

Macroeconomic Policies of Korea to Cope with the Crisis

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Abstract

This paper reviews the macroeconomic policy of Korea before and after the recent crisis and thoroughly evaluates the effects of fiscal and monetary policies implemented to cope with the crisis. Before the crisis, Korea's overall macroeconomic policy stance appeared to be contractionary. However, it can be assessed that, given the increased short-term liquidity through the massive inflow of foreign capital, the upward adjustment of domestic interest rate was not enough to be effective to alleviate the upward pressure of asset prices in Korea. After the crisis, the fiscal stimulus had significantly contributed to buffering the negative impact of the crisis in the first half of 2009, successfully playing its pump-priming role. Meanwhile, proactive monetary policy response along with strong fiscal stimulus also contributed to recovery of the Korean economy, though concern on its potential side effects such as asset market bubbles and fast inflation have been growing. Meanwhile, a certain degree of international cooperation may be required when policy stances are changed to exit from the crisis, specific exit strategies could be different depending on the country, in terms of the implementation time and scale.

I. Introduction

As for the Korean economy, the past two years can be characterized as a period of a sudden contraction and then a fast recovery, amidst the global financial crisis that was characterized as the largest economic turmoil since the Great Depression of the 1930s. Severe credit squeeze that shook global financial markets contracted every economy in the world, and Korea was not an exception to this shock due to its high dependency on the export sector. Consequently, financial markets, including the foreign exchange market, were thrown into a near-panic state and the quarter-to-quarter growth rate for the fourth quarter of 2008 plunged to -5.1%.

The Korean economy seems to be successfully bottoming out from the recession triggered by the global financial crisis, and the recovery pace is faster than anticipated. The recovery of the Korean economy within a year of the crisis has been assessed to be remarkably positive at home and abroad, and now the economy appears to enter into the stabilization phase, normalizing its recovery pace. It is obvious that the recovery is based on stabilization of the global financial market and improvement of the world trade environment as each country implemented the unprecedented expansionary policies to respond to the recession. On the domestic side, the enhanced capacity to respond to the crisis of each sector resulting from restructuring, which was carried out steadily since the financial crisis in the late 1990s, prevented the recession to be dragged on. In addition, the economists at home and abroad, along with international organizations like the IMF and OECD, invariably appreciate that the Korean government's comprehensive and timely implementation of policies have contributed to the faster than expected recovery.

This paper reviews the macroeconomic policy in Korea before and after the recent crisis and thoroughly evaluates the effects of fiscal and monetary policies implemented to cope with the crisis. However, it would not be possible to make the complete assessment at this time as it is too early to conduct analysis on the fundamental changes of the Korean economy and to accurately scrutinize questions such as whether the private sector is completely recovered or whether the potential growth rate of the Korean economy is lowered by the crisis. Therefore, this paper is a preliminary study or a general overview of the consequences of global financial crisis and Korea's policy responses.

Taking into account these limitations, Chapter 2 of this paper reviews the Korean economy before the outbreak of the 2008 crisis and its policy environment. Chapter 3 provides an overview of policy responses of the Korean government during the crisis, and assesses the impact of fiscal stimulus on GDP growth rates, followed by a brief assessment of the Bank of Korea's monetary policy of super-low interest rate. Chapter 4 concludes focusing on the exit from the recent crisis and implications for future policy directions.

II. Policy Environment before the Crisis

A. Macroeconomic Trends and Policies in Korea: 2005-2007

The Korean economy in the late 2000s was expected to show a steady growth, overcoming from the negative impact caused by the burst of household credit bubble in 2003. After the severe slump in 2003 and 2004, domestic demand has shown stabilized growth trend since 2006. Although the private consumption continued to slump due to the deterioration in terms of trade in the first half of 2006, the private consumption appears to improve gradually as the oil price growth slowed down since then. Equipment investment, which had been stagnant due to the downward adjustment in the balance sheet status of credit-card companies and partially by deterioration in terms of trade, also showed a steady growth pace since 2006.

Korea's exports which remained sluggish since the global IT bubble crash in the early 2000s showed signs of improvement ahead of domestic demand mainly supported by the rapid economic expansion of China. In addition, a strong recovery of the US and Euro-zone economies serve to stabilize overseas demand, supporting exports to regain their rapid growth pace. As the global economy maintained a steady growth in 2007, the Korean economy also showed a somewhat faster progress than anticipated in 2007. Meanwhile, unlike the period between 2005 and 2006, the terms of trade appeared to be stabilized in 2007, significantly narrowing the gap between GDP and GDI growth rates. Such stabilization in terms of trade led to the improvement in business sentiment represented by the consumer sentiment index and to the steady growth of corporate equipment investment.

Accordingly, as a stable growth pattern emerged from a balanced improvement in exports and domestic demand, Korea's overall macroeconomic policy stance appeared to be normalized. Above all, the fiscal policy was set to keep the consolidated government budget in balance over the business cycle ensuring the proper functioning of its automatic stabilizing role. In particular, fiscal expenditure had been curbed so that the favorable condition of tax revenue in such a well performing economy in 2007 would lead to the long-run fiscal soundness. The analysis using fiscal impulse as in Figure 1 confirms the changes in fiscal policy: an expansionary stance between 2003 and 2004, close to a neutral stance between 2005 and 2006, and much closer to a contractionary stance in 2007.

Figure 1: GDP and GDI Growth Rates in Korea

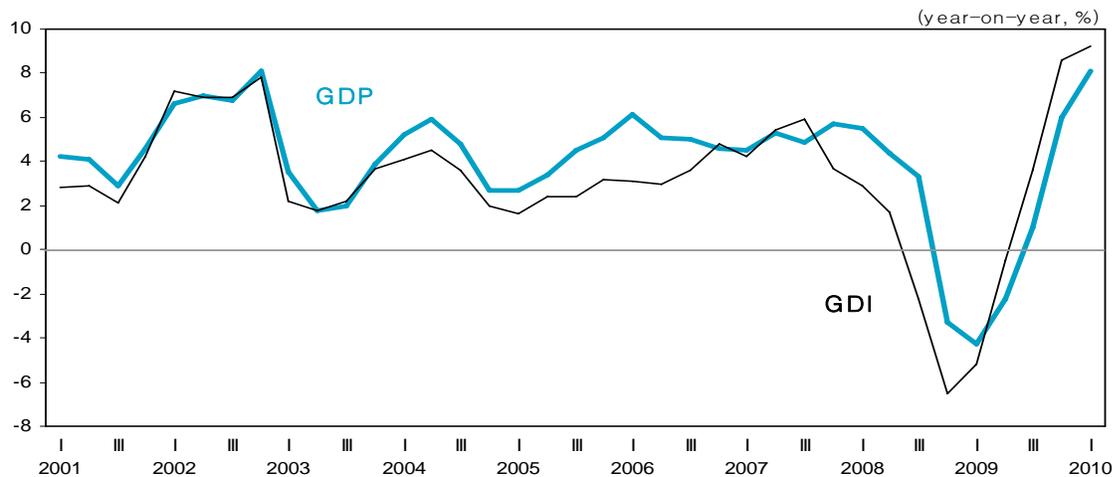
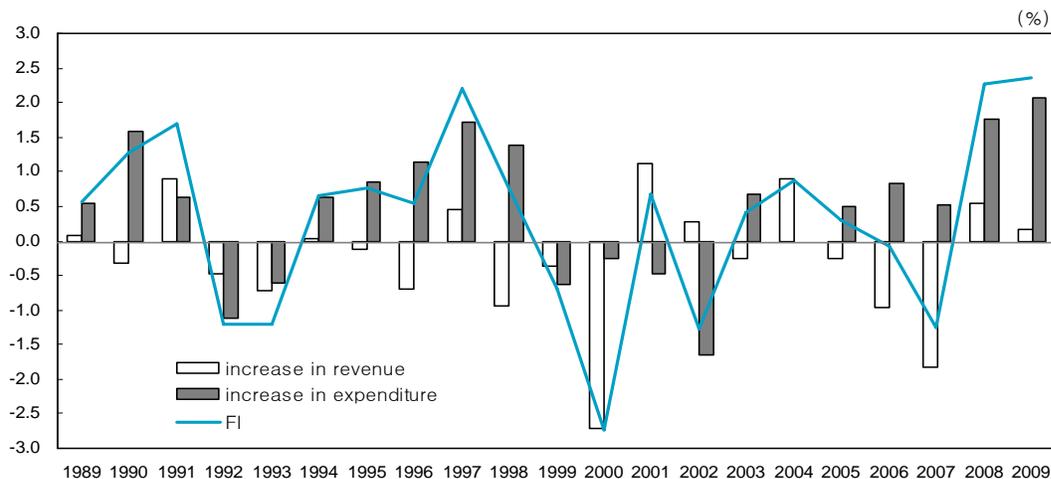


