

**A Preview of Tale of Korea's Two Crises:  
Distinct Aftermaths of 1997 and 2008 Crises\***

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The 2008 global financial crisis was much more severe than the 1997 Asian crisis. Thus, *ceteris paribus* and barring a serious nonlinearity, Korea's economy should have done worse in 2008 than a decade ago. However, the opposite seems to be true. This paper examines factors behind such a puzzling outcome. Another issue raised is potential long lasting impacts of the recent crisis. Since the 1997 crisis, the average growth rate of real GDP has been noticeably lower. Given serious welfare implications of such deceleration, one cannot but wonder about similar long term effects of the current crisis going forward.

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## 1. INTRODUCTION

This paper looks at the experiences of the Korea's economy through two major crises of 1998 and 2008, both of which had been triggered by large external financial shocks. In the first instance, Korea was the last economy that had been dragged into a whirlpool of foreign exchange crises that had started in Thailand in the summer of 1997, and moved eastward touching many regional economies leaving some standing damaged (Malaysia, Singapore, Hong Kong), taking others down into the pool (Indonesia, the Philippines, Korea in chronological order) by December. The affected economies share a common symptom of not being able to defend their exchange regimes of adjustable peg as they ran out of foreign exchange reserves in the face of large outflow of foreign capital started by a loss of confidence as well as speculative positioning by international investors. Each affected economy had common as well as idiosyncratic causes as to how such a downward cycle initially got started. Opaqueness about the extent of non-performing assets of financial sectors as well as their foreign exchange reserves situations was a common thread. Commercial real estate lending in Thailand and high reliance on external funds by large businesses in Korea were examples of idiosyncratic factors. Anyhow, the four economies that ended up getting emergency infusion of foreign exchanges from the International Monetary Fund went through periods of varying degrees of contraction. Korea experienced particularly steepest fall in output and a large devaluation of the Korean won in 1998. Despite being the highest income country among the four IMF aided economies and being the one with the largest GDP, in retrospect Korea was still quite vulnerable to external shocks as a small open economy.

After a decade later, international financial markets came close to a meltdown led by major failures in the US financial system in 2008. In many regards, the recent crisis easily surpasses the Asian financial crisis of a decade ago. However, simply put, Korea's economy fared much better this time. Immediately following the Lehman Brothers failure in September

2008, things looked very precarious for Korea. The Korean won/US dollar exchange rate as well as credit risk premia on internationally traded Korean papers shot up, and financial institutions were under heavy pressure for they could not roll over their short term external borrowings from international lenders. In Korea, a sense of *déjà-vu* was widespread. There were some harsh self criticisms blaming the government and businesses for implementing insufficient reforms in the bygone years only to repeat the painful adjustments all over again within a decade. However, things improved rapidly by mid spring 2009, and consequently unusually heightened risk indicators of interest rates and exchange rates subsided noticeably.

It appears safe to say that the 2008 global financial crisis was much more serious than the 1997 Asian crisis in terms of its breadth and width (not many have protested the dubbing of the recent crisis as the most severe one since the Great Depression of the 1930s). And given that Korea has become a more open 'small open economy' in 2008, it is puzzling how she appeared so less scathed in the wake of the bigger shock of 2008 than that of 1997. That is, *ceteris paribus*, and barring a significant nonlinearity of the economic system, Korea's economy should have done worse in 2008 than a decade ago in response to more significant external adverse shock. This raises an interesting question about why the Korea's economy did worse in 1997-1998 than in 2008.<sup>1)</sup>

Another important issue is potential long term effects of the recent crisis. A casual observation tells us that there had been a noticeable step-down of average growth rate of real GDP after the 1997 crisis. That is, events of the 1997 crisis seemed to have lowered the trend growth rate of Korea by at least 2 percentage points. Welfare implications of such a sustained deceleration

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<sup>1)</sup> There are different ways of drawing implications from financial crises, such as focusing on general properties of causes, propagations, and effects on real activity (Kindleberger, 1996; Reinhart and Rogoff, 2008, though Kindleberger offered detailed accounts of individual financial crises in addition to such a generalization). The focus of our investigation is to learn more about the Korean economy itself by looking at how she responded to external shocks differently between two separate episodes.

are large. So it is natural that one wonders about whether there is going to be a similar long term impact in the aftermath of the 2008 crisis.<sup>2)</sup>

This paper attempts to answer these questions by taking a careful bird-eye-view of the whole terrain. It would afford us more promising conjectures to be tested in later studies. Experiences of the Korean economy warrant a more careful treatment as she represents a successful small open economy with a fairly well developed financial as well as real sectors with important domestic idiosyncratic factors. Of course this is not to deny applicability of common methodologies focusing on relationships between a set of macroeconomic variables. An outbreak of a major crisis suggests a breakdown of mechanisms of usual interactions among price and quantity variables due to some extraordinary factors. Catastrophic events require looking into circumstances going beyond the usual suspects. This paper's examinations should offer two interesting cross section data of the Korean economy undergoing major external shocks within a decade. Hopefully it will shed some light on how best to prepare for unwelcome but unavoidable adverse external shocks in the future.

The rest of the paper is organized as follows: section 2 offers an overview of both 1997 and 2008 crises focusing on both financial markets and macroeconomic developments around each episodes. Section 3 discusses consequences of the crises on output and employment growth trends and their significance. Section 4 summarizes key factors that contributed to engendering different outcomes of two crises, and offers policy implications and areas for future research.

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<sup>2)</sup> This experience brings out an interesting point regarding the nature of, or how to interpret the 1997 crisis. The most common macroeconomic analytical framework of explaining fluctuations in recent period is to view it as a combination of growth trend with cyclical fluctuations as used by Lucas (1987, 2003). In that framework Lucas showed that welfare cost associated with fluctuations to be relatively small, thus finding little utility for stabilization efforts. There has been steady flow of studies that either support Lucas's interpretation or that disagree (see, references in Lucas, 2003, as well as Yellen and Akerlof, 2006; Gali *et al.*, 2007). However, Korea's experience since 1997 points to a long lasting and quantitatively significant impact of the big fluctuation around 1998. This is an issue that will require further careful study.

## 2. OVERVIEW OF THE TWO CRISES

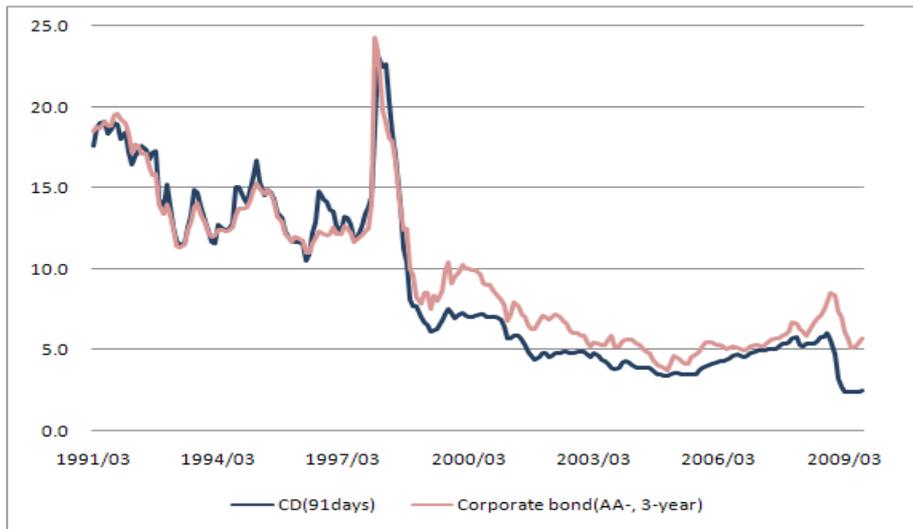
### 2.1. Macroeconomic and Financial Conditions of 1997

