# Korea's Experience of Crisis and Recovery: Comparing the 1997 and 2008 Crises*

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** The views expressed are those of the author and do not necessarily represent those of the Bank of Korea or the Korean Government.

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# Ⅰ. Introduction

During each of the last two decades, Korea witnessed a major financial crisis -- namely the 1997 Asian crisis and the 2008 global crisis. The two crises had common features as well as contrasting ones. In the context of the Korean experience, a major difference between the two crises is that the 1997 crisis in Korea originated from weakness of both the corporate and the financial sectors of the Korean economy, whereas in 2008 the financial crisis in the United States spilled over to the rest of the world including Korea. It is interesting, however, that Korea experienced severe foreign exchange market dislocations during both crises.

Against this background, this paper aims to compare the two crises as they affected Korea and identify lessons from them in light of the Korean experience, with the main focus on their implications for macroeconomic development and the foreign exchange markets. The paper begins with an overview of the courses of development of the two crises in the next section. In section 3, it then identifies key common and contrasting features between the two crises. After describing major changes in both the economic and financial environments of the Korean economy since the 1997 crisis, this section also compares the processes of recovery from the two crises, highlighting some similarities but also many differences. While the recovery of the real sector showed a similar "V"-shaped pattern after both crises, the pattern of recovery appears to have differed to a certain extent. Specifically, it took only four quarters for the Korean economy to return to its pre-crisis level of GDP after the 2008 crisis, while it took six quarters after the 1997 one. Another interesting feature observed from comparing the processes of recovery in economic activity after the two crises is that the slope of recovery was a little steeper in the case of the 1997 crisis than that of the 2008 crisis. Regarding the recoveries of the foreign exchange market during the two crises, it is observed that the recovery after the 1997 crisis appears to have been relatively quicker than that after the 2008 crisis. Comparing the processes of recovery of the domestic financial markets, finally, it is found that they have recovered much more rapidly after the 2008 crisis than after that in 1997.

In the final section, some important lessons from the Korean experiences of the two crises are suggested. The first lesson we have learned is that no single country can effectively insulate its economy from global systemic threat. This is particularly the case for highly open economies like Korea. The second lesson is that maintenance of financial stability in an individual country during tranquil times proves a crucial factor in reducing the size and duration of damage incurred from contagion of a crisis when it occurs. The third lesson is that emerging economies are very vulnerable to the capricious nature of international capital flows. The fourth lesson is that the hoarding of abundant international reserves and maintaining of greater foreign exchange rate flexibility prove very effective in general in insulating an individual country from financial crises. The fifth lesson is that the Korean experience in the 2008 crisis clearly also showed that greater volumes of international reserves and flexible exchange rates are not enough to alleviate tension in the foreign exchange markets from global crises such as that in 2008. The Korean experiences clearly present a strong case for establishing robust financial safety nets at the global level. Finally, the Korean experiences also clearly demonstrate the effectiveness of expansionary monetary and fiscal policies in facilitating the recoveries of crisis-hit economies, together with the importance of maintaining sound economic fundamentals, including soundness of public finance, during tranquil times.

# II. Overview of developments of the two crises

## 1. The 1997 crisis[1]

In retrospect, the first signals of an impending banking crisis in Korea appeared from the second half of 1996. As the economic downturn continued, the number of corporate bankruptcies increased sharply. It must be admitted that it would have been premature at that stage for policymakers to reach judgment on whether these signals implied the beginning of a banking crisis, since most of the bankrupt firms were small and medium-sized enterprises (SMEs), which are typically highly vulnerable to movements of the business cycle. The insolvency of Hanbo Steel, a large conglomerate, however, at the beginning of 1997, should have come as a strong warning, to policymakers as well as foreign investors, of the approach of a banking crisis. Following the series of insolvencies of large conglomerates in the first and second quarters of 1997, just after that of Hanbo Steel, the volume of financial institutions' non-performing assets increased steeply in response to the widespread corporate bankruptcies.

With the warning lights flashing, financial institutions began to have difficulties rolling over their foreign-currency loans from foreign financial institutions in the first quarter of 1997. The deterioration in external financing became more pronounced toward the end of March, the conclusion of the fiscal year for the Japanese financial institutions that were the main providers of short-term loans to Korean financial institutions. In particular, it was extremely difficult for financial institutions with large loan exposures to insolvent large conglomerates to borrow from foreign banks. At this time, foreign portfolio investment also shifted quite abruptly to a net outflow.

Reflecting the sizable current account deficit and slowdown of foreign capital inflows, strong pressure for the Korean won's depreciation built up. In order to moderate the pressure, the Bank of Korea intervened heavily in the foreign exchange markets.

The situation did then improve quite notably for a time from April 1997, however. External financing conditions also gradually eased, and foreign portfolio investment shifted back to a significant net inflow. The pressure for the won's depreciation in the foreign exchange market consequently lessened remarkably. This more benign environment was maintained until the middle of July 1997.

The situation started to worsen rapidly again, however, when Kia Motors became subject to the "Bankruptcy Deferment Accord", an agreement reached among financial institutions to maintain support to distressed firms whose turnarounds were deemed feasible. In the wake of this announcement, many depositors started to fret about their deposits in financial institutions whose loans were locked in to such effectively insolvent large corporations. Two nationwide commercial banks along with several merchant banks consequently began to face liquidity problems.

[1] This section is a modification of a portion of Sungmin Kim's "Monetary policy implementation during a banking and currency crisis: The case of Korea", a paper presented at the Seminar on Monetary Operations at the Joint Vienna Institution in September 1999.

At the same time, Korea's external financing conditions were deteriorating very sharply. Foreign investors' misgivings about the health of the Korean economy were deepened by the delay in handling the problem of Kia Motor's financial difficulties, by financial institutions' accumulation of non-performing assets, and by the negative impacts of the Southeast Asian currency crises. There was accordingly a renewed large net outflow of foreign portfolio investment, new external borrowing became almost impossible, and Korean financial institutions faced substantial difficulties rolling over their existing short-term debts in the international financial markets. As these factors together contributed to higher pressure for the won's depreciation, the Bank of Korea began to again intervene heavily in the foreign exchange markets.

In the face of substantial deterioration in its financial status due to the series of corporate insolvencies, the ailing Korea First Bank was supplied with 1 trillion won by the Bank of Korea in September. Another 1 trillion won was provided to sixteen merchant banks in October 1997, in the form of special loans.

Despite these measures, the situations in both the domestic and international financial markets worsened still further. It became increasingly difficult for financial institutions to access external borrowings. Much of their borrowing was moreover short-term and therefore required frequent rolling-over, leaving the institutions vulnerable to swings in their credibility in the eyes of overseas lenders. In particular, it was almost impossible for merchant banks to roll over their maturing debts in the international financial markets. In coping with a flood of repayment demands arising mainly from their heavy reliance on short-term external borrowings, merchant banks began heavy borrowing of short-term funds in the inter-bank market and purchases of foreign currency to repay their borrowings. This in turn created greater pressure for the won's depreciation and heightened short-term interest rate volatility. Trading in the foreign exchange markets was as a result suspended on six days in late October and early November 1997, as the won dropped to the lower limit of its ±2.25% daily fluctuation band against the US dollar shortly after the market opened.

During November 1997, as panic mounted in the domestic financial and foreign exchange markets, the government undertook several desperate measures. Among them, the Bank of Korea, in close consultation with the government, opened a foreign exchange window from early November to support financial institutions whose external debts were not being rolled over. In this process, in November and December 1997, as much as 23 billion dollars of the Bank's international reserves were operated in the form of deposits in the overseas accounts of domestic banks. The government also decided, on November 19th 1997, to widen the daily exchange-rate fluctuation band from ±2.25% to ±10% of the previous business day's market average rate. It further decided to increase the size of the Non-Performing Asset Resolution Fund, set up under the aegis of the Korea Asset Management Corporation, from 3.5 trillion won to 10 trillion won, in order to clear the non-performing assets off financial institutions' books as quickly as possible. The government in addition announced in November 1997 that it would guarantee full coverage of the principal and the accrued interest on all deposits up until year 2000, through the Deposit Insurance Fund under the aegis of the Korea Deposit Insurance Corporation (KDIC).

Here, it must be admitted that the measures taken to restore foreign confidence were at best stopgap. And the measures taken to handle the banking crisis basically involved provision of assistance, without any attempt to change the structures of ownership or of

management. They consisted chiefly of the easing of monetary policy and the extension of central bank credit.

However, this series of stopgap measures failed to convince the domestic and international financial markets. The downward pressure on the won mounted still further, and the Bank of Korea's international reserves continued to dry up rapidly as November wore on. Even after the daily fluctuation band was widened to ±10% in late November, the currency fell to the bottom of its band on six days during the remainder of the month and in early December 1997.

Finally, at the end of November 1997, the Korean government turned to the IMF. In the face of mounting downward pressure on the won, the most urgent task for the Bank of Korea was to prevent collapse of the won. On December 16 1997, the government eliminated the daily fluctuation band and adopted a freely floating exchange rate regime. At the same time, the Bank of Korea needed flexibility in its management of short-term interest rates, in view of their close linkages to the foreign exchange market. Consequently, acting in close consultation with the IMF, the Bank of Korea decided to adopt the overnight call rate as an operational target. Having chosen the overnight call rate as its operational target, in a desperate bid to stabilize the foreign exchange market at the beginning of December 1997 the Bank then raised it to 25% per annum.

