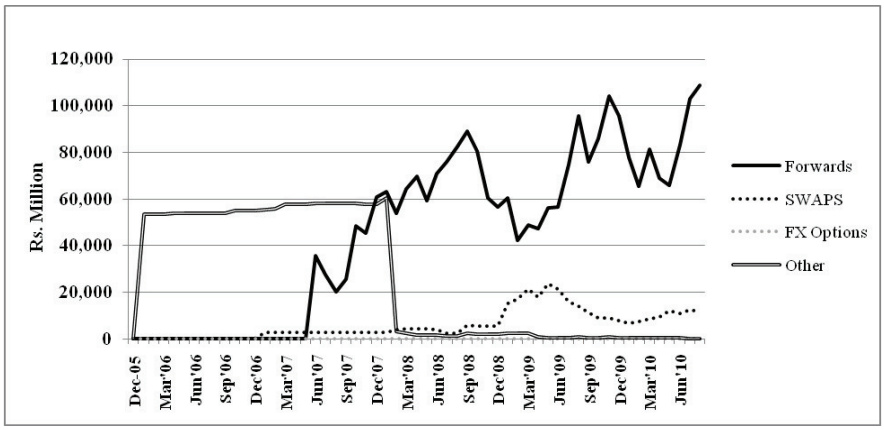
Figure 12
Outstanding Values of New Financial Products Product-wise



Note: End month notional values.

Although the relative significance of Hybrid Products, ABS, Bancassurance and others in the total outstanding values of new financial products have been very marginal over the period, nominal outstanding values of ABS and Bancassurances in absolute terms registered an upward movement in the recent years.

Figure 13
Outstanding Values of New Financial Products
Major Components of Structured Products



Note: End month notional values.

It is also evident that the most common instruments within the Structured Products are the Forwards (87.2%) followed by SWAPS (9.5%). These two products alone constitute 96.7% of the holdings of total Structured Products and 93.2% of total outstanding of new financial products, in August 2010 (Figure 14). Therefore, of the total Structured Products, Forwards and SWAPS play a leading role in the derivatives market in Sri Lanka.

Figure 14
Major Components of Structured Products
As a % of Structured Products and Total Notional Outstanding

	O	P	Q	R	S
6	**Product**	**Dec-07**	**Dec-08**	**Dec-09**	**Aug-10**
7	**% of Total Structured Products**				
8	Forwards & SWAPS	52.32	93.50	95.97	96.74
9	*o/w Forwards*	*50.06*	*85.25*	*88.60*	*87.20*
10	**% of Total Outstanding**				
11	Forwards & SWAPS	52.08	92.67	91.88	93.23
12	*o/w Forwards*	*49.82*	*84.49*	*84.83*	*84.04*

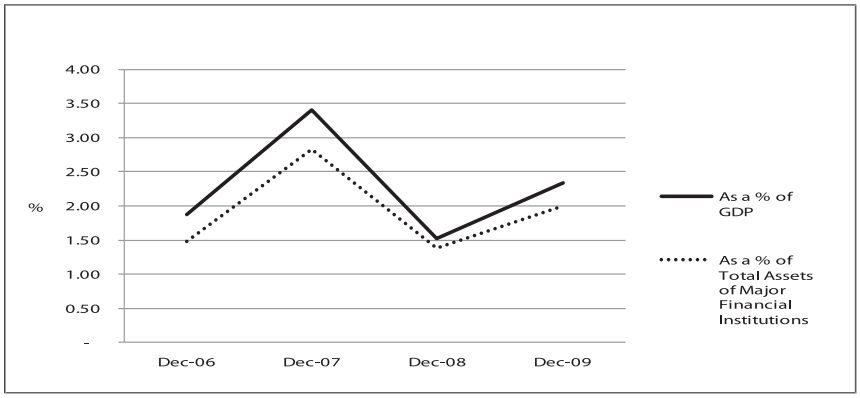
In addition, the notional outstanding values of new financial instruments accounted for 2.34 % of GDP at end 2009, reflecting the level of usage of this form of financing by the financial institutions. Though its significance has come down to 1.52% in terms of GDP in December 2008 from that of 3.41% in 2007, there was a sign of recovery in 2009, as the outstanding values/GDP ratio also increased by the end year. This indicates the relative significance of this market in the financial system in Sri Lanka.

Figure 15
Notional Outstanding Values of New Financial Products
As a % of GDP and Total Assets of Financial Institutions

	December 2006	December 2007	December 2008	December 2009
NFP Outstanding (Rs. Mn)	55,008.98	122,178.58	66,965.53	112,718.60
GDP Percentage	1.87	3.41	1.52	2.34
Financial Assets Percentage	1.48	2.83	1.38	2.01

Similarly, based on the survey estimates, the new financial products outstanding as a percentage of total assets of the major financial institutions also followed the same trend recording 2.01% at end 2009. This figure, which was at 1.48% in December 2006 almost doubled to 2.83% at end 2007, reflecting its increased importance in the financial sector. However, in 2008, the value of new financial products dropped to 1.38% in 2008, most likely due to loss of investor confidence on account of the issues in the global securitisation market.

Figure 16
Notional Outstanding Values of New Financial Products
As a % of GDP and Total Assets of Major Financial Institutions



Note: End year Notional Outstanding Values.

However, more importantly, resurgence is observed in the derivatives market, increasing its significance as a proportion of the total assets of the major financial institutions at end 2009. New financial products display a V-shaped recovery between end 2007 and 2009, both in terms of GDP and as a percentage of financial assets.

6. Concluding Remarks and Policy Recommendations

The study purports to evaluate the development of new financial instruments, effectiveness of prevailing regulations and policies and the potential risk exposure on the stability of the financial system, in order to consider the appropriate policy measures to maintain the financial system stability of the country. Despite the industry being in its early stages of development, the survey findings reveal that there are opportunities awaiting issuers, sellers and investors who are prepared to enter the industry.

The volume of transactions and the notional outstanding values of these products indicate that the industry is growing in Sri Lanka, despite a temporary set-back registered in 2008, in terms of the end-year values. As evident from the survey, a majority of financial institutions are interested in expanding their portfolio of these instruments in the future, depending on the demand for the product, its simplicity in character and the ease of offering these products to the market. However, the risks associated with these instruments could pose some

threat to the financial system stability, unless these risks are prudently managed. Therefore, the authorities should strive to ensure that both consumers and investors are protected and well informed of the risks that are associated with these instruments. Introducing more robust supervisory and regulatory frameworks to govern these activities of the financial institutions and imposing appropriate policies would be essential. However, imposition of policies alone would not provide the expected outcome, unless suitable measures and controls are instituted to ensure that the policy is carried out.

Accordingly, in view of the key issues, prevailing market conditions and financial infrastructure in the country, the following policy proposals could be recommended.

- *Hedging for Imports:* Since we are heavily dependent on imports, such as raw materials, essential commodities, fuel and other energy products, it is important to set up the right financial infrastructure to facilitate hedging. Hedging would serve as a cushion against wild price fluctuations of such products in the international markets**.** The careful selection of the appropriate derivative instruments and strategy would help maintain price and economic stability of the country.
- *Hedging for Government Securities:* A derivatives market could facilitate liquidity in the Government Securities market, particularly through hedging when the asset is in short supply. However, short selling of Government Securities, which is a prerequisite for the hedging mechanism, is not at present permitted in Sri Lanka. Therefore, with a view to improving liquidity in the market, necessary requirements for hedging including permitting short selling timely could be provided, subject to certain conditions together with the application of proper risk management processes and procedures, good governance, accepted accounting standards, reporting and disclosure requirements, etc.
- *Good Corporate Governance and Prudent Risk Management:* The institutional set-up should be developed with clearly defined objectives for derivative transactions, in order to minimise possible risks. The institutions should issue a clear policy statement about how derivatives are to be used and permissible limits for an employee to take positions. Compliance with these policies should be continuously monitored. Similarly, remedial action should be taken if there is any deviation from the specified guidelines.
- *Establishment of an Exchange:* As suggested by survey participants, immediate attention is required to introduce an exchange traded derivatives market in Sri Lanka. Such an exchange for derivative and equity transactions will provide facilities to handle the clearing and to mitigate settlement risk

of these dealings. The SEC has already directed the Colombo Stock Exchange to initiate action to set up a Central Clearing Corporation as a central counterparty, the process of which is required to be expedited.

