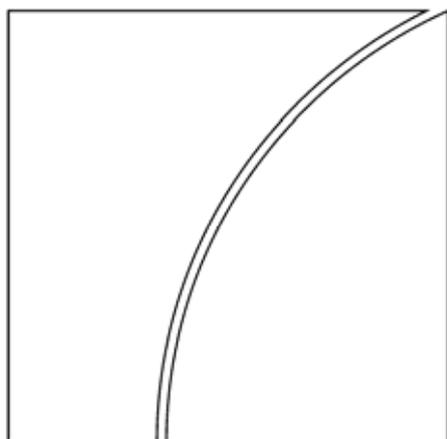




BANK FOR INTERNATIONAL SETTLEMENTS

Policy responses to the challenges posed by capital inflows in Asia

Speech by Hervé Hannoun
Deputy General Manager of the BIS



Bangkok, 28 July 2007

Speech by Hervé Hannoun

Deputy General Manager of the BIS

To the 42nd SEACEN Governors' Conference
in Bangkok on 28 July 2007

Policy responses to the challenges posed by capital inflows in Asia

I would like to thank Governor Tarisa for inviting me to address this SEACEN Governors' conference. Its subject is a very timely and important one.

The theme of this year's meeting, "Managing Exchange Rates and Capital Flows in Asia", implies two of the three desirable objectives of what some have labelled the impossible trinity. We would probably all like to have monetary policy set according to domestic conditions, exchange rate stability and the efficiencies of deep, liquid and open financial markets.

The impossible trinity tells us that, of these three desirable things, we can only achieve two. The impossible trinity or trilemma goes back at least to the work of Robert Mundell, who suggested in the 1960s that, for an open economy with free capital movements, monetary policy is a powerful stabilisation tool when the exchange rate floats but ineffective when the exchange rate is fixed; in other words, that the central bank cannot indefinitely control both the nominal exchange rate and the money market rate. I would like to frame my comments in the context of the choice among the three objectives.

The policy frameworks in place in Asia to address the trilemma

The table shows the diversity of trilemma choices in Asia and the Pacific. It presents, economy by economy, in a simplified way the main elements of the policy framework related to the degree of financial openness, the exchange rate regime and the monetary policy regime.

The choice a country makes among the three objectives of the impossible trinity will be influenced by a variety of factors, including: the nature of domestic and external shocks, vulnerability to those shocks; trade openness, and the development of markets and institutions to manage the associated risks; and other considerations such as asymmetric effects on poor households. Financial integration directly affects the implicit choices that countries make in terms of the impossible trinity. Put simply, more financial integration implies less exchange rate stability or less domestic stability, or perhaps a little less of each.

The trilemma choices in Asia and the Pacific

	Financial openness		Exchange rate regime			Monetary policy regime
	Lane & Milesi Ferretti 2006 ¹	IMF index 2005 ²	Fixed/flexible	Intervention	Reserves/GDP April 2007	
China	0.66	1	Managed	Yes	45%	Stability of value of currency
Hong Kong SAR	13.40	0	Fixed (currency board)	Yes	68%	Currency board
India	0.39	1	Managed float	Yes	21%	Multiple indicators approach
Indonesia	0.85	1	Managed float	Yes	13%	Inflation target 1999
Korea	0.80	1	Managed float	Yes	28%	Inflation target 1998
Malaysia	1.68	1	Managed float	Yes	56%	Price stability/sustainable growth
New Zealand	2.20	0	Float	Rare ³	7%	Inflation target 1989
Philippines	1.22	1	Managed float	Yes	18%	Inflation target 2002
Singapore	9.18	0	Managed (intermediate target)	Yes	102%	Price stability
Taiwan (China)	1.97	1	Managed float	Yes	74%	Internal and external value of currency
Thailand	0.89	1	Managed float	Yes	33%	Inflation target 2000

¹ International investment position (assets excluding reserves + liabilities) / GDP 2004. ² *Annual Report on Exchange Arrangements and Exchange Restrictions*. 1 = restrictions; 0 = no restrictions. ³ In June 2007.

Clear-cut choices

Some economies have made very clear choices among the objectives, and their respective experiences illustrate that each choice has benefits and costs. Hong Kong, with open capital markets and a currency board, implicitly accepts foreign monetary policy, which can at times be too tight or too easy. The fixed exchange rate provides a stable environment for importers and exporters. But against this exchange rate stability, the domestic economy is open to swings in liquidity and larger domestic price fluctuations. The painful adjustments in prices and wages after 1997 illustrated that clearly. But for the most part, given Hong Kong's openness and trade relationships, the currency board has served Hong Kong well.