The wide-ranging measures for structural reform of the financial sector brought into effect from late November 1997, gave rise to severe financial turmoil in the domestic financial markets. In particular, runs on merchant banks became widespread after the government, on November 24th 1997, publicly ordered twelve merchant banks unable to meet their current liabilities to improve their foreign business operations. Many financial institutions, most notably merchant banks whose credibility had taken bad hits, began to display serious symptoms of insolvency in the face of huge deposit withdrawals and difficulties borrowing call market funds. Confronting this increasingly severe financial turmoil, the government was convinced that, unless insolvent financial institutions were forced to suspend business or close down their business operations, a panic might lead to system-wide bank runs and jeopardize the overall financial markets. On December 2nd 1997, business suspensions were imposed on nine merchant banks and one securities house owing to their liquidity shortages. On December 5th 1997, another securities company on the brink of insolvency had its license revoked. The suspensions of an additional five merchant banks were then ordered on December 10th 1997. Subsequently, on December 19th 1997, one investment trust company was dissolved after a run on deposits made its continued operation impossible. In all, fourteen merchant banks, two securities houses and one investment trust company were ordered to suspend business in the course of December 1997.

The rash of business suspensions of so many financial institutions within one month posed serious systemic risk to the financial system. The worst systemic threat came in the middle of December 1997, after the suspension of the additional five merchant banks was ordered. The systemic threat was that of a bank failure, infecting healthy financial institutions and the financial markets more generally. The systemic threat came through three main channels. The first was through the payment system, where a failure provoked a chain of non-payments by other participants. The second channel was through the inter-bank call market, where a failure made other participants in the market extremely reluctant to extend loans to their counterparts. A final channel of infection was through the bank deposit market, where a

single bank failure prompted depositors to withdraw from other banks indiscriminately. The financial system was on the verge of almost total collapse.

In response to the severe systemic threat, the Bank of Korea decided to inject special liquidity amounting to 11.3 trillion won to financial institutions facing temporary liquidity problems due to the freezing of the call market liabilities of the fourteen suspended merchant banks and runs on their deposits. The recipient institutions included commercial banks, merchant banks, securities companies and investment trust companies. In an attempt to prevent a further rash of bank runs, the Bank also purchased Deposit Insurance Fund Bonds to a value of 6.5 trillion won in January 1998, since there was not sufficient money in the KDIC to recapitalize and pay the depositors of suspended financial institutions.

In the course of 1998, there were several occasions when insolvent financial institutions were ordered to suspend their businesses. However, the reaction on the part of depositors, as well as of financial institutions in general, was much milder than had been the case in December 1997. There was a relatively severe financial panic around June 29$^{th}$ 1998, when five commercial banks were ordered to exit through their acquisitions on purchase and assumption (P&A) bases by five sound commercial banks, since these were the first bank closures in the history of the modern Korea banking industry. The turmoil was short-lived, however, and did not develop into a systemic threat since it took the form of a flight to quality.

**(Table 1) <u>Trends of Selected Economic Indicators Before and After the 1997 Crisis</u>**

| | 97.3 | 97.6 | 97.9 | 97.11 | 97.12 | 98.3 | 98.6 | 98.12 | 99.12 |
|---|---|---|---|---|---|---|---|---|---|
| Overnight call rate[1)](%) | 12.97 | 11.45 | 14.25 | 12.40 | 26.04 | 21.98 | 14.89 | 6.74 | 4.79 |
| Foreign exchange rate[1)](₩/$) | 895.0 | 887.9 | 914.4 | 1,170.0 | 1,695.0 | 1,383.0 | 1,373.0 | 1,204.0 | 1,138.0 |
| Official foreign reserve holdings[1)](bill $) | 29.15 | 33.32 | 30.43 | 24.40 | 20.41 | 29.75 | 40.90 | 52.04 | 74.05 |
| Usable foreign reserves[1)](bill $) | 21.14 | 25.31 | 22.42 | 7.26 | 8.87 | 24.15 | 37.04 | 48.51 | 74.05 |
| MCT growth rate[2)](%) | 17.6 | 14.6 | 13.1 | 12.3 | 14.0 | 9.5 | 7.8 | 1.3 | 12.4 |
| Current Account[1)](mil $) | -1,808.6 | -240.3 | -509.6 | 860.1 | 3,578.4 | 3,581.8 | 3,321.9 | 3,165.3 | 1,623.4 |
| Capital Account[1)](mil $) | 2,309.1 | 1,929.4 | 452.3 | -4,464.4 | -6,370.5 | -121.6 | -428.6 | -870.4 | 2,401.2 |
| Monthly Inflation Rate[3)] | 4.5 | 4.0 | 4.2 | 4.3 | 6.6 | 9.0 | 7.5 | 4.0 | 1.4 |

Notes: 1) End of the month, 2) Average rate of increase compared with the same period of the previous year, 3) In terms of CPI (year-on-year)

By the end of 1998, the business licenses of seventeen merchant banks and four securities companies had been revoked, two investment trust companies had been acquired by remaining investment trust companies, and five undercapitalized commercial banks had been acquired through P&As by five sound banks. In addition, a merger had taken place among two nation-wide commercial banks, one local commercial bank, and one development institution.

Meanwhile, the severe disruption of financial markets and loss of confidence led to Korea's worst recession in over three decades. The slowdown in economic activity that had already started in 1997 became full blown in early 1998. Equipment investment had in fact fallen significantly in the third quarter of 1997, and industrial production had begun to decelerate in the fourth quarter. Quarter-on-quarter real GDP growth turned to a minus 0.4% in the last quarter of 1997, from plus 1.0% the quarter before. The deceleration of the real economy was conspicuous in early 1998, as industrial production fell sharply year-on-year for the first time since late 1992. The crisis resulted in a collapse of investment spending and private consumption. Economic activity was worst in the first quarter of 1998, with quarter-on-quarter real GDP growth of negative 7.0%.

As a result, real GDP growth during the whole course of 1998 was negative (-5.7%), for the first time since 1980. Construction and equipment investment fell by 10% and 38.5%, respectively, reflecting the uncertain outlook, weak corporate balance sheets and reluctance of banks to extend loans. A 9.5% fall in private consumption due to declining income and wealth, as well as depressed confidence levels and an unprecedented scale of inventory destocking also played important roles in the decline in economic activity in 1998. The only component contributing positively to GDP that year was the net foreign balance, as imports were severely compressed and exports rose in volume terms.

However, the economy recovered starting from the third quarter of 1998. Quarter-on-quarter real GDP grew by 1.3% in the third quarter, from a negative 1.0% in the second. As the recovery broadened to private consumption and investment, thanks to improving sentiment, corporate profitability and a regional recovery, the real GDP growth rate accelerated to 2.5% in the final quarter of 1998 and 3% in the first quarter of 1999 quarter-on-quarter. Real GDP consequently grew 10.7% year-on-year in 1999.

The recovery was mainly supported by the turnaround of the macroeconomic policy stance in the middle of 1998. With the stabilization of the foreign exchange markets starting from early 1998, interest rates were progressively lowered. The accommodative monetary policy stance lowered interest rates across the maturity spectrum and reduced the borrowing costs of the corporate sector. The implementation of fiscal pump-priming from the second half of 1998 further boosted the recovery. In addition, the restoration of confidence through the strengthening of the won, the build-up of international reserves, and the upgrade of Korea's sovereign rating made the recovery process further sustainable.

At the same time, thanks to these measures, combined with a strong recovery of the real sector of the economy from early 1999, the foreign exchange markets stabilized markedly from March 1999. The won strengthened to 1,138 won per US dollar as of end-1999, from a peak of 1,962 won in December 1997. The country's usable international reserves also increased sharply to over 74 billion dollars as of the end of 1999, from around 7 billion dollars at end-November 1997. Year-on-year consumer price inflation eased to 0.2% in February 1999, from its peak of 9.5% in February the year before.

## 2. The 2008 crisis

Capital inflows to Korea expanded in the mid-2000s, driven mostly by foreign investment in domestic bonds and stocks by banks' foreign borrowing. The increases in the opportunity for arbitrage transactions, mainly due to substantial forward selling by Korean shipbuilders and the resulting large deviations from covered interest parity (CIP), led Korean banks to build up foreign currency liquidity through offshore funding. The widening of arbitrage opportunities also accelerated foreigners' investment in domestic bonds from the second quarter of 2007. In this process, the nation's external debt piled up and foreign currency liquidity mismatches expanded, mostly at the branches of foreign banks whose foreign currency-denominated debts exceeded their foreign currency-denominated claims.

It is widely recognized that the trigger for the 2008 crisis was the decline in housing prices in the United States. At around the end of 2006, housing prices in the United States stopped rising and began to fall. Many marginal mortgages, notably sub-prime ones, went sour. This shocked the financial markets and led to drastic decreases in investor risk appetite across the board. The shock reverberated through the financial markets and financial institutions. At the same time, as asset prices dropped greatly, financial institutions needed to improve their capital ratios to satisfy either investor or regulatory requirements. This need brought about widespread deleveraging on the parts of financial institutions, through sales of risky assets or reduced lending.

