

# INFLATION TARGETING AND EXCHANGE RATE POLICY IN ASIA<sup>1</sup>

— An Option after the Asian Currency Crisis and Korea's Case —

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## Abstract

An increasing number of central banks in emerging market countries have adopted flexible exchange rate regimes combined with inflation targeting as an anchor. In Asia, Korea, Thailand, Indonesia, and more recently the Philippines joined this club, partly because, their previous de facto dollar peg regimes were considered major sources of the Asian currency crisis in 1997, and two-corner solutions, i.e., hard peg or flexible exchange rate regime combined with inflation targeting, seemed to provide a more resilient framework. The recent crisis in Argentina, however, put a big question mark on the sustainability of the currency board system and thus two-corner solutions. Will the other corner solution survive? Or would some intermediate options such as the BBC idea offer a more suitable solution? To address this issue, the discussion on inflation targeting in emerging markets must be further deepened.

Referring the lessons from the advanced inflation-targeting countries, including the importance of the independence of central banks and the critical role of the design of targets and frameworks, the Korean inflation targeting is examined as an important example, which Korea introduced first in Asia. The

evaluation will include the more independent legal status of the Bank of Korea, a wider band of the target and a longer target horizon that would be helpful for making the framework more effective.

## Introduction

Since the Asian currency crisis in 1997, an increasing number of countries that switched to the floating exchange rate regime have adopted inflation targeting as the framework for conducting monetary policy. Korea instituted it in 1998, followed by Thailand and Indonesia in 2000, and, most recently, by the Philippines in January 2001.

Fourteen countries of 30 advanced industrial countries of OECD have adopted inflation targeting to date, and among non-OECD members outside Asia, Chile, Brazil and Israel joined this club, with the number ever increasing (Table 1).<sup>2</sup>

This paper consists of three parts. Chapter I discusses how Asian countries came to adopt inflation targeting in the wake of the currency crisis, touching on its relation to the exchange rate regime. Chapter II draws on experiences and lessons from advanced industrial countries, including the United Kingdom

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2 As 12 countries participating in the European Monetary Union (EMU) follow the common monetary policy under the European Central Bank (ECB), the number of central banks in the OECD member countries amounts to 19. Thus 10 out of 19 central banks are targeting inflation. While the ECB does not target inflation, it takes the 'two-pillar approach' focusing on both prices and money supply. Because the relationship between the rate of increase of money supply and GDP growth is unstable, it has set sight on maintaining an annual growth of up to 2 percent in the Harmonized Index of Consumer Prices (HICP), the price index that adjusts for statistical differences in the member countries, as a de facto guidance to monetary policy. Although the ECB is counted here as a non-inflation targeting entity, it is, in practice, coming close to inflation targeting.

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**Table 1** Countries Implementing Inflation Targeting

	Introduced in	Current targets
OECD Countries		
New Zealand	1990	1-3%
Canada	1991	2 plus/minus 1%
United Kingdom	1992	2.5 plus/minus 1%
Sweden	1993	2 plus/minus 1%
Australia	1994	2-3%
Czech Republic	1998	2-4%
Poland	1998	less than 4%
Korea	1998	3 plus/minus 1%
Mexico	1999	3%
Switzerland	2000	less than 2%
Norway	2001	2.5%
Iceland	2001	2.5 plus/minus 1.5%
Hungary	2002	3.5 plus/minus 1%
Turkey	2003	less than 20%
Non-OECD Countries*		
Chile	1991	3 plus/minus 1%
Israel	1992	1-3%
Brazil	1999	2.5 plus/minus 1%
Indonesia	2000	9 plus/minus 1%
Thailand	2000	0-3.5%
South Africa	2000	3-6%
Philippines	2002	4.5-5.5%

\* The list includes most non-OECD inflation-targeters though it may not cover the all.

and Canada, and lays down conditions under which inflation targeting works effectively. Chapter III takes a close look at four years of the Korean experience in inflation targeting, assessing its effectiveness and considering how the current targeting practice may be improved to achieve greater effect.

## Chapter I Alternatives After the Crisis

### 1. Causes of the Crisis and Exchange Rate Regime

In the 1990's, there was a sharp increase in international capital flows against the backdrop of the

end of the Cold War, globalization, innovations in information and communications technology, and progress in financial technique. These developments were primary causes for a new type of currency and financial crisis that emerged in this period. In emerging economies, for example, the Mexican crisis broke out in 1994-95 and the Asian currency crisis emerged in 1997. They were characterized by a sequence of crises triggered by major and abrupt inflows and outflows of capital. This rocked the foreign exchange market, plunging the exchange rate, and subsequently collapsed the domestic financial system.

These crises were far removed from the past crises in terms of the depth and breadth of their impact on the world economy. Until the 1980's, currency crises were primarily triggered by a balance-of-payments crisis, and the classic prescription consisted of fiscal tightening and raising interest rates.

By contrast, currency crises in the 1990's reflected the undercurrent of large-scale international capital flows amid globalizing trend in economic transactions. Whether or not there are serious problems in economic fundamentals, the crisis broke out with a steep depreciation in the exchange rate triggered by large and drastic capital outflows. In particular, the prevailing view pointed to the fact that the virtual pegging their currencies to the dollar was one of the factors triggering the crisis. (See, for example, Ito, Ogawa and Sasaki (1998).)<sup>3</sup> A de facto dollar peg minimizes exchange rate risk for foreign investors, thereby encouraging inflows of capital that is required to finance economic growth. However, the other side of this coin is that it allows international investors to lower their guard against exchange rate risk to an excessive degree and, if combined with such structural problems as a weak banking sector and inadequate financial supervision in the host country, it stimulates capital inflows so massive and rapid that the domestic real economy is unable to absorb them, generating an asset bubble in real estate and the stock

3 Before the currency crisis, these countries had formally been under the managed float regime based on the currency basket. While the weights of individual currencies making up the basket were not made public, empirical studies on the movements of these exchange rates before the crisis found that their rates had been determined with an overwhelming weight on the dollar, supporting the view that they had been virtually pegged to the dollar (Frankel and Wei (1994)).

market. In Asian crisis countries, because of the de facto dollar peg regimes, downward correction of the substantially appreciated yen from the spring of 1995 through 1997 led them to lose export competitiveness despite significant changes in their real effective exchange rates, which reflect trade patterns in individual countries. Excessive capital inflows occurred primarily in the form of loans to banks. They tended to be speculative in nature, without involving demand in the real sector. Thus once capital outflows were set in motion, capital got the hell out of the country. This rush to the exit was accelerated by speculative moves by hedge funds. The monetary authorities found themselves unable to support the value of their currencies despite heavy intervention in exchange rate markets. The end result was the sharp depreciation of their currencies.

What kind of exchange rate regime should be adopted to prevent the new type of crises that involve massive international capital flows in a short period. While this question was discussed at various forums after the crisis, no consensus has yet to emerge to date.

In reality, Malaysia enforced restrictions on capital outflows in 1998, at the same time switching to the fixed exchange rate system, pegging the ringgit to the dollar. In contrast, Thailand, Korea and Indonesia floated their currencies, with regulations on capital movements being held to the minimum.<sup>4</sup>

The following sections will critically summarize discussions on exchange rate regimes in emerging market countries, held in international institutions and by the academia after the Asian currency crisis.<sup>5</sup>

## 2. The Two-Corner Solution

After the Asian currency crisis, there have been two major strands of thought on the exchange rate regime: the two-corner solution view and the intermediate view such as basket, band and crawl (BBC).

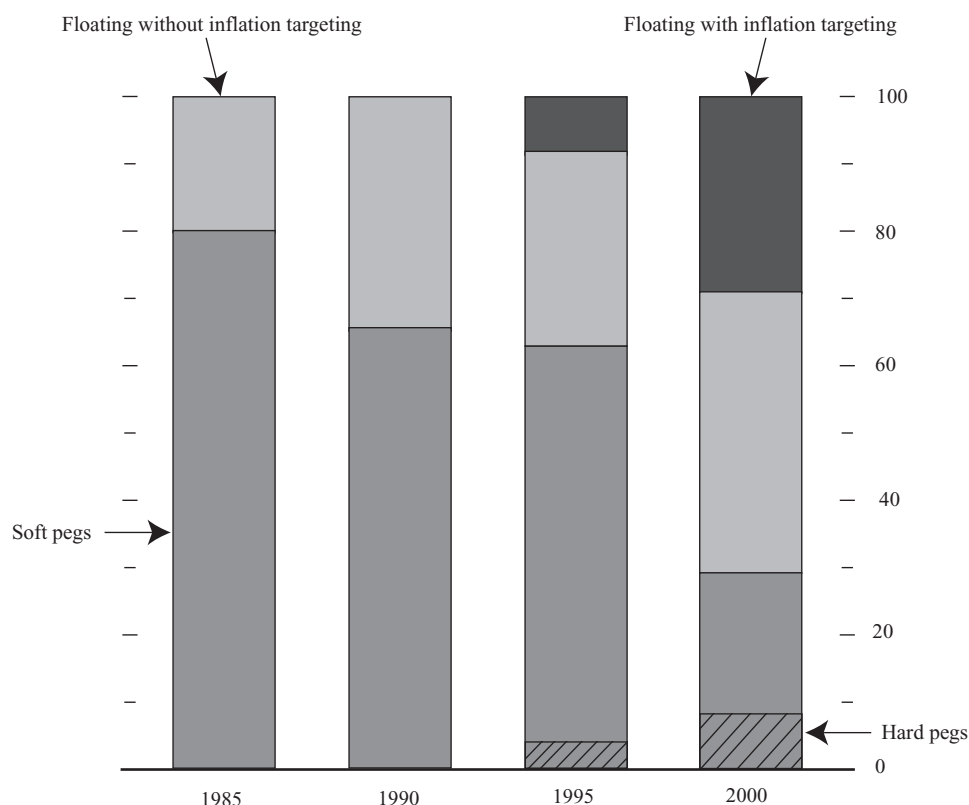
The two-corner solution view believes that only

two extreme solutions are sustainable for exchange rate regimes in emerging market countries: either a hard peg, including currency board and dollarization, or free floating. And if one opts for free floating, it is desirable to adopt inflation targeting as an anchor for monetary policy. Underlying this view is that as a hindsight of the Asian currency crisis, an intermediate regime of soft pegs is not desirable because emerging market countries are highly exposed to international capital movements and thus prone to attacks from the market. Soft pegs also often tend to perpetuate the level of the exchange rate not compatible with the real economy and lead to balance-of-payments problems. In addition, it is likely that growing external debt in the private sector without hedging against changes in the exchange rate will bring the external debt problem in the private sector to the surface once currency devaluation occurs.