Countries such as Australia and New Zealand have chosen domestic price stability in the form of an inflation target, and accept a high degree of exchange rate volatility. The flexible exchange rate plays a useful stabilisation role. For example, the currency tends to rise with the international price of commodity exports, leaving the domestic prices faced by producers relatively stable. But exchange rates can overshoot and deviate from theoretical fundamentals for long periods. The burden of adjustment then falls on the sectors exposed to international trade,

which must manage exchange rate risk. Frustration with exchange rate strength in the face of large capital inflows in recent years has led to a review of the macroeconomic framework in New Zealand.

Another clear choice is to combine a fixed exchange rate and domestic monetary independence at the cost of a closed capital account. In the absence of strong institutions and instruments for risk management, it can be more difficult to reap the rewards of financial integration. For such economies, remaining relatively closed may make sense, while focusing on building institutions and markets to support risk management. This can take time. However, a closed economy that prevents cross-border capital flows forgoes opportunities to channel savings more efficiently to profitable investment as well as giving up opportunities to spread risk.

Trends in the region

With these considerations in mind, two important trends in the region may be highlighted. First, in most countries, restrictions on cross-border capital flows are gradually being eased. Markets, banks and firms increasingly span borders. Portfolio investment assets held by developed countries in Asia more than doubled from 2001 to 2005. In 2006, foreign direct investment flows into Asia were about treble the average level of 1990–97. This gradual increase in financial integration is sharpening the trade-off between domestic monetary policy and exchange rate stability.

Second, a number of countries have moved towards an inflation targeting framework for monetary policy: Korea in 1998, Indonesia in 1999, Thailand in 2000 and the Philippines in 2002. Other countries have not adopted formal inflation targeting, but inflation is a priority in setting monetary policy; India and Malaysia are cases in point. Consistent with this greater focus on targeting or stabilising domestic inflation, a number of countries have allowed more exchange rate flexibility.

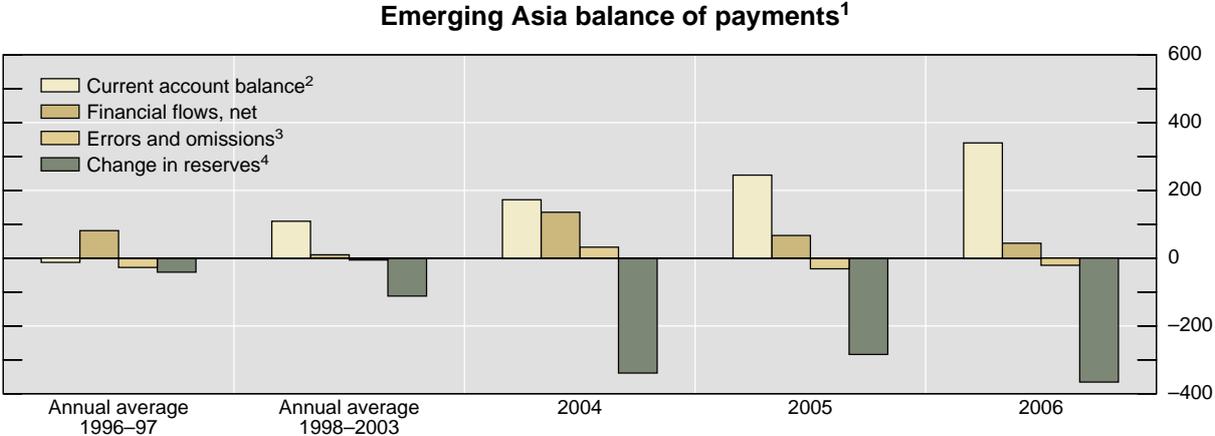
Intermediate solutions

To reiterate, these two trends are ongoing and gradual. Indeed, it could be argued that, in practice, most policymakers in the region adopt the intermediate solutions that are somewhere between the clear-cut choices relative to the trilemma. India and Malaysia are good examples of these intermediate solutions. Malaysia is remarkable for maintaining price stability with an inflation rate currently below 1.5%. There is, in fact, no reason to think that the best solution is an extreme – whether a pure inflation target or a fixed exchange rate in an open economy, or completely closed capital markets. An intermediate solution has a certain appeal: volatility might be spread among different channels and sectors; there might be some kind of optimal weighting among the three objectives; or the need to develop hedging instruments or institutions might make a rapid transition to a clear-cut solution undesirable.