- *Modules to Evaluate Risk Exposures*: As indicated by financial institutions in the survey, inadequate risk measuring tools for product management is one of the major challenges faced by institutions in the derivatives market. In this respect, carrying out stress tests, simulation exercises and scenario analysis would also be useful to identify risk exposures. Continuous monitoring and supervision are needed to take timely actions when risk indicators deviate from the desirable path. It is also important to have a mechanism of reporting risk exposure to the management for policy considerations.

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Appendix A

Chart A9: Regarding the Development of the Product Aspects Need to Expand in the Future

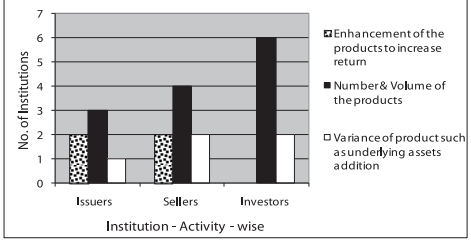


Chart A10: Main Constraint for expansion of new financial products

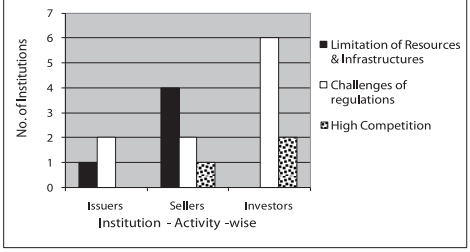


Chart A11: Major Challenges Related to the Product Management

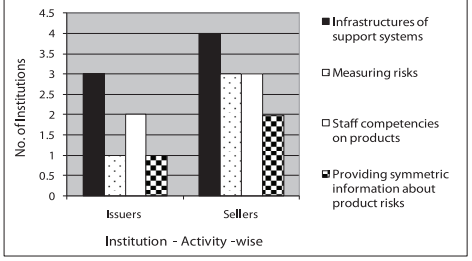


Chart A12: Effectiveness and Sufficiency of Current Regulations - Issuers

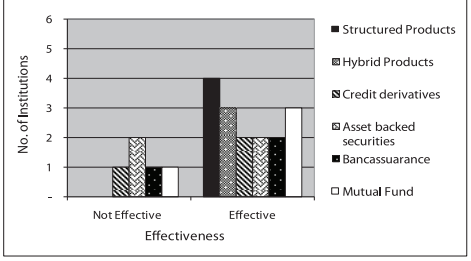


Chart A13: Effectiveness and Sufficiency of Current Regulations - Investors

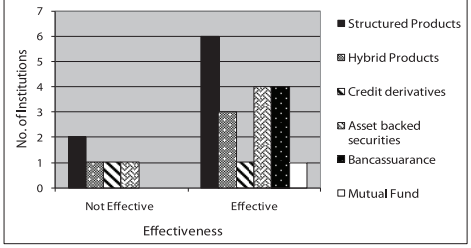


Chart A14: Influence of Regulations in Decisions

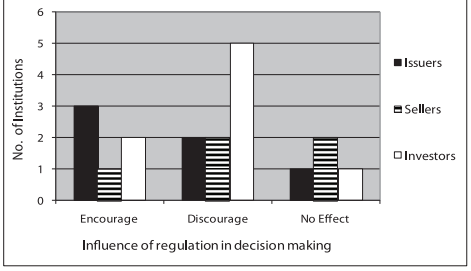


Chart A15: Expectations on Future Regulations for New Financial Products

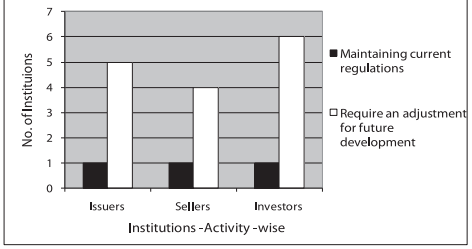
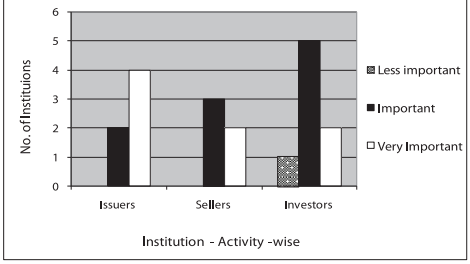
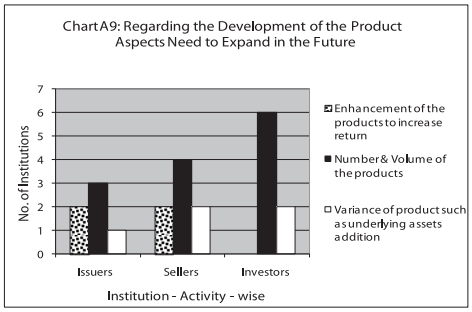
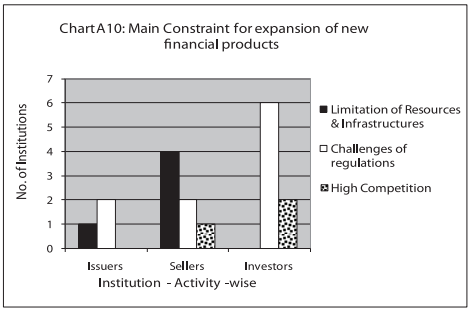
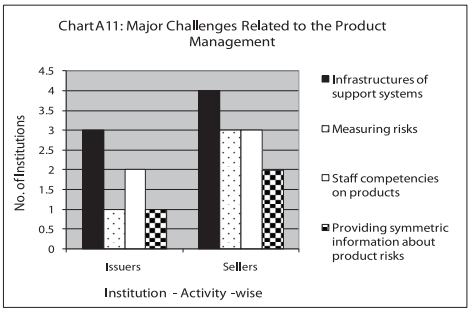


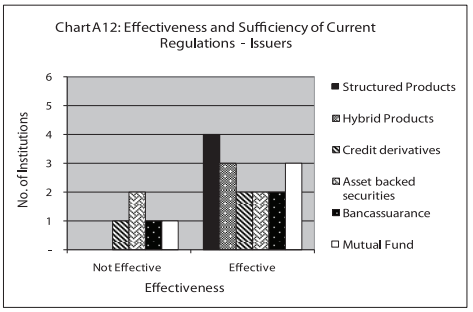
Chart A16: View on Cross Border Revision

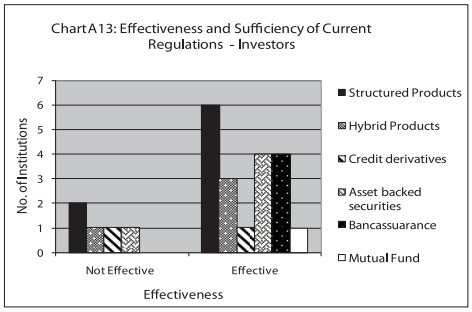


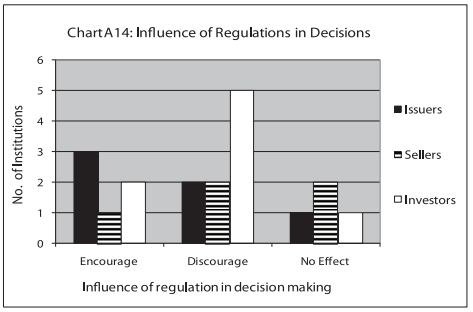

Chart A9: Regarding the Development of the Product Aspects Need to Expand in the Future
No. of Institutions
Issuers
Sellers
Investors
Institution - Activity - wise
Enhancement of the products to increase return
Number & Volume of the products
Variance of product such as underlying assets addition

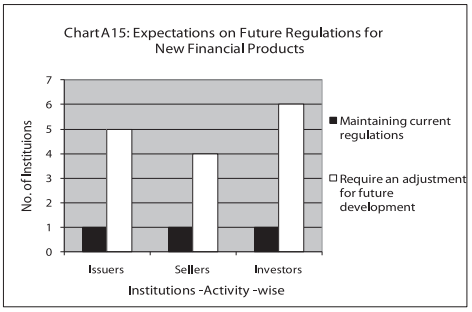

Chart A10: Main Constraint for expansion of new financial products
No. of Institutions
Issuers
Sellers
Investors
Institution - Activity -wise
Limitation of Resources & Infrastructures
Challenges of regulations
High Competition