Figure 2: Fiscal Impulse

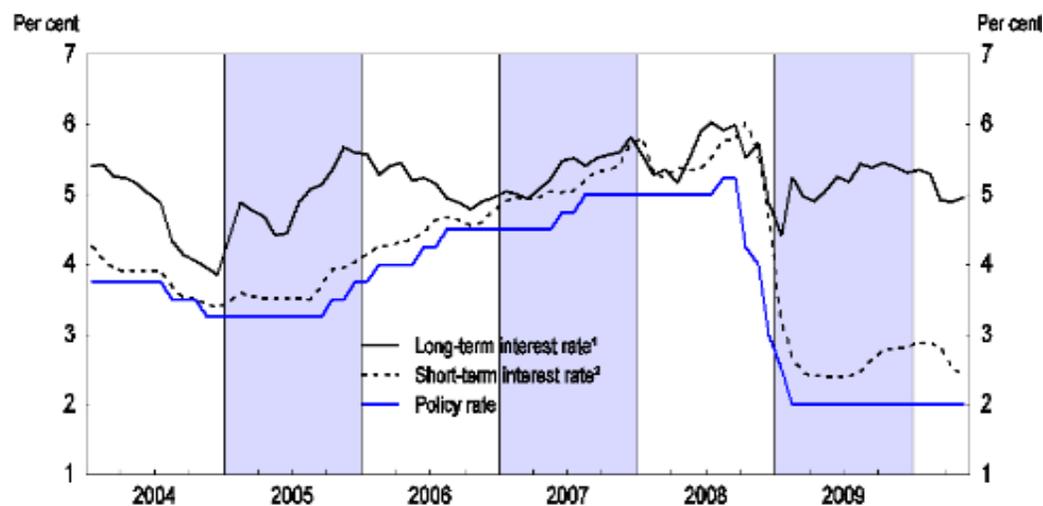


Notes: FI (fiscal impulse) is a measure to compute the changing impact of the budget stance of the economy with business cycle adjustment. The FI indicator implies that the fiscal policy stance of current year is expansionary (contractionary) compared to that of previous year when it is computed as positive (negative).

The monetary policy of Korea also had been implemented in a way to reduce the degree of accommodation gradually even before 2006, in response to the trend toward improvement of the real economy. The Bank of Korea undertook a five-step upward adjustment of the call rate target, by 25 basis points at each step, from October 2005 to August 2006. The raising of call rate target in this way was intended to gradually eliminate the side-effects arising from the past period of continual low interest rates, as well as preemptively counter the upward pressures on

prices driven by the sharp run-up in oil prices. In 2007, as inflation pressure from aggregate demand were growing, the Bank of Korea raised the target rate by 50 basis points to 5.0%.

Figure 3: Interest Rates in Korea



Notes: 1. Ten-year government bonds. 2. The 91-day CD rate.

Source: Bank of Korea.

Meanwhile, limiting its foreign exchange market intervention, the Korean authorities maintained the foreign exchange policy stance allowing the won's exchange rate to be determined flexibly by the supply and demand condition of the foreign exchange market.¹ Such flexibility in exchange rate and resulted appreciation of won served to buffer the impacts of changes in external conditions on domestic economy and to establish independent monetary policy for macroeconomic stability of Korea. In other words, the continued appreciation of Korean won until 2007 was a result of large inflow of foreign capital in the flexible exchange

¹ Despite the continued weakening of the dollar since 2003, the Korean government took actions to maintain the won's value at a low level. Then, in the fourth quarter of 2004, the won recorded a significant appreciation and export companies called for government intervention in the foreign exchange market. However, the government was already under increased pressure for handling the cost to sustain the overly accumulated foreign exchange reserve which was at that time even larger than Korea's total debt, so there was not much room for the government to initiate active policies on foreign exchange policies.

rate system, and it also played the role of limiting additional expansion of foreign exchange liquidity.²

B. Asset Prices and Financial Markets in Korea: 2005-2007

Several recent studies on the global financial crisis pointed out that expansionary monetary policy of advanced economies, particularly in the US after the IT bubble burst, as the main culprit behind the crisis.³ In particular, the low interest rate policy that has prevailed for a long period of time to respond to economic slowdown after the IT bubble burst left investors with appetite for high risk products, giving rise to high-risk investment and also encouraging these products to be distributed widely, which eventually heightened the risks in the financial sector, according to the studies. The low interest rate policy also has been accused as a major factor that contributed to forming house price bubbles combined with insufficient financial supervision and inadequate credit rating on the spread of investment products related to housing finance. These bubbles burst in the end, throwing global financial markets and world economies into the crisis of severe credit crunch and economic slowdown.

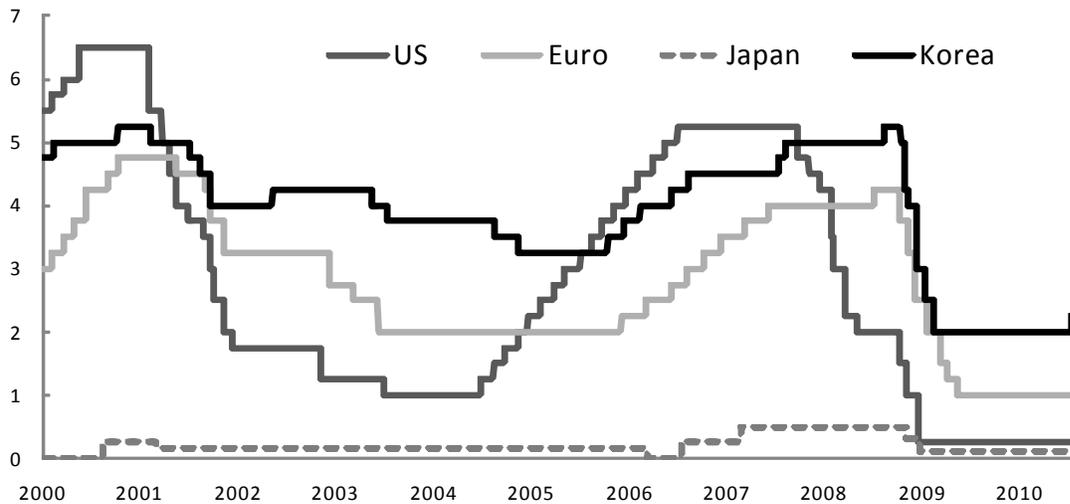
Korea, as well, maintained expansionary stance for the monetary policy as a way to respond to economic slowdown after the economic crisis of the late 1990s and IT bubble burst of advanced economies, which resulted in a rapid expansion in household credit and sharp rise in house prices. In this context, Korea appears to have experienced negative effects of monetary policy as advanced economies did. In other words, in Korea, as well, excessive liquidity had acted as an underlying factor behind the surge in house prices. However, it should be noted that Korea already went through a burst of household credit bubble in 2003 and the ensuing economic contraction. Also, the size of the monetary policy expansion and the house price growth was relatively smaller in Korea than the US and Europe, the epicenter of the recent crisis.

