Hong Kong Monetary Authority

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INFLATION TARGETING IN ASIA

Key Points:

- *Korea and Thailand have officially adopted inflation targeting as their monetary policy frameworks in the wake of the Asian financial turmoil. The Philippines and Indonesia are contemplating such a move. Nevertheless, there are a number of technical and structural issues in Asian economies that could potentially complicate the implementation of such a regime.*

- *The extremely open structure of most Asian economies, characterised by high dependency on exports and exposure to voluminous cross-border financial flows, presents substantial challenges to a credible implementation of inflation targeting, as fluctuations in exchange rates often have direct, and sometimes significant, impact on domestic price stability.*

- *One key component of a viable inflation targeting framework is a stable, and ideally quantifiable, relationship between the central bank's policy instruments and economic activity. Given existing weaknesses in the financial sectors of crisis-hit economies, monetary transmission mechanisms are likely to be unpredictable. Thus, the inflation targeters may have to accept a wider target band, or allow a longer time horizon for inflation to fall into the targeted range.*

- *A strong political will is crucial to a successful implementation of the inflation targeting regime. In Asia, central banks could face potential conflicts with the administration arising from multiple policy objectives. There is also a need for central banks to strengthen their technical capabilities in forecasting inflation, and understanding policy transmission mechanisms.*

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I. INTRODUCTION

This paper examines the recent shift of some Asian countries to target inflation as a monetary policy goal. For decades, monetary policies that revolved around nominal exchange rate anchors, mainly against the US dollar, were commonplace in Asia and constituted a cornerstone of the export-driven economic development in the region. That was severely disrupted by the financial crisis in 1997 and 1998, which forced most currencies to undergo various degrees of depreciation. While the Hong Kong dollar peg was successfully maintained, and the Malaysian Ringgit re-pegged at a lower level, most other currencies have been allowed to "float" in the sense that the respective central banks have resigned from using the external values of their currencies as an overriding policy objective. Inflation targeting appeals to this latter group as an alternative monetary framework, and has been formally adopted by Thailand and Korea, and is said to be under consideration by Indonesia, the Philippines and, of late, Japan.

Such a development is noteworthy for its potentially significant implications on financial and economic stability, not only for those Asian countries that adopted inflation targeting but also the region as a whole. For its Asian practitioners, both the short history of the inflation targeting regime itself and the significant structural differences that distinguish them from inflation targeters in industrial countries make for some uncharted waters ahead. This paper is an attempt to shed light on the potential challenges that comes with this new paradigm.

The paper is organised as follows. Section II reviews some background on inflation targeting. Section III examines the current drive by Asian countries to adopt such a regime. Section IV discusses potential complications that could arise in the specific context of Asian economies. Section V concludes and suggests areas for further research.

II. BACKGROUND

Mishkin (2000) gives a detailed definition of inflation targeting:

> Inflation targeting is a monetary policy strategy that encompasses five main elements: (1) the public announcement of medium-term numerical targets for inflation; (2) an institutional commitment to price stability as the primary goal of monetary policy, to which other goals are subordinated; (3) an information inclusive strategy in which many variables, and not just monetary aggregates or the exchange rate, are used for deciding the setting of policy instruments; (4) increased transparency of the monetary policy strategy through communication with the public and the markets about the plans, objectives, and decisions of the monetary authorities; and (5) increased accountability of the central bank for attaining its inflation objectives.

According to this definition, there are mainly two aspects to evaluate existing and prospective inflation targeting regimes. Point (2), (4) and (5) prescribe the institutional framework that provides for operational independence and an overriding objective of the central bank, whereas point (1) and (3) the technical considerations needed to define and implement the operation parameters of the program.

Table 1 lists the countries that have openly adopted an inflation targeting regime, and highlights the key features and parameters in their respective frameworks. The first noticeable fact is that inflation targeting has a very young history, with its longest practitioner, New Zealand, having barely more than a decade's experience. Second, it seems that even among the industrial countries, a strict adherence to all the components of inflation targeting as defined by Mishkin is an exception rather than the rule: Spain and Finland ran their short inflation targeting regimes concurrently with their pre-EMU push to convergence as specified in the Maastricht criteria, while Sweden, the UK and Australia all formalised the institutional framework by enacting the relevant legislation or officially announcing central bank independence, only years after adopting their inflation targeting regimes. The past decade has seen a continuous secular decline in global inflation that would have produced an easy victory for those who claim taming inflation as their primary objective. Thus, it is difficult to evaluate the success in implementing inflation targeting at this stage.

But even with these caveats in mind, it is fair to say that inflation targeting, as a relatively new regime, has measured up to its expectations, as compared with other competitive/predecessor regimes that target exchange rates or monetary aggregates. All the established participants in Table 1 has seen well-behaved price developments under their inflation targeting regimes, with no major recession or financial crisis. The contrast is even sharper considering that this sample of practitioners contain countries that either experienced crises earlier (UK and Sweden) or come very close to having one (Australian and New Zealand). If these episodes fall short of establishing inflation targeting as a viable monetary framework, as least they offer optimism in this regard.

III.   PRICE STABILITY AS A NEW POLICY TARGET IN ASIA

Asia's economic performance over the past decades is most often chronicled by first a period of high export-driven growth and then an ignominious crisis. With few exceptions, monetary management in the pre-crisis period appeared to be lacking in a clear and lasting anchor (Table 2). In general, most Asian central banks or monetary authorities did not state any clear and explicit monetary policy goals, while in practice, a number of them were generally believed to target the external value of their currencies against a basket of major foreign currencies. For instance, the Bank of Thailand was known to maintain a stable exchange rate against a weighted average of the US dollar and Japanese yen.