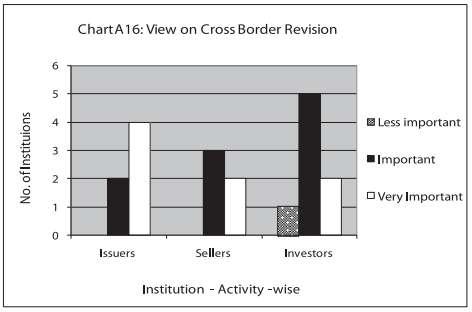

Chart A11: Major Challenges Related to the Product Management
No. of Institutions
Issuers
Sellers
Institution - Activity -wise
Infrastructures of support systems
Measuring risks
Staff competencies on products
Providing symmetric information about product risks


Chart A12: Effectiveness and Sufficiency of Current Regulations - Issuers
No. of Institutions
Not Effective
Effective
Effectiveness
Structured Products
Hybrid Products
Credit derivatives
Asset backed securities
Bancassuarance
Mutual Fund


Chart A13: Effectiveness and Sufficiency of Current Regulations - Investors
No. of Institutions
Not Effective
Effective
Effectiveness
Structured Products
Hybrid Products
Credit derivatives
Asset backed securities
Bancassuarance
Mutual Fund


Chart A14: Influence of Regulations in Decisions
No. of Institutions
Encourage
Discourage
No Effect
Influence of regulation in decision making
Issuers
Sellers
Investors


Chart A15: Expectations on Future Regulations for New Financial Products
No. of Instituions
Issuers
Sellers
Investors
Institutions -Activity -wise
Maintaining current regulations
Require an adjustment for future development


Chart A16: View on Cross Border Revision
No. of Institutions
Issuers
Sellers
Investors
Institution - Activity -wise
Less important
Important
Very Important

Appendix B

Survey on New Financial Products

		Issuing	Selling	Investing
1.	The product, which was first issued	Structured Products	Asset Backed Securities	Structured Products & Bancassuarance
2.	The year, the product was first introduced	1978	2002	2006
3.	The type of financial institution involved in	Commercial Banks	Commercial Banks & Primary Dealers	Commercial Banks, Primary Dealers & Non Bank Financial Institutions
4.	Involvement in activities as a % of respondents	23.1%	19.2%	30.8%
5.	Demand / Preference for products			
	- More Demand	Structured Products & Bancssuarance	Structured Products	Structured Products
	- No Demand	Credit derivatives	Credit derivatives	Hybrid Products & Credit derivatives
6.	Highly recommended product for future expansion by respondents	Structured Products	Structured Products	Structured Products
	- Rate as a % of institutions involve in	83.30%	66.70%	87.50%
7.	Reasons for expansion of current products	Market interest /demand & Easiness in offering	Market interest / demand & High returns	High Returns & risk management purpose
8.	Main aspect expected to expand of current products	Number and volume of the products	Number and volume of the products	Number and volume of the products
9.	Main constraints for expansion of current products	Challenges of regulations	Limitation of Resources & infrastructures	Challenges of regulations
10.	Major challenges faced for product management	Infrastructures of supporting systems & Staff Competencies	Infrastructures of supporting systems, Staff Competencies & Risk Measuring mesaures	N.A
11.	Perception on effectiveness of current regulations			
	- Very Effective	Mutual Fund	Mutual Fund	Asset Backed Securities
	- Less effective	Structured Products	Structured Products	Structured Products
	- Not Effective	Asset Backed Securities	Credit Derivations	Hybrid Products
12.	Influence of current regulations to issue another new financial products (Overall)	Encourage to issue	Discourage to sell	Discourage to invest
13	Expectations on future regulations (Overall views)	Require an adjustment	Require an adjustment	Require an adjustment
14.	View on cross border supervision	Important	Important	Important

Appendix C

New Financial Products
End-period Notional Outstanding
Institution-wise

Rs.million

Product	Dec-06	Dec-07	Dec-08	Dec-09	Aug-10
Commercial Banks	**143.98**	**63,943.08**	**64,537.03**	**111,305.26**	**127,898.74**
Issuers	**72.98**	**142.87**	**46.83**	**3,105.66**	**3,089.29**
Structured Products	**72.98**	**142.87**	**46.83**	**435.66**	**829.29**
1.Forward Ex.PURCH CE	62.98	126.01	4.49	387.52	810.26
2.Forward EXCH SOLD COR-EXP	-	-	-	-	-
3.SWAPS	10.00	13.00	38.00	46.00	-
4.FX Options	-	3.85	4.35	2.15	19.03
Asset Backed Securities	**-**	**-**	**-**	**2,670.00**	**2,260.00**
Sellers	**-**	**56,696.99**	**55,104.68**	**92,780.26**	**91,989.03**
Structured Products	**-**	**56,696.99**	**55,104.68**	**92,780.26**	**91,989.03**
1.Forwards	-	53,904.74	48,286.37	84,056.30	79,417.72
2.Interest Rate SWAPS	-	2,741.00	5,442.00	7,647.05	11,494.62
3.Option Collar	-	-	1,362.00	1,076.70	1,076.70
4.Dual Currency Deposits	-	48.83	14.10	-	-
5.FX Link Deposit	-	2.43	0.21	0.21	-
Investors	**71.00**	**7,103.22**	**9,385.52**	**15,419.34**	**32,820.41**
Structured Products	**-**	**6,860.35**	**8,978.97**	**14,052.08**	**31,097.26**
1.Forward Contracts	-	6,841.06	8,288.14	11,175.70	28,425.18
2.Overnight Index SWAPS[a]	-	-	-	-	-
3.FX Options	-	-	678.00	-	-
4.IRS	-	19.29	12.84	2,876.38	2,672.08
Asset Backed Securities	**-**	**0.87**	**0.55**	**750.26**	**580.16**
Leased Back Trust Certificate	-	0.87	0.55	750.26	580.16
Bancassuarance	**71.00**	**242.00**	**406.00**	**617.00**	**1,143.00**
Non Bank Financial Institutions	**54,865.00**	**58,235.50**	**2,428.50**	**1,413.33**	**1,388.29**
Investors	**54,865.00**	**58,235.50**	**2,428.50**	**1,413.33**	**1,388.29**
Strucured Products	**54,865.00**	**57,898.00**	**2,241.00**	**651.93**	**683.14**
1.SWAPS	-	-	-	253.93	383.14
2.Others[b]	54,865.00	57,898.00	2,241.00	398.00	300.00
Hybrid Products	**-**	**-**	**-**	**686.40**	**686.40**
Convertible Debentures	-	-	-	686.40	686.40
Others	**-**	**337.50**	**187.50**	**75.00**	**18.75**
Securitization Balance	-	337.50	187.50	75.00	18.75
Grand Total	**55,008.98**	**122,178.58**	**66,965.53**	**112,718.60**	**129,287.03**

(a)The product is available only within the year.

(b) Includes the aggregated values of SWAPS, Daily Range SWAPS, Daily Range Approved & Target Approved Redemption Forward. Notional outstandindg values with breakdown of each product is not available.

