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Responses of the Korean Economy to the Global Crisis: Another Currency Crisis?

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Abstract

This paper overviews the responses of Korea to the recent global crisis. Being an open economy, Korea experienced abrupt capital outflow and drastic collapse in export demand, but managed to recover thanks to relatively sound fundamentals achieved by the restructuring process since the 1997~1998 crisis.

1. Introduction

The crisis during the 2008~2009 period was truly *global*. Enormous impacts were spread throughout the whole world. Reinhart and Rogoff (2009, Box 16.1), for example, identified the recent crisis as one of the two global crises (the other being the Great Depression) from the past two centuries of financial data.

Acknowledgments

I am grateful to Hyun-Wook Kim, Kyung-Mook Lim, and the fellows in the Macroeconomic Policy Department of KDI for productive discussions. I also thank Kyu-sook Han at KDI for excellent research assistance. All remaining errors are, of course, solely mine. This paper was prepared for the 2010 EWC/KDI Conference on “Global Economic Crisis: Impacts, Transmission, and Recovery” in Honolulu, Hawaii, on August 19~20. Many parts of this paper reiterate the points raised by Cho (2009).

It was no surprise that Korea, too, was severely hit by the crisis. Korea was particularly susceptible to global shocks since its financial and export sectors were opened. Asset prices plummeted and exports collapsed. A drastic economic contraction was followed, and even a trauma from the financial crisis in 1997 resurfaced again. Sentiments in the market were propelled to the extreme and the *Economist* (February 26, 2008) ranked Korea at the fourth (following after South Africa, Hungary and Poland) on the list of most likely emerging economies to become the next victim of the global crisis. Yet, Korea managed to recover relatively early at a relatively strong pace.

In these respects, Korea is an interesting country to study: it is an open economy subject to global shocks, and has the experience of comparable crisis in its past to the recent one. By examining Korea's adjustment to the recent global crisis, this paper seeks some clues to the transmission mechanism of global shocks to emerging economies and the critical factors of host countries for either mitigating or amplifying the effects of external shocks.

The paper is organized as follows. Section 2 sketches development of the recent crisis in Korea and compares it with the 1997~1998 crisis period. Section 3 examines, in more details, the two transmission channels, financial and export markets. Section 4 explains Korea's macro-policy reactions to the crisis, and compares them with those during the 1997~1998 crisis. Section 5 concludes with an emphasis on the roles of fundamentals in mitigating the effects of external shocks.

2. The Korean Economy during the Global Crisis Period

2.1. Crisis and Recovery: A Brief Sketch

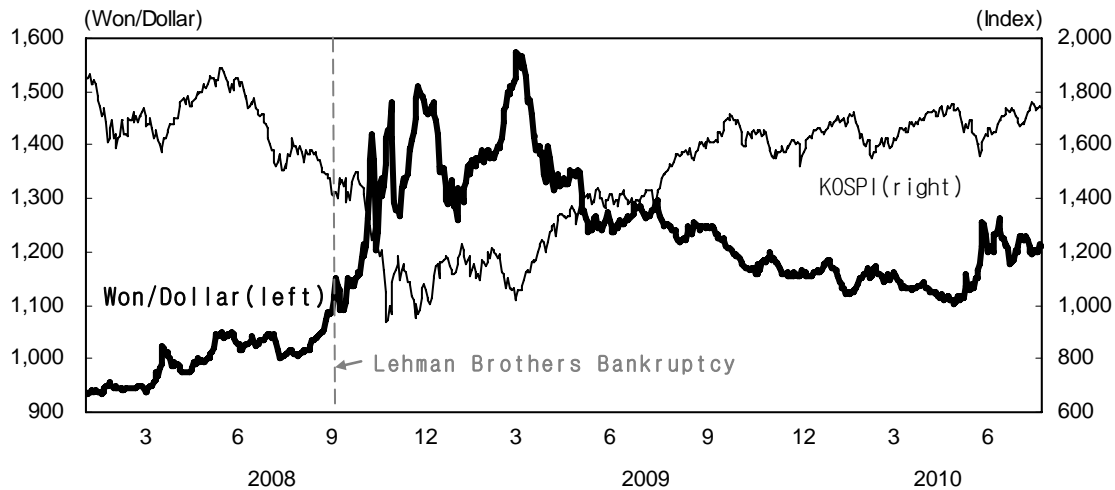
The Korean economy had maintained a reasonable pace of stable growth until the 3rd quarter of 2008. Domestic demand had gradually slowed mainly due to the soaring oil prices and the resulting loss of purchasing power, but exports had maintained a solid expansion. In fact, the 3rd quarter's export increased by 27% compared to that in the same quarter of the previous year, despite the global slowdown since the sub-prime mortgage crisis in the U.S.

However, the Lehman Brothers bankruptcy filing in September and the subsequent panic in the global financial market changed the whole environment. Enormous shocks hit Korea through the open doors of financial and export markets. The exchange rate depreciated from around 1,100 won/dollar to over 1,500 won/dollar, and foreign reserves declined from US\$240

billion at the end of September to US\$201 billion at the end of December. Other asset markets also responded. For example, stock values collapsed by approximately 30% by the end of the year 2008. (See Figure 1)

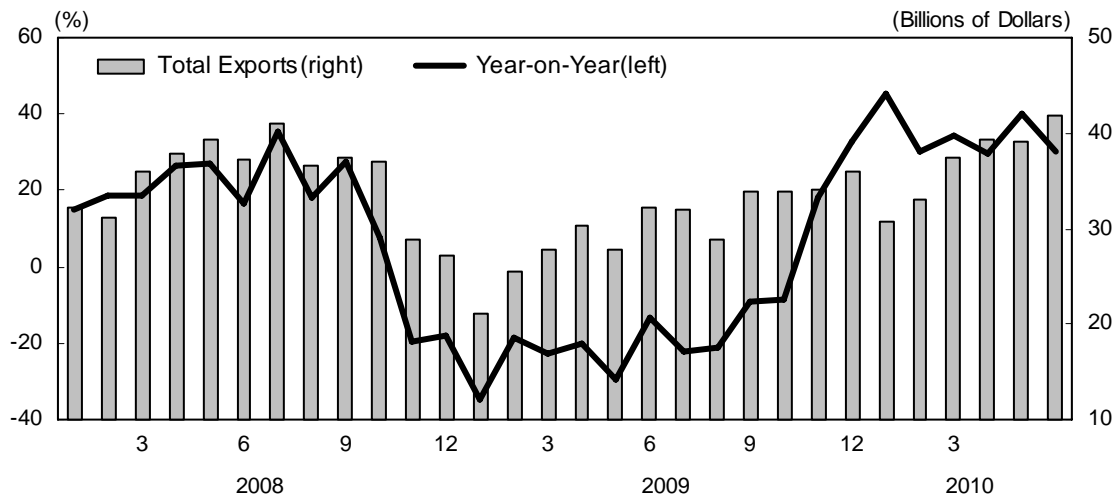
Korea’s export also collapsed at an incredible pace. The year-on-year growth rate of export declined from 27.6% in September to 7.8% (-2.6%, month-to-month) in October and further to -19.5% (-22.3%, month-to-month) in November. (See Figure 2) This collapse in export revenue raised concerns over the Korea’s capability to earn hard currencies and aggravated investor sentiments in the currency market that was already unstable.