For example, the World Economic Outlook in the spring of 2001, which analyzed a declining trend of inflation in the emerging market economies, indicated that monetary and exchange rate policies were converging to the two-corner solution. In particular, it stated that the adoption of inflation targeting would contribute to stable growth through decreasing and stabilizing inflationary expectations. Figure 1 indicates the changing pattern of monetary and exchange rate policies in 24 emerging market countries, including Asia and Latin America. In the middle of the 1980s, soft pegs (including crawling peg and crawling band) accounted for 80 percent of the overall countries, whereas only 20 percent were floating their currencies. In the 1990s, more countries shifted to currency float, while the number of countries that had adopted hard peg (including dollarization and the currency board) also increased. As a result, in 2000, soft peg countries declined to 20 percent of the total, while currency floating countries increased to 70 percent. In the second half of the 1990s, there was an increase in countries targeting inflation as an anchor for monetary policy among the currency floating

4 Some researchers take the view that currency float in these countries was managed float rather than free float. This point is addressed later in the paper.

5 It is well-known in international finance that there is a trilemma among 'capital liberalization', 'fixed exchange rate' and 'independent monetary policy', in other words, they cannot be achieved simultaneously. In the end, this proposition boils down to which of these to choose (or abandon).

**Figure 1 Monetary Policy Framework and Exchange Rate Regimes in Emerging Market Economies**

Source: IMF (2001)

countries. The International Monetary Fund examined six emerging market countries, including Chile and Brazil, that had adopted both inflation targeting and floating exchange rate, and found that this combination has worked relatively well.<sup>6</sup>

### 3. Proposal for BBC

A large swing in the exchange rate will likely hamper vigorous investment behavior because firms find it difficult to foresee future business activity and uncertainty increases. It may be argued that since emerging market economies have high export-GDP and import-GDP ratios, it is desirable for them to have a mechanism such as soft pegs that enables some degree of stability in the foreign exchange market. One can also argue that the exchange rate determined by market forces under the floating exchange rate

regime does not necessarily reflect fundamentals of the real economy due to misalignment. In addition, there is a strong fear of floating among policymakers. An analysis by some researchers suggests that even if there was an official shift to currency float, the reality might be managed float where significant intervention takes place in the foreign exchange market in an effort to place the exchange rate within the projected target zone (Calvo and Reinhart (2000)).

Some researchers emphasize its advantages based on the above argument, while vulnerability to attacks from the market is a disadvantage for an intermediate regime. For example, John Williamson of the Institute of International Economics criticized managed float for lack of transparency, and proposed an intermediate exchange rate regime such as the adoption of the basket, band and crawl (BBC) rule (Williamson (2000)). More specifically, an individual country pegs

<sup>6</sup> This assessment is derived from a study that compiled findings of studies in inflation targeting experiences of six countries: Brazil, Chile, the Czech Republic, Israel, Poland and South Africa (Schaechter, Stone and Zelmer (2000)). There is no comparable study on inflation targeting experiences in Asian countries.

its currency, within a certain band, to the basket of trade-weighted dollar, yen and euro. (Williamson proposed a margin of 10 to 15 percent on both the upper and lower band.) The central rate itself will be adjusted (crawl) from time to time to reflect economic fundamentals. The BBC rule allows economic agents to forecast future movements of the exchange rate to a certain degree, enabling them to make investment decisions with more certainty. Further, since an individual currency is pegged to the basket rather than a single currency, even if there is a sharp depreciation of a basket currency other than the dollar, for example, the yen, a country will be able to avoid a similar sharp change in its export competitiveness.

On the other hand, if the BBC rule is to obtain confidence from the market and not come under speculative selling attacks, it is crucial to review and crawl the central rate at an appropriate timing and by an appropriate margin.

#### 4. The Argentine Crisis and Doubt over the Two-Corner Solution

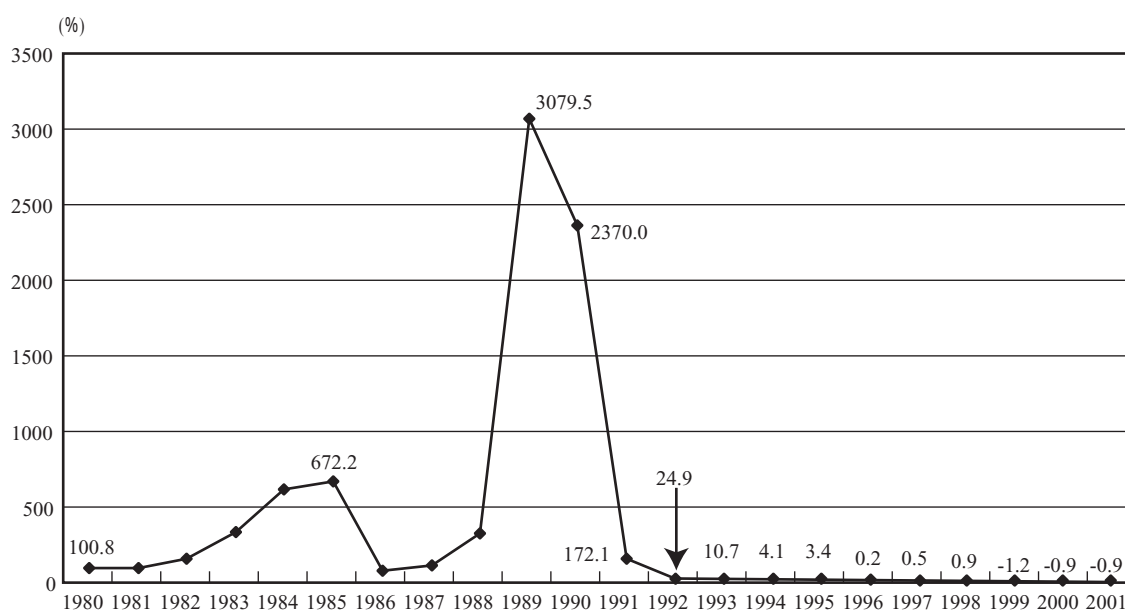
The two-corner solution view referred to in Section 2 claims that exchange rate regimes that can survive free capital mobility are limited to the two polar cases: floating and hard pegs (the currency board and

dollarization). Until the spring of 2001, examples of hard pegs often cited were Hong Kong and Argentina (the currency board) and Ecuador (dollarization).

The ongoing currency crisis in Argentina, which started in the summer of 2001 cast serious doubt on the two-corner solution. Since the crisis in Argentina is still unfolding, detailed analysis of its causes should certainly be high on the research agenda. This section attempts to examine its relation to the currency board regime to the extent possible within the framework of this paper.

There is no doubt that the currency board regime was instrumental in containing chronic high inflation that characterized Argentina in the 1980s. It is clear from Figure 2 that the introduction of the currency board in 1991 led to a dramatic turnaround in inflation. In the 1980s, Argentina was afflicted with almost perennial triple-digit inflation, with its economy more often than not recording negative growth. Inflation accelerated especially from 1989 and 1990, spiraling into outrageous hyperinflation with consumer prices shooting up by 3079.5 percent and 2370.0 percent respectively, or a thirty-one- and twenty-four-fold increase from the previous year. After the currency board regime was instituted in April 1991 with the legislation of the currency conversion law, the exchange rate was fixed at one peso for one U.S.

**Figure 2 Inflation in Argentina**



Source: IMF "International Financial Statistics".

dollar, and money supply was linked to foreign exchange reserves. This brought a rapid unwinding of hyperinflation. The inflation rate fell to 10.7 percent in 1993 and to under 5 percent in 1994 and continued to fall thereafter. A substantial decline in inflationary expectations also had favorable effects on both investment and consumption, as normal financial conditions returned, an improved business environment stimulated investments, and consumption was bolstered by an increase in sales of household durables, which were payable by installment. The economy continued to grow for seven years up to 1997 except 1995 when the Mexican currency crisis broke out (Figure 3).

However, in the second half of the 1990s, the Argentine economy lacked two important factors out of various requirements for the effective functioning of the currency board.

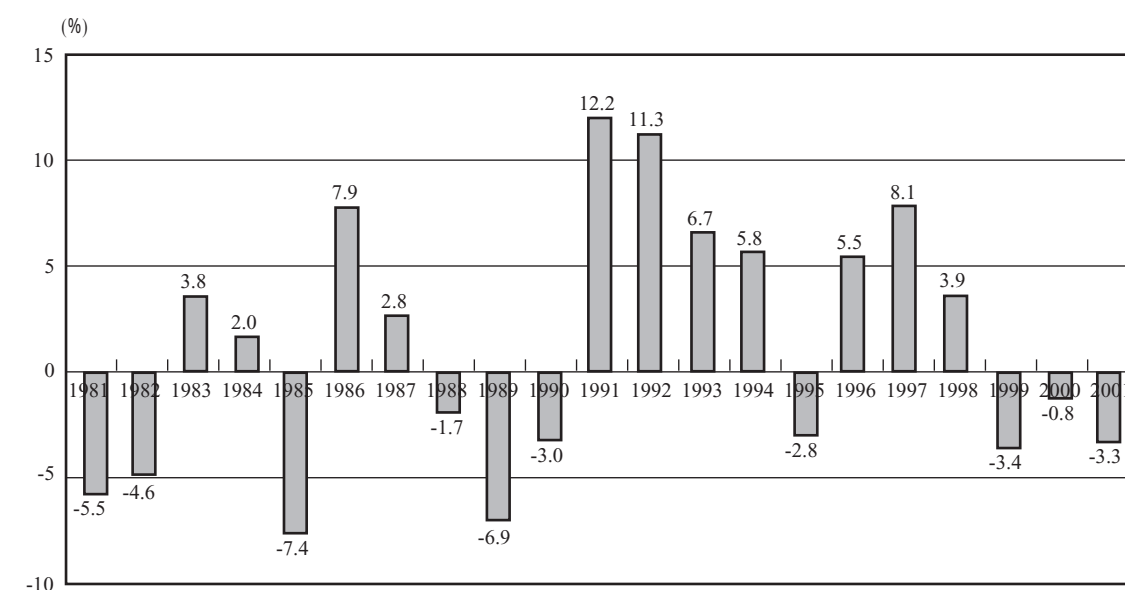
First is maintaining fiscal balance. By definition, the currency board regime fixes money supply to foreign exchange reserves. This had had a strong tightening effect on hyperinflation, sharply decreasing inflationary expectations among economic agents. However, if fiscal expenditures continue to exceed

revenues under fixed money supply, high interest rates will continue, crowding out investment activities in the private sector. Argentina had either fiscal surplus or a small fiscal deficit until 1994. Since 1995, however, tax revenues stagnated, while expenditures increased due mainly to fiscal transfers to state governments and rising external debt service. During this time, long-term interest rates rose, bringing pressure on economic activity in the private sector.

The other factor was related to flexibility in prices and wages which reflects flexible labor and product markets. The fixed exchange rate means that if the dollar appreciates due to U.S. domestic factors and others, Argentine exports lose their competitive edge. To prevent this outcome, domestic prices and wages have to decline.

Like many other countries, Argentine wages had downward rigidity. Thus adjustment did not take place in the labor market. As the sustained high value of the dollar, and thus the Argentine peso, in the 1990s was combined with devaluation in the Brazilian real, export competitiveness declined for Argentine industries.<sup>7</sup> Since adjustment to this development did not occur in the labor market through lower wages,

**Figure 3 Real GDP Growth Rate in Argentina**



Source: EIU

7 The largest share of Argentine exports goes to Brazil, which receives 25 to 30 percent of total Argentine exports. There are trade frictions over wheat, daily products and other exports.

unemployment continued to rise, reaching 18 percent in the fall of 2001, a level which was socially unsustainable.