² Considering the fact that the increased supply of foreign exchange was largely through the increase in short-term borrowings, it is, of course, naïve or incorrect to argue that the Korean government's foreign exchange policy posed no problems. The rapid increase in short-term external liability was a main culprit that caused a large and abrupt outflow and subsequent sharp depreciation of Korean won, rapidly infecting the Korean economy with the global financial crisis.

³ See Adrian and Shin (2008), Blanchard et al. (2010), and Reinhart and Rogoff (2009), etc.

For this reason, it might be reasonable to argue that conditions and consequences of the monetary policy naturally turned out very differently in Korea.

Figure 4: Key Target Interest Rates of Selected Countries



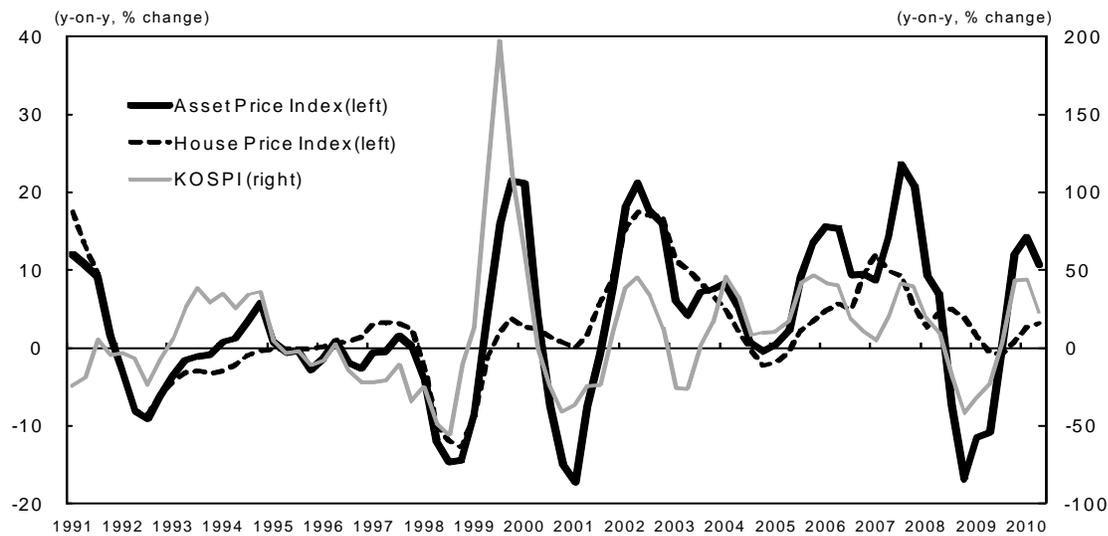
Just as other advanced countries, however, Korea also witnessed a phenomenon of asset price surge right before the outbreak of the global financial crisis. Though the Bank of Korea undertook an upward adjustment of the call rate target from 3.25% to 5.0%, Korea's nominal house price rose by 20% from 2005 to 2007, and KOSPI rose by 118%. The growth rate of house prices might look much smaller than that of stock prices but, considering the relative size of aggregate market value of house and differences in the degree of price fluctuations, the growth of house price seemed to be high enough to influence the overall asset prices in Korea.⁴

To examine the relation between Korea's asset price volatility and its monetary policy change, I consider devising a simple index of asset price in Korea as below. The index is merely the weighted average of the house price index and stock price indices of KOSPI and KOSDAQ markets using their respective aggregate market values as weights. As shown in Figure 5 below, Korea's overall asset prices have been usually led by the fluctuations in house prices. After the crisis of the late 1990s, however, it can observe that the effects of stock price fluctuations on the

⁴ The aggregate market value of house was nearly double the KOSPI's as of 2005 and the standard deviation of the monthly year-on-year growth rate of KOSPI from January 2000 to December 2007 recorded 28.7% while that of the house price index recorded only 5.6%.

movement of Korea's overall asset prices are increasing, which seems to reflect the expanded relative size of stock market in Korea. Figure 5 also shows that rise of asset price in Korea before the recent global financial crisis lasted for quite long period of time. The upward trend of asset prices, which started in 2005 with the simultaneous recovery signs of stock and house prices, maintained a year-on-year growth rate of over 10% for each quarter until late 2007.

Figure 5: Asset Prices in Korea



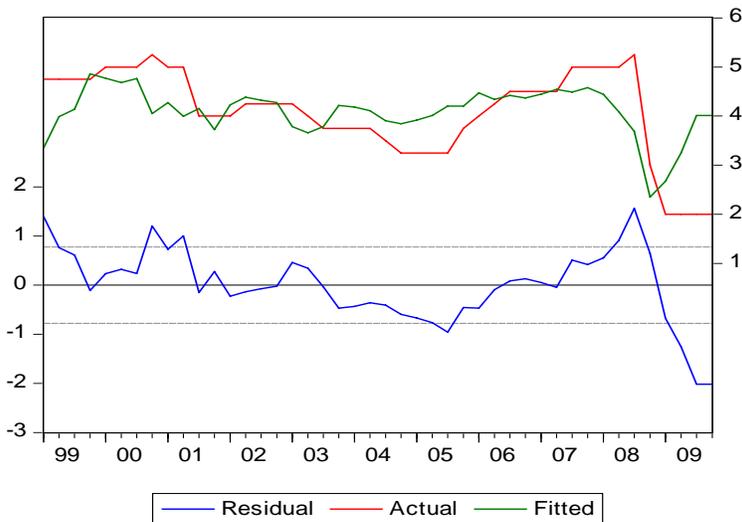
Nevertheless, it is still not quite clear that such upward trend of asset prices was attributable to inappropriate monetary policy in Korea as in the epicenter of the recent crisis. Although the Bank of Korea increased interest rates gradually since October 2005, such monetary policy reaction might not be strong enough to stabilize asset prices. To examine this, we estimated the following simplified version of Taylor rule equation for the Korean economy and compared the observed target call rate of the Bank of Korea and the rate implied by the Taylor rule.⁵

⁵ The Taylor rule specifies how a central bank might have altered its targeted short-term interest rate (the target call rate or base rate in Korea) in response to evolving macroeconomic fundamentals—specifically, the divergence of current output from potential output and of current inflation from the desired rate of inflation.

$$\begin{aligned}
 \text{Target call rate} = & 5.02 + 0.27 \text{ Output gap} - 0.35 \text{ Inflation rate} + \text{Residual} \\
 & (17.14) \quad (3.56) \qquad \qquad \qquad (-3.36) \\
 & \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \text{Adj. } R^2 = 0.26
 \end{aligned}$$

For the output gap, I use the aggregate demand pressure that can be extracted from the structural vector autoregression (SVAR) methodology of Blanchard and Quah (1989) as reported in Kim (1996) for the Korean data. The most critical identification assumption of this methodology is that the demand shock does not change the output level in the long run, while the supply shock does. I used the seasonally adjusted quarterly series of GDP and core consumer price index (core CPI) with eight lags included in the reduced form estimation, and the sample covered from 1970:Q1 to 2010:Q1. We calculate the inflation rate as the year-on-year percentage growth of the core CPI. The sample period of regression is set for the period after 1999 when the Bank of Korea first started to announce the call rate target. All estimated coefficients in the equation are statistically significant at the 1 percent level. The *t*-statistics of estimated coefficients are reported in parenthesis.

