



ADB Working Paper Series

**The Role of State Intervention in
the Financial Sector:
Crisis Prevention, Containment,
and Resolution**

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No. 196
February 2010

Asian Development Bank Institute

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This paper was presented at the Conference on Global Financial Crisis: Financial Sector Reform and Regulation, organized by and held at the Asian Development Bank Institute, Tokyo, 21–22 July 2009. The author is grateful to David Mayes, Yunjong Wang, and other conference participants for comments; and to Jung-Won Chae and Longzhu Li for research assistance. All remaining errors are the author's.

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Suggested citation:

Cho, Y. J. 2010. The Role of State Intervention in the Financial Sector: Crisis Prevention, Containment, and Resolution. ADBI Working Paper 196. Tokyo: Asian Development Bank Institute. Available: <http://www.adbi.org/working-paper/2010/02/18/3514.state.intervention.financial.sector/>

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Abstract

This paper discusses the role of state intervention for prevention, containment, and resolution of financial crises based mainly on the Korean experience during the 1997 Asian financial crisis. Crises in emerging market and developing economies tend to be more complicated than those faced by advanced economies because they are twin crises: financial and currency crises. Such crises require the development of a comprehensive strategy covering the stabilization of the domestic financial market and the foreign exchange market, closely coordinated responses by different government bodies, an extraordinary effort for financial restructuring, and the introduction of a new regulatory framework. This effort should be based on an effective crisis management team of experts given a clear mandate with well defined power; strong political support; effective communication with the market players, both domestic and foreign; and sufficient mobilization of public funds. In this regard, this paper emphasizes the importance of building a reliable information base, prompt actions, orchestrating political consensus, and a balanced approach to restructuring and regulation among different types of financial institutions. The paper also highlights the need for a new international financial architecture matching the rapid integration into the global market of the financial markets of emerging and developing economies while their currency remains non-convertible.

JEL Classification: E58, G01, G18, G21, G28, F34, F36, N20, O16

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1. INTRODUCTION

Historically, no industry has been as heavily intervened in by the state as the financial industry (Haber and Perotti 2008). State intervention has been pervasive in most developing countries as well as in many now advanced economies. Financial industry was a vehicle through which the state executed its industrial policies (policy-based lending), mobilized war finance, and financed fiscal deficits resulting from its populist policies. Financial industry also empowered the government to tame the industrialists by controlling their source of funding. Capital control, interest rate ceilings, credit rationing, and policy lending to priority sectors have been common features of state interventions. In many countries, not only policy-based banks but also commercial banks were owned by the state.

This state approach to the financial sector has been called “financial repression,” and it became the subject of criticism by many economists, especially starting around the 1970s. McKinnon (1973) wrote one of the seminal works in this regard. Many economists, through theoretical and empirical analyses, made persuasive arguments on the negative effects of financial repression on financial sector development as well as economic growth (Caprio et al. 1994; Cho 1984, 1986, 1988, 1990; Fry 1989; McKinnon 1989; Long 1983; World Bank 1989). This, together with the innovations of information technologies and rapid globalization, has led most countries to embark on the liberalization and opening of their domestic financial markets. Interest rates were deregulated, policy-based lending was reduced, interventions in bank management and credit allocations (such as restrictions on consumer loans) abated, and, in many cases, banks were privatized. The world also witnessed the alleviation of capital controls, liberalization of the foreign exchange system, and relaxation of entry barriers to domestic and foreign institutions. These contributed to the growth of the financial sector and improved the access of households, consumers, and small firms to finance.

The process of financial liberalization, however, has been turbulent. At the time when emerging economies began liberalization and opening, they had not established adequate institutions and systems for effective prudential regulation and supervision. There was also lack of expertise. At the same time, the amount of foreign capital flowing into these countries was large relative to the size of their financial markets and economies. Although many emerging economies started opening their capital markets much later than advanced economies, their markets quickly integrated into the global market, as is evident in the shares of foreign investors in their domestic stock markets or banking industries, which were much larger than in advanced economies. The combination of these factors increased the vulnerability of these economies to internal and external shocks. Severe financial and currency crises were experienced by Latin American countries in the 1980s and by Asian countries in the 1990s.

The United States (US) and Europe are now facing financial crises, but their crises will not develop into currency crisis because their currencies are international reserve currencies. In emerging or developing economies, however, crises usually come as twin crises—financial as well as currency crises. Such crises often deepen through the balance sheet effect of depreciated currency. They also complicate the government’s macroeconomic policy response. While the US and Europe have used expansive fiscal and monetary policies in the face of the financial crisis, developing countries have usually had to use tightened fiscal and monetary policies to cope with their twin crises. This has deepened economic recessions, aggravated corporate cash flows, increased non-performing loans, and further deepened financial crises. Dealing with crises in emerging and developing economies is thus a more daunting and complicated task than dealing with crises in advanced economies.

This paper discusses the role of state interventions in the financial system for crisis containment and resolution (Sections 3 and 4). It also briefly discusses the role of the state in crisis prevention (Section 2), since crisis prevention is linked with containment and

resolution. Discussion of crisis resolution is based largely on the Korean experience during the 1997 Asian financial crisis. Finally, the paper will draw some lessons and recommendations from the Korean experience of financial crisis resolution (Section 5).

The underlying theme of this paper is an old and familiar yet unresolved one: the role of the government versus the market for a stable financial system and economic growth. Crisis time calls for extraordinary government interventions in the market, often through the direct ownership of banks and non-bank financial institutions. But these interventions need to reduce conditions for moral hazard and the likelihood of a subsequent crisis. They also should protect the interests of taxpayers, impose losses on the responsible parties, and use the market as much as possible to pick the winners and losers. The ultimate objectives of government interventions are to address failures and imperfections of the market, but their constant exposure to the risk of government failure must be considered as well. When markets collapse in times of crisis, the government is the only remaining option. Nevertheless, government interventions should be complemented by market incentives and principles.

2. THE ROLE OF THE STATE IN CRISIS PREVENTION

Access to credit and finance is crucial for industrial development, smoothing out consumption, supporting house purchases, international trade, and economic growth. That is why the financial system is called the “bloodline” of the economy. The financial market is different from the goods market in that it sells and buys “promise” and “credit” (Stiglitz 1989; Bhagwati 1998). Today’s transactions are always linked to the promise of future delivery. As such, the financial market is more fragile than the goods market. Therefore, the state’s approach to the financial market has to be different from that toward goods markets.

State intervention in the financial sector has served many purposes: a vehicle of industrial and social policies; a source of power for the state; cheap financing of fiscal deficits; and stabilization of the financial system and the economy. In most countries where there have been state interventions, they were motivated by a combination of these purposes.

Different countries had different priorities in intervening in or regulating the financial sector. In some East Asian countries, notably the Republic of Korea (hereafter Korea), the government intervened in the financial market for industrial policy (Amsden 1989; Chang 2003; Cheng 1993; Cho 1989; Cho and Kim 1997; Woo 1991). In South Asia, the highest priority may have been social policies. In Latin America it may have been financing fiscal deficit.

One common goal of state intervention in all these countries, however, was to ensure the stability of the banking system. This has been done through imposing high entry barriers, restrictions on the types of products banks can deal with, and restrictions on deposit and lending competition, often by adoption of interest regulations. Arguments are divided on whether these interventions have aided or impeded the growth of financial savings—and, as a result, access to finance by firms and households—and financial sector development. Some argue that securing of rents to the incumbent banks and maintaining the stability of the whole financial system contributed to the stability and steady development of the financial sector as well as to the growth of and access to financial savings (Cho 1986; Hellmann, Murdock, and Stiglitz 1997; Aoki, Murdock, and Okuno-Fujiwara 1997). But others argue that it stifled competition and innovation in the financial sector, thereby discouraging the growth and development of the financial sector (World Bank 1989; Caprio and Honohan 2001; Caprio et al. 1994; Fry 1989; Long 1983). The empirical results are mixed, depending in large part on the extent of price stability that a given economy achieved. However, it is hard to deny that state interventions (or financial repression) have had some positive effects on the stability of the financial system by preventing excessive competition.

In practice, the line between economic regulation and prudential regulation is thin. Therefore, when countries are moving toward financial liberalization and removing economic regulations, they tend to increase the risk of financial crisis. Most cases of homegrown financial crises in emerging market economies have taken place during or following financial deregulation and opening. The East Asian financial crisis in 1997, the financial crisis in the Nordic countries in the early 1990s, and the Latin American financial crisis in the 1980s (Diaz-Alejandro 1985) were all related to financial liberalization and opening. The US subprime mortgage market debacle and the current global financial crisis are also related to financial deregulations that have been introduced during the last one or two decades. The separation of commercial and investment banking businesses was relaxed, regulations on new products became obscure, and entry barriers were reduced.

This points to the importance of establishing an effective prudential regulatory system when a country is moving toward greater opening and liberalization of its financial system. In emerging economies, prudential regulation should cover more dimensions than that in some advanced economies whose currency is international reserve currency. Often, weakness and vulnerability develops in the foreign exchange market. Large swings in the exchange rate give rise to big balance sheet effects on banks and corporate firms, which will affect their ability to meet financing needs. Currency and maturity mismatches in foreign currency loans should be carefully monitored in these countries, as the international financial market is more integrated and new types of interrelated transactions emerge frequently.

The importance of macroeconomic stability, the introduction of proper rules and standards for supervision, and the building of a proper institutional framework and infrastructure for regulation cannot be overemphasized. The recent global financial crisis has also highlighted the importance of macro-prudential regulation. It is now generally recognized that actions are required in five general areas: the regulatory, supervisory, and information perimeter need to be broadened to ensure that all financial activities that pose systemic risks are adequately captured; capital regulation, liquidity management, and risk management need to reflect individual institutions' risk but also their potential to form systemic risk; regulatory approaches that better dampen the procyclicality of financial markets need to be designed; information disclosure and corporate governance practices need to improve in order to enhance market discipline; and greater coordination is needed within and across countries in the design of regulation and the monitoring of systemic crises (Claessens 2009).

This paper will not go into detail on those policy and regulatory measures in preventing financial crisis.¹ In this section, I will briefly discuss three issues: monetary policies and asset prices; options available to emerging economies for currency market stability; and the establishment of an early warning system.