In addition to lacking these important requirements to sustain the currency board regime, this regime seems to be inherently incapable of making flexible response to evolving economic conditions. By its very nature, the currency board regime does not have any degree of freedom in monetary policy. Thus an economic downturn caused by a decline in export competitiveness could lead to spiraling deterioration toward contracted equilibrium. In addition, a majority of debts held by economic agents were dollar-denominated in Argentina. This practice was a negative legacy of the high inflationary period, but it should be noted that this made it difficult to abandon the currency board regime or devalue the exchange rate. Ideally, at the time Brazil devalued the real, Argentina should have considered devaluing its peso.

Summing up, the currency board regime in Argentina was very effective for bringing down high inflation; but it was inadequate in imposing fiscal discipline that was required to keep this regime going; a failure to make a timely and flexible response to a decline in the competitive edge in exports invited a series of crises from the fall of 2001.

Although a closer look into the evolving situation is in order before we take stock of all the lessons and implications of the present crisis in Argentina, I venture to point out that while the currency board regime is effective for containing high inflation, it must adhere to stringent requirements if it is to sustain for a long period of time.

In January 2002, Argentina abandoned the currency board regime and shifted to free float in February after a brief period of the dual currency system. At the time of this writing (April 2002), it is not clear what kind of exchange rate regime and monetary policy the country will ultimately choose over a medium and long run. Considering that Argentina used to be afflicted with chronic high inflation with high inflationary expectations, one possible scenario may be a search for a new anchor in monetary policy under the floating exchange rate regime, for example, by adopting inflation targeting.

In fact, this is what the IMF recommended (in April 2002). Caballero and Dornbusch (2002) proposed fixing the dollar-peso ratio at 2 to 1 for the time being, and conducting monetary policy by the board consisting of former central bank governors in foreign countries. In any event, it will be inevitable to reduce fiscal deficits steadily by reviewing the fiscal federation between the central and provincial governments and by strengthening tax collections.

Hong Kong has also adopted and still maintains the currency board regime. The Argentine crisis has thus not completely invalidated the argument for the two-corner solution put forward by the IMF. However, the crisis has cast serious doubt on its long-term viability.

The remaining alternative is currency float plus inflation targeting or an intermediate exchange rate system including the BBS regime. To examine which of the two regimes is more desirable, one must assess the extent inflationary targeting can work and be counted on as an anchor for monetary policy in emerging market economies. In the following chapters, after a brief survey of lessons from inflation targeting experiences in advanced industrial countries, the Korean case was presented and examined.

## **Chapter II**

### **Inflation Targeting Experience in Advanced Industrial Countries**

#### **1. Defining Inflation Targeting**

In the first half of the 1990s, an increasing number of advanced industrial countries adopted inflation targeting as their monetary policy. New Zealand was the first to target inflation explicitly, adopting it in 1990 as part of economic structural reforms. It was followed by Canada in 1991, the United Kingdom in 1992, Sweden in 1993 and Australia and Spain (until the European Monetary Union came into being) in 1994. Many of these countries have made a positive assessment of this regime, as inflation targeting contributed to sustainable economic growth through stable prices.

What is inflation targeting? It is much more than

simply setting a target for inflation. Research to date defines inflation targeting as the framework of monetary policy that consists of the following five components: (a) making public a specific numerical inflation target; (b) the central bank makes an explicit commitment, by making institutional arrangements, to setting price stability as its ultimate goal and economic growth and employment as the secondary goals; (c) a forward-looking monetary policy by comprehensive consideration of all the economic indicators related to price stability; (d) accountability to market participants and the public for monetary policy decisions and the reasons that led to them in relation to achieving inflation targets; and (e) the central bank holds it accountable to achieving the inflation target (Bernanke et al. (1999)).

What is important is that the central bank, being independent from the government, employs all the monetary policy instruments to concentrate on achieving price stability and that it is held accountable to the public to fulfill this mandate. Simply setting the target inflation rate can not be called inflation targeting.

## **2. Its Relationship with Rule-Based Monetary Policy**

Macroeconomic debate in the late 1970s and the 1980s raged on the question of the relative efficacy of discretionary and rule-based monetary policy. Under the assumption that economic agents form expectations rationally, discretionary policy is ineffective, and monetary policy based on some policy rule, such as a commitment by the central bank to  $x$  percent annual money supply growth, could moderate economic fluctuations of the business cycle.<sup>8</sup> Further, findings of game theory were incorporated into macroeconomics, leading to the recognition that economic agents, the government and the central bank engage in some sort of repeated games. They provided theoretical clarification for the proposition that through continued commitment to and repeated realization of the commitment to a certain policy, the

government and the central bank will gain credibility and high reputation for that policy, which is an important factor for stable economic development.<sup>9</sup>

Inflation targeting was a new policy technique that emerged from the above theoretical development in macroeconomics. Its central objective is to achieve stable economic development by exploiting the credibility and reputation of the central bank, which, in turn, will be obtained by setting an inflation target and conducting monetary policy committed to that target. It differs, however, from the  $x$  percent rule advocated by monetarists. Within the range where the inflation target may be achieved, the central bank has some room for discretionary policy, as distinct from the completely rule-based monetary policy.

For example, countries having a low output share of external trade and exporting primary products, such as Canada, Australia and New Zealand, experience substantial swings in the inflation rate, depending on exchange rates and commodity prices in international markets. Thus their central banks determine monetary policy based on comprehensive assessment, watching developments in foreign exchange markets and the international economy, in addition to domestic inflationary trends, and taking into account their effects on the current and future inflation.

Inflation targeting also calls for meeting an inflation target in the future, for example, one or two years ahead. Therefore, by its very nature, what is required is a forward-looking stance looking beyond the current economic situation rather than responding to it. Thus the right response to the currently high inflation is not necessarily an immediate hike in interest rates. In fact, the latest economic indicators represent economic performance in the last month or the month before last, and only the backward-looking stance will respond to events in the past. If inflation accelerates, one has to analyze its cause, assess whether it will continue into the future or if it is a temporary phenomenon, and deal with it by considering the forecast of future inflation. When the central bank forecasts inflation over the short and medium term, it has to weigh diverse factors, including

8 Such an argument was typically presented by Sargent and Wallace as the policy ineffectiveness proposition.

9 This is time inconsistency argued by Prescott.



the prospect for business activity, GDP gap, exchange rate forecast, inflationary expectations in the market and the state of the world economy. Inflation targeting never adjusts monetary policy simply by watching the immediately available inflation rate.

The above discussion has made clear that it is inappropriate to define inflation targeting as a rule-based monetary policy. On the other hand, it is far removed from the freely discretionary policy. The central bank must conduct monetary policy by constantly and closely watching the latest and future inflation rate. It may be regarded as a framework of 'constrained discretion.'<sup>10</sup>

### 3. Practice of Inflation Targeting

One of the objectives of inflation targeting is that setting the target rate of inflation enables market participants to predict the monetary policy of the central bank. If market participants place solid confidence on this framework, the expected rate of inflation will vary less, and this will lead to creating a stable macroeconomic environment. In addition, if the market regards monetary policy operations of the central bank as sufficiently credible, a temporary external shock such as a jump in the price of crude oil would not lead to an inflationary spiral where an immediate rise in the medium to long-term expected rate of inflation and actual inflation would feed each other.

However, there are instances of countries where inflation targeting in some countries did not work well, thus undermining the credibility of the central bank or leading to turmoil in the market. Inflation targeting comprises a range of elements: a particular price index targeted, the width of the target zone, the length of time for targeting, and the way to ensure accountability and transparency. Indeed it is no exaggeration to say that whether inflation targeting will succeed or not depends on the aspect of its practice of these elements.

This section presents a critical summary of important points in the effective practice of inflation targeting by drawing on experiences of advanced industrial countries.

#### (1) Independence of the Central Bank

As mentioned earlier, the independence of the central bank is a major prerequisite for inflation targeting. Since there are a number of factors with which independence of the central bank is evaluated, it is necessary to make a comprehensive evaluation. Especially important with respect to inflation targeting are 'goal independence' and 'operational independence.'

The former refers to independence in setting an inflation target. However, actual examples in advanced industrial countries indicated that this independence is not necessarily essential, as there are successful cases where the government and the central bank jointly set an inflation target or where the government singly set the target. For example, in Canada, the inflation target is jointly set by the government and the central bank, while, in the United Kingdom, this task is undertaken by the Treasury. In Sweden, the central bank enjoys goal independence and sets the inflationary target.

The latter operational independence is an indispensable factor for making inflation targeting a credible framework. It is essential that the central bank decides, independent of the government, what monetary policy instrument to employ in order to achieve a given inflation target.

The United Kingdom presents a case in point. While inflation targeting was introduced in October 1992, initially the Bank of England was not accorded independence, and the Chancellor of the Exchequer had the power to cut interest rates. As a result, market participants had doubt about the credibility of the inflation target. For example, in the spring of 1994, the overheating economy engendered inflationary concerns, and despite the warning of the Bank of England, the then Chancellor of the Exchequer lowered interest rates from political considerations. The movement of the expected rate of inflation as observed in the market was unstable and did not converge to the inflation target. When the government changed hands from the Conservatives to the Labour in May 1997, the division of labor between the central bank and the Treasury was reviewed, and the Bank of

10 The term was coined by Professor Marvin King of the London School of Economics who contributed to putting in place a framework of inflation targeting by the Bank of England.

England was given independence. The motives behind this move was: to make the framework of inflation targeting more effective, to accord the Bank of England operational independence, not to let monetary policy reflect political considerations, and to increase accountability. Since then, the expected rate of inflation has decreased gradually, converging closely to the inflation target. This is seen as the case where inflation targeting has gained confidence in the market (Ito (2000)).

As the British experience has made clear, one may conclude that the independence of the central bank is crucial for the effective functioning of inflation targeting.

## **(2) Choice of the Target Indicator for Inflation**

There are a number of economic indicators that capture price movements, including the Consumer Price Index (CPI), Wholesale Price Index (WPI), and service price index focusing on the service sector. Inflation targeting countries are using CPI or its modified index as a targeted indicator, because it is closely linked to the living conditions of the population. In particular, since some of these countries refer to the rate of increase of CPI in wage negotiations between labor and management, the CPI inflation rate is considered a preferable inflation indicator from the perspective of stabilizing the expected rate of inflation of economic agents.

Although the CPI has an advantage in that it is easily understood, it is not necessarily a perfect indicator that consistently reflects the overall conditions of a nation's monetary economy. CPI is a weighted average of the prices of representative consumption goods with their weights based on relative expenditures of household consumption items, which are obtained by a survey of households. Therefore, this index includes items, such as food and oil products, whose prices fluctuate significantly with weather conditions or international conflicts abroad, totally unrelated to monetary conditions. Monetary policy is unable to affect such factors causing changes

in the price index.