Although the decreasing risk appetite right after the souring of sub-prime mortgages in the US affected emerging economies including Korea to a limited extent, through one-off indirect ways including moderate outflows of foreigners' portfolio investment funds, the US financial crisis did not have a tangible spill-over effect on emerging economies until Lehman Brothers collapsed in mid-September 2008. In fact, the relative resilience of emerging economies, and in particular Asia-Pacific economies, led to initial optimism that emerging economies might have decoupled economically from the affected advanced economies. Such views became particularly prevalent as the pace of economic activity in the United States and Europe began to slow in early 2008, while the forecasts for Asia-Pacific economies remained strong[2].

For the Korean economy, the collapse of Lehman Brothers marked a turning point in both its financial markets and its economic activities. The economic environment deteriorated dramatically. The initial consequences were an abrupt drop in market confidence and a drastic decline in risk appetites. From early 2007 through August 2008, before the collapse of Lehman Brothers, the need for deleveraging on a worldwide scale by major international banks, together with extreme flight to quality, led to a massive sell-off by international investors in the Korean markets. In particular, global investment banks and hedge funds began to dramatically reduce their exposures to Korea, closing credit lines and repatriating funds, as they accelerated their deleveraging in response to possible losses and margin call pressures. From September through December 2008, Korea then experienced further massive capital outflows in a different form. Most of the massive capital outflows after the collapse of Lehman Brothers were in fact substantial withdrawals by foreign investment banks of their

[2] BIS Representative Office for Asia and the Pacific (2009), "The international financial crisis: timeline, impact and policy responses in Asia and the Pacific".

loans to Korean banks, amid the global-wide deleveraging of major international banks. This loan withdrawal amounted to a record high 46.5 billion dollars during the period, while portfolio investment in the Korean equity and bond markets at the same time recorded only slight net outflows.

**(Table 2)** **Net Capital Inflows to Korea**

(in billion dollars)

| | 2006 | 2007 | | | 2008 | | | 2009 Jan.~Aug. |
|---|---|---|---|---|---|---|---|---|
| | | | 1Q | 2Q~4Q | | Jan.~ Aug. | Sep.~ Dec. | |
| Net borrowings | 42.9 | 32.8 | 16.0 | 16.7 | -28.3 | 18.2 | -46.5 | -2.2 |
| Equities | -23.7 | -81.3 | -14.2 | -67.1 | -34.9 | -34.9 | 0 | 14.4 |
| Bonds | 0.4 | 55.2 | 2.0 | 53.2 | 19.5 | 21.5 | -1.9 | 17.8 |
| Direct investment | -45 | -138 | -9 | -129 | -106 | -97 | -9 | -24 |
| Sub-total | 15.1 | -7.1 | 2.9 | -10.1 | -54.3 | -4.9 | -49.3 | 27.6 |

Notes: 1) BOP basis (including transactions by residents and non-residents)

While external factors played a more dominant role behind the massive capital outflows, internal and domestic weaknesses also raised foreign lenders' concerns about Korea's external debt repayment capacity. Issues of concern included Korea's external debt sustainability, vulnerabilities in the Korean banking sector heightened by banks' great dependence on foreign short-term borrowings, and the sustainability of the current account balance, mainly in view of the rising oil prices which had led to its reversal to deficits from December 2007.

In this context, it is worth mentioning that the maturity mismatches of Korean banks further escalated foreign investors' concerns about Korean banking system weakness, resulting in an additional exacerbation of foreign currency funding problems[3]. Many banks, particularly local branches of foreign banks, had accumulated sizable short-term cross-border US dollar interbank liabilities in the years prior to the 2008 crisis. This accumulation largely reflected the role of onshore banks as counterparties to Korean corporations in foreign exchange derivatives transactions. Dollar-earning Korean corporations, particularly shipbuilders, sold large portions of their dollar receivables forward to banks, which prepared for future delivery by borrowing dollars on a relatively short-term basis and investing them in won-denominated bonds. The local branches of foreign banks, which were not subject to the local foreign exchange liquidity guidelines applied to domestic banks and could access low cost funding from their parents, borrowed particularly heavily to fund these investments, leaving themselves with large cross-border funding needs. As funding in the overseas markets dried up sharply, this created additional pressures on the foreign currency funding markets, and in particular the foreign exchange swap market. The lack of depth of the Korean foreign exchange swap market turned out to be a major vulnerability, as it became dysfunctional at the height of the crisis[4].

[3] Committee on the Global Financial System (2010), "The functioning and resilience of cross-border funding markets", report submitted by the joint CGFS/MC Study Group, *CGFS Papers*, No 37.
[4] Baba, N. and Ilhyock Shim (2010), "Policy responses to dislocations in the FX swap market: the experience of Korea", *BIS Quarterly Review*, June

Reflecting a sharp deterioration in foreign currency funding conditions, together with growing concern about Korea's external debt payment burdens, the won depreciated rapidly from mid-September -- from 936 won to 1,460 won per US dollar, a depreciation of almost 36% -- until October 28th. There were at this time also severe dislocations in the foreign exchange swap market. Deviations from CIP, i.e. the gap between the foreign exchange swap rate and the interest rate differential, expanded greatly. For example, the deviation from CIP for maturities of three-month widened from 256 basis points at end-August 2008 to 1,139 basis points on December 5th 2008.

In parallel, Korea's sovereign credit default swap (CDS) premium surged greatly compared to those of other emerging economies, and the spread on its Foreign Exchange Stabilization Bonds rose substantially. The five-year CDS premium skyrocketed from 116 basis points at end-August to 675 basis points on October 27th. The spread on five-year Korean Foreign Exchange Stabilization Bonds denominated in foreign currencies rose from 177 basis points at end-August to 622 basis points on October 29th, reflecting the worsening global credit crunch and negative views as to Korea's foreign currency liquidity conditions.

In response, the Bank of Korea implemented swift and effective policy measures to provide foreign currency liquidity support using its international reserve holdings, while at the same time entering into currency swap agreements with central banks of major countries -- the Federal Reserve, the Bank of Japan, and the People's Bank of China. The Korean government, with approval of the National Assembly, also decided to provide three-year guarantees on up to 100 billion US dollars of foreign currency borrowings by domestic banks from foreigners including foreign bank branches.

The won recovered markedly from October 30, thanks to the announcement of the bilateral swap line arrangement between the Bank of Korea and the Federal Reserve. Provision of foreign exchange liquidity to the foreign exchange banks by the Bank of Korea was mainly channeled through foreign exchange swaps funded by international reserves and foreign currency loans financed by the currency swaps with the Fed. The total foreign currency liquidity initially supplied from October 2008 amounted to 26.8 billion dollars. However, the won depreciated again as the impacts of the global financial crisis spilled over to the real economy through a drastic contraction in exports and investor pessimism, and intensified risk factors in the international financial markets. The won subsequently began to appreciate once more and the CDS premium to decline from March 2009. This reflected the marked improvements in international financial markets, thanks to the concerted policy measures implemented by major advanced economies, as well as the recovery in Korea's foreign exchange liquidity conditions helped by the huge current account surplus, capital inflows associated with foreigners' portfolio investment, and the restoration of foreign investors' confidence in prospects for the Korean economy.

In parallel, the deviation from CIP stabilized to its pre-crisis level by April 2009. In this context, it is useful to mention the recent empirical study by Baba and Shim[5], who showed empirically that the Bank of Korea loans funded by the swap line with the Federal Reserve were more effective than the Bank of Korea swaps using its own international reserves. They explained this finding by suggesting that the funds from the swap line with the

[5] Baba, N. and Ilhyock Shim (2010), "Policy responses to dislocations in the FX swap market: the experience of Korea", *BIS Quarterly Review*, June

Fed had enhanced market confidence more effectively because they were adding to Korea's international reserves, at a time when the total size of Korea's short-term foreign currency debt had almost reached the level of its international reserves.

**(Table 3)** **Korea's Currency Swap Arrangements with Major Countries**

| | Fed. (Oct. 30, 2008) | BOJ (Dec. 12, 2008) | PBC (Dec. 12, 2008) |
|---|---|---|---|
| Arrangement amount | 30 billion USD | 20 billion USD equivalent | 180 billion RMB |

Meanwhile spillovers from the global financial crisis to the real sector of the economy began to materialize from the last quarter of 2008. Since Korea is highly open to trade, the economy was very vulnerable to any cutback in external demand. A drastic fall in exports triggered increased concern about the real sector. Exports were, for example, down 35% year-on-year in January 2009. Given Korea's openness to trade, the external shock quickly spilled over to impact domestic demand. Investment contracted and private consumption fell sharply. Declining consumption, collapsing exports and inventory destocking resulted in a drop in industrial production. Real GDP contracted 4.5% quarter-on-quarter in the fourth quarter of 2008, among the sharpest contractions in the world.

In response to the freefall in economic activity, the government and the Bank of Korea implemented monetary and fiscal stimulus measures to arrest any further slide in confidence and sustain the real economy. The Bank cut its policy rate by a cumulative 325 basis points between October 2008 and February 2009 to 2%, the lowest level in its history. The government also implemented fiscal pump-priming, introducing a fiscal stimulus package for 2009 amounting to 3.7% of GDP. The stimulus included tax cuts and spending measures focused on such purposes as infrastructure outlays, targeted liquidity transfers to constrained households, and support for SMEs.