Appendix D

Major Components of Structured Products
As a % of Total Structured products & Total Notional Outstanding

Product	Dec-07	Dec-08	Dec-09	Aug-10
Structured Products	**121,598.21**	**66,371.49**	**107,919.93**	**124,598.73**
1.Forwards	60,871.82	56,579.00	95,619.51	108,653.16
4.SWAPS	2,754.00	5,480.00	7,946.98	11,877.76
Grand Total	**122,178.58**	**66,965.53**	**112,718.60**	**129,287.03**
As a % of Total Structured products				
Forwards	50.06	85.25	88.60	87.20
SWAPS	2.26	8.26	7.36	9.53
As a % of Total Notional Outstanding				
Forwards	49.82	84.49	84.83	84.04
SWAPS	2.25	8.18	7.05	9.19

Note: Detailed breakdown of the Structured products for 2006 is not available

Appendix E

New Financial Products
End-period Notional Outstanding
Activity-wise

Rs.million

Product	Dec-06	Dec-07	Dec-08	Dec-09	Aug-10
Issuers	**72.98**	**142.87**	**46.83**	**3,105.66**	**3,089.29**
Structured Products	72.98	142.87	46.83	435.66	829.29
Asset Backed Securities	-	-	-	2,670.00	2,260.00
Sellers	**-**	**56,696.99**	**55,104.68**	**92,780.26**	**91,989.03**
Structured Products	-	56,696.99	55,104.68	92,780.26	91,989.03
Investors	**54,936.00**	**65,338.72**	**11,814.02**	**16,832.67**	**34,208.71**
Structured Products	54,865.00	64,758.35	11,219.97	14,704.01	31,780.40
Hybrid Products	-	-	-	686.40	686.40
Asset Backed Securities	-	0.87	0.55	750.26	580.16
Bancassuarance	71.00	242.00	406.00	617.00	1,143.00
Others(a)	-	337.50	187.50	75.00	18.75

(a) Includes the aggregated values of SWAPS, Daily Range SWAPS, Daily Range Approved & Target Approved Redemption Forward. Notional ourstanding values with breakdown of each product is not available.

Chapter 9

NEW FINANCIAL PRODUCTS AND CHALLENGES FOR CENTRAL BANK

By
Wei-Sheng Chiu[1]

1. Introduction

1.1 General Motivation of Study

The rising defaults on sub-prime mortgages between 2008 and 2009 in the U.S. triggered the global financial crisis. This not only resulted in significant amount of losses for many American and European financial institutions but also seriously undermined the global financial system. However, this global financial crisis was caused by many derivative products and new financial products. It prompted financial authorities in all economies to reexamine the impact of derivatives and new financial products on the financial stability and implement more strict regulation and supervision.

Although the financial institutions in Chinese Taipei were not seriously affected during this financial crisis comparing to those in American and Europe, the huge sale of Lehman Brothers-related new financial products has led to serious damage that eroded people's confidence in the financial institutions and created many social issues. The Central Bank, Chinese Taipei, hereinafter referred to as CBC, is the highest authority for monitoring the foreign exchange derivatives, new foreign exchange financial products and the financial institutions. The CBC was convicted that the derivative and new financial products can severely affect the social stability and financial system of the economy. As a result, the study and supervision of derivatives and new financial products has become the urgent issue for the central bank. Moreover, it is also the main motivation of this research.

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1.2 General Outline of Study

This research is mainly divided into five sections. The first section is the main motivation of the research. Section 2 mainly discusses the study of the CBC on new financial products and reviews the important literature. Section 3 introduces the profiles of the banking industry in Chinese Taipei and the derivatives and new financial products. Section 4 discusses the implications of the derivatives and new financial products to the financial stability. Finally, Section 5 describes the central bank's policies toward the derivatives and new financial products, and brings us to the conclusion of the research.

2. Review of Literature

2.1 Investigation and Study of CBC

In the past, the CBC has been the most aggressive unit to investigate and study the new financial products. Besides the regular statistics of the transaction volume and scope of derivatives and new financial products, it also publishes a newsletter to announce the market transaction of the derivatives and new financial products every month. Over the past years, the CBC has regularly announced the "Financial Stability Report" to propose the strategies for dealing with the impact of the new financial products. Since the global financial tsunami began, the CBC has proposed the "Global Financial Crisis Compilation" to analyse and study the role the new financial products played in the global financial crisis and the transaction monitoring systems and future supervision trends of the derivatives and new financial products.

2.2 Study of Relevant Literature

The "Issues of the Derivative Financial Products and Supervision Reform Recommendations" written by the Department of Financial Inspection of the CBC and the "Impact of the Derivative Financial Products on Global Financial Stability" written by the Department of Foreign Exchange of the CBC are the most important documents related to derivatives and new financial products in recent years.

The "Issues of the Derivative Financial Products and Supervision Reform Recommendations" mainly studied the relationship between the derivative financial products and the 2008 global financial crisis and the relationship between the credit derivatives and the systematic risk. Moreover, it also pointed out the issues between the derivative transaction and monitoring system and finally provided

the supervision trends and recommendations for the future derivative financial products.

The "Impact of the Derivative Financial Products on Global Financial Stability" conducted the analysis and provided recommendations for three cases including the bankruptcy of the Barings Bank caused by derivatives, the crisis of the Long-Term Capital Management (LTCM) and the factors that led to the significant amount of loss for the Societe Generale Bank. In addition to that, it also discussed the inadequacies of the financial supervision structure of some economies and provided the supervision trends and recommendations for future derivative financial products.

3. Profile of Derivatives and New Financial Products

3.1 Major Participants in New Financial Product Market of Chinese Taipei: General Situation of Banking Industry

The financial market is the market for financing funds. In a narrow sense, it refers to the money market or capital market. However, the market has been expanded to cover the bank lending and borrowing market, foreign exchange market and insurance market. With the innovation and development of the financial market, new financial products have been continuously introduced, which makes the derivatives market an important part of the financial market. The second part of this section will introduce and analyse the derivative and new financial product markets in Chinese Taipei. On the other hand, the banking industry is the major participant of the derivative and new financial product markets while the CBC is the administrative authority of the banks in Chinese Taipei. Indeed, the first part of this section will primarily introduce and analyse the current banking industry of Chinese Taipei.

At the end of 2010, there are 39 domestic banks and 28 foreign banks with 3,334 and 92 branches, respectively, in Chinese Taipei. The number of branches of domestic banks greatly exceeds the number of branches of foreign banks. In addition, in November 2010, the asset size of the banking industry of Chinese Taipei accounts for 242% of GDP and the loan balance of the domestic bank also accounts for 133% of GDP. This further indicates that the banking industry plays an important part in the economic and financial stability of Chinese Taipei.

The financial administrative authority of Chinese Taipei made aggressive efforts to prod the banks in handling their non-performing assets and strengthening their risk management and assisted the banks in removing bad debts, the structure

of the banking industry of Chinese Taipei was significantly enhanced. In October 2010, the capital adequacy ratio of the domestic banks reached 11.79% while the overdue loan ratio was reduced to 0.7% in November 2010. This shows that the negative impact of the global financial crisis on the banking industry of Chinese Taipei is significantly less than the negative impact on American and European banking industries.

3.2 Profile of Derivatives and New Financial Products of Chinese Taipei

3.2.1 Foreign Exchange Derivatives Account for 76.18% of Overall Transaction Volume (Turnover Amount)

Figure 1
2010 November Notional Amount Turnover of Derivatives by RiskUnit: Million NT Dollar (NTD)

Figure 1 **2010 November Notional Amount Turnover of Derivatives by Risk Unit: Million NT Dollar (NTD)**				
	Related to NTD	Foreign Currency	Total	Percentage (%)
Interest Rate	334,391	1,532,906	1,867,297	19.21
Foreign Exchange	3,593,342	3,811,715	7,405,057	76.18
Equity-linked	383,559	4,696	388,255	3.99
Commodity	1,072	45,542	46,614	0.48
Credit	-	13,753	13,753	0.14
Total	4,312,364	5,408,612	9,720,976	100.00

Source: The CBC

3.2.1.1 NT Dollar-related Derivative Financial Products Account for 44% of Overall Transaction Volume (Turnover Amount)

According to the statistical data of the CBC, the overall transaction volume of the derivative financial products in November 2010 in Chinese Taipei has reached to NTD 9.72 trillion (Figure 1). Among them, the volume of NTD-related derivative transactions is NTD 4.31 trillion which accounts for 44% of the overall transaction volume and volume of the foreign currency transaction is NTD 5.41 trillion which accounts for 56% of the overall transaction volume

(Figure 1). This indicates a slight difference in the transaction volume between NTD-related derivatives and foreign currency derivatives.