There are many direct and indirect factors that led to the event of 1997. Given that the crisis itself is termed as ‘the 1997 foreign exchange crisis’ due to the shortage of the foreign exchange reserves in the face of capital outflow, looking at the external balances of Korea in the relevant period seems to be a good starting point. In the early 1990s, Korea started to liberalize, albeit partially, its capital account that had been closed. It was part of overarching efforts by the new government of the president Yong Sam Kim to decentralize and improve qualitative aspects of the Korean economy that had grown rapidly based on active leadership of bureaucrats. However, the system of a government controlled fund allocation, which in turn implied socialization of credit risks, was more or less still in place when the door to international investors opened. High interest rates due to chronic shortages of funds by businesses (see figure 1), coupled with a slow moving exchange rate under the adjustable peg system (see figure 2), meant high return with relatively low risk for international investors.<sup>3)</sup> Hence, foreign investment fund started to flow rapidly into the Korean bond market, which meant appreciation pressure on the exchange rate. There is nothing unusual about this from the perspective of international financial market participants. However, it was indeed an unusual development for Korean policy makers. Until then, the main factor that affected the exchange value of the currency had been external trade balances. For example, inflow of portfolio investment rose from U\$0.66 billion (1992) to U\$11 billion in 1993 and U\$21.5 billion in 1996. In comparison, Korea’s merchandise exports rose at a more measured pace from U\$65 billion to U\$82.2 billion in 1993 and U\$129.7 billion in 1996.

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<sup>3)</sup> This characterization of Korea’s exchange rate regime is due to Dooley, Dornbusch, and Park (2002).

**Figure 1 Short and Long Term Interest Rates  
(January 1991-August 2009)**



**Figure 2 Korean Won Exchange Rate vs U\$, Yen  
(January 3, 1991-September 17, 2009)**



**Table 1 Growth Contribution of GDP Components (1991-2000)**

|         | Private Consumption | Government Consumption | Domestic Demand (1) | Net Exports (2) | (1) + (2) | GDP Growth |
|---------|---------------------|------------------------|---------------------|-----------------|-----------|------------|
| 1991    | 5.0                 | 0.9                    | 11.8                | -2.60           | 9.2       | 9.4        |
| 1992    | 3.5                 | 1.0                    | 4.6                 | 0.74            | 5.3       | 5.9        |
| 1993    | 3.5                 | 0.8                    | 5.8                 | 0.71            | 6.6       | 6.1        |
| 1994    | 4.9                 | 0.6                    | 11.2                | -2.36           | 8.8       | 8.5        |
| 1995    | 5.7                 | 0.7                    | 10.2                | -1.55           | 8.7       | 9.2        |
| 1996    | 3.9                 | 1.0                    | 9.0                 | -1.78           | 7.2       | 7.0        |
| 1997    | 1.9                 | 0.3                    | 0.1                 | 4.25            | 4.4       | 4.7        |
| 1998    | -7.7                | 0.3                    | -18.4               | 11.29           | -7.1      | -6.9       |
| 1999    | 6.1                 | 0.4                    | 13.0                | -2.91           | 10.1      | 9.5        |
| 2000    | 4.6                 | 0.2                    | 8.0                 | 0.29            | 8.3       | 8.5        |
| Average | 3.1                 | 0.6                    | 5.5                 | 0.6             | 6.1       | 6.2        |

Source: The Bank of Korea, GDP measured in 2000 prices.

Such significant capital inflows and accompanied exchange rate appreciation pressure seemed to have complicated choices for the Korea foreign exchange authority in the face of continued and worsening current account deficit. In fact, ever growing negative net exports had made negative contribution to output growth for three consecutive years from 1994 to 1996 (table 1). Such a worsening external balance would ordinarily have made policy makers intervene to induce the exchange rate's depreciation by accumulating foreign exchange reserves. The foreign exchange reserve indeed rose in this period, but not sufficiently as the Won exchange rate stayed below 800 won per dollar between October 1994 and June 1996.

An almost chronic excess demand, for example the debt to equity ratio of large manufacturing firms was over 300% in 1996 (table 3), for outside funds by businesses was one of the key reasons for the capital inflow.<sup>4)</sup> That, in

<sup>4)</sup> See Krueger and Yoo (2002) for more detailed discussion of the financial conditions of Korean businesses in the period leading up to 1997 crisis.

turn, strengthened the exchange value of won. Both short and long term (3 years) interest rates remained well above 10% in the 1990s as can be seen in figure 1, reflecting such an excess demand condition. Interest rates in most advanced economies were generally lower in the same period, especially in Japan where they fell below 5% in the early 1990s. External borrowings, mainly by Korean banks, also grew. Not only that, the external borrowings concentrated at the short end of maturity were problematic as banks typically used them as a funding source for their long term lending, thus creating a maturity mismatch. Table 2 shows that, at the end of 1994, the short term borrowings were U\$38.5 billion out of the total external debt of U\$89.8 billion (154% and 359% of FX reserves, and 9% and 16% of GDP, respectively). In the second quarter of 1997, short term borrowings were U\$83.6 billion out the total U\$174.4 billion (251% and 524% of FX reserves of the second quarter of 1997, 16% and 34% of GDP, respectively).

It is interesting to note that the Korean FX regulation that actually favored short term over long term borrowings was an important contributing factor for the concentration of borrowings at the short term end.<sup>5)</sup> Along with this, there was another important problematic regulatory gap. The Merchant bank industry, made up of financial institutions which did not take retail deposits, was in a regulatory blind spot as no particular regulatory agency had been in charge of overseeing them.<sup>6)</sup> On top of that, as part of the deregulation drive, 16 new merchant banks were licensed and allowed to handle foreign exchange businesses. Merchant banks engaged in highly risky businesses. For example, they were not only lending to domestic businesses but also purchasing high yield bonds issued by Thailand and Russia which later ran into FX crisis of their own, rendering those bonds near worthless (Choi, 1998).

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<sup>5)</sup> It was in the form of long-term borrowing having to pass higher bureaucratic hurdle; for long-term borrowing, banks had to obtain permission from the minister of Finance, while there was no such requirement for short term borrowing. Such an asymmetric regulation was later repealed (Choi, 1998).

<sup>6)</sup> This was unusual because commercial banks, insurance as well as securities industries each had their own regulatory agencies at that time. They were merged into a single Financial Services Agency later in the wake of the 1997 crisis.

**Table 2 External Borrowings, FX Reserves, Exports, GDP**

(Unit: billion US\$, %)

