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**Monetary Policy Strategies in the
Asia and Pacific Region:
What Way Forward?**

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Abstract

Monetary policy frameworks in the Asia and Pacific region have performed well in the past decade as judged by inflation outcomes. We argue that this is due to three principal factors: (i) central banks have focused on price stability as the primary objective of monetary policy, (ii) institutional setups have been put in place that are supportive of the central banks' abilities to carry out their objectives, and (iii) economic policies in general have been supportive of the pursuit of price stability, in particular the adoption of prudent fiscal policies that have reduced concerns of fiscal dominance.

The financial systems in the region have also held up well in the face of the current crisis, notwithstanding more adverse liquidity conditions in several markets and pressures on certain exchange rates that spilled over from the West.

It may nevertheless be useful to ask whether changes in monetary policy frameworks should be contemplated. This paper concludes that: (i) for economies with well developed financial markets, there may be little value in using unconventional monetary policies in the absence of financial crises, because in normal times such policies are not likely to be effective and may further reduce the efficiency of the financial market; (ii) a good case can be made for elevating the role of the misalignment of asset prices (including exchange rates) and financial imbalances in the conduct of monetary policy; and (iii) financial stability should take on greater importance as an objective for public policy. Whether and how much of the financial stability objective should be assigned to the central bank is still an open question.

JEL classification: E52, E58.

Contents

1. INTRODUCTION

The financial crisis that started in the United States (US) in the summer of 2007 has shaken the financial systems in the US and Europe and has brought about a worldwide economic recession. What have we learned about monetary policymaking and more importantly what might be the way forward?

While the proximate cause of the crisis can be traced to the subprime mortgage market in the US, the underlying sources go deeper than that and involve issues of incentives in the structured finance market, over-reliance on the ratings of financial products by rating agencies, the regulatory treatment of structured investment vehicles, etc.[1] At a level further removed, it has also been suggested that the conduct of monetary policy was a contributing factor—specifically that policy interest rates in the US and elsewhere were held too low for too long after the burst of the internet bubble. Under this view, the surfeit of liquidity helped to fuel the speculative bubble in the US housing market and, through various macroeconomic and financial channels, contributed to excessive risk taking in financial markets more generally (Taylor 2009). Moreover, some have argued that too narrow a focus by central banks on price stability may have unwittingly contributed to this precipitous boom-bust cycle and, therefore, conventional monetary policy frameworks may need to do a better job of incorporating concerns about financial stability (White 2006).

The macroeconomic consequences of the crisis have also brought about innovations in the conduct of monetary policy by several central banks that a few years ago might have been considered highly improbable. As policy rates were lowered aggressively they hit the lower bound of zero in a number of jurisdictions, prompting central banks to engage in so-called "unconventional" monetary policies involving a massive expansion of central bank balance sheets. The growth of central bank balance sheets included purchases by central banks of private sector liabilities carrying significant credit risk.

Although most central banks in the Asia and Pacific region have not found it necessary to engage in the kind of unconventional polices practiced by their colleagues in the US, eurozone, and United Kingdom, it is nevertheless useful to ask whether there are lessons to be drawn from the crisis for the conduct of monetary policy in this part of the world. This is what this paper attempts to do.

The next section sets the stage by reviewing the nature of monetary policy regimes in the region prior to the crisis and by evaluating their performance. It then goes on to discuss three aspects of monetary policy which have received renewed attention in light of the crisis: unconventional monetary policies, the role of asset prices and financial imbalances in the conduct of monetary policy, and financial stability as an additional monetary policy objective. A final section summarizes the main conclusions of the analysis and what it implies for policy strategies going forward.

2. MONETARY POLICY OBJECTIVES AND INSTITUTIONAL ARRANGEMENTS IN THE ASIA AND PACIFIC REGION[2]

2.1 Objectives and Strategies

Along with an increasing number of monetary policy institutions elsewhere in the world, central banks in the Asia and Pacific region have chosen to pursue price stability as the

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[1] For an in-depth analysis of the recent international financial crisis, see Bank for International Settlements (2009a).

[2] This section draws heavily on Filardo and Genberg (2009).

principal objective of monetary policy. Based on information contained on their websites, of the twelve monetary authorities[3] studied in this paper, six[4] aim for price stability as an overarching objective (Table 1).

For the others, three central banks—the People's Bank of China, Bank Indonesia, and Bank Negara Malaysia—state the goal as maintaining the stability of the value of the currency, which could mean either the internal value in terms of goods and services—i.e., the price level, the external value namely the exchange rate—or some combination of the two. Bank Indonesia, for example, makes it explicit that the term refers to both aspects. Two central banks—the Reserve Bank of India and the Bank Negara Malaysia—state that an adequate supply of credit to the economy is also an explicit goal of the central bank. The remaining institution, the Hong Kong Monetary Authority, puts exclusive emphasis on exchange rate stability (vis-à-vis the US dollar) and pursues this goal by means of a currency board arrangement.

Strategies adopted to achieve the objectives are quite diverse. Six central banks are self-proclaimed inflation targeters—Reserve Bank of Australia, Bank Indonesia, Bank of Korea, Reserve Bank of New Zealand, Bangko Sentral ng Pilipinas, and Bank of Thailand. While the of Australia and New Zealand's reserve banks are "old hands" at inflation targeting, having started in 1993 and 1990, respectively, the other four central banks are relative new-comers with the Republic of Korea (hereafter Korea) starting in 1999, Indonesia and Thailand in 2000, and the Philippines in 2002.

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[3] Australia; Hong Kong, China; India; Indonesia; Japan; Korea; Malaysia; New Zealand; People's Republic of China; Philippines; Singapore; and Thailand.

[4] Australia, Japan, Korea, New Zealand, Philippines, Singapore, and Thailand.

Table 1: Central bank policy objectives

Jurisdiction	Central Bank	Policy Objective	… As Stated on the Central Bank's Official Website
Australia	Reserve Bank of Australia	Price stability	….to focus on price (currency) stability while taking account of the implications of monetary policy for activity and, therefore, employment in the short term.
PRC	The People's Bank of China	Value of the currency	The objective of the monetary policy is to maintain the stability of the value of the currency and thereby promote economic growth.
Hong Kong, China	Hong Kong Monetary Authority	Exchange rate stability	The primary monetary policy objective of the Hong Kong Monetary Authority is to maintain exchange rate stability.
India	Reserve Bank of India	Price stability and adequate credit supply	…maintaining price stability and ensuring adequate flow of credit to productive sectors.
Indonesia	Bank Indonesia	Price stability and exchange rate stability	… Bank Indonesia has one single objective of achieving and maintaining stability of the Rupiah value. The stability of the value of the Rupiah comprises two aspects, one is stability of Rupiah value against goods and services and the other is the stability of the exchange rate of the Rupiah against other currencies.
Japan	Bank of Japan	Price stability	The Bank of Japan Law states that the Bank's monetary policy should be "aimed at, through the pursuit of price stability, contributing to the sound development of the national economy."
Korea	The Bank of Korea	Price stability	Like other central banks, the Bank of Korea takes price stability as the most important objective of its monetary policy. The Bank of Korea Act, which came into effect in April 1998 following its revision at the end of 1997, stipulates price stability as the purpose of the Bank of Korea.
Malaysia	Bank Negara Malaysia	Price stability and exchange rate stability	To issue currency and keep reserves safeguarding the value of the currency; To promote monetary stability and a sound financial structure; To influence the credit situation to the advantage of the country.
New Zealand	Reserve Bank of New Zealand	Price stability	The Reserve Bank of New Zealand Act 1989 specifies that the primary function of the Reserve Bank shall be to deliver "stability in the general level of prices."
Philippines	Bangko Sentral Ng Pilipinas (BSP)	Price stability	The primary objective of BSP's monetary policy is to promote a low and stable inflation conducive to a balanced and sustainable economic growth.
Singapore	Monetary Authority of Singapore	Price stability	The primary objective of monetary policy in Singapore is to promote price stability as a sound basis for sustainable economic growth.
Thailand	Bank of Thailand	Price stability	Setting the monetary policy direction which is consistent with the nation's economic conditions, with the ultimate objective of maintaining price stability and sustainable economic growth.

PRC = People's Republic of China.

Source: Adapted from Genberg and He (2009).