2.1 Monetary Policies, Asset Prices, and Macro-Prudential Regulation

Most financial crises have been caused by the boom and bust of asset markets, especially housing bubbles. Thus, one major policy question is: should the monetary authority respond systematically to inflation in asset markets?

In many emerging market economies, central banks have adopted inflation targeting as an anchor for their monetary policies during the last one or two decades. The conventional view of inflation targeting assigns no role to asset prices in the conducting of monetary policy, except to the extent to which the changes in asset prices signal changes in expected inflation (Bernanke and Gertler 2000). In line with this view, the authorities should deal with asset price bubbles only as their consequences, if any, arise in terms of the inflation

¹ Capital controls, regulatory regimes, and a framework for a macro-prudential approach to systemic risk are the main subjects of other papers presented at this conference.

objective, e.g., by supplying the needed liquidity in the event of a bubble burst (Demirguc-Kunt and Serven 2009).

An alternative view advocates a more proactive response of monetary policies to asset prices. Because asset prices may rise for many reasons, including changes in fundamentals, this view holds that monetary policy should react to deviations of asset prices from their underlying fundamentals rather than deviations from any particular target level. Formally, while the monetary authorities' objective functions should continue to be defined only in terms of goods inflation, their reaction function should include not only inflation forecasts and the output gap, but also measures of asset price misalignment—what has been labeled “flexible inflation targeting” (Cecchetti, Genberg, and Wadwhani 2003).

It is difficult to judge which view is correct. Given the devastating consequences of building up and bursting a bubble in the financial system and the economy, the state should take action to prevent a bubble from building when danger seems obvious. However, it is difficult to judge whether or not asset price increases constitute a bubble. Even though a bubble may be building, it is not easy to spot it in real time when policy action would be most useful to prevent it. Also, reacting to a misidentified bubble may entail high costs. Monetary tightening in response to an asset price increase that has been driven by improved economic fundamentals will unnecessarily contract the economy. If the policy reacts to a bubble once it becomes evident, it may be too late. The timing and magnitude of the effects of monetary policy on asset prices remain uncertain. As a consequence, raising interest rates may be an ineffective and costly way of dealing with bursting bubbles. The international evidence suggests that a very large interest rate increase may be necessary to stabilize housing prices—so large as to result in huge output losses (Assenmacher-Wesche and Gerlach 2008).

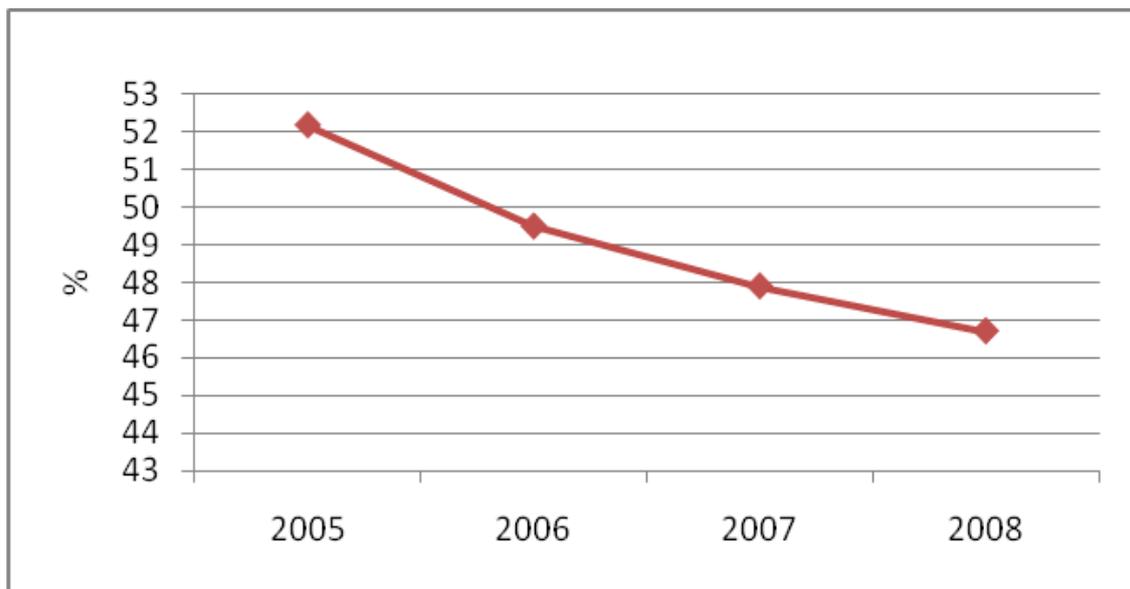
The political pressure not to raise interest rates to contain an asset bubble is also very strong in every country. Even for the central bank, which enjoys the highest independence guaranteed by law or by tradition, it would not be easy to stop the music when a party is going on. The Federal Reserve Board (FRB) during the period of 2002–2006 was no exception (Taylor 2009).

Given the constraints of using monetary policy to contain an asset bubble, an alternative response would be using regulatory measures such as loan-to-value (LTV) and debt-to-income (DTI) ratios, or some temporary tax measures. The Korean government adopted these measures when it was concerned about overheating of the housing market during 2003–2007. While inflation was stable and there was no significant output gap, it was not deemed to be appropriate to use the interest policy to address the rapid housing price increase. It was also true in the Korean case that the speculative investments in housing and the consequent bubble were not spread nationwide, but were limited to some popular metropolitan residential areas. In such a case, the regulatory authorities (Financial Supervisory Commission) required lower LTV and DTI ratios for loans extended for home purchases in those specific areas. In addition, the government designated a number of districts in the Seoul metropolitan area where housing prices had increased beyond a certain percentage within a year as “overheated areas.” Various tax disadvantages (such as higher capital gains taxes) and fee disadvantages (such as a higher stamp duty rate) were applied to these areas.

It is not clear to what extent these measures helped to contain the bubble in the housing market. But they certainly helped to lower the vulnerability of bank loans to the risk of a housing market collapse. With such measures in place, the average LTV ratio in Korea fell below 50% (Figure 1). It also appears that such measures have at least partially contributed to containing the bubble. The authorities tightened the ratios and had direct control of the expansion of housing loans when the housing price increased rapidly in late 2006, and subsequently housing prices in those areas started to stabilize. It is possible that this

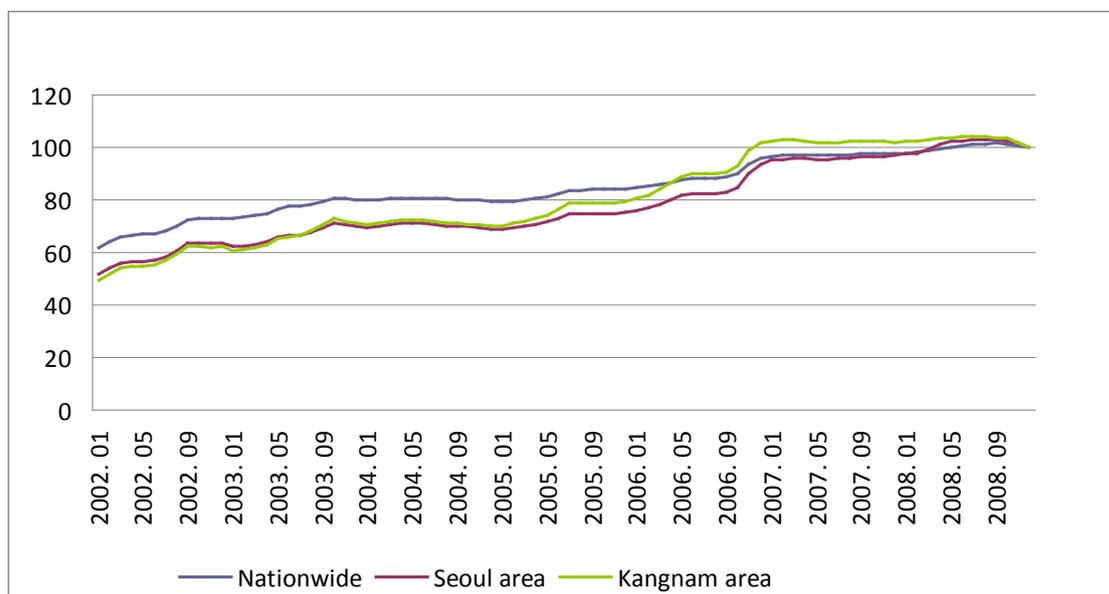
stabilization owes to other factors, but it seems clear that such measures provided the initial momentum of the stabilization (Figure 2).

Figure 1: Loan-to-Value Ratio of Banks in the Republic of Korea



Source: Ministry of Strategy and Finance, Republic of Korea, March 2009.

Figure 2: Republic of Korea's Housing Price Index, 2002–2008



Source: Korean Statistical Information Service.

Achieving both price stability and financial stability with a single policy tool—that is, interest rate policy—may not be feasible (Bordo and Jeanne 2002). Thus, a combination of policy measures would have to be used to achieve effective macro-prudential regulation. This also raises an issue regarding the appropriate mandates of the central bank (Goodhart 2008). In many emerging market economies, the mandate of the central bank is limited to achieving the price stability. Financial stability and the supervision of the banking system fall outside of the area of their responsibility in the central bank law. This responsibility has been transferred to the financial supervisory authorities or other government bodies.