As the title of this conference suggests, however, the difficulty in making a clear choice between exchange rate stability and domestic price stability points to an ongoing balancing act between managing capital market integration and managing exchange rates. This dilemma – or trilemma – can be very frustrating, as implicitly policymakers are trying to optimise over two or three objectives which cannot be simultaneously achieved.

Policy responses to the recent surge in capital inflows

Having presented briefly the various policy frameworks in place in Asia and the Pacific, let me now turn to the most recent developments on policy responses to capital inflows in the region.



¹ In billions of US dollars. ² Includes capital transfers (eg. migrants' transfers). ³ Most likely errors in private financial flow measurement. ⁴ A minus sign (outflow) indicates an increase in reserves.

Sources: IMF, World Economic Outlook.

Before I move on, though, I would like to make a clear distinction between the foreign currency flows linked to the current account balance and those associated with financial flows. As illustrated in the graph, the main source of foreign currency inflows in the recent period has been current account surpluses rather than net capital inflows. In the rest of my presentation, I will reason in terms of total foreign currency inflows, encompassing current account and capital inflows. The graph also shows that countries have responded to foreign currency inflows and appreciation pressures with intervention in foreign exchange markets that has resulted in very large reserve accumulation.

If we take it as given that central banks want to control domestic inflation, there are four ways to respond to the challenges posed by large capital inflows: 1) allow the exchange rate to appreciate; 2) intervene to resist exchange rate appreciation; 3) impose restrictions on capital inflows; and 4) liberalise outflows.

If the choice of objectives relative to the impossible trinity is not clear, the policymaker has a wider range of policy options, but must make trade-offs. In an environment of ever deeper and faster international capital markets, this can place an immense burden on the policy process.

The lack of a reliable framework for looking at these trade-offs analytically makes things even harder. The workhorse relationship between monetary policy and the exchange rate through uncovered interest rate parity typically does not hold up empirically. So it is not at all clear how to effectively manage these trade-offs, making exchanges and discussions such as this meeting particularly useful. The success with which conflicting objectives have been managed for an extended period of time is a tribute to many of the people in this room.

Allow the exchange rate to appreciate

The first policy option is to allow the exchange rate to appreciate. In normal circumstances, this would be the preferred option. In principle, the flexibility of the exchange rate is a major

adjustment mechanism for global trade and financial flows. Exchange rate flexibility facilitates adjustments when the inevitable shocks to relative prices, terms of trade or capital flows occur. It offers the advantage of allowing monetary policy to be directed at sustaining price stability instead of pursuing several objectives at the same time.

In normal circumstances, countries experiencing current account surpluses and gross capital inflows would see currency appreciation, which would not only help to limit future balance of payments surpluses but also reduce the adjustment burden for countries with large deficits.

Exchange rate flexibility, however, may be costly if there are unhedged foreign exchange exposures, as was shown by currency collapses during the Asian crisis. Since then, however, foreign exchange spot and derivative products have become increasingly available and affordable. These developments should increasingly enable a move away from reserve accumulation, which may prove to be a costly long-term strategy, towards allowing the exchange rate to play a more important stabilising role.

Intervene to resist exchange rate appreciation

A second policy option for countries confronted with large capital inflows is to intervene to resist exchange rate appreciation. In exceptional circumstances, this may be justified. Evidence seems to suggest that foreign exchange markets are prone to overshooting and that exchange rates diverge from fundamentals for lengthy periods. The existence of carry trades can in some sense be taken as evidence of this, as a carry trade involves a bet that interest rate differentials are not fully compensated by exchange rate movements, ie that the so-called uncovered interest rate parity (UIP) does not hold. According to the UIP theory, low-yielding currencies should be expected to appreciate and high-yielding currencies should be expected to depreciate. However, what we observe over lengthy periods is the reverse, followed by sharp corrections. In this regard, one could reflect on the yen versus the New Zealand dollar. The decision by the Reserve Bank of New Zealand to intervene a few weeks ago for the first time since 1985 illustrates that the principle of allowing exchange rate flexibility does not exclude taking action in exceptional circumstances to resist market excesses where appropriate.