[Figure 1] Exchange Rate and Stock Price Index



Source: Bank of Korea.

[Figure 2] Export

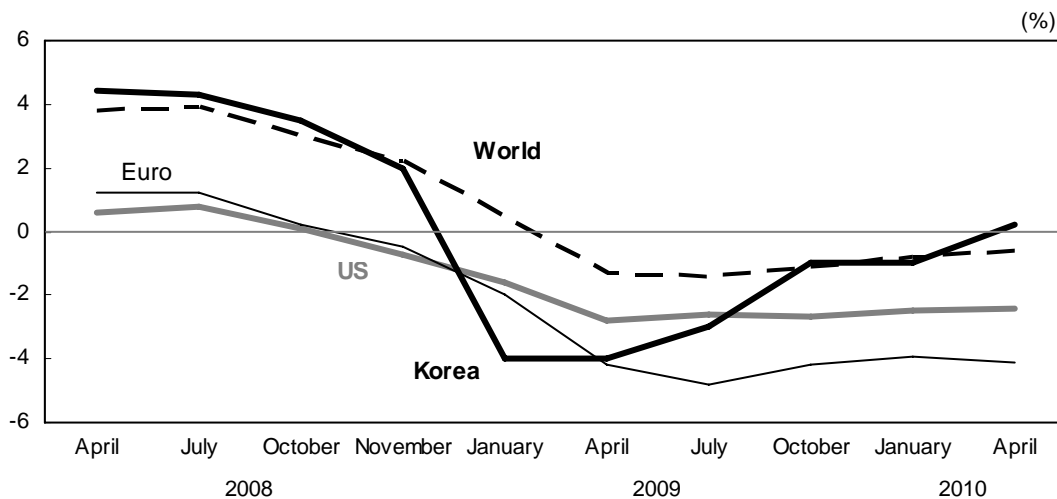


Source: Korea Customs Service.

International forecasting institutions rushed to join the march of downgrading Korea's outlook. For example, the IMF revised its forecast on Korea's 2009 growth from +2.5% in November 2008 to -4.0% in January 2009 --- a 6.5%p drop within just 2 months! (See Figure 3) However, this was not particularly dramatic at that moment, compared to the revisions of major investment banks. And most of these forecasts shared a common prediction that Korea (as well as other East Asian economies) would contract more than crisis-originating countries such as the U.S.

To the surprise of many commentators, however, the Korean economy began to recover from the 2nd quarter of 2009. After the final jitters in March, the financial market began to stabilize. Also in trade sectors, some recovery signals of export demand were detected. Having paused in the 1st quarter, the Korean economy began to recover at a relatively rapid pace, achieving more than 8% growth in just one year period until the 1st quarter 2010. Whenever relevant statistics were released, international institutions continued to revise their "forecasts" upward, until the Korea's official annual growth rate of 2009 was announced as 0.2%.

[Figure 3] Revisions of IMF Forecasts on 2009 Growth Rates



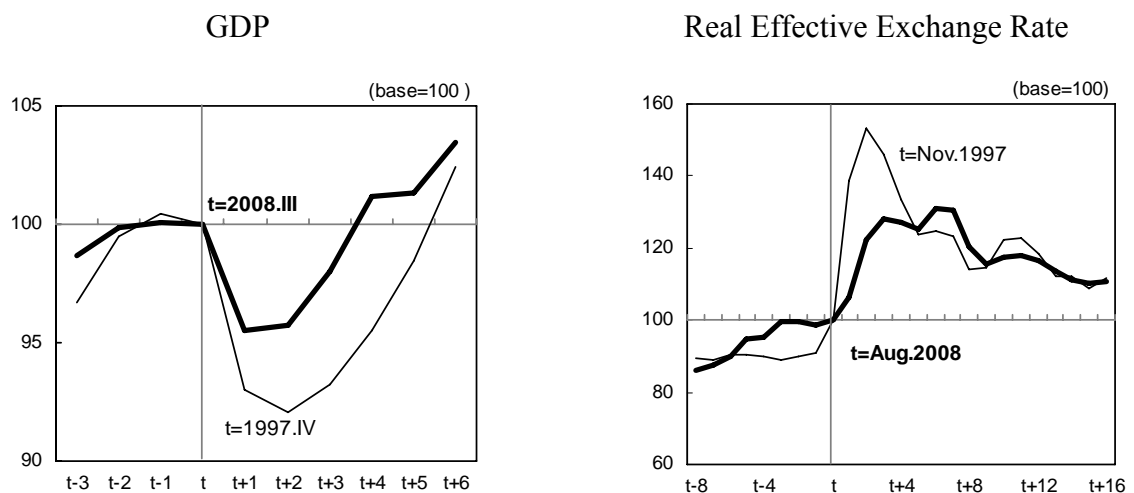
Source: IMF *World Economic Outlook*.

2.2. Comparison with the 1997~1998 Crisis: A First Look

The early recovery of Korea may have been a surprise to many forecasters, particularly those who had memories of the deep and painful crisis triggered in 1997. On surface, the two crises looked alike: asset values and GDP collapsed simultaneously, though the recent crisis was

slightly less severe in terms of magnitude and duration. The initial adjustments in the currency value, stock price index and GDP during the recent crisis were approximately two thirds of those in 1997. (See Figure 4) The duration of crisis --- though the definition of “crisis” is always elusive --- was also shorter this time: it took 6 months this time, compared to 12 months during the previous crisis, until the currency restored to the value of 20% lower than its pre-crisis level, and also for the stock price index to restore to its pre-crisis level; and it took 4 quarters this time, compared to 6 quarters during the previous crisis, until GDP restored to its pre-crisis level.

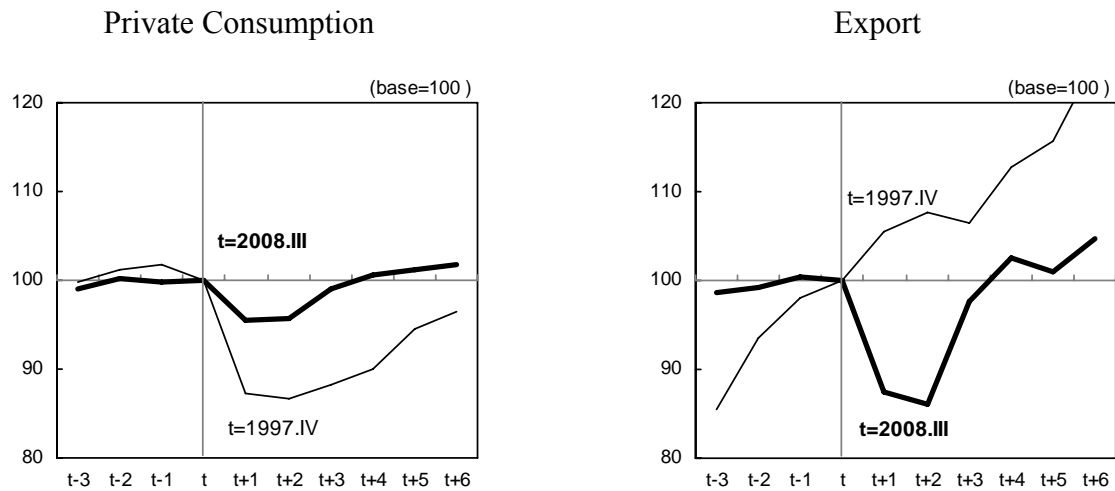
[Figure 4] Similarities of the Recent Crisis with the 1997~1998 Crisis



Source: Bank of Korea.