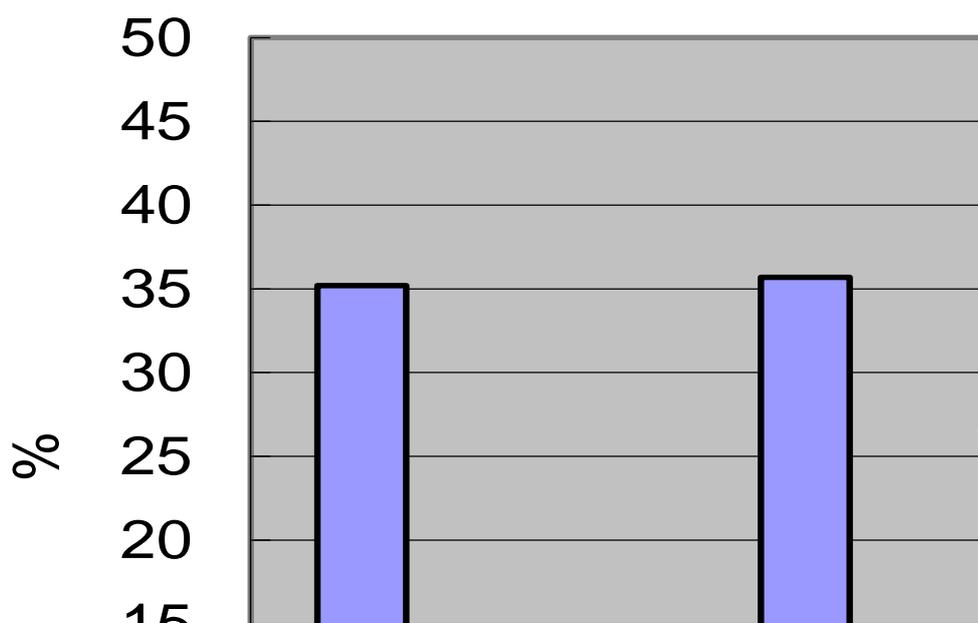
2.2 Options Available to Emerging Market Economies for the Stability of Currency Markets

Most emerging market and developing economies' currencies are non-convertible. Thus, a substantial portion of the firms' and banks' transactions as well as assets and liabilities are denominated in reserve currency, most notably in the US dollar. Current international accounting rules require mark-to-market on assets and liability reflecting the current exchange rate. This means that the balance sheets of big companies and financial institutions in these countries are highly vulnerable to changes in the exchange rates. When there is sharp depreciation of currency due to currency market instability, the debt ratio of firms and the capital adequacy ratio of banks are severely affected. This can further destabilize the financial and currency markets and may even lead to a crisis. Some call this an "Original Sin" (Fernandez-Arias and Hausmann 2000) of these countries. But this kind of situation in developing countries should be considered in the revision of accounting rules and practices that are later to be accepted internationally.

Advanced economies have gradually lifted their control on capital flows during the last four decades. During that process, they have established institutions and infrastructure that help the stability of their financial systems. But, in most developing countries and emerging market economies, the history of financial market deregulation and opening is short and such institutions and infrastructure have not been well established. Despite this, they are more integrated in the global economy in terms of foreign banks' share in their domestic banking industries, foreign investors' share in their domestic stock markets, and the foreign trade share in their gross domestic products (GDPs) (Figure 3). As a result, they face greater vulnerability to external shocks. Instability of the currency market can easily develop into widespread financial crisis in such cases.

Figure 3: Share of Foreign Investors in Stock Markets (2006)

□



Korea = Republic of Korea.

Source: Korea Exchange.

The global financial market has become integrated like a single market. The currency of most emerging markets is non-convertible while the business of their firms and banks is increasingly integrated into the global financial market. An increasing portion of the assets and liabilities of their firms and banks is denominated in international currency, especially in

the US dollar. But international financial architecture is still far from institutionally matching the closely integrated financial system. This leaves national governments and central banks in a helpless position when they face dollar liquidity problems, unless they hold a large amount of foreign reserves.

Thus, a new architecture for the international monetary system is urgently needed. Establishment of a global central bank may be the first best solution. But given the reality that it will not be realized in the near future, access to other options should be expanded for developing countries and emerging market economies. A substantial increase of the resources coming from the International Monetary Fund (IMF) and more ready access to its facility would be helpful. But in order to lessen the reluctance of developing countries to use IMF resources, the policy conditionality and its governance structure should be reformed. In the meantime, swap arrangements with the central banks of international reserve currencies such as the FRB and European Central Bank need to be extended to emerging and developing economies that are well integrated into the global financial system and have sound macroeconomic management records. Regional monetary arrangements may be another option. In any case, dealing with the problem of moral hazard will have to be addressed in the discussions and the design of the new international financial architecture. Otherwise, emerging countries will have to face increased risk of currency and financial crises in the rapidly integrating financial market environment, or they will have to reverse the opening of their markets by imposing capital controls or at least reducing the pace of integration, which would not be a desirable solution.

2.3 Early Warning System

It may be helpful to establish an early warning system to prevent crises. This warning system can be composed of two parts. The first part is models that include not only the macroeconomic model but also sectoral models. The latter may encompass the housing market, foreign exchange market, banking sector, stock market, and labor market. It can specify the range of daily, weekly, and monthly changes of indicators that would require different levels of reaction by the government. The second part is to define the institutions and meetings that are responsible for managing and improving the model, monitoring and reporting the market developments, and making the decision to address specific market developments.

In Korea, such a system was developed after the 1997 crisis. Initially, it was developed as an early warning model, which was basically a macroeconomic model focused on forecasting the developments of the foreign exchange market. The system was gradually expanded to include early warning models in the housing, labor, and financial markets. These models were continuously refined. In 2004, the government established a comprehensive early warning system that more clearly defined the responsibility of ministries and meetings that should monitor developments in each sector, the level of warning signals, and the reporting system. For instance, the Bank of Korea was responsible for monitoring foreign exchange flows, the Financial Supervisory Committee (FSC) for development of non-performing assets of financial institutions, Labor Ministry for the wage level and the situation of worker strikes, Construction Ministry for the tightness of housing and land value movements, and the Ministry of Finance and Economy for making overall judgments and reporting to the President. Various levels of warning signal were defined: green (normal), blue (needs attention but low risk of crisis), yellow (needs attention with high risk of crisis), orange (serious situation), and red (in crisis). The system established a Round Table Meeting, the core members of which were the Minister of Finance and Economy, Governor of the Bank of Korea (BOK), Head of the FSC, and the Economic Advisor to the President. These members met every week to check the market developments of the previous week. A working group meeting was also established to support this meeting. In the case of a yellow signal or above, the Economic Advisor was supposed to report to the President and suggest that the President call an Economic Policy Deliberation Meeting to be chaired by the President and

attended by the members of the Round Table Meeting and other relevant ministers. In that meeting, specific policy reactions were to be determined.

The advantages of this system were to make the monitoring of market developments part of the regular business of each responsible staff and institution, to automatically call the authorities' attention to market developments based on the signal of quantified indicators (and, as a result, to enable them to consider proactive policy measures), to allow a coordinated response by different government bodies, and to keep the head of the government informed regarding developments in the economic situation. In the case of Korea, even without a clear signal of crisis, Economic Policy Deliberation Meetings were held at least once a quarter to check this early warning system during the period of 2004–2007. Although the system was not perfect, it contributed to the sound management of the economy during this period.

3. THE ROLE OF THE STATE IN CRISIS CONTAINMENT

Crises should be prevented. But once a crisis develops, the government's job is to contain and resolve it. For successful resolution of a crisis, it is important for the government to understand the nature of the crisis and to have a clear vision about the new system it wishes to build from the collapsed system.

The 1997 crisis in Korea, for instance, started from widespread insolvencies of big companies in Korea, which then led to increasing non-performing loans in the domestic banking system. When Thailand's crisis started to contaminate neighboring countries, Korea fell victim to the currency crisis because of its weak financial and corporate sectors and large short-term foreign debts. This intensified the corporate and financial crisis. Thus, while trying to stabilize the currency market, the government had to initiate a fundamental corporate and financial restructuring. Without fundamental restructuring in both the corporate and financial sectors, the confidence of foreign investors as well as domestic depositors could not be recovered. This fundamental restructuring plan had to be backed by the introduction of a new regulatory system, rules, and standards, and also by a very tight monetary policy that aimed to stabilize the currency value.²

In 2008–2009, Korea faced severe pressure in the currency market once again. But this time, the crisis was not homegrown. Korea's banking system had been well capitalized and the nonperforming loan ratio was low. The Korean corporate sector also enjoyed high profitability and a low debt ratio after the fundamental restructuring of 1997. The source of pressure on the Korean currency market was external. Thus, Korean authorities took a different approach. This time the government strategy was "waiting out" or "muddling through" the crisis. They used expansionary fiscal and monetary policies by cutting interest rates sharply, increasing liquidity supports to banks, and forcing extension of credit to small and medium-sized firms. In contrast to previous crises, these measures did not deepen instability in the currency market because, this time, the currency market pressure was mainly caused by rapid deleveraging of troubled US and European banks. Had Korea followed the same macroeconomic policies it adopted during the 1997 crisis, the currency market instability might have deepened and the risk of financial crisis might have increased.

This illustrates that depending on the origin, nature, and scope of the crisis, the measures and focus of government interventions should be different. One of the first things that the government has to decide is its macroeconomic policy response. In general, weakness of the domestic financial system develops as a result of long-sustained economic recession or the burst of asset bubbles. Facing this situation, the government has to determine whether expansionary macroeconomic policies are appropriate, as they would enable the financial system to tide over the weakness, or whether some fundamental restructuring is needed. In

² The latter policy remains a controversial recipe in the eyes of the IMF.

the latter case, low interest rates and expansionary policies would give the corporate and banking sectors reason to underestimate the seriousness of their problems and to delay the required restructuring. Misjudgment of the nature and depth of the crisis ultimately increases fiscal costs and adds burden to taxpayers in the form of prolonged economic difficulties. This is an interesting subject, but it is beyond the scope of this paper.

Although every financial crisis is different, some common factors exist. Every crisis comes to the surface as a consequence of shortage of banks' liquidity. Their credit lines are cut or reduced and the revolving rate of their debts decreased. Liquidity starts to dry up in the interbank market, and depositors start to withdraw their funds from banks and non-bank financial institutions (NBFIs). Runs also can involve the withdrawal of funds that had been placed in off-balance-sheet instruments known as trust accounts, money desks, mutual funds, and the like. In developing economies, this can develop simultaneously with shifting of local savings to foreign currency deposits of local banks, or to foreign controlled banks. Currency speculations become widespread and strong pressure builds up in the currency market. Corporate firms rush to secure as much cash (both local and foreign currency) as their capacity allows, anticipating that their credit line will be inaccessible in the near future. Through the process of contagion, funding pressures can spread from the weakest to the strongest banks.

Facing such a situation, the government and central bank are forced to intervene through various means. The central bank is the first line of defense in dealing with runs. When the efforts of the central bank prove insufficient, the government is forced to step in. The government in this situation provides a blanket guarantee of bank deposits (sometimes most of the liabilities including foreign debt), suspension of banks, nationalization of banks, and imposition of temporary capital controls. Concurrent with taking urgent steps to stabilize the economy in crisis, the government needs to lay the foundation for managing the crisis.

