The Financial Safety Nets after the 2008 Global Financial Crisis: Korean Case Study

Kim, Young-Jae
Department of Economics, Pusan National University : Professor

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The Financial Safety Nets after the 2008 Global Financial Crisis: Korean Case Study*

Young-Jae Kim[1)] (Professor at Department of Economics, Pusan National University)

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1. Introduction

The 2008 global financial crisis triggered by the financial sector such as the bankruptcy of Lehman Brothers severely affected the real sector by devastating the financial system. The immediate impact effects of the adverse shock were very clear in the stock market and foreign exchange market: big fall in the stock price and the rapidly declining value of domestic currency in many countries. The turmoils in the financial markets spreads out over the world in a globalized economy, which in turn shrink and reduce the real economic activities such as production and trade leading to the sharp drop in the GDP growth rate in many countries simultaneously.

This chain-like happening was a new phenomenon in a deeply globalized world since the mid-1990s after the launch of WTO in 1995 and the further developments of globalization in terms of FTAs. The continuing globalization makes the financial markets more vulnerable to the unexpected external shocks such as the sub-prime mortgage

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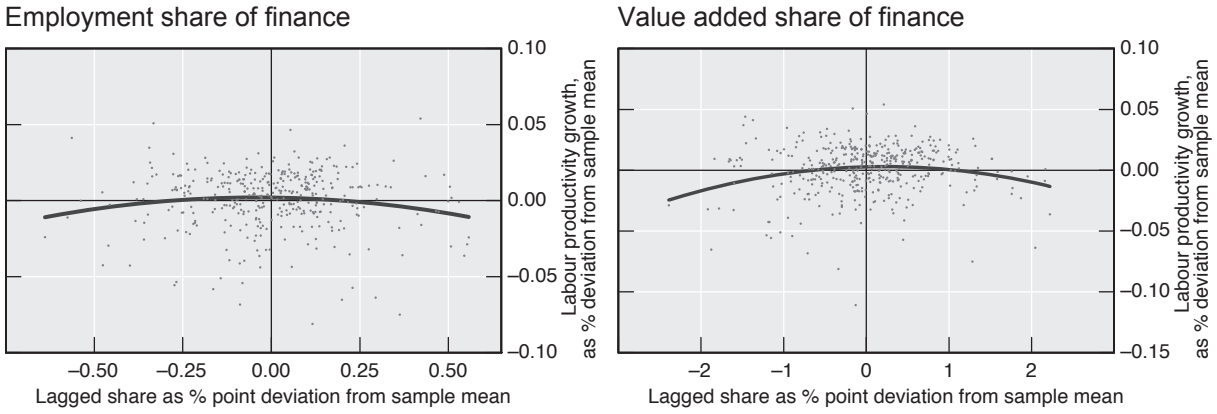
1) E-mail: kimyj@pusan.ac.kr, phone: (82-51)510-2539

crisis in 2007 *structurally and systematically*. This structural and systematic vulnerability is referred to as systemic risk in the financial system, which is different from the traditional systematic risk depending on the sets of information. In addition to the unprecedentedly high degree of globalization, the advancement in the information technology (IT) has also contributed to making the financial system more vulnerable to the shock in spite of great benefits of IT-based financial markets.

The recent global crisis originated from the private sector coupled with the globalized economy affected the government sector as well, which in turn provoked the budget crisis in many European countries, so-called euro-zone deficit crisis. The on-going euro-zone deficit crisis is so complicated in the following reason; it is closely related and connected between countries of euro-zone, and out of euro-zone and between sectors such as private financial markets, public financial sector (government budget) and central banks. Due to the nature of complication and connectedness, the euro-zone deficit crisis is still in the process of further developments and not yet resolved despite everlasting endeavors of the associated countries (G-20) and international institutions such as IMF and World Bank. In addition to the above mentioned euro-zone crisis, the government debt crisis since 2011 in the United States has aggravated the depressed world economy by restricting the government policy instrument such as stimulating fiscal expansion. In case of US, expansionary fiscal policy together with monetary expansion were quite effective to attack the 2008 crisis until 2010, but the US has lost those policy tools due to the unexpectedly slow recovery of both US and world economy. As indicated, the stimulating expansionary fiscal policy together with monetary expansion has boosted the US economy by resuming the financial stability for 2009 through 2010. Unfortunately, however, the US government and the Fed both lost their policy instruments to continuously pump the economy due to the government debt crisis and close to zero policy rate. As a result, the US should rely on the QE (quantitative easing) policy to stimulate the stagnant economy, which in turn leads to another global economic conflicts such as currency wars among many related countries; US, Japan, China, Euro and Korea.