While not a formal inflation targeter, the Monetary Authority of Singapore has been described by outside observers as one, albeit following a fairly unique strategy in pursuing price stability by announcing the level as well as the rate of change of target band for the nominal effective exchange rate of the Singapore dollar. By way of contrast, the Bank of Japan adopted an innovative "two-perspectives" monetary policy framework that blended views of a more conventional nature with views of a less conventional nature (e.g., especially those associated with high impact, low probability events). The other central banks employ a range of eclectic strategies generally reflecting a set of policy tradeoffs, not least being those associated with the targeting inflation, sustainable growth, and exchange rate stability.

With respect to policy instruments, the majority of the institutions carry out their policy by means of targeting a short-term interest rate (Table 2). The principal exceptions are the Monetary Authority of Singapore, which, as already noted, uses the nominal effective exchange rate as an intermediate target, the Hong Kong Monetary Authority, which intervenes in the foreign exchange market to keep the exchange rate vis-à-vis the US dollar within a pre-specified constant target zone, and the People's Bank of China (PBC). The PBC has adopted growth rates of monetary aggregates as intermediate targets and typically employs several instruments in the implementation of its monetary policy—exchange rate, required reserve ratio, interest rates, and open market operations. Existing controls on the domestic financial system and on international capital flows arguably makes it possible for the PBC to use several instruments somewhat independently of each other, an option less feasible in jurisdictions with more liberalized and efficient domestic financial markets and with more open capital accounts.

Table 2: Institutional Frameworks for Monetary Policy

	IT?	Targeting Arrangement	Formal Policy Rate	Formal Operating Target
Australia	Yes, 1993	Target for headline CPI consumer price inflation of 2–3% per annum on average over the business cycle	Target cash rate (=O/N rate target)	O/N cash rate
PRC	No	Reference to money growth targets	1-year deposit and loan reference rates	Excess reserves
Hong Kong, China	No	Currency board: target range centered on HKD 7.8 = US$ 1		USD/HKD spot rate
India	No	Multiple objectives: price stability understanding—containing the perception of inflation in the range of 4.0%–4.5% so that an inflation rate of 3.0% becomes the medium term objective.	1-day repo and reverse repo rates	No formal target
Indonesia	Yes, 2000	Inflation targeting: inflation target for 2008, 2009, and 2010 is 5±1%, 4.5±1%, and 4±1% for year-on-year CPI inflation	BI rate (= target rate for 1-month SBI)	1-month SBI rate
Japan	No	Medium- to long-term price stability expressed in terms of year on year rate of change in the CPI (approximately between 0 and 2%).	Uncollateralized O/N call rate target	O/N call rate
Korea	Yes, 1999	Inflation targeting: target range of 3±0.5% in terms of 3-year average of annual CPI inflation	O/N call rate target	O/N call rate
Malaysia	No		Overnight policy rate	Avg O/N interbank rate
New Zealand	Yes, 1990	Inflation targeting: target range of 1% to 3% on average, over the medium-term, defined in terms of the All Groups Consumers Price Index (CPI)	Official cash rate (=O/N rate target)	O/N cash rate
Philippines	Yes, 2002	Inflation targeting: target range of 3.5±1% (2009), 4.5±1% (2010) for the avg year-on-year change in the CPI over the calendar year.	O/N repo and reverse repo rates	No formal target
Singapore	No	As of mid-2009, zero percent appreciation of the undisclosed Singapore dollar NEER policy band	Policy band for Singapore dollar NEER	Singapore dollar NEER
Thailand	Yes, 2000	Inflation targeting: target range of 0–3.5% for quarterly average of core inflation.	1-day repo rate	1-day repo rate

BI = Bank Indonesia; CPI = consumer price index; HKD = Hong Kong, China dollar; IT = inflation targeting; NEER = nominal effective exchange rate, O/N = overnight; PRC = People's Republic of China; SBI = Bank Indonesia promissory notes.

Source: BIS MC Compendium: "Monetary policy frameworks and central bank market operations," June 2008, available at:, http://www.bis.org/publ/mktc01.pdf?noframes=1; national central banks.

2.2 Central Bank Governance and Independence

The ability of a central bank to achieve its objective depends in part on the institutional environment in which it operates. A large literature has investigated the link between measures of economic performance—usually inflation—and various indicators of central bank governance and independence (CBGI). A general conclusion of this literature is that central bank independence tends to be associated with better inflation performance, although there is some evidence that this result predominantly applies to developed economies (Cuikerman, Webb, and Nyapti 1992).

A recent paper in this genre focuses on Asia and the Pacific. [5] Ahsan, Skully, and Wickramanayake (2008) studied 36 economies in the region including 11 of the economies in our sample. [6] The authors constructed indices (hereafter referred to as the ASW indices) of CBGI using twenty-seven different variables meant to capture different aspects of governance and independence. Apart from an overall index, they tabulated indicators of: (i) legal independence ("Legal" in the graphs that follow), (ii) political independence ("Political"), (iii) independence to pursue price stability as the main and sole objective ("Price stability"), (iv) independence to pursue exchange rate policy ("Forex policy"), (v) independence in the control of monetary policy instruments and non-obligation to finance government deficits ("Deficit finance"), and (vi) accountability and transparency ("Account. and transp."); a higher value of the index is designed to reflect a greater degree of independence. Using these indicators in regression analysis, the authors found that each of these is negatively associated with the inflation rate of the corresponding economy.

Rather than pursuing the link between CBIG in the region and macroeconomic performance, in this section we examine the evolution in the ASW indices with the view to detect any trend over time and to see whether there is any appreciable difference between those inflation targeting central banks and the other monetary authorities. We will also look at whether the crisis in the region in 1997–1998 acted as a wake-up call for the authorities in the most affected economies in the sense that they altered the governance structure of their respective central banks after the crisis.

Figure 1 shows the overall value of the CBIG index for two years, 1996 and 2005. [7] The first is chosen to represent the situation before the 1997 Asian financial crisis and the second is the latest available value in the ASW data set. With the exception of India and New Zealand for which there were no changes, all economies showed some improvement over time. This is consistent with the notion that policy makers have accepted the view that greater central bank independence is desirable. The sets of bars on the right-hand side of the graph show averages of five groups of jurisdictions: all jurisdictions in the sample, the inflation-targeting economies, central banks that are not inflation targeters, the economies most affected by the Asian crises (Indonesia, Korea, Malaysia, Philippines, and Thailand), and finally the "non-crisis" economies . These bars reveal that both inflation targeting and crisis economies have experienced larger changes in the overall index than their respective counterparts. Figures 2 and 3 explore these differences at a more disaggregated level.

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[5] Fry (1996) is a forerunner in this respect.

[6] Singapore is not included. Ahsan, Skully, and Wickramanayake (2008) also contains an exhaustive survey of the literature relating CBGI and economic performance.

[7] The overall value is the simple average of the six sub-indices. Corresponding graphs for the sub-indices are available from the authors.

Figure 1: Index of Central Bank Independence and Governance[1]
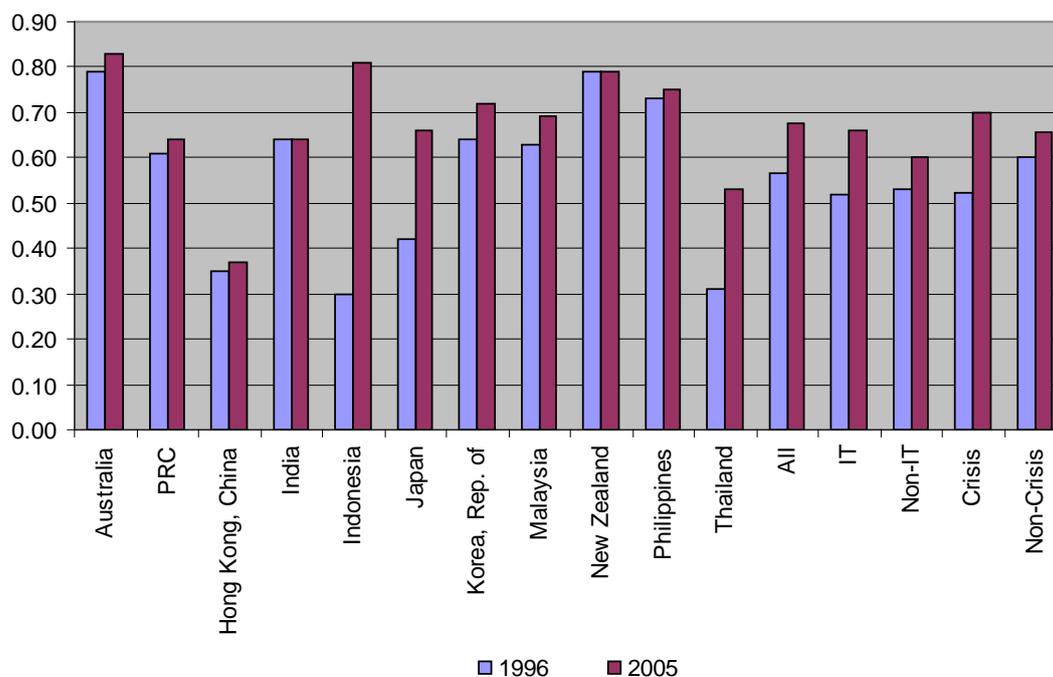
AU = Australia; HK = Hong Kong, China; ID = Indonesia; IN = India; JP = Japan; KR = Korea; MY = Malaysia; NZ = New Zealand; PH = Philippines; PRC = People's Republic of China; TH = Thailand; All = average for all economies; IT = average for inflation targeting economies; Non-IT = average for non inflation targeting economies; Crisis = average for Indonesia, Korea, Malaysia, Philippines, and Thailand; Non-Crisis = average for Australia; PRC; Hong Kong, China; India; Japan; and New Zealand.