Dekle and Pradhan (1997) in their description of monetary policy frameworks in the region refer specifically to the 1990s, yet they also make it clear that these regimes, even including that of Singapore, relied much more on monetary targets in the 1980s but was forced to renege due to "growing difficulties in simultaneously seeking to target the exchange rate and monetary aggregates in increasingly open

economies." This underlines the general lack of coherence in the monetary frameworks in most Asian economies in the pre-crisis era.

In this context, inflation targeting represents a marked shift in policy focus for many Asian countries. From a development perspective, the favourable experiences from the industrial world clearly appeal to Asian countries as they formulate their strategies to recover from the worst crisis in recent history. In particular, the economic revivals that the UK and Sweden have enjoyed in the years that followed their crises in 1992 should be no less a temptation among Asian policymakers who would like to see similar developments at home.

Inflation targeting also appeals from an operation standpoint. First, it does not require the authority to commit specific resources to a monetary policy goal, as is the case with a currency peg in terms of its requirement on foreign exchange reserves. Also, its operational parameters can usually be designed to allow for a higher degree of flexibility, including, as noted in Table 1, changes to the target itself. Finally, the absence of any immediate price pressure in a number of Asian economies in the near term further makes for an opportune moment for its introduction.

As now, Thailand and South Korea have both announced the adoption of an inflation targeting framework (Table 3). The Philippines is said to be moving in the same direction. Meanwhile, Singapore continues to adopt a managed floating regime. Indonesia has begun to announce a yearly inflation target but its central bank has also been given a new mandate to "maintain the stability of the rupiah value."[1] While most of these frameworks may still be at a state that falls short of the Mishkin criteria, there is little doubt that the general direction is towards one of targeting outright price stability. That leaves Hong Kong and Malaysia as the only two major economies in East Asia that still explicitly adopt a fixed exchange rate regime.

Although inflation in Korea and Thailand has appeared to behave reasonably well since their adoption of the inflation targeting regime (Chart 1), it is clearly too early to evaluate, at this stage, what this shift of monetary focus would mean to the region. Rather this paper focuses on the structural as well as institutional issues that would require attention. While some of the problems facing developing countries, such as a lack of fiscal discipline, are much less of a worry in this region, there are specific complications, such as the exposure to external influence, that warrant concern.

IV.   POTENTIAL ISSUES FACING INFLATION TARGETING REGIMES IN ASIA

Existing literature generally acknowledges that developing countries have to face extra hurdles in pursuing inflation targeting (Masson, Savastano and Sharma, 1997, Debelle and Cheng, 1998). The concerns fall into three broad categories.

First is the lack of policy coherence or, specifically, the "multiple objective" problem, namely the inability to carry out an independent monetary policy that is free of other implicit or explicit goals. This includes not only exchange rate targets but also other "commitments" like fiscal dominance or growth pledges. A more

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[1] Act Nr.23 / 1999 on Bank Indonesia Ch 3 Article 7

extreme case involves governments resorting to printing money, or the so-called "inflation tax", as a way to finance expenditure.

Second are the technical and operational issues that may arise during the actual implementation of inflation targeting. They include, among other things, whether inflation in these countries can be measured and forecast with reasonable accuracy and within reasonable timeframe, and whether the financial structures of these countries would allow a tenable channel for monetary policy to have a predicable impact on real economic activity. Developing countries are seen as having more difficulties due to their high reliance on basic commodities that expose the economy to supply shocks (such as poor harvests) and fluctuations in the world prices of these commodities.

Third is a backward financial sector that adds to these ills. An inefficient credit market discourages savings and may lead to high real interest rates, which in turn restricts the government's borrowing capacity and increases the likelihood of interference with monetary policy. The lack of financial market depth also diminishes the effectiveness and predictability of monetary policy.

On the surface, Asia's economies seem to have advanced beyond most of these characterisations even discounting the setback caused by the recent crisis. The region's development over the past decades has been marked by rapid industrialisation, underscored by high private sector savings and prudent fiscal management. A case in point is seigniorage. Table 4 lists some common measures on seigniorage reliance for a wide variety of countries as computed by Masson (1997). It can be seen that Asian economies on these measures are a lot closer to the developed countries than developing countries in other regions. From this perspective, they are clearly at a better position than other emerging economies to adopt inflation targeting.

Yet there is a case to be made that Asian economies, from its "miracle" years to the eventual crisis, have inherited their own distinct characteristics that set their economies apart from others. As a result, a more comprehensive evaluation should also take into account the very own fundamentals in these economies. From this perspective, this paper argues that there are a number of technical and structural issues common in Asian economies that could potentially complicate the implementation of an inflation targeting regime. The rest of our analysis is devoted to them.

a. Large exposure to external shocks

A potential source of instability arises from extremely open structure of most Asian economies. As Table 5 shows, not only are they more dependent on exports than other regions, they are also subject to large cross-border financial flows.

These circumstances present substantial risks to a credible implementation of inflation targeting. First, given its dominance in the economy, the trade sector will inevitably figure significantly both as a variable in the central bank's inflation assessment and a critical channel for monetary transmission. Unfortunately, that is also likely to be the sector that monetary policy has the least leverage on, as most of the variables involved, including world commodity prices and global demand, are exogenous. While our earlier discussion does point to hints of exchange rate management in past

conduct of monetary policies, under inflation targeting the desired level of exchange rate may come into conflict with the overriding goal of preserving price stability. A sudden surge of capital inflows, for example, may put authorities into the dilemma of choosing between an appreciation of the domestic currency that would hurt competitiveness and the inflation risk associated with a monetary expansion in an unsterilised foreign exchange intervention.[2]

Even in cases where a desired exchange rate movement is consistent with the inflation targeting framework, considerable uncertainty still exists with regard to how the foreign exchange market would react to monetary policy changes or ad hoc interventions, making it difficult to predict how a monetary policy move would influence, via its effects on the exchange rate, the inflation outlook. While this uncertainty confronts all open economies that adopt floating exchange rates, the large trade sector and the relative lack of financial market depth in Asia's economies could exaggerate the impact of capital flows on both the real and financial sectors.