Productivity growth and financial sector share

(16 OECD countries, 1980–2009)



Note: The left- (right-) hand scatter plot represents the partial relationship between labour productivity growth and the employment (value added) share of finance, controlling for, investment to GDP, employment growth, openness to trade, initial labour productivity, and country-specific dummies.

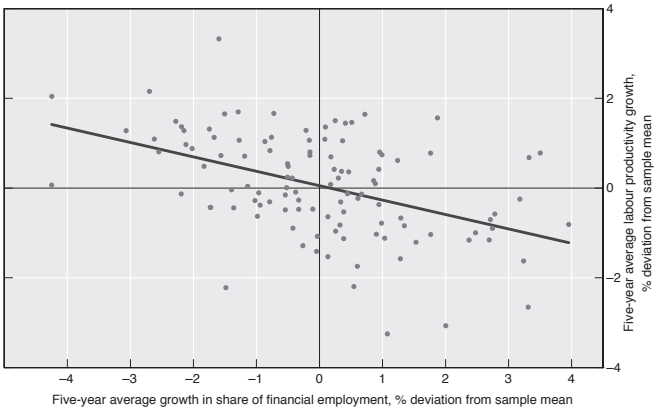
Source: Cecchetti and Kharroubi (2012) based on OECD, *Economic Outlook* and OECD, *STAN*.

Figure 1: Productivity Growth and Financial Sector Share

For the worsening effects of the recent financial crisis on the real sector, Cecchetti (2012) doubts of the benefits of financial globalization by asking "Is globalization great?" According to Figure 1, there may be an optimal level of financial globalization: Since a certain level of financial globalization, the labor productivity starts to decline. In addition, there may be a negative relationship between productivity growth and the growth in the financial sector shown in Figure 2. Thus, his conclusion is that financial globalization is great most of the time, but not always. The two figures suggest many implications for the causes of recent global financial crisis and possibly some remedies for the stagnant global economy severely affected by the crisis.

Productivity growth and growth in the financial sector

(16 OECD countries, 1980–2009)



Note: This scatter plot represents the partial relationship between labour productivity growth and the growth rate of the employment share of finance, controlling for investment to GDP, employment growth, openness to trade, initial private credit to GDP, initial labour productivity, and country specific dummies.

Source: Cecchetti and Kharroubi (2012) based on OECD, *Economic Outlook* and OECD, *STAN*.

Figure 2: Productivity Growth and Growth in the Financial Sector

Thus, this paper describes the current features of financial stability and emphasizes its importance in terms of preventing the future expected financial crisis and the recovery of depressed real economy. As already emphasized in the above, it is very significant to secure the financial stability for stale and sustainable economic growth through the favorable intermediary function of financial institutions and well-behaved financial markets. For further understanding, we specify the recent developments of securing financial stability in Korea and some episodes during the period of 2009-2010, named KIKO event.

The paper is organized as follows; section 2 describes the brief depiction of financial stability in three categories. Section 3 emphasizes the importances of financial stability based on the two episodes in 1997 and 2008. In the following section, the currently controversial safety nets in global and local aspects are discussed briefly. The final section provides the concluding remarks.

2. Descriptions of Financial Stability

2.1. Three Components of Financial Stability

Financial stability is referred to as a situation where financial system is generally stable, which implies that three components of financial system such as financial institutions, financial markets and financial infrastructure are all stable indicating all are fine and well-behaving. Put it in a different way, when the financial system is not unstable, the financial stability is said to be secured. We can identify the financial stability in terms of three components in the following ways more in detail.

For the stability of financial institutions, the basic financial intermediation should be well performed without any barriers indicating well-functioning mechanism of connecting demanders for fund and suppliers of fund. Thus, the instability of financial institutions may occur when the financial institutions could not perform the designated financial intermediation without the assistance of government and central bank as we observed during the 1997-98 Asian foreign exchange crisis and during the 2008 global financial crisis.