[1]There were no data available for Singapore.

Source: Ashan, Skully, and Wickramanayake (2008)

Figure 2 illustrates the extent of the improvements of the CBIG, with the notable exception of the ability to pursue price stability in the non-inflation targeting central banks. Particularly large increases are seen in (i) political independence in the crisis economies, (ii) in the ability to pursue price stability in inflation targeting and crisis economies (note that there is a large overlap in these groups as the inflation targeting classification is based on the situation in 2005), (iii) in the ability to independently determine exchange rate policy.

Figure 2: Differences in the Index Between 2005 and 1996
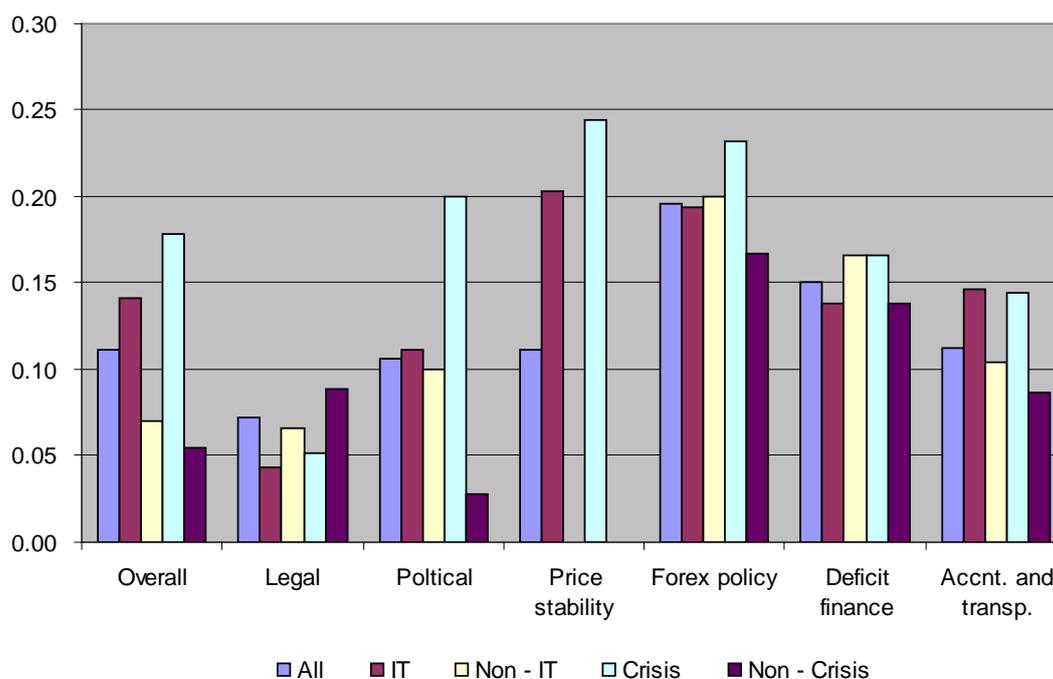
Figures 3a through 3c present a more detailed evolution of differences across economy groupings. The first figure shows, not surprisingly, that compared to their non-inflation targeting counterparts, central banks that are inflation targeters have been given more independence to pursue price stability as the sole objective of monetary policy. It also shows that the inflation targeting central banks have become more accountable and transparent relative to their non-inflation targeting colleagues. The latter finding is consistent with the notion that while greater accountability and transparency is desirable for all central banks (see Figure 2) they have been given particular emphasis in the context of inflation targeting monetary policy strategies. The graph also indicates that with respect to legal independence and the ability to set monetary policy independently from fiscal policy (the "deficit finance" columns) the greatest changes have actually occurred for non-inflation targeting central banks, somewhat contrary to the idea that the lack of fiscal dominance is particularly important for inflation targeting strategies.[8]

Figure 3b reveals that the difference in the CBGI indices for older inflation targeting economies in the region (Australia and New Zealand) and the newcomers were very large before the crisis and have fallen substantially since then.[9] This confirms that the introduction of inflation targeting coincided with a more general overhaul of the central banks' governance structure.

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[8] Graph A1e in Appendix 1 in Filardo and Genberg (2009) illustrates that this result is not the consequence of non-inflation targeting central banks catching up. On the contrary, they have a higher index both in 1996 and in 2005.

[9] The only exception is the legal independence sub-index.

Figure 3a: CBGI, Differences Across Economy Groupings
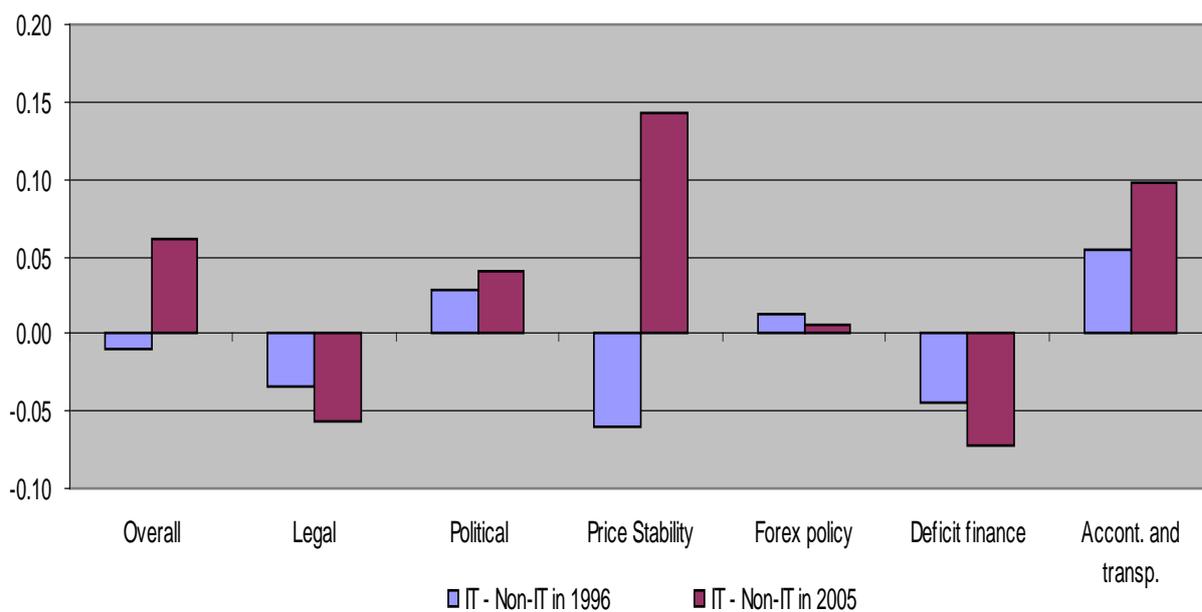
Source: Ashan, Skully, and Wickramanayake (2008)