Debelle and Cheng (1998) explicitly consider "large and potentially volatile capital inflows" as a significant complication in their evaluation of potential application of inflation targeting in the Philippines. They depict a situation where a regime involving a primary goal of inflation targeting and a secondary goal of exchange rate stability is challenged by strong capital inflows. A major problem for the central bank is to differentiate between temporary and permanent inflows. If such distinction can indeed be made, the policy recommendation is to sterilise temporary flows, but absorb permanent flows through a change in exchange rates such that the inflation target will not be compromised. Such complication is clearly relevant to other Asian economies as well.

Some small economies that have large export sectors also tend to rely heavily on imported goods to meet their domestic demand. In such a case, fluctuations in exchange rates of these economies would have direct, and sometimes significant, impact on domestic price stability. Thus, their central banks may need to target exchange rate in order to achieve their inflation targets. Singapore is an interesting case in point. Although the Monetary Authority of Singapore does not consider itself as an inflation targeter, it claims that it manages the nominal exchange rate in order to maintain low inflation (Table 2). Indeed, its exchange rate policy appears to serve the economy well in the past decade in terms of maintaining domestic price stability. This illustrates that inflation targeting central banks in small, open economies may also need to target exchange rate as an intermediate target in order to achieve the ultimate policy goal.

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[2] To avoid a monetary expansion, a central bank may sterilise its intervention in the foreign exchange market. However, the effectiveness of sterilised intervention is generally doubtful. Fiscal costs may also be incurred if domestic borrowing costs are higher than the return from investing in foreign currency assets.

b. **Financial sector inefficiency**

A major appeal of inflation targeting is that a stipulated inflation target, if credible, should reinforce the price signal in nominal interest rates and allow the credit market to perform more efficiently. In practise, however, this rationalisation also presents a challenge to the existing credit infrastructure. One key component of a viable inflation targeting framework is a stable, and ideally quantifiable, relationship between monetary variables and economic activity. Central banks can directly control certain monetary variables like official lending rates and interbank liquidity, but their impact on economic activity is largely transmitted through the financial sector, which decides how credit would be allocated to the real sector of the economy, given the policy signals of the central banks. A consistent and smooth-functioning financial sector thus adds to the credibility of monetary policy.

Unfortunately, the financial industries of most Asian countries have undergone a sea change since the Asian crisis. At this juncture, the region's banking sectors are still largely in rehabilitation, with a few under consolidation pressure while some already in public administration.[3] As long as the private credit market remains depressed, a structurally impaired credit infrastructure will continue to deny monetary policy the predictability that would be essential under inflation targeting.

Efforts that Asian countries have taken so far remained geared towards rehabilitation rather than reform. Measures like carving out bad debts and nationalising banks serve largely to contain the crisis but do not improve the functioning of the credit market. Rather it can be argued that takeovers of banks by the public sector may become a source of distortion and moral hazard. The slow pace of reform is raising the risk that these crisis-containing apparatus would be permanently institutionalised into the financial sector, thus further postponing a normalisation of the credit market.

Similarly, the demand side of the financial structure is also showing declining private sector participation. The relative share of credits going to the private sector has declined for a number of reasons in Korea, Thailand, Indonesia and Philippines since the financial crisis. The first of these is the immediate need to secure funding to finance the nationalisation and "bail out" exercises that various Asian countries have undertaken. The sharp drop in private sector share of domestic credit in Indonesia in recent years is a clear example, effected by a shift of private credit out of the "private sector" definition. The second factor is the general economic decline that has put increasing pressure on fiscal finance and necessitated public agencies to tap other means of financing. A third factor is an increase in credit risk that has biased the banks away from soliciting businesses from the private sector.

Whatever the reasons, the result is increasing involvement of the public sector on *both* sides of the credit market. This development contrasts the experience of most established inflation targeters, which have seen a gradual increase in private sector share of domestic credit (Chart 2). While the financial sector's weaknesses of many

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[3] The March issue of the Asia Recovery Report by the Asian Development Bank (p. 8) notes that non-performing loans (NPLs) in Korea and Malaysia remain high, and that in the Philippines still rising. Also, much of the headline NPLs reduction in Indonesia has been due to the transfer of problem loans to asset management corporations (AMC), where they remain unresolved.

Asian economies would need to be addressed regardless of what monetary policy regime they adopt, the needed reforms would obviously take time to complete. In the meantime, as their monetary transmission mechanisms are less predictable due to existing weaknesses of their financial sectors, the inflation targeters may have to accept a wider target band, or allow a longer time horizon for inflation to fall into the targeted territory in order to avoid losing credibility by missing the target too often.

c.   Weak institutional support

Another issue is whether the Asian economies concerned can provide a supporting institutional framework for the new regime to develop. As this paper argues earlier, few, if any, countries started their inflation targeting regimes as prescribed by the strict criteria proposed by Mishkin. In the case of Asia, a gradualist approach seems particularly justified in view of the dominating exogenous factors and structural hurdles discussed above. However, as in other areas of public policy, a political resolve to push forward the necessary institutional changes would clearly serve to mitigate the inevitable confusion during the initial stage of a new regime and enhance its credibility. In this regard, two measures of such resolve are the independence and resources that a central bank enjoys.

