PERSPECTIVES ON MACROPRUDENTIAL SUPERVISION FROM INDIVIDUAL FINANCIAL INSTITUTIONS

Kim Chang-Lok

Governor
Korea Development Bank

The view expressed here is the author's own and not necessarily the view of the Korea Development Bank.

I. Overview of Macroprudential Supervision

1. What is Macroprudential Supervision?

There is a considerable difference between macroprudential supervision and microprudential supervision with respect to their objectives, supervision methods, and recognition of economic conditions.

The objective of the existing microprudential supervision is to protect financial consumers through minimization of individual financial institutions' insolvency. Microprudential supervision, which typically acts as a regulation for BIS Capital Ratio, disregards unique characteristics of individual financial institutions and is rather applied as a "one size fits all" system. Under microprudential supervision, economic conditions are recognized merely as exogenous variables with no relevance to the business operation by individual financial institutions.

Macroprudential supervision improves the stability of the financial system by enhancing the system's capacity to properly respond to potential financial distress or instability. Because under macroprudential supervision, standards can be applied flexibly depending on the economic conditions and the degree of impact the financial instability may have on the financial market, and the risk factors of the financial system are analyzed and managed according to the macro-financial environment. That is, macroprudential supervision recognizes economic conditions as endogenous variables influenced by collective business operation by individual financial institutions.

Microprudential Supervision vs. Macroprudential Supervision

	Microprudential Supervision	Macroprudential Supervision
Objective	· Maintain soundness of individual financial institutions	· Maintain stability of the overall financial system
Method	· Present standardized supervision criteria for various risk factors · Evaluate management performance and make timely adjustments	· Run market-responsive supervision standards · Analyze risk factors according to changes in macro-financial environment
Recognition of economic conditions	· Exogenous variables with no relevance to business operation by financial institutions	· Endogenous variables influenced by collective business operation by individual financial institutions.

2. How did Macroprudential Supervision Emerge?

It became too difficult for a financial supervisory authority to sustain stability of the financial system only with microprudential supervision.

Financial instability, which incurs tremendous economic costs, originates from a common shock that brings impact, usually to the entire financial system. There is a limit to what the existing microprudential supervision can do to cope with such instability. The effectiveness of the conventional microprudential supervision became questionable especially with the outbreak of the financial crisis in the late 1990's.

Along with numerous changes in the financial environment including financial innovation, enlargement, diversification and globalization, the financial system's exposure to risks grew even further. Financial institutions' profit-oriented herding behavior bore many side effects including the fallacy of composition. This included excessive competition among commercial banks leading to a high concentration in mortgage loans.

The introduction of financial holding companies heightened the likeliness of the contagion effect, which has a far-reaching influence. As financial institutions are connected not only horizontally through the capital market, but also linked stronger vertically with the advent of financial groups, promoting financial stability only with the existing microprudential supervision has become too challenging.

Also, the rapid expansion of globalization and development of Information and Communication Technology (ICT) have exacerbated financial synchronization, causing internal and external shocks to spread faster. As the domestic and foreign macroeconomic indicators have become closely correlated and change simultaneously, financial instability is likely to be triggered more frequently.

Even for an individual financial institution, macroprudential supervision is essential to stable management. A crisis of financial system, in most cases, is unmanageable by individual financial institutions or is unpredictable due to unexpected factors. It is almost impossible for individual financial institutions to confront the instability in the overall financial market, especially if the financial instability is provoked by the realization of accumulated macroeconomic factors such as business turmoil taking a toll on a particular sector of the national economy or a recession. The liquidity crisis of credit card companies in 2003 was an example showing that insolvency in other economic sectors can lead to financial instability.

Financial instability, when not resolved at an earlier stage, may cause irrecoverable losses on individual financial institutions. A case in point is the financial crisis that broke out at the end of 1997 largely influenced by macroeconomic instability. Numerous financial institutions had to be liquidated or sold off.

Effective macroprudential supervision, therefore, ultimately contributes to the management stability and financial soundness of individual financial institutions. A resilient financial supervision that takes into consideration the macroeconomic and financial environment changes, would contribute to stable management of financial institutions by containing herding behavior and preventing financial system instability.