Figure 3b: CBGI, Differences Across Economy Groupings
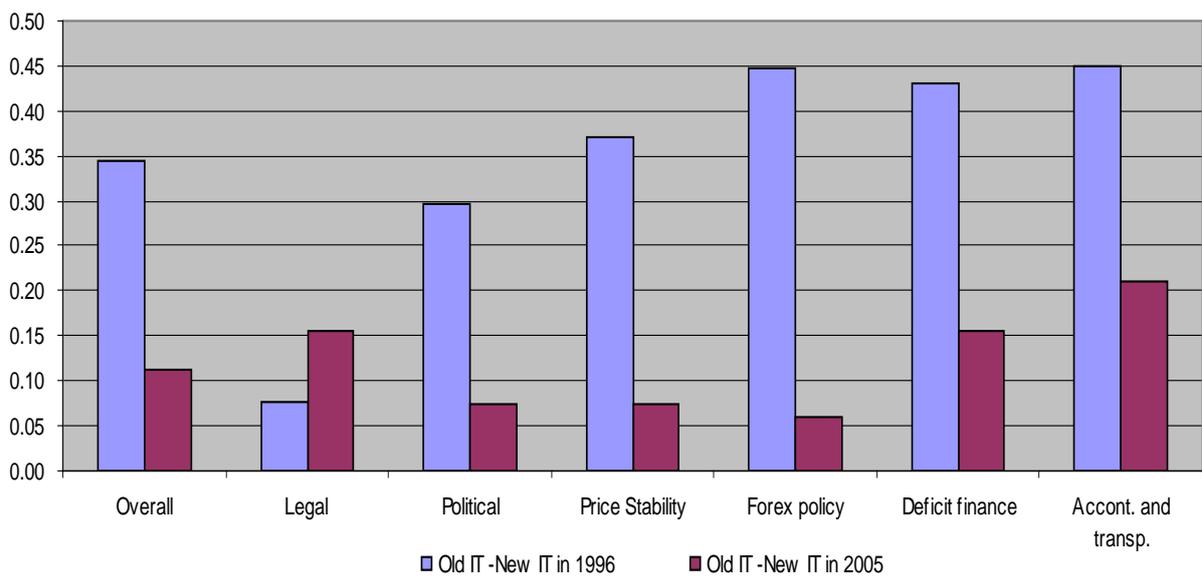
Source: Ashan, Skully, and Wickramanayake (2008)

Figure 3c: CBGI, Differences Across Economy Groupings
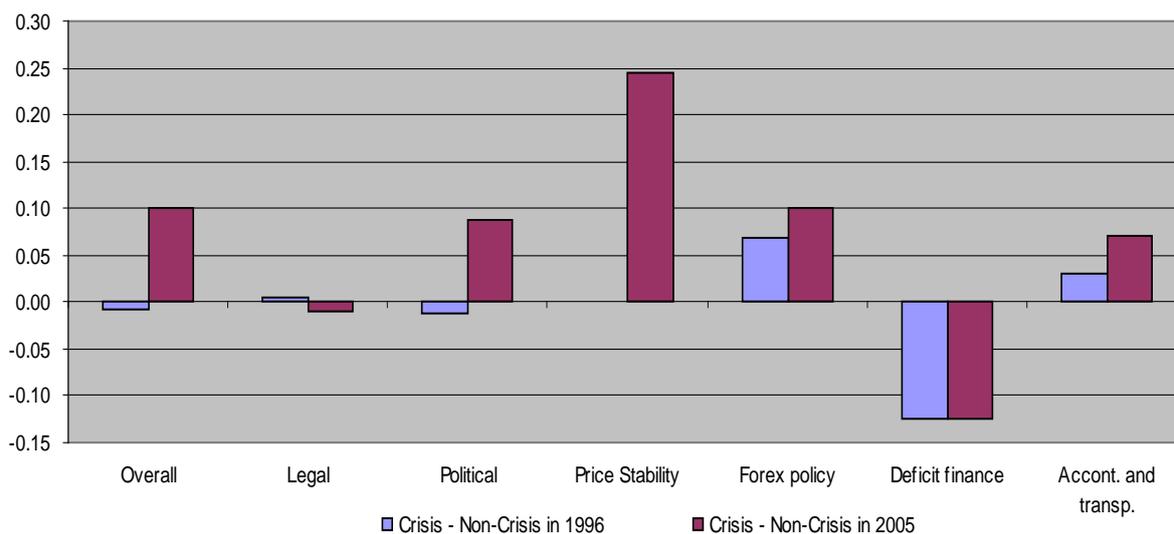
Comparing the crisis with the non-crisis economies (Figure 3c) provides supportive evidence that the Asian financial crisis did lead to significant reforms in the areas of political independence and in the ability to set price stability objectives; however, drawing conclusive inferences about the latter is difficult owing to the broad overlap in the sample between the crisis economies grouping and inflation targeting economies grouping.

2.3 Transparency

Dincer and Eichengreen (2007) focus on the determinants and effects of central bank transparency in a large (100) sample of central banks from developed and developing economies. Their regression results imply that greater transparency reduces inflation volatility and persistence. As their analysis covers also the central banks that we focus on, it is of interest to compare the indices of transparency they construct with those of Ahsan, Skully, and Wickramanayake (2008) described above in order assess the robustness of the results with respect to the data coding approach of different researchers. Comparisons contained in Table 3 support the following conclusions.

Table 3: Central Bank Transparency: Changes Over Time

	DE 2004	ASW 2005	DE 2004–1998	ASW 2005–1996
Jurisdictions				
Australia	9.0	0.86	1.0	0.0
China, People's Rep. of	4.5	0.61	3.5	0.0
Hong Kong, China	7.0	0.58	2.0	0.16
India	2.0	0.58	0.0	0.0
Indonesia	8.0	0.70	5.0	0.39
Japan	9.5	0.78	1.5	0.36
Korea	8.5	0.95	2.0	0.0
Malaysia	5.0	0.58	1.0	0.0
New Zealand	13.5	0.86	3.0	0.0
Philippines	10.0	0.83	6.5	0.08
Singapore	6.5		4.0	
Thailand	8.0	0.42	6.0	0.25
Averages				
All	7.6	0.7	3.0	0.1
Old IT	11.2	0.9	2.0	0.0
New IT	8.6	0.7	4.9	0.2
Non-IT	5.8	0.6	2.0	0.1

Source: DE: Dincer and Eichengreen (2007); ASW: Ahsan, Skully, and Wickramanayake (2008).

The ranking of the central banks in terms of the level of the transparency index is relatively similar across the two indices with a correlation coefficient of 0.64. The consistency across the indices is less satisfactory with respect to the change over time, as the correlation coefficient falls to 0.46. Both indices show that the early inflation targeting central banks are the most transparent and that the new inflation targeting central banks have improved the most during the period covered by the indices. This seems to suggest that central banks that introduce inflation targeting either felt the need or took the opportunity to also increase transparency of their policy frameworks. Of course, it could also arise spuriously from the coding approach of Dincer and Eichengreen (2007), to the extent that inflation targeting central banks were given higher marks for transparency (e.g., for clearly articulating the policy objective) by simply announcing the adoption of formal inflation targeting.

Filardo and Guinigundo (2010 forthcoming) offer a more recent assessment of the transparency and communication strategies of the central banks in our sample based on a survey of the central banks themselves. The responses to the survey give a snapshot of current practices in the region and indicate that central banks use "… a fairly sophisticated set of communication strategies…[reflecting]…the greater conscious effort within the policy making circle to clearly communicate policy-relevant information to financial markets, the media and the public at large" (Filardo and Guinigundo 2010 forthcoming). Although it does not contain an explicit comparison with past communication practices, the message of the Filardo-Guinigundo study is consistent with the statistics reported above which show a general increase over time in the transparency and accountability of central banks in the Asia and Pacific region.

Finally, it is of interest to note the study by Garcia-Herrero and Remolona (2010) which argues that central banks in the Asia and Pacific region have learned to conduct policy so as to take advantage of the expectations channel of monetary policy—i.e., to become more transparent as to their future policy intentions. The authors' conclusion is based partly on examining the content of central banks' policy statements and partly by presenting evidence showing that yield curves reflect expectations of future policy interest rates. Yet they also

note that "…policy statements still appear to contain a larger element of surprise than do macroeconomic news, suggesting that there is still scope for central banks in the region to communicate more effectively the way they interpret economic data and the strategies that guide their decisions."

2.4 Summary

Whether formal inflation targeters or those "merely" targeting inflation, most central banks in the Asia and Pacific region have experienced a gain in the degree of legal and/or political independence during the past decade. These banks have also seen improvements in other aspects of governance usually associated with the enhanced ability to control inflation.