3.2.1.2 Transaction Volume of Both Foreign Exchange Rate and Interest Rate Derivatives Accounts for 95.39% of Overall Transaction Volume

Currently, the derivative financial products in Chinese Taipei are mainly divided into five categories including the interest rate, foreign exchange rate, equity-linked, commodity, and credit derivatives. Among them, the transaction volume of the foreign exchange rate derivatives is the largest. In November 2010, the transaction volume has reached to NTD 7.41 trillion, which accounts for 76.18% of the overall transaction volume (Figure 1). The next largest transaction volume is the interest rate derivatives. The transaction volume of NTD 1.87 trillion accounts for 19.21% of the overall transaction volume which is significantly less than the transaction volume of the foreign exchange rate derivatives (Figure 1). Based on the statistical data of the CBC, it is known that the transaction volume of the exchange rate and interest rate derivatives accounts for 95.39% of the overall transaction volume. However, the equity-linked, commodity and credit derivatives only accounts for 3.99%, 0.48% and 0.14%, respectively, of the overall transaction volume of the derivative financial products (Figure 1).

3.2.1.3 Transaction Volume of Domestic Banks Accounts for 72.35% of Overall Transaction Volume

Besides, the transaction volume of the derivative financial products of the domestic banks accounts for 72.35% of the overall transaction volume in November 2010 while the transaction volume of the foreign banks accounts for 27.65%. The five leading banks contributing to the transaction volume are Chinatrust, Mega International Commercial Bank, Bank SinoPac, Standard Chartered Bank and Taipei Fubon Bank accordingly. The total transaction volume of these 5 banks accounts for 40.72% of the overall volume.

3.2.2 Interest Rate Derivatives Account for 62.37% of Outstanding Amount

Figure 2
2010 September Notional Amount Outstanding of Derivatives by RiskUnit: Million NT Dollar (NTD)

Figure 2 2010 September Notional Amount Outstanding of Derivatives by Risk Unit: Million NT Dollar (NTD)				
	OTC	Exchange-traded	Total	Percentage (%)
Interest Rate	32,912,040	343,508	33,255,548	62.37
Foreign Exchange	19,875,011	-	19,875,011	37.27
Equity-linked	15,926	14,663	30,589	0.06
Commodity	72,201	698	72,899	0.14
Credit	85,013	-	85,013	0.16
Total	52,960,191	358,869	53,319,060	100.00

Source: The CBC

On the other hand, the outstanding volume of derivatives in Chinese Taipei has reached to NTD 53.32 trillion up to September 2010 in terms of the current amount (Figure 2). Among them, the volume of the interest rate derivatives is the largest at NTD 33.25 trillion which accounts for 62.37% of the total balance (Figure 2). The next is the exchange rate derivatives which has a volume of NTD 19.88 trillion and accounts for 37.27% of the total balance (Figure 2). The interest rate and exchange rate derivatives account for 99.64% of the overall volume of the derivative financial products.

It is noticeable that the transactions of the derivatives are often made through OTC market. This is also known as the off-market transaction. In September 2010, the balance of the OTC derivative transactions has amounted to NTD 52.96 trillion which accounts for 99.33% of the outstanding amount (Figure 2). However, the outstanding amount of the exchange-traded derivative transactions is only NTD 3,588 hundred million which accounts for less than 1% of the outstanding amount (Figure 2).

4. Implications of New Financial Products to Financial Stability in Chinese Taipei

4.1 Effect of Financial Tsunami on Financial Stability of Chinese Taipei

(1) Large-scale Fluctuation in Stock Market and NTD Exchange Rate of Chinese Taipei

The biggest effect of the 2008~2009 financial tsunami on the financial stability of Chinese Taipei lies mainly in causing large-scale fluctuation in the Chinese Taipei stock market and NT Dollar (NTD) exchange rate. Because the financial tsunami inflicted heavy losses on the global economy and on European and American financial institutions and resulted in a plunge of global stock markets, as a middle-sized export-oriented economy, the economy and stock market of Chinese Taipei were affected by the European and American economy. The financial tsunami not only hurt the export of Chinese Taipei severely, but also resulted in a substantial withdrawal of foreign capital and caused a plunge in the stock market.

The financial tsunami not only caused a plunge in the stock market, but it also impacted the stability of NTD exchange rate. During the financial tsunami, the withdrawal of foreign investments from the stock market and the huge depreciation of Korean Won (KRW) exchange rate exerted increased pressure on the depreciation of NTD exchange rate, NTD even depreciated to its price of 1997~1998 Asian financial crisis. The financial tsunami not only affected the economy of Chinese Taipei seriously, but it also created a negative impact on financial stability.

(2) Profit of Some Financial Institutions Eroded Because of Investment in Overseas Financial Products

Although the impact of financial tsunami on the banks of Chinese Taipei was not as serious as on American and European banks, some banks were involved in investment of problematic overseas financial products and the dispute of wealth management business, which serious eroded their profitability. Some private banks faced loss of deposits and difficulty of capital funding, but as the CBC expanded repo & reverse repo transactions and the government carried out Full Guarantee Policy on Deposits, the tense situation was relieved. The global financial tsunami not only seriously affected the bank's profitability, but it also caused losses amounting to NTD 144.2 billion to the large insurance companies due to investment in problematic overseas financial products.

(3) Banks Sold Problematic Structured Notes to Society and Caused Disputes

Another aspect of the influence of financial tsunami on the financial stability of Chinese Taipei was that banks sold structured notes related to Lehman Brothers investment bank, but finally the bankruptcy of Lehman Brothers investment bank caused the investors of Chinese Taipei to lose everything they owned. The public began to doubt the professionalism and credibility of the banking industry. For this reason, the related financial supervisory authorities reviewed whether the banking industry was suitable to sell the complicatedly designed structured notes to unprofessional investors. After this event, the financial supervisory authorities of Chinese Taipei enhanced consumer protection and required that before selling any financial products, the banks must first let the customer know the potential risks and the possible maximum loss in the future.

4.2 Positive and Negative Impact of New Financial Products on Financial Stability

(1) Positive impact

The main reason why new financial products were launched into the financial market was that enterprises or financial institutions could use the new financial products as hedge tools. Because the fluctuation of the global financial market increased and the products and structures of financial market became increasingly complex, new financial products for hedging purpose developed rapidly and took an increasingly important position in the financial market.

(2) Negative impact

Although the new financial products were originally used to help enterprises or financial institutions to hedge the market risk, in recent years many people transacted in the new financial products for speculation, which twisted the original purpose to develop the new financial products. For such reason, the new financial products brought many major shocks to the global financial market in recent years, and even became the main reason for the global financial storm in 2008. Another factor why the new financial products have a huge destructive power on the financial markets is that the existing financial supervisory systems in all the economies cannot effectively supervise the new financial products, thus resulting in the occurrence of financial crisis. From the financial crisis in 2008, it has been known that new financial products have brought major challenges to the current financial supervision systems.

4.2.1 New OTC Financial Products Brought Challenges to Supervisory Systems

(1) The external characteristics of new OTC financial product transactions reduced the effect of the traditional supervisory methods based on balance sheet which uses the capital requirements as tools.

Traditionally, the bank supervisory authorities used the capital requirements as tools to ensure that the bank have enough capital to respond to the possible risks, to prevent any impact on the financial system, and to create a fair competitive environment for banks; the capital requirement often regulates a minimum standard based on a certain ratio of the balance sheet. As new OTC financial product transactions are not included in the balance sheet, banks dealt in new OTC financial product transactions on a large scale, so that the capital requirements which are based on a certain ratio of the balance sheet lose effect. Take the largest commercial bank in US, the JP Morgan Chase Bank, as an example. Towards the end of June 2010, its overall asset was US$1,570 billion but the new OTC financial products it held amounted to US$ 75,000 billion.

Because many positions of the new OTC financial products in the financial institutions are not supervised, such new financial products are exposed to a future potential risk, which may arise due to market changes (interest rate or exchange rate) or contract value change caused by change of counterparty's credit ranking. The longer the product maturity date, the higher the potential risk. Therefore, the new OTC financial products which had not been included in the balance sheet may generate tremendous risk in the future, and all such situations lack supervision. The external characteristics of new OTC financial products transaction reduced the effect of the traditional balance sheet based supervision which used the capital requirements as tools.

(2) The increasing complication of new OTC financial products and lack of generally acceptable pricing method made it difficult to measure and control risks.