Thus some countries focus on or adopt as an inflationary indicator the core inflation rate that excludes the items whose prices fluctuate significantly due to external factors.

For example, Canada has officially adopted the CPI inflation rate as the indicator for targeting inflation, aiming to bring it within an annual increase of 1 to 3 percent. However, the central bank usually uses the core inflation rate (which excludes food and energy items that fluctuate significantly) in assessing whether the target is met. There is a prevailing perception among market participants that the monetary authorities conduct monetary policy by consistently monitoring the core inflation rate without taking into account CPI fluctuations caused by such temporary supply shocks as changes in oil prices. Many economic agents also pay attention to the core inflation rate rather than the CPI inflation rate, as they form inflationary expectations and accordingly make investment and consumption decisions. This has an effect of being able to minimize temporary shocks to the economy in Canada. A temporary shock will not change significantly the expected inflation rate in the market nor cause a substantial disruption in the behavior of economic agents. Therefore, ultimately, supply shocks have a transient effect on the financial market.

The indicator used in the United Kingdom is an example of another type of indicator for inflation targeting. Although the mortgage rate (interest rate on housing loans) is included in the British retail price index, its ups and downs are subject to monetary policy. Thus this item is excluded in the inflation targeting indicator called RPIX (Retail Price Index X).

While the modified CPI inflation rate is widely adopted, there are cases where such modification has undermined the transparency of monetary policy.

For example, after joining the OECD, the group of developed countries, in 1995, the Czech Republic adopted inflation targeting in 1998.<sup>11</sup> Initially, the Czech authorities conceived the 'net inflation' to be

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11 Although the Czech Republic is an emerging market economy, its experience was described here because it is a member of the OECD and its experience is interesting in terms of lessons from inflation targeting.

used as the target indicator. This index removed from CPI those goods and services whose prices were officially controlled. In addition, the effect of indirect tax was also removed. However, it turned out that market participants found it difficult to understand as it was not adequately transparent. It also had a substantially smaller coverage compared with CPI. Thus, since it was far from a representative basket of goods and services, there emerged criticism that this indicator did not work as originally intended for the purpose of stabilizing inflationary expectations in the market. Therefore, the inflation targeting indicator was redefined in 2001. The transition of the socialist regime to a market economy involved liberalization of price controls, structural shift in trade and industry and was characterized by impetuous changes in the relative pattern of prices. There is some doubt about the significance of introducing inflation targeting when relative prices are yet to be stabilized. On the other hand, the Czech authorities came to adopt inflation targeting after a country, like Korea, was hit by the currency crisis in 1997, drawing the lesson that monetary policy anchored on the exchange rate tends to be vulnerable as it is exposed to speculative attacks in international financial markets. It seems that receiving technical assistance from central banks of the United Kingdom and other countries that had gone further afield in inflation targeting, the monetary authorities in the Czech Republic strived to conceive the net inflation. As it turned out, subsequent development revealed the difficulty of achieving at times conflicting objectives of ensuring transparency in the inflation target indicator and averting temporary external shocks.

### **(3) Target Range and Horizon**

Another issue is how to determine the width of the target range. A narrow target range will be difficult to achieve, but a too broader band will render inflation targeting ineffective and fail to stabilize the expected inflation rate in the market.

Whether to set a specific numerical figure or a band is also a problem. Whereas New Zealand,

Australia and Canada set inflation targets in terms of a band, as 'between zero to 3 percent,' the UK set a specific numerical figure for a target of '2.5 percent.' In the case where the target is set in terms of a band, oftentimes a problem may arise because the market may overreact once actual inflation breaks through the upper or lower boundary of the band, or because the credibility of the central bank may be questioned once the actual inflation exceeds the upper boundary. In the case where the target is set in terms of a specific figure, it is obviously difficult to hit the bull's eye. Thus one may say that missing it may not create a significant problem. In the British practice, should the actual inflation diverge more than 1 percent of the tolerable range on either side of the target figure, the Governor of the Bank of England is required to report to the Chancellor of the Exchequer in an open letter, explaining the reasons for such divergence. One may argue that this does not make much difference from the target band in terms of practical effect. Whether a specific figure or band is more desirable is hard to say as a general proposition, and there is no consensus on this point.

Although there is neither consensus on the target horizon, many countries have opted for a two-year or longer time horizon for inflation targeting in recent years. The early experience of inflation targeting in New Zealand has taught us that a one-year horizon is too short a period in view of a time lag for monetary policy to have its effects work through the economy, and that the central bank tends to move interest rates excessively to achieve the inflation target in a short period. At present, no definite time horizon is set for inflation targeting in the U.K. and New Zealand, as no line has been drawn in the timeframe to achieve the target. This means the target must be always achieved.<sup>12</sup>

### **(4) The Lower Boundary of Target Band and CPI Bias**

The lower boundary of the target band is very important in its relation to deflation.

Advanced industrial countries currently targeting

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12 It means the monetary authorities must constantly conduct monetary policy to meet the given inflation target.

inflation have been afflicted by high inflation in the past. They thus set low inflation targets, largely in cognizance of possible high inflation. However, few countries have set zero inflation as the lower boundary of the target band<sup>13</sup>. The reason is that a price index contains measurement errors and usually it has an upper bias, whereby the rate of increase of prices tends to be overestimated.

It is generally recognized that an upper bias exists in the CPI of every country. This point was first brought up by the Boskin report in the U.S., which identified an upper bias of about 1.1 percent in the U.S. consumer price index. The finding received widespread attention from policymakers in other countries in the mid-1990s, and similar estimates were made in individual countries, with their findings reported subsequently. This phenomenon arises from a number of technical factors, including a tendency of reshuffling of sampled items and shops in conducting the survey of prices that lags behind actual dynamic shifts in the consumption pattern; and the fact that the price index does not readily reflect the improved quality of goods. While the extent of the bias varies in individual countries, it often ranges from 0.5 to 1 percent (Table 2). It was estimated that the Japanese CPI inflation rate had about a 0.9 percent upper bias. It is for this reason that targeting zero inflation is tantamount to targeting deflation.

Price stability is not to aim at zero inflation in the price index. From the perspective of the practice of inflation targeting, it is important to set a minimum target of around 1 percent.

**Table 2** CPI Bias in Advanced Countries

United States	1.10
Japan	0.90
Germany	0.75
United Kingdom	0.35-0.80
Canada	0.50

Source: Shiratsuka(2000)

### (5) Escape Clause

The flexibility of the inflation target is also an important point. A target too precise and rigid is unable to deal with unexpected external disturbances, structural shifts in the economy and supply shocks.

In advanced countries, there are different ways to make inflation the target flexible. One method is to officially describe the reasons in an open letter when the actual inflation rate misses the target. Another method is to provide an escape clause in advance. Yet another method to ensure flexibility is to assign the core inflation rate that excludes items showing volatile price movements or other similar measures as the target indicator rather than the usual CPI inflation rate, as described in (2) above. In this way, the effect of such supply shocks as changes in crude oil prices may be removed as much as possible.

For example, New Zealand has provisions that allow dismissal of the governor of the central bank in the event of a failure to achieve the inflation target<sup>14</sup>, but there is also an escape clause against several contingencies, including changes in terms of trade, such as those resulting from a major swing in the exchange rate, and an economic crisis caused by natural disaster.

The British target is set around 2.5 percent in terms of RPIX (retail price index excluding interest payment on mortgage loans). However, as described previously, should a divergence occur by more than one percent in either direction, the Governor of the Bank of England has the obligation to explain the reasons for such divergence in an open letter to the Chancellor of the Exchequer. While this constitutes part of the device to hold the Bank accountable for its action/inaction, its net effect is that if there is a convincing reason for explanation to the external observers, a divergence from the inflation target is acceptable. This ensures a certain measure of flexibility.

Setting a too rigid and narrow target band on a short horizon may lead to an excessively tight

13 New Zealand sets the target band of zero to 3 percent. There are few examples of setting zero inflation as the lower boundary of the target band.

14 These provisions have yet to be invoked to date.

monetary policy in the face of a upward price shock originating from external factors. If the central bank resorts to an excessively tight monetary policy to meet the rigid target, the economy may slip into recession or volatile fluctuations. Experiences in individual countries have shown the success of inflation targeting depends largely on the design of the inflation target.

#### **(6) Transparency and Accountability of Monetary Policy**

There is no question that the transparency and accountability of monetary policy are extremely important for maintaining and increasing credibility in the monetary policy of the central bank regardless of inflation targeting. It is also well-known that communication with the market is important.

In many cases, central banks that have adopted inflation targeting publish monetary and economic reports, such as a monthly inflation report, providing an inflation forecast and, as its background information, detailed analysis of the current price, monetary and economic situation and their forecasts. Central banks thus provide the basis for their policy decisions. The Bank of England indicates inflation forecasts with probability attached in a fan-shaped chart. One look at this chart makes clear the inflationary pressure as perceived and foreseen by the central bank.

#### **(7) Measuring the Expected Rate of Inflation in the Market**

Since a central bank practicing inflation targeting conducts a forward-looking monetary policy, it has to gauge the future expectations, the expected interest rate and the expected rate of inflation of market participants, in addition to making a forecast of future monetary and economic developments. To perform this task, the central bank often employs the yield curve of government bonds and other securities used for an indicator to estimate market expectations in future interest rates and inflation, in addition to

frequently exchanging views with market participants and observers.

However, whether the term structure of interest rates is stable and reflects market expectations depends on depth, maturity, and the years-to-maturity structure in the secondary markets of government bonds. For example, one study found that among G7 countries, Japan, France and Italy have yield curves that did not robustly reflect inflationary expectations in the market (Schich (1999)). Well-developed financial markets, including the government bond market, is a prerequisite for the effective working of inflation targeting.

### **4. Exchange Rate Policy and Inflation Targeting**

#### **(1) Currency Crisis in Europe and Inflation Targeting**

A historical look at advanced countries reveals that many advanced industrial countries adopted inflation targeting to consolidate gains in their efforts toward disinflation after going through the agony of stagflation and high inflation in the 1980s. Inflation targeting indicates the inflation target in explicit numerical values. By evaluating policy performance in relation to this figure, the capacity of the central bank to implement its policy is exposed to the glaring light. If the credibility of the central bank is not to be undermined, it may be beneficial for the central bank to adopt inflation targeting at a particular timing when the target may be achieved without much difficulty rather than at a time when uncontrollable inflation is raging<sup>15</sup>. The timing of introducing inflation targeting could be an important factor for establishing credibility.

The UK and Sweden came under fierce attack from the market, including speculative sources, in the fall of 1992. As their exchange rates plummeted, these countries descended into a currency crisis. As a result, the UK had to leave the European Exchange Rate

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15 In the examples of Canada and New Zealand, the success at the initial stage has especially contributed to the widespread acceptance of an inflation target as a framework of monetary policy and to gaining credibility (Bernanke et al (1999)).