In this section, I will discuss the issues related to (i) coordination of policy responses; (ii) liquidity support; (iii) government guarantees; and (iv) effective communication with the market. I leave discussion of the measures for resolution of insolvent banks, including capital injections, nationalization, bank restructuring, and privatization, to the next section.

3.1 Coordination of Policy Responses

Effective crisis containment requires effective triage. There should be a clear coordination of policy responses among different government bodies including economic ministries, central bank, and regulatory authorities. It would be ideal to organize a crisis management team including these bodies. An early task of the team is to assess the scope of the problems facing individual banks and the overall financial system. An accurate diagnosis is necessary to determine appropriate mechanisms for stabilizing the exchange market, resolving distressed banks, determining the amount of support required by banks to be rescued, and estimating the aggregate financing needed to resolve the crisis.

It is vital at this stage to assure the market that the government is taking the situation seriously and to give confidence to the market players that the government is capable of dealing with the problems. If different views are voiced and inconsistent messages are conveyed by different organizations, possibly involving different ministries, the central bank, and regulatory bodies, market confidence will be eroded and the crisis will intensify. Thus, it is important to give the market a consistent government message with a single voice. This emergency team should be given a clear mandate with well-defined power, and it is equally important to endow the team with experts in this area who are well insulated from conflicts of interests. The past crisis experiences suggest that in this early stage of a crisis, existing accounting and regulatory information is substantially misleading and that the crisis management team will have to devote a large portion of its time to developing and analyzing a substantial amount of information necessary to support sound decisions.

3.2 Liquidity Support

A financial crisis is typically triggered by runs on banks and flight of funds from the financial system and from the country. Facing liquidity problems, the central bank, as the first line of defense, is forced to provide liquidity support. It provides liquidity to the overall system or to specific banks. It uses tools such as open market operations, discount window lending, repo and reverse repo operations, overdraft lending, and reduced reserve requirements to supply liquidity.

According to Bagehot's (1894) classic policy advice, during a systemic crisis, the central bank may lend freely to solvent banks, but should minimize subsidizing risk taking (moral hazard), and the loans are to be made at a penalty rate and only on good collateral. This implies that the central bank should not provide liquidity to insolvent banks and those with poor collateral. In order to follow this principle, the central bank must be able to distinguish quickly insolvent banks from those that are solvent yet are facing liquidity problems. However, in the crisis time, the central bank and the government are not often well situated to make a fair judgment in this regard due to lack of information. Therefore, if a bank that has systemic importance is facing liquidity problems, the central bank usually provides liquidity at this stage. Systemic importance usually has to be determined by the size of bank and its interconnectedness with other financial institutions. But the central bank may soon realize that its initial liquidity support is insufficient to stabilize the situation. In that case, the government has to step in and issue extensive guarantees to bank liability, and/or suspend specific banks to stop runs.³

The information problem is very important at this stage. This points to the importance for regulators to identify and remedy gaps found in information in non-crisis times. Even though the authorities may have no choice but to provide liquidity support to institutions deemed to have systemic importance, they should quickly start making diagnosis of the banks, and based on that, decisions should be made as to whether continued liquidity support is warranted. As for the banks that seem unlikely to survive, their business can be suspended, their assets and liabilities can be transferred to healthier banks, or they can be liquidated or nationalized, as will be discussed in the next section. When the government starts to do this, it moves to the stage of crisis resolution.

In the case of a foreign liquidity crisis, the ability of the authorities to provide liquidity is constrained by the amounts of foreign reserve holdings and swap arrangements with other central banks. Facing a run by foreign creditors and speculative currency dumping, the authorities have to decide whether to defend the currency or to allow free floating. If the authorities have sufficient foreign reserves that comfortably exceed the amount of short-term foreign debt plus foreign portfolio investment and long-term debt falling due within a year, their commitment to defend the currency has credibility. Otherwise, they have to reach a compromise between the goals of maintaining exchange rate stability and avoiding a currency crisis. Again, as was mentioned above, if this crisis is homegrown, a credible domestic reform program should be framed and announced to support this commitment. If, given the amount of foreign reserves, the exchange rate depreciation can go beyond the level that can be accommodated by domestic companies and financial institutions, the authorities should not wait until that happens, but instead ask the IMF for assistance.

During the 1997 crisis, Korea's short-term debt was about seven times the amount of foreign reserves. When the Asian crisis started from Thailand and foreign creditors started to cut credit lines and refuse revolving their loans to Korea, the Korean authorities initially attempted to provide guarantees and defend the currency. But when the level of foreign reserves further declined, the authorities lost credibility. In the end, the authorities used up almost all the usable reserves they had. When this was known to foreign creditors, the run

³ Suspension means that banks are temporarily closed for business, including deposit withdrawals, pending the decision regarding their viability.

was uncontrollable, the exchange rate was in a free fall, and the Korean government had no choice but had to ask the IMF for a bailout. Under the IMF program, the domestic interest rate was sharply hiked to stabilize the exchange rate, and this deepened the domestic financial crisis through increased corporate defaults. Most Korean corporate firms, at that time, were highly leveraged with an average debt-to-equity ratio close to 400%.

In the recent global financial crisis, with rapid deleveraging of international money center financial institutions, Korea again faced a sharp increase in capital outflows and mounting pressure on the Korean currency. This time, however, Korea had foreign reserves larger than the amount of short-term foreign debt. But Korea also had substantial foreign portfolio investments in the domestic stock market, which could leave the country at any time. The Korean authorities were more cautious this time in using foreign reserves to defend the won. The central bank occasionally auctioned dollars in the market to meet the domestic banks' need to pay back foreign debt borrowed. When the authorities saw the amount of foreign reserves fall close to US\$200 billion, almost equivalent to the amount of short-term debt and long-term debt falling due within a year, they refrained from actively intervening in the currency market to defend the currency. The Korean won depreciated nearly 50% within a year. The authorities were afraid that, if the foreign reserves fell below US\$200 billion, it could increase market anxiety and trigger rapid capital outflows. At the same time, the authorities made swap arrangements with FRB (US\$30 billion), Bank of Japan (US\$10 billion), and People's Bank of China (US\$10 billion) to assuage market anxiety.

Until this crisis, much debate and criticism had been expressed regarding the building of large foreign reserves by emerging market economies because it is seen as costly to them and makes their monetary control difficult. If Korea had not accumulated such a large amount of reserves, however, it might have fallen into another currency crisis. The cost of building up the reserves paid off, to a large extent, during the global financial crisis. Even Korea's large foreign reserves, amounting to US\$270 billion, which ranked the fifth or sixth largest in the world, were not sufficient to assuage the currency market anxiety. Only after the swap arrangement with the FRB did the exchange market begin to stabilize.

Emerging market economies and developing countries have been encouraged to open their financial markets by developed countries and multilateral institutions. Most of these economies increased the openness of their financial systems during the last two decades. And now, as discussed in the previous section, many of their financial systems are more integrated into the global financial system than most advanced economies in terms of the relative amount of foreign capital transactions to their economic size. This has made their economies vulnerable to contamination and spillovers of crises originating elsewhere. This again points to the importance of designing a new international financial architecture.

3.3 Government Guarantees

When it is found that the central bank's liquidity support is insufficient to stabilize the market, the government has no choice but to issue a blanket guarantee on bank liability or suspend the troubled banks. Although this measure is controversial due to its long-term moral hazard effect (Demirguc-Kunt and Serven 2009), it is unavoidable in order to stop a run from spreading to other institutions.

While suspension of banks has an advantage of saving fiscal costs, it tends to further undermine market confidence, reduce the money supply, increase uncertainty, and sometimes deepen a systemic crisis. Korea and Thailand suspended specific banks in an effort to stop runs during the 1997 crisis. In Korea, 14 merchant banks were suspended in December 1997. In Thailand, 58 finance companies were suspended in the second half of 1997. The experience of Korea and Thailand suggests that, although suspension seemed to be an expedient means for dealing with runs, it can exacerbate uncertainty and precipitate more runs. Depositors in other deposit-taking institutions, including commercial banks, apparently foresaw the potential suspension of their institutions and began withdrawing

deposits as a preventive measure. Similarly, debtors apparently foresaw the loss of access to lines of credit and ceased repayment of debts so as to conserve working capital. In addition, borrowers of some suspended finance companies who had been servicing their loans ceased debt repayment (Scott 2002).

In principle, the government should avoid offering extensive bank liability guarantees, since they limit the government's flexibility in allocating losses and may create incentives for moral hazard. In practice, however, given the systemic nature of the crises and the ensuing loss of confidence, governments may have few other options than to offer a broadly based guarantee of most bank liabilities. Quickly restoring depositor confidence is important for minimizing the damage caused by a financial crisis. A time-bound blanket deposit guarantee was made in Asian countries including Korea, Indonesia, and Thailand during the 1997 Asian crisis. This was also done in the United Kingdom in the wake of run on Northern Rock in 2007.

The relatively positive results of providing guarantees found in Korea and Thailand stand in contrast to the experience of Indonesia. A key distinction seems to be a relatively early adoption of extensive bank liability guarantees in Korea and Thailand and the limited credibility of the guarantee eventually adopted in Indonesia (Scott 2002). The guarantees in Korea and Thailand appear to have been effective in stabilizing domestic currency funding, but turned out to be ineffective with respect to foreign currency funding.

In the case of a foreign currency run, a government guarantee is credible only to the extent that the government holds a sufficient amount of foreign reserves or swap arrangements with foreign central banks to be able to honor such a guarantee. In addition, the government should make all information transparent on all types of short-term and long-term debt and foreign reserves to make such a guarantee credible. During the 1997 crisis, foreign creditors did not trust the information and statistics that the Korean government disclosed regarding the amount of usable foreign reserves and short-term foreign debts. This intensified the crisis in the currency market and eventually led to the IMF bailout. In the recent crisis, the Korean government, facing a rapidly falling foreign debt revolving rate and mounting pressure on the Korean won, provided guarantees on domestic banks' foreign debt up to US\$100 billion, which revolves every three months. Even though Korea held foreign reserves of more than US\$200 billion, this guarantee did not successfully address the concerns of foreign creditors regarding the possibility of currency crisis and eventual defaults. The past record of credibility of the Korean government's statistics on the amount of total foreign debt and usable foreign reserves undermined the government's effort in gaining the credibility required for such a government guarantee. This highlights the importance of establishing the credibility of the government's statistics and, in that respect, the importance for the regulatory authorities of closely monitoring and keeping accurate debt statistics.