Whereas there is controversy regarding the level of independence a central bank should enjoy under an inflation targeting regime, a common denominator seem to be that of "operational independence", or the freedom to set monetary policy to achieve a pre-specified inflation target. Other apparatus that is commonly included in such framework includes regular policy meetings that decide monetary decisions, and regular inflation reports that stipulate the central bank's views on inflation and articulate the rationale for its past decisions. In line with the established regimes, most Asian governments have instituted these key signatures of the framework, some even on a statutory level (see Table 6). In Korea, for example, the Bank of Korea Act was revised in 1997 to establish the neutrality and autonomy of monetary policy, which led Oh (2000) to conclude that "the legal independence of the central bank has been secured."

Yet in practice it is far from certain that Asia's central banks could set themselves aside from the potential conflict with the ruling administration. Thus aside from efforts to better articulate and justify its policy stance to the general public, there is also a need for these central banks to devise better communication channels with their governments so that debates and differences can be properly addressed within the institutional framework.

Another aspect of institutional readiness regards the level of support that the central bank can rely upon to make its policy decisions. This relates to not only a heightened demand for timely and accurate reporting of economic data but also more sophisticated quantitative capabilities. While the structural change following the change in monetary regime would in any case require efforts in constructing new models, and it takes time for linkages among economic and financial variables to stabilise, there is a need to fill the knowledge gap in deploying quantitative analysis. Schaechter, Stone and Zelner (2000) survey the institutional changes in several emerging market central banks, and note that the move towards inflation targeting in their cases has often been accompanied by i) major reforms to a more flexible organisational structure that

emphasises delegation of authority, ii) a shift in economic analysis focus and staffing requirements towards building models for inflation forecasting and monetary transmission and iii) changes in financial market surveillance from one focused on day-to-day developments to one that aims to gauge medium term expectations on general economic trends.

d.   Measurement and definition of inflation

The use of the consumer price index (CPI) as a cost-of-living index is known to suffer from several major weaknesses.[4] One of the major challenges for central banks is to discern when changes in headline prices are caused by transient and isolated factors to avoid over- or under-stating the inflation outlook. Insofar as these components constitute only a small proportion of the consumer price basket, one solution that is common for developed countries is to construct alternative goods basket to exclude components that are considered lacking in their contributions to the general price trend. Examples are the many "core" inflation measures adopted by countries that exclude the food and energy sectors, and the RPIX measure used by the UK to avoid an interest rate hike from being misinterpreted as a rise in general prices (see Table 1).

Asia's developing economies are considerably disadvantaged in this regard. First, their lower per capita income would suggest a consumption pattern that is tilted towards expenditure on demand-inelastic, basic necessities. As Table 7 shows, the consumption baskets that are used by these countries to compute consumer prices are weighted more heavily towards foodstuff. Income disparity under this condition further widens the gap between the "averaged" weights and the actual spending pattern of a typical household. As an example, the statistical authorities in the Philippines actually recognised that the proportion of income spent on food could exceed 70% for lower income families, not the 55% represented in its consumption basket.[5] The large share of agricultural sectors in these economies could also act as a significant channel through which food price fluctuations affect the broader economy. Under these circumstances, failing to address these components within the framework could risk a loss of relevance and credibility of the regime.

Another source of complications to consumer price statistics comes from those changes that are affected by administrative measures. These include various forms of consumption taxes/tariffs, outright price/quantity controls, or indirect interventions on production factors like minimum wage regulations. Aside from their potential to cause jolts to headline consumer prices, they also can have an unpredictable impact on real activity and thus generate additional uncertainties to the inflation outlook. An increase in sales tax, for example, could cause a temporary rise of headline prices in the short run

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[4] First is its use of fixed-weighs to summarise the general price trend, which implies that the same basket of goods will always be consumed regardless of any substitution effect that comes with price changes. Second is the inflexibility with regard to its treatment of fast evolving goods and quality improvements, with computers being an obvious example. As a result, it is generally agreed that CPI measures tend to overstate inflation. Despite these shortcomings, CPI remains overwhelmingly used as a policy guidepost by central banks, who employ statistical adjustments as well as a tolerance of some "acceptable" level of headline inflation to accommodate these problems.

[5] This statistics is discussed in an article titled "Is the present 1994-based CPI still useful for inflation monitoring?" released 9th Oct 2000, by the Census Department, the Philippines. For details: www.census.gov.ph

but suppress consumer spending, and thus a moderation of inflation pressure, at a later stage.

Similar to their treatment of the volatile price components, some central banks have relied on exclusion as a method to screen out the distortion of administrative shocks like VAT tax, with Canada being an example (see Table 1). Yet aside from the representation problem mentioned above, this approach also assume that tax changes are passed through immediately and one-for-one to consumer prices, which clearly ignore the potential impact of counter measures like producers offering tax rebates or consumers bringing forward or postponing their purchase.

For Asian economies, these uncertainties seem also to have figured heavily in influencing the inflation outlook. For example, Bank Indonesia mentioned in its latest annual report that the government's price and incomes policies were estimated to have contributed 3.2 percentage points to CPI inflation in 2000, as against a forecast impact of 2 percentage points at the beginning of the year.[6] The bank cited difficulties in foreseeing and assessing these policy measures as the main reasons for the deviation.