The fundamental difference between the two crises, however, can be found from the responses of aggregate demand components. (See Figure 5) During the 1997~1998 period, domestic demand drove the collapse of GDP, while export demand continued to expand. This time, in contrast, it was external demand that triggered the crisis, while the contraction in domestic demand was relatively mild. This stark contrast in the responses of aggregate demand components clearly demonstrates that the sources of crises were different. Whereas the 1997~1998 crisis was triggered by the *implosion* of domestic markets, the recent crisis was mainly triggered by the *explosion* of foreign markets.

[Figure 5] Differences of the Recent Crisis from the 1997~1998 Crisis

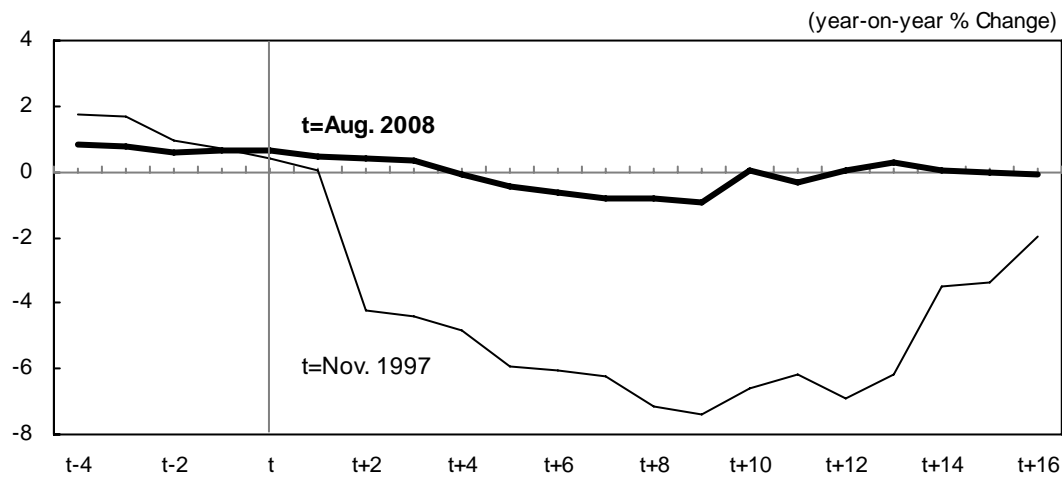


Source: Bank of Korea.

This difference in the two crises was translated into the difference in job loss statistics --- probably the most direct single indicator of society's suffering from an economic crisis. (See Figure 6) It has been shown that most short-term employment fluctuation in Korea is driven by domestic demand rather than export.¹ As consistent with this finding, the job-loss rate during the recent crisis was contained within 1% (on a year-on-year basis) at its peak, May 2009, which was far milder than 7.4% in August 1998.

In short, the two crises of Korea appeared similar, but their sources and impacts were quite different. The foreign-driven crisis in 2008 ended up incurring less pain than the 1997~1998 crisis that was caused by weak domestic fundamentals, particularly in financial markets.

¹ Shin and Kim (2008), for example, finds that domestic demand, particularly private consumption, is significantly correlated with employment. This finding, though subject to simultaneity bias critiques, makes sense in that export (or manufacturing) industries are mostly capital intensive, while service industries are labor intensive.

[Figure 6] Employment Growth Rate: Recent Crisis and the 1997~1998 Crisis

Source: National Statistics Office of Korea.

3. Two Channels of Crisis Transmission

3.1. Financial Market: Currency Crisis, but Not a Banking Crisis

3.1.1. Currency and Domestic Credit Markets

Financial market was the first channel that directly transmitted the global crisis. Immediately after the Lehman Brothers bankruptcy, panicked financial institutions rushed out to secure liquidity from anywhere possible in the world. Korea, which had accumulated short-term foreign debts since 2005, was particularly susceptible to this liquidity shock. (See Figure 7) Despite having the sixth largest foreign reserves in the world, Korea's ratio of short-term foreign debt to reserves exceeded those of other emerging economies in September 2008. Being an emerging economy with no hard currency, Korea was swept into the strong current of global financial panic, and experienced an abrupt and massive capital outflow. The size of financial capital withdrawn on net for just one month of October 2008 was US\$25.5 billion (more than 3 percent of annual GDP), which was far larger than US\$6.4 billion in December 1997, the worst month during the 1997~1998 crisis.² As a result, the Korean won lost its value vis-à-vis the US dollar by more than 30% and foreign reserves were reduced by approximately 20% during the

² More than 90% of this capital outflow, US\$ 25.5 billion, was accounted for by the reduction in short-term debts, while equity market exhibited net capital inflow.

three-month period from September to December 2008. By any working definition of the literature, this event should be classified as a currency crisis.³ The stock market's adjustment during the same period, more than 20%, can also be classified as a crisis by some definitions.⁴

Despite the crises in asset markets, however, Korea's credit market was not greatly affected by, or largely immune to, the global crisis. Bank credits continued to increase, and no evident spikes were observed in either the ratio of non-performing loans or the dishonored ratio of promissory notes. (See Figure 8) No major banks were bailed out by the government and no symptoms of bank-runs were detected. By any working definition of the literature, it was far from a banking crisis.⁵ In fact, this was the most marked difference from the 1997~1998 crisis period when the whole financial system melted down.⁶

³ The empirical literature's definition of "currency crisis" ranges from a narrow one focusing on devaluations of nominal exchange rates (Edwards and Montiel (1989) and Frankel and Rose (1993), among others) to a broader one that also considers reductions in foreign reserves and hikes in interest rates (Eichengreen, Rose and Wyplosz (1996) and Sachs, Tornell and Velasco (1996), among others).