While there are certainly differences in the evolution of central bank independence and governance between inflation targeting central banks and the other central banks in our sample, it is an open question whether these differences have resulted in differences in macroeconomic performance, in particular inflation performance, between the corresponding economies. The next section reviews evidence bearing on this question as well as the more specific issue of whether the adoption of inflation targeting confers some additional benefits.

3. THE INFLATION PERFORMANCE IN THE ASIA AND PACIFIC REGION: SOME EMPIRICAL EVIDENCE

Judged by the average inflation rate in the post-Asian crisis period, central banks in the Asia and Pacific region have performed very well both on an absolute level and relative to a comparison group consisting of economies whose inflation performance is regarded as exemplary (Table 4) The region's central banks' average inflation rate of slightly over 3% per year during the 1999–2008 period compares favorably with Chile, an inflation-targeting emerging market that is often held up as a success story as far as monetary policy is concerned. The average inflation rate among central banks in the Asia and Pacific region is only slightly higher than that in the US, and while it is above the remaining entries in the table, it is within striking distance of what is commonly thought of as price stability.[10]

Table 4: Average inflation rates

	1990–1997	1999–2008
Asia and Pacific region	5.83	3.03
Eurozone	-	2.20
Industrialized economies	3.28	2.17
Canada	2.41	2.26
Chile	13.64	3.67
Switzerland	2.82	1.08
United States	3.29	2.82

Source: Authors' own calculations based on International Monetary Fund data.

Inflation rates in the region were generally higher during the period before the Asian financial crisis,[11] suggesting that policy frameworks have improved over time, an observation consistent with the evolution of the indices of central bank governance and transparency presented in the previous section. An interesting question in this respect concerns the role of formal inflation targeting in this process. Filardo and Genberg (2009) reviewed empirical evidence on this issue. Three types of empirical results were presented: one relating to the

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[10] It may be thought that the excellent performance of the Asia and Pacific region is simply a reflection of the actual deflation experienced by Japan in the 1999–2008 period. The averages for the region excluding Japan (6.23% during 1990–1997 and 3.32% during 1999–2008) suggest that this is not the case.

[11] Australia and New Zealand are notable exceptions to this statement. They had introduced inflation targeting in 1993 and 1990, respectively, and had successfully brought down inflation rates earlier than other economies in the region.

time series properties of the inflation processes themselves, another relating to the nature of private sector inflation forecasts, and a third to the impact of commodity price cycles on headline inflation rates.

Models of inflation typically suggest that if inflationary expectations are firmly anchored, the inflation process will exhibit less persistence. The reason is that a purely temporary shock will not initiate a price-wage spiral that would lead to a drawn-out adjustment process. By estimating separate time series models for inflation in inflation-targeting and non-inflation-targeting central banks, Filardo and Genberg (2009) did find evidence consistent with this hypothesis, although it is not entirely clear-cut.

The properties of private sector inflation forecasts offer another way to investigate the importance of formal inflation targeting. The hypothesis investigated is that the distribution of inflation forecasts across individual forecasters should be more concentrated in inflation targeting economies than in non-inflation targeting economies, especially if the inflation target is credible. Panel regression analysis shows that a greater focus on inflation as a policy objective does indeed lead to less dispersion of inflation forecasts, but it does not appear that formal inflation targeting per se is the driving mechanism. Inflation forecasts for economies where central banks use more eclectic approaches have also become more concentrated over time.

Finally, the Filardo-Genberg (2009) paper investigatd the impact of the recent commodity price cycle on consumer price inflation rates in the region. They found that on the whole Asian economies weathered the cycle fairly well. While headline inflation rates showed considerable fluctuations as food and energy prices surged and collapsed, movements in measures of core inflation were much more muted. In other words, there was little evidence to suggest that second-round effects on inflation expectations took hold. Searching for evidence of differences between formal inflation-targeting economies and the others, they concluded that there is little in the data to suggest less sensitivity of underlying inflation to commodity prices (i.e., relative price shocks). In other words, inflation rates in the region remained remarkably well anchored for both inflation targeters and non-inflation targeters.

In conclusion, current monetary policy frameworks in the Asia and Pacific region have delivered good performance, indicating that it is important for central banks to focus firmly on inflation as the primary policy objective. Specific details of how to achieve this objective appear less crucial. That said, the current crisis has led to new thinking about monetary policy strategies and whether they can be adapted so as to reduce the likelihood of a crisis happening again in the future. The next section looks at whether there are any lessons for monetary policy management in the Asia and Pacific region.

4. CHALLENGES FOR MONETARY POLICY IN LIGHT OF THE INTERNATIONAL FINANCIAL CRISIS

The current international financial crisis has brought to the fore a number of issues related to the conduct of monetary policy. The most immediate relates to the policy response to the crisis itself. Central banks around the globe resorted to what have been called unconventional monetary policies. Many central banks found themselves in the position of needing to purchase private sector financial instruments, in part as a means to clear out impediments to the orderly operation of the monetary transmission mechanism. For some central banks, they had little choice but to vary the stance of policy with quantitative measures as the interest rate channel of the monetary policy transmission mechanism broke down when policy rates reached the zero lower bound. Such policies also go under the names balance-sheet policies, quantitative easing, credit easing, etc. Section 4.1 discusses the main issues related to these unconventional policies.

More generally, the crisis has also revived the debate about the role of monetary policy in the presence of asset price misalignments and the build-up of financial imbalances. Until very recently, the conventional wisdom has been that central banks should not lean against possible financial imbalances as they build up but aggressively respond to the collapse. In part, the key arguments supporting this view rest on the assumptions that such systemically significant imbalances are nearly impossible to assess with confidence in real-time and that the costs of the clean up are generally expected to be low and manageable.[12] Naturally, there are other views that call for a more pro-active approach. Some authors such as Cechetti et al. (2000); Cechetti, Genberg, and Wadhwani (2002); Borio and White (2004); and White (2009), among others, have questioned the conventional wisdom by suggesting that central banks should react to asset price misalignments and financial imbalances over and above what their effects on inflation during the usual policy horizon would call for. The crisis has reopened the debate regarding "leaning versus cleaning" (White 2009),[13] and section 4.2 reviews the main issues.

Finally, the crisis has brought up the more far-reaching issue as to whether the remit of central banks should be extended beyond securing a low and stable rate of inflation (with some regard for fluctuations in output) to include the responsibility for ensuring financial stability. This raises a number of questions, starting with an operational definition of "financial stability" and extending to the search for appropriate policy instruments for dealing with this additional objective and to the implications of an expanded mandate for the governance of the central bank, its independence from the fiscal authorities, and its communication strategy. These issues will be taken up in section 4.3.

4.1 The Crisis, the Zero Lower Bound and Unconventional Monetary Policies[14]

The severe recession brought about by the financial crisis has elicited a strong response from central banks in the form of sharply lower policy interest rates. In some institutions— e.g., the US Federal Reserve Board, the Bank of England, and the Bank of Japan—the nominal target interest rate has been brought very close to the lower bound of zero. Further monetary easing therefore cannot be achieved using traditional channels. In response, some central banks have embarked on what have come to be known as unconventional monetary policies. These unconventional policies involve changes in the size and composition of the central bank's balance sheet rather than relying on changes in the cost of borrowing from or lending to the central bank.

Central banks may also resort to unconventional policies if the transmission mechanism linking the short-term policy interest rate to longer-term deposit and lending rates is impaired. As spending and investment decisions by households and firms depend primarily on longer-term rates, severing the link between the policy interest rate and these longer-term rates would limit the effectiveness of conventional monetary policy measures. The relationship between short-term policy rates and longer-term lending rates depends not only on expected future short rates as is the case with the standard expectations theory of the yield curve, but also on liquidity and risk premia. The importance of the latter has been particularly strong during the current financial crisis.

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[12] See Blinder and Reis (2005) for a spirited defense of "mop-up after" strategy.

[13] See White (2009). White uses the phrase 'leaning versus cleaning" to differentiate between the view that central banks should act proactively and "lean" against the build-up of financial imbalances by raising policy interest rates and the view that they should wait and adjust policy interest rates ("clean") only in the event that such financial imbalances lead to serious economic disruptions.

[14] Unconventional monetary policies have been the focus of a number of recent papers. See, for example, Borio and Disyatat (2009), Morgan (2009), Shiratsuka (1009) and Stella (2009).

