FINANCIAL **STABILITY REVIEW** No.21, September 2013

al System stability, monetary stability (headed cody, dynedy)

al system stability market risk, liquidity risk, operational op nous risk, credit risk, market risk, liquidity, risk, operational operations, stress testing, surgering, and a

1012 corporate governance, income financial system stability, mone, ards, corporate governance, income financial system stability, mone, ards, corporate governance, income and a system stability, mone, ards, corporate governance, income and a system stability, mone, ards, corporate governance, income and a system stability, mone, ards, corporate governance, income and a system stability, mone, ards, corporate governance, income and a system stability, mone, ards, corporate governance, income and a system stability, mone, ards, corporate governance, income and a system stability, mone, ards, corporate governance, income and a system stability, mone, ards, corporate governance, income and a system stability, mone, ards, corporate governance, income and a system stability, mone, ards, corporate governance, income and a system stability, mone, ards, corporate governance, income and a system stability, mone, ards, corporate governance, income and a system stability, mone, ards, corporate governance, income and a system stability, mone, ards, corporate governance, income and a system stability, mone, ards, corporate governance, income and a system stability, mone, ards, corporate governance, income and a system stability, mone, ards, corporate governance, income and a system stability, mone, ards, corporate governance, income and a system stability, mone, ards, corporate governance, income and a system stability, mone, ards, corporate governance, income and a system stability, mone, ards, corporate governance, income and a system stability, and a system ards, corporate governance, income and a system stability, and a system ards, corporate governance, income and a system stability, and a system ards, corporate governance, income and a system stability, and a

aron coordination or come not nisk, exogenous risk, credit risk, esolution, coordination or come and ogenous risk, exogenous risk, credit risk, esolution, contagion effect, endogenous risk, exogenous risk, contagion effect, endogenous risk, exogenous risk, exogenous risk, contagion effect, endogenous risk, exogenous risk, exogenous risk, credit risk, nic risk, contagion effect, endogenous risk, exogenous risk,

esolution and effect, enclosing soundness indicators, early warning incrist, contagion effect, enclosing soundness indicators, early warning incrist, contagion affect, enclosing soundness indicators, early warning

nic fisk, colluos anagement, tinanula, and standards, corporate governe, integration, resk management, tinanula, regulation and standards, corporate governe, integration, resultion, co.

crisis, currency crisis, but risk assessment, risk mitigation crisis, currency crisis, risk assessment, risk mitigation contraction of the contract of the con

cmail supervision crisis manage crisis, systemic risk, contagion effect, endogenous risk, exogenous risk, exog



financial soundn

Publisher:

Bank Indonesia

The preparation of the **Financial Stability Review (FSR)** is one of the avenues through which Bank Indonesia achieves its mission **"to safeguard the stability of the Indonesian Rupiah by maintaining monetary and financial system stability for sustainable national economic development"**.

FSR is published biannually with the objectives:

- To improve public insight in terms of understanding financial system stability.
- To evaluate potential risks to financial system stability.
- To analyze the developments of and issues within the financial system.
- To offer policy recommendations to promote and maintain financial system stability.

Information and Orders:

This edition is published in September 2013 and is based on data and information available as of June 2013, unless stated otherwise.

Source: Bank Indonesia, unless stated otherwise.

The PDF format is downloadable from: <u>http://www.bi.go.id</u> For inquiries, comments and feedback please contact:

Bank Indonesia Department of Macroprudential Policy JI.MH Thamrin No.2, Jakarta, Indonesia Email: DKMP@bi.go.id

Financial Stability Review

(No.21, September 2013)



Department of Macropudential Policy Group of Macroprudential Policy Assessment and Recommendation

Table of Contents

Table of Contents	iii
Foreword	vii
Overview	
Chapter 1. Financial System Stability	
Box 1.1. Tapering by the Federal Reserve	
Box 1.2. Analysis of the Credit Default Swap (CDS) Market in Indonesia	
Chapter 2. Resilience of the Corporate and Household Sectors	
2.1. The Corporate Sector	
2.2. Conditions in the Household Sector	
Box 2.1. Risk Control in the Property Sector	
Chapter 3. Financial System Resilience	
3.1. Risk In The Banking System	
3.2. Potential Financial Market Risk and Financing From Non-Bank Financial Institutions	
Box 3.1. Burgeoning Share of Foreign Currency Deposits in the Banking Industry	
Box 3.2. Macroprudential Instruments in Basel III	
Box 3.3. The Role of JIBOR in supporting Financial System Stability	
Box 3.4. OTC Derivative Market Reform	
Chapter 4. Strengthening Financial System Infrastructure	
4.1. Risk Mitigation and Liquidity Management	
4.2. Development of Payment Systems Transactions	
4.3. Payment Systems Development for Strengthening Financial Infrastructure	
Bab 5. Challenges to Financial System Stability Looking Ahead	
5.1. Challenges to Financial System Stability	
5.2. Impact on Payment Systems	
5.3. The Resilience of Banking Industry and Financial Systems Prospects	
Article	
Article 1 Level of Competition and Efficiency at Commercial Banks and Rural Banks on the	e Microfinance
Ividiket in Indonesia	
Article 2 Branchiess Banking to underpin Financial System Stability and Inclusive Economic	L IU/
Affice 3 identifying indicators of the Countercyclical Capital Butter	

List of Tables and Figures

Tables

1.1.	Number of Financial Institutions	9
Box Ta	ble 1.1.1 Employment Profile of the United States	11
Box Ta	ble 1.2.1 Results of the Regression Analysis	14
Box Ta	ble 1.2.2 A Comparison of CDS Prices in Indonesia	
	and the Region	15
2.1.	Corporate Probability of Default by Economic	
	Sector	21
2.2.	Credit Facilities extended to the Corporate Sector	
	by Type	21
2.3.	Credit Disbursed to Corporations by Economic	
	Sector	22
Box Ta	ble 2.1.1 Borrowers with more than One Credit	
	Facility	25
Box Ta	ble 2.1.2 Number of Borrowers with more then	
	One Mortgage	26
Box Ta	ble 2.1.3 Maximum LTV/FTV by type of Credit/	
	Financing or Collateral	28
2.4		
3.1.	Nominal Growth of Credit Collectability by	~ 4
	Economic Sector	34
3.2.	LDR at Commercial Banks	35
3.3.	Composition of Bank Liquid Assets	36
3.4.	Profit and Loss of the Banking Industry	37
3.5.	Profitability and Credit Performance by bank Group	38
3.6.	Average Prime Lending Rates in the Banking	
	Industry (%)	39
3.7.	Distribution of CAR by Individual Bank	40
3.8.	Bank Capital by Bank Group	41
3.9.	Ratio of Credit Quality to Total Credit	45
3.10.	Composition of Bank Funding and Financing	45
3.11.	Composition of Securities on the Capital Market	48
3.12.	Financial Indicators of Finance Companies	51
3.13.	Total Financing and NPL by Financing Type	51
3.14.	Performance of Ten Insurers Listed with the Indonesia	
	Central Securities Depository (KSEI)I	52
3.15.	Insurance Profile	52
Box Ta	ble 3.1.1	54
E 4		0.0
5.1.	Global Economic Growth Projections	80
5.Z.	CAK Delta after Stress Tests	82

Figures

1 1	Aggregated Financial System Stability Index	7
1.1.	Vield Spread of Government Bonds	י 2
1.Z. 1.2	Five Day Velatility of IDX Composite	0
1.5.	Five-Day Volatility OFIDA Composite	0
1.4.	Market Liquidity Risk	ð
1.5	Asset Composition of Financial Institutions	9
Box Fig	gure 1.1.1 Share Indices Pre and Post Tapering	
	Policy	10
Box Fig	gure 1.1.2 Exchange Rates in a number of Countries	5
	Pre and Post Tapering Policy	10
Box Fig	gure 1.1.3 Inflasi Amerika Serikat: Persentase	
	Perubahan CPI YoY	11
Box Fig	gure 1.1.4. Total Mortgages (millions of USD)	
Doxing	and Mortgage Rates (%)	17
Roy Ei	gure 1.2.1 Comparison of CDS Prices in Indonesia	12
DOVIN	and the Degion	1 /
	and the Region	14
2.4		20
Z.I.	Actual and Projected Corporate Sector WNB .	20
2.2.	ROA and ROE of Non-Financial Public Listed Firms	20
2.3.	DER and TL/TA of Non-Financial Public Listed Firms	20
2.4.	Key Indicators of Corporate Financial Performance	21
2.5.	Consumer Confidence Index (CCI)	23
2.6.	Price Expectations Index for upcoming Six Months	23
2.7.	Performance and NPL of Household Credit	23
2.8.	Composition of Household Credit by Loan Type	23
2.9.	Performance of Household Credit by Loan Type	24
2 10	Performance of Household Non-Performing Loan	s
	hy Loan Type	24
3 1	Credit Growth by Currency	31
2.1.	Credit Funding by Currency	21
J.Z.	Credit Crowth by Type	21
5.5. 5.4		22
3.4. 2.5	Credit Growth by Economic Sector	32
3.5.	Non-Performing Loans (NPL)	32
3.6.	GDP and NPL Cycles	33
3.7.	Credit Collectability and NPL	33
3.8.	Credit Quality and NPL	33
3.9.	Ratio of Credit Quality to Total Credit	33
3.10.	Composition of Bank Funding and Financing .	34
3.11.	Deposit Growth by Semester	35
3.12.	Nominal Delta of Deposit Growth based on	
	Ownership	35
3 1 3	Composition of Term Deposits based on Tenor	35
3 14	Composition of Bank Liquid Assets	36
2.14.	Share of Bank Placements hold at Bank Indonesia	36
כו.כ. כוב	Share of Liquid Accets	טכ דכ
סו.כ. כייכ	Share of Liquid Assets	ן כ רכ
3.17.	Composition of Bank Profit/Loss	37

Figures

3.18.	Composition of Interest Income in the Banking	20
2.40	Industry (%)	38
3.19.	Rupiah Interest Rate Spread at Banks	38
3.20.	Bank Return on Assets and BOPO Efficiency Ratio)
2.24	(%)	38
3.21.	Components of Bank Capital	40
3.22.	Banking Industry CAR	40
3.23.	CAR by Bank Group	40
3.24.	Financial Market Stability Map	42
3.25.	Flows Non Residen : Saham, SBN, SBI	43
3.26.	Volatility on the Rupiah Interbank Money Market (PUAB)	: 43
3.27.	Volatility on the Interbank Foreign Exchange	
	Market (PUAB)	43
3.28.	Yield Curve SUN	44
3.29.	Volatility of SUN FR Benchmark	44
3.30.	VaR SUN by Period?	45
3.31.	The movement of Yield SUN or The Yield of	
	SUN Trends	45
3.32.	SUN Maturity Profile	45
3.33.	IDX Composite and Global Share Price Indices	46
3.34.	IDX Composite by Sector	46
3.35.	Share Price Volatility in Banking Sector	46
3.36	Regional and Global Stock Market Volatility	47
3.37.	Performance of Mutual Funds	47
3.38.	Mutual Fund Activity	47
3.39.	Credit Financing and the Capital Market	49
3.40.	Issuances of Securities through the Capital	
	Market	49
3.41.	Performance of Finance Companies	49
3.42.	Share of Finance Company Financing	50
3.43.	Sources of Funds of Finance Companies	50
3.44.	Investment Composition of Ten Public Listed	
	Insurers	53
3.45.	Market Share of the Ten Public Listed Insurers	52
Box Fi	gure 3.1.1 Composition of Additional Rupiah	
	and Foreign Currency Deposits	53
Box Fi	gure 3.1.2 Performance of Foreign Currency	
	Deposits	53
Box Fi	gure 3.1.3 Performance of Deposits in August	
	2013	53
Box Fi	gure 3.3.1 IDR JIBOR Performance	59
Box Fi	gure 3.3.2 USD JIBOR Performance	59
Box Fi	gure 3.3.3 BI Rate, PUAB and Rupiah JIBOR	59
Box Fi	gure 3.3.4 JIBOR Spread and Rupiah PUAB	59
Box Fi	gure 3.3.5 Spread of 3-Month LIBOR and OIS .	60

Figures

Box Fig Box Fig	gure 3.3.6 gure 3.4.1 OTC Derivative Counterparty Linkages	60 63
4.1.	BI-RTGS Transactions	71
4.Z.	BI-SSSS IIdlisdCliOlis	/ 1
4.5.	(BL-NCS) Transactions	71
4.4.	ATM/Debit Card Transactions	72
4.5.	Credit Card Transactions	72
4.6.	Electronic Money Transactions	72
5.1.	Stress Testing on Credit Risk	83
5.2.	Rupiah Maturity Profile	83
5.3.	Stress Testing on Interest Rate	84
5.4.	Stress Testing on lower Government Bond	84
5.5.	Net Open Position by Bank Group	85
5.6.	Stress Testing on Rupiah Depreciation	85
5.7.	Stress Testing by Bank Group	85
5.8.	Credit Growth (%, yoy)	86
5.9.	NPL Growth (%)	86
5.10.	Deposit Growth (%, yoy)	86

ADB	Asian Development Bank
AEC	Asean Economic Community
ASEAN	Association of Southeast Asian Nations
Bapepam- LK	Capital market and Financial Institution
	Supervisory Board
BCBS	Basel Committee on Banking Supervisory
BEI	Indonesia Stock Exchange
BIS	Bank for International Settlement
BNM	Bank Negara Malaysia
BPD	Regional Banks
bps	basis points
BRC	BPD Regional Champion
BRIC	Brazil, Rusia, India, dan China
CAR	Capital Adequacy Ratio
сс	Code of Conduct
ССР	Central Counter Parties
CDS	Credit Default Swap
CPI	Consumer Price Index
CRA	Credit Rating Agency
CRBC	China Banking Regulations Commissions
DER	Debt to Equity Ratio
EFSF	European Financial Stability Facility
ETF	Exchange-Traded Fund
EU	European Union
FASB	Financial Accounting Standard Board
FDI	Foreign Direct Investment
FSA	Financial Service Authority
FSAP	Financial Sector Assessment Program
FSB	Financial Supervisory Board
FSI	Financial Stability Index
G20	The Group of Twenty
GDP	Gross Domestic Product
GIM	Indonesian Saving Movement
G-SIFI	Global Systemically Important Financial
	Institutions
IAIS	International Association of Insurance
	Supervisor
IASB	International Accounting Standard Board
IDMA	Inter-dealer Market Association
IMF	International Monetary Fund
IOSCO	International Organization of Securities
	Commissions
IHSG/JSX	Jakarta Stock Exchange Index
Composite	
JPSK	Financial System Safety Net
LBU	Commercial Bank Report
LC	Letter of Credit
	Loan to Deposit Ratio
MSM	Micro Small and Medium Credit

NII	Net Interest Income
NIM	Net Interest Margin
NOP	Net Open Position
NPF	Non Performing Financing
NPL	Non Performing Loan
OER	Operational Efficiency Ratio
OPEC	Organization of the Petroleum Exporting
	Countries
отс	Over the Counter
PBI	Bank Indonesia Regulation
PD	Probability of Default
PIIGS	Portugal, Ireland, Italy, Greece and Spain
PMK BI	Bank Indonesia's Crisis Management
	Protocol
PUAB	Interbank Money Market
ROA	Return on Asset
ROE	Return on Equity
SBI	Bank Indonesia Certificates
SBN	Government Securities
SIFI	Systemically Important Financial Institutions
SSB	Securities
SUN	Government Bonds
TL/TA	Total Loss to Total Asset Ratio
US	United States of America
UU	Act

Foreword

We give thanks and praise to Lord God Almighty for completion of the Financial Stability Review (FSR) No. 21, September 2013. Amid a global economic downturn and planned tapering of the monetary stimulus program in the United States by the Federal Reserve, this edition of the Financial Stability Review, which contains an assessment of financial system conditions in Indonesia, is pertinent to understand how well the financial system in Indonesia can survive the prevailing shocks and dynamics. The Financial Stability Review is also expected to provide an input for policymakers and economic players in terms of managing economic stability in order to preserve sustainable economic growth in Indonesia.

Banking industry stability is the leading factor supporting financial sector resilience in the Republic of Indonesia. Maintaining banking industry stability is inextricably bolstered by a high capital adequacy ratio, which achieved 17.98% at the end of June 2013. The solid capital adequacy ratio achieved domestically enables the banking sector to confront and overcome shocks attributable to various forms of risk, including credit risk, exchange rate risk, interest rate risk and liquidity risk. Such indicators show that financial system stability in Indonesia was well maintained during the reporting semester.

In general, average liquidity in the banking industry during the first half of the year was deemed adequate, despite liquidity management at several banks requiring observation due to their respective funding structure. Imbalances in the funding structure, coupled with a slowdown in deposit growth and a decrease in liquid assets, caused a number of large banks to raise their interest rates, especially for large depositors. Despite a decline, the current position of bank liquid assets remains adequate to anticipate the potential risk of sudden withdrawals for the upcoming few periods.

On the other hand, the markets, particularly the foreign exchange market, experienced mounting pressures that lead to rupiah depreciation. Although market risk pressures remain relatively limited, the banking industry is urged to exercise prudence in managing its sources of funding for foreign currency credit and remain vigilant of potential losses resulting from an increase in the yield of tradeable government securities (SBN), particularly at banks with a large portfolio of SBN.

Meanwhile, credit risk remained low and under control. Nevertheless, Bank Indonesia still took a number of measures to maintain stability and strengthen financial system resilience through macroprudential policy refinements. This policy includes, among others, introducing loan-to-value (LTV) policy and adjusting the reserve requirement for secondary reserves, which is linked to the value of the loan-to-deposit ratio.

In line with the transfer of the banking supervision function from Bank Indonesia to the Financial Services Authority (OJK), Bank Indonesia continues to coordinate and cooperate closely with OJK to ensure the uninterrupted implementation of the tasks, function and authority of each respective institution during the handover of microprudential supervision on 31st December 2013 and thereafter. Furthermore, Bank Indonesia also plays an active role in the Financial System Stability Coordination Forum (FSSCF), comprised of the Minister of Finance, the Governor of Bank Indonesia, the Chairman of the Board of Commissioners of the Financial Services Authority (OJK) and the Chairman of the Deposit Insurance Corporation (LPS), in order to support financial system stability.

In closing this foreword, we sincerely hope that this edition of the Financial Stability Review (No. 21, September 2013) is utilised as a reference to analyse the performance, risks and prospects of the financial system in Indonesia looking ahead. We remain open to suggestions, comments and constructive criticisms from all stakeholders in order that we might further improve future editions of the Financial Stability Review. Thank you.

Jakarta, September 2013 GOVERNOR OF BANK INDONESIA

Agus D. W. Martowardojo

Overview

This page intentionally blank

Overview

In general, financial sector resilience in Indonesia was well maintained during the first semester of 2013 despite a moderate escalation in risk in the form of pressures on financial markets towards the end of the semester, as reflected by the Financial System Stability Index. Meanwhile, the banking industry continued to play a critical role in the financial system of Indonesia with a market share amounting to 77.9%, slightly decrease on the 78.3% noted in semester II-2012. The banking industry's dominance over the financial system in Indonesia ensures that the institutional stability of the banking sector is crucial when assessing the financial system as a whole.

Conditions in the corporate and household sectors continued to improve. Corporate financial performance improved on the previous year, evidenced by gains in profitability. Furthermore, the majority of bank credit to the corporate sector was extended in the form of working capital and investment. In line with greater business expansion, the business situation is expected to pick up and become increasingly favourable over the upcoming six months. Meanwhile, household credit continued to grow albeit at a slower pace over the past few months.

Banking sector performance improved during the first semester of the current year. Taken holistically, the banking industry successfully implemented its intermediation function and maintained credit risk at a low level along with liquidity risk at a safe level. Additionally, bank capital was held in excess of the minimum threshold according to risk profile. Notwithstanding, bank efficiency decreased slightly, as indicated by a moderate increase in the BOPO efficiency ratio compared to the previous semester.

The domestic stock market noted a marked improvement in performance in line with other regional bourses. Performance gains were demonstrated by a rally on the IDX Composite, achieving the highest level in the history of the index in May 2013, which precipitated strong performance of mutual funds that are dominated by equity funds.

Robust performance in the banking sector was also inextricably linked to the support of a sound, efficient and secure payment systems. Payment system reliability was bolstered by unrelenting efforts from Bank Indonesia to mitigate risk in the form of system development and enhancement as well as payment system policymaking.

Looking ahead, global economic growth is expected to slow in the second semester of 2013 and remain shrouded by widespread uncertainty as a result of the postponed tapering of quantitative easing in the United States. Consequently, economic growth in Indonesia will also experience a slowdown and is also facedwith a high rate of inflation. Although external imbalances have the potential to disrupt bank resilience, conditions are expected to remain sound during the second semester with strong domestic growth forecast and vigilance required of potential credit risk and market risk. Stress tests revealed that banks will continue to absorb their exposure to credit and market risk as a result of adequate capital. This page intentionally blank

Chapter 1 Financial System Stability

This page intentionally blank

Chapter 1 Financial System Stability

The resilience of the financial sector in Indonesia during the first semester of 2013 was relatively well maintained despite escalating risk in the form of pressures on financial markets at the end of the semester. The issue of tapering, widespread uncertainty concerning the global economic recovery and the domestic current account deficit all led to mounting potential credit risk, liquidity risk and market risk. Although risk overall remained under control, such conditions require continued monitored? in order to ensure financial system stability looking ahead.

Pressures on financial markets intensified towards the end of semester I-2013, however, well maintained stability at financial institutions helpedlimit the impact of such pressure. The build up of pressure in semester I-2013 was clearly reflected by the Financial System Stability Index (FSSI). Based on a recent review, although the Financial System Stability Index remained normal during the reporting semester, index performance required close monitoring in August 2013.

Disaggregating the Financial System Stability Index (FSSI) demonstrates that the spike in the index





Source:Bank Indonesia

was triggered by pressures on financial markets, while conditions at financial institutions remained normal. Pressures on financial markets were exacerbated by the tapering policy of the US Federal Reserve Bank, which manifest as rupiah depreciation against the US dollar. The issue of tapering is explained in more detail in Box 1.1. Meanwhile, pressures also mounted on the bond market (bond yield) as well as the stock market (IDX Composite) and liquidity risk intensified on the interbank money market.

Foreign investors interpreted the move by the Fed towards tapering as US efforts to begin reducing the economic stimuli taken to expedite a US recovery through the purchase of US Government Bonds. The signals were understood by global investors as signs that the Fed believed the US economy was improving, thereby persuading investors to return to currency and portfolio denominated in US dollars at the expense of maintaining portfolio in emerging markets like Indonesia. This move by global investors spurred greater volatility in terms of the rupiah exchange rate, the stock market

Chapter 1. Financial System Stability

index and yield of government bonds, thus intensifying pressure on financial markets. Consequently, stock market performance slumped. Subsequent to peaking on 20th May 2013 at a level of 5,214.98, up 20.81% (ytd), the IDX Composite slid to 4,082.73 at the end of August 2013 and slashed the return by -4.79% (ytd). The exchange rate depreciated up to the end of August 2013 by as much as 13.16% (ytd). Government bonds dominated the bond market, experiencing a steady increase in yield since May 2013. Several market indicators representing pressure on financial markets are illustrated in the following graphs.

Figure 1.2 Yield Spread of Government Bonds



Source:: Bloomberg processed



Source: Bloomberg processed



Source: Bank Indonesia

The issue of tapering was not the only determinant of pressure on financial markets in Indonesia. A persistent current account deficit, stemming from a slowdown in exports coupled with doggedly high imports, soaring inflation as a result of food price shocks, fuel subsidy reductions by the Government as well as expectations of a domestic economic downturn undermined foreign investor confidence in the economy of Indonesia.

Pressures on financial markets were further reflected by the price performance of Credit Default Swaps (CDS). Referring to Box 1.2, as pressures intensified on domestic financial markets, the price of CDS in Indonesia was the highest amongst six neighbouring countries in Asia.

Overall, the banking industry continues to play a significant? role in the financial system of Indonesia. The share of the banking industry amounted to 77.9% in semester I-2013, which represents a moderate contraction compared to that reported in the previous semester at 78.3%. The decreasing share of the banking industry primarily due to the increase of the burgeoning assets of non-bank financial institutions, such as finance companies, insurers, capital venture firms and pawnbrokers. The expanding share of finance companies was due, among others, to tenaciously strong public demand for automotive loans underwritten by such firms. Looking forward, the role of non-bank financial institutions is expected to expand in Indonesia

through efforts towards financial deepening along with greater public interest in financial products that are not banking products. The increase in business activity by other financial institutions and banks as well as the corresponding linkages requires close monitoring in the context of systemic risk. The relatively large assets of banks as well as their linkages to other financial institutions like finance companies must adhere to high levels of prudence.

Figure 1.5 Asset Composition of Financial Institutions



Table 1.1 Number of Financial Institutions

Asset Composition of Financial Institutions *) data as per June 2013 unless otherwise stated

Financial Institution	Number of Financial Institutions Banks
Banks	120
Rural Banks	1,640
Insurers ¹	139
Pension Funds ¹	268
Finance Companies	197
Capital Venture Firms ²	89
Guarantors ¹	7
Investment Managers ³	73
Pawnbrokers ⁴	1

¹ as per March 2013

² as per February 2013

³ as per December 2013

⁴ as per May 2013

Source: Bank Indonesia and the Financial Services Authority

To a survey conducted by the Financial Stability Board (FSB) [FSB 2012], Bank Indonesia provided data and information concerning conditions in Indonesia despite relatively little exposure of the Indonesian financial system to shadow banking compared to other G-20 members. According to the survey, however, linkages between shadow banking and the banking system in Indonesia are strong, as reflected by the dependence of traditional banks on shadow banking¹ as a source of funds coupled with widespread domestic bank placements at shadow banking entities.

The dominance of the bankings in the Indonesian financial systems caused stability of the banking institution become crucial in the financial system stability as a whole.

FSB identifies shadow banking as credit intermediation that involves entities and activities external to the traditional banking system (Financial Stability Board 2012) "Global Shadow Banking Monitoring Report 2012", November 2012.

Box 1.1 Tapering by the Federal Reserve

Departing from the calculations and expectations of most financial market observers, economists and economic agents, the Federal Reserve (the Fed) took the surprising decision to continue its unconventional monetary policy (postpone tapering policy) of quantitative easing (QE1, 2 and 3) in order to bolster the economic recovery and financial market stability in the wake of the subprime mortgage debacle in 2008. According to QE3, the Fed purchases US securities to the tune of USD 85 billion per month, consisting of USD 45 billion on US Treasury Bills and USD 40 billion on Mortgage Backed Securities. A positive response to the decision was felt on all financial markets in emerging countries with strong gains in stock, bonds and currency in affected countries. Looking ahead, global expectations are that the Fed will taper off its unconventional monetary policy beginning in December of this year and concluding sometime in the middle of 2014.

Box Figure 1.1.1 Share Indices Pre and Post Tapering Policy



Source:: Bloomberg Database

Current analysis, research and discussions conclude that the Fed will decide upon tapering off at the Federal Open Market Committee (FOMC) this upcoming September by reducing purchases to around USD 10-15 billion per month. This conclusion was reached after the shock announcement of Fed Chairman, Ben Bernanke, on 22nd May 2013 that the Fed will consider tapering off quantitative easing if a number of macroeconomic indicators show signs of improvement. The direct impact of this announcement triggered a variety of pressures and adverse reactions on nearly all international financial markets, including stock markets and exchange rates, particularly in emerging economies. The yield of 10-year US Treasury Bills increased (prices decreased) by 100 bps.



Box Figure 1.1.2

Note: the exchange rates of several currencies in the table above are presented on a scale to aid visualisation. The rupiah is presented in thousands of rupiah per US dollar, while the Malaysian ringgit is displayed in ringgit per USD 10. Source: Bloomberg Database

The anticlimactic decision taken by the Fed put an end to a series of market shocks in emerging market countries after Bernanke's announcement last May. A bathos of anticipation for tapering policy emerged from global financial investors who seemed to compete with one another to transfer their investments to higher yield instruments. Fundamentally, the investment reversal (outflow) can be understood as part of the investment fund repatriation strategy after implementation of quantitative easing (QE), which inflated the Fed's balance sheet to USD 3.7 trillion, with a portion flowing to emerging markets. The Economic Times estimates that approximately 35% of QE is invested outside of the US economy.

A pessimistically dovish tone concerning US economic fundamentals and the performance of the Fed was set by the official announcement of the FOMC at the subsequent press conference as follows:

Economic Fundamentals:

The Fed remains apparently in doubt regarding the sustainability of the US economic recovery. Job availability has not recovered as hoped, particularly during the past year since the introduction of QE3. Economic growth in the US remains relatively constrained, accompanied by a low rate of inflation. A section of analysts consider the macroeconomic projections made by the Fed to merely be hawkish estimates. In response, the Fed revised down its projections for GDP in 2013 to 1.8-2.4% from 2.0-2.6%; GDP 2014 down to 2.2-3.3% from 3.3-3.6%; inflation in 2013 will be below 1.2% and rise slowly to 2% in 2016. Unemployment has experienced a significant decline compared to during the crisis period (10%) to a level of 7.3%, which remains



Sumber: IFS, IMF

well above the initial target of 5.5% however. Similarly, growth in job availability is still very slow at just 0.54% (yoy), which has been accompanied by a decline in the level of participation over the past ten years. Such circumstances indicate that: (i) there is a problem with new labour absorption; and (ii) there are limitations on the level of economic growth that can be achieved by the United States (Box Table 1.1.1).

- The Fed has also been concerned over an escalation in financial market risk shocks(financial instability), domestically and globally, during the past few months as well as rising interest rates in the US property and financial sectors.
- The heated fiscal debate between the Government and Congress at the end of September 2013

Box Table 1.1.1 Employment Profile of the United States

Measure of Employment	M8 Persons in 2012		Actual V	Growth			
	(in thousands)	Rate 2008 M6	Rate 2012 M8	Rate 2013 M8	Target	YoY M8	YTD M8
Bekerja	144,170	94.30%	91.57%	92.76%	94.5%	1.41%	0.59%
Pengangguran	11,316	5.70%	8.10%	7.30%	5.5%	-9.35%	-8.24%
Total Tenaga Kerja	155,486	100%	100%	100%	N/A	0.54%	-0.11%
Partisipasi		66.10%	63.8%	3.5%	N/A	-0.47%	-0.63%

Source: IFS, IMF and US Bureau of Labour Statistics

regarding the budget and debt ceiling has also been a concern of the Fed, with a potential government shutdown on the cards.

A weak mortgage market. The number of outstanding mortgage loans declined in response to the tapering policy instituted by the Fed. Tapering policy has raised long-term borrowing costs on the bond market. In general, mortgage rates have tailed off significantly since the third quarter of 2008, namely from around 6% to below 3.5% in the third quarter of 2012. Nonetheless, mortgage rates started to rise again in June 2013, in the wake of tapering policy, with mortgage loans transacted at 4.07%. Meanwhile, the number of mortgage loans disbursed has only declined gradually, which has been sufficient to stave off a massive decline in the aftermath of the subprime mortgage fiasco in 2008.

Box Figure 1.1.4 Total Mortgages (millions of USD) and Mortgage Rates (%)



Source: federalreserve.gov

For Indonesia, the postponement of Fed tapering can be exploited as momentum to bolster external performance through government policy, hence improving the current account deficit and appealing to global investors oriented towards the real sector. This is even more important considering that the Government of Japan is now aggressively issuing fiscal and monetary stimulus packages to underpin economic growth there, which indirectly favours an increase in exports to Japan as well as inflows of investment to the financial markets of emerging countries, including Indonesia. Currently, the balance sheet of the Bank of Japan has swollen to more than USD 2 trillion, with expectations for a total of USD 3 trillion in 2014.

REFERENCES

- [1] http://www.reuters.com/article/2013/09/19/ususa-fed-banks-analysisidUSBRE98I07B20130919
- [2] http://www.reuters.com/article/2013/05/08/ususa-fed-inflation-idUSBRE94704L20130508
- [3] http://economistsoutlook.blogs.realtor. org/2013/07/03/latest-mortgage-applicationsdata/
- [4] Bloomberg Database and News
- [5] www.federalreserve.gov
- [6] International Financial Statistics, IMF
- [7] http://data.bls.gov/cgi-bin/surveymost
- [8] http://articles.economictimes.indiatimes.
 com/2013-06-11/news/39899565_1_emergingeconomies-crisis-liquidity
- [9] Global Counterpart Bank Indonesia

Box 1.2 Analysis of the Credit Default Swap (CDS) Market in Indonesia

The credit default swaps (CDS) of a country are often used as an unsettling indicator for the country involved and investors, especially when uncertainty is high. The dynamics of interaction among financial market players with a variety of complex instruments, on one hand broadens the options available, volume and liquidity on the market. On the other hand, however, the instruments available lead to ambiguity regarding the function and role attached to that instrument, among others, CDS and Non-deliverable Forwards (NDF). Determining the price of a CDS is no longer influenced by standard parameters, like ratings or the probability of default, on the intrinsic value of the CDS itself. This financial market phenomenon has become well-understood and tolerated by many, replete with financial market inefficiency, asymmetric information, changes in risk-appetite, credit events and others, thus triggering a rise in speculative activities.