Even if the guarantees provided are deemed credible and the crisis is contained, the governments still face another set of important challenges. These include the need to control the additional deposits or debts that insolvent institutions will continue to attract, to make sure the guaranteed institutions invest these new resources prudently, and to reduce or eliminate the guarantees once the containment stage of the crisis is over.

An extensive literature supports the position that in normal times overly generous safety-net policies and deposit insurance lead to moral hazard and financial instability (Demirguc-Kunt and Kane 2002; Demirguc-Kunt, Kane, and Laeven 2008). The longer the guarantee remains in place, and the longer insolvent banks are allowed to operate, the more difficult it will be to curb these excessive risk-taking incentives. Thus, it is important to quickly initiate the resolution of insolvent banks and to have a timely exit from such guarantees. In Korea, the blanket deposit insurance was provided for three years and withdrawn at the end of 2000, when the bank restructuring and rehabilitation program was almost completed. When

providing a guarantee on foreign debt early in 2009, the Korean government required the banks that received the guarantee to freeze the compensation of managers and their staff.

3.4 Effective Communications and Building Confidence

Effective communication with the market players is also critical in the stage of crisis containment. It is important that the government communicate with the market in a single voice with consistent messages. Different messages conveyed from different ministries, as noted above, can hamper the government's efforts to contain the crisis. As was suggested, organizing a crisis management team can be a good way to address these problems. The government has to make all available information transparent and assure the market that the information and statistics it discloses are fully reliable. Sometimes it may be necessary to replace ministers who appear to be incapable of winning strong confidence from the market.

In order to add credibility to its messages, the government should prepare a comprehensive and consistent program, both in macroeconomic and sectoral terms, to deal with macroeconomic problems as well as financial and corporate sector problems, especially those responsible for the development of the crisis. Based on those programs, the government should ask the Parliament or Congress for the approval of sufficient public funds to deal with impaired assets and recapitalization. This is one of the most important government roles in containing a crisis. Unless the government program is reliable and convincing, none of the measures discussed above (liquidity supports, guarantees) will be of much help in containing the crisis. Once the program is prepared, it would be helpful for the Minister or senior officials to engage in investor relations (IR) with domestic as well as foreign creditors and investors in international money centers to earn their confidence. Communicating with the public through the help of the media and politicians and securing their support is also crucial to mobilizing political support for the government's program. Again, the credibility and consistency of the program itself is a key to earning the confidence of domestic as well as foreign lenders and investors.

4. THE ROLE OF STATE INTERVENTIONS IN CRISIS RESOLUTION

When the initial panic abates and the market gradually regains confidence, the crisis moves into its resolution stage. Past crisis experiences provide many valuable lessons on how a government can effectively deal with impaired assets and recapitalization or liquidation of insolvent banks. Again, a critically important decision revolves around which banks to bail out and which banks to let go under. While the government should be prepared to act in a systemic crisis, its approach needs to be designed to reduce conditions for moral hazard and the possibility of a subsequent crisis. This should be done by imposing real costs on all responsible parties and getting the resources back to their productive use as soon as possible. Any government involvement should be designed to protect the interests of taxpayers, impose losses on the responsible parties, and use the market as much as possible to pick the winners and losers.

In distinguishing the banks that will receive capital injections from those not eligible, the government may rely on market criteria. In principle, if the banks are able to mobilize capital at least partially from the market, they can be eligible for government assistance. If they fail to do so, they should not be considered eligible (Honohan 2005). Such banks can be liquidated, their assets and liabilities can be transferred to other banks, or they can be nationalized by writing off the capital before the injection of public funds.

In this section, I will discuss the government approach to crisis resolution based on the Korean experience during the 1997 crisis, which is considered to be one of the reasonably successful cases (although with some weaknesses) of financial and corporate restructuring.

This discussion will include: (i) consolidation of the crisis management team; (ii) developing crisis resolution strategies; (iii) diagnosis of bank conditions; (iv) mobilizing public funds; (v) resolving insolvent and capital-deficient banks; (vi) management of nationalized banks and privatization; (vii) resolving nonbank financial institutions; (viii) dealing with impaired assets; and finally (viii) strengthening the regulatory framework.

The Korean government took quick action to intervene and stabilize banks. A number of banks, including the largest five, were nationalized. Rapid intervention and recapitalization helped to quickly restore confidence in the financial system and economic performance. Korean authorities were able to mobilize and allocate a substantial investment of public funds (done in two rounds due to initial underestimation of the size of problem), about US\$130 billion in total, equivalent to about 30% of GDP. It was used for the purchase of impaired assets (about US\$32 billion), recapitalization of banks (about US\$66 billion), and payment of depositors of closed banks (about US\$31 billion). Roughly two thirds of impaired assets of banks were taken over by the government's asset management company (Korea Asset Management Company [KAMCO]) at discounted prices, and capital was injected by the Korea Deposit Insurance Company (KDIC) through issuing bonds guaranteed by the government. In comparison to other governments facing financial sector crises in the past, these investments were considered extraordinary in terms of size and speed.

4.1 Consolidating the Crisis Resolution Team

Formation of a specific-purpose crisis resolution team is necessary when the government is preparing the resolution strategy. The crisis management team organized in the contagion stage could be developed into a crisis resolution team or an entirely new team could be created if the initial team has lost market confidence. Key objectives would be to consolidate responsibility, promote consistency of work and decisions, provide the necessary specialized skills, and insulate the work from other official responsibilities and related conflicts of interests. This crisis management team should have a governing body to facilitate the implementation of its decisions through the various government agencies involved and to secure political support.

The officials or representatives from institutions who are responsible for creating and contributing to the development of the crisis should be excluded from the team, if possible. They tend to underestimate the size of the problem to justify their past mistakes. In the case of Korea during the 1997 crisis, having experienced failure on the parts of the Ministry of Finance and Economy (MOFE) and the BOK and given their dwindling credibility, the newly created FSC was charged with the role of crisis resolution as well as financial and corporate restructuring. The head of the FSC had not held a position in the government for the past 15 years and the Commission recruited staff from outside the government. The Emergency Economic Policy Coordination Meeting was created and chaired by the late President Kim Dae-jung himself and attended by key economic policymakers including the Minister of Finance and Economy, Governor of the BOK, Head of the FSC, Chief Economic Advisor to the President, and other economic ministers. This played the role of the governing body of the crisis management team. In this weekly held meeting, discussions were held regarding the measures to resolve the crisis, and after necessary coordination was made and decisions were reached, those were communicated to the market.

Facing the recent global financial crisis, the government organized a similar institutional arrangement, namely the Emergency Economic Policy Coordination Meeting chaired by the President, and it has been held every week with the support of a small secretariat team. The team monitors the markets and prepares a daily report to the President. This has helped the government to closely and quickly coordinate its responses to market instabilities.

One weakness of Korea's strategy of organizing the crisis resolution team during the 1997 crisis, however, was having placed it under the FSC. Although the FSC had the advantage of separation from historical ties to the creating of the crisis, the coordination between the

FSC and MOFE (which was responsible for mobilizing public funds and monitoring their use) was not smooth. This weakness entailed high costs as the government was unable to act decisively and to speak with a single voice. Another weakness was that the dual roles of the FSC in crisis resolution and financial sector supervision often gave rise to serious conflicts of interests during the crisis period. For instance, the FSC was forced to accept implicit forbearance when the capital injection made turned out to be insufficient.

Ideally, central banks and supervisory agencies should play circumscribed roles in crisis resolution. Due to their official responsibilities for financial sector supervision and for being the lender of the last resort, these agencies are usually the first to become involved in dealing with the effects of a crisis. Nevertheless, when the crisis becomes systemic, they are often not prepared to play the leading role in crisis resolution. Moreover, forcing them to do so may undermine their capacity to perform their permanent functions. Although central banks have roles to play, the government should not compel them to bear an excessive burden in financial crisis resolution. This may risk the loss of monetary control. A more appropriate role for a supervisory agency is an independent check on the recapitalization transactions being organized by the government team (Scott 2002).

4.2 Developing Crisis Resolution Strategies

The first key task of a crisis resolution team is to develop a comprehensive and clear resolution strategy and then execute the strategy for solving the problems generated by the crisis. The problems are intertwined. For example, solutions to financial problems in banks have implications for debt restructuring in corporate firms and vice versa. Steps taken in nationalizing banks have implications for the government's ability to privatize them (Scott 2002). Moreover, solutions to financial problems have to be tempered by recognition of their political and social implications (e.g., unemployment, foreign entry, and social instability). Failure to develop an explicit, comprehensive strategy is likely to result in actions and decisions that undermine future degrees of freedom, leading to partial and false solutions and subsequently higher long-run costs.

The first step in defining the strategy is to obtain from senior political authorities clearly defined objectives for the crisis resolution team. Based on these objectives, the government or the team has to define in specific terms what is to be accomplished and avoided in the process of resolving the crisis. This serves as a mandate for the team driving the financial restructuring.⁴ At this stage, the government needs to have a clear vision on the future structure of the financial sector, which serves as objectives for decisions regarding the crisis resolution. These objectives then need to be translated into sector-specific goals for the banking system, the NBFIs sector, the public sector, and the structure of corporate finance. These goals and an accompanying strategy to achieve them should be agreed upon and endorsed by the governing body (including the head of the government) and shared by other government ministries and the central bank. The strategy for achieving each goal should define the key actions required to move from the present situation to the privatization of banks and assets that the government will acquire in the course of solving the problems (Scott 2002).

The strategy should be based on a realistic assessment of the dimensions of the problems. Underestimating the scope of the problems would undermine the utility of a comprehensive strategy. A lesson gained from past crises is that problems often are far worse than initially anticipated (Scott 2002). Therefore, the strategy needs to be flexible, requiring continuous revision and enhancement as it proceeds. The senior political authorities and the crisis resolution team have distinct roles to play in developing and executing a comprehensive strategy. The senior political authorities need to orchestrate political consensus regarding overall objectives, financial sector vision, medium-term goals, and operating principles. The

⁴ In the Korean case, the FSC assumed this role.

crisis resolution team needs to handle the details of the strategy based on explicit, politically agreed upon guidance on these matters (Scott 2002). It then develops strategy, establishes priorities, and defines and executes the specific work required for the crisis resolution. A key task of the team is to maintain political consensus on the main elements of the strategy. This is important because the team is likely to encounter serious unforeseen problems, including lobbying by vested interests. Similarly, maintaining media and public support for the strategy needs to be included as part of the work program.