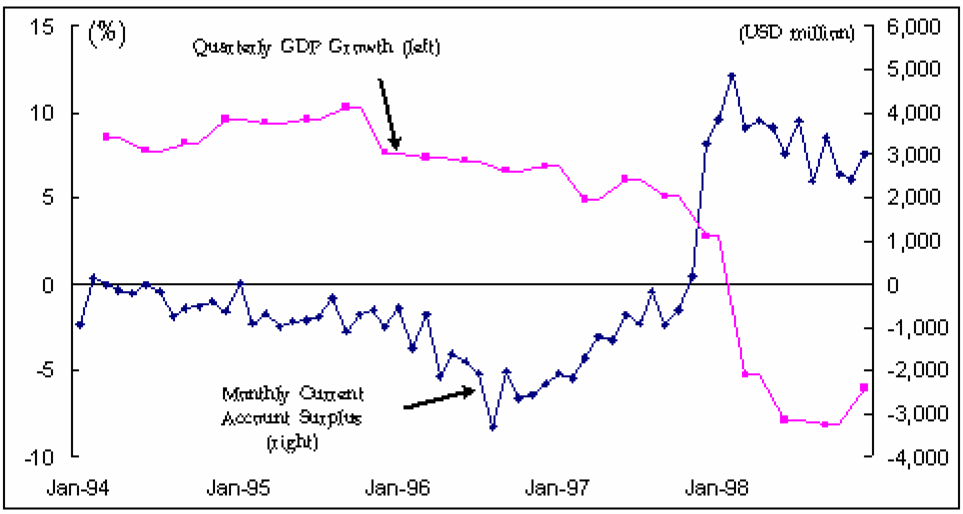
Therefore, the supervisor's ability to monitor symptoms of systemic risks may be just as essential to individual financial institutions as the institutions' own risk management capacity such as loan screening and collateral review.

II. Case Studies

1. Financial Crisis in 1997

There were several factors that led to the financial crisis in 1997. Korea's worsening macro-economic performance was one of them. In 1996, the nation's GDP growth rate plunged to the 6%-level from the 8%-level in 1994 and 1995. This was caused by domestic demand slowdown and sluggish exports arising from aggravating terms of trade. In addition, the rapid increase in the current account deficit brought a dampening effect on the national economy. The current account deficit snowballed to USD23.0 billion in 1996 from USD8.5 billion in 1995.

Major Macroeconomic Indicators (1994-1998)



Source: The Bank of Korea

Another reason for the financial crisis was excessive investment and weakened financial structure of the corporate sector. Large-scale investments had been made redundantly in equipment industries such as automobile, steel, semiconductor and petrochemical industries. The concerned companies' dependency on borrowings for the needed money worsened the financial structure of the corporate sector.

The banking sector's vulnerability also provoked the financial crisis. Loan practices based on collaterals were predominant in the banking sector at the time, and loan monitoring was rather slack. Led by long-term operations of short-term funds, foreign currency-denominated debts snowballed and maturity mismatch between assets and liabilities augmented.

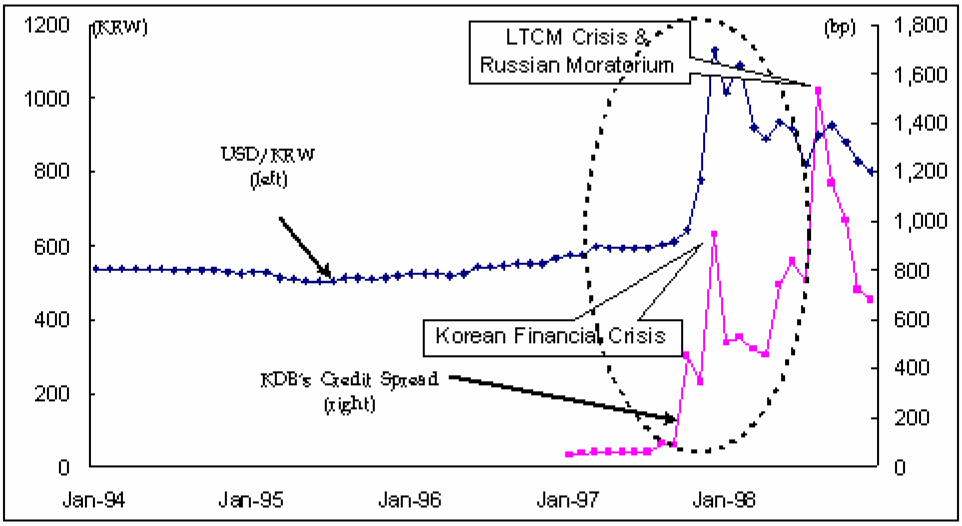
Lastly, the foreign currency crisis throughout Southeast Asia affected Korea, leading to the outbreak of the financial crisis in 1997. Then, the risks of the crisis eventually spread to the overall emerging markets.