|        | Total            | Short Term      | Long Term        | ST/Total | FX Reserves      | Exports          | GDP              |
|--------|------------------|-----------------|------------------|----------|------------------|------------------|------------------|
| 1994   | 89.8             | 38.5            | 51.4             | 43       | 25.0             | 96.0             | 423.4            |
| 1995   | 119.8<br>(33.4)  | 54.9<br>(42.7)  | 64.9<br>(26.4)   | 46       | 31.9<br>(27.5)   | 125.1<br>(30.3)  | 517.1<br>(22.1)  |
| 1996   | 157.4<br>(31.4)  | 75.9<br>(38.3)  | 81.5<br>(25.5)   | 48       | 32.4<br>(1.5)    | 129.7<br>(3.7)   | 557.6<br>(7.8)   |
| 1997   | 174.2<br>(10.7)  | 63.8<br>(-16.0) | 110.5<br>(35.6)  | 37       | 19.7<br>(-39.2)  | 136.2<br>(5.0)   | 516.3<br>(-7.4)  |
| 1998   | 163.8<br>(-6.0)  | 39.6<br>(-37.9) | 124.2<br>(12.5)  | 24       | 52.0<br>(163.6)  | 132.3<br>(-2.8)  | 345.4<br>(-33.1) |
| 1999   | 152.9<br>(-6.6)  | 43.1<br>(8.8)   | 109.9<br>(-11.5) | 28       | 73.7<br>(41.8)   | 143.7<br>(8.6)   | 445.4<br>(28.9)  |
| 2000   | 148.1<br>(-3.1)  | 49.7<br>(15.3)  | 98.5<br>(-10.4)  | 34       | 95.9<br>(30.1)   | 172.3<br>(19.9)  | 533.4<br>(19.8)  |
| 2001   | 128.7<br>(-13.1) | 40.3<br>(-18.9) | 88.4<br>(-10.2)  | 31       | 102.5<br>(6.9)   | 150.4<br>(-12.7) | 504.6<br>(-5.4)  |
| 2002   | 141.5<br>(9.9)   | 48.2<br>(19.6)  | 93.3<br>(5.5)    | 34       | 120.8<br>(17.9)  | 162.5<br>(8.0)   | 575.9<br>(14.1)  |
| 2003   | 157.4<br>(11.3)  | 50.8<br>(5.5)   | 106.6<br>(14.3)  | 32       | 154.5<br>(27.9)  | 193.8<br>(19.3)  | 643.8<br>(11.8)  |
| 2004   | 172.3<br>(9.4)   | 56.3<br>(10.9)  | 115.9<br>(8.7)   | 33       | 198.2<br>(28.3)  | 253.8<br>(31.0)  | 722.0<br>(12.1)  |
| 2005   | 187.9<br>(9.1)   | 65.9<br>(17.0)  | 122.0<br>(5.2)   | 35       | 210.0<br>(6.0)   | 284.4<br>(12.0)  | 844.9<br>(17.0)  |
| 2006   | 260.1<br>(38.4)  | 113.7<br>(72.6) | 146.3<br>(20.0)  | 44       | 238.4<br>(13.5)  | 325.5<br>(14.4)  | 951.8<br>(12.7)  |
| 2007   | 383.2<br>(47.3)  | 160.2<br>(40.9) | 222.9<br>(52.3)  | 42       | 261.8<br>(9.8)   | 371.5<br>(14.1)  | 1049.2<br>(10.2) |
| 2008   | 381.1<br>(-0.5)  | 151.1<br>(-5.7) | 230.0<br>(3.2)   | 40       | 200.5<br>(-23.4) | 422.0<br>(13.6)  | 929.1<br>(-11.4) |
| 2008Q1 | 415.8<br>(47)    | 176.0<br>(35.3) | 239.8<br>(56.9)  | 42       | 264.2<br>(8.3)   | 99.4<br>(17.4)   |                  |
| 2008Q2 | 421.7<br>(35.5)  | 176.2<br>(28.3) | 245.5<br>(41.1)  | 42       | 258.1<br>(3.0)   | 114.5<br>(23.1)  |                  |
| 2008Q3 | 425.5<br>(24.5)  | 189.6<br>(30.2) | 235.9<br>(20.2)  | 45       | 239.7<br>(-6.8)  | 115.0<br>(27.0)  |                  |
| 2008Q4 | 381.1<br>(-0.5)  | 151.1<br>(-5.7) | 230.0<br>(3.2)   | 40       | 201<br>(-23.3)   | 93.1<br>(-9.9)   |                  |

Source: Bank of Korea (<http://ecos.bok.or.kr>).

**Table 3 Some Financial and Real Indicators Related to Manufacturing Firms (%)**

|      | Debt to Equity Ratio <sup>1)</sup> | Net Interest Coverage Ratio <sup>2)</sup> | Growth Rate of Facility Investment <sup>3)</sup> |
|------|------------------------------------|---|--|
| 1995 | 286.75                             | N. A.                                     | 18.9   |
| 1996 | 317.11                             | N. A.                                     | 9.1  |
| 1997 | 396.25                             | N. A.                                     | -8.4   |
| 1998 | 303.02                             | 68.28                                     | -40.6  |
| 1999 | 214.66                             | 96.06                                     | 37.5   |
| 2000 | 210.57                             | 157.22                                    | 32.9   |
| 2005 | 100.9                              | 525.42                                    | 5.3  |
| 2006 | 98.88                              | 439.33                                    | 8.2  |
| 2007 | 107.1                              | 435.29                                    | 9.3  |
| 2008 | 97.83                              | 415.79                                    | -2.0   |

Notes: 1) (Current liabilities + non-current liabilities)/(stockholders' equity).

2) (Operating profit)/(interest expenses).

3) National Income Account, real, chain index.

Source: Bank of Korea (<http://ecos.bok.or.kr>).

Turning to non-financial businesses, they had been heavily reliant on external funds and also faced rising wages.<sup>7)</sup> Operating in such a strained environment, a string of businesses got into trouble, failing to service outstanding debts. To name only those with over one trillion won (about US\$ one billion) borrowing outstanding from financial institutions, and that officially entered restructuring procedures in 1997 are; Hanbo group (January), Jinro (April), Daenong (May), Kia (the big one with 9.5 trillion won, July), Haitai (November), and New Core (November).

<sup>7)</sup> Average leverage (debt to equity) ratio of the manufacturing sector ranged from 285.5 (1990) to 396.2 (1997) in this period. Real average wages of manufacturing sector rose at a double digit rate for 3 years between 1988 and 1990 before settling to 5-8% range until 1997. Labor strikes were especially frequent between 1987 and 1994, ranging 755.8 to 111.3 day/1,000 workers.

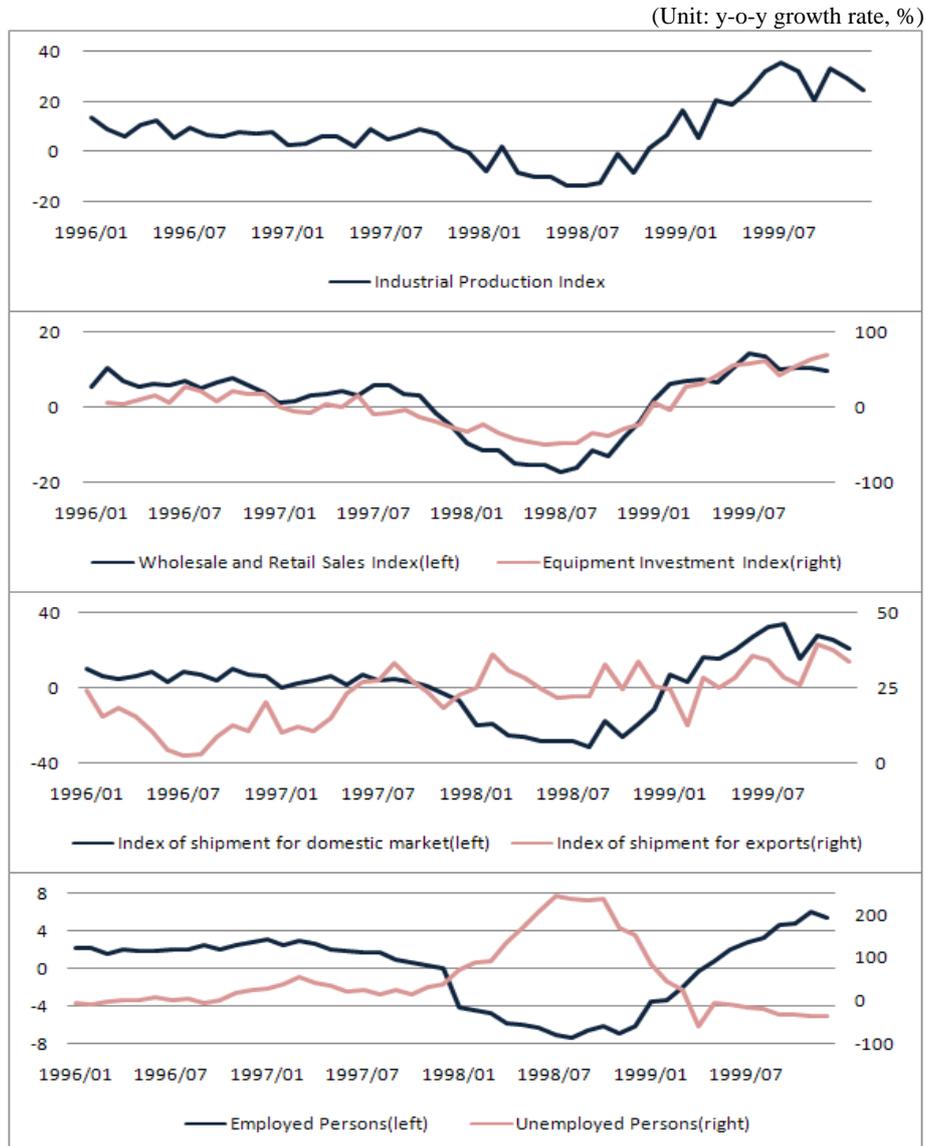
The crucial blow was the external shock that had already pushed three economies in the East Asian region, Thailand, Indonesia, and the Philippines, into currency crisis. With international investors' confidence already at the lowest level and new business failures developing, the fact Korea was a member of the OECD with much higher per capita income than those economies that were in crisis earlier in 1997 did not matter. A large scale outflow of foreign capital continued, and by November of 1997, Korea ran out of the FX reserves to meet redemption demand of departing capital. Korea went to the IMF for emergency loan facilities in early December.