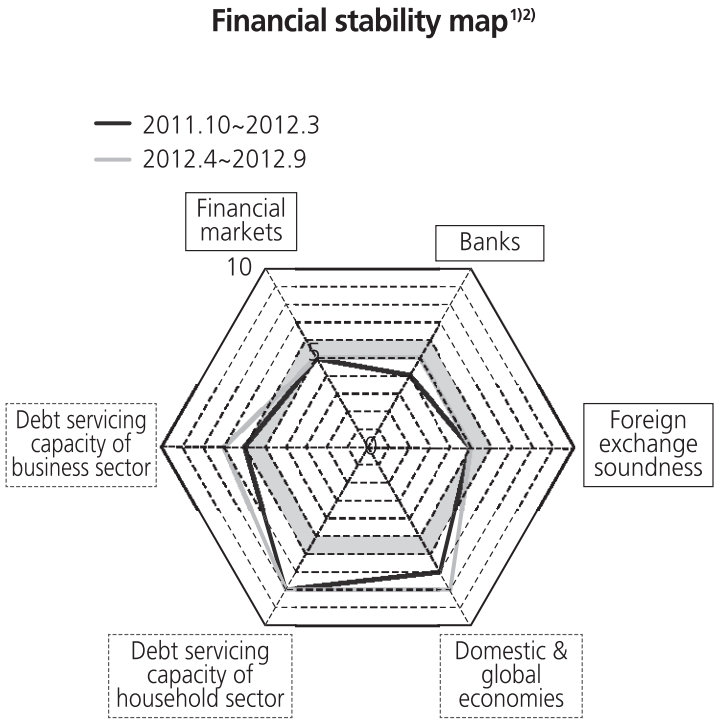
Similarly, the stability of financial markets states that all market participants such as individual households, firms, financial institutions and the government can make financial transactions with credibility for their own economic purposes in the forms of lending and borrowing in the markets. Under a stable financial market, the prices of financial assets such as interest rate, stock price and exchange rate should reflect the economic fundamentals such as GDP growth rate, price level and unemployment. Therefore, those asset prices would be unchanged unless the economic fundamentals alter. Then, the market participants are allowed to make rational economic decisions in the market, which leads to efficient resource allocation.

Slightly different from the stability of financial market, the stability of financial infrastructure is secured when a set of organizations and institutions associated with financial stability are well prepared and performed, which enables financial intermediaries and firms to prevent possible financial crisis, and both prudential monitoring and market discipline of supervisory authority equipped with effective financial safety nets and settlement system are functioning well. More specifically, corporate governance, market discipline, and financial regulation and supervision are the main categories in the stability of financial institutions. One representative example of prudential regulation is BIS capital adequacy ratio. In addition, the insurance system for the depositors is a good example of safety net because it avoids undesirable bankruptcy of financial institutions due to unexpected huge amount of withdrawal. Or in some cases, the central bank as a last lender can supply the needed money for the troubled institutions to protect both the institution and customers. The stability of settlement system is also quite important to secure the stability of financial institution since the settlement system is the final step for all kinds of transactions just like the blood venue in the body.

As explained in the above, the financial stability is obtained when the three components of financial system are all in a stable situation indicating each individual component is well-functioning and inter-connected.

2.2. The Current Financial Stability Map in Korea

Figure 3 describes the current status of 2012 financial stability in Korea comparing that of 2011 specifying 6 components. The financial system has generally maintained stability, but three sectors such as banks, domestic and global economies, and debt servicing capacity of business sectors have worsened due to the existing euro-zone crisis and economic slowdown at home and abroad. Financial markets have shown temporary unease at times when external risk factors emerged, but have kept up stable movements overall. The stable state of financial system is well-represented in the financial map of figure 3.