Fundamentally, CDS is an derivative financial instrument that aims to hedge against an event of default (bankruptcy, failure to pay, restructuring, moratorium, obligation acceleration) like those in Argentina, Russia and Greece as well as financial organisations like Fannie Mae, Freddie Mac, Lehman Brothers, Washington Mutual and the Bank of Ireland. From a range of definitions, a credit default swap is an over-the-counter derivative contract, where the buyer receives a payment from the seller of the CDS if the issuer (bond issuer) experiences an event of default.

In this case, the buyer is liable to pay a periodic premium/coupon for an agreed period to the seller of the CDS. Total transaction volume for CDS globally has reached USD 2 trillion, while the average weekly value of transactions is around USD 90 billion.

The CDS pricing mechanism is calculated from the probability of default along with several other factors like supply and demand, volume, volatility, expectations for economic fundamentals and market conditions in the affected country as well as speculative elements and others. Consequently, the performance of CDS prices in one country may not be totally in line with the rating of the country involved compared relatively with another country.

Analysing the correlation and regression of daily data observations from 2007-2013 provides evidence that CDS in Indonesia are influenced by several other financial market indicators like the value of the rupiah Forward Rate (one-month NDF) and shifts in the Dow Jones and IDX Composite, while the implied volatility of options on the Chicago Board Options Exchange (spread between the BI rate and Fed Fund rate (UIRP) was tested but found to be insignificant.

CDS fluctuations among six countries in Asia followed a similar pattern, namely that CDS prices in Indonesia were consistently the highest. Greater CDS fluctuations (primarily in countries with a relatively large current account deficit) occurred after the announcement made by Fed Chairman, Ben Bernanke, on 22nd May 2013, which hinted at the possibility of tapering off quantitative easing (QE), leading to a tighter credit market. Countries running a large current account deficit began feeling the pressure at the end of June 2013, like India (up 76 bps) and Indonesia (up 56 bps). Meanwhile, CDS in Malaysia and China increased by 41 bps, in the Philippines and Thailand by 35 bps and South Korea by just 19 bps. Since the beginning of 2013, CDS prices in Indonesia have diverged from trends found in other Asian countries (Box Figure 1.2.1).

In terms of volatility (annualised), CDS prices in Indonesia are the second highest after China, with CDS volatility high in China due to a cash/credit squeeze on 7th June 2013, thereby driving up rates significantly on the O/N Shibor rate.

Mounting CDS pressure and volatility in Asian countries over the past few months was the result of concerns regarding an economic downturn in such countries coupled with improved economic data and financial markets in the US and Europe. The intensity of



this pressure relates to increasing market expectations of Fed tapering on 18th September 2013.

Box Table 1.2.1 Results of the Regression Analysis

Metode Estimasi : Ordinary Least Square with modification of HAC Standard Errorand Covariance (use Bartlett Kernel and Bandwidth Newey-West to overcome problem of Auto correlation and Heteroskedastititas.

Data: Daily,4 January 2007-20August 2013

Variabel Dependen: Variabel Independen:	CDS Indonesia 5 years		
	Koefisien	t-Stat	Sig.
Konstanta	0.00	1.07	
CDS Indonesia 5 Th (t-1)	-0.17	-3.36	* * *
NDF	0.59	2.29	**
IHSG	-0.87	-5.98	***
DJIA (t-1)	-0.60	-4.06	***
DJIA (t-2)	-0.41	-3.42	***
Implied Volatility	0.07	4.43	***
Implied Volatility(t-1)	0.08	3.23	***
UIRP (t-2)	0.06	1.01	
Adjusted R-Squared	27.6%		
Akaike Info Criterion	-3.65		
Schwarz Criterion	-3.62		

Source: Bloomberg

There are also indications that foreign investor exposure is also a determinant of CDS prices, where the composition of foreign ownership of bonds in Malaysia (42%) and Indonesia (30%) is relatively high. Meanwhile, other countries like Sri Lanka, South Korea and Thailand have a foreign ownership composition of 13%, 15% and 17% respectively. CDS prices in one country are not always in line with the sovereign rating of that country, for instance the Philippines is rated by Standard and Poor as BB-, lower than that of Indonesia at BB+, but the pricing mechanism is relatively more sound (CDS in the Philippines, 117 bps; CDS in Indonesia, 242 bps) (Box Table 1.2.2).

	CDS Prices 9/19/2013 (BPS)			Transaction Volume	Current Account Deficit		Rating
Country	Bid	Ask	Spread	Millions of USD	Millions of USD	Periode	S&P
Indonesia	220	229	9	100-150	(5,270.10)	2013Q1	BB+
Philippines	107	113	6	100-150	3,439.00	2013Q1	BB-
Thailand	106	110	4	35-50	922.66	2012Q4	BB+
Malaysia	104	108	4	50-75	7,489.65	2012Q4	A-
China	80	83	3	250-300	45,111.70	2012Q4	AA-
South Korea	2	74	2	150-250	9,971.80	2013Q1	A+

Box Table 1.2.2 A Comparison of CDS Prices in Indonesia and the Region

Sumber: Perhitungan Penulis

According to one counterpart of Bank Indonesia, a global investment bank, there are several reasons why the pricing mechanism for CDS in the Philippines is better than that of other countries in the region as follows:

- Limited foreign investor exposure to domestic assets (only in the range of 2-3% of total domestic assets);
- External balance sheet performance, like the current account surplus since 2003 and the balance of payments surplus since 2005, in addition to accumulating significant foreign exchange reserves;

 Constantly improving fiscal conditions over the past few years, with a debt-to-GDP ratio that has declined to just 41%.

REFERENCES

- [1] http://www.reuters.com
- [2] Bloomberg Database and News
- [3] International Financial Statistics, IMF
- [4] Citibank Singapore & Citibank Hong Kong
- [5] Global Counterpart Bank Indonesia

This page intentionally blank

Chapter 2 Resilience of the Corporate and Household Sectors

This page intentionally blank

Chapter 2 Resilience of the Corporate and Household Sectors

In general, conditions in the corporate and household sectors continued to improve during the reporting period. Business activity continued to pick up on the back of optimism that business activity would accelerate with a well-controlled level of risk. Additionally, indicators of profitability and solvency as well as survey results further confirmed the gains in performance. Notwithstanding, such advances require constant monitoring considering the risks emanating from the global economy and also domestically. Externally, risk of an economic slowdown stems from weaker global demand, thereby undermining export commodity prices. Domestically, production costs are rising due to higher fuel prices and electricity tariffs as well as adjustments to the minimum wage in a number of regions in the archipelago. In addition to inflating the cost of production, government policy to reduce fuel subsidies and hike the basic electricity tariff also eroded public purchasing power in the household sector.

2.1 THE CORPORATE SECTOR

Corporate activity, in general, continued to perform well. The Business Survey conducted by Bank Indonesia evidenced greater business activity expansion during the second quarter of 2013 compared to the preceding quarter, as reflected by a weighted net balance (WNB) of 18.62% (Figure 2.1). The increase in WNB was triggered by growth in domestic consumption that boosted sales and corporate financial performance alike. Business activity is predicted to continue expanding during the third quarter of 2013, which is corroborated by a further increase in the weighted net balance to 23.89%. The trade, hotels and restaurants sector is projected to enjoy the highest levels of growth as a result of the holiday season. Meanwhile, the agricultural, plantation, livestock and fisheries sectors are also affected by seasonal factors,

with the peak of the main harvesting season expected to fall during the third quarter of 2013. Congruous with the increase in business expansion, conditions for doing business are improving and will continue to improve over the upcoming six months.

The financial performance of the corporate sector strengthened moderately compared to the same period of the previous year, as reflected by an increase in profitability. Amid the threat of a protracted global economic recovery, a slump in exports and lower commodity prices, the financial performance of the corporate sector continued to improve. Dogged domestic consumption was the main reason cited for increases in business activity, which underpinned corporate financial performance. Corporate profitability improved by 10.56%, as demonstrated by the increase in the return on assets (ROA) in Quarter I-2013 to 2.01%, up from 1.82% recorded in the preceding quarter (Figure 2.2). The increase in ROA was accompanied by a 2.8% gain in the return on equity (ROE) from 3.66% in Quarter I-2013 to 3.76% in the subsequent quarter. A number of key operating indicators also verified the improvement in corporate profitability, like a reduction in the collection period from 43 days (Quarter I-2013) to 20 days in the second quarter, which indicates that the time required collecting cash has been greatly reduced. The quicker cash can be collected from sales in the corporate sector, the quicker the corporate sector can reuse those funds as working capital and investment that further supports additional business development.





Source: The Business Survey (SKDU), Bank Indonesia, Quarter II-2013





Source: Bloomberg, processed

Regarding financing, the public corporate sector remained relatively prudent in terms of using loanable funds for business expansion. The debt ratio of public listed companies, however, actually decreased, which is confirmed by a lower debt-to-equity ratio in Quarter I-2013 amounting to 0.87compared to 0.91 in Quarter IV-2012, while the solvency ratio (total liabilities to total assets) remained relatively stable at 0.46 (Quarter I-2013) (Figure 2.3). The lower DER and solvency ratio were attributable to a 4% increase in corporate capital and a 0.6% decline in total liabilities compared to the previous quarter.





Source: Bloomberg

In broad terms, there is no threshold for the debtto-equity ratio (DER), however, it is widely accepted that a higher debt-to-equity ratio indicates a higher level of risk in terms of repayment capacity. Nonetheless, a low ratio could also imply that a firm is not optimally utilising external sources of funds as capital to support business expansion. The debt-to-equity ratio is normally compared to respective industry standards or the average for each corresponding industry. A study conducted by a leading US financial analyst concluded that the average debt-to-equity ratio for the manufacturing industry is 1.77, 1.80 for retail, 2.0 for transportation, 1.78 for construction and 0.84 for financial insurers. Meanwhile, the DER threshold for small enterprises should not exceed 2.0. As a whole, the performance of corporate indicators is presented in Figure 2.4.

Amid conditions conducive to business development, credit risk remained relatively low. Based on the probability of default (PoD), a number of non-

Figure 2.4 Key Indicators of Corporate Financial Performance



Source: Bloomberg, processed

financial public listed companies experienced an increase in the potential for default. The probability of default was 2.01% in the first quarter of 2013, up slightly from 1.91% in the previous quarter (Table 2.1).

A rise in the probability of default was attributable to escalating risk in the miscellaneous sector, which is dominated by the textiles and automotive industries as well as the trade sector that itself is dominated by retail and wholesale as well as restaurants, hotels and tours. This is considered to be the result of rising production costs. The increase in the probability of default in the trade sector, particularly in retail, food and beverages as well as restaurants was sparked by higher production costs caused by a hike in electricity rates and spiralling raw material costs for food due to a scarcity of supply in February 2013 in the wake of limited horticultural and onion imports.

The majority of bank credit was disbursed to the corporate sector in the form of working capital loans and investment credit, with working capital loans accounting for 64.3% of the total (Table 2.2). Of the total credit allocated to the corporate sector, working capital credit amounted to Rp1,068.5 trillion, investment activity to Rp550.0 trillion and consumer loans to Rp42.1 trillion. By economic sector, however, most corporate loans were extended to the manufacturing sector (27.1%), followed by the services sector (24.6%) and the trade, hotels and restaurants sector (17.6%) (Table 2.3).

Table 2.2 Credit Facilities extended to the Corporate Sector by Type

	Corporate Sector			
Credit Type	Outstanding Credit (trillions of rupiah)	Percentage of Outstanding Credit		
Working Capital Credit	1.068,5	64,3%		
Investment Credit	550,0	33,1%		
Consumer Loans	42,1	2,5%		
TOTAL	1.660,5	100,0%		

Source: Debtor Information System, August 2013* *preliminary

Corporate Probability of Default by Economic Sector										
SECTOR	2011Q1	2011Q2	2011Q3	2011Q4	2012Q1	2012Q2	2012Q3	2012Q4	2013Q1	
Agriculture	2,37%	2,01%	0,00%	2,12%	0,16%	0,23%	0,27%	0,28%	0,05%	
Basic Materials	1,70%	0,89%	2,49%	1,96%	1,97%	1,31%	0,88%	1,75%	1,69%	
Consumer Goods	1,15%	0,62%	0,89%	0,61%	0,70%	0,89%	0,50%	1,28%	0.94%	
Infrastructure	0,96%	0,79%	0,25%	1,26%	0,54%	0,51%	0,61%	1,72%	1,13%	
Others	2,18%	6,23%	6,63%	6,96%	7,67%	8,89%	5,51%	5,41%	6.34%	
Mining	1,72%	0,77%	1,38%	1,30%	1,21%	1,18%	3,13%	1,52%	1.36%	
Property	1,70%	0,88%	0,00%	2,68%	3,12%	3,40%	1,98%	1,50%	0.90%	
Trade	4,88%	2,84%	2,78%	3,26%	2,50%	1,90%	2,40%	2,17%	3.44%	
Agregrate (all corporations)	2,38%	1,78%	2,44%	2,55%	2,23%	2,16%	1,82%	1,91%	2.01%	

Table 2.1 Corporate Probability of Default by Economic Sector

*) Probability of Default is calculated using Contingent Claim Analysis

**) Data for Quarter I-2013 incorporates only 195 sample companies.

Source: Bloomberg, processed

Table 2.3 Credit Disbursed to Corporations by Economic Sector

	Korporasi			
Economic Sector	BakiDebet (triliun Rp)	%thd Baki Debet		
Agriculture, hunting and agricultural facilities	123,5	7,4%		
Mining	95,0	5,7%		
Industry	449,7	27,1%		
Utilities (gas, electricity and water)	71,1	4,3%		
Construction	92,2	5,6%		
Trade, restaurants and hotels	293,0	17,6%		
Transportation, storage and communications	122,2	7,4%		
Services	407,9	24,6%		
Others	6,0	0,4%		
TOTAL	1.660,5	100%		

Source: Debtor Information System, August 2013* *preliminary

A number of risks that require attention emerged amid well-maintained global business growth. Corporate performance in Indonesia has been overshadowed by the external threat of weaker global demand accompanied by tumbling commodity prices. The Fed's planned tapering policy also precipitated capital outflows and, hence, exchange rate fluctuations. In addition to confronting unfavourable external conditions, corporate performance was also hit with higher production costs because of hikes in fuel prices and electricity rates as well as corrections to the regional minimum wage in several provinces.

Government policy to adjust fuel prices and electricity rates, on top of eroding public purchasing power to consume, also raised production costs. In the aftermath of the fuel price hikes (June 2013) BPS-Statistics Indonesia calculated headline inflation in July to reach 3.29% (mtm) or 8.61% (yoy). Meanwhile, the threat of a potential global economic slowdown occasioned a shift in export activity, primarily in the exported products of natural resources like coal, rubber and crude palm oil (CPO).

An assessment of corporate assets and liabilities with a component of foreign exchange was conducted in order to reveal how far corporate resilience was affected by exchange rate depreciation and its impact on financial system stability. Unsurprisingly, corporations with a larger component of foreign exchange liabilities than foreign exchange assets are more vulnerable to weaker financial performance at times when the rupiah depreciates. This will ultimately undermine corporate repayment capacity on their burgeoning financial liabilities.

A sample of 196 non-financial companies listed on the Indonesia Stock Exchange was observed. In general, financial conditions in the corporate sector remain sufficiently resilient to rupiah depreciation. Consequently, the second-round effect on bank NPL and CARis relatively minimal. Stress tests were conducted to identify the number of companies that would become insolvent when the rupiah depreciated to a level of Rp16,000 per US dollar. Stress tests assuming a level of rupiah depreciation to Rp16,000 revealed that NPL would rise in the banking industry from 1.87% to 2.02%, while CAR would remain unchanged at 17.95%.

The aforementioned assessment of corporate resilience forms one part of a more complete evaluation to determine the impact on financial system stability because most corporate business activity is financed by financial institutions, predominantly banks.

2.2 CONDITIONS IN THE HOUSEHOLD SECTOR

The Consumer Confidence Index (CCI) increased in line with persistent growth in the business sector. Household consumption continues to grow and drive the domestic economy, which is reflected by a rebound in the Consumer Confidence Index in June 2013 after three months of continuous decline. Consumer Confidence Index gained 5.4 points to 117.1 due to increases in the Index of Current Economic Conditions and Consumer Expectations Index by 5.6 and 5.1 points respectively (Figure 2.5). The main driver of consumer confidence was the expectation that the Job Availability Index would climb 9.9 points from 97.0 to 106.9.



Source: Consumer Survey, DSM, Bank Indonesia

Inflationary pressures for the upcoming three months (September 2013) are expected to ease as demand returns to normal in the wake of the religious holiday Eid ul-Fitr. In contrast, inflationary pressures for the upcoming six months (December 2013) will escalate in the run up to Christmas and New Year. The prediction of less demand after Eid ul-Fitr moderately alleviated price pressures for the next three months, which is reflected in the -2.4 point decline in the price expectation index for foodstuffs. Similarly, the price expectation index also decreased for transportation, communications and financial services (-2.4 points). Conversely, the price expectation index increased 3.9 points for food, beverages, cigarettes and tobacco.

Price pressures for the upcoming six months (December 2013) are projected to mount, indicated by a 0.3-point rise in the index, due to seasonal factors like Christmas and New Year (Figure 2.6).

Figure 2.6 Price Expectations Index for upcoming Six Months



Source: Consumer Survey, DSM, Bank Indonesia

Household credit continued an uptrend despite a moderate slowdown over the past few months. Nevertheless, the level of non-performing loans has remained low and stable. Departing from trends in the corporate sector, where most credit is used in the form of working capital, households tend to favour consumer loans (70.1%). The position of outstanding credit in the household sector in June 2013 was Rp 646.8 trillion, equivalent to 9.41% growth year on year. However, growth in credit extended to the household sector up to Semester I-2013 was weaker than that posted during the same period of the preceding year, when 31.59% was achieved (June 2012).

Non-performing loans noted a moderate increase at the beginning of the current year but had subsequently eased off to a relatively low kevel of 1.54% by the end of Semester I-2013 (Figure 2.7).



Source: Monthly reports of commercial banks, processed

Most credit to the household sector was allocated in the form of property credit, followed by multipurpose loans and automotive loans (Figure 2.8).



Source: Monthly reports of commercial banks, processed

Chapter 2. Resilience of the Corporate and Household Sectors

Slower credit growth affected all forms of household credit, with automotive loans logging negative growth (from 15.81% to -8.17%) and credit to purchase household equipment (like furniture, televisions, electronic devices, computers, communications devices and others) plummeting from 50.76% to -50.97%.

In spite of the overall slowdown in credit growth, non-performing loans to the household sector remained low and stable at 2.33% for property loans, 0.93% for automotive loans, 0.93% for household equipment, 0.87% for multipurpose loans and 1.48% for other loans.





Source: Monthly reports of commercial banks, processed

Figure 2.10 Performance of Household Non-Performing Loans by Loan Type



Source: Monthly reports of commercial banks, processed

Box 2.1 Risk Control in the Property Sector

The share of consumer loans in terms of total bank credit in Indonesia continues to expand, swelling from 21.6% at the end of 2002 to 28.8% in June 2013. Mortgages, automotive loans and multipurpose loans dominate the various types of consumer loans available. Bank Indonesia amended its policy on the minimum downpayment applicable for automotive loans and imposed a maximum threshold on the loan-to-value ratio of mortgages, effective since 15th July 2012, in order to avoid excessive credit growth in specific sectors and ameliorate banking prudence. Since implementation of the new regulations, expansive growth in automotive loans has eased and nominal non-performing loans have also decreased. Growth in mortgage loans for houses with a floor area greater than 70m2along with loans for flats/apartments of the same size, however, posted strong growth amounting to 24.1% and 62.3% respectively in June 2013.

Rapid growth in mortgage loans was also accompanied by a 11% jump in the Residential Property Price Index during the first quarter of the year, followed by 12.1% in the second quarter, representing the highest incremental increase ever recorded since the survey was first conducted by Bank Indonesia. In terms of floor area, the strongest gains were reported on the prices of small houses (<36m2). Regarding the respective locations where property developers operate, annual increases in property prices vary widely. The highest price increases were driven by strong demand for property, both live-in and to let. Climbing property prices were not restricted to a few specific areas, the trend is spreading to other regions too. This has raised concerns that houses are becoming increasingly expensive and, therefore, unaffordable, especially to low-income earners. In addition, soaring property prices also precipitate higher value mortgage loans, which, if financed by a bank, have the potential to trigger financial instability in the event of default.

Vigilance over rising house prices and growth in mortgage loans is made more pertinent by the additional information that property can be purchased in bulk (more than one unit, even 10 at one time) using mortgage loans, cash and cash instalments. Data from the Debtor Information System (DIS) in April 2013 revealed 35,298 borrowers with more than one mortgage loan (around 4.6% of the total 768,132

No	Number of Mortga- ges	Number of Borrowers	Share of Total Borrowers	Total Property	Total Ceiling (in billions of rupiah)	Share of Total Ceiling	Total Outstanding Credit (in billions of rupiah)	NPL (in billions of rupiah)	NPL (%)
1	2	31.368	88,9%	62.736	24.878	72,1%	22.968	366	1,6%
2	3 - 6	2.937	8,3%	8.811	5.796	16,8%	5.288	45	0,9%
3	6 - 9	942	2,7%	4.092	3.211	9,3%	3.001	9	0,3%
4	>9	46	0,1%	384	618	1,8%	573	-	0,0%
Total 35.293		100,0%	76.023	34.503	100,0%	31.830	420	1,3%	
Total KPR April 2013						257.635	6.179	2,4%	
							12,4%	6,8%	

Box Table 2.1.1 Borrowers with more than One Credit Facility

No	Year	Number of Mortgages	Share (%)	Outstanding Credit (in billions of rupiah)	Outstanding Credit (%)	Credit Ceiling (in billions of rupiah)	Credit Ceiling (%)
1	<2009	13.298	38%	5.102	16%	6.025	17%
2	2010	4.700	13%	3.500	11%	3.852	11%
3	2011	6.570	19%	7.300	23%	7.958	23%
4	2012	8.299	24%	11.803	37%	12.378	36%
5	2013 (s.d. Apr'13)	2.431	7%	4.126	13%	4.290	12%
	Total	35.298	100%	31.830	100%	34.502	100%

borrowers) with a value of outstanding credit totalling Rp 31.8 trillion (12.4% of the total in April 2013 at Rp 257.6 trillion). Consequently, with such behaviour commonplace, the demand for property is expected to endure, spurring concerns of spiralling house prices.

Approximately 50% of borrowers with more than one mortgage took out the credit facilities within the last three years. From 2010 until April 2013, the number of borrowers with more than one outstanding mortgage tended to increase.

According to a recent Bank Indonesia survey, rapid growth in mortgage loans is further bolstered by the appeal of property to the public as an investment instrument. A number of important conclusions were drawn in the survey conducted by Bank Indonesia in May 2013 as follows:

- In the past year, 42.5% of respondents opted to invest or purchase property rather than gold, shares/mutual funds and term deposits.
- Demand for property for the upcoming year is expected to remain solid, considering that 64% of respondents will favour property investments over other alternatives in the next year.
- 81.1% of respondents cited expectations of higher property prices as the reason for purchasing property.

- Not all properties purchased using a first mortgage loan are bought to occupy by the buyer. Around 13.9% of respondents used their first mortgage loan as a means of investment or for letting property.
- As more mortgage loans are taken out the likelihood increases that the loan will be used for investment purposes. The survey found that 65% of second mortgages are used for investment and 100% of third mortgages.

Property credit includes mortgages for houses and apartments, construction loans and real estate credit. According to a Bank Indonesia survey, a portion of multipurpose loans is also used to purchase property, with 5% of respondents acknowledging using multipurpose loans for purchases and additional purchases of property in May 2013.

Stress tests were conducted assuming a 10% level of default related to property credit in order to observe the impact of property credit risk. The stress tests confirmed that under such conditions a number of banks would see their NPL ratio increase to in excess of 5%. Nonetheless, the impact on bank capital was relatively minimal with stress tests confirming that the capital adequacy ratio of no bank dropped below the 8% threshold set. This demonstrates that bank
resilience remains sufficient to absorb potential losses that may emerge as a result of a 10% level of default on property credit.

The results of stress tests that showed a tail off in bank performance in terms of NPL at several banks require more in-depth analysis. Consequently, the level of prudence at banks must be improved in order to avoid exacerbating the risks as well as to maintain financial system stability. Furthermore, buttressing prudential regulations would also control the use of bank credit and/or financing for the purchase of property not intended to meet the primary needs of the borrower.

Bank Indonesia's policy was further stipulated in the LTV regulation with the following provisions:

- A lower LTV regulation for second and third mortgages and subsequent mortgages thereafter.
- Introducing the LTV regulation for residential properties with a floor area of 22-70m2 on second and third mortgages and subsequent mortgages thereafter.
- Introducing the LTV regulation on first-time mortgages for apartments with a floor area of 22-70m2.
- Introducing the LTV regulation on propertybacked consumer loans (excluding mortgages), for instance in the case of property-backed multipurpose loans.
- Regulating the LTV ratio for credit/financing for second, third, etcetera home stores/home offices.
- Banning disbursement of additional credit/ financing to be used as a deposit on a house.
- Treating married couples as one borrower. Therefore, if a debtor has an outstanding mortgage/property-backed consumer loan and then subsequently applies for an additional loan

in the name of the married couple, the loan will be subject to a lower level of LTV as it represents a second mortgage. This does not apply if the couple are legally divorced.

 Introducing the LTV regulation for second and third, etcetera, home stores and home offices. In summary, the LTV regulation for second and third credit facilities and subsequent loans thereafter is as follows:

In addition to the aforementioned LTV regulation, and to underpin risk mitigation as well as consumer protection, second, third, etcetera credit facilities shall only be approved if the property to be purchased is complete pursuant to the prevailing agreement and ready to be handed over to the buyer. Notwithstanding, first-time property credit/financing can be used to purchase unbuilt houses (partial prepayment), however, the loan is disbursed in accordance with the progress of the property development under finance.

Not all consumers purchase property through loans. A portion of homebuyersaccrue property using cash/cash instalments without the need for a mortgage. Evidently, the LTV regulation can only influence demand for property bought on credit, the legislation is not effective in influencing demand for property bought using cash/cash instalments.

LTV policy aims to ameliorate prudence at banks and avoid excessive growth in mortgage loans for houses and apartments. Reasonable property credit growth can better maintain the sustainability of property sector growth in the long term.

Type of Credit/Financing	Maximum LTV/FTV					
or Collateral	l	II	>			
KPR Tipe > 70	70%	60%	50%			
KPRS Tipe > 70	70%	60%	50%			
KPR Tipe 22- 70	-	70%	60%			
KPRS Tipe 22 - 70	80%	70%	60%			
KPRS Tipe sd 21	-	70%	60%			
KP Ruko/Rukan	-	70%	60%			

Box Table 2.1.3 Maximum LTV/FTV by type of Credit/Financing or Collateral

Chapter 3 Financial System Resilience This page intentionally blank

Chapter 3 Financial System Resilience

Amid escalating pressures stemming from the global and domestic economies throughout the first semester of 2013, the banking industry successfully confronted the plethora of challenges faced and performed positively, as reflected by aspects including the intermediation function, profitability and the capital structure. Overall, the banking sector successfully implemented the intermediation function, demonstrated by the amount of public funds accumulated in deposits and the credit disbursed. The banks also efficaciously controlled credit risk at a low level and liquidity risk at safe levels. The credit expansion strategy employed by banks, which is oriented towards productive sectors and accompanied by greater operational efficiency, helped buoy bank profitability. In terms of capital, the capital adequacy ratio of banks remained well in excess of the minimum threshold based on risk profile.

3.1 RISK IN THE BANKING SYSTEM

3.1.1 Credit Performance and Risk Credit Performance

Bank credit growth continued to accelerate during the reporting period and contributed favourably towards the national economy. Bank credit grew by 9.3% during the first semester of 2013, equivalent to 20.6% year-on-year, with the majority

Figure 3.1





Source: Monthly Reports of Commercial Banks, Bank Indonesia





Source: Monthly Reports of Commercial Banks

Sluggish export performance due to the global crisis and a weaker rupiah ultimately slowed the growth of foreign currency loans. Such loans achieved just 7.12% growth during the first semester of the current year, which is a slower rate of growth than that posted in the same period of the previous year, congruous with weaker demand from a number of leading trade partners of Indonesia, coupled with tumbling prices for natural resource based exports like crude palm oil and coal.

Despite the slowdown in foreign currency credit growth, potential risk requires continuous vigilance considering that rupiah depreciation could undermine the repayment capacity of borrowers, thereby compounding the level of non-performing loans. Furthermore, banks are urged to act more prudently in terms of managing their sources of funds for foreign currency credit because the primary source remains short-term foreign currency deposits, therefore a potential currency mismatch must be mitigated.

Credit to productive sectors remained dominant during the first semester of 2013. The share of productive credit swelled from 70.5% in the previous semester to 71.2% on the back of growth in investment credit in line with optimism in the business community concerning national economic conditions. In this context, banks are encouraged to remain vigilant of investment credit risk, especially in terms of their sources of funds, the majority of which is short term in nature while investment credit itself tends to be long term. Meanwhile, the deceleration in consumer loans was attributable the loan-to-value and downpayment policies put in place since June 2012.

By sector, credit to all sectors continued to grow positively during the reporting semester despite a moderate slowdown. In more detail, several sectors experienced slower growth than that posted in the previous year including the mining sector, others and manufacturing. Tepid growth in



Figure 3.3

Source: Monthly Reports of Commercial Banks





Source: Monthly Reports of Commercial Banks

those selected sectors was ascribed to weaker performance at a number of domestic corporations in line with dogged uncertainty regarding global crisis resolution. In addition, the evaporation of bank liquidity, coupled with credit revitalisation, helped precipitate slower growth.





Figure 3.6 GDP and NPL Cycles



Credit Risk¹

Amid efforts to expand the intermediation function, bank credit risk remained low. The gross NPL ratio of banks at the end of Semester I-2013 was 1.88%, which is relatively stable compared to the previous semester but lower than during the same period of the preceding year. The slowdown was due to a selective credit allocation process implemented in the banking sector. Consequently, the rate of credit growth outpaced the increase in non-performing loans.



Figure 3.8 Credit Quality and NPL



The economic slowdown began to impact credit growth but credit risk remained low. Although nonperforming loans were low in the reporting semester, the economic slowdown began to trigger a rise in credit collectability, which has the potential to become nonperforming loans. However, such risk was limited but intensified in the real estate sector, business leasing and corporate services, electricity, gas and water, accommodation as well as food and beverages due to relatively strong growth in credit collectability.



- 2011

- 2012

- 2013

2010

Figure 3.9 Ratio of Credit Quality to Total Credit

¹⁾ Excluding channelling unless otherwise stated.

Annual Growth (yoy)			Monthly Growth (mtm)			
Economic Sector	Share	Growth	Economic Sector	Share	Growth	
Wholesale and Retail	8.1%	44.8%	Wholesale and Retail	5.2%	12.8%	
Manufacturing	6.2%	52.9%	Manufacturing	2.9%	21.8%	
Real estate, leasing and corporate services	4.8%	166.9%	Household – homeowners	2.8%	17.5%	
Household – for ownership of other household equipment	3.9%	94.1%	Real estate	1.8%	37.7%	
Household – homeowners	3.8%	22.1%	Leasing and corporate services	0.9%	11.9%	
Agriculture, hunting and forestry	2.5%	63.9%	Household – for ownership of automobiles	0.9%	22.2%	
Utilities (water, gas and water)	1.4%	613.3%	Transportation, storage and communications, other businesses	0.8%	11.1%	
Hotels and restaurants	1.1%	102.7%	Agriculture, hunting and forestry	0.8%	16.5%	
Social services, cultural and recreational and other individuals	1.0%	56.5%	Construction	0.8%	19.4%	
Transportation, storage and communications	1.0%	24.4%	Utilities (water, gas and water)	0.7%	85.0%	
Industry		30.4%	Industry		16.1%	
Note: Data for June 2013						

 Table 3.1

 Nominal Growth of Credit Collectability by Economic Sector

3.1.2 Funding and Liquidity Risk

Deposits

The funding structure of banks remained dominated by deposits in the reporting semester.

Up to Semester I-2013, the share of deposits as the primary source of funds reached 89.62%, which is up on the position in the same period of the previous year. Meanwhile, interbank funds experienced a 3.22% decline in the reporting period. Other funding components only account for negligible shares, namely loans, securities, other liabilities as well as liabilities held at Bank Indonesia and security deposits.