Figure 6: Predicted Values and Residuals from Taylor Rule Estimation



The predicted values from the estimated equation above and the residuals are reported in Figure 6. The predicted value from the estimated equation can be interpreted as “rule-based” monetary policy, and the residual as “discretionary” monetary policy. A positive residual

indicates tight monetary policy relative to the rule, while a negative residual indicates relatively loose policy. From Figure 6, it can be found that, despite the Bank of Korea's series of interest rate increase since the second half of 2005, monetary policy was loose until 2007 in the sense that the target call rate was lower (or not significantly higher) than the rate implied by the Taylor rule. According to the above figure, it seems that the Bank of Korea's contractionary monetary policy stance was not strong enough to fully cope with the changes in economic conditions.⁶

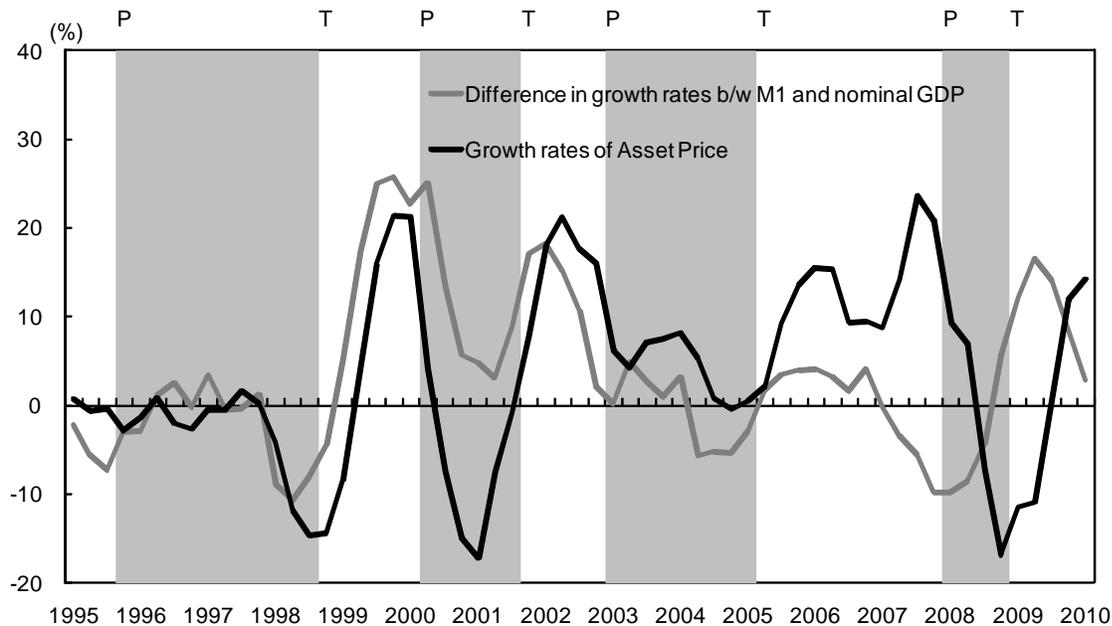
Meantime, the relation between the monetary aggregates and asset prices suggests that the asset price rise during the period from 2005 to 2007 might stem from the changes in monetary policy conditions. The growth rates of asset prices in Korea have been moving closely in line with monetary aggregates, particularly M1 (narrow money).⁷ Figure 7 indicates that the faster the M1's year-on-year growth rate grows above the nominal GDP growth rate, the higher the asset prices tend to rise. M1 is mainly the funds of the household and corporate sectors which need to be operated in the short-term. In other words, in the case where M1 grows much faster than that caused by the fluctuations of real economic activity, there would be an increase in the wandering short-term liquidity—which refers to the liquidity to move fast towards seemingly more profitable investment opportunities emerging in certain asset markets. For example, in the period where Korea's monetary policy was being eased excessively after the economic crisis of the late 1990s, the short-term liquidity in non-financial private sector rose much faster than real

⁶ This could be due to that under the inflation targeting, the Bank of Korea was more responsive to current inflation than to the expected inflation for the future. I estimated the Bank of Korea's target rate response equation using the year-on-year percentage growth of the CPI, the aggregate demand pressure, and the real effective exchange rate (REER). For the REER, I constructed an index that is based on twelve currencies of major trading partners of the Korean economy, using the relative portion of trading volumes as the respective currencies' weights. In order to eliminate the significant serial correlation of error term, I included the lagged dependent variable. According to the regression results, it seems that the call rate target set by the Bank of Korea was intended to stabilize output as well as inflation and also to directly respond to changes in the foreign exchange rate. The result also suggests that the target call rate responded significantly to the realized inflation rate, but insignificantly to the inflation rate of the next year. This implies that the Bank of Korea did not change the call rate in response to an expected call rate in a preemptive manner.

⁷ See Kim (2009) for details.

economic activity and was flown into stock and housing markets, raising asset prices at a rapid pace. This trend might have continued on in mid-2000s.

Figure 7: Growth Rates of M1 and Asset Price

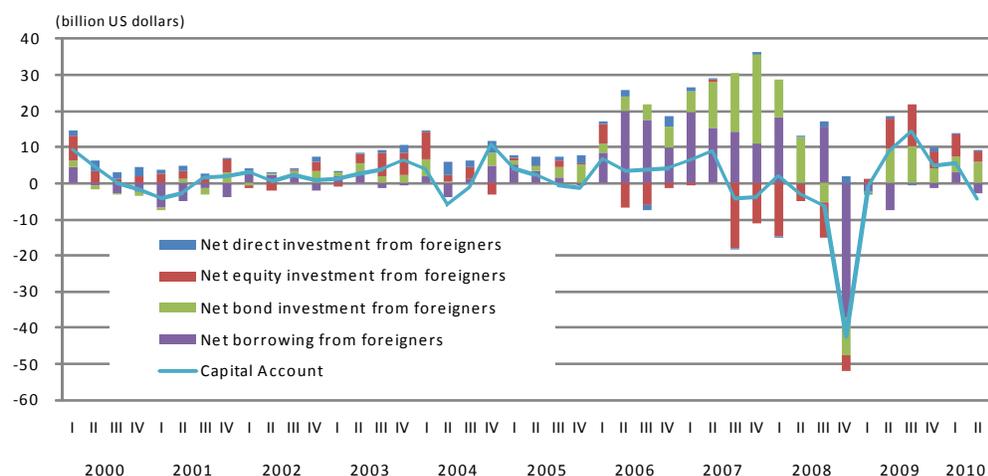


However, the rise in asset prices after 2005 appears to move somewhat differently, compared to the rise in short-term liquidity seen by the growth rate gap between M1 and the nominal GDP. As a result of the gradual step-by-step rise in the base interest rate by the Bank of Korea since October 2005, the growth rate of M1 has been maintained at a level not much different to the rise and fall of real economic activity. In 2007, the short-term liquidity even showed a downward trend, while asset prices maintained a significantly high growth rate until early 2008 before the rapid drop due to the global financial crisis.