Notes: 1) The closer to the center, the greater the degree of stability
2) □ Financial system dimensions
⬚ Macroprudential soundness condition dimensions

Source: Bank of Korea(2012)

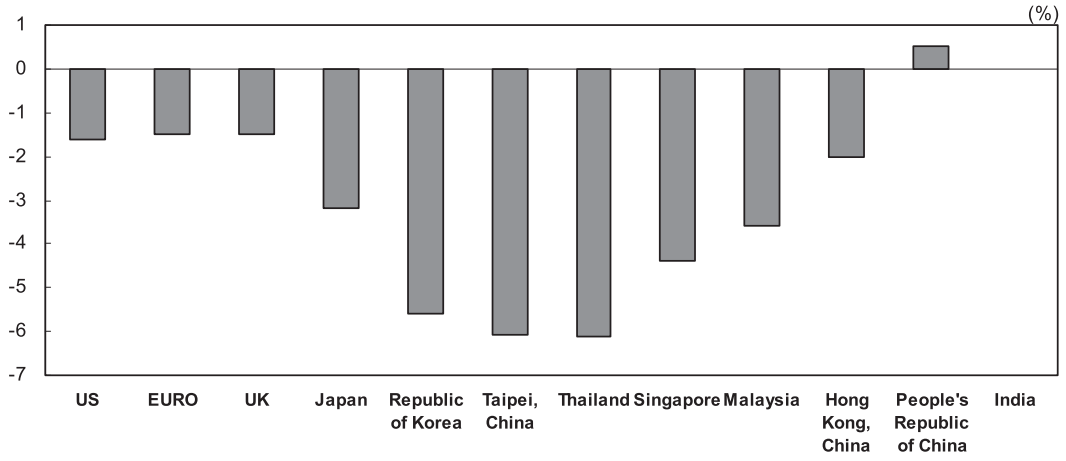
Figure 3: The Financial Stability Map of 2012 in Korea

According to Bank of Korea's Financial Stability Report (2012), the Bank of Korea will reinforce its capacities for identifying and analyzing systemic risks in advance and issuing early warnings of them to firmly maintain financial system stability. Moreover in as much as financial system resilience is secured only when economic fundamentals are kept favorable, the Bank will conduct monetary policy so as to ensure that the Korean economy can recover its potential level of growth, while stabilizing consumer price inflation within the inflation target over the medium-term horizon.

3. The Relationship between Financial Stability and Economic Growth

3.1. Effects of 2008 Global Financial Crisis on GDP

As the traditional economic theory of IS-LM model suggests that there is a close relationship between the real and financial sectors, the real economy denoted by GDP growth rate was significantly affected by the 2008 global financial crisis in many countries shown in Figure 4. As expected, the relationship between the real and financial sectors is so strong indicating the GDP growth rates of all countries are negative except China. Figure 4 also indicates that the fall in GDP growth rates is much greater in Korea, Thailand and Taipei, China than US, EURO and UK. In case of Korea, the GDP growth rate is close to minus 6 percent while US shows only negative 2 percent. It looks quite strange in sense that the origin of the crisis is from US, not Korea. What would be the possible explanations for this unpleasant outcome?

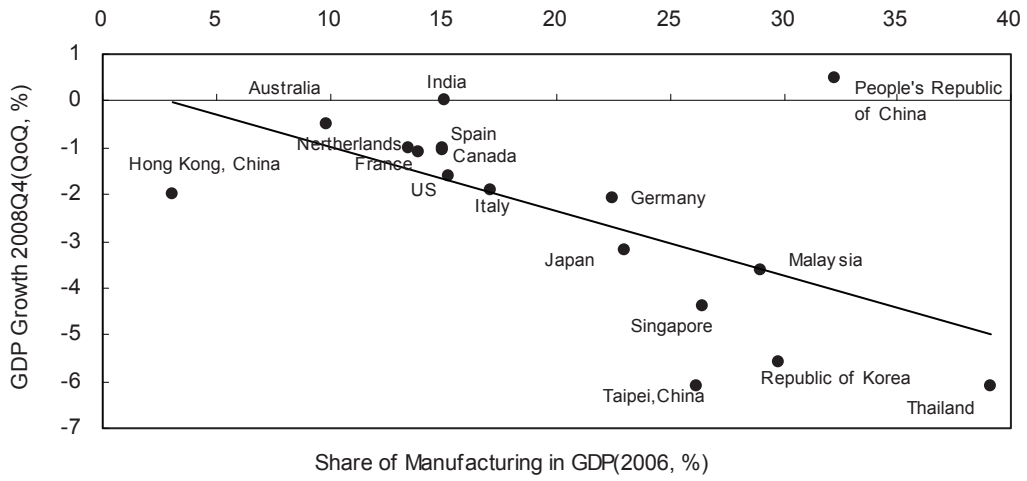


Note: For the countries (Taipei,China; Thailand; Malaysia; Singapore; People's Republic of China (PRC); and India) in which official quarter-to-quarter growth rates are not available, estimations were made by the formula, $g_t = G_t - G_{t-1} + \overline{g}_{t-4}$, where g_t is quarter-to-quarter growth rate, G_t is year-on-year growth rate, and $\overline{g}_{t-4}$ denotes the average quarterly growth rate of the past three years.