At the same time, in an attempt to mitigate spillovers to the domestic financial sector and a credit crunch, the government and the Bank of Korea supported the provision of credit through liquidity supply, credit guarantees, purchases of distressed assets from banks, and bank capital injections. In this context, the Bank of Korea broadened the lists of eligible counterparties and collateral for its open market operations, and set aside 5 trillion won to assist financial institutions in purchasing corporate bonds and commercial paper. As SMEs, which account for 80~90% of employment, suffered disproportionately during the credit crunch, the government also expanded its provision of credit guarantees to SMEs through two government agencies. The Bank of Korea in addition raised its aggregate credit ceiling for SME lending, from 6.5 trillion to 10 trillion won.

Thanks to the comprehensive stimulus package and measures to stabilize the financial markets, along with the marked improvements in international financial markets, the Korean economy began to show a strong recovery from the second quarter of 2009. GDP growth returned to moderate positive territory -- with 2.4% quarter-on-quarter growth in the second quarter of 2009, after a sharp contraction of 4.5% in the last quarter of 2008 and poor growth of only 0.1% in the first quarter of 2009. At the initial stage of recovery, the government's fiscal stimulus and the weak won played an important role. For example, in the

first quarter of 2009 government consumption and construction investment rose by 2.9% and 5.9% quarter-on-quarter, respectively, while private consumption recorded a mild recovery of 0.3%. At the same time, the weak won redirected domestic demand from imports to domestic production. As economic activity subsequently continued to improve along with exports, industrial production, and service sector activity, business and consumer confidence then recovered gradually.

**(Table 4) Trends of Selected Economic Indicators Before and After the 2008 Crisis**

| | 08.3 | 08.6 | 08.8 | 08.9 | 08.12 | 09.3 | 09.9 | 09.12 | 10.7 |
|---|---|---|---|---|---|---|---|---|---|
| Overnight call rate[1)] (%) | 4.98 | 5.01 | 5.25 | 5.22 | 3.02 | 1.73 | 2.00 | 2.01 | 2.28 |
| Foreign exchange rate[1)] (₩/$) | 990.4 | 1,046.0 | 1,089.0 | 1,207.0 | 1,259.5 | 1,383.5 | 1,178.1 | 1,164.5 | 1,182.7 |
| Official foreign reserve holdings[1)] (bill $) | 264.25 | 258.10 | 243.20 | 239.67 | 201.22 | 206.34 | 254.25 | 269.99 | 285.96 |
| M2 growth rate[2)] (%) | 13.9 | 15.1 | 14.7 | 14.5 | 13.1 | 11.1 | 10.0 | 9.3 | 9.7[4)] |
| Current Account[1)] (mil $) | -150.8 | 1,734.0 | -4,676.2 | -1,219.6 | 778.3 | 6,644.7 | 4,053.9 | 1,521.5 | 5,037.5[4)] |
| Capital Account[1)] (mil $) | 616.1 | -2,211.5 | 5,113.2 | -5,385.3 | -5,676.0 | -2,837.9 | 6,901.7 | 1,638.9 | -935.8[4)] |
| Monthly Inflation Rate[3)] | 3.9 | 5.5 | 5.6 | 5.1 | 4.1 | 3.9 | 2.2 | 2.8 | 2.6 |

Notes: 1) End of the month, 2) Average rate of increase compared with the same period of the previous year, 3) In terms of CPI (year-on-year), 4) 2010.6

The redirection of production, in combination with falling oil prices, turned the current account from a deficit of 3.4% of GDP in the third quarter of 2008 to a surplus of 5.1% of GDP in the first quarter of 2009. The country's international reserves, which had fallen by 38 billion dollars in the last quarter of 2008, to 200 billion dollars, consequently rose to 270 billion dollars as of the end of 2009. An exceptionally accommodative monetary policy stance, meanwhile, together with the steep depreciation of the won, was able to fend off the deflationary pressures created by the sharp contraction in economic activity.

# III. A comparison of the two crises

## 1. Key common and contrasting features of the two crises

Although the main focus of this paper is to compare the recent two crises in the context of the Korean experience, it might be useful to first compare and contrast key features of the two crises in the international context. There are several features that the two crises had in common, and also several contrasting features. Looking at the common features, the first one concerns the root causes of the two crises. While acknowledging that it is often very difficult to make a clear distinction between the real and the financial sectors of the economy, given the close interaction between the two, a root cause of both crises stemmed from excessive leverage of the real sector.

The second common feature is that, in both cases, the excessive leverage of the real sector made the asset side of the financial system vulnerable to occurrence of shock, resulting in financial instability. At the same time, weaknesses in the real sector created severe externalities[6] in the financial markets and financial system, which are very susceptible to informational asymmetry caused by heightened uncertainty concerning the resilience of the financial system to the rapidly changing financial and economic environment. These externalities generated malfunctioning of the financial system, leading to severe credit crunches in both cases.

The third common feature is that many emerging economies suffered from foreign currency liquidity problems in both crises. It is not very surprising that, during the 1997 crisis, the affected emerging economies and other emerging economies similar to them suffered from serious deteriorations of their external financing conditions, resulting in severe dislocations in their foreign exchange markets. However, it is far from clear why many emerging economies suffered from dislocations of their foreign exchange markets during the 2008 crisis as well, given that the epicenter of the crisis was not emerging economies. In fact, sudden stops and massive capital outflows from emerging economies, associated with the deleveraging of major multinational financial institutions of advanced countries, brought about severe foreign currency liquidity problems and rapid depreciations of their local currencies during the 2008 crisis.

The fourth common feature is that non-bank financial institutions, which are weak in terms of their deposit bases, acted as major catalysts triggering financial turbulence during both crises. Merchant banks were mainly responsible for triggering financial fragilities in the case of the earlier Korean crisis, while investment banks and hedge funds were a major culprit in the case of the recent financial crisis in the United States.

The fifth common feature concerns the surges of capital inflows to most affected countries prior to both crises. For example, Korea experienced sizable surges of capital inflows during the 1994-96 period[7]. In the case of the United States, its sizable inflows of capital

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[6] The severe externalities during the 1997 crisis are described in Sungmin Kim (1999), “Monetary policy implementation during a banking and currency crisis: The case of Korea”, a paper presented at the Seminar on Monetary Operation at the Joint Vienna Institution in September 1999.

[7] During this period, the amount of annual capital inflows to Korea was 3.2 % of GDP on average.

came mainly from emerging economies in the process of their huge accumulations of international reserves generated the abnormally low level of long-term interest rates in the United States during the pre-crisis period, which then Federal Reserve Chairman Allen Greenspan described as a "conundrum".

The sixth common feature is that policymakers underestimated the severities of the emerging problems at the inceptions of both crises. During the 1997 crisis, Korean policymakers pooh-poohed the danger of the emerging crisis by emphasizing the soundness of their macro-economic fundamentals. In the case of the sub-prime mortgage debacle, policymakers in the United States also underestimated the seriousness of the emerging crisis, by emphasizing the historical evidence that their country had never experienced a nation-wide housing market collapse.

The final common feature is that the crises interestingly broke out in lame duck years of the political cycles -- in the case of Korea both times and in the United States in 2008. Also, during the 1997 crisis, many other affected countries in the Asian region experienced political uncertainties. According to Corsetti et al.[8], "throughout the crisis, market expectations reflected and reacted to political and policy uncertainties in the region".

Having mentioned features that the two crises shared in common, it is worthwhile to now identify the contrasting features. The first of these is that the epicenter of the 1997 crisis was emerging economies, while that of the 2008 crisis was an advanced country with a key reserve currency.

The second contrasting feature relates to the natures of the crises. Whereas the 1997 crisis in Korea was a twin crisis, a banking crisis combined with a currency crisis, the 2008 crisis in the United States can be classified as a financial crisis. In particular, the 1997 crisis in Korea developed into a currency crisis due to the growing systemic risk of the domestic financial system.

The third contrasting feature is that the root cause of the 1997 crisis in Korea was corporate debt while that of the 2008 crisis in the United States was household debt. In other words, although the two crises both stemmed from excessive leverage of the real sector of the economy, the leverage at the root of the 1997 crisis in Korea was that of the corporate sector, whereas that behind the 2008 crisis in the United States was the household sector.

The fourth contrasting feature concerns the spill-over effects of the two crises. During the 1997 crisis the contagion was limited to emerging economies, in particular in the Asian region. The 2008 crisis has developed into a global-wide crisis, however, through both the financial and the real linkages across the global economy.

The final contrasting feature is the notable differences in the macroeconomic policy responses. During the 1997 crisis, many of the affected countries including Korea responded by tightening both their fiscal and monetary policies at the initial period of crisis, under IMF programs. However, many countries responded to the 2008 crisis by expansionary monetary policies and fiscal pump-priming.