Such difference can be partly attributable to the sharp rise in capital inflow driven by the global liquidity expansion and stock market boom. As Figure 8 suggests, foreign capital had surged into Korea since 2006, mainly through short-term loans and bond market investment. Figure 9 also shows that the external debt of Korea sharply increased in 2006 and 2007 due to the expansion of foreign capital inflow and, in particular, external debt increase in 2006 was extremely concentrated to the short-term borrowing from foreign banks. In addition, there is a

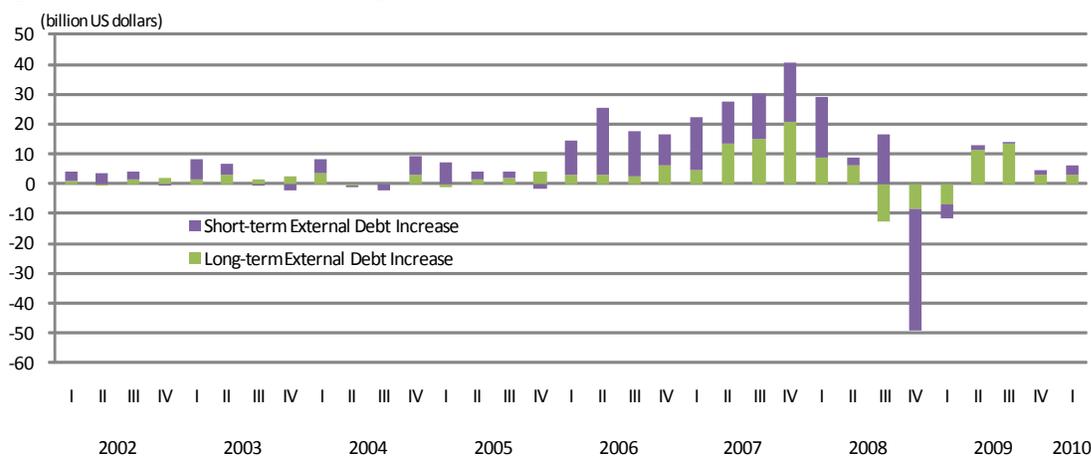
possibility that along with the foreign capital inflow, investment sentiment of domestic investors improved due to the expectation for the global stock market synchronization, significantly weakening the effect of contractionary monetary policy through the adjustment of policy interest rate.

Figure 8: Foreign Capital Inflow in Korea



Source: Bank of Korea.

Figure 9: Short-term and Long-term External Debt of Korea



Notes:

1. Figures are based on changes during the period.
2. Short-term external debt includes liabilities in money market instruments, trade credits, loans, and deposits of foreigners.
3. Long-term external debt includes liabilities in bonds and notes.

Source: International Investment Position, the Bank of Korea.

The increased liquidity from the foreign capital inflow through short-term borrowing might have been invested in non-traditional short-term financial investment products such as CDs of banks and money market fund (MMF) of non-bank financial institutions whose return used to be higher than that of traditional products.⁸ As these investment products are not included in M1, it is possible that the rise and fall in M1 might not clearly identify the fluctuation in short-term liquidity in the domestic financial market.⁹ This might be a reason why the growth rate of M1 showed declining trend, while overall short-term liquidity expanded through the foreign capital inflow and triggered the persistent rise of asset prices.

Therefore, Korea's monetary conditions were not contracted enough to effectively respond to the economic circumstances. Given the increased short-term liquidity through the massive inflow of foreign capital, the upward adjustment of policy interest rate was not enough to be effective to alleviate the upward pressure of asset prices in Korea.

III. The Crisis and the Policy Responses in Korea

A. Global Financial Crisis and Initial Policy Responses in 2008

The Korean economy in 2008 started with the moderate downturn, finalizing the expansionary phase which had continued until the end of 2007. The downturn was found to be noticeable in domestic demand rather than in the export sector. The sluggish domestic demand in the first half of 2008 was mainly due to the decline of the real purchasing power of the economy

⁸ In fact, since 2005, competition among Korean banks strengthened further, leading to a sharp increase in loans. As a way to finance the loans, banks have dramatically expanded non-deposit liabilities. Together with the rise in household loans, the loans to SMEs increased at a fast pace. Above all, as the balance sheet adjustment of households was drawing towards an end, the rate of increase of household credits began to pick up again from 2005 onwards. Their renewed acceleration was largely attributable to the continual expansion of mortgage loans as the upward trend of housing prices persisted unabated along with the intensified competition among financial institutions to expand their loan books.

⁹ Despite the increases in the call rate target since October 2005, unlike M1, the growth rate of M2 had picked up sharply, reflecting an enlargement of private sector's financial investments in the non-deposit financial products of banks and non-bank financial institutions.

reflected in the decline of GDI growth rate, which was faster than that of GDP growth rate impacted by the hike in oil price and thus worsened terms of trade.¹⁰

Korea's export, meanwhile, maintained the high growth rate of around 20% until the third quarter of 2008 owing to favorable exports to emerging market economies and an increase in export prices. The negative impact of the won's appreciation on exports has weakened reflecting enhanced quality competitiveness of Korean export goods.¹¹ However, the current account surplus was on the decline, as the balance of goods account recorded a reduced surplus influenced by the rise in imports due to the rising oil prices and also as the balance of service account recorded a large deficit influenced by the rise in overseas travel with the appreciated Korean won. In particular, the surge in oil price combined with the increase in import of crude oil impaired the current account, which reached a deficit of \$14 billion during the first three quarters in 2008 from a surplus of \$6 billion in 2007.

As the global financial market was severely strained since September 2008, the Korean economy contracted rapidly. The Korean financial market, which was exposed to the foreign capital relatively more than other emerging markets, was affected more severely, especially the won recorded the sharpest depreciation with the market in panic, while the plunge of Korean stock prices was just as bitter as other markets. Such sensitive reaction of the exchange market was quite unexpected when it is considered that the Korea's foreign reserve surpassed \$250 billion as of June 2008. In retrospect, the overreaction was caused by the doubt of market agents over the liquidity of the official foreign reserves in Korea reminding them of the trauma caused during the crisis in 1997 when the liquid assets in its official foreign reserves was almost completely depleted. However, the more fundamental cause appears to be the higher short-term external debt ratio than those of other emerging markets.

¹⁰ The depreciation of dollar in the wake of sub-prime mortgage crisis in the US had pushed up the oil and raw material price which already showed upward trend due to the global demand pressure. For example, Dubai oil price soared to \$140 per barrel in mid-July 2008 from \$70 per barrel on average in 2007. Figure 1 shows that the sharp rise in import price caused the year-on-year GDI growth rate to fall to -0.8% during the first three quarters in 2008 from 3.9% in 2007, while year-on-year GDP growth rate dropped only slightly to 4.8% during the first three quarters in 2008 from 5.0% in 2007.

¹¹ The degree of exchange rate pass-through to export prices in Korea also declined due to firms' cost cutting efforts. See Kim and Lee (2009) for more discussion.

Recognizing the importance of the foreign exchange market stability in the midst of worsening financial market conditions, the government put forth comprehensive measures on October 19, 2008, which included official guarantee of \$100 billion to external debt payment and supply of \$30 billion to banks and exporters in urgent need of foreign exchange. The measures also utilized the urgent supply of domestic liquidity by the central bank's purchase of government bonds or premature redemption of monetary stabilization bond. In addition, the Bank of Korea introduced a competitive swap auction facility on October 20. On October 27, it also slashed the key interest rate from 5% to 4.25% and the interest rate on the Aggregate Ceiling Credit Program from 3.25% to 2.5% and raised the upper limits on the program, while increasing open market operations and broadening the range of assets eligible for them to enhance bond market conditions and alleviate credit crunch of SMEs.