This example illustrates the large potential for *ex ante* inflation scenarios to be disturbed by unanticipated or unprecedented developments in other policy areas. In Asia, this uncertainty is heightened by increasing pressure on the region's governments to finance structural reforms while preserving fiscal and social stability in the current challenging growth environment. Also, in contrast to the massive drive by western governments to privatise their ownership of public industries in the past decade, most Asian economies, wary of further economic volatility, seem unready to relinquish their controls over what they consider key sectors of the economy. Unfortunately, this may have increased the scope for governments to resort to price management or price control tactics and further interfere with the workings of an inflation targeting regime.

While these issues complicate monetary policymaking by enlarging the unpredictable element in the inflation outlook, they are not restricted to Asia alone, nor are they insurmountable. Possible remedies include adopting a wider targeting band and/or a longer targeting horizon, and devising special clauses under which more appropriate measures of CPI can be used. Another strategy is to admit that the target will be breached occasionally and explain, in advance, how policy will be adjusted in this case. A good communication program that can articulate to the public the intricacies involved should also be stressed.

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[6] Bank Indonesia Annual Report 2000, Ch 3, p 45-46. Among the administrative measures are hikes in fuel prices, transportation tariffs, electricity tariffs, cigarette excise tax, and import tax on sugar and rice, civil servant salaries and regional minimum wages.

V.   CONCLUSION

While at this stage it is too early to pass a judgement on the eventual success of inflation targeting in Asia, this paper sets forth some economic and institutional issues that should concern central banks in the region that are considering, or have switched to, such a regime. Specifically, it argues how some of the common traits found among Asian economies – dominance of the agricultural sector, large exposure to exogenous shocks, and a financial reform under progress – could complicate the effort of a central bank to stabilise inflation using monetary policies. Most of these concerns seem to have roots in the region's economic structure, and thus would linger for a considerable period. Meanwhile, aside from trying to accommodate these complications by taking a more gradualist approach, an acceleration of financial reform plus further strengthening of the related policy institutions could help to carry these regimes through their formative years. While policy credibility in the long run would depend on the actual performance of the regime, central banks should also devise proper communication programs with the public and the government to strengthen the political will behind the initiative and guard against possible political interference. This is a tall order, the achievement of which has probably been made more difficult under the present economic climate. As a direction of future research, it will be useful to examine how the inflation targeters in this region address the various structural issues and transitional difficulties discussed above, and how they derive their policy rules, if any, under these constraints.

Table 1. Policy Parameters of Established Inflation Targeting Regimes

	Date Adopted	Target	Exchange Rate Regime/ Institutional Changes	CPI target
Developed Economies				
New Zealand	Mar 1990	1991: 3-5% 1992: 2.5-4.5% 1993: 0-2% 1997: 0-3%	Floating since 1985	All Groups Consumer Price Index excluding Credit Services (CPIX)
Canada	Feb 1991	1991: 3-5% 1992: 2-4% 1994: 1.5-3.5% 1995: 1-3%	Floating	Underlying CPI that exc. food, energy and indirect tax (CPIxFET)
UK	Oct 1992	1992: 1-4% 1995: 2.5% (± 1%)	Floating since exiting ERM in 1992 / 1997: CB Independence announced, MPC formed	Retail price exc. mortgage interest (RPIX)
Sweden	Jan 1993	1995: 2% (± 1%)	Floating since exiting ERM in 1992 / 1997: Riksbank Act	Headline CPI
Finland	Feb 1993 – Jun 1998	1993: 2 % (annual average basis)	1992: exit ERM 1996: join ERM 1999: join EMU	Underlying CPI that exc. indirect taxes, subsidies, housing prices and mortgage interest
Australia	mid 1993	1993: 2-3 % on average over business cycle	Floating / 1996: Joint Statement by government and central bank	A "Treasury Underlying CPI" before Sept 1998 that exc. roughly half of the CPI basket. A new CPI index used since.
Spain	Nov 1994 – Jun 1998	1997: < 3% 1998: < 2%	1989: join ERM Devaluation: Sep-1992: 5% Nov-1992: 6% Aug-1993: 8% Mar-1995: 7%	Headline CPI
Emerging Economies				
Chile	Sept 1990	Reset yearly until 2001: 2-4%	Floating since Sept 1999. Crawling band used before	Headline CPI
Israel	Dec 1991	Reset yearly 2000-01: 3-4%	Crawling band	Headline CPI

Source: Corbo (2001), Masson (1997) and central bank websites

Table 2. Snapshots of Asia's Past Monetary Regimes

Country	Characterisation
Korea	"The Bank of Korea had carried out monetary policies until 1997 making use of an intermediate targeting system whereby the rate of increase in the monetary aggregate had been used as an intermediate target. From 1979 to 1997, the rate of increase in M2 was employed…"
Singapore	"The nominal exchange rate is managed to maintain low inflation. There are no money, credit, or interest rate targets."
Thailand	"The baht is pegged to an undisclosed basket of currencies. The short-term operating target is the interbank rate; an overall target for private credit is set in the credit plan"
Indonesia	"The authorities monitor broad money, credit aggregates, as well as reserve money. In addition, the authorities monitor the real value of the rupiah against a basket of currencies."
Malaysia	"The short-term operating target is the one month interbank rate, while monitoring money and credit growth and the exchange rate."

Source: Comments on Korea from Oh (2000), others from Dekle and Pradhan (1997)

Table 3. Inflation Targeters in Asia

	Date Adopted	CPI Target	Target	Institutional Changes
Thailand	May 2000	CPI exc raw food and energy prices (19% of total CPI)	2000: 0-3.5% (quarterly average)	Legislation amendment to accompany inflation targeting framework still pending.
Korea	1998	A measure of CPI that exc. certain petroleum and agricultural sectors.	1998: 9% (± 1%) 1999: 3% (± 1%) 2000: 2.5% (± 1%) 2001: 3% (± 1%)	Bank of Korea Act revised in Dec 1997 to incorporate the new framework.