Source: Bureau of Economic Analysis (US), EUROSTAT (EURO, UK), Cabinet Office (Japan), Bank of Korea (Republic of Korea), Bloomberg (Taipei,China; Malaysia; India), Singapore Department of Statistics (Singapore), Census and Statistics Department (Hong Kong, China), National Bureau of Statistics of China (People's Republic of China).

Figure 4: Growth Rates of the Fourth Quarter of 2008

Figure 5 will give us one explanation for the growth rate differentials among the countries. Those countries that denotes big drops in GDP growth rates show relatively high share of Manufacturing in GDP, which means those countries depend heavily on the foreign economies just like Korea.

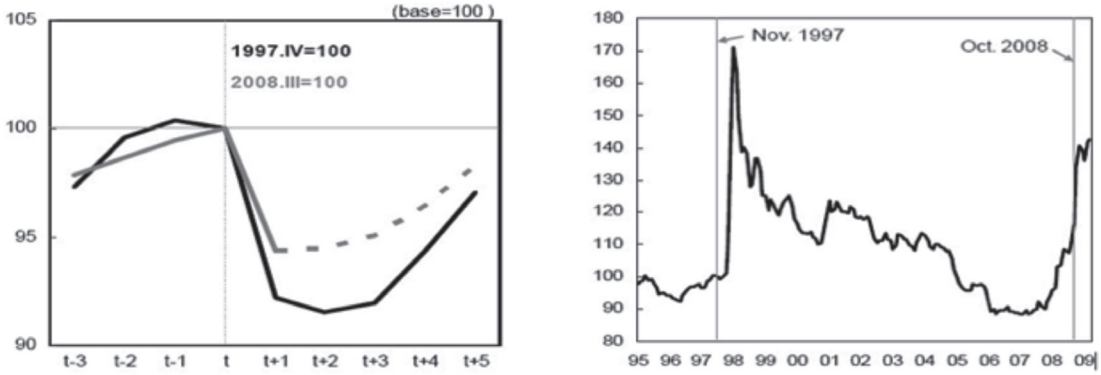


Source: OECD (Canada, France, Germany, Italy, Japan, Netherlands, Republic of Korea, Spain, US), Cabinet Office (Japan), Census and Statistics Department (Hong Kong, China), Singapore Department of Statistics (Singapore), Bloomberg (People's Republic of China; India; Malaysia; Taipei,China; Thailand).

Figure 5: Growth Rates of Fourth Quarter and the Share of Manufacturing

3.2. Comparisons of Two Episodes in Korea: 1997 and 2008 Crisis

In this section, we are going to compare the effects of two previous crises that hit the Korean economy in terms of macro economic variables: GDP growth rate and real effective exchange rate.



Note: Dotted line denotes author's projection.
Source: Bank of Korea (Republic of Korea), Korea Development Institute.

Figure 6: Similarities between 1997 and 2008 Crisis in Korea

As known, Korea had experienced two crises in 1997 and 2008, each called foreign exchange and global financial crisis respectively. The left diagram in Figure 6 represents the different path of GDP growth rate in response to the two shocks. In both shocks, the GDP growth rate felt severely and began to rise after a while. The right diagram showing the response of real effective exchange rate indicates that the exchange rate sharply rose meaning severe fall in the value of Korean currency against US dollar.

Unlike Figure 6, Figure 7 shows differences in two crises between 1997 and 2008 in terms of private consumption and export volume. Private consumption in left side of Figure 7 felt significantly in 1997, but did fall slightly in 2008. Surprisingly enough, export volume had continuously increased even after 1997 crisis, but it felt down drastically after 2008 crisis. From quite different responses, we can guess that the global economy began to shrink right after the 2008 crisis, but it did not after the 1997 crisis.