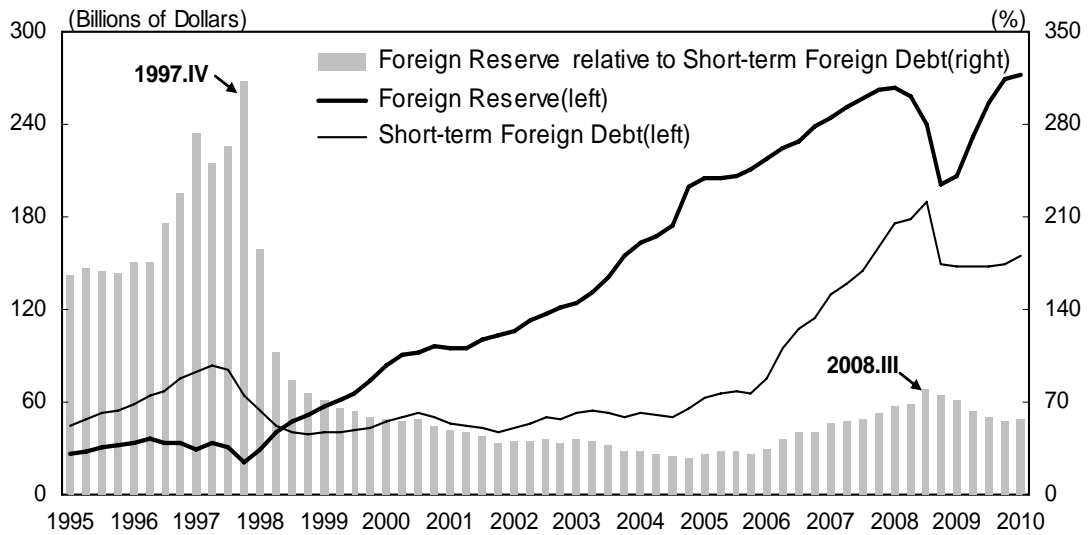
⁴ See, for example, Reinhart and Rogoff (2009).

⁵ Caprio and Klingebiel (1996) define a period of "financial distress" as "when a significant fraction of the banking sector is insolvent but remains open," and Calomiris and Gorton (1991) define a "financial panic" as "when bank debt holders suddenly demand their debt claims into cash to an extent that the banks are forced to suspend the convertibility of their debt into cash." Demirguc-Kunt and Detragiache (1998) define "systemic crisis" as the one in which (i) NPLs was at least 10 percent of total assets; (ii) cost of rescue operations was greater than 2% of GDP; (iii) banking problems resulted in a large-scale nationalization of banks; and (iv) emergency measures, such as deposit freeze, prolonged bank holidays, generalized deposit guarantees were introduced.

⁶ After the 1997~1998 crisis, 5 out of 33 major banks were closed and 10 were merged until the end of 2004. A more drastic restructuring was carried out for small banks (called "merchant bank corporations"), as a result of which only 2 out of 30 survived, while 22 were closed and 7 were merged, during the same period. For this restructuring, 64 trillion won (almost 13% of GDP) of public money was mobilized in 1998, and 40 trillion won (almost 7% of GDP) was added in 2000. See the Korea's Committee for Public Fund Management (2001).

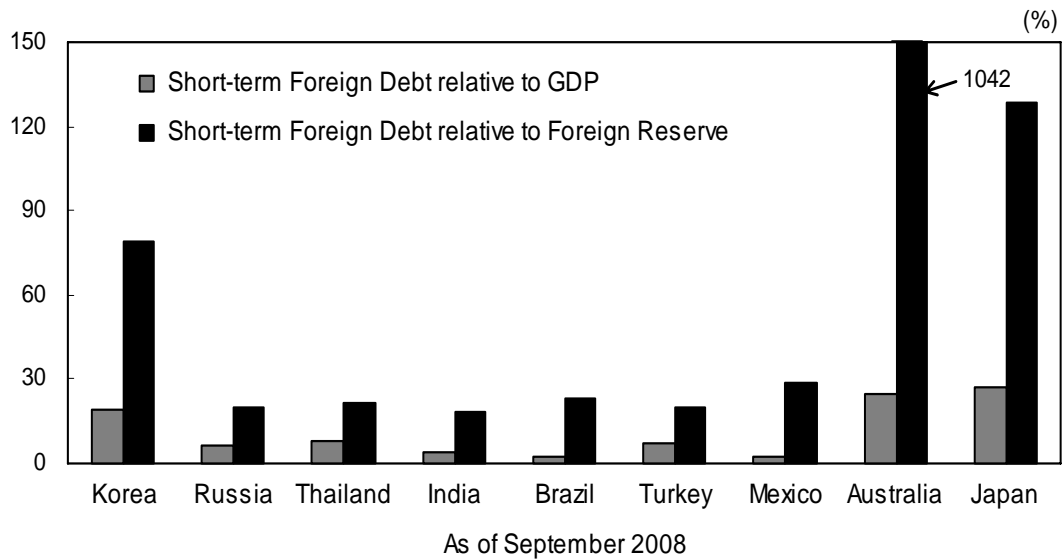
[Figure 7] Short-term Foreign Debts and Foreign Reserves

A. Trends



Source: Bank of Korea.

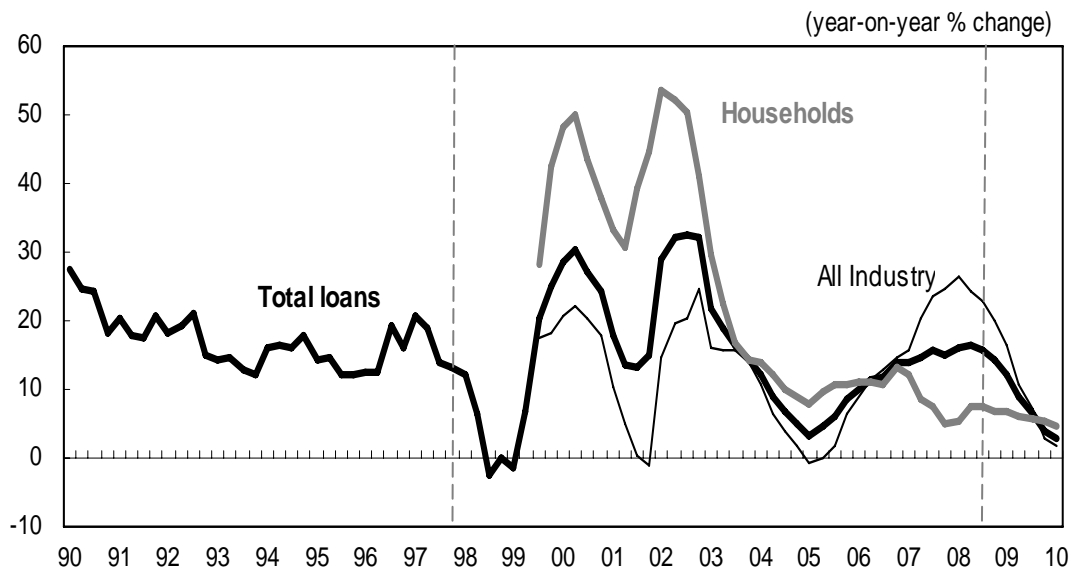
B. Comparison with Other Countries



Source: BIS, IMF, World Bank, Global insight.