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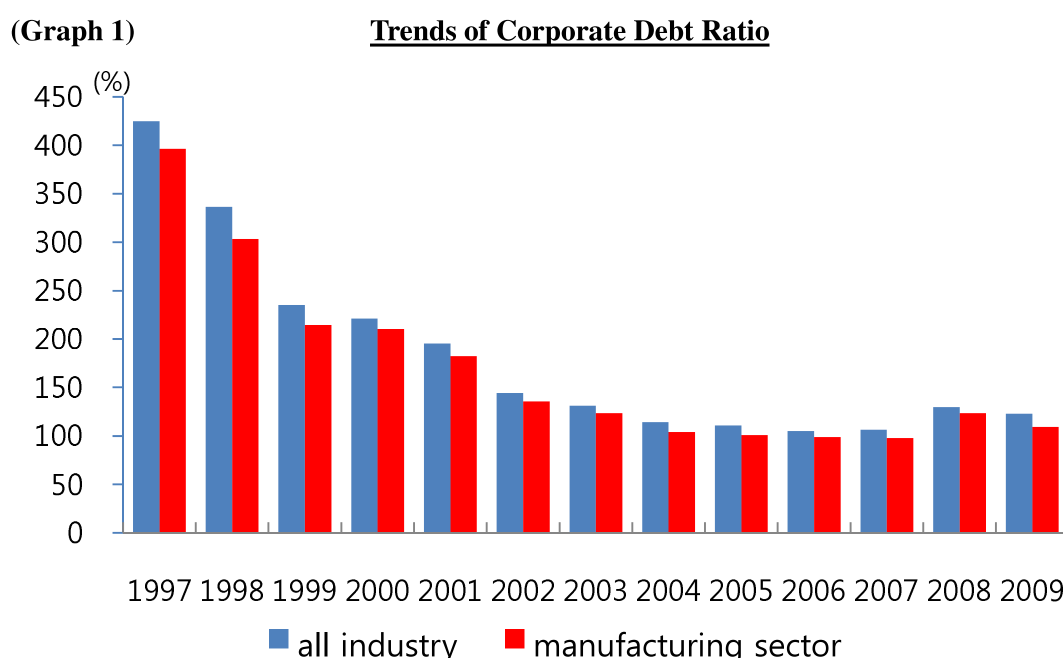
[8] Corsetti, Giancarlo, Paolo Pesenti and Nouriel Roubini, 1999, "What caused the Asian currency and financial crisis?", *Japan and the World Economy*, Vol. 11, No. 3

## 2. Comparison of the recovery processes after the two crises

Before comparing the processes of recovery from the two crises, it might be important to take a look at some major changes in both the economic and the financial environment of the Korean economy since the 1997 crisis. First, corporate sector leverage ratios in Korea were reduced remarkably during the period between the 1997 and the 2008 crises. Recognizing that excessive corporate sector leverage was a root cause of the 1997 crisis, the private sector and policymakers were together able to reduce the average all-industry debt-to-equity ratio from 423% in 1997 to 130% in 2008, thanks to rigorous and comprehensive implementation of structural reforms in both the financial and the corporate sectors.

**(Graph 1)** **Trends of Corporate Debt Ratio**




The second major change was that of the exchange rate regime, from a crawling peg to a free-floating system, in the midst of the 1997 crisis. Before the 1997 crisis, Korea adopted a market average exchange rate regime, which allowed daily fluctuations of the won/US dollar exchange rate within a specific band. For example, prior to November 19th 1997 the daily won/dollar exchange rate could fluctuate within the band of ±2.25% of the previous business day's average exchange rate. During the crisis, however, and despite the Korean government's efforts to widen the band substantially, it was almost impossible to cope with the mounting downward pressure on the won. On December 16th 1997, the Korean government, in consultation with the IMF, therefore eliminated the daily fluctuation band and adopted a free-floating exchange rate regime.

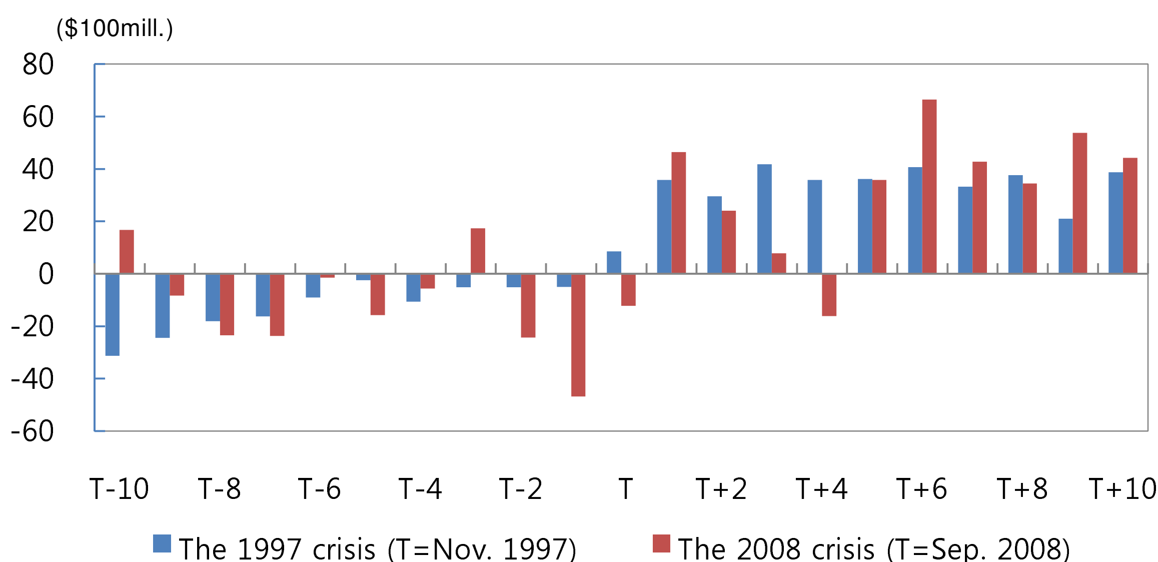
The third major change is that the scale of the international reserves held in Korea had increased remarkably, from 33.2 billion US dollars at the end of 1996 to 239.7 billion dollars at the end of September 2008, right after the collapse of Lehman Brothers. In terms of size relative to GDP, it had grown from 6.1% at the end of 1996 to 37.8% in September 2008.

The fourth major change is that the capital account has been fully liberalized since outbreak of the 1997 crisis. Before the 1997 crisis, the Korean government maintained a gradual approach to capital account liberalization, and a number of capital controls on cross-border capital transactions remained[9]. While most capital outflows were in general liberalized, capital inflows in the form of foreign portfolio investment remained subject to various ceilings and other regulations. In the midst of the 1997 crisis, however, the Korean government, in consultation with the IMF, fully liberalized capital inflows including foreign investment in the money markets.

The fifth major change is that the widespread perception of some firms being "too-big-to-fail" or "too-connected-to fail", in both the corporate and the financial sectors, which prevailed during the period before the 1997 crisis, has diminished notably since then. This mainly reflects a major change in the directions of government policy for dealing with failed large conglomerates and financial institutions during the 1997 crisis. Specifically, the authorities allowed unviable large conglomerates to go bankrupt, including the Daewoo Group, at that time the nation's third largest conglomerate, in 1999. Many financial institutions were also liquidated during the 1997 crisis. This has brought about a significant impact on risk management in both the corporate and financial sectors.

The sixth major change relates to the trends of the current account prior to the outbreaks of the two crises. During the three-year period before the 1997 crisis, the Korean economy recorded an average annual current account deficit of 2.2% of GDP; in 1996, most notably, it was 4%. During the 2005-2007 period, however, the economy recorded an average 1% GDP current account surplus, although it did experience reversal to a current account balance deficit from December 2007 and throughout 2008, due mainly to the higher global oil prices.

**(Graph 2)** **Trends of Current Account Balance**

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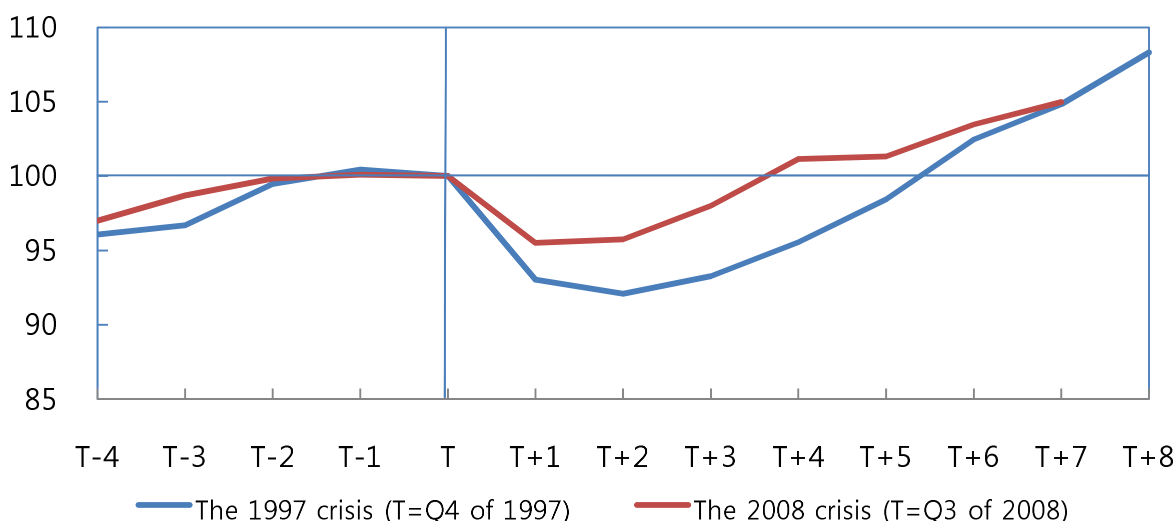
[9] For more detailed information on capital account liberalization and its consequences in Korea, please refer to Soyoung Kim, Sunghyun H. Kim and Yunjong Wang (2001), *Capital Account Liberalization and Macroeconomic Performance*: *The Case of Korea*, Korea Institute for International Economic Policy, Policy Analysis 01-01.