Deposits continued to grow but at a slower pace than in the previous semester and indeed the same semester of the preceding year. Bank deposits increased by Rp149.2 trillion (4.63%) during the first semester to Rp3,374.4 trillion. That compares to growth in the second semester of 2012 amounting to Rp269.40 trillion (9.12%) and the 6.14% achieved in Semester I-2012. The deceleration in deposit growth was linked to seasonal factors in the run up to the holy fasting month of Ramadan and Eid ul-Fitr. In terms of ownership, most deposit growth affected individual private companies and local government. The deposits of private companies recorded the highest growth at 49.40% or Rp290.20 trillion, followed by other private deposits at 19.55% or Rp73.92 trillion. Conversely, growth in individual private deposits dropped 0.67% subsequent to a larger decline of 2.79% in the previous semester.



Figure 3.10 Composition of Bank Funding and Financing

All components of deposits increased, with checking accounts and term deposits recording the most notable growth at 7.90% (Rp60.30 trillion) and 7.20% (Rp99.7 trillion) respectively. In the previous semester, however,

Figure 3.11 **Deposit Growth by Semester** 400 16.00% 14 00% 350 300 12.00% 250 10.00% 200 8 00% 150 6.00% 100 4 00% 50 2.00% n nn% en I-09 m II.00 com L10, com IL10, com L11 sem II-12 sem I-13 Nominal growth (left axis) Growth as a percentage (right axis)

savings accounts and terms deposits noted the most impressive growth at 14.65% (Rp137.63 trillion) and 6.39% (Rp83 trillion) correspondingly. The shift from savings accounts to term deposits is in line with the growth in private companies.

Based on currency, growth in deposits was primarily contributed by rupiah deposits. During the reporting period, rupiah deposits swelled Rp86.5 trillion, equivalent to 3.14% of total deposit growth, while foreign currency deposits increased Rp62.7 trillion, equivalent to 13.41% of the total. The growth in rupiah deposits during the reporting semester was not as strong as during the previous semester, when an increase of Rp118.1 trillion was reported.



Figure 3.12 Nominal Delta of Deposit Growth based on Ownership

Figure 3.13 Composition of Term Deposits based on Tenor



Deposits continued to dominate the banks' source of funds for credit, as reflected by the 3.73% increase in the loan-to-deposit ratio from Semester II-2012 to Semester I-2013. By currency, the foreign currency loan-to-deposit ratio was higher than that of rupiah deposits. In June 2013, the foreign currency loan-to-deposit ratioexceeded that of rupiah deposits. Similarly, the foreign currency loanto-deposit ratio surpassed that of rupiah deposits in June 2012 and in December 2012.

Table 3.2 LDR at Commercial Banks

	Des'11	Jun'12	Des'12	Jun'12
LDR	79%	82,88%	83,96%	87,69%
LDR Rupiah	76,67%	81,51%	82,72%	87,97%
LDR Valas	93,45%	91,46%	91,27%	88,74%

Source: Indonesian Banking Statistics, processed

The high foreign currency loan-to-deposit ratio a reflection of foreign currency deposits being the primary source of financing for foreign currency loans, in addition to interoffice funds and other liabilities. The majority (56.87%) of funds for foreign currency credit is still sourced form short-term funds like term deposits with a tenor of up to one month, thus forcing banks to implement a special strategy to shift short-term foreign currency funds towards the longer term and expand inexpensive foreign funds. Although a number of banks enjoy access to sources of funds from controlling shareholders located abroad, bank are urged to remain

Chapter 3. Financial System Resilience

prudent when managing their sources of funds for foreign currency credit in order to avoid a potential currency mismatch that could trigger additional losses from the exchange rate.

Liquidity Risk

Liquidity risk was well mitigated during the reporting period despite a decline in liquid assets caused by seasonal factors approaching Eid ul-Fitr. Bank liquid assets decreased by 7.69% during the first semester of 2013 to Rp1,016.33 trillion. The decline in liquid assets stemmed from a 13.31% decrease in secondary reserves, consisting of Bank Indonesia Certificates (SBI), other placements at Bank Indonesia, trading SUN and available-for-sale SUN, as well as 0.72% decline in primary reserves, comprising of cash andbank checking accounts held at Bank Indonesia. Notwith standing, tertiary reserves enjoyed 9.02% growth attributable to a slump in held-to-maturity SUN.

Bank liquidity remained adequate to meet corresponding liabilities, however, liquidity risk required vigilance. The ratio of liquid assets (LA) to non-core deposits (NCD), or LA/NCD, in June 2013 (after deducting the reserve requirement) was 96.67%, down on the position in December 2012 at 115.40% and in June 2012 at 161.38%. The decline was in line with greater credit expansion than growth in deposits, thereby forcing the banks to dissolve their liquid assets.

Table 3.3								
Composition of	of Bank L	iquid Assets						

	Position in June	Position Semesterly in June Growth			Annual Growth (yoy)		
	2012 (trillions of rupiah)	Nominal (trillions of rupiah)	%	Nominal (trillions of rupiah)	%		
Primary Reserves	368.92	(2.69)	(0.72)	44.20	13.64		
Secondary Reserves	573.44	(88.04)	(13.31)	(5.99)	(1.03)		
Tertiary Reserves	73.96	6.12	9.02	5.29	7.70		
Liquid assets	1016.33	(84.61)	(7.69)	43.50	4.47		

Note: Components of liquid assets in the table contain the reserve requirement Source: Monthly Reports of Commercial Banks, Bank Indonesia

Figure 3.14 Composition of Bank Liquid Assets



Source: Monthly Reports of Commercial Banks, Bank Indonesia

A review of liquidity spread and ownership revealed that available funds are not spread evenly. Fourteen large banks control the majority of liquid assets and deposits with a share of around 70%, while 106 other banks control the remaining 30%. Nevertheless, liquidity at individual banks is sufficient to cover withdrawals of non-core deposits. In comparison to the same period of the previous year, there are now many more banks with an LA/NCD ratio greater than 100% than there are with an LA/NCD ratio of less than 50%.

Figure 3.15 Share of Bank Placements held at Bank Indonesia



Source: Monthly Reports of Commercial Banks, Bank Indonesia

Figure 3.16 Share of Liquid Assets







Source: Monthly Reports of Commercial Banks, Bank Indonesia

3.1.3 Profitability and Capital

Profitability

The banking industry managed to book impressive profits during the reporting semester in harmony with relatively well-maintained domestic economic conditions. During Semester I-2013, banks recorded net profits to the tune of Rp51.1 trillion, exceeding those posted in the previous two semesters. The increase in profit stemmed from growth in interest income from loans, which contributed 72.2% of total interest income. Annually, credit interest income experienced growth amounting to 15.5%. Strong profits were evidenced by the 3.0% return on assets achieved by banks (June 2013), down slightly on the position in December 2012 at 3.1%.

In terms of bank group, most net profit was contributed by state-owned banks with a share of 44.8% of the total, followed by foreign exchange banks with 35.2%, regional banks with 11.5%, foreign banks with 4.4% and joint venture banks with 4.1%.

Table 3.4 Profit and Loss of the Banking Industry

(trillions of rupiah)

	Jun'12	Des'12	Jun'13
Operating P/L	55.8	114.7	62.0
Non-operating P/L	2.3	21.9	11.1
P/L before tax	58.2	119.5	64.4
P/L after tax	45.7	92.8	51.1

Source: Indonesian Banking Statistics

Operating profit generated by banks was still dominated by net interest income (NII) with a growing trend. Similar to the case in previous periods, operating profit dominated bank profits up to the end of Semester I-2013. In June 2013, the operating profit of banks totalled Rp62.0 trillion, up 11.1% on the same period in the preceding year. The increase in operating profits was made possible by an average monthly net interest income of Rp19.0 trillion in Semester I-2013, compared to Rp18.3 trillion in the previous semester and Rp16.3 trillion in the same period of the preceding year. The increase in net interest income (NII) demonstrates efficiency gains in the banking sector as an impact of credit growth and a downward trend in the cost of interest borne by the bank. Nevertheless, banks are urged to monitor the impact of adjusting lending and deposit rates during Semester II-2013 in response to the BI rate hike at the end of June 2013.



Figure 3.17 Composition of Bank Profit/Loss

Source: Indonesian Banking Statistics

No	Bank	P/L After Tax (trillions of dollars)			Cı	Credit Growth (% yoy)			Net Interest Margin (NIM, %)		
	Group	Jun'12	Des'12	Jun'13	Jun'12	Des'12	Jun'13	Jun'12	Des'12	Jun'13	
1	State-owned	19.0	40.8	22.9	20,2%	23,5%	24,9%	5.8	6.0	5.9	
2	Private	17.3	34.5	18.0	28,2%	20,8%	17,1%	5.3	5.4	5.3	
3	Regional	4.6	8.9	5.9	22,9%	26,2%	24,9%	6.4	6.7	7.2	
4	Joint Venture	1.8	3.4	2.1	46,9%	33,2%	21,1%	3.6	3.6	3.5	
5	Foreign	3.1	5.1	2.3	28,7%	26,6%	17,1%	3.5	3.5	3.4	
Ind	dustry Total	45.7	92.8	51.1	25,7%	23,1%	20,6%	5.4	5.5	5.4	

 Table 3.5

 Profitability and Credit Performance by bank Group

Source: Indonesian Banking Statistics and the Monthly Reports of Commercial Banks, Bank Indonesia





Figure 3.18

Source: Indonesian Banking Statistics

In terms of sources of interest income, **credit interest income continued to dominate total interest income during the reporting semester** with an expanding trend. The growing share of credit interest income to total interest income is in line with the increase in bank loans extended. Credit interest income increased while interest rate spread narrowed because the decline in lending rates exceeded the decline in deposit rates. Such conditions are not expected to endure into the second semester of 2013 due to a higher BI rate that will likely drive up deposit rates and lending rates.

Figure 3.19 Rupiah Interest Rate Spread at Banks



Source: Monthly Reports of Commercial Banks, Bank Indonesia, processed

Figure 3.20 Bank Return on Assets and BOPO Efficiency Ratio (%)



Source: Monthly Reports of Commercial Banks, Bank Indonesia, processed

		Entire Sample									lum: 10		
Credit	2011				2012			2013		qtq	Juni 12 - Iuni 13	Maret 12 -	
Jegment	Mar	Jun	Sep	Des	Mar	Jun	Sep	Des	Mar	Jun			
Corporations	10,51	10,72	10,51	10,18	9,86	9,81	9,75	9,69	9,53	9,65	0.11	(0.16)	(0.86)
Retail	11,80	11,91	12,04	11,61	11,23	11,08	11,03	11,14	10,91	11,03	0.12	(0.05)	(0.77)
Mortgages	11,16	11,38	11,04	10,71	10,61	10,50	10,45	10,41	10,33	10,37	0.04	(0.13)	(0.79)
Non-mortgages	11,56	11,86	11,88	11,51	11,05	10,99	10,67	10,65	10,62	10,59	(0.03)	(0.40)	(0.97)

Table 3.6 Average Prime Lending Rates in the Banking Industry (%)

Note: data excludes outliers and uses a weighted average.

Source: Monthly Reports of Commercial Banks, Bank Indonesia, processed

In line with a narrower interest rate spread, the Net Interest Margin of banks declined slightly compared to the previous semester. In June 2013, bank NIM was 5.4%, slightly lower than the 5.5% recorded in December 2012. The decrease in NIM continues a similar trend that has persisted over the past few years, where NIM tends to be lower in the middle of the year and then increases again towards the end of the year.

Interest rate spread narrowed as lending rates slumped. Lending rates followed a downward trend during the first semester of 2013, indicating an efficient bank intermediation function. The prime lending rate regulation promulgated by Bank Indonesia in March 2011 is primarily responsible for lower lending rates. Prime lending rates have fallen since March 2011 in all segments, principally due to a lower cost of loanable funds.

The return on assets (ROA) decreased 10 bps in June 2013 from 3.08% in December 2012 to 2.98%. A larger decline in the return on assets was reported in the reporting semester compared to the 3 bps (from 3.11%) noted in June 2012. The decline was mainly because the rate of profit growth in the banking industry was smaller then the average growth in total bank assets.

Banking efficiency tailed off moderately during the first semester of 2013, which is reflected by a slightly higher BOPO efficiency ratio compared to the previous semester. Such conditions were brought about by a larger increase in operating costs than the increase in operating revenue. The loss of efficiency was spurred by an increase in the overhead cost of all segments (mortgages, retail, non-mortgages and corporate loans). Furthermore, the cost of loanable funds in the corporate segment and for non-mortgages also increased. Raising the BI policy rate at the beginning of Semester II-2013 is expected to further undermine bank efficiency at the end of the current year.

Capital

The Capital Adequacy Ratio (CAR) remained at a level deemed safe and well above the minimum indicative threshold set by Basel. An increase in profits bolstered bank resilience, evidenced by a capital adequacy ratio of 17.98% in June 2013. CAR was relatively stable in the reporting semester, as indicated by a narrow range from 19.18% at its peak to 17.98% at its nadir. The capital adequacy ratio increased on the previous semester (17.32%) as the percentage increase in bank capital exceeded the percentage increase in risk-weighted assets.

The growth in capital was illustrated by the capital structure of banks, which also strengthened in terms of the composition of Tier 1 equity, increasingto Rp511.5 trillion and giving Tier 1 an 89.9% share of total capital (89.3% in Semester II-2012). Meanwhile, the share of Tier 2 capital shrank to 10.13% from 10.76% and Tier 3 capital remained at 0.006%. The larger composition of Tier 1 capital is a good indication of enhanced bank resilience in terms of absorbing potential risks that emerge from business activity and changes in the business environment.



Source: Monthly Reports of Commercial Banks, Bank Indonesia, processed



Source: Monthly Reports of Commercial Banks, Bank Indonesia, processed



Figure 3.23 CAR by Bank Group Keeping one eye on global conditions and in order to maintain bank resilience, banks are urged to maintain a high capital adequacy ratio and supplement capital in accordance with the risk profile and business activity, in particular amid the ongoing fallout from the global crisis. In addition, capital will be strengthened further in preparation for the new capital requirements pursuant to Basel III.

	Tabe	I 3.	7	
Distribution	of CAR	by	Individual	Bank

CAR	Number of Banks
< 10%	4
12 - 15%	27
15 - 20%	39
20 - 25%	20
> 25%	30
TOTAL	120

Strengthening capital based on Basel III is achieved in terms of both quality and quantity. Basel III requires an adjustment to the components and regulates capital instruments, including core capital (Tier 1), supplementary capital (Tier 2) and write-offs of Tier 3 capital, as well as setting common equity tier 1 (CETI1)and core capital (Tier 1) at 4.5% and 6% respectively. Furthermore, banks are required to hold additional buffer capital on top of the reserve requirement through the application of a conservation buffer of 2.5%, a countercyclical buffer of 0 - 2.5% and a capital surcharge applicable to banks deemed systemic.

Table 3.8 Bank Capital by Bank Group

					Growth (%)	
					sem II -	sem I -	
	Des'11	Jun'12	Des'12	Jun'13	2012	2013	уоу
Capital (trillions of rupiah)							
State-owned	166,30	156,96	166,80	185,97	5.9%	11.8%	18.5%
Private	204,86	193,46	204,86	235,73	5.9%	15.1%	21.8%
Regional	35,84	31,50	35,84	38,31	13.8%	6.9%	21.6%
Joint Venture	30,40	29,58	30,40	37,23	2.8%	22.5%	25.9%
Foreign	73,09	67,49	73,09	85,49	8.3%	17,0%	26.7%
Total	510,50	479,00	510,50	582,74	6.6%	14.2%	21.7%
Risk-Weighted Assets							
State-Owned	874,06	946,90	1,028,29	1,119,93	8.6%	8.9%	18.3%
Private	1,178,05	1,226,66	1,329,02	1,445,43	8.3%	8.8%	17.8%
Regional	159,01	183,85	197,90	244,16	7.6%	23.4%	32.8%
Joint Venture	138,96	149,13	156,33	174,68	4.8%	11.7%	17.1%
Foreign	192,99	237,97	236,59	257,71	-0.6%	8.9%	8.3%
Total	2,543,07	2,744,50	2,948,13	3,241,91	7.4%	10.0%	18.1%
						Delta (%)	
CAR (%)							
State-Owned	19.03%	16.58%	16.17%	16.61%	(0,4)	0,4	0,0
Private	19.39%	15.77%	15.41%	16.31%	(0,4)	0,9	0,5
Regional	22.54%	17.13%	18.11%	15.69%	1,0	(2,4)	(1,4)
Joint Venture	21.88%	19.83%	19.45%	21.31%	(0,4)	1,9	1,5
Foreign	37.87%	28.36%	30.89%	33.17%	2,5	2,3	4,8
Total	20.07 %	17.43%	17.32 %	17.98 %	(0,1)	0,7	0,5

Source: Monthly Reports of Commercial Banks, Bank Indonesia, processed

3.2 POTENTIAL FINANCIAL MARKET RISK AND FINANCING FROM NON-BANK FINANCIAL INSTITUTIONS

3.2.1 Potential Financial Market Risk

Financial system risk intensified on all components compared to the previous semester, stemming not only from the domestic economy but also from externalities. Higher inflationary expectations looking ahead along with concerns over the current account deficit exacerbated risk domestically, while widespread uncertainty and policies instituted by other central banks coloured the external landscape, thereby magnifying potential risk looking forward.

The Financial Market Stability Map showed a general escalation in risk compared to conditions in the preceding semester. Consequently, the level of risk for each component of the financial market increased, namely exchange rate volatility, bond market volatility, stock market volatility, interbank money market volatility and the external debt to GDP ratio (Figure 3.25). The most pronounced increase in risk was noted on the stock market due to extensive selling activity by foreign investors, as such risk skyrocketed from just 9% in the previous semester to 45%. Meanwhile, volatility on the interbank money market (PUAB) increased by the least of any other financial system indicator monitored, from around 19% to 23% in the reporting semester. Greater stability on the interbank money market was linked to efforts undertaken by Bank Indonesia to maintain liquidity on the rupiah and foreign currency money markets.

Mounting shocks on the financial markets in Indonesia were not only precipitated by domestic factors but also by negative sentiment triggered by externalities, particularly in the run up to the end if the semester as the Fed reduced purchases of securities through Quantitative Easing (QE). Concerns over the impact of such policy have a strong influence on outflows of foreign investment from domestic and regional financial markets. Internally, the balance of trade deficit, coupled with higher inflationary expectations, swayed domestic and foreign investors.



Figure 3.24 Financial Market Stability Map

Source: Bloomberg, Commercial Bank Monthly Reports; External Debt Statistics Indonesia, processed

Non-resident transactions of stock, tradeable government securities (SBN) and Bank Indonesia Certificates (SBI) followed an increasing trend at the beginning of the year but subsequently declined significantly from the end of May onwards (Figure 3.25). Relatively large-scale selling on the stock market and of tradeable government securities (SBN) amounted to Rp23.33 trillion and Rp22.44 trillion respectively at the end of Semester I-2013, while a slight inflow was recorded for Bank Indonesia Certificates (SBI). Consequently, a net foreign outflow was reported totalling Rp45.62 trillion. Overall during the first semester of 2013, foreign investors registered net purchases of securities on the three markets amounting to Rp13.94 trillion, which is down by 78% on the preceding semester (Rp57.79 trillion), consisting of Rp11.85 trillion in tradeable government securities (SBN), Rp1.41 trillion from the stock market and Rp0.69 trillion in Bank Indonesia Certificates (SBI).

Grafik 3.25 Flows Non Residen : Saham, SBN, SBI



Source: Bloomberg, Monetary Management Department of BI, processed

Money Market Risk

In general, rupiah interbank money market (PUAB) stability was well maintained, while risk on the interbank foreign exchange market tended to escalate. Volatility on the rupiah interbank money market eased during the first semester of 2013, only increasing in harmony with Bank Indonesia's decision to raise its benchmark policy rate and deposit facility, however, risk remained under control (Figure 3.26). Stability on the rupiah interbank money market was influenced by Bank Indonesia efforts to maintain adequate liquidity through monetary operations, underpinned by a policy mix that utilises unconventional monetary instruments to bolster financial market stability.

Volatility on the interbank foreign exchange market remained relatively high despite a moderate decline from February until May 2013 in line with Bank Indonesia efforts to alleviate rupiah exchange rate volatility. Notwithstanding, the rupiah has depreciated strongly since the end of May 2013 due to investor concerns regarding the deficit in the balance of payments amid strong demand for foreign currency from the corporate sector and relatively limited foreign exchange supply on the market. Furthermore, Bank Indonesia policy during that period tended to focus on more convergent rupiah pricing.



Source: Monthly Reports of Commercial Banks, Bank Indonesia, processed

Such conditions intensified volatility on the interbank foreign exchange market (PUAB) as illustrated in Figure 3.27. Nonetheless, Bank Indonesia continued its efforts to maintain stability on the foreign exchange market by maintaining adequate liquidity in the form of rupiah and foreign exchange, by monitoring flows of foreign exchange and auctioning foreign currency term deposits.

Figure 3.27 Volatility on the Interbank Foreign Exchange Market (PUAB)





Government Bond (SUN) Market Risk

Risk on the government bond (SUN) market escalated, as reflected by greater volatility compared to the previous semester. A number of factors triggered the increase in volatility, the first being a downgrade of Indonesia's sovereign rating outlook by Standard and Poor from 'positive' to 'stable' at the beginning of May

Chapter 3. Financial System Resilience

2013, which undermined foreign investor interest in Indonesia. Nevertheless, Standard and Poor's decision was offset by Bank Indonesia policy to maintain a presence on the tradeable government securities (SBN) market. Bank Indonesia's purchases of SBN were ostensibly used as a monetary instrument, particularly Reverse Repo SBN, and simultaneously served to stabilise market prices and offsetrisk for investors.

Second, inauspicious conditions persisted and stirred concerns of higher inflation and disquiet about the deficit in the domestic trade balance as well as the impact of global uncertainty in line with the US economic recovery that triggered fears of a tighter monetary policy stance in the US. Domestic financial authorities responded to weaknesses on financial markets, most notably Bank Indonesia raised its BI rate and continued to purchase tradeable government securities (SBN) on the secondary market. Although investors recorded relatively large-scale net selling during the reporting period, the impact on the market – for instance a slump in the IDMA Index – was less discernable than the shocks that plagued financial markets in 2008 and 2005.

The SUN yield curve increased for all tenors, however, the yield on short-term and medium-term government bonds (SUN) strengthened in April. At the end of the semester, yield had increased for all tenors, with the most salient gains affecting short-term and medium-term SUN (Figure 3.28). Similarly, SUN volatility intensified significantly towards the end of the semester but still remained under control. The volatility of short-term SUN was greater then medium-term SUN, which indicates that investors perceive economic fundamentals in Indonesia as sound (Figure 3.29).

Based on value at risk (VaR), the level of risk attached to government bonds (SUN) improved at the beginning of the semester but subsequently reappeared from May until the end of Semester I-2013 in line with the value at risk



Source: Bloomberg

Grafik 3.29 Volatility of SUN FR Benchmark



Source: Bloomberg

of each tenor (Figure 3.30). The direction of value at risk based on tenor demonstrated a similar impact across all tenors of government bonds as a result of global investor behaviour.

Congruous with the increased requirement for fiscal financing sourced domestically, the amount of tradeable government securities (SBN) issued by the government continued to swell. In addition to the tradeable government securities (SBN) presented in Table 3.9, the government also issued several series of non-tradeable securities, like Islamic Haj Funds, issued expressly by the Department of Religious Affairs. The largest portion of SBN traded belonged to non-banks, totalling Rp545.05 trillion, while



Grafik 3.31 The movement of Yield SUN or The Yield of SUN Trends



Source: Bloomberg, processed

securities experienced the least ownership at the end of the semester, amounting to just Rp0.99 trillion. Referring to bank ownership of SBN, an increase was noted as a result of increased selling activity by foreign investors, which was accommodated by the banks. However, bank liquidity decreased as a result of lower SBN prices due to large-scale mark to market undertaken by the banks (Table 3.10).

Based on the maturity profile, FR series SUN of short and medium-term tenors continued to dominate, while SUN with a tenor greater than 10 years also showed signs of increased activity (Figure 3.32). SUN maturity spread remained in a proportional range, thereby strengthening predictions of maturity risk and the external debt repayment scheme according to the government's budget.

Tabel 3.9 Ratio of Credit Quality to Total Credit

T Rp

			ттр						
	Bank Exposure								
Bank Group	Des'12	Jun'13	∆ Des'12 Jun'13						
BUKU 1	52.63	8.07	-44.56						
BUKU 2	129.77	38.58	-91.18						
BUKU 3	72.35	61.05	-11,30						
BUKU 4	221.61	163.23	-58,38						
Total	476.35	270.93	-205.42						
IDMA	111.7	104.7	-6.27%						

Note: includes all bank SBN positions (there are SBN recorded by the banks as held to maturity).

Institution (trillions of rupiah)	Des-11	Jun-12	Des-12	Jun-13	∆ Des'12 - Jun'13
Banks	265.03	297.98	299.66	314.34	4.9%
Bank Indonesia	7.84	20.36	3.07	29.13	848.9%
Non-Banks	450.75	472.85	517.53	545.05	5.3%
Mutual Funds	47.22	48.6	43.19	39.61	-8.3%
Insurance	93.09	106.86	83.42	126.38	51.5%
Foreign	222.86	224.42	270.52	282.96	4.6%
Pension Funds	34.39	34.56	56.46	29.11	-48.4%
Securities	0.14	0.27	0.30	0.99	230.0%
Others	53.05	58.14	63.64	40.97	-35.6%
Total	723.62	791.19	820.27	888.51	8.32%

Tabel 3.10 Composition of Bank Funding and Financing

Source: Directorate General of Debt Management, the Ministry of Finance of the Republic of Indonesia, processed



Figure 3.32 SUN Maturity Profile

ource : Directorate General of Debt Management, the Ministry of Finance of the Republic of Indonesia, processed

Stock Market Risk

Stock market performance indicated significantly mounting risk in line with regional bourses. The IDX Composite remained in accord with global price indices that induced changes in the investment patterns of global investors who shifted towards safe haven assets. The IDX Composite rallied to 136.9 in the middle of the semester (May 2013) but subsequently tailed off until the end of the semester. The index is expected to decline further during the upcoming semester as the world waits for confirmation from the Fed regarding the state of the ongoing US economic recovery (Figure 3.33).





Source: Bloomberg, processed

Figure 3.34 IDX Composite by Sector



Source: Bloomberg, processed

By sector, stock market performance broadly followed the IDX Composite. Shares in the property sector rallied strongly prior to a subsequent slump towards the end of the semester. Additionally, mining shares tumbled throughout the semester. Shares in the financial sector tended to strengthen and stabilise compared to shares in other sectors despite increased volatility at the end of Semester I-2013 (Figure 3.34 and 3.35).





Source: Bloomberg, processed

Domestic stock market risk exposure was in line with the performance of several global markets that rallied during the first semester of 2013 but the increase in IDX Composite risk was high, excluding that to the Nikkei (Figure 3.36). This prompted a response from foreign and domestic investors to global policy that impacted upon transactions on the domestic stock market.

The Capital Market Authority and Bank Indonesia strived to manage the impact of weaker demand for global investments and the impact of risk that emerged, especially on shares in the domestic banking sector, by hiking the BI rate at the end of Semester I-2013. In addition, Bank Indonesia extended its integrated policy mix taken to better maintain financial system stability.





Source: Source: Bloomberg, processed

Mutual Funds

The performance of mutual funds improved during the first semester of 2013, reflected by an increase in net asset value. The net asset value (NAV) of mutual funds jumped 14.36% from Rp187.59 trillion at the end of the preceding semester to Rp201.64 trillion in June 2013 (Figure 3.37). The increase in net asset value (NAV) was accompanied by an increase in the number if shares underlying mutual funds, a condition heavily supported by improved stock market performance despite a moderate downturn at the end of the semester. Based on type, the composition of mutual funds remained stable during semester II-2012 and into the first semester of 2013. Equity funds continued to dominate the structure of mutual funds with a 42.16% share, followed by protected funds (18.48% share), fixed-income funds (15.46%), discretionary funds (12.24%) and money market funds (6.02%). In the case of equity funds, an increase in the number of shares underlying mutual funds was reported in June 2012 and thought to be linked to lower share prices at the end of Semester I-2013, thereby providing an impetus for investment managers to supplement the stock investment component in their investment portfolio, especially as the economic outlook for Indonesia still looks promising in the far term.

Figure 3.37 Performance of Mutual Funds



Source: Capital Market Statistics, processed

Mutual fund activity recorded a net subscription, overall, during the first semester of 2013. Net redemptions occurred during the period from January to February 2013, while from March to June of the same year net subscriptions were noted (Figure 3.38). The highest level of net subscriptions occurred at the end of June 2013 (totalling Rp9.23 trillion).



Figure 3.38 Mutual Fund Activity

Source: Capital Market Statistics, processed

Chapter 3. Financial System Resilience

The improved performance of mutual funds was linked to market confidence that in the long term, owning shares would remain profitable as an investment asset. Considering the underlying of mutual funds, fluctuative financial market conditions will influence their performance. Therefore, market risk must be considered when managing mutual funds. However, mutual funds are a financial instrument used to hedge the portfolio of investment funds.

3.2.2 Financing through the Capital Market and Finance Companies

Issuances of Shares and Corporate Bonds

Sources of funds stemming from the capital market increased during the first semester of 2013, buoying the national economy. Share ownership on the capital market expanded to Rp3,126 trillion in Semester I-2013, compared to Rp2,742 trillion in the previous semester (Table 3.11). Similar to the preceding period, the composition of share ownership was dominated in Semester I-2013 by equity, followed by corporate bonds with a stable structure.

In Semester I-2013, issuances of bonds, continuous bonds and Islamic bonds totalled Rp34.76 trillion and were issued by 29 firms. From the banking sector, issuances of bonds and continuous bonds reached Rp1.2 trillion and Rp9.6 trillion respectively from six issuing banks. Less licensing bureaucracy and cheaper costs to issue continuous bonds bolstered that achievement.

Financing through the capital market is one alternative used to reduce systemic risk exposure originating from the banking sector. Nonetheless, potential risk emanates from the capital market itself because the speculative element is larger than that in a highly regulated banking sector. Accordingly, policy to mitigate risk stemming from the capital market should be enhanced without reducing incentives for investors to place their funds. The development of low-risk financing instruments as well as effectiveness and efficiency on the capital market are encouraged in order to expand sources of financing

Position (billions of rupiah)		Des	es'11 Jun'12		2	Des	'12	Jun'13	
1	Equity	2,091,205	92.30%	2,216,406	92.09%	2,525,005	92.09	2,884,618	92.28%
2	Corporate Bonds	141,918	6.26%	161,174	6.70%	181,404	6.62	206,461	6.60%
	Corporate Bonds								
	(millions of US dollars)	725	0.03%	758	0.03%	967	0.04	998	0.03%
3	MTN	11,934	0.53%	12,009	0.50%	11,881	0.43	10,542	0.34%
	MTN (millions of USD)	7,419	0.33%	4,731	0.20%	9,452	0.34	9,651	0.31%
4	Islamic	5,876	0.26%	6,669	0.28%	6,883	0.25	6,974	0.22%
5	Warrant	4,460	0.20%	2,695	0.11%	3,114	0.11	3,661	0.12%
6	EBA	1,447	0.06%	1,247	0.05%	1,982	0.07	1,700	0.05%
7	Mutual Funds h	488	0.02%	1,004	0.04%	1,252	0.05	1,461	0.05%
8	Rights Issue	238	0.01%	1	0.00%	47	0.002	2	0.00%
Total		2,265,711	100.00%	2,406,694	100%	2,741,988	100	3,126,068	100%

Table 3.11 Composition of Securities on the Capital Market

Source: Capital Market Statistics, processed

from the capital market. Additional investment choices on the capital market will simplify internal risk diversification and mitigation efforts against the global crisis and boost the appeal of domestic investment to domestic investors.

IPOs and rights issues increased during the first semester of 2013 compared to the same semester of the previous year. In total, IPOs increased to Rp10.10 trillion and rights issues to Rp20.71 trillion (Figure 3.39). The role of the capital market as an alternative source of financing will help companies access cheaper funds, which will stimulate other financial subsectors to manage their sources of funds more efficiently.

Figure 3.39 Credit Financing and the Capital Market



Source: Capital Market Statistics, processed





Source: Economic and Monetary Statistics Department, processed

Performance and Risk of Finance Companies

The performance of finance companies improved during the reporting semester in harmony with robust financing growth, particularly consumer loans. The performance of finance companies is still dictated by small-scale and retail financing, the majority of which is consumer financing used predominantly to purchase motor vehicles. Such financing schemes are the same as those offered by banks for the purchase of automobiles and property. Nonetheless, the financing facilities provided by finance companies offer less stringent financing requirements.