In order to assess whether there is a case for unconventional monetary policies to be used independently from the interest rate, it is useful to review the full range of policy instruments available to central banks.[15] As already noted, unconventional monetary policy instruments refer to those that affect either the size or the composition of the central bank's balance sheet. Stylized balance sheets of the central bank and the commercial banking sector displayed in Table 5 can be used to illustrate the main differences between the different types of instruments.

Table 5: Stylized Balance Sheets of the Central Bank and the Commercial Banking System

Central Bank				Commercial Bank			
Assets		Liabilities		Assets		Liabilities	
International reserves	F	Reserves of commercial banks	R	Reserves with central bank	R	Deposits	D
Domestic government bills	TB			Domestic government bills	TB	Capital	
Domestic government bonds	B			Domestic government bonds	B		
Other assets	OA			Foreign assets	F		
				Other assets	OA		

Source: Author's construction.

Quantitative easing (QE) refers to policies that aim to increase free reserves of the banking system with the intention to boost banks' incentives to expand lending to the non-bank sector of the economy. The two main methods of doing so are (i) an open market purchase of low-risk short-dated government paper (TB in Table 5) from the banking sector in exchange for reserves (R) and (ii) to purchase foreign assets (F) in exchange for reserves.[16, 17] Both balance sheet options can increase the size of the central bank's balance sheet, hence the term quantitative easing.

The principal difference between the two options has to do with the impact on domestic short-term interest rates relative to the exchange rate. The open market purchase of domestic assets would naturally have a stronger effect on the interest rate, whereas the intervention in the foreign exchange market would impact relatively more on the exchange rate. The lower the degree of substitutability between domestic and foreign assets the larger will be the differential impact.

It is important to note that in the idealized case where financial markets are liquid and deep, a central bank following an interest rate policy setting rule allows the size of the balance

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[15] Even though they did not face the zero lower bound constraint and did not implement unconventional monetary policies as we define them, central banks in the region did take actions to counter disruptions in local money markets during the crisis. These actions included modifying collateral requirements for access to central bank discount windows and concluding swap arrangements with the US Federal Reserve Board and with others in the region (bilaterally and multilaterally) to be able to offer foreign currency, principally US dollar funds, to local financial institutions.

[16] For simplicity's sake, we refer to "purchases" of assets by the central bank. In reality, central banks mostly engage in repurchase agreements when they conduct open market operations involving either domestic assets or foreign assets.

[17] The domestic asset used in the transaction does not necessarily have to be a liability of the government. The collateral used in the repurchase agreement typically varies across jurisdictions.

sheet to be determined endogenously. During normal times in such an economy, the impact of balance sheet adjustments has, at best, a transitory impact on the stance of monetary policy. In other words, a decision to buy or sell a government security on the asset side of the ledger would require a similarly sized adjustment to offset the effect on total reserves in the banking system to ensure consistency with the policy rate target.

These arguments imply that the term "unconventional" to describe policies that influence the size and composition of the central bank's balance sheet is suitable mostly when one discusses central banks in advanced economies. In economies where financial systems are less developed, such policies are arguably more effective than the short-term interest rate in influencing lending conditions of the banking system. In these circumstances balance sheet policies become a more conventional way to conduct monetary policy.

Analogously on the international side, the policy of intervening in the foreign exchange market against bank reserves results in the central bank sterilizing the effect of the intervention by selling an equivalent amount of domestic government bills. This is equivalent of exchanging international reserves (F) for government bills. It is therefore not a policy of quantitative easing and it is intended to influence the exchange rate rather than the overall liquidity in the banking system. In addition, unless it is done as a repurchase agreement at a pre-determined exchange rate, it will also lead to a change in foreign exchange risk taken on by the central bank.

Credit easing (CE) is a term used to describe policies aimed at affecting the composition of the central bank's balance sheet leaving the size unchanged. In terms of the stylized balance sheets in Table 5, the policy could take two forms; one involving an exchange of government bills for government bonds, and the other a purchase of other assets (OA) from commercial banks against government bills.[18] The former policy should perhaps more accurately be described as a yield curve policy as its intention is to alter conditions in long-term debt markets relative to those in shorter maturities, and by so doing influence conditions in longer-term private credit markets.[19]

Purchasing claims on the non-financial private sector (OA) from commercial banks in exchange for risk-free government bills is intended to ease credit conditions for the non-bank sector, and it implies that the central bank takes credit risk onto its balance sheet. Like the yield-curve policy, its effectiveness depends on a certain degree of imperfect substitutability between the assets on the two sides of the transaction. While this is a plausible assumption when one considers central bank purchases of mortgage-backed securities or commercial paper against government bills in periods of market stress, it is more debatable in the case of exchanging short-term for long-term government securities, at least during "normal" market conditions. In economies where fixed income markets are highly liquid it is generally believed that the relative supplies of short-term versus long-term government debt does not have a significant influence on the slope of the yield curve.[20] During the present crisis, however, market conditions have not been "normal", and efforts by central banks to reduce term premia by purchasing long-term government debt appear to have had some success (BIS 2009a). One aspect of the success that deserves greater study is the differential roles of the signaling channel and of the actual purchases in boosting market confidence and in promoting a return to normalcy.

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[18] "Other assets" typically include private sector financial instruments such as mortgage backed securities and commercial paper. In principle they could also include loans to non-financial enterprises.

[19] Operation twist carried out by the US Federal Reserve in the US in the early 1960s is an example of such a policy. Under this policy the US Treasury retired long-term debt by issuing short-term debt. The intention was to ease conditions in mortgage markets which were thought to be competing with long-term government debt for funds while at the same time attracting (or at least to offsetting) international short-term capital flows. The effectiveness of this policy has been called into question by numerous observers, among them former Chairman Volcker of the US Federal Reserve Board (Volcker 2002).

[20] See footnote19.

Looking beyond the current crisis, an important issue for central banks is whether QE and CE policies should become part of the standard monetary policy toolkit to be available and used also during more normal conditions as well. With respect to quantitative easing the answer depends essentially on two essential conditions: (i) whether the central bank can influence <u>both</u> a short-term interest rate and the quantity of reserves in the banking system and (ii) whether the impact of monetary policy is different when it is carried out by setting a short-term interest rate as opposed to the quantity of reserves.

When the interest rate is not at or close to the zero lower bound, and if the short-term interbank money market is highly efficient, the answer is, to a first approximation, that the central bank can influence either the interest rate or the quantity of reserves in the system, but not both. This suggests that as economies recover, those central banks using policy rate targets would find QE-type policies ineffective.[21]

Whether pure credit easing polices should remain in the central bank's toolbox raises several additional issues. The most fundamental is the fact that such policies involve the central bank directly in the financial intermediation process, arguably something that is best left to the private sector.[22] In addition, by taking on credit risk, the central bank runs the risk of having to ask the government for additional capital in case a significant portion of its credit portfolio underperforms. This in turn could compromise its political independence and lead to a deterioration of its ability to carry out its mandate.

A final issue is whether central bank policy should take more explicit account of variations in the spread between the overnight policy interest rate and the longer-term interest rate that enters into consumption and investment decisions. To the extent that this spread is variable and determined by some other factors than expected future policy rates, the answer is quite straightforward: the policy rate should be adjusted as a function of the spread in order that monetary conditions relevant for private sector inter-temporal spending are consistent with the price stability objective of the central bank.[23] Extending the argument somewhat, one might ask where in the term structure the central bank should intervene. If the majority of macroeconomic decisions are based on the n-month interest rate, should the central bank then not specify its target in terms of this interest rate and intervene directly in that segment of the market? The conventional objection to this idea is that it would make short-term interest rates more variable and could hinder the development of the overnight interbank market that is central for banks' liquidity management. The fact that the Swiss National Bank sets its policy target rate in terms of a 3-month interest rate and not an overnight rate and has been quite successful judged by its record of delivering price stability, casts some doubt on this objection. At a minimum, the issue deserves further study.

4.2 Financial Imbalances and Monetary Policy

Having observed that inflation targeting economies were not spared from the fall-out of the crisis, some observers have concluded that this monetary policy framework is no longer appropriate and needs to be replaced.[24] The assessment seems to be based on the view that by focusing too resolutely on the rate of inflation in setting policy interest rates, central banks failed to take into account the build-up of financial imbalances and asset price bubbles that ultimately precipitated the financial crisis.