The seventh major change is that the banking system prior to the 1997 crisis suffered from mounting non-performing loans, whereas it was generally healthy before the 2008 crisis. At the same time, commercial banks' loan exposures to the corporate sector have been reduced remarkably since the 1997 crisis. Instead of their heavy reliance on corporate lending, in particular to large conglomerates, Korean commercial banks have diversified their loan portfolios through increasing their lending to consumers, particularly in the form of housing loans.

The final major change is that there has been notable improvement across the board in the transparency of the Korean economy. During the 1997 crisis, international investors' concerns about the Korean economy were substantially overblown, reflecting the lack of transparency in the Korean economy. In light of this experience, both policymakers and the private sector have devoted efforts to enhancing transparency. Although there does remain further scope for improvement in transparency in the Korean economy, it has been markedly enhanced -- in both the private and the public sectors.

A comparison of the processes of recovery from the two crises highlights some similarities, but many differences. While the recoveries in the real sector showed similar "V"-shaped patterns after both crises, the patterns of recovery appear to have differed to a large extent. Specifically, it took only four quarters for the Korean economy to return to the pre-crisis level of GDP after the 2008 crisis, while after the 1997 crisis it took six quarters. Considering the fact that external demand conditions for Korean exports were far less favorable after the 2008 crisis than after 1997, due mainly to sluggish demand in major advanced countries in general and the United States in particular, it is fair to say that the recovery process after the 2008 crisis was in fact remarkably rapid and strong.

**(Graph 3)** **<u>Comparison of Changes in GDP Before and After the Crises</u>**

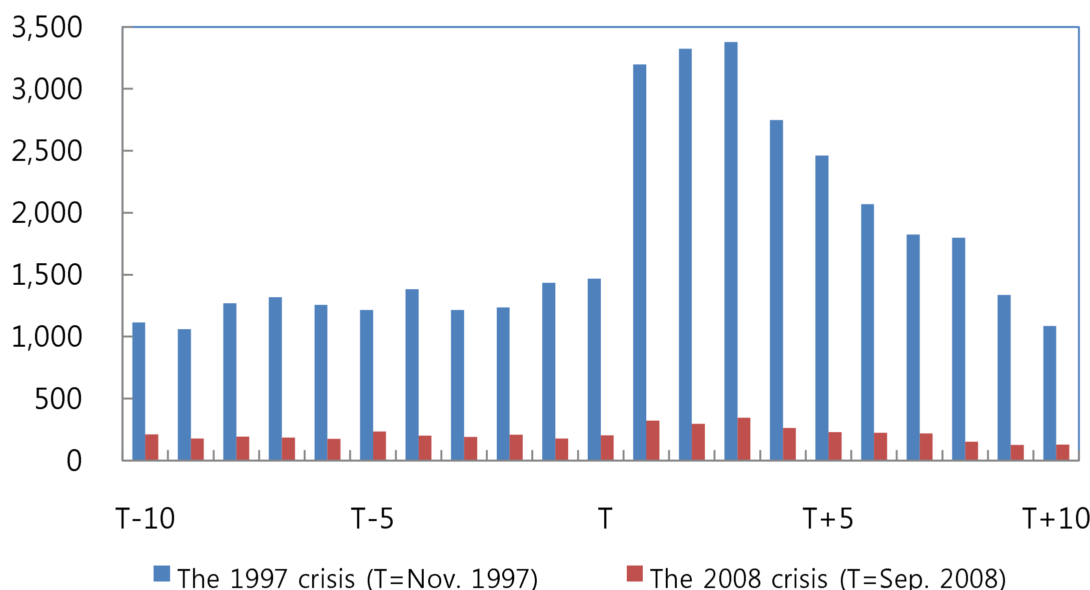



There appear to have been three factors underlying the remarkable recovery after the 2008 crisis. The first underlying factor might be the starkly different macroeconomic policy response taken compared to that in 1997-8. During the 1997 crisis, the IMF-administered austerity measures were dominant in the macro-economic policy responses at the initial stage. The policy framework of the IMF program during the Asian Crisis, including its

macroeconomic policies, was well documented in a paper by Kocchar et al. (1998)[10]. According to that paper, monetary policy was initially aimed at the priority task of stabilizing the foreign exchange markets. For this, "the program envisaged a tightening of monetary policy, including through increases in interest rates, to make holding the local currency more attractive, to make getting access to the local currency more expensive for speculators, and to curb the inflationary pressures that were bound to arise from nominal exchange rate depreciation". Kocchar et al. also mentioned that fiscal policy was initially aimed at tightening the public sector's financial position, "on the grounds that the current account adjustment necessitated by the capital inflows should not unnecessarily burden the private sector, and that financial sector restructuring costs must be offset". In the area of macroeconomic policy, nominal exchange rate depreciation thus played the sole role in stimulating demand, at least during the initial stage of the crisis.

During the 2008 crisis, in contrast, all stimulus pipelines of macroeconomic policies were mobilized from the inception. Expansionary fiscal and monetary policies were a core of the macroeconomic policy implementation responding to the 2008 crisis. As mentioned earlier, the Bank of Korea cut its policy rate by a cumulative 325 basis points during the relatively short period from October 2008 to February 2009 -- to 2%, a record low. At the same time, the government implemented a fiscal stimulus amounting to 3.7% of GDP during 2009, far in excess of the G20 target of 2%.

**(Graph 4)** **Trends of Numbers of Companies with Dishonored Bills**



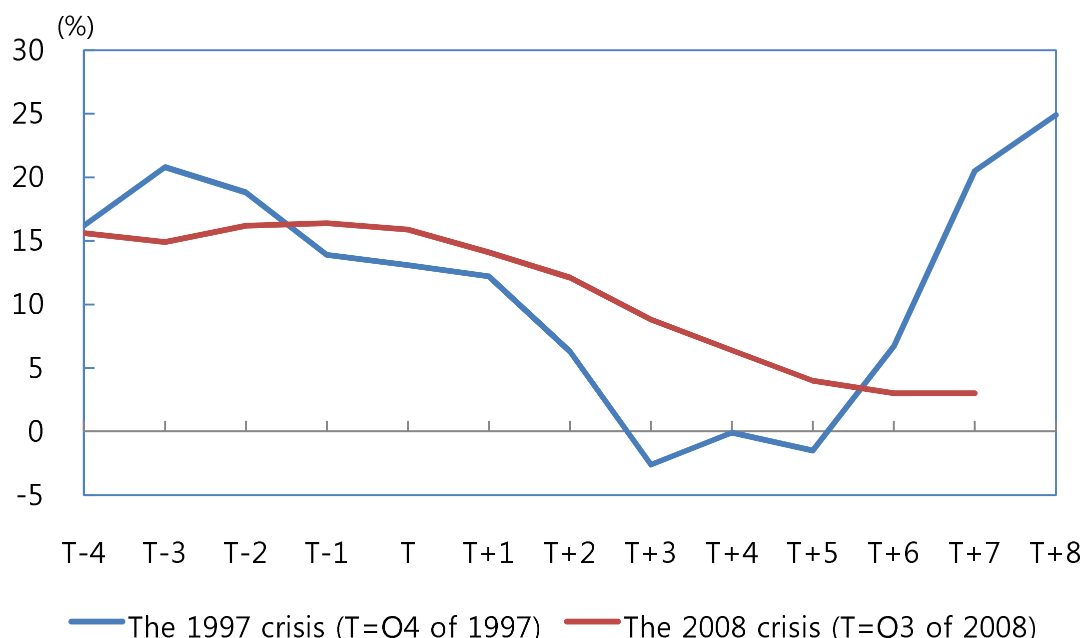

The second factor underlying the differences in recoveries from the two crises might be the fact that both the financial and operational sides of the corporate sector were strengthened notably through comprehensive and aggressive implementation of corporate restructuring after the 1997 crisis. In particular, the average debt-to-equity ratio of the Korean

[10] Kocchar, Kalpana, Prakash Loungani, and Mark R. Stone (1998), "The East Asian Crisis: Macroeconomic Developments and Policy Lessons," *IMF Working Paper*, WP/98/128

corporate sector has fallen remarkably since 1997. The government's willingness to allow large conglomerates to fail, including the Daewoo Group in 1999, also gave a strong wake-up call to corporations to manage their risks more cautiously. In consequence, corporate sector efforts to cope with the 2008 crisis were remarkably successful compared to those during the 1997 crisis. In fact, the number of defaulting firms was markedly less during the 2008 than during the 1997 crisis, as can be seen from Graph 4.