4.3 Diagnosis of Bank Conditions

It is important to distinguish viable banks from non-viable ones early in the crisis to prevent wasting of funds. The government needs accurate information to determine appropriate resolution mechanisms for distressed banks and to estimate the potential requirements for funding the crisis resolution. However, it is likely that the authorities do not get accurate information regarding the financial condition of banks. Their main sources of information are accounting data prepared by banks and debtors and the regulatory indicators and supervisory analysis prepared by supervisory authorities. This information can be inaccurate even in normal circumstances, but tends to deviate further especially in times of financial distress.

Contributing to the inaccuracy of accounting and regulatory information are the incentives presented to most stakeholders to underestimate the scope of financial problems, especially in the face of a systemic crisis. Bankers who face the risk of losing their jobs if their banks are assessed to be insolvent are strongly inclined to underestimate the severity of their financial problems. Owners and managers of firms who risk losing control of their business or its assets if the firms are diagnosed as insolvent are likely to be motivated by a similar incentive as the above. Supervisory authorities, who may expect to be held accountable for the current situation by politicians, the media, and the public, have incentives to downplay the scope of the problems (Scott 2002).

Regulatory indicators also suffer a number of weaknesses. The regulatory indicators that receive the most attention in a crisis are nonperforming loans and bank capital. Because bankers are capable of manipulating accounting information to obscure the actual conditions of debtors, the regulatory measure of nonperforming loans can be substantially underestimated (Scott 2002). Overstatement of asset values and understatement of liabilities mean bank capital can be substantially overstated. This accounting problem is compounded by the heightened uncertainty regarding financial and real asset prices during the initial phases of a crisis. Interest rate hikes, huge exchange rate depreciation, and near frozen markets for assets such as land, buildings, and equipment make it difficult to estimate realistic values and prices. The likely result of these factors is misdiagnosis of the nature and extent of the financial problems of banks and debtors. Therefore, early diagnosis tends to underestimate, to a large extent, the scope of the problems and the amount of financing that will be required of the government.

Facing these problems, Korea's crisis resolution team attempted, with the assistance of the World Bank, to obtain better information on the conditions of banks in at least four ways. One step was to hire international accounting firms to perform diagnostic reviews of troubled banks. This work was performed in two phases, first for the largest and most troubled banks and subsequently for the remaining banks. A second step was to require the banks to submit rehabilitation plans containing detailed information regarding their prospective financial and operating conditions. Progressive improved plans were demanded. A third step was to commission major international firms to perform an industry analysis. A final step was to commission another international firm to develop a financial analysis model that could incorporate various inputs, including the results of the diagnostic reviews and the industry analysis, and project the future profitability and equity recapitalization needs of banks (Lee 2006; Scott 2002). To acquire better information on the financial problems of major debtors

to banks, the government also required the larger companies in the chaebol to enter into debt reduction agreements with their banks. These agreements aimed to generate complete information regarding the liabilities and cash flows of the chaebol.

However, these attempts were only partially successful in diagnosing the size of the problems individual banks were facing. These steps could serve to help identify clearly non-viable banks, which should be resolved as a priority, but they did not provide sufficient information regarding the capital shortfalls or the nature and consequences of operational weaknesses in the banks. However, given the urgency of the bank restructuring, and the difficulty in estimating the losses inherent in corporate debt restructuring, the government chose to act quickly by determining the restructuring plan based on the evaluation of individual banks' rehabilitation plans. This later turned out to be insufficient injection of capital to the banks.

This experience suggests that, while acknowledging the need to act quickly in the early stage of a crisis, it is essential to invest in information gathering and analytical capacity in advance. It is also important to ensure that the persons responsible for gathering, verifying, and analyzing this information do not have incentives to underestimate the extent of the problems. This, in turn, has implications for appropriately organizing and staffing the crisis resolution team.

4.4 Mobilizing Public Funds

Securing sufficient public funds to finance crisis resolution costs depends on the political leadership as well as on political consensus. The Korean government was able to mobilize a significant financing package early on (about 15% of GDP), signaling the government's determination to tackle the crisis. Gaining quick political consensus on a financing package helped to restore confidence by bolstering the credibility of the government's statements and commitments.

However, the Korean government faced difficulty in determining the appropriate size of the financing package. Initially, there was great uncertainty about the scope of insolvency and the amount of financing required. The government faced a trade-off between speed in arranging financing and certainty as to the amount of financing required. The government at the time expected difficulty in raising additional financing if the initial package proved insufficient. Thus, the initial package had to be sufficiently large to be credible to the market. To the extent that assets acquired by the government in the course of crisis resolution can be sold quickly, the proceeds can be used to reduce the size of the financing package.

In Korea, Thailand, and Indonesia, the governments used indirect methods of financing such as issuing guarantees or writing put options as a substitute for issuing direct government debt. These can be valid financing techniques. But the possible danger is that these obligations give rise to contingent liabilities and may obscure the cost of crisis resolutions (Scott 2002; Calomiris, Klingebiel, and Laeven 2005). These financial liabilities have to be identified, monitored, and managed in much the same manner as direct liabilities. In Korea, when the government-guaranteed bonds matured, they were either paid by recovered funds or replaced by issuing government bonds.

4.5 Resolving Insolvent and Capital-Deficient Banks

In the early stage of the crisis, the Korean authorities had suspended the operations of a number of merchant banks, leaving their customers in limbo and creating uncertainty in the market. After going through such an experience, Korea turned toward resolving insolvent banks in an effort to minimize customer disruption and uncertainty, especially among depositors.

Three options for resolving insolvent banks were adopted: **liquidation**, **business transfers** (both asset and liability transfer), and **nationalization**. The Korean authorities tried to avoid liquidating failed banks unless they had little or no franchise value. The authorities used liquidations to resolve small failed NBFIs. For small failed commercial banks, they orchestrated deposit and asset transfers to healthier banks; they nationalized the largest banks. Business transfer covered all assets and liabilities to ensure that there would be no disruption of business for bank customers. Shareholders lost their investments while creditors remained protected. The acquiring banks had access to the central bank's liquidity support to minimize the disruption of banking services for customers of the failed banks. They also received a put-back option on nonperforming loans and capital injections to maintain their capital ratio at pre-acquisition levels. For the nationalized banks, top managers were removed and new managers were instructed to cut costs substantially.

In Korea, the largest banks had no controlling shareholders, which minimized the prospects for raising capital from existing shareholders. Also, acquisition by a sound domestic bank was difficult to envision in such circumstances. The best policy alternative in these circumstances was for the government to do whatever was necessary to sell strategic stakes to qualified investors who would invest some capital and assume control of the banks. But there were no apparent sources of domestic capital during the crisis (except for some large chaebol, which were restricted from owning banks, as will be discussed below) and the government did not want to sell a large portion of the banking system to foreign investors. To the extent that private sector solutions could not be achieved, nationalization was required to sustain the core institutions of the banking system.

The government sought to use its provision of public funds to banks as an opportunity to promote consolidation within the banking system. In addition to providing support to healthier banks acquiring weaker banks, the government required mergers among larger banks as a condition for public support. The government adopted this policy as a means to increase the efficiency and competitiveness of Korean banks as well as a means to generate public support for using public funds to recapitalize the banks. But it is not clear whether this indeed contributed to a significant increase in the efficiency or competitiveness of Korean banks.

To minimize the risk of moral hazard, the World Bank recommended that the government allocate support to a bank only once (Scott 2002). Full recapitalization of banks seemed necessary to provide the management capital cushion that would assist banks with necessary restructuring and reactivating their normal operations, especially lending. Failure to provide sufficient recapitalization would undermine or delay restructuring, prolong the credit crunch leading to inappropriate risk-taking by management, and weaken the credibility of the authorities. This would require more rounds of support and costs would increase as a result. A shortage of public funds for recapitalization was a key constraint to the overall bank resolution program in the case of Korea. This was caused by initial underestimation of the size of the problem, as explained above. This underestimation was partly ameliorated by the second round of approval of public funds by the National Assembly.

One of the difficulties in quickly resolving the failed banks stemmed from uncertainty of corporate restructuring. The Korean banks' non-performing assets were caused not by the burst of the housing bubble but by highly indebted corporate insolvencies. Thus, in Korea, the financial restructuring had to be carried out simultaneously with corporate debt restructuring. This further complicated the financial restructuring process (Cho 2002b). It was almost impossible to make a clear estimation of the amount of loss, since uncertainty was still looming over the future value of corporate firms. The government opted for a gradualist approach to corporate debt restructuring, and this significantly undermined the bank resolution strategy. When big companies in the chaebol (including Daewoo) failed later, the government had to recapitalize the banks again.

4.6 Management of Nationalized Banks and Privatization

Nationalization of banks brought with it major responsibility for the government not only for recapitalizing the banks but also for exerting governance and overseeing bank restructuring. For that reason, nationalization represents a substantial challenge to the capacity of the government. The government has to ensure that the support provided was put to good use in order to minimize potential demands for additional support, and to maximize the potential for prompt reprivatization.

The principal tool to accomplish this objective was *performance contracts* for the senior managers of nationalized banks in Korea. As a condition for granting public support, the Korean government imposed performance contracts containing strict terms on the top management to promote restructuring. But this also suffered from a lack of sufficient information on the quality of assets. Managers were most successful in their efforts to reduce staff expenses and close or sell branches. On average, Korean domestic banks reduced staff costs by around 35% and reduced the number of branches by 20%. But in other areas, they did not take much initiative beyond rapidly expanding loans to households and consumers. In the case of two nationalized banks, *management contracts* were made so that they could be managed by private banks until they could be privatized (one big nationwide bank was managed by a foreign bank and one small regional bank was managed by a sound domestic bank).