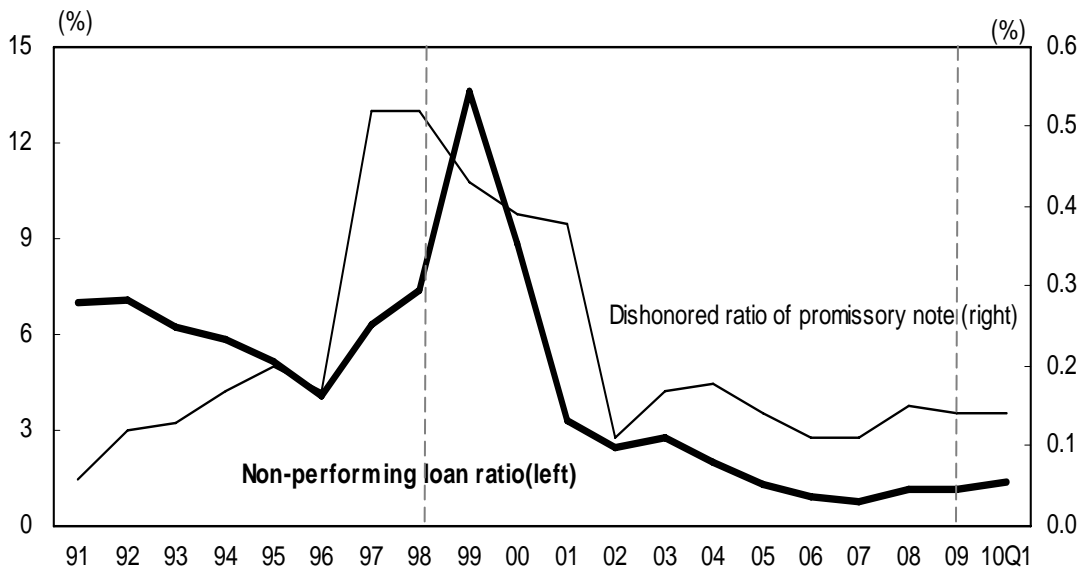
[Figure 8] Domestic Credit Market

A. Loan Growth Rates of Depository Banks



Source: Bank of Korea.

B. Default Rates



Source: Financial Supervisory Service of Korea, Bank of Korea.

3.1.2. Financial Policy Reactions

Many efforts of the government contributed to relieving the tensions in the financial market. First, the government announced to provide temporary guarantees (until the end of June 2009, later extended to the end of December 2009) on rolled-over short-term foreign debts of commercial banks, as many other governments did at that time. Although no banks ended up relying on government money, this policy must have helped mitigate concerns of international investors. The government also raised 10 trillion won (1% of GDP) of funds for stabilizing bond markets (though only 5 trillion won was used until dissolved) and increased capital bases of public agencies for credit guarantees. In many instances, the government allegedly relied even on moral suasions for commercial banks to roll over the loans to small and medium sized enterprises. The Bank of Korea also kept pace with the government by extending its operating instruments to risky assets such as commercial bank debentures.

However, it is noteworthy that a similar menu of policies was taken in response to the 1997~1998 crisis, but Korea nonetheless plunged into a severe banking crisis. In this respect, critical factors that protected the Korea's banking system must have lied somewhere else.

3.1.3. Buffers to Absorb the Shocks

Typically, a currency crisis is transmitted into a banking crisis—a twin crisis—through the following channels:

- (i) sudden reversal of foreign currency liquidity flow →
- (ii) shrinkage of bank assets in public (when the exchange rate is pegged) or private sector (when the exchange rate is floated) →
- (iii) decrease in credit supply and a surge in default →
- (iv) deterioration of banks' capital bases →
- (v) vicious cycles of credit crunch between banks and borrowers.

Every single step toward a twin crisis was observed during the 1997~1998 crisis, but the Korean economy in 2008 was equipped with better buffers at most junctures.

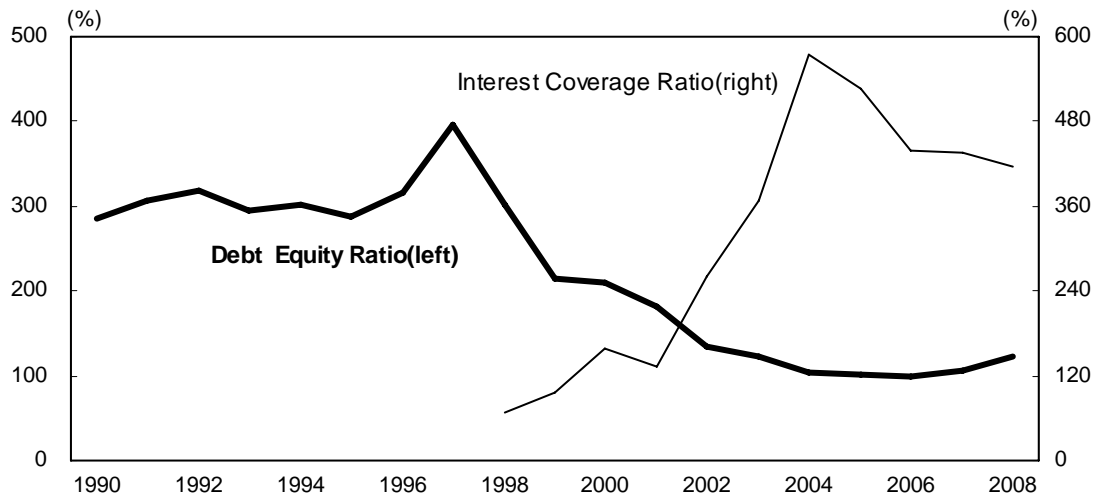
First, an ample amount of foreign reserves helped dampen the impacts of a sudden reversal in capital flows on private banks' assets. Although the massively accumulated short-term foreign debts made the Korean economy fragile to a foreign liquidity shock, the amount of foreign reserves was still large enough to cover the whole short-term foreign debt. For example,

the aforementioned government guarantee on foreign debts would not have been regarded as credible by the market, had foreign reserves not been sufficient as in 1997.

The way to supply foreign reserves was also improved. Unlike in 1997, however, the government did not waste foreign reserves this time by committing to a certain level of *price* (i.e., the exchange rate). Instead, the government secured additional liquidity via currency swaps with the U.S. and other countries, and supplied a manageable *quantity* of reserves within a closed circuit of the banking sector by auction. That is, instead of fighting the market to protect the currency value, the government concentrated its efforts on protecting the banking system by supplying foreign currency liquidity required to reduce the accumulated leverage. It was not a sheer coincidence that the amount of decrease in foreign reserves during the crisis period from September to December 2008, approximately US\$40 billion, was almost the same as that of short-term foreign debts.⁷ This approach to the foreign exchange market seems to have been effective in dampening the adverse impacts of capital outflows on the banking sector, while honoring the automatic stabilizing role of the exchange rate (see below).