Mechanism (ERM), the basket of pegged exchange rates practiced at that time by member countries of the European Union. The Swedish authority also had to abandon its currency peg to the ECU. After letting their currencies float, the UK and Sweden adopted inflation targeting shortly thereafter, in October 1992 and in January 1993 respectively, as a new anchor of monetary policy replacing the pegged exchange rates.

In particular, it is interesting to note that this was not the first time for Sweden to adopt a monetary policy anchored on the price index in the face of a currency crisis, even though the country had traditionally followed the monetary policy anchored on the pegged exchange rate, as it is a small open economy in Europe. In 1931, when the UK abandoned the gold standard system, Sweden had to follow suit, facing a disturbance in the foreign exchange market, and its economy slipped into deflation. At that time, Sweden adopted as an emergency measure a mechanism that somewhat resembles inflation targeting (the target was the price level rather than the inflation rate).

## **(2) The Use of Monetary Condition Index (MCI)**

Exchange rate fluctuations will affect prices through the demand side of the economy. Separately they will also affect the inflation rate directly through changes in import prices. These effects are particularly significant in the countries where the ratio of trade to GDP is high. For example, in New Zealand, a one-percent depreciation in the effective exchange rate is estimated to increase prices by around 0.4 percent in the following one-year period. In countries like New Zealand and Canada where trade has a significant proportion of the total output, the Monetary Condition Index (MCI) has been developed to measure the effect of interest rates and the exchange rate on prices.

This indicator is a weighted average of changes in the effective exchange rate and short-term interest rate. It is a comprehensive indicator identifying whether overall monetary conditions are getting easier (lower interest rates and/or currency depreciation) or

tighter (higher interest rates and/or currency appreciation). For example, New Zealand used the rates of change of the effective exchange rate and short-term (3-month) interest rate by assigning them a respective weight of 1 and 2. In Canada, the weight is 1 to 3<sup>16</sup>.

This indicator is a useful device for the countries that tend to be affected significantly by exchange rate movements. At one point, their central banks conducted monetary policy by placing weight on this indicator. Market participants also paid attention to MCI to foresee the next step the central bank would take.

However, in New Zealand, the currency suffered a fallout from the Asian currency crisis and depreciated sharply. Then, given the market perception that the central bank placed an operational target in monetary policy on stable movements of MCI, short-term interest rates in the market rose to offset the sharp currency depreciation<sup>17</sup>. This phenomenon increased the depth of recession caused by the external shock of the Asian currency crisis. In the wake of this bitter experience, MCI is not used for conducting monetary policy in New Zealand.

While MCI is a convenient indicator, there is room for further consideration before we use it in making decisions on monetary policy.

## **Chapter III Inflation Targeting in Korea**

The previous chapter considered inflation targeting experiences in advanced industrial countries. Does inflation targeting work well in emerging market economies in Asia where there are a number of differences in such areas as economic structure and the depth of the financial market. In Asian countries which differ from advanced countries in their external conditions, to what extent can we rely on the function and efficacy of inflation targeting as a device to support the floating exchange rate regime and serve

16 This reflects that New Zealand is more vulnerable to exchange rate fluctuations than Canada.

17 This is partly due to the fact that MCI is sensitive to exchange rate changes.

toward stable economic development?

Korea is the first country in Asia to adopt inflation targeting after the Asian currency crisis of 1997. Acting on the suggestion of the IMF, the authorities in Korea amended the Bank of Korea Act and started to target inflation in 1998. This chapter will take up the case of Korea and look into the possibility of inflation targeting in Asian countries.

## 1. How Korea Came to Adopt Inflation Targeting?

Korea signed an agreement with the IMF for a standby credit arrangement after it was hit by the currency and financial crisis in November 1997. Emerging out of the crisis, Korea has embarked on structural reforms in a broad range of areas to prevent another crisis. They included the reform of the financial system, disposal of nonperforming loans, corporate governance, liberalization of the capital account, reforms in the labor market and development of a safety net.

In the area of exchange rate policy, Korea abolished the daily band of exchange rate fluctuations in December 1997, thereby moving to a full-fledged currency float. In step with this regime shift, the authorities moved to increase foreign exchange reserves based on the prepared plan. As a result, their figure reached 52.0 billion dollars at the end of 1998, well above the pre-crisis level<sup>18</sup>. In the area of capital transaction, measures were implemented to liberalize acquisition of domestic corporations and transactions in the corporate bond market for foreign investors. In May 1998, the ceiling on equity investment for foreign investors was eliminated, and a ban on foreign direct investment in 45 business areas was lifted except a few cases.

After the currency crisis, a major monetary tightening took place<sup>19</sup>. At the same time, however, the Bank of Korea Act was amended, bringing major changes in the framework of monetary policy

(officially announced on December 31, 1997). This law went into effect in April 1998. There are two important points to make with respect to this amendment. First, the Bank of Korea was given independence from the government as the central bank. Second, inflation targeting was adopted under statutory provisions.

Regarding independence, Article 3 of the amended Bank of Korea Act set forth: ‘Monetary policy of the Bank of Korea shall be formulated neutrally and implemented autonomously. The independence of the Bank of Korea shall be respected.’ The Monetary Policy Committee of the Bank of Korea, which makes decisions on monetary policy, used to be chaired by the Minister of Finance and Economy before the amendment, and monetary policy was determined under the leadership of the Ministry of Finance and Economy (MOFE) in terms of procedures and policymaking. The amendment set forth that the Governor of the Bank of Korea assume the chair, putting in place a system similar to those in advanced countries.

Regarding inflation targeting, Article 1 of the amended Bank of Korea Act set forth the mandate of the Bank of Korea as ‘pursuing price stability through the formulation and implementation of efficient monetary policy’, thereby contributing to sound development of the national economy. Another provision, ‘The Bank of Korea shall set a price stability target every year in consultation with the Government’ (Article 6, Section 1), and put in place the framework of inflation targeting under which the annual target inflation rate is set. While it is not unusual at all for the statutes of the central bank to articulate a goal of the central bank as pursuit of price stability, there are not many cases where statutory provisions stipulate inflation targeting.

Thus Korea adopted inflation targeting as the framework for governing monetary policy after the currency crisis forced it to shift to a currency float. It was implemented after a very short period a few

18 Later foreign reserves rose to \$102.8 billion (worth 8.7 months of import amount) at the end of 2001. This was a considerable amount of accumulation compared with \$400 billion in Japan whose economy is ten times as large as that of Korea.

19 The lower inflation rate was a target contained in the economic program to obtain credit from the IMF under the stand-by arrangement.

months of preparations. This was recognized by the staff of the Bank of Korea who were involved in working out the draft legislation. Since the Bank had not conducted research on inflation targeting, they drew on the example of New Zealand in making preparations for the draft amendment in a short period of time. Therefore, implementation seems to have been far from smooth, involving a great deal of trial and error.

It should also be noted that in this process, inflation targeting was adopted simultaneously as independence was given to the central bank. It may be considered that enacting inflation targeting reinforced the independence of the central bank. In other words, according independence as a formality is not enough. Since the Bank of Korea must turn to the government for its annual budget like other central banks, it may be difficult, in reality, to completely do away with influence on monetary policy from the fiscal authorities unless some sort of framework is in place, providing an exogenous constraint against such influence. If such influence is to be eliminated completely, it is important to make the decision-making process of monetary policy as transparent as possible and make it available to the public. Since inflation targeting provides an explicit numerical target, it will serve to increase the transparency of the monetary policy process, as is clearly shown by examples in advanced countries.

## 2. The Mechanism in Practice

This section is an overview of the inflation targeting mechanism in Korea. Section 3 will evaluate this mechanism.

### (1) Inflation Target

In the Korean case of inflation targeting, the Bank of Korea sets the target inflation rate for the coming year at the end of the year in consultation with the government (MOFE), and the Monetary Policy Committee determines more specific monetary policy

operations to achieve this target.

A look into individual inflation targets over the years reveals traces of trial and error. The average annual CPI inflation rate was 9 percent in 1998 and 3 percent in 1999, with a one percent band on either side. As it happened, however, the actual average annual inflation was 7.5 percent in 1998 and 0.8 percent in 1999, well below the target figures.

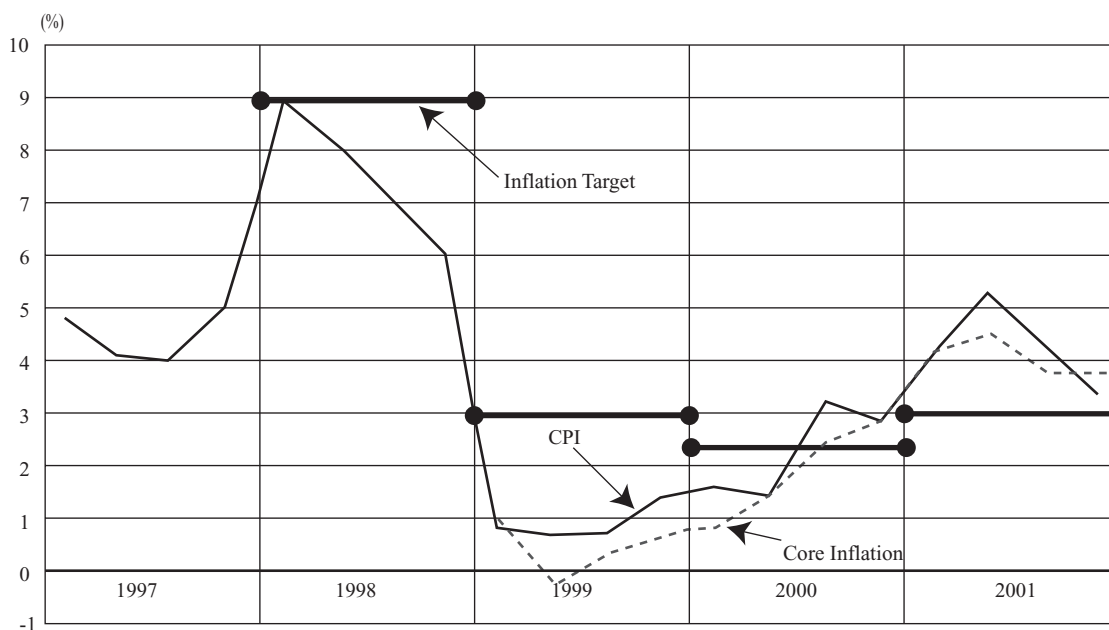
In 1998, despite major monetary relaxation, bank loans did not increase due to a credit crunch induced by nonperforming loans, with the economy experiencing a major recession. Thus despite the presence of inflationary pressure from a sharp increase in import prices in parallel with a plunge of the won and an increase in some food prices caused by unfavorable agricultural harvests attributable to floods, the CPI inflation rate rose less than anticipated.

In 1999, there were factors for pushing up prices, such as an increase in food prices and utility rates. On the other hand, despite a sharp rebound of the economy, there was excess aggregate supply relative to demand in the overall economy because of the lower capacity utilization than pre-crisis levels and high unemployment rate. The appreciation of the won also lost upward pressure on prices. These factors, among others, led to low inflation.

