

THE IMPLEMENTATION OF MONETARY POLICY: LESSONS FROM THE CRISIS AND CHALLENGES FOR COMING YEARS

Proceedings of the
First SEACEN–CEMLA Conference



BANK NEGARA MALAYSIA
CENTRAL BANK OF MALAYSIA



The SEACEN Centre

CEMLA
CENTER FOR LATIN AMERICAN MONETARY STUDIES

Sasana Kijang, Kuala Lumpur, Malaysia
October 13-15, 2011

**The Implementation
of Monetary Policy:
Lessons from the Crisis
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Foreword

The recent financial crisis in advanced economies has been a wake-up call for policymakers and academics alike. The crisis has underscored the limitations of the prevailing paradigm and the analytical approaches that guided macroeconomic policy and the regulation and supervision of financial intermediaries. Accordingly, in the aftermath of the crisis there is underway a shift of emphasis from the stability of individual institutions to that of the system as a whole, and, at the same time, a shift in view towards tighter interdependence between monetary policy and financial stability. Both of these policy shifts are expected to bring into sharper consistency and alignment the nexus between the financial system and the real economy. How can we make this paradigm shift operational in Asian and Latin American central banks? How should Asian and Latin American central banks operationalize their financial stability mandates without jeopardizing price stability? How and to what extent can regional monetary and financial cooperation among emerging markets contribute in operationalizing this shift in emphasis? What are the implications of commodity price booms and volatile exchange rates and capital flows on the operationalization of such financial and price stability mandates in Asian and Latin American central banks? These were some of the important questions which were raised and addressed at the inaugural SEACEN-CEMLA Conference on “The Implementation of Monetary Policy: Lessons from the Crisis and Challenges for Coming Years”, hosted by Bank Negara Malaysia and co-sponsored by Banco de la República (Central Bank of Colombia) in Kuala Lumpur, Malaysia, on October 13-15, 2011.

The Conference provided a unique opportunity for central banks from the Asian, Latin American and Caribbean regions for the sharing of experiences and deliberating on the lessons learned from monetary policy responses to the recent global financial crisis, as well as for identifying the challenges ahead in the formulation and implementation of monetary policy. The discussions provided some food for thought on how existing policy frameworks can be refined, including the predication of a tighter linkage between monetary policy and financial stability as well as a greater awareness of the international dimension of such refinements. The discussions also illuminated the need to manage expectations, especially in terms of recognising the limits that central banks face in managing the economy.

A number of key messages emerged from the discussions, including the following: first, additional emphasis has to be accorded to the risks associated with the buildup of financial imbalances and this will require policies that aim at limiting the exposure of the financial system to such systemic risks. Specifically, the implementation of policies based on a macroprudential framework requires a set of instruments that has to be wider than the standard monetary policy and supervisory toolkit. Second, the implementation of such policies will entail an institutional framework that governs the deployment of these sets of instruments, as well as a clear delineation between the mandates of monetary and macroprudential policies. Third, central banks should formally take a lead role in the formulation and implementation of such macroprudential policies. Fourth, in an environment of soaring commodity prices driven by unsustainable strong global demand, central banks should be ready for a more aggressive monetary policy stance. Finally, central banks need to take better account of the impact of their actions on other economies, and as such greater central bank cooperation is needed to achieve a favourable outcome in this increasingly globalised world.

We are indeed elated that the papers presented in this Conference are being made available to a wider audience through the publication of the Conference Proceedings. The first Conference is paving the way for further collaboration between SEACEN and CEMLA, including through

annual joint conferences to be held alternatively in Latin America and Asia, and a joint website which features collaborative activities between the two institutions and linkages to their respective member central banks/monetary authorities. Looking forward, it is hoped that these efforts will be platforms for Asian and Latin American central banks to promote cross-regional collaboration in central bank learning, strengthen networking relationships, share expertise and exchange valuable ideas and experiences from the two regions.

A.G. Karunasena
Executive Director
The SEACEN Centre

J.E. Guzmán Calafell
General Director
CEMLA

Session 1

Opening and Keynote Address

Muhammad bin Ibrahim

Welcoming Remarks

On behalf of Bank Negara Malaysia, I have the pleasure today to welcome distinguished Governors, resource persons, and participants to this inaugural SEACEN-CEMLA Conference on Monetary Policy.

I wish to extend a warm welcome to all our guests, especially those who have travelled long distances across different time zones to join us today in Kuala Lumpur.

This two-day conference will address a wide range of central banking issues. They include the challenges to monetary policy in responding to commodity price increases, capital flows and exchange rate volatility; the role of central banks in financial stability; and the scope for international and regional cooperation in the postcrisis environment.

This is certainly a heavy menu of issues, with scope for active debate and plenty of food for thought thereafter. I noticed the phrase *postcrisis* was used on a number of occasions, I wonder if the use of this word is a bit over-optimistic in presuming that we are in a post-crisis environment, given the continuing uncertainties and volatilities and the unfolding events in Europe over the last few months.

SEACEN-CEMLA Cooperation

While there are many international forums and occasions for central bankers to meet to discuss topical subjects of global concern, avenues

Deputy Governor, Bank Negara Malaysia.

for more direct and informal dialogue of specific interest to the SEACEN and CEMLA regions have in the past been rather limited

An important first step to bridge this gap was made with the launch of the inaugural South-East Asian - Latin American and the Caribbean (SEA-LAC) Central Bank Governors' Meeting in Kuala Lumpur held before the IMF/World Bank Annual Meetings in Singapore in 2006. SEA-LAC's aim is to provide a forum for central bankers to explore opportunities to strengthen economic and financial cooperation between the SEACEN and CEMLA regions. Since then, this meeting has been held annually on six occasions and served as the interface between our two central banking communities.

This inaugural SEACEN-CEMLA conference represents another effort to strengthen relationship between our two regions. Engagements like this give us an opportunity to exchange information, share expertise and experiences on central banking and deliberate on policy options that could promote monetary and financial stability.

This conference could also serve as an important forum for identifying new area of interests where our member central banks could discuss on matters that could benefit both region.

By leveraging on our collective experience and expertise, SEACEN-CEMLA central banks will also be in a better position to promote closer interregional trade and investment flows and as a platform to discuss global issues common to both region.

We recognised that the SEACEN and CEMLA regions respectively comprise a diverse range of economies at various stages of development but the regions also share many similar interests and economic direction.

To begin with, economies in the SEACEN-CEMLA regions have generally adopted an outward-looking policy orientation, with an emphasis on open international trade and foreign direct investments. In the CEMLA region, total trade (exports and imports) represents a significant 30% to 80% of GDP. Among SEACEN members, the figure ranges from 30% to 150% or more.

Many SEACEN-CEMLA region economies are emerging market economies which are deeply integrated into the global supply chain, while

others represent a vital source of primary commodities critical to the global economy.

Collectively, the SEACEN-CEMLA economic area has an aggregate GDP of USD 14 trillion with a total population of 2.6 billion people. Several members –for example, China (with 1.3 billion people) and Brazil (193 million)– are also home to a large domestic market and growing middle class. Combined, both regions offer members an enormous economic and business opportunities.

Lessons from Past Crises – Malaysia’s Experience

We have much to learn from each other, particularly in sharing the experience of the SEACEN and CEMLA economies in dealing with past crises.

No two crises are exactly alike, and one critical lesson in crisis management is that, every crisis redefines what currently represents conventional wisdom, and what are considered as unorthodox policies. To be successful in managing a crisis, our experience suggests that policies must be pragmatic and tailored to suit country-specific circumstances. Crisis it seems, always alter the concept of conventional wisdom.

In Malaysia’s case, there was much criticism over the use of selective exchange controls to safeguard the domestic economy from the impact of the 1997-1998 Asian financial crisis. Many of the measures were considered unorthodox and some even suggested them as heretic.

On hindsight, many of the measures that were implemented worked –they stabilized the domestic financial system and provided the breathing space for corporates to restructure and provide the window of opportunity for financial reforms to be instituted and succeed. The measures worked because they were implemented as part of a comprehensive and timely macroeconomic policy package, the National Economic Recovery Programme.

More recently, the IMF has acknowledged that “capital flow management measures”, a fancy term to describe capital control measures, have a role to play in certain circumstances to complement and supplement sound macro-prudential policies and principles in dealing with surges in

capital inflows. It took more than a decade to hear that policies taken in 1997-1998 were indeed proved to be appropriate and timely.

Our experience with the Asian crisis of the 1990s also underscored the importance of regional self-help and support mechanisms – it led to the creation of the Chiang Mai Initiative (CMI), a USD 120 billion regional financing arrangement among the ASEAN economies, and China, Japan and Korea. Today, the network of bilateral swap arrangements has evolved into a stronger, multilateralized arrangement with a regional surveillance system.

The role of the CMI as a regional financing and surveillance mechanism is to complement and supplement the role of the international financial institutions (IFIs) in crisis prevention, management and resolution.

There is scope for more strategic alliances for interregional safety nets such as the CMI and the IFIs. This will promote greater synergies and complementarities while leveraging on the respective strengths of each region and international financial institutions. Such alliances will also increase engagement and connectivity between the regions and the IFIs, and hopefully result in an international financial architecture that is more equitable, inclusive and responsive to the fundamental changes taking place in the global economic and financial environment.

Sasana Kijang

Our meeting here today at Bank Negara's newly-launched Sasana Kijang complex is particularly appropriate for several reasons.

Firstly, Sasana Kijang is the logical choice since it is the new home of the SEACEN Centre as well as the Islamic Financial Services Board, an international standard-setting body for global Islamic finance.

Secondly, Sasana Kijang is the realization of Bank Negara's aspiration for a nexus for thought leadership and international collaboration in central banking and finance –in particular in dealing with topical issues and challenges confronting the international economic and financial system.

The word *Sasana Kijang* was actually coined by Governor Zeti. *Sasana* is a Sanskrit word for a meeting point for the wise and learned,

while the Kijang or Malayan deer features prominently in Bank Negara's logo. The Kijang is a small but highly resourceful and agile creature that has the smarts to outwit its larger predators to survive in the Malaysian jungle. Taken together, *Sasana Kijang* carries a powerful metaphor that embodies Bank Negara's aspirations.

Keynote Speaker

Today we have with us Dr. Stephen Cecchetti, Economic Adviser and Head of the Monetary and Economic Department of the Bank for International Settlements (BIS). We thank him for accepting the invitation to deliver the keynote address on "Monetary Policy Lessons Learned from the Crisis and the Post-Crisis Landscape."

Dr. Cecchetti and the BIS are at the forefront in the assessment and long-term resolution of many of the issues confronting the global financial system. His insights on the situation developing in Europe will be beneficial in setting the context for our SEACEN-CEMLA Conference on The Implementation of Monetary Policy: Lessons from the Crisis and Challenges for Coming Years.

We look forward to Dr. Cecchetti's assessment of current events unfolding before us and now it will impact the future. In particular, I am very interested to listen on his views on monetary policy challenges in managing the trade-offs between capital flows, amid a global environment of anemic growth and inflationary pressures.

Conclusion

I wish to take this opportunity to thank all the speakers and the moderators for accepting our invitation to share your valuable knowledge and experience in this conference.

On this note, I wish all of you a very productive and constructive conference and hope all our foreign guests will have an interesting and memorable stay in Kuala Lumpur.

Stephen G. Cecchetti

Monetary Policy Lessons Learned from the Crisis and the Postcrisis Landscape

It is both a pleasure and a privilege to address the inaugural SEACEN-CEMLA Conference this morning in Kuala Lumpur. In my remarks, I would like to examine three main themes, drawing out the main lessons from the crisis for central banking in the postcrisis era.

They are:

- The future of inflation targeting
- The future of central banks' operational frameworks
- The future of global central bank cooperation

It is immediately clear to everyone here that we have seen each of these aspects –inflation targeting, central banks' operational frameworks and global central bank cooperation– put to the test. In each case, the experience of the last three years has changed the way in which we do and should think about how central banks go about meeting their macroeconomic stabilisation objectives. But, not only do these lessons influence how we formulate policy frameworks, they also have

Economic Adviser and Head of the Monetary and Economic Department, Bank for International Settlements (BIS). The author would like to thank Andrew Filardo, Boris Hofmann and Aaron Mehrotra for their help in preparing these remarks. The views expressed here are those of the author and do not necessarily reflect those of the BIS.

implications for how we should go about constructing a credible and consistent governance structure. After all, governance is the enduring core of central banking. Without appropriate governance arrangements, policymakers cannot even set out on the difficult path that they need to follow.

What Is the Future of Inflation Targeting?

With that as a brief introduction, let me turn to my first theme: the future of inflation targeting.¹ Here, I will start with the basics –the three main elements that define an inflation targeting framework:

- The public announcement of medium-term numerical targets for inflation
- An institutional commitment to price stability as the primary goal of monetary policy
- Frequent communication with the public about the plans, objectives and decisions

By focusing on a clearly defined and easily observable numerical inflation statistic, and requiring frequent communication with the public, inflation targeting increases policymakers' accountability and helps to establish their credibility. Not only do central bankers know what they are supposed to do –everyone else does too. The result is not just lower and more stable inflation, but higher and more stable growth as well.

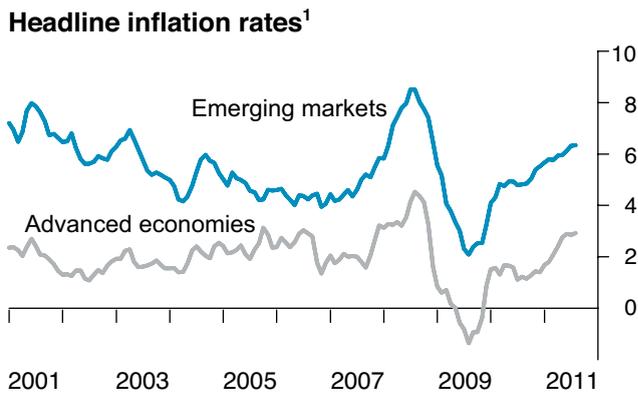
But the proof of the pudding is truly in the eating. And here, there is clear success. I have little doubt that the adoption of inflation targeting frameworks –either explicit or implicit– was one of the key factors in the achievement of low and stable inflation rates globally for more than a decade (as shown in the top panel of Figure 1). And in addition to more stable prices, countries that adopted inflation targeting enjoyed higher and more stable growth rates prior to the crisis. This was no small feat.

¹ See F. S. Mishkin, "Inflation Targeting", in B. Snowdon and H. R. Vane (eds.), *An Encyclopedia of Macroeconomics*, Edward Elgar, 2002.

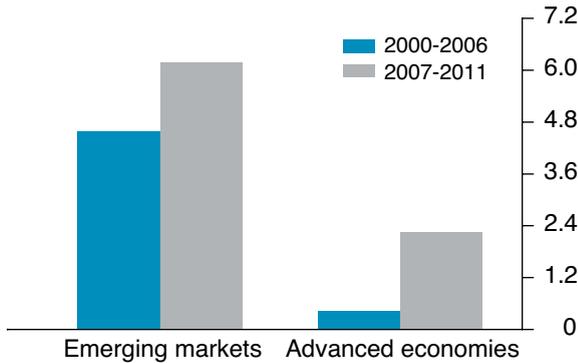
The benefits of inflation targeting frameworks were clearly revealed during the crisis. An institutional commitment to the inflation objective together with timely and clear communication –both inherent features of price stability-oriented frameworks– helped keep inflation expectations stable when the crisis hit. The stability of inflation expectations, in turn, reduced the risk of deflation. As you can see in the right-hand panel of Figure 1, inflation expectations have also remained well anchored in the subsequent recovery despite extraordinarily loose monetary conditions and soaring commodity prices. This was supported

Figure 1

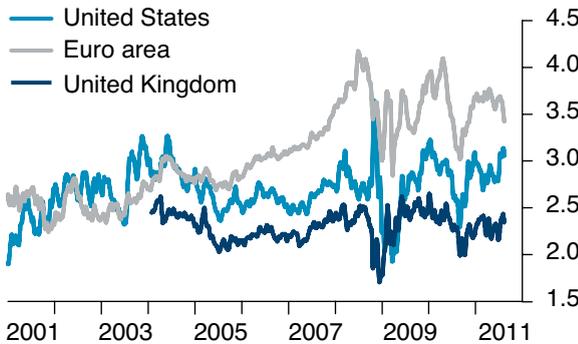
INFLATION (year-on-year percentage changes)



Inflation volatility^{1, 2}



Inflation expectations³



¹ Aggregates based on 2005 GDP and PPP exchange rates of the countries listed. Emerging markets: Argentina, Brazil, Chile, China, Colombia, the Czech Republic, Hong Kong SAR, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Peru, the Philippines, Poland, Russia, Saudi Arabia, Singapore, South Africa, Thailand and Turkey. Advanced economies: the euro area, Japan, the United Kingdom and the United States.

² Variance of monthly year-on-year changes of headline inflation. Argentina, Russia and Turkey are excluded.

³ Five-year forward five-year-ahead inflation-linked swap rate.

Sources: Bloomberg; Datastream; national data.

by the high accountability and credibility of inflation targeting central banks. But, while inflation targeting worked well, there is clearly need for refinement.

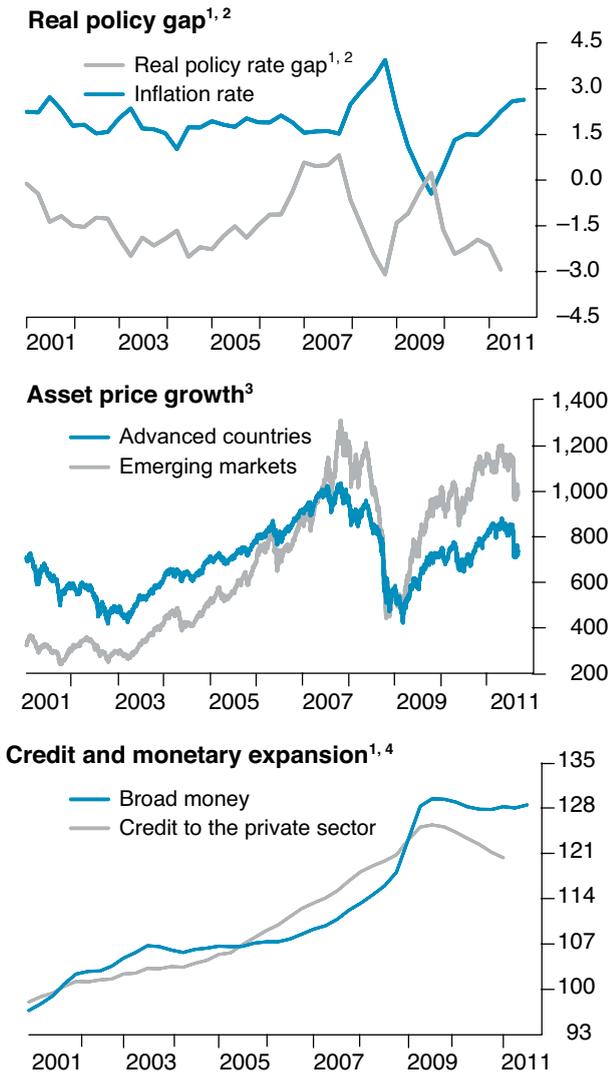
A key lesson from the crisis is that existing monetary policy frameworks need to be modified to put additional weight on the risks associated with a buildup of financial imbalances, even when inflation rates remain low and stable. It is important for policymakers to monitor general financial conditions, including both the prices and transaction volumes in a broad array of asset markets. The experiences of the past decade have demonstrated that accommodative monetary conditions can lead to massive increases in asset prices and credit aggregates without triggering movements in consumer price inflation. We can see this in Figure 2, where I have plotted a measure of policy accommodation along with inflation in the left-hand panel together with asset price and credit growth in the centre and right-hand panels. The message is that, during the last decade, policy was almost always accommodative. And, from 2001 to October 3, 2006, asset prices and credit both boomed. At the same time, inflation appeared largely under control.

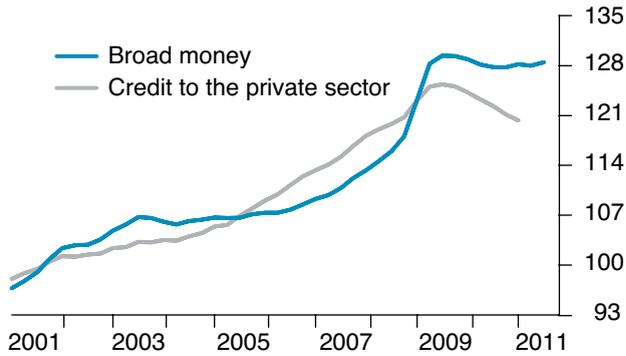
The immediate implication is that achieving financial stability as well as price stability requires modification of inflation targeting frameworks; but how? First, there is the need to lengthen the policy horizon beyond the conventional two years or so typical of many inflation targeting frameworks. Financial imbalances tend to build up only gradually over many years. Addressing the systemic risks that arise is something that can require policymakers to allow inflation to deviate from their short-term objectives. Second, monetary policy needs to be tightened aggressively during financial booms, not only loosened during the following busts. This helps avoid situations where policy interest rates trend downwards over time to levels incompatible with price stability in the steady state and where excessive leverage is encouraged.

Let me briefly turn to the role of the exchange rate in inflation targeting frameworks, especially in emerging market economies. Over the past decade, there has been a somewhat disturbing growth in foreign exchange reserves in emerging market economies, particularly in Asia.

Figure 2

LOW INTEREST RATES, ASSET PRICE GROWTH AND CREDIT EXPANSION



Credit and monetary expansion^{1, 4}

¹ Major OECD countries; weighted averages based on 2005 GDP and PPP exchange rates.

² Real policy rate minus natural rate. The real rate is the nominal rate adjusted for four-quarter consumer price inflation. The natural rate is defined as the average real rate in 1985-2005 (for Japan, 1985-1995; for Switzerland, 2000-2005) plus the four-quarter growth in potential output less its long-term average.

³ For advanced countries, MSCI World Index; for emerging markets, MSCI Emerging Markets Index.

⁴ Relative to nominal GDP; 2001 = 100.

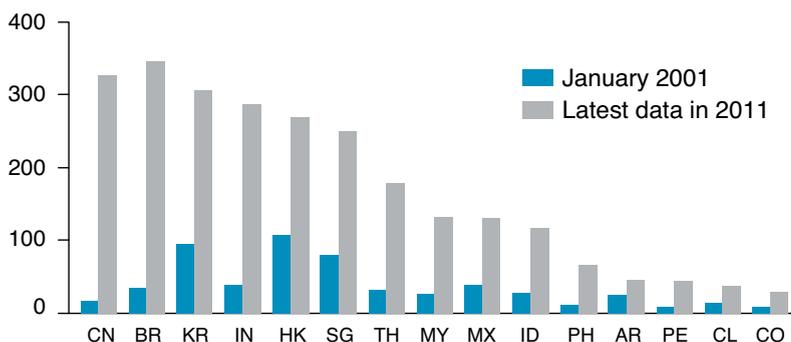
Sources: IMF; OECD; Bloomberg; national data; BIS calculations and estimates.

Figure 3 compares the levels in January 2001 with those today. Initially, much of the buildup reflected the desire to increase the stock of precautionary reserves as a defence against the type of issues that arose in the Asian financial crisis in the late 1990s. However, over time, the buildup increasingly reflected exchange rate regimes which were resisting appreciation pressures.

Some have argued that emerging market policymakers have been trying to reduce volatility, not to influence the level of the exchange rate per se. To be sure, these concerns can be justified by short-term

Figure 3

RESERVE ACCUMULATION
(billions of USD)



AR = Argentina; BR = Brazil; CL = Chile; CN = China; CO = Colombia; HK = Hong Kong SAR; ID = Indonesia; IN = India; KR = Korea; MX = Mexico; MY = Malaysia; PE = Peru; PH = Philippines; SG = Singapore; TH = Thailand.

Sources: IMF, International Financial Statistics; CEIC; Datastream; national banks.

concerns over macroeconomic and financial stability, and medium- to long-run concerns over resource allocation. But resisting exchange rate pressures for too long implies some willingness on the part of monetary policymakers to lessen their commitment to inflation control. And, we should always remember the benefits of exchange rate flexibility. Increased exchange rate flexibility, in particular allowance for greater exchange rate appreciation, helps contain domestic inflation during booms.

To sum up, inflation targeting frameworks proved their worth before and during the crisis. They fostered conditions that contributed to stable inflation and firmly anchored inflation expectations. While refinements to such frameworks are needed, price stability is an essential component of any stability-oriented policy framework going forward.

What Is the Future of Central Banks' Operational Frameworks?

Let me now turn to my second theme: the future of central banks' operational frameworks. The precrisis consensus was that monetary policy should be both framed and implemented via policy interest rates. The characterisation of monetary policy in most cases boiled down to Taylor-type rules in which the level of the policy-controlled interest rate reacted to a combination of movements in inflation and fluctuations in the state of the business cycle.

This view has been fundamentally challenged with the experiences of the crisis. Central banks' toolboxes now comprise a whole range of monetary policy instruments:

- The policy rate
- The size of the central bank balance sheet
- The composition of the central bank balance sheet
- Reserve requirements
- The remuneration rate on excess reserves

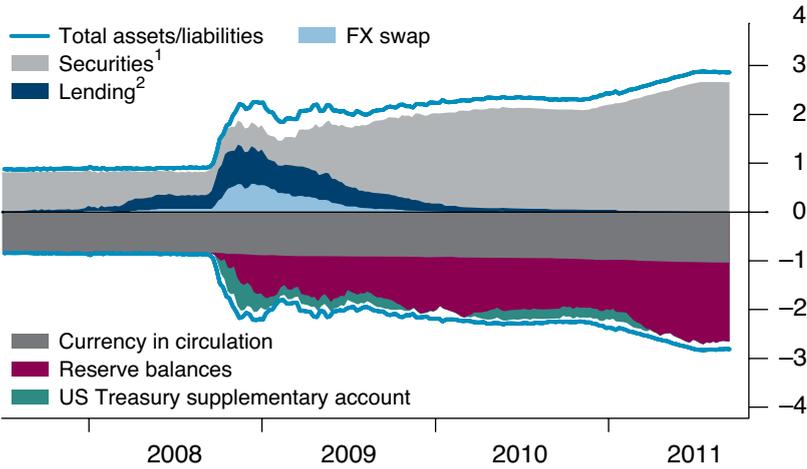
In advanced economies, central bank balance sheet policy has shown itself to be a powerful and flexible instrument during crisis times. The size of central bank balance sheets increased to unprecedented levels, and the composition varied over time and across central banks, as different strategies were adopted. Figure 4 shows the change in both size and composition since 2007. Arguably, this aggressive and flexible use of central bank balance sheets was instrumental in preventing a collapse of the global financial system and the global economy.

At the same time, central bank reserve policy has gained importance as a monetary policy tool. Some advanced economies' central banks have used the remuneration rate on reserves as a tool to enhance the management of reserve holdings and the control over money market-rates against the background of expansionary balance sheet policies. Reserve requirements have been used by a number of EME central

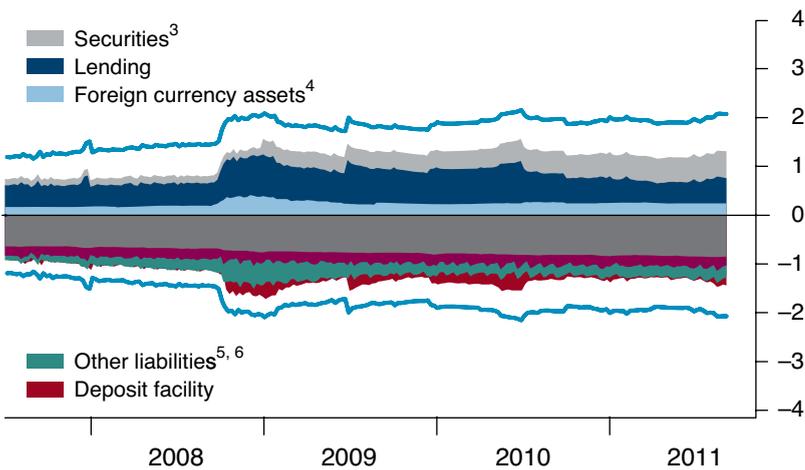
Figure 4

CENTRAL BANK ASSETS AND LIABILITIES
(trillions of respective currency units)

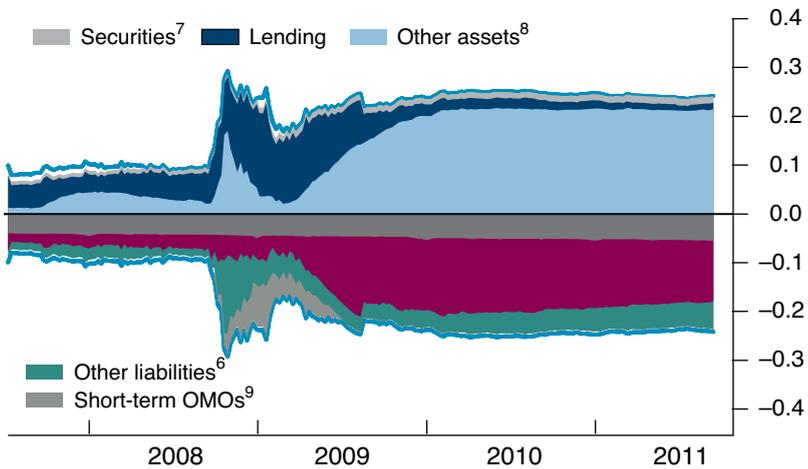
Federal Reserve



Eurosystem



Bank of England



¹ Securities held outright.

² Repurchase agreements, term auction credit, other loans and Commercial Paper Funding Facility.

³ Securities issued by euro area residents and general government debt, in euros.

⁴ Including US dollar liquidity auctions.

⁵ Including liabilities to non-euro area residents in euros and liabilities to euro area residents in foreign currency.

⁶ Including to central banks.

⁷ Bonds and other securities acquired via market transactions.

⁸ Including US dollar liquidity auctions and loans to the Bank of England Asset Purchase Facility Fund.

⁹ Open market operations, including issuance of Bank of England sterling bills.

Sources: CEIC; Datastream; national data.

banks as a tool to ease banks' financing conditions during periods of financial stress and to dampen credit growth during booms.²

These new instruments are very likely to remain important elements of central banks' toolboxes in the foreseeable future. The ongoing fragility and volatility of the global economic and financial environment suggest that we cannot expect to return anytime soon, if at all, to an operational framework centred on the policy rate as the single monetary policy instrument. Situations where the short-term financing needs of the financial sector cannot be sufficiently addressed by the policy rate or where they are even at odds with the central bank's medium-term macroeconomic stability goals appear increasingly likely in the future. As a consequence, central banks' operational frameworks will be much more complicated than those that prevailed before the crisis.

Additional complications arise from the huge debt burdens facing many economies. Figure 5 displays trajectories for government debt for a sample of large advanced economies in several policy scenarios. As governments address these large and growing financing needs, sovereign debt management decisions will play an increasingly important role in the implementation of monetary policy. By choosing the quantity and maturity structure of the supply of government bonds, debt managers influence the shape of the sovereign yield curve. To the extent that debt managers and central banks have different priorities, they might find themselves working at cross purposes. This does not necessarily mean that monetary policy will be less effective, but it does mean that central banks will have to work harder to achieve their desired policy stance with respect to the level and shape of the yield curve.³

² See C. Montoro and R. Moreno, "The Use of Reserve Requirements as a Policy Tool in Latin America", *BIS Quarterly Review*, March 2011, pp. 53–65.

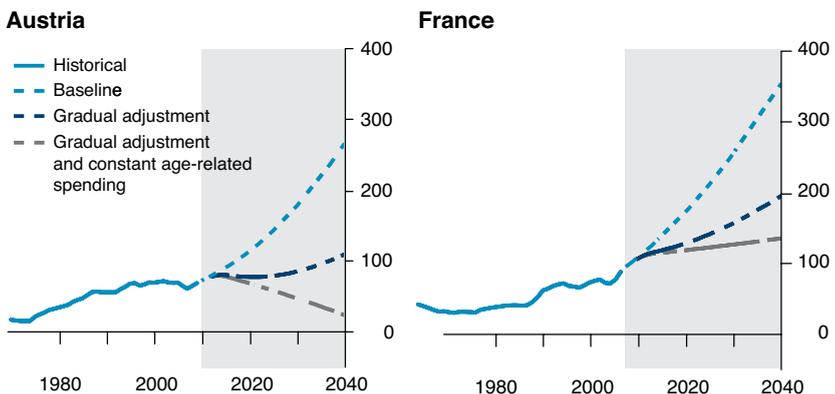
³ See P. Turner, *Fiscal Dominance and the Long-term Interest Rate*, LSE Financial Markets Group Special Paper, No. 199; and Committee on the Global Financial System, *Interactions of Sovereign Debt Management with Monetary Conditions and Financial Stability: Lessons and Implications for Central Banks*, CGFS Papers, No. 42.

Based on US experience, there is reason to expect interaction between debt management and monetary policy. For example, the maturity of government debt issuances has historically displayed a positive correlation with the level of the federal funds rate, indicating that the maturity structure of debt was shortened when short-term rates were low and lengthened when they were high. As you can see in Figure 6, more recently US Treasury issuance increased the supply of long-term sovereign debt at the same time as the Federal Reserve was actively buying at the long end of the yield curve to reduce duration.

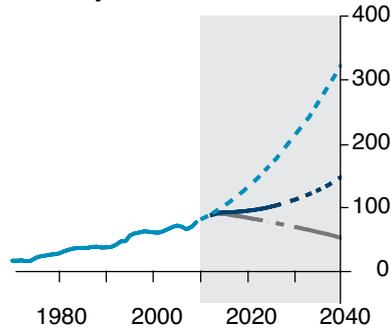
So, what is the future of central bank operating procedures? For one, central bank operating procedures of the future will be more complicated, with more tools and more options. In addition, the interaction of monetary policy and sovereign debt management will be a major challenge for those operating procedures in the coming years. Central banks in economies with high debt burdens and those affected by the actions taken in economies with high debt burdens will therefore need to keep abreast of the activities of debt managers when implementing monetary policy.

Figure 5

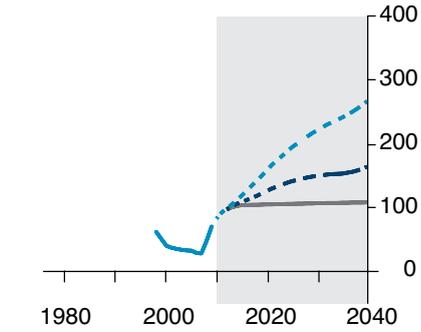
**GROSS PUBLIC DEBT PROJECTIONS
(as a percentage of GDP)**



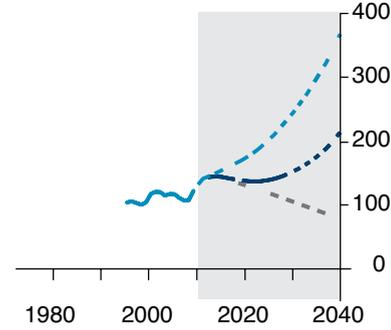
Germany



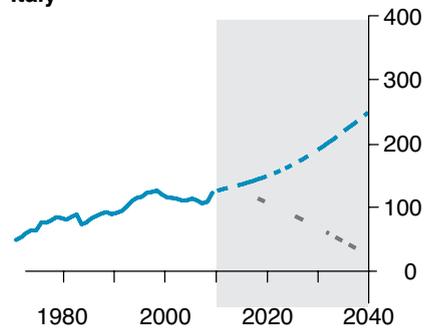
Ireland



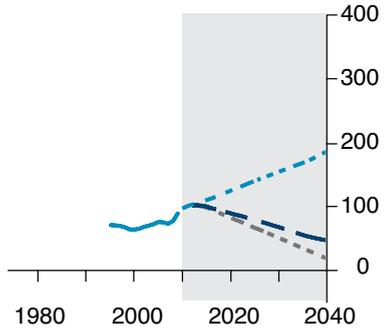
Greece



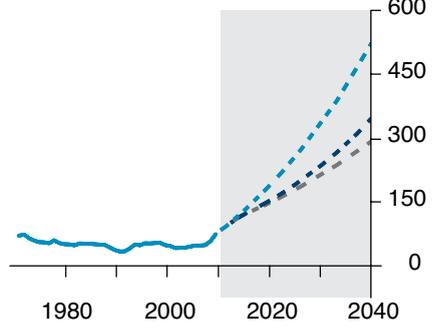
Italy



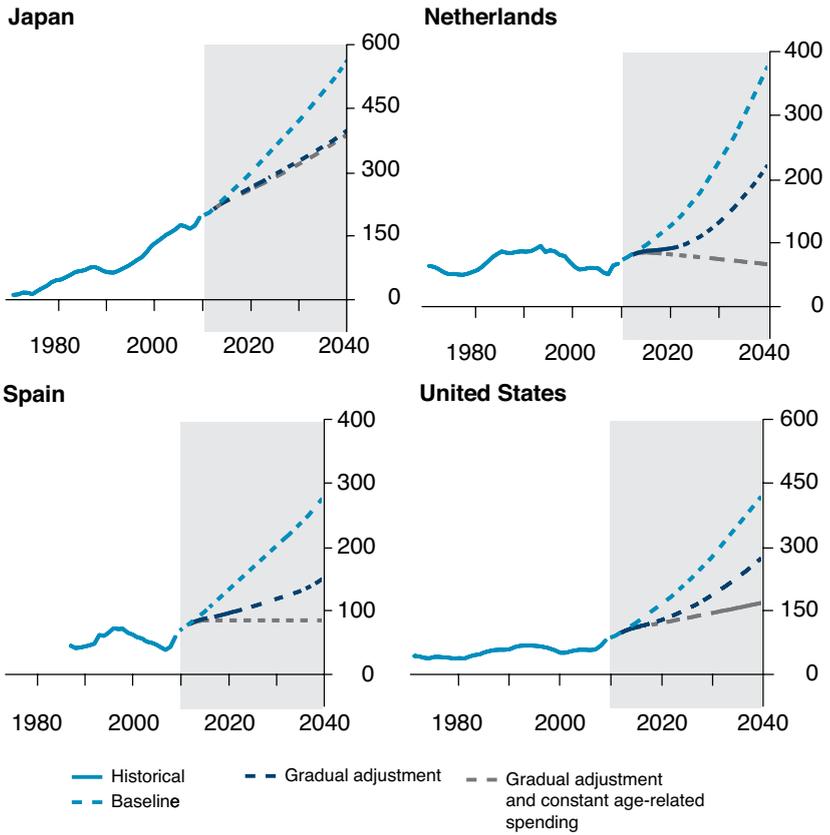
Portugal



United Kingdom



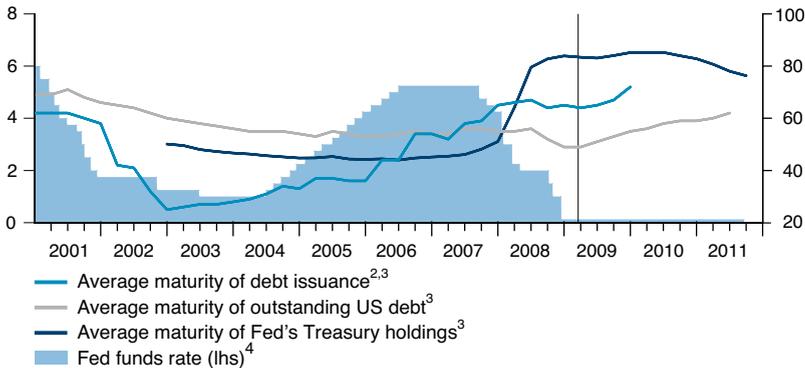
— Historical
 - - - Gradual adjustment
 - - - Gradual adjustment and constant age-related spending
- - - Baseline



Sources: European Commission; IMF, *World Economic Outlook*, April 2007; OECD; US Congressional Budget Office; authors' projections.

Figure 6

BALANCE SHEET POLICY OVERLAPS WITH SOVEREIGN DEBT MANAGEMENT¹



¹ The vertical line indicates the Federal Reserve's announcement of the USD 300 billion Treasury purchase programme.

² One-year moving average; data no longer released after February 2010.

³ In months.

⁴ Percentage.

Sources: US Treasury; Datastream; BIS calculations.

What Is the Future of Central Bank Cooperation?

I now turn to my last theme: the future of central bank cooperation. Rapid economic and financial globalisation has been a key characteristic of the world economy over the past two decades. Figure 7 shows the dramatic increase in international investment positions over the past 30 years, from well below 50% of world GDP in 1980 to more than 150% of world GDP today. At present, these positions sum to more than USD 100 trillion. Combined with the dramatic increase in goods and service trade, this has been a key driver of global growth and prosperity. We must continue the integration process in order to reap its benefits. A return to isolationism is not an option.

However, greater global integration brings important new challenges for everyone, including central banks. Economic and financial conditions in one country are increasingly influenced by global conditions. And those global conditions, in turn, while appearing independent of each individual country's actions, are inevitably influenced by collective behaviour. This means that central banks need to take better account of the impact of their actions on others, and on monetary conditions globally.

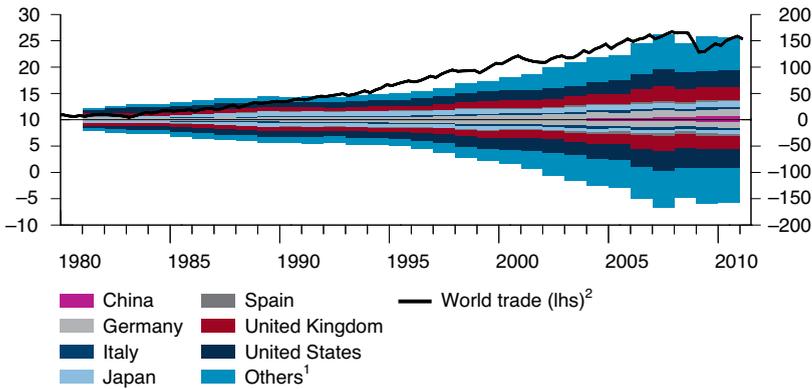
Again, there are lessons to be learned from the crisis. As already mentioned, accommodative global monetary conditions played a role in the run-up to the international financial crisis. Unusually low policy rates in many advanced economies were transmitted to the rest of the world in large part by the choice of a number of emerging market economies to resist exchange rate appreciation pressures.

Taken together, the result was an unusually loose global monetary policy stance despite record global growth. The resulting global asset price and credit boom set the stage for the subsequent global bust. More worrisome now, we cannot rule out the possibility that we are seeing the beginning of a similar phenomenon playing itself out again. As shown in Figure 8, the level and volatility of capital flows to emerging market economies have increased significantly. This is probably driven in part by record low interest rates and additional monetary easing via balance sheet policies in advanced economies, but it probably also just reflects the natural outcome of capital flowing towards economies with stronger growth prospects.

What are the options for global economic policy cooperation against this background? The EMES would certainly like to see the advanced economies recover more quickly, maintain low inflation, and move decisively to achieve sustainable public finances. The problem is that delivering this outcome, along with an accelerated normalisation of monetary policy, is unlikely to be feasible. As a result, EMES may have to consider a compromise. It seems reasonable for the EMES to expect public finances in the advanced economies to be brought onto a sustainable path, in order to reduce short-term financial instability and

Figure 7

**INTERNATIONAL INVESTMENT POSITIONS OF ALL COUNTRIES
(percentage of world GDP)**



¹ Sum of 114 economies.

² Average of exports and imports in goods and services.

Sources: IMF, *International Financial Statistics* and *World Economic Outlook*; OECD; BIS calculations.

medium-term inflation risks. To achieve this, monetary policy will have to do what it can to keep advanced economies from falling back into recession.

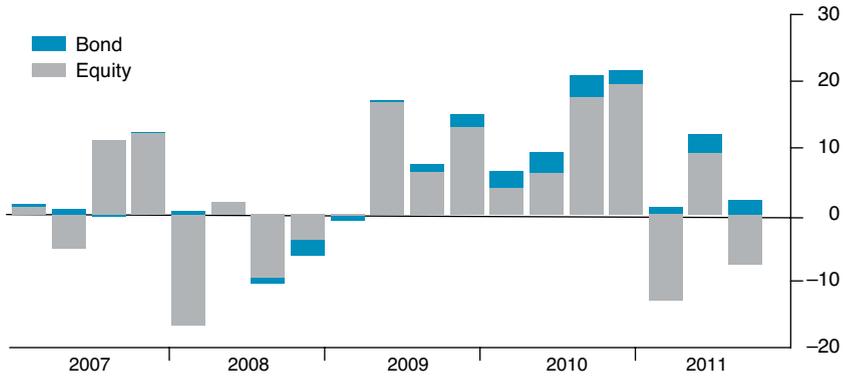
At the same time, the EMEs will need to consider what they themselves can do to foster more balanced and sustainable growth of the world economy. As I have argued elsewhere,⁵ one natural option would be greater exchange rate flexibility. This might be more palatable to each EME if it were agreed by many at once. One concern for any

⁵ S. G. Cecchetti, "Global Imbalances: Current Accounts and Financial Flows", remarks prepared for the Myron Scholes Global Markets Forum, University of Chicago, September 27, 2011.

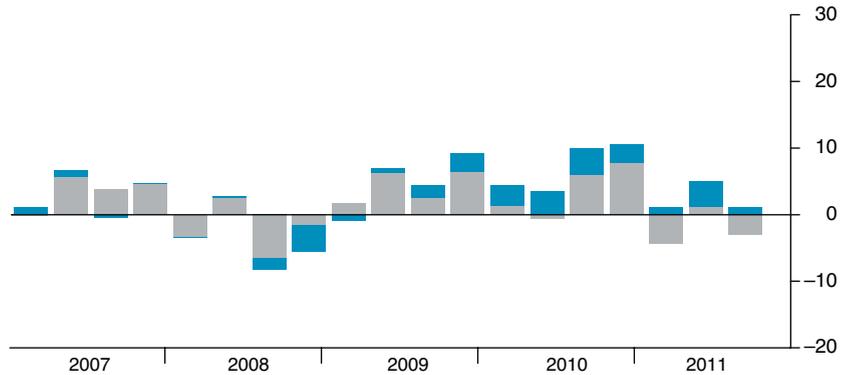
Figure 8

CAPITAL FLOWS INTO EMERGING MARKETS¹ (billions of USD)

Asia²



Latin America³



¹ Quarterly sums of weekly data up to September 7, 2011 across the economies listed.

² China, Chinese Taipei, Hong Kong SAR, India, Indonesia, Korea, Malaysia, the Philippines, Singapore and Thailand.

³ Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela.

Sources: EPFR.

individual EME pursuing such a policy is that any action, if taken in isolation, would disadvantage its export sector. And with an EME being small in the global economy, the go-it-alone option would not be seen as resolving the more general global imbalance. In other words, it is important that a collective understanding arises that overcomes the first mover disadvantage.

We are of course far away from forging such effective cooperative arrangements. But we are making progress. The frameworks for global economic policy cooperation now involve both advanced and emerging market economies. The G20 has replaced the G7 as the prime forum for global economic governance issues. And the Global Economy Meeting of BIS central bank governors has replaced the G10 group of governors as the prime forum of central bank cooperation.

In addition, regional efforts are also contributing to a strengthening of global central bank cooperation. A good illustration of how regional efforts can reinforce global cooperation is the success of SEACEN and CEMLA. And, today, at this inaugural joint SEACEN-CEMLA event, we are a part of what some have called the death of distance.

Clearly, emerging market economies share plenty of opportunities and policy challenges. It is important that such collaboration fosters stronger global cooperation. In other words, we must ensure that regional efforts complement global efforts and guard against actions that might substitute for effective global cooperation.

In conclusion, central bank cooperation has been critical to our success and more is needed as the global challenges multiply. In our globalised world, purely domestically oriented policy approaches are bound to be inadequate and potentially counterproductive. We are still a long way from the ideal of a truly global perspective in the conduct of monetary policy, but progress is being made and we are on the right track.

Central Bank Governance –The Enduring Core of Central Banking

Let me now come to the final and concluding part of my presentation, central bank governance. This is the enduring core of central banking and a theme that cuts across all of the themes I have discussed thus

far. And within governance, it is central bank independence which safeguards the monetary policy objectives from the temptation of politicians to use central banks for short-term political gain.

Let me return to some of the points I raised earlier in order to illustrate how they tie in with governance and monetary policy independence in particular.

I think of inflation targeting as the *quid pro quo* for central bank independence. At the same time, central bank independence itself is essential for inflation targeting frameworks to be credible. Independence will also be the key to effective implementation of a leaning-against-the-wind approach to monetary policy. While increasing policy interest rates in the context of inflationary booms is bound to meet with some political resistance, surely it is even harder to politically justify counter-cyclical policy measures when the near-term inflation outlook is benign. A high level of operational independence is essential to ensure sufficient room for manoeuvre to take action against risks in the financial system that build up slowly and often without overt near-term inflation pressures. To reduce political opportunism, well designed governance arrangements are needed to provide a clear allocation of responsibilities for financial stability and this must be buttressed with strong accountability provisions.

Safeguarding central bank independence is also crucial in an environment of high public debt burdens and concerns about fiscal sustainability. High public debt levels increase the risks of fiscal dominance, where central banks are pressured to monetise and inflate away the public debt.

Central bank independence is also important in the context of public debt management and monetary policy. While central banks must take debt management decisions into account in the implementation of monetary policy, they should not be put in the position of having to subjugate their price stability goals to the goals of the debt managers.

Finally, governance issues are at the heart of the dilemma of central banking in a more globalised world. Mandates for domestic monetary policymaking may appear to be in conflict with taking a global monetary

policy perspective. But, the reality is that global factors are playing an increasingly important role in determining domestic outcomes. Therefore, it is imperative that governance frameworks at least allow central banks to go beyond simply keeping their own house in order in the short run. Central banks need to be independent from domestic political pressures so that they can implement policies that take account of global spillovers and feedbacks from their individual monetary policy actions. This independence should, implicitly or explicitly, provide incentives for central banks to cooperate with other central banks and to seek global solutions to problems where international cooperation is required.

Concluding Remark

What I have tried to do this morning is to describe a set of very tough challenges facing central banks in the coming years. But, as we all focus on the future, it is important not to lose sight of the remarkable progress in the theory and practice of monetary policy. Looking back to the beginning of my professional career, I remember vividly the difficult and confusing inflation problems of the late 1970s and early 1980s. And with that confusion came widespread scepticism about the capacities of the world's monetary policymakers. But central banks in both advanced economies and the emerging world changed their operational frameworks and governance arrangements, made a number of tough choices and delivered price stability. It is our job to build on this success, modifying and extending inflation targeting frameworks, refining balance sheet tools, and enhancing global cooperation to further enhance the welfare of society.

Session 2

**Challenges and Issues
in the Postcrisis Environment**

José Manuel González-Páramo

The Conduct of Monetary Policy: Lessons from the Crisis and Challenges for the Coming Years

The SEACEN-CEMLA Conference offers the opportunity to review the experience of the European Central Bank (ECB) in conducting monetary policy over the past four years of financial crisis and to explore some of the main challenges that the ECB is likely to face in the future.

With the benefit of hindsight, the implementation of monetary policy during normal times seemed like a relatively straightforward affair. The Governing Council of the Eurosystem decided on the level of the key ECB interest rates, following a comprehensive assessment of the outlook for price stability and the associated risks, based on its economic and monetary analyses. The Executive Board of the ECB then organised the refinancing operations with eligible counterparts in order to implement the decision of the Governing Council. And it did so in a relatively *standard* fashion, employing a relatively small set of instruments in a rather predictable way.

Through its refinancing operations, the ECB aims at supplying the amount of liquidity that is necessary for a smoothly operating banking system, influencing short-term money market interest rates to align them with the policy stance signalled by the Governing Council. Through the money market yield curve, the monetary policy stance is transmitted to the pricing of financial instruments, and credit conditions more generally. These conditions in turn influence saving and investment decisions

Member of the ECB's Executive Board.

and monetary dynamics in the economy which finally also influence price developments in the euro area.

The operational framework is the initial link between the key ECB policy rates and money market rates. It supports the fulfillment of the ECB's mandate for price stability by letting monetary policy decisions feed through as quickly and precisely as possible to short-term money market rates.

Before discussing how the ECB reacted to the crisis it is necessary to explain the key differences in our monetary policy framework compared to the situation during *normal* times.

The ECB's Monetary Policy Framework during Normal and Turbulent Times

The assessment of the monetary policy stance is essential in order to be able to make the right interest rate decisions at the appropriate time. In the case of the ECB, this assessment has two elements: *i*) the formation of a view on the medium-term inflation outlook and, in particular, the risks to price stability, based on the interaction of supply and demand in various markets (economic analysis); and *ii*) the identification of the monetary impulses from current and past monetary policy decisions taking into account that these impulses are always transmitted to the economy with a certain lag (monetary analysis).

Needless to say that assessing the monetary policy stance in real time is always a challenging exercise. This is even more so in turbulent periods when there is a high degree of uncertainty surrounding current and future economic conditions and the functioning of the economy, including the transmission of monetary policy itself. The assessment of the appropriate monetary policy stance must therefore be broad-based and forward-looking, encompassing all the information relevant to the formation of a view on the risks to price stability over the medium term, including the potential impact on price developments of risks to the growth outlook.

Monetary policy decisions may only affect the developments of economic variables in the intended way if financial markets efficiently

transmit the initial monetary impulses along the yield curve. This requires that money markets, as well as broader financial markets, are functioning properly. If this condition is not met, it may become necessary for central banks to take action to ensure that the monetary policy transmission channel continues to work effectively, while at the same time continuing to assess the appropriateness of the monetary policy stance given changes in the economic environment. If the central bank did not act to prevent markets from becoming dysfunctional, its decisions over monetary policy rates would remain purely theoretical. Its decisions would have little or no impact on the real economy and the impact itself would become increasingly difficult to predict. This is precisely what led the ECB to implement various *unconventional measures* during the different stages of the financial crisis.

By construction, the monetary policy framework of the ECB (i.e. the decision on the appropriate level of interest rates and the management of inter-bank liquidity conditions needed to implement this decision) implies a separation between monetary policy decisions, on the one hand, and the implementation of the desired monetary policy stance through open market operations, on the other. A clear distinction therefore has to be maintained between interest rate decisions taken to preserve price stability (i.e. the determination of the monetary policy stance) and liquidity decisions taken in the course of implementing this stance.

This distinction is useful both under normal market conditions and in periods of financial turbulence, albeit for somewhat different reasons. In normal times, this so-called *separation principle* allows the central bank to fine-tune operational procedures in order to steer short-term interest rates very close to the main policy rate, without risking that those adjustments are regarded by observers as changes to the monetary policy stance. In exceptional circumstances, when severe distortions in financial markets emerge (reflected, for instance, in volatile and rising money market spreads), a more non-standard liquidity management by the central bank may be needed without jeopardising the central bank's main monetary policy objective. Against this background, the so-called *unconventional measures* implemented by the ECB during the crisis still

aim mainly at *implementing* the monetary policy stance by contributing to restoring the smooth distribution of liquidity in the money market. It is along those lines that the ECB's actions during the ongoing financial crisis must be understood.

It is the view of the ECB that the role of a central bank under any circumstances, and in crisis times in particular, is to inflexibly pursue its main objective, which in the ECB's case is price-stability, and to perform as a key anchor of stability. This implies very careful analyses of any sudden unexpected shocks before considering a change to its monetary policy stance. In the same vein, the ECB also must assess in real time the effectiveness of its actions in order to be able to decide at the right time whether or not to phase out the exceptional measures implemented to cope with exceptional events. This is the main reason why the ECB never pre-commits to any particular future policy stance or measure. Given the high level of uncertainty that exists in a crisis environment, any pre-commitment would risk persisting with a particular policy stance even when this stance is judged to no longer be appropriate by the ECB on the basis of its assessment of the most up to date information.

As regards the additional liquidity providing operations introduced by the ECB during the crisis, it is worth mentioning that these non-standard measures have been enacted at positive interest rates throughout the financial turmoil, even though the level of policy rates was close to a lower bound. In normal times, remunerating reserves allowed banks to have convenient buffers to face liquidity shocks at low costs. In crisis times, it proved to be insufficient. Nevertheless, the link between the policy rate and the remuneration rate on required reserves allowed us to conduct non-standard measures with positive (non zero) policy rates, and hence without affecting the costs of keeping high level of reserves at the ECB. In addition, the rate that the ECB pays on cash placed overnight on our deposit facility in effect sets a floor for short term money market rates. Throughout the crisis, the Eonia, the index for euro-area overnight money market interest rates, always fluctuated at levels above the deposit facility rate. Especially in periods with a very high degree of liquidity provision, Eonia tended to be quite close

to the deposit facility rate, but the difference remained always positive. Consequently, it was possible in the euro area to conduct non-standard measures at low, but positive short-term interest rates consistent with a reasonably functioning inter-bank money market.

The ECB's Monetary Policy During the Financial Crisis

The implementation of the ECB's monetary policy during the crisis can be divided into four phases in the period between August 9, 2007 and October 2011.¹

The first phase –which can be called the *market turmoil* phase– runs from 9 August 2007 –the day the French bank BNP Paribas announced that it suspended the redemption of shares in its funds that had invested in sub-prime mortgages– until September 15, 2008 –the day Lehman Brothers failed. The main challenges faced by the ECB during this period were to calibrate adequately the *right* amount and timing of frontloading of liquidity, to be able to continue steering the overnight interest rate without relying on *too* frequent interventions. This was done in an environment where the reserve averaging mechanism –which under normal market conditions ensures a stable interest rate path– was no longer sufficient to stabilize money market conditions. There were various reasons for this, including the hoarding of liquidity by banks, heightened aversion by banks to counterparty credit risk and increased cross border market segmentation. In addition to these factors, liquidity in the inter-bank market was also negatively affected both by the idiosyncratic liquidity uncertainty faced by individual banks and the aggregate liquidity uncertainty faced by the banking system as a whole. During this phase, the ECB also needed to determine the appropriate split in the provision of liquidity between short- and long-term refinancing operations subject to market participants' preferences.

The second phase –which can be labelled the *financial crisis* phase– covers the last quarter of 2008 and the first three quarters of 2009. This

¹ See, for example, Cassola, Durré and Holthausen (2010).

period was marked by a sharp contraction in world output and trade followed by a sluggish recovery. In fact, in the autumn and winter of 2008/2009, macroeconomic developments tracked very closely those observed at the start of the Great Depression of the 1930s. During this period the Eurosystem implemented *non-standard* monetary policy measures. Against the background of a sharp contraction in world output and trade and in reaction to increasingly dysfunctional money and financial markets, the ECB took bold steps to support the banking system which is at the core of the monetary policy transmission mechanism in the euro area. In terms of conventional monetary policy the ECB cut the minimum bid rate (MBR) in a sequence of steps from 4.25% to a record low of 1%. In terms of non-conventional measures the ECB announced that it would conduct all of its refinancing operations at a fixed rate (the MBR rate) with full allotment. At the same time the ECB decided to narrow the interest rate corridor of its standing facilities. The eligibility criteria for collateral was temporarily extended and the credit threshold for eligibility was lowered from A- to BBB- for marketable assets (except ABS) and non-marketable assets (with an additional haircut). In July 2009 the ECB also launched its first Covered Bond Purchase Programme (CBPP) with the intention of supporting a financial market segment that is particularly important for the longer-term funding of banks, and the financing of the real economy in the euro area, and which had become dysfunctional during the crisis. The ECB also strengthened its international coordination with other central banks through initiatives like re-activating US dollar liquidity providing operations. These type of operations had already been implemented in December 2007, following the establishment of bilateral currency swap agreements with the US Federal Reserve, but in 2008 they were offered under the fixed-rate full-allotment tender modality and with longer maturities.

These measures were implemented with a view to re-establishing market functioning so that the transmission of monetary policy would continue to work. The fear was that the malfunctioning of financial markets would lead to a deterioration of credit conditions and spill over to the real economy. Indeed, as recent ECB research shows, banks

with weaker core capital positions, and greater dependence on market funding and on non-interest sources of income, restricted their loan supply more strongly than other banks during the crisis (see Marqués and Gambacorta, 2011).

The third phase, which one can call the *phasing-out* phase, spanned the period between December 2009 and April 2010. During this phase the Eurosystem announced and initiated the gradual phasing-out from the *non-standard* policy measures. The ECB began this process by not renewing the one-year longer-term refinancing operations and other supplementary refinancing operations with maturities of three and six months, which reduced the liquidity surplus in the interbank market as the old operation began to expire. On the collateral side, eligibility requirements for ABSs were tightened (in December 2009) and the expiry date for the other temporary collateral measures, like the enlargement of the list of collateral assets and the reduction of the rating threshold, was initially set for the end of 2010. In addition, the supply of USD liquidity providing operations was discontinued and variable rate tender procedures were reintroduced for regular three months refinancing operations.

The intensification of the sovereign debt crisis, which had started in late 2009 and peaked for the first time in the spring of 2010, however, led to a re-assessment by the ECB of the appropriateness of embarking on the phasing-out process. This re-assessment marks the beginning of what one could call *the fourth phase*, or the *sovereign debt crisis* phase, in which we are still in. In early 2010, the sovereign bond spreads of several euro area countries, relative to German bonds, widened sharply. Even though these developments could be interpreted as the result of growing market concerns about the sustainability of public finances in Greece, clear signs of contagion to other euro area bond markets emerged towards the spring of 2010. This contagion affected Ireland and Portugal and, eventually, also Spain and Italy. Sovereign bond markets in an increasing number of euro area countries began to become dysfunctional. This weakened the transmission channel of monetary policy decisions to financial markets and broader financing

conditions in the economy. In order to address this problem, on May 10, 2010, the ECB launched the Securities Market Programme (SMP) under which it conducts outright purchases of euro area debt securities in the secondary market. Although the SMP remained inactive for a period of around four months between April and August 2011, following renewed tensions in euro area sovereign bond markets, the ECB announced on August 7, 2011 that it would resume purchases under this Programme. This took place after the announcement of new fiscal and structural policy measures by the Italian and Spanish governments.

A key distinguishing feature of asset purchases made under the SMP is that their liquidity impact has been sterilised through the conduct of weekly liquidity absorbing operations. Overall, there has been no net injection of central bank liquidity to the market as a consequence of these operations. These measures and their objectives are therefore fundamentally different from quantitative easing.

On October 6 the ECB announced a number of important additional non-standard measures. First, the Governing Council decided to conduct two new longer-term refinancing operations (LTROs), with maturities of 12 and 13 months, with the fixed-rate full-allotment tender procedures. The rate in both operations will be fixed at the average rate of the main refinancing operations over the life of these respective LTROs.

Second, main refinancing operations (MROs) will continue to be conducted with fixed-rate full-allotment tender procedures for as long as necessary, and at least until July 10, 2012. This procedure will also remain in use for the special-term refinancing operations with a maturity of one maintenance period, which will continue to be conducted for as long as needed, and at least until the end of the second quarter of 2012. The fixed rate in these special-term refinancing operations will be the same as the MRO rate prevailing at the time.

The six LTROs with maturities of three-months that will be conducted in the first half of 2012 will also be conducted with fixed-rate full-allotment tender procedures. The rates in these three-month operations will be fixed at the average rate of the MROs over the life of the respective LTRO.

Third, a new covered bond purchase programme (CBPP2) will be launched. Under the CBPP2 the Eurosystem will purchase, in both primary and secondary markets, covered bonds for a total value of EUR 40 billion over a period on one year beginning in November 2011. Further details on the modalities of CBPP2 will be announced after the Governing Council meeting of November 3, 2011.

Challenges Ahead

After four years of financial market turmoil, market conditions in many countries, including the euro area, remain exceptionally fragile. In response, the Eurosystem continues to provide support to euro area money markets in the various ways that have been described in this article. Such support should prove beneficial if three principles are followed: the support should be timely, targeted and temporary.

The ECB's interventions have been *timely* since the outbreak of the crisis, in the sense that on the day in which tensions from the US sub-prime mortgage market first spilled over to euro money markets, the ECB reacted quickly by temporarily offering unlimited amounts of liquidity to the banking sector, to avoid that liquidity tensions would spill over to other segments of the financial markets and to maintain control over short-term unsecured interest rates. More recently, the decision to phase out, or to introduce new non-standard measures, was also taken in accordance with what was judged to be appropriate under the market conditions that prevailed at the time.

The Eurosystem's response has also been *targeted*. Its response has, for example, focused on the banking sector, because this sector continues to play a major role in euro area financial markets, in particular for the transmission of monetary policy.

Finally, the ECB has repeatedly emphasized the *temporary* nature of its non-standard measures. Indeed, maintaining measures which have outlived their usefulness for too long could trigger other types of imbalances which could contribute to a new crisis in the future. For example, if support for the banking sector is provided for too long, banks' incentives to resume market-based funding activities may suffer and

markets may become increasingly dependent on central bank funding. Incentives for banks to monitor each other may also be lost, and this could result in further market inefficiencies. For these reasons, the Eurosystem tries to keep its interventions in financial markets at a low level that is still commensurate with its main objective. This is the so-called market principle.

The Eurosystem will eventually also have to face the challenge of timing the process of phasing out its non-standard policies appropriately. When the time comes, it is important that the Eurosystem's approach to monetary policy implementation is adapted in a *gradual* manner to normalizing market conditions. This will allow the central bank to better fine-tune its exit steps, and to ensure that the withdrawal of its support measures does not lead to renewed market tensions.

Once market conditions have improved to the point that the monetary policy transmission mechanism can function without additional central bank support, monetary policy implementation will be able to revert to a more conventional format. It is important to emphasize, however, that the decision to scale back the non-standard measures can be taken separately from any decisions on the level of interest rates that are set by the ECB.

In a gradual phasing-out, the ordering of different steps will need to be defined carefully, and in line with market developments. When the time comes, the Eurosystem will also need to define clearly what the appropriate design of the operational framework in a postcrisis world should be.

In the years before 2007, the framework performed very well, as it was able to achieve stable short-term money market rates close to the minimum bid rate of our main refinancing operations. This was achieved with a relatively rule-based implementation framework that did not require frequent ad-hoc interventions by the Eurosystem.

Would the same framework achieve equally good results in a postcrisis environment? This will depend on whether the financial landscape will change in ways that are important for the transmission of

monetary policy. A number of potential changes in the financial system may need to be taken into account.

In particular, as the annual ECB money market surveys show, wholesale interbank unsecured lending activity has declined during the financial crisis. It is possible, that unsecured lending will continue to account for a low share of overall lending in the interbank market, also in the years to come. This could affect monetary policy implementation in two ways. First, the steering of short-term unsecured rates constitutes the first step of the monetary policy transmission mechanism. This mechanism might be weakened, should unsecured interest rates become less relevant in determining overall access to credit. Second, it could lead to more volatility in this market and thus make the steering of interest rates less precise. One possible hypothetical response to such developments could be that central banks give greater prominence to secured and repo market rates.

Market participants may also retain a higher level of risk aversion than was the case before the crisis. This could lead to higher risk premia and continued market tiering. Lending rates in the money markets may also become more dispersed, depending on the credit quality of the bank that is borrowing. This would render the task of the central bank more complex.

Finally, the interaction between the new Basel III liquidity standards and monetary policy operations is likely to be significant and complex. Central banks' policies can influence the ability of banks to comply with the new liquidity risk regulation, because this regulation is likely to affect banks' recourse to the central bank's operational framework. For instance, in jurisdictions where the set of assets eligible for central bank operations is broader than the one qualifying for the fulfillment of the liquidity standards, one may witness an increased reliance on central bank refinancing using less liquid assets as collateral.

The question of whether central bank operational frameworks should support, or not, the fulfillment of banks regulatory liquidity standards is certainly not straightforward. The interaction between liquidity regulation and central bank operations will certainly be pervasive. Indeed,

central banks are by definition the only agents which are not affected by liquidity risk and which generally continue to be considered free from default-risk during a financial crisis. For these reasons, and as they fulfill a public mandate, central banks act as lenders of last resort in financial crises, providing liquidity to the banking system in their jurisdiction. Liquidity regulation is about ensuring that banks remain liquid also in a stress situation to avoid the negative externalities of liquidity hoarding and the fire sale of assets. Therefore, the lender of last resort function and liquidity regulations in some way share the same goal, although none of them can by themselves be considered sufficient to address the issue of financial instability caused by liquidity stress. They will also interact in the sense that banks will factor in both liquidity regulations and the last resort function in their optimization behaviour. The two must therefore not be treated in isolation.

The possible impact of the new liquidity standards on central bank operations and related relevant market segments (including those relevant for the transmission of monetary policy) is currently being analyzed carefully by the ECB.

Conclusion

To sum up, the financial crisis has brought many challenges for central banks in general, and for the ECB in particular. More specifically, the conduct of monetary policy had to take into account an increasingly large number of uncertainties while liquidity management by the central banks had to adjust flexibly to implement monetary policy decisions in an environment of distorted money market segments.

The flexibility of the Eurosystem's operational framework has proved invaluable during the crisis, and it will allow the Eurosystem to adjust, if necessary, to a possibly change in the financial landscape.

Of course, the recent sovereign debt crisis in some euro area countries poses additional challenges, also for the Eurosystem. In this regard, it is essential that prudent fiscal and economic policies are employed in all euro area countries. This will reduce bank's current over-reliance on central bank funding and facilitate the ECB's task of

delivering price stability. In this context, it is important to emphasize that the central bank must remain vigilant in order to ensure that its enhanced intermediation role during crisis times is not abused by fiscal authorities and market participants, as it remains essential that they strictly fulfill their own responsibilities. This approach means that market participants must also adopt a pro-active liquidity management policy and accept trading with each other again. It also implies that different public authorities, like regulators and governments, should also take the necessary measures to stabilise the financial system, so that it can play its part in the recovery of activity and employment.

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Capital Flows Management during the Post-2007 Global Financial Crisis: The Experiences of SEACEN Economies

Although global financial stability in late 2010 and early 2011 has, in general, improved when compared to the 2008-2009 period of the sub-prime global financial crisis, vulnerabilities remain high. The recent World Economic Outlook of the IMF (WEO, September 2011) underlines the two speed recovery processes taking place in the world economies. In advanced economies, especially those hit hardest by the crisis, firms, government and household sectors continue to be heavily indebted and are likely to spur relatively weak demand. Although the financial markets of these economies have, in most parts, returned to profitability, the overall frail balance sheets reflect the general subdued state of the local economy. For the rest of 2011, the fragile financial institutions and the unsustainable fiscal position of the euro economies will likely be the source of major vulnerability and risk for the world economy.

Research and Learning Contents (RLC) Department, The SEACEN Center. Views expressed are of the authors and do not necessarily represent those of The SEACEN Centre and their member central banks.

Furthermore, a recent update on the unemployment rate of the US has also added uncertainty in the overall outlook for global economic recovery. In June 2011, the US economy only added 18,000 additional jobs, despite the massive quantitative easing policies.

In August, no additional job was reported in the USA economy. This latest employment trend is the lowest in twelve months, exacerbating fears that the nascent recovery is stalling in the face of high petrol prices, knock-on effects from the Japanese tsunami, debt overhang in the US and the euro area and chronically weak consumer confidence. The unemployment rate in the USA ticked up to 9.1 % in second quarter of 2011. In August 2011, the Standard & Poor stripped the US economy of its triple-A credit rating.

Macroeconomic and financial outlook in the euro area have also been the source of concern for the world economy. In mid-July 2011, Ireland's bond was downgraded to junk status, triggering further concern that this will have some ramifications on Greece's debt problem, in particular, and other highly indebted euro area economies, in general. The downgrade in the economic rating of Italy in September have fueled further worries on the sustainability of the fiscal position in many neighboring economies particularly and the euro area in general. The only silver lining came from the relatively robust export performance of the USA and the euro area, riding on the strong demand coming from the emerging markets of Asia and Latin America. Furthermore, a recent economic report from Japan has also been a more positive one. The economic output in July 2011 is expected to return to the level prior to the March 2011 earthquake. Looking ahead, however, there are many remaining challenges facing the Japanese economy, which includes its weak labor market. In sharp contrast, the emerging economies, including those of the SEACEN region, are posting robust growth rates until the second half of 2011, meeting new challenges associated with strong demand, rapid credit and excess liquidity. Price pressures, including potential asset price bubbles, have been the common themes of policy challenges for the SEACEN economies.

Managing macro-financial risks, namely balancing growth, balance sheet soundness of the financial institutions, particularly the banking sector, and keeping a lid on inflationary pressures, have been and will likely be the primary policy challenges for these emerging markets in 2011 and 2012.

The first part of this study takes stock of recent trends and developments with regard to capital flows in the SEACEN economies. Taking advantage of the survey conducted by the Research and Learning Contents Department of The SEACEN Centre on selected SEACEN member economies, the next section elaborates in detail, the breakdowns and compositions of the flows. In particular, the focus of the analyses will be on key flows such as the international bank lending activities to the region.

The Report then summarizes and analyzes some of the basic push and pull factors of these flows (Section 3). The primary objective here is to understand some of the domestic and external drivers of these flows. Next, we look closely at some of the economic consequences of these capital flows and policy dilemma facing the SEACEN economies during the recent years. The discussion will then concentrate on the policy responses of the central banks/monetary authorities, in particular, to mitigate the negative consequences and maximize the benefits of capital flows. The Report ends with some forward looking analysis and brief concluding remarks.

Waves of Capital Inflows across the SEACEN Region

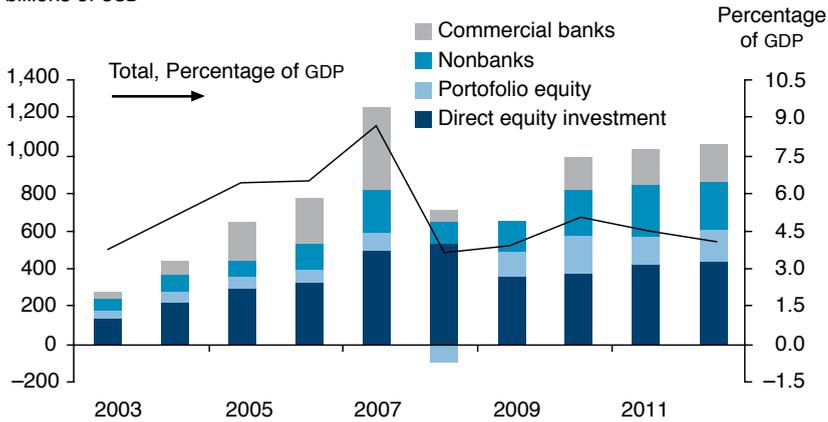
Global Setting

In 2010, private capital flows to emerging economies revived sharply and should continue to be relatively buoyant in 2011 and 2012, as ongoing robust growth and financial deepening encourage greater foreign investments (IIF, June 2011). Net private capital inflows to emerging economies are estimated to be USD 990 billion in 2010, some USD 350 billion higher than in 2009. The projected private flows in 2011 and 2012 are even higher at USD 1,041 billion and USD 1,056 billion respectively (Figure 1).

Figure 1

EMERGING MARKET PRIVATE CAPITAL INFLOWS

Emerging market private capital inflows, net
billions of USD



In terms of the composition of the flows, most of the increase in capital inflows in 2010 was due to higher bank and non-bank debt flows, although equity investments also picked up. In addition, the current account surplus of the emerging market also increased marginally in 2010. These sources of funds were balanced by strong emerging market external asset acquisitions, including a surge in reserve accumulation. Looking at the net private capital flows by region, Emerging Asia was the largest recipient of flows at around USD 499.5 billion in 2010 as compared to USD 264.9 billion for Latin America, USD 148.4 billion for Emerging Europe and USD 76.9 billion for Africa/Middle East. For 2011, it is forecasted that net private capital inflows into emerging markets of Asia will be around USD 484.1 billion, representing more than 45% of total private inflows to emerging markets (Table 1).

Table 1

**NET PRIVATE CAPITAL FLOWS TO EMERGING MARKETS –BY REGION
(billions of USD)**

	2009	2010	2011 ^a	2012 ^a
Total private inflows, net	643.7	989.8	1,041.1	1,056.4
Emerging Asia	377.5	499.5	484.1	446.0
Latin America	155.5	264.9	254.7	238.5
Emerging Europe	56.0	148.4	246.6	300.1
Africa/Middle East	54.6	76.9	55.7	71.8

^a IIF forecast.

Source: IIF (June 2011).

Updates of Trends for SEACEN Economies

Following the remarkable economic recovery across the region, fueled by abundant global liquidity associated with loose monetary policy and increased risk appetite in major advanced economies, most SEACEN economies had, in general, seen a substantial turnaround in capital flows, leading to positive overall net capital flows and favorable balance of payment positions (Table 2 and Figure 2). Between 2008 and 2009, the capital outflows totaled USD 221.3 billion but the trend was reversed in 2010, with registered capital inflows of USD 36.6 billion.² Equally important to note is that the net capital inflows remained positive consistently throughout all four quarters of 2010.

The first half of 2011 saw another round of very volatile period of capital movements in and out the Asian region. In the first quarter of 2011, the region saw a small net capital outflow of USD 7 billion. This was due to USD 3.4 billion and USD 8.7 billion outflows in portfolio and other investments respectively. However, by the second quarter of 2011, there was a large surge in capital flows into the SEACEN economies. In that

² Excludes China, Papua New Guinea and Myanmar.

quarter alone, net capital inflows registered USD 43 billion, larger than the totaled annual inflows in 2010. The net capital inflows were overwhelmingly dominated by portfolio inflows since 2009. This shows that while net portfolio flows were relatively volatile, investors continue to channel their funds into this region in search of higher yields.

However, the trend was different for foreign direct investments as both inward and outward direct investments rebounded in 2010. While the region remained an attractive venue for foreign direct investments, there is increasing trend of domestic companies continuing to tap profitable opportunities outside their respective economies.