In recent years, the trading volume of new OTC financial products grew rapidly and their complexity is also increasing day by day. The application of Cap, Floor and Swaption became more and more common. Other complicated new financial products, such as Structured Notes and Exotic Options, also increased at a rate higher than the market level. In face of such more complicated new financial products, the financial institutions often price them with their own pricing models, but as there are so many kinds of pricing models

whicht are difficult to understand, it became complicated to measure and control the risks. In addition, the increasing complexity will easily cause moral risks, motivating the financial institutions to produce false accounting statements, or even intentionally overestimating the book profit in order to attract more investment.

(3) The flexibility and customisation of products reduced the effect of the traditional supervision methods based on product.

A distinct characteristic of the market of new OTC financial products is that most of the products are designed according to private negotiation between the users and the traders, with large flexibility and customisation. Through different combinations of basic products such as bonds, forward contracts or options, one can customise totally different kinds of new OTC financial products. However, at present in many economies, the supervisory authorities for new financial products are structured in accordance with the product type. Since the flexible nature of OTC new financial products allows them to contain many basic products and span the jurisdiction of a lot of supervisory authorities, this reduced the effect of the supervisory framework based on the product.

(4) The generalisation of users brought difficulty to the supervisory method based on the financial institution.

Now the users of new OTC financial products become more and more generalised. Besides financial institutions, companies, governments and international organisations also use new financial products. There is a notable growth among non-financial institutions to use Interest Rate Swap and Currency Swap. Why so many organisations participate in the market of new OTC financial products? There are two main reasons: (1) The new financial products can satisfy the user's special requirements; and (2) The cash flow of new OTC financial products is quite different from new financial products sold at the exchange, and new OTC financial products do not require margin.

However, the generalisation of users in the OTC market also brought larger difficulties in supervision. The traditional supervisory framework in many economies takes institution as the supervision object to divide the supervision authority. For example, in the United States, the banking supervisory system is represented by the Federal Reserve Board, the securities supervisory system represented by the SEC, the insurance supervisory system is represented by state government insurance agency, which exercises the regulatory power respectively in its own industry. This supervision mode caused many blind spots,

for example, in the past, the Federal Reserve Board could not supervise non-banking financial institutions, but these financial institutions may make many transactions of new OTC financial products with banks, which increased the possibility of risk infection.

(5) Counterparty credit risk and trading concentration could result in the systematic risk of financial markets.

As the trading activities of OTC new financial products increased rapidly, another trend appeared – the trading concentrated among some large dealers. Taking the United States as an example, in June 2010, the new OTC financial products held by American commercial banks and trust companies amounted to US$223,376.2 billion, and the new OTC financial products held by the top 25 American commercial banks and trust companies was up to US$223,007.6 billion. In fact, the phenomenon of trading concentration is not difficult to understand, because all the market participants want to make OTC transactions with higher credit-ranking dealers in order to reduce the default risk. On the other hand, scale economy can also lead to increased trading concentration; the larger scale of the dealer is more likely to find a position to offset, thus further reducing the transaction costs.

Although the high concentration of OTC market can produce many benefits, it can also increase the possibility of systematic risks. Once the large financial institutions break the contract, the high concentration would make many other users involved, and then cause a fatal situation. In addition, because OTC products would not be traded in the public market, the price information is usually not transparent, so the users can not fully understand the risks when using specific new OTC financial products.

The increase in trading concentration would also increase the difficulty in supervision. A few large dealers face so many counterparties, and some of the transactions may be very minute and the supervisory authorities may not be able to perceive the risks in time. In the event that these traders break the contract, systematic risks will occur and pose a big problem to the supervisory authorities.

(6) Globalisation of OTC market makes the coordination of supervision policies increasingly difficult.

The market of new OTC financial products has undoubtedly become an important bridge to link the financial markets all over the world, but the financial

globalisation also brings difficulty for the supervisors. The financial statements and disclosure systems of different economies are very different and the risk assessments of new financial products may be different due to differences in the applied accounting systems. On the other hand, due to the lack of mutual communication and real-time information collection, the supervision policies become difficult to coordinate and it becomes more difficult to assess the risks of the new financial products.

4.2.3 Exchange Market Brought Challenges to Supervisory System

The formation of the global market, drive of scale economy, and improvement of technologies made it possible for international financial institutions to make transactions in different exchanges, where the investors can quickly enter or exit any market, and digitalisation and networking broke the membership-related limitation of tradition exchanges. The relationship between the different markets is becoming closer and closer, but it also exposed many regulatory problems. The systems of exchanges are different and this might cause information asymmetry and form blind spots in supervision. The event of the Barings Bank is a good example: if the Singapore Exchange and Osaka Securities Exchange could exchange information in time, the problem of the Barings Bank could be detected early. Therefore, given the globalisation of the financial market, the supervisory authority of each county should make transnational cooperation and coordinate information with one other.

On the other side, the international financial institutions often use the trading tools of the exchange to hedge the risk of new OTC financial products, so that a close relationship is established between new OTC financial products and the exchanges, which would often transfer the risk in OTC market to the exchanges.

4.3 Influence of Present Supervisory Policies and Statutes About New Financial Products on Financial Stability

4.3.1 Framework of Financial Supervision in Chinese Taipei

In the past, the Ministry of Finance (MOF) is the central supervisory authority for the financial system of Chinese Taipei and is responsible for the supervision of banking, securities, and insurance businesses, but because there is inadequate manpower for the MOF to make on-site inspection, the supervisory work was respectively undertaken by the MOF, CBC, and the Central Deposit Insurance Corporation (CDIC). In order to resolve the problem of unclear responsibilities among financial supervisory authorities and enhance the efficiency

of financial supervision, the MOF and CBC proposed the Improvement Scheme of Financial Supervision Management System to the Executive Yuan in November 1997, aiming to unify financial supervision. After several years of discussion and to respond to the supervision of Financial Holding Company, the top legislature of Chinese Taipei, the Legislative Yuan, passed the "Organic Act Establishing the Financial Supervisory Commission, Executive Yuan" on July 10, 2003, and accomplished the unification of financial supervision and inspection system of this economy. The establishment of the Financial Supervisory Commission (hereinafter referred to as FSC) on July 1, 2004, opened a new era for the unification of financial supervision. From then on, treasury and financial supervision were formally separated, and financial supervision and common financial inspection of financial institutions were formally transferred to the FSC; the CBC retained the financial inspection of special cases and projects.

4.3.2 Role of CBC in Financial Supervision

Although the financial supervision and common financial inspection of Chinese Taipei presently have been transferred to the FSC, the CBC can still make financial inspection of financial institutions for matters related to the business of the CBC (such as currency, credit, foreign exchange and payment & settlement services, and so on, in order to ensure the stability of the financial market. Foreign exchange management is the main work of the CBC, so supervision of new foreign exchange financial products is also a main responsibility of the CBC.

The financial supervisory work of the CBC consists mainly of five parts: licence issuance, establishment of laws and regulations, off-site monitoring, on-site inspection, and correction and sanction. The responsibilities of the CBC in financial supervision are highlighted below:

4.3.2.1 Licence Issuance

Banks' application for foreign exchange transactions or application for formation of offshore banking unit (OBU) are required to be approved by the CBC, which is responsible for issuing the designated foreign exchange (FX) banking licence or the designated OBU licence. Banks in Chinese Taipei must apply for such designated FX banking licence from the CBC, in order to engage in transactions related to new foreign exchange financial products.

4.3.2.2 Establishment of Laws and Regulations

At present, the main regulations used by the CBC to manage the new foreign exchange financial products are "Regulations Governing Foreign Exchange Business of Banking Enterprises" and "Directions for Banks Conducting Financial Derivatives Businesses". These two regulations stipulate the detailed rules on how the banking industry is to deal in new foreign exchange financial products, including the market trader's qualification, transaction rules, and which financial products require the approval of the supervisory authorities.

From January 2005, the CBC applied the Negative List to manage the new foreign exchange financial products (not related to NTD) of the banking industry, so that the banks could have a bigger space to engage in the business of new foreign exchange financial products. Even so, the CBC did not loosen the supervision of new financial products, but enhanced the regulations on **risk management** and **consumer protection** (Figure 3) governing the banks' transaction of new financial products.