The economic contraction that followed in 1998 was very severe. Despite strong growth in exports that year, the real GDP fell by 6.9% due to extreme domestic demand contractions (see table 1). The extent of contractions can be seen in figure 3. As can be seen, contractions in real activity and employment were quite severe except for export shipments. A sharp depreciation of the Korean won when the global demand remained not significantly affected by Asia's regional financial troubles must have helped Korean exporters. The degree of severity of policy prescriptions by the IMF initially had been the point of contention ever since they were implemented beginning in December 1997 and early 1998. The goals of tightening both fiscal and monetary policies were to dampen domestic demand to restore external balance and to stem outflow of funds. They worked too well in the sense of engineering an extreme shrinkage of domestic demand as can be seen in table 1. However, interest rates that shot above 20% in early 1998 seemed to have done more than stemming the outflow of capital. As explained earlier, given the high leverage ratios of many businesses, both almost halving of the exchange value of the Korean won and punishingly high interest rates meant insurmountable obstacles to many highly leveraged businesses that might have survived in somewhat less constrictive circumstances. The IMF policies might have aggravated the extent of the troubled asset problem.<sup>8)</sup>

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<sup>8)</sup> See Cho (2002) for discussion of a conjecture that the high interest rate policy recommended may have deepened the 1998 contraction, and also Krueger and Yoo (2002) for discussion

**Figure 3 Trend in Monthly Real Activity Indicators  
(January 1996-December 1999)**



Source: National Statistics Office.

of a possibility that the high interest rates might have triggered the crisis, more than FX crisis, due to high level of leverage and low profitability of the chaebols.

There were massive closures of banks and businesses throughout 1998 and a large scale reduction in workforce. The government had to inject huge sums of financial resources, not to mention emergency financial support to affected populace, to pay depositors of closed banks and recapitalize failed banks and so forth in order to restore the financial system. In addition, the government set up the Korea deposit insurance corporation (KDIC) and the Korea asset management company (KAMCO) to handle issues related to depositor protection and disposition of troubled assets.<sup>9)</sup>

This financial involvement of the government offers an interesting way to quantify the magnitude of the problem that had existed submerged due to the government control over the financial system, which had an important consequence of delaying realization of losses, and which had existed until the outbreak of the crisis in 1997. As noted by many observers, Korea had only two instances of business failures of a significant size for almost two decades up until 1997.<sup>10)</sup> Thus, the event of 1997 was an opportune chance to measure the extent of the hidden problems associated with regulatory as well as financial forbearance in Korea as most troubled financial institutions and many bad borrowers were allowed to fail. However, the size of public fund injections in the period immediately following 1999 would likely to overstate

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<sup>9)</sup> In addition, some noteworthy changes and infrastructure building took place: The first is prohibition of cross guaranteeing among affiliated firms when they borrow, a practice which exposed them to domino like spread of problem in case one firm runs into trouble; the second is the enactment of the Asset Securitization Act in 1998, which provided Korean financial institutions and corporations legal framework to securitize the non performing assets; another was the introduction of the private equity fund, which could lead to corporate restructuring buyout funds by domestic capital (Indirect Investment Fund Act in 2004).

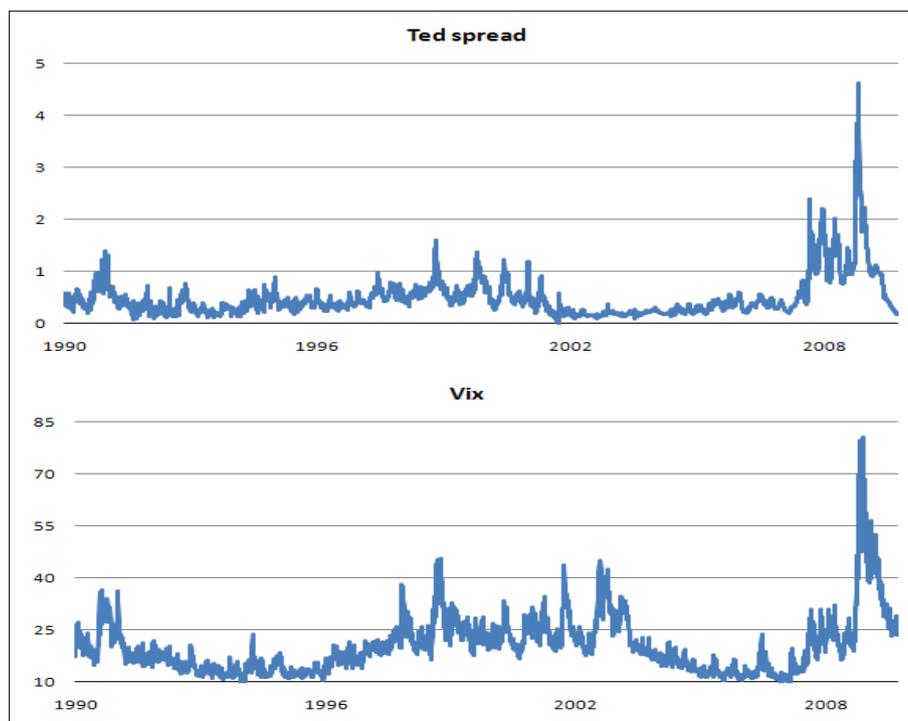
<sup>10)</sup> The Kukje group's failure in 1985 and Woosung Construction's in 1996 are the two cases. It is not too unrealistic to assume that there had been a few cases of de facto defunct businesses had remained solvent before 1997 only due to supports by banks, which in turn did not have experiences or willingness to deal with large scale delinquency problems. Government officials who had authorities over initiation as well as overall procedure should have no more willingness to be the first to deal with such messy problems. To begin with, Korea did not have well developed legal or financial market institutions to deal with large scale bankruptcy cases. Thus, the preferred way of dealing with large corporate problem was to arrange other firms to absorb the troubled, which was employed to deal with a substantial industrial restructuring in the early 1980s.

the problem as some of failures were presumably partly due to overly tight policy measures that were implemented in the initial stage of the crisis. For example, both short and long term interest rates shot up close to 30% from 10% level since December of 1997. Thus, it would be prudent to allow for time lapses to avoid overestimation. For example, it is going to take some time for the process of recuperation of residual values through sales of non-performing assets of failed banks and businesses. This is an important consideration for Korea in 1998 as there were no extant markets for troubled assets as well as many willing domestic buyers with means.