Given the diversities of the economies, the composition and the size of these net flows differ from one SEACEN economy to another. In general, those at the early stages of their economic development and are endowed with abundant natural resources experienced massive injection of direct investments. In the case of Mongolia for instance, there was a dramatic increase in FDI inflows, amounting to USD 1,874 billion in 2010, an almost 140% rise from the level in 2009. The investments

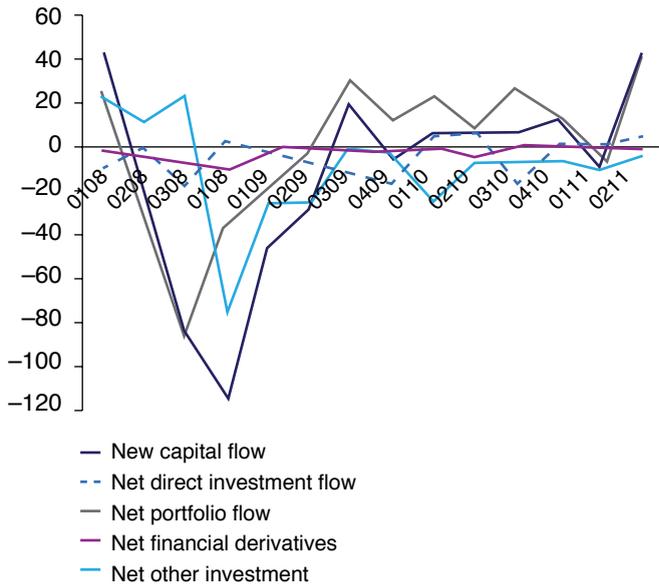
Table 2

SELECTED INDICATORS AT A GLANCE OF SELECTED SEACEN ECONOMIES¹
(billions of USD)

	2008	2009	2010	2010				2011	
				Q1	Q2	Q3	Q4	Q1	Q2
New capital flow	-169.7	-51.6	36.6	7.3	7.9	7.7	13.7	-7.0	43.0
Net direct investment flow	-19.1	-30.2	-0.2	5.5	7.6	-15.5	2.2	2.8	5.5
Net portfolio flow	-122.2	25.7	75.5	23.8	9.1	28.2	15.4	-3.4	39.9
Net financial derivatives	-16.0	1.4	-0.5	1.0	-2.9	0.5	0.8	2.2	0.2
Net other investment	-12.4	-48.5	-39.2	-23.1	-5.9	-5.4	-4.6	-6.7	-2.6

¹ Data excludes China, Papua New Guinea and Myanmar.

Figure 2

CAPITAL FLOWS IN SELECTED SEACEN ECONOMIES
 (billions of USD)


Source: Survey conducted by The SEACEN Centre and the CEIC Database.

in the mining sector, particularly for copper, gold and coal, accounted for a major share of the investments. A similar phenomenon was reported in Myanmar where in 2008/2009, direct investments to the power, oil and gas and mining sectors attracted a little less than USD 1 billion. However, with rapid liberalization of various key sectors of the economy, viz., agriculture, mining and manufacturing sector, foreign direct investments to the economy soared to well above USD 19 billion in 2010/2011. A significant jump in FDI was also reported in Cambodia, where in 2010 net direct investments increased by around 48%, primarily in the agricultural and textile sectors.

The role of FDI is expected to grow in Indonesia, Malaysia and Thailand. In 2010, Indonesia saw FDI increase by more than 250% from that reported in 2009. A mild increase in FDI was reported for Thailand in 2010 in comparison to the previous year, albeit still lower than the level in 2008. Malaysia welcomed almost RM 28 billion in FDI in 2010 as compared to a mere RM 5 billion in 2009. However, not all SEACEN economies continued to attract increasing FDI. For example, Sri Lanka and the Philippines have seen FDI numbers moderate slightly in 2010 as compared to a year earlier. It is also important to highlight here that a number of SEACEN economies, such as Malaysia, Korea, Chinese Taipei and Singapore, have long been reporting outward direct investments to take advantage of the higher returns beyond the border.

In the case of Chinese Taipei, a significant rise in direct investments abroad in 2010 contributed to the sudden turnaround –from net inflows of around USD 2.6 billion and USD 5.9 billion in the first and second quarter of 2010, respectively, to net outflows of USD 2.5 billion and USD 6.6 billion in the third and fourth quarter of 2010, respectively. In most of the SEACEN economies with more developed capital markets, portfolio inflows dominated and accounted for the largest share of net capital inflows into the domestic markets (Figure 2). A fair share of these portfolio investments into the SEACEN economies targeted sovereign bonds and securities. This is evidently demonstrated in the case of Indonesia, Philippines and Thailand. In Indonesia, foreign holdings of government bonds increased by USD 3 billion during the period of February to April 2011, boosting foreigners' share of outstanding bonds to 33%. In comparison, the respective share in the US was 42% while in Korea it was 15% of total outstanding bonds. Equity investments in local firms and banks were also strong, reflecting the return of risk appetites of global investors and abundant liquidity, driven partly by the expansionary monetary policies of advanced economies.

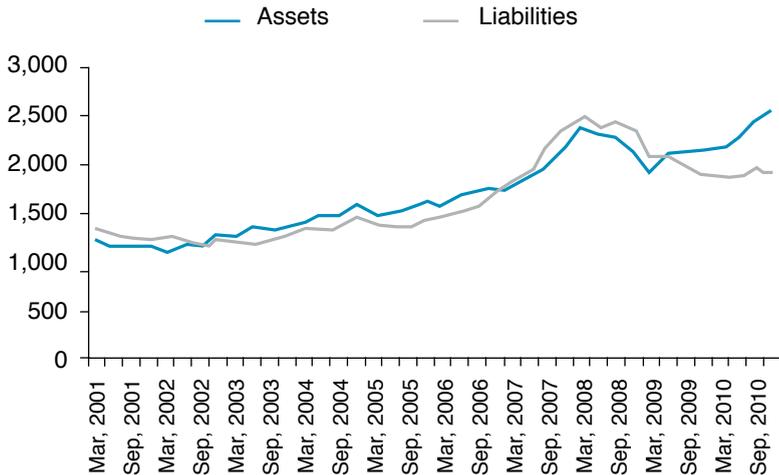
International Bank Claims

Other investments have also increased, particularly bank lending of the international banks. From an international bank lending perspective,

the region has turned from debtor to net creditor throughout most of the subprime crisis period. As shown in Figure 3, the net claims of the BIS reporting banks in the SEACEN region during the period of March 2007 to March 2009, showed a significant outflow of crossborder funds from the SEACEN economies. However, the trend reversed during the second quarter of 2009. This gap has widened significantly compared to before the crisis, following improvements in global liquidity resulting in significant inflows into the SEACEN economies. This is reflected by a more than two-fold increase in the net inflows of USD 266 billion during the last quarter of 2009 compared to USD 608 billion in the same period in 2010.

Figure 3

**EXTERNAL POSITION OF REPORTING BIS BANKS VIS-À-VIS ALL SECTORS
(March 2001-December 2010, in billions of USD)**



Source: BIS Statistics.

Total foreign claims of international banks, in general, sustained strong momentum in some of the emerging markets of the Asian region up to the fourth quarter of 2008. However, during the immediate weeks and months following the Lehman Brothers debacle, six of the eight SEACEN economies were engulfed in a sharp and sudden reversal of international bank claims. The unforeseen and sheer size of these reversals in international bank flows out of these six SEACEN economies saw the annual growth rate of these flows hitting negative territory by end- 2008, with the exception of Thailand and Sri Lanka.² More recent data reveals that inflows of international bank lending have again returned strongly to these economies in 2010³ (Table 3)⁴ and the first quarter of 2011(Figure 3).

While international bank lending retreated substantially in almost all of the eight SEACEN economies in the immediate aftermath of the Lehman Brothers debacle, the key component of these international bank lending in the form of local claims of foreign banks operating within the domain of the SEACEN economies, remained strong and was less adversely affected by the external shock originating from the USA. As depicted in Figure 4, while the local claims booked by offices of foreign banks retreated in Indonesia, Korea, Philippines and Thailand, such was not the case for Malaysia and Chinese Taipei in 2008.

In retrospect, when we look back at previous crises such as the Asian financial crisis and the 2001-2002 collapse of the IT bubble in the US, almost all of the eight SEACEN economies experienced sharp reversals in total international bank flows during these two separate crisis periods similar to the one that recently occurred at end-2008. However, remarkably, as noted above local claims of these international banks continue to register positive average annual growth rates

² Though Thailand only experienced a very marginal increase in international bank inflows.

³ With the exception of Korea

⁴ The only exception is Sri Lanka, which suggests that the adverse effects of the global financial crisis impacted the economy with a lag.

Table 3

**ANNUAL AVERAGE GROWTH OF INTERNATIONAL BANK CLAIMS
IN SELECTED SEACEN ECONOMIES**

<i>Economies</i>	<i>1983- 1988</i>	<i>1989- 1996</i>	<i>1997- 2000</i>	<i>2001- 2002</i>	<i>2003- 2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>
Indonesia	8.59	16.11	-6.27	-13.33	15.16	-0.85	14.01	31.8
Korea	-0.97	20.09	-7.49	6.85	34.50	-19.98	16.76	-3.0
Malaysia	0.84	16.12	15.88	1.39	16.69	-5.91	2.75	19.9
Philippines	-2.98	6.08	10.30	-2.00	8.44	-20.35	10.89	26.1
Singapore	18.80	10.00	-10.40	-0.90	15.30	-4.20	5.30	25.7
Sri Lanka	7.09	3.62	21.87	2.34	22.93	14.24	-4.82	18.5
Chinese Taipei	18.94	10.13	1.43	11.05	23.33	-15.60	21.09	46.6
Thailand	8.45	30.65	-13.35	-9.19	9.32	1.61	19.38	30.6

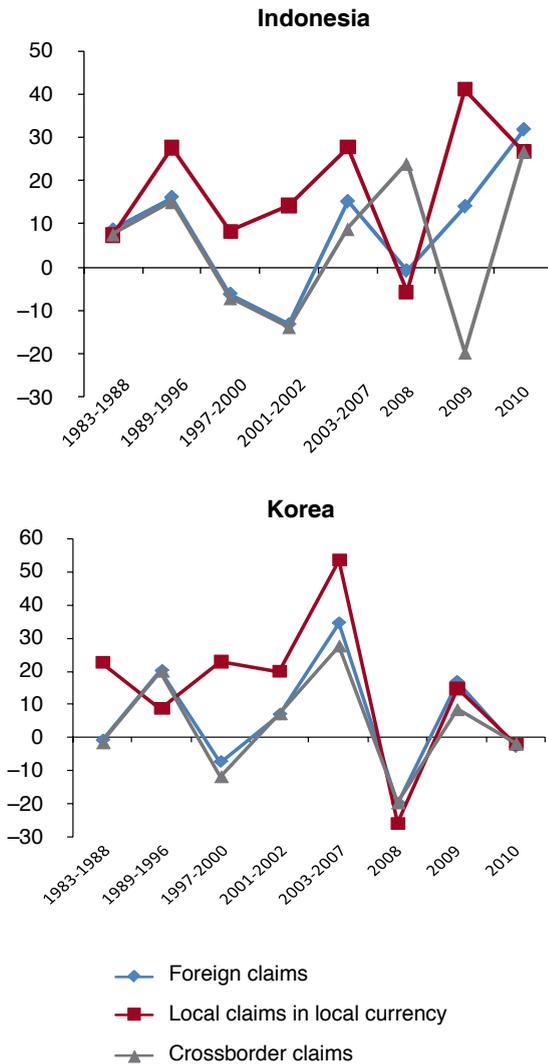
Source: BIS Consolidated Banking Statistics for the Basic Data and RLC Department of SEACEN.

during the past crisis episodes, namely the 1997 East Asian crisis and the 2001-2002 IT bubble. In addition, more recent data in the post-global financial crisis (GFC) period indicates that the local claims of foreign banks in 2010 recovered immediately and grew positively in eight economies, with the lesser exception of Korea (Figure 4). The almost similar experiences across a broad sample of SEACEN economies highlights the indisputable evidence of the growing inter-connectedness of global banks to the SEACEN economies in which these same global banks act as a conduit of financial shock transmission from the global financial markets to the local economy.⁵

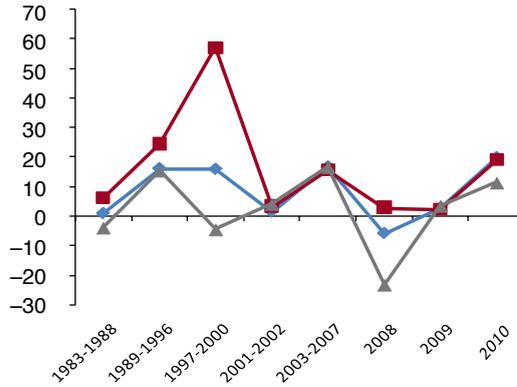
⁵ For a more comprehensive study, refer to recent study conducted at The SEACEN Centre (Pontines and Siregar, 2011).

Figure 4

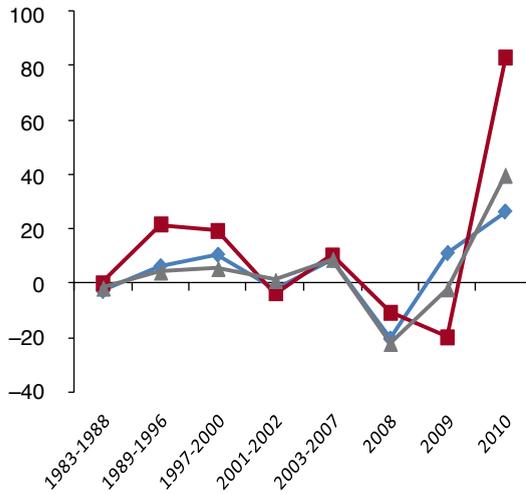
AVERAGE ANNUAL GROWTH RATE OF FOREIGN AND LOCAL BANK CLAIMS IN MAJOR EAST AND SOUTHEAST ASIAN ECONOMIES



Malaysia

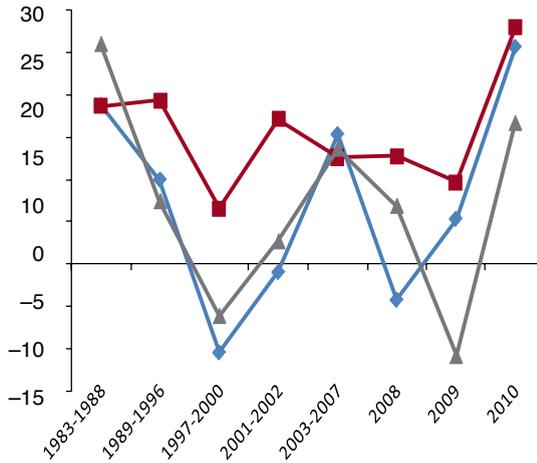


Philippines

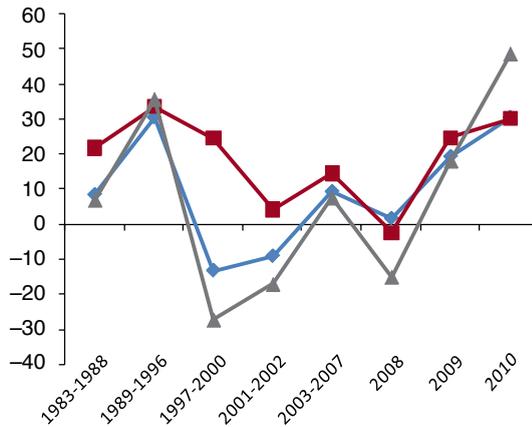


- ◆ Foreign claims
- Local claims in local currency
- ▲ Crossborder claims

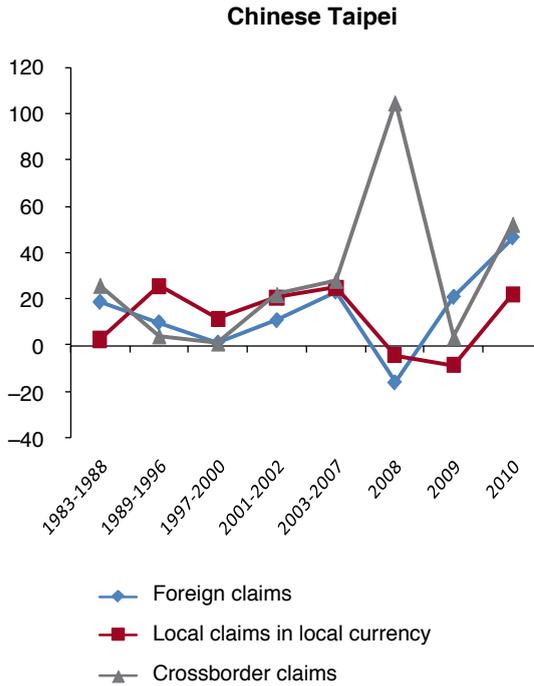
Singapore



Thailand



- ◆ Foreign claims
- Local claims in local currency
- ▲ Crossborder claims

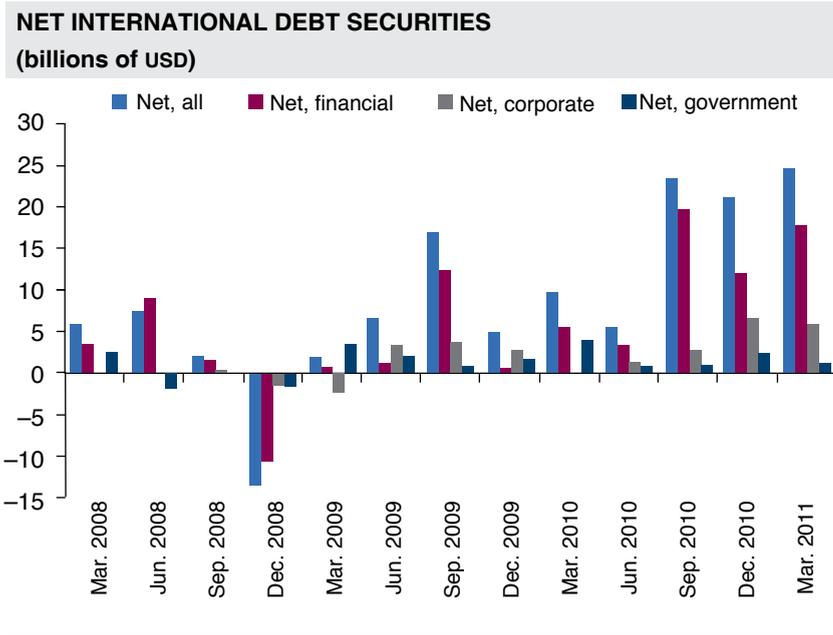


Source: BIS Consolidated Banking Statistics and RLC Department of SEACEN.

International Debt Securities

In the case of net international debt securities issuance, net borrowings which started to pick up from June 2009 onwards, experienced a drop in June 2010 before recovering in September 2010 (Figure 5). With the exception of the government sector, net international debt securities issuance was negative in June 2010. However, from the third quarter of 2010 to the first quarter of 2011, all sectors registered net positive issuance. Among the sectors, financial institutions registered as the highest issuers of net international debt securities, which accounted for around 80% of the total international debt issuance of the SEACEN economies in March 2011 (Figure 6). This signifies the importance of financial institutions' role in raising funds in the SEACEN economies.

Figure 5

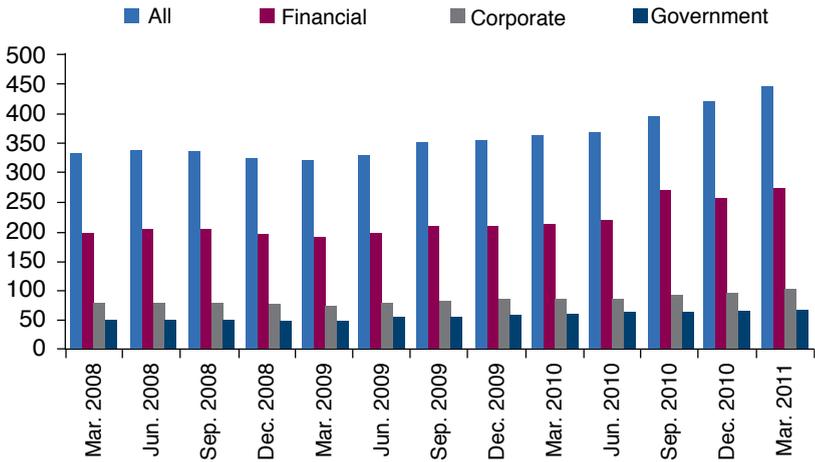


Source: BIS Database.

Data is for China, Vietnam, Singapore, Chinese Taipei, Indonesia, Malaysia, Philippines, Korea, Sri Lanka and Thailand.

Net international debts issued in all sectors were mostly volatile for the individual economies. During March 2011, the net international debt issued by the financial sector registered the largest volume in China, Korea and Singapore. In addition, these three economies led in the net international financial debt issuances by the corporate sector during the same period. On the other hand, the net issuance by the corporate sector registered net negative flows in Indonesia. In absolute terms, from March 2008 to March 2011, Korea recorded the largest amount outstanding in terms of net international debt issued by the corporate sector, followed by Singapore and China. These three economies contributed to around 73% of the total amount understanding in the selected

Figure 6

INTERNATIONAL DEBT SECURITIES: OUTSTANDING
(billions of USD)


Source: BIS Database.

Data is for China, Vietnam, Singapore, Chinese Taipei, Indonesia, Malaysia, Philippines, Korea, Sri Lanka and Thailand.

SEACEN economies.⁶ For the financial sector, Korea, China, Singapore as expected, dominated the amount outstanding of financial debt securities (77% of the total outstanding). On the other hand, the amount outstanding in the government sector was largest in the Philippines, Indonesia and Korea (79% of total outstanding).

Stock Market

According to the World Federal of Exchanges (2011), during the first six months of 2011, volumes were relatively stable (experiencing a mild

⁶ The selected SEACEN economies are China, Korea, Indonesia, Malaysia, Philippines, Singapore, Sri Lanka, Thailand, Chinese Taipei and Vietnam.

contraction of -0.8%) with large regional contrasts with the America's trading decreasing by 9.3% whereas Asia-Pacific's volumes rose by 13.8% . From June 2010 to June 2011, four SEACEN exchanges were among the top ten performers worldwide (Table 4). In terms of percentage change in the same period, the Colombo Stock Exchange (48.0%), Indonesia Stock Exchange (33.5%), Stock Exchange of Thailand (30.6%) and Philippines Stock Exchange (27.6%) were among the top ten performing stock markets worldwide. The increase reflects the large portfolio flows into the SEACEN region.

Table 4

TOP 10 PERFORMING BROAD MARKET INDEXES

<i>Exchange</i>	<i>Broad index name</i>	<i>Percentage change end-June 2011/End-June 2010 (in local currency)</i>
Tehran Stock Exchange	TEDPIX	68.4
Buenos Aires Stock Exchange	Composite Index	49.3
Colombo Stock Exchange	CSE All Share	48.0
Lima Stock Exchange	Indice General BVL (IGBVL)	35.0
Indonesia Stock Exchange	JSX Composite Index	33.5
NASDAQ QMS US	Composite Index	31.5
Stock Exchange of Thailand	SET Index	30.6
NYSE Euronext US	Composite Index	28.6
MICEX	MICEX Index	27.3
Philippine Stock Exchange	PSE Index (PSEI)	27.2

Source: World Federation of Exchanges (2011).

Push and Pull Determinant Factors of the Capital Surges

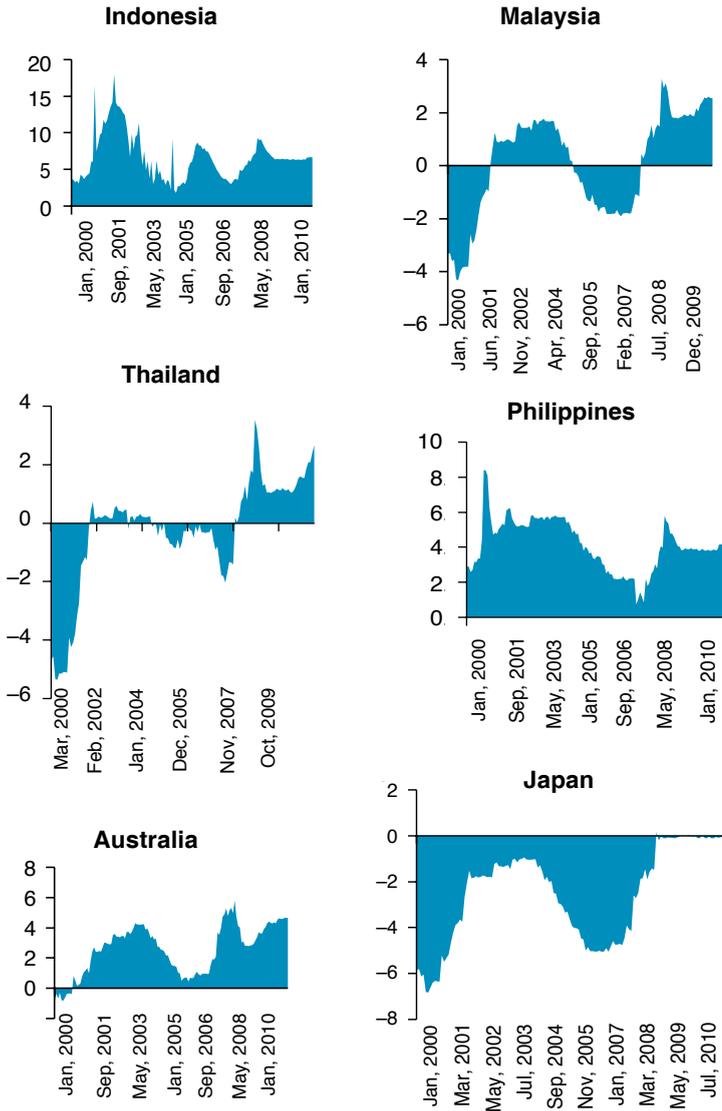
The developing Asian economies continue to be the backbone of global economic growth. While the advanced economies only grew by about 3% in 2010, developing Asia region reported a growth rate of slightly less than 10% (*World Economic Outlook*, June 2011). More importantly, the emerging markets of Asia are expected to remain as the growth engine of the world economy in 2011 and 2012, albeit with more moderate forecasted growth rates. As mentioned earlier, global liquidity, supported by quantitative easing measures in the advanced economies and the returns in investor risk appetites following signs of normalization in the global financial markets in the first half of 2011, have added stimulus to the surge of capital inflows into the SEACEN economies.

Several push (external) and pull (domestic) factors have contributed to the resurgence of capital flows into the SEACEN economies in 2010 and early 2011. The pull factors being higher relative interest yields (Figure 7), booming housing markets and expectation of appreciating domestic currencies, combined with rising sovereign debt risks in many advanced economies and sound domestic macroeconomic fundamentals together with strong growth prospects. In Malaysia, Korea, Chinese Taipei and Thailand, the interest rate differentials since 2008 have, on average, been below 3%; in the Philippines and Australia around 4%; while in Hong Kong it is less than 1%. Amid excessive domestic liquidity and strong private credit growth, both Indonesia and Sri Lanka had to keep the interest rate differential relatively high, at close to 7-8 percent.

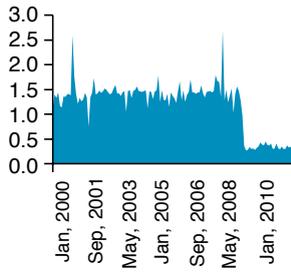
One can argue that the global financial crisis was a temporary watershed event for some Asian economies. The large positive growth rate differential that selected Asian economies experienced with respect to the case of the USA for the entirety of the early and mid-2000s in which economies to name a few such as the Philippines (2003Q2), Singapore (2004Q2), Hong Kong, China (2004Q2), Malaysia (2002Q4) and Thailand (2003Q1) enjoyed positive quarterly growth differentials against the USA of between 5% and 12%, disappeared around the time of the crisis (Figure 8). However, along with the resurgence in capital flows

Figure 7

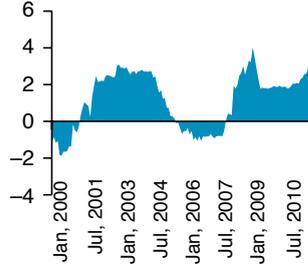
POLICY RATE DIFFERENTIALS



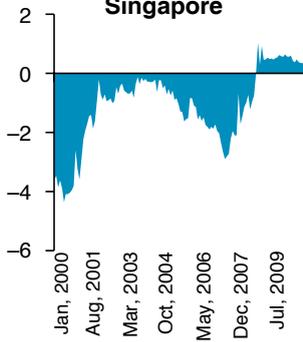
Hong Kong



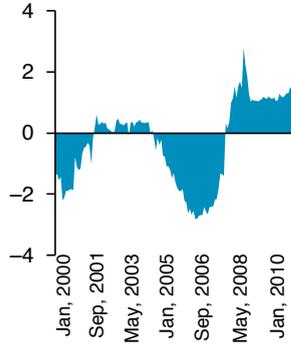
Korea



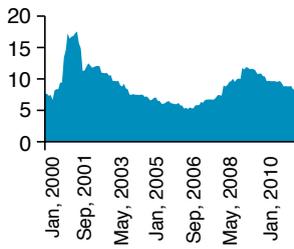
Singapore



Chinese Taipei



Sri Lanka



Source: SEG Database and CEIC Database.

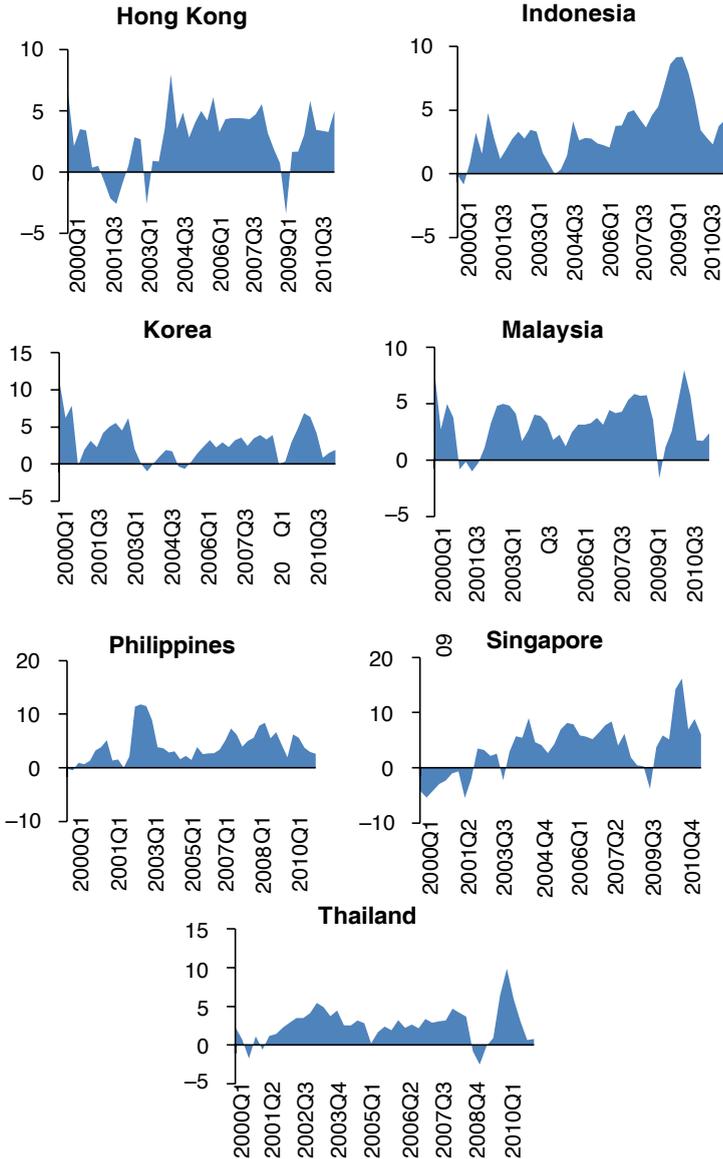
in the region and amidst the lingering economic weaknesses in the developed economies in the aftermath of the recent crisis, these wide positive growth differentials had immediately returned to the region. Indeed, this large positive growth differential with respect to the USA never disappeared even during the period of the crisis in the case of Indonesia, while large positive quarterly growth differentials in the order of between 3% to as high as 14% in the case of Singapore (2010Q1) have undoubtedly contributed to the resurgence in large capital inflows to the region during the post sub-prime crisis.

A number of emerging SEACEN economies such as Indonesia, the Philippines, Mongolia and Sri Lanka have seen their sovereign rating upgraded, reflecting the overall sound macroeconomic positions which include fiscal strength. In Korea, the prospects of the Korean Stock Market joining the MSCI Developed Market Index and of the Korean Bond Market joining the World Government Bond Index (WGBI) contributed to the strong surge of portfolio capital. Closer economic integration with mainland China was also a crucial factor, especially for Hong Kong SAR and Chinese Taipei (with the expectation of the cross strait Economic Framework Agreement, ECFA).

The return of more stable political and economic environment has also been a strong impetus for massive capital inflows. In Nepal and Sri Lanka for instance, the much-improved internal security situations spurred strong investment drives in the domestic economies. In Cambodia, the commitments and efforts to pursue open market policies, to further reform the economy, and to improve the legal and institutional infrastructure contributed immensely to making the economy an attractive investment location for both regional and global investors. In more developed economies such as Chinese Taipei, a number of tax incentives, such as reductions in the tax bequest rate and profit-seeking enterprise income tax rate, and full insurance of deposits, successfully attracted foreign deposits of local residents back into the domestic economy.

Figure 8

QUARTERLY GROWTH RATE DIFFERENTIALS



Domestic and External Drivers of International Bank Lending

In a recent study conducted at The SEACEN Centre for a number of SEACEN economies (Cambodia, Chinese Taipei, Indonesia, Korea, Malaysia, the Philippines, Myanmar and Sri Lanka), Pontines and Siregar (2011) highlight several fundamental determinant factors of bank lending from three major advanced economies, namely Japan, the UK and the US to these SEACEN economies. To start with, the real GDP growth rates of the home (Japan, UK and USA) and host (or SEACEN) economies have, indeed, been an important factor. In particular, the procyclicality of these flows, i.e., better (worse) economic conditions in the host (home) economies leads to greater (less) bank flows into some of these SEACEN economies.

The short-term uncertainties and volatilities of the global economies, captured by the widely used S&P 100 Volatility Index (VIXT) of the Chicago Board Options Exchange, are found to have an adverse impact on the flows of international bank lending into the SEACEN region. This finding strongly suggests that global/external factors have a role to play in determining bank flows from developed to emerging economies. The balance of the evidence also appears to suggest that greater exposure on the part of major foreign banks in these selected SEACEN economies fulfill a stabilizing or crisis-mitigating role of international bank lending during periods of financial distress such as that of the 1997 East Asian financial crisis. However, the study also finds the opposite case for the recent subprime crisis. In short, for capital flows in general, we find the impacts and roles of international bank lending in the local economy can be a two-edged sword. In good times, the flows contribute positively to the financing of economic activities. However, during times of uncertainties in the local and external markets, international bank lending can amplify the severity of volatilities and hence the vulnerability risks of the local economy.

Economic Consequences of Flows and Policy Dilemma Facing the Local Authorities

While inflows have largely been attracted by returns and strong prospects of the region, they have, nonetheless, benefited the economies on many fronts. Given the liquid financial markets, a higher rate of investment has, in general, been recorded across all SEACEN economies. As mentioned earlier, for some economies such as Australia and Mongolia in particular, these funding enabled them to place substantial investments in the highly profitable mining and energy sectors. In general, the liquidity in the market has also led to a deepening of the financial markets in both capital and banking sectors, and a lowering of the cost of capital domestically in many SEACEN economies.

While there are benefits to be reaped from capital inflows, excessive, persistent and potentially unsustainable inflows could also lead to disruptions in the domestic economies. The old fear associated with *hot money* flows has amplified in recent months. The surge of capital inflows, dominated by the portfolio flows, has accelerated growth in credit, appreciated local currencies and potentially fuelled asset-price bubbles in securities and housing markets. As a caution, these inflows have long been known to have the potential to abruptly stop and reverse, triggering a sudden drying up of domestic liquidity. The pressures on the local currencies and domestic price levels have made the management of macroeconomic policies in general and monetary policy in particular more challenging. The next two sub-sections will further elaborate the consequences of these inflows for local currencies and asset prices.

Domestic Inflation

While deflation was the source of distress among policy makers in early 2009, the rising price level has taken over the driver seat in regional policy debates, especially since the first half of 2010, with very few exceptions such as Japan (Figure 9). The latest trends reported in May 2011 capture the consistent messages of enduring inflationary pressures across the SEACEN economies. Indonesia and China

experienced relatively higher rates of annualized inflation of around 5.5% in May 2011. Notable inflation rates were also reported in Korea, Singapore and Thailand, in the range of 4%-4.5% by May 2011.

Exchange Rate and Exchange Market Pressure Index

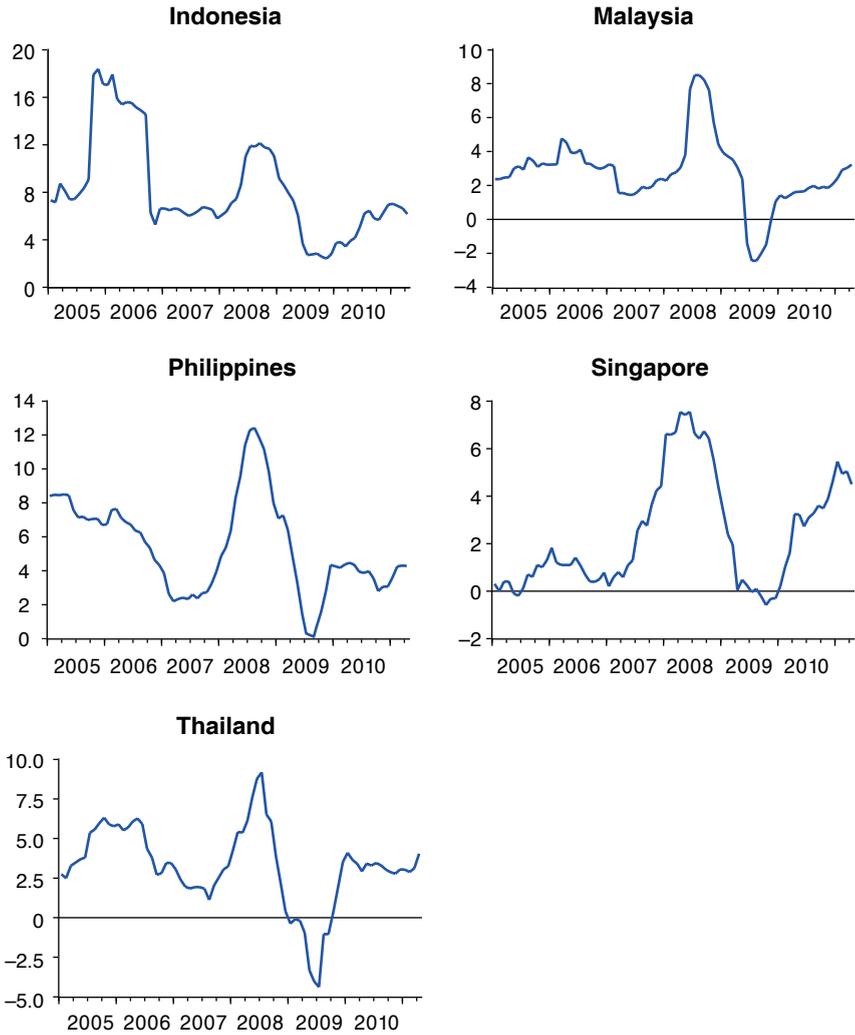
With the rise in volatility and the size of capital flows affecting economies in the region, especially since the collapse of the Lehman Brothers, the foreign exchange market is one of the key markets to be monitored closely. For most parts of 2010, appreciation trends, albeit in varying degrees, were reported for all SEACEN currencies. In many cases, this has in turn, attracted more speculative inflows in anticipation of further exchange rate appreciations, resulting in a vicious cycle of speculative inflows and exchange rate appreciations. Some notable appreciating currencies against the US dollar are illustrated in Figure 10. The Australian dollar has appreciated against the US dollar by around 24.5% by July 2011. Other SEACEN currencies that have strengthened against the US dollar by more than 10% include those of Korea, Singapore and Chinese Taipei. The yen has also appreciated by around 8% in July 2011 from last year, despite the earthquake disaster in early 2011. The rapid appreciation and increased volatility of the yen in recent months prompted the authorities to intervene in foreign exchange markets in September 2010, the first time since 2004.

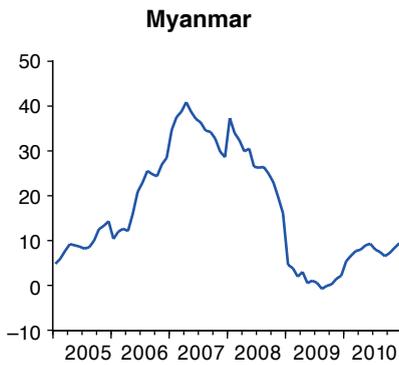
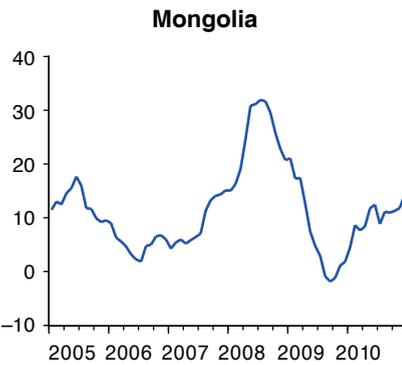
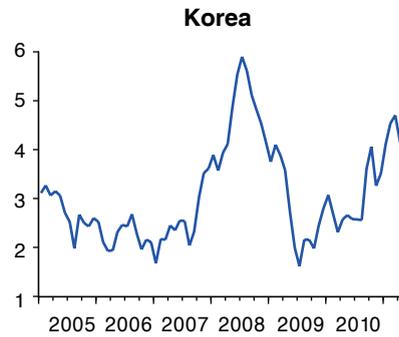
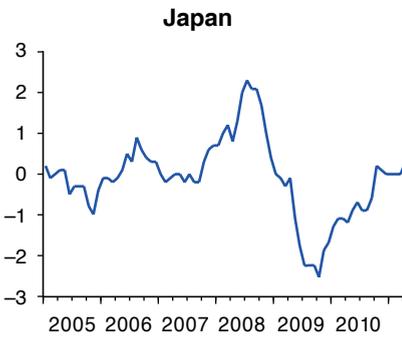
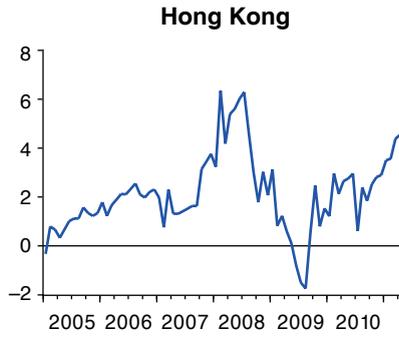
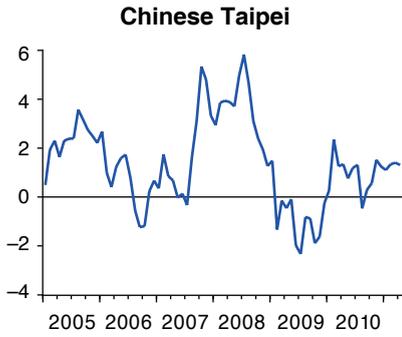
With the combination of appreciating nominal exchange rate and relatively higher domestic inflationary pressure, the Indonesian rupiah, Malaysian ringgit, and Thailand baht for instance, experienced the strongest real effective exchange rate appreciations, with their currencies close to 10-year highs in August 2010. The Singapore dollar also appreciated to reach a 10-year high in real effective terms in August 2010, following the authorities' move in April 2010 to tighten policy stance by re-centering the policy band upwards and returning to a modest, gradual appreciation of the nominal effective exchange rate.

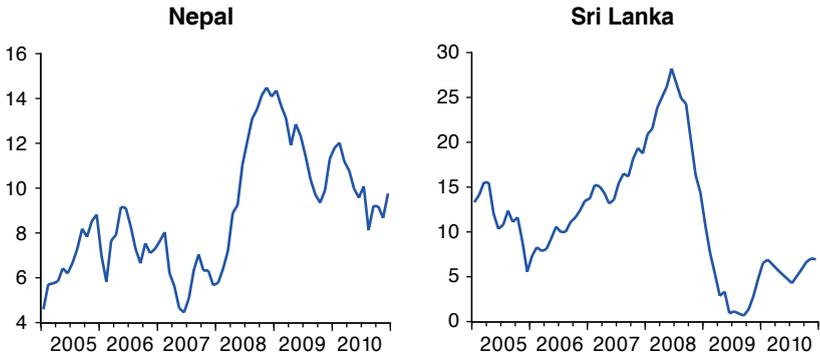
To better assess the pressures in the foreign exchange market, in a recent SEG (SEACEN Expert Group) Report produced by The SEACEN

Figure 9

ANNUALIZED MONTHLY INFLATION



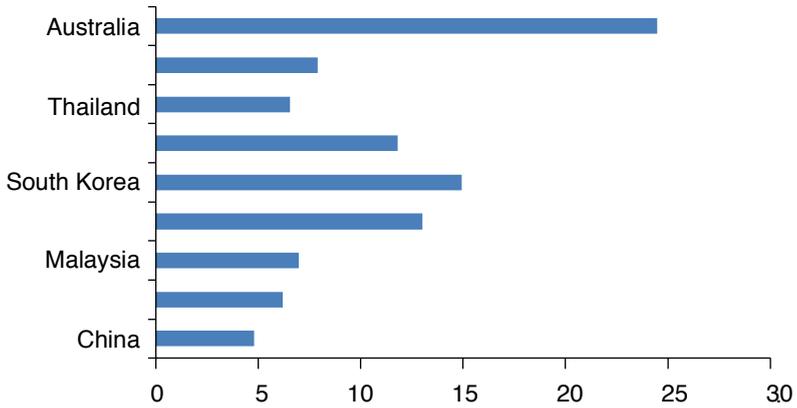




Source: CEIC Database.

Figure 10

SELECTED ANNUALIZED EXCHANGE RATE APPRECIATION AGAINST THE US DOLLAR IN JULY 2011



Source: The Economist.

Center, a biannual analysis of the exchange market pressure (EMP) index of the SEG currencies was included. However, before we report the update of the EMP index, it is worthwhile to briefly revisit the underlying concept of the EMP (Siregar, Mohd, Hussain and Pontines, 2010). To manage exchange rate volatility, central banks have often resorted to multiple policy instruments. Buying and selling foreign exchange reserves and policy rate adjustments are arguably two of the most frequently adopted instruments. Any excess demand for foreign exchange, responsible for the volatility, can be fulfilled through non-mutually exclusive conduits. If the market or currency pressure is successful, there is a sharp depreciation of the domestic currency. However, at other times, the market pressure can be repelled or warded off through raising interest rates and/or running down their foreign exchange reserves. Combining the information on exchange rate fluctuation, interest rate adjustment and reserve movement, should convey a more informative and reasonable measure of the extent of pressures on a currency, or referred to as the index of exchange market pressure (EMP). We construct the EMP index by applying the Kaminsky, Lizondo, and Reinhart (KLR, 1998) smoothing method to weigh the three components of the index of speculative pressure. The exchange market pressure index of KLR is expressed as follows:

$$EMP_t = \frac{\Delta e_t}{e_t} - \frac{\sigma_e}{\sigma_R} \left(\frac{\Delta R_t}{R_t} \right) + \frac{\sigma_e}{\sigma_i} (\Delta i).$$

Where EMP_t is the exchange rate market pressure index for the economy in period t ; R_t the units of economy's currency per US dollars in period t ; R_t is gross foreign reserves of the economy in period t ; i_t is the nominal interest rate for the economy in period t ; σ_e is the standard deviation of the rate of change in the exchange rate $\Delta e_t/e_t$; σ_R is the standard deviation of the rate of change in reserves $\Delta R_t/R_t$, and σ_i is the standard deviation of the rate of change in the nominal interest rate Δi . By construction, a positive (negative) EMP index implies a selling (buying) pressure in the foreign exchange market.

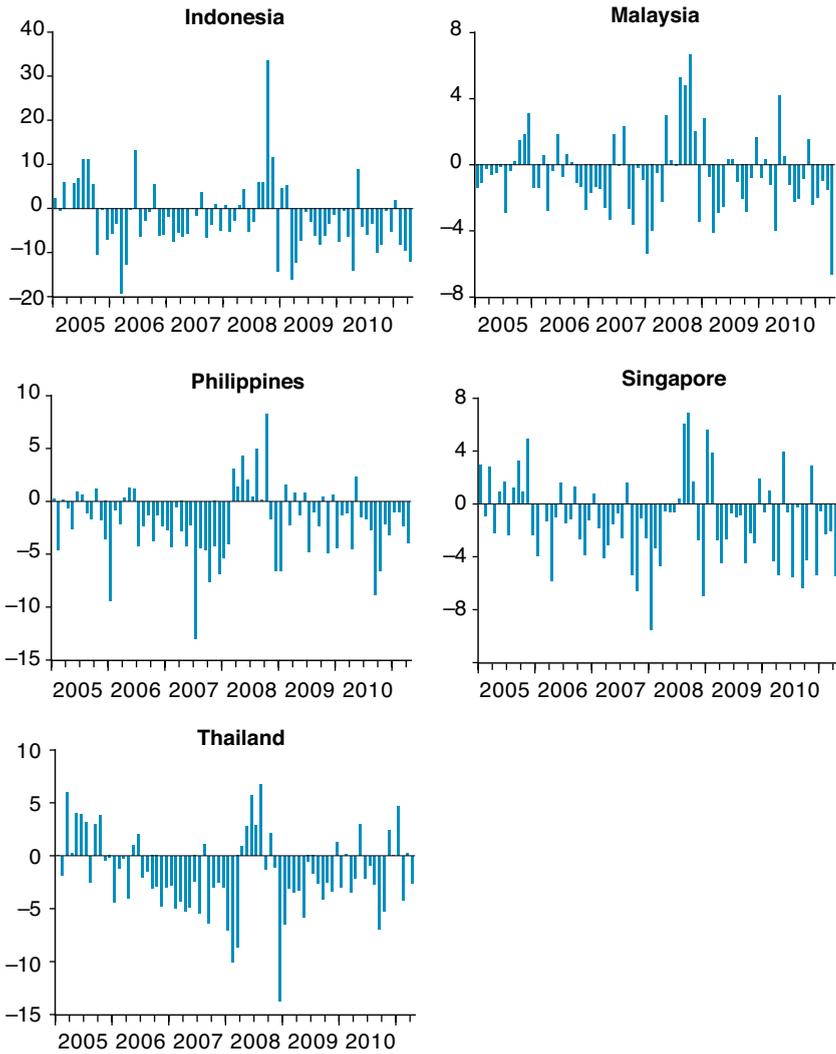
From our first report of the exchange market pressure index released in May 2010, a number of observations are worth revisiting. To start with, prior to 2008, the Malaysian ringgit, Thai baht, Korean won, NT dollar, Singapore dollar and Japanese yen, have actually been under buying pressure for a couple of years or more. In contrast, the EMP for Hong Kong, Sri Lanka and Australia have, in general, been at positive levels prior to 2008, suggesting that these economies' currencies had experienced selling pressures. Nonetheless, it is clear that the year 2008 marked the period of heavy selling pressures for all the currencies of the economies included in our study. Furthermore, the EMP series, on average, peaked around the final quarter of 2008 –around the period of the Lehman Brothers' collapse. In 2009, the EMP levels have turned negative, suggesting that the SEACEN currencies have largely been under buying pressure. The buying/appreciation pressure continued during most parts of 2010 and early 2011, as shown by the persistence of negative EMP levels for the SEACEN economies (Figure 11).

Stock Exchange Index

The rapid rise of the stock market indices of SEACEN economies, particularly in Indonesia, Thailand and Sri Lanka has also induced anxiety over the return of an asset price bubble in the region (Figure 12). By December 2010, the annualized returns of the Indonesian and Thai stock exchanges reached a staggering rate of around 50%. Bursa Malaysia (formerly known as Kuala Lumpur Stock Exchange, KLSE) has also reported strong market capitalization with an annual return of close to 27%. The return of political stability has brought about market confidence in the local capital market of Sri Lanka and this can be seen from the steep rising trend in the stock exchange index. From the collapse of Lehman Brothers to early 2011, the index of Sri Lanka's stock exchange experienced a 400% increase. Strong gains have also been reported in the stock exchanges of Korea and Chinese Taipei. In contrast, there have been much more subdued profit-taking activities in the stock exchanges of developed economies such as US, UK and Japan. The UK FTSE 100 only increased, in US dollar terms, by a mere 0.5% in

Figure 11

EXCHANGE MARKET PRESSURE INDEX



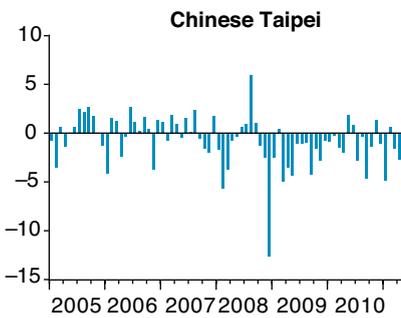
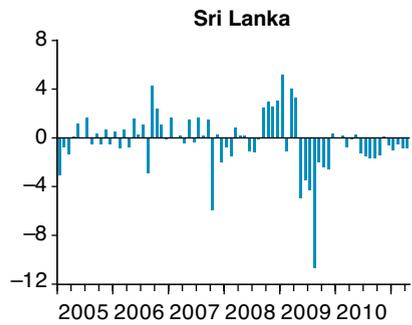
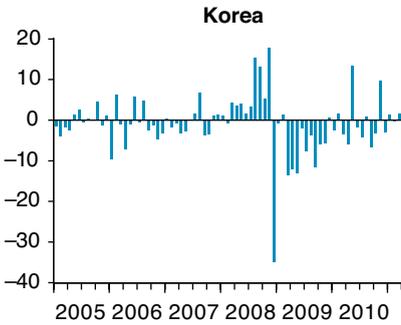
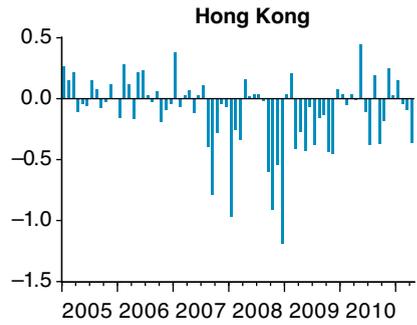
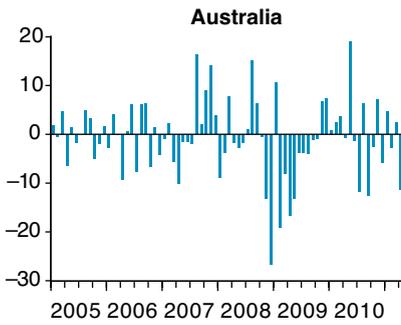
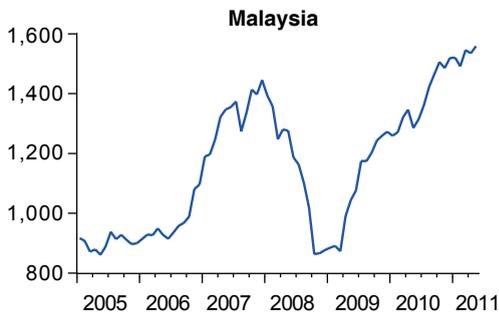
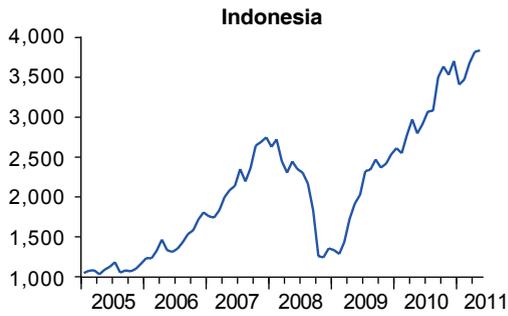
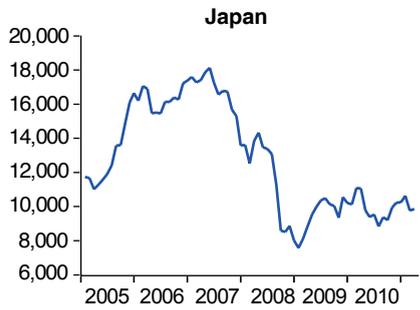
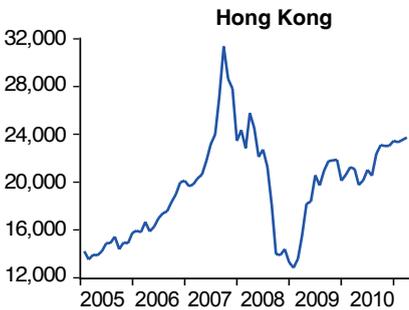
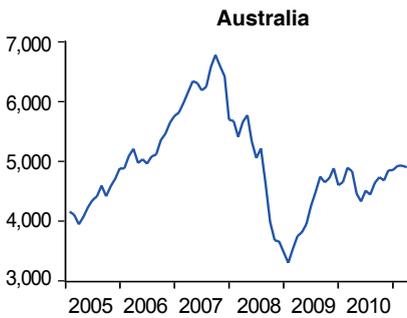
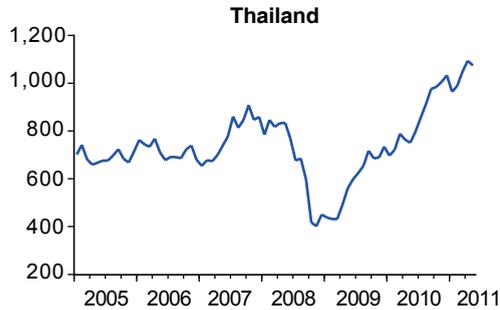
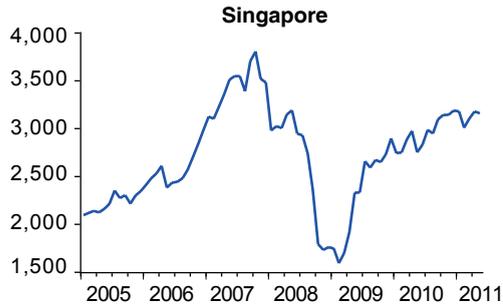
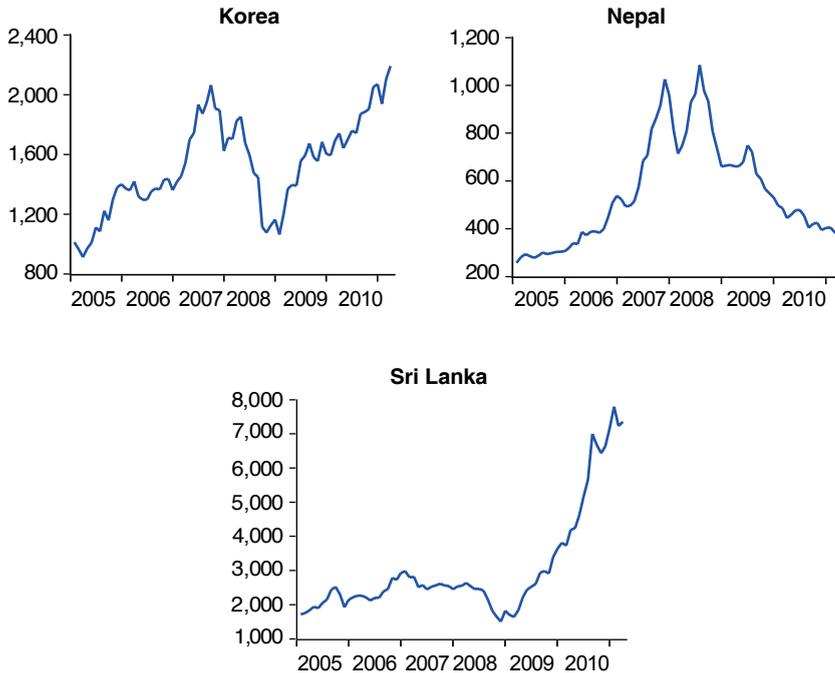


Figure 12

MONTHLY REGIONAL STOCK MARKET INDEX (January 2005-May 2011)







Source: CEIC Database.

December 2010 from the level in December 2009. Nepal was the only economy that reported a bearish trend in the domestic stock exchange market. In general, the strong returns in the stock markets continued to be felt during the first quarter of 2011, albeit at a relatively modest rate.

House Prices

Another frequently debated concern associated with the strong capital inflows is the potential bubble in housing price. In its recent survey of 50 economies around the globe, Knight Frank (2011) found that the global house price increased by only less than 2% annually in the first quarter of 2011. In regional terms, the same survey has found that Asia experienced the most drastic rise in housing prices during the first three months

of 2011 (Table 5). The region recorded an 8.4% growth over the last twelve months, down from the 17.8% reported a year earlier. The weakest region was North America which saw a fall of 0.4% in value, largely driven by a contraction of almost 5% in the US housing price index.

The same survey by Knight Frank (2011) has also listed Hong Kong as the economy experiencing the highest annual rate of price increase during the first quarter of 2011. House prices in Hong Kong have risen by more than 24% within a year. Government officials including Chief Executive Donald Tsang had warned of an asset bubble in Hong Kong, where home prices have surged more than 70% since the beginning of 2009 (Balfour, 2011). In the most recent measures to curb prices, announced in 10 June 2011, the government raised up-front payments for properties costing more than HKD 6 million (USD \$770,000) and required borrowers, whose income is primarily from outside Hong Kong,

Table 5

KNIGHT FRANK HOUSING PRICE INDEX

<i>Rank</i>	<i>Economies</i>	<i>Region</i>	<i>Annual % change</i>	<i>Six-monthly % change</i>	<i>Latest data if not Q1 2011</i>
1	Hong Kong	Asia Pacific	24.2	14.1	
2	India	Asia Pacific	21.9	14.1	Q4 2010
3	Chinese Taipei	Asia Pacific	14.3	6.9	
4	Israel	Middle East	12.1	5.3	
5	Singapore	Asia Pacific	10.5	3.5	
6	France	Europe	8.7	1.7	
7	Poland	Europe	8.5	0.2	
8	China ¹	Asia Pacific	8.4	6.8	
9	Norway	Europe	8.2	4.9	
10	Malaysia	Asia Pacific	6.4	1.4	
11	Belgium	Europe	5.9	5.6	Q4 2010
12	Switzerland	Europe	5.1	3.3	

<i>Rank</i>	<i>Economies</i>	<i>Region</i>	<i>Annual % change</i>	<i>Six-monthly % change</i>	<i>Latest data if not Q1 2011</i>
13	Latvia	Europe	5.1	-2.1	
14	Indonesia	Asia Pacific	4.5	2.9	
15	Slovenia	Europe	4.3	6.1	
16	Denmark	Europe	4.1	-1.1	Q4 2010
17	Canada	North America	4.1	0.7	
18	Finland	Europe	3.9	1.3	
19	Turkey	Europe	3.5	2.8	
20	Iceland	Europe	3.4	2.1	
21	Colombia	South America	3.3	5.4	Q4 2010
22	Jersey	Europe	2.9	-1.6	
23	Luxembourg	Europe	2.6	0.1	Q4 2010
24	Austria	Europe	2.4	2.9	
25	Estonia	Europe	2.1	2.7	
26	Sweden	Europe	2.1	-0.7	
27	Germany	Europe	1.3	-0.1	
28	Australia	Asia Pacific	-0.2	-0.9	
29	United Kingdom	Europe	-0.2	-0.5	
30	South Africa	Africa	-1.3	1.9	
31	Italy	Europe	-1.4	-0.6	Q4 2010
32	Portugal	Europe	-1.8	1.0	
33	New Zealand	Asia Pacific	-1.8	0.6	
34	Malta	Europe	-2.0	-2.5	Q4 2010
35	Slovak Republic	Europe	-2.5	-3.1	
36	The Netherlands	Europe	-2.6	-2.2	
37	Hungary	Europe	-2.7	-4.5	Q4 2010
38	Czech Republic	Europe	-3.5	-2.6	
39	Japan	Asia Pacific	-3.6	-1.6	Q3 2010
40	Croatia	Europe	-3.8	-1.0	Q4 2010

<i>Rank</i>	<i>Economies</i>	<i>Region</i>	<i>Annual % change</i>	<i>Six-monthly % change</i>	<i>Latest data if not Q1 2011</i>
41	Lithuania	Europe	-4.0		Q4 2010
42	Spain	Europe	-4.6		
43	United States	North America	-4.9		
44	Bulgaria	Europe	-5.6		
45	Greece	Europe	-5.7		
46	Ukraine	Europe	-7.5		Q3 2010
47	Dubai, UAE	Middle East	-8.2		
48	Ireland	Europe	-11.9		
49	Russia	Europe	-13.9		
50	Cyprus ²	Europe	n.a.		Q4 2010

¹ Based on Beijing and Shanghai.

² The Cyprus index started in Q4 2009, no annual data available.

Source: Knight Frank (2011).

to deposit an extra 10% when they buy properties unless they can demonstrate a *close connection* to the city. As a result, the Hang Seng Property Index has declined 12% in June 2011, while the benchmark Hang Seng Index is down 6.2% (Balfour, 2011).

Of the 50 listed economies, four Asian economies were among the top five experiencing the most price increases in their housing markets. Overall, six Asian economies were among the top 15 economies in the Knight Frank House Price List. In addition to Hong Kong, other Asian economies experiencing significant house price increases are Chinese Taipei, Singapore, China, Malaysia and Indonesia. It should also be noted that recently, house prices in Hong Kong, Chinese Taipei and China continue to experience strong growths, despite the significant increases that had already taken place in 2010. This is in direct contrast to Europe where Portugal, Ireland, Greece and Spain continue to struggle to contain the downward spiral in the domestic housing prices.

Undue Concern of the Financial Sector

Based on the survey conducted for the SEACEN member banks, it was inferred that the volatile and strong surge of capital movements has raised concerns on the stability and strength of the financial sector. Selected key financial indicators that we have gathered, however, do not seem to corroborate the fear. Looking at Table 6 on the capital adequacy ratio, the banking system of the reporting economies continue to be well above the Basel III requirements, even during the peak of the subprime financial crisis. In general, the ratios improved in 2009 and were well maintained in 2010. By the end of 2010, the capital adequacy ratio was averaging around 15%, substantially above the proposed Basel III regime of 10.5%, which is to be fully enforced by 2019. Profitability of financial industries of the SEACEN economies, particularly the banking sector, has indeed taken a beating during the peak of the global financial crisis in 2007-2008 (Table 7). However, the financial firms continued to report relatively robust profitability, except for Japan. This is a sharp contrast to the experience of the 1997 East Asian financial crisis for some of the SEACEN economies. General strengthening in profitability rate took place in 2009 and 2010. Similarly, the quality of loans remained high and did not seem to be affected by the global financial crisis of 2007-2008 (Table 8). Even at the peak of the subprime global financial crisis, the non-performing loans did not go beyond 5% of total loans.

Policy Measures

With the strong surges in capital flows into most SEACEN economies, the main challenge for the central bank is to remain consistent with its mandates of price and financial stability while being mindful of the opportunities as well as the risks accompanying these flows, especially with the mounting excess liquidity in the domestic market. Obviously, this is easier said than done. The task of policy tightening has been complicated by the strong and persistent surge of capital inflows. A number of common and overriding objectives of these policies can be summarized as follows. To start with, policy makers are aware of

Table 6

BANK REGULATORY CAPITAL TO RISK-WEIGHTED ASSETS (percentages)							
	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011Q1</i>
Australia	10.2	10.3	10.1	11.3	11.9	11.4	11.5
Hong Kong	14.8	14.9	13.4	14.8	16.9	15.9	-
Indonesia	20.5	21.5	20.2	17.5	17.8	16.2	-
Japan	12.5	13.3	12.3	12.4	15.8	16.7 Sep/	-
Korea	13.0	12.8	12.3	12.3	14.4	14.6	-
Malaysia	15.1	14.7	14.8	16.1	18.2	17.5	16.3
Philippines	17.7	17.6	15.7	14.6	15.4	16.7	16.7
Singapore	15.8	15.4	13.5	14.7	17.3	18.6	17.8
Thailand	13.2	13.6	14.8	13.9	15.8	16.0	-

Source: Financial Soundness Indicators, IMF.

the benefits and the need to attract these flows and convert them into stable sources of funding with manageable levels of risk. In most, if not all of the SEACEN economies, these funding are urgently needed to finance the much-needed infrastructure projects to support overall development programs in the economy. Hence, converting capital into a more medium-to-long term financing is a challenge shared by most of the SEACEN economies.

In a more short-term perspective, one key consideration in the face of strong capital flows would be their implications on asset prices, inflation and inflation expectations. A surge in capital inflows may lead to liquidity expansion which could have inflationary consequences. Similarly, these inflows could also affect the exchange rate which, in turn, affects the prices of commodities. Hence, balancing long-term objectives with short-term concerns have been the principle

Table 7

**RETURN ON EQUITY OF SELECTED SEG ECONOMIES
(percentages)**

	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011Q1</i>
Australia ¹	25.6	27.8	30.2	18.9	17.4	20.5	-
Hong Kong	19.1	19.8	25.1	13.9	16.7	16.7	-
Indonesia	23.1	27.1	27.8	23.9	26.3	26.1	-
Japan ²	10.9	8.5	6.1	-6.9	4.7	8.3 Sep/	-
Korea ³	18.4	14.6	14.6	7.2	5.8	7.3	-
Malaysia	15.7	16.9	19.2	17.6	13.4	16.3	19.0
Philippines	8.8	10.6	10.7	10.0	15.4	16.7	14.2
Singapore	11.2	13.7	12.9	11.7	10.8	15.5	17.2
Thailand ³	14.7	8.2	1.2	9.7	8.5	10.0	-

Source: Financial Soundness Indicators, IMF.

Note: Data definitions follow, to the extent possible, the methodology of the Financial Soundness Indicators Compilation Guide. Major deviations from this methodology are indicated in economy specific footnotes. Due to differences in consolidation methods, national accounting, taxation, and supervisory regimes, data are not strictly comparable across economies.

Numerator: Annualized net income before extraordinary items and taxes, from the beginning of the year until the reporting month.

Denominator: Average value of capital over the same period.

¹ Accumulated income of the last 12 months.

² Unless otherwise indicated, data refer to the end of the fiscal year, i.e., March of the next calendar year.

³ After extraordinary items and taxes.

Table 8

**NON-PERFORMING LOANS TO TOTAL LOANS
(percentages)**

	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>Q12011</i>
Australia ¹	0.6	0.6	0.6	1.3	2.0	2.2	2.2
Hong Kong ²	1.4	1.1	0.8	1.2	1.6	0.8	-
Indonesia	7.6	6.1	4.1	3.2	3.3	2.5	-
Japan ³	1.8	1.5	1.4	1.6	1.7	1.8Sep/	-
Korea ⁴	1.2	0.8	0.7	1.1	1.2	1.9	-
Malaysia ⁵	9.4	8.5	6.5	4.8	3.6	3.4	3.2
Philippines ^{6,7}	10.0	7.5	5.8	3.9	3.5	3.4	3.5
Singapore ⁸	3.8	2.8	1.5	1.4	2.0	1.4	1.3
Thailand	9.1	8.1	7.9	5.7	5.3	3.9	-

Source: Financial Soundness Indicators, IMF.

Note: Data definitions follow, to the extent possible, the methodology of the Financial Soundness Indicators Compilation Guide. Major deviations from this methodology are indicated in economy specific footnotes. Due to differences in consolidation methods, national accounting, taxation, and supervisory regimes, data are not strictly comparable across economies.

Numerator: Gross value of loans on which 1) payments of principal and interest is past due by 90 days or more, or 2) interest payments equal to 90 days interest or more have been capitalized, refinanced, or rolled over, and 3) loans less than 90 days past due, that are recognized as nonperforming under national supervisory guidance.

Denominator: The total value of the loan portfolio (including nonperforming loans, and before the deduction of specific loan loss provisions).

¹ Includes both impaired and past due items.

² Loans classified as substandard, doubtful, and loss; not necessarily linked to a 90-day criterion.

³ For nine major banks only. Unless otherwise indicated, data refer to the end of the fiscal year, i.e., March of the next calendar year.

⁴ Loans classified as substandard, doubtful, and loss; not necessarily linked to a 90-day criterion.

[Notes continue on next page]

challenges. The next several subsections summarize and highlight major strategies and corresponding policy measures implemented during the past two years by the central banks and monetary authorities of the SEACEN economies. More importantly, more often than not, each of the policy measures come with trade-offs or potential cost that must be weighed in.

Balancing Objectives and Trade-offs: Managing the Impossible Trinity

Strong and persistent surge of capital inflows have undoubtedly complicated the conventional monetary and exchange rate policy. As the following subsections will demonstrate, the authorities of the SEACEN economies had to resort to all types of policy measures, both macro and micro policies, and balance the trade-offs. These difficult policy choices and trade-offs are driven by one of the key principles of international macro-finance: the Impossible Trinity. This principle basically argues that if policy makers want to maintain monetary independence while managing exchange rate movements, they need to sacrifice capital mobility.

Interest Rate Adjustments

Interest rate policy has remained one of the primary policy instrument choices to manage price and financial stability in the domestic economies. With the return of capital surges, all SEG economies have resorted to a number of interest rate hikes in 2010 and 2011. Frequent interest rate adjustments have, in fact, been more of a norm than an exception since 2010. People's Bank of China, for instance, has raised interest rates several times during the first half of 2011 alone (Table 9).

⁵ Loans with principal and/or interest past over 180 days; credit card debt and bankers' acceptances past over 90 days; loans secured by cash and cash substitutes past 365 days.

⁶ Thirty days for loans payable in lump sum or payable in quarterly, semiannual, or annual installments; 90 days for loans payable in monthly installments.

⁷ Interbank loans are excluded.

⁸ Other characteristics may be considered beyond the 90-day past-due criterion to classify a loan as nonperforming.

Similarly, Bank of Thailand, considered among the more hawkish central banks in the region, increased its benchmark interest rate by about 25 basis points to 3.25% in July 2011. This latest adjustment was the sixth hike announced by Bank of Thailand from mid of 2010 to July 2011. Yet, as discussed before, inflationary pressure remains relentless. In May 2011, the annual inflation in China has already reached around 5.5%, the highest annualized inflation in 34 months. Interest rate adjustment has proven to have limited effectiveness, especially in addressing excess liquidity and potential asset price bubbles in various sectors of the economies, such as the property and stock markets as elaborated earlier.

Table 9 also clearly demonstrates the set of balancing acts that the monetary authorities must consider when implementing the rate adjustments. Absorbing liquidity to manage inflationary pressure on the one hand, while at the same time maintaining a growth conducive environment, had been the core objectives of these measures. In addition, ranges of liquidity management instruments have been adopted, both market rates and direct instruments, such as reserve requirement. Managing monetary aggregate stability in a volatile and liquid market has also been a challenge for most of SEACEN central banks/monetary authorities. This is particularly true for some of these economies that adopt a monetary targeting regime. It has often been the case that the central banks have to actively conduct open market operations, including in the overnight market, to absorb the excess liquidity. In Sri Lanka, the central bank has also engaged in foreign exchange swap agreements with the commercial banks to mop the excess liquidity.

Similar issues are also faced by the inflation targeting economies. While they remain strong advocates of the inflation targeting policy, the central banks of Australia, Indonesia, Korea, Philippines and Thailand have given heightened attention to asset price movements, beyond just headline and core inflation, by tracking various financial and asset price indicators to ensure that they can spot the emergence of medium-term risks to macroeconomic stability, and act preemptively to ward off potential threats to price stability.