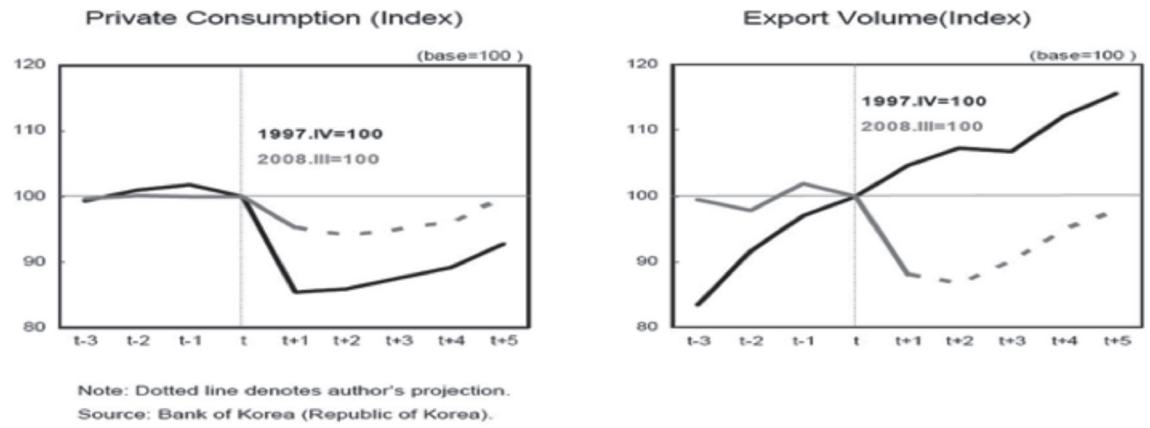


Figure 7: Differences between 1997 and 2008 Crisis in Korea

4. The Current Financial Stability and Safety Nets in Korea

4.1. The Two Issues of Korean Financial Stability Environments

1） Household Debt Problem

One of the key issues associated with Korean financial stability is quite high amounts of household debt since the mid-2000s. As shown in Figure 8, the growth rate of household debt was very high from 2005 through 2011, but decreased sharply in 2012. That is, household debt growth rate showed just 1.1% in the first half of 2012, the lowest since the credit card crisis in 2003. But, the absolute amount of household debt still is apparently a big burden to the Korean financial market.

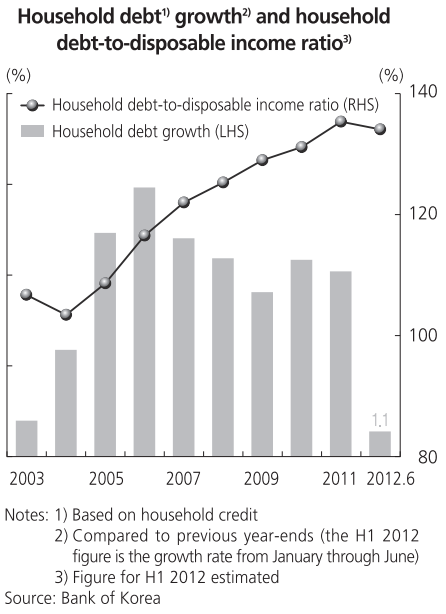
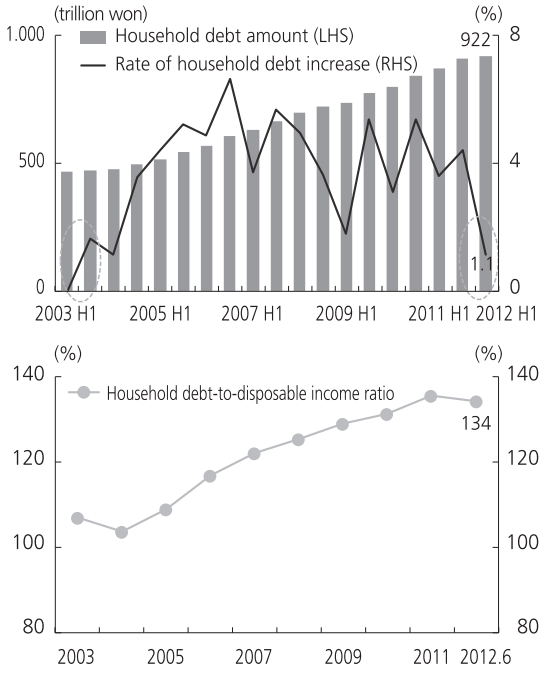