Less stringent financing requirements were buttressed in June 2012 by the introduction of new provisions as detailed in the loan-to-value policy as well as additional regulations promulgated by other financial authorities under a macroprudential policy framework. Nominally, the assets of finance companies expanded in the reporting semester by Rp17.44 trillion compared to the previous semester from Rp342 trillion to Rp 359 trillion thanks to a moderate increase in financing and funding activity as well as more capital (Figure 3.41). A decrease in total assets was noted in the middle of the first semester of 2013 due to the closure of Pan Multifinance, a finance company.





Source: Economic and Monetary Statistics Department, processed

As mentioned previously, consumer financing continued to dominate the financing disbursed by finance companies with the automotive segment representing the largest portion of financing due to less stringent requirements, namely collateral requirements that are less strict than equivalent bank loans and also broader marketing endeavours. The risk of credit default required vigilance, however, in terms of the ease of obtaining credit. Consumer financing extended by finance companies increased Rp18 trillion in the first semester of 2013 from Rp192 trillion in Semester II-2012 to Rp210 trillion (Figure 3.42). Furthermore, the share of consumer financing also expanded in comparison to the previous semester, from 63.5% to 65.4% of total financing. Overall, however, total financing from finance companies followed a slight downward trend during the first semester of the current year.





Source: Economic and Monetary Statistics Department, processed

In terms of funding, issuances of securities, primarily corporate bonds, by finance companies increased, with a similar trend reported for loanable funds by domestic commercial banks, opposing the prevailing downward trend of loanable funds from international banks. Overall, therefore, total finance company funding increased, primarily on the back of a slight increase in loans from domestic banks (Figure 3.43). The expansion of financing from finance companies was attributable to efforts taken by the finance companies themselves to realise their planned funding at the beginning of the year and in order to benefit from market momentum at the start of Semester I-2013, considering growing potential economic uncertainty in the subsequent semester. A number of finance companies have accumulated funds over the past few years in order to optimise financing in 2013 bearing in mind escalating economic risk in the run up to 2014.



Figure 3.43 Sources of Funds of Finance Companies

The financial ratios of finance companies in Semester I-2013 indicated a stable level of earnings and efficiency similar to the previous semester (Table 3.12). Such conditions reflect little change in the scheme to disburse consumer financing and leasing as well as an increase in sound financing.

Non-performing loans (NPL) at finance companies decreased during the reporting semester, evidencing less exposure to funding risk and supported by wellmaintained financial ratios in Semester I-2013. Integrated financial policies promulgated by the relevant domestic financial authority signalled for greater prudence at finance companies when allocating financing.

Source : Economic and Monetary Statistics Department, Bank Indonesia, processed

Table 3.12Financial Indicators of Finance Companies

Trillions of Rupiah	Jun 2012	Dec 2012	Sem II 2012	Jun 2012	Sem I 2013
Assets Liabilities	322 263	342 275	6% 5%	359 285	5% 4%
o/w Debt Capital o/w Profit before Tax	245 60 8	255 67 16	4% 11% 102% 102%	264 74 9 7	3% 11% -43% -42%
Financial Ratio (%)					
Capital ROA (%) ROE (%) OER (%) Debt/Equity Liabilities/Equity	5.03 20.45 75.97 4.09 4.75	4.86 19.80 76.35 3.84 4.54		5.08 19.83 74.91 3.56 4.34	

Source: Economic and Monetary Statistics Department, Bank Indonesia, processed

The aggregate percentage of non-performing loans at finance companies improved to 0.77% in the first semester of 2013 compared to 1.14% in the previous semester thanks to a drop in the NPL of consumer financing (Table 3.13). The deceleration in financing growth is linked inextricably to prevailing economic conditions coupled with the policies issued. The range of policies introduced, which are synergetic with other financial sector policies, are expected to enhance the capacity of finance companies in terms of managing risk but still provide ample room for finance companies to develop as an alternative source of funds to catalyse the domestic economy.

Performance and Risk of Insurers

The performance of 10 public listed insurers tended to improve during the first semester of 2013. The pattern of placements and investment diversification by insurers remained relatively unchanged in Semester I-2013 despite a slight adjustment in the investment composition. Insurers tended to favour shares as a form of investment, even exceeding the portion dedicated to bonds and medium-

Table 3.13Total Financing and NPL by Financing Type

Finance Company Financing in trillions of rupiah	Jun 2012	Dec 2012	Sem II 2012	Jun 2012	Sem I 2013
Total Financing	320.82	302.05	-5.85	320.82	6.21
Leasing	105.56	105.08	-0.45	105.56	0.45
Factoring	5.41	5.15	-4.85	5.41	5.10
Credit Cards	0.00	0.00	87.41	0.00	-46.64
Consumer					
Financing	209.86	191.82	-8.59	209.86	9.40
NPL (%)					
Total Financing	0.77	1.14		0.77	
Leasing	0.76	0.29		0.76	
Factoring	2.52	1.51		2.52	
Credit Cards	0.00	0.00		0.00	
Consumer					
Financing	0.73	1.60		0.73	

Source: Economic and Monetary Statistics Department, Bank Indonesia, processed

term notes (MTN) as well as mutual funds, which occupied second and third position after term deposits (Figure 3.44). This development was made possible by gains in the stock market index of Indonesia(the IDX Composite), which repeatedly broke records. A change in investment strategy by insurers towards instruments with a higher level of return is expected to bolster profitability, as opposed to boosting profit through receipt of insurance premiums, which in June 2013 accounted for 65% of revenue in the preceding year.

Figure 3.44 Investment Composition of Ten Public Listed Insurers



Source: Indonesia Stock Exchange; processed

Chapter 3. Financial System Resilience

Total assets of insurers at the end of Semester I-2013 increased Rp2.41 trillion or 11.29% to Rp23.71 trillion compared to Rp21.31 trillion at the end of the same period in the previous year. Interestingly, favourable developments on financial markets in Semester I-2013 were directly proportional to growth at insurance companies.

Based on insurance industry data released by the Financial Services Authority, as of June 2013 there were 139 insurers consisting of 45 life assurance companies (with 17 insurers operating a sharia business unit), 80 loss insurers (22 of which with a sharia business unit), five social insurers (3 with a sharia business unit) and four reinsurance companies (Table 3.14). Of the total 139 insurance companies operating in Indonesia, ten are listed publically on the Indonesia Stock Exchange with total assets amounting to Rp23.71 trillion in June 2013. Of the ten public listed insurers, one company dominates the share of total assetsaccounting for 61% (Figure 3.45).





Source: Indonesia Stock Exchange; processed

Table 3.15 Insurance Profile

	Total Companies						
Profile	Konv	Konv UUS		Total (Konv+FS)			
Life Assurance	45	17	3	48			
Loss Insurance	80	22	2	82			
Social Insurance	5	-	-	5			
Reinsurance	4	3	-	4			
Total	134	42	5	139			

Table 3.14
Performance of Ten Insurers Listed
with the Indonesia Central Securities Depository (KSEI)

Performance of the 10 Public Listed Insurers									
l	NVESTMENT ASSETS (trillions of rupiah)	2010	∆ (%yoy)	2011	∆ (%уоу)	2012	∆ (%yoy)	Jun-13	∆ (%ytm)
1	MUTUAL FUNDS	0.29	-80.89	0.11	-60.87	1.84	<mark>1535.68</mark>	1.90	3.44
2	Bonds and MTN	1.38	173.47	1.03	-25.03	1.78	72.20	1.37	-23.14
3	TERM DEPOSITS	2.81	61.89	2.51	-10.54	3.49	39.01	3.34	-4.16
4	SHARES	0.86	-86.90	0.90	3.92	1.77	97.15	1.96	10.77
4	GOVERNMENT BONDS	-		-	-	0.05	-	0.05	-3.21
5	BI CERTIFICATES (SBI)	-	-	-	-	0.00	-	0.00	
TOT	AL INVESTMENT ASSETS	12.13	21.44	14.16	16.69	8.44	-40.35	8.63	2.20
TOTA	AL NON-INVESTMENT ASSETS	1.37	14.58	2.53	84.04	2.36	-6.49	3.61	53.14
TOT	AL ASSETS	13.51	20.71	16.68	23.54	10,81	-35.22	23.71	119.35
PROFITABILITY INDICATORS									
ROA		9.56%		8.67%		8.36%		3.84%	
NOA		5.5070		0.0770				5.0770	

Source: Indonesia Stock Exchange; processed

Box 3.1 Burgeoning Share of Foreign Currency Deposits in the Banking Industry

Global and domestic economic pressures on the financial system intensified during the second half of Semester I-2013. A number of episodes, like climbing domestic inflation, tapering off by the Fed, a Bloomberg survey and net outflows from the financial market reinforced expectations for rupiah depreciation for the upcoming few months. Such conditions are cited as a strong reason why some bank customers are opting to save their funds in a foreign currency rather than the rupiah. Consequently, foreign currency deposits in the banking industry are increasing.

Significant growth in foreign currency deposits was reported in the months of May and July 2013, when the respective shares achieved 15.9% and 16.2% of total deposits, compared to an average of 14% in 2012. Nominally, average foreign exchange deposits ballooned from Rp490.56 trillion (January – April 2013) to Rp537.73 trillion (May-July 2013) or \$50.6 billion to \$53.8 billion in US dollars.

Box Figure 3.1.1 Composition of Additional Rupiah and Foreign Currency Deposits





Box Figure 3.1.2 Performance of Foreign Currency Deposits





Growth in foreign currency deposits endured into August 2013, however, exchange rate volatility led to fluctuations when converted into US dollars. Observing the performance of foreign currency deposits (in US dollars), which tailed off in the middle of August compared to July, indicates a lack of sufficient evidence for the changing preference of customers towards foreign currency instead of the rupiah.

Individual banks are currently being monitored based on the upward trend of foreign currency deposits and the events that precipitated rupiah depreciation against the US dollar. To facilitate monitoring, banks are filtered according to their share of foreign currency deposits as well as depositors' profiles. During the period from April – July 2013, as many as 12 banks experienced a significant increase in foreign currency deposits with a delta exceeding Rp1 trillion. Observing the profiles of depositors at those specific banks confirmed that the increase in foreign currency deposits was not attributable to currency switching on behalf of the depositors but due to anticipatory measures taken by depositors against operating activity.

Meanwhile, foreign currency deposits accumulated by banks were managed and invested in a variety of instruments. The majority of banks utilised their foreign currency deposits to allocate foreign currency loans or invest in other international banks and foreign currency government bonds. The remainder

	Name of	Foreign Currency Deposits (billions of USD)							
No	Bank	April 2013	May 2013	June 2013	July 2013	Delta April - Juli 2013			
1	А	7.40	8.67	8.23	8.21	1.17			
2	В	4.98	6.97	6.72	6.11	1.14			
3	С	3.34	3.57	3.98	4.10	0.76			
4	D	1.83	1.97	1.87	2.08	0.25			
5	E	2.31	2.31	2.34	2.44	0.13			
6	F	0.42	0.50	0.51	0.58	0.16			
7	G	3.36	3.42	3.20	3.34	(0.03)			
8	Н	0.63	0.64	0.78	0.75	0.11			
9	I.	1.33	1.33	1.39	1.39	0.06			
10	J	0.56	0.59	0.65	0.66	0.11			
11	K	0.18	0.30	0.31	0.29	0.11			
12	L	1.65	1.71	1.69	1.66	0.01			

Box Table 3.1.1

	Flow of foreign currency to Banks experiencing an increase in Foreign Currency Deposits (July 2013 in trillions of rupiah)										
No	Name of Bank	Foreign Currency Deposits	Foreign Currency Credit	Foreign Currency Term Deposits	Nostro	Foreign Currency Reserve Requirement	Foreign Currency Government Bonds	Mismatch/ Excess Foreign Exchange			
1	А	25.07	18.3	0	0.55	2.31	0.62	3.25			
2	В	7.68	3.1	0	1.20	0.70	0.25	2.46			
3	С	5.97	3.4	0	0.29	0.42	0.00	1.81			
4	D	34.29	15.9	2.05	7.88	3.14	4.27	1.03			
5	E	2.95	3.2	0	1.24	0.37	0.00	(1.87)			
6	F	42.10	24.6	2.82	5.46	3.51	3.85	(2.09)			
7	G	17.03	15.0	1.74	0.19	1.83	0.70	(2.41)			
8	Н	62.83	43.9	2.05	11.08	7.63	3.83	(5.54)			
9	L	21.38	12.8	2.05	8.83	1.69	2.76	(5.76)			
10	J	84.33	50.9	13.34	15.07	7.96	6.31	(9.29)			
11	К	6.73	18.8	0	0.13	1.73	0.00	(13.88)			
12	L	14.32	43.9	0	0.19	1.63	2.13	(33.56)			

was transacted on the money market. Consequently, the net open position of banks in Semester I-2013 stayed below the indicative threshold of 20% of bank capital.

Box 3.2 Macroprudential Instruments in Basel III

I. MACROPRUDENTIAL POLICY

Currently, there is no universally accepted definition of macroprudential policy. Notwithstanding, several institutions define macroprudential as an instrument to limit systemic risk. According to the IMF², macroprudential policy predominantly uses prudential instruments to limit systemic risk or system-wide financial risks.

Systemic risk has two components, namely a time dimension and a cross-sectional dimension. The time dimension refers to aspects of procyclicality, where financial institutions tend to take excessive risk when an economy contracts. The cross-sectional dimension covers risks that may emerge from similar risk exposure and/or inter-institutional linkages in the financial system.

II. BASEL III

Fundamentally, Basel III is a regulatory framework to strengthen capital standards and bank liquidity regulatory standards. The goal of Basel III is ultimately to integrate macroprudential and microprudential policies, including: higher quality and levels of capital; capital standards to dampen excessive credit expansion and contraction cycles; and capital standards to alleviate systemic risk. In addition to merely raising capital standards, Basel III also introduces two minimum liquidity standards, namely the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR). LCR intends to bolster bank resilience against potential short-term liquidity pressures, while NSFR aims, among others, to limit excessive dependence upon short-term sources of funds when there is excess liquidity on financial markets.

III. MACROPRUDENTIAL INSTRUMENTS IN BASEL III

Departing from the understanding of macroprudential policy presented above, the main instruments of Basel III used to dampen procyclicality and contagion risk are as follows:

1. Countercyclical Counter Buffer

The Basel III framework introduces time-varying capital requirements as additional capital on top of the minimum requirements pursuant to Basel III, namely a countercyclical buffer. This capital requirement will be phased in from 2016 until full implementation in 2019. The aim of the countercyclical capital buffer is to ensure banks have adequate capital to implement the credit intermediation function under a variety of economic conditions.

When economic conditions are expansive, and systemic risks tend to emerge, the countercyclical counter buffer will be activated to force banks to hold additional capital. Conversely, when financial conditions deteriorate or the economy contracts, namely when banks tend to limit credit allocation or incur losses that erode capital, the countercyclical capital buffer will be utilised to avoid a credit crunch. Therefore, the countercyclical counter buffer is expected to stabilise the pace of credit growth throughout the economic cycle.

International Monetary Fund, Macroprudential policy: An Organising Framework. 2011

2. Systemic Capital Surcharges

In addition to the requirements of Basel III, Global Systemically Important Banks or G-SIBs are subject to more stringent minimum capital requirements because of their potential to trigger larger risks in the financial system. More capital at G-SIBs is expected to lower default because of their capacity to absorb larger losses. Additional capital requirements will by met through Common Equity Tier 1 ranging from 1% to 3.5% on top of the existing reserve requirement, depending uponhow systemic the bank involved is considered to be. Similar to the case of the countercyclical capital buffer, this additional capital requirement will be implemented gradually from 2016 to 2019.

In addition to the capital framework applicable to G-SIBs, the Basel Committee on Banking Supervision also issued a capital framework for Domestic-Systematically Important Banks (D-SIBs). However, the framework is characterised more by guiding principles that translate to the framework implemented in each respective country.

3. Other Instruments

Other Basel III requirements aim to mitigate risks that stem from inter-institutional exposure at individual banks, including: i) capital requirements to support central counterparties on the OTC derivative market; and ii) liquidity requirements that aim to provide disincentives for banks that source funds in the form of shortterm interbank loans.

According to the liquidity requirements under Basel III, particularly the LCR standard, banks are required to hold high-quality liquid assets in order to cover potential withdrawals of all funds sourced from short-term interbank loans. Meanwhile, according to the Basel III NSFR standard issued by the Basel Committee on Banking Supervision in 2010 that is still being refined, a bank's short-term sources of funds are not considered a stable component of funds that can be used to offset long-term bank assets.

Box 3.3 The Role of JIBOR in supporting Financial System Stability

WHAT IS JIBOR?

The Jakarta Interbank Offered Rate (JIBOR) is an indicative rate used for money market transactions in Indonesia. JIBOR reflects the interest rates that banks charge one another for taking and offering loans. In other words, JIBOR is a reference rate for transactions on the interbank money market. JIBOR consists of rates for two currencies: Indonesian rupiah and US dollars, which are respectively comprised of six tenors: one day (overnight), one week, one month, three months, six months and 12 months. Since development in 2013, Bank Indonesia acknowledges 28 banks as contributors to IDR JIBOR and 14 banks for USD JIBOR. Contributing banks are selected based on total active banks that must cover at least 75% of total rupiah and US dollar transactions on the interbank money market (PUAB). Of the interest rate data quoted by contributing banks, Bank Indonesia cleanses the data by omitting the highest and lowest quartiles to calculate the interquartile mean of JIBOR.

JIBOR DEVELOPMENT

Since its inception in 1993, JIBOR has continued to evolve. A long time disregarded, in 2005 the JIBOR report, previously collated through the Money Market Information Centre (PIPU), was refined to become the Daily Report of Commercial Banks (LHBU). All banks are required to report their quotation for JIBOR through the daily reporting system, with JIBOR subsequently calculated as the average of those rates submitted.

In line with the growing need for a reference rate on the market, in 2011 Bank Indonesia refined JIBOR again to ensure greater credibility. As a result, JIBOR was subsequently calculated as the average quoted rate, excluding the highest rate and lowest rate, and contributing banks had to be active on the interbank money market (PUAB). In 2013, however, JIBOR evolved again with Bank Indonesia using the interquartile mean to calculate JIBOR by omitting the highest and lowest quartiles for the average quoted rate.

1993: JIBOR established; 2001: JIBOR reported through banks' daily reporting system; 2011: Move towards best practices; 2013 Refined JIBOR method.

As the JIBOR calculation method and contributor selection process improved, so too did the credibility of JIBOR. A number of banks began using JIBOR as a reference rate to calculate their financial instruments, like cross-country swaps and interest rate swaps. Furthermore, deviation between the JIBOR rate and actual interest rates on the interbank money market (PUAB) also narrowed, demonstrating an improvement in the quality of quotations provided by contributing



banks and, thereby, raising the credibility of JIBOR as a reference rate. The following graphs illustrate that point.



Box Figure 3.3.2 USD JIBOR Performance



Box Figure 3.3.3 BI Rate, PUAB and Rupiah JIBOR



Box Figure 3.3.4 JIBOR Spread and Rupiah PUAB



Source: Daily Reports of Commercial Banks, Bank Indonesia Official Website, processed

THE ROLE OF JIBOR IN SUPPORTING FINANCIAL SYSTEM STABILITY

JIBOR is a reference rate that can be used to price a variety of financial instruments, on top of serving as a reference for market players concerning market liquidity conditions. Both domestic and international market players require a reference rate, thus the credibility of said rate is crucial in supporting financial market development (BIS, March 2013). Global attention on the reference rate increases as the rate becomes more useful in terms of financial market and macroeconomic development in general³. Research points to a couple of reference rate channels that affect the macroeconomy as follows:

- Reducing asymmetric information in the bank intermediation function, where the rates between agents do not vary excessively.
- Providing more accurate information (reducing noise on the money market) to the monetary authority when applying monetary policy.
 Research also illustrates the importance of reliable
 reference rates for the economy and financial markets,

 [&]quot;Financial Markets, Monetary Policy and Reference Rates: Assessments in the DSGE Framework" NaoSudo, December 2012

primarily from the perspective of macro stability and applying monetary policy, especially when ubiquitous uncertainty abounds like conditions currently.

The importance of reference rates is further corroborated by the growing role of such rates as early warning indicators of liquidity shortfalls in the financial system. Another reference rate, the London Interbank Offered Rate (LIBOR), is indicative of rates at several banks wishing to lend their funds to other banks for a specified tenor. As an early warning indicator, LIBOR is deducted from the overnight index swap (OIS) that represents market expectations of the federal funds rate looking ahead. Spread between LIBOR and OIS gauges market perception of risk on financial markets, particularly the credit market⁴. Alan Greenspan even opined that LIBOR-OIS remains a barometer of bank solvency⁵. During the sub-prime mortgage debacle, LIBOR-OIS spread had already begun to increase in the middle of 2007, finally peaking when the Lehman Brothers filed for bankruptcy in September 2008. Therefore, it can be concluded that shifts in LIBOR-OIS are an early warning system for market players and related monetary authorities to observe distress on financial markets, however, the credibility of LIBOR



Box Figure 3.3.5 Spread of 3-Month LIBOR and OIS

has recently waned in light of the corresponding price setting scandal.

In line with the aforementioned Best Practices, as the credibility of JIBOR increased in the eyes of market players, JIBOR steadily became an alternative early warning indicator of distress on domestic financial markets. The interest rate differential between 1-month JIBOR and 1-month USD/IDR swap premium increases as pressure on financial markets escalates, particularly the exchange rate. As depreciatory pressures on the rupiah exacerbated exchange rate volatility, spread between the 1-month JIBOR and the corresponding implied swap premium tended to increase, from -10 to -20 bps previously to between 30 and 150 bps.



It can be seen that as pressure on financial markets mounted, the spread between JIBOR and the swap premium increased. Pressures on domestic financial markets and some emerging market countries persist in line with the Fed's Tapering policy⁶. Enriching the early warning system is one endeavour that could support task implementation at the financial authority in terms of formulating policy in order to prevent

⁴⁾ Reuters Financial Glossary

⁵⁾ Thorton, Daniel L. (2009) What the LIBOR-OIS Spread Says. Economic Synopses Number 24, 2009.Federal Reserve Bank of St Louis.

^{6) &}quot;Explaining Financial Market Barometers" Barclays (2013).

aggravating pressures further and, hence, better maintaining financial system stability. Nonetheless, a more in-depth review is still necessary to investigate the level of consistency of JIBOR spread analysis as an early warning indicator of distress on financial markets.

Box 3.4 OTC Derivative Market Reform

I. BACKGROUND

The Financial Crisis of 2008 revealed that over-the-counter (OTC) derivatives in general and credit derivatives in particular have systemic implications on financial markets. The bailout of AIG and the default of Lehman Brothers demonstrated weaknesses in counterparty credit risk management and a lack of transparency on the OTC derivative market with a systemic effect.

Weaknesses in counterparty risk management. Weaknesses were uncovered from the AIG case in terms of counterparty risk management on derivative transactions. As the parent company enjoyed a triple-A credit rating and only sold credit default swaps on super-senior tranches, so the subsidiaries (AIG Financial Group) were only required to deposit margin or collateral if the credit rating of the parent company was downgraded. Consequently, when the credit rating of AIG plummeted and the securitisation of guaranteed assets failed, AIG experienced margin calls and concomitant liquidity pressures. Subsequently, AIG received bailout funds from the US Government on 16th September 2008 in order to avoid a deep systemic impact due to the complex linkages and wide reach of AIG with global customers including government institutions, firms, retail customers and transaction counterparties.

A lack of transparency on the OTC derivative market. A lack of transparent trading and exposure by OTC derivative market participants made it nearly impossible to predict the impact of default by certain market players on counterparty creditworthiness. This led to reluctance among market players to transact and precipitated the withdrawal of credit lines from the market after the collapse of Lehman Brothers, which was one of the main dealers on the OTC derivative market. Inadequate information also limited the capacity of authorities to identify the problem and implement corrective actions in order to overcome systemic risk. The lack of transparency when trading OTC contracts also adversely affected price efficiency and left the market vulnerable to manipulation.

At a meeting in Pittsburgh in September 2009, G-20 leaders agreed OTC derivative market reforms with a timeframe of no later than 2012 for final implementation and covering the following salient points:

1. Simplification and standardisation of OTC derivative contracts.

The simplification and standardisation of OTC derivative contracts, consisting of standardising contract terms and operationalization, aims to augment the number of OTC derivative contracts that can be cleared through CCP and/or traded on an exchange or electronic trading platform. Standardisation also simplifies the market in terms of valuing derivative contract prices and assists the relevant authority when collating trading data from numerous global trade repositories.

Clearing all standard OTC derivative contracts through central counterparties. Central counterparties, or CCP, function as a

circuit breaker to prevent contagion on the OTC derivative market that, among others, stems from weaknesses in risk management at one of the parties involved in the transaction. The
presence of central counterparties enables derivative contracts to be traded through CCP as the counterparty.

3. Trading standard derivative contracts on an exchange or electronic trading platform and reporting the derivative contract to a trade repository.

Trading derivative contracts through an exchange or electronic trading platform and reporting the contract to a trade repository aims to enhance transparency for market participants and the relevant authorities. Boosting transparency, particularly in terms of prices and exposure, will make it simpler for the market to assess the impact of default by specific market players on counterparty creditworthiness and prevent price manipulation. On the other hand, greater transparency helps the relevant authorities identify a buildup of systemic risk earlier.

4. Higher margin and capital requirements on bilateral contracts.

In addition to more robust risk management requirements, bilateral derivative contracts are subject to higher margin and capital requirements to ensure better risk management on the OTC derivative market.

II. OTC DERIVATIVE MARKET AND CONTRACT TYPES

1. The OTC Derivative Market

According to Randall Dodd (2002)⁷, a derivative contract can be traded on two markets, namely on an exchange or on the over-the-counter market (offexchange). Trading on an exchange is traditionally achieved through open outcry, where professionals meet face-to-face to conduct the transaction. Nevertheless, trading on an exchange has developed to utilise electronic trading platforms that automatically find buying and selling prices offered by market players through multilateral trading. The main difference between an exchange and the OTC market is regulation. The majority of exchanges control the activity of their members on and off the exchange.

Conversely, the OTC derivative market is organised in three forms, namely the traditional dealer market, the electronically brokered market and a proprietary trading platform.

i. Traditional dealer market.

A traditional OTC market is operated by one or more dealers as market makers that determine buying and selling price quotations to market participants. Quotations and price negotiations are usually executed over the telephone or through electronic bulletin boards that present dealer quotations. The trading process is conducted over the telephone, either between the end user and the dealer or between dealers, which is a bilateral process because there are only two market players involved with direct access to the quotation and execution. Although only two parties know the price quotation, market participants with contacts to many dealers can still obtain a view of the market that is similar to that available through multilateral trading.

ii. Electronically brokered market

OTC derivative contracts can be traded over an electronically brokered platform, which is fundamentally the same as the electronic trading platform used by an exchange. On

Randall Dodd. The Structure of OTC Derivatives Markets. The Financier Vol. 9, Nos 1-4. 2002.

this type of market, institutions managing the trading platform only act as an trade intermediary and do not take a trading position or act as counterparty. Circumstances change, however, if the electronic platform utilises a clearinghouse. The clearinghouse takes over the credit risk of trading through the platform and reports it to the clearinghouse.

iii. Proprietary trading platform.

A proprietary trading platform is a combination of a traditional dealer market and an electronically brokered market, where OTC derivative dealers create their own proprietary trading platform. According to this system, quotations only originate from the dealer running the platform. This mechanism is known as one-directional multilateral trading because market players only find out the quotation from the dealer, while quotations from other market players are implicit of changes in the execution price. With this platform, the dealer takes all the credit risk on the market and is counterparty to all transactions on the platform.

2. Types of OTC Derivatives

According to the International Swaps and Derivatives Association (ISDA)⁸, derivative contracts contain three main categories. The first are over-thecounter derivatives that constitute customised bilateral contracts. Such contracts are negotiated between two parties and recorded directly by each respective party without an intermediary. The second category includes standard derivatives that are traded on an exchange, more commonly known as listed derivatives or futures. In contrast to OTC derivatives, futures are traded on the exchange and subsequently registered by a central counterparty usually known as a clearinghouse. The final category involves cleared derivatives, namely OTC derivatives negotiated bilaterally but, similar to futures contracts, logged by a central counterparty.

III. CENTRAL COUNTERPARTY

The element of OTC derivative market reform that is expected to have the most significant impact on changes to domestic financial market structure is the clearing mandate through a central counterparty (CCP). Therefore, understanding the role of a central counterparty, the benefits and the risks require a more specific study.

1. Benefits of centralised clearing.

Multilateral netting. One essence of centralised clearing is, through a legal process known as novation, handing over bilateral trade to the CCP. Consequently, CCP takes responsibility for the risks linked to a transaction as the buyer for all sellers and the seller for all buyers. This mechanism simplifies bilateral exposure across several counterparties to become one net exposure for the CCP. Therefore, compared to the bilateral mechanism, multilateral netting can reduce the amount of exposure on counterparties in the banking system as well as linkages between one bank and other banks.

Creditworthiness assessment. Utilising a CCP does not necessarily alleviate counterparty risk because such risk is thus concentrated around the central counterparty. Therefore, the capacity of the CCP to manage risk is important. Risk

⁸⁾ http://www.isda.org/educat/faqs.html





mitigation by a central counterparty is no different, in general, to that used for bilateral trading, namely that clearing members are required to meet minimum credit worthiness standards and advocate due diligence.

Margin requirements and the default fund In addition, clearing members are also required to maintain an initial margin and a variation margin in order to dampen the impact of losses in the event of default by a clearing member. On top of the margin requirement, the central counterparty has another source of funds to overcome extreme episodes. If the margin and contribution to the default fund by the defaulting clearing member are inadequate to absorb the losses, then the CCP default fund that is contributed by other clearing members can be used (loss mutualisation) in addition to internal funds of the CCP itself.

2. Risk concentration Counterparty credit risk

Positioning the central counterparty among a large number of counterparties concentrates the credit risk. CCP default, among others, due to inadequate risk management can significantly disrupt the wider financial system, especially if the CCP is conducting clearing activity on a systemically important market.

Operational risk. Serious operating disruptions at the central counterparty could have a systemic effect. Although a central counterparty has a back-up system and a sound disaster recovery plan, there is a possibility that the contingency plans drawn up might not cover all future eventualities. Temporary service interruptions when market conditions are stable might not trigger a larger problem. On the other hand, however, a significant or protracted disruption, terminating the payment for a transaction and/or uncertainty regarding the status of a transaction cleared when market conditions are not stable will compound market uncertainty and spur withdrawals of liquidity.

The capacity of the central counterparty to manage counterparty credit risk and operational risk is crucial so that as such risks emerge they do not trigger new risks in the financial system and conversely, can even reduce counterparty credit risk on the derivative market, among others, due to multilateral netting. Chapter 4 Strengthening Financial System Infrastructure This page intentionally blank

Strengthening Financial System Infrastructure

Financial system and monetary stability are an inseparable part of the strategic role played by the payment system as financial system infrastructure. An efficient and secure payment system is critical in expediting payments activities in an economy.

The reliability of the payment system operated by Bank Indonesia and the payment system industry was well maintained throughout the first semester of 2013. The reliability of the payment system from Bank Indonesia's standpoint was evidenced by the availability of the BI-RTGS system, BI-SSSS and BI-National Clearing System, which all met predetermined service levels. Such impressive performance formed the cornerstone of financial system and monetary stability, thereby contributing propitiously to economic activity. Payment system dependability was underpinned by continuous risk mitigation efforts undertaken by Bank Indonesia in the form of system development, system enhancement and payment system policymaking.

4.1 RISK MITIGATION AND LIQUIDITY MANAGEMENT

1. BI-RTGS System

Chapter 4

The operating activity of the BI-RTGS system was performed securely and without interruption during the reporting semester. Departing from conditions in the preceding semester, the data communication network experienced no further disruptions in Semester I-2013. Updating the communication network from SNA to TCP/IP helped further mitigate technical disruptions in the BI-RTGS system.

Additionally, the smooth operation of the BI-RTGS system was attributable to the reliability of the main system and availability of supporting infrastructure like the BI-RTGS Disaster Recovery Centre (DRC) that is in a constant state of preparedness to replace the primary system in the event of a disruption. Bank Indonesia regularly operates DRC infrastructure for daily transactional activityin order to ensure the operational readiness of the DRC. Furthermore, DRC infrastructure is operated transparently in order to demonstrate to participants of the BI-RTGS system that the primary system and backup system adhere to the same level of quality. During the reporting period, DRC infrastructure was employed for transactional activity during the month of April 2013, exhibiting uninterrupted operational continuity.