But intervention should arguably remain a temporary measure, as prolonged intervention poses well known risks. In particular, large reserve accumulation can affect the central bank balance sheet. It also leads to potential domestic imbalances, to be discussed later.

Intervention offers a means to resist exchange rate appreciation. But to avoid undermining domestic price stability, intervention needs to be sterilised. Sterilisation can be costly and the cost can increase with the stock of reserves. Moreover, a growing currency mismatch on the government (or central bank) accounts introduces the risk of large accounting losses later on should the exchange rate appreciate.

The risks associated with the currency mismatch on the stock position usually fall on the central bank's balance sheet. As the stock of reserves has grown, a number of central banks have run out of domestic assets to sell in order to sterilise increases in foreign assets. A central bank with domestic currency liabilities and foreign currency assets needs a relatively large capital base, or contingency funds to cover the mismatch.

The risks for a central bank grow further if a central bank continues to expand its mismatched balance sheet by continuing to intervene and issuing its own bills to sterilise intervention. This can lead to net losses from carrying costs and add interest rate risk to the foreign exchange risk on the mismatched stock position. Thus it compounds vulnerability and also risks segmenting domestic bond markets. In the absence of a contingency buffer, exchange

rate appreciation can lead to a rapid deterioration of the central bank's balance sheet, undermining monetary policy independence and credibility.

The experience of Asia with the financial carrying costs of foreign reserves has been diverse, and in some respects somewhat unusual. In some countries with higher domestic interest rates, such as India, the cost of sterilised intervention is visible. In India, the authorities have responded by providing government securities for intervention and putting contingency funds in place. In other countries, such as China, where the domestic interest rate paid by the central bank on its sterilisation securities is lower than the foreign interest rate, the nominal carrying cost of sterilised intervention by the central bank has been negative for extended periods.

Impose restrictions on capital inflows

The third and fourth policy responses relate to restrictions or prudential policies regarding capital flows. Imposing restrictions on capital inflows can dampen exchange rate appreciation. However, experience reveals that the effectiveness of such controls can be undone by markets over time. In addition, such controls can create volatility in key markets. Central banks also appear to see controls as a temporary rather than a long-run solution, as is apparent from Thailand's measures to gradually ease restrictions on inflows imposed in December 2006. The Korean authorities have recently taken steps to discourage foreign banks from further short-term borrowing from their affiliates and other banks abroad.

Reduce restrictions on capital outflows

Finally, a fourth policy option – reducing restrictions on capital outflows – has been adopted in the past two years in several countries (including China, India, Korea and the Philippines), and a few days ago in Thailand. In contrast to imposing capital controls, this represents a step forward in the transition toward financial integration. It does, of course, bring new risks. While relatively easy in an environment of capital inflows, good risk management is crucial to ensure that companies and banks that invest abroad can deal with the market risks that are driven by changes in market sentiment.

Some observers have argued that there is a fifth policy option consisting of a substantial interest rate cut to discourage capital inflows. This is obviously not in the range of policy options for a central bank committed to price stability.

Excessive resistance to exchange rate appreciation?

Having reviewed the four policy options available to deal with large capital inflows, the question arises as to whether one can detect in Asia an excessive resistance to exchange rate appreciation. To put it more bluntly, is there a risk of "exchange rate dominance" in Asia? (The notion of exchange rate dominance may be simply defined as the danger that exchange rate policy dominates or pre-empts monetary policy.)

As is well known, there has been extensive debate on Asia's choices in the preceding menu of policy options. Some research suggests that there has been more exchange rate flexibility in Asia since the Asian crisis, and indeed there are noteworthy examples where currencies in the region – such as the Thai baht or the Korean won – have been observed to appreciate significantly. Others have pointed to reserve accumulation and suggested that, on the contrary,

the exchange rate is a major – if not the dominant – consideration in policy-setting, and that countries have actively sought to dampen exchange rate appreciation. Some (specifically Dooley, Folkerts-Landau and Garber) have suggested that this is because stabilising the exchange rate is part of Asia’s economic development strategy.

Put in terms of the trilemma, has Asia given priority to exchange rate stability rather than to domestic price stability? Asian authorities have increasingly emphasised the importance of price stability, but traditionally some degree of exchange rate stability is also seen as desirable because of the importance of international trade. Indeed, in what follows, I suggest that policies have been broadly consistent with more exchange rate stability, and specifically less exchange rate appreciation. This has been associated with abundant liquidity, but until recently no consistent signs of high inflation. However, inflation risks do appear to have increased.