Table 9

RECENT INTEREST RATE ADJUSTMENTS							
March 2011	Policy rate	%	Hold	Increase	Decrease	% Increase (BP)	Remarks
SEACEN							
CB							
BI	Benchmark reference rate	6.75	*				
CBSL	Repurchase rate	7.0	*				
BOT	1-day repurchase bond	2.5		*		25	Anchoring inflationary pressure
BOK	7-day repurchase rate	3.0		*		25	
SBV	Rediscount rate	12.0		*		500	
	Rate of recapitalizing banks	12.0		*		100	Two-year high inflation
PBC	Required reserve ratio	20.0		*		50	3rd increase of the year
BSP	Reverse repurchase facility	4.25		*		25	Inflationary pressure
	Repurchase facility rate	6.25		*		25	
CBC	Riscount rate	1.75		*		12.5	Inflationary pressure
	Secure loan rate	2.125		*		12.5	
	Unsecured loan	4.0	*			12.5	
Others							
RBA	Cash rate	4.75	*				
BOJ	Overnight call rate	0.1	*				Expansion of asset purchase program of 5 trillion yen
HKMA	Base rate	0.5					
FED Res	Interest rate	0-2.5	*	*			No charge in QEII at USD600 billion

April 2011	Policy rate	%	Hold	Increase	Decrease	% Increase (BP)	Remarks
SEACEN CB							
PBC	1 year lending rate	6.31		*		25	Inflationary pressure
	1 year deposit rate	3.25		*		25	
SBV	Reserve ratio on USD deposit	3-6		*		200	Inflation rate was 13.9% in March
	Reserve ratio for non-term USD deposit	6.0		*		200	
	Refinance rate	14.0		*		100	
	Discount rate	13.0		*		100	Annual inflation was 17.51% in April
	Refinance rate	15.0		*		100	
BOK	7-day repurchase rate	3.0	*				
BI	Key interest rate	6.75	*				
CBSL	Statutory reserve ratio (rupee)	8.0		*		100	Inflation was 8.6% in March
	Repurchase rate	7.0	*				
	Reverse repurchase rate	8.5	*				
PBC	Required reserve ratio	20.5		*		50	Average for larger banks; report or higher inflation
BOT	1-day bond repurchase rate	2.75		*		25	Inflationary concerns
Others							
US Fed	Fed funds	0-0.25	*				
HKMA	Base rate	0.5	*				
RBA	Cash rate	4.75	*				
BOJ	Overnight call rate	0-0.1	*				One trillion yen package towards FIs affected by the earthquake

May 2011	Policy rate	%	Hold	Increase	Decrease	% Increase (BP)	Remarks
SEACEN CB							
BSP	Overnight borrowing rate	4.5		*		25	
	Overnight lending rate	6.5		*		25	
BNM	Overnight policy rate	3.0		*		25	
	Statutory reserve ratio	3.0		*		100	
BI	Benchmark rate	6.75	*				
PBC	Statutory reserve ratio	21.0		*		50	21% for large banks and 19% for smaller bank
BOK	7-day repurchase rate	3.0	*				
CBSL	Repurchase rate	7.0	*				
	Reserve repurchase	8.0	*				
	Reserve ratio	0.5	*				
Others							
RBA	Cash rate	4.75	*				
BOJ	Overnight call rate	0-0.1	*				

June 2011	Policy rate	%	Hold	Increase	Decrease	% Increase (BP)	Remarks
SEACEN							
CB							
SBV	Reverse repo	15		*		100	Inflation was 17.51% in April
BOT	1-day bond repurchase rate	3	*				
BI	Benchmark rate	6.75	*				
BOK	7-day repurchase rate	3.25		*		25	Inflationary expectation
CBSL	Repurchase rate	7	*				
	Reverse repo	8.5	*				
PBC	Reserve requirement	21.5		*		50	Inflationary expectation
BSP	Overnight borrowing rate	4.5	*				
	Overnight lending rate	6.5	*				
CBC	Discount rate	1.875		*		25	
	Collateralized loan rate	2.25		*		12.5	
	Unsecured loan rate	4.125		*		12.5	
Others							
RBA	Cash rate	4.75	*				
BOJ	Overnight call rate	0-0.1	*				Extended loan program, a new 500 billion yen lending facility
HKMA	Base interest rate	0.5	*				

July 2011	Policy rate	%	Hold	Increase	Decrease	% Increase (BP)	Remarks
SEACEN							
CB							
SBV	OMO interest rate	15		*		100	
PBC	1-year benchmark	6.31		*		25	
	1-year deposit rate	3.25		*		25	
BNM	Overnight policy rate	3	*				
	Statutory reserve ratio	4		*		100	
CBSL	Repurchase rate	7	*				
BI	Reference rate	6.75	*				
BOT	1-day bond repurchase rate	3.25		*		25	
BOK	7-day repurchase rate	3.25	*				
CBC	Minimum liquidity ratio	10		*		300	(Effective October 2011): Strengthen risk management
BSP	Overnight borrowing rate	4.5	*				
	Overnight lending rate	6.5	*				
	Reserve requirement	21		*		100	Effective August, 5 2011

August 2011	Policy rate	%	Hold	In- crease	De- crease	% Increase (BP)	Remarks
SEACEN CB							
PBC							Ban on mainland-based companies directly borrowing renminbi denominated loans from foreign banks
BI	Reference rate	6.75	*				
BOK	7-day repurchase rate	3.25	*				
CBSL	Benchmark repurchase rate	7	*				
	Reverse repurchase	8.5	*				
	Statutory reserve ratio	8	*				
BOT	1-day bond repurchase	3.5	*			25	
SBV	Non term foreign currency deposit and deposit less than 12 month	8		*		100	For most state-owned commercial banks, joint stock banks, 100 % foreign owned banks, joint venture banks, and foreign bank branches. Ratio also increased for other institutions.
Others							
RBA	Cash rate	4.75	*				
BOJ	Overnight call rate	0-0.1	*				Extended loan program, a new 500 billion yen lending facility
US Fed	Fed funds/rate	0-0.25	*				August 5, USA downgraded to AA+ from AAA by Standard & Poor's
HKMA	Base interest rate	0.5	*				

Source: <www.centralbanknews.info>

Foreign Exchange Market Intervention

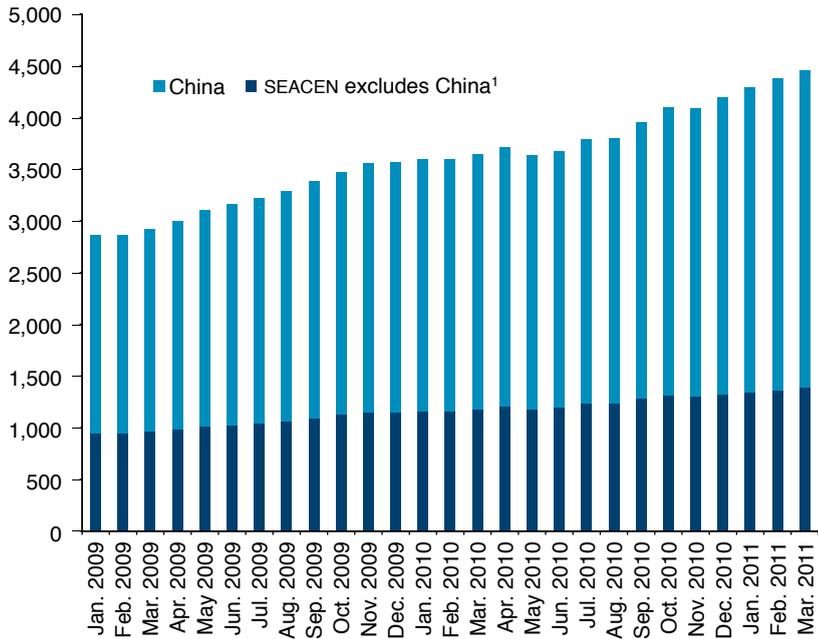
The challenge of dealing with the impossible trinity under strong surges of capital flows is most felt in the foreign exchange market. Under buying/appreciation pressures, central banks around the world have been actively implementing varying degrees of intervention in the foreign exchange markets to dampen rapid appreciations of the local currency. Traditionally, among the emerging markets, including SEACEN economies, foreign exchange intervention is sterilized. This sterilization effort is needed to manage the level of excess liquidity and domestic money supply. Hence, potential sterilized intervention could reduce the appreciation pressure on the exchange rate and in some parts help manage overheating of the economy that unsterilized intervention may induce.

Active sterilized foreign exchange interventions have been evidently illustrated by the strong reserve accumulations reported by a number of SEACEN central banks/monetary authorities (Figure 13). Indonesia and Thailand, among economies that have experienced strong surges of portfolio capital since the second half 2009, accumulated foreign exchange reserves averaging around USD 28 billion in 2010. In fact, Bank Indonesia accumulated an estimated USD 18.5 billion in foreign reserves from February to April 2011, a three-month record that put total reserves at an all-time high of USD 113.8 billion. Similar trends are also reported in a number of emerging SEACEN markets. Mongolia, driven largely by the commodity boom, has seen its foreign exchange reserve position almost triple from January 2009 to end of 2010. With the return of political stability and security, Sri Lanka has seen its reserves triple within a period of less than two years.

Sterilized intervention has, in general, been found to be fiscally very expensive as the domestic central banks/monetary authorities are forced to earn a lower interest rate on the foreign currency reserves that it purchases than it pays on the sterilized bonds of central bank securities issued in the sterilization process. These quasi-fiscal costs (roughly equal to the interest rate differential between domestic and foreign economies multiplied by the rise in foreign exchange reserves) can be quite high and damaging to the balance sheet of the central bank. The magnitude

Figure 13

ACCUMULATED INTERNATIONAL RESERVES OF THE SEG ECONOMIES (billions of USD)



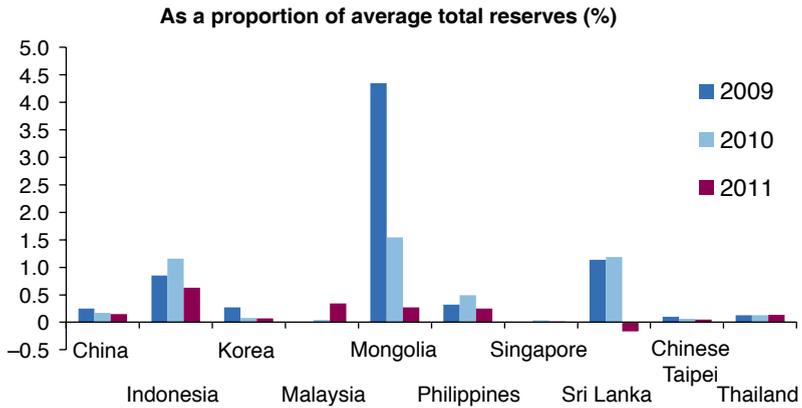
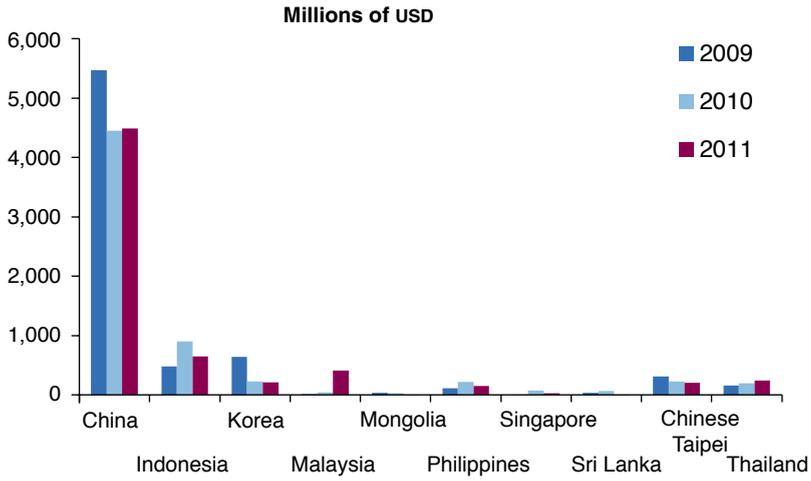
Source: IMF IFS, July 2011 and CEIC Database.

¹ Include Indonesia, Korea, Malaysia, Mongolia, Nepal, Philippines, Singapore, Sri Lanka, Chinese Taipei and Thailand.

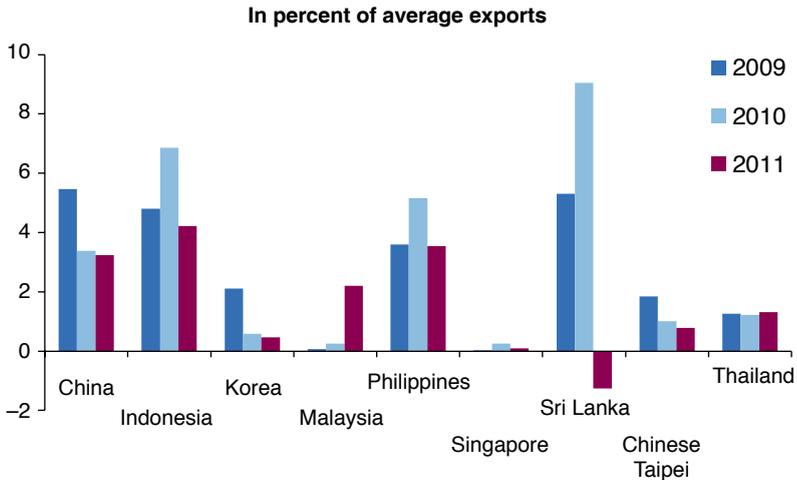
of these quasi-fiscal costs can vary from as high as an average of around USD 4.8 billion in the case of China for the period of 2009 to mid-2011 to an average of USD 22 million in the case of Mongolia for the same period. In between these respective upper-and lower bound estimates are quasi-fiscal costs that reached as high on average of around USD 677 million, USD 359 million and USD 248 million in the case of Indonesia, Korea and Chinese Taipei, respectively (Figure 14).

Figure 14

COSTS OF INTERVENTION, JANUARY 2009-JUNE 2011



Source: Estimate conducted by the RLC Department of The SEACEN Centre.



Source: CEIC Database and authors' own estimates.

Nonetheless, due to the sheer size of international reserves accumulated by these economies prior to and over the same period, when these costs are assessed as a proportion of average total reserves, China's quasi-fiscal costs only amounted to an average of 0.19% of average total reserves for the same period of 2009 to mid-2011. Moreover, the quasi-fiscal costs in the case of Indonesia, Korea and Chinese Taipei translated to averages of around 0.88%, 0.14%, and 0.07%, respectively. In contrast, in the particular case of Mongolia, this translated to a little higher average quasi-fiscal cost of around 2.05% for the same period.

The cost of holding reserves is, however, more alarming when we look at them as the share of the export revenue of the economy. For Indonesia, for instance, the cost of intervention was about 7% of total export revenues in 2010. Perhaps the more important argument, however, is that in most cases, especially under the persistent and massive surge of capital inflows, central banks/monetary authorities are not in the position to fully sterilize the market let alone the capacity of fiscal and monetary authorities in Asian economies to viably absorb these

estimated quasi-fiscal costs. Furthermore, sterilized intervention also does not effectively stop capital inflows.

In some of the SEACEN economies, such as Indonesia and Chinese Taipei, policy concerns have also been raised on the significant share of central bank securities being held by the foreign investors/banks. Since November 2010, the amount of outright purchase of Chinese Taipei government bonds by foreign investors is being counted toward the ceiling of inward remittance of portfolio investments by each foreign investor. To reduce short-term volatility associated with the strong surges of capital flows, Bank Indonesia (BI) introduced a one-month holding period for its certificate (SBI) purchased in both primary and secondary markets in June 2010. Prior to this, BI launched a concerted effort to shift the maturity structure from one-month to three- and six-month tenors and from weekly to monthly auction. Longer maturity SBIs –SBI-9 months and SBI-12 months– are being considered in late 2010 with the purported aim of lengthening the maturity profile of investors.

Given the high cost and, non-sustainability of active intervention and sterilization, allowing more flexibility and higher appreciation of the local currency against most major currencies has been one alternative strategy adopted by the authorities. This measure allows the exchange rate to adjust more flexibly to absorb the surge in capital inflows while reducing the need to intervene in the foreign exchange market. Singapore, for instance, has employed the trade-weighted based exchange rate policy approach as a key monetary policy tool. This exchange rate framework provides the flexibility for absorbing transient volatility associated with short-term capital flows. In addition, a number of SEACEN economies, such as Malaysia, the Philippines and Thailand, have made it easier for domestic residents to invest abroad. Easy access to foreign investments has long been one prescribed measure to mitigate the impact of capital inflows on the domestic economy.

Macprudential Measures

As elaborated above, the effectiveness of conventional monetary and exchange rate policies have been found to be rather limited. A clear

concern is that while interest rate policy has become impotent to contain asset bubbles, it has a much wider adverse consequence on other productive sectors of the economies, such as agriculture and manufacturing. The strategies to mix conventional monetary and exchange rate policies with more microprudential measures targeting macroeconomic objectives, or also known as macroprudential measures, have been widely adopted by the authorities of the SEACEN economies (Table 10). In the second half 2009 and first half 2010, these macroprudential measures have frequently been adopted to supplement macroeconomic policy measures by the SEACEN authorities to gradually shift away from the generally expansionary policy stances during the peak of subprime crisis. The primary objectives of the recent macroprudential measures are to manage procyclicality, to reduce interconnectivity and systemic risks and to place “sand in the wheel” and slowdown the capital inflows.

Concerns for the persistent surges of capital inflows and too rapid increase in rates further widening interest rate disparities discussed earlier and hence attracting more inflows of capital, have forced central banks of the SEACEN economies to employ a multiple set of policies to supplement the conventional interest rate policy. In some SEACEN economies, a mix of interest rate hikes and reserve requirement has frequently been adopted. People’s Bank of China has, for instance, increased the reserve requirement ratio six times in the first half of 2011 alone. Other central banks, such as Bank Negara Malaysia, Bank Indonesia, Bank of Mongolia, Central Bank of Sri Lanka and Central Bank, Chinese Taipei, to name a few, have also adopted a similar strategy more than once during the past 12 months.

A combination of loan to deposit ratio and reserve requirement policy has been enforced by Bank Indonesia, for instance, to manage credit growth and risk taking in the domestic banking sector. A key objective of the Singapore government, for example, is to ensure a stable and sustainable property market where prices move in line with fundamentals. In February 2010, the loan-to-value (LTV) limit for housing loans extended by financial institutions was lowered to 80%. To discourage speculative flipping of properties, a seller’s stamp duty on all residential

Table 10

SELECTED IMPLEMENTED MACROPRUDENTIAL REGULATIONS

Member banks	Macroprudential policies taken (or macroprudential tools used)	Purpose of policy / tools
AMBD	<p>Establishment of a mandatory deposit protection scheme</p> <p>Establishment of a credit information bureau.</p>	<ul style="list-style-type: none"> To restore and sustain depositor confidence in the financial system post GFC and to strengthen the financial system infrastructure.
	<p>Restrictions on credit cards and on personal/ consumption financing.</p>	<ul style="list-style-type: none"> Strengthening of the financial system infrastructure and enhancing credit risk assessment and management (CRM) across all banks. To ensure greater discipline by both borrowers and banks in the disbursement of credit and contribute to the decline in household debt.
	<p>Adopting dynamic differentiated reserve management ratio (RRR) adjustment, namely, requesting banks to adopt differentiated RRR based on the divergence of credit to economic and price growth, and on the systemic importance and soundness of the bank.</p>	<ul style="list-style-type: none"> To reduce the incidence of household debt in the economy and to ensure more productive allocation of credit in the economy to aid the economic diversification program of the government away from oil and gas. To enhance the access to credit for SMEs and to foster expanded SME financing.
PBC	<p>To introduce total social financing as interim variable of monetary policy.</p>	<ul style="list-style-type: none"> To improve monetary policy instruments, to combine quantitative adjustment on liquidity management and countercyclical macroprudential policy framework, and to enhance the flexibility and effectiveness of macro-management. To cooperate with traditional management tools including credit management, and to increase the effectiveness of financial macro-management.

HKMA	<ul style="list-style-type: none">• Measures applicable to owner occupied residential property mortgage loans only:<ul style="list-style-type: none">• For properties with a value at HKD 10 million or above, the maximum LTV ratio shall be 50%;• For properties with a value at HKD 7 million or above but below HKD 10 million, the maximum LTV ratio shall be 60%, subject to a maximum loan amount of HKD 5 million;• For properties with a value below HKD 7 million, the maximum LTV ratio shall be 70%, subject to a maximum loan amount of HKD 4.2 million.• Measures applicable to residential and non-residential property mortgage loans:<ul style="list-style-type: none">• Reducing the applicable maximum LTV ratio by 10 percentage points for all property mortgages to borrowers whose income is derived mainly from outside Hong Kong.• However, borrowers who can demonstrate having a close connection with Hong Kong (e.g. those who are on secondment by a local employer to work outside Hong Kong with documentary proof provided by the employer or those who have their immediate family members residing in Hong Kong) will not be subject to the LTV reduction.• Lowering the maximum LTV ratio for property mortgage loans based on borrowers' net worth (i.e., net worth-based mortgage loans) from 50% to 40 percent.• Irrespective of the value of the properties. In view of the difficulties in verifying borrowers' net worth regularly, it is considered prudent to lower the maximum LTV ratio.• To introduce prudential measures for mortgage lending to address the increasing risk to the stability of the Hong Kong banking system.
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<p>BI</p> <p>Comprehensive mix of central bank instruments including central bank bills, term deposits, and lengthening tenor of central bank facilities</p> <p>LDR-linked statutory reserves.</p> <p>LTV ratio.</p>	<ul style="list-style-type: none"> • To manage capital inflows and deepen financial market instruments. • To mitigate systemic liquidity risks while stimulating bank intermediation. • Leverage backstop in property markets. <p>BNM</p> <p>Implementation of a maximum LTV ratio of 70%, applicable to the third house financing facility taken out by a borrower (Nov 2010).</p> <p>Increase in risk weights for residential mortgages and personal financing under the Standardized Approach (SA) for credit risk (Feb 2011):</p> <ul style="list-style-type: none"> • Risk weight for performing residential mortgages with a LTV ratio > 90% increased from 75% to 100 percent; • Risk weight for performing term loans extended for personal use with an original maturity of > 5 years increased from 75% to 100 percent.
<p>NRB</p> <p>Ceiling on real estate exposure.</p> <p>Macro stress tests.</p>	<ul style="list-style-type: none"> • To moderate excessive investment and speculative activity in certain pockets of the residential property market which has resulted in higher than average price increases in such locations while continuing to support a stable and sustainable property market, and promote the continued affordability of homes for the general public. • To ensure the capital framework better reflects the higher risk profile and actual loss experience of higher loan-to-value mortgage portfolios and longer term personal loans/financing facilities. <ul style="list-style-type: none"> • To ensure adequacy of security. • To reduce sectoral concentration risk and allocate financial resources to productive sectors. • To assess the vulnerability of the financial system to possible macroeconomic shocks.

MAS	<p>Regular coordinated industry stress testing exercise with banks, finance companies and insurers.</p> <ul style="list-style-type: none"> • Lowering of LTV limits on residential property loans. • Imposition of seller's stamp duty (SSD) for the sale of residential properties. 	<ul style="list-style-type: none"> • Part of ongoing assessment of financial stability, potential risks to financial institutions' soundness and the need for measures to enhance their financial resilience. • To maintain a stable and sustainable housing market.
CBSL	<p>Limits on banks' exposure to stock market activities.</p>	<ul style="list-style-type: none"> • To require banks to adopt appropriate risk management standards to mitigate risks arising from possible volatility and price bubbles of assets.
BOT	<p>LTV ratio for residential mortgage less than 10 million baht (November 12, 2010).</p> <ul style="list-style-type: none"> • Higher risk weight for mortgage on high-rise building that has LTV greater than 90% (effective on Jan 2011). • Higher risk weight for mortgage on low-rise building that has LTV greater than 95% (to be effective on Jan 2012). • Note: For high value real estate (condominiums, lands, and houses for residence valued 10 million baht and over), BOT set the LTV limit at 70% in 2003, and subsequently increased to 80% and impose higher risk weight capital charge for loan with BOT greater than 80% in 2009. 	<ul style="list-style-type: none"> • To preemptively avoid risk of asset price bubble in residential real estate markets although there is no obvious sign of asset price bubble.

Source: Survey conducted by The SEACEN Centre, June 2011.

properties bought and sold within one year was introduced. In August 2010, the holding period for the imposition of the seller's stamp duty was increased from one year to three years. The Singapore government also tightened measures to ensure public housing is utilized as intended, i.e., for owner occupation. To deal with the *hot* property sector, the Hong Kong Monetary Authority has lowered the loan-to-value (LTV) ratio for property mortgages and imposed different LTV ratios for residents and non-residents.

Bangko Sentral ng Pilipinas has also enforced the loan-to-value ratio requirement as a tool to limit risk exposure of the banking sector to the real estate sector during the current year. To moderate any excessive investments and speculative activity in the residential property market; effective from November 3, 2010, new housing loans approved by financial institutions and development financial institutions to borrowers who already hold two outstanding housing loan accounts, will be subject to a maximum loan-to-value (LTV) ratio of 70%. The Adjustment LTV cap has also been pursued by the Bank of Thailand in recent years.

To manage interconnectivity and risk exposure, Bank Indonesia, on the other hand, monitors daily liquidity positions of banks, especially those institutions that are expected to have more systemic implications. Commercial banks in Indonesia are also prohibited from extending loans to a single affiliated party by more than 10% of the capital. Prohibition on complex derivative asset trading has also been enforced by a number of SEG central banks and monetary authorities. Nepal Rastra Bank, for instance, imposes limits on investments, except for government and central bank securities. Another typical prudential measure to manage interconnectivity is limiting sector credit, including interbank placements. The Central Bank of Sri Lanka introduced the Direction on Maximum Amount of Accommodation regulation in 2007 with the main objective of limiting a bank's credit exposure to any single individual or company or to any groups of individuals or companies.

In November 2009, authorities in Korea imposed a set of tighter regulations on currency trading, including new standards for foreign exchange liquidity risk management, restrictions on currency forward

transactions of non-financial companies, and mandatory minimum holdings of safe foreign currency assets by domestic banks. This set of policies followed an earlier move to curb speculative foreign exchange transactions. In July 2010, the minimum amount of deposits for foreign currency margin trade was raised to 5% of transaction value from 2% in an effort to clampdown on speculative foreign exchange trading by individual investors. Central Bank, Chinese Taipei have banned foreign investors from holding NTD\$ time deposits with domestic financial institutions since November 2009. In addition, on January 1, 2011, the Central Bank, Chinese Taipei has also increased the required reserve ratio (RRR) of foreigners' NTD\$ demand deposits from 9.775% to 90%, if the outstanding balance of foreigners' demand deposit exceeds that of December 30, 2010. Otherwise the RRR is increased to 25 percent.

Stepping up to Regional and Global Cooperation

Blanket Guarantee Coordination

Past and recent crisis have again demonstrated that policy cooperation across different jurisdictions are also critical to enhance the effectiveness of various monetary, exchange rate and prudential measures in mitigating the impacts of the crisis and more importantly, position the economy into a stable economic recovery stage.

In July 2009, the Hong Kong Monetary Authority, Bank Negara Malaysia and the Monetary Authority of Singapore announced the establishment of a tripartite working group to map out a coordinated strategy for the scheduled exit from the full deposit guarantee of the banking system by the end of 2010 in their respective jurisdictions.

Crossborder Supervision of Globalized Banking System

Despite the growth of capital markets, the financial sector of the SEACEN region is dominated by the banking sector. As discussed in Section 2.3, foreign banks' operations in emerging markets across the global banking system, including those of the Asian economies, increased dramatically starting the second half of the 1990s. In addition, a recent survey

carried out by The SEACEN Centre has identified a number of regional and global banks that have strong presence in major Asian economies (Siregar & Lim, 2010). The Hong Kong Shanghai Banking Corporation (HSBC), Citibank and the Standard Chartered Bank are among the three major international banks that have wide and extensive branch networks in the Asian region. In addition to these three international powerhouses, the region has also witnessed the emergence of its own multinational banks. In Malaysia, banks such as the Malayan Banking Berhad (Maybank), Commerce International Merchant Bankers Berhad (CIMB) and Rashid Hussain Berhad (RHB) have expanded their networks into Southeast Asian and beyond. A number of Singaporean banks, namely the Development Bank of Singapore (DBS), the United Overseas Bank (UOB), and the Overseas Chinese Bank Corporation (OCBC) have achieved similar success in their efforts to become regional banks.

Studies such as Cetorelli and Goldberg (2008 and 2010) illustrated the role of global banking system in transmitting monetary policy adjustments and adverse balance shocks across borders. In their 2008 study, Cetorelli and Goldberg demonstrate that the globalization of banking in the United States is influencing the monetary transmission mechanism both domestically and externally. Furthermore, global banks played a significant role in the transmission of the 2007 to 2009 crisis to emerging market economies. Cetorelli and Goldberg (2010) examine the relationships between adverse liquidity shocks on main advanced-country banking systems to emerging markets across Europe, Asia, and Latin America, isolating loan supply from loan demand effects. Loan supply in emerging markets was significantly affected through three separate channels: a contraction in cross-border lending by foreign banks; a contraction in local lending by foreign banks' affiliates in emerging markets; and a contraction in loan supply by domestic banks resulting from the funding shock to their balance sheet induced by the decline in interbank, crossborder lending.

A vital area of policy cooperation, therefore, is on the supervision of the increasingly globalized banking systems and markets. The annual

gathering of the Deputy Governors of the SEACEN Central Banks in-charge of Financial Stability has been initiated in Bali, Indonesia in 2010. The second annual meeting took place in October 2011 in the Philippines. At the initial stage, the focus has largely been on identifying the issues and challenges facing the global banking system in the region. The ASEAN central banks responsible for banking supervision have, in general, committed to bilateral memorandums of understanding (MOU) with each other and central banks from other parts of the world. These bilateral MOU usually at the very least entails information and data sharing, and joint onsite examination on banks that have offices in both jurisdictions. In addition, a number of monetary authorities/central banks of major ASEAN economies have also participated in colleges of supervisors following the recent global financial crisis since 2009/2010. The colleges of supervisors are permanent, although flexible, structures for cooperation and coordination among the authorities responsible for and involved in the supervision of the different components of crossborder groups, specifically large groups. For Hong Kong Shanghai Banking Corporation Ltd (HSBC) and Standard Chartered Bank for instance, Bank Indonesia, Monetary Authority of Singapore, Bank Negara Malaysia, Bank Sentral ng Pilipinas and Bank of Thailand are among the ASEAN central banks who are directly participating in the colleges of supervisors together with the home supervisors of these banks. A more concrete step has also been taken to form a college of supervisors to coordinate the supervision of a regional bank. This effort should further enhance closer cooperation among the supervisors in the regions.

Chiang Mai Initiative (CMI) and Chiang Mai Initiative Multilateralization

The Chiang Mai Initiative (CMI) was launched at a meeting of ASEAN+3 Finance Ministers in Thailand in May 2000. This initiative has a broad set of objectives for financial cooperation, involving policy dialogue, monitoring of capital flows, and reform of international financial institutions. However, the series of bilateral swaps under CMI were found to be cumbersome and ineffective and it was, therefore, necessary to

move from a bilateral to multilateral approach. In May 2009, the Chiang Mai Initiative Multilateralization (CMIM) was announced. Under the CMIM, the members of ASEAN+3 agree to a self managed reserve pooling arrangements governed by a single contractual agreement. The reserve would be held by national central banks. The disposition of those reserves, however, would be subjected to a single agreement.

The CMI and CMIM are, indeed, milestones for regional cooperation for ASEAN-plus three economies. The recent subprime crisis showed that in spite of large foreign reserves, liquidity shortage could still rapidly emerge. In its initial stage, the total size of the reserve pooling under CMIM is about USD 120 billion, a significant rise from the USD 90 billion under the CMI arrangement. Table 11 provides details of the CMIM contributions, purchasing multiples and swap facilities. Each of the five major ASEAN-5 (Indonesia, Malaysia, Philippines, Thailand and Singapore) economies, for instance, contributes around USD 4.5 billion and can draw around USD 11.4 billion of swap facility support.

Going Forward and Concluding Remarks

The two speed economic recoveries of the advanced and developing markets in the global economy are expected to continue in 2011 and 2012, albeit with the expected narrowing of the gap in the growth rates. Concerns remain with the risks arising from the problems in the sovereign debt markets and banking sectors in the euro area, on-going geopolitical tensions in the Middle East, as well as less than encouraging news with the USA economy. Going forward, initiatives taken by the advanced economies in dealing with their fiscal sustainability issues are also expected to influence the global economic outlook beyond 2012. For commodity-dependent economies, such as Mongolia and Australia, the terms of trade condition is likely to be favorable in the coming years.

Consequently, the emerging markets in Asia are forecasted to continue receiving an average of around 45% of total capital flows to the emerging markets in the world (Table 1). In addition, barring major upheavals in the global and regional financial markets, the overall broad

Table 11

**CMIM CONTRIBUTION, PURCHASING MULTIPLIER
AND SWAP FACILITY**

<i>Country</i>	<i>Contribution (billions of USD) (a)</i>	<i>Purchasing multiple (b)</i>	<i>Total swap facility (billions of USD) (a)* (b)</i>
Brunei	0.030	5.0	0.15
Cambodia	0.120	5.0	0.60
PRC (and Hong Kong, China)	38.400	0.5	19.20
Indonesia	4.552	2.5	11.38
Japan	38.400	0.5	19.20
Korea	19.200	1.0	19.20
Lao PDR	0.030	5.0	0.15
Malaysia	4.552	2.5	11.38
Myanmar	0.060	5.0	0.30
Philippines	4.552	2.5	11.38
Singapore	4.552	2.5	11.38
Thailand	4.552	2.5	11.38
Viet Nam	1.000	5.0	5.00

Source: The Joint Ministerial Statement of the 13th ASEAN+3 Finance Ministers' Meeting, Tashkent, Uzbekistan, May 2, 2010.

components of these flows in 2011 and 2012 are expected to exhibit similar trends. This means that market volatilities are also expected to remain. For most of the SEACEN economies, a fair share of these flows is in the forms of portfolio and banking flows. The challenges facing the monetary authorities and policy makers of the SEACEN economies this year and the next, are therefore, likely to be a continuation of those in

2010. Hence, the discussions in this paper on the consequences of these flows and the policy options and trade-offs will remain relevant for the near term.

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Julio Velarde

The Implementation of Monetary Policy: Lessons from the Crisis and Challenges for Coming Years

Since their creation, central banks have oriented their policies and instruments towards one of the three following objectives: *i)* monetary stability, i.e., keeping inflation low and stable; *ii)* financial stability, in particular acting as a lender of last resort to ensure adequate liquidity and a fluent functioning of the payments system; and *iii)* exchange rate stability.

During the period that preceded the global financial crisis, a growing number of independent central banks adopted monetary strategies aimed at preserving price stability with exchange rate flexibility. Financial stability used to be considered a natural by-product of monetary stability, of deep and sophisticated financial markets, and of an adequate assessment of financial risks. In this context, financial regulation with a microprudential approach sought to ensure the solvency of market participants, regardless of the risks involved in the interaction between them.

From the mid-1980s, declining inflation and economic volatility in developed economies, together with a greater emphasis on financial innovation, resulted in strong deregulation, which in turn promoted an extraordinary development of the international financial system. These

President, Banco Central de Reserva del Perú.

developments led to a perception that monetary stability was a sufficient condition to ensure financial stability, and that shocks with the potential to create systemic risks in the financial system were too unlikely to be factored into the design of monetary policy.

Lessons from the Global Financial Crisis

One of the most important lessons from the recent crisis has been the verification that the macroeconomic stability achieved in recent years thanks to reduced and stable inflation and to lower economic volatility was not sufficient to preserve financial stability. Most of the developed economies that succeeded in bringing annual inflation below 3% and achieving a significant moderation in economic volatility prior to 2007 wound up at the center of the crisis. In addition, the extraordinary financial development in advanced economies (particularly in the non-banking sector) contributed to enhancing the interconnectedness of financial systems and financial entities' leveraging. However, the valuation of newly created instruments became more opaque. All these elements contributed to creating the systemic risks that sparked off the crisis.

Especially, the use of a single monetary instrument –the short-run interest rate– proved insufficient to preserve financial stability. It has now been recognized that it is necessary to put in place a set of additional policies and instruments –known as macroprudential measures– to secure financial stability and prevent systemic risks. It is important to clarify that this does not mean that the current monetary frameworks, predicated on central bank independence and the single objective of price stability, need to be abandoned. On the contrary, the credibility gained by inflation targeting (IT) central banks has been crucial to anchor inflation expectations and ensure adequate inflation control, even in the presence of severe international food and fuel inflation. This credibility also enhanced the effectiveness of monetary stimulus in countering the impact of the crisis.

A main lesson from the crisis is that changes in the policy interest rate may not influence other interest rates in the economy in periods of acute financial stress, as the latter can stunt the monetary transmission

mechanism. For example, as a consequence of the demise of Lehman Brothers, the TED spread (the difference between the LIBOR and the federal funds rate) soared from 209 to 463 basis points between August and October 2008. This resulted in higher bank financing costs in spite of a reduction in the federal funds rate. The crisis also showed that economic dynamics can become highly non-linear, and that shocks may involve considerable tail risks. In such cases, the monetary strategy must emphasize risk management to reduce the impact of external events with a high adverse impact on the health of the financial sector and the wider economy. Otherwise, the risk of being driven towards a zero interest rate is higher, given that the likelihood of suffering greater shocks increases considerably.

It should be noted that the conventional approach to monetary policy had been under discussion in emerging economies well before the crisis. Most emerging economies did not deregulate their financial markets as aggressively as developed economies, nor did they confine monetary policy to a single instrument. In addition to interest rates, several central banks from emerging economies kept in store macroprudential instruments aimed at reducing systemic risks. Notably, the central banks of the main Latin American economies have made cyclical use of reserve requirements, caps on foreign exchange positions, and liquidity requirements to limit potential disequilibria caused by surges in short-term capital inflows.

An explanation for this emphasis on complementary instruments to mitigate financial risks is that central banks in emerging economies have operated under greater uncertainty, with recurrent financial crisis episodes; and less-developed financial markets increased risks associated with abrupt capital outflows, unexpected exchange rate depreciations, and terms of trade fluctuations. In fact, many of these tools were introduced at the end of the 1990s in the wake of the 1997 Asian crisis and the 1998 Russian crisis. In particular, several macroprudential instruments, especially in highly dollarized economies, aim at limiting risks associated with exchange rate mismatches. In general, macroprudential instruments have been tailored to the needs and economic and

financial structure of each country. These instruments include: capital requirements and provisioning, limits on leveraging, liquidity requirements, reserve requirements, and caps on loan-to-value ratios, together with non-conventional monetary and fiscal policies aimed at reducing macroeconomic and financial risks with implications for financial stability.

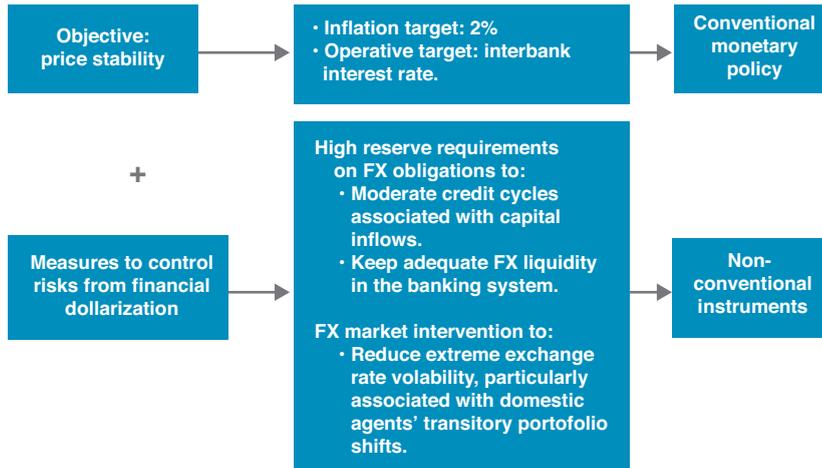
A main feature of most macroprudential instruments used in the region is their discretionary component, which allows greater flexibility in view of the difficulties in measuring systemic risks. Only some countries in the region, like Bolivia and Peru, have used rules to trigger certain instruments, such as the accumulation of dynamic provisioning and –in the case of Chile– additional capital requirements. Lately most Latin American central banks have intensified the use of these kinds of policies, which likely have contributed to enhancing financial resilience. At the same time, they recognize the potential risks from regulatory arbitrage and the risk that excessive use of these instruments may encourage financial disintermediation.

Peru's Experience

Peru's conduct of monetary policy reflects the lessons learned from past crises. In 2002 the Banco Central de Reserva del Perú (BCRP, Peruvian central bank) adopted an IT arrangement that targets the 12-month variation of Lima's consumer price index (CPI) at $2\% \pm 1\%$. Peru's brand of IT departs somewhat from international standards in that the BCRP uses other instruments, in addition to the reference rate, with an aim to reduce balance sheet risks associated with high financial dollarization.

Since the beginning of the 1990s, dollarization has been a significant concern to Peru's monetary authorities in view of its potential risks to the financial system. Dollarization remained above 75% on average in the 1990s. An important part of dollar bank loans were extended to local firms earning domestic currency incomes, a mismatch that raised credit risks associated with abrupt exchange rate fluctuations. With an aim to limit risks from dollarization, in addition to the usual monetary policy instruments, such as the short-run interest rate, since the beginning of the 1990s the BCRP has used high reserve requirements on

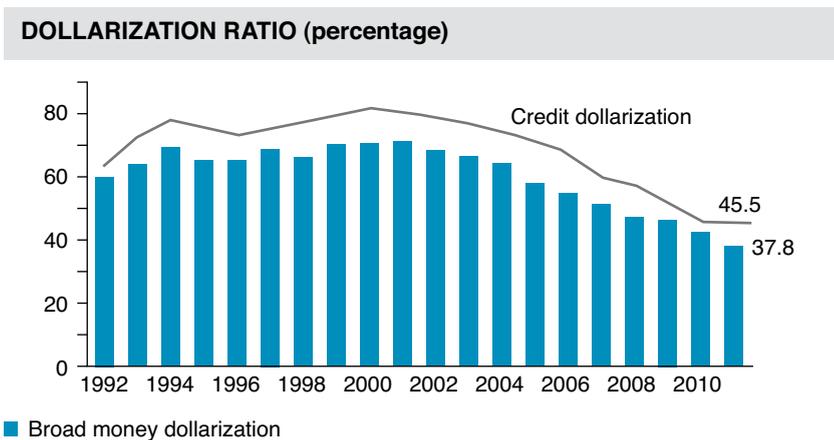
Figure 1



foreign currency bank deposits and intervened in the foreign exchange market to reduce excessive exchange rate volatility.

In a dollarized economy, high reserve requirements are intended to: *i)* create adequate international liquidity to face potential bank runs and

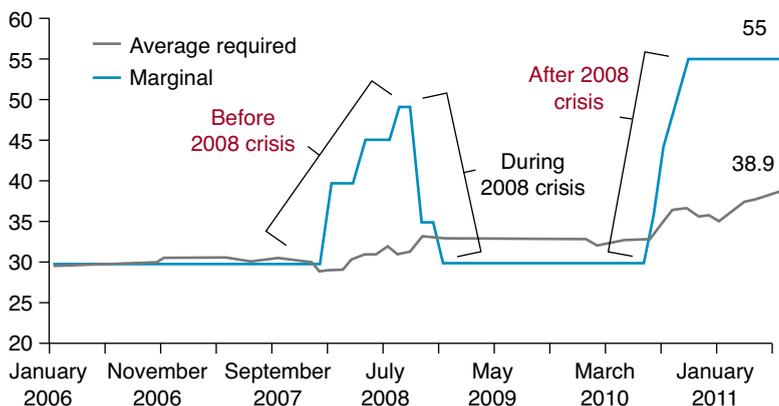
Figure 2



sudden capital reversals; *ii*) reduce pressure on bank credit growth in the face of low international interest rates and high and persistent capital inflows; and *iii*) internalize risks from financial dollarization. The Asian and Russian crises of the end-1990s exposed the risks from excessive short-run foreign leveraging and made clear the need to extend the use of high reserve requirements to local banks' short-run obligations to foreign banks. In 1997, the latter jumped from 5% to 16% of banks' total foreign exchange liabilities, which introduced an important element of vulnerability. In these conditions, the global crises created substantial pressure on foreign exchange liquidity and the exchange rate. The domestic currency depreciated by 22%; credit growth dropped from above 20% in 1997 to zero in 1999; and ten banks were driven out of the system between 1999 and 2002. The economy decelerated from an average 5.3% in 1991-1997 to 2.5% in 1998-2002 (1% in 1999). To avoid such risks, in 2004 the BCRP expanded reserve requirements to short-run obligations. This encouraged banks to lengthen foreign funding maturities.

Figure 3

FOREIGN CURRENCY RESERVE RATIOS
(as percentage of total obligations subject to legal requirements)



The recent crisis put to the test the BCRP's IT strategy *cum* financial risk control. Interest rate differentials and currency depreciation expectations attracted important capital inflows in the run-up to the crisis (first half of 2008). The important bank liquidity levels originated by capital inflows hindered the BCRP's conduct of monetary policy. Appreciation pressures intensified in Peru's small foreign exchange market. In this context, in addition to raising the reference rate (from 4.5% in July 2007 to 6.5% in August 2008) in response to inflationary pressures, the BCRP increased reserve requirements on domestic and foreign currency deposits to ensure an orderly expansion of liquidity and credit.

Higher reserve requirements led to an accumulation of bank liquidity in foreign currency, which reduced the financial system's vulnerability to potential shocks in the form of sudden bank withdrawals or capital reversals. Additionally, the increase in reserve requirements on short-

Figure 4

EXTERNAL LIABILITIES OF BANKING ENTITIES
(balance in millions of us dollars, ratio in percentage)

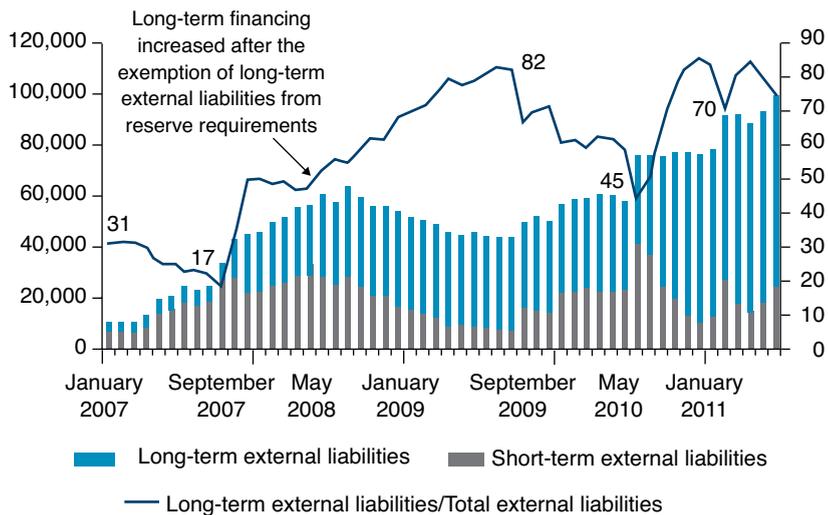
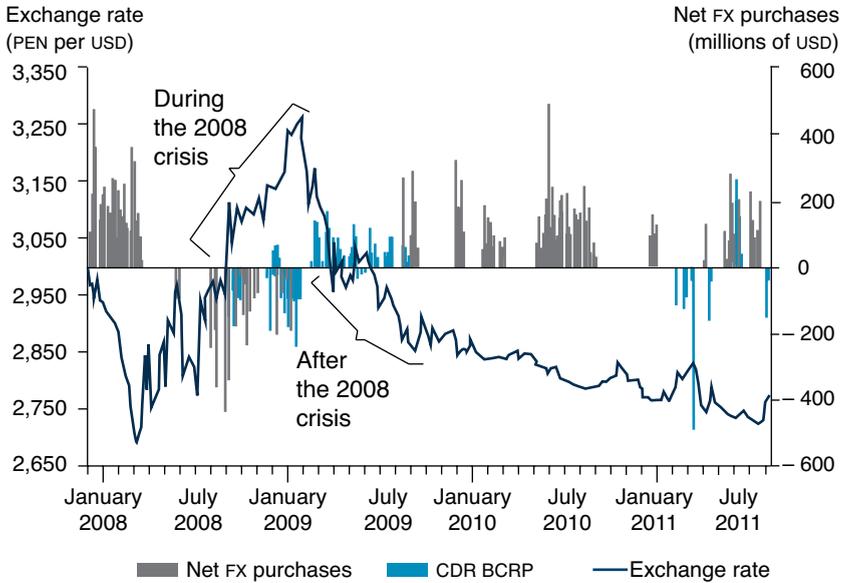


Figure 5

NOMINAL EXCHANGE RATE AND NET FOREX INTERVENTION

Millions of USD	Net purchases	New maturity of CDR-BCRP	Net placements of CDLD
Accumulated 2007	10,306	0	0
Accumulated 2008	2,754	-1,421	0
Accumulated 2009	108	1,421	0
Accumulated 2010	8,963	0	160
Accumulated October 3, 2011	1,493	-590	-160
Accumulated 2007-2011	23,624	-590	0



run obligations at end-2007 encouraged banks to shift from short- to long-term foreign leveraging, thus reducing external financing volatility.

In the same period, the BCRP boosted the frequency and intensity of foreign exchange intervention, leading to an USD 8.4 billion increase in official reserves in January-August 2008. This precautionary reserve buildup enhanced the BCRP's ability to inject foreign liquidity and pre-

vent an abrupt currency depreciation during the capital reversal that took place in the first half of 2008.

In September 2008, the BCRP responded immediately to the turbulence caused by the Lehman Brothers bankruptcy by injecting liquidity amounting to 9.3% of GDP through a wide range of instruments, such as reducing reserve requirements to end-2007 levels, foreign exchange sales by USD 6.8 billion in September 2008-February 2009, repo operations, and currency swaps.

Non-conventional instruments were also used to protect vulnerable market participants. The crisis provoked a segmentation of the money market, which resulted in reduced funding to smaller or higher-risk entities. The BCRP responded by increasing both the number of participants in liquidity injection facilities and the kinds of assets acceptable as collateral—specifically, collaterals accepted in repo operations were extended to include high-rating credit instruments. Additionally, repo maturities were expanded and government instruments were auctioned to prevent interest rates in these markets from increasing abruptly.

Table 1

MONETARY INJECTION OPERATIONS

	<i>Flow September 2008-February 2009</i>	<i>Period of implementation</i>
Repo	7,877	From October 2008
CDBCRP ¹	8,045	January-May 2008
CDBCRP ²	16,581	From September 2008
Reserve requirements	2,307	Eight reserve requirement measures between September 2008 and March 2009
Total	34,810	
Percentage of 2008 GDP	9.30	

¹ Certificados de depósito del Banco Central de la República.

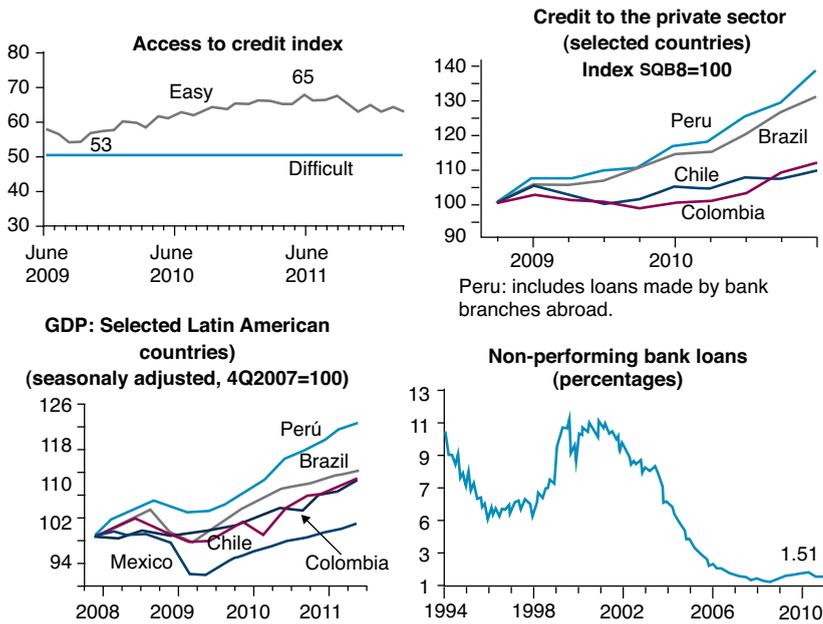
² Certificados de depósito del Banco Central de la República con negociación restringida.

These measures cushioned the domestic financial system from the impact of the crisis and facilitated a swift and sustained recovery of credit and growth from the second half of 2009. Peru's GDP and credit cumulative growth since end-2007 remains the highest in the region. During the worst of the crisis (October 2008-March 2009) access to credit was preserved and non-performing bank loans remained low.

In sum, Peru's response capacity during the crisis was made possible by the BCRP's ability to mobilize foreign exchange liquidity against capital outflows, credit reversals, and depreciation pressures. Large reserve buffers built up in the years prior to the crisis through reserve requirement management, foreign exchange intervention, and a strong fiscal position, in a context of favorable terms of exchange, were key in this

Figure 6

PERU: SELECTED INDICATORS



respect. The policy mix and timing under the crisis illustrates the importance of ensuring adequate liquidity on three fronts: official reserves, financial liquidity, and the maturity and composition of foreign debt.

Challenges for Coming Years

One of the main lessons from the crisis is the need to put in place policies aimed at limiting the exposure of the financial system to systemic risks. This requires both an institutional framework that establishes the principles and instruments governing financial macro-regulation and a clear distinction between the mandates of monetary and macro-regulatory policies.

Experience shows that it is possible to implement macroprudential policies while preserving the two pillars of monetary policy; i.e., central bank independence and the single mandate to preserve monetary stability. The latter are fundamental to anchor inflation expectations and enhance central banks' ability to control inflation.

In the face of various potential sources of systemic risk, macroprudential policies require a set of instruments wider than the standard monetary policy toolkit. Such instruments have the common objective of deterring financial market participants from taking excessive risks and protecting the financial system against low-probability but high-impact events. Several central banks, especially in emerging market economies, have used instruments such as capital requirements, counter-cyclical provisioning, additional liquidity requirements, and debt limits to meet these objectives.

The use of these instruments represents an important challenge to the authorities, as they typically impose efficiency costs on financial intermediation. However, these are lower than the benefits from preserving financial stability. At the same time, shortcomings may be limited by using the right mix of instruments –especially distributing the burden of macroprudential regulation among a wider set of tools. It is fundamental to ensure an adequate flow of information from the regulatory and supervisory authorities to the officials in charge of implementing macroprudential policies, as well as adequate coordination between

the central bank, the financial regulation entities, capital markets, and the government. With an aim to institutionalize macroprudential policy, financial stability committees have been introduced in the US (Financial Stability Oversight Council, July 2010), the UK (Financial Policy Committee, July 2010), and the EU (European Systemic Risk Board, December 2010) to coordinate actions by regulatory and supervisory entities, the central bank, and the ministry of finance.

In preventing systemic risk, the European Central Bank (ECB) plays a more important role than the US Federal Reserve and the Bank of England, while the latter two have reinforced their micro-prudential role. Additionally, the committees' regulatory perimeter has been expanded to include other systemically important financial intermediation entities, such as mutual funds and insurance companies. Legislation has also been passed to grant increased powers to the central bank, the Treasury, and the banking supervision body in the resolution of financial crisis.

In Latin America, Brazil, Mexico, Chile, and Uruguay have made progress in establishing macroprudential committees. In January 2006, Brazil created the Committee for the Regulation and Supervision of Financial and Capital Markets, Insurance Companies, and the Pension System (Coremec); in July 2010, Mexico established the Financial System Stability Council (CESF); in April 2011, the creation of the Financial Stability Council (CEF) was proposed in Chile; and the Financial Stability Committee (CEF) was established in Uruguay in June 2011.

Many challenges remain going forward. In particular, the limits between monetary and macroprudential policy need to be further clarified; and additional work is required to identify areas where the complementarity between monetary and macroprudential policies can be maximized.

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Julio Roberto Suárez Guerra

Comments on presentations

Guatemala is a small open economy located in the western hemisphere next to Mexico. It features a long track record of macroeconomic stability reflected on low fiscal deficits, a solid external position, one-digit inflation, a sound banking system and a flexible exchange rate regime. Despite its robust macroeconomic fundamentals, during the period 2007-2009 Guatemala faced two significant shocks, namely the food and oil prices shock and the global financial crisis. Regarding the food and oil prices, the surge of their international prices affected significantly the domestic inflation due to the important weight of food and energy in the domestic CPI. As a response, during 2007-2009 the Central Bank raised its monetary policy rate 225 basis points to moderate inflationary pressures and avoid second-round effects, and as we will underscore afterwards this created room to the monetary policy to be accommodative during the global financial crisis. With respect to the 2008-2009 global financial crisis, it had a negative impact on the Guatemalan economy given its tight trade relation with the US economy. As a matter of fact, the effects of the global crisis on the domestic economy can be divided into four stages.

The first stage, which began in early 2008, was characterized by a tightening of external banking credit to local banks, which prompted

Deputy Governor, Banco de Guatemala.

a reduction of capital inflows, and hence, a shortage of foreign currency liquidity, namely of US dollars (USD). It is worth to mention that this contraction did not affected dramatically the domestic banks liquidity because the central bank activated several mechanisms to provide them foreign exchange liquidity. In this context, liquidity and solvency remained strong since the domestic banks had no exposure to risky subprime mortgage assets in the United States and the participation of foreign banks in the system was small.

During the second stage, which began in September 2008 with the Lehman Brothers collapse, our economy started to experience a significant depreciation of the Guatemalan quetzal, a contraction of trade (both imports and exports), remittances, foreign direct investment (FDI) and a reduction of tax revenues provided the deceleration of domestic and external demand. Initially, the economic authorities allowed the automatic stabilizers to operate. However, as global crisis deepened after September 2008, they intensified their policy dialogue with the IMF staff on the key elements of a comprehensive policy response. Since there were significant risks of a worsening of external conditions due to a more severe impact of the global financial crisis on Guatemala's trading partners, particularly the United States, fiscal authorities proactively secured financing from external multilateral sources which had a positive effect on expectations, because it was not only appropriate to launch fiscal stimulus and prevent crowding-out of credit to private sector, but it was also a commitment to limit the size of fiscal stimulus. Nevertheless, the important decrease of international commodity prices, and the reduction of domestic demand prompted a significant reduction in inflation.

By late 2008, leading indicators of economic activity pointed to a rapid deceleration; however, the more significant impact was observed since early 2009 (drastic reductions in trade, tax revenues, remmitances, and FDI), where the third stage began. Notwithstanding, it is important to mention that although Guatemalan economic activity slowed down during this stage, it did not shown a profound contraction as their regional peers. In fact, it was among the few economies that registered a positive

rate of growth during 2009 (0.5%). I believe this positive outcome was a result in part of the adequate response to the global financial crisis reflected on: the authorities' proactive action by securing external financing in 2008, a moderate fiscal stimulus, the reduction of 275 basis points of the monetary policy rate, and the subscription of an stand-by agreement with the IMF with exceptional access (300 percent of quota) which I believe served well the country by helping economic agents maintain confidence in the authorities' response to the crisis by increasing existing liquidity buffers and endorsing macroeconomic policies aimed at preserving macroeconomic stability during the global slowdown.

The fourth stage began in early 2010, when we could observe a normalization of external credit lines to local banks, a nominal exchange rate appreciation, and a reactivation of domestic demand. In fact, we are still in such an episode.

Comments on the Papers Presented for Session 2

Given that I have to comment on the presentations made by our distinguished speakers, I will try to give some general comments to them based on different experiences documented in various research papers.

As for the general macroeconomic lessons, I will review those basic principles on which monetary policy was implemented before the occurrence of the economic and financial crisis; next, on the question of how it has changed our conception of monetary policy; then on the implications for the implementation of monetary policy, and finally I would refer to the upcoming challenges for economic policy.

Basic Principles

According to Mishkin (2011), before the occurrence of economic and financial crisis that led to the Great Recession, both empirical evidence and economic theory, guiding the way in which monetary policy was implemented in most central banks, were based on nine principles. The first refers to the seminal work of the Nobel Prize winner in Economics, Milton Friedman, who stated that "inflation is always and everywhere a monetary phenomenon", premise under which central

bankers recognize their responsibility as the importance of keeping inflation low and stable. The second basic principle has to do with the benefits of price stability: maintaining a low and stable inflation promotes the efficient use of resources, reduces the uncertainty to economic agents, encourages investment, and avoids arbitrary redistributions of income and wealth. The third basic principle refers to the non-existence of the long-term negative relationship between inflation and unemployment, so that maintaining low and stable inflation promotes labor supply as a result of increased efficiency of production resources. The fourth basic principle refers to the important role played by expectations in macroeconomics, which have become a central element of macroeconomic analysis from the work of Robert Lucas, mainly, in which agents are assumed to process information provided by the monetary authority and, on this basis, make their consumption decisions, savings and investment, so that the credibility of the monetary authority is crucial for macroeconomic analysis. The Taylor principle as the fifth basic principle, states that in order to achieve price stability, monetary policy interest rate increases should be higher than expected increase in inflation, which implies that the real policy interest rate must be positive. The sixth principle has to do with the time inconsistency problem, an idea originally introduced by Finn Kydland and Edward Prescott in 1977, which earned them a Nobel laureate in economics, under which the policy action taken by a central bank, today considered optimal, may not remain so tomorrow, thus reputation and credibility of a central bank to effectively fulfill its mission becomes crucial. The seventh principle refers to central bank independence, which is a way to eliminate the inflation bias and the problem of time inconsistency discussed above. The central bank should not be independent only *de jure* but also independent in terms of use of instruments, objectives and budget, which allow them to adopt stabilization policies subject to an explicit inflation target under a specific legal mandate to avoid the political cycle. The eighth basic principle refers to the central bank's explicit commitment to its goal of price stability through a clear nominal anchor to maintain the credibility of undertaken monetary policies, to resolve

the time inconsistency problem and motivate the government to implement responsible fiscal policy measures. The last basic principle has to do with the role of financial frictions in the economic cycle, which increase the asymmetry of information and financial instability so that the financial system becomes unable to channel funds into activities that generate productive investment opportunities, and might lead to economic downturns.

Now, How Did the Crisis Change the Way We Think?

Mishkin (2011) keeps on telling us that there are five lessons that could be derived from the occurrence of financial crisis and that can answer the question posed. First, the development in the financial sector has a more profound impact on economic activity than previously anticipated. Indeed, the crisis was a reminder that financial frictions should be front and center as a macroeconomic analysis, in conjunction with price stability. Second, macroeconomics is highly nonlinear. The models used to describe the economy were based on linear dynamic equations; however, these models represent approximations of the economy when operated under normal conditions, this approach may not be suitable when the economy is in the presence of a financial turmoil. Third, the zero bound on interest rates is more problematic than we thought, particularly because there is a short term phenomenon. Thus, massive interventions may be needed in the credit market and a major expansion of the balance sheets of central banks. Fourth, the *cost of cleaning* after a financial crisis occurred is very high. These costs are in addition to the loss of aggregate domestic product from: slower growth, a deteriorating fiscal position, long-term effects of inflation, and erosion of central bank capital. Finally, the stability of price and output does not ensure financial stability. Theoretical research suggests that a healthy economic environment promotes considerable risk taking, which could lead to fragility in the financial system, so it is necessary to have or enhance a regulatory framework that ensures financial stability.

The crisis has drawn important lessons about the implementation of monetary policy as well as a thorough analysis on the theoretical

concepts we have learned from economics. Yet it would be an exaggeration to consider that the economy has failed due to lack of foresight of the crisis but, rather, it is necessary to recognize the shortcomings that were revealed in order to avoid the same mistakes. In that sense, it is necessary to analyze in more detail the ninth principle outlined above and give it greater importance than previously because the functioning and the role of financial markets, within the framework of monetary policy, has both strengths and vulnerabilities. Therefore, none of the lessons from the financial crisis in any way undermines or invalidates the nine basic principles of the science of monetary policy developed before the crisis. However, the ninth principle is more relevant than central bankers used to think.

Lessons for Emerging Market Economies

In monetary policy, there was a relevant difference between those emerging countries experiencing low inflation, greater central bank credibility and lower foreign currency debt with respect to those that recorded higher inflation rates, lower credibility of monetary policy and higher foreign currency debt since the first were able to implement countercyclical monetary policies more efficiently, while the latter were forced to raise interest rates causing a pro-cyclical effect. Therefore, it is clear that a stronger position prior to the crisis was key to the policy response undertaken by central banks in the two groups in emerging economies. However, recent events suggest that the standard inflation targeting scheme has been expanded to include aspects of financial stability in order to reduce the vulnerability of economies. The crisis also led to a new episode of high volatility, which again prompted discussion about the common currency baskets of regional monetary unions and fixed exchange rates. On the other hand, it has facilitated the use of a flexible monetary policy following the change of exchange rate targeting regime to a regime of inflation targeting in Latin America and, to a lesser extent, in East Asia, so that central banks in these economies had more room to use their operating instrument of policy that the advanced economies.

On fiscal matters, new improvements in the management of fiscal policy (for instance, fiscal policy structural rules) allowed them to limit the effect that, under different circumstances would have generated the crisis. Indeed, strong balance sheets and lower budget debt ratio gave them more room for countercyclical fiscal policies. The fiscal stimulus undertaken by this group of economies helped to cushion the effects of the disruption in demand for exports. This has also helped expand social programs to help the most vulnerable sectors of the society to lessen the impact generated by the crisis. Furthermore, large fiscal deficits (of about 3% of GDP in emerging economies) that were associated with lower tax revenues worked as automatic stabilizers, generating a countercyclical effect.

With regard to financial stability and banking regulation, bank regulators should require banks to match, as much as possible, the maturity of their assets and liabilities when operating in foreign currency, and adjust the position of the firms in markets and futures options. Moreover, in contrast to the concern about foreign banks to leave the country at the slightest sign of trouble, they were held to support their subsidiaries in emerging markets in a remarkable degree, which helped lessen the negative effects that crisis could have caused in their domestic financial markets. Similarly, the presence of foreign banks is associated with currency mismatches, with the implied financial difficulties; however, emerging markets should encourage the entry of foreign banks and strictly regulate their local lending practices. There is also evidence that countries with better developed bond markets experienced fewer negative consequences derived of the crisis. Finally, to encourage the participation of foreign investors is a quick way to encourage the activity of a local bond market; however, recent experience suggests that faster is not necessarily better.

With respect to the implications for the international financial architecture, they imply a need for cooperation between international agencies to jointly manage a broader set of macro-financial information and greater experience to continuously assess and identify key risks and vulnerabilities of the global financial system. It also requires more and

better information on markets to help policy makers improve the assessment of systemic risk. It is also necessary to enhance border relations for joint crisis management as countries cannot cope with large financial institutions, complex and globally active by themselves (here recent coordination efforts from the IMF and the FSB, are welcome). However, the improvement of crisis management will require better provision of international liquidity to prevent side effects that become a solvency problem. On the other hand, reserve accumulation policies to protect economies during the crisis is now a questionable measure given the uncertainty about the immediate availability of these funds in emerging economies in times of global crisis. Should be analyzed in the same way, the desirability of establishing a reserve system in different currencies where a single issuer not monopolizes the privilege of supplying the reserve unit.

The crisis reminds us that much remains to be done to deal with economic and financial matters. Central bankers have to think about a much wider range of policy issues than they used to handle in the past (for instance, to complement their price stability objective with a financial stability mandate). We are faced with a whole new agenda for research, such as, how to monitor credit conditions and how to use monetary policy to prevent excessive risk taken, based on the correct and opportune information. Political economy of financial regulation, financial openness and financial crises, will be of great relevance. Emerging markets need to continue adapting their policies to take advantage of the globalization. This means making their economies more attractive for foreign investment by streamlining bureaucracy and enhancing competitiveness. It also means conducting sound and stable monetary, fiscal and debt-management policies in good times so that they have space to deploy those policies in bad times. Emerging economies will also have to deal with the current international monetary system, not the one they think prevails. Post-crisis reform agenda is enormous. In particular, the reforms should rely on economic reasoning to identify market failures and spillovers as well as to envisage the best way to solve negative incentive problems.

Upcoming Challenges

The monetary policy faces challenges due significant changes in the functioning of the bank lending channel of monetary policy transmission resulting from financial innovation and changes in banks' business models. Inflation targeting has played an important role in achieving a worldwide low inflation. However, the limitations of the medium-term forecast become a difficult issue to address. Therefore, some central banks should start to monitor a number of additional variables besides model forecasting and use them for monetary policy purposes.

The financial crisis showed that central banks should be allocated with additional tasks (or a mandate) in the financial stability arena; the governance arrangements for the financial stability functions will be different from those applying to the monetary policy function, as financial stability requires more cooperation with other institutions and may involve more political oversight. The key issue is to preserve the independence of the monetary policy. Moreover, the increase in the size and complexity of central bank balance sheets resulting from unconventional monetary policies and foreign reserve accumulation creates risks that, if left unaddressed, could eventually impact monetary policy credibility.

At the same time, soaring commodity prices have pushed headline inflation rates up to uncomfortable levels in many economies, while tighter capacity constraints have heightened the risks of second-round inflation effects. These increased upside risks to inflation call for higher policy rates, but in some advanced economies this still needs to be balanced against the vulnerabilities associated with continuing private and public sector balance sheet adjustments and lingering financial sector fragility. However, the prolonged period of very low interest rates entails the risk of creating serious financial distortions, misallocations of resources and delay in the necessary deleveraging in those advanced countries most affected by the crisis. Moreover, some emerging market economies show signs of a renewed buildup of financial imbalances, as a consequence of a significant surge of capital inflows, which calls

for international policy coordination. Normalize policy rates in central banks in many advanced and emerging market economies would be dangerous due the vulnerabilities associated with continuing private and public sector balance sheet adjustments and lingering financial sector fragility. However, some have already begun modestly raising policy rates. Even in some of the countries hardest hit by the crisis, markets are pricing in policy rate increases both in the near term and in the coming years. It is also crucial that central banks are to preserve their hard-won inflation fighting credibility, which is particularly important now, when high public and private sector debt may be perceived as constraining the ability of central banks to maintain price stability. Central banks may have to be prepared to raise policy rates at a faster pace than in previous tightening episodes.

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Luncheon Address

Zeti Akhtar Aziz

Charting Sustainable Growth in Asia and Latin America in a New Global Economy

Just a few months ago, many of us believed that, with the improvements in the major economies and the international financial markets, that the time had come to commence the gradual withdrawal of the policy stimulus. Recent developments in several of the advanced economies, however, have generated a higher degree of uncertainty in the global economic and financial environment. While the worst may be behind us, we can expect to be continually confronted with testing challenges in the period ahead.

In this environment, central bank cooperation between Asia and Latin America becomes even more important. Despite the great physical distance separating us, our coming together here in Kuala Lumpur reflects our common conviction that sharing knowledge and experiences will contribute towards our understanding on issues confronting emerging economies. It also allows us to explore the range of solutions to manage and resolve the difficult challenges confronting our economies and the areas which we might work collaboratively. Indeed, actions in both our regions will also be important in shaping global events. It will reinforce our respective efforts for the collective benefit of the global economy with the ongoing fundamental realignment of the international financial and economic landscape. Central to this realignment is the

Governor, Bank Negara Malaysia.

increasing role of emerging economies –particularly in Asia and Latin America– in preserving macroeconomic stability and growth and thus contributing towards global growth.

My remarks today will touch on three key issues that highlight the role of emerging economies in rebalancing global demand, the role of policy in ensuring sustainable growth, and the role of interregional co-operation in reinforcing global growth and stability.

The Rebalancing of Global Demand

Global economic power is gradually shifting towards emerging economies. Once attractive only for their natural resources, source of cheap labour and low-cost manufacturing centers, emerging markets are now increasingly being recognized as important demand centers. Emerging economies now account for 50% of the world economy and this share is expected to rise to 60% by 2030. The International Monetary Fund (IMF) forecasts that the total GDP of emerging markets, in US dollar terms, could overtake that of the developed economies as early as 2014. Underlying this shift is the uneven outlook for global growth.

The slow and fragile recovery in the advanced economies and the conditions that contribute towards this trend indicate the protracted nature of this trajectory. Weaknesses in their labour market and fiscal position will continue to affect their growth prospects. Together with the near-zero interest rates and the sizeable liquidity already injected into their economies, policy options in the advanced economies have become narrowed. At the same time, the high government indebtedness and over leveraged households will take a considerable amount of time to be unwound. These weaknesses will continue to weigh on the recovery and result in downside risks for a prolonged period of time.

In this global environment, emerging economies continue to demonstrate the ability to generate growth in their domestic economies. In addition, the increasing economic and financial connectivity among the emerging economies is reinforcing this trend. While we were not spared from the global economic recession that followed the international financial crisis in 2008, our downturn experience was relatively

more shallow and shorter. This higher level of resilience reflects earlier conscious policy efforts and reforms that has now strengthened our ability to withstand shocks. Stronger institutions and financial systems and relatively healthy fiscal positions underpinned by the sound balance sheet positions of households and businesses have reinforced our prospects for this recovery. Structurally, rising incomes and low unemployment have generated a growing number of consumers, which has in turn contributed to increased domestic demand. This has been important in supporting domestic growth. Emerging economies are currently adding an average of 125 million people to the global middle class each year, and the number is expected to double in this decade.¹ This geographical shift will increase the role of emerging economies from being global producers to global consumers.

Given this prospect, there will be increased potential for emerging economies to increase trade and investment. Two-way trade activities between the economies of Asia and Latin America amounted to USD 172 billion in 2010, an increase of 50% from 2009. Trade between the two regions has in fact risen at an annual compounded aggregate growth rate of 25% since 2000.² In 2010, Latin America accounted for 27% of Asia's trade while Asia accounted for 17% of Latin America trade.³ There is room for this to grow further. Trade is currently concentrated mainly in interindustry activities, in which Latin America largely exports primary products and resource-based manufactures to Asia, while Asia exports manufactured goods of different technological intensities to Latin America. Trade therefore can be diversified and extended further into intra-industry levels that could optimize the competitive advantage of each respective region. Higher investment flows within emerging economies have also increased thus contributing further to unlocking economic growth opportunities.

¹ OECD, *The Emerging Middle Class in Developing Countries*, January 2010.

² Source: JP Morgan.

³ Economic Commission for Latin America and the Caribbean (ECLAC), 2011.

While growth prospects in emerging economies remain positive, the more open emerging economies that have significant trade and financial links with the advanced economies will however be affected by developments in these economies. Countries in Latin America including the Central American countries for example have been adversely affected by the developments in the United States, which is a major export market and a source of remittances from nationals that are working there. However, the increased resilience of several of these economies built up over several years have reduced the extent of this impact.

A further challenge for several of the emerging economies is the rising inflation emanating mainly from high commodity and energy prices. The increased downside risk to global growth and the resultant abatement of pressure on international commodity prices have however relieved some of these pressures on inflation. Nevertheless, underlying domestic demand appears to be sustained amid the diminishing slack in the emerging economies and this will require continued vigilance. In this regard, central banks in several emerging economies have raised interest rates while taking into consideration the need to avoid a subsequent need for an over-tightening of monetary policy that could also affect growth in this environment.

Finally, emerging economies have also experienced greater volatility in capital flows, driven by the growth differentials, the increased global liquidity and investors' search for yield. These surges in capital flows and its reversals have increased the foreign exchange rate volatility, the risk to the buildup of financial imbalances and unpredictable fluctuations of prices of financial assets which in turn could exacerbate domestic economic and financial boom-bust cycles. Several emerging economies have therefore implemented a series of macroprudential measures to mitigate this risk.

Policies for Sustainable Growth

While policies for macroeconomic stability is vital to support economic activity in this uncertain external environment, equally important for emerging economies is to ensure high quality and inclusive growth.

For monetary policy, the challenge is to manage concurrently the risks of slower growth, rising inflation and the buildup of financial imbalances. Given the uncertain global environment, several emerging economies have undertaken a pause in monetary policy normalization. At the same time, actions have also been taken, in particular, in several emerging economies in Asia to contain excessive growth in credit, signaling the potential for incipient financial vulnerabilities.

Anticipatory policy responses to address the potential buildup of financial imbalances and macroeconomic instability will have the potential to be most effective. At the same time, it will reduce the prospect for over adjustment and high costs to the domestic economy. Preemptive monetary policy will need to be complemented with prudential policies. In Malaysia, we commenced monetary policy normalization and raised interest rates starting in early 2010. This was complemented by a series of macroprudential measures during the course of 2010 and this year. The recent fiscal budget currently being debated in our Parliament has also announced tax measures that reinforce these policies. Over the medium-term, structural policies will also be important to facilitate the economic transformation. This will be essential to enable us to be well positioned to respond to the fundamental structural changes taking place in the global and domestic environment. In undertaking these structural reforms in an environment of growth, it enhances the likelihood of its success.

In Asia, policy efforts have focused on fostering greater emphasis on promoting domestic demand and regional integration. It is recognized that the continued reliance on the advanced economies for export-led growth will limit our potential. This has included an extensive series of pro-growth policies of specific sectors of our economies. This shift towards greater domestic and regional demand will also contribute towards the unwinding of global imbalances. Core attention is also given to avoid excessive leverage that could give rise to impaired balance sheets of households, the financial sector and that of the government.

In Asia, policy emphasis has also been given towards developing greater intraregional financial intermediation. In this regard, the

relatively high savings rate in several of our economies provides enormous opportunities to finance the investment activities in our region. The increased intra investment activities also benefit from the transfer of skills and technology arising from these significant intraregional flows.

Globally, there has to be progress and meaningful reform of the international monetary system. Although the importance of emerging economies has increased, the shift has not been matched by corresponding changes in the governance of the global monetary and financial system. The setting of global standards and rules remains very much the preserve of the advanced economies while the US dollar and the euro remain very much at the centre of the global monetary system.

In addition, the quantitative easing measures by central banks in the advanced economies have resulted in surges in global liquidity and heightened currency and financial market volatility in the international financial system. Emerging economies are thus at the receiving end of this increased volatility.

While it is recognized that the progress towards a better international financial system needs to be gradual. There is also a need to inject a greater urgency towards exploring the possible options to facilitate the development of a more stable international monetary system. In this regard, it is hoped that the growing prominence of several Asian and Latin American economies in the international policy forums would contribute to greater progress in reshaping the international monetary system.

The Role of Interregional Policy Cooperation

With greater economic and financial interdependence in the global economy and the international financial system, sustainability of global growth and financial stability has become a shared responsibility. As national boundaries are blurred by greater integration, the significant impact of external developments on our economies will increase. While the buildup of domestic resilience is important, increased cooperation among emerging economies will become critical. In retrospect, the value of international monetary and financial cooperation was highlighted when the international community came together to address the effects

of the financial crisis in the advanced economies in 2008. The positive outcome arising from the collective action of countries in restoring stability in global financial markets and, in dealing with the crisis is evident – the forceful and concerted effort through substantial monetary and fiscal stimulus successfully averted the threat of plunging the global economy into a deep depression. In contrast, during the Asian financial crisis in 1997/1998, the respective countries in Asia dealt with the crisis on their own. This experience has brought the region together in a number of areas, including surveillance, developing regional financial infrastructure, harmonization of rules and documentation, and in capacity building.

Given the significance of emerging economies in the global economy, it is important that emerging market economies have a more influential voice and role in shaping the systems and rules that govern the world economy. Collectively, emerging Asia and Latin America would be better positioned in advancing the perspectives of emerging economies. At a time when the global monetary and financial system is being redesigned and undergoing change, this would ensure new international standards and reforms take into account the views of emerging economies.

The scope for regional cooperation is wide and varied as both Asian and Latin American countries possess knowledge, expertise and experience unique to their own history and economy. This effectively provides value in terms of capacity and institutional building as well as facilitating knowledge sharing in many fields.

Creating an enabling environment through stronger financial linkages would also encourage intraregional trade and investment. Trade between Asia and Latin America has increased by more than four times over the recent decade. Intraregional trade and investment can be enhanced by establishing institutional arrangements and mechanisms that would support greater regional financial integration. In addition, standardizing trade and investment procedures such as documentation and settlement systems would also contribute to this trend. Emerging Asian and Latin American countries can also pool together knowledge on building institutional arrangements to further promote and strengthen trade and investment relations.

The increased engagement between central banks from Emerging Asia and Latin America started five years ago to foster greater understanding and more active interactions in policy discussions. This is now being taken to a higher level through the setting up of platforms for inclusive interaction to discuss policy issues and to identify potential channels for further collaboration. This SEACEN-CEMLA conference is important in the area of intraregional exchange, marking the first bilateral exchange between central banks and learning institutions of Latin America and Asia and to explore other potential areas of collaborations.

Conclusion

Allow me to conclude. The global financial and economic crisis has resulted in significant changes to the global economic and financial landscape. A new world is emerging, one that is fundamentally different. In this new world, emerging economies are expected to contribute more and assume greater responsibility for supporting global financial and economic stability. This prospect requires the continuous effort by emerging economies to ensure sustainable growths path that is reinforced by macroeconomic and financial stability. Coming together and cooperating will enhance the prospects for emerging Asia and Latin America to realize the full extent of our potential.

Session 3

**Macroeconomic Effects of the Increases
in Food and Commodity Prices
and Monetary Policy Responses**

Diwa C. Guinigundo

Making Monetary Policy Work amidst Rising Commodity Prices

Background

Commodity price pressures have become an important concern for central banks in recent years. Food and oil prices have been on an uptrend since 2000, with world food prices nearly 80% higher in real terms while oil prices rose by 175% than the levels recorded in January 2000.¹

Prices have also remained volatile in recent months despite weaker global economic activity. Supply and demand conditions in food markets remain tight due to low inventory buffers and weather-induced output shocks on the one hand, and steady demand momentum from emerging and developing economies on the other. Similarly, oil prices have remained volatile amid supply disruptions from ongoing geopolitical tensions in the Middle East and North Africa (MENA) region combined with still-strong global demand.

The factors driving commodity price volatility are expected to remain at play in the near to medium term, even after taking into account the weaker outlook for the global economy. In the case of food, for example, cereal utilization is expected to continue to outstrip production, leading to a continued drawdown in inventory stocks.²

Deputy Governor, Bangko Sentral ng Pilipinas (BSP).

¹ IMF, *World Economic Outlook* (September 2011).

² FAO, *Cereal Supply and Demand Brief* (August 2011), available at <<http://www.fao.org/worldfoodsituation/wfs-home/csdb/en/>>.