In terms of liquidity management, liquidity was well maintained in the BI-RTGS system during Semester I-2013, as reflected by the turnover ratio ^{,1} the number of gueued transactions, unsettled transactions, throughput guidelines² and FLI. Compared to the previous semester, the turnover ratio decreased during the first semester of 2013 but the number of gueued transactionsincreased in terms of volume and value. The turnover ratio averaged 0.96 in Semester I-2013 and the number of transactions forced to gueue totalled 3,503 with a total value of Rp27.99 trillion. During the reporting semester, 13 transactions were unsettled, valued at Rp719.87 billion. Furthermore, the distribution of transactions based on throughput in Semester I-2013 was 34%;53%; 13%, which indicates that the majority of transactions were settled during the middle of the day. Additionally, no bank required the intraday liquidity facility (FLI-RTGS) during the first semester of 2013, thereby affirming that the liquidity condition of all BI-RTGS participants was well maintained. The intraday liquidity facility represents a form of risk mitigation provided by Bank Indonesia to overcome temporary funding shortfalls experienced by banks participating in the BI-RTGS system that occur during operational hours in order to avoid payment system gridlock.

2. BI-SSSS

BI-SSSS was secure and free from disruption during the first semester of 2013 thanks to the reliability of the main system and availability of a backup system constantly prepared to replace the primary system in the event of disruptions. Similar to the BI-RTGS system, updating the communication network from SNA to TCP/IP successfully mitigated disruptions to BI-SSSS relating to the communication network.

3. The National Clearing System (SKNBI)

In general, the national clearing system was operated smoothly without interruption, as demonstrated by the lack of system down time during the reporting semester. On a daily basis, however, there were a few cases of time extensions due to technical issues but that did not disrupt the national clearing system overall. Moreover, Bank Indonesia has a sound contingency planin place, buttressed by reliable backup infrastructure in order to maintain the uninterrupted operation of the clearing system. The liquidity of clearing participants can be monitored using several indicators like successfully meeting the prefund requirement, using that prefund or the top-up prefund as well as erroneous transactions. During the first semester of 2013, no bank failed to meet the prefund requirement at the beginning of the day as a prerequisite for participation in daily clearing activities.

4.2 TRANSACTIONS THROUGH THE PAYMENT SYSTEM

Financial transactions processed through the payment system increased during the first semester of the current year, both in terms of volume and value. Regarding value, transactions settled through the BI-RTGS system continued to dominate the non-cash payment system with a share of 76% of the total value. Additionally, BI-SSSS transactions accounted for 19.33% and card-based payments for 2.45% of the total value of financial transactions through the payment system. Concerning volume, ATM cards and ATM/debit cards continued to dominate with a share of 92.01% of total transaction volume in the non-cash payment system at the end of Semester I-2013.

The turnover ratio is a comparison of outgoing transactions settled through a bank's opening balance available at the beginning of the day. A high turnover ratio indicates that a bank favours settling its liabilities by waiting for incoming transfers form other banks rather than using its own internal funds, hence a higher turnover ratio is indicative of such transactional behaviour.

²⁾ Throughput guidelines are targets for when participants are expected to settle a specific percentage of their total payments throughout the day referring to a graduated payment schedule as follows: <10:30 WIST; 10:30 to 14:30 WIST; and 14:30 to 16:30 WIST expected to settle 30%; 30% and 40% respectively.</p>

1. BI-RTGS System Transactions

Payment transaction activity through the BI-RTGS system in the reporting semester increased in terms of volume but decreased in value compared to the same period in the previous year (Figure 4.1). Volume increased by 3%, while value decreased by 32%. The average daily value and volume of transactions settled through the BI-RTGS system in Semester I-2103 were Rp326.90 trillion and 71,119 transactions respectively, therefore totalling Rp40,188.74 trillion and 8.74 million transactions for the semester as a whole.

Figure 4.1



2. BI-SSSS Transactions

Transactions through BI-SSSS experienced a decline during Semester I-2013 compared to the previous year. Thevalue of transactions through BI-SSSSslumped toRp10.24 thousand trillion, which is down 52% in comparison to the 8% increase in volume noted with 68.316 transactions settled. Therefore, average daily transactions through BI-SSSS in Semester I-2013 were valued at Rp83.14 trillion with a volume of 555 transactions.





3. National Clearing System (SKNBI) Transactions

Payment transaction activity through the national clearing system (SKNBI) during the first semester of 2013 experienced an increase in terms of value but a decrease in volume compared to the same period of the preceding year (Figure 4.3). In Semester I-2013, the average daily value and volume of SKNBI transactions were Rp9.39 trillion and 409.10 thousand transactions respectively with a total value of Rp1,153.52 trillion and total volume of 50.29 million transactions for the semester overall. In comparison to the same semester of the previous year (yoy), value increased by 10% and volume decreased by 2%.



Source: EDWSP, subject area BI-RTGS

4. ATM and ATM/Debit Card Transactions

Payment transaction activity using ATM and ATM/ debit cards increased during the reporting semester compared to the same period of the previous year (Figure 4.4). The average daily value and volume of card-based transactions amounted to Rp9.98 trillion and 9.11 million transactions respectively, therefore totalling Rp1,800.71 trillion and 1.65 billion for the semester as a whole. Compared to the same period of the previous year (yoy), value and volume both increased by 25% respectively.

Source: BI-SSSS

Chapter 4. Strengthening Financial System Infrastructure



Source: EDW, Head Office Reports of Commercial Banks (LKPBU)

5. **Credit Card Transactions**

Payment system activity using credit cards intensified during the reporting semester compared to the same period of the previous year (Figure 4.5). During Semester I-2013, the average daily value and volume of credit card transactions were Rp589.19 billion and 642.24 thousand transactions respectively with a total value of Rp106.67 trillion and total volume of 116.23 million transactions for the semester overall. Compared to the same period of the preceding year, transaction value and volume increased by 9% and 7% correspondingly.



RRH Volume

Apr . Mei 5 540

520

Ags Source: EDW, Head Office Reports of Commercial Banks (LKPBU)

Sep 0kt Des

ò Jan Feb ٨ar

3

Electronic Money Transactions 6.

 \sim 12 2 2 2 2 2 2 2 2 m m m

٨ar

Apr . Mei η

0.48

0.46

 \sim \sim

lan de

Payment system activity using electronic money (e-money) increased during Semester I-2013 compared to the same period of the preceding year (Figure 4.6). In Semester I 2013, the average daily value and volume of e-money transactions totalled Rp7.01 billion and 356.97 thousand transactions

with totals for the semester amounting to Rp1.27 trillion and 64.99 million transactions respectively. When compared to the same period of the previous year, transaction value and volume increased 67% and 55% respectively.





Source: EDW, Head Office Reports of Commercial Banks (LKPBU)

4.3 PAYMENT SYSTEM DEVELOPMENT TO STRENGTHEN FINANCIAL SYSTEM INFRASTRUCTURE

Maintaining the reliability and security of the payment system is inextricably linked to efforts to mitigate risk in the payment system in order to bolster financial system and monetary stability. To this end, the primary focus of Bank Indonesia payment system policy is directed towards ensuring security, boosting payment system efficiency and broadening access to the payment system. In addition, payment system policy is geared towards operating a payment system that is secure, efficient and free from disruption while broadening access in the national interest.

Payment system development policies include, among others, development of second-generation BI-SSSS and BI-RTGS systems, updating BI-SSSS applications, interconnectivity between principals in terms of national payment gateway development, implementation and further development of mobile payment services and issuing Bank Indonesia circulars concerning auctioning procedures for government bonds (SUN) on the primary market, administrating government bonds and transferring funds.

a. Progress of Second-Generation of BI-RTGS and BI-SSSS Development

Up to the first semester of 2013, second-generation of BI-RTGS system development (RTS/X module) had completed the UAT phase, training batch I for members of the working group and activity testing to accommodate testing by participants who have completed application interconnectivity training on the Participant Platform and Central Node as well as testing the interface mechanism between the participant platform and the internal systems of participants.

Second-generation of BI-SSSS development included the DEPO/X and TRAD/X modules as well as HARTIS, while activity continued to focus on completing the UAT script.

b. Updating BI-SSSS Applications

BI-SSSS applications have been updated along with simulated auctions of green shoe options as well as training provided to the Ministry of Finance and primary dealers in order to support the government plan to extend its selling scheme of government bonds (SUN) through green shoe option auctions.

c. Interconnectivity between Principles in terms of National Payment Gateway Development

Bank Indonesia has and will continue to advocate interconnectivity between industry players, among others, through the development of a National Payment Gateway (NPG) in order to boost efficiency in the retail payment system. NPG development is a joint endeavour between Bank Indonesia and industry players to create national switching that meets transactional requirements between hosts of the payment system, which occur in a variety of delivery channels like ATM, EDC, the Internet, telephones and cellular telephones. Moreover, NPG will help centralise national payment system data, thereby supporting more comprehensive data in the payment system policymaking and decision-making process.

Preliminary development includes building interconnectivity between the various ATM card networks. In 2012, Bank Indonesia facilitated ATM network interconnectivity between BCA and Bank Mandiri, which enabled cash withdrawals, fund transfers and other transactions like account balance information. Initiating interconnectivity between those two banks is expected to entice other industry players into active participation of broader interconnectivity as payment system infrastructure remains concentrated in large cities and, hence, does not reach all strata of society in Indonesia.

As a follow-up measure after initiation, interconnectivity between domestic principals was achieved, namely between PT Alto Network, PT Artajasa Pembayaran Elektronis and PT Rintis Sejahtera, through a Memorandum of Under standing, dated 6th May 2013. Although interconnectivity between principals remains limited to fund transfers, this represents a positive signal from industry players about broadening service coverage while concomitantly improving alternative payment system services that are more efficient. Such cooperation provides a clear opportunity for the banking community to broaden service coverage to all corners of the archipelago with lower cost ATM infrastructure. Furthermore, the provision of ATM infrastructure is no longer based on the requirements of each respective bank but is now centred on the aggregated needs of the industry. From a broader perspective, this also provides an incentive for the banking industry to expand its infrastructure into

remote areas, hitherto lacking ATMs, with relatively low cost investment that could increase service revenues. This initiative also benefits the customers. A direct benefit immediately felt by the general public as a result of interconnectivity between domestic principals is greater convenience when transferring funds from and to any bank in Indonesia. Previously, the general public did not have access to all banks because a number were not connected to the ATM network. Convenient and smooth transactions between members of the general public, coupled with better quality and secure services will ultimately catalyse national economic activity.

Synergy among domestic principals is the foundation for Bank Indonesia to realise a national retail payment system that incorporates other retail payment services like debit cards, credit cards and electronic money. Under ideal conditions, where all payment system operators and instruments are mutually interconnected, greater public and private desire to use non-cash instruments would stimulate growth in national economic transactions and simultaneously strengthen domestic industry competitiveness against international competition.

d. Implementation and Performance of Mobile Payment Services

In line with the development of the national economy and a general populace spread out over thousands of islands, Bank Indonesia acknowledged the requirement for a financial and payment system that can span the Indonesian archipelago and reach all strata of society, especially the unbanked and underbanked. It is recognised that payment system operators are currently limited in terms of their outreach, whereby large swathes of the nation remain unserved. Consequently, service innovation is required that will reach all levels of society wherever they may be through mobile technology and thirdparty operators, namely payment system and financial intermediaries, to provide payment system and financial services.

A fundamental consideration in the use of mobile technology is the depth of market penetration by cellular telephones in Indonesia, reaching 240 million with as many as 12.5 million people switched on to mobile electronic money. From a slightly different perspective, telecommunications infrastructure already covers 95% of Indonesian territory with over 2 million agents and telecommunications retailers in the country. Meanwhile, using third parties as intermediaries of payment system and financial servicesis expected to help ingratiate the technology with the general public, not only in terms of physical distance but moreover in terms of psychology and culture. The proletariat, who have hitherto remained reluctant to engage with formal financial institutions, will feel more at ease transacting through informal agents.

In general, this proliferation of financial services is known internationally as branchless banking. The services offered include opening electronic money accounts and savings accounts, withdrawing cash, routine bill payments, fund transfers, etcetera. The availability of simple services is expected to meet the requirements of the unbanked and underbanked. Such communities will start to recognize and be acknowledged in the financial system, thereby enabling access to additional funds to finance productive businesses.

Internationally, particularly in emerging market countries, the practice of branchless banking is nothing new, which is evidenced by a variety of studies from over 100 countries like India, Malaysia, the Philippines, Kenya, Pakistan and Mexico where branchless banking has already been implemented. Meanwhile, in the context of Indonesia, branchless banking is new to the domestic banking industry. Therefore, branchless banking requires prudent implementation considering that expanding the payment and financial system through technology and third parties entails risk, particularly operational risk, legal risk and reputational risk for the banks and telecommunications companies involved.

Pilot projects are implemented first in order to minimize the risks that may emerge. Testing is expected to produce a business model applicable to the unique conditions found in Indonesia, the culture and the practical constraints that may emerge as well as the risks faced by those parties involved. Implementation will be conducted in phases commencing with the guiding principles, testing, monitoring, overall evaluation and finally full implementation through the promulgation of regulations concerning mobile payment services.

The guiding principles regulate the implementation of limited banking and payment system services through third parties, including a business model and the products available, the activities undertaken, the applicable requirements and technologies used, risk management, compliance to anti-money laundering, education, consumer protection and so on. Testing began in May 2013 and will continue until November of the same year referring to the guiding principles. Limited pilot projects have been implemented at five banks and two telecommunications companies in eight provinces determined by the banks, namely North Sumatera, South Sumatera, West Java, Central Java, East Java, Bali, East Kalimantan and South Sulawesi. Each bank is permitted to select no more than two provinces and three districts within each province.

It is hoped that through testing, all stakeholders

involved will gain more comprehensive understanding and therefore be better prepared to support pilot project implementation, including input from regulators when legislating mobile payment services.

e. Issuing Bank Indonesia Circulars concerning Auctioning Procedures for Government Bonds (SUN) on the Primary Market and Administrating Government Bonds as well as a Bank Indonesia Circular on Fund Transfers

Regarding an amendment to Ministry of Finance Regulation (PMK) No. 50/PMK/08/2012 concerning Auctioning Rupiah and Foreign Currency Government Bonds on the Domestic Primary Market, Bank Indonesia issued Bank Indonesia Circular No. 15/15/DASP, dated 8th April 2013, on Auctioning Procedures for Government Bonds (SUN) on the Primary Market and Administrating Government Bonds. The circular letter was promulgated because the previous Ministry of Finance regulation only accommodated the green shoe option for Islamic tradeable government securities (SBSN), excluding provisions for government bonds (SUN).

In addition to issuing a circular concerning the auctioning procedures for government bonds on the primary market in Semester I-2013, Bank Indonesia Circular No. 15/23/2012, dated 27th June 2013, concerning Fund Transfers was also issued in order to bolster the security and smooth settlement of fund transfers as well as provide additional clarification on the rights and responsibilities of all parties involved in the transfer of funds. That circular letter represents the implementation requirements for Bank Indonesia Regulation (PBI) No. 15/23/PBI/2012 regarding Fund Transfers (State Gazette of the republic of Indonesia 2012 Number 283, Supplement to State Gazette Number 5381).

This page intentionally blank

Chapter 5 Challenges to Financial System Stability Looking Ahead This page intentionally blank

Chapter 5 Challenges to Financial System Stability Looking Ahead

The financial system in Indonesia is beset by a number of challenges in 2013 that threaten to undermine the internal and external economic balance. Internally, economic growth is projected to ease in 2013, accompanied by a high rate of inflation. Externally, however, Indonesia's balance of payments ran a deficit up to the second quarter of the year but should show signs of improvement by yearend. Based on the results of stress tests for the banking industry, bank resilience in Indonesia is still well maintained and buttressed by adequate capital. Against this backdrop, the banking outlook in Indonesia for 2013 is good despite some vigilance required of potentially escalating credit risk.

5.1 CHALLENGES TO FINANCIAL SYSTEM STABILITY 5.1.1 External Opportunities and Challenges

The global economy in 2013 will not grow as robustly as previous projections. A number of international institutions have revised down their global growth projections. The IMF, in its July 2013 Update of the World Economic Outlook (WEO), revised down its global growth forecast by 0.2% from the 3.3% (yoy) predicted in April 2013 (WEO). The World Bank released its projection of 2.2% in June 2013, down from its previous forecast of 2.4%.

Global growth projections were revised down primarily because of weaker economic performance in China. In Quarter II-2013, China recorded lower-thanexpected growth, which forced corrections in forecasts for 2013 overall. The IMF, in its July 2013 Update of the World Economic Outlook (WEO), predicted 7.8% growth in China, down from 8.1% projected in the April 2013 Update of the World Economic Outlook. The economic slowdown in China is reflected by the production index that slumped from 9.2% in May 2103 to 8.9% in June, coupled with weaker investment, particularly in the manufacturing sector and real estate.

The languid economic recovery in advanced countries will persist, especially in the Euro Area. The IMF revised down its projections for the United Sates and Euro Area in its July 2013 Update of the World Economic Outlook by -0.2% respectively compared to previous projections. Nonetheless, the US economy responded positively in the second quarter of the current year with real economic growth achieving 1.7% (yoy), up from 1.3% in the preceding quarter. Meanwhile, the Euro Area is still plagued by weak consumer spending. The economy of Japan rallied on the back of improved manufacturing sector performance in line with stronger exports. The Abenomics policy of Japan bolstered consumer confidence and spurred a significant increase in retail sales.

Weaker projections for the global economy undermined world trade volume and lowered commodity prices, in particular non-oil/gas prices. The outlook for the price of oil in 2013 is expected to be higher than previous projections in congruence with the economic recovery in the US and negative sentiment surrounding geopolitical shocks.

Looking ahead, the global economy remains shrouded in uncertainty. Postponing the tapering policy by the Fed, announced on 18th September 2013, will exacerbate uncertainty concerning the global economic recovery. The postponement indicates that the US economy is not on track with previous estimates, thereby compounding uncertainty regarding policy implementation. Ubiquitous uncertainty overshadowing the global economic recovery requires tight vigilance in terms of managing economic stability and the financial sector in Indonesia because of potential shocks on global financial markets, mounting volatility of capital flows and exchange rate fluctuations in other countries, including emerging market countries.

5.1.2 Internal Opportunities and Challenges

Financial system stability will be threatened by the challenge of disruptions to the internal and external balance of the Indonesian economy. Internally, economic growth in 2013 will slow compared to that posted in the preceding year and the rate of inflation is high. Externally, the Indonesian balance of payments recorded a deficit in the second quarter of 2013.

Economic growth in Indonesia is projected in the range of 5.5%-5.9% for 2013, revised down from 5.8%-6.2% (yoy) previously. The projection was revised down due to weaker domestic demand that has hitherto been a main driver of economic growth in Indonesia. Furthermore, weaker public purchasing power eroded household consumption and the impact of the social safety net on the working class was insufficient to raise

	WEO-IMF		v	/orl Bar	ık	Asia Pacif Consensus Fo		ic Asia Deve recast Bank Fo		evelop k Foreca	elopment orecast	
	2011	2012	2013	2011	2012	2013	2011	2012	2013	2011	2012	2013
World Output	3,9	3,1	3,5	2,8	2,3	2,2	-	-	-	-	-	-
Advanced Economies	1,7	1,2	1,8	3,8	2,9	3,1	-	-	-	1,2	1,1	1,1
Amerika Serikat	1,8	2,2	2,0	1,8	2,2	2,0	1,8	2,8	1,6	1,7	2,2	2,0
Jepang	-0,6	1,9	3,5	-0,5	2,0	1,4	-0,6	2,0	1,9	-0,7	1,9	1,8
Eropa	1,5	-0,6	0,3	1,5	-0,5	-0,6	1,5	-0,5	-0,4	-	-	-
Developing Asia *	7,8	6,5	7,0	-	-	-	-	-	-	7,2	6,1	6,3
China	9,3	7,8	7,9	9,3	7,8	7,7	9,3	7,8	7,5	9,3	7,8	7,7
India	6,3	3,2	6,0	6,2	5,0	5,7	6,2	5,0	4,9	6,5	5,0	5,8
ASEAN 5	4,5	6,1	5,5	-	-	-	-	-	-	4,5	5,6	5,2
Indonesia	-	-	-	6,5	6,2	6,2	6,5	6,2	5,7	6,5	6,2	6,4
Malaysia	-	-	-	-	-	-	5,1	5,6	4,4	5,1	5,6	5,3
Philipina	-	-	-	-	-	-	3,6	6,8	7,0	3,9	6,6	6,0
Thailand	-	-	-	0,1	6,5	5,0	0,1	6,5	3,6	0,1	6,4	4,9
Vietnam	-	-	-	-	-	-	5,9	5,0	5,2	5,9	6,0	5,2
Latin America												
and the Caribbean	4,6	3,0	2,9	4,4	3,0	3,3	-	-	-	-	-	-
Middle East and North Africa	2,9	2,4	2,8	-2,2	3,5	2,5	-	-	-	-	-	-
Sub-Saharan Africa	5,4	4,9	-	4,7	4,4	4,9	-	-	-	-	-	-

Table 5.1 Global Economic Growth Projections

Source : IMF World Economic Outlook Update July 2013, WB Global Economic Prospect, June 2013; Consensus Forecasts September 2013; Asia Pacific Consensus Forecasts September 2013; ADB Asia Development Outlook April 2013 & Supplement July 2013.

public purchasing power. Household consumption is only expected to pick up in the final quarter of the year in line with preparations for the planned General Election in April 2014. In harmony with the current slowdown in household consumption, investment spending, particularly non-construction investment, will ease off in 2013 overall. Several investment indicators, like imports of capital goods, sales of heavy equipment and electricity consumption in the manufacturing sector confirmed that non-construction investment will contract in the second semester of 2013. Weaker investment performance is also attributable to higher interest rates and rupiah depreciation.

Externally, export performance is predicted to rebound. Although the prospects of a global economic recovery appear bleak, rupiah depreciation is expected to catalyse exports in 2013. Meanwhile, for the year of 2013 as a whole, growth in real imports of goods and services will slump due to waning domestic demand.

On the supply side, sluggish value added growth in primary economic sectors is expected in 2013. Growth in the manufacturing industry as well as the trade, hotels and restaurants sector is predicted to decelerate as fuel price hikes precipitated weaker domestic demand. Notwithstanding, the agricultural sector will remain relatively stable, while the transport and communications sector achieved robust growth stemming from the value added of communication data along with escalating communication activity in preparation for the upcoming General Election in April 2014. The transport subsector experienced heightened pressures after raising fares in the wake of the subsidised fuel price hikes. Moreover, construction sector performance will deteriorate as a result of weak investment. However, mining sector performance will improve due to advances in oil production and a rebound in non-oil/gas mining production.

The rate of inflation is forecast in the range of 9.0% to 9.8% in 2013, well above the target corridor of

4.5%±1%. The soaring rate of inflation is blamed on unpopular fuel price hikes in June 2013 that not only intensified inflation on administered prices but the second-round effects also impacted volatile foods. The outcome of fuel price hikes is only temporary with conditions shortly thereafter expected to return to normal, as indicated by a lower rate of inflation in August 2013 compared to the previous month. Inflationary pressures will ease during the remainder of the year as domestic demand weakens and measures to strengthen policy coordination between Bank Indonesia and the Government in terms of controlling inflation are realised.

Externally, the balance of payments faced challenges in 2013 stemming from uncertainty overshadowing the global economic recovery. Such uncertainty triggered a deceleration in trade volume and commodity prices compared to previous projections. On the other hand, relatively strong domestic demand in the fist half of the year placed additional pressures on demand for imported goods and services. Consequently, Indonesia's balance of payments ran a deficit totalling US\$2.5 billion in Quarter II-2013. Nevertheless, the current account balance is expected to improve during the second half of the year. The prospective global economic recovery, followed by rising international commodity prices in Semester II-2013, will foster better national export performance. Meanwhile, the domestic economic slowdown and rupiah depreciation will help drive down imports. Additionally, subsidised fuel price hikes in June 2013 will contribute to a decline in oil imports. Taking into consideration the aforementioned conditions predicted for the second half of the year; the current account deficit will be reduced and remain under control in Semester II-2013

5.2 IMPACT ON THE BANKING SYSTEM 5.2.1 ASSESSMENT OF RISK

The internal and external challenges mentioned have the potential to affect banking industry

resilience. The challenges are primarily in the form of sluggish domestic economic growth in Indonesia, rupiah depreciation and rising domestic interest rates. The macroeconomic constellation of Indonesia could aggravate potential credit risk and market risk in the banking industry. Consequently, stress test were conducted to assess banking industry resilience using standards pursuant to the Financial Sector Assessment Program of the IMF (FSAP) 2009 in order to investigate bank resilience against potential credit risk and market risk that could emerge.

In general, banking sector resilience against potential increases in credit risk and market risk remained sound, reinforced by a capital adequacy ratio in excess of that recorded at the end of Semester II-2012. Stress tests based on sensitivity and scenario analysis (in the case of stress testing credit risk)¹ revealed that in June 2013 the banking industry could successfully absorb potential increases in credit risk and market risk. In this context, market risk comprises of rising interest rates, lower government bond prices and exchange rate depreciation.

By bank group, regional banks, private banks and state-owned banks were the most vulnerable to increases in non-preforming loans (NPL) and interest rates, which sparked a drop in CAR of more than 100 bps. State-owned banks were also vulnerable to the effects of lower government bond prices, while foreign banks were found to be the most susceptible to the effects of

1) Refer to the Financial Sector Assessment Program of the IMF (FSAP) 2009

		CAR	after Stress	Tests (June	2013)	
	All	Regional	Private	Joint- venture	Foreign	State- owned
Initial CAR	17,95%	15,67%	16,27%	21,31%	33,17%	16,61%
CAR after increase in NPL (to 9.8%)	15,21%	10,76%	13,77%	19,69%	31,64%	13,50%
CAR after increase in rupiah interest						
rates (10%)	16,15%	11,88%	14,91%	21,17%	32,47%	14,15%
CAR after decrease in government bond						
prices (-20%)	16,78%	15,16%	15,58%	20,54%	30,89%	14,85%
CAR after rupiah depreciation (-50%)	17,55%	15,64%	16,05%	20,98%	32,60%	15,91%
		CAR Deita	after Stress	Tests (in ba	sis points)	
	All	Regional	Private	Joint- venture	Foreign	State- owned
CAR after increase in NPL (to 9.8%	-274	-491	-250	-162	-153	-311
CAR after increase in rupiah interest						
rates (10%)	-180	-379	-136	-15	-71	-246
CAR after decrease in government bond						
prices (-20%)	-118	-51	-70	-77	-228	-176
CAR after rupiah depreciation (-50%)	-40	-4	-22	-33	-57	-69

Table 5.2 CAR Delta after Stress Tests

Figure 5.1

lower government bond prices. Joint-venture banks were the most resilient to market risk and the decrease in CAR due to credit risk was also relatively negligible compared to other bank groups.

5.2.2 Assessment of Credit Risk

Stress testing credit risk was conducted using potential increases in bank NPL, namely from 1.88% at the end of December 2012 to 9.8% at the end of June 2013. The stress tests were performed in accordance with one of the scenarios of the Financial Sector Assessment Program (FSAP) 2009, assuming 0% GDP growth. According to this scenario, bank CAR has the potential to decrease 247 bps to 15.21%. Declines in CAR are transmitted from a 5.22-time increase in NPL along with 0% GDP growth. The increase in non-performing loans is assumed to stem from healthy credit (column 1) and substandard loans (column 2) becoming doubtful (column 4). A change in the collectability of credit due to additional nominal NPL involves a corresponding increase in the loan loss provisions held by banks. By bank group, regional banks, stateowned banks and private banks were the most vulnerable to increases in credit risk with CAR after stress testing amounting to 10.76%, 13.50% and 13.77% respectively. Those three bank groups were the most vulnerable because their initial levels of NPL were relatively high and levels of CAR relatively the same at around 16%. In comparison, the initial levels of NPL of joint-venture banks and foreign banks were relatively lower and levels of CAR surpassed 20%. Based on historical averages, the percentage of NPL over the past decade was 4.5%. According to a scenario of NPL at 5%, bank CAR only decreased 92 bps to 17.04%.

5.2.3 Assessment of Market Risk

In terms of market risk, the exposure of bank short-term assets and liabilities to changes in interest rates increased moderately during the first semester



Source: Bank Indonesia, processed

of 2013. By tenor, the short-term rupiah maturity profile (<12 months) recorded an increase in the short position (net liabilities) from Rp275.15 trillion (December 2012) to Rp327.69 trillion (June 2013). Of the banks' liabilities, the majority were up to 1-month tenors and increased slightly on the position in the preceding semester.





Source: Bank Indonesia, processed

Stress testing rupiah interest rates revealed a potential decline in bank CAR of 180 bps to 16.15% according to another FSAP scenario that assumes a 10% hike in rupiah interest rates in parallel across all maturity buckets of less than one year. The decline in CAR is transmitted from potential bank losses due to an increase in interest bearing liabilities following the hike in interest rates. By bank group, regional banks and state-owned banks that maintain a significant short position were the most vulnerable to the risk of higher interest rates with a level of CAR after stress testing amounting to 11.88% and 14.15% respectively.



Figure 5.3

Source: Bank Indonesia, processed

Escalating market risk not only stems from rising rupiah interest rates but also from lower government

bond prices. At the beginning of the financial crisis in 2008, the mark-to-market value of available-for-sale and trading portfolio slumped as a result of lower government bond prices. In June 2013, bank exposure to the risk of lower government bond prices increased slightly compared to the situation in Semester II-2012 due to additional AFS and trading government bonds amounting to Rp191.38 trillion (June 2013), up from Rp181.22 trillion in December 2012.

Stress testing a 20%² decline in government bond prices revealed a potential decline in bank CAR of 118 bps to 16.78%. The decrease in CAR is transmitted through mart-to-market losses on government bonds amounting to 20% of total government bonds in the AFS and trading portfolio. By bank group, foreign banks, with the largest holding of government bonds, could potentially experience

the most significant decline in CAR, namely 228 bps. Nonetheless, as the CAR of foreign banks is the highest of all bank groups, in excess of 30%, the capital adequacy

Figure 5.4



Source: Bank Indonesia, processed

ratio of foreign banks would still remain above 30%. Stateowned banks would also be detrimentally affected by a 170 bps decline in CAR to 14.85%.

Rupiah exchange rate depreciation is another form of market risk with the potential to undermine **bank CAR**. A weaker rupiah has the potential to trigger bank losses stemming from an increase in foreign currency liabilities following rupiah depreciation. Based on data of bank exposure to foreign exchange in June 2013, the net open position was relatively low at 2.93%, which is relatively unchanged from the position in December 2012 at 2.91%. Meanwhile, the rupiah depreciated against the US dollar from around Rp9,360 per US dollar (December 2012) to Rp9,780 in June 2013. The net open position in June 2013 remained low compared to the maximum permitted under prevailing regulations, namely 20%.

Stress testing a 50%³ level of rupiah depreciation revealed a minimal decline in bank CAR. Bank CAR only decreased by 40 bps to 17.55%, which is insignificant in terms of undermining capital resilience because bank exposure is relatively small. By bank group, all bank groups

²⁾ In line with the FSAP 2009 scenario.



are adequately resilient to exchange rate exposure with CAR maintained in excess of 15%.



Figure 5.6 **Stress Testing on Rupiah Depreciation**

Source: Bank Indonesia, processed

In general, the stress tests conducted during the reporting period clearly demonstrated that each respective bank group could absorb its exposure to credit risk and market risk. A sound level of CAR in the banking industry throughout Semester I-2013 further evidences this. Nevertheless, vigilance is required concerning an increase in risk exposure at regional banks (BPD), particularly in terms of credit risk and rising rupiah interest rates.

5.2.4 Contagion Risk Analysis

Banks are urged to be more prudent in their activities in order to avoid potential contagion as a result of complex interbank linkages. Bank contagion



analysis is conducted to determine the potential contagion effect from the default of one bank to other banks through exposure to interbank placements. Based on the results of extreme stress tests on the position in June 2013, it was shown that if seven trigger banks (lenders) experienced defaults that cannot be offset by their interbank liabilities, the capital of as many as 20 other banks would be affected (single failure impact). The knock-on effect (multiple failure) would undermine capital at a further three banks (second-round impact).



5.3 THE RESILIENCE OF BANKING INDUSTRY AND FINANCIAL SYSTEMS PROSPECTS

The outlook for the banking industry in Indonesia remains solid for 2013 despite some vigilance required of potential credit risk. Considering the opportunities and challenges confronting the economy of Indonesia as well as current performance and resilience, the banking industry in Indonesia is projected to grow robustly despite a moderate slowdown compared to growth posted in 2012 with a well-maintained level of resilience. Credit growth is projected in the range of 19.0%-20.4% at the end of 2013, while deposits are predicted to grow in the range of 15.3%-16.3%. Weaker economic growth, coupled with a higher rate of inflation, rupiah depreciation and BI rate hikes, could potential amplify credit risk, with the NPL ratio forecast in the range of 2.3%-2.6%.