The third underlying factor might concern Korean financial system soundness. The domestic financial markets and financial system were relatively more resilient during the 2008 crisis compared to during the 1997 crisis. Whereas many merchant and commercial banks had to be bailed out or liquidated during the course of the 1997 crisis, there have not been any significant bail-outs since the 2008 crisis erupted. Bank credit increased throughout the 2008 crisis, whereas there was a marked shrinkage of bank credit at the initial stage of the 1997 crisis, as can be seen from Graph 5.

**(Graph 5)** **Trends of Rates of Increase in Loans by Deposit Money Banks**

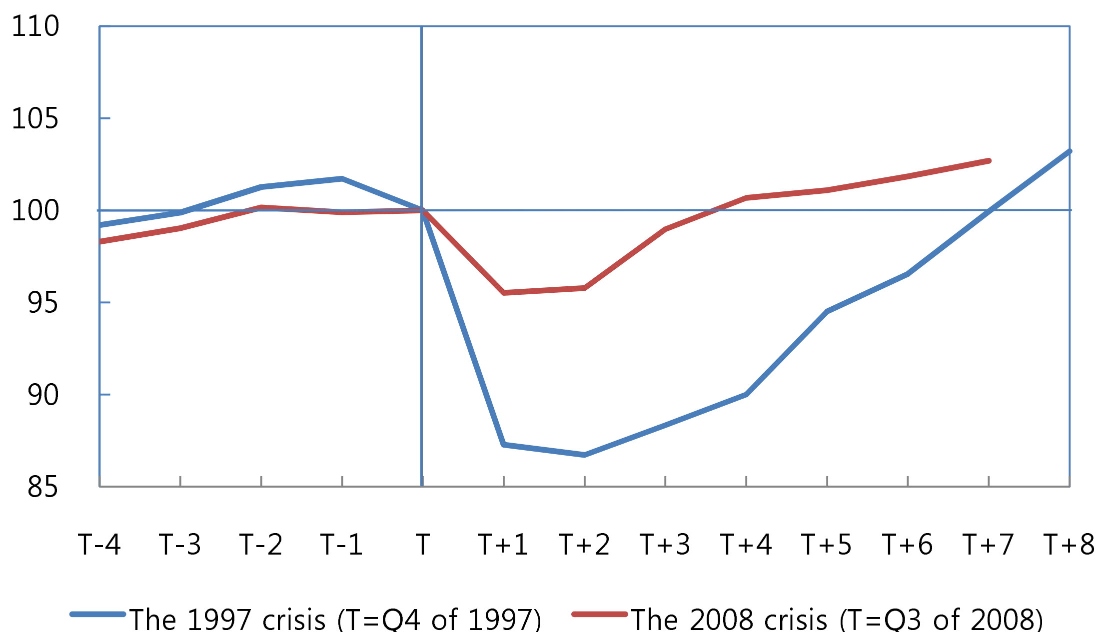



Another interesting feature observed from comparing the processes of recovery in economic activity following the two crises is that the slope of recovery was a little steeper in the case of the 1997 crisis than that of the 2008 crisis, as shown in Graph 3. Although it must be recognized that the recovery of economic activity after 2008 is still ongoing, the process of recovery appears to be exhibiting a little more moderate pace so far compared with that after the 1997 crisis.

There might be a couple of potential factors explaining the more moderate pace of recovery since the 2008 crisis. To a certain extent, it may reflect cyclical factors, in that demand conditions in the global economy, notably in advanced countries including the United States, have been much weaker than after the 1997 crisis. Alternatively, this may reflect structural factors, in that the potential growth of both the global and the Korean economies might have deteriorated in the aftermath of the 2008 crisis. In the context of the

domestic economy, one potential explanation for this might be the relatively less steep recovery of private consumption since the 2008 crisis. As can be seen from Graph 6, the pace of the private consumption recovery was much more gradual after the 2008 than the 1997 crisis. This may reflect the weight of the higher level of household debt on the private consumption recovery after the 2008 crisis, as the ratio of household debt relative to disposable income has risen sharply -- from 82% in 1998 to 149% in 2007. At the moment, however, it looks premature to judge which factor is mainly responsible for the differences in the paces of recoveries. It remains to be seen which factor dominates going forward.

**(Graph 6)** **Comparison of Changes in Private Consumption Before and After the Crises**



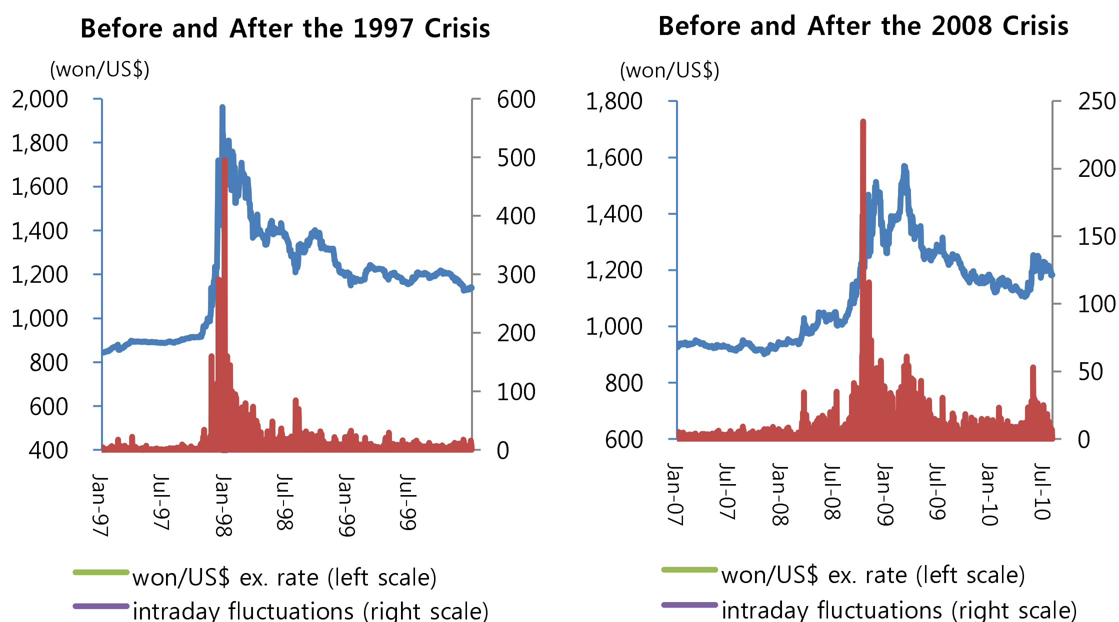

Regarding the recoveries in the Korean foreign exchange markets following the two crises, it is observed that the one following the 1997 crisis appears to have been relatively quicker than that after the 2008 crisis. Graph 7 clearly shows that the pace of the foreign exchange market recovery after the 2008 crisis was far behind that after the 1997 crisis, in terms of both the extent of the strengthening of the won and its volatility.

This is a bit puzzling, because Korea had accumulated much more international reserves prior to the 2008 crisis than it held prior to 1997, and the exchange rate has also become much more flexible compared with the case in 1997. In fact, Korea's international reserves relative to GDP had increased from 6.1% at the end of 1996 to 37.8% at end-September 2008. Regarding the effectiveness of large hoarding of international reserves as a buffer against external shock, there is no doubt that Korea's international reserves did play an important role in tackling the global shock in 2008. However, it is worth mentioning that during the 2008 crisis, a "fear of losing international reserves" appears to have also been at work. Reportedly, there was a widespread perception during the 2008 crisis, among foreign exchange market participants, that the authorities would refrain from using the international reserves beyond a certain level. Aizenman and Sun (2010)[11] also found evidence that this

[11] Aizenman, Joshua and Yi Sun (2010), "The financial crisis and sizeable international reserves: From 'fear of

"fear of losing international reserves" seems to have played a key role in shaping the actual use of international reserves by emerging economies during the 2008 crisis, reflecting their concerns that dwindling of their international reserves might induce more destabilizing speculative flows. Meanwhile, on the other hand, the Korean experience during the 2008 crisis also proved clearly that exchange rate flexibility did function as a key buffer insulating the economy from global shock.

**(Graph 7) <u>Foreign Exchange Markets Developments Before and After the Crises</u>**




It is nevertheless far from clear why the process of recovery in the foreign exchange market after the 2008 crisis was slower than that after the 1997 crisis. One possible explanation might be the fact that international financial market conditions were more favorable during the post-1997 crisis than after the 2008 crisis. Another possible explanation might be the differences in the scales of the crises and in the ranges of the countries affected. In particular, since the dislocation of foreign exchange markets during the 1997 crisis stemmed from financial fragilities in both the domestic financial and corporate sectors, the situation improved markedly once foreign investor confidence in domestic financial and corporate sector prospects strengthened with the tangible materialization of structural reforms of these sectors. In contrast, since the foreign exchange market dislocations in Korea after the collapse of Lehman Brothers stemmed to a greater extent from a credit crunch in the international financial markets (although the weaknesses of domestic financial institutions, including maturity mismatches of their foreign currency-dominated assets and liabilities did also play a certain role), the continuous uncertainties governing these markets in a post-crisis period led to a relatively slower foreign exchange market recovery in Korea.

floating' to the fear of losing international reserves'?", Department Working Paper, UC Santa Cruz, May.