Second, sound financial positions of firms, particularly large corporations (or *chaebols*), were crucial in absorbing the impacts from the banking system to real economy. Since the 1997~1998 crisis, Korean firms had carried out drastic restructuring and their financial stability had been significantly improved. As an example, the average debt-to-equity ratio of the corporate sector fell from over 400% in 1997 to around 100% in 2008, and the interest coverage ratio rose from barely over 100% in 1997 to over 500% in 2008. (See Figure 9) This improvement in financial buffers greatly helped Korean firms to weather the credit constraints and demand contraction posed by the global crisis.

⁷ From September to December in 2008, short-term debts were reduced by US\$39.7 (from US\$186.6 to US\$ 149.9) and foreign reserves were reduced by US\$38.5 (from US\$ 239.7 to US\$ 201.2).

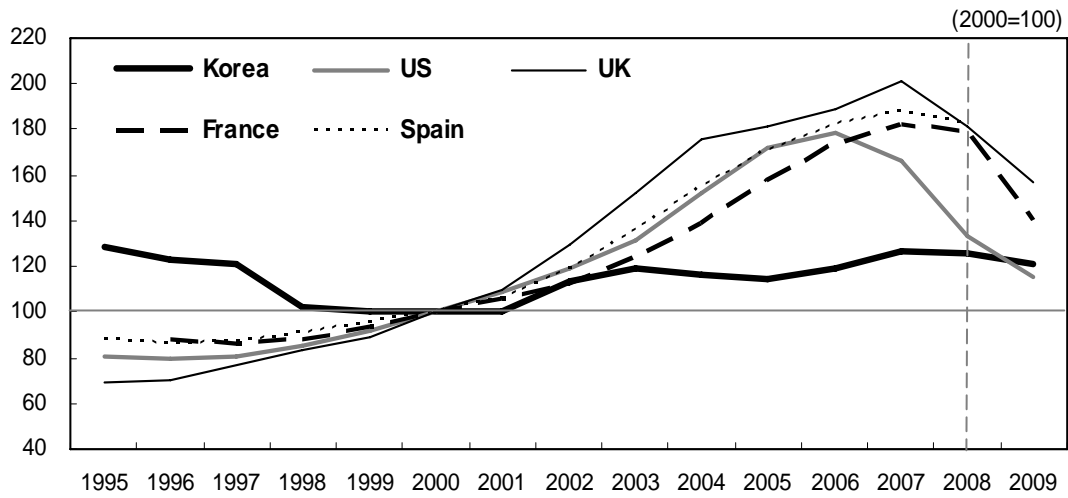
[Figure 9] Financial Buffers of Korean Firms

Source: Bank of Korea.

There was a concern on households' debt-leverage. As in many advanced countries, Korean households had substantially increased debts in relation to housing investment since the 1997~1998 crisis. An important difference, however, was that the magnitude of house price hikes in Korea was far milder than those in advanced countries during the run-up to the crisis. (See Figure 10) To the extent that the debts were backed by less bubbly assets, the associated risks were likely to be smaller. In fact, Korea's house prices were almost immune to the crisis, and household debts did not trigger any significant troubles during the crisis period.

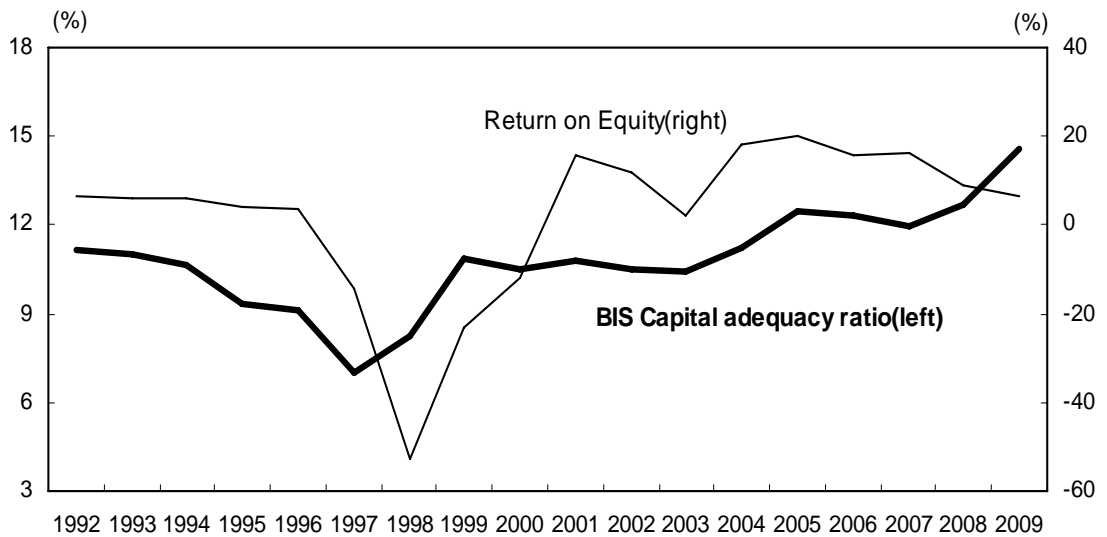
Third, banks also have secured far better capacities to absorb shocks in 2008 than in 1997. Based on the improved BIS capital adequacy ratio and return on equity, the banking sector would have been able to avoid a critical situation, even if a certain degree of defaults had taken place. (See Figure 11)

[Figure 10] (Real) House Price Hikes during the Run-up to the Crisis



Source: Kookmin Bank (Korea), Standard and Poor's, S&P/Shiller Case (U.S.), National Institute for Statistics and Economic Studies (France), Banco de Espana (Spain), Nationwide (UK).

[Figure 11] Financial Buffers of Korean Banks



Source: Financial Supervisory Service of Korea..

All in all, the financial buffers of each sector played critical roles in protecting Korea from plaguing the currency crisis to a banking crisis. This must have helped save domestic demand, hence employment, during the recent crisis, despite enormous additional shocks that flooded into Korea through the trade channel.⁸