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[21] Again it is important to keep in mind that in economies with fragmented financial markets, QE policies can be more important than interest rate based policies, because the binding constraint on lending in such economies may be the "availability" rather than the cost of credit.

[22] This leaves out the political economy question of whether the central bank or the government has a comparative advantage to do so.

[23] See, for example, Genberg (2007) and Cúrdia and Woodford (2009).

[24] Wolf (2009) has expressed this view.

We take the view that paying attention to financial imbalances and asset price misalignments is not incompatible with vigorously targeting inflation as the objective of central bank policy. On the contrary, we have previously argued that they are complementary (Cecchetti, Genberg, and Wadhwani 2002; Filardo 2004). For example, the report *Asset Prices and Central Bank Policy* contained the following statement:

> …a central bank concerned with stabilizing inflation about a specific target level is likely to achieve superior performance by adjusting its policy instruments not only in response to its forecasts of future inflation and the output gap, but also to asset prices. (Cecchetti et al. 2000: xix)

At the time, this was a distinct minority view, but as noted above, while it is now less controversial, a consensus has not yet emerged. So what is the argument still about? One way to frame this question more specifically is to pose the issue as follows: When formulating its policy, should a central bank consider the movements in asset prices over and above their influence on the inflation gap and the output gap?

In order to make some headway and to avoid misinterpretation, it is important to have a common understanding of what the assumed objectives of monetary policy are. In this section, we stick to the conventional case where the central bank attempts to minimize some combination of fluctuations in inflation around a target value and fluctuations of output around its natural level (the output gap for short). In view of the lags with which monetary policy operates on the economy, it is clear that the central bank must be forward-looking and set its policy in response to deviations of future expected inflation and output levels from their respective targets. From this it follows that if the central bank takes into account the expected levels of inflation and output at all future horizons, weighted by the appropriate discount factor, then all relevant information is already factored in and there is no reason to include additional variables such as asset prices, or for that matter, monetary aggregates, in the decision-making process. So to make the issue interesting, we must consider the case in which the central bank focuses on some particular horizon, two years say, as this is commonly used by some central banks.

In the 2000 report (Cecchetti et al. 2000), the issue was addressed by simulating a theoretical macroeconomic model that included a process that could generate asset price misalignments under different assumptions about the form of the monetary policy rule. The conclusion based on these simulations was that giving a small weight to asset price developments improved the performance of the economy as judged by an ad hoc welfare function that depended on the present discounted value of inflation and output deviations.

It is of course possible to construct counter examples where adjusting a policy interest rate in response to asset price misalignments would be counterproductive. The 2005 paper by Gruen, Plumb, and Stone (2005) is such an example. However, it is also not robust to modification in the assumed stochastic process for asset prices (Haugh 2008). So the conclusions we can draw appear to be model dependent, which is a nuisance. But this does not mean that we should ignore potentially relevant information, only that we cannot react to it mechanically without reflection.

A number of additional arguments have been brought up purporting to show that reaction to asset price developments would be a mistake. Some of these are based on a different notion than ours of what "reacting to asset prices" means.

One objection would argue that stabilizing asset prices would require such large adjustments in the policy interest rate that it would be destabilizing for inflation, output, and employment. While this may be the case, it is not relevant for the issue as we see it. When we advocate taking asset price developments into account, we make it clear that it is for the purpose of stabilizing inflation and output, not for stabilizing asset prices themselves. For this reason the

reaction to asset prices is likely to be relatively muted—i.e., it would be to lean against the wind of asset price developments not to attempt to target some particular value.

A second objection claims that targeting an asset price is dangerous because we do not know what its equilibrium value is. As with the previous point, this argument is based on the idea that the central bank should try to achieve some particular value of the asset price—i.e., that it should target asset prices. This is not what proponents have in mind. Of course, as with the output gap, the central bank does need to base its actions on an estimate of the difference between the actual and the equilibrium value of the variable it monitors. When there is uncertainty about the equilibrium value, it would be important to allow for some margin of error within which no action is taken as suggested by Haugh (2008). In other words, the policy reaction would be subject to some threshold effect. In addition, it may be useful to combine asset price information with information about credit or money growth in the economy to gauge whether there is a case for policy adjustment [Borio and Lowe (2002), Borio and Drehman (2009)]. The implication is that theoretical and empirical modelling efforts must incorporate non-linearities explicitly in order to be informative (Filardo 2006).

A third objection suggests that monetary policy should not worry about the build-up of asset price bubbles, but should react swiftly and forcefully to the bursting of the bubble. This argument for an asymmetric response is based on the idea that it is difficult to identify the emergence of a bubble, because the build-up is incremental in nature whereas it is obvious when a bubble bursts. In addition, the sharp decline in the asset price associated with the bursting of the bubble can be very costly. This argument seems to stand William McChesney Martin's dictum on its head, namely that we should keep the party bowl well filled because we do not really know the capacity of each party-goer to hold his liquor.[25] Instead we should just be ready to treat the hangover. This asymmetry seems to be a recipe for moral hazard, because by promising to clean up after a bust in asset prices we may make investors less likely to exercise appropriate caution on the way up. Of course, we are not arguing that the central bank should stand idly on the sidelines if financial instability and recession are brought about by a sharp asset price decline. We are arguing, however, that tightening policy somewhat in response to emerging asset-price overvaluations would lead to a better outcome.

In an open economy context, the issue of reacting to financial imbalances or asset price movements naturally translates into a debate about whether the central bank should pay attention to exchange rate movements in deciding on monetary policy. Of course, to the extent that exchange rate movements have an impact on the central bank's inflation forecast at the policy horizon, they will already be factored in. Hence the question is again whether an additional policy adjustment is justifiable. In the context of emerging markets the issue is particularly important in periods of sudden capital inflows or outflows. Temporary surges of capital flows can have large impacts on the exchange rate, often pushing it well beyond a value reasonably implied by a conventional medium-term equilibrium analysis—i.e., based on relative inflation rates and differential growth rates of productivity. The resulting misalignments can have undesirable real effects on the economy not unlike those associated with the "Dutch disease", and a case can be made that the central bank should adjust its monetary policy to lean against the build-up of the misalignment.[26]

To be sure, there are difficulties associated with the assessment of the nature of capital flows and the measurement of the equilibrium value of the exchange rate, but these are not unlike those the central bank faces in analyzing shocks to output or inflation or in measuring the output gap. Therefore, in principle, these difficulties cannot justify inaction.

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[25] William McChesney Martin, Jr., who served as Chairman of the United States Federal Reserve System from 1951 to 1970,is widely cited as having joked that the job of the Federal Reserve is "to take away the punch bowl just as the party gets going".

[26] See Devereux and Engel (2007) and Engel (2009) for arguments with similar conclusions.

Note that the reaction to exchange rate misalignments may take the form of direct interventions in the foreign exchange market. Indeed this may be the most efficient policy response in the case where domestic and foreign assets are not perfect substitutes. Do such interventions constitute "beggar-thy-neighbor" behavior harmful to trading partners? We would argue that they do not when they are undertaken to lean against misalignments in the exchange rate, because in this case they prevent rather than promote distorted relative price movements.

4.3 Financial Stability as an Additional Objective

The near collapse of the financial system during the height of the crisis has triggered a more fundamental questioning of the role of central banks, namely whether the objective of their policy formulation should be extended to ensure financial stability in addition to monetary stability. While many central banks already undertake <u>assessments</u> of the stability of their financial systems and publish "financial stability reports" in addition to "inflation reports" or "monetary stability reports," these assessments do not typically form the basis for specific policy recommendations the way "inflation reports" do.

Adding financial stability to the objectives raises a number of thorny issues: Is the central bank able to deliver financial stability using policy tools at its disposal? Could there be trade-offs between measures to deliver financial stability and monetary stability, and if so how should they to be resolved? What are the implications for the governance structure of the central bank if it is charged with delivering financial stability in addition to monetary stability? And, so on. This section will review the evolving debate regarding these questions.

In pursuing monetary stability, or more precisely price stability, the central bank can rely on (i) a relatively clear and precise definition of its objective, (ii) a body of theory and empirical evidence relating to (a) the determinants of price stability as well as (b) the relationship between the policy instrument(s) and the ultimate objective, and (iii) readily available and relatively comprehensive data on the variables relevant for carrying out the mandate.