Signs of excessive resistance to exchange rate appreciation

Are there signs of excessive resistance to exchange rate appreciation? I shall now briefly review five key indicators which suggest that exchange rates in Asia have appreciated less than they otherwise might have in the past 10 years.

Indicator 1: foreign exchange reserves

Foreign exchange reserves as a percentage of GDP now exceed by far conventional thresholds of reserve adequacy. This suggests that reserve accumulation is driven by the desire to resist exchange rate appreciation rather than by a need to build buffers as a self-insurance policy.

Indicator 1: foreign exchange reserves as a percentage of GDP¹

	1997	April 2007
Japan	4.9	20.6
Emerging Asia ²	13.1	37.5
China	14.7	45.0
Hong Kong SAR	51.9	68.3
India	5.9	21.3
Indonesia	6.7	12.5
Korea	3.7	27.5
Malaysia	18.7	56.3
Philippines	8.4	17.6
Singapore	74.7	102.4
Taiwan (China)	27.8	73.9
Thailand	17.0	32.8

¹ End of period; in billions of US dollars. ² Regional figures are the sum of the countries shown below.

Sources: Datastream; national data.

Indicator 2: real exchange rates

Although there are some countries in the region (Korea) which recently experienced substantial exchange rate appreciation, it is remarkable that the real exchange rate of most Asian countries has on balance depreciated over the past 10 to 15 years. This is in contrast to Balassa-Samuelson predictions that such fast-growing export-oriented economies would experience significant exchange rate appreciation. China’s exchange rate has appreciated since 1994, but would record a long-run depreciation if the sample is extended back to the 1980s.¹

¹ See for example Graph 1 (page 7) in *BIS Paper* no 24.

Indicator 2: BIS real effective exchange rates index^{1, 2}

	1994	2000	June 2007
China	100.00	135.25	128.32
Hong Kong SAR	100.00	115.52	87.49
India	100.00	98.74	110.13
Indonesia	100.00	65.44	90.37
Japan	100.00	94.24	60.11
Korea	100.00	89.51	108.54
Malaysia	100.00	84.52	86.60
Philippines	100.00	88.98	98.15
Singapore	100.00	97.10	89.85
Taiwan (China)	100.00	92.89	75.00
Thailand	100.00	82.85	94.36

¹ BIS Real Exchange Rate Index. Broad Index, 52 countries. ² An increase indicates an appreciation of the currency.

Source: BIS calculations.

Indicator 3: interest rate differentials

Differentials between policy interest rates in Asia and fed funds in the United States have narrowed considerably as US policy rates have risen but interest rates in many Asian countries have not kept pace. Interest rate differentials turned negative in a majority of cases.

Indicator 3: interest rate differentials with the United States¹

	In per cent (end of period)		
	1996	1997	July 2007 ²
Japan	-4.8	-5.0	-4.8
China	5.7	1.6	-3.1
Hong Kong SAR	0.4	3.9	-0.9
India	2.8	1.5	2.5
Indonesia	7.6	14.5	3.0
Korea	7.3	19.4	-0.5
Malaysia	1.1	-1.5	-1.8
Philippines	6.0	8.1	1.8
Singapore	-2.3	3.5	-2.7
Taiwan (China)	0.1	1.6	-3.3
Thailand	6.6	24.3	-2.0

¹ National policy or short-term rates minus US federal funds target rate; for China, one-week repo rate, prior to December 2001 one-day interbank rates; for Hong Kong SAR, three-month HIBOR; for India, midpoint of repo and reverse repo rates range, prior to 2000 three-month bill rate (secondary market); for Indonesia, one-month official discount rate, prior to 1996 three-month SBI rate; for Japan, overnight call money market rate (uncollateralised); for Korea, overnight target rate, prior to 2004 overnight market rate; for Malaysia, overnight policy rate; for the Philippines, midpoint of repo and reverse repo rates range, prior to 2001 interbank call loan rate; for Singapore, three-month interbank interest rate; for Taiwan (China), overnight interbank money market rate; for Thailand, two-week repo rate. ² Latest available at the time of the presentation.

Sources: Bloomberg; CEIC; Datastream; national data.