As CPI is more easily influenced by fluctuations in the price of limited items such as foods than initially anticipated, the Bank of Korea adopted the core inflation rate as an inflation target indicator from 2000, by defining the core inflation as 'CPI excluding non grain agricultural products and petroleum products.' The target set for the average annual core inflation rate was 2.5 percent in 2000 and 3 percent in 2001 and 2002, with a one percent band on either side. The actual performance was 1.8% in 2000 within the target band, but 4.2 percent in 2001, 0.2 percent off the band (Figure 4). The Bank of Korea evaluated that this was attributable to a loose monetary policy extending longer than necessary, in addition to the effect of utility rate hikes, and the Governor of the Bank apologized for these points<sup>20</sup>.

20 In the Article IV consultation with Korea, the IMF noted that the monetary policy stance in 2001 was appropriate in that it balanced the two objectives of maintaining the credibility of inflation targeting and supporting the economy.



**Figure 4 Inflation in Korea**

Source: Bank of Korea

### (2) Inflation Target over the Medium Term

The Bank of Korea sets and publishes the inflation target over the medium term, aside from the annual inflation targets. In 2002, this target was 2.5 percent, lower than the average annual inflation of 3 percent. According to sources in the Bank of Korea, this target was set in order to stabilize the expected inflation of market participants by signaling to the market an intention to bring down future inflation to 2.5 percent.

Since the inflation target has to be revised every year by law, the expected inflation rate necessarily becomes unstable as the end of the year draws near. Therefore, even if this medium-term target is not a statutory requirement, it is considered to offset this shortcoming under the present law. However, what is meant by 'medium term' and consistency with annual inflation targets are not necessarily clear. Thus it can be said that the concept of the medium-term inflation target is somewhat ambiguous.

### (3) Relationship with Monetary Target

Before introducing inflation targeting, the Bank of Korea used monetary aggregate, specifically a rate of increase of M2, as a guide to conducting monetary policy. However, as seen in other countries, the relationship between money growth and GDP growth was not stable.

As inflation targeting was introduced in the middle of the currency crisis, the Bank of Korea had to supply ample liquidity to the financial system. Thus, as a transitory measure, the Bank designated money growth an intermediate target and set this figure so that it is consistent with the inflation target. In addition, since major structural reforms in the financial system, including disposal of nonperforming loans, were underway, M3 was used for the specific money supply indicator, to be used for the intermediate target, rather than M2, as M3 includes loans to finance companies. This was because there was a major divergence between M2 and M3 due to realignment of the financial system after the currency crisis and substantial movements of funds between financial products as represented by a shift in deposit.

An observation of the actual conduct of monetary policy in 1998 and 1999 may lead to the conclusion that the focus was placed more on monetary growth, an intermediate indicator, rather than the inflation rate, the ultimate indicator and that it was de facto monetary targeting. During this period, Korea was undergoing realignment in the financial system and it was important to supply adequate liquidity. Given the urgency of rehabilitating the financial function, one can endorse this policy.

In terms of such flexibility, the framework of

inflation targeting differs entirely from the currency board regime, the other corner solution. When the currency crisis involves problems in domestic financial institutions, an ample supply of liquidity is called for. The combination of a floating exchange rate and inflation targeting is considered a superior solution as it makes this possible. Under the currency board system, money supply must be by definition fixed to foreign exchange reserves. Thus if there is a problem in the domestic financial system, as in Korea, adequate liquidity may not be supplied, and the situation may deteriorate further.

From 2001, M3 was relegated to a monitoring indicator from the intermediate indicator, and while it is constantly watched, it will not guide monetary policy. For example, in 2002, the monitoring range for M3 growth is set between 8 to 12 percent. Under this mechanism, a major divergence from this range will lead to the examination of its causes and a scrutiny to determine if there is a major problem in the financial system such as liquidity supply.

#### **(4) Policy Instruments**

The primary instrument of the Bank of Korea to conduct monetary policy is to influence and guide the interest rate in the call market.

The power to decide on monetary policy rests with the Monetary Policy Committee, which consists of seven members: the Governor of the Bank of Korea, one member recommended by the Governor of the Bank of Korea, three members recommended by the business and financial community and one member each recommended by Minister of Finance and Economy and Chairman of the Financial Supervisory Commission<sup>21</sup>. The Committee is chaired by the Governor of the Bank of Korea, and the minutes of discussion in the Committee are published.

The department (Policy Planning Department) in the Bank of Korea in charge of the Committee analyzes financial and economic conditions, while monitoring not only prices but also a wide range of

economic indicators that may affect prices, including GDP forecasts, the gap between supply and demand, money supply, developments in the financial market, exchange rate movements, asset prices and world economic conditions, and submits to the Committee the results of its analysis to seek the decision of the Committee with respect to monetary policy. In addition, the department makes model-based inflation forecasts and prepares the (unpublished) fan chart, which show their stochastic distribution, and studies the outlook of the world economy and currency markets by drawing on the OECD Economic Outlook and IMF World Economic Outlook to assess their effects on future inflation rates. Part of the results of their research and analysis is published every month as economic reports. Thus such publications are sources for economic agents to understand the basis of specific monetary policy decisions.

### **3. Issues in Inflation Targeting in Korea**

#### **(1) Independence of the Bank of Korea**

As a result of the amendment of the statutes of the Bank of Korea, the Bank's independence in terms of instrument has increased significantly. However, the following two problems remain.

First, of the seven members of the Monetary Policy Committee, two are appointed based on recommendations by the Minister of Finance and Economy and Chairman of the Financial Supervisory Commission, and usually former bureaucrats having influence in the government are likely to be appointed.<sup>22</sup>

These two members will attend the Monetary Policy Committee, discuss, and participate in decision making in an individual capacity. They also have security in their position, as they can not be dismissed during the four-year term. Because the Vice Minister of Finance and Economy may attend the committee and express opinions on behalf of the government, the government does have the opportunity to express

21 The problem with a government-affiliated person as a full member of the Monetary Policy Committee will be discussed later.

22 Any current public officials cannot be a MPC member by the BOK Act.

its opinion (Article 91, the Bank of Korea Act).<sup>23</sup> However, the fact that two out of seven members are recommended by the government may generate suspicions among market participants and observers of the Korean economy as to whether committee members may be under the strong influence of government intentions and whether the independence of the central bank may be threatened.

While the minutes of discussions in the committee are made public, it is difficult to judge whether this measure will increase independence. There are two possibilities. If committee members recommended by the government air their views biased toward government intentions, their remarks will be published in the minutes, and therefore the minutes may discourage such biased remarks. On the other hand, since remarks of the members are disclosed later in minutes, members recommended by the government may have to make their remarks reflect the desires of the government.<sup>24</sup>

Second, according to the Bank of Korea Act, the Minister of Finance and Economy may ask for reconsideration with respect to decisions made by the Monetary Policy Committee, if, in his judgment, they conflict with fiscal policy and thus are not desirable. If as the result of reconsideration, the committee endorses the initial decision with a majority vote of five members or more, the President of Korea may determine whether the decisions of the committee are acceptable (Article 92, Section 1 and 2). Since the President of Korea is the ultimate decision-making body in the executive branch, his opinion is likely to reflect the intent of the Ministry of Finance and Economy, and thus this provision is problematical from the point of view of independence of the Bank of Korea.

In reality this provision has not been enforced. In particular, Article 92, Section 3 sets forth that in

the case where the Minister of Finance and Economy requests reconsideration with respect to decisions made by the committee, he has to show explicitly the grounds for such a request. It is important to note that this puts a constraint on arbitrary invocation of the provision for reconsideration. Suppose this provision was invoked without appropriate reasons based on economics and economic policy, then the credibility of the government's capacity of conducting macroeconomic policy would be questioned at home and internationally, and there would be significant political damage.

## (2) Target Indicators

As discussed in Chapter II, whether to take the CPI inflation rate or the core inflation rate for the inflation target indicator is an arguable point. The CPI inflation rate is easily understood by the public, but if its fluctuations are caused by non-monetary and/or non-economic factors totally unrelated to monetary policy, it is not appropriate for inflation targeting, which is the framework for holding the central bank accountable for the extent the inflation target has been achieved.

Moreover, what is important for monetary policy is to prevent an inflationary spiral, which may occur when there is a spillover into other prices of an increase in the prices of fresh foods or petroleum products caused by supply shocks from weather and the international political situation. For example, a rise in crude oil prices will lead to a rise in the prices of petroleum products or products that are produced by using a large amount of petroleum products, thus increasing the CPI inflation rate. This is called the first-round effect. In the meantime, an actual rise in CPI will raise inflationary expectations among people. Especially, when wage negotiations between management and labor determine the next year's rate

23 This custom is seen in a considerable number of central banks including Bank of Japan. In Japan, for example, Minister of Economic and Fiscal Policy and Minister of Finance are allowed to attend the MPC meeting of the BOJ, express their opinions and make their proposals. They also can request the deferral of voting in the MPC meeting.

24 For example, the ECB does not publish the minutes of the MPC meeting, because if it were published, the MPC members from the central banks would be exposed to political pressures from their original countries, which might jeopardize the MPC decision-making that must be based on the economic situation in the euro area as a whole.

of increase of wages, workers form inflationary expectations for the next year and make wage negotiations reflect it so that their real living standards will not fall. Therefore, this mechanism will increase workers' inflationary expectations, which will bring about a rise in nominal wages, which will be reflected in an increase in prices by raising the cost of production, which, in turn, will raise inflationary expectations and further boost nominal wages. In other words, a wage-price spiral will set in. In order to avert such second-round effects, it is imperative to distinguish a price hike caused by the monetary causes and a temporary price hike caused by non-monetary causes. This consideration favors use of the core inflation rate as an inflation-targeting indicator.

In general, emerging market countries and developing countries have high Engel coefficients. This means that to the extent that the price index is a weighted average of the consumption basket, food prices have a substantial effect on the overall price index. In Korea, food items account for about one third share of CPI. In addition, their prices fluctuate substantially. The share of petroleum products is less than 5 percent, but because Korea relies on imports for almost all crude oil, Korea tends to be affected by a large increase in crude oil prices in international commodity markets. When economist at the IMF estimated the degree of supply shock from these two items with an autoregressive model, they found, with 90 percent level of significance, that the volatility of the two items is two times larger than that of other items (Hoffmaister (2001)). The same study found that one percentage point change in food prices will change CPI by 0.3 percent after six months.<sup>25</sup> Therefore, the core inflation rate is an appropriate indicator in the framework under the Bank of Korea Act, which stipulated that the inflation target is set annually.

As seen in Chapter II, another way to bring flexibility to the inflation target is a resort to the escape clause rather than the core inflation rate. This approach relieves the central bank of responsibility

for failing to meet the inflation target to the extent that this is attributed to weather, the international situation or disasters. This approach, however, needs to determine whether events to be included in the escape clause are appropriate or whether a given rise in prices falls into the provisions of the escape clause, based on rigorous analysis. In particular, if the appointment of the governor of the central bank is based a contractual obligation directly linked to achieving a given inflation target, as in the case of the current legislative arrangement in New Zealand, there must be detailed considerations regarding what provisions to be included in the escape clause. In emerging market countries where economic structure is changing rapidly, there are a number of problems related to the credibility of the system, including whether such an analysis will be made rigorously, whether such an analysis will be made in a politically neutral manner and whether the public will have confidence in the results of the analysis. In Korea, it is simple and reasonable to use the present method where the single core inflation figure is employed to assess whether the target is achieved.