In addition, prices are expected to be propped up by extreme weather disturbances, increased fertilizer costs, and structural demand driven by rising incomes in emerging and developing economies. In the case of oil prices, the extent of the moderation in global demand hinges largely on the pace of global economic activity. It should also be noted that gasoline consumption has accelerated over the past two years, suggesting that the growing number of cars per household has started to influence the demand pattern for gasoline. Moreover, oil supply continues to be hampered by the unrest in the MENA region. The medium-term prospects for oil are also weighed down by supply constraints due to maturing fields and a relatively long period of reduced exploration, which is attributed partly to the restrictions imposed on oil investments.

The confluence of these factors suggests that commodity prices will continue to be a key monetary policy concern over the foreseeable future.

Key Policy Concerns for Central Banks

Inflationary pressures from increased prices and volatility of global commodities pose important challenges to monetary policymaking through: 1) risks to the inflation outlook; 2) upward shifts in inflation expectations; 3) spillover or second-round effects; and 4) potential slowdown in domestic demand.

Impact on Inflation

Surges in global commodity prices result in higher domestic price levels, posing risks to the inflation outlook.

Commodity price shocks are of particular concern to central banks in emerging and developing economies where the pass-through of international commodity prices to domestic inflation tends to be larger relative to advanced economies.

The IMF estimates that, over the long-term, a 1% increase in international food prices translates into a 0.34% increase in domestic food prices of emerging and developing economies, almost double the pass-through effect to advanced economies. The pass-through from a 1% oil

price shock to transportation prices is lower at 0.13 for advanced economies and 0.17 for emerging and developing economies.³

Table 1

PASS-THROUGH OF GLOBAL COMMODITY PRICES ON DOMESTIC PRICES¹
(percentages)

<i>Commodity</i>	<i>Advanced economies</i>	<i>Emerging and developing economies</i>
Food	0.18	0.34
Oil	0.13	0.17

¹ IMF estimates of the median long-term pass-through of a 1% increase in global commodity prices on domestic commodity prices.

Source: IMF, *World Economic Outlook*, September 2011.

Price pressures are more pronounced in emerging and developing economies because of the large share of food and energy in their respective CPI baskets, therefore, these economies are more likely to experience second-round effects from high commodity prices.

Indeed, the IMF projects increased levels of inflation for emerging and developing economies in 2011 at 7.5%, with developing Asia expected to post an average consumer price increase of 7.0% during the same period, from the year-ago rates of 6.1% and 5.7%, respectively.

Inflation Expectations

The buildup in inflationary pressures from commodity price increases could generate upward shifts in inflation expectations, which could become self-perpetuating and embedded in the psyche of market participants and consumers.

³ This incomplete pass-through reflects the significant local component in the production of food (including retail and distribution margins, excise taxes and customs duties), subsidies for food and oil, as well as variations in domestic consumption patterns across economies.

The overall effect of continued surges and volatilities of international commodity prices, and the appropriate policy response, will depend crucially on how well inflation expectations are anchored. If monetary policy credibility is high, then medium-term inflation expectations should respond marginally to incoming inflation information, thereby requiring smaller adjustments in monetary policy settings. However, if market participants and the general public do not believe that the central bank can or will stabilize inflation, then inflation expectations are likely to trend upward with upside risks to inflation outlook.

IMF estimates indicate that inflation expectations tend to be generally less anchored in emerging and developing economies than in advanced economies.⁴ However, it is notable that inflation expectations are more well-contained among emerging and developing economies that use an inflation targeting framework. In economies with explicit inflation targets, inflation rises by only 0.07% five years into the future with a 1% standard deviation shock, which is statistically indistinguishable from the response estimated for advanced economies.

Second-round Effects

Price pressures in key commodities lead to more entrenched and broad-based demand-side inflationary pressures, giving rise to spillover effects on other commodities.

Moreover, sustained increases in the international prices of food and oil directly affect the domestic prices of commodities which have a high import content and raise the likelihood of second-round effects, which could feed into wage- and price-setting behavior. In the case of the Philippines, for example, this could take the form of calls for wage adjustments to compensate for losses in purchasing power.

⁴ IMF, *World Economic Outlook* (September 2011).

Table 2

EFFECT OF SHOCK ON INFLATION EXPECTATIONS¹
(percentages)

	<i>Advanced economies</i>	<i>Emerging and developing economies</i>	<i>Emerging and developing economies with IT</i>
Current year	0.6	1.8	0.3
5 years into the future	0.4	0.3	0.07

¹ IMF estimates the effect of a 1% standard deviation shock on inflation expectations. Source: IMF, *World Economic Outlook*, September 2011.

Impact on Output and Domestic Demand

The broader effects of a surge in commodity price inflation also include a curbing of domestic demand and slower output growth via reduced household consumption levels.

For example, escalating prices of food and oil also have adverse effects on households' purchasing power. The direct impact is on food consumption given the significant share of food expenditures in households' income. In large emerging economies, the share of food typically exceeds 25%, while in developing economies, it is above 50%. Nonetheless, oil price increases could also dent households' income levels via direct and indirect effects. International oil prices directly affect the prices of petroleum products consumed by households, while they also indirectly affect the prices of other goods and services used by households that count petroleum products as immediate inputs.⁵

Challenges to Central Banks

The policy concerns sparked by rising commodity prices are compounded by a number of challenges to central banks posed by the current global macroeconomic environment.

⁵ IMF Fiscal Affairs, Policy Development and Review, and Research Departments, "Food and Fuel Prices –Recent Developments, Macroeconomic Impact, and Policy Responses", June 30, 2008.

Slowdown in Global Economic Activity

Weaker external demand implies that individual economies will need to rely on domestic demand. Given the potential decline in consumer spending in advanced economies, specifically the USA, as downside risks to global growth strengthen, emerging economies could be adversely affected through the trade, investment, remittance and tourism channels. It is imperative, therefore, that domestic demand is strengthened by boosting consumption and investment activities. However, increased spending has inflationary effects. The key is to maintain an effective policy balance between sustaining domestic growth and maintaining stable inflation.

Constraints in Fiscal Position

Limited fiscal space puts pressure on monetary policy to preserve macroeconomic stimulus in order to support economic activity. However, this could fuel further inflationary pressures. In addition, with a perceived lack of fiscal policy room in advanced economies, the risk of a too-sudden and too-big fiscal adjustment (for advanced economies) looms, leading to sharp increases in savings rates that could further undercut activity across economies.

Risks in Capital Flows and Financial Stability

Market apprehensions about the sovereign debt problems in advanced economies, mainly Europe, have translated into worries about banks holding these sovereign debts. Weak sovereigns combined with fragile banking sectors could give rise to significant upward shifts in global market risk aversion.

Fiscal and financial vulnerabilities combined with low economic growth could give rise to negative feedback loops, which could translate into a loss in investor confidence while risk aversion increases. This is of particular concern to emerging market economies since a rise in risk aversion could induce investors to shift away from risky emerging market assets, resulting in potential capital flow reversals and liquidity problems.

At the same time, with higher market aversion from adverse fiscal, financial and economic developments in the external front, emerging economies will then have to deal with possibly more significant and more volatile capital flows.

The benefits of capital inflows are well known but so are the risks. On one hand, It is well recognized that increased capital inflows help relax the financing constraints of many emerging economies. Stronger capital inflows tend to have a positive impact on the development of the financial markets.

On the other hand, rapidly rising external liquidity and credit growth could challenge the domestic economy's capacity to absorb the flows. These could stoke inflationary pressures, lead to asset price misalignments, and undermine financial stability.

Monetary Policy Responses

Central banks have an array of tools and instruments at their disposal to respond appropriately to pressures arising from increased commodity costs. In principle, monetary authorities have the flexibility to use all available policy instruments to rein in inflation to safeguard price stability.

As a general rule, however, central banks typically accommodate the first-round effects of commodity price increases on domestic inflation. Instead, monetary policy responds mainly to second-round effects that could lead to wage adjustments and also influence the price-setting behavior of firms via interest rate action.

Monetary policy looks through supply side pressures since these are driven by factors outside the central bank's control. Nevertheless, authorities can also employ non-monetary measures to address supply-side risks such as dialogue with concerned agencies of the government who are responsible in implementing measures to address supply gaps and disruptions. For example, in the case of domestic food supply, the timely importation of major food products can directly address supply constraints.

In the case of oil prices, public dissemination efforts on energy conservation as well as facilitating access of major users to petroleum

products (e.g., transport groups) through discount schemes could form part of the response to elevated oil prices. Government authorities may also put in place subsidy schemes, while in extreme cases, they may resort to implementing price controls to moderate oil inflation.

An equally important tool in ensuring that monetary policy works amidst rising commodity prices is the communication policy of central banks, which would help in managing the public's inflation expectations. Delivering clear, comprehensive and concise monetary policy statements also helps to strengthen central bank credibility. A credible central bank has a better handle on inflation and inflation expectations, ensuring that monetary policy works even amidst the uptrend and volatility of global commodity prices. This would include press releases on price developments and monetary policy decisions as well as media pronouncements on the central bank's views on inflation-related matters. In addition, the publication of various reports as well as highlights of the monetary policy meetings could also form part of monetary policy communication. Some central banks also hold regular seminars and conferences involving the discussion of monetary developments and policy issues. At present, about 90% of central banks worldwide publish monetary policy statements, which include monetary authorities' policy outcomes and the reasons behind the decisions, view on prevailing conditions, outlook for the economy and the inflation coupled with a discussion of the associated risks, and forward policy guidance.

The BSP's Policy Responses

Consistent with its inflation targeting framework for monetary policy, the BSP considers a comprehensive set of information that reflects the trend in the various factors affecting inflation and output growth. These include demand and supply indicators as well as variables that provide information on financial market conditions.

The uptrend in international commodity prices directly impacts on the domestic prices of commodities, particularly those with a high import content and gives rise to second-round effects, leading to a more generalized increase in prices.

For example, the global oil and food price surge in 2008 contributed to second-round effects, which affected the wage- and price setting behavior of businesses. A rise in inflation expectations was also evident from surveys and financial market data, while the BSP's forecasts showed the risk of inflation exceeding targets for 2008 and 2009. The BSP responded to these second-round effects with decisive action and strong anti-inflation pronouncements. In particular, the BSP raised key policy rates by a total of 100 basis points from June to August 2008 while strengthening its anti-inflation commentary. So far in 2011, the BSP raised its policy rates twice during the first five months of 2011 (on March 24 and May 5) by a cumulative 50 basis points to 4.5% for the overnight borrowing or reverse repurchase (RRP) facility and 6.5% for the overnight lending or repurchase (RP) facility to ensure that inflation expectations remain well-anchored amid the growing risks to the inflation outlook brought about by continued capital flows.

In the midst of strong foreign exchange inflows, interest rate action may be complemented by other policy measures. The BSP raised the reserve requirement ratio twice (on June 24 and August 5) by a total of two percentage points to preserve price stability amid the additional inflationary pressures brought about largely by the surge in foreign exchange inflows to the country. The BSP also makes use of all other instruments at its disposal to rein in inflation, including the special Deposit Account (SDA) facility, rediscounting facility, and outright sale/purchase of BSP's holdings of government securities.

The BSP keeps a close watch on inflation expectations and ensures that these are firmly anchored through careful communication of policy decisions. An effective communication policy, backed by timely policy action, will help manage inflation expectations. Indeed, in the recent commodity price spikes, the BSP scaled up its anti-inflation rhetoric in its policy statements to reduce the risk of self-perpetuating inflation expectations becoming embedded in the psyche of markets and consumers. In addition to conveying the outlook and risks to inflation, and forward-looking information, communication policy also seeks to explain

policy decisions and make clear that the central bank will only respond to the second-round effects of supply-side shocks.

The BSP also actively supports the use of non-monetary government intervention measures to address more directly the supply-side risks to the inflation outlook, especially in the case of food prices. This is reflected in increased coordination with the Department of Agriculture (DA) and the Department of Trade and Industry (DTI) during periods of tight supply conditions to ensure that gaps are addressed through the timely importation of major food products such as rice, meat, and corn.

Finally, the BSP is of the view that the exchange rate plays an important role in tempering imported inflation. In particular, an appreciating exchange rate, determined by market forces of demand and supply, helps to reduce the cost of imported commodities. The BSP pursues a freely-floating exchange rate system, with scope for occasional official action to maintain orderly market conditions.

Gustavo E. González

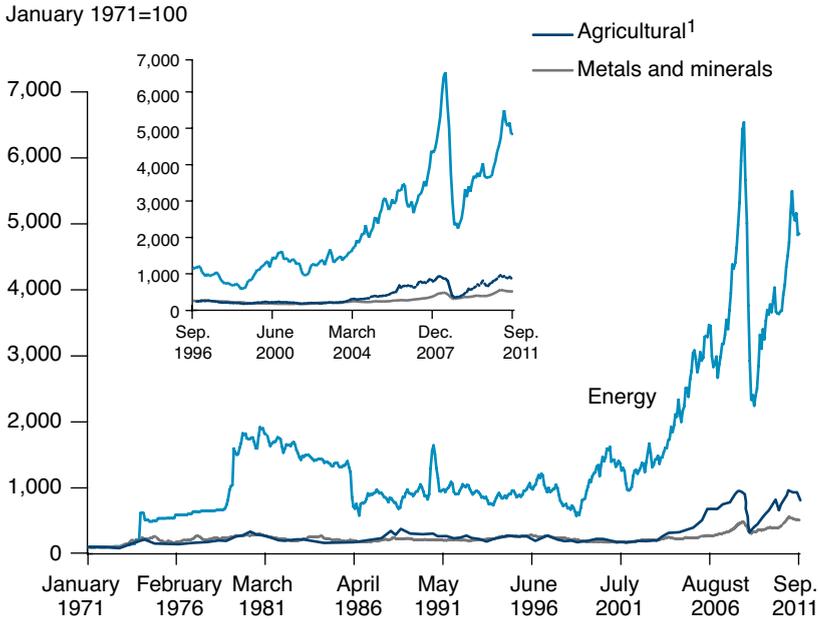
Macroeconomic Effects of Commodity Prices Evolution and its Relation with Monetary Policy in Emerging Countries

The objective of this paper is to present some of the linkages that arise between the evolution of commodity prices and the designing of macroeconomic policies. Particularly we want to show how monetary policy should take into account the challenges that those prices poses on emerging market economies (EMEs). Our comments will be from the perspective of the Argentinean economy, an small open economy that share many features with the EMEs but it also has its own peculiarities. In the last two decade, in general, there was a global environment of strong real economic growth and low levels of domestic inflation. Within that framework, as it is shown in Figure 1, all kind of commodities prices (energy, agriculture and metals and minerals) followed an upward trend, both in nominal and in real terms. That evolution included the boom in the years before the financial and economic collapse triggered by the Lehman outburst. In real terms during the last decade, while energy prices reached historic highs, agricultural commodities did not achieve the 70s peak (Figure 2).

Economic advisor for the Deputy Governor, Banco Central de la República Argentina. The author is grateful to Florencia de la Iglesia for her helpful comments and efficient assistance in the preparation of this document. The views expressed are totally personal to the author.

Figure 1

COMMODITY PRICES
(current USD)



Source: World Bank.

¹ Includes: cocoa, coffee, tea, coconut oil, peanut oil, palm oil, soybean meal, barley, corn, rice, wheat, banana, beef, chicken, oranges, sugar, wood, cotton, rubber and tobacco.

Though high commodity prices have favorable effects in commodity-exporting economies (e.g. external sector and public finance), it was also seen that the increases in all kind of commodities was accompanied by a higher degree of volatility. As it happened in previous world recessions, during the current global economic crisis, agricultural commodity prices showed significant less volatility than that of industrial and energy (see Figure 3).

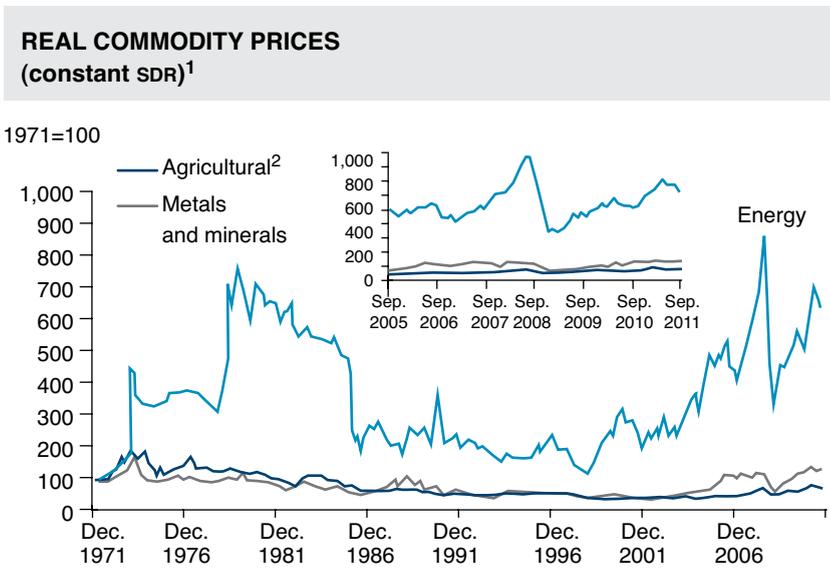
Therefore, in a context of high economic growth and ample international financial liquidity, economic policy makers in most countries have to deal with higher levels of commodity prices combined with higher volatility.

The Drivers of Commodity Prices

There have been a number of drivers that could explain the performance of commodity prices in recent years. We can divide them into structural trends, medium term cycle and short term volatility.

Some factors have to do with demographic trends, like population—its number and age structure—, the increase of life expectancy and the

Figure 2

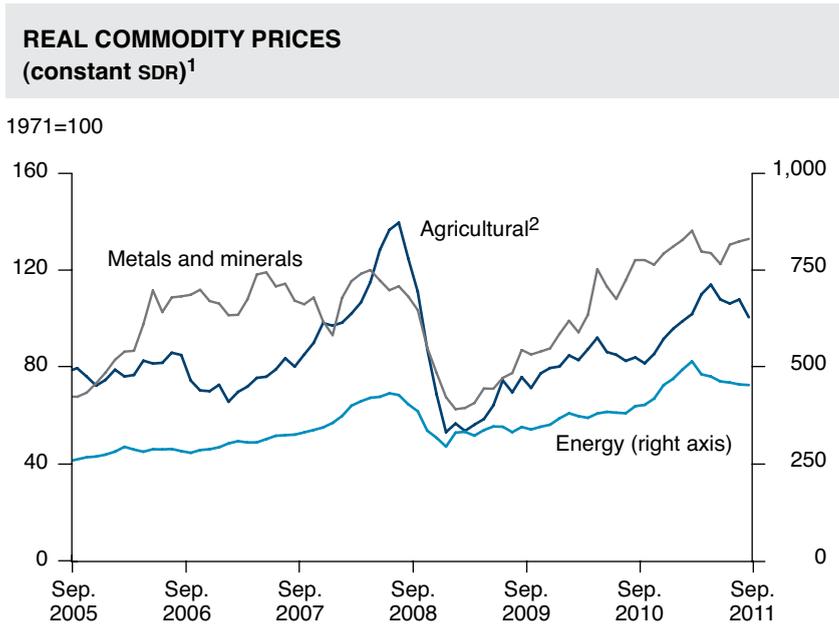


¹ Deflated by weighted average CPI of special drawing rights currencies (dollar, euro, yen and pound sterling).

² Includes: cocoa, coffee, tea, coconut oil, peanut oil, palm oil, soybean meal, barley, corn, rice, wheat, banana, beef, chicken, oranges, sugar, wood, cotton, rubber and tobacco.

Source: Banco Central de la República Argentina from Bloomberg World Bank and IMF.

Figure 3



¹ Deflated by weighted average CPI of special drawing rights currencies (dollar, euro, yen and pound sterling).

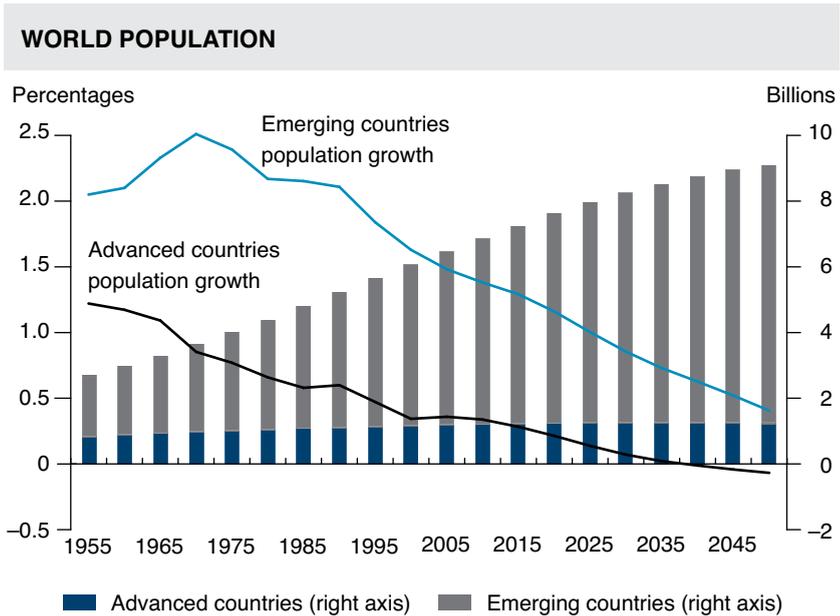
² Includes: cocoa, coffee, tea, coconut oil, peanut oil, palm oil, soybean meal, barley, corn, rice, wheat, banana, beef, chicken, oranges, sugar, wood, cotton, rubber and tobacco.
Source: Banco Central de la República Argentina from Bloomberg, World Bank and IMF.

reduction of infant mortality. Though the percentage of people starving has been reduced worldwide, in absolute values the number of people that suffers from famine has been increasing (see Figure 4).

In addition, per capita consumption of agricultural commodities in some big EMEs is at low levels, giving room to further increases. Thus, for all these structural reasons, food consumption will continue to grow, in a context of limited production capacity.

Other reasons are related to economic issues like the increasing economic importance of some emerging countries, such as China

Figure 4



Source: Population Division of the United Nations.

and India, as consumers (see Figures 5 and 6). As an example of this, China is the second world consumer of crude oil, while India is the fifth, and is also the biggest consumer of wheat, rice, soybeans and corn. The case of China stands out since, despite its increasing production, it is one of the leading food importers worldwide. In fact, in the last decade it became a net importer of the main agricultural products.

On the other hand, it is also important the use of commodities for producing energy like ethanol and biofuels. In the US almost 50% of the corn production goes to the ethanol industry. Meanwhile, in Brazil ethanol is mainly made with sugarcane and in Argentina biofuel is mainly produced with soybeans. These three countries are the largest producers of biofuels.

Table 1

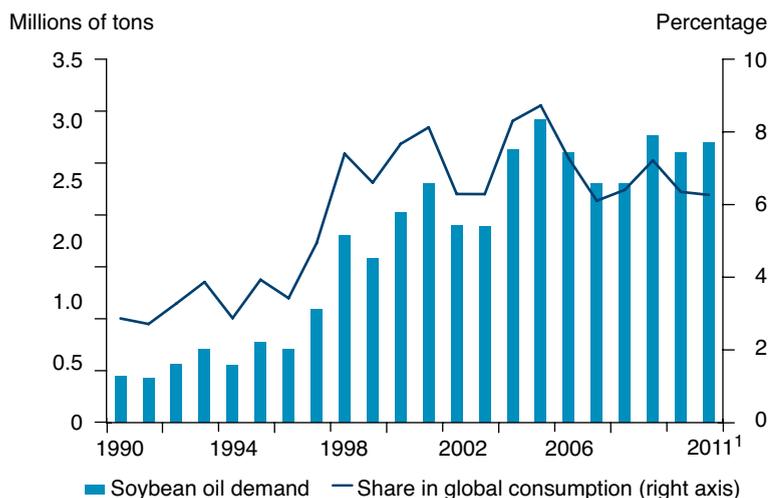
**PER CAPITA GRAIN CONSUMPTION
(TON/THOUSAND INHABITANTS)**

	<i>Corn</i>	<i>Wheat</i>	<i>Soybean</i>	<i>Pellets</i>	<i>Oil-soybean</i>
Argentina	179.3	143.5	996.8	17.8	67.9
Brazil	264.6	57.0	202.9	71.0	27.7
China	141.0	83.8	52.5	35.0	8.9
India	15.5	69.2	9.2	2.9	2.2
United States	885.0	100.1	149.6	86.4	25.4

Source: USDA y FMI.

Figure 5

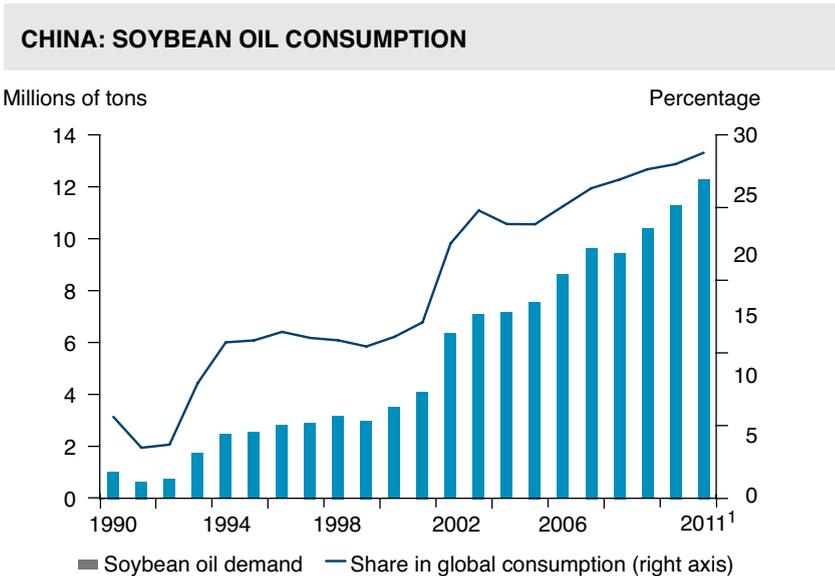
INDIA: SOYBEAN OIL CONSUMPTION



Source: Banco Central de la República Argentina from USDA data.

¹September forecast.

Figure 6



Source: Banco Central de la República Argentina from USDA data.

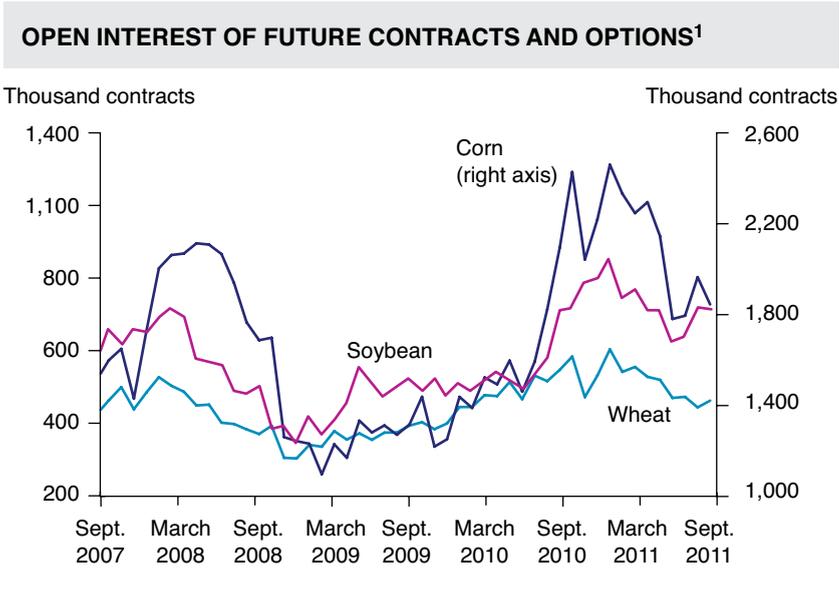
¹ September forecast.

The production and demand of biofuels is expected to continue increasing, after its exponential growth of recent years. The accelerated development of this industry will continue to be one of the main determinants of the evolution of global agricultural commodity markets.

In the medium term, stocks, costs and regulation also affect commodity prices. In addition, in a context of high liquidity in international financial markets, most food commodities were demanded as financial assets (see Figure 7). Therefore, in recent years financial speculative demand in the markets for agricultural commodities could have introduced more volatility in prices.

Finally, the evolution of the US dollar against other major currencies, considering that most markets settled the contracts in this currency, has an impact on commodity prices. US dollar depreciation tends to be

Figure 7



Source: CFTC.

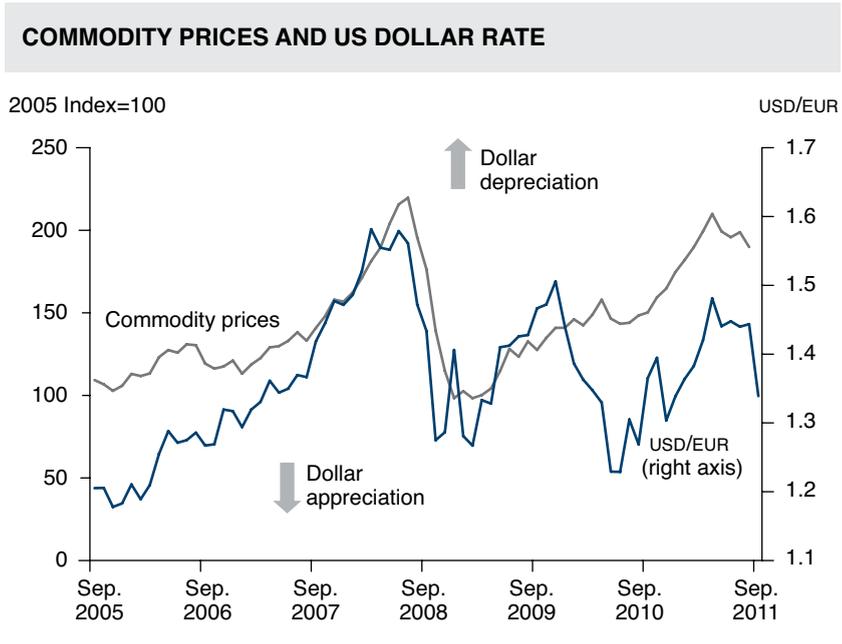
¹ Data as of the last week of each month.

accompanied by price increases and the other way around with appreciation (see Figure 8).

The Impact of Commodities Prices on EMES

In developing countries the demand for food and goods have a high weight in their consumer basket, while in developed economies the consumption expenditure is more related to industrial and technological goods and services. Thus, one main feature of emerging economies, compared with industrialized economies, is that given the higher proportion of foodstuffs, including agricultural commodity prices, in their consumption baskets, the impact of increases of these prices on domestic economies is higher (see Figure 9). In fact, we can see that in Latin American countries the weight of food in the CPI goes from 20% to

Figure 8



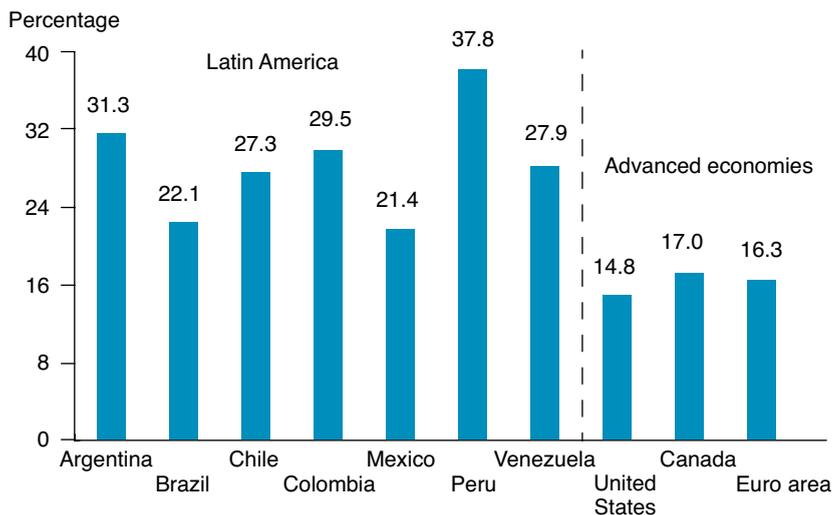
Source: Bloomberg and IMF.

40%, while in advanced economies that weight is approximately 16%¹ (according to the BIS, in Argentina the weight of food in CPI is 31.3%). Even more, there is an inverse relationship between the level of per capita income and the share of the food component in the consumer basket: when income per capita is lower, the weighting of foodstuffs grows. Related to this, developing countries have higher percentage of its population living under conditions of poverty than in developed countries, and for this reason are more affected by food price increases. At the same time, for each economy, the evolution of relative prices

¹ This feature is also explained in the paper presented by the Deputy Governor of Bangko Sentral ng Pilipinas.

Figure 9

WEIGHT OF FOOD IN THE CPI



Source: BIS.

is influenced by several elasticities –price and income– as well as the country trade status (it means if is a net exporter or importer of the product) and also by its exchange rate policy. Besides the mentioned difference in the composition of consumption baskets between countries, in general EMEs show higher values on demand elasticities than developed countries.²

In a group of Latin American countries, including Argentina, figures show that there is positive correlation between the evolution of international

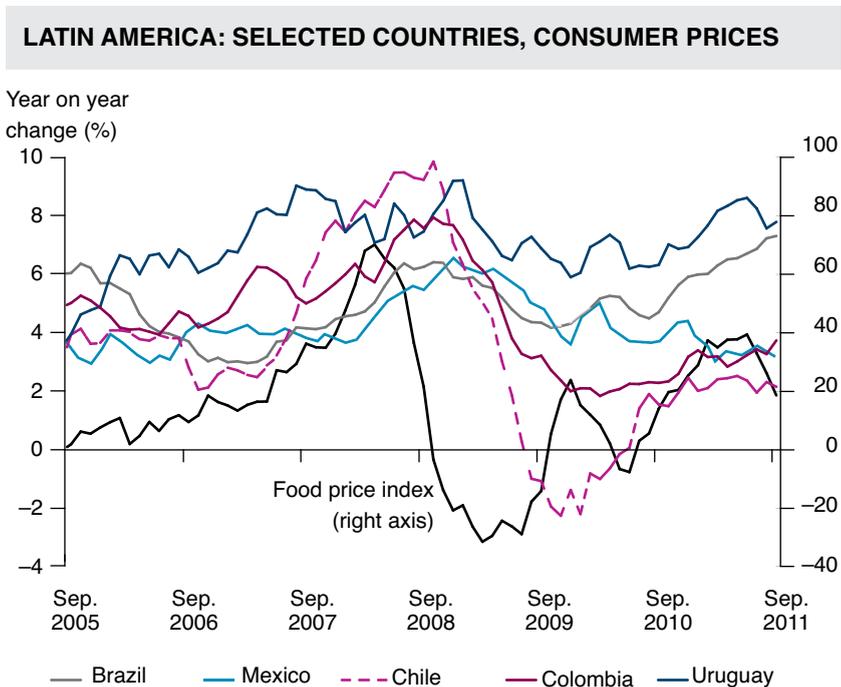
² Following this, in recent years price increases of agricultural commodities has been accompanied by raises in the values of their respective demand elasticities. For example, the demand elasticity of inputs by foods increased from 0.3 to 0.36 between 2000 and 2008 with an upward trend.

food prices and price consumer indexes (see Figure 9 and Figure 10).

In order to see the importance of this issue, in the case of Argentina, as an example, considering that we are an important consumer of beef and the price in international markets of beef (according to WB Data) has been increasing near around 20% year-on-year and the weight in our CPI is 10%, then we could have had two percentage points of consumer inflation just for the evolution of this item.

The above mentioned structural changes in international economy and the own structural characteristics of EMEs are the basis for divergent inflationary dynamics between different groups of countries. Given that the component of expenses for food is higher in emerging coun-

Figure 10



Source: Banco Central de la República Argentina from Bloomberg, World Bank data.

tries, mounting pressures were observed in the general price level, as it was seen in recent years. In this sense, the shocks on food prices in emerging countries, where contribution to inflation indices is four times higher with respect to the developed ones according to some studies, require different economic policy responses.

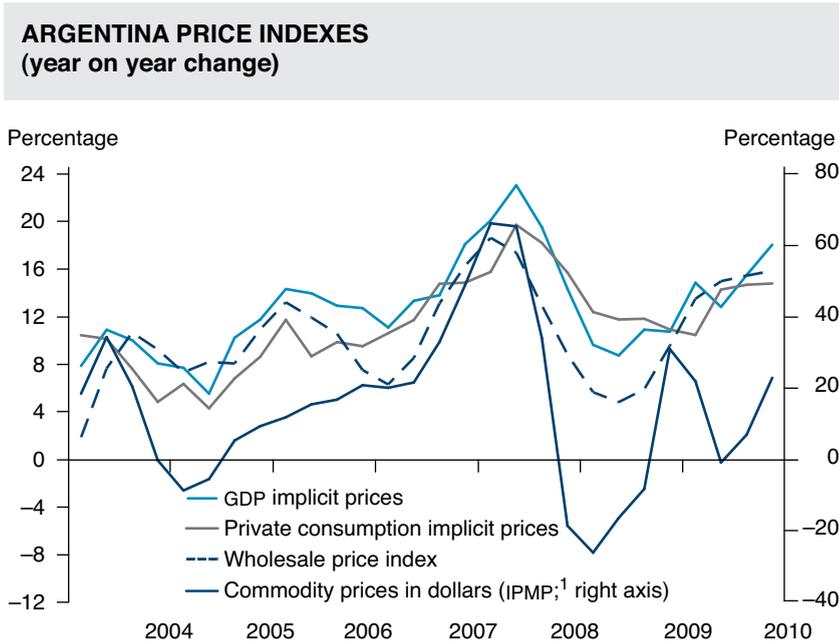
Macroeconomic Policy under a Commodity Price Boom Scenario. The Case of Argentina

In order to present the linkages between the evolution of commodity prices with the external sector and monetary policy, we first have to recall some features of Argentinean economy. Argentina is a small open economy, with a low degree of financial deepening (considering its banking sector and capital market, the economy has faced frequent shifts in financial capital flows that have had huge impact in terms of macroeconomic volatility –pro cyclical fluctuations with large inflows at peak periods and abrupt outflows in the phase of recession– and financial stability). It has been also a highly dollarized economy where the evolution of the nominal exchange rate is important for consumer and investor decisions, and its current account is highly dependent on its trade balance.

Under that scenario, the increases in commodity prices are a key factor in explaining the external sector performance. As we explained before, they have also effects on consumer prices, foreign exchange and monetary markets (exchange rate evolution, currency mismatches and monetary aggregates expansion or reductions) as well as on public finances (regarding export related revenues).

It is important to mention the relevance of agricultural sector (both primary and manufactured) in Argentinean total exports. In fact, commodity exports represented 38% of total exports in 2010, while only soybean complex exports represented 26% of total exports in that year. It is also worth noting that a large portion of agricultural exports (chiefly soybean complex) have a seasonal behavior. Its receipts are liquidated in the FX market in a short period (from March/May to August/September; see Figure 12 and Figure 13).

Figure 11



Source: Banco Central de la República Argentina.

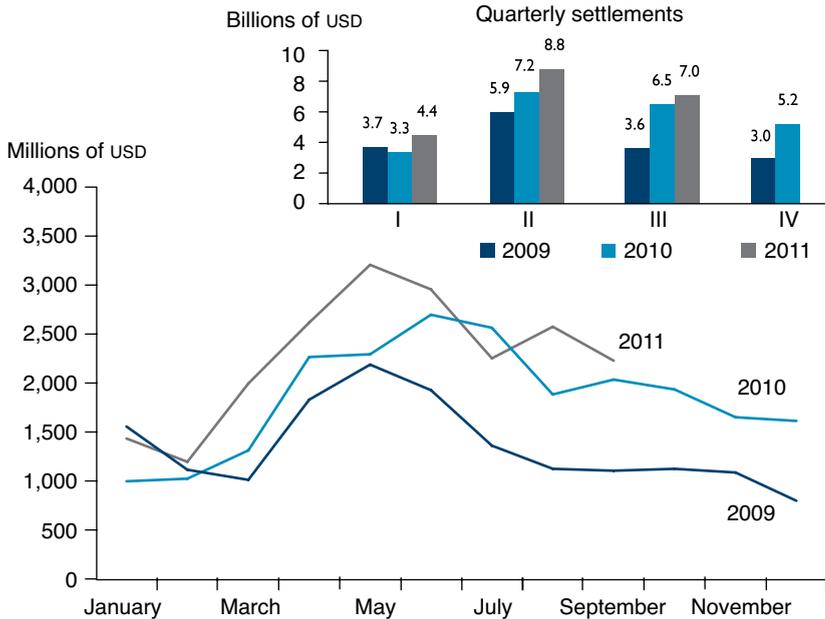
¹ IPMP: BCRA Commodity Price Index.

It is easy to imagine that this situation imposes some challenges to monetary policy in term of maintaining monetary equilibrium and reducing exchange rate volatility (see Figure 14). In countries with long experience of high macroeconomic instability, for policy makers it is important, including at central banks, to try to maintain a smooth path for the nominal exchange rate and monetary aggregates. In Argentina, for example, where the evolution of the nominal exchange rate, as well as its expectations, have strong links with private saving decisions and financial stability (or instability)³ the above mentioned concerns are increased.

³ As shown in the 2001-2002 financial crises, a high level of dollarization implies a point of vulnerability of the financial system against negative shocks,

Figure 12

**AGRICULTURAL EXPORT SETTLEMENTS
(Oilseeds and cereals)**

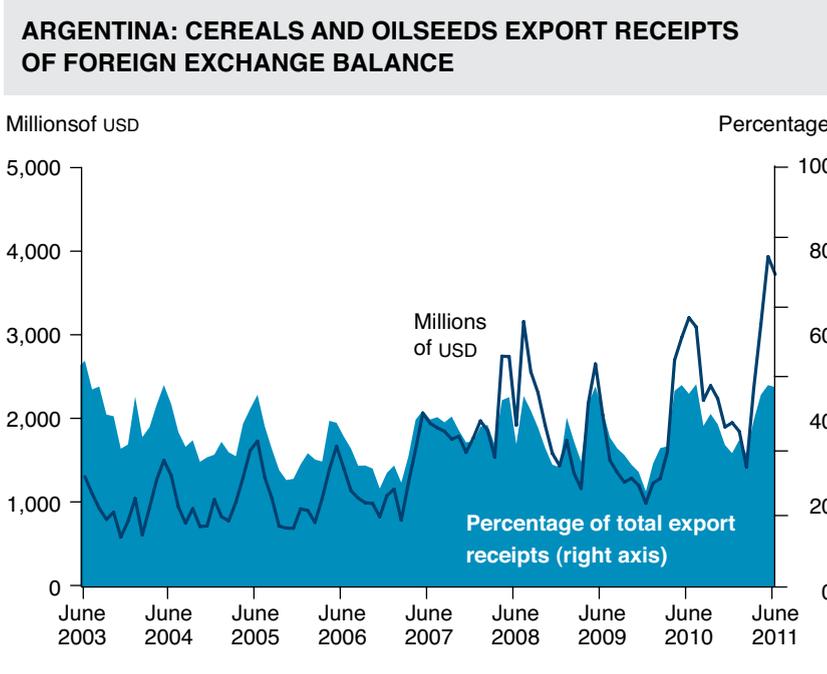


Source: Banco Central de la República Argentina from CIARA-CEC data.

Regarding this, after the collapse of the convertibility Argentina implemented a managed float exchange regime, in which the Central Bank performs FX market operations in order to keep exchange rate volatility under control. In Figure 15 we can see the high correlation between nominal exchange rate volatility and financial stability measured by term deposits withdrawals (see Figure 15) as an example of the

which causes liquidity and solvency to be at increasing risk since in the latter the banks' currency mismatch affects their profitability and, therefore, their levels of solvency.

Figure 13



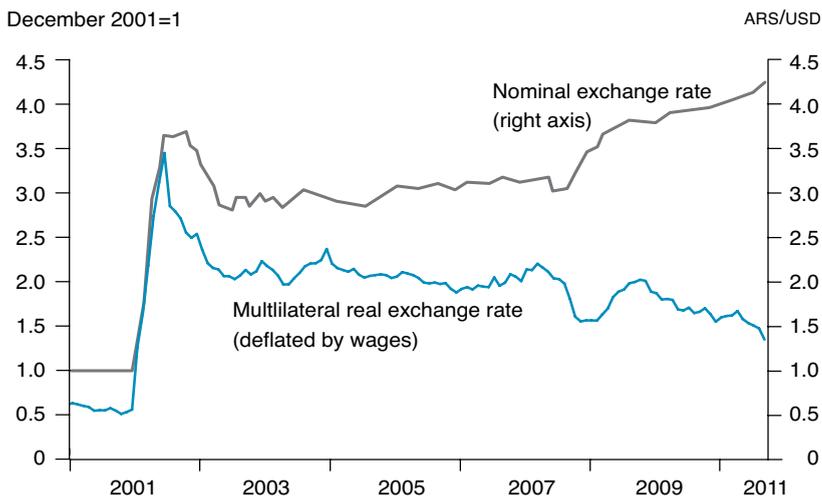
Source: Banco Central de la República Argentina.

problems that monetary policy has to face. Thus maintaining nominal exchange rate changes under control is also important in order to reduce its short and medium term volatility, as a key economic signal for consumers, investors and exporters.

In doing so the Central Bank carried out a policy of active FX market intervention and at the same time it also helped to build up international reserves for precautionary reasons. The size of the intervention (that as we said obviously has an impact on monetary aggregates) ranged just from 6% to 8% of total operation in the FX market. In this context, the Central Bank has been either buyer or seller of reserves depending on the FX market situation.

Figure 14

ARGENTINA: EXCHANGE RATE



Source: Banco Central de la República Argentina from Bloomberg data.

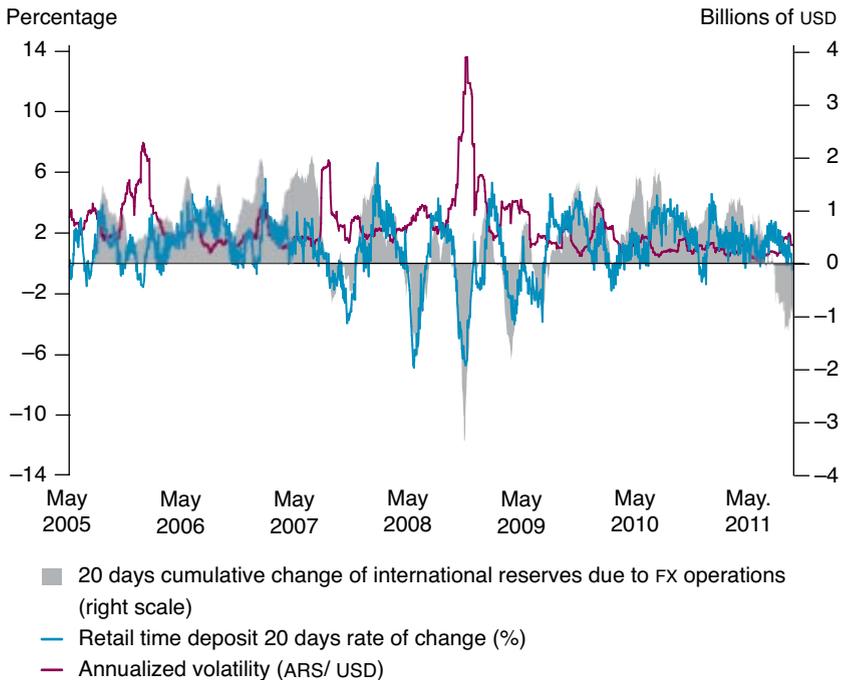
In the wave of the commodity boom, as we said in the above paragraph, the policy of foreign reserves accumulation allowed most EMES to withstand the crisis with no major impacts on domestic financial markets and without being dependent of external financing from multilaterals.

Also, in order to moderate the exchange rate volatility, an increasing number of EMES receiving short term financial flows (including Argentina), among their kit of counter cyclical policies, started to apply further regulations on that kind of flows.

On the other hand, regarding the expansion of monetary aggregates generated by the purchase of the excess supply of international currency, the current account surplus, the Central Bank has constantly

Figure 15

EXCHANGE RATE VOLATILITY AND RETAIL TIME DEPOSITS

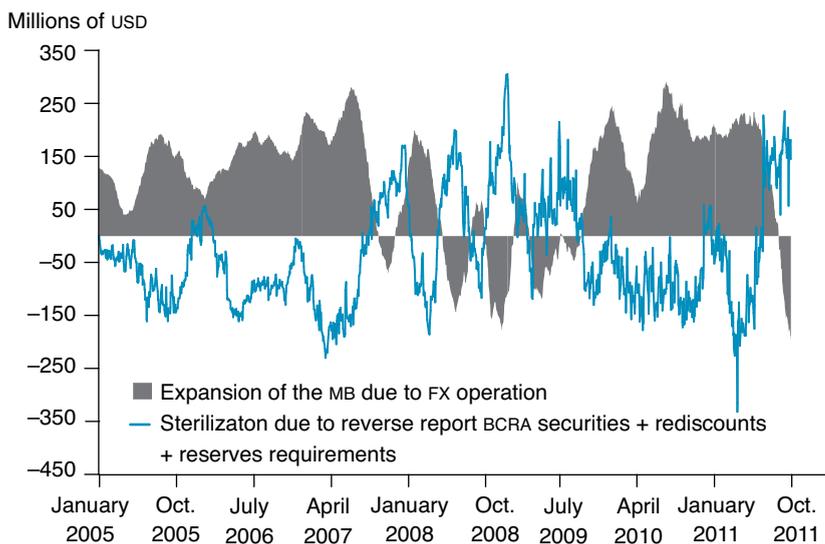


been executing a policy of partially sterilized intervention by absorbing a large portion of that expansion. The sterilization policy has been carried out through different mechanisms (see Figure 16) including the issue of its bonds (Lebac and Nobac) and the repurchase of rediscounts given to commercial banks during the 2001-2002 crises. In this sense, the Central Bank in the period that went from 2010 until mid 2011 has sterilized almost 50% of the monetary expansion due to foreign exchange operations.

By the implementation of this policy, the central bank has been able to control domestic interest rates and monetary expansion.

Figure 16

**STERILIZATION OF FX OPERATIONS
(three months moving average)**



Source: Banco Central de la República Argentina (BCRA) from Bloomberg data.

Economic and Monetary Policy Challenges. Final Thoughts

After a long period of macroeconomic instability and low growth, in the last 25 years, many EMEs have experienced a process of rapid economic progress which has been sustained, among other reasons, by the continuous rise in commodity prices.

There are some structural conditions that can explain this behavior including demographic trends, the increasing role of big EMEs in the economic global scenario and the recent financing of some commodities, particularly those related to agriculture. The interplay of these drivers suggests that most commodity prices will continue to be at high levels in the medium term, creating a potential opportunity for EMEs.

Considering this, one of the main challenges that policy makers have is how the *external prosperity* can be transferred to domestic economies, reducing the negative impacts on monetary, financial and foreign exchange markets in terms of higher domestic inflation (limiting the impact of food prices), or exchange rate appreciation (disturbing consumption, investment and export decisions). It was seen during the 2008-2009 global crises that large short run fluctuations in commodity prices could generate negative effects on economic activity, domestic prices, monetary equilibrium and on real exchange rates. It was also seen that given the higher proportion of foodstuffs, including agricultural commodity prices, in EMES consumption baskets, the impact of increases of these prices on domestic economies is higher than that of in industrialized countries.

Policy makers in EMES should accommodate to this new commodity boom scenario in which uncertainty in international financial markets is also an important issue, designing and implementing economic policies with the focus on supporting rates of economic growth in an environment of high and volatile commodity prices. For instance, EMES could take advantage of those favorable conditions to tackle structural problems of lack of infrastructure, high levels of poverty or inequality. Domestic financial systems are needed to channel the inflows, included from commodity exports, to EMES to productive uses and to allow central banks to manage liquidity efficiently.

In open small economies, with shallow in its financial and capital markets, like Argentina, is vital to regulate the flow of short term financial flows in order to avoid the generation of monetary imbalances and temporary pressures on the foreign exchange market. In particular, monetary policy should aim at providing a long term framework of monetary and financial stability.

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Benny Popoitai

Comments on presentations

Increases in food and commodity prices can be beneficial to the economies that are suppliers of these items while being disadvantageous to those economies that demand them.

The recent surge in food and commodity prices has provided opportunities and also policy challenges for many countries and indeed for my country. The extent of the effects on an economy from these price increases depend on whether a country is a net exporter or importer of commodities, in particular oil, mining products, agricultural export commodities, and food. Net importers tend to be adversely affected the most, with ramifications on their budgets, balance of payments, inflation, and ultimately growth. I intend to share perspectives representative of small economies, drawing on experiences from Papua New Guinea (PNG).

I will discuss how increase in international food and commodity prices has affected some key macroeconomic variables, and the how the Bank of PNG has responded to these changes.

Macroeconomic Effects

PNG is a primary export commodity-based economy. The increases in the prices of non-oil commodities such as gold, copper, and agricultural commodities such as coffee since 2004, following increasing demand

Deputy Governor, Bank of Papua New Guinea.

from emerging economies such as China and India, has had positive impacts on the PNG economy. The kina has appreciated exchange rate and terms of trade has improved. Other factors including low interest rates, a weaker US dollar, and to an extent some speculation, have supported this price boom. On the other hand the slow increase in international food prices since 2004, and the surge in 2007 and again in 2010, largely due to supply constraints, has contributed to a rise in inflation in the PNG economy. Positive benefits to the PNG economy from the increase in commodity prices include:

- increased mining, petroleum and agricultural commodities tax revenue, allowing government to reduce its external debt, thus allowing for more stable financing of the national budget and external position;
- no central bank financing of the national government budget, which in the past has fueled high inflation and exchange rate depreciation;
- higher non-mineral export prices have increased employment and incomes; and
- high economic growth.

With high foreign exchange inflows and export tax revenue paid in foreign currency to the central bank, the Bank of PNG has accumulated international reserves to record high level, currently at USD 3.8 billion, sufficient for around 10 months of total and 15 months of non-mineral import covers.

Impact on Inflation in Papua New Guinea

On the other hand, increases in oil and food prices have led to an increase in imported inflation as PNG is a net importer of these items. The nature of inflation generation in PNG has evolved since political independence in 1975, where a *hard currency* strategy was pursued. Inflation averaged around 6% during the early years to 1994 when the local currency (kina) was floated, following years of government defi-

cits, and depletion of foreign exchange reserves. This resulted in substantial reduction in the value of the kina, and led to higher price for imports. Inflation picked up in the ensuing years to average 12.6% between 1995 and 2003, a period marked by exchange rate depreciations caused by government deficits and monetization, Asian financial crisis, a prolonged drought, and consequently low foreign exchange reserves.

Then there was a turn around in macroeconomic performance between 2004 and 2007, with increasing export prices enabling stable government revenues, replenishing of foreign exchange reserves, and a stable exchange rate. That led to a historically low average annual inflation of 1.8% during this period. In the years thereafter, when the international food and oil prices picked up, prices for many imported items increased, and since 2008 inflation has averaged around 8%. It also marks a period in which inflation was largely attributed to external forces, and to less extent, exchange rate depreciation. Food features prominently on the consumption basket in developing economies (PNG 41%), thus higher prices have significantly increased inflation in 2008 (10.2%), 2010 (7.2%) and June quarter 2011 (9.6%).

In recent years, there has been a decline in the composition of food prices, implying that other emerging factors have also contributed to inflation. Increase in business activity and foreign investment driven by the PNG Liquefied Natural Gas project (LNG), and increased Government expenditure have contributed to increased domestic demand and generating inflationary pressure. Since 2007, inflation in PNG has been affected mainly by these factors: 1) external food and fuel prices; 2) increased domestic demand due to high government spending, business activity, and LNG project construction; and, increasingly, 3) inflation expectations.

Monetary Policy Response

The Bank of PNG has some tools to influence these inflation developments, but when it comes to externally driven factors such as food prices, PNG is a price taker like so many small economies, and the main challenge is for the Bank to limit these prices passing on to other

prices. To contain inflation, the central bank is limited to influencing changes in monetary aggregates. The Bank of PNG has taken a tight monetary policy stance recently by increasing its policy signaling rate—the Kina Facility Rate by 25 basis points each in June,

July and September to 7.75% in response to an increase in annual headline inflation to 9.0% in the March quarter and 9.6% in the June quarter 2011.

Tightening monetary policy by increasing interest rates could potentially dampen credit, consumption and demand to some extent. However, PNG as a price taker, it will do little to affect imported food price inflation, government spending and LNG construction, although it could have a slight effect on expectations. It presents a challenge for the Bank to limit prices passing on to other prices. Moreover, with much of the current business boom driven by the LNG project, the Bank of PNG can only have a limited effect on demand conditions.

Any severe tightening of monetary policy could potentially lower the ability of non-LNG private sectors from expanding, thus could exacerbate the potential effects of Dutch disease in this period mineral boom and high growth in PNG. Annual private sector credit growth is currently at 10%, falling from a high of 30% two years ago.

The blunt and effective instrument the Bank can use is the exchange rate. With the increase in foreign exchange inflows, the Bank has allowed the foreign exchange market to take its natural course under the floating exchange rate regime by allowing the kina to appreciate against the key currencies of US dollar and the Australian dollar. There is still some potential for the kina to appreciate further, and lower the cost of imported prices. This would also reduce export revenue in kina terms, however, current high international commodity prices would have offsetting effect and keep exports revenue attractive.

Challenges

Government spending sourced from windfall revenues and LNG construction will continue to spur growth, and inevitably inflation, in the coming years. This will continue to present challenges to PNG, and the

scenario calls for close and effective monitoring of food prices by relevant agencies. Increase in the cost of imported food also presents an opportunity to increase local food production, which the country has a huge potential to tap into.

Also management of increased revenues for the government is increasingly an issue for both fiscal and monetary policy. Therefore, the central bank continues to call for the government to establish an off-shore account and allow it to manage windfall mineral tax revenues prior to the establishment of a Sovereign Wealth Fund (SWF) for the LNG project. While this will assist the government in smoothing out expenditure and reduce domestic demand and inflationary pressures, it will also assist in monetary policy management, in terms of reducing the impact on liquidity from high expenditure.

Myrtle Halsall

Comments on presentations

The Spectre of Rising Commodity Prices

Global commodity prices, in particular for food and energy, have increased significantly since 2006 with double digit increases in 2007 and 2008. After some reversion in 2009 due to the global recession, prices resumed their upward momentum.

Dr. González presented a comprehensive analysis of the evolution of the commodity price increases. He noted several factors which contributed to the rapid spike in global food and energy prices including:

- i) Increased consumer demand for food, oil and energy among emerging market economies, such as China and India, due to rising incomes.
- ii) Sluggish supply due to lower crop yields resulting from adverse weather conditions associated with global warming.
- iii) Increased attractiveness of corn for biofuel production leading to the substitution away from the cultivation of other crops.
- iv) Decline of the US dollar against other major currencies increasing the attractiveness of commodities as an asset class.

Senior Deputy Governor, Bank of Jamaica. Comments on presentation by Dr. Gustavo González of the Banco Central de la República Argentina, "On Macroeconomic Effects of Commodity Prices Evolution and its Relation with Monetary Policy in Emerging Countries".

However I would add two other factors which had an impact on the rate of increase in commodity prices, namely:

- i) Increased food security concerns by some major food-producing countries leading to export bans and trade restrictions.
- ii) Political disturbances in the Middle East and North Africa regions affecting the supply of crude oil.

Macroeconomic Effects of Rising Commodity Prices

An important consideration in assessing the impact of rising commodity prices on a country's macro economy is an assessment of its status prior to the increase in commodity prices. This assessment is necessary in the determination of the type of policy response. These factors were not considered in the presentation. Factors such as:

- i) The level of economic growth and inflation, the state of the balance of payments as well as the level of fiscal dominance.
- ii) The level of poverty, particularly in low income countries faced with low growth prospects and macroeconomic imbalances.
- iii) The inflationary impact of rising commodity prices amplified by continuing demand pressures associated with accelerated growth in some emerging economies.
- iv) The relative level of pass-through of increases in imported food prices in the food basket.

The presentation, I think, could contrast the impact of increases in commodity prices on countries that are net exporters versus countries that are net importers of commodities.

Accordingly, the commodities price surge has raised the challenges faced by many net importing countries of fuel and food in maintaining internal and external stability and reducing poverty. The case of Jamaica which is sketched later illustrates this point.

Monetary Policy Response to Rising Commodity Prices

In assessing the monetary policy response to increase in commodity prices, the presentation could consider the duration of the increase, that is whether they are transitory or persistent.

- i)* Formerly, the prescribed response by central banks to a commodity price shock was to not react as these movements in the past normally reflected transitory supply shocks and therefore a tightening of monetary policy may have been inappropriate. In addition, because higher commodity prices can reduce aggregate demand in net commodity-importing countries, policy tightening could weaken growth and lead to output fluctuations.
- ii)* The recent surge in prices, however, has changed the views on the appropriate response of central banks since the persistence of the commodity shocks could have a lasting impact on underlying (core) inflation and inflation expectations.
- iii)* Where inflation expectations are traditionally high, a commodity price shock is likely to have larger first and second-round effects and may require a more aggressive policy response, particularly where excess demand is high and the inflation rate is above target.

Another important aspect of monetary policy consideration not included in the presentation is the role of communication.

- i)* In the face of volatile commodity prices, central banks have sought to communicate with the public with the use of core inflation indicators which tend to represent the underlying demand or price trend in an economy.
- ii)* However, with increased prevalence and persistence, these commodity price shocks could have spillover effects on the measures of core inflation. One would thus have to further and explain that although core inflation measures are rising, the momentum behind the increase is not likely to be sustained unless there are aftershocks

caused by, say, hoarding or export bans. If commodity prices rise to a new level and remain there, both core and headline inflation rates should normalize over time.

The Jamaican Experience

Jamaica is a net importer of commodities, being a large importer of grains such as rice, wheat, corn and soybean, both for the production of many processed foods as well as an essential part of the local diet.

Macroeconomic Impact

Rising food and energy prices have had and continue to have a negative effect on inflation and the balance of payments in Jamaica. Within the consumer price index (CPI), grains are estimated to directly affect 23.8% of the items in the food and non-alcoholic beverages category which in turn accounts for 37.4% of the CPI. Largely due to the rise in commodity prices in 2007 and 2008, inflation rose to 16.8% in both years. However, with the onset of the global recession and the consequent reduction in domestic and global demand, inflation declined to 10.2% in 2009. Inflation has and has been decelerating since, largely because of these factors as well as an extended period of stability in the exchange rate and moderating inflation expectations.

As a net importer of oil, sharp increases in oil prices had a significant impact on Jamaica's external accounts. For every one dollar increase in international oil prices, Jamaica's fuel bill increase on average by USD 20 million, assuming no change in consumption. For 2010, spending on fuel imports was 30.5% of total imports and represented a 13.5% increase, relative to the previous year. For 2011, fuel imports expected to account for 34.4% of total imports.

Monetary Policy Response

The Bank of Jamaica's response to the commodity price resurgence since 2010 has been to maintain stability in the exchange rate to limit inflationary impulses from this source. Pass through of exchange rate to inflation in Jamaica is full and immediate.

Table 1

ANNUAL AVERAGE CHANGE IN SELECTED GLOBAL COMMODITIES PRICES

	Agriculture:										Crude oil, WTI (USD/bbl)
	Agriculture: Food, 2000=100	Food: Grains, 2000=100	Maize (USD/t)	Weath, US, HRW(USD/t)	Weath, US, SRW(USD/t)	Barley (USD/t)	Rice, Thailand, 5% (USD/t)	Soybeans, US (USD/t)	Sugar, US		
1991- 1995	3.7	4.0	2.7	6.0	5.8	6.8	4.2	1.1	-0.1	-5.3	
1996- 2000	-6.4	-6.7	-4.3	-7.2	-8.9	-5.0	-8.3	-3.1	-3.3	14.9	
2001- 2005	6.1	4.9	2.5	6.2	6.9	4.9	8.0	6.2	2.0	15.0	
2006	10.0	18.4	23.5	26.0	17.2	22.6	6.5	-2.2	4.1	17.0	
2007	25.6	26.2	34.3	32.9	50.1	47.9	7.1	43.0	-6.1	9.5	
2008	33.9	49.0	36.3	27.7	13.8	16.3	99.2	36.1	2.4	37.8	
2009	-17.1	-23.7	-25.8	-31.3	-31.5	-36.0	-14.6	-16.4	17.1	-38.1	
2010	9.3	0.4	12.3	-0.2	23.5	23.5	-11.9	3.0	44.3	28.7	
2006- 2010	12.4	14.1	16.1	11.0	14.6	14.8	17.2	12.7	12.3	11.0	

Source: IMF Pink Sheets.

The success in reducing inflation during this period was also due in part to significant reduction in fiscal dominance. This was achieved through the Government's successful implementation of a voluntary exchange of its domestic debt in January 2010, the Jamaica Debt Exchange (JDX).

In addition the Bank also increased its communication, articulating on a timely basis the issues surrounding price developments so as to contain inflation expectations. This strategy has worked due to increased credibility of the Bank of Jamaica.

Table 2

JAMAICA: INFLATION BY ITEMS

	<i>Weights</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011'</i>
HEADLINE INFLATION	100	5.5	16.8	16.8	10.2	11.7	5.9
<i>Food and non-alcoholic beverages</i>	37.45	5.8	24.7	24.0	8.1	12.8	6.2
Food	35.10	5.4	25.2	24.7	7.9	13.0	5.9
Bread and cereals ²	6.10	9.8	30.9	33.5	6.8	6.4	11.3
Meat ²	7.66	12.0	23.7	15.8	10.1	8.6	8.4
Fish and seafood ²	5.33	12.4	16.8	17.6	13.7	10.4	8.0
Milk, cheese and eggs ²	3.11	9.3	21.1	24.2	7.2	9.9	10.0
Oils and fats ²	1.64	2.9	21.0	43.4	8.0	11.5	6.4
Fruit	1.14	3.9	22.8	13.7	7.5	12.4	14.0
Vegetables and starchy foods	6.85	-8.9	37.1	29.7	-0.3	27.5	-8.0
Vegetables	4.64	-13.3	35.5	38.4	-2.1	35.4	-16.6
Starchy foods	2.21	-3.6	40.4	10.2	5.3	10.4	7.1
Sugar, jam, honey, chocolate and confectionery	1.72	9.0	13.8	20.3	21.0	12.3	25.6

Food products, n.e.c.	1.55	6.1	14.3	24.5	16.0	13.1	5.2
<i>Non-alcoholic beverages</i>	2.35	10.8	16.7	13.1	11.8	9.1	11.9
<i>Alcoholic beverages and tobacco</i>	1.38	4.8	16.0	27.0	23.2	14.5	6.1
<i>Clothing and footwear</i>	3.33	5.6	15.4	14.4	10.6	9.0	7.8
<i>Housing, water, electricity, gas and others fuels</i>	12.76	8.1	21.0	9.3	23.0	8.4	9.7
Water supply and miscellaneous services related to the dwell ³	1.32	-3.8	6.4	35.6	16.0	5.9	8.5
Electricity, gas and other fuels	7.12	9.3	25.3	4.7	26.2	2.6	14.6
<i>Furnishing, household equipment and routine household maintenance</i>	4.93	11.0	17.0	16.3	9.8	7.0	6.9
<i>Health</i>	3.29	9.9	3.4	9.1	4.0	2.9	2.6
<i>Transport³</i>	12.82	0.6	6.8	9.6	6.1	25.7	5.0
<i>Communication</i>	3.99	0.0	2.7	0.0	3.2	5.4	3.1
<i>Recreation and culture</i>	3.36	6.0	9.9	12.8	9.7	6.9	2.2
<i>Education</i>	2.14	7.8	6.1	16.5	6.6	8.0	4.4
<i>Restaurants and accommodation services</i>	6.19	5.2	15.3	13.8	7.2	5.4	2.9
<i>Miscellaneous goods and services</i>	8.37	6.4	9.8	17.7	12.9	8.7	4.7

Table 2 (conclude)

	<i>Weights</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011¹</i>
CORE INFLATION							
CPI without agriculture and fuel		8.1	15.6	16.6	10.3	8.7	6.5
CPI without food and fuel		6.7	11.5	12.6	10.0	8.2	4.4
Trimmed mean		3.8	9.4	10.3	5.4	5.4	3.6

¹ Figures for 2011 are projected.

² Divisions or subdivisions directly affected by grains price increases.

³ Divisions or subdivisions directly affected by crude price increases.

Table 3

JAMAICA: IMPORTS BY END USE (CIF) (millions of USD)

	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011¹</i>
CURRENT ACCOUNT	-1,182.7	-2,038.3	-2,793.9	-1,127.5	-933.9	-1,654.0
<i>Fuel</i>	1,758.5	2,429.9	3,354.8	1,396.7	1,584.6	2,130.1
Change (USD millions)	397.9	671.4	924.9	-1,958.1	187.9	545.5
Change (%)	29.2	38.2	38.1	-58.4	13.5	34.4
Share in total imports (%)	31.1	35.2	40.1	27.6	30.5	34.6
Fuel-mining	459.3	458.0	521.5	148.0	197.2	266.4
Fuel non-mining	1,299.2	1,971.8	2,833.3	1,248.7	1,387.4	1,863.7
<i>Other mining</i>	167.5	239.4	177.8	43.1	58.9	78.9
<i>Consumer goods</i>	1,430.2	1,837.1	2166.9	1,738.4	1,758.2	1,893.2
Change (USD millions)	106.5	406.9	329.8	-428.4	19.8	135.0
<i>Raw materials</i>	1,533.6	1,682.8	1,937.5	1,414.7	1,368.1	1,595.0
Change (USD millions)	222.4	149.3	254.7	-522.8	-46.6	226.9

<i>Capital goods</i>	760.7	704.7	724.0	472.8	424.9	468.0
Change (USD millions)	178.8	-56.0	19.3	-251.2	-48.0	43.2
TOTAL	5,650.4	6,893.9	8,361.0	5,065.7	5,194.6	6,165.2
Change (USD millions)	911.10	1,243.5	1,467.1	-3,295.3	128.9	970.6

¹ Projections.

Session 4

Managing Volatile Exchange Rate and Capital Flows

Suchada Kirakul

Managing Volatile Exchange Rate and Capital Flows: An Emerging Asian Perspective

Currently, the world economy is undergoing rapid changes which have impacted capital flow movements around the globe. After the 2008 global financial crisis, emerging economies have become the new engine of world economic growth as the G3 countries face problems of their own: the USA economy is headed for a long-term sub-par growth, Europe is engulfed with the public debt crisis, and Japan is still in recession. These conditions help to attract capital inflows to emerging economies especially Latin America and Asia as these regions are viewed more favorably due to a more solid economic structure relative to other regions. Remarkably, the size of capital inflow has also increased tremendously in line with excess global liquidity condition as a result of the extraordinarily loose monetary policy used by G3 economies to stimulate their economic growth.

Past experiences and the latest developments in global financial markets have shown that when a sizable amount of capital flows into a

Assistant Governor, Bank of Thailand. The author is grateful to Atchana Waiquamdee for useful advice and insightful comments. He would also like to thank Don Nakornthab, Ubonrat Jantarangs, Norataj Unakul, and Nuwat Nookhwun for excellent research assistance. The views expressed herein are those of the author and do not necessarily reflect the views of the Bank of Thailand. All remaining errors are hers.

country, there is a concurrent increase in the future risk of capital reversal especially if there is an event which affects investor confidence in the financial markets. Recently, such trigger events include the fragile economic recovery of the G3 economies especially the USA, the uncertain public debt situation in some euro area countries, and the Federal Reserve's and Asian countries' monetary policy stances which contain insights to how the economic growth will play out in the future. Wavering investor confidence has direct impacts on the volatility of capital flows which inevitably influences the value of domestic currencies. Such volatile movement of capital flows and exchange rates through many channels in the economy could have adverse consequences for each country. These channels include the exchange rate which affects competitiveness, as well as asset prices which could lead to imbalances being built up in various sectors. Thus, management of capital flows and exchange rate is an important issue so as to limit their impact on the economy of capital recipient countries.

This paper will focus on the management of volatile exchange rate and capital flows from an emerging Asian economy perspective. Section 2 describes the changing patterns of capital flows in emerging economies of Asia. Section 3 summarizes the various determinants of capital flows with particular emphasis on the period after the 2008 global financial crisis. Section 4 assesses the impact of volatile capital flows on domestic financial stability. Section 5 presents a brief discussion of the policy options that could be used to manage volatile exchange rate and capital flows. Section 6 concludes the policy implication for emerging Asian economies.

Changing Nature of Capital Flows in Emerging Economies and Emerging Asia Economies¹

Gross capital flows² to emerging and developing countries peaked in 2007, reaching an all-time high of over USD 1,600 billion. After coming to a halt during the 2008 global financial crisis, capital flow has resumed its increasing trend in line with the global economic recovery. In terms of composition, direct investment remains the main component form of capital flow before and after the crisis despite slowing down in 2008-2009 due to the collapse of world trade. Portfolio investments, while quite volatile by nature, have also been increasing steadily, accounting for 40% of total gross capital inflows in 2010.

As for the destination for capital flow prior to the 2008 global financial crisis, Emerging Asia as a region was the main target, followed closely by Emerging Europe and then Emerging Latin America. After the crisis, Emerging Asia remains the most popular destination,³ however, Emerging Europe was overtaken by Emerging Latin America.

Emerging Asia⁴

Gross capital inflows to Emerging Asian economies has have also peaked in 2007 at a value of over USD 200 billion in 2007Q4. After

¹ Emerging Economies refer to the countries listed in the “Economic Groupings” section of the *IMF World Economic Outlook* (WEO), April 2011. These groups consist of Emerging Asia, Emerging Latin America, Emerging Europe, and Other Emerging Economies.

² Gross capital inflow refers to the changes in portfolio and other liabilities of residents to non-residents and inward direct investment. This paper will focus primarily on gross capital inflow as it reflects foreign capital flow which has increased in size and volatility in the recent period. See for example IMF (2011).

³ It should be noted that a source of capital flows is also from the Sovereign Wealth Funds (SWF). The majority of SWF assets are managed by the funds in emerging market countries and one third are managed by the funds from Emerging Asia, geographically (Mihaljek, 2008).

⁴ From IMF WEO Economy Groupings, including Hong Kong, India, Indonesia, Korea, Malaysia, Philippines, Singapore, Sri Lanka, Chinese Taipei and Thailand (excluding China).

Table 1

EMERGING ECONOMIES' GROSS CAPITAL INFLOWS
(billions of USD)

	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	
FDI	220.60	171.07	126.87	136.34	237.99	
Portfolio	66.79	28.95	18.81	93.97	117.30	
Other	-28.34	-85.82	-50.42	47.42	142.84	
<i>Total</i>	259.04	114.20	95.26	277.74	498.12	
	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>
FDI	286.94	417.02	593.69	638.20	380.38	368.43
Portfolio	162.45	187.23	319.71	-155.99	246.72	393.15
Other	161.67	334.63	749.43	178.23	-101.21	214.81
<i>Total</i>	611.06	938.88	1,662.83	660.44	525.90	976.40

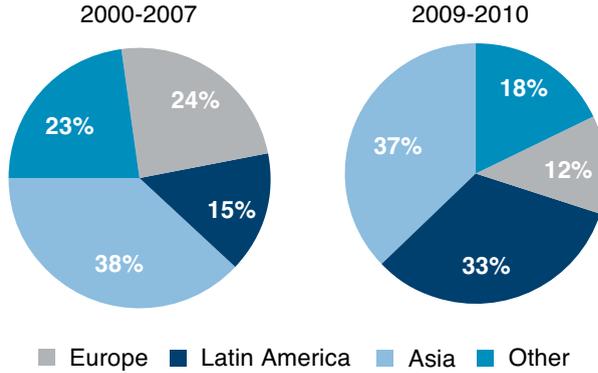
Source: CEIC.

reversing during the 2008 global financial crisis, capital inflow returned again by the second half of 2009. However, it has not reached its previous peak yet. The composition of capital inflows for Emerging Asian economies has also changed.

It is worth noting that foreign direct investments in the periods before and after the 2008 global financial crisis were stable. Prior to the 2008 global financial crisis, other inflows in the form of bank lending dominated, with foreign direct investment outpacing portfolio investment. However, the period after the crisis saw portfolio investments overtaking those flows, with the share of direct investment closely trailing. Other investments and portfolio investments are relatively volatile in both periods.

Figure 1

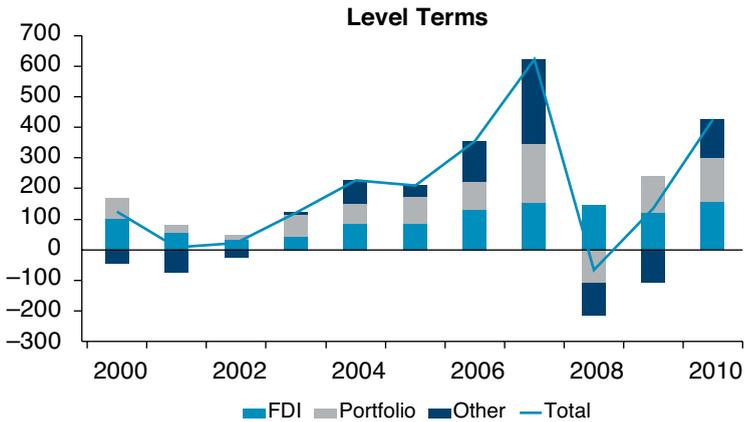
EMERGING ECONOMIES' GROSS CAPITAL INFLOWS BY DESTINATION



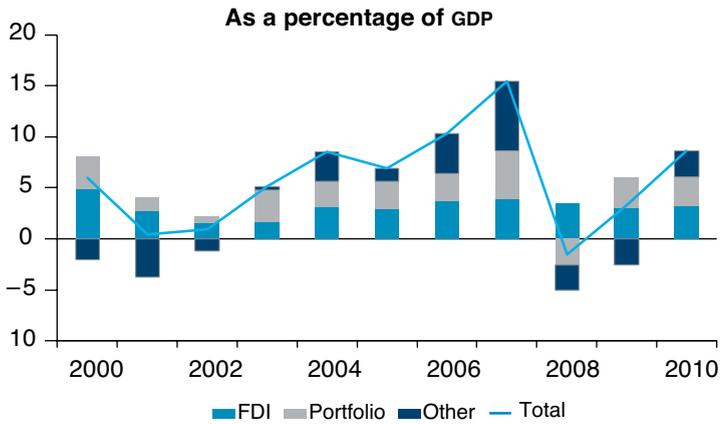
Source: CEIC.