Source: Bank Indonesia, processed





Source: Bank Indonesia, processed



Source: Bank Indonesia, processed

Article

This page intentionally blank

Article 1

Level of Competition and Efficiency at Commercial Banks and Rural Banks on the Microfinance Market in Indonesia

(Januar Hafidz¹, Sagita Rachmanira², Tika Octia³)

1. INTRODUCTION

Micro, small and medium enterprises (MSMEs) occupy a crucial and strategic function in driving the domestic economy of Indonesia. This is evidenced, among others, by the success of the MSME sector in terms of withstanding the crisis and even bolstering the economy during the crisis episode. The significant contribution of the MSME sector leads to sustainability and, therefore, MSME development is vital in the economy. One method to develop the MSME sector and strengthen its role in the structure of the national economy is through broader MSME access to credit/financing. Through their research, Morduch (1999) and Robinson (2001) found that the supply of financing to micro and small entrepreneurs (MSE) played a major role in combatting poverty and could catalyse economic expansion in developing countries.

The financial system in Indonesia is a bank-based economy; therefore, the banking sector tends to dominate financing to MSMEs, including commercial banks⁴ and rural banks. Initially, the extension of micro credit was primarily the preserve of rural banks and other microfinance institutions and characterised by high costs and high labour, which constrained commercial banks from engaging in microfinance. Nonetheless, in line with tighter competition in the banking industry in terms of

4) Commercial banks comprise of conventional commercial banks and Islamic banks

disbursing credit to the corporate and retail sectors, the large segment of micro enterprises that are financially feasible to receive credit and the relatively larger profit margin associated with micro enterprises compared to other sectors, commercial banks have begun financing micro enterprises. Such circumstances have lead to tighter competition in the micro segment, including competition between commercial and rural banks.

Against this backdrop, this article aims to identify (i) business characteristics and the attributes of microfinance: (ii) the level of competition between commercial banks and rural banks in terms of microfinance; and (iii) the level of efficiency of commercial banks and rural banks. The level of efficiency is included because a number of other research papers have found that interbank competition could influence bank performance, especially the level of efficiency (Casu and Girardone, 2007, Schaeck and Cihak, 2008).

2. LITERATURE STUDY

Competition is the mutual struggle between two individuals or groups seeking the same object. In general, there are two approaches to competition theory, namely a structural approach and non-structural approach (Bikker and Haaf, 2002). The structural approach is a departure from conventional Industrial Organisation theory, which is based on the level of concentration, otherwise known

¹⁾ Author is an Economist at the Department of Macroprudential Policy, Bank Indonesia.

²⁾ Author is an Economist at the Department of Macroprudential Policy, Bank Indonesia.

³⁾ Author is a Research Fellow at the Department of Macroprudential Policy, Bank Indonesia.

as Structure Conduct Performance (SCP). Based on the SCP approach, a high level of concentration will result in collusive and non-competitive behaviour. A higher level of concentration leads to a higher level of market power. Therefore, there is a negative correlation between the level of concentration and level of competition. Meanwhile, a non-structural approach focuses more on collating information concerning competitive behaviour, based on revenue elasticity to input price (Panzar and Rosse, 1987) and is independent from the level of competition. In broad terms, there are four factors that influence the level of competition in the banking industry, namely regulation, fast-growing demand for banking services, technological development and global financial market innovation (Maudos et al, 2002).

Over the past decade, research on the level of competition in the banking sector has not stopped at merely identifying competition. Discussions on how competition affects bank performance have become a hot research topic. One paper by Schaeck and Cihak (2008) concluded that interbank competition boosts bank soundness through the transmission of efficiency. In their research, Schaeck and Cihak (2008) tested two hypotheses, namely the Competition-Efficiency Hypothesis and the Efficient Structure Hypothesis (Demsetz, 1973), which state that a greater market share tends to facilitate prices exceeding the marginal cost. The high price is identified by inefficient conditions. Conversely, on a competitive market with low market share, the possibility of setting prices above the marginal cost is limited, which reflects a better level of efficiency. Meanwhile, the Competition-Inefficiency Hypothesis can be explained as follows: customer loyalty tends to wane in a banking structure with a high level of competition. Consequently, the relationships between the banks and their customers are less stable and tend to be shorter term (Boot and Schmeijts, 2005). Such conditions subsequently spur the emergence of asymmetric information and force banks to be more focused and spend a lot of money on activities that aim to bolster customer loyalty. Casu and Girardone (2007) provided another opinion regarding correlation between the levels of competition and efficiency. Their research found that inefficiencies in a competitive banking industry could manifest in two ways, namely that a bank struggles against the level of competition or that banks are being exploited by an increase in market power.

In addition to simple calculations using the accounting ratio, two other approaches are commonly used to calculate bank efficiency, namely the parametric approach and the non-parametric approach. The parametric approach involves specification requirements and estimations of the cost function and production function, for instance using Stochastic Frontier Analysis (SFA) and Distribution Free Analysis (DFA). The keyaspect to consider when calculating the level of efficiency through this approach is accuracy when determining the function specification and stochastic underlying process used. Meanwhile, the non-parametric approach does not require specific econometric specifications (functions). This approach utilises linear programming to construct an efficient frontier as a reference. One non-parametric method commonly used is Data Envelopment Analysis (DEA). DEA has an advantage when measuring the level of efficiency of an economic activity with multiple inputs and outputs. In 2006, Fiorentino et al tried to measure the level of efficiency of banks in Germany through two approaches, SFA and DEA. Based on this research, it was found that the nonparametric approach tends to be more sensitive to error and outliers. However, the parametric approach generated unstable results over the 12-year estimation period.

The parametric and non-parametric approaches can be used to calculate the level of efficiency at financial institutions through three input-output concepts, namely the production approach, the intermediation approach and the asset approach. The production approach defines financial institutions as producers of deposit and credit accounts. The intermediation approach defines financial institutions as intermediaries that convert deposit liabilities into the financial asset known as credit. Similarly, the asset approach defines financial institutions as the producers of assets, in particular credit.

3. CHARACTERISTICS AND PERFORMANCE OF MICROFINANCE

Through promulgation of Bank Indonesia Regulation (PBI) No. 14/22/PBI/2012, Bank Indonesia defines microfinance as credit disbursed to micro enterprises according to prevailing criteria. Pursuant to Act No. 20 of 2008, concerning MSMEs, micro enterprises are defined as productive small businesses owned individually or by individual business entities that meet the following criteria: (i) a net worth of less than Rp50 million, including land and buildings; and/or (ii) annual revenue of less than Rp300 million. Nonetheless, the aforementioned legislation does not regulate the credit ceiling for each MSME segment. Consequently, the MSME credit limit is different at each bank according to the risk-appetite of each respective bank. From the customers' standpoint, such conditions are unfavourable considering that the lending rates offered on microfinance tend to be much higher than equivalent rates for other credit segments.

Currently, total credit allocated to the micro sector accounts for just 14.8%⁵ of total micro businesses in the country. In addition, from the banks' perspective, microfinance only accounts for 4.1% of total bank credit. Consequently, there remains a clear opportunity for banks to expand their microfinance allocation, which is further buoyed by strong public demand. Therefore, in an effort to expand the intermediation function to MSMEs, through the same regulation Bank Indonesia requires commercial banks to allocate no less than 20% of their total credit to micro, small and medium enterprises. The minimum threshold will be implemented gradually through to 2018, however, the regulation has no provision for the minimum share of each respective MSMsegment.

Up to the end of 2012, microfinance accounted for the smallest share of MSME credit extended by commercial banks (18.5%). The most salient constraints preventing micro enterprises from accessing bank financing include, a large portion of unfeasible or unbankable micro enterprises, overly complex commercial banking regulations and the application of prudential principles. From the banks' viewpoint, however, extending microfinance is not cheap, incurring expensive operating costs and a lot of manpower competent in allocating microfinance, including a more intensive approach compared to commercial and corporate segments. Moreover, the majority of micro enterprises are located in remote areas, thereby suffering infrastructure constraints, including transportation, communication and money supply as well as other banking facilities like branch offices and ATMs. Consequently, not all commercial banks are exposed to microfinance. In contrast, microfinance accounts for the largest portion of MSME financing disbursed by rural banks, totalling 69.7% in December 2012. Relatively less stringent regulations for rural banks, coupled with their proximity to micro enterprises, helps simplify and expedite the microfinance process at rural banks. Therefore, microfinance has become a mainstay of rural banks.

Article Figure 1.1 Share of Microfinance to Total Credit of Commercial and Rural Banks (%)



Using preliminary figures from the Ministry of Cooperatives, Small and Medium Enterprises.



Another characteristic of microfinance is the large amount of borrowers but with relatively small loans. Nominally, commercial banks are the largest supplier of microfinance in Indonesia, accounting for 86.21% of total microfinance, while rural banks only make up 13.79%. Such conditions imply that commercial banks are dominant microfinance players because they enjoy better infrastructure and stronger capital, adequate sources of funds, an extensive office network as well as adequate human resources in terms of quality and quantity compared to rural banks. Meanwhile, based on total accounts, microfinance constitutes a significant amount of accounts. The share of microfinance to total MSME credit is dominant at 79.96%, while the share of microfinance to total credit is just 14.56%.









a. Commercial Banks MSME Credit

During the past three years, the allocation of bank credit to micro enterprises has continued to increase in terms of both volume and the number of banks engaged in microfinance. Overall, the share of MSME credit to total bank credit reached 19.31% in December 2012, with a share of microfinance to total MSME credit and to total bank credit of 18.46% and 3.57% respectively. Concerning quality, disbursements of microfinance by commercial banks are offset by a well-maintained quality of loans, which is evidenced by the gross NPL ratio that has remained below 3% for the past three years, lower than that of small loans (4.74%), medium loans (2.57% and MSME loans overall (3.23%).

Article Table 1.1 Performance of Microfinance at Conventional Commercial Banks

Year	Nominal Value (trillions of rupiah)	Share to Total MSME Credit	Share to Total Credit (%)	Gross NPL (%)
2010	71,63	19,02	4,03	2,69
2011	88,02	19,21	3,97	2,33
2012	97,18	18,46	3,57	2,49

When disbursing microfinance, commercial banks are able to extend loans directly to members of the general public and also indirectly through rural banks by way of a linkage program. The linkage program allows commercial banks to impose lower interest rates on rural banks through executing schemes.

Looking ahead, the allocation of MSME credit by commercial banks through rural banks is expected to expand, both nominally and in terms of the number of banks involved. Such conditions are also supported by the following factors: (i) Bank Indonesia regulations that require commercial banks to allocate at least 20% of their total credit to micro, small and medium enterprises; (ii) the proven resilience of micro, small and medium enterprises

	Desember - 10	Desember - 11	Desember - 12
Executing			
Outstanding (millions of rupiah	2.660.382	3.826.197	6.428.560
Commercial Banks	36	41	49
Rural Banks	443	4503	545
Average Interest Rate (%)	13,03	12,29	11,78
Interest Rate Range (%)	7,5 - 17,00	7,00 - 17,00	6,50 - 16,78
Executing			
Outstanding (millions of rupiah)	1.851.529	1.937.635	861.395
Rural Banks	126	122	118
Total Linkage	4.511.911	5.763.832	7.290.055

Article Table 1.2 Linkage Program Performance

to economic shocks, coupled with stable and prospective revenues; and (iii)doggedly strongpublic demand for MSME loans (including microfinance). Furthermore, data shows that a number of banks with a focus on microfinance and/ or MSME loans tend to enjoy a higher net interest margin (NIM) compared to their peer group and the average for the banking industry as a whole. This would seem to imply that microfinance could generate an adequate revenue stream for the banks.

Components of Interest Rates

The contribution of microfinance to bank interest income is currently relatively small at just 6.1%. However, the contribution could swell as the volume of microfinance allocated also grows.

Article Table 1.3 Contribution of MSME Credit to Interest Income

Credit Segment	Weig Ave Intere: (؟	yhted rage st Rate %)	Contribution to Interest Income (%)		
	2011	2012	2011	2012	
Microfinance	17,22	17,52	6,1	6,1	
Macrofinance	15,49	14,65	9,2	8,7	
Medium Credit	11,75 11,4		10,7	10,8	

Microfinance; Macrofinance; Medium Credit

Using the prime lending rate approach, the interest rate structure of microfinance contains four components, namely the cost of loanable funds, overhead costs, profit margin and risk premium. Based on the reports of 11 banks responsible for a significant portion of microfinance, a simple average of the largest component, namely overhead costs (OHC), is 40%, followed by the cost of loanable funds (30%) and then the profit margin and risk premium accounting for 15% each. Therefore, efforts to reduce microfinance lending rates could be achieved by boosting efficiency (focusing on the cost of loanable funds and overhead costs) as well as setting reasonable profit margins and risk premiums.

The largest component in the cost of loanable funds is the cost of deposits, amounting to 73% of the cost of loanable funds. This relates directly to the deposit rate and volume of deposits. As mentioned previously, banks take into consideration a variety of determinants when setting lending rates, like the lending rates of competitor banks, their liquidity requirement and business strategy as well as the targets set (including credit allocation and profit). Meanwhile, the main determinant of prime lending rates, namely the overhead cost, is largely predetermined by the cost of labour and promotional costs incurred. Moreover, business performance, employee requirements and employee retention programs influence the cost of labour. Data shows that the cost of human capital tended to increase from 2001 to 2012, which was offset by gains in employee productivity, for instance in terms of extending credit, accumulating funds and generating profit.

Meanwhile, promotional expenses are affected by the business strategy, efforts to build brand awareness among the general public, the level of competition in the industry and efforts to retain loyal customers. Industry wide, the share of promotional costs to total operating costs has increased since 2010 but remains relatively low at just 2.21% in December 2012. Meanwhile, when compared to deposits, credit and total assets, the share of promotional expense is almost negligible at less than 0.3%.

When determining their profit margin, banks consider, among others, the level of competition, the profit targets contained within the Bank Business Plan as well as the bank business development strategy (investing profit to increase capital and so on). Additionally, the risk premium is not only based on historical data concerning the NPL performance of microfinance but also on bank projections of repayment capacity, business prospects and borrower performance. Consequently, banks need to maintain a sound database and develop accurate methods to calculate risk premium in order to avoid setting an unreasonable risk premium for their customers.

b. Rural Banks MSME Credit

The share of microfinance to total credit at rural banks has followed a downward trend since 2010, dropping to 31.21% in 2012, but still constitutes the most dominant portion compared to small and medium loans. Similar performance is noted regarding the share of MSME credit, which has dwindled to less than 50% of total credit since 2011. Notwithstanding, departing from conditions reported at commercial banks, the quality of microfinance extended by rural banks is actually higher than other credit segments but following a downward trend. This is reflected by a gross NPL ratio of microfinance from rural banks of 7.61% in December 2012.

		-													
No	No Bank T		lillion Rp)	Laba/TK (Million Rp		Kredit/TK (Million Rp)	DPK/TK (I	Million Rp)	B.Diklat/TK	(Million Rp)	BTK/TA (%)		BTK/La	ıba (%)
	Group	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012
1	State- owned Banks	9.311	7.449	231,14	200,15	5.453,87	4.654,67	7.296,86	5.829,85	7,12	5,72	1,36	1,41	54,75	52,48
2	Foreign Exchange Banks	8.580	8.551	146,97	158,43	5.401.62	5.587.89	6.864,06	6.787,70	5,49	5,19	1,40	1,43	81,63	77.41
3	Non Foreign Exchange Banks	3.580	2.852	47,88	56,97	1.947,55	1.913,15	2.371,42	2.207,92	2,97	3,20	2,44	2,49	155,32	124,70
4	Regional Banks	8.555	7.938	211,00	193,65	4.947,65	4.737,44	6.626,26	6.029,41	7,75	7,53	1,97	1,95	80,01	80,12
5	Joint-Venture Banks	18.732	16.541	259,54	269,62	12.425,19	11.526,87	11.835,57	9.975,05	11,72	9,27	1,24	1,20	89,58	73,85
6	Foreign banks	26.941	28.804	509,67	488,37	13.702,00	16.481,55	14.202,72	14.202,72	13,50	15,38	1,19	1,13	63,08	66,60
7	Industry	8.938	8.083	182,98	175,70	5.385,25	5.104,22	6.807,90	6.079,38	6,33	5,68	1,45	1,48	70,66	67,60

Article Table 1.4 Recapitulation/Labour Performance by Bank Group

Note: TA = Total Assets; TK = Total Labour Force; B. Diklat = Cost of Education and Training; DPK = Deposits; BTK = Cost of Labour; Profit = Net Profit

Components of Interest Rates

Rural banks' sources of funds to finance credit predominantly stem from deposits, accounting for 81.15% of the total. In 2012, growth in credit outpaced that of deposits, necessitating additional observation in terms of credit sustainability. Over the past three years, the loanto-deposit ratio of rural banks has remained relatively high at around 78%. Accordingly, rural banks require additional sources of funds to finance credit, among others, through a linkage program with commercial banks. As an alternative source of funds, the linkage program has its share of benefits and weaknesses. The average interest rate of the linkage program was 11.78% in 2012, which is an expensive source of funds for rural banks considering the term deposit rate offered by rural banks is only about 8.40%. On the other hand, on top of not requiring additional costs when accumulating funds, the contribution of funds from the linkage program as a source of rural bank funds is only around 17%. Moreover, funds from the linkage program should not automatically raise the lending rates on microfinance extended by rural banks. Consequently, rural banks will need to implement a strategy, looking ahead, to help strike an optimal balance between sources of funds from deposits (with tighter competition from rural banks and commercial banks) and the linkage program (with a huge supply of expensive funds from commercial banks).

Among the other segments of MSME credit, lending rates on microfinance are the highest (33.14% in 2012) but following a downward trend as efforts manifest to boost efficiency by rural banks. Lending rates at rural banks are much higher than those offered by commercial banks at around 17.52%. Rural banks implement an interest rate structure that is similar to that of commercial banks, however the composition differs. The composition of the cost of loanable funds, overhead costs, profit margin and risk premium is 23.42%, 31.18%, 29.52% and 15.89% respectively.

Article Table 1.6 Lending Rates at Rural Banks for MSME Credit

Credit	Average Rate (%)						
Туре	2010	2011	2012				
Micro	34,51	34,00	33,14				
Small	29,87	27,39	26,57				
Medium	24,23	24,55	25,15				
Non-MSM credit	28,13	27,30	26,12				

Ponggolongan Krodit	Positio	n (billions o	of rupiah)	Grov	wth (%)		Share (%)			NPL (%)	
renggolongan Kreuit	2010	2011	2012	2011	2012	2010	2011	2012	2010	2011	2012
Business Type	33.844	41.100	49.819	21,44	21,22	100	100	100	6,10	5,22	4,75
a. Micro	12.668	14.292	15.551	12,82	8,81	37,43	34,77	31,21	8,61	8,03	7,61
b. Small	3.669	3.795	4.838	3,45	27,48	10,84	9,23	9,71	6,08	5,86	5,70
c. Medium	1.313	2.421	3.408	84,45	40,74	3,88	5,89	6,84	7,20	3,86	4,03
d. Non-MSME	16.195	20.591	26.022	27,14	26,38	47,85	50,10	52,23	4,09	3,32	2,96
Loan Type	33.844	41.100	49.818	21,44	21,21	100	100	100	6,10	6,10	4,75
a. Working Capital	16.790	19.557	23.030	16,48	17,76	49,61	47,59	46,23	8,40	7,54	6,69
b. Investment	1.929	2.364	2.964	22,56	25,40	5,70	5,75	5,95	5,06	4,17	4,65
c. Consumer loan	15.126	19.178	23.824	26,79	24,22	44,69	46,66	47,82	3,71	2,99	2,63

Article Table 1.5 Performance of Microfinance extended by Rural Banks

*) For 2010 and 2011 data, credit criteria based on business type is adjusted to fit the criteria for MSMEs pursuant to Act Number 20 of 2006 concerning micro, small and medium enterprises (MSME)

Similar to commercial banks, the cost of loanable funds at rural banks depends upon volume and deposit rates as the primary source of funds at rural banks. Meanwhile, overhead costs are the largest component of operating costs at rural banks with an average share over the past three years of 51.61%. The largest components of overhead costs are salary disbursements, the cost of goods and services as well as promotional and educational costs amounting to 52.61%, 13.74% and 9.54% respectively. The domination of salary disbursements is in accord with the business development of rural banks, where employee requirements and the supply of high-guality employees are improved through employeeretention programs. Furthermore, the increase in the cost of promotional activity is congruous with the additional efforts taken by rural banks to introduce their products and services to the general public as well as to retain customer loyalty as competition tightens.

Profit margin is the second largest component of microfinance lending rates at rural banks due to the following factors: (i) credit is the main source of interest income at rural banks; (ii) profit is a component of capital, therefore larger profits could raise capital at rural banks to expand business activity; and (iii) based on survey results, the customers of MSME credit (including microfinance) do not generally pay due regard to the lending rates offered by rural banks because access and convenience are the most important aspects to the customer, which is a consideration for rural banks when setting relatively high lending rates. A wide profit margin leads to a relatively high ROA ratio and net interest margin (NIM) in the rural banking industry, even exceeding that of commercial banks. Furthermore, the smallest component of microfinance lending rates is the risk premium. The risk premium determined by rural banks is moderate although the gross NPL ratio of microfinance averaged 8.08% for the period from 2010-2012

4. LEVEL OF COMPETITION BETWEEN RURAL BANKS AND COMMERCIAL BANKS TO FINANCE MICRO ENTERPRISES

Calculating the level of competition in this research is achieved using a structural approach to determine the Herfindahl-Hirschman Index, otherwise knows as the Herfindahl Index (HHI). The Herfindahl Index (HHI) is a common statistical instrument used to measure concentration levels. According to Bikker and Haaf (2002), the capacity of the concentration ratio to accurately reflect structural market conditions ensures that the ratio is regularly used as a statistical instrument in the structural model to explain bank competition. In a number of countries, HHI plays an important role in bank antitrust assessments. For example, the Department of Justice and the Federal Reserve Commission of the United States use HHI as an index to assess the competitive effect in bank mergers. The US Horizontal Merger Guidelines of 2010 divide the HHI threshold into three categories, namely (i) unconcentrated markets (HHI<15000); (ii) moderately concentrated markets (1500<HHI<2500); and (iii) highly concentrated markets (HHI>2500). If a merger produces a value of HHI in the highly concentrated markets bracket, with a change in HHI of greater than 200 points pre and post merger, the merger is assessed to have successfully achieved a sufficient level of concentration to generate market power. The aforementioned thresholds are not fixed and are applied differently in other countries.

Mathematically, HHI can be expressed as the solution to a quadratic equation for the level of concentration (share) at each respective bank in one market or expressed as follows:

(4.1) $HHI = \sum_{i=1}^{n} s_i^2$

wheres is the share of each respective bank and n is the total number of banks. The lowest HHIvalue of 1/n⁶ is achieved

⁶⁾ Can be expressed as ((1)/(n)*10,000)

Article Figure 1.1

HHI $\uparrow \implies$ Level of Concentration $\uparrow \implies$ Market power $\uparrow \implies (p > mc) \implies$ Less competitive

if each bank has the same size market share and achieves the highest value of 1⁷ in a state of imperfect market competition (monopoly). The ability of HHI to identify the level of competition on a market is illustrated in Article Figure 1.1.

Based on economic theory, market power indicates the capacity of a firm to raise prices above the marginal cost (mc) and simultaneously take the role of price setter. Therefore, a market experiencing a lot of market power tends to be more monopolistic in nature. This is congruous with the SCP approach, which states that a high level of concentration will precipitate collusive and non-competitive behaviour.

The concentration index for k the largest banks (CRk) is calculated using the following formula in order to complete the analysis and identify market power:

$$(4.2) \quad CR_k = \sum_{i=1}^n s_i$$

There are no special considerations when specifying the number of largest banks (k) to be included in the calculation of the concentration index (CRk). The magnitude of k is based on an arbitrary decision.

In this section, HHI is calculated for share of microfinance at rural banks and commercial banks. Consequently, the calculation only includes banks with exposure to microfinance⁸. The data used is taken from the monthly reports of individual banks submitted to Bank Indonesia for three positions, namely December 2010, December 2011 and December 2012.

Referring to the HHI threshold applied in the United States, it is concluded that the microfinance market

for commercial banks over the past three years could be categorised as highly concentrated. An HHI value in excess of 2500 indicates dominant behaviour in the extension of microfinance by commercial banks. The shares of the two largest banks (CR2) further corroborate thosefindings, attaining >70%. Indeed, of the total microfinance disbursed by commercial banks, more than 50% stems from just one bank. Notwithstanding, if HHI is recalculated omitting the two most dominant players, the microfinance market for commercial banks is actually categorised as unconcentrated. This implies that aside from the dominant players, there are clearsigns of competition amongst commercial banks in terms of extending microfinance.

Based on the value of HHI for the past three years, the microfinance market for rural banks is categorised as unconcentrated. A very low value of HHI indicates that competition among rural banks on the microfinance market has tended to escalate during the observation period. Nonetheless, the business scale of rural banks tends to concentrate in specific locales, which denotes that competition among rural banks in terms of extending microfinance only occurs among banks operating in the same physical area.

Article Table 1.7 Concentration Level among Commercial Banks

		2010	2011	2012	3-year average
	PMax share (%)	57,2	62,5	62,6	60,8
	Min Share (%)	0,001	0,001	0,001	0,001
-	HHI	3.616	4.119	4.084	3.940
	CR2	74,5	75,7	71,5	73,9
	HHI excluding two largest banks	739,8	740,0	1.069,1	849,6
	Total Banks	77	78	78	

⁷⁾ Can be expressed as 10,000.

Excluding foreign banks due to their unique characteristics in terms of capital and cost of funds.

	2010	2011	2012	3-year average
Max share(%)	3,44	3,71	3,25	3,47
Min Share (%)	0,00001	0,00001	0,00001	0,00001
ННІ	38,99	37,57	35,19	37,25
CR2	5,80	5,62	5,08	5,50
HHI excluding two largest banks	24,33	22,65	23,60	23,53
Total Banks	1530	1539	1548	

Article Table 1.8 Concentration Level among Rural Banks

A similar conclusion as that for commercial banks can be drawn when amalgamating rural banks and commercial banksin one microfinance market, namely that the value of HHI indicates a highly concentrated market and market power. This conclusion is due to the relative business scale of rural banks to commercial banks that is much smaller. Consequently, the role of commercial banks on the microfinance market is more dominant than rural banks. Nevertheless, excluding the dominant player brings the value of HHI to reflect an unconcentrated market and competition between rural banks and commercial banks in terms of allocating microfinance. It should be emphasised that because the business scale of rural banks is concentrated in specific locales, competition between rural banks and commercial banks in terms of extending microfinance only occurs when both types of bank are operating in the same region.

Tabel Artikel 1.9 Concentration Level of Commercial Banks and Rural Banks

	2010	2011	2012	3-year average
Max share (%)	48,6	53,7	54,0	52,1
Min Share (%)	0,000002	0,000001	0,000002	0,000002
HHI	2.610	3.045	3.035	2896,7
CR2	63,2	65,0	61,6	63,3
HHI excluding two largest banks	264,5	271,2	442,6	326,1
JTotal Banks	1607	1617	1626	

The conclusion is consistent with survey results and the FGD, which found that 90% of rural banks consider themselves in competition with commercial banks in terms of fighting for new customers as well as appropriating borrowers and employees. Conversely, only 42% of commercial banks see themselves in competition with rural banks. Differentmicrofinance market segments forrural banks and commercial banks, as reflected by different microfinance ceilings, led 58% of respondent commercial banks to express that they did not feel in competition with rural banks. For commercial banks, the main competitors in terms of microfinance are other commercial banks. Nonetheless, the recent phenomenon of extending microfinance by several commercial banks through mass community projects and community banking puts them on a direct course to competition with rural banks.

Article Table 1.10 Average Credit Ceiling per Microfinance Account

millions of ruplan							
	2010 2011						
Commercial Banks	13,1	15,8	16,9				
Rural Banks	7,3	8,1	9,4				

During the observation period that extends back three years, the average credit ceiling of microfinance accounts at commercial banks and rural banks has risen. Industry wide, the credit ceiling is higher at commercial banks than rural banks, more specifically greater than Rp 10 million at commercial banks and less than Rp 10 million at rural banks. Such data indicates segmentation among borrowers of microfinance from commercial banks and rural banks. Based on share, the majority of microfinance loans extended by commercial banks ranges from Rp 10-50 million with a total credit ceiling of more than Rp 500 million. At rural banks, however, a shift has occurred in the credit ceiling of microfinance extended. Previously, the majority of microfinance loans disbursed by rural banks had a ceiling of Rp 1-10 million. More recently, however, the credit ceiling has increased to Rp10-50 million. Consequently, recent developments indicate that competition between rural banks and commercial banks
occurs for microfinance with a credit ceiling of between Rp 1 million and Rp 500 million, with competition tightest for microfinance loans in the range of Rp10-50 million.

5. EFFICIENCY AT RURAL BANKS AND COMMERCIAL BANKS

Efficiency is calculated in this research using two approaches, namely the accounting ratio and nonparametric data envelopment analysis (DEA). Thereinafter, the results of both approaches are compared and their level of consistency observed. The data used in this section originates from the monthly reports of individual banks submitted to Bank Indonesia, including commercial banks and rural banks for the period up to December 2012.

5.1 Calculating the Accounting Ratio

In general, there are two accounting ratios that could be used as indicators of bank efficiency, namely the BOPO efficiency ratio and the Cost to Income ratio (CIR). The fundamental difference between the two approaches lies in the calculation of interest costs. In the BOPO ratio, the cost efficiency of a bank is calculated by the costs incurred to generate a certain amount of income. According to the cost to income ratio, however, the cost efficiency of a bank is calculated omitting the cost of interest. Lower values of both indicators demonstrate higher levels of efficiency. In this research, the BOPO efficiency ratio is favoured. Mathematically, the two ratios can be expressed as follows:

(5.1)
$$BOPO(\%) = \frac{Operating Cost (BO)}{Operating Income (PO)}$$

where BO includes the cost of interest and other operating costs excluding interest, while PO is interest income and other operating income excluding interest.

$$(5.2) CIR(\%) = \frac{Overhead Cost (OHC)}{Nett Interest Rate Income? + Other Operating Income}$$

As explained previously, the interest cost of deposits is the largest component of bank operating costs. Meanwhile, in terms of operating income, interest income, particularly interest-bearing credit, contributes the most. Therefore, it can be opined that the performance of the BOPO ratio is heavily influenced by the intermediation activities of accumulating and disbursing funds, both in terms of volume and interest rates. Based on historical data since 2005, the BOPO ratio of commercial banks has followed a downward trend, which indicates that commercial banks in Indonesia continuously strive to enhance efficiency, particularly in terms of offering reasonable interest rates to the general public.



Article Figure 1.5 Share of Micro Credit Ceiling per Account





Article Figure 1.7 Average Bank Interest rates



Efficiency gains at commercial banks, as reflected by improvements in the BOPO efficiency ratio and underpinned by lower deposit rates, have lowered average lending rates. Based on historical data since 2005, average rupiah lending rates have followed a downward trend, culminating in December 2012 at a level of 12.06%.

Departing slightly for the arguments presented so far, discussions with banking supervisors and a number of commercial banks actually revealed that bank efficiency is not always followed by lower lending rates. As a bank becomes more efficient it generates more profit as a result of, among others, reducing certain costs, reflected by a wider bank margin. In addition, there is a trend among banks to maintain lending rates at a certain level based on benchmarking and peer group analysis. Consequently, when a bank realises efficiency gains it will raise its profit margin as a form of balancing, therefore, lending rates remain the same (no decrease).

Article Table 1.11 **Key Rural Bank Indicators**

INDICATOR	2010	2011	2012
Interest Rate (%)			
Savings	5,53	5,21	4,68
Term Deposit	10,25	9,85	8,40
Credit disbursed	30,56	29,48	28,29
Ratio (%)			
LDR	79,02	78,54	78,63
ROA	3,16	3,32	3,46
ROE	26,71	29,46	32,63
воро	80,97	79,47	77,77
NPLGross	6,12	5,22	4,75
NPL Net	4,25	3,67	3,25
NIM	12,92	12,09	11,96

The improving trend in bank efficiency has also been evident in the rural banking industry. The BOPO efficiency ratio of the rural banking industry has improved over the past several years to 77.77%. Similar to conditions at commercial banks, interest costs, particularly on deposits, strongly affect the operating costs of rural banks, while interest income also dominates the operating income of rural banks, particularly that from credit. Consequently, the BOPO ratio of rural banks is also influenced by the intermediation activity of such banks. Similar to the case of commercial banks, improvements in the level of efficiency at rural banks, supported by lower deposit rates, are one determinant of lower lending rates at rural banks and have lowered the net interest margin of rural banks.