Korean banking law prohibits industrial chaebol firms from owning banks. Their maximum share was limited to 4%. Therefore, banks' shares were defused and there was no controlling shareholder. In this circumstance, only healthier domestic banks or foreign financial institutions could take over nationalized banks. Reprivatization of nationalized banks thus generated a great challenge for the government. When initiating banking crisis resolution, the Korean government wanted to attract private sector capital to complement public funds invested in banks. The Korean government liberalized regulations regarding foreign ownership to permit 100% ownership of banks by foreign financial institutions. Nevertheless, the government was unable to attract foreign capital during the crisis resolution due to the government's failure to acknowledge the reduced value of the banks and to articulate clearly to potential investors the terms and conditions under which public support would be available.

The IMF and World Bank teams advised quick privatization of nationalized banks. They also recommended privatization to foreign strategic investors as it would bring about significant structural changes and import of needed management skills and technology. They advocated an open auction process designed to lead to the sale of majority stakes in the banks to strategic investors (Scott 2002). The floating of shares on the stock exchange was to be avoided as it would likely permit insufficient recapitalization by the public sector and result in weak governance and management. Following this advice, the Korean authorities quickly initiated an auction process and tapped professional support (an investment bank, an accounting firm, and a privatization advisor), but the process broke down and resulted in direct negotiations with a number of potential foreign investors. One bank was privatized to New Bridge Capital, a US-based private equity fund, and another was sold to Hana Bank, a healthier domestic bank with substantial foreign shareholdings.

Overall, privatization turned out to be no easy task. The Korean government so far has not been able to privatize one of the largest banks, Woori Bank, which was nationalized during the crisis. The self-imposed deadline for privatization was not met and has been pushed back several times. There has been political resistance to sell it to foreign strategic investors, given that three out of the largest seven commercial banks have already been taken over by foreign investors. Chaebol firms are still not allowed by law to own banks. In the case of most of the largest commercial banks in Korea, Woori Bank being the only exception, the total foreign investors' share, including portfolio investors, now exceeds 50%. The government recently revised the banking laws to allow increased participation of industrial

chaebol firms and private equity funds in the bank ownership as a way to seek bank privatization.⁵

4.7 Resolving Non-Bank Financial Institutions

While commercial banks were not allowed to be owned by industrial chaebol in Korea, NBFIs, including security firms and insurance companies, were allowed. As a result, most NBFIs in Korea have been owned by chaebol or other private controlling shareholders. The Korean authorities limited the use of public funds in resolving NBFIs to those required to meet the government guarantee on NBFIs liabilities. Existing shareholders were given a certain time period to recapitalize and restructure. If those efforts failed, the government then intervened. NBFIs were resolved either by business transfers to other institutions (at least their government guaranteed liabilities) or liquidation. Few NBFIs were nationalized.

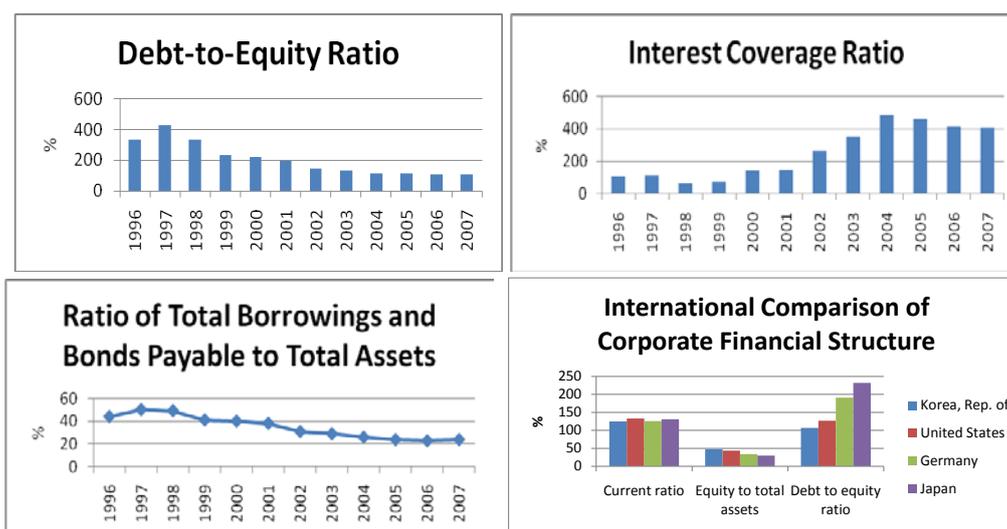
As a result of this far reaching financial restructuring, a number of banks and NBFIs exited the market. Many of them merged with or were taken over by others. The number of banks and NBFIs has been significantly reduced and the soundness of Korean banks has been much improved (Table 1). The stability of the financial system was fully restored after two or three years. This was achieved in conjunction with a substantial improvement of the debt ratio as well as other financial indicators of the corporate sector (Figure 4).

Table 1: Results of Financial Restructuring

Item	1997	2005
Number of financial institutions	2,101	1,346
Number of banks	33	19
Banks' non-performing loan ratio	13.6%	1.2%
Banks' capital ratio	7.0%	12.8%

Source: Financial Supervisory Commission.

Figure 4: Corporate Sector Financial Indicators



Source: Financial Supervisory Commission.

4.8 Dealing with Impaired Assets⁶

To deal with impaired assets, the Korean government established the Non-Performing Asset Management Fund (the “NPA Fund”) under the management of KAMCO and raised funds

⁵ The cap of ownership by an industrial chaebol was increased to 9% from 4% in July 2009.

⁶ This subsection is based on Ministry of Strategy and Finance of the Republic of Korea (2009).

through government guarantees. The government classified the impaired assets based on collateral availability, seniority, and degree of impairment and applied a consistent haircut to assets within the same class. One example of valuation methods is described in Table 2.

Table 2: Pricing Scheme for Impaired Assets

Degree of Impairment	Collateral Availability	Valuation
Ordinary assets	Secured	Effective collateral value × 45.0%
	Unsecured	Book value of assets × 3.0%
Special assets*	Secured	Effective collateral value × 28.2%
	Unsecured	Book value of assets × 3.0%

*Assets related to obligators under restructuring or resolution process.

Source: Ministry of Strategy and Finance of the Republic of Korea (2009).

The haircut used for the valuation of secured assets was based on the historic average of recovery rate less the portion given to senior lien holders. For unsecured assets, it was based on the historic non-performing loan recovery rates of KAMCO. Collateral value was appraised by professional third-party property appraisers to ensure the credibility of the pricing mechanism. Another notable aspect of Korea's case is that the Korean government used a post-settlement scheme to share the proceeds from the sale of impaired assets with financial institutions in order to build a relationship of trust and induce the participation of such institutions.

Pricing impaired assets and removing them from the balance sheet is an important exercise in determining the financing requirements for recapitalization of banks. In this regard, the task of preventing a potential conflict of interests was considered crucial, and the government sought not to delegate both functions to a single agency. The Korean government assigned KAMCO the role of relieving impaired assets and KDIC the role of recapitalizing financial institutions. The rationale behind this decision was that a single agency endowed with both responsibilities would not be able to negotiate the lowest price for the impaired assets, largely because doing so would require a capital injection in the future.

Assigning each function to different institutions ensured that one of them would appraise asset values based solely on their intrinsic value and the other would decide whether to inject money by independently judging the viability and systemic importance of the institutions concerned. Further, recognizing the need to coordinate both functions to achieve financial stability, the Korean government established the Public Fund Oversight Committee to control and supervise the operation of KAMCO and KDIC.

The Korean government also adopted various exit measures to minimize government intervention and revive the market functions, as well as lessen the fiscal burden. Methods were adopted to quickly dispose of acquired impaired assets. These included conventional methods such as court auctions, public auctions, and direct sales, as well as less conventional international tenders, securitization, joint ventures, and debt-equity swaps. Through these efforts, US\$33.9 billion (US\$62 billion in book value) has been recovered, which exceeds the amount spent (Table 3).

Table 3: KAMCO's Recovery of Public Funds

Assets Acquired		Recovery			Balance Held	
Book value	Purchase price	Book value	Purchase price	Recovery	Book value	Purchase price
85.1	30.9	62.0	24.8	33.9	23.1	6.1

KAMCO = Korea Asset Management Company.

Source: Ministry of Strategy and Finance of the Republic of Korea (2009).

4.9 Strengthening the Regulatory Framework

Crisis resolution provides a unique opportunity to build a new system—a more robust and sound financial system. Political support for regulatory reform could never be stronger than in times of crisis. In Korea, in conjunction with financial restructuring, global standards were introduced in loan classification, provisioning rules, and auditing and accounting. International best practices of corporate governance structure (Anglo-American-type corporate governance structure) were also adopted in financial institutions. Now the banks are required to have outside directors take the majority of seats in the board of directors and subcommittee chairs are all outside directors. The strengthening of regulatory rules has contributed to making the management and operation of financial institutions more transparent. It has also contributed to substantial improvements in the soundness of the financial sector.

But in the course of strengthening the regulatory system, Korea also experienced several problems that it could have handled better (Cho 2002a). First, the unbalanced approach to strengthening the regulatory rules on banks and NBFIs led to a shift of funds from better regulated banks to less-well-regulated or poorly regulated NBFIs, especially investment and trust companies (ITCs). While Korea's crisis resolution efforts concentrated on banks and merchant banks, the regulatory rules and standards were also strengthened in these institutions. Strengthened loan classification and provisioning rules led to conservative loan decisions and risk management in the banking system. To meet the capital adequacy requirement, banks' assets did not grow and loans to corporate firms were reduced. Corporate firms with cash shortages sought other sources of finance and relied heavily on issuing bonds, which were purchased by ITCs that were still poorly supervised. Prevalent irregularities of their business operations allowed heavy financing to risk-taking chaebol firms such as Daewoo, and when these firms got into trouble, they also could not avoid a similar fate. This required a second round of mobilization of public funds and financial restructuring.

Second, the strengthening of bank regulatory rules itself had a contractionary monetary effect. When the banks had to maintain the required capital adequacy ratio under the new loan classification and provisioning rules, they could not increase their lending. The money creation function of commercial banks was substantially undermined during the transition period when regulatory rules were strengthened, and when bank restructuring was undergoing progress. The money multiplier sharply fell during this period (Cho 2002a). Even with a rapid increase of reserve money, broad money (M2) growth was very slow. This further deepened the economic recession in 1998. In fact, the institution that led the M2 supply during this period was not the central bank (BOK) but the regulatory body (FSC). This suggests that monetary policy and supervisory policy need to be well coordinated not only in boom times but also in crisis times to reduce procyclicality.