Figure 2

**EMERGING ASIA'S GROSS CAPITAL INFLOWS
(billions of USD)**



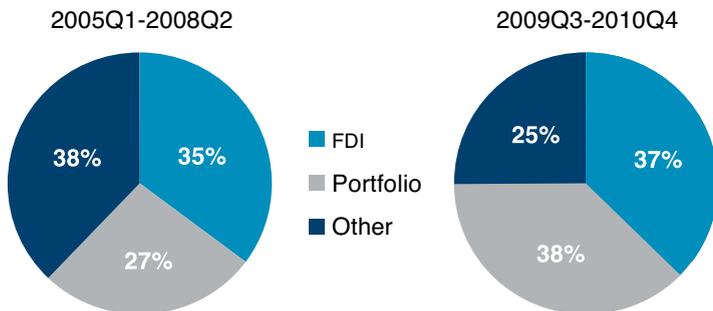
Source: CEIC.



Source: CEIC, IMF WEO.

Figure 3

COMPOSITION OF EMERGING ASIA'S GROSS CAPITAL INFLOWS



Source: CEIC.

Thailand

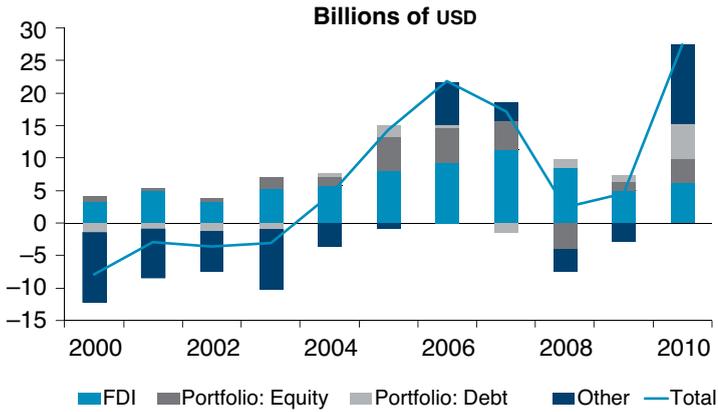
Gross capital inflows to Thailand peaked at over USD 11 billion in 2006Q1, well before Emerging Asia did. Nonetheless, it has been in line with the region as it has reversed during the 2008 global financial crisis. Inflows resumed by the second half of 2009, almost reaching its peak again in 2010Q4 at a value of over USD 10 billion. The composition of capital inflows for Thailand has also changed. Prior to the 2008 global financial crisis, foreign direct investments dominated, with portfolio investment and other investment trailing in a distance. This could be due to the implementation of the unremunerated reserve requirement (URR) imposed between December 2006 and March 2008 that had the effect of discouraging short-term speculative flows (Thaicharoen and Ananchotikul, 2008). For the period after the crisis, however, other investments have overtaken those flows, with portfolio investment now outpacing FDI. Other investments mostly reflects trade-related bank flows in which banks increase their external short-term borrowing to square their positions in preparation for exporters' FX hedging transactions. Similar to Emerging Asia, foreign direct investments in both periods was quite stable whereas portfolio and other investments were more volatile.

Determinants of Surges and Sudden Movements of Crossborder Capital Flows in Emerging Asian Economies after the 2008 Global Financial Crisis

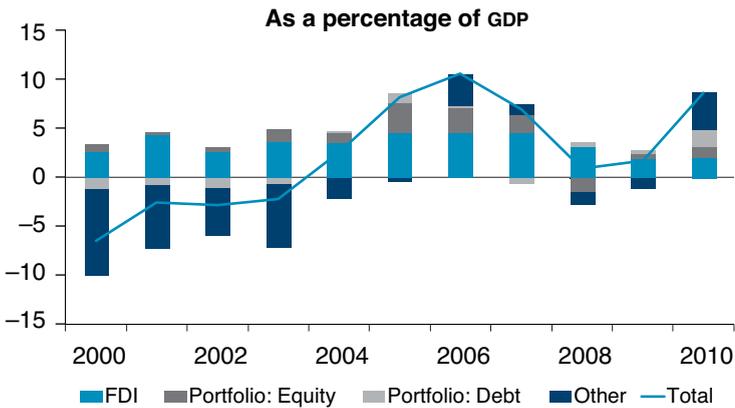
There are many factors that impact the movements of capital flows and they can be categorized into pull (internal) and push (external) factors as well as cyclical/structural factors (Fratzscher, 2011). This section lists four major factors that are widely believed to be key determinants of capital flows in the emerging Asian economies in the postcrisis period. Quantifying their relative importance, however, is beyond the scope of this paper.

Figure 4

THAILAND'S GROSS CAPITAL INFLOWS

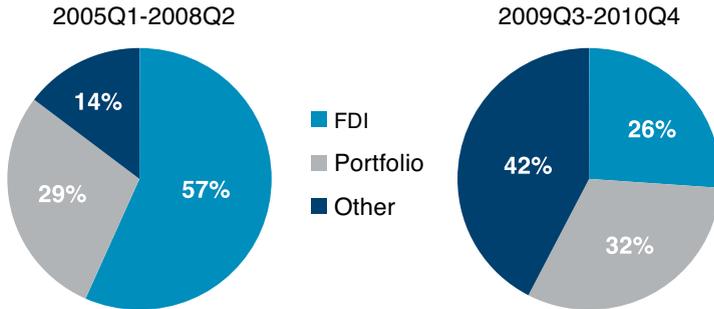


Source: BOT.



Source: BOT, IMF, *World Economic Outlook*.

Figure 5

COMPOSITION OF THAILAND'S GROSS CAPITAL INFLOWS


Source: BOT.

Growth Differentials

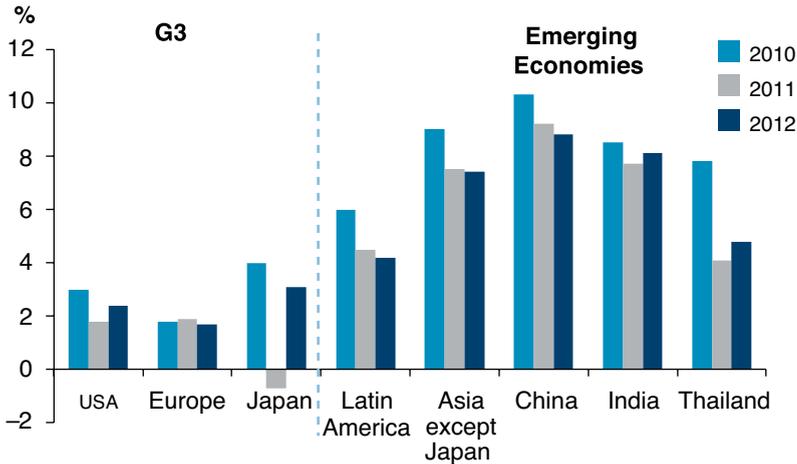
The prospect of economic prosperity should be a positive factor that draws foreign capitals into the host country (BIS, 2009). Slower growth of advance economies given low-risk investment environment causes investors based in these countries to look overseas in the search for better yields elsewhere, especially in emerging markets (Fratzscher, 2011). According to the consensus forecasts, it is predicted that emerging economies will continue to exhibit growth momentum while the advanced economies' recovery retains its sluggish path in the future. Therefore, capital will continue to flow into emerging economies as long as this growth differential remains in place.

Interest Rate Differentials

Interest rate cuts in investors' countries increases capital flows to emerging markets because investors in advanced economies, especially with shorter investment horizon, are looking for higher yields. In addition, emerging countries can benefit from lower cost of financing; hence, lower international interest rates also encourage borrowers in

Figure 6

CONSENSUS FORECASTS¹ OF REAL GDP GROWTH

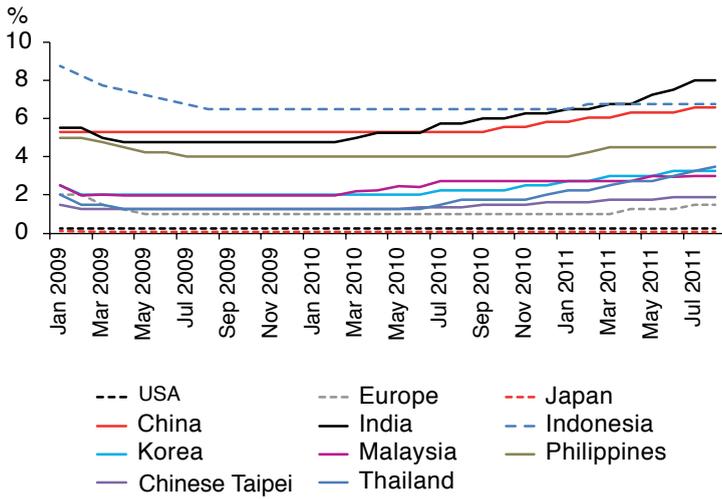


¹ Survey date August 8, 2011.
Source: Consensus Forecasts.

emerging market countries to borrow in foreign currencies (BIS, 2009). Nevertheless, interest rate differentials may not be the main factor that drives capital flow; however, it is an indicator that can point the direction to where capital should flow to. Most emerging Asian economies were not affected much by the 2008 global financial crisis and have since quickly recovered. As a byproduct, inflationary pressures have risen and have prompted their central banks to embark on the policy normalization path as monetary stimulus is no longer necessary. This gives rise to interest rate differentials as the advanced economies have not fully recovered. This factor, combined with the expectation of currency appreciation which will be discussed later on, attracts return-chasing capital flows as profits become more obvious (EMEAP, 2011).

Figure 7

POLICY RATE DIFFERENTIALS



Source: Bloomberg.

Expectations of Exchange Rate Appreciation

Capital inflows for the past 5-6 years, especially portfolio investments, have been mainly driven by further expectations of exchange rate appreciation. Heavy intervention by regional central banks may have caused their currencies to appear undervalued, giving rise to expectations of further appreciation. With economic indicators such as GDP growth and current account balance remaining robust, this further leads to investors' expectations of exchange rate appreciation. Moreover, China's gradual shift towards a more market-based exchange rate regime since 2005 and again in 2010 has met with some expectations that Asian central banks will also allow more room for their currencies to appreciate in line with the yuan as it will not affect their countries' competitiveness.

Figure 8

MOVEMENTS OF REGIONAL CURRENCIES AGAINST USD

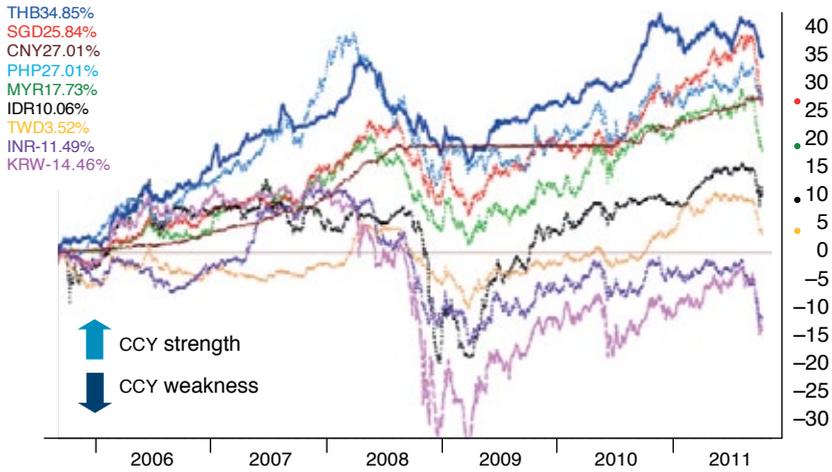


Table 2

EFFECTIVE EXCHANGE RATE INDICES AND EXCHANGE RATES IN ASIA

	As of August 2011		Percentage change from December 2009	
	NEER	REER	REER	USD
KRW	1.8	4.1	4.1	8.5
SGD	8.1	11.9	11.9	15.6
IDR	2.5	6.6	6.6	10.9
TWD	3.9	1.0	1.0	11.4
MYR	6.8	5.7	5.7	14.4
JPY	11.3	5.5	5.5	16.8
CNY	0.8	4.6	4.6	6.6
PHP	1.8	3.9	3.9	9.2
INR	-1.5	8.4	8.4	10.9
THB	3.0	5.0	5.0	11.2

Source: BIS and Reuters.

Global Liquidity Conditions and Market Sentiment

Global liquidity has been mentioned as an important push factor of capital flow as abundant liquidity conditions during low-risk environments can result in capital flowing from low-yield markets to high-yield markets (BIS, 2009). This topic has been gathering attention since the 2008 global financial crisis due to the unconventional monetary policies implemented by central banks in advanced economies such as purchasing public debt securities in the secondary market, or more commonly known as quantitative easing (QE).

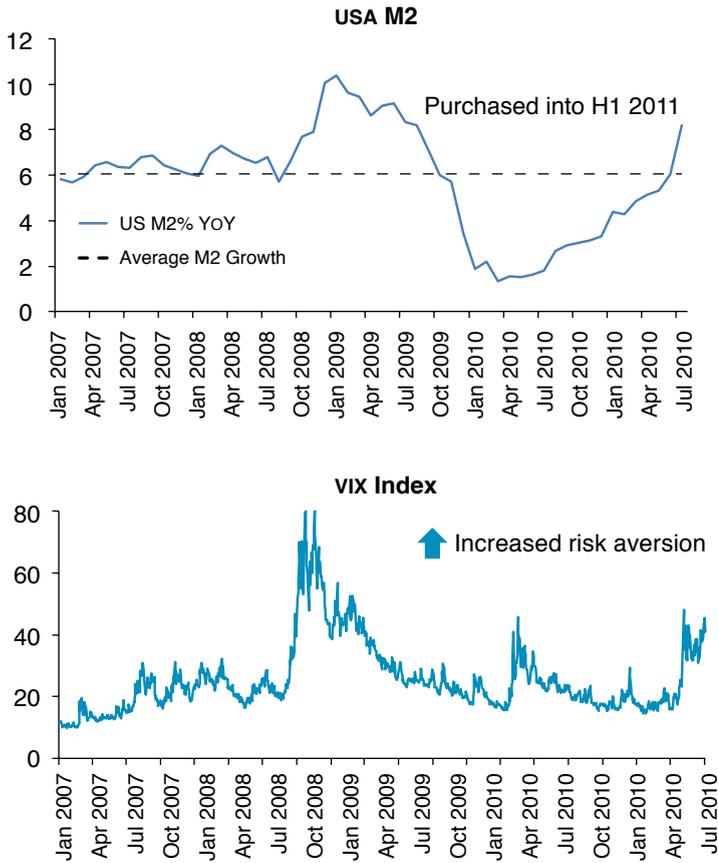
However, QE1 was a response measure in desperate times as the USA economy headed for a downturn in 2008Q4. At the same time, capital was also exiting emerging economies too, and they did not return until mid-2009. The financial markets became calmer during 2009-2010 as shown in the decline of the VIX index, and that is when capital inflow to emerging economies started to accelerate. Thus, a case could be made that increased global liquidity conditions is a necessary but not sufficient condition for increases in capital flows to emerging markets; risk sentiment must also be taken into account. With the uncertain resolutions to the persistent sovereign debt problems in the USA and Europe, market risk can become more volatile going forward.

Implications of Volatile Capital Flows for Financial Stability

Since capital flows are often regarded as a destabilizing factor to the financial system as well as the economy, it is important to note that they are also equipped with their own benefits. First, external capital is another source of funding to economic activity, particular in the economy where investment exceeds saving, thus improving liquidity and credit in the financial system. Second, capital flows are also crucial to long-term development of the financial market by enhancing its scope in terms of both instruments and players which allow for better price discovery. Finally, it also strengthens the role of the financial system in fostering economic growth.

Figure 9

GLOBAL LIQUIDITY AND RISK SENTIMENT



Source: Bloomberg.

Attempting to obstruct capital flows to a large extent, therefore, may not be a suitable choice under increasingly integrated international financial market and can make the country forgo existing favorable consequences. However, by allowing financial openness, there can be various risks associated with the capital flows. Potentially, large inflows of capital can lead to exchange rate overshooting, fuel bank lending boom and speculative activities in asset markets, and also risk facing a sudden reversal of the flows, which has been a cause of many past financial and economic crises (Johnston, Darbar, and Echeverria, 1997). In particular, the current situations of capital flows have already entailed some implications on financial stability, and there remain some prospective risks which have yet to cause adverse impacts on the economy. The following section will discuss them in detail.

Appreciated and Volatile Exchange Rate

Exchange rate appreciation among emerging currencies, both in bilateral and in effective terms seems to be the most evident consequences of current development of capital flows. Many currencies have risen past their precrisis level and even approached their historical record levels. The strengthening trend in some periods was also abrupt, particularly when foreign investors' appetite for risk and the global economy consistently recovered. Most emerging countries' current account surpluses have also additionally fueled the rise.

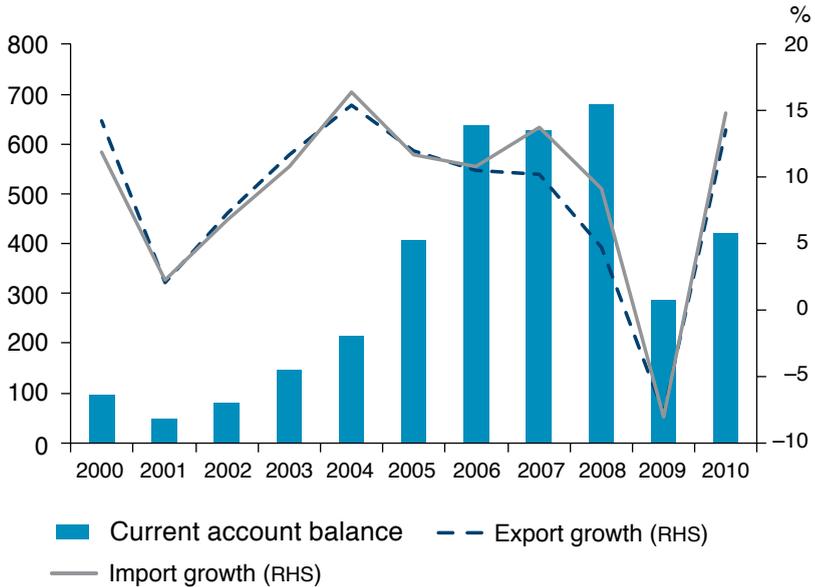
The appreciation has posed concerns to policymakers who fear that economic recovery could be derailed given that external demand has been a crucial factor fostering postcrisis growth. Fortunately, price competitiveness may not be much threatened as most emerging countries, whose products are largely similar, have seen their exchange rates moved in line with each other. However, balance-sheet effects, resulting in lowered income when expressed in local currency, remain albeit in the short run. These can be averted by hedging against foreign exchange risk, either through natural hedging or via hedging instruments.

In the short-run, each currency, apart from facing the appreciating trend, is also subject to increasing volatility. The underlying cause may be owing to the changing nature of foreign investors which actively respond to any idiosyncratic shocks affecting risk sentiment and expectations regarding growth prospect. The latter is increasingly volatile as well since the global economy remains vulnerable, either from structural problems in the advanced economies or overheating risks in the emerging ones, ultimately causing investors to consistently rebalance their portfolio towards assets with acceptable risk. The volatile exchange rate causes further uncertainties for international trade and investment, and makes financial risk management, particularly those which are not entirely hedged against exchange rate risk, a more challenging task.

However, the impact of appreciated and volatile exchange rate may differ across countries, depending on economic structure and conditions. The more vulnerable ones may be export reliant; have a great number of small and medium firms with small profit margin and often exposed to price competition; have limited development of the financial market; and, when faced with economic instability, point to their relative inability to cope with exchange rate fluctuations. Most characteristics belong to emerging economies, causing the central banks to promptly react to exchange rate movements. The continuous increase in international reserves could well reflect the consistent participation of the banks in the foreign exchange market.

So far, despite relatively unfavorable exchange rate movements, we can still witness robust economic recovery and in particular export growth among emerging economies in this postcrisis event, though some firms in the more micro level may experience hardship to some extent. This resiliency mostly reflects the fact that the income effect from regained global growth momentum is the dominant factor driving activity in the tradable sector, rather than the price (or exchange rate) effect which may subside due to various factors, including rising availability of hedging instruments, product and market diversification, as well as the fact that most central banks in the region intervene to smooth exchange rate adjustments.

Figure 10

**EMERGING AND DEVELOPING ECONOMIES' CURRENT ACCOUNT
(billions of USD)**


Source: IMF WEO.

Advanced economies, like Japan and Switzerland, appear to be more concerned about massive exchange rate appreciation due to the currencies' safe-haven status and have launched unusual measures to contain the overshooting of their currency given that their recovery is far weaker than the emerging ones. To counter the yen appreciation, the concerted intervention accompanied by major economies of G7, along with the individual ones, was conducted.

This comes at a surprise since the Japanese authority has not intervened in the market since 2004. Meanwhile, the Swiss National Bank (SNB) has eased its monetary policy, by lowering interest rate to zero bound and launching a kind of quantitative easing measure, as well as

setting the target for its exchange rate against the euro to counter the overvalued currency. Nevertheless, the important lesson learned in this episode is the limited effectiveness of those measures; that is, one ultimately cannot resist the trend of the exchange rate, or a large amount of resources may be required to influence it.

Risks of Asset Price Bubbles and Bank Lending Boom

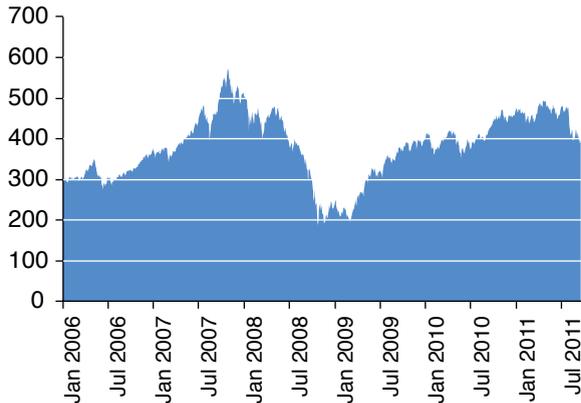
The postcrisis capital flows could penetrate into various asset markets, including stock and housing and bond market, causing a subsequent rise in asset prices which could benefit the recovering economy through various channels. However, the policymakers usually put emphasis on a more devastating case in which asset prices are excessively driven up, usually by speculative activity, and bubbles are formed. And, once the bubbles burst, balance sheets of firms and individuals would be seriously affected, ultimately leading to adverse macroeconomic implications.

Among asset prices, the stock price evidently rebounded after a considerable plunge during the crisis. Many stock market indices have risen past their precrisis level. Theoretically, this increase in the stock price can provide expansionary impacts on the economy.

Through the wealth effect, consumption can be boosted, while investment will also improve via a rise in the so-called Tobin's Q theory. In addition, the consistent increase of the stock price can entail psychological effects, providing more confidence to firms and individuals, which subsequently boost spending and economic activity. However, the stock prices have been relatively volatile, throughout their rising trend, in response to fluctuating capital flows. This volatility in stock prices has, in part, lessened concern on the bubbles in the stock market as it has prevented a sustained and excessive increase in the stock prices, an important characteristic of asset bubbles. With on-going global economic uncertainties and continuing balance sheet adjustments, the concern for the stock bubble may not be warranted.

The capital flow impacts on house price have been varied across countries. Among Asian economies, Singapore, China and Hong Kong have experienced faster rises in house prices along with significant

Figure 11

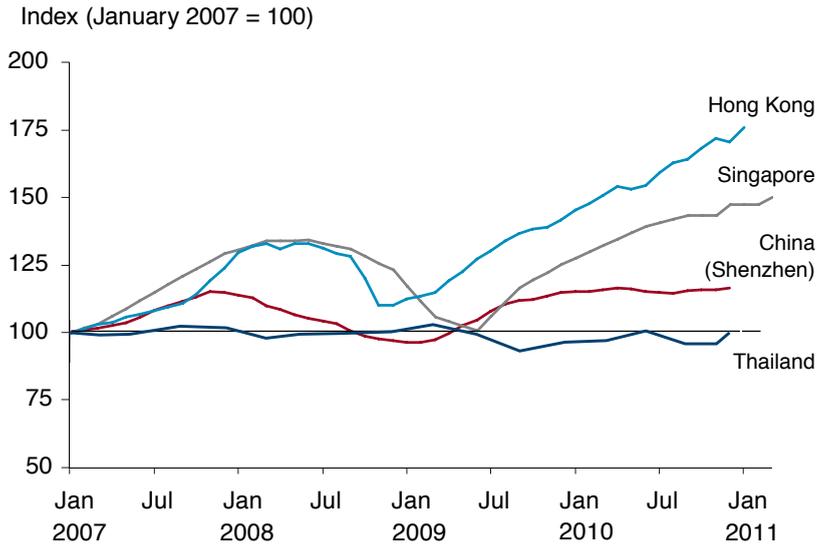
MSCI EMERGING ASIA INDEX

growth in mortgage debt. However, it should be noted that such increases are partly attributed to internal factors, for example, robust economic fundamentals which boost purchasing power of the residents. A housing bubble is much more adverse since it is the root cause of the latest subprime crisis, and can contain some exceptional characteristics that make it more terrifying than a stock market bubble –houses and properties are more costly and difficult to liquidate. In response to the developments in house prices, macroprudential measures have been imposed to secure financial stability. While Singapore and Hong Kong chose to lower or place a limit on the loan-to-value (LTV) ratio, the Chinese authority implemented various measures ranging from increasing down-payment requirement, suspension of mortgage on some types of house purchase, imposing property tax and even price control. In case of Thailand, the Bank of Thailand (BOT), also tightened its LTV regulation but as a preventive, not reactive tool.

Meanwhile, even though the capital flows into the bond market in quite large volumes, particularly once the emerging interest rates start

Figure 12

REGIONAL PROPERTY PRICE INDICES



Source: CEIC, calculations by Bank of Thailand.

the normalizing process while the advanced economies still maintain their unusually low interest rate, and the stock prices have increased to the level that makes expected capital gains less attractive, bond prices have yet to be significantly affected. The bond price is mainly governed by expectation regarding future short-term interest rates. Thus, only in some cases and in the short run, capital flows into debt market cause the bond price to rise, or in other words, the yield to drop. The implications on financial stability as well as the effectiveness of monetary policy would be significant if such a change is large.

Apart from fueling the stock and bond markets which can be regarded as market-based sources of funding, capital flows can be channeled through bank lending, which may subsequently boost economic activity (Ishii, Habermeier et al., 2002). In the case where capital inflows are excessive, they can foster a credit boom which may lead to economic overheating and, without proper regulation and supervision, contribute to vulnerabilities in the financial system. The Asian crisis over a decade ago is a good example illustrating the disruptive impact of this bank-lending channel that led to an extension of under-regulated credits, which ultimately led to bubbles, reversal of capital flows and financial crisis. Mihaljek (2008) also examined the precrisis cross-border banking flows into emerging economies and found that it can result in higher credit risk and potential for capital flow volatility and cross border contagion. However, it is to note that, in the current episode, external bank lending may not all be channeled through real activity and some are related to an adjustment of the foreign exchange position by banks in order to hedge against exchange rate risks after conducting a forward transaction with customers, namely exporters and importers.

Risks of Capital Flow Reversal

Generally, adverse impacts on financial and currency stability could take place once there is a reversal of capital flows, either abrupt or otherwise. The abrupt reversal is usually crisis-related while the non-abrupt one could occur when advanced economies begin to consistently strengthen. The reversal of flows could pose negative consequences on the whole economy by having the bubble burst, impairing individuals and firms' balance sheet, freezing lending activity as well as derailing confidence which subsequently hamper economic growth, or in more disastrous case, leading to financial and economic crisis (Johnston, Darbar, and Echeverria, 1997).

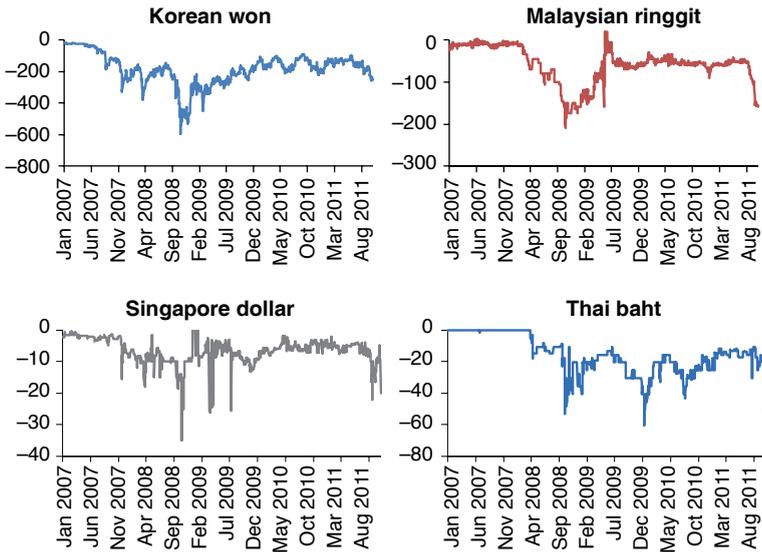
The impact and possibility of an abrupt reversal of inflows can currently be higher due to increased integration and interconnectedness of the global financial market. Firstly, this means that capital inflows are large relative to the absorptive capacity of any economy, causing the

effects of capital inflows abrupt reversals more severe. Also, the contagion effect will become more pronounced since investors' decision is driven more by the formation of regional and global prospects. Policy or economic shocks originating in important countries can produce externalities in other markets. In addition, the IMF's WEO April 2011 has recently found that different types of capital inflows to emerging economies tend to complement rather than substitute one another. Thus, when there are shocks appearing in one market, these can be subsequent spillovers in other markets. The impacts of shocks or reversals can therefore be amplified.

An indicator of capital reversal can be the cross-currency basis swap spread against the USD LIBOR. The cross-currency swap spread is the difference between the local currency interest rates and the USD LIBOR in the swap market. This measures the demand for USD: a lower spread means that the value of the USD is higher relative to the local currency and that holders of USD can borrow the local currency at lower costs, while holders of local currencies are more willing to borrow USD at higher costs. It can help to identify abnormal circumstances (i.e., USD shortage) if the spread has moved veered significantly from past trends. The figures below show the cross currency basis swap spread between the Korean won and the USD. During the height of the 2008 global financial crisis, the spread point dropped to a historic low of close to -600. Recently, some capital outflows were experienced due to risk aversion and the swap spread has started to decrease for some currencies as well.

However, the extent of the problem should also depend on the overall external stability which can be inferred to by certain indicators: foreign currency reserve holdings and the amount of short-term external debt. The international reserves can act as a cushion for foreign currency shortage in the event of crisis. Many literatures have attempted to measure reserve adequacy but have yet to reach a convincing conclusion. However, since most emerging economies have accumulated large reserves over the past decade, this is a favorable prospect for external stability and helps lower the chance of flow reversal itself.

Figure 13

CROSS CURRENCY BASIS SWAP SPREAD FOR KRW, MYR, THB AND SGD

Source: Bloomberg.

Regional cooperation which creates a pool of foreign currency liquidity could also help contain the impact. Meanwhile, the short-term external debt outstanding, though increasing, remains low comparable to the latest Asian crisis, as indicated by various external vulnerability indicators.

Policy Options

Theory suggests that capital inflow would help ease domestic financing constraints and improve welfare via investment diversification and risk sharing. Moreover, theory also assumes that the exchange rate works perfectly as an automatic stabilizer. Unfortunately, assumptions underpinning textbook explanations do not always hold in reality, especially for emerging economies. This may be due to imperfections in the financial markets. First, asymmetric information may exist in the

real world. With this, financial market participants may not always act rationally, and their behavior is sometimes influenced by *animal spirits* and externalities, leading to herd behaviors. Additionally, emerging markets are not endowed with deep and developed financial markets; thus, the types and views of market players are not diversified. Real sector rigidities also complicate the issue; for example, dependence on the export sector may constrain an economy’s ability to adjust smoothly to FX movements. Thus, these imperfections may require the use of policy options to smooth out market rigidities. Policy implementation can be one of the ways to deal with volatile capital flows to minimize its adverse impacts on the economy. This section lists some policy options available to most emerging economies. These include flexible exchange rate and foreign exchange market intervention, interest rate policies, reinforcing macroprudential measures, expanding outward investments, capital controls, developing deep and resilient domestic financial markets, and regional cooperation. A summary table is presented below.

Table 3

SUMMARY OF POLICY OPTIONS

<i>Policy options</i>	<i>Impact</i>	<i>Effectiveness</i>
Flexible exchange rate and foreign exchange market intervention	Flexible exchange rates act as automatic stabilizer, cushion against shocks, tame speculation Intervention as a transition process that lessens shocks as economy moves toward more flexible exchange rate regime	Exchange rate flexibility helps foster businesses adaptation However, too high flexibility can cause adverse impact on economy Too low flexibility can reduce automatic stabilizer properties Increasing financial globalization makes FX intervention more costly

<i>Policy Options</i>	<i>Impact</i>	<i>Effectiveness</i>
Interest rate policy	To reduce interest rate differentials that might be a driving factor of capital flow	Too blunt of a policy tool: may adversely impact other aspects of economy other than capital flows
Reinforcing macro-prudential measures	To deal with signs of financial imbalances in specific parts of the economy (e.g., financial sector and real estate)	Effectiveness depends on the balance it strikes between under- and over-regulation Results of the measures are still inconclusive as this policy is quite new
Expanding outward investments	More balanced financial flows Greater investment options for domestic investors Improved risk management for domestic investors	Factors influencing the amount of investments abroad include Home-bias Financial literacy Time Experiences has shown that some countries are more successful than others in promoting outward investments
Capital controls	To curb capital flow and exchange rate volatility	May be less effective in long-run May create negative externalities and other distortions
Developing deep and resilient domestic financial markets	To enhance the ability of the domestic financial market to absorb capital inflows To help cushion against large external shocks To improve the ability of market participants to manage risk	Well-developed financial markets are able to absorb shocks better than smaller markets
Regional cooperation	To lessen systemic risk and financial crisis contagion via Mutual review of economic health Regional safety net	Results of the measures are still inconclusive as this policy is quite new

Flexible Exchange Rate and Foreign Exchange Market Intervention

Since capital inflows can be channeled through economic activity, subsequently causing overheating and inflationary pressure, a flexible exchange rate can act as an automatic stabilizer against these macroeconomic impacts like it also does in response to other prevailing shocks in general. As capital surges in, the flexible exchange rate, the movements for which are consistent with economic fundamentals, can act as a stabilizer for the economy by lessening the chance for overheating. The notion is crucial as a result of short-run wage and price rigidities, as well as the fact that most central banks attempt to secure internal price stability. Flexible adjustment of the exchange rate is thus required to preserve macroeconomic equilibrium; otherwise, output and employment instead will need to be adjusted, causing difficulties on the economy.

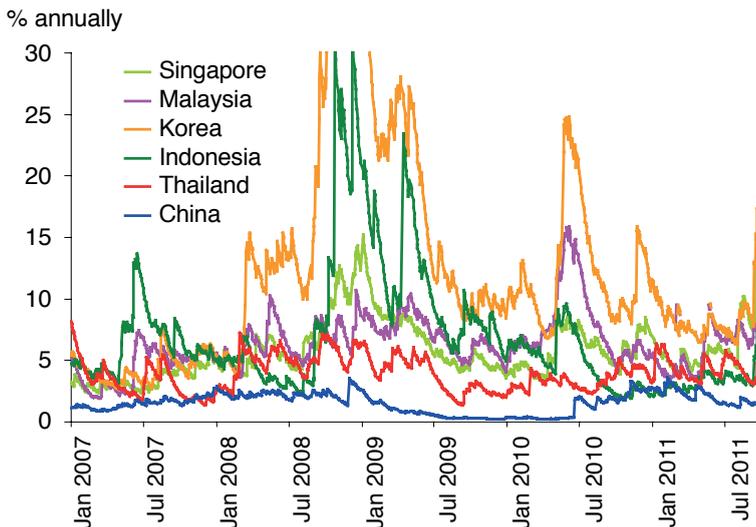
Exchange rate flexibility can also help stabilize capital flows and underlying speculative behavior. In one way, flexibility of the exchange rate creates return uncertainty to speculators and hence discourages them. Moreover, allowing the exchange rate to move flexibly with economic fundamentals would prevent exchange rate misalignment and speculation, which are a crucial source of capital flow volatility, in the first place. In this regard, the flexible exchange rate would act as a first-line defense against capital inflows. The central bank may therefore resort some degree of flexibility as one of the tools to curb the flows, especially the speculative ones. Conversely, without exchange rate adjustments towards equilibrium, any expectations of currency appreciation could encourage capital inflows, contributing to greater pressures on the exchange rate and higher chances of financial imbalance. From this reasoning, adopting a more flexible exchange rate policy can also allow the economy to cope with capital outflow because not only does the price of its goods and services become more competitive in the global market, it may also temper expectations of further depreciation if it is allowed to quickly adjust towards equilibrium.

An indicator of flexible exchange rate could be its measured volatility as it reflects the two-way movements of the currencies. It is not clear-cut from the data that the volatility of foreign exchange movements of Asian currencies, although quite volatile during the 2008 global financial crisis, has increased substantially overtime. This may be due to heavy intervention by central banks which can curb volatile movements of the exchange rate.

Most economies, particularly the emerging ones, may not be able to withstand *fully* flexible exchange rate and from time to time still need to intervene in the foreign exchange market. Foreign exchange intervention was evident in Emerging Asia over the past decade, as reflected by a considerable increase in international reserves. The rationale for

Figure 14

CROSS-COUNTRY DAILY FX VOLATILITY



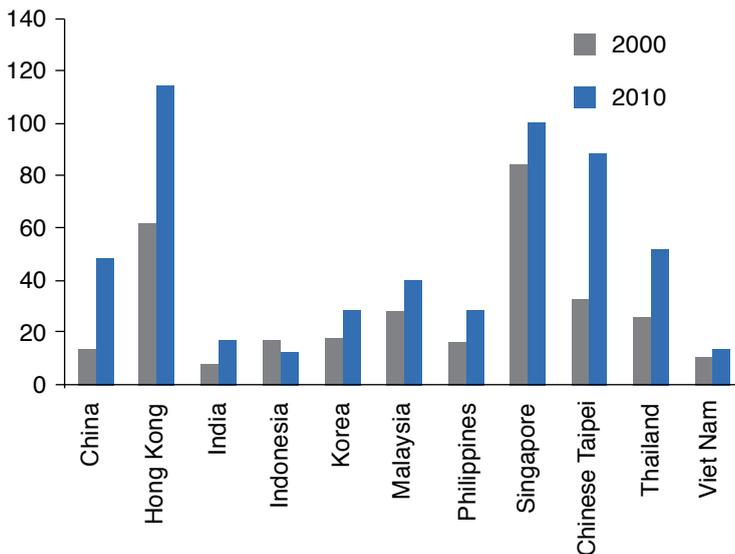
intervention varies across countries, ranging from calming market disorder, preventing misalignment, dampening excessive volatility to the textbook idea of reducing uncertainties with respect to international trade and investment. However, most of them share the same underlying cause, which is economic and financial vulnerability. Intervention is, in particular, required in the face of currently larger and more fluid capital flows and when the economy is in the process of recovery, with worsened immunity to exchange rate shocks.

Considering both sides of arguments, the question arises as to what is an appropriate degree of flexibility. On the one hand, too much flexibility can cause adverse impacts on the tradable sector, particularly in emerging economies where economic and financial structures are not as robust as the advanced ones. On the other hand, low flexibility can forgo benefits of exchange rate as a shock absorbing mechanism. Indeed, the degree of flexibility should suit the economic condition and structure, which signal the ability to withstand exchange rate fluctuations. During the crisis episode in which firms already suffered from shrinking global demand, it is evident that many emerging central banks have made interventions on their exchange rates; China even returned to the regime of fixed exchange rate which peg the value of yuan against the US dollar.

However, the future economic and financial landscape seems to warrant greater exchange rate flexibility. Firstly, it helps foster businesses to adapt themselves, particularly by improving their production efficiency as well as financial and risk management; all of which are crucial to long-term development of the country, both in the real and financial sector, and also strengthen sustainability in a highly-dynamic global market. In addition, the controllability issue could also present itself as a potential limitation to foreign exchange intervention, and ongoing development in the financial market will even worsen the ability to influence the exchange rate. Given increasing financial liberalization, leading to larger and more integrated international financial markets, central banks would require larger amount of resources to manage the currency. Under these circumstances, even concerted actions would

have less capability. The final argument points to entailed financial costs of reserve accumulation and sterilization, not to mention subsequent implications on pursuing independent monetary policy. The intervention to stem appreciation pressure has inevitably caused the international reserves of Asian economies to continually rise. Share of international reserves held by emerging market economies has increased continually, entailing large balance-sheet mismatch in each individual country. In particular, each country has to fund the intervention with local interest rates that are higher than what it would earn from the international reserves.

Figure 15

ASIAN COUNTRIES' FX RESERVES AS A PERCENT OF GDP


Interest Rate Policy

Interest rate differentials between the emerging and advanced economies are often regarded as an important factor explaining behavior of postcrisis capital flows. Consequently, the IMF has suggested that central banks should use the policy interest rate as another tool to deal with capital flows, if economic conditions permit.

Specifically, many have argued that the hikes would actually induce more capital inflows that add pressures on the currency. However, due to the global and domestic economic recovery, the inflation risk has recently materialized and pose increasing threats to domestic price stability, requiring policy tightening, that is, an increase in policy interest rate. This concurrent event of capital inflows and inflation risk inevitably presents policymakers with a policy dilemma.

Actual central bank actions during the past year demonstrate that when faced with this dilemma, Asian central banks in the end choose to increase their policy rates. One reason is that, despite theoretical support, the effectiveness of interest rate in countering capital flows is empirically less clear cut. Firstly, the relationship between interest rate and capital flows may be exaggerated by the procyclicality nature of capital flows that follows relative growth developments, while interest rate also reacts systematically to growth and inflation outlook. Thus the relationship could be more a correlation, rather than causality, happening in the environment of robust Asian growth prospect. Second, surges in capital flows toward Asia are triggered by factors other than interest rates of Asian economies, especially those factors that are out of our control. These could range from usually low interest rate and liquidity provisioning measures in the advanced economies, and a return of risk appetite to better growth prospect of Asia. Hence, an attempt to lower interest rate to counter against capital inflows will not be effective. In addition, interest rate returns are minimal compared to returns from exchange rate or other capital gains. Thus, large interest rate changes may be required in order to prevent capital flows and such a change, in turn, could pose serious implications on macroeconomic stability.

On top of the effectiveness issue, as a policy instrument to pursue the monetary policy objective, implementing interest rate to achieve price and economic stability should and indeed must be the first priority; otherwise, the central bank may risk losing credibility in its fight against inflation. Indeed, by looking from another angle, in the case when the economy is experiencing solid economic growth and upcoming risk to inflation, without the use of interest rate as countercyclical tool, an overheating economy may induce more capital flows, exerting more pressures on the exchange rate and financial system. However, these do not preclude the possibility of exercising the role of interest rate. Interest rate may be implemented as a tool to prevent capital flows should macroeconomic conditions, namely inflation and output gap, warrant; that is, interest rate responses to capital movement and macroeconomic outlook are consistent. In an environment where capital surges in despite weak macroeconomic growth and low inflation, interest rate may be lowered to cope with capital inflows. On the other hand, if capital flow reversal occurs in a period of robust macroeconomic growth and increasing inflationary pressures, interest rate may be raised. These situations assume that the exchange rate is also flexible; otherwise, using interest rate to manage capital flows would be equivalent to using interest rate to anchor the domestic currency. In that case, the exchange rate would be misaligned with fundamentals, which could destabilize the growth and inflation conditions as well as fuel currency speculation.

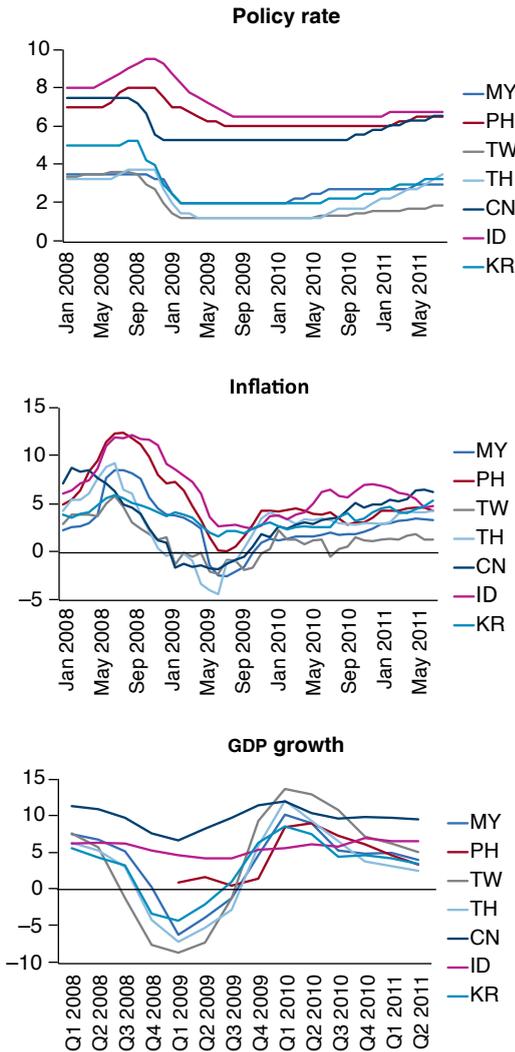
At this crucial juncture of economic recovery, many central banks are hiking their interest rates in light of inflation development and in a process of policy normalization. The use of interest rate to deal with capital inflows and exchange rate appreciation is evident in only a limited number of countries such as Switzerland, as previously mentioned, Brazil, and Turkey.

Reinforcing Macprudential Measures

Capital inflows could come in the form of foreign bank loans which further fuel speculative activities in asset markets and balance sheet

Figure 16

POLICY INTEREST RATES, INFLATION, AND GDP GROWTH RATE OF SELECTED EM ASIA



mismatches, thereby leading to financial instability. To deal with signs of financial imbalances in specific parts of the economy, macroprudential measures are widely accepted in both academic and policymaking fronts. An effective and responsive prudential framework can help contain the buildup of financial risk and vulnerabilities that a boom in capital inflows typically generates. They, from system-wide perspective, can help moderate procyclicality arising from the interplay between the business cycle, the financial cycle, and risk-taking behavior of economic agents. Macroprudential measures work to reduce systemic risk across the financial system. Therefore, they are useful tools to “lean against the wind” of excessive credit growth and asset price increases in order to support the functioning of the financial system.

In particular, macroprudential measures help overcome constraints faced by other types of instruments. Firstly, microprudential instruments focus only on the strength of individual banks but cannot capture system-wide risk triggered by capital inflows. Meanwhile, interest rate policy, while attempting to lean against asset bubbles and credit boom, could be a blunt instrument, posing negative externalities on other assets as well as the economy as a whole.

Macroprudential measures instead can be implemented more specifically towards problematic sector and overcome trade-off that arises when inflation prospect is not consistent with asset price increases or rapid credit growth. In addition, capital flow measures can give distorting effects as well as externalities on the economy which may cause the economy to forgo potential benefits of capital inflows. However, macroprudential measures do not obstruct external capital in the first place but instead aim to prevent or lessen the adverse aftermaths of inflows in the pursuit of financial stability.

One of the most evident cases implementing macroprudential measures belongs to Korea, inspired by volatility of banks’ external borrowings during the past two financial crises: excessive capital inflows during boom periods and sudden outflows in times of bust, consequently bringing about a severe financial crisis. The Korean government therefore reinforced macroprudential measures to reduce capital flow

volatility, including ceilings on foreign exchange derivatives positions of banks, regulations on foreign currency bank loans and also prudential regulations for improving FX soundness of financial institutions. Apart from Korea, as mentioned above, some Asian economies have also imposed prudential measures to cope with housing price rise.

Often left out during the recent times of capital inflow is Malaysia's strategic measures implemented during the 1997 Asian financial crisis when regional economies faced large reversals. Apart from the capital control measures that Malaysia imposed during the turbulent time (which will be discussed later), authorities also implemented several prudential measures. One of the measures was the requirement that sale of ringgit assets had to go through authorized domestic intermediaries only and that all ringgit assets held abroad had to be repatriated within one month. This served to shutdown the offshore Malaysian ringgit market, where much of the currency speculation took place. Arguably, this measure, combined with capital controls, served to stem capital reversals, reduce the volatility of capital flows, restore order in the Malaysian financial market and hence allowed its economy to recover faster than regional peers (Kaplan and Rodrik, 2001).

Nevertheless, imposing macroprudential measures can entail some costs in the case that the measures are tightly implemented, causing the financial system to be over-regulated. This could become an obstacle to economic growth and long-term development, rather than stabilizing the economy. Indeed, the factor that may lead to over-regulation can be practical difficulties in identifying the trigger points for implementing them. Here, the challenge lies in setting an appropriate financial stability framework which covers noted feature of procyclicality, risk-taking behavior, asset bubbles, as well as the role of capital flows. The framework should include instruments whose impacts and effectiveness are known to a certain extent and a set of indicators that can summon a timely policy choice.

Expanding Outward Investments

Another policy option to deal with volatile exchange rate and capital flow is to allow residents to invest abroad. This could take the form of liberalizing outward direct investments, portfolio investments, or lending abroad. The benefits of this policy option are that it not only creates more balanced financial flows (and hence two-way movements of the exchange rate if flows are not hedged), but it also provides greater investment options and improved risk management for domestic investors. Many countries in the past, including Thailand,⁵ have used this policy option to address this issue. However, consistency in macroeconomic management especially in foreign exchange policy is required to avoid the costs of potential capital flight arising from greater liberalization of capital outflow.

There are many factors that could explain the phenomenon of relatively low investments abroad despite freer regulations. First, home-bias may be one important factor tempering outward investments as domestic investors may feel more familiar doing business in the home country rather than abroad. Another factor may be due to financial literacy. Since

⁵ In the case of Thailand, authorities have continued to relax exchange control regulations for direct investments, portfolio investments, and lending abroad particularly since 2007 in order to provide Thai residents greater investment options and allow for more balanced financial flows. Latest revisions were made on October 2010 as follows:

- Direct investment: Thai corporations are free to conduct direct investments and lending to affiliated companies abroad.
- Portfolio investment: Granted additional amount on portfolio investments abroad to be allocated to investors under the Securities and Exchange Commission (SEC) supervision from USD 30 billion to USD 50 billion.
- Other investment:
 - Relaxed regulation on lending of Thai companies to non-affiliated companies abroad up to USD 50 million per year.
 - Increased the amount limit for purchase of immovable properties abroad from USD 5 million to USD 10 million per year.
 - FCD: Raising the outstanding balance limits of foreign currency accounts deposited with funds exchanged from Thai baht to USD 500,000.

investors do not possess expertise in the external financial markets yet, it is more likely that portfolio allocation abroad may be small in the beginning. This highlights the effects of liberalization which may take time to develop and pick up momentum. Finally, the prospect of returns on investments abroad may still be unattractive at the moment when compared to returns domestically.

Policymakers may be hesitant to reduce restrictions on outward investments. There are a variety of factors that can contribute to this tentativeness, such as the fear of depleted national savings and risks to financial instability should capital continually flow out. Although these concerns are well founded especially for emerging economies, expanding outward investments could also be viewed in light of creating stability via a more balanced two-way flows. In a period of substantial capital inflows, and hence currency appreciation, domestic residents will find foreign assets more affordable and may acquire them. On the other hand, in a period of substantial foreign capital outflow, residents who own foreign assets can convert them and repatriate the proceeds back home should they need to. This is an example showing that expansions of outward investment can smooth capital flow and income shocks.

Nevertheless, freeing up everything at once will be harmful. In this regard, the BOT has continually relaxed exchange control regulations for direct investments, portfolio investments, and lending abroad since 2007. The BOT is currently in the process of drafting the Capital Account Liberalization Master Plan to be announced by the end of the year. This Master Plan will follow an accelerated phase approach to liberalization.

Capital Controls

If other policy options proved to be ineffective in managing volatile exchange rate and capital flows, imposing capital controls is a policy option that could be explored. Capital controls may have some benefits in curbing capital flow and exchange rate volatility in the short-run. However, it also has several costs (Ariyoshi et al., 2000). From a practical standpoint, capital controls may be more feasible for countries with less open capital accounts. In reality, most countries have already liberalized

their capital account so their imposition would require certain institutional and administrative adjustments that may need to be newly created which bear setup, monitoring, and enforcement costs. After its imposition, countries could experience adverse consequences because capital controls can create negative externalities and distortions. This stems from weakening foreign investors' confidence, which could deter value added foreign productive investments and impose higher risk premiums on domestic borrowers of foreign capital in the future.

Moreover, past research on capital control suggests that the net effect of capital control tends to be ambiguous; over the long-run, the effect tends to fade away (Gochoco-Bautista et al., 2010). Lastly, if one country adopts capital controls, it may be more likely that others may too. This can result in currency wars and foster an environment of capital account protectionism which hinders the process of global financial integration (Pradhan et al., 2011). Thus, given its limitations and costs, capital controls should be used cautiously and in the following ways:

- Should be used as a complement to other policy measures and not as substitutes.
- Should be imposed only temporarily.
- Should only be implemented as a safety valve under extraordinary circumstances.

Below is a list of recent capital control measures imposed by emerging countries, followed by a brief discussion of some of them.

Recent Country Experiences with Capital Controls

• Brazil's Tax on Financial Operations

On October 2009, Brazil's Ministry of Finance imposed a 2% IOF tax on foreign investments in fixed income instruments and equities in an attempt to slow the appreciation of its currency. However, the effect was short-lived. After its announcement, the Brazilian real weakened by 2% and the stock market declined by 3%; both have rebounded in just a couple of days. Nonetheless, there were some observed declines

Table 4

RECENT MACROPRUDENTIAL AND CAPITAL CONTROL MEASURES			
<i>Measures/Country</i>	<i>China</i>	<i>Malaysia</i>	<i>Thailand</i>
Limits on bank's net open position	✓		
Requirement for 100% underlying transactions provided by banks for forward contracts			
Requirement for resident banks' long-term FX loan to be covered by 100% of long-term FX borrowing			
Restrictions to maturity and issuance (such as minimum holding period on CB bills)			
Limits on overseas borrowing			
- Banks	✓		
- Non-banks	✓		
Limits on FX exposure (e.g., access to currency market and the ability in trading FX)			
Raising reserve requirement			
- on local currency deposits			
- on foreign currency deposits			
Expand targets reserve requirement rules (to include other liabilities than deposits)			
Withholding tax on foreign holdings of government bonds			✓
Taxes on financial transactions			
Adjusting exchange rate band			
Limits to LTV ratio			✓
Prohibition on short-selling			

<u>Singapore</u>	<u>Indonesia</u>	<u>Korea</u>	<u>Japan</u>	<u>EU</u>
		✓		
		✓		
		✓		
	✓			
	✓			
			✓	
	✓			
	✓			
		✓		
		✓		
				✓
				(November 2011)
✓				
		✓		

of foreign portfolio investments in Brazil during 2010Q1 to 2010Q2. However, by 2010Q3, capital inflows especially in the form of portfolio investments returned and exactly one year later, Brazil tightened this measure by raising the financial transactions tax rate to 4% on October 2010. Five months later, this rate was raised to 6% in March 2011. Despite being able to generate some fiscal revenue through this tax, the fact that Brazil had to continually tighten this measure reveals that capital controls can be ineffective in managing volatile exchange rate and capital flow. This may be due to other factors such as Brazil's robust growth prospect that has attracted capital flows to the point that investors believe that this factor outweighs the increased tax rate.

• Thailand's 30% URR

Despite embarking on a number of policy options, such as foreign exchange intervention, capital outflow liberalization, and several prudential measures⁶ but to no avail, Thailand decided to impose the unremunerated reserve requirement (URR) in response to the surge of continued capital inflows in 2006. This measure aimed to:

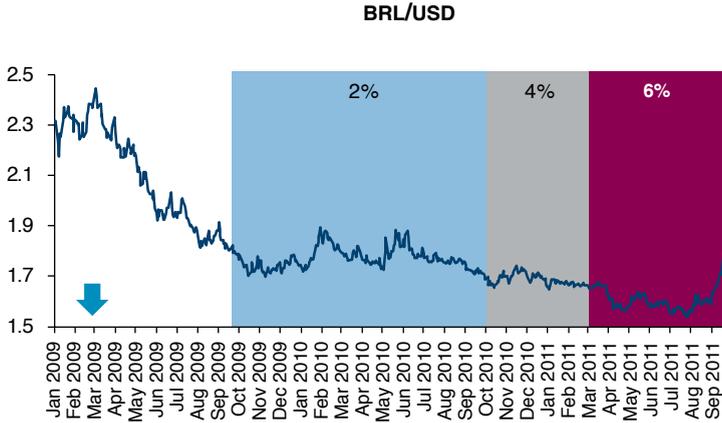
- Break the momentum of rapid one-way speculation on the Thai baht and allow it to move more in line with regional currencies.

⁶ These measures include:

- Financial institutions are asked to refrain from selling and buying all types of debt securities through sell-and-buy back transactions for all maturities. Such transactions are financial instruments which nonresidents can undertake to evade the BOT's measures preventing Thai baht speculation.
- Financial institutions are allowed to sell and buy foreign currencies with nonresidents or to credit or debit the nonresident baht accounts for the settlements relating to investments in government bonds, treasury bills or BOT bonds only when such investments are longer than three months.
- Financial institutions are allowed to borrow Thai baht from nonresidents including through sell-buy swap transactions when there is no underlying trades and investments in Thailand for a maturity of longer than six months. BOT seeks cooperation from Thai businesses not to issue or sell short-term debt securities to nonresidents. Furthermore, financial institutions are also asked to refrain from selling short-term corporate debt securities to nonresidents.

Figure 17

BRAZIL: EXCHANGE RATE MOVEMENTS AND GROSS CAPITAL INFLOW DURING IOF TAX



Source: CEIC.

- Slow down the surge of inflows which would allow FX intervention to become more effective.
- Provide the private sector some time to adjust to the sharp rise of the baht.

The effectiveness of this measure is somewhat mixed. In terms of the exchange rate, Thai baht (THB) depreciated by 1.3% from 35.337 THB/USD on December 18, 2006, to 35.815 THB/USD the following day. Although the Thai baht continued to appreciate, the pace of appreciation became lower relative to peer currencies in the next two months. Thus, the URR was somewhat effective in breaking the momentum of the one-way bet against the baht. In terms of the composition of capital inflows, foreign investments in debt securities and loans were most affected as the BOT exempted its application to equity investment in the Stock Exchange of Thailand (SET) the day after its imposition. The effect mostly occurred in the short-run, spanning 2006Q4 to 2007Q1 where, according to the balance of payments data, portfolio investments showed a marked decline compared to the previous period. However, as time wore on, the effectiveness of the URR was reduced as seen by the return of capital inflows in 2007.

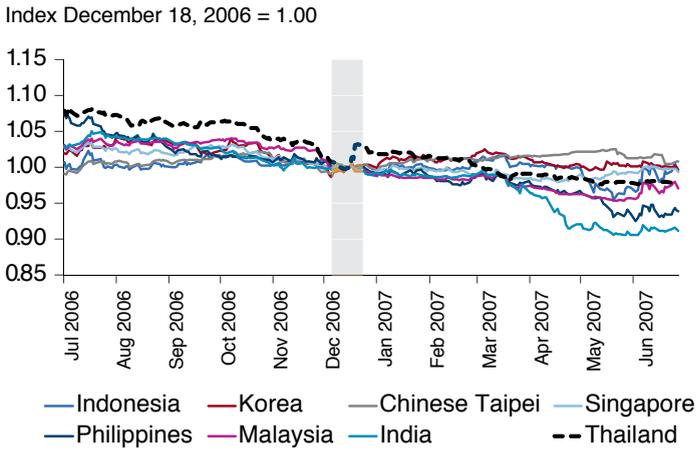
In retrospect, a case could be made that because of URR, capital inflow did not make a comeback nor flow out as much. When comparing peaks, emerging markets as a whole had their peaks during 2007Q4. However, Thailand experienced the peak of capital inflow during 2006Q1 and the level of inflows prior to the 2008 global financial crisis was quite moderate. Subsequently, all emerging markets experienced capital reversal at the same time due to the 2008 global financial crisis. However, emerging markets saw capital reversals of over USD 160 billion, or about 4% of GDP during 2008Q4 while Thailand only saw approximately USD 5 billion (2% of GDP).

• Malaysia's Exit Taxes

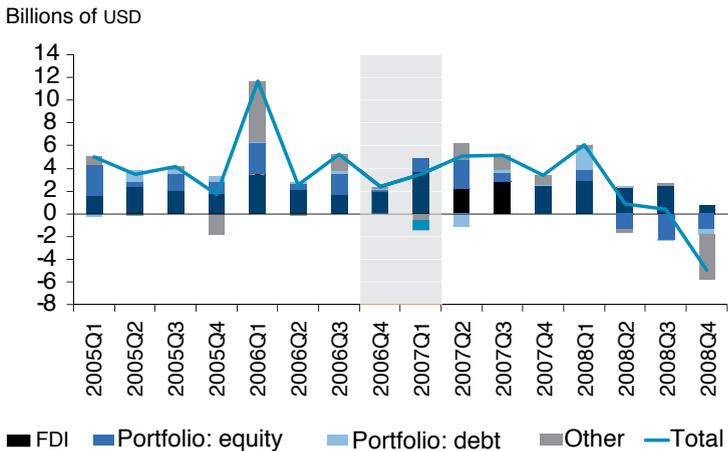
During the 1997 Asian financial crisis, Malaysia, like several regional economies, faced large capital reversals. Much of the large reversals

Figure 18

THAILAND'S EXCHANGE RATE MOVEMENTS AND GROSS CAPITAL INFLOW DURING URR 30%



Source: Bloomberg.



Source: CEIC.

occurred due to speculation of the Malaysian ringgit (MYR). Speculation was fueled by the fact that offshore interest rates for MYR deposits were larger than onshore interest rates. Thus, capital was flowing outwards and it created an environment of credit crunch domestically, which complicated the task of monetary policy. Thus, a series of capital control measures were implemented to address this issue. First, on September 1998, Bank Negara Malaysia (BNM) fixed the exchange rate. Then, they announced that nonresidents were required to obtain BNM approval to convert ringgit held in external accounts into foreign currency and that nonresident sellers of Malaysian securities were required to hold on to their ringgit proceeds for at least 12 months before repatriation. While FDI was exempted from the former measure, both measures were aimed at reducing short-term capital outflow and curb MYR speculation. Later, the Ministry of Finance of Malaysia replaced the previous measures on February 1999 with the imposition of a tax on capital gain and repatriation, which was applied to all capital entering Malaysia. The amount of tax was based on the duration of the investment period; generally, the shorter the stay, the higher the tax rate. For further in-depth discussion of the measures, please refer to Kaplan and Rodrik (2001).

It could be said that the effectiveness of this measure was quite limited as capital continued to flow out. However, empirical studies have shown that Malaysia was able to recover quicker than its peers. Kaplan and Rodrik have cited two reasons for this phenomenon: capital controls allowed for the implementation of expansionary monetary policy to stimulate demand, and capital controls removed uncertainty about the financial system which boosted confidence. Thus, from the Malaysian experience, measures that are able to isolate an economy from the swings associated with financial integration that triggers capital outflow can stabilize the economy, allowing policy space to be implemented domestically.

Developing Deep and Resilient Domestic Financial Markets

Developing financial markets in the context of market players, products,

and supervisory bodies enhances the ability of the domestic financial market to absorb capital inflows, help cushion against large external shocks, and improve the ability of market participants to manage risk. In terms of players, countries may promote domestic investor participation in their financial markets on the condition that market players stand to gain when participating and are capable of evaluating risks. Development of financial products is important in attracting market participation as well as offering alternatives to diversify risks. These characteristics, combined with players, mutually assist each other in the development of financial markets. The role of regulators is to eliminate obstacles in order to allow for the efficient allocation of capital. However, attention should also be paid on their role as an enforcer that seeks to prevent actions detrimental to the market. Regulators must also be constantly proactive in detecting sources of market imperfection and evaluating the consequences should it occur.

The 2008 global financial crisis brings with it examples of resiliency that well developed financial markets possesses as well as regulatory flaws. Although some market participants were well aware of the risks that instruments linked to subprime mortgages are inherently risky, the majority were not. As it turns out, there was minimal monitoring of the widely-traded yet risky collateralized debt obligation instruments.

Once housing prices started to decline and these bad debts begin to surface in 2008Q3, the stock market was hard-hit after Lehman Brothers declared bankruptcy and the government had to step in to help other troubled banks. Nevertheless, since the USA has the most developed financial market, the stock market did not crash. The Dow Jones industrial average fell from a peak of 14,165.02 on October 10, 2007, to a low of 6,544.10 on March 5, 2009, when it began to stabilize and rally thereafter. If a decline of that magnitude were to strike any emerging market stock markets; an all-out sell-off would ensue and their stock markets would have crashed precipitously, maybe even resulting in contagion to regional peers. Thus, although a well-developed financial market may still experience volatility, it would still be able to absorb shocks better than a less developed one.

Authorities in Thailand have moved towards this goal by drafting the Capital Market Master Plan on November 4, 2009, with the vision to improve the infrastructure of Thai capital markets over the next five years which include increasing market competitiveness, size, and liquidity.⁷

Moreover, since February 2010, the BOT has allowed the unwinding of FX hedging transactions in order to increase the flexibility of corporations for risk management.

Regional Cooperation

An early step towards the direction of regional cooperation is to keep our own economies healthy in the first place. This translates to each country committing to ensure macroeconomic balance with a combination of fiscal discipline, judicious monetary policy and exchange rate flexibility so as to ensure regional stability and avoid crisis contagion during this period of uncertain economic environment.

There should also be greater cooperation in terms of policy coordination. These include improving monitoring systems and greater financial collaboration. Moreover, emphasis on stronger coordination when implementing capital controls should be explored so as to reduce the adverse effects of the contagion of shocks and stigma. Discussion has also been made with regard to increasing the role of the People's Bank of China and the Bank of Japan as the main providers of USD swap line

⁷ Among the many points that the plan touches upon, a few are worth noting in particular. First, the plan aims to improve the stock market efficiency by privatizing the Stock Exchange of Thailand in order to increase market competitiveness since it is currently supervised by the government in a monopolistic industrial setup. Second, the plan moves to increase the competitiveness of securities companies by liberalizing the process that grants new licenses for opening up securities companies and to liberalize the commission fee for securities businesses in order to increase market efficiency. The plan also aims to increase the size and liquidity of the debt market in Thailand by granting the government more flexibility in managing their cash balances and to implement the securities borrowing and lending scheme to provide greater options for debt market participants in managing risks.

in the region as they are able to provide liquidity on a massive scale for the region. Finally, coordinated holding of cross border collateral had also been brought up in policy circles. This involves holding local regional currencies as foreign exchange reserves.

A more pertinent, yet underutilized, function of regional arrangements could be a candid peer review of member countries' financial and economic health. This could be regarded as a firm step towards regional cooperation as it would increase the incentives for member countries to keep themselves healthy and avoid potential spillovers. The IMF has pioneered and improved upon their assessments for quite some time through the Article IV consultations and the Financial Sector Assessment Program (FSAP). Emerging countries could draw from its extensive experience and make improvements to better fit their respective characteristics. The ASEAN+3 Macroeconomic Research Office (AMRO) could play a pivotal role in launching this field of work.

The regional safety net is another policy option that requires regional cooperation. Currently, this framework contains two objectives in the global arena: as a crisis resolution mechanism for insolvent countries and/or as a precautionary facility for crisis prevention by being a stop-gap measure in taming the negative psychology of the market towards any one member who experiences liquidity shocks. Ideally, the best safety nets are the ones that are never drawn upon. However, should they be available, its size should not be too large that individual countries feel too secure and become complacent in their management of the economy. Thus, a delicate balance will be needed in designing regional safety nets.

The Chiang Mai Initiative Multilateralization (CMIM) is a regional safety net created in 2007 that involves all thirteen ASEAN+3 countries (including Hong Kong as part of China). As indicated in Table 5, the size of this regional safety net is USD 120 billion. While foreign reserves make up this contribution, they are still owned and kept within each member's central bank, only to be drawn down should any member seek swap lines. The maximum quota each country is allowed to draw from CMIM is that member's contribution to the pool multiplied by the

purchasing multiple. However, only 20% of that size is freely available: any amount beyond that will have to be subjected to an International Monetary Fund (IMF) program as a mechanism to avoid moral hazard. However, after the 1997 Asian financial crisis, many members carry a deep-rooted stigma against the IMF.

This creates a problem as it becomes a factor that forces some countries to bypass this arrangement (Sussangkarn, 2011). As an example, during the 2008 global financial crisis, Korea was experiencing a liquidity crisis because their short-term debt was quite high in relation to its foreign reserves. When the global foreign exchange markets experienced US dollar shortages, Korea faced a sudden shortage of foreign currency and the Korean won depreciated substantially. Although the country was far from insolvent, it still had to regain market confidence before the situation escalated. This means that Korea had an imminent need for US dollars to service their debts. At that time, Korea had swap agreements with CMIM totaling USD 18.5 billion. However, only USD 3.7 billion was usable without attachment to an IMF program. Going into an IMF program would be political suicide, so instead of using the CMIM arrangement, the Korean government agreed to a swap facility with the Federal Reserve instead. From this experience, what is needed for the regional safety net to work is to increase the effective quota size that members are able to draw from in order to fulfill its purpose as a crisis prevention mechanism.

Conclusion

Emerging Asia could still benefit from capital inflows. These gains come in the form of technology transfers, development of financial markets, and access to lower cost of funding which can diversify investment risks, finance productive investment projects, or cover shortfalls in consumption spending. The issue at hand is that the risks associated with large capital inflows are real and must be mitigated. Negative externalities associated with excessive amounts of capital inflow and their volatile movements include exchange rate overshooting which can hurt exports, credit booms which can cause macroeconomic overheating

Table 5

CMIM VOTING RULES, CONTRIBUTIONS, PURCHASING MULTIPLE, AND QUOTA
(billion of USD unless otherwise stated)

<i>Country</i>	<i>Voting weight (percentage)</i>	<i>Contribution</i>	<i>Purchasing multiple (times)</i>	<i>Size of swap quota</i>	<i>Without attachment to IMF Program</i>
Brunei	1.16	0.03	5.0	0.15	0.03
Cambodia	1.22	0.12	5.0	0.60	0.12
China	25.43	34.20	0.5	17.10	3.42
Hong Kong	2.98	4.20	2.5	10.50	2.10
Indonesia	4.37	4.55	2.5	11.38	2.28
Japan	28.41	38.40	0.5	19.20	3.84
Korea	14.77	19.20	1.0	19.20	3.84
Laos	1.16	0.03	5.0	0.15	0.03
Malaysia	4.37	4.55	2.5	11.38	2.28
Myanmar	1.18	0.06	5.0	0.30	0.06
Philippines	4.37	4.55	2.5	11.38	2.28
Singapore	4.37	4.55	2.5	11.38	2.28
Thailand	4.37	4.55	2.5	11.38	2.28
Vietnam	1.85	1.00	5.0	5.00	1.00

Source: The Joint Ministerial Statement of the 13th ASEAN+3 Finance Ministers' Meeting, Tashkent, Uzbekistan, May 2, 2010.

and inflation, the buildup of private sector balance sheet mismatches which can lead to financial sector vulnerabilities and/or devastating asset price bubbles, and the subsequent capital reversal which can lead to economic stress if distortions are not addressed.

The flow of capital to emerging Asia comes from two main sources: current account surpluses and foreign investment, the latter of which is driven mainly from the different growth prospects, loose monetary policies of G3 economies, and other events that affect sentiment and thereby contribute to volatility. Given that the major composition of capital flows to emerging Asia are portfolio investments which are, by nature, more sensitive to events beyond emerging economies' control, it is important that both the public and private sectors of the respective countries be ready for potential shocks. The job for the public sector in this regard is to minimize the adverse consequences of volatile capital flow to the economy.

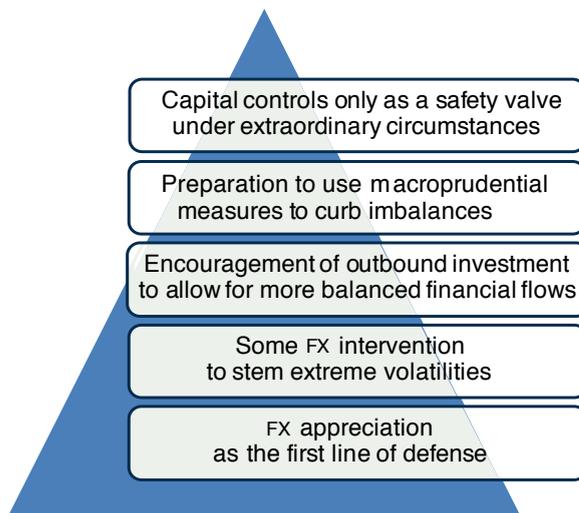
One of the ways to do this is to implement some of the policy options outlined in this paper. A recommended order in implementing policy choices to deal with capital inflows could be to start with the policy option that creates the least negative impact on the financial market and the real economy, then later moving on to policy options that can potentially have greater effects. This could consist of the following: first, authorities should begin by pursuing a more flexible exchange rate policy as the primary line of defense. In the case of capital inflows, authorities should allow the exchange rate to appreciate as the exchange rate can act as an automatic stabilizer for the economy. Along the same line, foreign exchange intervention could be undertaken to prevent overshooting and minimize exchange rate volatility. The next remedy to pursue would be to liberalize capital outflows in order to create a balance between inflows and outflows. However, since its effectiveness may not be seen straight away, this method is a long-term solution which should be done immediately, if possible. These three options are common procedures that almost all countries pursue. Nonetheless, should vulnerabilities emerge within specific parts of the economy, the use of macro prudential policies could help to contain the buildup of financial

imbalances. Finally, if all measures fail to adequately manage volatile exchange rate and capital flow, capital controls could be used as a last resort but care must be given to the distortion it may potentially cause.

Nevertheless, policymakers should note that each policy has its pros and cons so it is important that each country carefully evaluate their own conditions and implement a policy mix that is most appropriate. Being able to use appropriate policies will help economies cope with capital inflows by reaping the maximum benefits from it while at the same time reducing the related risks. On the other hand, the private sector must not be complacent and need to continually enhance their ability to compete through operational hedging by improving production methods and moving up the industrial value chain while also improving risk management especially in the form of foreign exchange.

Figure 19

POLICY ORDER TO DEAL WITH CAPITAL INFLOWS



The latest turmoil in 2011 saw a substantial reversal of capital flow due to deteriorating investors' confidence as a result of uncertainties in the resolution to the euro zone debt crisis and the slower than expected growth of the USA economy. Again, this event is a reaffirmation that some driving factors of capital flow are beyond emerging economies' control. Asset price dips, both equity and bonds, indicate wealth losses are by no means of marginal concerns. These represent additional challenges for policymakers in formulating measures to manage volatile capital flow. As long as emerging economies maintain macroeconomic balance –a combination of fiscal discipline, judicious monetary policy, and exchange rate flexibility– they will be able to cope and live with volatile capital flows for years to come.

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Capital Flows, Policy Challenges and Policy Options

Latin American economies (LAC) are characterized by low domestic saving rates, which leave them vulnerable to large and unexpected swings in the availability of external financing, i.e., to the occurrence of sudden stops in capital inflows. This was particularly evident during the 1998 Russian crisis, which generated a panic among investors that led to massive capital outflows from LAC and costly adjustments in consumption, output and employment (Calvo, 1998).

The 2007-2008 global financial crisis brought again to the table the fears of a new series of costly and protracted adjustments; reminiscent of those occurred immediately after the Russian crisis. Fortunately, even though LAC suffered a steep decline in growth and a stop in capital inflows, both of them quickly resumed after the crisis.

After briefly reviewing the fluctuations of macroeconomic aggregates along the cycles of capital flows for a sample of Latin American economies, these notes then describe the policy challenges associated with these capital flow cycles and summarizes the policy options available to policymakers to try to cope with them. The note will argue that both good policies *and* good luck are key elements in explaining the different outcomes observed in LAC during the Russian crisis versus the recent global financial crisis.

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Capital Flows Cycles

This section presents a series of regularities about the behavior of output, credit and the real exchange rate along the cycles of capital flows since the early 1990s for six Latin American economies –Argentina, Brazil, Chile, Colombia, Mexico and Peru, LAC6– which comprise about 80% of regional output.

Fact number 1: output growth is strongly and positively associated with non-FDI flows, namely portfolio and debt flows. There is also a positive (although weaker) association between economic activity and total capital flows.

As evidenced by Figure 1, periods of rapid economic expansion coincide with periods of net positive non-FDI flows and vice versa. Figure 2 displays the same positive association between output growth and total private capital flows. This is strongly at odds with the standard model of frictionless financial markets, which predicts that countries will be able to smooth a negative output shock by tapping into international capital markets.

Fact number 2: the real exchange rate (RER) appreciates as international capital flows into the economy.

Figure 3 displays the real exchange rate, defined as the relative price of a US basket of goods in terms of a country's basket of goods, and non-FDI capital flows. According to the figure, there is a strong negative association between the RER and capital flows, i.e., inflows of capital coincide with large and persistent appreciations of the RER.

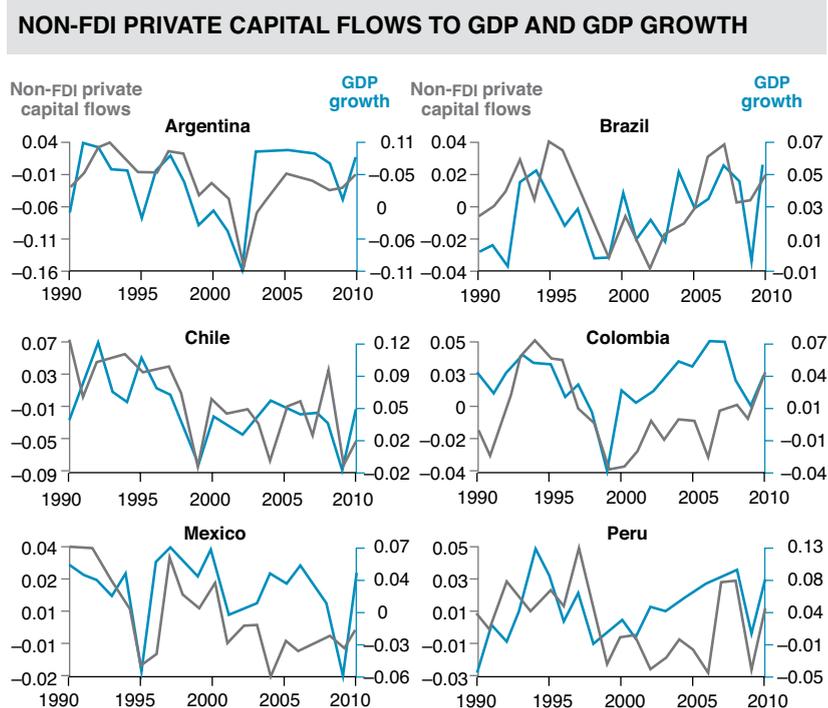
Fact number 3: financial credit to the private sector grows rapidly during a phase of large capital inflows.