Major Events related to the Financial Crisis

	Major Events	Major Changes
Jan. 1997	Default of *Hanbo Steel*	-Moody's downgraded long-term credit ratings of the banks that extended loans to *Hanbo Steel*. -New investments in Korea by foreign capital were curbed and existing investments were re-analyzed.
Jul. 1997	- Default of *Kia Motors* - Southeast Asian Crisis	-KDB funding cost: over *Libor + 1%* -Rollover rate of merchant banks' short-term debts was drastically reduced and their funding costs sharply rose.
Oct. 1997	Hong Kong Crisis	-Money supply to Asia by international capital was reduced and existing money in Asia was collected. -Credit rating agencies including Moody's started downgrading the sovereign rating of Korea. -Due to the drastic decrease in short-term debts' rollover, the financial crisis drew near.

The financial crisis harmed individual financial institutions, and the Korea Development Bank (KDB) was no exception. Like other financial institutions, KDB also faced a crisis. The credit spread of foreign currency-denominated Industrial Finance Bonds (IFBs), which were issued by KDB, rose to Libor + 628 basis points at the end of 1997 from Libor + 20~50 basis points prior to 1997 crisis. In August 1998, when the credit markets worldwide suddenly contracted due to the Russian moratorium and the crisis of Long Term Capital Management (LTCM), the credit spread of foreign currency-denominated IFBs rose even higher to over Libor + 1,000 basis points.

Credit Spread Trend of 5-yr. Foreign Currency-denominated IFBs



Source: The Bank of Korea, KDB

Due to continuous bankruptcies of Korean companies since the outbreak of the financial crisis in 1997, KDB recorded sluggish performance until 2000. Between 1998 and 2000, KDB's non-performing loans (NPL) ratio rose sharply to even surpass the 10%-level, posting a sizeable net loss.

<u>KDB's Post-Crisis Financial Indicators</u>

(in KRW billion, %)

	1997	1998	1999	2000	2001	2002	2003	2004	2005
Net Income	△55	△4,889	212	△1,398	109	184	167	997	2,422
NPL Ratio	6.9	9.5	16.7	8.1	4.4	1.9	2.9	1.6	1.0
BIS Ratio	9.1	11.3	17.6	11.4	16.9	16.8	16.2	18.1	18.4

Source: KDB

Several implications were made by the crisis. First, it was affirmed that there is a clear limit to what each financial institution can do on its own to tackle systemic risks. Before the financial crisis, domestic financial firms had lacked internal risk management techniques and had not fully perceived the need for an internal risk management system. And, even if individual financial firms were equipped with sufficient risk management capabilities, it is questionable whether they would have been able to overcome the crisis on their own. Korea's financial industry, a typical domestic industry, is closely related to the domestic economy. Considering the unique traits of the Korean economy as a small-scale open economy, dealing directly with systemic risks aroused by drastic changes in external economic conditions is beyond each financial institution's capacity.

Second, the existing financial supervisory system was found to have its limits in dealing with systemic risks. Efficient monitoring and supervisory systems for the banking sector were not fully established at the time. Prior to the financial crisis, supervision services were delivered separately by different financial sectors such as banking, security, and insurance. Analyses of the symptoms of the forthcoming crisis as well as preventive measures were insufficient.

2. Liquidity Crisis of Credit Card Companies in 2003

In the aftermath of the 1997 financial crisis, the Korean government encouraged credit card usage in order to boost the domestic consumption for economic expansion. The incentives then introduced include tax deduction, elimination of caps for cash advances, and raffles using credit card receipts as tickets.