5. LESSONS AND CONCLUSION

Although financial crises share a number of common features, they are not identical. Every crisis takes place in different circumstances and thus requires different approaches. To contain and resolve a crisis, it is critical to understand the nature of the crisis. In the Korean case, the recent crisis is different from the one faced in 1997 in terms of the nature, scope, and origin. Accordingly, the government response to the crisis has been different in a number of respects. During this crisis, the government has used extremely expansionary fiscal and monetary policies to minimize the impact of external shocks caused by the global financial crisis. However, the crisis in 1997 required a fundamental corporate and financial restructuring. The crisis of 1997 was, to a large extent, a homegrown one and problems of the financial as well as the corporate sector were the main cause for the instability in the banking system and the exchange market. The government was not able to use an expansionary macroeconomic policy response given the currency market situation. On the

contrary, the government had to use tight macroeconomic policies to help stabilize the currency market. This further aggravated the corporate financial situation and deepened the banking crisis.

This paper has discussed the role of the state in crisis containment and resolution based mainly on the Korean experience of the 1997 financial crisis. The Korean government was not fully successful in dealing with the crisis; it did make mistakes. But the Korean experience of overcoming the economic crisis of 1997 has drawn much attention from policymakers as well as economists, and is regarded as one of the successful efforts. Although there is no one-size-fits-all solution for every crisis, we may be able to draw several lessons from the Korean experience. Chief among these lessons are the importance of: (i) improving the quality of information on financial institutions and systems, (ii) mobilizing political support, (iii) taking prompt action, (iv) implementing a balanced approach to strengthening regulation, (v) ensuring effective coordination between monetary and supervisory authorities, (vi) dealing with conflicts of interests, and (vii) establishing a new international financial architecture.

5.1 Information

The Korean experience of financial restructuring suggests the importance of having a well defined, comprehensive, and integrated strategy for crisis resolution. The effectiveness of this strategy in quickly resolving the troubled banks and restoring the banking system's stability depends on the availability of relevant information. Korea's financial restructuring was largely successful. But the government failed to inject a sufficient amount of capital in the initial round and had to repeat the process of recapitalization. It also underestimated the amount of public funds necessary to deal with the problems. When the government recapitalized the banks, it did not have sufficient information to assess banks' capital needs, especially information regarding losses in the loan portfolios. The lack of information also impaired the government's ability to define performance contracts for the managers of nationalized banks. The basic lesson is that bank recapitalization cannot proceed in a vacuum. Losses in assets must be made as transparent as possible in the process of recapitalization. Substantial restructuring and improvement of bank operations also must take place through tight monitoring. To promote these objectives, the government should be able to make informed decisions. Thus, the importance of improving the quality and scope of data in the financial system, including that in individual financial institutions, cannot be overemphasized.

5.2 Political Support

Financial and corporate restructuring is bound to produce many losers. These potential losers include banks, non-bank financial institutions (NBFIs), and big companies, which tend to have strong political connections and influence over the local media. They are likely to lobby hard against the decisions made by the crisis management team. Crisis resolution is a process of allocating losses among stakeholders including creditors, shareholders, and taxpayers. Principles and fairness are important in the process. Once these are compromised, the government will be unable to drive the financial and corporate restructuring effectively. This means that strong political support for the crisis management team is critical. Crisis times provide a rare opportunity for economic reform and restructuring. In a time of crisis, political support for difficult reforms can be easily mobilized. Nevertheless, when it comes to deciding who stays and who fails, pulls and pushes of political games and blackmail can thrive. Without strong support from the very top of the government, the drivers of crisis resolution can easily become victims of political fighting. Thus, as was suggested in the previous section, the institutional arrangement of the crisis resolution team and its governing body should be organized in a way that allows effective mobilization of political support and management of political resistance. It is also important for the crisis

management team to have effective communication channels with political circles and the media.

5.3 Prompt Government Action

In times of crisis, when uncertainty is high and accounting data is not reliable, the authorities face difficult choices as to whether they should quickly recapitalize to resume the normal function of banks or wait, by giving forbearance, until the size of the hole becomes reasonably clear. The Korean government opted for the first option—acting quickly—even though it did not have sufficient information. This later required another round of recapitalization, and perhaps increased the ultimate cost of bank restructuring. However, its impact on the overall economic recovery was positive. There is trade-off between promptly addressing the bank insolvency problem and trying to avoid repeated recapitalization and its moral hazard effect. Although the former may turn out to be more costly in terms of total public funds spent for recapitalization, it can also be viewed as a preferred option because it helps to quickly normalize the operation of the banking system, which then contributes to an early recovery of real sector activities. In other words, prompt action may increase the cost of financial restructuring but may reduce the overall cost to the economy in terms of lost employment and output.

Crisis resolution is like fighting in a battlefield. Effective crisis management requires effective triage. Sometimes the government has to compromise among conflicting goals and make decisions as it takes into account a number of trade-offs. It would be unrealistic to envision a single textbook perfectly suitable for dealing with every crisis. Although we cannot completely eliminate the possibility of making costly mistakes, speed in such circumstances is important to invite an early recovery of the real economy. Nevertheless, we cannot overemphasize the importance of following the principles as closely as possible in the course of dealing with troubled financial institutions, as was discussed in the previous sections.

5.4 Balanced Approach to Strengthening Regulation

The way the financial restructuring was carried out in Korea after the crisis turned out to exert quick impacts on the subsequent development of the financial market structure. Korea's financial restructuring plan initially concentrated on the restructuring of banks and merchant banks. Strengthening regulatory standards and rules also focused on these institutions. Other financial institutions, including investment and trust companies (ITCs) remained beyond the scope of strengthening of supervision or restructuring. The prevalent irregularities in the mobilization and management of investors' money by these institutions were benignly neglected by the supervisory authorities. As a result, these institutions took advantage of poor regulatory oversight for their rapid expansion (Cho 2002b).

This had both positive and negative impacts. The positive impact was immediate in that it mitigated the impact of the credit crunch in the banking sector (e.g., by providing a "spare tire" as Alan Greenspan, former Chairman of the US Federal Reserve mentioned). The negative impact was realized over time. The imbalanced approach to strengthening regulatory rules shifted the funds from the banking sector, in which regulation was strengthened, to a sector that remained poorly regulated. As a result, the overall risk to the financial system did not improve. The rapid expansion of the investment and trust business sustained the firms of which bankruptcy should have been realized earlier. When the investment and trust companies imploded, the securities market collapsed (the "spare tire" also went flat), and this added to the ultimate amount of nonperforming loans as well as the taxpayers' burden.⁷ This suggests that an approach to financial restructuring requires a

⁷ See Cho (2002b) for more details.

careful balance among different segments of the financial system during the process of crisis resolution.

5.5 Macro-Prudential Regulation: Coordination Between Monetary and Supervisory Policies

The Korean experience showed that financial restructuring and strengthening the regulatory rules have a strong contractionary effect by diminishing the money creation function of the involved intermediaries (Cho 2002a). During the time of bank restructuring and strengthening of regulatory rules, the actual monetary stance was affected more strongly by the actions taken by the supervisory authorities—through reducing the money multiplier—than those taken by the monetary authorities. This suggests that there should be close coordination between the two authorities, if they are separate, in order to avoid unintended consequences for the money supply during crisis resolution. Effective macro-prudential regulation, through close policy coordination between the regulatory body and the central bank, is important not only in boom times to prevent bubbles, but also in times of bank restructuring to prevent sharp economic contraction.

5.6 Conflicts of Interests: Problem of Regulatory Authority Being a Main Driver of Crisis Resolution

In the case of Korea, the newly created Financial Supervisory Commission (FSC), the regulatory body, was empowered to become the main driver of the crisis resolution. A crisis resolution team was formed under the FSC. This had some advantages, as was discussed above. But it had some weaknesses as well. The dual role of crisis resolution and financial sector regulation gave rise to conflicts of interests during the time of bank restructuring. The FSC was forced to give forbearance to the banks when they could not meet the regulatory standards and rules due to problems caused by the actions of the crisis resolution team, which was under the FSC, such as the initial underestimation of the size of loss, failure to mobilize a sufficient amount of public funds, and insufficient recapitalization. This undermined the capacity of the FSC to perform its permanent function, that is, the effective supervision and regulation of financial institutions. Another problem was the policy coordination with the Ministry of Finance and Economy (MOFE). MOFE was mainly responsible for financial sector policies and mobilization of public funds to address the financial crisis. The coordination and cooperation between MOFE and the FSC, which became in charge of financial restructuring, was not always smooth. This proved costly as the government was unable to act decisively and to speak with a single voice.

5.7 New International Financial Architecture

Until the current crisis, much criticism and concern had been expressed regarding the building of large foreign reserves. However, if Korea had not accumulated such a large amount of reserves, it might well have faced another currency crisis this time. Most emerging market economies' currencies are non-convertible. Due to global financial integration, an increasing proportion of the assets and liabilities of these economies' banks and NBFIs has become denominated in international settlement currency, especially in United States (US) dollars. This leaves the national governments and central banks in a helpless position when they face dollar liquidity problems. During the period of de-leveraging of financial institutions in the US and Europe in 2008–2009, emerging market financial institutions, including those in Korea, suffered from severe liquidity problems. The central banks of international settlement (or reserve) currency provided liquidity to their domestic institutions, but they did not—and could not—do the same for foreign institutions, even though both made transactions in the same currency. This deepened the instability of the exchange and

financial markets of emerging market economies. The balance sheet effect of exchange rate volatility further deepened the crisis in these economies.

However, if every economy were to try to hold a large amount of foreign reserves as insurance against crises, it could generate damaging consequences including mercantilistic domestic policies, undervaluation of currency, export promotion, and continuation of global imbalances. A new international financial architecture is urgently in demand. As the establishment of a global central bank will not be realized soon, measures such as swap arrangements between central banks of reserve currency and central banks of emerging market economies should be more actively considered. Regional monetary arrangements are another option to consider. Swap arrangements among central banks in the region or the establishment of regional monetary funds can also be of help in protecting participating countries from the risk of currency crises.

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