### (3) The Level and Band Width

Over the four years since inflation targeting was introduced, actual performance fell short of the target in 1998 and 1999, while actual performance surpassed the target somewhat in 2001.

Korea belongs to the group of countries heavily dependent on external trade, with an export-GDP ratio of 38 percent and the import-GDP ratio of 35 percent. Thus exchange rate fluctuations will significantly affect the economy as a whole, and price movements are also large. It is also difficult to identify with some degree of precision the transmission mechanism of monetary policy in emerging market countries where industrial structure and trade structure tend to change rapidly.

In addition, since the currency crisis of 1997, major changes have been taking place in the financial system, including realignment of chaebol and

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25 According to Hoffmaister(2000), the effect after one year rapidly declines and reaches at 0.03 % after 24 months. Thus the CPI would be a more desirable target from the viewpoint of transparency if the horizon is extended to more than one year.

rebuilding of the corporate finance mechanism. Under these circumstances, it is not easy for the monetary authorities to pinpoint the monetary transmission mechanism.

The current inflation target has one percent band on either side of the central target figure. This overall target band of two percents is similar to those of advanced industrial countries. However, given that Korea is a small open economy and that its economic structure is in the process of adjustment, a somewhat wider band would increase the chance of hitting targets and thereby lead to a greater credibility of inflation targeting.

In general, in the process of structural adjustment it would be better to stimulate private investment, which is bound to take place under the changing economic environment, and encourage structural shift in the corporate sector. This means it would be desirable to favor the borrowers with a moderate inflation. Though Korea does not estimate CPI bias, CPI bias is likely to be large during the period when the economy grows fast because of a considerable shift in consumption pattern. Therefore, if one takes these factors into account, a 3-to-4 percent annual increase in prices is not necessarily high for an emerging market economy. In fact, a 2.5 percent medium-term inflation target is considered somewhat low for Korea.

#### **(4) Time Horizon**

The Bank of Korea Act set forth that the time horizon of the inflation target is one year. Many cases in advanced countries have horizons exceeding one year, however. According to the VAR model simulation by the Bank of Korea, a change in call rate will begin to affect prices in 7 to 8 months and its effects will continue into 2 years (Oh, 1999). Further, exchange rate fluctuations will usually have their effects being felt after more than one year. Thus a one-year horizon of the inflation target seems to be too short for conducting monetary policy.

The target horizon of one year is beneficial in terms of achieving consistency with the government economic forecast and fiscal policy stance based on it. In this respect, it has an advantage of making it easy for the monetary authorities to discuss the inflation target with the government. On the other

hand, there arises a dilemma: as the end of the year approaches, the monetary authorities have to determine monetary policy even if the target for the next year has not been set.

One of the intrinsic characteristics of inflation targeting is a forward-looking monetary policy. Thus what is important in inflation targeting is that rather than adjusting the current policy by watching the latest economic indicators and developments, the current policy will be changed based on assessment as to whether the future inflation forecast is expected to exceed or fall short of the target inflation. From the practical viewpoint, it is difficult to conduct forward-looking monetary policy with a one-year target horizon.

#### **(5) Ensuring Transparency**

In addition to providing access to the documents providing the annual inflation target and monetary policy stance as well as minutes of discussions at the Monetary Policy Committee, the Bank of Korea publishes a monthly outlook of financial and economic conditions and monetary policy stance, including English versions on its website, to ensure the transparency of monetary policy. Quarterly Bulletins, working papers and other materials are also made available to the public to provide the detailed analysis of financial and economic conditions, as they constitute the background of monetary policy decision.

Greater transparency of monetary policy, which will allow market participants to easily read the next move of the monetary authorities, is believed to lead to a stable development of the financial market. Therefore, it is desirable to keep up such efforts. For example, if it happens that the structural shift after the crisis has been more or less completed and a more sophisticated model may be constructed with an increased amount of data, public disclosure of the econometric model the Bank of Korea uses internally may be considered as part of the agenda.

#### **(6) Relationship with Exchange Rate Fluctuations**

There are two channels through which exchange rate fluctuations affect prices: real demand and import prices.

Since the yen accounts for 20 percent of Korean trade transactions, while the dollar accounts for 80 percent thereof, the effect of the latter channel depends largely on the dollar-won relationship. During appreciation of the dollar, or depreciation of the won, inflationary pressure is likely to emerge.

As to the latter channel, since some Korean products are competing with Japanese products, changes in the yen-won exchange rate will affect the overall Korean exports by changing the price competitiveness of Korean exports in the Japanese or a third-country market. Thus won depreciation increases business activity through export expansion and may work as inflationary pressure if the economy overheats.

These two channels imply that excessive won depreciation may bring inflationary pressure. Thus from the point of view of meeting the inflation target, the central bank may have a tendency to avoid won depreciation as much as possible. On the other hand, the government may prefer won depreciation as political pressure may work toward that direction from industry. This may create a divergence of interests between the government and the central bank.

However, intervention in the foreign exchange market is supposed to be a joint operation by the MOFE and the Bank of Korea. Although the actual intervention is conducted by the Bank of Korea, the ultimate decision on intervention is made by the fiscal authorities (MOFE), just like Japan. In practice, the relevant section in the MOFE and its counterpart in the Bank of Korea are watching real-time transactions on their monitors every day and a decision on intervention is made through discussions with each other on a direct line. Since the ultimate power to make a decision is vested with MOFE, the intention of MOFE prevails in the case where there is any difference in opinion. Therefore, theoretically, despite the existence of inflationary pressure, MOFE may hold a certain view strongly and nudge the won rate toward depreciation. As a result, there is a risk of missing the inflation target.

The Korean government and the Bank of Korea

have stated that currently their intervention is only confined to a 'smoothing operation' under the flexible floating exchange rate regime and dismiss such risk. A smoothing operation is an intervention aiming to moderate market volatility that may arise when there is turbulence in market activity, massive outflows or inflows of funds or a large gap between bids and offers. Such intervention goes against the wind but only slows down the speed rather than reverse the direction. Neither the Korean government nor the Bank of Korea have released the record of intervention in the foreign exchange market, including the volume of intervention, even at a later date. Thus, the actual scale of their smoothing operation is unknown.

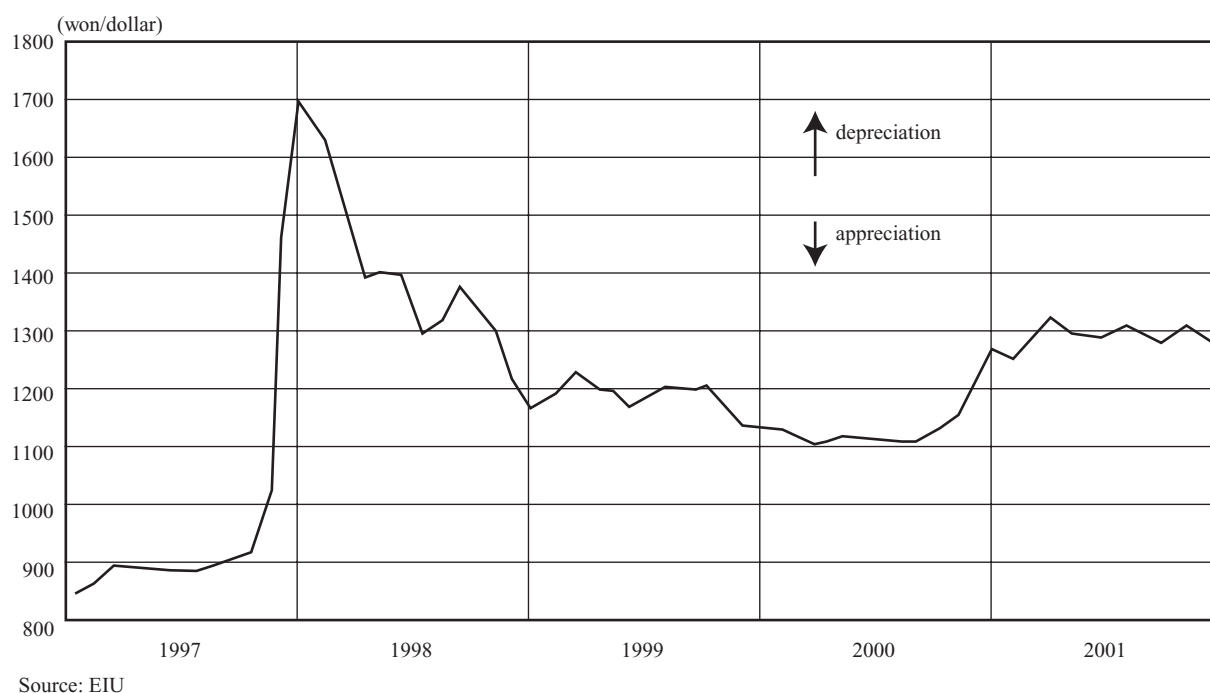
Actual movements of the won against the dollar were largely stable in 1999 and up to the first half of 2000 (Figure 5). The regression of daily and weekly changes in the won against corresponding changes in the dollar, the yen or the German mark (euro) found that a close co-movement of the dollar and the won has remained almost unchanged from the pre-crisis period. Some observers suggested that a *de facto* dollar peg continues to prevail after the crisis, creating a divergence between *de jure* and *de facto* exchange rate regime (McKinnon (2000) and Calvo and Reinhart (2000)).

On the other hand, in contrast to the pre-crisis period, the volatility of the won has increased after the crisis. If frequent intervention takes place, there are significant fluctuations in foreign exchange reserves. However, foreign exchange reserves in Korea clearly fluctuated less after the crisis than before the crisis (Nadal-De Simone (2001)).<sup>26</sup> Therefore, while theirs is far from a clean float, it may be taken to be a policy shift from the pre-crisis period, coming closer to a currency float after the crisis.

It is not obvious whether co-movements of the dollar and the won may be ascribed to exchange rate intervention or a coincidence caused by other factors. The Korean economy is particularly dependent on trade with the United States and strongly correlated to U.S. business cycles. Therefore, when the value of the dollar is high, there is a high likelihood that the

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26 A substantial stock of foreign reserves may be considered a result of lessons drawn from the currency crisis, and it should not necessarily be seen as reserve funds for constant intervention in the foreign exchange market.

**Figure 5 Exchange Rate in Korea**

won is purchased in the market. Another phenomenon often pointed out is co-movements of the yen and the won. It is known that depreciation in the yen will decrease Korea's export competitiveness, causing market participants to associate it with selling the won and leading to won depreciation. Careful examination is called for to determine whether close co-movements are a result of the exchange rate policy of the authorities or reflect changing market expectations.