Figure 3

Risk Management	(1) The name of each foreign exchange derivative business shall be stated specifically on the resolution from the board of directors of a domestic bank and the letter of authorisation provided by the head office (or regional head office) of a foreign bank, submitted to the CBC. The name of the business shall be consistent with the name of the business shown on the prospectus and compliance statement. (2) The responsible persons for foreign exchange derivatives (including financial and marketing staff) and the relevant managers shall meet the qualification requirements specified in the"Regulations Governing Foreign Exchange Business of Banking Enterprises" and the time, place and content of the seminars, licences, internships or actual experience of the relevant business must be stated specifically in order to ensure that professional credentials required for the business are met. (3) It is prohibited to use foreign exchange derivatives to varnish over or manipulate financial statements by, for example, deferring or concealing losses, falsely reporting earnings, recording earnings prematurely, or helping a customer defer or conceal losses, falsely

	report earnings, or recognise earnings prematurely. In option transactions, a bank shall take care to avoid using premiums (especially for long-term or extremely short-term options) to varnish over financial statements which then lead to impropriety.
Consumer Protection	(1) The Bank must formulate a "Know Your Customer" system and tracking and inspection chart, and shall achieve a good understanding of the customer's financial status, investment experience, investment needs, ability to withstand potential losses, as well as the suitability of a transaction involving foreign exchange derivatives. (2) Promotional material for foreign exchange derivatives shall be clear and fair, cannot mislead investors, and must make investors understand the risks associated with the products. The customer shall make a declaration that the bank has dispatched a specific individual to explain the product, and shall sign each prospectus as a confirmation. (3) The risk disclosure statement shall fully provide the nature and content of the risks associated with the products and the source and methods of reaching the return rate promised by the bank; if the term of the product exceeds one year, the return shall be stated in annualised rate of return, and an explanation of the greatest possible loss on the product and a table showing the analysis of possible losses and gains under different conditions shall be made. Protection measures provided to non-professional investors shall be strengthened, and the assumption of credit risk by the bank and structured deposits linked to derivatives not covered by deposit insurance shall be stated in the risk disclosure statement. (4) Banks should establish the product after-sale service measures. (5) Banks should have regular and irregular scheduled courses to educate the investors, but should not predict the trend of exchange rate and improperly promote financial products.

4.3.2.3 Off-site Monitoring

The CBC not only monitored the currency market and foreign exchange market, but also established the audit system to analyse and assess the capital adequacy, asset quality, law compliance, operation strategy and stability, profitability, and liquidity of the financial institutions. As for the new foreign exchange financial products, the CBC also requires banks to report the business volume of the new foreign exchange financial products every month, so that the CBC can master the risk exposure of the new foreign exchange financial products, making the process of financial supervision smooth. According to the Regulations Governing Foreign Exchange Business of Banking Enterprises, if a Non-deliverable Forward (NDF) is over US$5 million, the bank is required to notify the Department of Foreign Exchange of the CBC by telephone immediately. It is important to monitor the influence of the new foreign exchange financial products on the financial market at any time.

4.3.2.4 On-site Inspection

At present, the common financial inspection of the financial institutions of Chinese Taipei is under the charge of the FSC; if such inspection involves the business of the CBC, it is necessary to consult the CBC for its comment. However, according to the CBC Act, when necessary, the CBC can carry out financial inspection of the financial institutions that are engaged in the new foreign exchange financial products, in order to understand whether the financial institutions have any significant defaults doing the business.

4.3.2.5 Correction and Punishment

In the course of off-site monitoring or financial inspection if it is discovered that a bank violates the regulations of the CBC, the Central Bank can impose appropriate punishment according to the law. At present, if the financial institutions have defaults in their new foreign exchange financial product dealings, the CBC will ask for correction or impose punishment depending on the seriousness of the offence. In a slight case, it is necessary for the financial institution to work out an improvement plan. In a serious case, the banker involved may be asked to leave the bank and face a judicial investigation; the financial institution involved must also suspend the business related to the new financial products.

4.4 Cooperation Between CBC and Other Governmental Departments

Because the CBC no longer performs common financial inspection, the acquisition of information about financial supervision shall depend on contact, cooperation and information exchange with other financial supervisory authorities. The Financial Supervision Contact Group Meeting is an important platform for the CBC and other financial supervisory authorities to exchange supervision information.

According to the "Operation Rules for Businesses of FSC, Executive Yuan related to the Central Bank or Other Sectors" in order to establish a system to cooperate and contact with the FSC, CBC, Central Deposit Insurance Corporation or other authorities as for financial supervision, management, and inspection, the Financial Supervision Contact Group (hereinafter referred to as the Contact Group) was established, with responsibility to coordinate and deal in the following matters:

1. Significant financial systems and policies related to cross-agency business;
2. The operational crisis of financial institutions and significant events which may influence the stability of financial system, and emergent capital financing;
3. The settlement of the financial market and the reform of financial payment system; and
4. The information communication and sharing among different authorities.

The membership of the Contact Group comprises the FSC chairperson and two vice chairpersons, the deputy governor of the CBC, the director general of the Department of Financial Inspection of the CBC, the director general of the Bureau of Agricultural Finance, Council of Agriculture, Executive Yuan, the board chairman of Central Deposit Insurance Company, the director general of Banking Bureau of FSC, the director general of Securities and Futures Bureau of FSC, the director general of Insurance Bureau of FSC, and the director general of Financial Examination Bureau of FSC. In principle, the Contact Group meets once a month, during which the deputy governor of the CBC and the director general of the Department of Financial Inspection of the CBC can exchange ideas about financial stability with the FSC, Council of Agriculture, and Central Deposit Insurance Company. Therefore, although the CBC does not deal with common business inspection any more, it still achieves the goal of financial stability through the financial inspection of special cases and the contact group meeting to exchange information with other financial supervisory authorities.

4.5 Supervisory Cooperation between CBC and Other Central Banks

After the formation of the FSC, the CBC does not make on-site inspection of domestic bank's overseas branches any more. However, in order to respond to the international requirement of consolidated supervision and master the latest information and trend of international financial supervision, the CBC continues to contact and cooperate with foreign financial supervisory authorities for implementing the Core Principles for Effective Banking Supervision announced by the Basel Committee on Banking Supervision. The CBC pays close attention to the recent important financial reform plans of the US and UK, to keep abreast of the reform of the financial supervisory structure in the US and UK as well as the new regulations on new financial products.

In addition, the CBC is a member of the Conference of The South East Asian Central Banks (SEACEN), which consists of 17 Asia & Pacific central banks. Through the annual conference, the CBC interacts, communicates and often exchanges ideas about important international economic and financial subjects with the senior directors and governors of central banks of those economies which have no diplomatic relations with Chinese Taipei, Besides, the CBC maintains very close ties and establishes good relationship with the US Federal Reserve Board and the central banks of Japan, France, UK, Germany, Switzerland, and the Bank for International Settlements (BIS), and often exchanges financial supervision information and shares financial supervision experience with the main central banks in the world.

5. Central Bank Policies and Conclusions

Although new financial products brought significant challenges to the supervisory system, the CBC and other financial supervisory authorities gradually applied open policies on new financial products and did not loosen the supervision of new financial products at the same time. In addition, the supervision regulations are good and all financial supervisory authorities make good communication. Therefore, in our track record, the new financial products have not resulted in any financial crisis in Chinese Taipei, and the banking industry of Chinese Taipei experienced little damage during the global financial tsunami. Because the global financial crisis prompted all economies to strengthen the supervision regulations on new financial products, in the future, the central banks and financial supervisory authorities are expected to adopt the following principles in supervising the new financial products:

5.1 Establishment of Sound and Complete Regulations on New Financial Products to Respond to Market Changes

One contributory factor to the global financial crisis was that the financial supervisory authorities loosened the management of new financial products, did not establish sound and complete regulations and used multivariate financial supervision systems. In the future, all new financial products should receive consistent supervision and it is necessary to work out complete regulations and statutes. The above framework can be initially implemented in the exchange market. As for the OTC market, when the transaction scale reaches a certain threshold, such management method is also applicable. Second, it is necessary to let a single supervisory authority be responsible for supervising all the new financial products in a unified way, in order to avoid supervision arbitrage. On the other hand, the financial supervisory authorities must supervise the development of new financial products and their influence on the financial market at any time, modify the related supervision regulations and supervision methods in response to changes in the products and markets, in order for them to perform effective financial supervision.