5.2 Data Envelopment Analysis

Charnes, et al. (1978) first introduced data envelopment analysis (DEA), otherwise known as the CCR model, which was later developed by Banker, et al. (1984) and known as the BCC model. The difference between the two approaches to data envelopment analysis lies in the assumptions used. The CCR model assumes constant returns to scale (CRS); meaning that one unit of input will produce a fixed unit of output. In contrast, the BCC model assumes variable returns to scale (VRS). Both models can be calculated using two approaches, namely input oriented and output oriented. The input-oriented approach aims to minimise input in order to produce the desired output, while the output-oriented approach aims to maximise output from the level of input available.

In this section, DEA is calculated for a sample of 110 commercial banks⁹ and 1,390 rural banks using data for December 2012. Considering that the discussion on efficiency in this research is linked to the level of competition when extending microfinance, the preferred method is output-oriented data envelopment analysis through the intermediation approach. DEA is calculated using two alternative input-output variables for each CCR and BCC model. Thereafter, the results of the DEA are compared with the level of efficiency according to the accounting ratio, namely the BOPO ratio that is strongly affected by intermediation activities.

In contrast to the BOPO ratio, a DEA value of 100% is actually the most efficient. Based on the DEA model using both alternative input-output variables, the CCR and BCC models point to the same conclusion, namely that the level of efficiency is greater at commercial banks than rural banks. This can be explained as follows. As mentioned previously, the most important determinants

of bank efficiency are the cost of loanable funds and overhead costs. At rural banks, a relatively limited market encourages rural banks to offer deposit rates, the largest component of the cost of loanable funds, at a higher rate than commercial banks in order to maintain their customer base. Moreover, the lending rates of rural banks are also higher. Conversely, with more varied sources of funds, a broader market, better infrastructure and facilities as well as more competent human capital, commercial banks are able to reduce their operating costs, particularly overhead costs and the cost of funds, better than rural banks.

The results of the data envelopment analysis are consistent with the level of efficiency produced using the accounting ratio, BOPO, as evidenced by a negative correlation between DEA, both the CCR and BCC models, and the BOPO ratio. What this signifies is that as the value of the BOPO ratio decreases, the value of DEA increases. Both ratios, however, indicate the same outcome, namely that the level of efficiency is continuously improving.

A table comparing the results of HHIwith DEA illustrates that commercial banks tend to have higher values of HHI and DEA than rural banks. This means that with a higher level of competition, the level of efficiency is actually lower at rural banks, which is congruous with the competition-inefficiency theory. However, the results are biased when interpreted directly considering the level of competition in this research merely focuses on extending

Efficiency Approach	Model description							
Accounting Ratio	BOPO = Operating Cost (BO) / Operating Income (PO)							
	elopment Analysis)							
	Alternative	Input	Output					
	Alternative 1	1. Overhead Costs	1. Credit Interest Income					
Frontier		2. Cost of Deposits	2. Other Operating Income					
	Alternative 2	1. Overhead Costs	1. Credit volume					
		2. Volume of Deposits	2. Other operating income					

Article Table 1.12 Modelling Strategy to Calculate Efficienc

⁹⁾ Excluding foreign banks due to their unique characteristics compared to other bank groups, particularly in terms of capital and the cost of funds.

Article 1. Level of Competition and Efficiency at Commercial Banks and Rural Banks on the Microfinance Market in Indonesia

Article Figure 1.8



micro credit, while the level of efficiency is calculated for all activities of the bank. Although bank efficiency is inextricably linked to intermediation activity, the allocation of microfinance only represents a very limited share of total bank intermediation.

Article Table 1.13 DEA and BOPO Correlation

	CF	RS	VRS		
	Alt 1	Alt 2	Alt 1	Alt 2	
Commercial Banks	-0.570	-0.210	-0.515	-0.183	
Rural Banks	-0.671	-0.367	-0.562	-0.333	
Commercial and Rural Banks	-0.668	-0.346	-0.572	-0.306	

Tabel Artikel 1.14 Perbandingan HHI dan DEA

	нні	CRS		VI	RS
		Alt 1	Alt 2	Alt 1	Alt 2
Commercial Banks	1.069	61.423	41.593	75.294	55.387
Rural Banks	23.60	44.013	32.580	50.042	37.381
Commercial and Rural Banks	442.58	42.686	31.205	47.570	34.376

6. CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

a. Up to the end of 2012, microfinance only held a4.06% share of total financing allocated by banks,both commercial banks and rural banks. The high-



cost and high-labour characteristics of extending microfinance, among others, are the most salient constraints to commercial banks when financing micro enterprises.

- b. The business scale of rural banks is far smaller than that of commercial banks, therefore the share of microfinance extended by rural banks only accounts for 13.79% of total bank microfinance compared to 86.21% provided by commercial banks.
- c. The level of competition was calculated in this research using structural approaches with the Herfindahl-Hirschman Index (HHI) and the following results were obtained:
 - There is market power in terms of financing micro credit by the banking sector, where >50% of microfinance extended by commercial banks is only provided by one bank. Although the share of that one bank is clearly dominant, its impact is not considered adverse as long as prices remain unaffected. The bank in question has actually become a role model for other banks in terms of extending financing to micro enterprises.
 - There is competition among commercial banks and competition among rural banks in terms of extending microfinance, with a greater level

of competition among rural banks, particularly among rural banks operating in the same region.

- There is competition between rural banks and commercial banks when allocating microfinance. Based on segment, competition is tightest for microfinance with a credit ceiling of between Rp 10 and 50 million.
- d. In addition to direct competition, there is synergy between rural banks and commercial banks in the form of a linkage program. However, the linkage program itself is an expensive source of funds for rural banks.
- e. It was observed that the level of efficiency at both rural and commercial banks has improved greatly over time. Quantitatively, the level of efficiency was calculated using data envelopment analysis and the accounting ratio, BOPO, returning the following key findings:
 - Calculating the level of efficiency using DEA and BOPO returned consistent results, demonstrating a negative correlation between DEA and BOPO.
 - DEA indicated that commercial banks are relatively more efficient than rural banks.
 - When comparing the levels of competition, it was concluded that as the level of competition at rural banks increased, the average value of DEA tended to be lower. This pattern is in agreement with the Competition-Inefficiency hypothesis, which states that competition causes inefficiency. Nevertheless, the results are biased considering that competition in this research only takes into consideration microfinance, which occupies a relatively small share of total bank financing. Meanwhile, inefficiency is calculated looking at all intermediation activities.

- f. Looking forward, the micro segment is a market with great potential to finance. In addition to tenaciously strong demand, microfinance is relatively resilient to economic shocks, indicated by a well-maintained quality of credit (gross NPL of microfinance is below 3%).
- g. Bank Indonesia, as the regulator, continuously strives to foster competition and advocate efficiency gains in the banking sector through appropriate regulations and a supervisory approach. A number of noteworthy regulations recently issued by Bank Indonesia, among others, include:
 - Requiring the mandatory publication of prime lending rates in March 2011 (including a supplementary provision for the micro segment added in February 2013).
 - Requiring banks to include their targets of efficiency (BOPO and NIM among others), the prime lending rate and other lending rates in the bank business plan (BBP), which is subsequently assessed and monitored by Bank Indonesia as part of the supervisory action.
 - Performing routine monitoring of interest rates (credit and deposit) reported by banks and initiating supervisory action as required.
 - Promoting the linkage program between commercial banks and rural banks, with the expectation that rural banks are able to access additional funds at a relatively low interest rate to be extended to micro, small and medium enterprises (MSMEs).
 - In the case of multi-licensing:
 - On aspect taken into consideration when Bank Indonesia is assessing the bank business plan in relation to expanding a bank's office network is efficiency, thereby continuously encouraging banks to enhance their efficiency.

- Based on group, banks are required to allocate between 55% and 70% of their total credit as productive credit no later than June 2016. Consequently, the supply of productive credit would surge, hence tightening competition and precipitating a downward trend in lending rates.
- The requirement to allocate productive credit contains a provision for banks to allocate no less than 20% of their total credit to micro, small and medium enterprises incrementally prior to 2018.

In addition, efficiency is an integral part of banking supervision and assessment in terms of evaluating a bank's soundness level as well as routine monitoring of bank performance.

6.2 Recommendations

- a. Sustainable educational activities are required for the general public organised by regulators, the Government and the banking industry concerning the expected level of lending rates applicable. One form of education undertaken by Bank Indonesia is through the mandatory publication of prime lending rates (including microfinance).
- b. The credit ceiling on micro, small and medium loans must be regulated so that: (i) uniform credit ceilings are achieved among banks for reporting and statistical purposes, and (ii) the opportunity for banks to place certain borrowers into the micro segment in order to impose higher rates would be lost. This arrangement is possible because: (i) it falls under the authority of Bank Indonesia to regulate the credit ceiling; and (ii) Act No. 20 of 2008 concerning MSMEs only explains/regulates the definition of micro, small and medium enterprises (the credit ceiling is not regulated).

- Pursuant toPBI No. 14/22/PBI/2012, dated 21st C December 2012, commercial banks are required to allocate no less than 20% of their total credit to micro, small and medium enterprises, however, the portion of each respective credit segment is not regulated (micro, small and medium). Therefore, in order to achieve that target, banks will opt to extend credit to the small and medium segments because the nominal value of such credit is larger than the micro segment, thus the 20% target is more manageable. Consequently, it is preferable for banks to achieve the target of 20% by proportionally allocating each segment of credit according to capacity, requirement and business strategy of the bank in order to ensure banks allocate credit evenly to each segment.
- d. The rates offered through the linkage program should be reviewed and discussed again to ensure the program's success as a cheap source of funds for rural banks but also to generate profit for commercial banks.
- e. Over the past three years (2010-2012), the gross NPL ratio of microfinance has remained below that of small and medium loans, which is evidence of an improvement in the performance of microfinance over the past three years. Consequently, in order to meet the 20% requirement for MSME credit to total bank credit and concomitantly incentivise credit allocation to the micro segment, a review is required concerning the risk-weighted assets of the micro segment, which is lower than that of the small and medium segments.
- f. A follow-up review is required on the respective roles of commercial banks and rural banks in financing micro enterprises; are they substitutive (in direct competition) or complementary?
- g. In order to ensure a comprehensive review, additional studies are required to map competition in each region and utilise better statistical tools to observe levels of competition.

REFERENCES

- Banker, R.D., A.W. Charnes, AND W.W. Cooper, 1984, "Some Models for Estimating Technical and Scale Inefficiencies in Data Envelopment Analysis", Management Science, 30(9) 1078-1092.
- Bikker, J.A., and K. Haaf, 2002, "Measure of Competition and Concentration in the Banking Industry: A Review of the Literature", Economic & Financial Modelling 9, 53-98.
- Boot, A.W., and A. Schmeijts, 2005, "The Competitive Challenge in Banking", Amsterdam Center for Law & Economics Working Paper No. 2005-08.
- Casu, B., and C. Girardone, 2007, "Does Competition Lead to Efficiency? The Case of EU Commercial Banks", Essex University, Discussion Paper No. 07-01.
- Charnes, A., W.W. Cooper, and Rhodes, E., 1978, "Measuring the Efficiency of Decision Making Units", European Journal of Operational Research, 2, 429-444.
- Demsetz, H., 1973, "Industry Structure, Market Rivalry and Public Policy", Journal of Law and Economics, Vol. 51, pp.393-414.
- Fiorentino, E., A. Karmann, and M. Koetter, 2006, "The Cost Efficiency of German Banks: A Comparison of SFA and DEA", Discussion Paper, Series 2: Banking and Financial Studies 10, Germany: Deutsche Bundesbank.
- Maudos, J., J.M. Pastor, andF. Perez, 2002, "Competition and Efficiency in the Spanish Banking Sector: The Importance of Specialisation", Applied Financial Economics 12, 505-516.
- Morduch, J., (1999), "The Microfinance Promise", Journal of Economic Literature, 37, 1569-1614.
- Panzar, J.C., and J.N. Rosse, 1987, "Testing for 'Monopoly' Equilibrium', Journal of Industrial Economics 35, 443-456.

- Robinson, M., 2001, "The Microfinance Revolution: Sustainable Finance for The Poor", World Bank, Washington D.C.
- Schaeck K,andMihák,2008, "HowDoesCompetition Affect Efficiency and Soundness in Banking? New Empirical Evidence", ECB Working Paper No. 932 (Frankfrurt: European Central Bank).

This page intentionally blank

Article 2

Branchless Banking to underpin Financial System Stability and Inclusive Economic

(Pungky Wibowo¹, Ricky Satria², Primitiva Febriarti³)

Innovative financial services are required to engage those at the bottom of the pyramid, who generally remain unbanked in the financial and economic system, while addressing aspects of efficiency for the operator and affordability for the customer. One popular form of innovation is through the distribution and infrastructure of payment system and financial services, known as branchless banking or mobile payment services, which has been implemented in a number of emerging market countries since the financial crisis in 2008. Such innovation utilises advances in technology and communications as well as third-party agents, which require the support of innovative and proportional regulation. These efforts to expand financial access to the general public are not merely in the pursuit of financial inclusion but also to maintain financial system stability, bolster economic growth and reduce inequality towards greater prosperity.

FINANCIAL INCLUSION AND FINANCIAL SYSTEM STABILITY

Observing the impactof widespread financial inclusion on the financial system, it could be concluded that financial inclusion and financial system stability are inseparable. Khan (2011) supports this theory with the view that financial inclusion and financial system stability are no longer a policy option but are indeed essential policy. Explicitly, Khan opines that they represent two sides of the same coin. A number of aspects point to tight linkages between financial inclusion and financial system stability as follows:

• Liquidity risk diversification. The financial crisis in 2008 demonstrated that bank dependence

on corporate funds as their main source rapidly propagated liquidity risk when one or two corporations suddenly withdrew their funds. By embracing unbanked members of the general public, whose number are large but individual funds are relatively small, banks acquired a new source of funds, retail funds.

- Credit risk diversification. Serving and providing products to underbanked and unbanked members of the general public help banks diversify credit risk. Banks are more resilient to credit risk if a few micro borrowers default rather than one or two corporate borrowers.
- Increased capability. A prerequisite to the achievement of financial inclusion is greater financial literacy that helps bolster the capacity of financial management. This is achievable through sustainable

¹⁾ Author is the Director of the Department of Financial Access and MSMEs, Bank Indonesia.

²⁾ Author is a Senior Analyst at the Department of Financial Access and MSMEs, Bank Indonesia.

³⁾ Author is an Analyst at the Department of Financial Access and MSMEs, Bank Indonesia.

financial education. Effective and continuous financial education would clearly enhance financial management and impact propitiously upon financial system stability, for example by easing credit default risk. Consequently, the general public are empowered to manage their own financial budgets and cash flow, which would demonstrably alleviate credit risk.

- Tighter competition. Financial literacy would enhance the bargaining position of members of the general public, thereby enabling them to choose the best financial solution from a variety of providers. The general public would obviously opt for the cheapest option with the lowest risk from the safest financial sector players, which would patently benefit the economy as a result of tighter competition among financial service providers. Ultimately, this would lower economic costs, for instance through lower lending rates.
- By serving all strata of society with affordable and appropriate products coupled with enhanced financial management, individual and household prosperity would flourish. Household prosperity broadly implies greater income equality and reducing the gap between the haves and the have nots, which reinforces household resilience. Collectively, this would greatly reduce risk and precipitate more sustainable economic growth, including alleviating social risk and political risk.

Financial inclusion is difficult to achieve in the event of instability, in fact financial exclusion would actually exacerbate the situation.

Monetary and macroprudential policy in response to market performance is more effective because the policies issued will touch all societal strata, wherever they may be located. As an illustration, monetary policy instituted through the policy rate is transmitted via the banks though adjustments to lending and deposit rates. With financial inclusion, hitherto unbanked members of the general public become banked and therefore affected by adjustments made to interest rates. Consequently, members of the general public will modify their saving behaviour as well as demand for credit.

Notwithstanding, it is important to note that financial inclusion, if not implemented correctly and prudently, involves potential risks for the economy and stability overall considering that:

- Efforts to ingratiate unbanked members of the general public into the financial system, if not accompanied by financial education, will generate asymmetric information that could contribute to another crisis episode. In addition, inadequate financial management skills will catalyse borrower default.
- Unbanked members of society are often characterised as unfeasible and ineligible, with a low risk buffer. Therefore, extending credit to this group is not as simple as extending to normal borrowers due to several salient factors, including an inability to manage finances as well as insufficient collateral.
- Utilising third parties by banks to expand the outreach of financial services could compound risk at banks.
- Unbanked members of the general public welcome inexpensive and convenient fund transfer services; however, the popularity of such services increases the load on the payment system, especially an interoperable payment system. Consequently, issues in the payment system could create their own problems.

The Role of Regulation

The role of the regulator to 'expand the depth of reach of financial services through responsible innovation'

is expected to expand the outreach of financial services to those found at the bottom of the pyramid without triggering adverse effects. Accordingly, in order to mitigate risk, regulations play a strategic role in addition to bank monitoring and surveillance (microprudnetial and macroprudential). On top of regulating implementation, it is important to offset innovation and risk. Furthermore, regulations are also required to ensure consumer protection.

The implementation of financial inclusion requires the support of responsible finance, which comprises of two factors, namely education and consumer protection. Neither factor of responsible finance can afford to be neglected, especially considering that the primary targets of financial inclusion are those with a low level of financial literacy. Both factors are the responsibility of the regulator and the market alike.

Branchless Banking

One innovation in the field of financial inclusion that could overcome the array of constraints to financial access is branchless banking. Branchless banking does not merely involve channel innovation (distribution alternatives) but also aspects of product innovation (utilisation of basic saving accounts), device innovation (utilisation of cellular technology), infrastructure innovation (data tracking of customer behaviour) and regulatory innovation (simple know your customer principles, using third parties), including innovation in the areas of education and consumer protection.

There is a range of reasons why so many people remain untouched by banking/financial services. The most commonly cited constraints include the absence of a bank branch in close proximity, prohibitively expensive costs imposed by banks for small-value financial transactions, a low level of financial literacy, low income, bank image and so on. In addition, the image of banks as only serving the middle and upper classes has a psychological effect on the community. Based on the aforementioned constraints, the informal provision of financial services represents a more apposite approach to financial inclusion.

From the banks' perspective, efforts to bridge the gap between banks and the general public through office network expansion are complex and expensive. Establishing a new bank branch is made more complex by administrative and financial requirements. Furthermore, limited infrastructure and the natural topography of Indonesia as an archipelago are constraints in themselves.

The stigma that the Poor are unable to save is not entirely true. Based on findings in the field, poor communities are able to put aside a part of their income, however, the means by which to save are constrained by factors mentioned previously. The opinions of several experts further corroborate those findings. In their book **The Portfolio of the Poor**⁴, Ruthven et al (2010) conclude that the Poor can save and are indeed active money managers.

There is a paradigm on the supply side that extending financial services to the unbanked is unprofitable. A number of recent developments, however, have reversed that paradigm, for instance Grameen Bank and the fact that business profits in the MSME sector are relatively large. In his book **The Fortune at the Bottom of the Pyramid⁵**, Prahalat (2004) reveals that profitable businesses exist among the underclasses as long as the corporate sector can find an applicable business process. Currently, many businesses are starting to focus on this segment (financially and non-financially or a combination of the two) through technological advances, culture and regional entities.

Considering the relative importance of the unbanked, their basic needsare actually comparatively simple, namely to transfer funds, save disposable income and access

⁴⁾ Collins, Murdoch, Rutherford and Ruthven, 2010.

⁵⁾ C K Prahalad, 2004.

additional funds to finance productive businesses. If those basic necessities are combined with efforts to enhance bank efficiency in order to ease pressures on lending rates, then the answer to reducing constraints in terms of access to banking services is broadening the bank office network through unconventional methods. One such progressive method utilises communications technology, for instance mobile banking, point-of-sale systems in the form of card readers connected to a terminal, GPRS or satellite and local third-party agents with deep market penetration to help integrate financial services. The solution is not to open another branch office. This is known as branchless banking.

Within the concept of financial inclusion in Indonesia, branchless banking is a limited financial service and payment system operated without a physical branch office, instead opting to utilise third-party technology and services, in particular to serve the unbanked. Cellular technology is used in the implementation of branchless banking, which is favoured because of the existing market penetration of such technology that permeates all corners of the Indonesian archipelago, including remoteand rural areas.

In terms of the national clearing system, branchless banking falls under Pillar 5, namely enhancing intermediation and the distribution channels. *Branchless* banking can be interpreted as delivering alimited financial and payment system service without relying on physical bank branches, instead utilising third-party technology and services, primarily to serve the unbanked. The overarching point is to use agents and/or technology.

Currently, more than 120 iterations of branchless banking are implemented in over 60 countries worldwide. The pioneers of branchless banking include the Philippines (Asia), Kenya (Africa) and Brazil (Latin America). Branchless banking is expected to help the unbanked access appropriate financial transactions at an early stage in order to promote a culture of saving, while ultimately providing finance, particularly microfinance and small loans, to buoy the household economy.

The application of branchless banking in Indonesia is still (November 2013) at the preliminary stage of pilot projects as follows:

- Members of the general public can open a savings/emoney account upon producing a valid identification card and registering a cellular telephone number.
- Simple customer due diligence is achieved through know-your-customer principles with approvals for savings accountsmade in the back office of the bank (verification).



- The accounts used are basic savings accounts free from administrative costs, like the *TabunganKu* (*TabunganKu*) product. In this case, banks can provide a passbook (bankbook) or debit card or neither. In this case, customers can check their account balance and transaction history through their cellular telephone.
- There are limits imposed on transactions processed by agents concerning withdrawals and using cellular telephones to transfer funds.

Agents: What and How?

A key to the success of branchless banking isthe involvement of third-party agents, otherwise known as Financial Intermediary Service Units (FISA). Financial Intermediary Service Units function as an extension of the operators of financial and payment services. As a result of their pivotal role, agents are selected using a prudential process in order to avoid triggering operational and reputational risks. Considering the critical nature of agents, Bank Indonesia requires all banks to perform due diligence and register selected agents with Bank Indonesia.

In principal, Financial Intermediary Service Units work hand in hand with a bank/telecommunications company to provide financial services to the general public. In practice in other countries, however, regulations concerning agents cover at least three points, namely agent criteria, the activities agents are permitted to engage in and educating agents on know you customer principles and consumer protection. A number of other aspects relating to agents are required as follows:

- Selection criteria for agents, both qualitative and quantitative, for example whether the agent has owned a business previously and whether the agent (individual) is from the local community.
- Risk mitigation measures to avoid fraudulent

behaviour at agents, for instance:

- The application system used by the agents shall be provided and monitored by the operator; and
- The applications provided by the operator shall not allow the agent to observe customer transactions.
- Full understanding of the CDD procedure and KYC principles to avoid money laundering and funding terrorism though agents.
- Furnish agents with sufficient knowledge on how to handle customer complaints and instil the importance of maintaining customer data confidentiality.
- Provide regular education and training to the agents.
- Operator monitoring to observe potential agent development as well as suspicious transactions performed by the agent.

Several practices to help mitigate risk include requiring agents to place funds at a bank (guarantee) or encouraging banks to use agents that have borrowed previously from the bank. Furthermore, the financial activities agents can engage in are relatively limited to the following:

- Facilitating the opening of savings accounts and electronic money accounts. In this case, agents merely forward the application to open an account and implement CCD, while account approval is still handled at the corresponding bank.
- Cash withdrawals and deposits. Cash withdrawals and deposits are limited in order to minimise service risk as well as bolster antimoney laundering (AML) and counter-terrorism financing (CTF).
- Cash payments forloans.
- Cash payments for bills.
- Cash payments for pension funds and

government cash assistance.

- Remittances.
- Extending micro insurance.
- Transferring funds.
- Forwarding applications for microfinance.
- Other activities permitted by the regulator.

From the broad scope of branchless banking already implemented worldwide, the system is said to be secure and convenient, as revealed by surveys conducted by the Bankable Frontier Association (2010) regarding the application of branchless banking in Brazil, Kenya and South Africa as follows:

- Branchless banking is an effective and efficient way to provide formal financial services to vulnerable groups.
- Members of the general public rarely experience problems or lost funds through branchless banking.
- Agent liquidity is the most common problem found yet the simplest to overcome.
- There is a tendency for the general public to utilise branchless banking in the long term.

Factors Supporting Preparations in Indonesia

In general, based upon existing conditions and several studies/surveys, a number of supporting factors are present for the development of branchless banking in Indonesia as follows:

- A large potential market considering the scale of the unbanked in the country.
- Branchless banking is already available to the general public, particularly for payment services, for example by:
 - Issuing electronic money, like the e-wallet, by banks and telecommunications companies.
 - Providing mobile services with EDC to provide financial services to residents in remote locations.
 - Credit card payment transactions via EDC at

merchants.

- Withdrawing money or paying public utility bills thorough Payment Point Online Bank (PPOB), which can take the form of an individual agent.
- 3. The general public is becoming more mobile oriented, evidenced by the pervasive nature of mobile phone ownership. Existing data indicates around 255 million users(?) of cellular telephone technology in Indonesia (population of Indonesia is only 250 million) with penetration into the most remote areas of the country.
- The widespread use of technology, among others, cellular telephones, the Internet and broadband has the potential to catalyse economic expansion.
- The security level of financial transactions in Indonesia is sufficiently assured, as reflected by the results of surveys conducted by international consultancy firms, especially when compared to a number of other



Source: BCG (The Boston Consulting Group), "Asian's Next Big Opportunity: Indonesia's Rising Middle-Class and Affluent Consumers, March 2013

emerging markets like China, India and Brazil.

6. Indonesia is considered a country with high readiness



Source: : Mobile Financial Service Development Report 2011, World Economic Forum

for the application of branchless banking.

- 7. Basic savings accounts, as the basic tool, already exist in Indonesia (TabunganKu or MySavings).
- The financial education program continues to run 8. well, involving students and other specific community groups.

Quantitative Analysis of Branchless Banking, **Potential Savings and MSM Financing**

Potential savings and loans were mapped, especially microfinance and small loans, to reveal the concentration level of bank services using the Boston Consulting Group matrix (1970) and based on life cycle theory (Wibowo, Pungky P, 2013). The analysis model is also used to map the banking industry by province throughout Indonesia, where numerous market players exist in monopolistic competition.

The Boston Consulting Group matrix was constructed using Gross Regional Domestic Product (GRDP) on the vertical axis as well as deposits per capita and credit per capita on the horizontal axis. The threshold value of GRDP growth is determined using national GRDP growth (prevailing prices), while the threshold value for deposits per capita and credit per capita use the national values



Deposits per Capita and Credit per Capita Source:

ofdeposits per capita and credit per capita.

Accumulating Deposits

A linear regression model is used to estimate the increase in savings accounts in the event of additional financial services. A basic calculation is applied using the linear regression model for each bank saturation zone.

The effect of expanding the bank service network (traditional offices and agent banks) on precipitating an increase in bank accounts is calculated based on the

Propinsi Aceh Sumatera Utara Sumatera Barat Riau Jambi

10 Kepulauan Riau 11 DKI Jakarta

12 Jawa Barat 13 Jawa Tengah

14 DI. Yogyaka 15 Jawa Timur 16 Banten

16 Banton 17 Bait 18 Nusa Tenggara Barat 19 Nusa Tenggara Timur 20 Kalimantan Barat 21 Kalimantan Selaan 22 Kalimantan Selaan 23 Kalimantan Selaan 24 Sulawesi Vara 25 Sulawesi Selatan 27 Sulawesi Selatan 28 Gorontalo 29 Sulawesi Selatan 29 Sulawesi Selatan 20 Maliku Utara 31 Maliku

32 Papua 33 Papua Barat

6

Sumatera Selatan Bengkulu Lampung Kepulauan Bangka Belitung



Article 2. Branchless Banking to underpin Financial System Stability and Inclusive Economic

	Unstandardize	d Coefficient	Standardized Coefficient			
Model	В	Std. Error	Beta	Т	Sig.	
Zona 1	788,989	72,059	,953	10.949	,000	
Zona 2	636,978	43,101	,991	14,779	,000	
Zona 3	1148,139	89,140	,988	12,880	,000	
Zona 4	849,168	110,838	,938	7,661	,000	

Source:: Bank Indonesia 2013

saturation level of bank accounts in each province.

Analysis using a linear regression model shows that most additional bank accounts are achieved in the medium equilibrium zone, while the smallest increase is noted in the low equilibrium zone. This also indicates that the economies of scale achieved through expanding the bank network are rational. In terms of banks acting as agents of development, however, the role of banks requires further optimisation in service network development.

analysed. Assuming that GDP up to 2018 will remain constant at 6.5% and the share of micro and small enterprises will remain relatively unchanged, the potential of micro and small businesses is estimated to reach Rp 1,588.42 trillion in 2018.

From the projections, potential MSM credit is analysed using the BSG matrix to measure the level of credit concentration. In this analysis, GRDP growth is again placed on the y-axis but potential MSM is on the x-axis. The four quadrants in this analysis are as follows: a) Quadrant 1: potentialhigh, economies of scale high; b) Quadrant 2: potentialhigh, economies of scale low; c) Quadrant 3: potentiallow, economies of scale low; and d) Quadrant 4:

Extending Microfinance and Small Loans

The extension of microfinance and small loans is



Source: Bank Indonesia 2013

potentiallow, economies of scale high.

Analysis of the results shows that the provinces with high potential and high economies of scale are West Papua and East Kalimantan. In contrast, the provinces deemed low potential and low economies of scale are Central Java, East Java, Bali, West Kalimantan, West Nusa Tenggara and Papua.

Analysing the BCG matrix to map potential MSME financing leads to the conclusion that branchless banking spurs a tendency among banks to more expeditiously extend credit.

Conclusion

As an inseparable part of the National Financial Inclusion Strategy, branchless banking could help expand public access to affordable financial services and broaden the availability of financial products that fit the needs of low income earners, which would bolster financial system stability as well as sustainable and inclusive economic growth.

Branchless banking could trigger an increase in the capabilities and quality of life of individuals and households, which would reduce inequality and enhance prosperity. Branchless banking is not a cheap financial service but it is secure and could help realise greater bankability, which is the right of all people.

Nevertheless, the implementation of branchless banking requires proportional regulation and monitoring in order to minimise adverse spillover to the general public, the banks, the economy and financial system stability. Looking ahead, branchless banking will be known as mobile payment services.

REFERENCES

- AFI, Financial Inclusion Data Tracking and Measurement: Demand-Side Surveys to Inform Policymaking, Guideline Note No. 10, August 2013.
- AFI, Mobile Financial Services Basic Terminology, Guideline

Note No. 1 ,August 2013.

- AFI, Mobile Financial Services Indicators for Measuring Acces and Usage Guideline, Note No. 11, August 2013.
- Ardic, O.P., Imboden, K., and Latortue, A.Financial Access 2012 Getting to a More Comprehensive Picture. No.6, June 2013. CGAP.
- Bank of Ghana. 2008. "Guidelines for Branchless Banking". Accra, Ghana: Bank of Ghana.
- Bank of Pakistan. 2008. "Branchless Banking Regulations: for Financial Institutions Desirous to undertake Branchless Banking." Islamabad, Pakistan: Bank of Pakistan.
- Bankable Frontier Associates. 2009. "The Mzansi Bank Account Initiative in South Africa". Final Report. Bankable Frontier Associates.
- Bankable Frontier Associates. 2010. "Consumer Experiences in Branchless Banking." Final Report. Bankable Frontier Associates.
- Basel Committee on Banking Supervision. 2005. "Outsourcing in Financial Services." The Joint Forum. Switzerland: Bank for international Settlement.
- Boyd, Caroline. 2007. "Mobile Financial Services and the Underbanked: Opportunities and Challenges forMbanking and Mpayments." Chicago,USA: The Center of Financial Services Innovation.
- (The Boston Consulting Group), "Asian's Next Big Opportunity: Indonesia's Rising Middle-Class and Affluent Consumers, March 2013
- Cohen, Monique, Danielle Hopkins, and Julie Lee. 2008. "Financial Education: A Bridge between Branchless Banking and Low-Income Clients". Working Paper No:4. Washington, D.C.: Microfinance Opportunities.
- Bold, C., Porteous, D., and Rotman, S. Social Cash Transfers and Financial Inclusion : Evidence from Four

Countries. No. 77 Feb 2012. CGAP.