Source: central bank websites

Table 4. Seigniorage Measures and Inflation Tax, 1980-95

	Seigniorage/GDP		Inflation Tax
	Measure 1	Measure 2	
Developed Countries			
United States	0.37	0.26	4.5
Germany	0.44	0.29	3.0
United Kingdom	0.20	0.25	5.7
Sweden	0.65	0.47	6.4
New Zealand	0.12	0.23	7.5
Asian Countries			
Thailand	1.05	0.44	5.1
Philippines	1.40	0.95	11.1
Indonesia	0.85	0.52	8.5
Korea	0.87	0.51	6.8
Latin American Countries			
Argentina	3.66	3.66	55.5
Brazil	5.13	5.26	72.1
Chile	1.66	1.34	15.9
Other Inflation Targeting Countries			
Israel	1.57	1.60	33.1
South Africa	0.68	0.58	11.9
Spain	1.61	1.30	7.7

Source: Masson(1997)

Measure 1: Annual change in the monetary base divided by nominal GDP, except for Argentina, where M1 was used.
Measure 2: Annual monetary base multiplied by the inflation tax rate and divided by nominal GDP, except for Argentina, where M1 was used.

Inflation Tax Rate = [CPI inflation/(100+CPI inflation)], a measure of the real losses on holdings of money balances.

Table 5. Exports as Percentage of GDP (1996-2000 average)

	(%)
Indonesia	39.4
Thailand	54.1
Philippines	49.9
Korea	39.4
United Kingdom	27.4
New Zealand	31.9
Canada	41.5
Australia	19.9
Israel	33.7
Chile	40.0

Source: Datastream, IMF Statistical Appendix

Table 6. Institutional Framework of Current and Prospective IT Regimes

	Target decision	Monetary decision body	Appointing Framework	Communication with the Public
New Zealand	Target set jointly by government and central bank.	Monetary policy decisions made by the Governor.	The Treasurer appoints the 7-10 members of the Board of Director, 3 of which (one Governor and two Deputy Governors) are executive directors, all on a renewable 5-year term.	Quarterly inflation report. Regular announcement of monetary statements.
Canada	Target set jointly by government and central bank, but government can issue formal directive to central bank.	The Governing Council: - 1 Governor - 1 Senior Deputy Governor - 5 Deputy Governors	The Governor and the Senior Deputy Governor are appointed by the outside directors with the approval of the Cabinet for a term of seven years.	Semi-annual inflation report with quarterly update. Regular announcement of monetary statements.
UK	Target set by government.	The Monetary Policy Committee: - 1 Governor - 2 Deputy Governors - 2 Bank Executive Directors - 4 experts	Governor/Deputy Governors are appointed by the Crown on a renewable 5-year term. The 2 Bank Executive Directors are appointed by the Bank and the 4 experts by the Chancellor of the Exchequer.	Quarterly inflation report. Monthly MPC meeting, accompanied by announcement of monetary statements.
Sweden	Target set by central bank.	A 6 member Executive Board.	The Executive Board is elected by the 11 members of the General Council on a 6-year term. The General Council is in turn elected by the parliament.	Quarterly inflation report.

To be continued on next page.

Table 6 (continued)

	Target decision	Monetary decision body	Appointing Framework	Communication with the Public
Australia	Set jointly by government and central bank.	A 9 member Reserve Bank Board: - the Governor - the Deputy Governor - the Secretary to the Department of the Treasury - six external members	The Governor and Deputy Governor are appointed for terms of up to seven years. Others are appointed for terms of up to five years.	Quarterly statement on monetary policy.
Emerging Economies				
Chile	Target set jointly by central bank in consultation with Minister of Finance.	Monetary policy decisions made by a 5-member council.	The council comprises of 5 members appointed by the President on renewable 10 year terms	Monthly MPC meeting, accompanied by announcement of monetary statements.
Israel	Ministry of Finance in consultation with central bank	Governor	Governor appointed by President on 5 year terms	Semi-annual inflation report.
Thailand	Set by central bank.	The new Monetary Policy Committee replaced the former Monetary Policy Board on 9 July 2001. - 8 senior officials from the Bank of Thailand. - 2 Board-appointed outsiders as advisors.	Appointed by the Board of the Bank of Thailand. Term length unspecified.	Quarterly inflation report. Monthly MPC meeting, accompanied by announcement of monetary statements.
Korea	Set yearly by the central bank in consultation with the government.	A 7-member Monetary Policy Committee: - the Governor - 6 members representing the Minister of Finance and Economy, the Bank of Korea, the Financial Supervisory Commission, the Chamber of Commerce and Industry, and the Korea Federation of Banks, and the Korea Securities Dealers Association.	Appointed by the President on 4-year terms.	Monthly MPC meeting, accompanied by announcement of monetary statements. Semi-annual inflation report to National Assembly.