With the lack of a relevant risk management system, credit card companies were driven to issue cards without properly checking the credit history of applicants. As a consequence, lending to problematic cardholders soared, soon bearing many delinquents. The delinquency ratio outstanding for more than a month, which was as low as 3.8% in 2001, jumped to 8.8% by the end of 2002 and to 11.1% by January 2003. At the same time, loan loss reserves of credit card companies almost tripled within a year to KRW3.5 trillion (end of 2002) from KRW1.2 trillion (end of 2001).

On the other hand, the high profitability of credit card companies came under fire, forcing the government to urge the issuers to lower fee rates. In 2002 alone, the fee rates were declined by 3.69%p on average. For credit card companies, this meant plummeting incomes. Under these circumstances, the bottom lines of credit card companies were significantly aggravated.

Major Credit Card Industry Statistics

	1997	1998	1999	2000	2001	2002	2003
No. of Cards in Issue (in million)	44.69	42.30	38.99	57.88	89.33	104.80	95.22
Average No. of cards per (economically active) person	2.1	2.0	1.8	2.7	4.0	4.6	4.1
No. of Merchants (in million)	4.16	4.89	6.19	8.61	12.63	15.61	16.95
Total Card Billings (in KRW trillion)	72.1	63.6	95.1	237.3	480.7	669.8	517.3
Net Income (in KRW billion)	24.5	36.1	△347.5	937.9	2,594.2	△211.7	△10,474.2

Source: The Financial Supervisory Service, The National Statistical Office

Borrowings held by credit card companies mushroomed as well, and their weakening financial structure undermined the credibility of the financial market. As of March 2003, the total borrowing of the credit card companies stood at a whopping KRW88.8 trillion. Concerns over the soundness of the credit card companies began to arouse and eventually a liquidity crisis broke out.

Government officials and regulators noticed the rise in default rates and household debts as early as 2001, but failed to tackle the issue preemptively as they had then put more focus on economic stimulation. Despite the introduction of various measures since 2002 including the "Comprehensive Measures for Credit Card Problems" (May 2002) and the "Comprehensive Measures for Improved Management of Credit Card Companies" (March 2003), the problem took a turn for the worse. In April 2003, another support package was implemented for credit card companies and trust investment companies to address liquidity issues. Although the package helped ease liquidity concerns temporarily, it fell short of solving the fundamental problems.

Massive restructuring of leading credit card companies eventually led to huge losses on the Korean financial industry. And LG Card was finally declared insolvent in November 2003. With mounting deficits and worsening financing conditions in the second half of 2003, LG Card struggled with liquidity concerns and came under the control of its creditors in early 2004.

In the mean time, Kookmin Bank merged the affiliated Kookmin Card into its own Credit Card Division in September 2003. The decision cost Kookmin Bank a great loss with the related loan loss reserve quadrupled to KRW118.8 billion in 2003 from KRW28.5 billion in the previous year. Woori Bank took a similar step in 2003 with its credit card subsidiary, Woori Card. In 2003, Woori Bank participated in the two seasoned equity offerings of Woori Card followed by a massive reduction in capital stock. In February 2004, Woori Card was eventually merged into its parent company, which increased the loan loss reserve of Woori Bank from KRW45.2 billion in 2002 to KRW169 billion in 2003.

The credit card liquidity crisis, too, showed some implications. First, regulators and individual financial institutions have only limited capacity in tackling financial disorder that spread from a specific sector. More specifically, financial institutions found it difficult to identify signs, causes, and impact of a crisis at an individual level.

Second, despite heightened awareness of the importance of financial institutions' soundness and improved supervision after the financial crisis, the response to systemic risks was still weak. In particular, as non-bank credit-specialized financial companies (credit card companies, leasing companies, etc.) are often under less strict supervision, it is almost impossible to prevent a liquidity crisis solely under microprudential supervision.

Finally, in the process of addressing the liquidity crisis, the fallacy of composition occurred as the interests of individual institutions concerned ran against those of the financial industry as a whole. In the process of LG Card's restructuring, each stakeholder tended to act in its own way rather than joining forces to maintain market stability at a macro level. On top of this main problem, the cause of the liquidity crisis and the locus of responsibility were not clarified, making it an even tougher issue to address.