While the plentiful supply of domestic liquidity contributed to abating concerns of credit crunch in the financial market, it also lowered the short-term interest rate and thus gave an additional depreciation pressure on Korean won. In particular, market agents seem to have purchased foreign currencies leveraging the domestic liquidity supplied by an array of measures, which caused an additional pressure on Korean won.

Under those circumstances, the announcement on October 29 that the Bank of Korea signed the currency swap contract with the FRB amounting to \$30 billion made a big contribution to the stabilization of foreign exchange market in Korea.¹² The Bank of Korea also agreed to expand the currency swap arrangement with the Bank of Japan from \$3 billion to \$20 billion on December 12, and made an announcement to sign the currency swap contract with the People's Bank of China.

Despite a variety of policy measures implemented to stabilize the financial market, the household and corporate sectors still suffered from the crunch. The uncertainty drawn over the financial market further deteriorated the slowdown of the domestic demand of consumption and

¹² Considering that Korea already had foreign reserves of more than \$250 billion, it is hard to see how the currency swap of \$30 billion could be very meaningful. Obstfeld et al. (2009) suggests that the swap lines could be interpreted as signals. In fact, the stabilizing effect of the currency swap contract did not last very long. It was only after the Fed announced that it would renew the swap agreement, foreign investors' confidence in the Korean economy improved and stability in the foreign exchange market could be secured.

investment, dragging down the stock and house prices and increasing financing cost. Along with this, the diffusion of the global financial crisis undermined the emerging economies as well as advanced economies, damaging the export demand. Korea as well saw a sharp decline in export and the economy went into recession rapidly.

B. Macroeconomic Policy Responses to the Crisis

In 2009, the Korean government made a proactive effort to alleviate the plunge of the economy via expansionary monetary and fiscal policies in addition to the various measures announced to stabilize the financial market immediately after the financial crisis.

The Bank of Korea maintained the key interest rate to the lowest level of 2.0% by downgrading two times in a row by 0.5%p each on January 9 and February 12, 2009. The efforts to stabilize the financial market were continued such as setting up the Bank Recapitalization Fund to supplement the recapitalization of banks in February 2009 in addition to the Bond Market Stabilization Fund established in December 2008.

In the case of fiscal policies, the government expanded fiscal budget by more than 50 trillion won (over 5% of GDP) since the second half of 2008, which included 4.4 trillion won through tax refund on oil consumption and others and 4.6 trillion won fiscal spending based on supplementary budget in 2008 and tax cuts of 10.2 trillion won and additional fiscal spending of 11.4 trillion won and 17.2 trillion won by the revised fiscal budget and supplementary budget, respectively in 2009. The government established a system to take effective and bold measures in a prompt manner; calling the administration an “economic emergency government” and holding “emergency meetings” almost every week.¹³

Such proactive policy responses mentioned above can be evaluated to have contributed to moderating the serious contraction in the economy from the beginning of 2009 and fast recovery of the economy after the second quarter. Under the worst external conditions ever, the Korean economy started to show signs of gradual recovery, with quarter-to-quarter GDP growth rate turning to 0.1% in the first quarter of 2009 from -5.1% in the fourth quarter of 2008. As global financial markets slowly stabilized with the risk factors phasing out, the Korean economy accelerated with a surprising quarter-on-quarter growth rate of 2.6% in the second quarter of 2009.

¹³ Emergency economy meetings were held 40 times in 2009.

The ease of severe contraction of export due to the increasing demand from the major trade partners such as China was another major factor in the recovery since the second quarter of 2009. Although the stability of Korea's foreign exchange market was low, depreciated won benefited the price competitiveness of Korean exports. Moreover, the current account surplus along with the fall of oil and raw material prices reduced the tension of the supply and demand of foreign exchange. The real purchasing power of domestic income was strengthened due to the improvement in terms of trade, and the recovery of asset prices such as stock prices and stabilized inflation alleviated the concerns of further contraction of domestic demand, thus improving the economy rapidly.

The Korean economy continued the fast recovery in the second half of 2009 with the improvement in export and domestic demand amid the stable employment situation. The quarter-on-quarter GDP growth rate magnified to 3.2% in the third quarter from 2.4% in the second quarter. It appears that expansionary monetary and fiscal policies successfully buffered the negative impact of global financial crisis on domestic demand in Korea. In addition, the effects of fiscal expenditure from the second half of 2008 to the first half of 2009 can be evaluated to have enhanced the self-sustainability and viability of the private sector with some lags through dynamic equilibrium channels. The following presents the impacts and consequences of expansionary fiscal policy in detail.

C. Expansionary fiscal policy and its consequences

The Korean government responded to the sharp economic downturn resulting from the global financial crisis with a large fiscal stimulus. The expansion in fiscal stimulus package after the second half of 2008 reached 50 trillion won, which accounts for more than 5% of Korea's nominal GDP in 2008. According to OECD (2010), the magnitude of fiscal stimulus package implemented and/or announced by the Korean government to respond to the global financial crisis is 6.1% of GDP, which is the highest among OECD member countries adopting explicit crisis driven stimulus programs.

Table 1: Composition of Fiscal Packages in Major Countries¹

	Net effect	Tax measures					Spending measures					
		Total	Individuals	Firms	Consumption	Social contributions	Total	Final consumption	Investment	Transfers to households	Transfers to firms	Transfers to sub-national government
Canada	-4.1	-2.4	-0.8	-0.3	-1.1	-0.1	1.7	0.1	1.3	0.3	0.1	..
France	-0.7	-0.2	-0.1	-0.1	0.0	0.0	0.6	0.0	0.2	0.3	0.0	0.0
Germany	-3.2	-1.6	-0.6	-0.3	0.0	-0.7	1.6	0.0	0.8	0.3	0.3	0.0
Italy	0.0	0.3	0.0	0.0	0.1	0.0	0.3	0.3	0.0	0.2	0.1	0.0
Japan	-4.7	-0.5	-0.1	-0.1	-0.1	-0.2	4.2	0.2	1.2	0.6	1.5	0.6
Korea	-6.1	-2.8	-1.4	-1.1	-0.2	0.0	3.2	0.0	1.2	0.7	1.0	0.3
UK	-1.9	-1.5	-0.5	-0.2	-0.6	0.0	0.4	0.0	0.4	0.2	0.0	0.0
US	-5.6	-3.2	-2.4	-0.8	0.0	0.0	2.4	0.7	0.3	0.5	0.0	0.9
OECD average ²	-3.9	-1.9	..	..	..	..	-2.1	..	..	..	..	..

Notes:

1. Announced or implemented over the period 2008-10 as a share of 2008 GDP. The amounts shown in the total columns do not always match the sum of the columns shown because some components either have not been clearly specified or are not classified in this breakdown.
2. Weighted average of countries that adopted positive stimulus programs.

Source: OECD (2010).

A large fiscal stimulus such as this had made significant contributions to Korea's economic recovery from the severe economic slowdown. However, as the government executed front-loading of fiscal expenditure in the first half of 2009, the capacity to cover the additional fiscal expenditure was weakened, triggering concerns that the Korean economy's recovery might slow down sharply from the second half of 2009.¹⁴ Such concern was rooted from the worry that the growth potential or viability of Korea's private sector was not sufficiently recovered. To examine such concern, it may be necessary to measure the contribution of fiscal stimulus to the recovery of GDP growth rate and figure out the extent of private sector recovery.

¹⁴ The Korean government announced that 65% of budget (167 trillion won out of 258 trillion won) was front-loaded in the first half of 2009.