As of the end of 2006, by which time the estimates have remained more or less little changed for several years, the total public fund expended since 1998 was 168.3 trillion won. Out of this sum, 84.5 trillion won has been recovered. In addition to this, the KAMCO owns 73% of outstanding shares of Woori bank, which came into being as a result of multiple mergers of several troubled banks in the wake of the 1997 crisis, and is one of the largest commercial banks in Korea. An approximate total market value of those shares amounts to 13 trillion won. This calculation shows the net cost of financial restructuring related to the crisis to be about 70 trillion won. One can think of this sum as an estimate of the cost associated with the shortcomings of the financial resources allocation system that had existed until mid 1990s. Also, the figure partly represents the cost of buying legal and market institutional frameworks to deal with bankruptcies and affected assets, which has been introduced since then.

## **2.2. Macroeconomic and Financial Conditions of 2008**

The developments that adversely affected Korea's economy in 2008 were global in nature and thus were exogenous, sharing characteristics of the 1997 crisis. One way to see how extraordinarily conditions in global financial markets had worsened is to examine indicators of credit risks. Figure 4 shows both the so called 'Ted spread' (spread between 3-month London interbank lending rate and yield on 3-month US Treasury bills) and Vix (uncertainty

**Figure 4 Ted Spread and Vix (January 2, 1990-September 17, 2009)**

index which measures the cost of insuring against volatility in the S&P 500 index traded in the Chicago Board of Options Exchange). They are based on very widely available financial market prices for a long period of time, making them particularly useful to compare events at different points in time. As can be seen, the turmoil in the global financial markets (especially in September-October period) was truly unprecedented. The effects of the 1997 crisis on the global financial markets look insignificant in comparison.

Such an extraordinary event indeed created a difficult situation for the Korean economy that has become more externally oriented in trade as well as financial transactions over the past decade. As can be seen in figures 1 (interest rates) and 2 (exchange rate), even before the failure of the Lehman Brothers in September 2008, both FX and domestic financial markets started to show elevated volatility. Given that there had not been notably

problematic developments in domestic real and/or financial sectors, increasing exchange rate variability and credit premia on internationally traded Korean papers must have reflected concerns about Korean firms and banks' expected difficulties derived from the global financial crisis. We will come back to the issues related to external finances after perusing macroeconomic conditions before 2008 first.

Korea's domestic landscape, however, looked much different from a decade ago. Perhaps the most important change has been an absence of a noticeable business failure, or a near failure that threatens soundness of the financial system. Large Korean businesses, most of whom are also the main exporters, had been experiencing an export boom, surfing the waves of strong growth of the global economy that grew at 5% both 2006 and 2007 in real terms (IMF data). China's strong growth translated into growing demand for industrial goods Korea was producing. The manufacturing sector, low profitability and high debt ratio of whose member firms were one of key symbols of problems ten years ago, now boasted high profitability and low debt burden. For example, the interest coverage ratio, which shows operating profit relative to interest expenses, of Korean manufacturers stood above 400% since 2004, while the same for the US manufacturers for 2008 was 311%.<sup>11)</sup>

Despite the overall healthy appearance, two areas of businesses and their adverse implications on the financial sector were a cause for concern in 2008. One was the shipbuilding industry whose breakneck growth since 2003 led to too many small startups as the industry's orders passed the peak by 2008. The other was an overhang from a by-gone boom, namely, in residential construction markets. Even though the construction boom that took place in Korea was much more muted compared to the US's housing markets until

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<sup>11)</sup> However, as can be seen in table 3, such an improvement in financial health of businesses has come at a cost in terms of lower physical capital formation. From 1980 to the 1997 currency crisis, the average fixed capital investment in Korea was 11.6% which was far greater than the U.S (8.6%) and Japan (4.6%). But after the 1997 crisis, from 1997 to 2004, while Korea's annual economic growth rate was 4.1%, the average growth rate of the fixed capital investment was only 0.8%.

2006, house prices in Seoul area rose rapidly for several years up to 2006 and led to a modest residential construction boom in other areas in Korea. A stock of unsold apartment units grew, and many builders got into trouble. As they relied heavily on financing from pooled loans from smaller savings banks, concerns grew about the potential non-performing loans and troubled assets. However, this has not evolved into a much significant problem. For one, rules of mortgage lending were far more restrictive. For example, the loan to value ratio (i.e., the amount of collateral value allowed out of the market price of the property to be purchased) was held below 60-70%, so lending was more properly secured. Also, the rise in house prices was limited compared to the US and most other OECD countries. The financial regulatory authorities took actions and implemented measures to address the problem starting in December 2008. It involved selecting 70 suspect firms in construction and shipbuilding industries, and their viability was assessed after which appropriate measures were implemented.

An apparently healthier picture notwithstanding, a sharp fall in the exchange value of the Korean won due to rising demand for the US dollar in the fall of 2008 eerily reminded one of events a decade earlier. Also, the issue of large external short term borrowings became a potentially serious destabilizing problem. Many in the international financial press took to the critical view that Korean banks relied on foreign borrowings to aggressively expand their asset base through lending to households this time, whereas it was lending to businesses (and non-extension of maturing loans by international lenders), that ultimately led to FX reserve shortage problems a decade ago.

However, a closer look at data shows that the trend has been paced not only by Korean banks but branches of foreign banks in Korea as well, and thus the accusations have been misplaced. As can be seen in table 4, short term borrowings by Korean banks rose from U\$28 billion in 2005 to U\$66.3 billion in the second quarter of 2008. The comparable figures for branches of foreign banks were U\$23.3 billion in 2005 and U\$80.3 billion in the second quarter of 2008. This stands in stark contrast to patterns seen in long

**Table 4 Details of External Borrowing (1994-1998, 2005-2009Q2)**

(Unit: end of period balances, US\$ billion)

|        | Korean Banks |      | Foreign Bank Branches |      | Nonbank Private Corp. |       |
|--------|--------------|------|-----------------------|------|-----------------------|-------|
|        | Short        | Long | Short                 | Long | Short                 | Long  |
| 1994   | 17.9         | 16.3 | 11.8                  | 2.1  | 8.3                   | 21.5  |
| 1995   | 28.5         | 25.0 | 15.7                  | 2.6  | 10.3                  | 26.2  |
| 1996   | 42.1         | 35.0 | 18.9                  | 3.2  | 14.5                  | 31.6  |
| 1997Q1 | 44.1         | 36.6 | 20.2                  | 3.2  | 15.1                  | 34.1  |
| 1997Q2 | 47.2         | 39.0 | 20.8                  | 3.4  | 15.2                  | 35.5  |
| 1997Q3 | 41.6         | 41.8 | 23.0                  | 3.6  | 14.8                  | 37.7  |
| 1997Q4 | 27.3         | 38.0 | 21.9                  | 3.8  | 13.7                  | 38.1  |
| 1998   | 15.0         | 38.5 | 16.0                  | 2.8  | 7.2                   | 36.9  |
| 2005   | 27.9         | 30.4 | 23.3                  | 1.7  | 8.6                   | 58.9  |
| 2006   | 44.2         | 37.8 | 51.8                  | 2.5  | 9.1                   | 69.8  |
| 2007   | 54.6         | 54.3 | 79.3                  | 4.5  | 10.4                  | 94.3  |
| 2008Q1 | 62.6         | 59.2 | 87.5                  | 4.7  | 11.2                  | 99.1  |
| 2008Q2 | 66.3         | 60.9 | 80.3                  | 3.7  | 11.8                  | 99.4  |
| 2008Q3 | 65.6         | 57.8 | 94.0                  | 3.2  | 12.5                  | 103.6 |
| 2008Q4 | 45.2         | 54.1 | 67.7                  | 4.5  | 13.8                  | 105.6 |
| 2009Q1 | 38.3         | 53.6 | 65.4                  | 4.4  | 15.3                  | 102.8 |
| 2009Q2 | 39.7         | 57.0 | 66.3                  | 4.8  | 14.9                  | 101.9 |