3.2. Export Market: Faster Recovery than Other Countries

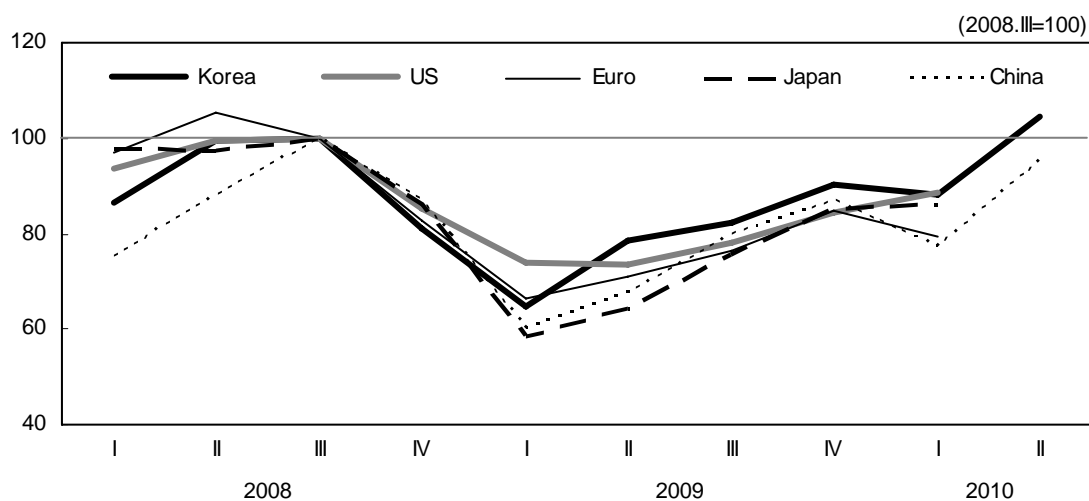
3.2.1. Fall and Rise of Korea's Export

The magnitude of the shock through the trade channel was no smaller than that through the financial channel: approximately 40% of export demand evaporated during the 3-month period from September to December 2008. This dramatic collapse in export was a worldwide phenomenon, but served as the main ground for the extremely gloomy forecasts on the Korean economy (as well as other East Asian economies) that heavily relied on manufacturing export sectors.⁹

Having passed the trough in January 2009, however, Korea's export began to recover along with global trade. This recovery must have been benefited by the global policy coordination and demand recovery. But it is still notable that the recovery pace of Korea's export was faster than those of other economies. By the 2nd quarter 2010, Korea was fully recovered to the pre-crisis level, while most of other countries have not. (See Figure 12) For the entire year of 2009, Korea's export went through a relatively milder correction, -13.8%, than that of global trade, -22.9%, raising its market share in global trade to 3.1% from 2.8% in 2008.

⁸ See Bernanke (1983), Bernanke and Gertler (1989), Kiyotaki and Moor (1997), among others, for the literature emphasizing the importance of credit markets on economic fluctuations. Similarly to Kaminsky and Reinhart (1999), Cerra and Saxena (2008) recently documented that the output impact of a banking crisis was nearly twice as large as a currency crisis, using a wide set of data covering 190 countries.

⁹ A leading example was the IMF's position note by Martin Sommer (2009), which established a strong negative cross-country relationship between the growth rate of the 4th quarter 2008 and the portion of manufacturing industries in GDP. It is obvious that an economy more dependent on export should be more affected by the global trade shock. However, contrary to a casual argument, this never implies that crisis-affected regions (*e.g.*, East Asia) should contract more than crisis-originating countries (*e.g.*, the U.S.) through trade channels. See Kato (2009) and Cho (2009) for more discussion on this point.

[Figure 12] Fall and Rise of Exports

Source: Eurostat, Korea Customs Service, Trade Statistics of Japan, National Bureau of Statistics of China, US Census Bureau

3.2.2. China, the Biggest Trading Partner of Korea

One of the reasons for the relatively fast recovery of Korea's export was its structure concentrating on China market: the share of China in Korea's export market was 24% (almost 30% including Hong Kong) in 2008, while those of the U.S., EU, and Japan were 10%, 13%, and 6%, respectively. Therefore, Korea's export was likely to recover faster, if China's import recovered faster than other regions, which in turn was a natural implication of the global rebalancing: the unwinding of global imbalance should imply a relatively small correction of final demand (domestic absorption, to be precise) in China compared to that in the U.S. As far as Korea's export to China did not entirely rely on final demand induced by the U.S., or to the extent that it depended on China's autonomous domestic absorption, a relatively small correction of Korea's export was required in the process of global rebalancing.

This composition effect thanks to China's faster recovery alone, however, cannot fully explain the differential between the growth rate of Korea's export and that of global trade. If Korea's market shares in China and other regions had remained the same, the growth rate of Korea's export in 2009 would have recorded -20.8% (a weighted average of the import growth rates of China, -11.3%, and the other regions, -23.8%), still falling short of the realized rate, -13.8%. In fact, Korea's market shares did increase in both China and other regions, implying that macro-factors in addition to the China factor must have worked. (See Table 1)

[Table 1] Korea's Export and Global Import

	Korea's Export Growth Rate	Import Growth Rate			Share of Korea's Export		
		World	China	Others	World	China ¹⁾	Others ²⁾
2008	-	-	-	-	2.7	9.9	2.2
2009	-13.8	-22.9	-11.3	-23.8	3.0	10.2	2.4

Source: Global Insight, Bloomberg.

3.2.3. Exchange Rate, an Automatic Stabilizer

The most likely macro-factor was the huge depreciation of the Korean won that occurred during the crisis period. Though it is always difficult to precisely quantify the effects of exchange rate on export, the following result from a simple regression (for monthly data from January 2000 to April 2010) can provide a first approximation:

$$\begin{aligned}
 EX_{Korea} = & -3.28 + 0.37 IM_{US} + 0.33 IM_{Euro} + 0.20 IM_{Japan} + 0.25 IM_{China} \\
 & (-4.31) \quad (2.25) \quad (3.48) \quad (1.90) \quad (8.35) \\
 & -0.03 ER_0 - 0.38 ER_{-1} + 0.13 ER_{-2} + 0.56 ER_{-3} + residual \\
 & (-0.14) \quad (-0.90) \quad (0.31) \quad (2.21)
 \end{aligned}$$

where EX_{Korea} is log-export (in US\$) of Korea, IM_i is log-import (in US\$) of region i , and ER_t is log of real effective exchange rate of the Korean won.¹⁰ A noticeable result is that the effect of IM_{China} appears smaller than that of IM_{US} or IM_{Euro} , despite a larger portion of China than that of the U.S. or Euro in terms of Korea's export destination. This result suggests that a substantial portion of China's import is induced by other regions' final demand. In fact, the relative magnitudes of the coefficients for each region appear to be similar to the relative sizes of GDP.

¹⁰ The real effective exchange rate was constructed by taking an average of nominal exchange rates deflated by CPI for 12 countries (Australia, China, Japan, France, Germany, Italy, Hong Kong, Netherlands, Singapore, Taiwan, U.K., and U.S.), weighted by the trade portion of respective country.

As for the exchange rate, it appears to take several months until its effects kick in, which seems to explain why Korea's export began to recover from the 2nd quarter 2009, several months after the exchange rate shock in the 4th quarter 2008. Yet, the accumulated elasticity with respect to the exchange rate is calculated at 0.28, with due consideration to the unpolished regression specification.¹¹ Applying this rough estimate, more than 20% of exchange rate depreciation that occurred during the crisis period could generate at least 5~6% of export increase, accounting for two-thirds of the differential in growth rates between Korea's export and global trade in 2009.

In this regard, the "currency crisis," not accompanied with a banking crisis, contributed to the faster recovery of export sectors in Korea. To put it elegantly, the Korea's experience confirmed the textbook prediction that a flexible exchange rate system would help automatically stabilize the economy. And this role of exchange rate was particularly necessary in an economy opened to capricious international capital flows, such as Korea.