Given that the volume of transactions in the Korean foreign exchange market have increased to about 3 billion dollars a day, there is suspicion as to whether intervention is effective in reversing the trend, even if it may successfully moderate the speed of the precipitant changes.<sup>27</sup>

In any case, one cannot draw the conclusion from intervention in the foreign exchange market that the particular regime is soft peg rather than the flexible rate system.<sup>28</sup> The actual exchange rate policy cannot

be neatly grouped into three types consisting of hard peg, soft peg and free float. An actual exchange rate regime is a relative characterization, falling into some point in the continuum between hard peg and clean float. In practice, advanced countries adopting the floating system may, in many cases, be characterized as practising more or less managed floating. From the practical aspect of conducting economic policy, it is too naive to exclude any kind of intervention in the foreign exchange market.

More important in its relation to monetary policy is not the extent currency floating is dirty but what basis the monetary policy is predicated on and what the target monetary policy is committed to. In inflation targeting, it is not inappropriate in theory as well as in practice to make interventions in the foreign exchange market to prevent overvalued or undervalued exchange rates as a means to meeting the inflation target.<sup>29</sup>

27 This point was emphasized by Korean market participants and observers. However, relative to trade figures, Korean foreign exchange reserves are not significantly large compared with those in other countries such as Japan, Thailand, Brazil and Mexico (Park, Wang and Chung (1999)).

28 While the monetary authorities in Japan, the United States and Europe have conducted major interventions in the foreign exchange market in the past, few people will presume from this fact that these countries did not have floating exchange rate regimes.

29 For example, it should be recalled that even if the ECB is not officially targeting inflation, it intervened in the market in the face of the depreciating euro shortly after its introduction in 1999, justifying this by stating that it would hold on to an inflation target of 2 percent.

**(7) Relationship with Asset Prices**

Another factor that has to be taken into account in inflation targeting in Korea is its relationship with asset prices. Although this issue is common among inflation targeting countries and not confined to Korea, the Korean case requires special attention. Since there are large capital inflows from abroad in emerging markets, asset prices could register a sharp increase at any time. Many Korean households, even the middle income group, have also invested in real state. In addition, Korea had the experience of descending into an asset bubble situation immediately prior to the currency crisis as prices of stocks and real estates soared sky high. On the other hand, asset prices are not included in the inflation target. How should inflation targeting deal with an asset price bubble?

Since the end of 2001, foreign investors have increased investment in stocks and real estate prices have risen, reflecting the economic upswing. Against this background, the Bank of Korea has added to the document describing its monetary policy stance a line that the Bank would 'pay sufficient attention to asset prices'. This may be taken to be an indication that it will resort to monetary tightening depending on how asset prices will change. A rise in asset prices will boost consumption through wealth effect and could create inflationary pressures down the line. Thus, monetary tightening to prevent such an outcome is justified under the framework of inflation targeting. However, in the present Korea where recovery in capital investment and exports is still weak, monetary tightening solely based on the asset prices could drag down the pace of economic recovery. A rise in stock prices may well be a straightforward reflection of expected growth and fundamentals in the Korean economy, but it is quite possible that foreign investors invested in Korean stocks simply because of their perception that relative to other Asian economies, the Korean economy happened to show a fair performance. If this is the case, Korean stock prices could decline as other economies register significant improvements in performance.

Therefore, it is necessary to conduct more study on how monetary policy should deal with a temporary increase in asset prices amid a generally weak

economy by taking into account spillover effects of asset prices.

**(8) Macroeconomic Policy Measures**

The adoption of inflation targeting means that monetary policy is primarily devoted to price stability and that monetary expansion should take place within the margin that price stability is assured into the future. Does this mean that we have to rely on discretionary fiscal policy for smoothing out business cycles?

This question depends on various factors, including the size of the fiscal multiplier, the degree of fiscal built-in stabilizers and the speed with which a decision on discretionary policy is translated into implementation. In other words, the larger the fiscal built-in stabilizer, the more economic stabilization is expected from an automatic increase in the fiscal deficit which results from an increase in unemployment insurance benefits and reduction in tax revenues without turning to discretionary fiscal expansion. Discretionary fiscal expansion also takes a longer time than monetary policy in reaching a decision, as the parliament has to deliberate and pass the supplementary budget bill. Further, it takes a longer time required for the preparatory work toward implementation. As a result, empirical knowledge has taught us that an economic package often has its effect felt after the time when there is acute need for it, thereby working to amplify business cycles.

In the Korean case, built-in-stabilizers do not have large effects at present. On the expenditure side, there used to be inadequate safety nets, and they are currently still in the process of improvement and thus spending from income transfer effect is small. Thus we should not expect much from built-in-stabilizers.

According to the estimate of the Korean Development Institute (KDI), the fiscal multiplier effect is 0.89, which is significantly smaller than 1.21 in Japan. In addition, since foreign investors rigorously scrutinize the fiscal soundness of emerging market economies, economic policy must take this factor into consideration. As the implementation lag in Korea is six months to three quarters, fiscal policy lacks speed and flexibility and is likely to amplify economic fluctuations. This consideration points to the reality that it is not a good policy to assign the



role of economic stabilization to discretionary fiscal policy.<sup>30</sup>

Therefore, it is more appropriate to expect monetary policy, to a limited extent, to fine-tune economic activity within the framework of inflation targeting. In this context, too a narrow target band or too low a target point will not allow this margin of discretionary monetary policy to work effectively. As discussed in Section 2 of Chapter II, inflation targeting is a framework to pursue constrained discretion in monetary policy. In the case like Korea where it is not beneficial to rely on discretionary monetary policy, an important point is that the inflation target must be set in such a way that its constraint is not too tight and that there is a margin of maneuverability within which monetary policy will be able to nudge the market while anchoring its inflationary expectations.

#### 4. Overall Assessment

Since its adoption in 1998, inflation targeting has played a certain role in stabilizing the Korean economy. In particular, inflation targeting made way for a firm commitment to the independence of the monetary policy of the Bank of Korea and a greater increase in the transparency of monetary policy than in the pre-targeting days.

On the other hand, there is a considerable room for further improvement if inflation targeting is to be firmly embedded and practiced effectively. Specifically, further strengthening of the independence of the Bank of Korea and a review on designing inflation targets would be indispensable for increasing the credibility of inflation targeting. There are also such problems as the relationship with exchange rate policy and an appropriate response to a rise in asset prices. These are inherent in Korea's economic structure. There would be a case for further examination on how to deal with these problems and

where to head for in doing so under the framework of inflation targeting.

### Concluding Comments: Agenda for Inflation Targeting in Asian Economies

There have been less than sufficient advances in research on inflation targeting in emerging market economies to date, without consensus views being formed in academic literature. If anything actual practice has outstripped research. An increasing number of countries have adopted inflation targeting as an anchor of monetary policy as they shifted their exchange rate regimes to floating, drawing on the experience that an impetuous movement of capital was the prime cause of the currency crisis.

A tentative look at the academic literature at this point in time discerns two camps: one is positive toward inflation targeting in emerging market economies, while the other remains suspicious.

For example, Frederic S. Mishkin at Columbia University, who is well-known for his distinguished research in monetary economics and monetary policy, including inflation targeting, belongs to the former camp, though his view is somewhat tempered. After comparing the pros and cons of inflation targeting and examining the successful example in Chile, he concluded that although inflation targeting is no panacea for emerging market countries, it will serve as a very useful device for monetary policy in many countries (Mishkin (2000)).

On the other hand, Barry Eichengreen at Berkeley, University of California, argued that emerging market economies are vulnerable to currency fluctuations; forecasting inflation is difficult to make; given that their external debt is primarily denominated in U.S. dollars, a framework for monetary policy that is likely to allow the national currency to depreciate freely is impractical,

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30 In general, the Mundell-Fleming Effect is also important to discuss the effect of fiscal policy: in an open economy with free capital flows, fiscal expansion will result in the currency appreciation via capital inflows induced by the rise in interest rate, which curb the export competitiveness, thus the effect of the fiscal expansion. In Korea, however, the correlation between the interest rate and the currency is not high. Rather, a boom in the stock market leads to currency appreciation. Therefore, the Mundell-Fleming effect is not discussed in this paper.

considering the problem this will pose to the balance sheet of their financial institutions; and their central banks have credibility problems. For these reasons, he takes a view that only a small number of emerging market countries that do not have the above problems can adopt inflation targeting (Eichengreen (2002)).

As seen in Chapter III, an examination of the Korean experience suggested that it is, at least, not appropriate to take a negative view on inflation targeting simply because it is an emerging market economy.

It is not only in emerging market countries but also in some advanced industrial countries that central banks have yet to establish credibility. In the case of Korea, the 4-year experience in inflation targeting has increased the credibility of the central bank, at least, compared with the period before it was adopted. Credibility is gained as a result of repeated games between the central bank and market participants. Thus it is difficult to establish credibility in a short period. In advanced countries, it is a result of the accumulation of sober work, including greater transparency of monetary policy and continuous dialogues with the market. Emerging market countries need to lay down more rigorous legal provisions for the independence of the central bank than advanced countries as well as an institutional design to enable their central banks to conduct monetary policy in a more neutral manner.<sup>31</sup> In this case, it is important to impose on the central bank rigorous accountability matching greater independence of means.

There is no question about difficulties of forecasting inflation in emerging market economies. In particular, the difficulty to identify the monetary transmission mechanism because of structural shift and vulnerability to exchange rate fluctuations make it very difficult to forecast inflation. However, no matter what policy framework is chosen, as long as it is forward-looking in nature, it is indispensable to forecast future economic variables. Globalization has

increased uncertainty in monetary policy and made it difficult to identify the monetary transmission mechanism even in advanced economies (Wagner (2001)). Therefore, in whatever policy framework, consistent efforts to improve capabilities of making economic forecast and analysis should be important.

While dollarized debt is a serious problem, one cannot avoid the same problem in any monetary policy framework as long as it is under the flexible exchange rate system. Since Korea has maintained a de facto dollar peg for a long period before the currency crisis, firms did not have an incentive to hedge exchange rate risk by bearing some cost. However, after the crisis, companies hedging foreign exchange risk have increased and the Korean government has made an effort to spread the prevalent use of hedges against exchange rate risks, with an overall move being underway toward reducing the vulnerability of the economy to exchange rate fluctuations. It is important in consolidating the flexible rate system that emerging market countries make efforts to build the economy resistant to exchange rate fluctuations by broader use of exchange rate hedging measures.

Unlike advanced countries, there are many difficulties in inflation targeting in emerging market countries. On the other hand, however, there are positive aspects such as a move to secure and strengthen the independence of the central bank. It is important to increase the credibility of monetary policy by making further improvements in the functioning of inflation targeting, while strengthening such positive developments. In looking to the future, specific issues related to inflation targeting in emerging market economies, including the relationship with exchange rate policy, dealing with the asset price bubble resulting from capital inflows from abroad and the macroeconomic policy assignment problem, will be on the agenda for further research.

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31 In this connection, an abrupt dismissal of the governor of the central bank in Thailand in May 2001 is problematical from the viewpoint of establishing the credibility of the central bank for targeting inflation.

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