Source: Bank of Korea (<http://ecos.bok.or.kr>).

term borrowings by both parties. Korean banks' long term borrowings rose from US\$30.4 billion to US\$61 billion, while they were US\$1.7 billion in 2005 and US\$ 3.7 billion for foreign bank branches in the second quarter of 2008. Throughout this period, external borrowings by private corporations have been mostly in the long maturity category. Therefore, it is the branches of foreign banks along with Korean banks that led the upsurge in short term external borrowings in recent years. Such a pattern is very different from the one we saw in the period leading up to 1997 when Korean banks were the leading short term borrowers by a large margin compared to foreign bank

branches as well as nonbank private corporations as can be seen in table 4. This time around, it was a big surge in short term borrowings of branches of foreign banks in Korea that set the trend.

The criticism of the foreign financial press is valid to the extent that foreign bank branches were mainly engaged in arbitrage transactions while Korean banks were using the funds for expanding domestic lending. And also Korean banks can be criticized to the extent that their inter-bank borrowings cannot be as easily revolved as those of the foreign branches (whose borrowings are basically intra-bank transactions). However, while short term borrowings by Korean banks grew from U\$42 billion to U\$60 billion between 1996 and 2007, the FX reserves grew 6 folds, exports treble, and GDP doubled in the same period. Therefore it seems too harsh to view increases in Korean banks short term borrowings over this period excessive only by looking at the absolute amount.

Turning to macroeconomic conditions again, one can see a sharp deceleration in domestic spending in 2008, lowering its contribution to growth compared to earlier years, while that of net exports has gone up compared to their respective averages since 2001. An overwhelming impact of the drop-off in private domestic demand can be seen clearly in table 5. In addition to a big contribution of net exports, increases in government spending substantially added to growth. Enhanced contribution of the net exports was due to the fact that imports fell more than exports thus giving rise to trade surpluses. Such a positive role played by the external sector reminds one of similar but quantitatively much more significant role played by the rise in exports in 1998 as shown in table 1. A big negative contribution of shrinking private domestic spending is almost identical this time as in 1998. What is different this time is the quite substantial contribution made by increased government spending that added 1.74 percentage point to growth, more than twice the average since 2001.

A positive role played by fiscal policy was matched by monetary policy actions. The short term policy interest rate, which was 5.25% August 2008 had been lowered to 2% by early 2009. In addition, a watered down version

**Table 5 Contribution to GDP Growth (2001-20091H)**

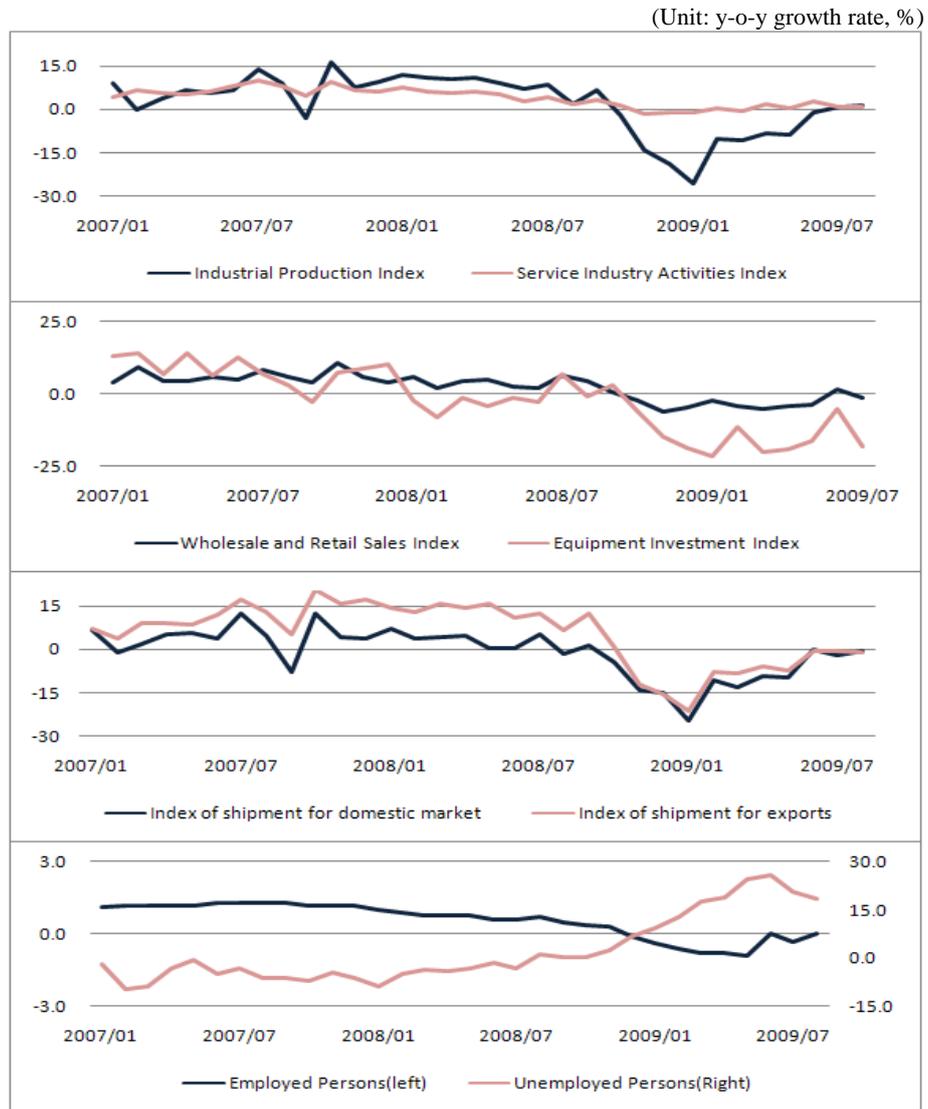
|               | Private Domestic Demand | Gov't Spending | Domestic Demand | Net Exports | GDP Growth |
|---------------|-------------------------|----------------|-----------------|-------------|------------|
| 2001          | 2.65                    | 1.06           | 3.72            | 0.48        | 4.0        |
| 2002          | 7.36                    | 0.61           | 7.97            | -0.70       | 7.2        |
| 2003          | 0.36                    | 1.23           | 1.58            | 0.91        | 2.8        |
| 2004          | 0.88                    | 0.64           | 1.53            | 2.65        | 4.6        |
| 2005          | 3.31                    | 0.45           | 3.75            | 0.26        | 4.0        |
| 2006          | 4.19                    | 0.57           | 4.77            | 0.34        | 5.2        |
| 2007          | 3.72                    | 0.79           | 4.51            | 0.72        | 5.1        |
| 2008          | 0.88                    | 0.44           | 1.32            | 1.05        | 2.2        |
| Average       | 2.92                    | 0.72           | 3.64            | 0.71        | 4.39       |
| 2009 1st Half | -9.22                   | 1.74           | -7.48           | 3.51        | -3.17      |

Source: Bank of Korea, GDP measured in 2000 prices.

of quantitative easing, such as expanding the list of papers purchased in open market operations by the central bank, to boost liquidity has been implemented. A key step taken by authorities was to supply foreign exchanges on an emergency basis to Korean banks that were having dollar funding difficulties. Most importantly, currency swap facilities established with the US, Japan and Chinese central banks in November and December 2008 had real calming effects on the FX market. Thanks to the policy measures, foreign exchange and financial markets started to stabilize in the early spring of 2009, helped along by growing indications that international financial markets were thawing and coming back to life out of the deep freeze.