III. Macroprudential Supervision in Korea

1. Structure of Korea's Macroprudential Supervision

Macroprudential supervision in Korea is at its infancy. Relevant institutions are actively discussing the importance of macroprudential supervision as an effective tool to manage risk factors related to changes in the macroeconomic and financial environments at home and abroad. Although the awareness has improved significantly, the concrete schemes of macroprudential supervision have not been presented. Different functions among regulators have not yet been classified, either.

The two institutions leading the development of macroprodential supervision are the Financial Supervisory Service (FSS) and the Bank of

Korea (BOK). The FSS established the "Macro-Prudential Supervision Department" to monitor the financial market and formulate preventive measures and early warning systems. The Deparment consists of 23 members in four teams: Macro-Prudential Supervision Team, Financial Industry & Market Team, Early Warning Team, and Financial Issue Analysis Team.

At the BOK, the "Financial System Stability Department" is in charge of the operations related to macroprudential supervision. The main functions of the Department include financial stability analysis, related researches, promotion of collaboration on supervisory issues at home and abroad, and monitoring of financial institutions for emergency credit extension. With these extensive studies, the Department has regularly published Financial Stability Reports since August 1998 and Financial System Reviews since April 2003 on a biannual basis to raise awareness of the importance of financial system stability. The Department is composed of 68 members in eight teams.

2. Execution of Macroprudential Supervision in Korea

The recent risk management scheme for mortgage loans presented by the FSS is a good example showing a macroprudential supervision approach. The persistence of low interest rates worldwide triggered housing prices to surge. In some regions in Korea, apartment prices shot up at an abnormal pace, consequently undermining the overall market stability.

To ease the overheating in the housing market, the FSS implemented an enhanced risk management plan after conducting investigations on mortgage loans. Under the plan, those who want to buy a house in a speculative zone are permitted only once to apply for a loan. The loan-to-value (LTV) ratio was also dropped to 40% from the previous 60%. Moreover, in March 2006, the debt-to-income (DTI) ratio was introduced to be applied to a house whose value exceeds KRW600 million, in an aim to prevent excessive tilting towards mortgage loans. Thanks to such efforts, the growth of mortgage loans extended by commercial banks gradually slowed down.

Mortgage Loans Extended by Commercial Banks

(in KRW trillion)

	2004	2005				2006				
		1Q	2Q	3Q	4Q	1Q	Apr	May	Jun	Jul
Household Loans	22.5	2.8	11.5	8.9	6.2	5.0	3.6	4.6	4.3	2.5
Mortgage Loans	16.4	2.4	7.4	6.4	4.1	2.1	3.2	3.1	2.2	2.3

Source: The Bank of Korea

Meanwhile, the BOK cannot make any direct intervention due to its role as a central bank to be the lender of last resort that maintains stability in the payment and settlement systems. But, it does make efforts to secure market stability through monetary policies. For instance, the BOK's recent decision to raise the benchmark rate was perceived by market participants to prevent the distortion of real estate prices.

Changes in Overnight Call Rate Target

(in %)

	'04.8.12	'04.11.11	'05.10.11	'05.12.8	'06.2.9	'06.6.8	'06.8.10
Call Rate Target	3.50	3.25	3.50	3.75	4.00	4.25	4.50

Source: The Bank of Korea

IV. Suggestions

Respect for market discipline must be considered first for the minimization of any unnecessary regulatory cost of macroprudential supervision. Market intervention by the supervisory authority is likely to place restrictions on the business activities of each financial institution. Individual financial institutions may find themselves in the prisoner's dilemma in relation to opportunity costs incurred by regulatory intervention. In other words, in pursuit of profit, the institutions may be tempted not to abide by macroprudential supervision.