Figure 4 shows how real domestic credit growth expands as the economy receives net positive capital flows. This expansion in credit is due in part to the intermediation of capital flows through the financial system, which allows consumers and firms to further increase their expenditure during phases of economic boom.

Fact number 4: asset prices increase during phases of capital inflows.

Figure 5 shows a measure of domestic asset prices, namely a real

Figure 1

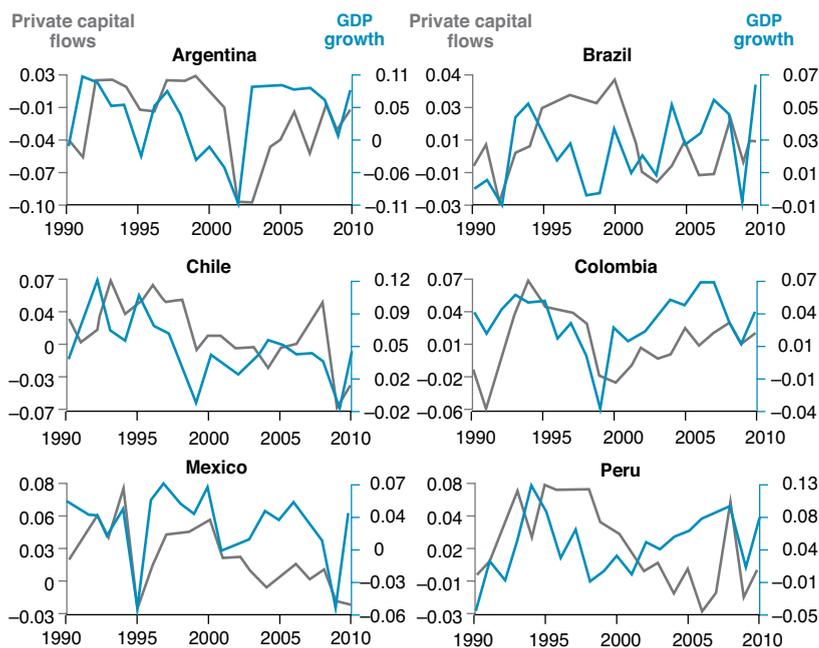


index of domestic stock prices alongside total private capital inflows. Starting from the first decade of this century, stock prices increased as capital was flowing into the economy, and briefly reverted during the recent global financial crisis.

Comparing the adjustment of LAC6 economies after the Russian crisis versus the adjustment after the global financial crisis, it is evident from that output recovered quicker during the recent crisis (Figure 1), the real exchange rate experienced a short-lived depreciation that was quickly reverted as capital flew back to the economies (Figure 4), and financial credit stayed constant in real terms or fell, but much less relative to the large adjustment observed during the late 1990s (Figure 5). Table 1 quantifies these output growth swings for LAC6 and shows that

Figure 2

PRIVATE CAPITAL FLOWS TO GDP AND GDP GROWTH



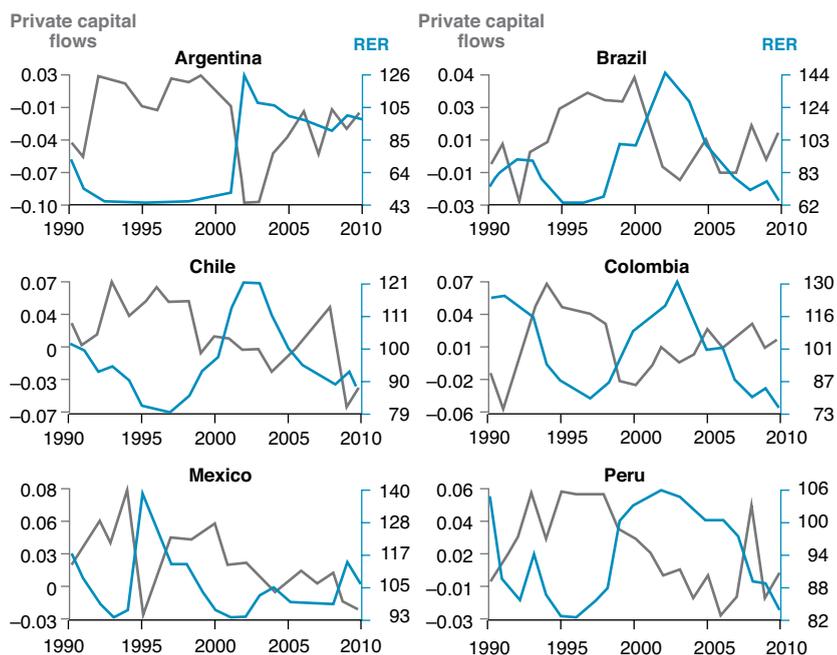
in fact these economies experienced a V-shaped growth recovery after the global financial crisis, whereas output recovered at a slower pace after the Russian crisis.

One important difference between the 1998 Russian crisis and the global financial crisis was the lower vulnerability of LAC6 to external shocks due to two factors: a lower current account deficit and a higher openness to trade. Table 2 presents a measure of this external vulnerability: the ratio of the current account to the sum of total exports and imports around the crisis episodes.¹

¹ The sum of exports and imports is used as a proxy of domestic consumption of tradable goods. More formally, the vulnerability to external shocks is

Figure 3

PRIVATE CAPITAL FLOWS TO GDP AND RER (2005 = 100)

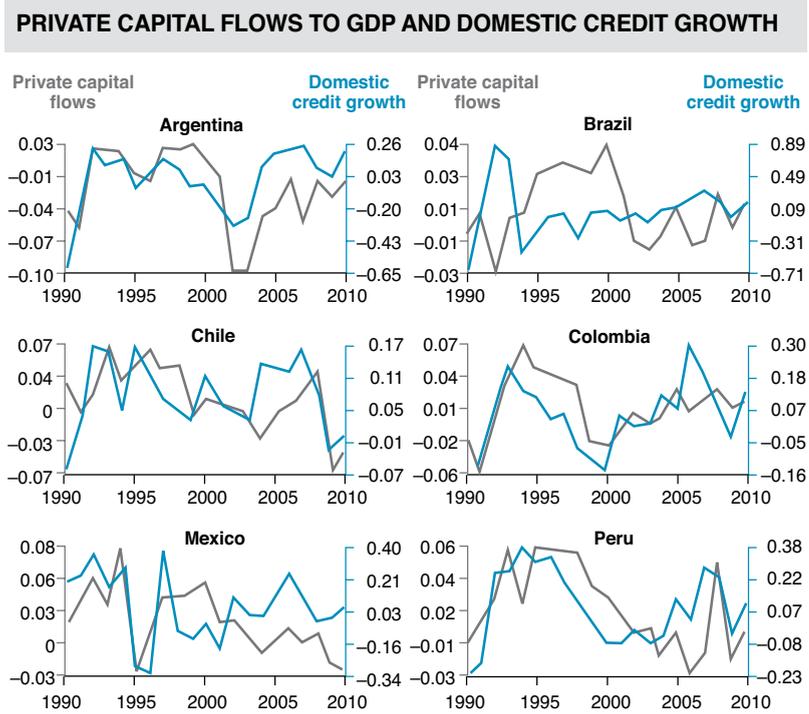


According to the table, Chile, Colombia, Mexico and Peru, had on average a current account deficit that was 12% of their international trade just before the Russian crisis. This deficit was completely erased during the crisis. During the global financial crisis, however, the current account deficit was just 4% of their international trade, so the required adjustment to close the deficit was much lower.

Part of these differences in the extent of external vulnerability and the smoother response of the domestic financial sector are attributable

measured as the ratio of the current account to the domestic absorption of tradable goods, as in Calvo, Izquierdo and Mejía (2008).

Figure 4



to better management policies that originated from the lessons learned after the Russian crisis.

Policy Challenges

The theoretical benefits of capital flows are clear: they allow an open economy to smooth aggregate demand fluctuations by borrowing and lending in international financial markets. In the recent past, capital inflows have been a cheap and readily available source of funding for the region, boosting domestic demand in the recovery phase of the business cycle.

However, large and rapidly growing inflows are a concern due to their potential consequences on the allocation of real resources across

sectors and time. As shown in the previous section, there is a systematic relationship between widening capital account surpluses, economic expansions (Fact 1), real appreciations (Fact 2), credit booms (Fact 3) and asset and non-tradable prices booms (Fact 4). Taken together, these four facts imply that there are important imperfections in domestic and international financial markets (v.g. frictions, lack of development) that prevent economies from fully smoothing their consumption in the face of adverse shocks which, in turn, creates a series of challenges from the viewpoint of the policymaker.

The first challenge is associated with the large and persistent real exchange rate appreciation episodes that accompany capital inflows (Fact 2). The issue goes beyond the pure distributional effects between

Figure 5

PRIVATE CAPITAL FLOWS TO GDP AND STOCK MARKET PRICES

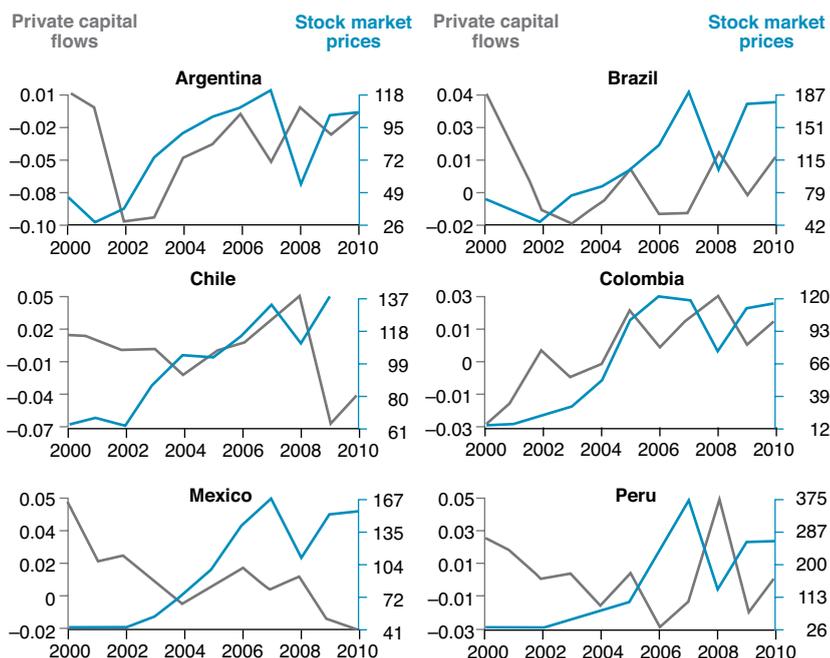


Table 1

OUTPUT GROWTH BEFORE AND AFTER EXTERNAL FINANCIAL SHOCKS (annual percentual rate)

	Average growth		Russian crisis				Global financial crisis				
	1990-2010	98Q1	99Q3	00Q3	Fall	Recovery	08Q3	09Q3	10Q3	Fall	Recovery
Argentina	4.6	6.0	-5.1	-0.6	-11.0	4.4	6.9	-0.3	8.6	-7.3	8.9
Brazil	3.1	0.8	-1.0	4.2	-1.8	5.2	7.1	-1.8	6.7	-8.9	8.6
Chile	4.4	6.8	-1.1	4.2	-7.9	5.3	5.2	-1.4	6.9	-6.5	8.3
Colombia	3.2	5.6	-3.2	2.8	-8.8	6.0	3.6	1.1	3.6	-2.5	2.4
Mexico	2.5	7.5	4.4	7.0	-3.1	2.6	1.3	-5.5	5.1	-6.8	10.6
Peru	3.2	2.6	-1.3	2.5	-4.0	3.8	10.9	-0.6	9.6	-11.5	10.2

Source: Author's calculations based on World Data Bank, World Bank.

Table 2

EXTERNAL VULNERABILITY (current account deficit as a percentage of international trade)

	2000	2001	Δ	2008	2009	Δ
Argentina	-6	21	27	4	7	3
Brazil	-28	-9	19	-10	-11	-1
	1998	1999	Δ	2008	2009	Δ
Chile	-4	0	4	-1	2	3
Colombia	-20	3	23	-9	-8	1
Mexico	-11	-8	2	-4	-2	2
Peru	-11	-5	6	-5	0	5
Averages	-13	0	14	-4	-2	2

Source: Author's calculations based on World Data Bank, World Bank.

the tradables and non-tradables sectors associated with a change in relative prices. A further risk is that the medium and long run health of the economy may be compromised by these episodes. For instance, consider a typical persistent appreciation phase: demand for non-tradables increases, hurting the tradable sector for a protracted period. Once the factors behind the appreciation subside, non-tradable demand contracts. If financial constraints are binding, the tradable sector's ability to recover is compromised and the economy experiences a large exchange rate overshooting. The overshooting results from the tradable goods producers' inability to absorb idle resources, especially those workers freed from the contraction of the non-tradable sector. This inability leads to an amplified fall in real wages and consumption which reduces welfare. In addition, mismatch and informational problems in labor markets increase unemployment.²

The second challenge stems from the credit booms originated in part by the intermediation of capital flows (Fact 3). The literature, e.g., Kaminsky and Reinhart (1999), has found that persistent credit booms are typically later associated with financial crisis and deep contractions of credit, a vivid example being the banking crisis of the 1980s and the financial disarray caused by the 1998 Russian crisis. Although not all credit booms end in financial crises, the required real exchange rate adjustments once external conditions change and capital flows come to a sudden stop pose a serious risk to non-tradables sectors in the presence of large currency mismatches.

A third challenge is associated with the composition of capital flows, which may amplify other risks. In particular, short-term debt flows raise liquidity or currency risk for the real sector and the financial system. In general, the combination of loose macroeconomic policies and large capital inflows in the expansionary phase of the business cycle increase financial and real vulnerabilities, and makes the adjustment of the economy after a sudden stop more painful.

² These effects are amplified further in presence of nominal rigidities, since the adjustment involves a larger increase in unemployment.

A fourth challenge is the underdevelopment of domestic financial systems. Capital flows are volatile and unpredictable, which would not be much of a problem in economies with deep, solid and developed financial sectors, nor in countries with a low degree of financial development, where capital inflows are naturally restricted by illiquid asset markets and high transaction costs. However, countries with an intermediate degree of financial development have *partially* liquid financial instruments and markets. Thus their ability to safely deal with all capital inflows is limited. In this context, liquidity, term and currency mismatches become relevant, and the markets for hedging against these mismatches are typically not well developed (IMF, 2010, and Yellen, 2011).

Policy Options

The discussion in the previous section emphasized the wide array of challenges associated with episodes of large capital inflows. Given these challenges, policymakers are faced with the dilemma of how to take advantage of the virtues of capital flows while, at the same time, minimizing the destabilizing risks inherent to sudden stops in capital flows. This section discusses the policy tools used across LAC6 before and during the global financial crisis that originated, in part, as a consequence of the hard lessons learned after the Russian financial crisis.

- i) Countercyclical monetary policy with a floating exchange rate regime. Exchange rate flexibility has been crucial for implementing countercyclical monetary policy, especially in a low currency-mismatch and low pass-through environment, as evidenced by the difference in how monetary policy responded during the Russian crisis and during the global financial crisis. In turn, low currency mismatches are partially the result of exchange rate flexibility, as the private sector learns to deal with exchange rate volatility.
- ii) Countercyclical fiscal policy. Monetary policy alone cannot be fully effective to stabilize business cycles. In fact, the best way to deal with a persistent appreciation of the currency stemming from structurally high terms of trade and the related FDI inflows is to increase

domestic savings. In the short and medium term, this must be accomplished by raising public savings, which gives a central role to countercyclical fiscal policy, like fiscal rules.

- iii) Sterilization of capital inflows. In the absence of a global, coordinated insurance system that substitutes for international capital markets in the face of a global crisis, countries are left to resort to self-insure via international reserves accumulation, that serve as a partial buffer against external shocks. This international reserves accumulation should balance the benefits of self-insuring and correcting the distortions induced by externalities with the costs associated with providing an implicit floor for the exchange rate, which hampers private sector's incentives to hedge from exchange rate risk. A perverse outcome of this is the emergence of large currency mismatches that would hinder the ability to conduct anticyclical monetary policy and compromise financial stability.
- iv) Financial regulation. As mentioned before, capital flows are largely intermediated through the domestic banking system (Kaminsky and Reinhart, 1999). This induces important liquidity and foreign currency risks that may come to fruition once capital flows come to a sudden stop. In this regard, financial authorities may reduce the extent of liquidity and foreign-currency mismatches by introducing leverage caps on foreign-currency denominated assets and debts. As well, countercyclical marginal reserve requirements are a useful tool for containing excessive credit growth during periods of large capital inflows.³
- v) Capital controls as a complementary countercyclical policy. Despite the long-standing debate about the effectiveness of capital controls, there is an apparent growing consensus, partly fueled by the IMF,

³ This is especially important for countries with intermediate financial development. As financial markets deepen the country's ability to absorb capital inflows increases, however, sound financial regulation is still crucial, as the financial crisis in the developed world shows.

that capital controls can be a legitimate countercyclical policy tool in some specific (and probably extreme) circumstances (Ostry et al., 2010), especially when monetary and fiscal policies bring about undesirable consequences, like large quasi-fiscal costs. Yet, recent theoretical and quantitative models show that Pigouvian taxes to capital flows can restore the first best equilibrium as they attack the externalities that give rise to large and persistent RER appreciations and overborrowing (Mendoza and Bianchi, 2011, and Korinek, 2011). Thus, the policy implication in these models is that taxing capital flows are more a complementary instrument than a last-resort measure. In any case, whether capital controls are used as a last-resort or as a complementary tool, they do not substitute monetary and fiscal countercyclical policies as well as prudent financial regulation.

It is important to emphasize that these policy tools should be coordinated so that, for example, a tight monetary policy during a period of expanding growth should be accompanied by a policy of fiscal restraint. Also, these policies are more effective when coupled with countercyclical financial regulation and a careful supervision of domestic financial institutions.

A Few Caveats

- i) *Good luck versus good policies.* Some economists are quick to attribute lower output growth volatility to successful policy responses. This probably overestimates the impact of policies, as countries with different policy tools and frameworks displayed fairly similar behavior during the crisis (see Table 3). Of course, good policy was and will continue to be central. However, there were three important *good luck* elements that reduced the impact of the crisis:
 - a) First, unlike other episodes of large external shocks to the region, this time the origin of the crisis was in advanced economies, so LAC6 felt the second round of the crisis, instead of the main shock.

Table 3

MACROPRUDENTIAL POLICIES

<i>Policy tool</i>	<i>Recent examples or proposals</i>	<i>Motivation/objective</i>
Countercyclical capital requirements	Basel III; Brazil (auto loans–December 2010)	Buffer ranging between 0-2.5 percent to be introduced when aggregate credit is growing too fast.
Dynamic provisioning	Bolivia (2008); Colombia (2007); Peru (2008); and Uruguay (2001)	Countercyclical tool that builds up a cushion against expected losses in good times so that they can be released in bad times.
Leverage ratios	Basel III	Constrain the leverage in the banking sector, to mitigate the risk of the destabilizing deleveraging processes; and supplement the risk-based measure with a simple, transparent, independent measure of risk.
Loan-to-value (LTV) ratios	Canada (mortgage market-April 2010, March/April 2011):	Regulatory limit to moderate cycles in specific sectors by limiting loan growth and leaning on asset demand.
Debt-to-income (DTI) ratios	Korea (August 2010)	Measure to limit the leverage of borrowers and manage credit risk.
Liquidity requirements	Colombia (2008); New Zealand (2010); and Basel III	Tools to identify, measure, monitor, or control liquidity risk under conditions of stress.
Reserve requirements on bank deposits	Peru (January and April 2011); Brazil (December 2010); China (January 2011); and Turkey (2009-2011)	Countercyclical tool that acts as: <i>i</i>) speed limit on credit; <i>ii</i>) tool for credit allocation; and <i>iii</i>) complement to monetary policy to achieve macroprudential goals.

Tools to manage foreign exchange credit risk	Peru (July 2010); Uruguay	Tool to internalize foreign exchange credit risks associated with lending to unhedged borrower.
Limits to foreign exchange positions	Colombia (2007); Israel (restrictions on banks derivatives transaction-2011)	Measures to manage foreign exchange risk in on–and off–balance–sheet FW–denominated assets and liabilities. Also useful for dealing with surges in capital inflows, which may pose systemic risks to the financial system when they create <i>bubbles</i> in certain economic sectors
Others	Brazil (tax on consumer credit-April 2011)	Curb credit expansion

Brazil: *i*) increased by 50 percentage points the risk-weighting on consumer and automobile loans depending on their loan-to-value ratio and maturity; *ii*) introduced a 60% reserve requirement on short US dollar positions; and *iii*) increased the tax on consumer credit from 1.5% to 3.0 percent.

Peru: *i*) raised by 100 basis points the implicit reserve requirement rates on domestic and foreign currency deposits, and the unremunerated portion of reserve requirements (currently 9% of deposits); *ii*) reduced reserve requirements on external FX liabilities with maturities under two years (from 75% to 60%), but extended their application to credit channeled through off-shore branches of domestic financial institutions; and *iii*) established limits on the net FX derivative position of banks (40% of capital or PEN 400 million, whichever is higher).

Source: IMF (2011), *Regional Economic Outlook: Western Hemisphere: Watching Out for Overheating*, April.

- b) Second, commodity prices in real terms are at historical highs, even accounting for their correction during the financial crisis. This certainly contributed to the ability of commodity exporters to cope with the effects of the shock.
- c) Third, IMF and Multilateral Banks aid packages, as well as central banks swap agreements, helped to contain liquidity risks in many countries like Brazil, Mexico, South Korea, Singapore, Hungary, to mention a few (see, Izquierdo and Talvi, 2010).

- ii) *Effectiveness of macroprudential policies.* There is little empirical evidence on the effectiveness of some of the policy tools, especially the unconventional ones. True, the literature on macroprudential policies is still young, but the wide variety of policy frameworks and the similarly shaped LAC6 recovery has also probably made it more difficult for researchers to assess the *marginal* contribution of macroprudential tools, at least in Latin America.
- iii) *Global general equilibrium effects of self-insurance and capital controls.* Even if unconventional policies were effective, prudence should also be exerted when implementing them due to their general equilibrium effects. For instance, a self-insurance global equilibrium in which all central banks pile up foreign reserves, leads to an inefficient intertemporal allocation of capital with low interest rates, as we already know from the incomplete financial markets literature (Prasad, 2011). A similar argument applies to capital controls, with one aggravating consequence: the forgone benefits of the private sector's access to international financial markets (Calvo, 2010).

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Zoljargal Naidansuren

Comments on presentations

In the last few years, the Bank of Mongolia has been encountering contrasting circumstances which requires different policy actions, particularly on capital flows and exchange rate management.

If we look at figures of the nominal exchange rate from 2006 to 2011 on the slide, it reveals to us that there might be four phases of exchange rates dynamics responding to macroeconomic fundamentals as well as policy actions.

Phase I: Current Account – Boom and Bust Cycle (2006-2008)

In 2006, world commodity market prices rebounded well –especially copper prices which increased by 83.1% on a year on year basis, which was a major component of export revenue in Mongolia. As a result of copper export revenues reaching USD 635.4 million, the current account had a surplus of USD 372.2 million, which increased by more than four times compared to 2005.

Thanks to the above-mentioned upsurge in commodity prices, the budget revenue increased by 62% reaching USD 981.7 million while fiscal expenditure escalated by 68% reaching USD 1.1 billion, stimulating total domestic demand resulting in economic overheating.

The economy of Mongolia had been severely affected by the global financial crisis through sharp declines in exporting commodity prices

Deputy Governor, Bank of Mongolia.

starting from the second half of 2008, resulting in balance of payments and budget deficits.

Phase II: Crisis and Stabilization (November 2008-March 2009)

During the crisis, the net international reserves had declined by 31% while the nominal exchange rate depreciated by over 30%. With this external imbalance, the government of Mongolia and the Bank of Mongolia implemented the IMF Stand-by Arrangement amounting to USD 224 million.

The following are policy measures implemented under the macro-stabilization program:

- 1) The Government revised its fiscal stance and state budget for the fiscal year of 2009. Within a tight fiscal policy framework, the Government had maintained fiscal discipline while the Parliament approved the Fiscal Stability Law in June 2010, which will be effective from 2013.
- 2) The Bank of Mongolia implemented an effective monetary policy, enhanced banking supervision, improved exchange rate flexibility and opportunistically built up international reserves.

Phase III: Large Capital Inflows (April 2009-January 2011)

As a result of the remarkable economic recovery, maintenance of confidence in the economy, favorable external condition and inflow of foreign direct investments, net capital inflows reversed to positive numbers of USD 277.2 million in 2009 which further reached USD 1.6 billion in 2010.

Meanwhile, the Bank of Mongolia intervened in the foreign exchange market when it was necessary to smoothen excessive fluctuations in the exchange rate due to large capital inflows. It also built up foreign exchange reserves, sterilized excess liquidity and tightened monetary policy through either increasing its policy rate or enhancing prudential regulations to reduce inflationary pressures.

As a result of these policy actions, gross international reserves reached its all time historical high level while the inflation rate was maintained at a reasonably low level and the nominal exchange rate against the USD appreciated by 13% in 2010.

Phase IV: Large Capital Inflows and Fast Growth – since January 2011

As of the first three quarters of 2011, the nominal exchange rate against the USD has been very stable due to well balanced capital inflows and outflows, buildup of international reserves as well as the effectiveness and deepness of the foreign exchange market even though total turnover of foreign exchange flows increased by 70% on a year-on-year basis.

Meanwhile, Mongolia's real GDP growth reached 20.8% as of end September 2011. Foreign direct investments and the boom in the extractive industry have been a driving engine of this rapid growth. However, the fast economic growth, substantial increase in money supply, credit growth and positive output gap may signal an increasing pressure on inflation and economic overheating. Therefore, the Bank of Mongolia has been implementing countercyclical policy measures such as tight monetary policy, maintenance of flexible but smooth exchange rates, enhancing banking supervision, increasing international reserves as a safeguard (five billion renminbi local currency swap line with PBOC).

Concluding Remarks

Mongolia is expected to be the fastest growing economy in the region due to the commencement of the world-scale mineral projects. Under this remarkable growth prospective, the main challenge for the government of Mongolia will likely be a continuous maintenance of macroeconomic stability, prudent management of resource revenues and effective policy on poverty reduction.

Therefore, the authorities of Mongolia have been implementing the following policy measures continuously and effectively:

- Sound fiscal policy
- Stability-oriented monetary policy
- Exchange rate flexibility and further buildup of international reserves
- Macroprudential measures
- Enhanced legal environment (new foreign exchange regulation, etcetera).

Javier Guzmán Callafell

Comments on presentations

I will concentrate my remarks on three issues, with special attention to the Latin American case.

1) Notwithstanding the fact that we are going through a period of turbulence, and capital is flowing out of emerging market economies (EMEs), when discussing policy options basically everybody focuses on the challenges raised by capital inflows. There are of course good reasons for this.

Mrs. Kirakul's paper¹ provides a detailed assessment of pull and push determinants of surges of cross border capital to emerging Asian economies –that is in fact applicable to other emerging markets. On balance, it can be concluded that it is reasonable to expect that capital will continue to flow to these countries in substantial amounts in the medium term.

I am not going to repeat the arguments. I would only like to stress that there are important factors of permanent nature that explain the flow of capital to emerging economies. In particular, the fact that many of these countries have put in place better policy frameworks, by improving their growth prospects, has probably resulted in a permanent shift in investors' portfolio allocations.

¹ Suchada Kirakul, "Managing Volatile Exchange Rate and Capital Flows: An Emerging Asian Perspective", in this volume.

General Director, CEMLA.

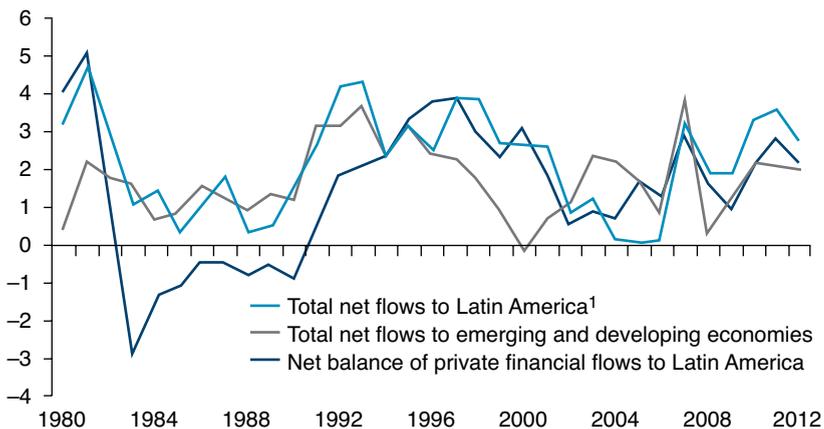
It is also important to recall that holdings of emerging markets assets in the portfolios of advanced economy investors remain rather limited. Up to recently, the share of G7 countries' total portfolio investment assets in all EMEs was only 9%. It is therefore natural to expect an increased share in coming years.

2) Many economic crises in Latin America and other emerging market regions have taken place after periods characterized by large capital inflows. In this context, it is natural to ask whether the current episode of large capital flows is part of a period of sustained development or rather the beginning of a new crisis.

In trying to answer the first of these questions, let me note that the economies of Latin America observed three episodes of substantial capital inflows from the mid seventies to 2007 (Figure 1): the first

Figure 1

NET CAPITAL FLOWS TO EMERGING AND DEVELOPING ECONOMIES AND TO LATIN AMERICA (percentage of GDP)



Source: International Monetary Fund, World Economic Outlook Database.

¹ Includes errors and omissions.

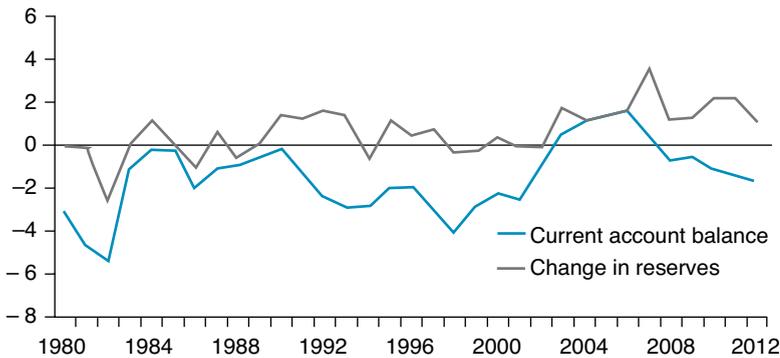
related to the recycling of the so called *petrodollars* that finally led to the debt crisis of the 1980s and a lost decade for the region; the second, linked to two different periods of monetary easing in the advanced economies, resulted in the Mexican crisis of 1994-1995 and in the crises in Asia and Russia in 1997-1998; the third episode, which by the way also had as one of its determining factors very easy monetary policies in the advanced economies, peaked in 2007.

What are the main differences between the present period of capital inflows to Latin America and the previous episodes that led to crises described before? I would underline three that in my view are particularly important: the size, the utilization of foreign capital, and the strength of economic fundamentals of the Latin American economies.

- i) To start with, it is not clear whether the phenomenon we are witnessing today represents the beginning of a new episode of comparable magnitude. According to IMF figures, expressed as a share of GDP, net private capital flows to Latin America peaked at 5% in 1981 and at 4% in 1997. This compares with a figure of 2% for 2010 and projections of similar ratios for the next couple of years (Figure 1).
- ii) What about the utilization of these resources? The counterparts to net capital flows are the current account balance and the variation of international reserves. During the capital inflow episodes of both the 1980s and 1990s, capital flows to Latin America were mostly used to finance large current accounts deficits. The situation changes completely in the period 2008-2011, as projected by the IMF and other analysts, since we observe moderate deficits in the current account and a continued accumulation of international reserves (Figure 2).
- iii) Irrespective of the size and use of capital flows, is Latin America well prepared today to cope with the challenges posed by them? To answer this question, I would like to focus on the case of five economies with strong links with international financial markets and that account for most of the flows to the region: Brazil, Chile, Colombia, Mexico and Peru.

Figure 2

LATIN AMERICA: CURRENT ACCOUNT AND VARIATION OF INTERNATIONAL RESERVES (percentage of GDP)



Source: International Monetary Fund, World Economic Outlook Database.

Rather than referring to a long list of figures, I would note the following:

- a) The IMF created in March 2009 the Flexible Credit Line (FCL). This facility is designed for countries with very strong economic policies and fundamentals, and track records of policy implementation. The criteria for assessing qualification for the FCL include a sustainable external position, a comfortable international reserve position, sound public finances, the absence of bank solvency problems, and effective financial sector supervision, among others. Both Mexico and Colombia have been approved an FCL, and many analysts believe that Brazil, Chile and Peru would be granted one, if requested.
- b) The sovereign debt of the five Latin American countries considered has received investment grade status from the major rating agencies. In 2000, only one of these economies had achieved that status (Table 1 and Figure 3).

Table 1

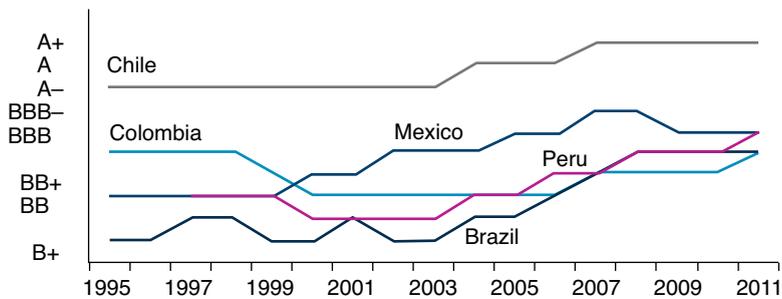
INVESTMENT GRADE STATUS ¹						
Country	1995	2000	2002	2008	2011	Outlook
Brazil	-	-	-	√	√	Stable
Chile	√	√	√	√	√	Positive
Colombia	√	-	-	-	√	Stable
Mexico	-	-	√	√	√	Stable
Peru	-	-	-	√	√	Stable
Total	2	1	2	4	5	

Source: Standard & Poor's.

¹ Investment grade rating for long-term sovereign debt in foreign currency. Information for October 7, 2011.

Figure 3

RATINGS BY STANDARD & POOR'S



Source: Standard and Poor's.

- c) There is widespread agreement that flexible exchange rates reduce the probability of crises. These regimes discourage speculative capital inflows and the accumulation of external imbalances. Today, all the countries considered have floating exchange rate regimes. In 1990, only one of them operated under such a regime (Table 2).

Table 2

COUNTRIES WITH FLOATING EXCHANGE RATE REGIME								
Country	1980	1985	1990	1995	1999	2000	2005	2011
Brazil	-	-	-	-	√	√	√	√
Chile	-	-	-	-	-	√	√	√
Colombia	-	-	-	-	-	√	√	√
Mexico	-	-	-	√	√	√	√	√
Peru	-	-	√	√	√	√	√	√
Total	0	0	1	2	3	5	5	5

Source: International Monetary Fund. Exchange Arrangements & Exchange Restrictions, Annual Reports.

d) Furthermore, the IMF makes a favorable assessment of the financial sector in Latin America in its April 2011 *Regional Economic Outlook*. According to the Fund, “banks in the region remain sound and standard financial indicators have improve since the crisis: capital adequacy ratios are up from already comfortable levels, non performing loans returned to a downward trend, bank profitability recovered somewhat and funding ratios remain generally healthy”. Against this background, it should not be surprising that no Latin American banking system faced a crisis during the recent episode of global financial turmoil.

3) Governor Uribe has referred to four challenges for policy makers in dealing with the impact of capital inflows: the possibility of large and persistent exchange rate appreciation, credit booms, capital flows composition, and the underdevelopment of domestic financial systems.

I would add a fifth challenge.

If Latin America is to face a substantial inflow of capital in coming years, it will be necessary not only to face its macroeconomic and financial stability consequences, but to use them productively to increase the region’s growth potential. The experience thus far is discouraging. In a recent study by the Interamerican Development Bank on productivity

gains and losses relative to the United States for a sample of 76 countries, half of the 20 worst performing are from Latin America and the Caribbean.² According to the study, a typical Latin American country could have increased income per capita by 54% since 1960 if its productivity had grown like that of the rest of the world during the period. And the document goes on to conclude that more than additional investments, countries in the region need to make better use of the existing stock of physical and human capital.

² See Carmen Pagés-Serra (ed.), *La era de la productividad: cómo transformar a las economías desde sus cimientos*, Interamerican Development Bank, June 2010.

Dinner Address

José Darío Uribe

Lessons from the 2008 Financial Crisis: How Financial Infrastructures Mitigate Systemic Fragility

The Nature of Financial Systems

Financial systems are complex due to the myriad of interconnected banking and non-banking institutions providing a vast range of financial services. They are homogeneous because all institutions, despite of their business line, pursuit returns with the same risk management and asset allocation models and techniques, resulting in all institutions *diversifying* in a similar manner.¹ They are opaque because financial innovations such as credit derivatives and structured products, along with the presence of a large shadow banking system, allow for an unprecedented and obscure transfer of risks and transformation of liquidity and maturity.

¹ Homogeneity in risk management is acknowledged and criticized by the IMF (*Global Financial Stability Report*, 2007); the best example is the widespread use of value-at-risk models led by Basel II regulatory framework. Homogeneity in asset allocation is acknowledged and criticized by the BIS (*81st Annual Report*, 2011); the best example is the widespread use of mean-variance portfolio optimization techniques, which partially explain why almost all market participants, including very risk averse agents such as central banks and pension funds, had positions in illiquid or even toxic assets such as mortgages and complex credit derivatives.

Governor, Banco de la República, Colombia.

It is important to recognize that complexity is by no means an undesirable feature of a system: Mother Nature demonstrates that complexity may bring robustness, where participants' number and diversity may help to absorb or disperse risk in a proper manner. Nevertheless, in the absence of diversity, with all participants developing similar tasks with identical tools and strategies, complexity may serve as a risk amplifier. Moreover, if the system is complex and homogenous, and the instruments are able to obscure the connections and exposures between participants, risk becomes uncertainty, pricing becomes difficult, and imitating becomes the most rational strategy at individual level... but with extreme costs at systemic level: herding, panic, positive feedbacks, liquidity spirals and financial systems' fragility.

Consequently, coping with financial systems' fragility is nowadays the foremost objective of regulators, supervisors and overseers, who are now committed to achieve financial stability, even in rare events such as the mortgage market collapse. Therefore, financial authorities should confront the source of systemic fragility: the undesirable and dangerous combination of complexity, homogeneity and opaqueness.

Despite the joint importance of these three factors, in what follows I will focus on financial infrastructures' role regarding the complexity and opaqueness of the financial system.

The Role of Financial Infrastructures in the Crisis

As it is well-known today, the collapse of Lehman Brothers and the near-collapse of AIG and Bear Sterns made clear that market participants were not able to map their own exposures with ease. It also demonstrated that financial authorities had no information on the structure and dynamics of the connections between market participants in order to technically identify too-connected-to-fail financial institutions. A key variable for understanding and analyzing the financial system was missing: complete and transparent information.

The largest portion of market participants' exposures was fuzzy because they belonged to over-the-counter bilateral transactions, especially to credit derivatives and other structured products; for example,

according to Financial Stability Board 2010 figures, bilateral clearing still covers approximately 90% of the USD 30 trillion of outstanding credit default swaps.

Because of this fuzziness no financial institution or financial authority had a fair idea of the magnitude of the real exposures in these bilateral transactions in the outbreak of the crisis, and they had no idea of who was at risk through the intricate network of counterparty failure typical of credit derivatives; for example, according to BIS,² as late as February 2008 the end-2007 data on major international banks exposures to structured products was still fragmentary and lacking in comparability. Additionally, because over-the-counter transactions do not require collateral or are inadequately collateralized, market participants' uncertainty about their real exposure augmented.

As put forward by the Financial Stability Board,³ the recent financial crisis exposed weaknesses in the structure of the over-the-counter derivatives markets that contributed to the buildup of systemic risk, where the potential for contagion resulted from the interconnectedness of market participants and the limited transparency of counterparty relationships.

Not surprisingly, centralized markets, which typically register transactions and use central counterparties, were a source of support for the safe and efficient functioning of the payment system. As has been extensively documented after the crisis, the major UK and US central counterparties were able to orderly unwind Lehman's positions in the month following its bankruptcy. For example, the largest clearing agent of the US (Depository Trust and Clearing Corporation) announced in October 2008 that it had successfully unwound over USD 500 billion in market participants' exposure from Lehman Brothers bankruptcy, mainly by netting positions.

² BIS, *81st Annual Report*, 2011.

³ Financial Stability Board (FSB), *Implementing OTC Derivatives Market Reforms*, October, 2010.

As has been widely recognized in the aftermath of the 2008 crisis, clearing transactions centrally via a financial infrastructure such as a central counterparty mitigated financial systems' fragility. A central counterparty, which is an infrastructure that becomes the buyer of each seller and the seller of each buyer, has the potential to mitigate systemic risk in several ways.

First, because outstanding positions are reduced due to central counterparties' ability to perform multilateral netting of participants' positions, liquidity and counterparty risks may be reduced.

Second, because each bilateral transaction is replaced with two transactions with the central counterparty, not only counterparty risk is mitigated, but the complexity and opaqueness of the interconnections between participants may be reduced.

Third, as margins, collaterals, guarantee funds, liquidity lines, position limits, and the capital of the central counterparties are designed as lines of defense against the default of a member or several members under normal market conditions, the potential contagion effect may be mitigated.

Fourth, as collaterals are centrally managed by a central counterparty that has several sources of liquidity from the lines of defense against default, fire-sale risk may be mitigated.

Fifth, as central counterparties use standardized products and valuation models, products opaqueness may be reduced, therefore enhancing supervision and oversight.

Because of these demonstrated advantages, G20 members agreed in 2009's Pittsburg Summit that in order to improve over-the-counter derivatives markets, and to mitigate systemic risk, three steps should be taken:

- All standardized over-the-counter derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties by end-2012 at the latest.
- Over-the-counter derivative contracts should be reported to trade repositories.

- Non-centrally cleared contracts should be subject to higher capital requirements.

Therefore, as said before, one of the main lessons from the 2008 crisis is the importance of financial infrastructures such as central counterparties and trade repositories for mitigating systemic risk.

Challenges Ahead –The Colombian Case

Despite this lesson seems to be straightforward nowadays, there are still some challenges in its implementation, especially for emerging markets and other non-developed financial systems. In order to address these pending challenges please allow me to briefly refer to Colombia's case with financial infrastructures such as central counterparties and trade repositories.

Regardless of being dominated by fixed income and equity spot markets, Colombian derivatives market has gained some importance. As in many other countries, our derivatives market is an over-the-counter driven market. Foreign exchange derivatives account for 98% of that market.

Only recently, by mid-2008, the first and only central counterparty was established as a joint effort from banks, broker-dealer firms and the local stock exchange. Even though its share of derivatives market is still minor, it has succeeded to continuously and significantly increase the number and outstanding volume of transactions, mainly futures on foreign exchange and sovereign debt securities.

Several decisions have been taken in order to foster the move of over-the-counter transactions to central clearing at the central counterparty. For example, financial regulation exempts participants' exposure to the central counterparty for calculating credit risk capital requirements, and are excluded from individual and concentration credit limits. Additionally, the central bank has excluded foreign exchange intermediaries' derivatives transactions that are cleared through the central counterparty from the calculation of foreign exchange leverage limits.

Notwithstanding central counterparties are well known for being safer than individual financial institutions, with only three documented cases of failure,⁴ some issues regarding the concentration of counterparty, liquidity and operational risk are to be properly addressed. The ongoing debate regarding central counterparties' access to central bank liquidity may be one of the most important issues regarding financial infrastructures' potential to mitigate systemic risk: should the central bank provide intraday or even overnight liquidity in order to allow for orderly liquidation of collaterals and guarantees? Or, as Bernanke said in 1990 after the 1987 stock market crash, should the central bank serve as an "insurer of last resort" for central counterparties' in order to allow them to fulfill its obligations even in the most extreme case scenario?

According to the IMF, the European Central Bank, and the UK's Financial Services Authorities, central bank money may provide the resources required by a systemically important central counterparty to manage its liquidity risk without distorting financial markets via fire-sale risk, and to assure market participants that the central counterparty will ultimately fulfill its obligations, even in extreme conditions not covered by the design of its lines of defense and its equity.

Despite the only central counterparty of Colombia is not systemically important because of the low outstanding value of transactions, the central bank of Colombia has taken a proactive approach to this issue: we are currently analyzing if granting access to central bank's liquidity facilities is convenient or not, and what mechanisms could be the most appropriate.

Regarding trade repositories, which are entities that maintain a centralized electronic record of transaction data, their role on enhancing transparency of information has been emphasized after the 2008 crisis. As with central counterparties, trade repositories may fill the informational gap that prevented financial institutions from mapping their own exposures, and authorities from understanding the structure and

⁴ Caisse de Liquidation (Paris, 1974), Kuala Lumpur Commodity Clearing House (1983), and Hong Kong Futures Guarantee Corporation (1987).

dynamics of the financial system. Colombia has no trade repositories, but we are currently analyzing if such centralized register of transaction data may be undertaken by the existing infrastructure of the central bank, or if the private sector or another financial authority should undertake it.

As verified in the aftermath of the 2008 crisis, the central bank of Colombia recognize that central counterparties and trade repositories, even though differing in their function, both alleviate the insufficiency of current sources of information for understanding, analyzing and deciding about financial systems. Besides, as explained before, the central counterparty not only helps to cast light on the complex and obscure network of connections between financial institutions, but also serve as a centralized and more efficient manager of liquidity and counterparty risks.

Finally, I would like to close my intervention with some additional remarks.

As demonstrated by the 2008 crisis, infrastructures such as central counterparties and trade repositories may help to mitigate informational gaps in order to cope with the systemic fragility resulting from the complexity and opaqueness of financial systems.

Unlike traditional balance sheet data, financial infrastructure data are particularly dynamic and granular and may help to identify the type, volume and risk profile of the activities and services provided by each type of institution, even at the firm level.

According to our experience, other infrastructures, such as the large-value payment system, which are typically managed by the central bank, are another rich source of information for understanding and analyzing the structure and dynamics of the financial system.

Using infrastructure data requires new approaches and techniques. Only after designing and implementing appropriate methodologies suitable for its analysis (e.g. network theory) it is possible to fully exploit the more transparent information provided by infrastructures.

According to our experience when dealing with large-value payment system information, new approaches and techniques for analyzing

infrastructures' information allow for assessing key criteria such as financial institutions' connectedness and non-substitutability, which may help identifying systemically important financial institutions outside the traditional too-big-to-fail concept.

At the end, we, as overseers of the payment system, and acting as one of the guarantors of financial stability, are committed to mitigating systemic risk by all means necessary, where sound and well-designed financial infrastructures serve as shields against fragility, and as sources of key information for financial authorities' prudential and decision-making purposes.

Session 5

**Postcrisis Appraisal of Monetary
Policy Framework**

Andrew Filardo

Ensuring Price Stability in Postcrisis Asia: Lessons from the Recovery

The international financial crisis that began in 2007 tested the integrity of monetary policy frameworks in Asia. The region was hit hard by the financial storms originating outside the region, especially in late 2008 and early 2009. Macroeconomic performance and Asian financial markets suffered. One important question to consider is the role domestic monetary policy played in Asia during this period. This paper attempts to assess this role, arguing that, on the whole, monetary frameworks adopted prior to the crisis served the region well. However, the recovery period has presented a number of price stability challenges which suggest a need to refine existing frameworks.

The paper starts with some observations about how the region fared during the crisis and the V-shaped recovery. One clear lesson from the crisis is the critical importance of taking actions to strengthen economic and financial fundamentals during the good times so as to be prepared for the bad times. For monetary policy frameworks, this means committing to the goal of price stability, and consistently and credibly delivering on it.

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What is remarkable about this region is that credibility for price stability has not been tied exclusively to one type of policy regime. The region's monetary policy frameworks are quite diverse operationally. Some central banks closely control their exchange rates, some have explicit inflation targets and others have chosen eclectic regimes which focus on a range of policy goals. Nonetheless, the region has achieved a good record for price stability.

The Asian record during the crisis also highlights the importance of flexibly responding to economic and financial developments. Asian monetary policymakers could not completely shield themselves from the consequences of the problems in the West. At various points in the crisis, volatility spiked in the region and uncertainties about the future multiplied. The experience of the crisis illustrated that the Asian policy approach needs to change given the circumstances. During normal times, Asian monetary policy focused on price stability. During crisis times, however, the priorities of central banks were more varied, and required some flexibility in assigning weight to these priorities. This experience underscores the importance of putting more weight on financial stability when worrisome tail risks become immediate, at the cost of somewhat higher short-term inflation stability. One way to characterize this pattern of responses is to say that Asian monetary policy frameworks allow a fair amount of state dependence. In other words, what works well in normal times may not be best in periods of turmoil.

Operationally, the record also illustrates that, in periods of great uncertainty, Asian monetary authorities have not focused simply on the mean forecasts of key macroeconomic variables but have also responded to external tail risks. While this may seem obvious to many, the implications for monetary policy frameworks are significant and potentially far-reaching. When significant tail risks arise, a more aggressive monetary policy stance than usual may be required, and central banks may need to show more tolerance for slippage in short-term inflation control.

Such unavoidable complexities make clear communication a priority. This means explaining why short-term deviations from (implicit and

explicit) inflation targets may be appropriate, if not optimal, during a crisis and when coming out of a crisis. Questions remain about whether such a strategy should be formally incorporated in monetary policy frameworks, especially for central banks with formal mandates for financial stability.

The putative success in navigating the crisis does not mean to suggest that monetary policy frameworks in Asia are perfect. Indeed, the recovery period has presented a number of price stability challenges which I will address in this paper. These include significant questions about how central banks should respond to gyrations in commodity prices, how central banks should prioritize mandates for financial stability, and how central banks should deal with the likelihood of a persistently unbalanced global economy.

The paper proceeds as follows. Section II reviews Asia's experience during the recent international financial crisis, highlighting the role monetary policy played. Section III then discusses several key price stability challenges now facing Asia's central bankers, especially the concern that existing policy frameworks are inherently procyclical. Section IV offers some conclusions.

The Value of Strong Fundamentals –Perspective from Asia

The V-shaped cyclical recovery in Asia points to both the underlying strength of the economies and financial systems in Asia, and the success of the policy responses. The main lesson learned from the crisis is the importance of building up economic and financial resilience during the good times as the best defense for the bad times. The impact of the crisis also highlights the fact that, no matter how well one's house is in order, economies are still susceptible to adverse spillovers from distant shores. In an increasingly globalized world, these vulnerabilities are only going to grow.

Brief Timeline of the International Financial Crisis

Often, the international financial crisis is portrayed as a singular event. When taking a broad-brush perspective, this may be reasonable.

However, to better understand the challenges that were faced in Asia, it is important to remember that the international financial crisis in Asia had its own tempo.

There were periods of tumult and periods of relative calm. At the risk of oversimplifying the complexities of such a large, diverse region, this paper highlights the policy successes and challenges with a chronology of the crisis in Asia that can be succinctly characterized in five phases: *i*) the initial headwinds blowing from the West in 2007-2008, *ii*) the financial tsunami that hit the shores in late 2008, *iii*) the immediate aftermath –dealing with the impact, *iv*) the V-shaped recovery, and *v*) the long and winding road to full normalization.¹

In many respects it is important to begin with a snapshot of the economic cycle. After nearly a decade of robust growth and considerable gains in standards of living, Asian economies experienced an abrupt slowdown in late 2008, followed by a sharp recession and a strong recovery beginning in some economies in early 2009. The slowdown exhibited itself in various ways. Some economies saw a sharp contraction in output while others experienced a growth cycle recession (Figure 1).

- The Headwinds (mid-2007-mid-2008)

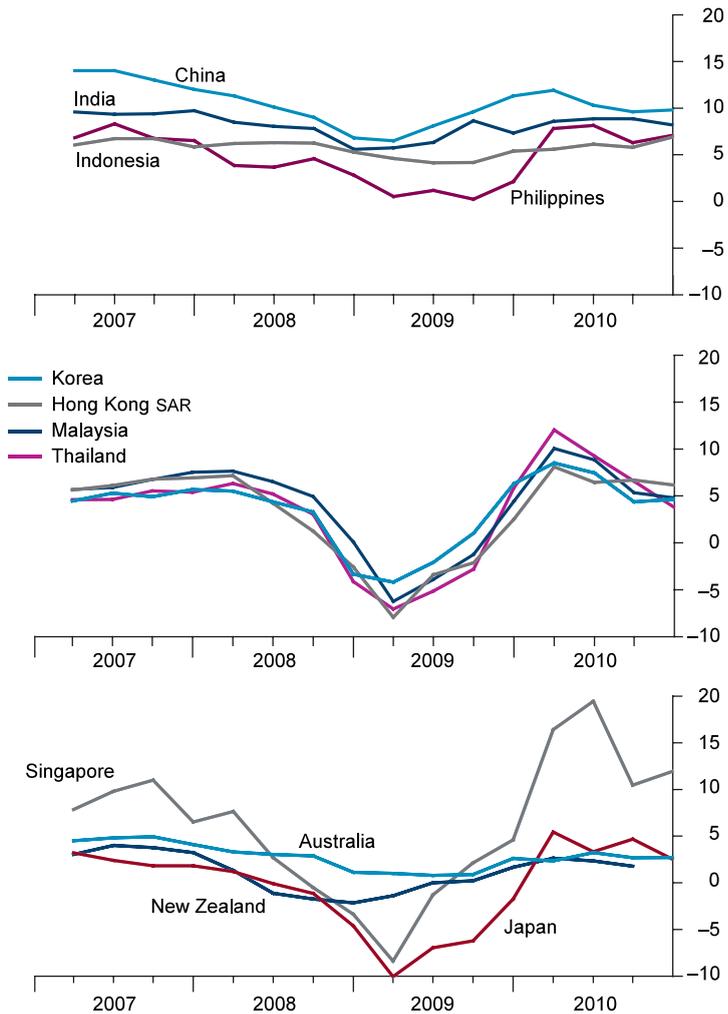
In this initial stage of the international financial crisis, Asia demonstrated the value of keeping one's own house in order. Strong economic and financial fundamentals kept the region relatively resilient to the virulent stresses developing overseas. To be sure, some of the turmoil did create some dislocations in the region during this period. But on the whole, policymakers faced more urgent challenges from domestic overheating pressures than from external risks.

The initial financial dislocations in the region reflected the particular stresses emerging in global financial markets. The pricing problems in global markets that developed early in the crisis were largely limited to certain classes of risky assets, as exemplified by the difficulties at BNP

¹ For a more detailed description, see Filardo (2011).

Figure 1

REAL GDP GROWTH¹
(percentages)



¹ Annual changes.

Source: National data.

Paribus and later at Bear Stearns. The stresses in interbank markets in some advanced economies also led to large, temporary liquidity injections being required to restore more orderly financial conditions in some economies. These early rumblings, however, paled in comparison –economically and financially– to the seismic event that occurred in September 2008.

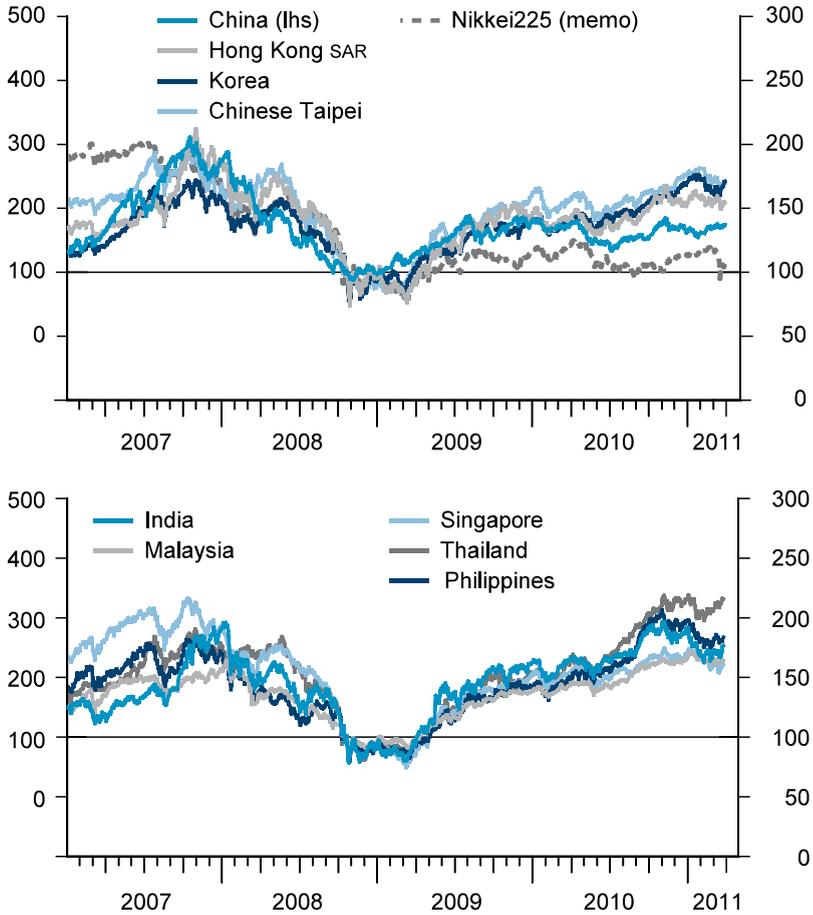
In Asia, it is important to remember that the direct spillovers during this phase were relatively modest financially and did not significantly alter the macroeconomic trajectories for output and inflation. The Asian exposures to the so-called toxic assets were rather limited. But, as we have seen time and again, the region was not immune from the more generalized decline in risk appetites of global investors. During these waves of global investor pessimism, low-grade borrowers in India, Indonesia and the Philippines lost access to markets for a while. And even high-grade borrowers faced higher financing rates, which were a burden for those economies with large external financing needs. Equity prices came off highs achieved late in 2007 (Figure 2).

Despite these sporadic problems in the region, the impact of these initial financial headwinds on the prospects for economic growth in Asian economies was modest. GDP growth was still expected to grow 4% to 5% in 2008 and 2009, according to forecast surveys at the time. Indeed, the relatively strong Asian growth performance fed increasingly popular views that the region had become sufficiently resilient to shocks from the rest of the world that it could be characterized as effectively decoupling from the West. While this view would eventually be disproven in the next phase of the crisis, the robust Asian economic activity in 2007 and 2008 was leading to overheating and concerns about price stability. Rising inflation pressures in Asia came from energy and food prices. For commodity-producing economies, the higher prices also helped to offset the financial headwinds from the West.

It is also important to note the performance of banks during this phase of the financial crisis. Asian banks weathered this period rather well, continuing to report positive earnings and experiencing only modest losses. Capital adequacy ratios remained high throughout the

Figure 2

EQUITY PRICES IN ASIA¹



¹ In local currency; December 2008 = 100.

period, non-performing loans were low and loan-to-deposit ratios were at a comfortable level (Figure 3). In part, the health and resilience of Asian banking systems stemmed from the relatively traditional bank business models. On the liability side, the banks rely heavily on retail deposits; Korea, though, relied on wholesale funding more extensively than the others. On the asset side, banks generally adopted the traditional originate-and-hold approach, and investments in complex financial instruments remained limited.

In part, the Asian banking model reflected the relatively conservative regulatory regime adopted in the 2000s, reflecting the lessons learned during the Asian financial crisis of the late 1990s. During the Asian crisis, weak banking regulatory systems contributed to financial system weaknesses. In the aftermath, regulators took a relatively conservative approach toward financial stability issues. Maybe more important, the regulated sector also took a conservative approach towards risk management, generally adopting practices that provided a high degree of resilience during the recent international financial crisis.

Asia also learned important lessons from their 1990s crisis about the value of fiscal discipline and the value of possessing a war chest of foreign reserves. Fiscal authorities strengthened their policy frameworks in the 2000s, leaving them with considerable fiscal room for maneuver at the time of the international financial crisis. Fiscal surpluses were the rule rather than the exception, and government debt was relatively low on an international standard; Japan has been a notable exception to this trend.

The region had accumulated massive quantities of foreign reserves throughout the past decade. Early on, central banks and finance ministries focused on building buffer stocks, motivated primarily by achieving reserve adequacy levels using various metrics (e.g., reserves as a share of GDP, as a share of three months of imports and of one year of short-term debt). Later in the decade, prolonged exchange rate intervention, which added further to reserves holdings, turned out to be a byproduct of the exchange rate regime. As

economies in the region resisted nominal exchange rate pressures, foreign reserves reached unprecedented levels. It should be noted, though, that some of these reserves and forward FX positions that were built before 2007 helped protect the region from credit rating downgrades as the headwinds from the West picked up. And some economies used the stock of reserves to help provide dollar liquidity and stabilize their currencies.

In addition to all these strong fundamentals, monetary policy frameworks in Asia were built on a strong foundation of price stability. In the decade prior to the start of the international financial crisis, the region gained a reputation for low and stable inflation. Filardo and Genberg (2010a) find that it is very difficult to detect systemic differences in inflation performance across the region. The authors concluded that Asia has demonstrated that there is more than one way to achieve price stability.

Despite the differences in the monetary policy frameworks, the initial monetary policy response to the crisis was rather similar across central banks. In the early phase of the international financial crisis, monetary policy throughout much of the region was tightened, especially in India and Indonesia where inflation rates reached double digits. Japan was a stark exception as it kept its policy rate at 0.5%, as its incipient recovery after a very long period of subpar performance seemed particularly vulnerable to the adverse developments in North America and Europe. Malaysia also kept policy rates relatively low as it expressed concerns about the downside tail risks brewing on the other side of the Pacific Ocean.

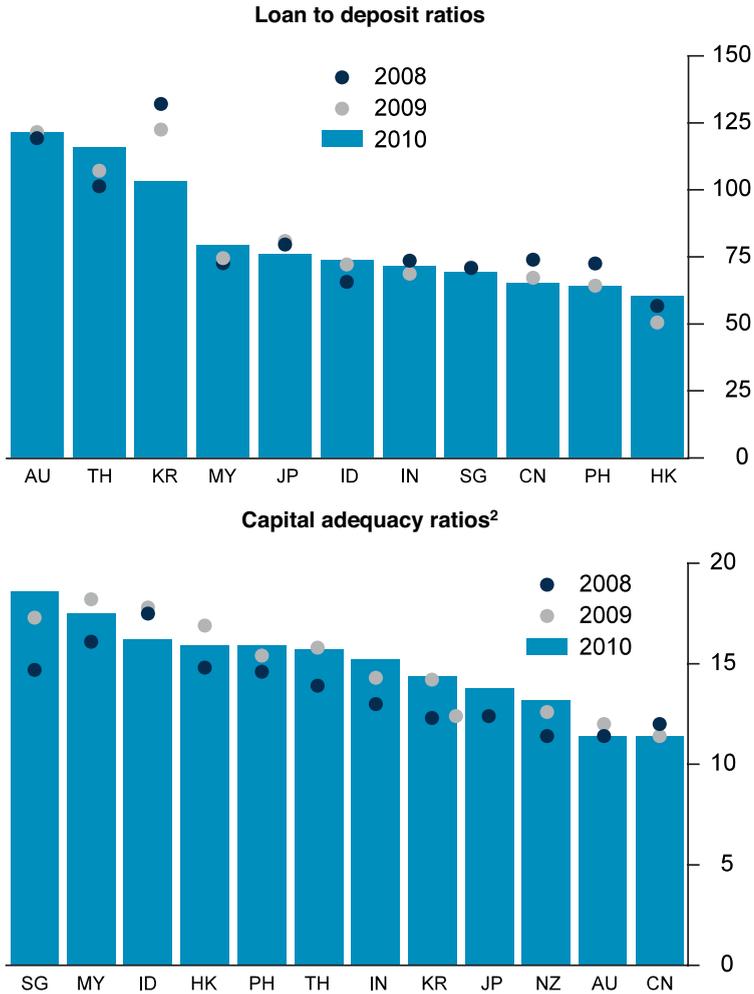
In sum, during this initial phase of the international financial crisis, Asia faced negative financial spillovers but, on the whole, domestic macroeconomic conditions dominated the policy environment. Rising inflation pressures were the focus of monetary policy.

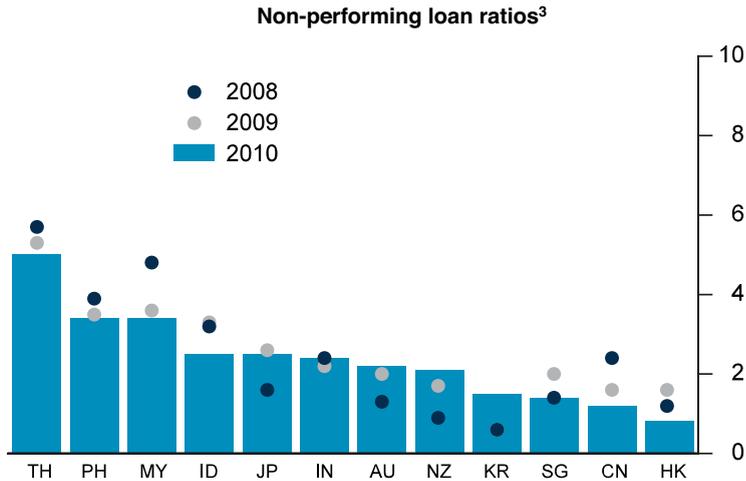
- The Financial Tsunami in Late 2008

Despite the strong economic and financial fundamentals in Asia going into the crisis, the region was not immune to the sharp intensification of

Figure 3

BANK SOUNDNESS INDICATORS¹





AU = Australia; CN = China; HK = Hong Kong SAR; IN = India; ID = Indonesia; JP = Japan; KR = Korea; MY = Malaysia; NZ = New Zealand; PH = Philippines; SG = Singapore; TH = Thailand.

¹ In percent.

² Total capital as a percentage of total risk-weighted assets.

³ Definitions may vary across countries.

Sources: Bloomberg; CEIC; IMF; national data.

the international financial crisis after the collapse of Lehman Brothers in September 2008. The arrival of the financial tsunami on the shores of Asia was fast and occurred with great intensity. The initial impact was felt in the financial markets as market confidence and risk appetite collapsed. Asia’s equity indexes fell sharply by the end of 2008, even after prices drifted down from the highs in 2007 through most of the year. Housing prices also faced downward pressures.

Possibly more revealing was the sharp spike in sovereign CDS spreads in the region (Figure 4). Indonesia, Korea and the Philippines experienced the worst of it, but all were affected to varying degrees. The skyrocketing CDS spreads represented massive reassessments of risks. This provides solid evidence that gyrations in the pricing of risk

are an important channel through which problems overseas can affect Asia. In this case, risk preferences of international investors swung from a large underpricing of risk before the crisis to a significant overpricing of risks after the Lehman bankruptcy.

The change in risk appetite had significant consequences for the real economy. Along with a rapid reversal of commodity prices, there was a multiplication of downside risks to the economic outlook and a genuine concern about the consequences for financial stability in the region.

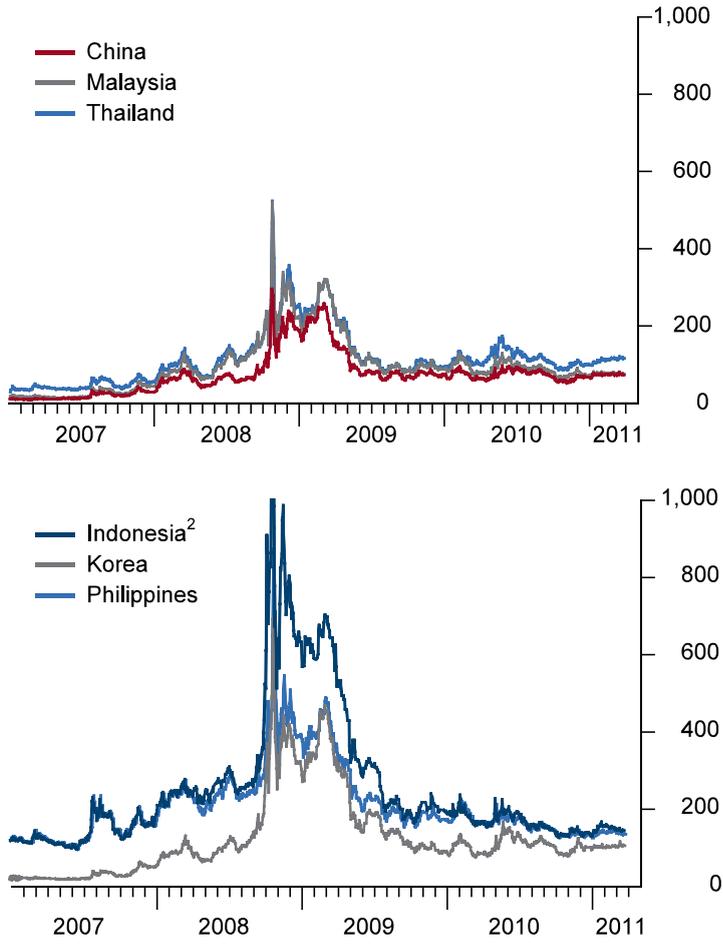
One interesting feature of the international financial crisis is the severe disruption in international, especially US dollar-denominated, money and capital markets. The disruptions rapidly pushed up financing costs faced by borrowers in Asia. Huge gross US dollar denominated exposures in economies such as Korea proved very costly as Asian currencies depreciated. The disruptions happened in three ways: by directly reducing the availability of offshore credit to Asia-Pacific residents; by increasing demand from non-residents to borrow in Asia-Pacific markets; and by leading market-makers to scale back their activities. All this underscores the argument for more cooperation in ensuring a global financial safety net with central banks playing a key role.

The freezing up of short-term markets for US dollars in September and October 2008 led to serious repercussions for Asia. Offshore credit was collapsing as were exports. These conditions forced firms needing to refinance dollar-denominated debts and derivative exposures to sell local currency assets and to seek US dollar borrowing from locals. Banks in India and Korea offered exceptionally high interest rates in October 2008 to raise US dollars from local sources.

In other Asian markets, demand for US dollars led to some stress, but not severely so. A second way in which the disruptions in US dollar markets caused local financing conditions to tighten was that non-residents sought to tap Asia's markets and swap the proceeds for US dollars or other foreign currencies, pushing up local yields and credit spreads in the process. Third, international banks responded to the difficulties that they themselves faced in securing financing by scaling back their activities. As a result, Asian securities became more expensive

Figure 4

SOVEREIGN DEBT CDS PREMIA¹



¹ CMA 5-year credit default swap premia; in basis points.

² Indonesia's premia exceeded 1,000 on December 22, 2008, reaching a peak of 1,256.7 on December 23, 2008.

to trade. International banks were important dealers not only for foreign currency securities issued by Asian borrowers but also for local securities and derivatives. Their retrenchment caused transaction costs to increase and liquidity to drop for a wide range of instruments.

Against this backdrop, monetary authorities cut policy interest rates across the board (Figure 5). A number of economies also cut their reserve requirement ratios. With trade collapsing, in part because of the expected drying up of the supply of trade finance, special trade finance programs were announced. The US dollar squeeze was also addressed by tapping the ample foreign exchange reserves that Asian central banks had amassed in the previous decade.

The lack of liquidity in various markets also complicated the monetary transmission mechanism; local currency liquidity supports were provided, including extending maturities of the borrowing and broadening of collateral eligibility for the borrowing. In addition, liquidity assistance in foreign currency was provided by the swap facility at the Federal Reserve with various central banks, which were in turn recirculated in markets.² Reinforcing the thrust of the monetary actions, fiscal authorities announced plans for massive emergency fiscal stimulus.

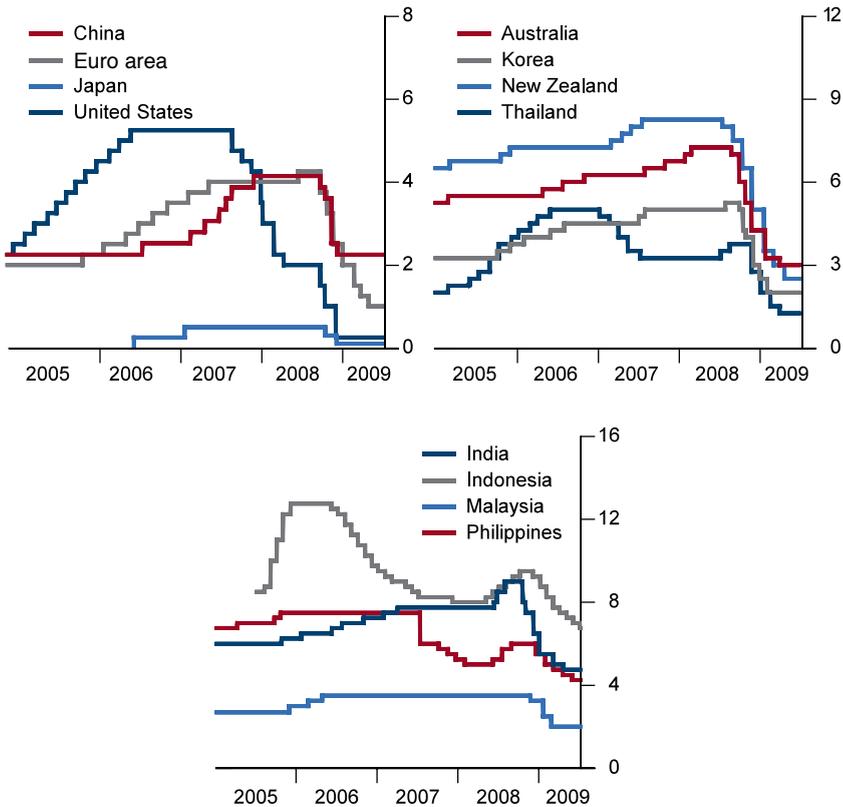
• The Immediate Aftermath –Dealing with the Impact

By late 2008, it became increasingly evident to policymakers that this financial tsunami that had hit the shores of Asia was quickly morphing into a full-blown macroeconomic meltdown. Exports fell sharply, with small, open economies being severely hit. Industrial production was collapsing as inventory liquidation accelerated the descent. At the time, it was not clear just where the bottom of the cycle would finally end up. As GDP contracted in most Asian economies, the prospects for growth in 2009 and 2010 were also marked down significantly. Hong Kong,

² Australia, Japan and Korea drew on the swap lines while New Zealand and Singapore did not.

Figure 5

MONETARY POLICY RATES¹
(percentages)



¹ Policy target rates or their proxies. For China, household saving deposits one-year rate; for the euro area, ECB minimum bid refinancing one-week rate; for Japan, BoJ target rate; for the United States, Federal Reserve funds rate; for Australia, RBA cash target rate; for Korea, overnight call rate target before March 7, 2008, one-week BOK Base Rate thereafter; for New Zealand official cash daily rate; for Thailand, 14-day repo rate before January 17, 2007, one-day repo thereafter; for India, RBI repo cutoff yield; for Indonesia, BI reference interest rate; for Malaysia, overnight policy rate; for the Philippines, overnight reserve repurchase agreement RRP daily rate.
Source: Bloomberg.

Japan, Singapore and Thailand were the hardest hit economies, with real GDP falling by more than nine percent.

There were some silver linings in the dark clouds. China, India and Indonesia –the three largest emerging market economies in Asia– were able to grow faster than 5%. This helped to support economic activity throughout the region owing to the extensive regional supply chains. The associated boost to aggregate demand sustained relatively high commodity prices, which was important for the commodity-exporting economies. Moreover, the ability of these three large Asian economies to weather the storm laid the foundation for the eventual global recovery.

One lesson learned during the crisis is that those economies most vulnerable to a shock to external demand suffered heavily. Large economies with substantial domestic demand sectors and limited financial linkages globally weathered the storm relatively better than the small, open economies. It is important not to draw far-reaching inferences from this observation. These hard-hit economies also recovered quickly and had benefited during the past decade from this external orientation. However, it does suggest that open economies may have to be more vigilant with respect to external spillovers and put in place more resilient economic and financial safeguards.

The credit crunch in the region compounded the macroeconomic decline. International banks retreated from the region, leaving fewer lenders, at the same time that risk appetite fell. Those economies with less highly-rated financial systems suffered more as risk spreads ballooned and, as a consequence, borrowers faced much higher external funding costs. Cross-border capital outflows aggravated the situation for those economies with fairly liquid and open equity markets, such as Korea. The retreat of international banks also precipitated cross-border banking outflows, especially in the financial centers of Hong Kong and Singapore.

One of the big surprises was the vulnerability of trade finance during the crisis. Trade credit in Asia-Pacific is typically denominated in US dollars and is short-term in nature; hence, it is thought of as being

low-risk. However, as dollar liquidity dried up at the height of the crisis, and the FX swap market became dysfunctional, exporters found it difficult to roll over this form of credit. Domestic and regional banks partially filled the gap left by the international banks and new guarantees from governments and international agencies helped too.

In the end, however, the containment of the downside risks can be attributed in large part to the confidence-restoring actions of the governments in the region. In addition to further easing of monetary policy, large supplementary fiscal packages were arranged, in some cases complementing earlier packages.

A range of unconventional policy actions supplemented the conventional macroeconomic tools and further strengthened the monetary transmission channels. They included liquidity assistance.

• The V-shaped Recovery

By mid to late 2009, however, the success in the region started to shift the balance of risks from the downside to the upside risks of overheating. Accommodative monetary policy remained largely in place as much of the fiscal stimulus continued. Financial markets were on the mend. Another issue that arose during this time for regional policymakers was the prospects of disruptive capital flows. Capital flows returned to Asia, with varying intensities across time and economies. These included foreign direct investment, bond and equity portfolio flows and crossborder bank lending.

One complicating factor during this period was the flare-up of sovereign debt concerns in Europe. This sent another wave of international investor pessimism across the globe, with global risk aversion reversing course for a while. Early on, regional asset prices were impacted in a manner consistent with the high correlation between Asian financial markets and global financial markets. By year-end, however, investors appeared to be fairly discriminating, at least geographically, in their appetite for risk; Asian fundamentals were sound and risk spreads reflected this.

Nonetheless monetary policymakers faced difficult tradeoffs. On the one hand, higher policy rates would attract more capital flows as

international interest rate differentials widened. And, for those resisting currency appreciations, this meant a buildup of one-sided currency bets and the potential for carry trade dynamics. On the other hand, low policy rates and the associated prolonged stance of accommodative monetary policy would contribute to excessive credit creation and asset price bubbles.

The evidence during this period supports both of these concerns. Asia's equity prices rose rapidly above precrisis highs, and property prices in particular jurisdictions saw meteoric rises consistent with bubble behavior; this was particularly the case in Hong Kong, Singapore and certain cities in China. The reluctance to rely on policy interest rates to stabilize macroeconomic forces saw policymakers experimenting with the use of administrative measures such as capital controls and macroprudential tools to rein in capital flow pressures and rapid credit expansion.