Table 2: Macroeconomic Effects of Fiscal Expansion of 1% of GDP

	(%p)							
	1 st quarter	2 nd quarter	3 rd quarter	4 th quarter	5 th quarter	6 th quarter	7 th quarter	8 th quarter
Real GDP	0.49	0.21	0.20	0.15	0.11	0.08	0.05	0.03
Private Consumption	0.50	0.53	0.43	0.32	0.24	0.17	0.12	0.09
Equipment Investment	1.31	1.09	0.91	0.70	0.48	0.28	0.11	-0.03
Construction Investment	0.53	0.53	0.52	0.50	0.46	0.42	0.38	0.33

Notes: Numbers are the size of growth rate change from the respective baseline Q-to-Q growth rate.

Generally, in a simple dynamic general equilibrium model, it is expected that the effect of expanded fiscal expenditure would be realized with some lags. Using the quarterly macroeconomic model of the Korea Development Institute, KDI (2009) simulated the dynamic effects of Korea's fiscal expenditure on GDP for several quarters.¹⁵ The results reported in Table 2 imply that a temporary increase in fiscal expenditure of 1% of annual GDP of Korea (about 10 trillion won) in a certain quarter raises the real GDP growth rate by 0.49%p from the baseline for the same quarter and 0.26%p for the period of 4 quarters, i.e. during the immediately following year after the stimulus.¹⁶ It should be noted that such positive effect of fiscal expenditure will be

¹⁵ The numbers in the second row of Table 2 can be considered as the fiscal multiplier. As reported in Spilimbergo et al. (2008), existing studies provide a wide range of values for the short-term fiscal multiplier from less than zero to larger than four, depending on the identifying assumptions, the type of fiscal policy, and the country of interest. Similarly for Korea, Huh (2007) found that the fiscal multiplier is not significantly different from zero or even negative while most of other studies indicate that the fiscal multiplier is positive but less than 1 as those found in this paper. Hong (2009) suggested that the fiscal multiplier is likely to be larger in the current crisis because the effectiveness of a stimulus package depends on the severity of a recession, especially when there is large slack in the economy.

¹⁶ In the model used for the estimation, interest rates are endogenously determined so that an increase in fiscal expenditure leads to upward pressure on interest rates, which partially crowds out the effects on the GDP growth rate. However, as experienced in 2009 and the first half of 2010, when interest rates remains at a low level due to expansionary monetary policy, the effect of fiscal expenditure would be bigger than that shown here. Still, there remains an issue that the leakage of demand through imports and the effects of fiscal expansion on the exchange rate also have the 'crowding-out effect.'

weakened after the 5th quarter and turn out negative in later quarters so that the long-run effect of increase in fiscal expenditure would be negated. Table 2 also shows the effects of increase in fiscal expenditure on other macroeconomic variables.¹⁷

To measure the macroeconomic effects of fiscal stimulus package executed since the fourth quarter of 2008, I used the numbers reported in Table 2 as multipliers that can be combined with the temporarily expanded fiscal expenditure due to the discretionary stimulus policy. It is assumed, first, that the entire supplementary budget of 4.6 trillion won determined in September 2008 was spent during the fourth quarter of 2008. For the first half of 2009, the amount of 34.6 trillion won can be calculated as the temporarily expanded discretionary fiscal expenditure, including the increased expenditure during the first half of 2009 under the original budget and the amount spent under the supplementary budget during the same period. For the second half of 2009, the similar calculation show that discretionary fiscal expenditure had been decreased by 4.4 trillion won from the baseline due to front-loading in the first half, despite the increased expenditure under the supplementary budget. Also, due to the limitations of data, it is assumed that the size of temporarily expanded discretionary fiscal expenditure in each half of 2009 was equally distributed in its relevant two quarters. In the case of tax reduction, a half of tax reduction in the second half of 2008 (6.6 trillion won) was assumed to be executed in the fourth quarter of 2008 and a fourth of tax reduction in 2009 (11.7 trillion won) was assumed to be executed in each quarter of 2009. In this way, the ‘temporary expansion’ of total fiscal stimulus is calculated to be 46.5 trillion won during the period from the fourth quarter of 2008 to the fourth quarter of 2009.

Table 3 shows the accumulated contribution of fiscal stimulus executed in each quarter considering the dynamic effect of fiscal expenditure shown by the numbers in the second row of Table 2. Table 3 indicates that fiscal stimulus had significantly contributed in buffering against a falling growth rate of the Korean economy in the first half of 2009. In other words, the expansion in fiscal expenditure and tax reduction were estimated to uphold the growth rate for the first

¹⁷ Numbers in Table 2 show the size of growth rate change of each macroeconomic variable triggered by the temporary expansion of fiscal expenditure. The effects on macroeconomic variables could turn out differently when the type of fiscal expenditure—such as final consumption, investment, transfer—are considered. In this table, the weighted average of simulated numbers for each type of fiscal expenditure considering the composition of fiscal stimulus in 2008 and 2009 is reported.

quarter of 2009 to increase by 1.2%p and that for the second quarter by 1.8%p. This could also mean that without such fiscal stimulus, the quarter-on-quarter growth rate could have reached only -1.0% in the first quarter and 0.6% in the second quarter.

Table 3: Contribution of Fiscal Stimulus to GDP Growth Rate (Q-t-Q growth rate, %, %p)

	2008	2009				2010			
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3 ^P	Q4 ^P
Real GDP Growth (A)	-4.5	0.2	2.4	3.2	0.2	2.1	1.5	1.0	1.2
Contribution of Fiscal Stimulus (B)	0.4	1.2	1.8	1.2	1.0	0.8	0.5	0.3	0.2
(A-B)	-4.9	-1.0	0.6	2.0	-0.8	1.3	1.0	0.7	1.0

Notes: Growth rates after the third quarter of 2010 are from KDI's economic outlook.

Furthermore, Table 3 shows that the contribution of fiscal stimulus was sustained in the second half of 2009 despite the fiscal expenditure sharply decreasing in the same period.¹⁸ Since then Korea's GDP growth rate has remained above the total contribution of fiscal stimulus, which implies that the recovery pace of demand in the private sector began to accelerate while the effects of fiscal stimulus of 2008 and 2009 were phased out. In particular, exports and domestic demand in the private sector appears to be the lead drivers for stronger recovery, contributing to sustaining the growth of the Korean economy. Therefore, it might be appropriate to conclude that the fiscal stimulus in Korea successfully played its pump-priming role during the crisis.

D. Low interest rate policy and its consequences

After raising its base interest rate (target call rate) to 5.25% in August 2008, just one month before the Lehman shock, the Bank of Korea quickly reversed its course. Between September 2008 and February 2009, the Bank cut the base interest rate six times to a record low of 2%, where it has remained since then until July 2010 when the Bank raised it by 0.25%p

¹⁸ There were concerns that the recovery pace of the Korean economy might slow down significantly in the second half of 2009 since there were not much room left for additional fiscal expenditure.