Indicator 4: real interest rates

Real interest rates remain low in the region and well below potential rates of growth in fast-growing Asian economies.

Indicator 4: real policy or short-term rates¹

	In per cent (end of period)		
	1996	1997	June 2007
Japan	-0.2	-1.4	0.8
China	3.7	6.7	-1.4
Hong Kong SAR	-1.0	4.0	3.1
India	2.6	2.9	3.2
Indonesia	6.4	8.8	2.6
Korea	7.2	17.2	1.9
Malaysia	2.8	1.1	2.0
Philippines	3.9	5.8	6.2
Singapore	0.9	6.8	1.2
Taiwan (China)	2.8	6.8	1.9
Thailand	6.8	20.6	1.6

¹ Policy or short-term rates deflated by lagged CPI inflation (for India, WPI inflation); for China, one-week repo rate; for Hong Kong SAR, three-month HIBOR; for India, midpoint of repo and reverse repo rates range, prior to 2000 three-month bill rate (secondary market); for Indonesia, one-month SBI rate; for Japan, overnight call money market rate (uncollateralised); for Korea, overnight target rate, prior to 2004 overnight market rate; for Malaysia, overnight policy rate, prior to 2004 overnight market rate; for the Philippines, midpoint of repo and reverse repo rates range, prior to 2001 interbank call loan rate; for Singapore, three-month interbank interest rate; for Taiwan (China), overnight interbank money market rate; for Thailand, overnight repo rate, before 2007 two-week repo rate.

Sources: Bloomberg; CEIC; Datastream; national data.

Indicator 5: balance of payments

The aggregate current account surplus of Asian emerging economies rose to USD 340 billion in 2006, compared to an aggregate current account deficit of USD 12 billion 10 years ago. As indicated before, net capital inflows are much smaller (USD 54 billion in 2006) and indeed have slightly eased compared to the situation a decade ago. Normally, current account surpluses are associated with exchange rate appreciation.

Indicator 5: balance of payments

	In billions of US dollars					
	Current account balance		Net private capital flows		Change in reserves	
	Average 1996-97	2006	Average 1996-97	2006	Average 1996-97	2006
Emerging Asia including China	-12	340	82	54	-41	366
China	22	250	31	7	34	247
Japan	81	171	-74	-103	21	32

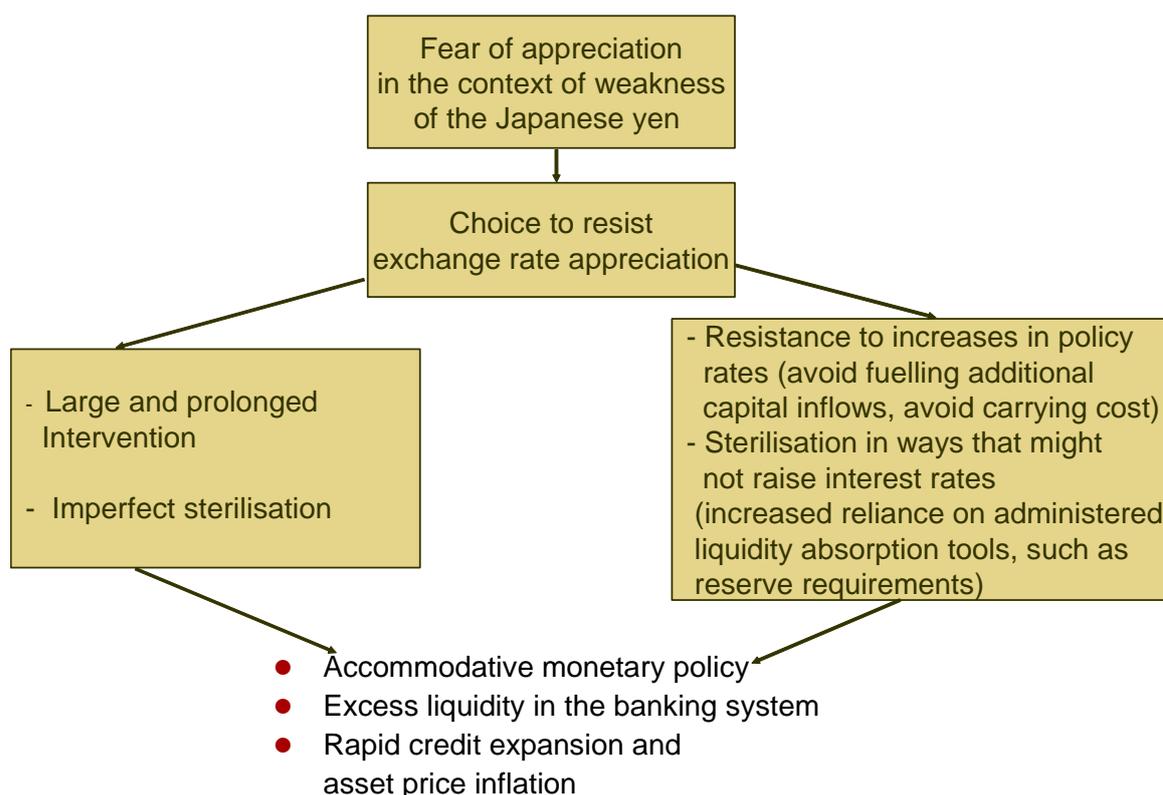
Sources: IMF, *World Economic Outlook*; national data.