Real activity has hardly started to recover from the sudden and sharp contraction seen in the fourth quarter of 2008, with the exception of export shipment, as can be seen in figure 5. A rise in unemployment has been pronounced. These sluggish indicators underscore the importance of the

**Figure 5 Trend in Monthly Real Activity Indicators  
(January 2007-September 2009)**



Source: National Statics Office website.

government's spending increase in undergirding the real sector activity in 2009 on a temporary basis.

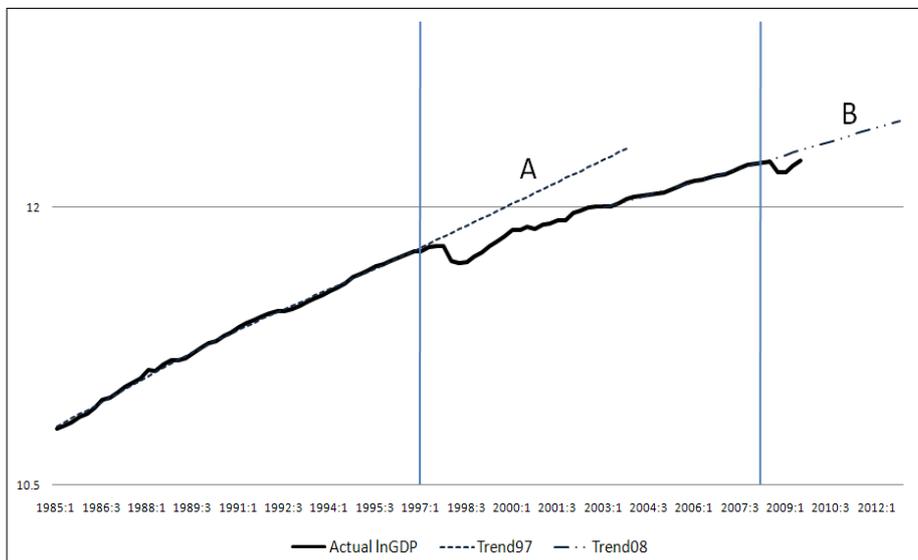
### 3. CONSEQUENCES OF THE TWO CRISES

#### 3.1. Output Trend

Perhaps the most serious concern from the macroeconomic perspective about the recent crisis is not what happened during the event but its potential impact on Korea's growth trend. Temporary output and job losses indeed have important welfare consequences, but less so compared to adverse consequences that influence output and consumption over a long time to come. This is a serious possibility in view of what happened to the GDP trend since the 1997 crisis. Figure 6 shows two interesting trends in the quarterly real GDP since 1985 to third quarter of 2009.

Both trends were calculated following way. For trend 97, the Hodrick-Prescott filter was applied to logged quarterly real GDP data from 1970Q1 to 1996Q4 (date shown by the first vertical line). Then an AR(1) was fitted to the trend component estimated from the HP filter. Lastly, the AR(1) was

**Figure 6 Quarterly Real GDP and Trends (1980Q1-2009Q3)**



Source: Bank of Korea.

projected forward to obtain the trend line A. This line can be viewed as a hypothetical path of real GDP had events around 1997 not happened. For trend 08, the same procedure was repeated using data from 1970Q1 to 2007Q4 (date shown by the second vertical line).

The output consequences of the 1997 crisis is easy to see; real GDP dropped off sharply in 1998 then recovered quite briskly in the following couple of years. However, when compared to the trend line A, the recovery was not sufficient to reach the old trend, and more significantly, the gap between the trend growth (line A) and the actual growth started to get wider as time passed. The average growth rate of the trend line A is the same as that of actual data before 1997, 7.6%, whereas the average growth for the 1999-2007 period has been 4.7%, and thus two lines that grow at different rates will move more apart as time passes. This is a clear illustration that the events of 1997 not only had severely reduced spending and economic activity in the following year, but had a lasting impact on the pattern of output growth. A general perception of such a shift has been that what went on in Korea's financial and corporate sectors was not sustainable before 1997 and it was natural that Korea's growth decelerated. This seems to be a widely accepted view, but there is paucity of theoretical or empirical explanations except the actual outcome of slower growth. Perhaps that is enough evidence.<sup>12)</sup>

But now we are facing an interesting possibility. The 2008 crisis was marked by a sharp fall in output though not as severe as 1998 but still the most pronounced one since then. What kind path is the real GDP going to take? Is it going to get back to the trend line B, proving the event of 2008 a temporary shortfall, or is it going to remain below the B line but growing at the same rate to form a parallel line? Or are we going to follow the new path which slowly diverges from the line B as the average growth rate falls below that of the trend line B as in the case of the post 1998 period? The more optimistic scenario would be that the real GDP rises above the trend

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<sup>12)</sup> For some examples of empirical examinations of the trend output or potential GDP since 1997, see Huh and Park (2003), Kwark (2007), Kim and Noh (2007).

line B over time so that at least some of the divergence between the lines A and B is narrowed. This would be possible if we have 5-6% growth for awhile, for example.

These are all possible future trajectories each with serious welfare implications. For one, the slower the average growth rate, the longer it will take for Korea's GNI per capita to catch up with those of advanced OECD economies. Furthermore, it will make demands for more limited resources among interest groups (i.e., young vs. old, welfare payment vs. tax cut, Seoul capital area vs. the rest of country) ever more competitive, adding to the trend of eroding social cohesion and sharpening social tensions that have become a source of serious concerns for many in the country in recent years.

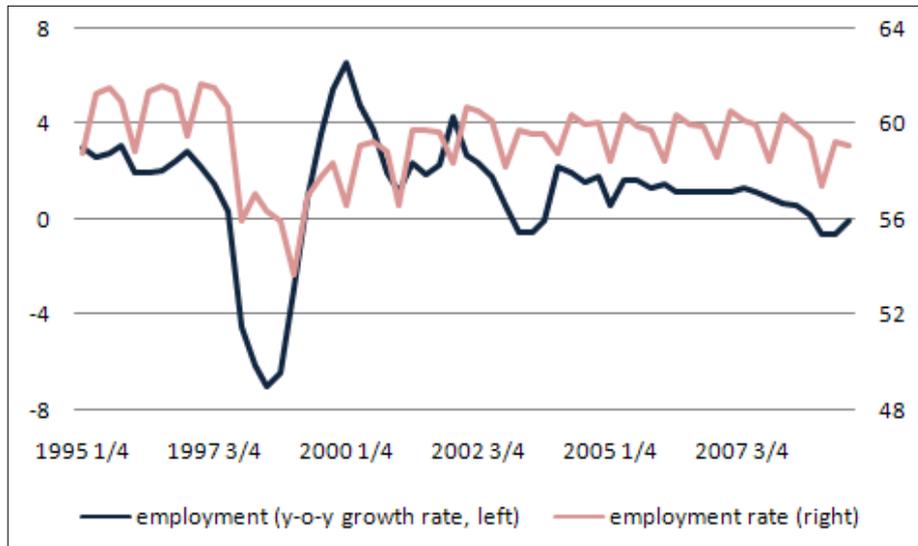
### **3.2. Employment Trend**

Another macroeconomic trend that has serious implications is that of employment. Especially job creation, or lack thereof, has been a focal point of the recovery that is taking place in the US and other economies. Concerns about the so called 'jobless recovery' already had been important in many economies even before the current episode of contraction and recovery. However, in Korea, the trend of employment growth seemed to have shifted lower some time back.