In 2010, the US passed the 2010 Dodd/Frank Wall Street Reform and Consumer Protection Act, which took measures to adjust the financial supervisory framework according to the changes of the financial market. The Financial Stability Oversight Council was then founded to be responsible for supervising and dealing with related risks of financial stability, and the Federal Reserve Board has the authority to supervise the most complicated financial institutions, thus to thoroughly know the economic risks.

5.2 Introduce Customer Classification Management System and Complete Transaction Orders to Guarantee Investor's Rights

Because many new financial products are quite complicated and lack liquidity, they conceal many potential risks. The investor often invests in these complicated new financial products blindly to pursue high return but these complicated new financial products finally result in huge losses to the investor and cause social problems. In view of this, it is necessary to introduce the customer classification management system. In addition, it is necessary to further review and strengthen regulations on customer appropriateness, advertisement, description obligation, risk disclosure, and so on, in order to complete the transaction order and guarantee the customer's rights. At present, the regulations of Chinese Taipei classify the investors of new financial products into professional customers and common

customers for managing their transactions in new financial products and take stricter consumer protection measures for common customers. In the future, it will be regarded as an important principle of financial supervision to guarantee the investor's rights.

The US and UK financial reform in 2010 also regard "consumer protection" as the key. The Federal Reserve Board established the Consumer Financial Protection Bureau (CFPB), with the director of CFPB appointed by the president of the US and approved by the Senate. This bureau has the authority to establish the laws and regulations of the consumer protection related to banks and other financial institutions, and the consumer protection regulations scattered in many sectors are concentrated and strengthened in this bureau. The United Kingdom also established the Consumer Protection and Markets Authority (CPMA) that is independent of the Bank of England and is responsible for protecting consumers' rights and maintaining the order of the financial market.

5.3 Reinforce Market Infrastructure for New Financial Products

In order to effectively supervise the influence of new financial products on financial stability, in the future, all economies should reinforce the market infrastructure of new financial product transaction and promote the foundation of the Central Counterparty (CCP) with the purpose of reducing the credit risk of the counterparty and improving market transparency to resolve the financial information disclosure problems which have troubled the supervisory authorities for years.

The US financial reform in 2010, for the first time, widely managed the new financial product market, and required that new financial products be traded in exchanges and settled in a clearing house. The customised swap contact should be declared to the central database, so that the supervisory authority can know the current market situation; regulations established to guide the transaction capital, margin, declaration system, record maintenance and business instruction of new financial products; banks are to establish subsidiaries to specialise in the transaction of new high-risk financial products, and the banks can preserve interest rate swap, currency swap, gold and silver swap.

5.4 Correct Abnormal Salary Problem of Financial Institutions

From the experience of the 2008 financial tsunami, correcting the abnormal salary system of the financial institutions is an essential measure to prevent financial crisis. In recent years, America and Europe not only deregulated the

financial industry, they also vigorously advocated financial freedom and financial innovation. Therefore, all kinds of new financial products developed rapidly in the financial market and the financial institutions profited immensely by it. Driven by the abnormal salary system of financial institutions, the traders, product salesmen, and financial engineers in the financial institutions gradually forgot the financial risks of the new financial products and they pursued short-term returns in the trading of the new financial products. The following methods can be used to resolve this abnormal phenomenon.

The financial institution should not take the trader's performance in a gambling transaction as the basis of reward. The financial institution should create a bonus fund calculated based on a long-term return instead of a short-term return. In this system, the trader of a financial institution can earn a good reward due to the high return of his/her trading, but trader's bonus must be preserved in an **entrusted contract account** for a long period. If a trader causes his/her bank to suffer losses in the following years, his/her losses should be calculated in his/her entrusted contract account. Under such system, the bonus amount could be recovered or written off depending on the trader's long-term performance. As the entrusted contract account preserves the bonus for a longer time, the trader will think over the risk carefully in order to avoid losing his/her long-term income.

The salary problem can be resolved through another method: do not reward the bankers with money or stocks, but with the complicated securities they designed by themselves. If the bankers designed toxic securities, their rewards are also these toxic securities. In such method, if the bankers know that these products will finally erode their own bonus, they would be more careful to choose the investment targets.

The US financial reform in 2010 also proposed related measures to correct the abnormal salary problems of financial institution, for example: endow the stockholders of public-listed companies with unbinding vote to the salary and Golden Parachute[2] of high level directors, and endow SEC with the right to appoint board chairperson through stockholders; on the other hand, the UK government also considered regulations on the salary system of financial sectors in order to manage the abnormal salary of bankers in financial industry.

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2. The advantages endowed the high level management director when he or she signed the contract with the company (for example, if the director must leave his or her company as the company consolidates with others, he or she can get a fat profit.)

5.5 Improve Transparency of New Financial Product Transaction

The global financial crisis in 2008 demolished the mutual trust between banks and froze the liquidity of the financial system, mainly because the problem assets held by the counterparties of financial institutions could not be effectively valuated, and the financial market lacked information channels. Therefore, the financial supervisory authorities all over the world should enhance the transparency of new financial product transaction in the future, strengthen international cooperation and information exchange, have a more optimistic attitude to collect the price, trading amount, and other information about new financial products. In addition, the financial supervisory authorities should provide important information about the financial market to the general public in order to prevent liquidity problems.

5.6 Promote Reform of Credit Rating System

From the study of the causes of the 2008 global financial crisis, it was found that the reviewing standards of the lending institutions were too loose; the packing process of the structured products was complicated, even the professional investment institutions did not understand the risks; the credit-rating institutions rated so many such financial products as good (for example, about 80% the secondary mortgage structured products were regarded as high-level); and the investors entrusted the credit-rating institutions excessively but did not concern the risk characteristics of the financial products, performance of the target asset, market information, and so on. The credit-rating institution's bad rating is the important reason why the problematic structured products could be sold successfully. But no warning was given in advance before bubble developed in the housing market and could be reflected in the credit ratings in a timely way. Just after the financial situation deteriorated severely, the credit-rating institutions began lowering the credit ratings of these problematic structured products. For example, the three big credit-rating institutions adjusted totally the credit ratings of 145,899 structured products from July 1, 2007 to June 24, 2008, which further aggravated the market crisis and caused serious impact on the structured products.

Therefore, promoting the reform of the credit-rating system is an essential measure to prevent new financial products again from causing another financial crisis. The credit-rating institutions are required to provide fair and objective credit information and straighten their internal governing. In addition, the financial supervisory authorities can determine the correct rating standards, regularly announce accurate information about the credit-rating institution's default rate,

in order to supervise the credit-rating institutions and stimulate them to improve their credit rating quality through market constraint. On the other side, credit-rating information is only a facilitating tool and should not replace the careful thinking required in making an investment decision. The supervisory authorities and credit-rating institutions should educate investors, so that they can know the meaning and limitation of the credit-rating information and carefully analyse and evaluate its reliability and not blindly trust the credit-rating result.

Because inappropriate credit rating is one reason for the global financial crisis, the US also enacted the regulations on the credit-rating companies in the 2010 Dodd/Frank Wall Street Reform and Consumer Protection Act, which provides for the following:

1. Reform of the credit-rating industry and establishment of a standard official organisation to deal with the potential interest conflict of credit-rating companies.
2. Allowing investors to initiate judicial proceedings against the credit-rating company when it has significant faults.
3. Empowering the SEC to establish a new supervisory unit with the authority to inspect the credit-rating companies, make known important inspection results, and enforce punishment.
4. Authorising the SEC to write off the bad credit-rating institutions.
5. Reducing the regulations that require the use of the credit-rating result.

5.7 Strengthen Financial Supervision Cooperation between Economies

At present, the market of new financial products is a global one, so the financial problem of a single economy may extend to the global financial market through new financial products. Therefore, to supervise the market of new financial products, the supervisory authorities in all economies should strengthen their cooperation and enhance the exchange of information about the financial market and financial supervision, in order to prevent the new financial products from influencing negatively the global financial stability.

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