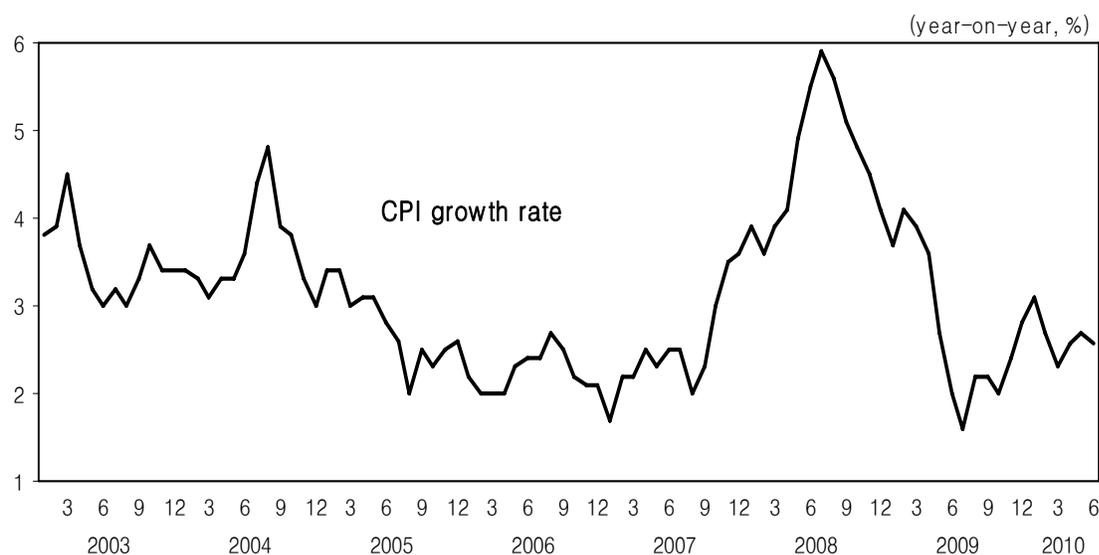
(Figure 4). In addition, according to OECD (2010), the Bank of Korea provided 27.8 trillion won (2.7% of GDP) through its open market operations, Aggregate Ceiling Credit Program, and contributions to the Bond Market Stabilization Fund and the Bank Recapitalization Fund.

Such proactive monetary policy response along with the strong fiscal stimulus contributed to successfully buffering the negative impact of global financial crisis on the Korean economy. That is, supplemented by discretionary fiscal stimulus, the low interest rate and increasing money growth played a role as a powerful countercyclical policy. However, as the monetary policy stance of super-low interest rate have been maintained, and concerns on its potential side effects, such as asset market bubbles and fast inflation, have been growing. In particular, as seen in Figure 6, the target call rate have been significantly lower than the rate implied by the Taylor rule since the second quarter of 2009, implying excessively loose monetary policy.

For example, the appropriate de-leveraging in each sector of the Korean economy might have been delayed due to the super-low interest rate policy. In fact, I could not observe any significant debt adjustment of households and companies that can be easily witnessed in advanced economies. As for households, the debt ratio against GDP rose even after the crisis to 80% in 2009, meaning that it would be difficult to exclude the possibility of a growing pressure of repayment and insolvency risks, when the rapid rise in household debt continues, although the possibility of an outbreak of massive default problem is low. As for corporations, the debt ratio against GDP reached above 110%, higher than those of the crisis epicenter countries, meaning that a full-scale de-leveraging is required, centering on loans to SMEs and the construction sector, which posted a sharp rise from 2005.

Despite the excessively loose monetary policy, consumer price inflation has been stabilized, so far. Headline CPI inflation has fallen from a peak of nearly 6% (year-on-year) in mid-2008 to 2% in the third quarter of 2009 (Figure 10). In contrast to the concern on actual or potential deflation, inflation in Korea has stayed above 2%, reflecting, in part, the base effect related to the higher starting point. Such relatively high inflation during the crisis period in Korea also reflects the large depreciation of won, which boosted import prices. Inflation bottomed out at 2% in the third quarter of 2009 and has since picked up while remaining below the mid-point of the inflation target zone.

Figure 10: Headline CPI Inflation in Korea



Although the current inflation rate seems to be well stabilized, it is mostly attributable to the stabilization of exchange rate in Korea. In fact, inflationary pressures have been building up with the overall economic recovery and import prices, including crude oil prices, also have continually put an upward pressure. However, Korea's exchange rate flexibility has served well, and the appreciation of Korean won since 2009 have been successfully offsetting the upward inflationary pressures.

IV. Conclusion: Policies to exit from the crisis

Although the proactive fiscal and monetary policy significantly contributed to the recovery from the recent crisis, there have been questions raised of the appropriate timing and speed of the exit from such exceptional macroeconomic policy stances as Korea's strong recovery from the global financial crisis is expected to continue. It is concerned that excessive macroeconomic stimulus implemented during the crisis may bring negative effects, such as asset price bubbles and overheated economy, unless these macroeconomic policies are normalized in a timely manner. Further, to lead the recent economic recovery pace to a stable and steady growth, it has been suggested that macroeconomic policies need to be implemented with their focus on improving the economic efficiency while gradually normalizing contingency measures.

For the fiscal policy, there are continuously arising worries that rapidly expanded fiscal stimulus measures to alleviate the impact of crisis and overcome economic recession could

undermine fiscal soundness. In addition, although Korea's fiscal conditions have not yet faced severe situations as in some advanced economies and Korea's government debt, currently around 35% of GDP, seems still manageable, there is still the possibility of growing government debt. From a long-term perspective, there are several negative factors such as population aging and reunification which poses a threat to Korea's future fiscal soundness.

Considering that the 2010 budget is relatively tight based on the fiscal impulse indicator compared to the budget for 2009, it can be seen that the normalization process in the fiscal policy is already underway. Given the pace of the upturn, the planned withdrawal of fiscal stimulus in 2010 appears to be appropriate, but needs to be followed by more spending restraint compared to the past, centering its policy focus on recovering fiscal soundness. Not only should the temporary measures of fiscal incentives be phased out as scheduled, but also revenue bases need to be expanded such as through lowering tax exemptions. Additional revenue could be obtained by broadening tax bases without worsening distortions. In addition, some structural changes of fiscal policy framework are needed, such as a stricter practice of medium-term budget planning and reduction of discretionary components.

Given Korea's outlook for strong output growth led by private-sector demand, the Bank of Korea should start to withdraw monetary policy of super-low interest rate to keep inflation firmly anchored at its current level of 3%. While there is uncertainty, it is important not to let inflationary expectations and pressures build for too long, making it important to begin withdrawing monetary stimulus. Such pre-emptive action would avoid another run-up in inflation, which would likely require a significant tightening that could undermine the expansion.

There are still concerns that should be mentioned. It should be also noted that to normalize the current super-low interest rate would take a considerable amount of time. On the other side, a sudden upward adjustment of policy interest rates could bring unnecessary burdens to the recovery. Therefore, as a way to normalized the current macroeconomic policy stances at a gradual pace, it seems natural to start the adjustment of interest rate before the potential side effects are realized. In other words, now is the time to start steering the monetary policy towards a stable growth.

Meanwhile, it is also necessary to discuss the international spillover effect of the change in macroeconomic policy stance. That is, as policy change in a nation can significantly impact on other countries through trade and financial channels, a certain degree of international cooperation

may be required. In particular, implementing an exit strategy without considering such spillover effects is likely to bring about an unexpected negative impact on the global demand which will then hinder stable recovery of the global economy. Reflecting these possibilities, world leaders in the G20 Summit reached an agreement on the principles of the global cooperation in implementing exit strategy, but no unified restrictions were made to determine the time schedule and the scale of exit strategy of each country.¹⁹

Therefore, specific exit strategies could be different, depending on the country, in terms of the implementation time and scale. It is necessary for each country to recognize the need for independent policy which is made to fit the unique conditions of each country such as the independent decision making of central banks relating to the raise in the policy interest rates. Nevertheless, in order for each government to carry out correct policies, accurately understanding the global economic conditions is of great significance. In that sense, the sharing of information on macroeconomic conditions and policy stance among countries is particularly important in terms of global cooperation.

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¹⁹ In particular, a discussion in G20 Summit was made on different exit strategies depending on the economic conditions of each country and the proactive attitudes of each government.

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