Finally, looking at the recoveries of the domestic financial markets after the two crises, it is found that they recovered much more rapidly after the 2008 than the 1997 crisis. During the 1997 crisis, severe externalities in the domestic financial markets were generated by heightened uncertainties concerning financial system resilience and the severe asymmetry of information as to the quality of financial institutions as well as their customers. These externalities brought about a rash of bank runs and severe credit crunches. In this process, the business licenses of seventeen merchant banks and four securities companies were revoked, two investment trust companies were acquired by remaining investment trust companies, and five undercapitalized commercial banks were taken over through P&As by five sound banks. There were also a couple of major after-tremors in the form of financial turbulence, including the turmoil in the corporate bond markets[12] right after the collapse of the Daewoo Group in July 1999 and the subsequent credit card company debacle in early 2002.

In contrast, the domestic financial system turned out to be more resilient and the financial markets recovered much faster following the 2008 crisis. There were consequently also no major bail-outs or liquidations of financial institutions, and the credit crunch that arose was much milder. There has also so far not been any significant after-tremor in the form of financial turbulence since outbreak of the 2008 crisis, although it remains to be seen what will happen down the road.

There appear to be several reasons why the domestic financial system had become more resilient and the financial markets recovered relatively rapidly after the 2008 crisis. First of all, since the 2008 crisis did not stem from weaknesses of the Korean financial system, the domestic financial system was better able to cope with a global systemic threat. Second, the financial system in general has become much sounder since the implementation of rigorous financial sector restructuring in the late 1990s. In this context, it must be stressed that the authorities' actions to allow troubled financial institutions to fail after the 1997 crisis have significantly changed the risk-taking behaviors of Korean financial institutions. Financial institutions have become keener in their risk management. Third, more transparency of the financial system in general and in the authorities' policy responses has contributed effectively to the containment of externalities associated with uncertainties and asymmetric information caused by global systemic shock. Finally, the authorities' timely, pre-emptive actions proved very effective in insulating the domestic financial system from the global shock and stabilizing the markets earlier than anticipated.

[12] For more information about turmoil in the corporate bond market, please refer to Kim, Sungmin and Jae Hwan Park (2002), "Structural change in the corporate bond market in Korea after the currency crisis", *BIS Paper*, No. 11

# Ⅳ. Lessons from the two crises

Although the recent two crises resulted in devastating impacts on the economies of the affected countries including Korea, they also provided excellent opportunities for both policymakers and academics to identify important issues needing study and discussion going forward. Some of the important issues that require further study include how the economy now works under the growing interaction between its real and its financial sectors; how a crisis in one country can spill over to other countries in our globally integrated financial markets and economies; how both domestic and global systemic risk can be identified ex ante; what measures are effective for preventing crisis down the road; and to what extent the premier forums like the G20 can cooperate and coordinate with each other to tackle global systemic risks effectively. Most of these issues are currently being studied and discussed intensely by policymakers and academics around the world.

Bearing these issues in mind, this section attempts to derive some important lessons in light of the Korean experiences of the recent two crises. Although there are a great many lessons based on Korea's experiences, it might be more useful to focus on some of the more important ones. The first lesson we have learned is that no single country can effectively insulate its economy from global systemic threat. This is particularly the case for highly open economies like Korea. The Korean experience during the 2008 crisis clearly demonstrated that the rising degree of both financial and economic openness constitutes an important channel for cross-border crisis contagion. Cross-border crisis contagion can be transmitted through links between real economies, between financial markets, and between financial markets imperfections associated with asymmetric information including herding behavior on the part of international investors. This provides a strong justification for strengthening the bilateral and multilateral surveillance of systemically important countries at the global level, with particular emphasis on the financial sector. This also calls for closer cooperation and coordination among the major systemically important countries in identifying and tackling a global systemic threat.

The second lesson is that maintaining the financial stability of an individual country in tranquil times proves a crucial factor in reducing the size and duration of damage incurred from crisis contagion. This was clearly demonstrated by the Korean experiences of the two crises. In the context of maintaining financial stability of the economy, it must be emphasized that maintaining soundness of both the financial and the corporate sectors is of utmost importance, since these sectors are two sides of the same coin, namely the asset and liability sides of the financial system.

The task of maintaining financial stability therefore requires not only preventing financial imbalances including asset bubbles, but also implementing corporate restructuring on a regular basis -- including through the elimination of nonviable zombie firms. It also calls for bolder action by the authorities to allow liquidation of troubled financial institutions in an orderly manner. As mentioned earlier, this action could change the risk-taking behaviors and risk management of financial institutions significantly. However, it is important to recognize how painful and disruptive it is to liquidate financial institutions during a crisis, as evidenced by the Korean experience during the 1997 crisis. This has an important implication for the current discussions in the G20 on mitigating the moral hazard risk associated with systemically important financial institutions. There is in addition a strong case for trust

building at the individual country level in tranquil times, through enhancement of financial system transparency. This could reduce the damage incurred by externalities associated with asymmetric information generated by a crisis.

The third lesson is that emerging economies are very vulnerable to the capricious nature of international capital flows. This is particularly the case for highly open emerging economies like Korea. As evidenced by the two crises, foreign currency liquidity risk turned out to be a systemic risk in Korea. To a large extent, this problem stems from the "original sin" of many emerging economies, whose currencies are not convertible. However, it is often exacerbated by the heavy reliance on foreign borrowings, and the maturity mismatches between foreign currency-denominated assets and liabilities of individual countries. The Korean experience during the 2008 crisis highlights the dangers of foreign currency borrowing, as well as of foreign currency asset and liability maturity mismatches. It is in this regard crucial that foreign liquidity regulation and stress testing exercises take this systemic dimension of liquidity risk into account at the individual country level.

The fourth lesson is that the hoarding of abundant international reserves and maintaining of greater foreign exchange rate flexibility prove to be very effective in insulating an individual country from financial crises in general. In fact, the 2008 crisis illustrated how valuable ample international reserves can be during financial turbulence on a global scale, especially in emerging economies with large external exposures such as Korea. Greater exchange rate flexibility also proved very effective in 2008 in insulating economies from external systemic threat.

The fifth lesson that the Korean experience in the 2008 crisis clearly also showed is that greater volumes of international reserves and flexible exchange rates are insufficient for alleviating foreign exchange market tension stemming from a global crisis. As mentioned earlier, despite its ample accumulation of international reserves there is evidence that a "fear of losing international reserves" was at work in Korea during the 2008 crisis, resulting at a certain stage in difficulties in mobilizing this self-insurance as a tool in response. In this context, it must be mentioned that the Bank of Korea's foreign currency swaps with the Federal Reserve, the Bank of Japan and the People's Bank of China supplemented Korea's international reserves -- bolstering both market confidence and the provision of foreign currency liquidity. Regarding flexible adjustment of exchange rates, meanwhile, in Korea's recent experience it did not eliminate the excessive demand for US dollars in the face of the global dollar shortage caused by the global financial crisis. This is particularly the case for many emerging economies such as Korea, where foreign exchange markets are not well-developed and very thin.

Consequently, the Korean experiences clearly present a strong case for the establishment of robust financial safety nets at the global level. Given the remarkable expansion in the scale of international capital flows, and the large quasi-fiscal costs accompanying maintenance of huge foreign exchange reserve volumes, self-insurance by means of international reserve accumulation is obviously not a sustainable solution. More efforts should therefore be focused on improving the existing instruments of financial safety nets, and on further diversifying instruments to tackle countries' temporary liquidity problems. In this process, it should be mentioned that the issue of moral hazard needs appropriate addressing. It should also be emphasized here that there is no one-size-fits-all solution, since each country's preference for each instrument will depend upon its own circumstances. We

consequently need to explore from scratch the feasibility of other various instruments. Such tools could include the expanded use of swap arrangements between central banks, and the greater integration of regional arrangements such as Chiang Mai Initiative Multilateralisation with the work of the IMF.

Finally, the Korean experiences clearly demonstrate the effectiveness of timely and decisive implementation of expansionary monetary and fiscal policy in helping crisis-hit economies to recover, and the importance of maintaining sound economic fundamentals, including soundness in public finance, during tranquil times. In general, accommodative macroeconomic policy stances will be necessary in a crisis situation, in order to minimize the negative spill-over impacts from the crisis onto the real sector. During the 1997 crisis, however, the Korean government did the opposite by tightening its macroeconomic policies, as the priority was on stabilizing the foreign exchange markets and not on minimizing the negative impacts on the real sector. The differences in the Korean policy responses between the 1997 and the 2008 crises highlight the constraints on macroeconomic policies that many emerging economies have faced in crisis situations. That is, emerging market economies cannot mobilize accommodative macroeconomic policies in response to crises if the crises originate from domestic imbalances and the confidence of foreign investors is thus at stake. As mentioned earlier, the Korean economy in 1997 was at the epicenter of the crisis, which made it difficult to mobilize accommodative monetary and fiscal policy at the initial stage. Macroeconomic policy tightening in the 1997 crisis acted as an important factor delaying the recovery in economic activity. In contrast, the implementation of expansionary monetary and fiscal policy from the inception of the 2008 crisis, based upon the country's sound economic fundamentals, paved the way for a relatively quicker recovery in Korea.

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