First is the appearance of a level shift in the employment rate (shown in figure 7), which measures total number of the employed over the size of population over 15-years old, before and after the 1997 crisis. This ratio is already lower than most OECD member countries, signifying a low level of labor force utilization. Instead of the labor utilization ratio growing, which one would expect of an economy still growing at a higher rate than most OECD countries, we are seeing it stuck at a lower level.

Second, the growth rate of total employment itself has been variable between 1997 and 2004. The big fluctuation has to do with the 1997 crisis and the second and smaller episode was related to the credit card bubble and bust in 2002-2003. However, if one connects the trend shown before 2007

**Figure 7 Employment related Trends (1995Q1-2009Q3) (%)**



Source: National Statics Office website.

with that drawn for post 2004 period, it is going to have a distinctly downward slope. More precisely, the period average of the employment growth rate for 1995Q1-1996Q4 was 2.5%, whereas it was 1.4% for 2004Q1-2007Q4.

Such a trend, combined with the fact that the most distinct demographic trends in Korea are very rapid ageing and a very low birth rate, have not so pleasant and serious implications. For one, as the number of people who work decreases, the social burden of providing for older generation per worker is going to grow faster. The size of the burden itself would also grow faster as less and less ageing individuals would be working and making private provisions, at least partly, for their retirement.

#### 4. CONCLUSION

Two economic crises that visited the Korean economy have given rise to

pressing challenges. As Korea's economy becomes more developed and, at the same time, more outwardly oriented, external shocks seem to create ever more serious domestic turmoil. Increased vulnerability might come unavoidably with increased openness. However, if every external shock leaves indelible adverse marks on basic tenets of the country's economy such as potential output, the long term economic outlook is very bleak.

What happens with respect to the trend growth trajectory in the post 2008 period is a point of great interest in this regards. In the wake of the 1997 crisis, both economists and policy makers took to the view that the pre-crisis period growth trend was not sustainable and deceleration in growth was to be welcomed for a more stable profile of economic performance over time. Despite the distinctly lower growth profile since late 1990s, Korea's economy ran into difficulties in 2003 due to a domestic cause (credit card burble and bust) and again in 2008 due to a truly large external shock. This suggests that the improvements in the soundness of Korean economy might have been somewhat limited.

Several factors appear to have contributed to the puzzling result that Korea's economy fared much better in the aftermath of 2008 shock, which has been much more severe than the 1997 crisis by any metric. One, Korea in 2008 was not encumbered by the '70 trillion won' problem of non-performing assets that was uncovered through messy restructuring processes following the 1997-1998 crisis. Of course there is going to be reckoning of non-performing assets this time around too as government's active intervention and assistance since late 2008 surely have postponed eventual realization of losses. However, for now the order of magnitude of hidden problem is expected to be much less than that of the pre-1997 period. For one, many businesses have maintained healthy finances mainly due to robust export performances for several years before 2008.

Two, comparatively speaking, policy reactions were prompt and offered sufficient resources to stop the economy's downward spiral. This aspect stands in strong contrast to the situations of 1997-1998, when interest rates were hiked over 20% while this time it was lowered to 2% from above 5% in

about 6 months.<sup>13)</sup> Fiscal assistance came late and timid in 1998 whereas a large supplementary spending package came in early 2008 at the heel of the regular annual budget, adding close to 2% point to the first half growth. Furthermore, steps were taken to allay heightened fear of another foreign exchange crisis which could have easily turned into a potentially dangerous self-fulfilling expectation. Particularly useful was establishing currency swap facilities with the central banks of the US, Japan and China.

Three, very aggressive policy coordination among leading economies to counter the global financial freeze and its adverse impact on real activity has helped through two channels. First, it allowed a relatively rapid recovery of an orderly flow of financial capital in and out of Korea, and put a floor to how far Korea's exports fell as a consequence of the global slowdown. Second, it emboldened Korean policy makers to implement market stabilization measures as well as macroeconomic supports. This is a very different picture compared to a decade ago when local policy makers would typically mention 'consultation with the IMF' somewhere in their responses to policy related questions. Establishing currency swap arrangements and thus allowing provision of foreign exchanges on a more normal basis, instead of the mode of emergency credit facilities a la 1997 IMF assistance, has had quite important salutary effects.

It is needless to say that these factors are still conjectures, requiring more systematic examination for their quantitative importance. Of course empirical approach might have to find tractable ways to examine these issues. For example it might be difficult to examine a quantitative significance of the third point that is decidedly a qualitative observation. However, comparing experiences of the other three countries that received emergency IMF funding in 1997, then and now would be doable. This examination could shed some light on to what extent Korea's outcome in the aftermath of 2008 crisis really is unique.

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<sup>13)</sup> See Chopra *et al.* (2002) for an extensive explanation about macroeconomic policy consultations between the Korean government and the IMF, and other IMF perspectives on issues of 1997-1998 period.

## REFERENCES

- Cho, Y., "What Have We Learned from the Korean Economic Adjustment Program?," in David T. Coe and Se-jik Park, eds., *Korean Crisis and Recovery*, IMF and KIEP, 2002.
- Choi, D., *On the Causes and Development Processes of the 1997 Asian Currency Crisis*, Korea Economic Research Institute, 1998 (in Korean).
- Chopra, A., K. Kang, M. Karasulu, H. Liang, H. Ma, and A. Richards, "From Crisis to Recovery in Korea: Strategy, Achievements, and Lessons," in David T. Coe and Se-jik Park, eds., *Korean Crisis and Recovery*, IMF and KIEP, 2002.
- Dooley, M., Rudiger Dornbusch, and Y. Park, "A Framework for Exchange Rate Policy in Korea," in David T. Coe and Se-jik Park, eds., *Korean Crisis and Recovery*, IMF and KIEP, 2002.
- Gali, J., M. Gertler, and J. Lopez-Salido, "Markups, Gaps, and the Welfare Costs of Business Fluctuations," *The Review of Economics and Statistics*, 89(1), February 2007, pp. 44-59.
- Huh, C. and W. Park, "Impact of the 1997 Crisis on Korea's Growth Trend: Unobserved Component Model Estimates," *Seoul Journal of Economics*, 16(2), 2003, pp. 215-246.
- Kim, K. and Y. Noh, "Estimation of Potential GDP in Korea with Nonstationary Time-Series Data," *Journal of Economic Studies*, 25(3), 2007, pp. 1-30 (in Korean).
- Kindleberger, C., *Manias, Panics, and Crashes: A History of Financial Crises*, third edition, New York: John Wiley & Sons, Inc., 1996.
- Krueger, A. and J. Yoo, "Falling Profitability, Higher Borrowing Costs, and Chaebol Finance during the Korean Crisis," in David T. Coe and Se-jik Park, eds., *Korean Crisis and Recovery*, IMF and KIEP, 2002.
- Kwark, N., "The Change in Potential Growth After the Currency Crisis in Korea Based on Growth Accounting Analysis," *Kyong Je Hak Yon Gu*, 55(4), 2007 (in Korean).

Lucas, R. E., *Models of Business Cycles*, Blackwell, Oxford, 1987.

\_\_\_\_\_, *Macroeconomic Priorities*, mimeo, University of Chicago, 2003.

Reinhart, C. and K. Rogoff, "Is the 2007 U.S. Sub-prime Financial Crisis so Different? An International Historical Comparison," *American Economic Review*, 98(2), 2008, pp. 339-344.

Yellen, J. and G. Akerlof, "Stabilization Policy: A Reconsideration," *Economic Inquiry*, 44(1), January 2006, pp. 1-22.