Figure 8: Household Debt Growth in Korea Ⅰ

Household debt (based on household credit) stood at 922 trillion won as of June 2012, a mere 1.1% increase compared to the end of 2011 (912 trillion won). As of June 2012, the household debt-to-disposable income ration was estimated to stand at 134%, having inched downward about 1% point compared to the end of 2011 (135%) in Figure 9. In spite of low growth rate of household debt, the ratio of household debt to disposable income is still very high indicating household is very vulnerable to the adverse external shock just like the 1997 foreign exchange crisis.

As already noted, the household debt built up since the mid-2000s can act as a substantial factor burdening the macro-economy including growth: In the short run, private consumption may fall with the increase in debt service burden, in the medium-to long run, the economy's growth potential may be weakened by the limited accumulation of productive capital through the poor domestic economic fundamentals and reduced household savings.

<Figure II-63> Amount and rate of increase[1] of household debt[2], and household debt-to-disposable income ratio[3]



Notes: 1) Compared to ends of previous periods
2) Based on household credit
3) Figure for June 2012 an estimation
Source: Bank of Korea

Figure 9: Household Debt Growth in Korea Ⅱ

2） The KIKO Problem: 2008 – 2009

KIKO (Knock-In, Knock-Out) is a financial derivative[2] composed of call option and put option to hedge the declining won/dollar exchange rate. Since 2002 through 2007, the won/dollar exchange rate continues to fall, which means the exporting firms may loose significantly the revenue when the dollar has been converted to the won.

2） Call option is a right to buy the underlying asset at a given price, while put option is a right to sell the underlying asset at a given price.

Under these situations, the small and medium sized firms need to hedge the expected loss caused by the falling won/dollar exchange rate (depreciation of dollar against Korean won): As value of U$ declines, the exporting firm's revenue in terms of Korean won falls. Due to the 2008 global financial crisis, the continuously falling won/dollar exchange had started to rise above 960 won per dollar, which resulted in heavy loss to the firms.

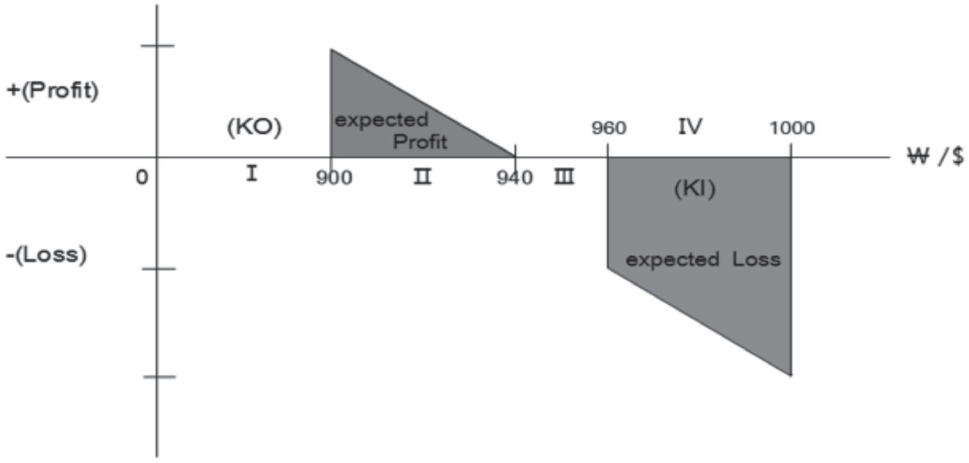


Figure 10: The Profits Structure of KIKO

Figure 10 represents the expected profits associated with the movements in exchange. There may be 4 possible cases in terms of profits. First, exchange rate is less than 900, then the contract will be in KO(Knock Out) area, which leads to expiration of the contraction. Second, when the exchange is between 900 and 940, put option is exercised by firms so that firms may get profits. In this case, the firms hedge the falling rate by insuring the KIKO. Third, no transaction occurs when the rate is between 940 and 960. However, when the rate is over 960, call option is exercised by banks so that the firms should sell the agreed amount of dollar at a lower price than the market price. In this case, the firms lose and banks gain. As a result, many firms are financially in trouble (bankruptcy), which in turn leads to financial instability (Need financial safety nets to avoid KIKO)