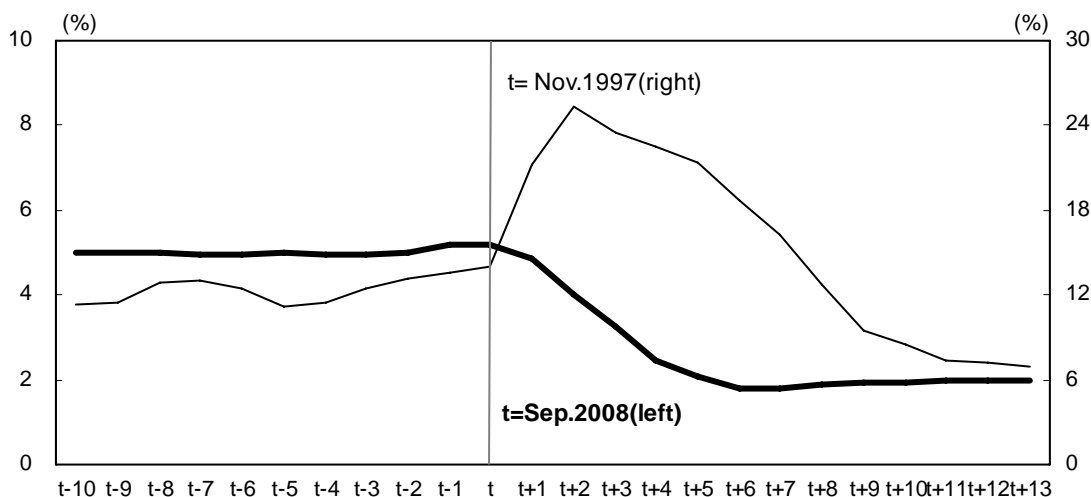
4. Macro-Policy Reactions

4.1. Monetary Policy

Among many policy reactions to the crisis, the most contrasting in 2008 to those in 1997 was the monetary policy. The policy interest rate was raised in 1997 to the level (almost 30%) above twice the pre-crisis rate (approximately 12%), but it was lowered to the level (2.00%) below half the pre-crisis rate (5.25%) in response to the recent crisis. (See Figure 13) No doubt the monetary easing in 2008 was crucial in guarding domestic economy from the external storm, whereas the monetary tightening in 1997 aggravated the domestic banking crisis.

More interesting than the policy effects, however, was the environments that led to different policies. Most advanced countries aggressively lowered interest rates to cope with their own financial crises in 2008, while they did not in 1997. This trend in international policies lightened the Bank of Korea's burden associated with the monetary easing in 2008, despite the exchange rate depreciation.

¹¹ Estimates of the accumulated elasticity from different specifications range from 0.15 to 0.35.

[Figure 13] Inter-bank Overnight Call Rate

Source: Bank of Korea

The most critical difference, however, was the foreign currency liquidity situation when the crisis was triggered. Given foreign reserves almost depleted, the high interest rate policy in December 1997 may have been inevitable, but Korea in 2008 reserved rooms to maneuver on this front.¹² And the most important factor that led to different foreign reserve situations was the government's approach to the foreign exchange market. In 1997, the government believed that it could, and should, control the foreign exchange market, and actually did attempt to engineer a "smooth and orderly" depreciation from the beginning of 1997. This approach only invited currency speculations and catalyzed reserve depletion in the end. In 2008, in contrast, the government let the exchange rate adjust to the shock instead of wasting foreign reserves, which eventually saved the flexibility of monetary policy as well as the aforementioned automatic stabilizing role of the exchange rate.

¹² At the verge of national default in December 1997, all of the policy measures including monetary policy were lined up to secure foreign currency liquidity rather than economic stabilization. See Fischer (1988) and Krueger (2000) for example. Under this policy priority, it was necessary, or probably inevitable, to impose a high interest rate policy. It was particularly so, given that the penalty interest rate was charged on the foreign currency loans of the Bank of Korea to commercial banks. Otherwise, commercial banks desperate of foreign currency liquidity would have rushed to borrow domestic currency at relatively low interest rates, and converted it into foreign currency to pay back their existing borrowings to the Bank of Korea, which could have further deteriorated foreign exchange situation. See Lee (2010) and Cho (2010) for details of the financial market situation in Korea during the crisis period.

4.2. Fiscal Policy

Fiscal policy reactions were not as contrasting as monetary policy reactions. In both periods, expansionary fiscal stances were assumed. The sizes of budget deficits, approximately 3 percent of GDP, were also similar.

However, the processes to similar results, *ex post*, were different. In 1997, the IMF initially recommended the Korean government to maintain a budget balance in December 1997 when fiscal stimulus was most needed. Only after the severe recession was realized, budget deficit was allowed in 1998 and gradually expanded as the recession was deepened.¹³ This time, in contrast, the Korean government announced fiscal expansion as soon as the global crisis was set off, and injected the necessary stimulus. A supplementary budget of 10 trillion won (approximately 1 percent of GDP) was implemented in November 2008, and an additional supplementary budget of 28.4 trillion won (approximately 2.8 percent of GDP) was drawn up by March 2009. Considering time lags common to fiscal policy effects, the early execution of fiscal spending must have contributed to stabilizing the economy.

5. Conclusion: Putting the Pieces Together

The recent crisis and subsequent recovery of Korea may have been a surprise to many forecasters. But it was a relief to most Koreans who still had vivid memories of the 1997~1998 crisis. There were many factors that contributed to mitigating the effects of shocks on Korea. Some factors worked in protecting domestic banking system and others were operated for inducing relatively fast export recovery. (See Figure 14)

These factors can be broadly classified into two categories, pre-crisis fundamentals and post-crisis macro-policy reactions. The former includes a large amount of foreign reserves, improved financial structures of firms and banks, relatively mild house price hikes, and the tradition of sound government budget, while the latter includes the foreign exchange policy that honored market forces, the monetary policy that stabilizes domestic economy, and the fiscal policy that was carried out on time. Between the two categories, however, inextricable relationships exist. Sound fundamentals are necessary, though not sufficient, conditions for

¹³ The recommended budget deficit of the IMF was expanded to 0.8% of GDP in the 5th agreement on February 7, 1.75% of GDP in the 6th agreement on May 2, 4% of GDP in the 7th agreement on July 24, and finally 5% of GDP in 8th agreement on October 27. See Chopra *et. al.* (2000) for details.

flexible macro-policy reactions.¹⁴ In reverse, prolonged expansionary policies erode the soundness of fundamentals, which will eventually restrict the flexibility of macro-policies.

Korea could successfully recover this time, thanks to the relatively sound pre-crisis fundamentals achieved by the restructuring processes since the 1997~1998 crisis, along with consistent macro-policies. However, if the emergency policies are not normalized on time and necessary restructuring is delayed, the recent success can become an ominous prelude to another crisis in the future.

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¹⁴ Monetary policy of Korea in 1997 and the recent fiscal policy of Greece may be leading examples.

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[Figure 14] Transmission of the Global Crisis to Korea