- CGAP, Applied Product Innovation in Branchless Banking, October 2011.
- CGAP, Global Standard-Setting Bodies and FI for the Poor,October 2011.
- CGAP,Interopability and Related Issues in Branchless Banking: A framework,2011.
- CGAP, Regulating Transformational Branchless Banking: Mobile Phones and Other Technology to Increase Acces to Finance, January 2008.
- CGAP, Supervising Nonbank E-Money Issuers, July 2012.
- Dass, Rajanish and Sujoy Pal. 2011. "Adoption of Mobile Financial Services among Rural Under-Banked." Ahmedabad, India: Indian Institute of Management.
- Dias, D. and McKee, K. Protecting BB Consumers: Policy Objectives and Regulatory Options. No.64 September 2010. CGAP.
- Dittus, Peter and Michael Klein. 2011. "On harnessing the potential of financial inclusion." BIS Working Paper No:347. Switzerland: Bank for international Settlement.
- Financial Inclusion and Customer Protection in Peru : The Branchless Banking Business .Joint assessment Report Superindence of Banks, Insurance and AFPs Consultative Group to Assist the Poor, February 2010.
- Flaming, M., Prochaska, K., Staschen, S. 2009. Diagnostic Report on the legal and regulatory environment forBranchless Banking in Indonesia. June 2009. CGAP.
- Flaming, M., McKay, C., and Pickens, M.Agent Management Toolkit :Building a Viable Network of BB Agents, Technical Guide , CGAP.
- Hannig, A. and Jasen, S. Financial Inclusion and Financial Stability: Current Policy Issues ADBInstutite ADBI working paper series , No. 259, December 2010.

Hawkins, Peneope (2006): "Financial access and financial

stability", in Bank for International Settlements, Central banks and the challenge of development, pp 65–79, www.bis.org /events/cbcd06.pdf.

- IMF, Enhanching Financial Sector Surveilance in Low-Income Countries: Financial Deepening and Macro-Stability , April 16, 2012.
- International Finance Corporation. 2010. "Mobile banking in Indonesia: Assessing the Market Potential for Mobile Technology to Extend Banking to the Unbanked and Underbanked." Jakarta: Australia-Indonesia Partnership.
- Ivatury, G. and Mas, I.2008. The Early Experience with Branchless Banking. No. 46 April 2008. CGAP.
- Klein, Michael and Colin Mayer. 2011. "Mobile Banking and Financial Inclusion: The Regulatory Lessons."
 Frankfurt School – Working Paper SeriesFrankfrutn No:166. Frankfrut,Germany: Frankfrut School of Finance and Management.
- Kendall, Jake, Nataliya Mylenko, and Alejandro Ponce. 2010. "Measuring Financial Access around the World." Policy Research Working Paper No: 5253. World Bank.
- Lyman, Timothy, David Porteous, and Mark Pickens. 2008. "Regulating Transformational Branchless Banking: Mobile Phones and Other Technology to Increase Access to Finance." Focus Note 43. Washington, D.C.: CGAP.
- Lyman, Timothy, Gautam Ivatury, and Stefan Staschen. 2006. "Use Of Agents In BranchlessBanking For The Poor: Rewards, Risks, And Regulation." Focus Note 38. Washington, D.C.:CGAP.
- Lauer, K., Dias D., and Tarazi, M. 2011. Bank Agents: Risk Management, Mitigation, Supervision. No. 27, Dec 2011.CGAP.
- Makin, Paul. 2009. "Regulatory Issues around Mobile Banking". Consult Hyperion. OECD.
- Mas, Ignacio, and Hannah Siedek. 2008. "Bankingthrough Networks of Retail Agents." Focus Note 47.

Washington, D.C.: CGAP.

- Martinez , M. and McKay, C. Emerging Lessons of Public Funders in Branchless Banking. No. 72 July 2011. CGAP.
- Pickens, Mark, David Porteous and Sarah Rotman. 2009. "Scenarios for Branchless Banking in 2020." Focus Note 57. Washington, D.C.: CGAP.
- R Khan Harun. 2012. Issues and Chalangges in Financial Inclusion- Policies, partnerships, process & products. Keynotes address by Mr.Harun Khan, at the symposium on "Financial Inclusion in India Economy" 30 June 2012.
- Subramanian, Lakshminarayanan, Dennis Shasha, and Ashlesh Sharma. 2009. "Secure Branchless Banking." Montana, USA: NSDR.
- Tadu, R. and Muyambiri, B. (2013). Financial Inclusion and Financial Stability: the important role of financial regulation in explaining the relationship. Journal of Research in International Business and Mangement Vol. 3(4)pp 139-149, April 2013.
- Tarazi, M. and Breloff, P. Regulating Banking Agents .No. 68 March 2011. CGAP.
- Wibowo, Pungky P. 2013. Bank Indonesia. Branchless Banking Setelah Multilicense: Ancaman Atau Kesempatan Bagi Perbankan Nasional. Paper Sespibi Angkatan XXXI.
- World Economic Forum, The Mobile Financial Services Development Report 2011, 2011

This page intentionally blank

Article 3

Identifying Indicators of the Countercyclical Capital Buffer

Iman Gunadi¹, Diana Yumanita², Januar Hafidz³, Rieska Indah Astuti⁴

Abstract

A countercyclical capital buffer is a macroprudential policy taken to reduce procyclicality in an economy. By slowing credit growth, the policy is expected to ultimately maintain credit growth in line with economic expansion. Based on the outcome of previous research, procyclicality affects credit in Indonesia. Therefore, this article reviews indicators that could be used to determine the scale of the countercyclical capital buffer (CCB) required. Using data from 2001-2012 and referring to the approach advocated by the Basel Committee for Banking Supervision (BCBS), this article provides evidence that the ratio of narrow credit to GDP gap is a leading indicator of the countercyclical capital buffer, Notwithstanding, the narrow credit/GDP gap requires corroboration from other complementary economic indicators, particularly in determining when is appropriate to activate and deactivate countercyclical capital buffer policy.

I. BACKGROUND

Financial crises are happening with increasing frequency. Although each crisis is unique, they all tend to incur substantial losses for economic players and the general public alike. For example, the crisis in 1997/98 incurred recovery costs amounting to 51% of Indonesia's Gross Domestic Product (GDP).

The performance and innovation of increasingly complex financial products without an underlying in the real sector along with moral hazard represent the root of the financial crisis. Schinasi (2000) showed that growth in the financial sector since 1970 has become increasingly expansive compared to real economic growth. In 2000, growth of assets in the financial sectors of advanced countries was twice that of the period from 1970-2000. Furthermore, asset growth in the financial sector of the UK skyrocketed from 110% (1980) to 377% (2000). During the same period, asset growth in the financial sector of Germany nearly doubled from 182% to 353% and in the US soared from 111% to 257%.

Such conditions, among others, encouraged leaders of G-20 affiliated countries to compile a blueprint of global financial reforms. In general, global financial reforms consist of eight core elements, namely: (1) improving bank capital and liquidity standards; (2) addressing systemically important financial institutions (SIFIs); (3) expanding and refining the regulatory perimeter; (4) improving the OTC and commodity derivatives markets; (5) developing

¹⁾ Author is a Senior Researcher at the Department of Macroprudential policy, Bank Indonesia.

Author is a Senior Researcher at the Department of Macroprudential policy, Bank Indonesia.
 Author is an Economic Researcher at the Department of Macroprudential policy. Bank

Indonesia.

Author is an Economic Researcher at the Department of Macroprudential policy, Bank Indonesia.

Article 3. Identifikasi Indikator Countercyclical Capital Buffer

macroprudential frameworks and tools; (6) strengthening and converging accounting standards, (7) strengthening adherence to international supervisory and regulatory standards; and (8) other issues.

A part of the agreement was subsequently contained within Basel III, which regulates aspects of bank capital and liquidity. In terms of bank capital, the minimum capital requirement under Basel I and II of8% was deemed insufficient to overcome procyclicality in the financial system and economy. Consequently, pursuant to Basel III, banks are required to increase their capital in the form of a Countercyclical Capital Buffer (CCB) in order to anticipate procyclicality.

Countercyclical capital buffer policy aims to expand capital reserves at banks, which are used to suppress excessive credit growth and avoid systemic risks. The reserves are built up during an expansionary phase of the economic cycle and subsequently utilized when the economy enters a contractionary phase in order to maintain flows of credit and financing to productive sectors.

In December 2010, the Basel Committee for Banking Supervision(BCBS) issued guidelines that contain general principles and formulae to calculate the countercyclical capital buffer. This review aims to implement the contents of those guidelines for the banking industry of Indonesia.

II. RESEARCH OBJECTIVES

This research article aims to identify candidate indicators that could be used to determine the countercyclical capital buffer in Indonesia. Furthermore, the article also strives to identify other complementary indicators that could be utilized to illustrate real economic and financial system conditions in support of the leading indicators.

III. DEFINING THE COUNTERCYCLICAL CAPITAL BUFFER

III.1 Capital Buffer

In the literature, a diverse range of definitions is offered concerning capital buffers. Jokipii and Milne (2008) define a capital buffer as the amount of risk-based capital with a ratio of less than 8%. After Basel II, banks used different methods to estimate risk, for example using the internal rating approach. Therefore, banks tended to maintain differing levels of capital depending upon how they estimated risk. Jackson (1999), Bikker and Metzemakers (2005), as well as Jokipii and Milne (2008) found that banks will maintain excessive capital in order to signal the market regarding their level of solvency. When banks have a sound level of solvency it is easier for them to access funds at lower interest rates.

In general, a capital buffer is used to protect the bank from unexpected losses that could emerge in future periods. In addition to a capital buffer, provisions are also used as an alternative instrument. Nonetheless, a capital buffer and provisions are significantly different in their use. Terrier et al. (2011) opined that the function of provisions is to absorb expected losses on the bank balance sheet. In contrast, the function of a capital buffer is to absorb unexpected losses in future periods. Figure 3.1 illustrates that provisions are used to absorb expected loss, as indicated by the upward curve in provisions. Meanwhile, thedownward curve of the capital buffer shows that the buffer is used when unexpected losses emerge.

Article Graph 3.1 Capital and Provisions



Source: Terrier et al. (2001), IMF Working Paper, WP/11/159

III.2. Capital Buffer and the Business Cycle

In practice, efforts to supplement capital and shifts in credit follow different cycles. Chen and Hsu (2011) provide evidence for this by showing that the correlation between the capital buffer and credit cycle is negative. Those findings are congruous with the results of other studies, which indicate a negative co-movement between the capital buffer and the economic cycle. Such conditions exacerbate procyclicality (Fonseca et al, 2010).

Agenor (2009) found two channels where the capital buffer influences the economic cycle as follows:

- a. Influencing corporate investment through interest rate spread (lending rate minus deposit rate).
- Influencing household consumption through interest rate spread (lending rate minus deposit rate).

The effect of a capital buffer on interest spread can be explained through the argument that banks will bolster screening and monitoring of their credit. This is in line with the findings of Meh and Moran (2010), who show that suboptimal bank supervision of their borrowers will spur risks, the cost of which is borne by the borrower.

Based on the channel argument presented previously, Fonseca et al. (2010) proposed three hypotheses as follows:

- Capital buffers reduce the interest rate spreads that banks charge for loans and the interest rate spreads they pay for deposits.
- The negative influence of bank capital buffers on lending rates and banks' cost of deposits is greater in developing countries.
- The presence of explicit deposit insurance diminishes the ability of bank capital buffers to reduce deposit rate spreads.

Conditions where interest rates are high while the economy experiences a downturn affect demand for credit in the same period. Weaker demand during a bust period will undermine bank profits and, therefore, banks will struggle to find funds in that period. This is the impact that many central banks around the world are trying to avoid. In more detail, the following diagram can illustrate the impact of countercyclical capital buffer policy on credit.





Source: Hypothetical based on the study conducted by Fonseca et al (2010), "Cyclical Effects of Bank Capital Buffers with Imperfect Credit Markets: International Evidence."

III.3 Leading Indicators base don BCBS Guidelines

The Basel Committee for Banking Supervision (BCBS) has outlined five basic principles as guidelines when calculating the magnitude of countercyclical capital buffers as follows:

- The goal of the countercyclical capital buffer is to protect the banking system from potential losses during periods of excessive credit growth that is expected to undermine financial system stability.
- 2. Use the credit to GDP ratio as a common reference or benchmark. In this context, credit refers to broad credit (including credit from banks and nonbanks). The authorities are not obliged to adopt this approach, however, if another approach is used, the relevant authority is required to explain their decision for using the benchmark.

- 3. Using the credit to GDP approach or indeed another approach entails the risk of misleading signals. As a result of this risk, authorities are required to ensure that the data/information used to calculate the countercyclical capital buffer, like credit/GDP, is consistent with other variables like various asset prices, funding spread and CDS spread as well as surveys concerning credit conditions.
- The use of a countercyclical capital buffer is based on prompt release. Under conditions of distress, the countercyclical capital buffer must immediately be available to alleviate risk of unchanneled credit as bank capital decreases.
- 5. It is possible to simultaneously utilize other macroprudential tools in conjunction with the countercyclical capital buffer. Under conditions of distress, other macroprudential tools (like the loan to value ratio and income gearing limits) must be used in tandem with the countercyclical capital buffer to ease systemic risk.

Meanwhile, when determining the appropriate timing to build up and activate the countercyclical capital buffer, accurate leading indicators are required, which may be different in each country. Drehman et al (2010) analysed variables with the potential to become leading indicators. The variables analysed were divided into three broad groups as follows:

- Macroeconomic variables: GDP growth, (real) GDP growth, deviation between credit/growth and its long-term trend (credit gap/GDP) as well as deviation between real equity prices and their long-term trends (real equity price gap).
- Bank performance: profits (earnings) and a proxy of gross losses.
- Cost of funding: credit spread

A statistical method of signal extraction is used to determine leading indicators from the variables listed

previously. One important criterion in the determination of leading indicators using the signal extraction method, according to Kaminsky and Reinhart (1999), is that such indicators have the lowest noise to signal ratios. In principle, the noise to signal ratio denotes the quality of leading indicators. A higher ratio of good signals to bad signals implies that the variable tested is more viable as a leading indicator. Simulations show that the credit/GDP gap generates the lowest noise to signal ratio. Other research (Borio and Lowe, 2002) also found that the credit/GDP gap provided the most robust signal in terms of predicting episodes of banking crisis. Consequently, on top of the empirical reasons cited by the Basel Committee for Banking Supervision, it was decided that credit/GDP gapwould be used due to the following considerations:

- The credit/GDP gap is smoother because it is normalised according to the size of the economy (GDP), therefore it is unaffected by normal credit growth cycles.
- It is easier to achieve the goal of macroprudential policy in terms of protecting the banking sector from excessive credit growth.

Determining the indicators to set the Capital Buffer; Implementation in other countries, BCBS Guidelines; Credit Gap to GDP with its long-term tend; Determining alternative indicators; Determining the long-term trend calculation method; Based on the following criteria: 1. BCBS recommendations; 2. Fulfilling the assumptions for each respective filter.

Based on the following criteria: 1. Gap when the crisis is higher than H; 2. Early warnings 2-3 years prior to the crisis; 3.Lowest signal to noise ratio; 4. Data availability. Candidate indicators; Contrafactual test; Selected Indicators.

Lead by the BCBS published guidelines, the framework of this research is illustrated as follows:

Article Figure 3.1 Research Framework



IV.RESULTS AND DISCUSSION

IV.1. Determining the Indicator Gap with the HP Filter

Gap is the difference between each respective indicator and its long-term trend. The Basel Committee for Banking Supervision (2010) recommend the HP filter method with $\lambda = 400,000$ to estimate the long-term trend of each indicator. Selecting a λ value of 400,000 is based on a number of considerations (Drehman et al, 2010) that can be explained as follows.

Historical data shows thatfluctuations in the financial cycle (credit cycle) linked to a crisis are generally longer in duration than fluctuations in the business cycle. Based on the procedure developed by Bry and Boschan (1971),

the calculation of λ is adjusted to the economic cycle of Indonesia.

Article Table 3.1 Financial Cycle and Business Cycle in Indonesia

Cycle	Average Duration				
Cycle	Business Cycle*)	Financial cycle**)			
Peak to peak	10.00	44			
Trough to trough	9.50	36			
Siklus	9.75	40			
Financial cycle/ Business cycle	4.10				

*) GDP Growth

**) Credit Growth (narrow credit between 1997 and 2008 - Systemic)

From Table 3.1 it can be concluded that the credit cycle in Indonesia is longer than the business cycle, therefore $\lambda = 4,104*1,600 = 400,000$ (Drehman et al, 2010). A higher value of λ indicates a longer timescale in identifying the onset of a crisis episode, thereby enhancing the reliability of a variable as an early warning indicator.

Thereafter, the gap of each respective indicator is calculated as follows:

 $Gap_t = indicator_t - long-term trend of indicator_t$

The gap of each indicator is subsequently used as the basis in determining the size of the countercyclical capital buffer required for the banking industry in Indonesia.



IV.2. Determining Indicator Gaps using Kalman Filter Method

Rudolf Emil Kalman initially developed the Kalman Filter in 1960. The Filter is a recursive data management algorithm to produce optimal estimates based on existing information. The Kalman filter is also used to determine the long-term trend of an indicator. In practice, for the purpose of finding long-term trends, the HP filter is more popular than the Kalman filterbecause there are a number of assumptions that must be met when using the Kalman filter, which in reality are difficult to fulfil with the dataavailable. The assumptions are as follows:

 Error is distributed normally with an expected value and average error equal to zero.

- 2. Homoscedasticity or the variance of ϵ_t and η_t is constant for all observations.
- 3. Independency, namely no autocorrelation between errors.

The Kalman filter is not used in this research because the normality assumption for credit/GDP data that begins in Q1-1993 is not met as a result of the crisis episode in 1997/98 in Indonesia, which caused data to be skewed due to extreme values during the crisis. Consequently, the HP filter is more robust in this research to determine the long-term trends of each indicator.

Article Table 3.2 Residual Diagnostic Test on Credit/GDP Data (Q4-2000 to Q3-2012)

No	Assumption	Statistic	Value	Critical Value	Test Result
1	Normality	Ν	5,78	5,99	Asumsi Terpenuhi
2	Homoscedasticity	1/H(14)	0,49	2,86	Asumsi Terpenuhi
3	Independency	Q(11)	5,26	12,59	Asumsi Terpenuhi





Nevertheless, in the interest of research the Kalman filter is used thereafter to illustrate a comparison with the HP filter, using credit/GDP data from Q4-2000 to Q3-2012.

Based on Table 3.2, it can be seen that all the assumptions associated with the Kalman filter are met. The Kalman filter is then used to find the trends that are the optimal estimates of Credit/GDP for subsequent comparison with the results produced by the HP filter with $\lambda = 400,000$.

Article Table 3.3 Paired Samples Test Paired SamplesTest

					95% Confi	dence Interval Difference			
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Gap Kalman Filter - Gap HP Filter	.06026	.85962	.13109	20429	.32481	.460	42	.648

Article Figure 3.5 Narrow Credit/GDP and Kalman Filter



Article Table 3.4 Correlation between the Kalman Filter and HP Filter

Paired Samples Correlations						
Pair 1	Sig.					
Gap Kalman Filter & Gap HP Filter	0.750	0.000				

Based on the tables and figures above, it is concluded with a 95% level of confidence that the average trends produced using the Kalman filter and HP filter are not statistically different. This is reinforced by the positive correlation between the two, amounting to 0.75. Therefore, based on that explanation along withfailing to meet the normality assumption, the HP filter is selected for further use in this research with $\lambda = 400,000$.

IV.3. Selecting Candidate Leading Indicators

The selection of leading candidate indicators is based on the capacity of each indicator to identify a crisis period 2-3 years in advance of the crisis (BCBS, 2010). The Basel Committee for Banking Supervision established three criteria that must be met by candidate indicators as follows:

- 1. At the onset of the crisis the credit gap/GDP \geq H.
- Two or three years prior to the crisis the credit gap/ GDP is at a level L.
- 3. Credit data availability in Indonesia.

In addition to the three criteria noted, two additional guidelines are used in this research as a reference to determine which indicators will become leading indicators, namely the reliability and consistency of the indicators.

Reliability is measured by calculating the noise to signal ratio (NSR) of the respective indicator. An indicatoris said to provide a reliable signal if it can identify a crisis period two to three years before it occurs with the lowest NSR (Drehman et al, 2010), where:

- Type-1 error: signal is not detected but a crisis episode occurs.
- Type-2 error: a signal is detected but no crisis period transpires.
- Noise to signal ratio: the ratio between a type-2 error and (1 minus the type-1 error).

In their study, Kaminsky and Reinhart stated that the best early warning indicator is one that has the lowest noise to signal ratio.

In addition to meeting strict reliability requirements, a leading indictor must also be consistent with other complementary indicators in terms of identifying a crisis episode. This is necessary considering that as an increasing number of indicators transmit a signal in the form of an indicator gap value that follows an upward trend beyond the threshold (H), the more accurate the indicators become in identifying a crisis. By achieving consistency between leading indicators and complementary indicators, wrong signal detection should be avoided.

IV.4. Candidate Indicator Estimation Results

Identifying appropriate indicators is critical in terms of providing accurate signals of an impending financial crisis in the economy. The literature reveals that a reliable and consistent indicator in one country may not necessarily be used accurately in another country to illustrate the business and financial cycles there.

In subchapter 4.2.1 (Table 3.1), 14 indicators were presented as candidate leading indicators to determine the size of the countercyclical capital buffer in Indonesia. Each indicator is assessed to determine its appropriateness for economic conditions in Indonesia. Meanwhile, the BCBS

An analysis table of candidate indicators and criteria set by BCBS is as follows:
Article Table 3.5
Indicator Map

		Criteria						
No	Indicator	Indica	Indicator Gap during Crisis		Sig (Quarte	Noise to Signal Ratio		
		1997 Q3	2005 Q4	2008 Q4	1997 Q3	2005 Q4	2008 Q4	(NSR)
1	Narrow Credit /GDP	21.686	-2.977	2.770	7	-	1	0
2	Market Capitalization/GDP	32.491	-18.115	-55.567	9	-	-	0
3	PMTDB/GDP	4.043	-1.836	2.490	11	-	-	1
4	Mortgages Loan/GDP	1.254	0.048	0.150	6	-	-	0
5	Property Credit/GDP	5.843	-0.621	0.835	6	-	-	0
6	Consumer Loan/GDP	2.340	1.028	0.073	6	4	-	0
7	Narrow Credit Growth	15.899	5.265	10.771	11	6	5	0
8	Market Capitalization Growth	-32.400	-13.523	-74.686	-	-	-	0.67
9	Mortgages Loan Growth*	17.699	11.771	4.007	2	9	-	0.33
10	Property Credit Growth*	37.795	11.495	6.402	2	11	6	0.33
11	BC-Pinjaman LN Growth**	21.163	0.343	9.665	2	6	5	0.33
12	BC-(Pinjaman LN+LN Bank)**	-	2.217	8.317	-	6	5	0
13	BC-Pinjaman LN Bank**	-	0.468	16.089	-	1	4	0
14	Loan to Deposit Ratio	31.550	-3.962	12.681	14	-	4	1

Note:

- *Data is available from Q1-1997.

- **Data is available from Q1-2002.

- Red cells indicate that the gap during a crisis episode exceeds the maximum threshold (H) set for each respective indicator.

- Yellow cells denote that the indicator provides a signal two years or more before a crisis period.

- Green cells denote indicators with the lowest noise to signal ratio (the best indicators).

guidelines of December 2010 are used to determine the size of the countercyclical capital buffer, beginning with calculating the ratio of each indicator. The gap between the ratio of each indicator and its long-term trend is subsequently calculated. The HP filter is used to calculate the long-term trend of each indicator with $\lambda = 400,000$.

Based on the gaps obtained, the lower (L) and upper (H) thresholds are determined referring to the consultative document issued by the Bank for International Settlements (BIS). The PMTDB/GDP gap and the LDR gap have the highest noise to signal ratio (NSR) of 1, which indicates that the probability those indicators will transmit an erroneous signal regarding an impending crisis is 1. Similarly, the gaps of market capitalisation growth, mortgage loan growth, property credit growth and broad credit to external loans growth each have a noise to signal ratio of greater than zero. In their study, Kaminsky and Reinhart (1999) stated that the best early warning indicator is one with the lowest noise to signal ratio. By meeting a further two additional criteria, namely the gap during a crisis episode and early signal detection, five indicators remain as candidates for the best leading indicators as follows: narrow credit/GDP. mortgage loans/GDP, property credit/GDP, consumer loans/GDP and narrow credit growth.

IV.5. Proposed Alternative Best Indicators

Using the L and H criteria from the Basel Committee for Banking Supervision and based on Article Table 3.5 above, of the 14 indicators presented in Table 3.1 four are appropriate to conditions found in Indonesia, namelynarrow credit/GDP, mortgage loans/GDP, property credit/GDP and consumer loans/GDP with a lower threshold (L) and upper threshold (H) as follows:

Narrow credit/GDP is the best leading indicator as a reference when determining the size of the countercyclical capital buffer, while the three other indicators are complementary and reinforce the signal of the early warning indicators.

Article Table 3.6 Selected Indicators and Thresholds

		Three	shold
No	Indicator	L	Н
1	Narrow Credit /GDP	2	15
2	Mortgages Loan/GDP	0.5	1
3	Property Credit/GDP	2	5
4	Consumer Loan/GDP	0.5	1





To test whether a new policy is effective or not in its implementation, contrafactual testing is performed (Heckman, 2008). Nonetheless, contrafactual testing does not significantly contribute to determining the effectiveness of CCB policy in Indonesia because average bank CAR in Indonesia is relatively high at around 16-17%, which is already well in excess of the maximum buffer set. This demonstrates that there are no significant differences between before the countercyclical capital buffer was set and after the countercyclical capital buffer was set.

V. CONCLUSION

A number of conclusions can be drawn based on the review of identifying indicators of the countercyclical capital buffer in Indonesia as follows:

 Efforts to identify indicators that can be used as a countercyclical capital buffer are still constrained by a lack of data prior to 1997. Data of sufficiently long series are the key to determining credit and financial cycles as a basis for calculating the size of the buffer. Only credit data and economic growth figures are available all the way back to 1977, while other data is limited and varies from 1996 to 2000, for example data on external loans, bonds and shares, property credit and consumer loans. Consequently, the credit assumptions used in CCB policy in Indonesia merely cover narrow credit not broad credit.

- 2. Based on data availability since 1997 and fulfilling BCBS criteria, there are four indicators applicable to conditions in Indonesia, namely the narrow credit/ GDP gap, the mortgage loans/GDP gap, the property credit/GDP gap and the consumer loans/GDP gap. In addition to fulfilling data availability requirements and meeting the BCBS criteria, all four selected indicators also statistically have the lowest signal to noise ratio.
- 3. Narrow credit to GDP is the leading indicator used as a reference when determining the size of the countercyclical capital buffer in Indonesia, with a threshold ranging from 2-15. Meanwhile, the three other indicators are complementary and reinforce the early warning signals.
- 4. The Kalman filter could not be used to find the longterm trends because the normality assumptions for credit/GDP data were not met due to the 1997/98 crisis in Indonesia that skewed the data as a result of extreme values during the crisis period. Consequently, the HP filter method was more robust for use in this research (λ =400,000) in terms of finding the longterm trend of each respective indicator.

VI. POLICY IMPLICATIONS

 Determining indicators of boom and bust economic periods cannot fully rely on one indicator, namely the credit/GDP gap, but requires observations of several other indicators as an early warning system, like ISSK, macro indicators and also fiscal indicators.

- For additional refinement looking ahead, further efforts are required to more accurately measure the financial cycle and business cycle using existing data and macroeconomic data.
- Looking forward the implementation of CCB policy requires an appropriate communication strategy in conjunction with relevant agencies and public institutions, in particular the banking industry, to ensure the effective implementation of CCB policy.

REFERENCES

- Agusman et al., 2012, "Countercyclical Capital Buffer: Evidence from Indonesia", Department of Banking Research and Regulation, Bank Indonesia
- Agenor et al., 2011, "Capital Requirements and Business Cycles with Credit Market Imperfections.", Banco Central Do Brazil, Working Paper Series 231, p 1-58, January 2011
- Basel Committee on Banking Supervision, 2010, "Guidance for National Authorities Operating The Countercyclical Capital Buffer", Bank of International Settlements, December.
- Borio, et al.,2001, "Procyclicality of The Financial System and Financial Stability: Issues and Policy Options", BIS Papers No 1.
- Bank of England, 2013, "The Financial Policy Committess's Powers to Supplement Capital Requirements: A Draft Policy Statement," Bank of England.
- Bikker, J.A and Metzemakers, P.A.J, 2005, "Bank Provisioning Behaviour and Procyclicality", Journal of International Financial Markets, Institution and Money, Elsevier, Vol 15 (2), Pages 141-157, April.
- Berger et al., 1995, "The Role of Capital in Financial Institution.", Wharton Financial Institution Center Working Paper 95-01
- Bry, Gerhard and Boschan, Charlotte, 1971, "Cyclical Analysis of Time Series: Selected Procedures and

Computer Programs.", National Bureau of Economic Research, ISBN 0-87014-223-2

- Claessens, et al., 2011, "How Do Business and Financial Cycles Interact?", IMF Working Paper WP/11/88.
- Caruana, Jaime, 2010, "Systemic risk: how to deal with it?", Bank for International Settlements, http://www. bis.org/publ/othp08.htm
- Chen et al., 2011, "Are Bank Capital Buffers Cyclical Evidence for Developed and Developing Countries.", Department of Finance, University of Kaohsiung
- Drehman, et al.,2010, "Countercyclical Capital Buffer: Exploring Options", BIS Working Papers No 137, July.
- Derantino, Elis,2011, "Procyclicality of Bank Capital Buffer and its Impact on Bank's Lending Activity in ASEAN Countries", Department of Banking Research and Regulation, Bank Indonesia
- Furine, Craig, 2001, "The Interbank Market During a Crisis.", Bank for International Settlement Working Papers No. 99, June 2001.
- Fonseca et al., 2010, "Cyclical Effects of Bank Capital Buffers with Imperfect Credit Markets: International Evidence.", Banco Central Do Brazil, Working Paper Series 216, p 1-54, October 2010
- Gopinath dan Choudhary, 2012, "Countercyclical Capital Buffer Guidance for India", RBI Working Paper Series, WPS (DEPR) 12/2012, June.
- Jokipii, Terhi and Milne, Alistair, 2008, "The Cyclical Behaviour of European Bank Capital Buffers", Journal of Banking and Finance 32 (2008) 1440-1451
- Kaminsky, G. L and Reinhart C. M, 1999, "The Twin Crisis:
 The Causes of Banking and Balance of Payment
 Problems.", The American Economic Review, Vol.
 89 No. 3, June.
- Meh, Cesaire A. and Moran, Kevin, 2010, "The Role of Bank Capital in the Propagation of Shocks.", Journal of Economic Dynamics and Control 34 (3)

: 555-576

- Phua, Wee Ling, 2011, "Basel III & Beyond: A View from Asia.", Master of Finance Individual Project, Judge Business School, University of Cambridge, August.
- Repullo, Rafael and Saurina, Jesus, 2011, "The Countercyclical Capital Buffer of Basel III: A Critical Assessment.", CEPR Discussion Paper 8304, C.E.P.R Discussion Paper.
- Tabak et al., 2011, "Bank Capital Buffers, Lending Growth and Economic Cycle: Empirical Evidence for Brazil.", BIS CCA-004-2011
- Terrier et al., 2011, "Policy Instruments to Lean Against The Wind in Latin America.", IMF Working Papers, WP/11/159
- Utari et al., 2012, "Optimal Credit Growth", Economic Research Group, Bank Indonesia
- Vuuren, 2012, "Basel III Countercyclical Capital Rules: Implications for South Africa", Department of Economics, North-West University.

This page intentionally blank

Financial Stability Review

No.21, September 2013

DIRECTOR

Darsono Agusman Yati Kurniati

Linda Maulidina

COORDINATOR & EDITOR

Dwityapoetra S. Besar Ita Rulina

COORDINATOR & EDITOR FOR CHAPTER I

Cicilia A. Harun

COORDINATOR & EDITOR FOR CHAPTER II

Wahyu Hidayat S.

COORDINATOR & EDITOR FOR CHAPTER III-IV

Kurniawan Agung W.

COORDINATOR & EDITOR FOR CHAPTER V

Ndari Suryaningsih

ANALYSTS

Koppa Kepler, Ibrahim, Iman Gunadi, M. Firdaus Mutaqin, Arlyana Abubakar, Clarita Ligaya Iskandar, Sri Noerhidajati, Rozidyanti, Risa Fadila, Kartina Eka D, Eka Vitaloka, Frimayudha Ardyaputra, Indra G. Sutarto, Indrajaya, Mestika Widantri, Hero Wonida, Heny Sulistyaningsih, Darmo Wicaksono, Arsya Helmi, Aditya Anta Taruna, Jhordy Kashoogie

OTHER DEPARTMENT CONTRIBUTION ON SELECTED ANALYSIS

Department of Economic Research and Monetary Policy Department of Bank Licensing and Banking Information Department of Accounting and Payment System

PRODUCTION AND DISSEMINATION TEAM

Syaista Nur, I Made Yogi, Harris Dwi Putra, Saprudin



DEPARTMENT OF MACROPUDENTIAL POLICY