With respect to financial stability the situation is almost completely the reverse. There is no generally agreed definition of what constitutes a state of financial stability, let alone a single numerical indicator that could serve as a measure of the success or failure. In fact, financial stability is typically defined by its negative, the absence of financial instability. But even here it has not as yet been possible to define a set of numerical indicators that could form the basis for a clear policy strategy. The problem is that financial instability can take many forms. It can be reflected in the banking sector or non-bank financial intermediaries, in short-term interbank money markets or in equity markets, in international financial flows, or in exchange rate movements, etc.

Because financial instability can take many forms, there is no general model that can be relied on to account for all of its manifestations, and to link these to appropriate policy instruments. Partial equilibrium models of individual markets do exist, and while they can provide valuable insights about certain sources of financial instability, they are as yet not always well suited to provide recommendations with respect to specific policy actions.

As a matter of general principle, for a policymaker to achieve a certain number of policy objectives it is necessary to be able to control an equal number of independent policy instruments. A central bank that is trying to achieve an inflation target while at the same time minimizing variability of output should ideally have two instruments, and adding a third objective related to financial stability would require yet an additional instrument. We may need to look beyond the traditional tools of the central bank for this.

In the area of traditional macroeconomic stabilization, automatic stabilizers in the fiscal system have proven to be useful complements for monetary policy. Other institutional arrangements relating, for example, to the functioning of the labor market or the tax code

may also be relied on to make the economy more flexible and improve the ability of the economy to adjust to exogenous shocks.

Similar arrangements should be encouraged for the purpose of securing financial stability. The system put in place by the Spanish authorities comes to mind. This system involves requiring financial institutions to make capital provisions that are based on the state of the business cycle in a way that make them counter-cyclical (e.g., see Fernández de Lis, Martínez, and Saurina [2001]).

In response to the pro-cyclical nature of a market-based financial system, the authors of the latest Geneva Report on the World economy propose to make counter-cyclical capital charges a feature of a new regulatory regime (Brunnermeier et al. 2009). They have in mind a scheme where the basic capital adequacy ratio (CAR) under Basel II would be multiplied by a factor that would be a function of, among other variables, credit expansion and asset price increases as these are believed to be positively related to the build-up of systemic risk. They envisage that the scheme be governed by a regulator that has been granted independence from political and lobbying pressures.

But the strictures implied by the Tinbergen rule and the related assignment problem should not be overstated.[27] There are two basic reasons for not applying them too dogmatically. Goals related to financial, foreign exchange, and capital flow volatility are not truly independent of the goal of price stability. Achieving price stability is a much more difficult task if stresses associated with these other factors are present in the economy. For example, if a strict focus on inflation control over a certain time horizon is associated with the build-up of imbalances in the economy that leads to inflation (or deflation) pressures further out in the future, then it may be argued that monetary policy faces a trade-off between near-term and longer-term inflation stability. Second, some central banks in the Asia and Pacific region have been able to achieve strong inflation performance while at the same time placing emphasis on exchange rate volatility, capital flows and financial stability concerns (e.g., India, Indonesia, and the People's Republic of China).[28]

This is not to say that central banks have an absolute or in most cases a comparative advantage in taking on these particular goals. But the experience in the region points out that one need not abandon inflation control when taking some actions to address these alternative, albeit subordinate, goals.

Even if additional policy instruments are available to deal with additional objectives, this does not imply that interest rate policy should be conducted completely independently of those other policy instruments. Coordinated actions involving all instruments are surely more efficient as some occurrences of financial instability may be related to general financial conditions rather than circumstances particular to a specific sector. In addition, there may be situations where there are conflicts between the achievement of price stability and financial stability. For example, concerns about illiquidity in the banking system may call for some form of easing of regulatory standards even if this may compromise the inflation objective some time in the future. If the policy interest rate is raised as a pre-emptive measure, the original illiquidity problem may become more acute, potentially eliciting a further regulatory response leading to an unstable interaction between the two policy instruments. In this case a coordinated policy response, in which the regulatory response and the interest rate policy are set cooperatively, is likely to produce a superior outcome.

Another situation where the interest rate instrument may have to be used in part to deal with a latent financial instability problem could arise if the agency charged with financial stability policy does not act for some reason. In this case it may be that the central bank has a

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[27] This and the next paragraph are adapted from Filardo and Genberg (2009).

[28] For some evidence that capital controls have allowed the Reserve Bank of India and the Peoples Bank of China to manage both the exchange rate and domestic monetary conditions, see Ouyang and Rajan (2008) and Ouyang, Rajan, and Willett (2007) respectively.

comparative advantage (in the short run) to use the policy interest rate as a second-best solution trading off inflation and financial stability concerns.

The possible need for coordination between policies to deal with inflation on the one hand and financial stability on the other, raises the question whether both policy instruments should be vested with the central bank. The benefits from coordination speak for combining both instruments in the same agency. Against such an arrangement it has been argued that assigning too many possibly conflicting goals to the central bank may affect negatively its credibility in carrying out its original objective of price stability. To guard against this, it may be desirable to separate clearly the duties by creating a "financial stability committee" that would be responsible for the analysis and policy recommendations with respect to financial stability policy. This committee would operate separately from the "monetary policy committee" the primary responsibility of which would be to pursue price stability by setting the policy interest rate. Some organized form of coordination between the two committees would have to be designed, especially with respect to the effective sharing of information relevant to the two goals; in some cases, the ultimate responsibility may have to be accorded to the central bank governor. However the institutional arrangement is solved, the fact that there is a clear nexus between traditional interest rate policy and a newly created financial stability policy, and the potential for conflicts, points to considerable communication challenges for the policy authorities.

The issues discussed in this section are just in the process of being considered by central banks and international bodies at the Bank for International Settlements (e.g., the Basel Committee on Banking Supervision and the newly formed Financial Stability Board). Much theoretical and statistical work remains to be carried out in order for the pursuit of financial stability to be put on sound analytical and empirical foundations. Likewise, designing robust institutional arrangements, both at the national and international level, needs further analysis. In many ways, the work is still in its infancy; however, recent international efforts have instilled some confidence that much progress may be achieved in a relatively short period of time.

5. CONCLUDING REMARKS

Monetary policy frameworks in the Asia and Pacific region have performed well in the past decade as judged by inflation outcomes. We argue that this is due to three principal factors: (i) central banks have focused on price stability as the primary objective of monetary policy,[29] (ii) the jurisdictions have put in place institutional setups that are supportive of the central banks' ability to carry out their objectives, and (iii) economic policies in general have been supportive of the pursuit of price stability, not least being the adoption of prudent fiscal policies that have reduced concerns of fiscal dominance.

The financial systems in the region have also held up well in face of the current crisis, notwithstanding more adverse liquidity conditions in several markets and pressures on certain exchange rates that spilled over from the West during the recent international financial crisis. Lessons learned from the Asian financial crisis have no doubt contributed to this outcome. The private sector learned about the perils of currency mismatches on balance sheets and between revenues and costs, and central banks found out that quasi-fixed exchange rates can be interpreted as a government guarantee. Consequently, the region entered the current crisis in much better shape than it did the crisis of the mid-1990s.[30]

It may nevertheless be useful to ask whether changes in monetary policy frameworks should be contemplated. This paper has discussed three possible areas: (i) whether unconventional

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[29] The Hong Kong Monetary Authority is a notable exception, but by linking its monetary policy to that of the US Federal Reserve, it has effectively "imported" price stability as a policy objective.

[30] For a detailed discussion, see Bank for International Settlements (2009b).

monetary policies such as quantitative and credit easing should be added to the toolkit of the central bank's policy measures, (ii) what the role of asset prices and financial imbalances should be in the conduct of monetary policy, and (iii) whether financial stability more generally should be added as an objective to be pursued by the central bank in addition to price stability.

We conclude from our analysis that:

(i) There is little need for unconventional monetary policies in normal times and where financial markets are well developed, because in this environment policies designed to influence the slope of the yield curve are not likely to be effective, and policies where central bank substitutes for the private sector in the intermediation process are likely to reduce the efficiency of the financial market.

(ii) A good case can be made for elevating the role of the misalignment of asset prices (including exchange rates) and financial imbalances in the conduct of monetary policy.

(iii) Financial stability should be significantly elevated as an objective for public policy. Whether and how much of it should be assigned to the central bank is still an open question. Much theoretical and empirical work still needs to be carried out in order to have a firm basis for deciding.

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