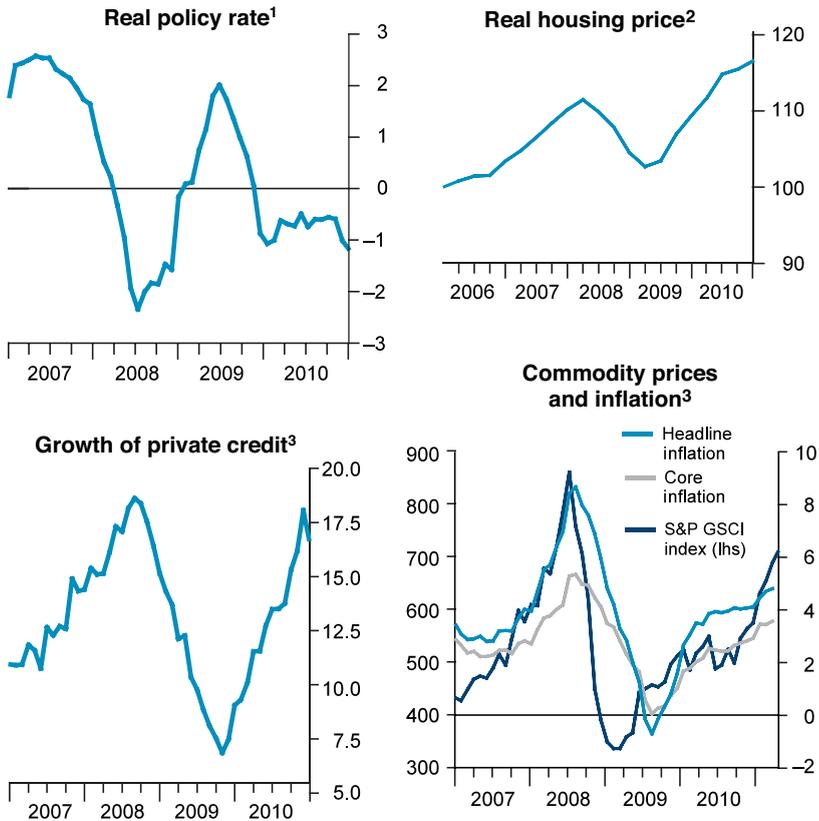
- Long Road to Full Normalization (2010 to Present)

Despite the brisk recovery so far, the stance of monetary policy in Asia has remained rather accommodative. Indeed, by measures of the real policy interest rate, the stance of monetary policy has been extremely loose (Figure 6). As well, this assessment remains accurate even when accounting for the state of the business cycle and inflation pressures (Figure 7). This evidence raises concerns that central banks in the region have kept policy rates too low for too long. The surge in credit growth, the reemergence of asset price bubbles and pickup in inflation in the past year all support this conclusion.

This view would also suggest that the eventual inflation fight will be quite difficult. Given the lags of monetary policy, a sharp increase in nominal policy interest rates will be required to raise real policy rates sufficiently to rein in inflationary pressures already in the pipeline. If too aggressive, the monetary policy reaction could be disruptive and precipitate a dramatic slowdown, which would open up another set of policy challenges. This view would emphasize the point that monetary policy in the recent past has been too procyclical, thereby promoting

Figure 6

MONETARY POLICY, CREDIT GROWTH, HOUSING PRICES AND INFLATION IN ASIA



¹ Policy target rates or their proxies corrected by forward- and backward-looking inflation component (equally weighted 12-month backward-looking CPI inflation and 12-month forward-looking consensus expectations); average of China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, Philippines and Thailand.

² End 2005 = 100; average of China, Hong Kong SAR, Indonesia, Korea, Malaysia, Singapore and Thailand.

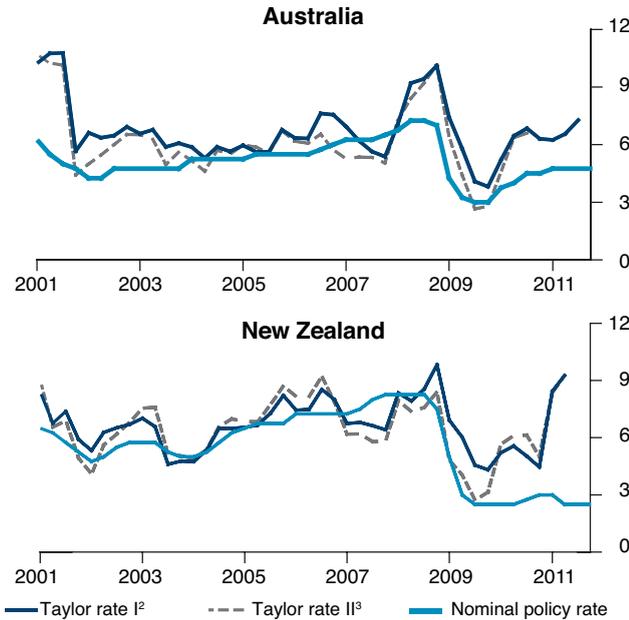
³ Annual change; average of China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, Philippines, Singapore and Thailand.

Source: CEIC, IMF IFS, national data.

Figure 7

**POLICY RATES¹ AND THOSE IMPLIED BY THE TAYLOR RULE
(percentages)**

Countries with an inflation target

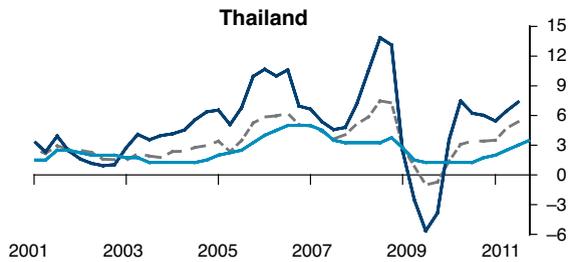
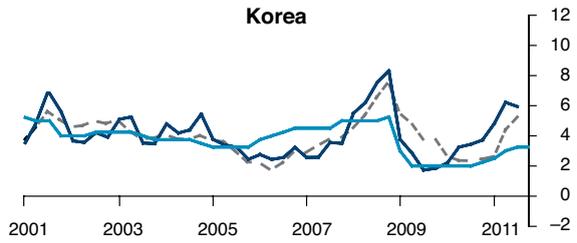
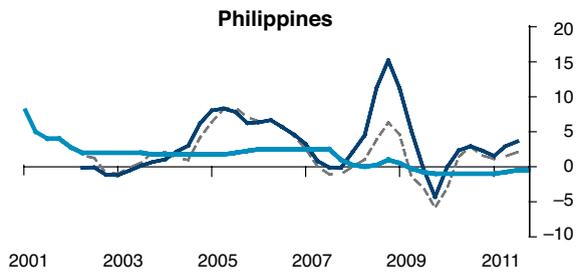
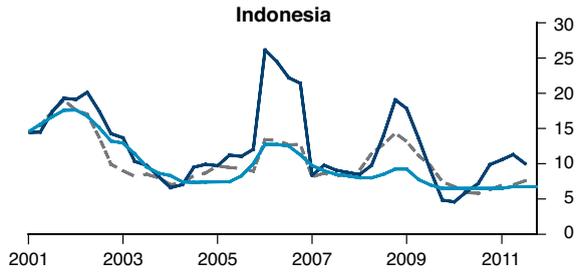


¹ For Australia, RBA cash target rate; for China, one-year lending rate; for Hong Kong, discount window base rate; for India, reverse repo rate; for Indonesia, one-month SBI rate; for Japan, overnight call rate; for Korea, overnight call rate; for Malaysia, overnight policy rate; for New Zealand official cash daily rate; for Philippines, overnight reserve repo rate; for Singapore, three-month interbank rate; for Thailand, 14-day repo rate before 17 January 2007; overnight repo thereafter.

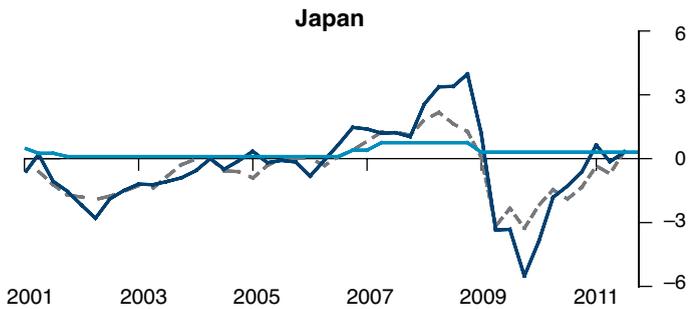
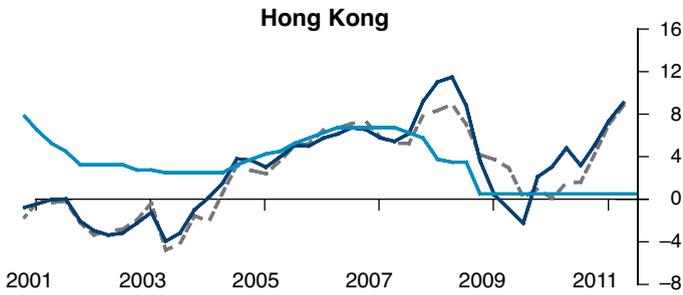
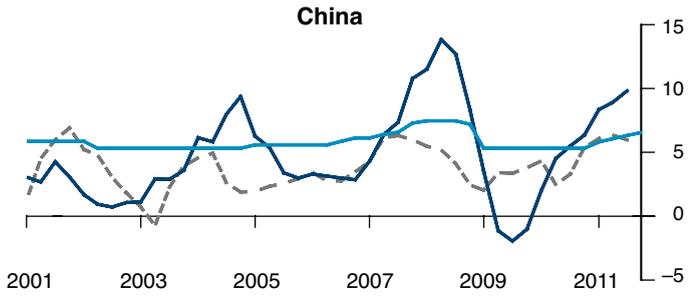
² Calculated using $i_t = i_t = r + \pi_t + 0.5(\pi_t - \pi^*) + 0.5y_t$ with r the average ex-post real policy rate over the sample; π_t the headline inflation rate; π^* the inflation target for six inflation targeting countries, 1% for Japan, 5-year moving average of headline inflation for other economies; y_t the output gap indicator. The real policy rate is the nominal policy rate minus annual core inflation rate.

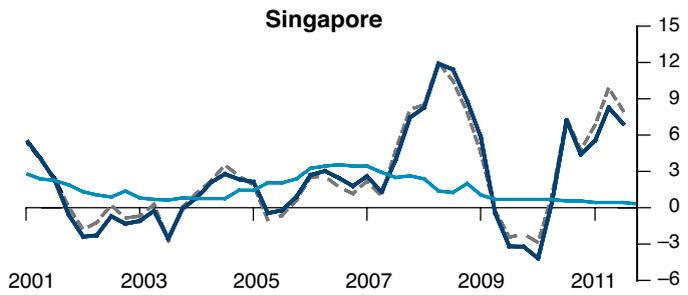
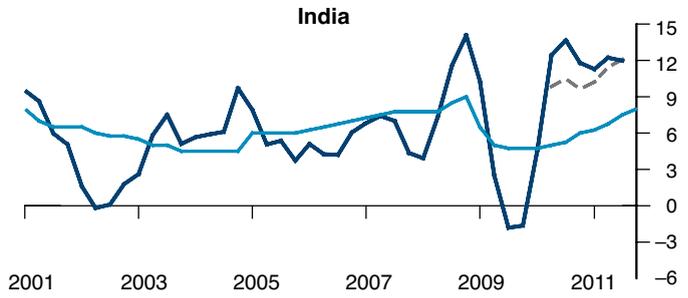
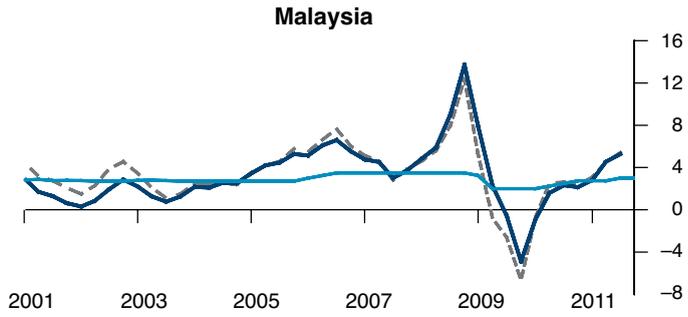
³ Calculated using the equation in footnote 2 with π_t the core inflation; π^* the inflation target for six inflation targeting countries, 5-year moving average of core inflation for other economies. Core inflation is the headline inflation excluding food and energy.

Sources: CEIC, Datastream, IMF IFS, BIS, national data.



Countries without an (explicit) inflation target





boom-bust dynamics with respect to goods and services prices as well as asset prices.

It is important to note that one justification for the accommodative monetary policy has been opening up of downside tail risks associated with a fragile global economy. Sovereign risk concerns in Europe and balance sheet adjustments –for governments, corporations and households– needed in the West, more generally, represent significant tail risks obscuring an otherwise fairly bright outlook in emerging Asia over the medium term. Concerns persist that Asian economies are particularly vulnerable to these risks as long as prospects of a sustained recovery in the West remain shaky. Proponents of this tail risk view would highlight the point that easy monetary policies have helped to boost confidence by providing tailwinds behind the regional recovery –helping it deepen and broaden– and thereby improving its resilience in case of another negative shock emanating overseas.

But this tail risk justification for keeping monetary policy accommodative is likely to weaken over time. As the global economy achieves a more sure footing, the economic and financial tail risks from overseas will fade and it is important for the Asian policy stance to adjust accordingly. Even if the global economy were to remain mired in subpar performance, the balance of risks may nonetheless shift as concerns about the external risks are supplanted by domestic risks of overheating and boom-bust dynamics.

- Drawing Some Tentative Conclusions about the Design of Monetary Policy Frameworks –Revising the Precrisis Consensus

The policy responses in the crisis have highlighted the differences between policy priorities in normal times and those during period of financial stress. Prior to the crisis, a consensus was forming about how central banks should respond. Central banks were expected to respond gradually over time to inflation deviations from their implicit or explicit targets and the state of the business cycle. This behavior was exhibited in both advanced and emerging market economies in the decade before the crisis. As economies overheated and inflation pressures grew,

central banks moved policy interest rates gradually upward over an extended period. Often the policy moves were in 25 basis point increments. Overall, monetary policy responses appeared to be rule-based, gradual and signaled in advance.

What is remarkable is that the policy responses to the crisis were at such odds with the precrisis consensus. The monetary policy responses were bold and front-loaded, often including big moves in policy interest rates. In addition, unconventional measures were taken simultaneously to address particular stresses in financial markets that were adversely affecting the monetary transmission mechanism.

This approach demonstrated the importance of state-contingent monetary policy strategies. During normal times, monetary policy can be gradual and preannounced. During periods of extreme stress, policy needs to be much more discretionary, front-loaded and bold.

These strategies, however, leave many questions open. To what extent should such state dependence be explicitly incorporated in existing policy frameworks? To what extent should this be rule-based rather than being left to the discretion of the policymakers? Is there a moral hazard associated with pre-authorizing monetary policy tools to deal with unconventional situations? How does one weigh the moral hazard risks with the critical need for a quick response at the onset of a crisis? The answer to such questions may vary from economy to economy.

Three Price Stability Challenges in Asia

So far, this is a success story for the region's central banks. Asian central banks adopted monetary policy frameworks over the past decade that have by and large worked well both to ensure price stability during the precrisis period and to navigate the shoals during the international financial crisis. This, of course, does not mean that there is no room for improvement.

Indeed, the inflation challenges seen in 2011 raise concerns that existing monetary policy frameworks in Asia may be prone to procyclicality. In this section, I highlight three key aspects of the policy environment that may promote inflation volatility and hence deserve attention:

- How should Asian central banks deal with commodity price booms?
- How should Asian central banks operationalize their financial stability mandates without jeopardizing price stability?
- How should Asian central banks address growing imbalances arising from the uneven global recovery?

Dealing with Commodity Prices

In the past five years, Asia has experienced two rounds of soaring commodity prices. This has raised a range of domestic policy challenges, especially with headline inflation persistently exceeding core inflation (Figure 8). Should central banks focus primarily on core or headline inflation? More generally, how should central banks respond to commodity prices?

One operational approach is to tighten monetary policy sharply at the first sight of a commodity price boom. Ideally, this would curb rising headline inflation pressures and, thereby, forestall second-round inflation effects (i.e., a wage-price spiral).

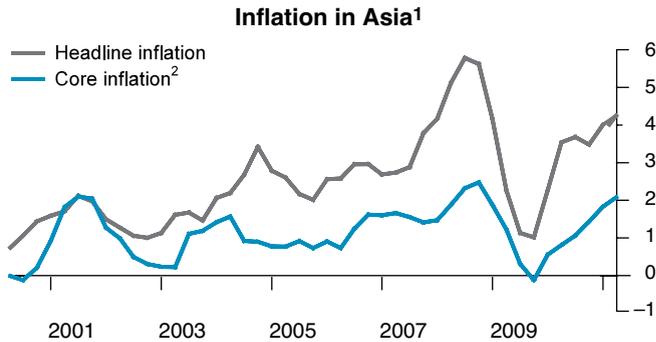
Another possible approach is to look through the commodity price gyrations, as they are relative price shifts and should only have a transitory impact on inflation. This would argue for greater weight being given to core inflation and medium-term inflation expectations.

Both approaches have their pros and cons. For example, responding aggressively to headline inflation can lead to volatility in policy rate changes, which could prove too disruptive. Prior to the crisis, central banks in the region tended to move policy rates incrementally over prolonged periods –both on the upside and the downside. This would suggest that central banks were responding to a less volatile inflation guide, such as core inflation.

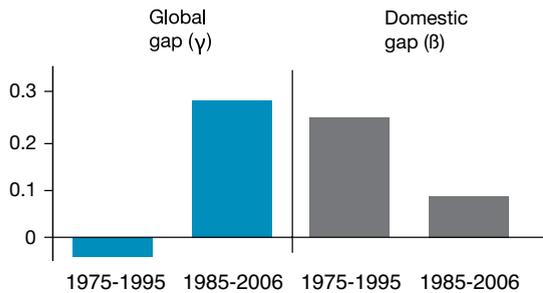
However, responding to core inflation may lead to a delay in responding to incipient inflation pressures before they become embedded in factor market prices, especially when headline inflation exceeds core inflation for extended periods of time, as has been the case in emerging market economies.

Figure 8

INFLATION AND GLOBAL SLACK



Rising importance of global slack³



Note: All country group aggregations were done using 2005 PPP and GDP weights.

¹ Inflation rates measured as annual changes.

² Headline inflation excluding food and fuel.

³ Regression coefficients γ and β for $GAP(t) = c + \beta DGAP(t-1) + \gamma GGAP(t-1) + \varepsilon(t)$, where GAP is the inflation gap, DGAP the domestic output gap and GGAP the import-weighted global output gap; the bars represent simple averages of the advanced industrial countries. See BIS (2006) for further discussion of the issues.

Sources: CEIC; Datastream; IMF; World Economic Outlook; OECD; BIS estimates; national data.

One difficulty in drawing strong conclusions at this time is that both commodity price booms in the past five years ended because of an unexpectedly sharp economic slump in the advanced economies. In 2008, the financial crisis eventually took its toll on global growth and commodity prices; in the recent run-up in prices, sovereign debt risks and a pronounced softening of the global recovery cooled commodity markets.

These large exogenous external shocks that ended the commodity price booms have left us wondering what might have happened if these adverse international spillovers did not come along and act as a powerful headwind against the inflation pressures. What would Asian central banks have had to do? What would have been the consequences?

The experience in India may offer some insights worth considering. Its economy and financial markets are relatively closed when compared with other emerging Asian economies from a globalization perspective. So, the adverse international spillovers have been more muted. From this perspective, it may not be such a surprise that it had a much bigger deterioration in its inflation picture in 2011 than other emerging Asian economies.

Moreover, in light of the fact that the two commodity price booms occurred in such a short period of time raises questions of whether the region will remain particularly prone to swings in the future. For policymakers, it is also important to consider the possibility that existing monetary policy frameworks may have contributed to the amplitude of the boom-bust commodity cycles. The evidence so far suggests the answer might be yes.

The evidence indicates that the recent commodity booms have been driven by strong growth performance in the emerging markets. The growth shifted global commodity demand out on an increasingly steeply sloped commodity supply curve. Two key arguments support this view (Inamura et al., 2011). First, a greater share of global demand is accounted for by emerging market economies. Second, emerging market demand tends to be more commodity-intensive than the demand in the advanced economies. This partly reflects the relatively high

demand for goods over services in the emerging markets.³ The bottom line is that, in the past two commodity cycles, strong global demand led to the surge in prices.

How should Asian central bankers respond? The answer to this question depends crucially on the source of the shocks driving commodity prices. If a surge in commodity prices is driven by a supply shock, the lesson learned during the experiences in the 1970s and 1980s apply: central bankers must focus on the impact of the rise in commodity prices on inflation expectations. There have been numerous examples of central banks that have largely looked through the gyrations of commodity price shocks, as long as the increase in prices did not appear to feed an increase in medium-term inflation expectations –the so-called second-round effects.

However, as noted above, soaring commodity prices in recent years do not appear to have been the result of a supply shock, but of a persistent global demand shock. In other words, the higher prices have been the result of a shift in global demand along a more steeply sloped aggregate supply curve. One telltale sign that it was mainly demand, and not supply, driving up commodity prices is that output grew robustly, even as prices of all types of commodities rose.

The following thought experiment highlights the nature of the policy trade-offs in this case of a positive global demand shock. Consider the existence of a hypothetical global monetary authority. The policy prescription is straightforward when the commodity price increases are signaling strong global aggregate demand. This hypothetical global monetary authority would tighten monetary policy by raising the real policy

³ What is not addressed when analysts suggest that “emerging market economies are responsible for the run-up in commodity prices” is the allocative efficiency of commodities. If emerging market economies are much more productive than the advanced industrial economies, shouldn’t commodities naturally flow to the emerging market economies? Put another way, couldn’t the run-up in prices be seen as an insufficient reduction in demand by the advanced economies?

rate sufficiently to counteract the underlying shift in aggregate demand. And, if calibrated correctly, non-inflationary sustainable growth would be achieved and commodity price pressures would abate. However, this prescription arguably stands in sharp contrast to the way in which many central banks addressed the run-up in commodity prices in 2006-2008 and in 2011.

What might account for this discrepancy between theory and practice? One difficulty in operationalizing this theoretical policy prescription at the national level is that a global demand shock may look like an external supply shock to policymakers.⁴ This would be particularly the case when an economy is a large net importer of commodities.

In this situation, there is a temptation for central banks to dwell on the external nature of the shock. For small, open economies, it might be difficult to see how its policy response alone would materially influence global demand. As a result, without some common understanding that leads to a simultaneous tightening of monetary policy across many economies, a domestic monetary authority would have the incentive to wait until surging commodity prices were showing up domestically in inflation expectations.

Of course, if every central bank were to follow this prescription, monetary policy settings would tend to be too accommodative during the upswing in commodity prices. In other words, without better central bank cooperation, there would be a tendency for central banks to delay in tightening policy and as a result fall behind the inflation curve in the way a global monetary authority would not.

This highlights the need for greater central bank cooperation to ensure that narrow domestic monetary policy incentives do not foster an environment of boom-bust cycles at the global level. How can we achieve such an outcome? Policy coordination would be one option. But, given

⁴ This may sound like pure semantics but it is also an important distinction in terms of communicating to the public the accurate conceptual framework being used by central banks; this may also be valuable for internal deliberations inside the central bank.

the reluctance to closely coordinate policy responses in the region, this option may be unrealistic. So, in the absence of overt monetary policy coordination, a key question is whether there is a cooperative strategy, which if generally agreed to, would minimize this procyclical tendency?

One possibility is to come to a common understanding that central banks should put more weight on headline inflation when commodity prices appear to be driven by global demand than on measures of inflation that abstract from food and energy prices. The benefits of this approach are that it can easily be incorporated into existing policy frameworks and that it would help to reduce the procyclical nature of policy response to commodity prices.

Naturally, there are factors other than global demand shocks affecting commodity prices that would need to be considered when redesigning monetary policy frameworks. A surge in commodity prices might reflect a supply shock or price frothiness due to speculation associated with commodity market financialization.

In the supply shock scenario, policymakers may want to heed the monetary policy lessons of the 1970s and 1980s. For instance, the experience with oil price shocks in the 1970s and 1980s taught monetary policymakers a key lesson: it is important to take strong policy actions to prevent second-round inflation effects, but otherwise ignore the gyrations in prices.

When this focus on second-round effects was applied during the second oil crisis, central banks such as the Deutsche Bundesbank, Bank of Japan and Swiss National Bank achieved much better inflation performance.

In the case of a growing financialization of commodity prices, the appropriate policy response seems consistent with this supply shock approach. Namely, the monetary authority with a credible medium-term inflation anchor can follow a strategy of constrained discretion, i.e., *looking through* the transitory price shocks when setting monetary policy. As long as inflation expectations remain well-anchored, the argument goes, relative price movements would lead to some volatility of headline inflation but underlying (e.g., core) inflation would remain on target without unnecessary gyrations in nominal policy rates.

These alternative interpretations of the drivers of commodity prices underscore the importance of identifying the nature of the shocks when determining the appropriate monetary policy response and especially when communicating the reason for the monetary policy decision to the public. Raising policy rates when inflation expectations appear to be well anchored is never an easy situation for central bankers to find themselves in. This is more likely to be the case when global demand shocks look like supply shocks from domestic perspective.

Of course, the extent to which all these factors matter will differ between net commodity importers and net commodity exporters. For commodity exporters, a rise in commodity prices would result in an increase in incomes and in incentives to boost production through more investment and hiring. This would argue for a more aggressive tightening response of monetary policy than in the case of central banks in commodity importing economies. In this latter case, higher prices would tend to have a less expansionary effect.

Taking all these considerations into account, what might this analysis suggest now? Commodity prices have come off their highs established in 2011. This suggests that there is less urgency to normalize policy rates. If, however, accommodative monetary policies in emerging economies and the advanced economies eventually revive global economic growth, it is possible that this break in commodity prices may end up being transitory. Staying vigilant to such a possibility is important for policymakers to stay ahead of the inflation curve.

Dealing with Financial Stability Mandates

Financial stability issues have taken on an increased importance in Asia since the international financial crisis. This is not to say that Asian central banks ignored them before. Quite the contrary. Asian central banks and regulators have had a long history of using tools which are now often referred to as macroprudential tools. Nonetheless, there has been renewed interest in the appropriate role that Asian central banks should take with respect to financial stability concerns.

How should financial stability concerns factor into existing monetary policy frameworks? It is also important to consider the appropriate conceptual frameworks within which to consider the trade-offs between price stability and financial stability. In particular, how should we think about the priorities for both price stability and financial stability, what tools are most effective and how do these multiple mandates present communication challenges? I will now turn to each one of these questions.

- General Issues

To agree that central banks have a financial stability mandate is a starting point, not an ending point in a discussion of monetary policy frameworks. To operationalize the financial stability mandate, there needs to be an understanding of the central bank's responsibilities and the governance rules that assign particular tasks to the central bank relative to other governmental bodies. In every case that I know, financial stability is not the sole responsibility of the central bank. Regulators and supervisors of banks, insurance companies, financial markets, etc., all have roles to play.

It should not seem odd that central banks naturally have some responsibility for financial stability. Price stability –a central bank's primary mandate– is not only an important objective independent of financial stability concerns but is also a precondition for financial stability. Therefore, at a certain level, there is no inherent contradiction between a central bank's role in maintaining price stability and its role in contributing to financial stability. In the best of all worlds, the goals of price and financial stability are self-reinforcing in a positive way.

It is also the case that financial instability has implications for price stability. Financial instability can result in entrenched deflation which, in turn, can lead to further financial instability as real debt servicing costs build. And there have been experiences where financial instability has led to runaway inflation expectations. This has been the case when markets saw no alternative other than monetization of the problems. In either case, financial instability and price instability can generate a vicious circle. Such linkages provide a clear justification for a pivotal role for central banks in ensuring financial stability.

A key question is what should central banks –using their policy tools and central bank balance sheets– do, above and beyond ensuring price stability to contribute to financial stability?

It is important to understand that addressing financial stability concerns with central bank tools can lead to some compromise on short-term inflation objectives. Keeping policy interest rates below what inflation and output concerns would alone justify for too long and expanding the balance sheet too much raises inflation risks. This policy dilemma highlights the need for central banks to prioritize their mandates for both price stability and financial stability.

Assuming a social, economic and political consensus for increased central bank responsibility for financial stability, a number of operational issues need to be addressed. In this short space, I will highlight only three key issues relevant to Asian central banks. First, what priority should a central bank place on financial stability vis-à-vis price stability? Second, what tools should be used? Third, does a greater role for financial stability significantly elevate communication and accountability challenges?

- Preferences for Price Stability and Financial Stability

- Taking on the Trade-offs

What priority should a central bank place on financial stability? This comes down to the specification of preferences for financial stability in monetary policy frameworks. Conceptually, these preferences summarize the governance arrangements that the government (implicitly or explicitly) agrees to with the central bank. To illustrate the importance of getting the preference ordering right, it is useful to consider a few alternatives.

At one extreme is a view that price stability takes primacy over all other objectives. This is sometimes referred to as a lexicographical approach (Fischer, 2008). Under this view, central banks focus exclusively on inflation control as long as inflation falls outside the preferred target range. If in the target range, however, then central banks would use their tools countercyclically to nudge economic activity towards its sustainable growth path. And, only if inflation and output were sufficiently

close to their objectives would central banks then turn to financial stability concerns (and other issues such as exchange rate volatility).

This prioritization scheme has some appeal for central banks that see the inflation objective as paramount. If a credible framework, it would go a long way to build central bank credibility for price stability. But some might be tempted to refer to such preferences as those belonging to inflation nutters. To disregard the state of the business cycle and the extent to which there are financial stability risks when inflation is a bit too high or a bit too low seems to be at odds with the traditions of Asian central banks.

Alternatively, central bank preferences may reflect a smoother trade-off between price stability and financial stability, even if they were state contingent. Such preferences might capture the notion that central bankers may by and large ignore financial stability issues during normal times but elevate the issues during turbulent times.⁵ During times when financial instability threatens to severely impact output and inflation dynamics beyond the conventional forecast horizons, central banks would factor such considerations into their decisions about the appropriate monetary policy stance. Operationalizing this approach is still quite fraught with difficulties. To formalize such monetary policy responses, we need a much better understanding of crisis dynamics (Nakornthab and Rungcharoenkitkul, 2010) and some understanding of the governance arrangements that arise when financial regulators fail to achieve their goals and crisis management largely falls to the central bank (Filardo and Genberg, 2010b).

Finally, when addressing the tail risks of financial instability, it is important that central banks act symmetrically on the way down as well as on the way up. We have seen central banks in the region act aggressively as the international financial crisis intensified and spilled over geographic borders. To prevent a systematic procyclical bias during the recovery phase, central banks need to tighten policy preemptively as the tail risks fade. The evidence to date however suggests that the

⁵ One way to be more precise about the preferences is to derive them from a microfounded macroeconomics model (e.g., Disyatat, 2010).

policy response may be asymmetric, i.e., easing aggressively on the way down and tightening very cautiously on the way up. If sufficiently asymmetric, the accommodative monetary policy may sow the seeds for financial instability in the future.

- **Monetary Policy Tools – Complements or Substitutes**

The desire of a central bank to promote both price stability and financial stability may also be limited by the number of effective tools at its disposal. In this section, I focus first on the use of policy interest rates and then on the use of macroprudential tools. The conventional argument against using a single monetary policy tool to pursue multiple goals is embodied in the classic assignment problem –which emphasizes the need for one independent tool for each independent goal. The origin of this advice comes from the operations control literature. While the logic behind this proposition is mathematically precise, the applicability to practical central banking is less than perfect for two important reasons. First, as argued above, the multiple goals of central banks sometimes are not completely independent.

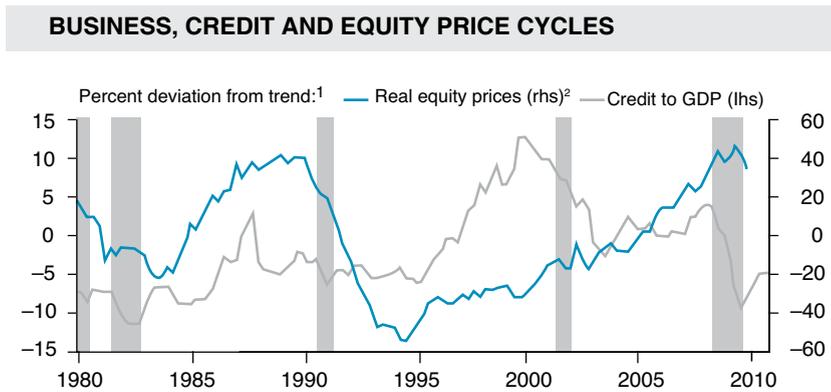
Take, for example, the goals of financial stability and price stability. Achieving price stability is rather difficult if the economy is suffering financial instability. Second, time horizons matter. While acute financial turmoil may require aggressive monetary accommodation in the very short-run, this does not mean that medium-run price stability goals have to be jettisoned. It means that some of the discretion used to address near-term problems will be constrained, as time goes on, as to how much the central bank can do while preserving price stability.

But central banks need to be careful not to conclude that policy interest rates can do it all. While low policy interest rates can help support financial stability in periods of turmoil, there are inherent limits to their usefulness. When business cycles and financial cycles are synchronous, policy interest rates may be effective in, metaphorically, killing two birds with one stone. While there are times when the two cycles move together, we have to remember that the cycles empirically can have very different paths over the

longer run (Figure 9). More recently, the desire to keep policy interest rates in Asia low despite the robust recovery has introduced another dimension to the policy mix: the interest in macroprudential tools as the first line of defense to restrain credit growth, and hence economic activity, without having to resort to raising policy interest rates. This approach is based on the conceptual view that macroprudential tools and policy instruments are substitutes. While there is some evidence over short periods of time to support this view, the nature of the tools and the nature of the business and financial cycles argue against this conclusion as a general proposition.

In addition to the macroprudential tools, several central banks (e.g., China and the Philippines) have been relying on reserve requirement ratios more heavily than in the past to lock up liquidity in the financial system. This tool can be useful in liquidity control but it also acts as a tax on the banking system. High reserve requirement ratios provide

Figure 9



¹ Trend as calculated by HP filter with Lambda set at 400,000. Vertical shading represent periods between National Bureau of Economic Research's peak and through dates.

² Real equity prices calculated by deflating national stock indices with the consumer price index.

Source: IMF IFS.

incentives for savers to circumvent the implicit tax on deposits held in banks by moving into non-bank financial institutions.

The evidence from Asia indicates that persistent macroeconomic imbalances require time-tested macroeconomic tools in order for central banks to be confident of achieving lasting relief –i.e., appropriate settings of policy interest rates, sustainable fiscal policies and flexible exchange rates. Financial imbalances require sound micro- and macroprudential tools that are well calibrated. It is important to rely on the right policy tools for the right problems. Over time, macroeconomic tools and macroprudential tools are complements, not substitutes.

- **Communication and Accountability Challenges**

Clear communication and accountability for actions are two important elements of credible monetary policy frameworks. Multiple mandates can make this a challenge, especially if actions taken to address one mandate compromise the effectiveness of achieving the second.

In the case of overheating when asset prices are soaring and inflation pressures are surging, a tighter monetary policy addresses both concerns simultaneously. Communicating these reasons for tightening monetary policy can still be a challenge but it is clear that economic overheating and the feeding of financial stability risks calls for higher policy interest rates.

The challenges are much greater if the tail risks of financial instability are flaring up as inflation pressures rise –as has been the case in the past year in Asia. With sovereign risk concerns reaching an acute stage in Europe and renewed prospects of a double-dip recession in the United States, another pessimistic wave of global risk aversion could not be ruled out in 2011. At the same time, emerging Asian economies continued to experience a fairly robust recovery, especially in the largest economies. The tail risks of global contagion called for a somewhat easier stance of monetary policy; the inflation picture, in contrast, called for a continued pace of policy rate normalization.

For explicit inflation targeters, this challenge may raise issues of credibility. As tail risks rise, central banks may want to take out some

insurance against such tail risks. In terms of the stance of monetary policy, that typically means that policy interest rates would be kept below what they would have been based solely on price stability concerns. Moreover, there is also the issue of tail risks and accountability of inflation performance. Conceptually, taking out insurance against these tail risks means that if these risks do not materialize, the *ex post* stance of monetary policy would have been too accommodative; of course, it is important to recognize that *ex ante* it might have been set appropriately.

Even though financial market participants may understand this distinction between *ex ante* and *ex post*, it may be more difficult to explain this to the general public, especially when inflation surges above target. The *ex post* justifications may be seen as a convenient way to rationalize a mistake. This possibility calls for clear communication *ex ante*, i.e., either at the time that tail risks are rising or when designing monetary policy frameworks that explicitly incorporate such contingencies. The past decade or so is replete with examples of well-anchored long-term inflation expectations, even when inflation targeters persistently missed their targets. Clear communication has been the key to the success. Over time, however, credible monetary policy frameworks are more likely to develop in an environment where word and deed are consistent.

The communication challenges, daunting as they may be at times, also put a premium on central banks refraining from promising too much with respect to financial stability. Not only are there natural trade-offs between financial stability and price stability at times, but also other government policymakers may have a comparative advantage in dealing with financial stability issues. These policymakers include the financial regulators and supervisors. Ideally, financial stability issues would fall into their purview, freeing central banks to focus exclusively on price stability. However, experiences in the past few decades have made it clear that other authorities may not always take sufficient actions to ensure financial stability.

In periods of financial instability, central banks will naturally be called on to play a pivotal role in crisis management. Clarity about the

role of the central bank in advance of a crisis period can clarify the action plan during a crisis. Some of this clarity, of course, has to be judged against the risks of moral hazard. Promising to prop up markets may create incentives for private investors to take one-sided bets in financial markets which, in turn, may increase the odds of financial turmoil. An alternative approach is to engage in *constructive ambiguity*. The costs and benefits of constructive ambiguity are still debated. The possibility of boom-bust financial cycles and the enhanced responsibilities of central banks with respect to financial stability both indicate that existing monetary policy frameworks in Asia may need to build in more flexibility.

Strict inflation targeting frameworks may be too constraining to address the full range of relevant policy risks, as discussed in Filardo and Genberg (2010b). The risks that typically apply to output and inflation are fairly well understood by central banks and researchers –these are in the category of the known unknowns. Those risks associated with fragile financial systems are less well understood –these are largely in the category of the unknown unknowns; it should be noted, though, that in the postcrisis period considerable progress is being made to clarify the nature of these types of uncertainty.

These two different types of risks might call for some refinements of monetary policy frameworks in emerging Asia in the direction of the multi-pillar approach of the European Central Bank and the Bank of Japan. Of course, one size does not fit all. This general approach would have to be tailored to each central bank's particular economic and financial environment. To the extent that such frameworks capture the behavior of Asian central banks, explicit adoption could raise accountability during times of financial stress and ultimately add to central bank credibility.

Dealing with an Uneven Global Recovery

Strong forces are preventing a speedy and balanced global recovery. The uneven nature of the global recovery is likely to persist for some time and presents considerable challenges to emerging market economies

in general and emerging Asia in particular. So far, emerging Asia has recovered despite lingering problems in the United States and Europe. And most forecasts now suggest that the United States and Europe will continue to log subpar growth for years to come with fiscal and financial system problems threatening to scuttle any signs of a nascent sustained recovery. Emerging Asia, on the other hand, is expected to grow robustly, especially if the region is able to encourage an orderly rotation of demand from an export orientation to sources of domestic demand.

Let me briefly describe four policy challenges that arise from the uneven global recovery.

- Easy Money, Fear of Floating and Capital Flows

As noted above, the region has pursued an accommodative monetary policy stance for quite a while, with real policy rates either low or even negative. This conclusion is also consistent with evidence from estimated Taylor-type rules. To some extent, the accommodative policy is explained by the tail risks brewing offshore, especially in Europe and the United States.

Part of the explanation reflects a fear of floating.⁶ The region has kept interest rates low to prevent a widening of international interest rates that would naturally promote capital flows to the region. So far, however, capital flows into the region have been, on the whole, much less disruptive than expected earlier. One reason capital flows to the region have been more moderate than expected has been the relatively high level of global risk aversion (Forbes and Warnock, 2011). This does not suggest that the fears of disruptive capital flows have truly dissipated. Given the strong medium-term fundamentals in the region, it is still possible that a veritable wall of liquidity could hit the shores of Asia. This might be the case if the global recovery proved to be much stronger than currently envisioned and global risk aversion declined markedly.

⁶ This behavior is consistent with the fear of floating hypothesis. For issues in SEACEN economies, see Pontines and Siregar (2010).

One approach to slowing strong capital inflows is to keep policy interest rates low enough to dissuade international investors from shifting their portfolios toward Asia. But low interest rates promote rapid credit growth, frothy asset prices and overheating in the region. In such an environment, a risk-taking channel (i.e., one that leads to a rapid buildup in leverage) could be activated (Borio and Zhu, 2008). Another approach is to change the monetary-fiscal mix. Tighter fiscal policy could help mitigate the impact on the longer-end of the yield curve to an increase in short-term interest rates.

Finally, more flexible exchange rates discourage carry trade capital flows to the region for any given stance of monetary policy. Of course, the adoption of a more flexible exchange rate regime has to be weighed against the associated costs of greater exchange rate volatility.⁷

- External Threats Still Worrisome

At the present time, risks brewing outside Asia remain elevated. The housing-related problems in the United States and issues of fiscal sustainability and sovereign risk concerns in the G3 do not seem to be getting resolved quickly. There certainly is a chance for a surprise on the upside but much of the concern is on the downside. The prospects for a double dip, a jump in global risk aversion and considerable volatility cannot be ruled out. In such an environment, policy frameworks in Asia may need to become more defensive and respond more symmetrically to tail risks as they rise and fall. As noted above, responding to tail risks may complicate central bank communication with the public, especially for inflation targeters. If the tail risks do not materialize, inflation is likely to exceed the central bank's target, at least in the near term.

- Further Rounds of Quantitative Easing, QE

Recent research by Chen et al. (2012) finds evidence of significant spillovers of QE programs in the United States to emerging Asia (Table 1). One interpretation of this research is that as long as existing

⁷ For example, see CGFS (2009) and Engel (2010).

exchange rate regimes remain in place, further rounds of QE and very easy monetary policy in the West will have important implications for the policy environment in Asia. At the same time, official Asian purchases of US Treasuries drive down long-term yields and tend to strengthen the dollar (Warnock and Warnock, 2009). Foreign official holdings of US Treasuries run around USD 2.5-3 trillion (Turner, 2011).

As long as policy interest rates in emerging Asia track the low rates in the West and long-term rates are kept low, the threat of excessive domestic credit growth and asset price boom-bust dynamics will be ever present. Of course, if Asian central banks pursue the option to raise policy rates, this would lead to less domestic credit creation. But such an approach would attract more capital inflows. This suggests that Asian central banks responding to future QE programs in the West, using the policy interest rates alone, cannot choose the size of the resulting credit boom; they can choose only the source of the credit creation. The lower the domestic policy interest rate, the greater the domestic share of credit creation relative to external capital inflows.

In addition, QE programs also raise the risk of excessive offshore USD credit creation. To date, there has been a sharp increase in cross-border USD lending to Asians (Figure 10). At the same time, USD liabilities have not risen. This suggests that there could be a growing currency mismatch being taken on the books of banks. It also suggests that even though there is only modest evidence that QE in the US has led to massive carry trades from US-domiciled banks, there appears to be a spill-over channel through offshore US dollar credit creation (Borio, McCauley and McGuire, 2011). This channel exists because of the internationalized nature of the US dollar and needs to be closely monitored.

As noted above, Asia has been relying on macroprudential tools to control credit growth, credit quality and economic activity for a while now. From a macroprudential perspective this is sensible. But over time, as long as real lending rates are low, the financial system may find it easier and easier to evade some of these administered measures. This suggests that monetary authorities will eventually have to rely more on policy interest rates –and allowing currency appreciation– to prevent

Table 1

CUMULATIVE TWO-DAY CHANGE AROUND ANNOUNCEMENT DAYS OF QE FOR ASIA¹

Announcement period	Total amounts (billions)	Gov't 2-year yields (bps)	Gov't 10-year yields (bps)	Corp bond yields ² (bps)	Sov'gn CDS premia ³ (bps)	Equity prices (%)	FX against USD ⁴ (%)	Commodity prices ⁵ (%)
US to November 2008 to November 2009	1,400	-45.37	-79.70	-52.90	-46.92	10.75	4.49	-2.57
QE ² August 2010 to November 2010	600	-9.06	-9.16	-14.84	-4.80	1.53	-0.36	-2.95

¹ Simple averages of China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, the Philippines, Singapore and Thailand. Due to data availability, 2- and 10-year yields exclude China, Indonesia and Malaysia; for sovereign CDS premia, data unavailable.

² Excluding Indonesia.

³ Excluding India and Singapore.

⁴ A positive change indicates an appreciation against the US dollar.

⁵ S&P GSCI composite index, in US dollar terms.

Sources: Bloomberg; Datastream; Markit; national data; BIS calculations. From Chen et al. (2012).

macroeconomic imbalances from growing. Letting regional policy interest rates track those in the West, especially in the case of future rounds of QE, may become a more risky strategy going forward. Macroprudential policies cannot effectively substitute for macroeconomic rigor.

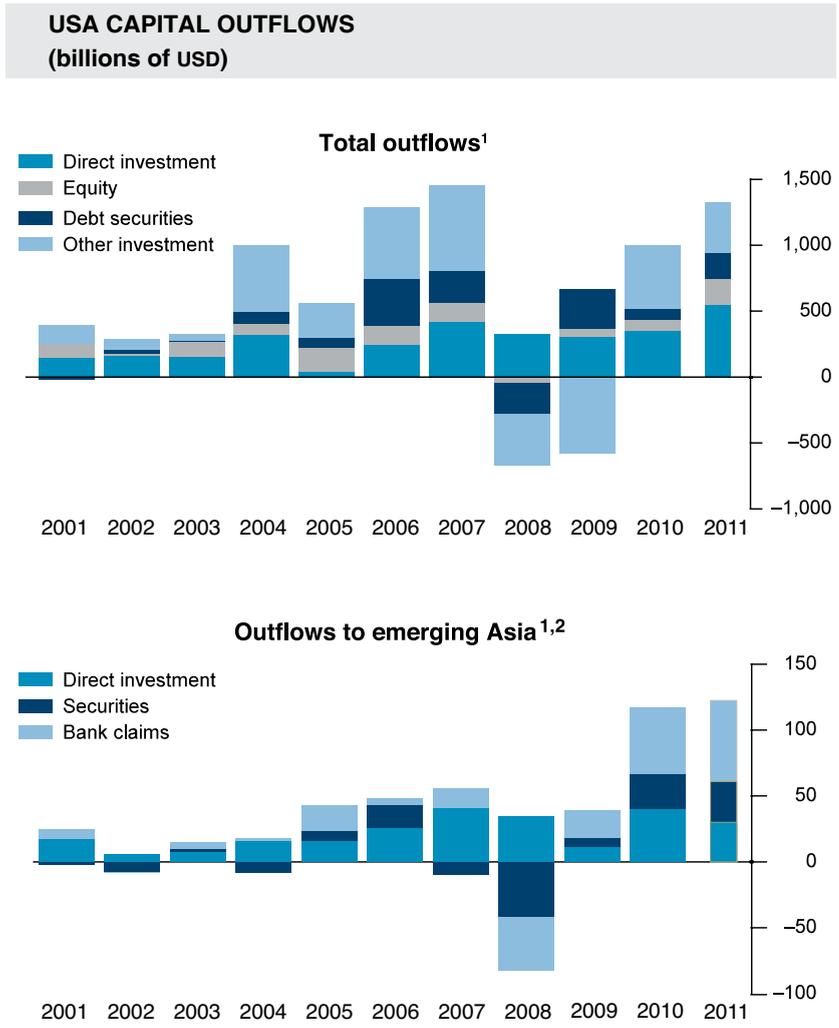
- Foreign Exchange Asset Accumulation, Central Bank Balance Sheets and Financial Stability Risks

Finally, there are the challenges arising from the exchange rate regimes in Asia and its implication for central bank balance sheets. In the past decade, the region has been accumulating massive foreign reserve assets (Figure 11). Instead of reflecting the need to build up more precautionary reserves, much of the buildup in recent years has been a byproduct of exchange rate regimes. Policymakers have chosen regimes that lean against exchange rate pressures –building up reserves during periods of appreciation pressures. Ideally, reserves would move up and down over time assuming symmetric foreign exchange rate pressures on the upside and the downside.

Given the current prospects for an uneven global recovery, one-sided exchange rate pressures may persist for quite a while. In addition to the increasing carrying costs of these huge foreign reserve assets (Filardo and Grenville, 2011), subtle financial stability risks may also be building in emerging Asian financial systems. For example, as central banks sterilize the impact of the purchase of foreign reserve assets, central banks create lazy assets in the form of sterilization bonds, required reserves and excess reserves. As these low-yielding lazy assets grow, the financial system has an increasing incentive to transform them into productive ones. Unless the central bank has complete control over them and can truly lock them up, these assets may contribute to the activation of a significant risk-taking channel, especially when global risk aversion returns to more normal levels. These forces could compromise the effectiveness of monetary policy in reining in future credit growth.

In sum, the uneven global recovery presents considerable challenges to Asian central banks and to emerging market economies more

Figure 10



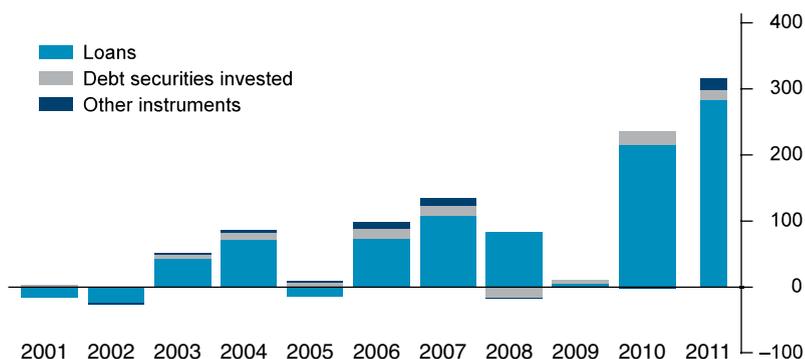
¹ 2011 figure based on annualized Q1 data.

² US-owned private assets vis-à-vis emerging Asia-Pacific.

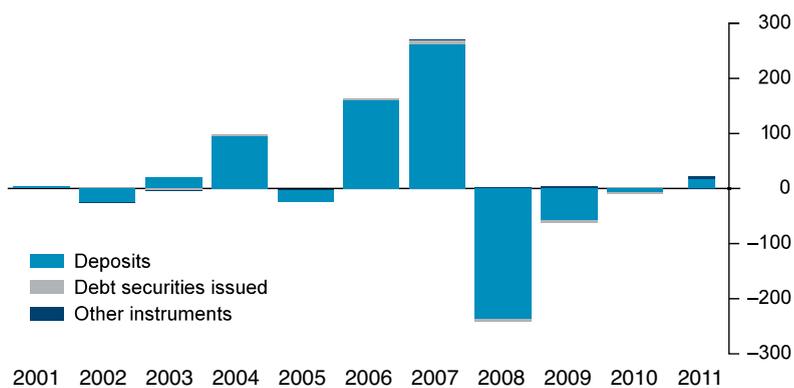
Sources: IMF IFS; US Bureau of Economic Analysis.

USD FLOWS OUTSIDE USA^{1, 2}
(billions of USD)

Assets of non-US banks vis-à-vis Asian residents



Liabilities of non-US banks vis-à-vis Asian residents



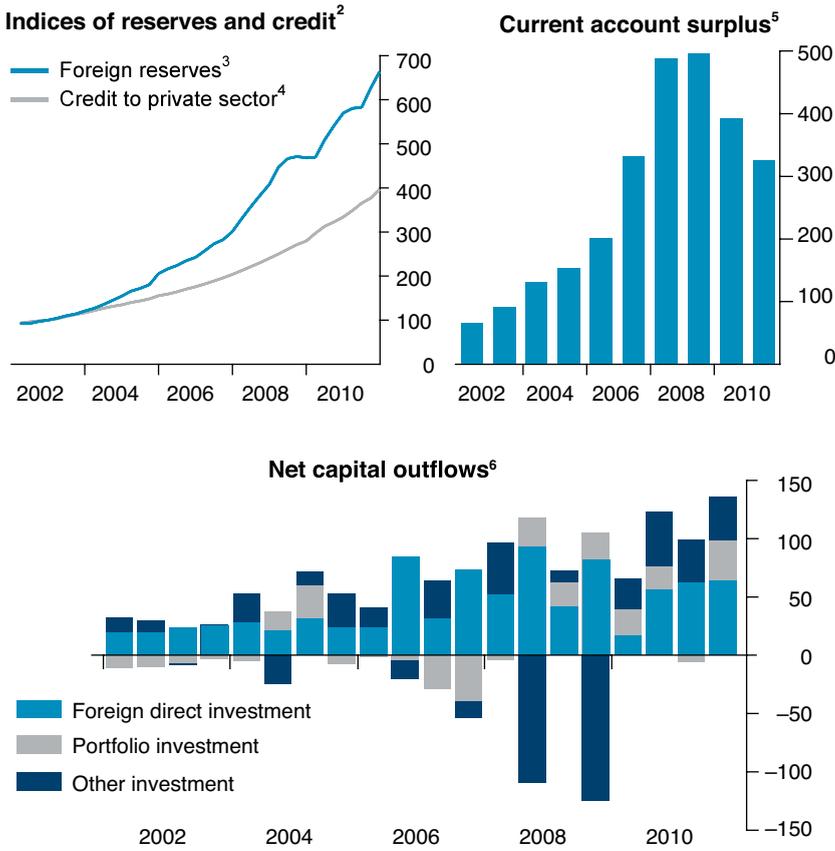
¹ 2011 figure based on annualized Q1 data.

² Estimated exchange rate adjusted changes of total positions of BIS reporting banks vis-à-vis all sectors in emerging Asia-Pacific.

Sources: BIS locational banking statistics.

Figure 11

FOREIGN RESERVES, CREDIT AND CAPITAL FLOWS IN ASIA¹



¹ China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, the Philippines, Singapore and Thailand.

² End 2001 = 100.

³ In US dollar terms; sum of the economies listed.

⁴ Weighted average based on 2005 GDP and PPP exchange rates.

⁵ In billions of USD; sum of economies listed.

⁶ Positive (negative) indicates inflows (outflows).

Source: IMF IFS.

generally. While some of the policy measures taken to date appear to have worked well, there is a risk that some of the administered measures will lose their effectiveness over time. This suggests that more traditional macroeconomic tools –policy rates and flexible exchange rates– will have to play a much bigger role going forward.

Conclusions

The main conclusion of this paper is that Asia has adopted monetary policy frameworks that have been successful in delivering credible price stability. Of course, there will be setbacks from time to time. Short-run inflation will rise above implicit or explicit targets. But the preference for low, stable inflation over the medium term has been clearly demonstrated in the region again and again.

The main challenges now arise mainly from the external environment. And these external developments are largely out of the control of the Asian central banks, as the international financial crisis revealed. The advanced economies have yet to show clear evidence of a robust recovery. Global risk aversion remains high and has been rather volatile. QE and other unconventional policies in the West that are still in the pipeline will have implications for the policy trade-offs faced by monetary authorities in the region.

There is a temptation to call for much more flexible exchange rate regimes. Greater flexibility in the medium-term is needed to meet some of the challenges currently being faced in the region. But volatile exchange rates have costs, especially in low income economies (CGFS, 2009). Major distortions could develop over time. Each country would have to assess these associated costs and benefits to determine the desirability of such a change.

One might be also tempted to argue for more rules in policy frameworks and less reliance on discretion. However, upon reflection, this choice is not so much captured by the traditional rules versus discretion debate. Arguing for more rules-based policy frameworks assumes that 1) one knows the best rules, and 2) that the domestic monetary authorities have the power to implement such rules. The former calls for more

research to better understand the policy tradeoffs and for more concrete efforts to operationalize the research. The latter assumes that domestic policy decisions are largely determinant –or at least, that the level of international cooperation is sufficient to ensure the preferred outcome.

Notwithstanding these concerns, this paper has highlighted three important challenges now facing regional central bankers which may be made somewhat easier if more explicit rules were adopted: the monetary-policy-induced procyclicality of commodity price dynamics, the operationalization of financial stability mandates, and the uneven global recovery. What types of rules might these be? The paper points in particular directions that deserve some consideration.

With regard to commodity prices, central banks may be able to overcome some of the inherent procyclicality at this time by adopting monetary policy frameworks that call for a more aggressive monetary policy response when soaring commodity prices are being driven by unsustainably strong global demand.

Greater central bank cooperation may be needed to achieve the favorable outcome in this increasingly globalized world.

With regard to financial stability, considerable efforts have been made in the region to incorporate such concerns in policy frameworks. But more needs to be done. In particular, central banks may be able to realize greater benefits by clarifying to the public their likely operational responses to tail risks of financial instability. Of course, this is easier said than done. In part, we need more research on the nature of financial instability and the interactions with monetary policy. In Asia, the international financial crisis and the recent growth in offshore US dollar credit growth underscore the point that we also need to have a better understanding of the interactions between the financial systems here and the international role of the US dollar.

Finally, with regard to the uneven global recovery, the sustained increase in foreign reserve assets on the balance sheets of emerging market central banks is a signal that there may have been excessive resistance to exchange rate appreciation pressures over the past

decade. A reorientation of the existing exchange rate regimes may be needed. As discussed in Filardo and Grenville (2011), this does not necessarily imply that the best alternative is a fully free-floating exchange rate. Various options are possible. For example, intervention could be based on an assessment of the fundamental equilibrium exchange rate (FEER).⁸ This, of course, would need to reflect views about sustainable current account positions and capital flows which are the counterpart of this position. Given the uncertainty in measuring the FEER, it might best be seen as a band or range, perhaps quite wide if the uncertainties are great. In this case, foreign reserve accumulation would then be more rules-based and exhibit more symmetry than currently is the case in a number of economies. Operationally, when the exchange rate approaches the edges of the band, central banks would intervene. If the band is centered on the FEER, over time such interventions would be two-way and roughly symmetric.

All these options provide some food for thought about how to refine existing policy frameworks in emerging Asia and deserve some thoughtful consideration. There are certainly other options and other challenges. But these would all help to preserve price stability and foster conditions that would contribute to more balanced and sustainable global economic growth going forward.

⁸ See Williamson's BBC proposals (Williamson, 2000).

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Annex Table 1

INSTITUTIONAL FRAMEWORKS FOR MONETARY POLICY

	IT?	Targeting arrangement	Key policy rate	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
China	No	Reference to money growth targets	1-year deposit & loan reference rates	Excess reserves as a tool for reference
Hong Kong	No	Currency board: target range HKD 7.75-7.85 per USD; centered on HKD 7.8 per USD.	USD/HKD spot rate	USD/HKD spot rate within Convertibility Zone
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 rate; reverse repo rate is pegged to repo rate as 100 bps lower.	Weighted average overnight call money rate
Indonesia	Yes, 2000	Inflation targeting: inflation target for 2008, 2009, 2010 and 2011 is, respectively, 5±1%, 4.5±1%, 5±1% and 5±1% for y-o-y 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%, centered around 1%).	Uncollateralized O/N call rate target	O/N call rate
Korea	Yes, 1998	Inflation targeting: target range of 3± 1% for 2010-2012 in terms of 12-month change in CPI.	Bank of Korea base rate	O/N call rate
Malaysia	No	Macroeconomic stability 6-8 days ahead.	Overnight policy rate	Avg O/N inter-bank rate

	IT?	Targeting arrangement	Key policy rate	Operating target
New Zealand	Yes, 1990	Inflation targeting: target range of 1-3% 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), 4±1% (2011) for the average year-on-year change in the CPI over the calendar year.	O/N repo & reverse repo rates	O/N repo & reverse repo rates
Singapore	No	Since Apr-2010, MAS has shifted the undisclosed S\$NEER policy band from that of a zero percent appreciation to one of modest and gradual appreciation, As of Oct-2010, the policy stance remains supportive of economic growth while seeking to cap CPI inflation at 2-3% in 2011 from 2.5-3.0% in 2010.	Policy band for S\$ NEER	Singapore dollar NEER
Thailand	Yes, 2000	Inflation targeting: target range of 0.5-3.0% for year-on-year percentage change of core inflation in years 2009, 2010 and 2011.	1-day bilateral RP rate	1-day bilateral RP rate

R. Sean Craig

Lessons of the Global Financial Crisis for Monetary Policy Frameworks

Introduction

The 2008 global financial crisis was followed by a sovereign debt crisis in Europe that forced central banks to continue operating in a dislocated global financial environment. The inflation targeting paradigm that shaped the institutional design of central banks over the last two decades remains relevant but needs to adapt to this more challenging environment. A number of central banks at the epicenter of the 2008 crisis adopted some radical innovations in the conduct of monetary policy. What are the lessons from this experimentation for the redesign of monetary policy frameworks for central banks in Asia and Latin America? While they escaped much of the fallout from these crises, they can benefit from the lessons learned by these other central banks on how to adapt their frameworks to cope with future crises.

This short paper first summarizes the key features of the emergency response by central banks to the crisis in section II. Section III then discusses the difficulties they faced exiting these extraordinary measures and how this can be avoided in the future in the redesign of monetary policy frameworks. Section IV distills the lessons from the crisis that could be reflected in monetary policy frameworks. Section V focuses on specific monetary policy tools that central banks might want to develop

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to meet new needs. Section VI considers institutional reforms at central banks that might be needed in the revamp the monetary policy framework. Section VII concludes. The paper draws heavily on the extensive work done at the IMF on the lesson from the crisis and monetary policy frameworks.

Central Banks' Extraordinary Responses to the Crisis

The financial crisis confronted a number of central banks around the world with a severe disruption of financial market functioning, a rapid deterioration in economic activity and prospects, large shifts in capital flows, and sharp declines in commodity prices. How did they respond?

- i)* To meet the immediate priority of shoring up financial markets, central banks provided large amounts of liquidity by, for example, modifying liquidity provision arrangements to better meet exceptional needs, and by establishing new facilities to alleviate liquidity shortfalls in specific markets.
- ii)* Central banks also took extraordinary measures to ease monetary policy. In most countries, policy interest rates were cut rapidly to unprecedentedly low levels, in some instances down to the zero-bound. They also undertook wide-ranging unconventional monetary operations to avoid a collapse in aggregate demand.
- iii)* To cope with large capital outflows, central banks used a variety of tools to limit the impact on exchange rates and domestic financial systems, including large-scale foreign exchange market intervention, liquidity support in foreign exchange, and regulatory measures. In some countries, however, capital outflow pressures forced central banks to maintain interest rates at levels substantially higher than consistent with stabilizing domestic demand.

Inflation expectations remained remarkably stable despite the massive easing of monetary policy stances and, in some cases, large movements in exchange rates. This reflects the credibility of central banks' commitment to price stability that they built up over the past

two decades, which allowed them to ease aggressively without undermining market confidence in their longer-term inflation objective. With these lessons behind us, we now have to consider how to reform the monetary policy framework with the purpose of institutionalizing this capacity to respond effectively in case of disruptive effects of a financial crisis. These lessons come mainly from the advanced economies but emerging market central banks can learn from their mistakes and successes in deciding how to respond.

Difficulties Exiting Extraordinary Policy Measures

Reform the monetary policy framework must also address the problems faced by central banks in exiting extraordinary policy measures. Exiting from monetary crisis intervention policies involves a complicated balancing of policy measures that include fiscal and supervision policies as well as the monetary, which can delay exit. However, such delay entails significant costs and risks that mean that monetary crisis measures should be unwound as soon as conditions permit.

- i) Central banks may face pressure to use the emergency tools put in place during the crisis after it has passed. These include a variety of quasi-fiscal roles such as providing credit directly to the economy. These roles risk compromising central bank independence and monetary policy objectives.
- ii) Balance sheet monetary operations also pose financial risks to central banks owing to the buildup of risky assets on their balance sheet from large scale asset purchases or repo operations against lower quality collateral. If losses materialize and are large enough to threaten the financial soundness of central banks, their independence could be compromised by the need for recapitalization or budgetary support. Thus, these operations should be unwound as quickly as feasible.
- iii) Crisis measures can create lasting distortions in the financial system by favoring particular markets. Targeted intervention with specific market instruments in a crisis is sometimes necessary but can

result in misallocation capital and loss of information conveyed by prices in the intervened markets. Thus, the crisis-mitigating benefits of the emergency measures can be quickly outweighed these costs as markets normalize and, thus, need to be unwound.

iv) Large-scale systemic liquidity provision could crowd out money markets. Money markets can be supplanted by a large amount of excess reserves over a long period of time, shrinking the infrastructure needed for the efficient operation of these markets and leading banks to cut back on their own market-based liquidity management.

While many crisis measures need to be unwound owing to the risks and costs identified above, some could be retained because fill gaps in the range of tools in the precrisis framework. How effectively the monetary crisis measures can be unwound will be influenced by the design of the post-crisis monetary operations framework.

Lessons from the Crisis for the Monetary Policy Framework

The breakdown of monetary policy transmission mechanisms in the crisis highlighted the need to take into account the functioning of the financial system in implementing monetary policy. The lack of traction from policy rate cuts led central banks to implement a variety of quantitative easing measures. The crisis revealed gaps central bank monitoring of financial developments and vulnerabilities and the use of this information in calibrating interest rates and other policy instruments. How should central banks strengthen their analysis of the influence of the condition of the financial systems in the monetary policy transmission mechanism? The crisis provides several lessons:

i) Central banks may need to pay more attention to the longer-term effects of monetary policy. For example, they need to consider the possible effects of maintaining a low level of interest rates for a prolonged period of time. This increased the propensity of investors to take excessive risks. Asset prices, including property prices, can be

driven up to unsustainable levels, with potentially systemic consequences when prices correct.

- ii)* Central banks need to enhance their capacity to monitor and manage capital flows surges. Prior to the crisis, an aggressive search of yield led to large cross capital inflows into emerging markets. Sometimes, there was also an associated build up of concentrated positions by foreign investors in some markets. This increased the risk of market illiquidity when these positions are liquidated simultaneously, which could contribute to a broader loss in confidence and collapse in the exchange rate. The crisis highlighted the risks associated with large capital flows, the buildup of external imbalances and the potential for significant external financing difficulties from a sudden stop in capital inflows.
- iii)* Central bank policy has to anticipate the impact of crises on fiscal positions. Government deficits and debt ballooned during the global crisis to unsustainable levels in some countries. In this situation, fiscal dominance can emerge as a key risk to monetary policy and central banks' operational independence.
- iv)* Fiscal consolidation can pose a challenge for central banks when the financial system remains impaired in the aftermath of a crisis. The scope for monetary policy to provide offsetting support for economic activity is limited by a broken transmission mechanism or where weak central bank credibility and capital flight risk limits scope to cut policy rates. In this situation, unconventional monetary measures and macroprudential policies may need to be relied upon as a substitute for rate cuts.

Monetary Policy Tools to Be Added to the Operational Framework

During the crisis central banks had to rapidly innovate as existing traditional liquidity facilities proved too rigid in the face of problems in specific markets and institutions. As these shortcomings became apparent, new liquidity facilities were often introduced in an ad-hoc manner.

These could not be phased out, and attempts to do so sometimes had to be reversed, owing to lasting changes in financial systems such as the diminished capacity of domestic money and interbank markets and the heightened risk of financial market illiquidity. Liquidity management frameworks need to be reviewed with a view to rationalizing the expanded range of facilities. First, modifications to traditional (precrisis) facilities to make them more flexible need to be identified. Second, central banks need to decide whether, and how, to institutionalize new monetary tools that proved effective in the crisis to make them permanent so they will be available in the event of another crisis.

Modifications to liquidity management frameworks should aim at maintaining stable monetary conditions so the price stability objective is not compromised, increasing resilience against stressed market conditions, and maintaining proper incentives for risk and liquidity management in financial institutions. Tools contributing to this include the following:

- i)* Expand the range of counterparties, as the crisis demonstrated that mechanisms for distributing liquidity among financial institutions quick break down during times of stress when counterparty risk becomes a concern. This requires much better data to allow central banks to judge counterparties' solvency and liquidity condition.
- ii)* Broaden the range eligible collateral to facilitate smooth distribution of funds in stressed time. For this, arrangements need to be put in place to maintain appropriate incentives for counterparties to hold and use good quality collateral.
- iii)* Longer maturity, full allotment repo auction to reduce funding liquidity risk. This mitigates concern about loss of access to wholesale funding that can trigger a collapse in credit.
- iv)* More flexibility is needed in liquidity absorption tools to prevent emergency liquidity provision implemented for financial stability purposes from undermining traditional monetary policy operations aimed at

ensuring price stability. This involves reviewing the full range of tools including reverse repos, central bank bills and special term deposits.

In the crisis, central banks switch to balance sheet expansion measures when traditional policy interest rates cuts proved ineffective, possibly because rates were close to the lower (zero) bound. These include the systemic liquidity measures that work by channeling additional liquidity directly to financial institutions, and expanding central bank reserves. These are balance sheet tool that work by expanding the central bank balance sheet (rather than by adjusting policy rates) to affect credit and monetary conditions. In addition to mechanisms that channel liquidity directly to banks, mentioned above, they include:

- i)* Purchases of long-term public sector securities, principally intended to lower long-term interest rates and thus to improve overall credit conditions.
- ii)* Purchases of long-term private sector securities to channel credit directly to the real economy but which expose the central bank to credit, market and prepayment risks.
- iii)* Foreign exchange liquidity provision through swap facilities with domestic financial institutions aimed at alleviating foreign exchange liquidity shortages or balance sheet currency mismatches. These facilities must typically be backed up by swap arrangements among central banks, exposing them to foreign exchange risk.

Institutional Reforms to Strengthen Monetary Policy Frameworks

A key lesson of the crisis is that central banks need to develop institutional frameworks broad enough to respond to a financial crisis, either domestic or global. Reforms can cover the objectives of monetary operations, the range of instruments, and institutional and legal arrangements. This will help insure central bank independence in a crisis, because when a central bank is following a clear mandate and guidelines it is less vulnerable to criticism or outside interference.

The crisis highlighted the importance of cooperation among central banks to maintaining the proper functioning of some important markets. These cooperative responses may need to be institutionalized where this has not been done so already. A case in point is the network of foreign currency swap arrangements, which have been used extensively to help bolster financial stability. In sum, a critical feature of institutional reforms to strengthen management of future crises is the strengthening and formalizing arrangements among central banks and with the international financial institutions (IFIs).

Maintaining the Primacy of the Price Stability Objective

Central banks focus on price stability as their primary responsibility should not be altered or diluted by institutional reforms to strengthen crisis management in response to the crisis. A concern is that adding an explicit financial stability objective to the monetary policy mandate could dilute central bank credibility and accountability. This is a risk, but it can be avoided by clearly delineating the monetary policy framework and how the financial stability mandate fits into this framework. This requires defining an appropriate division of labor between macroprudential and monetary policy tools. While the effect of monetary policy tools on financial stability needs to be taken into account, a disciplined policy setting process helps ensure that financial stability consideration does not pose any risk to the primary objective of price stability.

Consideration should be given to lengthening the policy horizon for achieving the inflation objective to allow consideration of financial stability concerns. For example, a central bank that targets inflation over a two year horizon (i.e., with a two year inflation forecast) may want also take into account the buildup of financial imbalance over a longer horizon that could threaten the inflation objective beyond the two year horizon. To this end, the range of indicators can be broadened to encompass macroprudential variables, such as asset prices and lending growth that impinge on monetary policy.

Adding an Explicit Mandate for Financial Stability

Progress has been made with many central banks now given more explicit responsibility for systemic stability. This requires defining more clearly the framework for financial stability and how it should be integrated into central banks' decision making process and accountability. Many central banks have already established financial stability departments to monitor and evaluate financial system risks but often face the challenge of how to integrate this surveillance into the conduct of monetary policy. There are several points where financial surveillance can inform monetary policy:

- i) Analysis of the monetary policy transmission mechanism: this can reveal how weaknesses in the financial sector can impair the effectiveness of monetary policy.
- ii) The impact of monetary policy on asset prices, including the exchange rate, which often depends on investor sentiment. And, how conditions in global capital markets impinge on the monetary policy transmission mechanism.

Arrangement for Coordination with Financial Supervision

When both monetary policy and prudential supervision are within the central bank, decision-making and accountability need to ensure that each set of policymakers maintains a clear focus on their respective policy objectives (i.e., price stability and bank soundness). The addition of a new financial stability mandate should not dilute these objectives, but it does impose new obligations on both sets of policymakers. These involve the exchanging of information and a shared analysis of macroprudential risks rigorous enough to justify the deployment of prudential tools to achieve macroprudential objectives. Having both under one roof helps avoid many of the bureaucratic impediments to such cooperation.

Where monetary policy is institutionally separate from prudential supervision, more complex institutional arrangements will be needed. These would aim to give the central bank an appropriate degree

of influence over policies conducted by separate supervisory agencies to achieve financial stability objectives. A well designed framework would also ensure that the supervisory agencies are incentivized to internalize systemic stability objectives that guide macroprudential policy. In some countries, this has led to the establishment of financial stability oversight committees, which bring together relevant agencies. The challenge in implementing this institutional arrangement is how to ensure that it will take timely action in response to emerging vulnerabilities in a way that complements monetary policy.

Conclusion: Principles for Redesigning the Monetary Policy Framework

More broadly, there is a need to effectively integrate monetary and macroprudential policies into coherent frameworks. Decisions relating to the expanded range of instruments and institutional reforms outlined above will influence how central banks use interest rate policy or other monetary measures to contain the buildup of financial imbalances and manage financial crises. A number of principles can help guide debate on these issues:

- i)* The financial stability objective is not always aligned with the price stability objective. Thus, there needs to be separate sets of macroprudential and monetary policy instruments to achieve both targets at the same time.
- ii)* Central bank will have to play a key role in the development and use of macroprudential policies, whether or not it is the financial supervisor, which will require clarifying the relationship between the two.
- iii)* Financial stability considerations need to be clearly incorporated into the monetary policy decision-making process.
- iv)* In situations where monetary and financial stability objectives are aligned, interest rates could be used to lean against financial imbalances when pursuing price stability so as to reduce the likelihood of inflationary boom-bust cycles.

Reform the monetary policy framework to institutionalize this capacity to respond effectively to the disruptive effects of a financial crisis remains a key challenge for emerging market central banks. The question is what lessons to take away from the experience of the central banks at the epicenter of the crisis.

Halim Alamsyah

Comments on presentations

A crisis always brings new lessons. For central banks, crises are often associated with changes in their mandates and functions. For example, the economic downturn during the Great Depression of the 1930s placed central bank under the control of fiscal authorities for nearly two decades afterwards. The great inflation of the 1970s had the opposite effect. High inflation in the early 1980s led to central bank having monetary policy frameworks solidly anchored by price stability mandates, safeguarded by independence. This paradigm shift was supported by a solid theoretical foundation on the time inconsistency theory which led to a growing number central banks in both advanced and emerging countries converging on the inflation targeting framework. Institutionally, to avoid a conflict of interest, bank supervisory role in some countries had been detached from the central bank mandates. The recent global crisis and its subsequent events also highlight some important issues on the role of central bank in the macroeconomy and the way monetary policy should be conducted. Andrew Filardo and Sean Craig highlight the issues comprehensively. The crisis paradoxically occurred during a time when the global economy managed to achieve its best performance in maintaining price stability and economic growth. While this golden age of inflation targeting contributed to the low inflation, the narrow focus on price stability may fail to account adequately for finan-

Deputy Governor, Bank Indonesia. Please do not quote paper without the author's permission.

cial sector risks. Postcrisis, central banks in emerging Asia and Latin America have been facing more challenging tasks, particularly massive and volatile capital flows and the commodity price shocks. The capital inflows have complicated monetary policy management, intensified the volatility of real activity, and increased the financial sector risks. The global commodities price volatilities make the inflation forecasting and thus monetary policy stance increasingly problematic.

How would lessons learnt from the crisis and the changing environment have implications for the monetary policy framework going forward? This paper aims to discuss the challenges faced by the Indonesian economy following the global crisis and their implications for strengthening the monetary policy framework. This paper argues that there should be a paradigm shift in designing the monetary and exchange rate policy framework after the two global crisis. The following section elaborates precrisis monetary policy framework. The third section presents the challenges, policies taken, and the design of monetary policy framework in the postcrisis period. The final section provides the concluding remarks.

Precrisis Monetary Policy Framework

Mishkin (2011) argues that there are nine basic scientific principles, derived from theory and empirical evidence that guided thinking at almost all central banks: 1) inflation is always and everywhere a monetary phenomenon; 2) price stability has important benefits; 3) there is no long-run trade-off between unemployment and inflation; 4) expectations play a crucial role in the determination of inflation and in the transmission of monetary policy to the macroeconomy; 5) real interest rates need to rise with higher inflation, i.e., the Taylor principle; 6) monetary policy is subject to the time-inconsistency problem; 7) central bank independence helps improve the efficiency of monetary policy; 8) commitment to a strong nominal anchor is central to producing good monetary policy outcomes; and 9) financial frictions play an important role in business cycles. The monetary policy strategy that follows from the first eight principles of the new neoclassical synthesis is referred

to as flexible inflation targeting (Svensson, 1999). It involves a strong, credible commitment by the central bank to stabilize inflation in the long run, but allows stabilizing output around its natural rate level in the short run. Since 1990, many central banks adopted the inflation targeting framework. This framework has two main rules. First, observe inflation and output gap forecasts as summary statistics of the state of the economy. Second, fine-tune the policy instrument so that inflation forecasts are stabilized and output volatility is minimized. However, limiting the information set to inflation forecasts and output gap can be highly misleading. One reason for this has been known for a long time: output gaps are ill-defined objects and are subject to a great deal of measurement error.

In the case of Indonesia, the Central Bank Act in 1999 has given Bank Indonesia the independence and mandate to pursue stability of currency.¹ From 2000 to 2004, Indonesia adopted some form of inflation targeting regime,² with a role for output stabilization and base money as an operational target. Regimes such as these are sometimes referred to as Inflation Targeting Lite (ITL) because they are essentially eclectic and incorporate some, but not all, of the key features of inflation targeting (Stone, 2003). The amendment of the central bank act in 2004 gives a clearer framework where the inflation target is set by the Government. Since 2005, we have adopted full fledged (flexible) inflation targeting.

Empirically, evaluations of ITF application in Indonesia over the past five years have yielded a number of noteworthy outcomes, namely *i*) institutional strengthening of the monetary policy decision-making process; *ii*) clear monetary policy signals that affect inflation expectations; and *iii*) increased policy credibility (Juhro et al., 2009). Nevertheless, achievement of the inflation target, which is the overriding objective of a central bank, is not as straightforward as it seems. A number of shocks,

¹ Currency stability is referred to as price stability and exchange rate stability. But, in the practice, Bank Indonesia put more weight on price stability (inflation).