Source: Corbo and Schmidt-Hebbel (2001), Masson (1997) and central bank websites

Table 7. A Comparison of Structural Factors that Affect Inflation Measurement

|	a Weight of Food, Alcohol and Tobacco in CPI basket (%)	b Gini Index	c Industrial Share of GDP (%)			d Per Capita GDP (1999 USD)
			Agriculture	Industry	Services	
Indonesia	34.7	36.5	21	35	44	580
Thailand	38.8	41.4	12	39	49	1,960
Philippines	55.1	46.2	20	32	48	1,020
Korea	30.3	31.6	5	45	50	8,490
United Kingdom	26.6	36.1	2	25	73	22,640
New Zealand	27.0	43.9	8	23	69	13,780
Canada	21.4	31.5	3	31	66	19,320
Australia	25.1	35.2	3	26	71	20,050
Israel	17.1	35.5	2	17	81	>9,266
Chile	NA	56.5	6	33	61	4,740

Source:
(a) National statistical authorities
(b) (d) – World Development Report 2000/2001,
  - Atlas Method (3 year exchange rate average) used for (d)
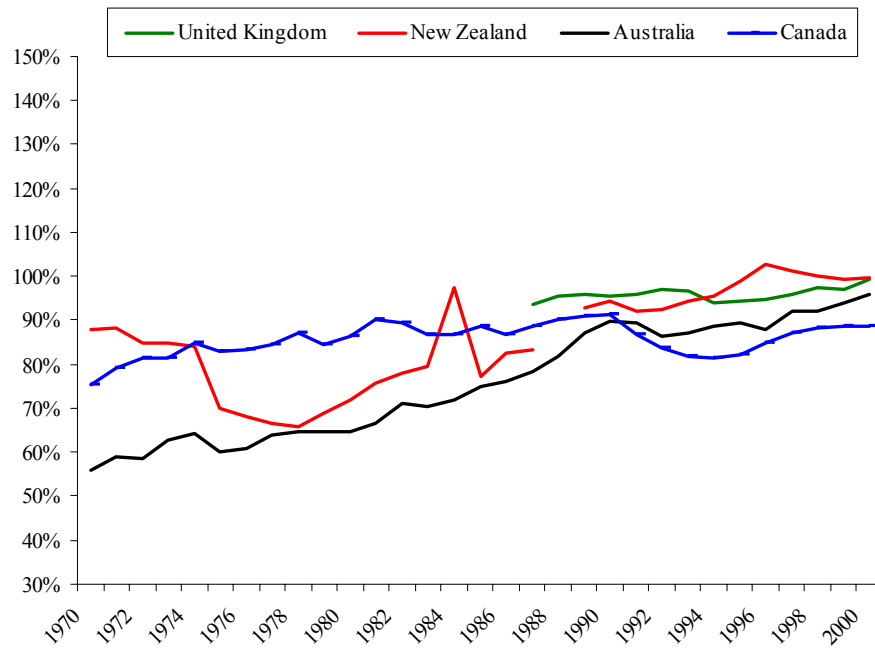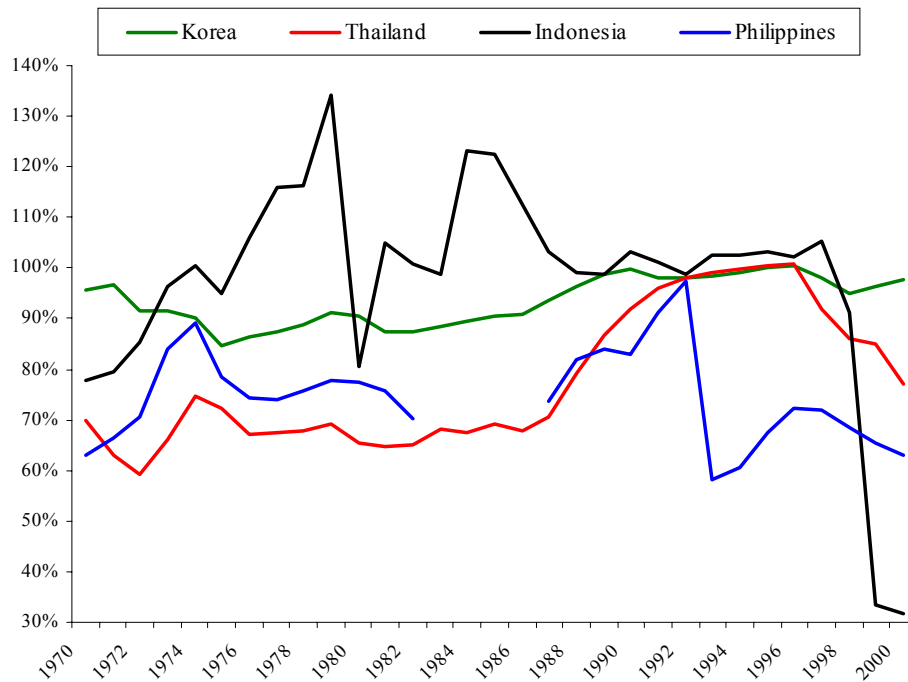 - Per capital GDP for Israel is estimated to be greater than 9266 USD
(c) CIA World Factbook