Second, the achievement of macroprudential supervision depends on the supervisor's ability to identify and manage the underlying risks in macroeconomic and financial environment. As efficient and effective macroprudential supervision require timely judgement of the cyclical status, the supervisory authority in charge of macroprudential supervision should be equipped with proper expertise and in-depth knowledge of overall economic conditions and financial market. The supervisory authority can secure reliability and confidence to the market by signaling the clear intention of macroprudential supervision through cooperation and information sharing with other government agencies. Particularly since prudential policy function and monetary policy function are separated in Korea, in contrast with the Monetary Authority of Singapore which carries out both functions in a single umbrella, effective coordination between the Financial Supervisory Service and the Bank of Korea would be all-the-more crucial.

In the case of mis-guidance by the regulatory authority, responsibility issues may arise. As the failure of macroprudential supervision would eventually lead to worsened business performance of individual financial institutions, the institutions might be susceptible to the moral hazard of imploring compensation for observing macroprudential supervision.

Third, an adequate reward system for efficient macroprudential supervision need to be established. Differences among individual financial institutions make it difficult to induce necessary cooperation for efficient recovery from crises. The experience of overcoming the LG Card crisis teaches lessons that financial institutions could oppose macroprudential supervision, depending on their own risk exposure, risk tolerance, etc. The regulatory authority should, therefore, accordingly provide proper incentives or punishments based on each financial firm's cooperation, and thereby prevent moral hazard and free-riding behavior.

Fourth, cross-border cooperation with foreign authorities on macroprudential supervisory should be stepped up. The Korean supervisory authority is currently going through an unprecedented phase with growing presence of foreign financial institutions in banking, insurance and securities industries. The Korean financial market is being transformed into a financial hub for Northeast Asia where foreign financial entities such as Citibank Korea and SC First Bank compete, let alone branches of foreign financial institutions. Thus, there is a growing need for fair macroprudential supervision to be equally applied to foreign financial players.

Korean financial firms are also expanding their overseas business activities especially in emerging markets such as China. International cooperation must be strengthened to ensure that macroprudential supervision of the concerned nation does not work against Korean financial institutions operating there. Overall, discriminatory application of macroprudential supervision to local and foreign players should be prevented.

Finally, in line with the Korean government's efforts to change its financial system from a Bank-based to a Market-based one, macroprudential supervision that can effectively support the national policy should be implemented. The prevailing tactics of macroprudential supervision currently under discussion are mostly related to the banking industry. The most commonly-referred macroprudential approaches such as flexible capital requirement based on procyclicality and the New Basel Accord are associated with banks.

The current efforts made by the Korean government to build a Market-based financial system need more diversified macroprudential supervision. Breaking away from the decades-long Bank-based financial system, the Korean government is legislating "Financial Investment Services and Capital Market Act" to foster world-class investment banks and develop a more balanced financial system. In the case of non-bank financial institutions, generally supervised less strictly, they should be fully covered by macroprudential supervision as well, and at the same time be encouraged to construct an adequate internal risk management system.

<References>

Borio, C.(2003), "Towards a Macroprudential Framework for Financial Supervision and Regulation?", BIS Working Papers, no 128, Basel, February.

Borio C., Furfine, C., and Lowe, P.(2001), "Procyclicality of the Financial System and Financial Stability : Issues and Policy Options," Marrying the Micro- and Macro-prudential Dimensions of Financial Stability, BIS Working Papers, No. 1, March 2001.

Crockett, A.(2000), "Marrying the Micro- and Macro-prudential Dimensions of Financial Stability," BIS Financial Stability Forum, pp. 1-9

Doh, B.(2005), "The Basel II Capital Standards and Macro-Prudential Supervision," Financial Stability Studies 6, KDIC, December.

Gieve, J.(2006), "Financial System Risks in the UK - Issues and Challenges," Speech at a Centre for the Study of Financial Innovation Roundtable, London, 25 July.

Kang, D. S.(2005), On the Macro Prudential Regulation, KDI, November.

Kim, H. W. and Lee, H. Y.(2005), New Basel Accord and Procyclicality of Bank Loans in Korea, KDI, December.

Rochet, J. C.(2005), "A Framework for Macroprudential Banking Regulation," Paper for the Joint Conference IDB Atlanta-Fed "Toward Better Banking in Latin America", 30 September.

White, W. R.(2004), "Making Macroprudential Concerns Operational," Speech at a Financial Stability Symposium organized by the Netherlands Bank, Amsterdam, 25-26 October.