These various indicators point to a resistance to exchange rate appreciation which might be seen as excessive. Let me mention that the BIS recently published on the occasion of the presentation of its Annual Report a press statement which says – I quote – “[I]t is important that global macroeconomic adjustment is not impeded through excessive resistance to exchange rate appreciation in those countries where appreciation is warranted by current account surpluses and positive terms-of-trade developments. The associated foreign reserve accumulation can also pose a threat to the internal balance of the countries concerned.”

However, in view of the fact that inflation has so far been broadly well contained it might not be appropriate to state that monetary policy in the region is dominated by exchange rate considerations.

Interactions between reserve accumulation and monetary policy

Let us take a closer look at the mechanisms of interactions between reserve accumulation and monetary policy.



As illustrated by the diagram, reserve accumulation may undermine the effectiveness of domestic monetary policy through four channels.

Imperfect sterilisation

First, the costs of intervention create a temptation to less than fully sterilise intervention. Large-scale reserve accumulation has led to persistent excess liquidity conditions in Asian banking systems. The unsterilised component of intervention is reported to have increased in some Asian countries in recent months, implying inflation risks.

Carrying costs: a disincentive to increases in domestic interest rates

Second, the concern about the carrying cost of reserves could engender resistance to necessary increases in interest rates. In some cases, the carrying cost is negative, as the central bank issues its sterilisation bills at interest rates less than the comparable yields on reserve assets.

Sterilising in ways that might not raise interest rates

Third, there is a tendency to sterilise intervention in ways that might not raise interest rates but instead weigh on bank profitability. In China, the People's Bank of China is relying heavily on

administered liquidity absorption tools such as reserve requirements rather than relying solely on selling central bank paper. In principle, reducing liquidity or excess reserves in this fashion could raise interest rates. In practice, it is not clear that it has.

Transmission of low G3 interest rates to emerging market economies

Fourth, while accumulating reserves, emerging market central banks invest such funds in industrial country assets, thus helping to keep the domestic interest rate in industrial countries at a low level. In turn, resistance to exchange rate appreciation has tended to transmit the low level of interest rates prevailing on the three key currencies to the emerging market economies.

These four channels converge in accommodative monetary policies in a number of Asian economies, and the combination of low policy rates and resistance to currency appreciation means that monetary conditions have been very expansionary in the recent cycle.

Greater exchange rate flexibility: the importance of risk management

Moving to the last part of my presentation, three main factors could contribute to greater exchange rate flexibility in the region going forward: the normalisation of Japanese monetary policy, China's move towards greater exchange rate flexibility, and the building up of the risk management tools required by a flexible exchange rate regime:

- The end of the zero, or close to zero interest rate policy would make yen carry trades less attractive, perhaps also slow down the capital outflows from Japanese investors and probably remove the yen depreciation pressures over the medium term.
- China's move towards greater exchange rate flexibility would facilitate a similar move elsewhere in Asia. Nominal exchange rate appreciation would also help China to contain rising inflationary pressures in an overheating economy, and greater exchange rate flexibility would pave the way for a more market-oriented monetary policy.
- Building up the risk management tools required by a flexible exchange rate regime and a higher degree of financial openness is another important factor that should encourage more exchange rate flexibility.

The first two factors are exogenous factors for Asian countries except China and Japan. Let me elaborate on the third one.