Chart 1. Inflation Rates vs the Target Bands in Korea and Thailand
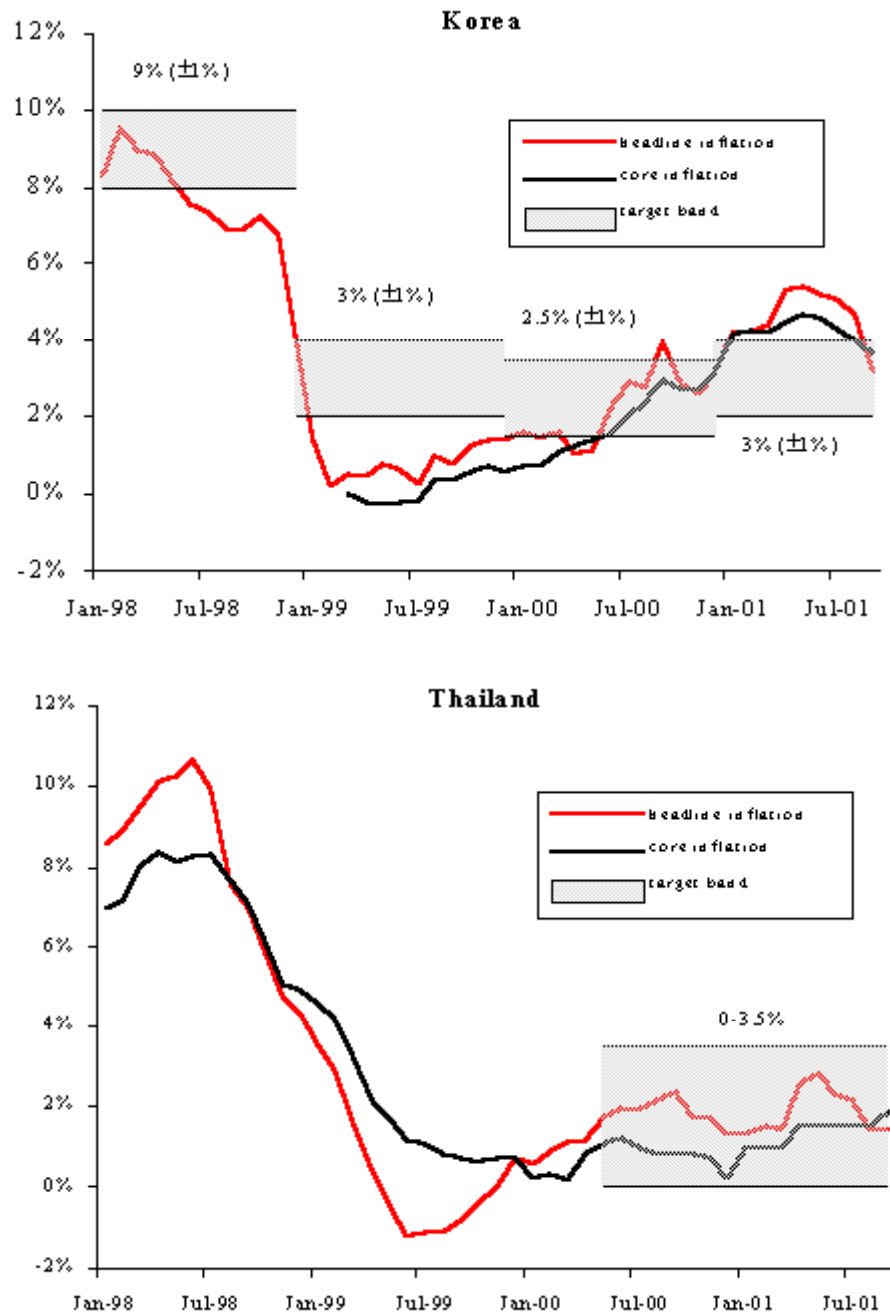
Source: CEIC

Note: Korea's inflation target is based on a core CPI measure, which excludes petroleum and agricultural goods in its calculation, while Thailand's target is also based on a similar core CPI, which excludes energy and raw food.

Chart 2. Percentage of Total Domestic Credit Attributed to Private Sector

Legend: Korea, Thailand, Indonesia, Philippines

Legend: United Kingdom, New Zealand, Australia, Canada

Source: IMF International Financial Statistics
- Figure larger than 100% represent years when the public sector was a net lender
- Monetary data for New Zealand in 1988 were unavailable due to a change in definition of deposit money banks.

References

Asian Development Bank, *Asia Recovery Report 2001*, March 2001.

Bank of Canada, *Inflation Report July 2001*.

Bank of Indonesia, *Annual Report 2000*.

Central Intelligence Agency, *The World Factbook 2001*.

Corbo, Vittorio and Schmidt-Hebbel, Klaus, "Inflation Targeting in Latin America," Working Paper N 105, Central Bank of Chile, September 2001.

Debelle, Guy, "Inflation Targeting in Practice," IMF Working Paper WP/97/35, March 1997.

Debelle, Guy and Cheng, Hoon-Lim, "Preliminary Considerations of and Inflation Targeting Framework for the Philippines," IMF Working Paper WP/98/39, March 1998.

Dekle, Robert and Pradhan, Mahmood, "Financial Liberalizatoin and Money Demand in ASEAN Countries: Implications for Monetary Policy," IMF Working Paper WP/97/36, Washington, D.C., March 1997.

Grenville, Stephen, 2000, "Inflation Targeting in the World of Volatile Capital Flows," paper for International Symposium on Practical Experiences on Inflation Targeting, Bangkok, Thailand, 20, October 2000.

Masson, Paul R.; Ssavastano, Miguel A., and Sharma, Sunil, "The Scope for Inflation Targeting in Developing Countries," IMF Working Paper WP/97/130, Washington, D.C., March 1997.

Mishkin, Frederic, "Inflation Targeting in Emerging Market Countries," Working Paper 7618, National Bureau of Economic Research, Cambridge, Massachusetts, March 2000.

National Statistical Office, Republic of the Philippines, "Is the present 1994-based CPI still useful for inflation monitoring?" Press Release: 2000-71, 9 October, 2000 (www.census.gov.ph/data/pressrelease/2000/pr0071tx.html)

Oh, Junggun, "Inflation Targeting: A New Monetary Policy Framework in Korea", paper for International Symposium on Practical Experiences on Inflation Targeting, Bangkok, Thailand, 20, October 2000.

Schaechter, Andrea; Stone, Mark R. and Zelmer, Mark, "Adopting Inflation Targeting: Practical Issues for Emerging Market Countries," IMF Occasional Paper 202, Washington, D.C., 2000.

World Bank, *World Development Report 2000/2001*, New York, Oxford University Press.