4.2. The Regional and Korean Financial Safety Nets

1) European Safety Net

Many European countries were severely devastated by the 2008 global financial crisis such as Greece and Spain, so that ECB and other institutions has made many efforts to avoid another future crisis by introducing a little bit radical measures such as Tobin tax. Tobin Tax is to impose tax on international financial transactions, 0.1% on stock and bonds, 0.01% on financial derivatives such as futures and options. The expected positive effect to stabilize the foreign exchange market through avoiding sudden outflow and inflow of foreign capital, which reduces the volatility of price variables and help to secure financial stability. At the same time, the expected negative effect is to shrink the transactions of foreign exchange market which leads to distortions of domestic and international capital markets, and the economic growth will be reduced.

In addition, fiscal Integration was proposed to avoid deficit crisis in some specific countries. To reach the fiscal integration, fiscal union is set for the first step, fiscal integration is set for the next step. Fiscal Union is to set the target of fiscal deficits. monitoring and supervision on fiscal policy of member countries. Next, Fiscal Integration should be implemented to establish a single ministry of finance for Integrated Budget System, integrated government debt, policy coordination and fiscal transfer.

2）Asian Safety Net

Since the Asian crisis in 1997, Asian community proposed Asia-focused special initiative to avoid future expected foreign exchange crisis. The first one is CMI (Chiang Mai Initiative) which is a bilateral currency swap among ASEAN + 3(Korea, Japan, China), effective as of May 2005. in the following step, CMIM (Chiang Mai Initiative Multilateral) is upgraded CMI from bilateral to multilateral based on the given proportion of obligation, effective as of Oct. 2010. Besides, ABMI (Asia Bond Market Initiative) was proposed to develop Asia bond market for circulating the funds in the corresponding region by issuing the bonds with local currency, but not yet established, in progress

3）Korean Safety Nets

Along with the international trend in securing financial stability, Korean government proposed Tax on Foreign Exchange Transaction: Apply Tobin Tax to the foreign exchange market only to avoid severe volatility of foreign exchange rates. And related other macro-prudential policies were suggested as follows;

- Reduce forward foreign exchange position
- Tax on Bond transactions
- Tax on foreign currency's borrowing

Together with the short-term perspective policy, long-term perspective one also proposed: Foreign Exchange Stabilization Mechanism should be established to avoid another KIKO crisis in the future.

5. Concluding Remarks

We develop the importance of financial stability by investigating the relationship between real sector and financial sector based on the two previous crises: 1997 Asian and 2008 global crisis. Through the unprecedented two episodes, many financial institutions proposed financial safety nets to avoid future expected crisis. Despite hardworking endeavors, it seems very difficult to introduce specific and concrete policy due to conflicts of interests among the related countries. Here we propose some directions and lessons for future productive policies.

Comprehensive, complementary and internationally-coordinated policy should be developed and pursued to secure and maintain the financial stability in the following four perspectives.

1）Within individual financial system perspective: Each individual financial system is composed of three components such as financial institutions, financial markets and infrastructure.

2) Inter-individual financial system perspective (between countries): Each individual financial system is well open up and dependent on the others due to the on-going globalization. For this perspective, extended and enhanced supervision and monitoring system should be emphasized to stabilize the severe volatility of the markets by checking the in- and out-flows of capital between countries.

3) Between sectors within a country perspective: Financial system is inter-related with the other sectors of the economy such as real sector and the public sector. In euro-zone, the budget crisis was aggravated by the private financial institutions affected by the 2008 global crisis and vice versa.

4) Between sectors and between countries perspective: Each individual financial system is inter-dependent and inter-connected both between sectors and between countries in a widely globalized world economy so that global policy coordination should be intensified through various channels of international bodies such as G20 meetings.

It maybe very important to find the optimal level of financial globalization reflecting the negative relationship between the growth of financial sector and the growth of labor productivity, and the recessed economies of financially specialized countries such as USA and Ireland. As experienced in many European countries and US, even in Korea, all kinds of debts such as government debt, firms debt and household debts become very risky after reaching a certain level. US budget cliff and euro-zone deficit crisis are all triggered by the extreme government debts and Korea's household debt is currently very serious economic and social problem.

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