There is no doubt that financial integration and growing cross-border flows go hand in hand with new risks. To reap the benefits of financial integration, these new risks must be well managed. Arguably, the most important policy response is to ensure that risk management systems are put in place. The challenges in this area, while perhaps less visible than macroeconomic policy responses, are no less demanding. They are intensive in human capital, increasingly sophisticated technically and continually evolving.

More financial integration requires management of greater exchange rate risk or greater inflation risk, or possibly both, depending on the trilemma choice. Going back to our earlier examples of clear-cut choices, consider New Zealand and Hong Kong.

In New Zealand, exchange rate fluctuations present a major source of uncertainty. In this environment, products are needed to manage foreign exchange risk. In response, foreign exchange markets and their derivatives, especially forward and swaps contracts, have grown relative to other markets.

In contrast, in Hong Kong there is little need to hedge US dollar exchange positions, and instruments for hedging foreign exchange positions relative to other currencies are generally available in the United States or other markets. There is a greater need to hedge risks

associated with domestic price fluctuations. This has contributed to growth in markets for real assets such as equity and property and their derivatives such as real estate investment trusts and equity warrants.

An important consideration is that if policy choices are not clear, then the private sector may face the need to insure against a wider set of risks. The wider set of risks may mean not only higher costs to hedge those risks, but dilution of the incentives for development of markets and products for the purpose. To simplify: the first step is to know what those risks are. For instance, increasing exchange rate flexibility in many countries is sending an important signal that exchange rate fluctuations can be expected.

To effectively hedge its exposures, the private sector needs the instruments with which to do so at reasonable cost. I would like to mention two developments in the region that might be thought of as pillars of the risk management infrastructure. The first is the development of domestic currency bond markets and the second is the development of money and foreign exchange markets.

The development of local currency bond markets, in terms of both depth and the maturities available, not only reduces currency and maturity mismatches directly, but also provides the building blocks for pricing a wide range of financial risk instruments. As such, these markets are seen as a way of reducing vulnerability to crisis. In several Asian countries, domestic debt markets have more than doubled as a share of GDP since 1997. The BIS is pleased to have supported this process through its involvement in the ABF2 initiative.

The second area where important progress has been made is in the development of money and foreign exchange markets. As money markets have become more liquid, the pricing and settlement of a range of products that help firms and banks to manage risks have been enhanced. Foreign exchange derivatives market activity has also grown rapidly. In particular, in Indonesia, Korea, the Philippines and Thailand, where adoption of inflation targeting frameworks has implied greater exchange rate variability, turnover in foreign exchange derivatives has grown substantially, reflecting the increasing range of products available for managing foreign exchange risk.

The public sector and in particular the central banks have played an important role in improving national balance sheets in the region, providing a stable macroeconomic environment, building buffers, promoting private sector risk management through setting rules and standards, and supporting the development of markets for hedging instruments.

This process is intensive in human capital and ongoing. These markets are still relatively small in many countries. New challenges lie ahead. These include home-host issues associated with cross-border banks, and the implementation of Basel II, to which the supervisors of the economies in the region have generally committed.

I am sure these initiatives will help to pave the way for further advances in financial integration. The increased scope they provide for risk management in turn should increase the range and scope of policy options available on the macro-stabilisation side, and therefore also pave the way for greater exchange rate flexibility in the region.

Conclusion

With increased financial integration, the trilemma is forcing most countries to accept somewhat less exchange rate stability or less domestic monetary stabilisation. This has become increasingly apparent in Asia in the face of the recent surge in foreign currency inflows. It is not clear that the optimal choice between the options is a pure fixed or floating exchange rate, and

there may be good arguments for a gradual transition. However, an intermediate choice leaves policymakers managing very difficult trade-offs, and may hinder private sector incentives to develop appropriate hedging capacity. Where associated with resistance to exchange rate appreciation, an effort to optimise over multiple objectives risks contributing to the build-up of imbalances both at home and abroad.

SEACEN central banks have strived to strike a balance through a combination of reserve accumulation, exchange rate flexibility and liberalising outflows, while broadly maintaining price stability. Perhaps most importantly, the instruments for risk management are being put into place, paving the way for greater financial integration and for greater exchange rate flexibility going forward.

But these successes are only part of an ongoing process for all countries facing increasingly integrated and complex financial markets. I will thus finish by wishing SEACEN a happy anniversary and a successful next 25 years of continuing support for the human capital development that will be required to address these challenges.