² See Alamsyah et al. (2001), for the early implementation the inflation targeting in Indonesia.

including commodity price shocks, volatile capital flows and structural supply constraints over the past six years have pushed inflation away from the target range.

Postcrisis Monetary Policy Framework

The lessons learned from the global crisis and the new environment post crisis has provided some valuable lessons for central banks in strengthening monetary policy framework going forward. As rightly pointed by Fillardo, there are at least three key issues to be addressed by central banks in this region in order to ensure price stability. First, how to integrate financial sector in the monetary policy framework? Second, how to deal with the volatile capital flows in the postcrisis? Third, how to deal with the volatile commodity prices?

Integration of Financial Sector and Monetary Policy Framework

Prior to the global crisis, the common wisdom was that achieving price and output stability would promote financial stability. This was supported by research (Bernanke, Gertler, and Gilchrist, 1999; and Bernanke and Gertler, 2001) which indicated that monetary policy which optimally stabilizes inflation and output is likely to stabilize asset prices, making asset-price bubbles less likely.

The crisis, however, has revealed that maintaining low inflation alone, without taking into account financial stability, is insufficient to achieve macroeconomic stability. This lesson is not new for Asian central banks. A number of crises that have occurred in recent decades show that macroeconomic instability is primarily rooted in financial crises. Financial markets are inherently imperfect and potentially create excessive macroeconomic fluctuations if not well regulated. Therefore, the key to managing macroeconomic stability is not only managing the internal and external imbalances, but also an imbalance in the financial sector, such as excessive credit growth, asset price bubbles and the cycle of risk-taking behavior in the financial sector.

The recent crisis clearly demonstrates benign economic environments may promote excessive risk taking and may actually make the

financial system more fragile (Gambacorta, 2009). Although price and output stability are surely beneficial, the recent crisis indicates that a policy focus solely on these objectives may not be enough to produce good economic outcomes. During the global crisis, it is clear that price stability may have encouraged the accumulation of risk in the financial sector, such as excessive credit growth and asset price bubbles (Blinder, 2010). Stable macroeconomic conditions reflected by a long period of low interest rates created moral hazard among market participants against macroeconomic risks. Investors felt that the macroeconomic risk was already guaranteed by the credible central bank; therefore they tended to seek higher yields in higher risk assets.

Is inflation targeting still relevant? Mishkin (2011) argues that none of the lessons from the financial crisis in any way undermines or invalidates the nine basic principles of the science of monetary policy developed before the crisis. The lesson that developments in the financial sector can have a large impact on economic activity does indicate that the ninth principle about financial frictions is valid, but now is even more important than central bankers previously realized. Although the support for the flexible inflation targeting framework is not weakened by the lessons from the financial crisis, they do suggest, however, that the details of how flexible inflation targeting is conducted and what flexibility means need to be rethought.

The question is how to integrate the financial sector into the monetary policy framework. The dynamics of the financial crisis demonstrated that it is increasingly necessary to steer monetary policy towards anticipating the risk of macroeconomic instability stemming from the financial system. This implies that sound macroeconomic management must also take into account financial system stability. Adhering to this policy perspective, in order to strengthen monetary and financial system stability, Bank Indonesia utilize instruments that can maintain financial system stability as a whole, e.g., macroprudential instruments, as part of its policy instruments.

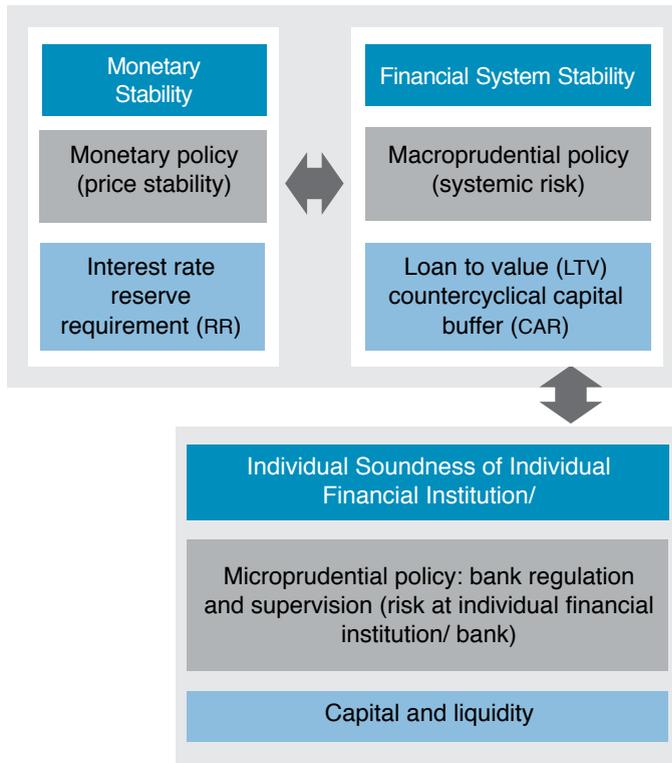
According to such thinking, appropriate monetary and macroprudential policy integration or synergy is required in order to buttress monetary and financial system stability. The commonly accepted overriding objective of monetary policy is to maintain price stability. To achieve this goal, central banks normally use the interest rate as the main policy instrument. However, maintaining price stability is insufficient to guarantee macroeconomic stability because the financial system is procyclical, which leads to excessive economic fluctuations. With its countercyclical role, macroprudential policy supports monetary policy in the pursuit of maintaining price stability and output.

The successful achievement of the goals of monetary policy and macroprudential policy is mutually reinforcing. Measures are taken to strengthen financial system resilience and bolster monetary policy, among others, by protecting the economy from sharp shocks to the financial system. Conversely, macroeconomic stability will reduce financial system vulnerabilities that are procyclical by nature. Holistically, therefore, large adjustments are perhaps not required for interest rate policy compared to when there is a lack of integration or policy coordination. Meanwhile, macroeconomic policy will affect the supply of credit and, hence, monetary policy transmission. The efficacy of policy coordination depends on the macroeconomic environment, financial conditions, the intermediation process as well as the level of capital and assets in the banking system. Therefore, it is unrealistic to expect a combination of monetary and macroprudential policy to eliminate the economic cycle in its entirety. The overarching goal of policy integration is to manage the cycle and augment financial system resilience on a macro scale.

A framework to reinforce monetary stability and financial system stability through monetary and macroprudential policy integration is illustrated in the Figure 1.

Monetary and macroprudential policy integration can also be explained as follows. For instance, macroprudential policy aims to tighten capital and liquidity requirements during an economic upswing, thereby encouraging banks to rein in credit growth in an attempt to maintain

Figure 1

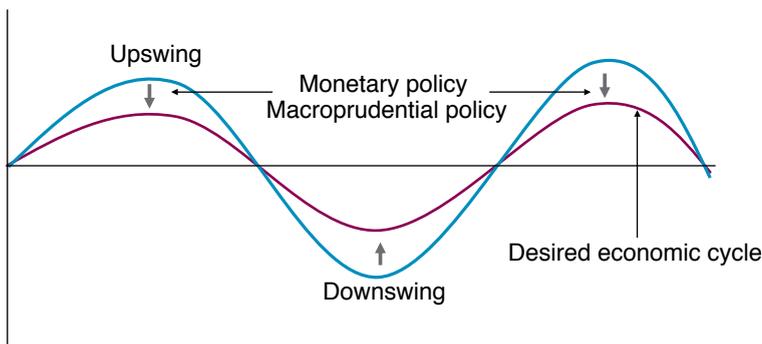
THE FRAMEWORK OF MONETARY – MACROPRUDENTIAL POLICY INTEGRATION MONETARY STABILITY


future bank resilience when the economy experiences a downturn. Under such conditions, efforts to preserve banking system resilience will concomitantly underpin the goal of monetary policy, which is to stabilize the supply of credit. Therefore, the objective of countercyclical macroprudential policy is in harmony with the goal of monetary policy in terms of reducing excessive economic fluctuations.

Referring to the framework presented above, there are a number of requirements for the appropriate implementation of monetary and macroprudential policy integration. First, thorough comprehension is required on the linkages between monetary policy, macroprudential policy and microprudential policy due to potential conflicts in the achievement of policy objectives. Second, understanding is needed on how the monetary and macroprudential policy transmission mechanism affects economic activity, which requires a more integrated analysis framework, particularly in terms of calculating the significant role of the financial sector. Third, accurate measurement of risk indicators is required to monitor risks in the system. In addition, such indicators will also strengthen analysis of the transmission mechanism through the risk-taking channel. Fourth, from an institutional perspective, coordination amongst different agents is necessary to make the policy mix effective, particularly if there is an institutional separation between microprudential, macroprudential and monetary policies.

Figure 2

MONETARY AND MACROPRUDENTIAL POLICY TO DAMPEN PROCYCLICALITY



Managing Capital Flows

Post global crisis, a two-speed global economic recovery has created massive capital flows, which have posed a number of arduous challenges for emerging countries. While recipient countries benefited from the inflows through financial deepening and wider sources of financing, capital flows have also elicited various challenges on the recipient countries. Capital flows have put pressures on domestic currency appreciation, accelerated economic overheating, triggered asset price bubbles and intensified the risk of financial system instability. Speculative capital inflows could create economic vulnerabilities to changes in investor sentiment, primarily through changes in asset prices, the exchange rate and maturity mismatches. This is a classic impossible trinity of monetary policy in a small open economy.

To confront this issue, Bank Indonesia's policy has been to strike an optimal balance among the three objectives by adopting a *policy mix*, combining exchange rate flexibility, reserve accumulation, discouraging the very short term inflows, and managing liquidity. In other words, we are trying to transform the impossible trinity into a possible trinity. The concept of the possible trinity can be expressed as an intermediate solution that avoids volatile swings in the exchange rate, controls excessive short-term capital inflows and reinforces independent monetary policy (Palley, 2009).

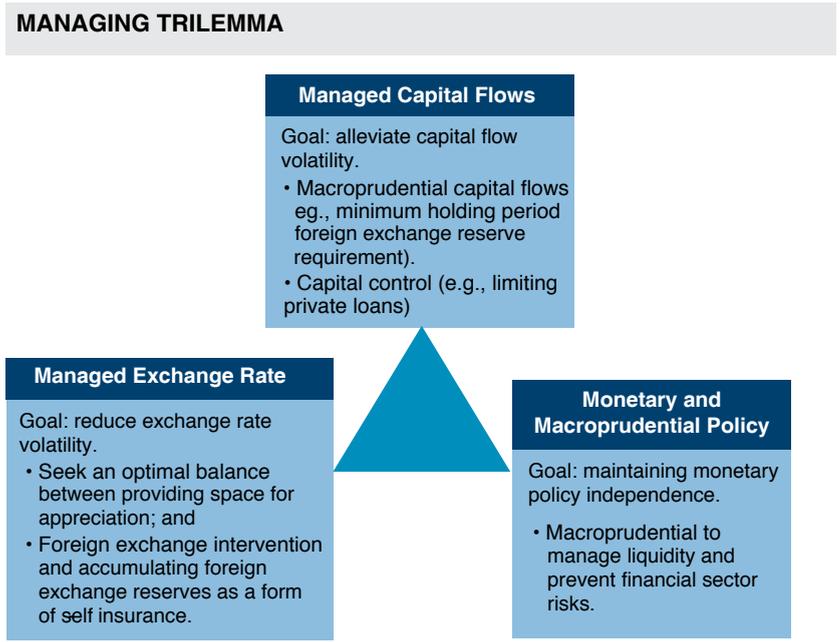
To address capital flows, the rupiah has been managed to remain flexible and provide space for appreciating while at the same time also avoid being overvalued as this will endanger macroeconomic stability. Consequently, Bank Indonesia's presence is required in the foreign exchange market to ensure that the rupiah does not deviate with excessive volatility. Of course, this option is no longer available if the rupiah becomes overvalued excessively. Simultaneously, efforts to accumulate foreign exchange reserves are vital as a form of self-insurance considering that short-term capital flows are particularly vulnerable to the risk of sudden reversal.

Regarding capital flows, by continuing to adhere to a free foreign exchange regime, macroprudential measures consisting of policy options

are designed to reduce excessive short-term capital flows. Such measures have been introduced by Bank Indonesia through regulations that oblige investors to hold Bank Indonesia bills (SBI) for a minimum period of six months. This policy has helped diversify foreign portfolio capital flows and extend the duration of Bank Indonesia bills.

Monetary policy complexity stemming from the interest rate can partially be resolved by quantitatively applying tighter monetary policy by raising the reserve requirement. In addition, macroprudential policy aims to avoid asset bubbles and excessive credit growth, which could trigger potential financial system instability. This type of macroprudential policy is effective if banks can intermediate the capital flows. Nevertheless, if the capital flows emanate directly from unregulated sectors, like direct loans from the private sector, measures to control capital inflows are another option, for example by limiting private loans.

Figure 3



The coordinated implementation of a policy instrument mix is ultimately part of an important strategy to employ an optimal possible trinity in the current climate blighted by widespread uncertainty. Coordination is critical, not only to address the two sources of imbalances (external and internal imbalances), but also to optimally manage the impact of monetary policy; while avoiding overkill and mutual exclusivity. To this end, policy coordination should be based upon a wider implementation framework as formulated in the crisis management protocol (CMP) scheme, which incorporates prevention, management and resolution.

Dealing with Commodity Price Volatility

Filardo's paper argues that monetary policy responses to commodity price shocks should depend on the sources of the shocks. If the commodity price is driven by a supply shock, then central banks should focus on the impact of the rise in commodity prices on inflation expectation. However, he argues that the recent rise in commodity prices has been as a result of a persistent global demand shock, particularly increasing demand from emerging markets. While the global demand can be seen as a supply shock to central banks, without central banks' cooperation to deal with the global demand shock, there is a risk behind the inflation curve globally.

This is a delicate issue since the identification of sources of shock is not an easy task, given that speculation partly plays an important role in commodity price formation (Filardo, 2011). Furthermore, monetary policy response to deal with headline inflation due to commodity price shocks may not be compatible with domestic objectives. In our view, we should identify whether the shock is temporary or permanent. If the shock is temporary, then the response should be treated like a supply shock, otherwise policy responses to the headline inflation could risk interest rate volatilities. However, our experience in the last decade suggests that, despite the temporary nature of shocks, as long as the increase in prices feeds into an increase in the inflation expectation, the central bank should respond to the second round effects.

Table 1

POST-GLOBAL CRISIS MACROPRUDENTIAL POLICY MEASURES

<i>Measure</i>	<i>Objectives</i>
Minimum holding period on BI bills (one month in 2010 and changed to six months in 2011)	To put sand in the wheels of short-term and speculative capital inflows, as well as mitigate the risk of sudden reversals.
Shifting BI bills to term deposits as of June 2010	To lock up domestic liquidity to longer term and limit the supply BI bills on the market.
Reinstate limits on short-term offshore bank borrowing	To limit short-term and volatile capital inflows. To limit FX exposure of the banking system stemming from capital inflows.
Increase FX reserve requirements of the banks	To strengthen FX liquidity management, and thereby the resilience, of the banking system in confronting increasing FX exposure emanating from capital inflows. Help absorb domestic liquidity.
Increase rupiah reserve requirement from 5% to 8%, effective November 2010	To absorb domestic liquidity and enhance liquidity management by the banks without exerting negative impacts on lending that is required to stimulate growth.
Lengthen (from weekly to monthly) auctions and offer longer maturity (three, six and nine months) of BI bills as of June 2010	To enhance the effectiveness of domestic liquidity management, including from capital inflows, by locking up to longer term and helping develop domestic financial markets.

Conclusion

In the current post-global crisis era, the monetary policy framework in Indonesia needs to be modified. The core elements of the paradigm, including central bank independence and policies which are decisively oriented towards the maintenance of price stability, remain pertinent for the period ahead. However, a new paradigm must be considered in the design of future monetary policy framework, in that Bank Indonesia's policy must be directed towards anticipating macroeconomic instability risks that stem from the financial system. Considering that monetary

instruments cannot be used to achieve an array of concomitant goals, Bank Indonesia will supplement its policy with the full panoply of instruments available, including macroprudential instruments that directly aim to ensure financial system stability.

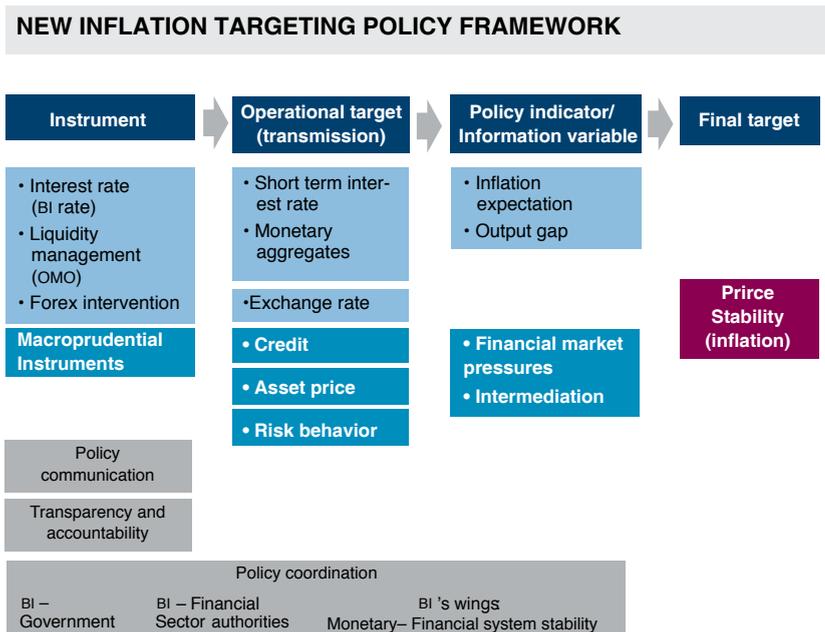
In general, a post-global crisis monetary policy framework in Indonesia is characterized by the following (Figure 4):

- Flexible ITF. The policy framework continues to adhere to an inflation target as the overriding objective of monetary policy. The main characteristics of ITF will remain, namely that the inflation target is announced publicly and that monetary policy is forward-looking, transparent and clearly accountable (Alamsyah et al., 2001). However, ITF as implemented in a number of countries is flexible. Bank Indonesia must not only look at the inflation target merely in terms of policy formulation but also consider a number of other factors, including financial sector stability and supply factors.
- Integrated with macroprudential policy. Under a new inflation targeting policy framework, monetary and macroprudential policy would be integrated in order to guarantee macroeconomic stability. According to this paradigm, financial factors play a crucial role in the transmission of monetary policy through the corporate balance sheet channel, bank balance sheets as well as the risk-taking behavior of banks and firms (Satria and Juhro, 2011; Agung, 2010). Macroprudential policy is instituted to overcome short-term capital flows, manage liquidity in the domestic economy and mitigate the risk of instability in the financial system.
- Exchange rate management as a part of monetary instrument. Differing from standard ITF where the exchange rate is exogenous, under this framework the exchange rate is managed in such a way as to play a role in achieving price stability. In emerging market countries with an open capital account and a free-floating exchange rate regime, shifts in the exchange rate are often times affected by exchange rate volatility, which is not necessarily related to economic fundamentals. Allowing capital flows to move in line with market mechanisms

precipitates exchange rate volatility and misalignment risk, which can undermine macroeconomic stability. Consequently, the exchange rate must be managed in order to support price stability.

- Policy coordination is an essential element. Policy coordination, principally with the fiscal authority as well as sectorally, is crucial considering that inflation stemming from the supply side creates the majority of inflation volatility.
- Communication strategy as an instrument. Communication strategy is considered as one monetary policy instrument in the context of guiding future inflation expectations, shifts in the exchange rate and the role of macroprudential policy as a whole.

Figure 4



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Enrique Alberola

Comments on presentations

The two preceding presentations made most of the relevant points on the post crisis appraisal of monetary policy. In the following pages, I will try to systematize the frameworks, making special emphasis on the differences arising between advanced and emerging economies.

As a starting point, I would like to wrap up the main takings from the presentation by Sean Craig –most of which coincide with Andy Filarido's: *i)* modified institutional frameworks have to be developed; *ii)* inflation remains the paramount objective, but some refinements are required (v.g. longer run considerations); *iii)* financial stability goals should be more explicitly recognized; financial stability concerns should inform monetary policy (whatever the verb *to inform* means in practice); *iv)* a higher interest rates activism plus new instruments are granted to preserve financial stability.

Basically, we agree with these messages, maybe with the exception of the last, a more proactive role of interest rates against financial stability. Using one instrument –the interest rate– to fulfill two goals is not optimal and in this post-crisis central banking world there is a non-negligible risk of ambiguity which may hinder the fulfillment of monetary policy goals in the future.

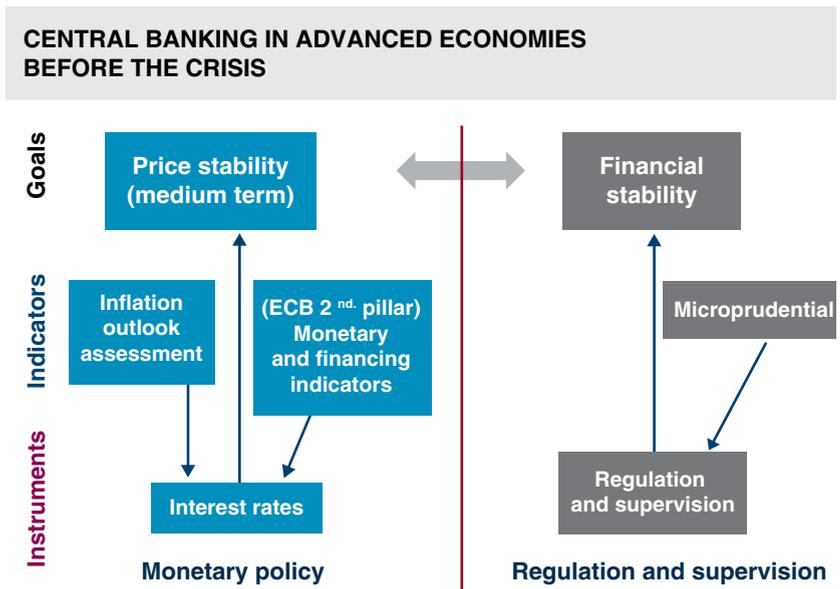
Executive Coordinator, Associate DG International Affairs, Banco de España. The support of Sonsoles Gallego, José Ma. Martínez, José Ma. Serena and Jimena Llopis in the preparation of the material is gratefully acknowledged. These views do not necessarily represent those of Banco de España.

Precisely the rest of my presentations aim at setting up a simple framework to analyse the evolvement of new monetary frameworks. The dividing line between advanced and emerging economies can be applied to two temporal dimensions of the analysis: the changes in the structural setting –or paradigm– focused in the long-run and the central banking paradigm, and the management of the crisis –centered in the short to medium run.

Changes in the Central Bank Dashboard

The following figures address the structural issues. Figure 1 displays in a simplified manner the operative framework of central banks in advanced economies prior to the crisis. Two main goals, price stability and financial stability, appear separated by a thick wall: a strict separation of instruments and goals. Price stability is achieved through the use of the interest rate instrument, based on the assessment of the inflation out-

Figure 1



look. In the case of the Eurosystem this assessment is complemented by an assessment of the monetary and financing conditions –second pillar– which, to some extent, conveys financial stability considerations. On the other side of the wall, regulation and supervision was engineered through microprudential tools where the elements supporting financial system stability. In this paradigm, the link between monetary policy and financial stability was indirect and rather marginal: the best service that monetary policy could make to financial stability is to keep price stability because it is a necessary condition for a healthy development of financial system. In the opposite direction, financial stability supports monetary policy by making the monetary transmission mechanism work properly.

The crisis has modified this framework. Figure 2 displays the changes in advanced economies and Figure 3 in emerging economies.

For advanced economies, the key change has been the acknowledgment that the wall between financial stability and monetary policy

Figure 2

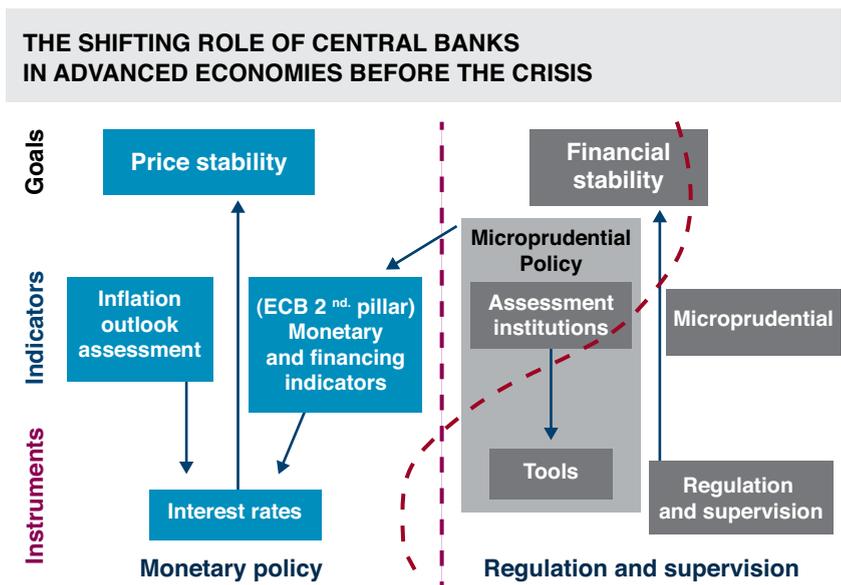
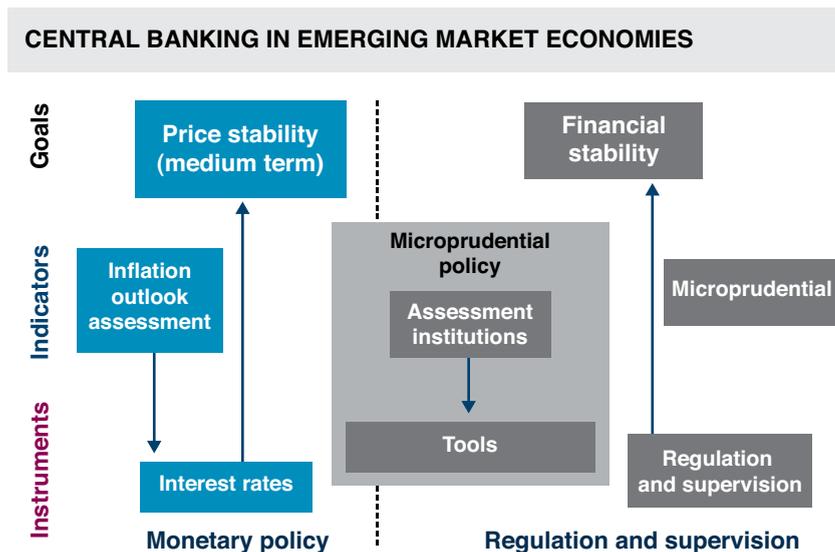


Figure 3



must be more porous. The second is the emergence of macroprudential policy as a key policy block, something that in the previous paradigm was dismissed by most countries. The macroprudential kit consists of two pillars: assessments and tools (much in the vein of the traditional instruments-indicators-goal scheme) and is also implying the creation or revamping of macroprudential institutions.

The fit of the macroprudential block is clearly on the financial stability side, as a complement to regulation and supervision in advanced economies. This includes not only the ECB, but also the Federal Reserve or the Bank of England. Indeed, these central banks emphasise that the paramount goal of monetary policy is price stability, so their interest in marking the separation between macroprudential policy and interest rate instruments. A confusion in this sense would erode central bank communication and the effectiveness of the traditional monetary policy instruments. However, given the stronger accepted interlinkages between price and financial stability goals, macroprudential

analysis should not be dismissed in the assessment of price stability goals. In this vein, macroprudential assessments should *inform* monetary policy. This could be achieved by extending the horizon of price stability longer, so that financially fuelled price pressures –on assets, for instance– could be considered. As a matter of fact this is already factored in by most central banks –including the ECB in its second pillar–, so the request would be equivalent to a higher weight of long-run considerations.

In the case of the euro area, given its supranational nature, there are other interesting aspects. The red line in the charts highlights the divide between euro level and domestic mandates. In the new framework monetary policy and the macroprudential assessment and recommendation will be carried out at the euro area level, while the implementation of regulation, supervision and macroprudential policies will remain in the domestic sphere.¹

The new situation for emerging market economies is displayed in Figure 3. The first thing to note is that the separation between monetary policy and financial stability have always been more tenuous in those countries. The barriers are not only porous but also rather indefinite, as the Figure suggests. Since in many emerging markets supervision is outside the central bank, the macroprudential assessment and institutions tend to be clearly placed in the realm of financial stability. On the contrary, the various kinds of tools are spread throughout the whole central banking map: reserve requirements are close substitutes to interest rates, but reserve accumulation or exchange rate interventions have a more ambiguous placements; loan-to-value or credit caps or specific requirement for foreign currencies are closer to the financial stability area. Notably, in emerging economies, taxes or controls on capital inflows are also seen as macroprudential, a definition which can be controversial in some cases and that takes advantage of the good press that macroprudential policies have nowadays.

¹ Obviously, this also entails a domestic assessment of financial stability, at the micro and macro levels.

Crisis Management Differences

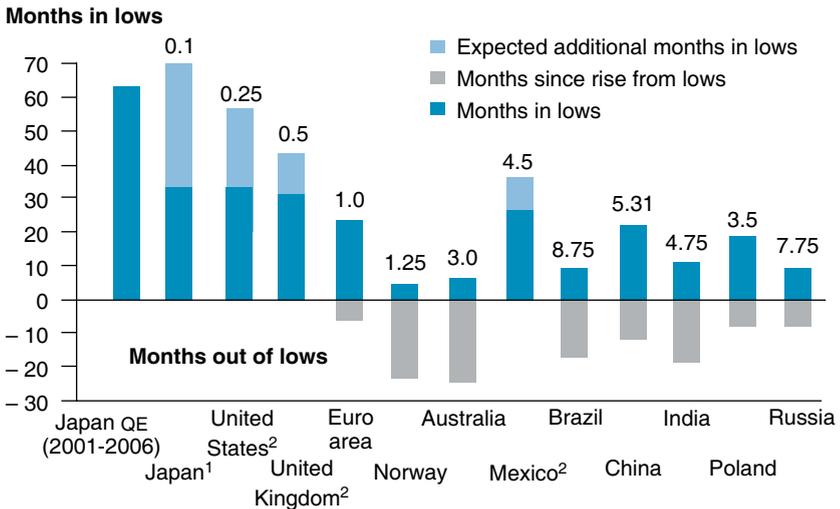
All in all, differences in the revised central banking frameworks between advanced and emerging economies are substantial. These differences are also reflected in the process of crisis management, in this case because the depth, persistence and consequences of the crises has impacted very differently both groups of economies.

As a response to the huge impact of the crisis, advanced economies' central banks have greatly expanded their balance sheets and the interest rates remain at historical lows in most of them. Emerging economies also drove their interest rates to relatively low levels, but the transitory impact of the crisis and the ensuing return of capital inflows have reactivated the tightening credit cycle in most of them.

Figure 4 shows, through a duration graph, the marked differences in interest rate policies. The positive numbers in the vertical axis displays the months in which interest rates have stayed in their post-crisis lows (the number over the bars is the lowest rate in that period). The blue bar is the actual number of months, while the stacked black bar is the additional months they are expected to remain in lows, according to the respective yield curves –as of late September 2011. It is remarkable the expected length of interest rate lows near the zero bound in advanced economies, close to five years in the US, four years in the UK and indefinitely in Japan, which are comparable with the period of quantitative easing in Japan between 2001 and 2006. This comparison underscores the risks and difficulties of overcoming the financial and economic consequences of the crisis. Some other advanced economies, such as the euro area, Norway or Australia started their tightening crisis but their interest rates, in particular in the euro area, are still close to the zero bound. In emerging economies, most economies have already started their tightening cycle one year ago or less and are well into it, due to inflationary pressures. Notwithstanding this, the loss of impetus in the recovery has implied a new reversal of interest rates –towards a loosening stance– in some countries.

Figure 4

THE PROTRACTED PERIOD OF LOW INTEREST RATES



Sources: Bloomberg, Datastream and National Sources

¹ In Japan the probability of raising rates is zero.

² For United States and United Kingdom the additional duration in lows is derived from the respective curve of rates from 21/09/2011 and for Mexico it is derived from the survey corresponding to August 2011.

However, emerging economies are also constrained in their interest rates by the policy dilemmas arising from capital inflows. The dilemma can be summed up in the attempt to reconcile addressing inflationary pressures –through interest rate hikes– and limit excessive capital inflows and exchange rate appreciation –which higher rates tend to foster. And this is where macroprudential tools, encompassing the wide battery of instruments mentioned above are being helpful to deal with and mitigate these dilemmas: they complement interest rate movements, so that financial and monetary conditions in the economy become tighter. In some cases, such as reserve requirements, they are close complements to interest rate hikes; in others, such as measures

closer to the financial stability (credit caps, ...) the link is more distant. In any case, the addition of these macroprudential instruments expands the central banking toolbox, although they make the assessment of the monetary policy stance more complex.

Precisely, Figure 5 is an attempt to assess the monetary policy stance taking into account not only the interest rate but also one other key policy in many countries in Latin America and Asia: the increase in reserve requirements. The horizontal axis displays the Taylor rule gap, that is, the difference between the current policy interest rate and the required interest rate according to a very simple Taylor rule.² Negative numbers indicate a loose interest rate stance relative to the rule. All countries except Chile would be in such situation. However, when the impact of the increase in reserve requirement is taken into account, the picture changes. We use a very simple rule of thumb, so that a 1% increase in reserve requirements is equivalent to half percentage point increase in the interest rate,³ so that points above the *neutral policy line* would indicate a contractionary policy stance. Now countries like China or Peru would be considered to be on the contractionary side, while in some others, like Malaysia or Brazil, the policy would be neutral or close to neutral.

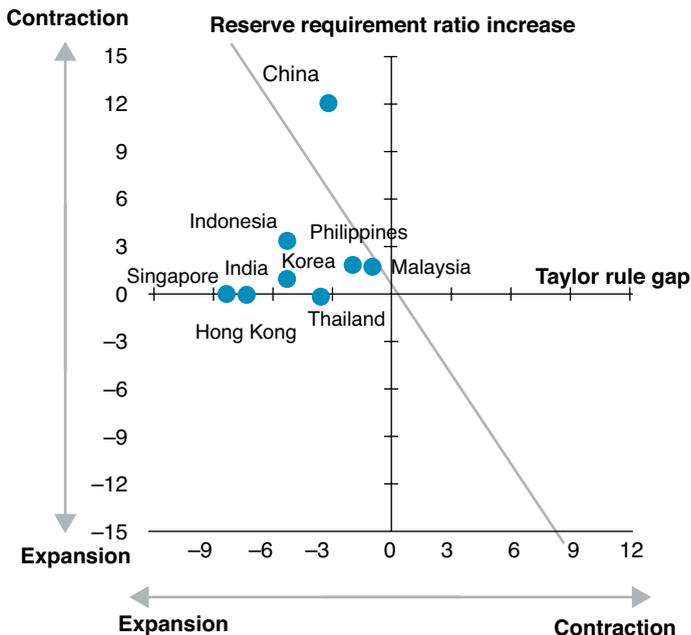
Conclusions

These comments have tried to underscore three main points: first, that the ramifications of crisis into central banks are being multiple, affecting the structural setting of their policymaking –the central bank’s dashboard– and impinging on the management of day-to-day policymaking in the crisis management process; second, that these extraordinary times will be persistent and they will have an even more lasting impact on monetary policy frameworks; and third, that there are large

² The Taylor rule interest rate would be equal to $i = r + \pi + 0.5(\pi - \pi^*) + 0.5y$ with r the average ex post real policy rate over the sample; π the headline inflation rate; π^* the actual or implied inflation target .

³ This result is based in the average of some evidence in China, Peru and Brazil.

Figure 5

MONETARY POLICY STANCE IN EMERGING ASIA: TAYLOR RULE AND RESERVE REQUIREMENT RATIO INCREASE


differences between advanced and emerging markets economies. More precisely, the changes are more profound and demanding in the advanced economies

An interesting conclusion is that, in two respects, the central banks of emerging economies were *ahead of the curve*. This contributes to explain the larger impact of the crisis on the frameworks of advanced economies.

On the one hand, the monetary policy paradigm of emerging markets was more flexible, for different reasons: *i)* the track record of orthodox monetary policy—very much focused on price stability—was not fully consolidated, so that they still used instruments associated to the

previous regime, such as exchange rate interventions; *ii*) financial volatility and vulnerability made central banks in EMES more prone to use complementary instruments in the realm of what we call today macroprudential policies; *iii*) the reliance on foreign financing, the underdevelopment of their financial systems and, hence, the weaknesses of their monetary transmission mechanism made them rely on complementary instruments to interest rates, such as reserve requirements, exchange rate interventions, etc. Thus, emerging markets were actively using macroprudential policies before the crisis.

On the other hand, they are also ahead of economic and financial cycle. While the monetary policies in advanced economies are well still in an *emergency mode* dealing with the severe impact of the crisis and their recovery is uncertain, emerging economies recovered relatively fast, because their fundamentals were less affected by the crisis and were less vulnerable beforehand. Therefore, the tightening cycle has started earlier, also because inflationary pressure strongly reappeared as the recovery took hold.

All in all, central banks in emerging economies have been able to manage satisfactorily the fallout from the crisis and, to some extent, its more flexible paradigm has been vindicated. Thus, these countries are embracing macroprudential policies enthusiastically and, in the name of macroprudential policy some controversial tools –capital controls, taxes on capital, etc.– are being applied.

However, this may entails some risks. First there is not a definite assessment of the effectiveness of these tools or combination of tools and they may segment and distort markets; second, the emphasis on financial stability may distract from the price stability objective in regions where inflationary pressures are high and where the antinflationary reputation of central banks is not well established yet.

All in all, the crisis is having an enduring impact on central banks' views and actions. The embrace of macroprudential policies, both in the operational framework and in the management of the crisis has some merits, but central bankers should not forget that their paramount objective is achieving price stability.

Session 6

**The Role of Central Banks
in Financial Stability:
Macro- and Micro-prudential Policies**

Nor Shamsiah Mohd Yunus

Role of Central Banks in Financial Stability: Macro- and Micro-prudential Policies

In the aftermath of the global financial crisis, financial stability mandates and macroprudential policy framework are re-evaluated, redeveloped or reconfigured across many jurisdictions in an unprecedented manner. These accelerated efforts underscore one of the major lessons learned from the financial crisis of 2008-2009 –inattention, inaction and irresolute coordination by authorities in managing financial stability issues have adverse economic and financial repercussions as well as social dislocations. The depth and breadth of the crisis rekindled the complex debate relating to the objectives, functions, instruments, legal foundation and governance arrangements of central banks that are necessary to effectively deliver and safeguard systemic stability. The diverse institutional settings and historical background of central banks globally as well as the various development stages of financial sector suggest that there is no one-size-fits-all approach to a sound and comprehensive financial stability policy framework. For Malaysia, the prominent role of the central bank in ensuring an effective formulation, execution and coordination of mutually reinforcing macro- and micro-prudential policies became visible only after the Asian financial crisis. During the decade

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following that, a great deal of attention and resources was allocated towards strengthening the foundation, infrastructure and institutional arrangements for financial stability. These reforms and the effectiveness of the implementation strategies have been instrumental in the country's preparedness in dealing with the global financial crisis and the ongoing uncertainty on the external front. This paper begins with a quick review of the key lessons learned, notably on the need for central banks to assume a leadership role in maintaining financial stability. In discussing this issue, the paper draws on the experience of and key challenges faced by Bank Negara Malaysia in promoting financial stability in Malaysia.

Central Banks' Role in Financial Stability

Key Observations and Lessons Learned from the Recent Crisis

It is increasingly being recognised that central banks should formally or actively (if not directly) play a lead role in the formulation and implementation of financial stability policy in order to achieve optimal outcomes for a nation's sustained growth and development. Focus needs to be accorded towards harnessing synergies between macro- and micro-prudential policies through a credible operating and governance framework, which when deployed alongside monetary policy, can be used to address buildup of systemic risks or financial imbalances in an economy. If such prudential and supervisory tools are not implemented well in concert, monetary policy will need to shoulder a heavier burden in countering buildup of systemic imbalances. In addition, a stronger role of central banks in macro- and macro-prudential supervision and regulation can significantly improve the overall efficacy of financial regulation. Amalgamating central banks' expertise in macrofinancial analysis with prudential information is critical in the calibration of macroprudential policies and has proven to be invaluable in informing the design of crisis prevention, management and resolution measures. Moreover, clarity in central banks' financial stability objectives, functions, policy autonomy and instruments needs to be underpinned by strong legislative framework and safeguards. This is extremely vital to

1) promote central banks' ability and willingness to act in a timely and decisive manner, shielded from undue external influence, and 2) minimise the mismatch between what the public expects and what the central bank is accountable to deliver within its statutory mandates. A credible operating and governance framework that harness synergies between monetary, macro and microprudential policies and other public policies is also critical in enabling robust and timely decision making and effective management of potential policy tradeoffs. These different policies have distinct yet interrelated objectives which may give rise to potential tensions. As such, careful attention must be accorded in designing adequately robust governance and operating arrangements to execute financial stability functions.

Bank Negara Malaysia (BNM) Role in Financial Stability

BNM's role in maintaining overall stability of the Malaysian financial system is anchored by four fundamental elements: *i*) a clearly articulated statutory mandate, objectives and functions, *ii*) a wide range of legislative powers and tools to perform its mandate, taking into account current and anticipated future developments in domestic and global environment, *iii*) strengthened processes, governance, transparency and accountability framework to support the enhanced oversight function and powers, and *iv*) a comprehensive and pragmatic financial stability framework to operationalize its mandate.

Clearly Defined Mandate and Primary Functions

Under the Central Bank of Malaysia Act (CBA) 2009, the principal objects of BNM are clearly articulated –to promote monetary stability and financial stability conducive to sustainable growth of the Malaysian economy. It is recognized that the pursuit of monetary and financial stability should not be viewed as an end in itself, but as a means to an end –sustainable economic growth and improvement in living standards for the Malaysian populace. The CBA sets out the primary functions of BNM as follows:

- formulate and conduct monetary policy;

- regulate and supervise financial institutions which are subject to laws enforced by BNM;
- exercise oversight over the payment systems;
- provide oversight over money and foreign exchange markets; and,
- promote a sound, progressive and inclusive financial system.

Like most central banks in emerging market economies, BNM has traditionally and continues to assume a strong developmental role. This is deemed necessary, more notably during the formative phases in the development of the financial system, to create an enabling environment and a strong foundation for the effective implementation of the central bank's monetary and financial stability policies. The overarching mandate of financial stability under the CBA is complemented by progressive and comprehensive regulatory laws which are aimed at fostering:

- the safety and soundness of financial institutions;
- reliable payment systems;
- orderly functioning of the money and foreign exchange markets;
- fair and responsible market conduct by financial institutions; and,
- protection of the rights and interests of consumers of financial services.

As the elements that can contribute to or affect systemic financial stability are very diverse, establishing a comprehensive definition of financial stability remains a daunting and challenging task. The financial stability mandate in the CBA therefore adopted the approach of defining the conditions that are likely to result in risks to financial stability. These chosen parameters of financial stability provide definitive triggers for BNM to exercise its powers under the CBA in a consistent manner yet with sufficient flexibility to accommodate different circumstances. This

is essential to ensure that BNM's actions are only taken in the sole interest of preserving financial stability.¹ In the process, this approach accords BNM with the ability to respond to unforeseen circumstances that may not be captured by a more restrictive definition of financial stability.

Comprehensive Powers to Address Systemic Risks

The CBA provides BNM with a wide range of powers and policy tools to avert or reduce risks to financial stability in a timely and effective manner. Specifically, the CBA empowers BNM to:

- Broaden the scope of surveillance beyond its regulatees to facilitate timely risk identification, data capture and preemptive actions.
- Prevent, manage and resolve systemic crises via an array of intervention and resolution powers, which include powers to avert or manage systemic implications from failures of banks and non-bank entities, as well as institutional or market liquidity shocks.

Given BNM's autonomy and leadership role in maintaining financial stability, BNM has been entrusted with a comprehensive set of legal powers to ensure the speed and efficacy of resolution measures, and in the process, preserve financial intermediation function, reduce system-wide losses and promote confidence in the financial system. The CBA also empowers BNM to exercise its financial stability powers over non-bank financial entities that may have systemic implications but fall outside BNM's regulatory net. This is particularly pertinent in situations where a potentially destabilising buildup of systemic risks is emerging but not necessarily originating from financial institutions or sectors that are directly under BNM's regulatory purview.

¹ Risks in financial stability as defined in CBA are risks that 1) disrupt, or are likely to disrupt, the financial intermediation process; 2) disrupt, or are likely to disrupt, the orderly functioning of money and foreign exchange markets and 3) affect, or are likely to affect, public confidence in the financial system or the stability of the financial system.

Enhanced Institutional and Governance Arrangements

To ensure proper controls and governance in the deployment of extensive financial stability powers by BNM, enhanced oversight functions and powers are balanced and complemented by a strengthened framework for governance and accountability. In circumstances where financial stability powers are to be invoked on non-bank financial entities that lie outside of BNM's regulatory reach, or where it involves public funds, the CBA provides that such a decision are to be taken by the Financial Stability Executive Committee. The composition of this committee, which includes a clear majority of non-executives, is aimed at ensuring the robustness of deliberations as well as the independence of decision-making process in extending financial support or in imposing financial stability measures to non-regulated entities. Within the Bank, deliberations on risks to financial stability and any policy responses are carried out at the Financial Stability Committee (FSC), an internal high-level forum whose mandate includes:

- Discuss and deliberate on emerging issues and areas of vulnerabilities which may pose risks to financial stability.
- Deliberate and decide on macroprudential policies to address potential threats and risks to financial stability.
- Deliberate and decide on micro-surveillance responses, supervisory actions and resolution measures.
- Make recommendations to the Financial Stability Executive Committee on specific measures pursuant to CBA for the purpose of averting or reducing systemic risks.
- Monitor the implementation of approved policy responses and other actions as directed by the FSC and the Financial Stability Executive Committee.

While the effective conduct of monetary policy presupposes a stable and healthy financial system as an effective transmission mechanism, continued financial stability requires effective and sound monetary policy and macroeconomic conditions. Given that monetary and financial

stability are highly interdependent, efficient implementation of policies in both areas are critical towards sustainable economic growth. In this regard, the Bank has introduced an internal organisational process that ensures effective coordination of financial stability policies that may have wider impact on macroeconomic and monetary conditions. For this purpose, BNM has established a joint policy forum involving members of both the FSC and the Monetary Policy Committee to deliberate macroprudential policies that have broader implications on the economy. This joint policy forum provides for BNM to effectively manage complex interactions and policy trade-offs between these mutually reinforcing mandates. The joint forum met in 2010 and 2011 to deliberate and decide on the policy responses to developments in the household sector and property market.

Comprehensive Financial Stability Framework

BNM's financial stability framework comprises the following key elements:

- An effective and progressive regulatory and legal framework.
- A sound, risk sensitive supervisory framework.
- An integrated macro- and micro-surveillance framework.
- A robust financial infrastructure.
- An effective safety net and crisis management framework.
- An effective market discipline and consumer education framework.

In promoting financial stability, BNM strives to put in place an effective and progressive prudential regulatory framework underpinned by principle-based regulations and differentiated rules based on the risk profile and financial strength of individual institutions. While providing flexibility for financial innovation, BNM requires that risks are well understood, assessed and managed effectively by the senior management

and boards of financial institutions. This is complemented with a forward looking, risk-based and consolidated supervisory framework which, coupled with a stronger macroprudential orientation, focuses on enhancing corporate governance and risk management in financial institutions. Comprehensive and integrated surveillance at both the system and institutional levels has been another key focus in BNM to identify, monitor and assess emerging risks to financial stability at the system wide level, taking into account interactions between players and markets. Various initiatives have also been undertaken by BNM to put in place a robust financial infrastructure which includes appropriate and evolving legislative framework, sound accounting standards, reliable and safe payment systems as well as a comprehensive consumer protection and education framework. At the same time, BNM is also actively involved in promoting consumer and shareholder activism to facilitate a more effective market discipline in the financial services industry. Such efforts include measures to enhance transparency and disclosure on financial products and services, so that consumers can make well-informed decisions on their financing requirements. In addition, BNM's experience has been that communication of financial stability risks, issues and the authorities' financial stability strategy and policies is critical to clarify the policy intent and help crystallise the desired outcomes of such policies. BNM communication strategy seeks to incorporate seven key features: clarity, comprehensive, consistency across time and across different stakeholders, concise, coordinated, credible and continuous.

The Bank's Macroprudential Approach to Surveillance and Regulation

BNM's macroprudential approach to surveillance, regulation and supervision gained momentum post-Asian financial crisis which surfaced the need for:

- Timely identification, monitoring and management of systemic risks from all sources of risks irrespective of the origins, including those

emanating from non-regulated entities and sectors.

- Robust assessment on cross-institutions, markets, sectors & crossborder risk transmissions and contagion channels, synthesising information from various sources such as supervisory assessment, market intelligence, information obtained from other regulatory authorities and other qualitative and quantitative data.
- Integrated policy responses to mitigate systemic risks, particularly the combination of micro- and macro-prudential measures with distinct objectives but mutually reinforcing cross-effects.
- Strong institutional arrangements and governance framework to manage complex policy trade-offs.

Essential Elements of BNM's Macroprudential Policy Framework

Macroprudential policy instruments (MPI) have been deployed and targeted at 1) enhancing the financial resilience at institutional and system-wide levels against business cycles variations or endogenous and exogenous shocks through accumulation of financial buffers during upturns, and 2) managing destabilising capital flows, unsustainable levels of credit growth, risk taking activities and buildup of asset prices or other financial imbalances. Recognising that the stability of the financial system as a whole is not achievable solely by ensuring the safety and soundness of individual institutions (fallacy of composition), BNM has deployed MPI, in combination with various micro-prudential measures, to safeguard systemic stability. Essentially, MPI broaden the perspective and application of microprudential tools and can be deemed as reconfiguration and systemic-overlays to existing prudential instrument settings, thereby extending the intended outcome of “institutional safety and soundness” to “systemic resilience and stability”. In designing the MPI, BNM had adhered to the following principles and considerations:

- MPI are used to complement, and not to substitute, macroeconomic (monetary and fiscal) policies to achieve an effective equilibrium of financial and monetary stability, with a common, over-

riding objective of promoting sustainable growth.

- MPI are used as a preemptive tool that is calibrated to address two dimensions of systemic risk: 1) evolution of systemic risk over time (procyclical nature of financial system and institutions) and 2) distribution of risk throughout the financial system at a given point in time (cross-sectional dimension) which is usually characterised by concentration, linkages and interconnectedness between different components that coexist within and outside of the regulated system.
- MPI must be able to respond to structural changes and evolution of the financial sector and economy to ensure that the MPI remain relevant, especially in a rapidly changing environment. Some MPI has been retained or modified over time to manage the accumulation of systemic risks in the more vulnerable segments of the financial system.

BNM's Experience in Deploying MPI

Strong economic growth and buoyant stock market activities in early 1990s had induced massive capital inflows into Malaysia. This created upside pressures on prices of financial assets and real estate to levels that did not commensurate with economic fundamentals. To manage the potential destabilising effects of reversal of such short-term flows and to moderate such inflows on the financial sector and economy, a series of macroprudential measures were implemented during the course of 1993. These measures were aimed at discouraging large scale inflows of short-term funds into the country and hence, provided some calmness in the financial market. These measures were discretionary and temporary, and were removed when conditions returned to desired levels during the course of 1994.

Between 1994 and 1996, macroprudential measures such as loan-to-value ratio on the purchase of non-owner occupied residential properties and tighter conditions on lending extended for the purchase of shares were introduced to curb excessive credit expansion that had fed into asset prices. These measures complemented the use of monetary

policy as increasing interest rates too high during periods of formation of asset bubbles would dampen investments in the productive sectors of the economy whilst at the same time attracts inflows of short term funds into the country. The macroprudential measures were implemented in stages to address the specific issues at hand and to avoid adjustments in the financial markets.

More stringent requirements were implemented in April 1997 to limit bank lending to finance the purchase of shares, and to finance investments in broad property sector. This was in response to concerns of increasing contribution of bank lending to the potential formation of an equity and property price bubble, and at the same time, the adverse impact of a steep correction in these markets on banking system stability. For each of these areas, limits were imposed on different forms of credit exposures such as loans and financing, guarantees and holdings of corporate debt securities issued to finance activities in the broad property sector and equity market. In 1995, limits were also introduced to curtail the rapid growth of lending for purchase of passenger vehicles.

Following the implementation of the limits, loans to the broad property sector and for the purchase of shares declined to 22% of total loans as at end-1997 from 39% of total loans as at end-1996. Financing for share purchase grew only by RM 2.3 billion in the second half of 1997, compared to RM 12.2 billion in the preceding half year. Property prices plateaued and the annual growth in the Malaysian house price index moderated substantially to 1.9% by end-1997 (1996: 12.9%). This alleviated further the buildup in property prices which could have had more damaging effects on the economy following the Asian financial crisis in 1998. Subsequently, the crisis resulted in a sharp contraction in overall aggregate demand including speculative activities that led to further contraction in banks' lending and decline in financial asset prices.

In the November 2010, BNM set a maximum LTV limit of 70% on a borrower's third housing loan onwards. The targeted implementation of the LTV ratio was intended to moderate excessive investment and speculative activity in certain pockets of the residential property market, which had resulted in above-average price increases in such locations. This

has led to house prices in surrounding locations to experience upward movements, thus reducing affordability of homes for genuine and mass house buyers.

The Bank exercises discretion by making appropriate adjustments to the limits where and when necessary, to ensure its continued relevance and effectiveness while minimizing the potential adverse consequences on the financing of economically productive activities. For example, given that the property overhang situation remained substantial in certain subsectors, such as high-end properties and commercial real estate, restrictions on the provision of bridging finance for such property development were instituted in 1999. As the oversupply conditions improved in tandem with overall economic performance and risk management practices of banks, these measures were uplifted in September 2004. Banking institutions however continue to be required to obtain approvals from their respective Boards when extending credit facilities for this purpose, taking into account the impact of particular projects on the overall property market in the vicinity (or 10 km radius). Another example relates to the adjustment in the limit on margin of financing for the purchase of passenger vehicles from 75% in 1995 to 70% in 1997, following the continued pressure in the consumption credit segment. In similar vein, the price threshold for applicability of the LTV was increased from RM 150,000 to RM 250,000 to meet the genuine growing demand for medium-cost properties in tandem with income profile of the Malaysian public.

Key Challenges for Effective Deployment of MPI

It is recognized that the use of MPI is not an exact science given the difficulty to directly gauge its effectiveness and to precisely attribute intended outcomes to MPI in isolation of other factors. For example:

- The intensification of the Asian financial crisis in 1998 had resulted in inherent changes in risk appetite and hence credit growth and leverage thus leading to contraction in overall aggregate demand.
- The limits were introduced as part of a broader package of

preemptive prudential measures which worked in concert.

- The introduction of other banking sector support measures had collectively mitigated the full impact of the crisis on banking institutions.
- More targeted MPI, which were typically aimed at addressing more vulnerable segments, also provided more room for circumvention thus leading to difficulty in assessing overall effectiveness of MPI.

With the benefit of hindsight, it is apparent that a more disruptive correction or significant systemic impact could have unfolded if certain MPI had not been instituted prior to the Asian financial crisis. For example, property prices in Malaysia stabilized (slowest increase since 1993) shortly after the introduction of LTV limit in 1997. In addition, the moderation in margin financing for security purchases mitigated the impact of the sharp decline in equity prices on banks' balance sheet.

The experience has been that timing is a major challenge –the timely implementation and removal of MPI is crucial to prevent overshooting and unintended consequences. Due attention must be given to anticipate and manage the potential for circumvention, inadvertent spillovers or shift of targeted risks to other sectors. In this regard, clear and coordinated communication is vital to ensure symmetric reactions to the MPI. More importantly, progressive and targeted implementation of MPI will enable policymakers to respond more effectively to changing conditions. This calls for continuous monitoring, analysis and recalibration where necessary, as it is often complicated to reverse the impact of unintended effects.

Enhancement to the Macroprudential Policy Framework

BNM adopts an all encompassing strategy in ensuring an effective design of macroprudential framework. In terms of capability development, BNM has established dedicated division accountable for financial stability mandate. BNM's financial stability sector has been reorganised along functional lines, with clearer accountabilities. This includes separation

between the consumer protection, market conduct and supervisory functions. The realignment in 2006 was aimed at having a better approach to regulation, supervision and macroprudential surveillance functions of BNM, as well as facilitating greater integration between macro- and micro-prudential assessment and policies.

Enhancements to the macroprudential policy framework also include new institutional and governance arrangements. For example, the establishment of the Joint Policy Forum, comprising members of the FSC and the MPC, is designed to facilitate deliberation of macroprudential policies that have broader implications on the economy. In considering the choice of macroprudential policy instruments, the Joint Forum would take into account the interaction of macroprudential policies with other key policy objectives such as microprudential, fiscal and monetary policies. In this regard, the Joint Forum represents an important avenue that enables BNM to better manage the interactions and policy trade-offs between the Bank's mutually reinforcing mandates, with a view towards striking the appropriate balance in maintaining financial stability and price stability. As BNM is also the supervisory authority, trade-offs and interactions between micro- and macro-prudential policies objectives are considered and managed internally through robust decision making process, governance arrangements and appropriate check and balances. A common policy trade off involves the balance between the regulatory burden and the desire for innovation and continued growth by financial institutions. To this end, various horizontal technical groups and committee-based decision making structure has been instituted to better integrate macro- and micro-prudential assessments as well as to manage the trade-offs between key policy areas in a more holistic manner.

The design and implementation of BNM macroprudential policy framework is continuously refined and enhanced to remain dynamic and relevant in addressing current and future challenges. A major consideration is the rapid evolution of the financial system, which has led to a shift in the potential sources of systemic risk. The focus is now on continuous monitoring of a broad set of information to identify systemi-

cally important institutions and markets, and to extend the regulatory and supervisory perimeter, where appropriate. In this connection, work is underway in BNM to identify and clarify the definition of the shadow banking system, with a view to establishing an appropriate approach for a monitoring framework for such activities that are currently outside BNM's regulatory perimeter. Another area of focus is the trend where non-regulated entities are becoming increasingly interconnected with the BNM-supervised financial institutions and play a more prominent role in the financial intermediation process. All these considerations call for continuous monitoring and review of BNM's regulatory perimeter.

Mario Bergara

Financial Stability Nets: Complementing and Reinforcing Micro- and Macro-perspectives

Lessons from the Crisis: What Is New?

The aftermath of the 2008 global financial crisis witnessed a surge on the discussion of financial stability issues. In some countries the focus of the debate is on the role of the shadow financial system, its relationship with banks, and the regulatory and supervisory failure to address the problem of regulatory arbitrage. In Europe, the main concerns lie on the lack of a European safety net, mainly due to the absence of a European lender of last resort. In emerging countries, however, the discussion is centered on the impact of the crisis on the volatility of capital flows and the architecture of the international financial system. Though some of the phenomena underlying the origins and depth of the financial crisis were either new or located in new instruments and markets, most of the issues that were raised during this episode can be traced back to the first financial crisis of the world. In the following lines, we develop the argument that even though financial stability concerns are as old as financial systems, and despite some of the main lessons of the recent crisis look pretty much alike the lessons of several financial episodes of the past (to which many jurisdictions have already reacted), there are good reasons to heighten our concern with financial stability.

President, Banco Central del Uruguay.

Financial stability arises as a main concern, despite the fact that the concept is neither new, nor the main explanation for the collapse the world experienced in 2008. The crisis revealed the existence of regulatory failures at different levels, as well as problems in the design of the financial safety nets both at the national and international level. In what appears to be nearly a paradox, regulatory failure has remained in the background overshadowed by the concentration of policy making bodies in financial stability.

Financial stability concerns have had an impact on the management of both macro and micro policies regarding financial stability for a long time now. Uruguay can give examples of that matter. To quote one, in 1998 when facing a bullish international environment, Uruguay increased capital requirements on banks to tame the seemingly bubbling behavior of domestic credit. For years now, Uruguay has worked on increasing the maturity of domestic public debt to avoid liquidity pressures on fiscal accounts that might in the end affect the health of the banking sector. Another example is our country's concern with real exchange appreciations. In the figure below it is possible to see that every financial crisis we had in the last 50 years was preceded by a deep and gradual appreciation of the real exchange rate followed by a sudden and sharp depreciation. That lesson has carved deep into the skins of the Uruguayan people, who see the appreciation of the currency as a sign of trouble to come. As a reflection of that concern, macroeconomic policy has always been keen to keep an eye on the exchange rate market, trying to prevent the misalignment of the real exchange rate with respect to fundamentals. Financial stability is then a long term concern in both macro and micro economic policy design.

Despite their long standing tradition on caring about financial stability, emerging countries like Uruguay are paying a renewed and closer attention to the matter because the international environment has changed. The G20 solution to the financial crisis has set clearly the boundaries of the international financial safety net, which were previously unknown, and has left a legacy of medium term excess liquidity that has to be dealt with in emerging economies. The sum of those two

elements implies much more volatile international capital flows, in an international financial architecture in which each country is basically on its own.

As a result, even though financial stability is nothing new to us, we are paying a much closer look at the ways to complementing and reinforcing efforts to enhance the stability of our financial system and its contribution to the whole economy. In the next lines we would go over the way we envisage financial stability in the new international context.

Why Is Public Intervention in Financial Markets Necessary?

Public intervention in an industry is commonly justified by the existence of market failures and externalities. Market failures and externalities are particularly pregnant in financial markets. Financial markets operate in an environment of asymmetric information where adverse selection, moral hazard and costly state verification problems play a very important role. Moreover, the activities of the financial market players pose important spillovers and externalities over other players in the industry, other industries, the domestic economy and even spread over other economies. Many examples of contagion, externalities and other market failures may be identified on the recent global financial crisis.

Some aspects that are specific to the financial industry provide a rationale for public intervention in financial markets.

Representing and protecting small claimholders. Financial institutions (e.g. banks) finance risky investments (e.g. loans) through retail deposits and other liabilities. Retail depositors, as well as other claimholders, are relatively small (and maybe non-sophisticated) agents. They do not have either the technical capabilities or the incentive to monitor financial institutions. Hence, public intervention is justified in order to cope with the potential moral hazard problem. In particular, a public entity assumes the representation of small claimholders of financial institutions in order to protect them (see Dewatripont and Tirole, 1994).

Controlling systemic risk, financial and macroeconomic stability. One of the main functions of financial institutions is to manage risks.

For this reason, financial institutions are inherently fragile, to the point that some authors refer to them as *risk machines* (see Bessis, 2010). Moreover, troubles in one institution may rapidly amplify and spread to others through balance sheet interlinks and financial contagion, and affect the payment systems and the real economy [see, for instance, Allen and Gale (2000), Diamond and Dybvig (1983), Freixas et al. (2000). Ponce and Tubio (2010) offer a review of the literature]. In addition to these externalities, amplification and spillover effects, a situation of financial instability may be the result of the materialization of a macroeconomic risk which is common to all financial institutions (see Rochet, 2004). Yet, financial institutions may face difficulties to coordinate actions in order to solve potentially damaging imbalances. Rochet and Vives (2004) demonstrate in a formal model that such coordination failure may determine that solvent financial institutions face severe liquidity shortfalls. Hence, these market failures and the need to preserve public goods (e.g. the payment system and the financial and macroeconomic stability) provide another rationale for public intervention.

Protecting taxpayer's money. Financial crises have demonstrated to impose large cleaning burdens to fiscal authorities. Hence, the protection of fiscal revenues is another rationale for prompt public intervention in order to reduce the frequency and the impact of crises, and to quickly and efficiently solve them once they have materialized.

Public intervention in financial markets commonly implies a series of functions that can be classified into the categories of *prevention* and *resolution*. Among the category of prevention one can mention the activities of monitoring and assessing risks (two crucial functions of financial supervision), and the application of a regulatory policy. A regulatory policy implies the use of rules (i.e. regulations) but also of preventive action (e.g. to enforce rules), and corrective action (e.g. to lean against imbalances). The resolution policy involves the use of rules, which are important to guarantee prompt and efficient resolution processes, the resolution and cleaning of institutions in trouble, and the correction of imbalances. Many tools are used to fulfill the objectives of public intervention in financial markets: prudential regulation,

control and supervision (i.e. preventive tools), and resolution mechanisms and emergency liquidity assistance (i.e. resolution tools).

The set of all these functions and tools provides a *financial safety net* to the financial system. In general, the functions and tools of the financial safety net are allocated to different agencies. For example, it is generally the central bank which is responsible for the provision of emergency liquidity assistance. Other responsibilities like prudential regulation, supervision, and deposit insurance are allocated inside the central bank in some jurisdictions and outside in others. In order to determine the most efficient governance structure for the financial safety net policymakers should consider the agencies explicit conflict of objectives, the potential conflict of opinions about key issues (e.g. the intervention or the liquidation of a financial institution, the provision of short term emergency assistance, the authorization of mergers and acquisitions), and the need for coordination. In addition to this, policymakers should consider the pros and cons of the unification versus the separation of financial safety net agencies on the grounds of their relative expertise, capabilities, reputation, credibility and institutional strength. Moreover, the financial safety net affects and is affected by other functions like the conduction of monetary policy and fiscal policy. These effects should also be considered when designing financial stability institutions. We come back to this point in Section 5.

Micro- and Macro-prudential Perspectives

Sound risk management is needed not only at individual institutions but also at the financial system as a whole. The severity of the recent global financial crisis can only be explained by the systemic risk factors that propagated the problems in individual institutions and markets to the entire global financial system. The close relationship between individual and systemic risks provides a rationale for complementing the traditional microprudential perspective (focusing on individual risks) with a macroprudential perspective (assessing systemic risks).

Most of the financial regulatory and supervisory apparatus focalizes on the microprudential perspective. Some exceptions are the cases

of Spain and Uruguay which have been implementing mechanisms to control both the static and the dynamic dimensions of systemic risk (e.g. dynamic provisioning and limit to currency mismatches) during the last decade. The recent Basel III capital and liquidity accord makes advances in the consideration of systemic risk. However, most of the current financial regulation focuses on the stability of each financial institution and market considered in insulation. Hence, it largely ignores the externalities that one institution poses on the others, the systemic importance of individual institutions, and the risks that are generated endogenously to the financial system. Moreover, the regulation focusing on individual institutions may open possibilities for regulatory arbitrage, i.e. the possibility that financial institutions avoid regulations of certain activities by conducting them through other entities (or lines of business) which are subject to less severe regulations.

The final objective of the macroprudential perspective is to avoid the materialization of large social and economic costs due to financial instabilities. Hence, this perspective to financial stability considers the entire financial system and intends to protect their infrastructures (e.g. the payment system, the interbank and the money markets). The macroprudential perspective overlooks the aggregate risk of the entire financial system by explicitly considering the exposition of individual institutions and market to common sources of risk, and the dynamic of risks that are generated endogenously.

The micro- and the macro-prudential perspectives should be jointly considered in order to avoid regulatory arbitrage and to ensure financial stability. Both perspectives should complement and reinforce each other in order to protect small customers and the stability of the entire financial system. Hence, their contribution should be transversal to the financial safety net agencies rather than the responsibility of a specific, macroprudential authority. The following sections analyze the implications of jointly considering the micro- and the macro-prudential perspectives on rules, institutions, governance and the design of macroeconomic policy.

Micro- and Macro-prudential Policies: A Two-way Road

The following lines we argue that the function of financial stability implies a more articulated cooperation between institutions concerned with macro and microeconomic policy making and regulation.

Implications of Systemic Risk on Traditionally Microprudential Rules and Institutions

The consideration of systemic risks (e.g. exposure to common and correlated risks, interconnectedness, financial and real sector conglomerates, crossborder issues, regulatory arbitrage, new kinds of risks and developments) have implications on traditionally microprudential rules and institutions.

Risk-based regulation. Risk-based regulation implies that similar risks face similar regulations regardless the financial institution and activity that generate them. This kind of regulation is a direct way to provide safety and protection to claimholders of financial institutions and other participants to the financial system. Other kind of regulation (e.g. activity-based and institution-based) may imply that important sources of risk remain unregulated and foster regulatory arbitrage. Moreover, they may ignore the important synergies, interlinks and externalities among different activities and financial institutions (which are particularly relevant under financial conglomerates) that contribute to systemic risk. To anticipate and control excessive risk taking is a direct mechanism to mitigate the negative effects that the materialization of risks impose to the stability of the financial system. A risk-based regulation acts directly over the incentives to take risks, and reduces the possibility of regulatory gaps whereby important activities that should be regulated escape regulation.

Dynamic regulatory perimeter. Financial institutions are special not only because they are specialized on risk management but also because they have shown to be creative and efficient on the development of new products. Financial innovation may contribute to social welfare but it also may serve as a device to arbitrate regulation and thereby

to increase individual and aggregate risk. The capacity to innovate of financial institutions, the potential for regulatory arbitrage, and their potentially dangerous effects to the whole financial system provide a rationale for allowing the agencies on the financial safety net to expand and contract the regulatory perimeter (i.e. to select what institutions and activities should be regulated) in order to promptly react to new kinds of risks as market develop.

The possibility to dynamically adjust the regulatory perimeter is also justified by the trend of financial institutions to form groups and conglomerates where a stockholding company (even a non-financial one) owns financial institutions. Moreover, state-owned and privately-owned financial institutions managing similar risks should be in the same side of the regulatory perimeter and then subject to the same kind of regulations and controls.

Uruguay represents a particular case in Latin America where the law gives powers to the financial sector regulator and supervisor to adjust the regulatory perimeter in order to fulfill its mandate of preserving the stability of the financial system.

Centralized regulation. The regulation of financial institutions should be centralized in a unique regulator. The existence of many agencies regulating the same financial institution (e.g. in an activity-based regulatory framework) may imply important overlaps in regulatory requirements or important gaps where important activities that should be regulated escape regulation. Moreover, financial markets are naturally dynamic and financial institutions and markets (e.g. banks and other intermediaries, pension funds, insurance and capital markets) show important interlinks which justify the need for a large level of consistency thought different regulations.

More centralization of financial regulation may imply lower bureaucratic costs, economies of scale and scope, the use of a conglomerates logic and lower regulatory arbitrage. These advantages from concentrating financial regulation may be traded off the potential advantages from a less concentrated financial regulation (e.g. efficiency gains due to specialization).

The rules and tools used by the centralized regulator should consider micro- and macro-prudential risks. Otherwise stated, the financial regulator should take both prudential perspectives into consideration when writing rules and using regulatory tools and instruments. Hence, the financial regulator should receive as a clear and explicit mandate not only to ensure the stability of individual institutions and markets, but also to guarantee the stability of the whole financial system. Other aspects that are related to the governance of the financial regulator and its relationship with other agencies are analyzed in Section 5.

Implications of Microprudential Concerns on Macroeconomic Policies

Microprudential policy has a direct impact on macroeconomic policy, but experience shows that the reciprocal is also true.

Changes in regulation and supervision affect the power, reach and timing of macro policies. Leaving aside the obvious effects in crisis times, it is well known the impact of regulation and supervision on the development of financial markets and credit. Changes on the development of financial markets have a direct effect on the power of monetary policy. Changes in credit affect might affect consumption and therefore fiscal revenues. The recent crisis has highlighted the potential effect of failure in regulation and supervision on the creation of asset price bubbles. If we add those *normal time* effects to the ones generated during times of stress, we have a clear case why both monetary and fiscal policy should be concerned with financial stability.

Nevertheless, since many financial crisis can be traced back to problems in policy at the macro level, there is a clear case of a reciprocal concern on macro policy design coming from the authorities of the financial safety net. Particularly in the case of emerging economies, threats to financial stability come from the macro environment, and depend largely on the way macroeconomic policy is conducted. Reinhart and Rogoff illustrate that financial crisis tend to cluster in history, and are related to the volatility of capital inflows and commodity prices. The literature on early warning systems suggest that the most basic fea-

tures that currency and banking crisis seem to share are unsustainable appreciations of the domestic currency and fiscal problems. In the case of Uruguay, the three cases depicted in the figure portrayed in section I can be explained by (or cannot be understood without) problems on the design of macroeconomic policy. Since most financial crisis events have macroeconomic factors that either caused or amplified them, financial stability concerns should affect the design of macroeconomic policies.

The impact of macroeconomic policies on financial stability justifies the presence of macro policy makers in the discussion of financial stability issues not only as the ones that pay the bill once the crisis has started, but also as key actors in the prevention of episodes of financial instability. A direct result of the line of reasoning that this paper develops is that financial stability is a two way road, in which all the actors involved have some mileage to cover in order to ensure financial stability.

Financial Stability Committees: From Safety to Stability Nets

The final outcome in terms of financial stability depends on the policies conducted by several of the agencies that are involved on macroeconomic policy design and the financial safety net: prudential regulation and supervision, emergency liquidity assistance, deposit insurance, etc. All the agencies that may contribute to the stability of a financial system *own* policy instruments and tools, and are responsible for their use. The challenges are that all these agencies should internalize the effects of their policies on financial stability; that all these agencies should complement each other on the identification and the assessment of risks and vulnerabilities; and that policy instruments and tools should be used and calibrated by considering both the micro- and the macroprudential perspectives to financial stability.

Operationally independent agencies should receive clear mandates and remain accountable for the outcome of their policies. Hence, safety net agencies should receive the mandate of contributing to the stability of the whole financial system in addition to their specific mandates.

Yet, agencies may have conflicting opinions on crucial decisions which may end in situations of financial instability. Financial stability committees appear as a response to align incentives, coordinate efforts, and contribute for all agencies to comply with their respective mandates. Financial stability committees also add to the financial safety net by helping the micro- and the macroprudential perspectives to complement and to reinforce each other. Financial stability committees are a step toward *financial stability nets*. Uruguay, like other Latin American countries, has recently created a committee with the objectives of sharing information and coordinating actions among the financial safety net agencies.

Financial stability committees serve as a framework to share information and to coordinate actions. They also help to improve the identification and the assessment of risks, and the accountability of the stability net agencies. Hence, they help safety net agencies to comply with their mandates. The specific mandates of safety net agencies and the operational constraints that they face imply that each of them specializes on the oversight of specific dimensions of financial risks. To share, combine and analyze the different pieces of information under the leadership of a financial stability committee improves the efficiency of risk assessment not only by profiting from the specialization of safety nets agencies on assessing specific risks, but also by having a more comprehensive approach to risks, by considering the interlinks between them, and by anticipating new risks. To get information from different safety net agencies also has the benefit for the financial stability committee (and the social welfare) of reducing the potential that the industry *captures* safety net agencies (see Boyer and Ponce, 2011). Moreover, the sharing of information, the insights provided by different safety net agencies, and the explicit consideration of different point of view on crucial decisions imply the generation of observable (and verifiable) information which may improve the accountability of the agencies.

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Financial Stability and the Role of Central Banks: The Case of Mexico

Introduction

In contrast to price stability, which is essentially a monetary phenomenon, financial stability comprises monetary and nonmonetary issues, which inherently involve financial authorities beyond the central bank. This is especially true in countries where governmental institutions distinct from the central bank undertake many activities in bank regulation and supervision, as it is the case of Mexico. Based on this idea, this essay maintains that several financial authorities should engage in maintaining the financial sector operating smoothly, sharing the responsibility of delivering financial stability. Additionally, this essay supports the notion that it is not necessary to create an explicit mandate for financial stability within autonomous central banks, as financial stability is inherently attached to the *raison d'être* of such institutions already.

In Mexico, there is no legal provision that stipulates for an exclusive financial stability mandate to a single financial authority; rather, there

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is a financial stability council, formed by several financial authorities, which does have such an ordinance. This council is a coordinating body that does not have regulatory nor supervisory powers by itself; instead, it aims at coordinating regulatory and supervisory efforts among financial authorities to accomplish its purpose, coordination that the recent international financial crises showed that is essential for preserving financial stability.¹ Among other things, the council gathers, processes, and analyses financial data; evaluates methodologies and indicators to measure systemic risk; weights up the vulnerabilities of the Mexican financial system; provides recommendations in terms of prudential policy; and delivers an annual report on the financial stability status of the Mexican economy.

A challenge in terms of macroprudential policy in Mexico is to design mechanisms that render the financial stability council to operate as efficiently as possible, observing the legal framework that circumscribes the legal capabilities of each Council's member.

The remainder of this essay encompasses six sections. Section two presents the Council for the Stability of the Financial System (CESF),² which is the lead institution on financial stability in Mexico. This section shows that various authorities are involved in the procuring of financial stability in Mexico, and why this is a necessary condition for bringing out financial stability in the country. Section three addresses the mandate of the Banco de México (Mexican central bank), to explain why financial stability is already deeply rooted in the central bank's chart, so there is no need to change its formal mandate. Section four comments on the status of macroprudential policy in Mexico and describe some of the macroprudential instruments that are currently in operation in this country. Section five discusses some general guidelines to build up the macroprudential toolkit. Section six points out the organizational changes that have taken place within the central bank to enhance its capacities of procuring financial stability. Finally, section seven concludes

¹ See Carstens (2010).

² All the acronyms in this essay are in Spanish.

with some remarks on the role of central banks in financial stability and the design and implementation of macroprudential policy.

The Council for the Stability of the Financial System

On July 29, 2010, a presidential decree created the Council for the Stability of the Financial System (CESF). The decree establishes the Council as a forum for evaluation, analysis, and coordination of authorities on issues of the financial system. It also states that the purpose of the Council is to contribute to financial stability in Mexico, by avoiding substantial disruptions or disturbances in the functioning of the financial system, and by minimizing the impact of such events if they occur. According to the decree, the Council has the function of identifying in advance systemic risks and recommending and coordinating financial stability policies, measures, and actions that could be implemented by the financial authorities according to their lawful attributions.

Nine representatives from six financial authorities constitute the CESF (see Table 1). In their respective sphere of legal capabilities, these authorities are responsible for planning, coordinating, evaluating, and monitoring the banking system, including the supervision and surveillance of banks, deposit insurance, and bank resolutions. They are also responsible for organizing the functioning of non-bank financial institutions and financial markets, regulating the issuance and circulation of money, conducting the monetary policy, defining the foreign exchange policy,³ and regulating the payment systems.

To perform its duties, the Council relies upon a Technical Committee, which is formed by 14 representatives from the same financial au-

³ The Foreign Exchange Commission defines the foreign exchange policy in Mexico. The Secretary and the Undersecretary of Finance and Public Credit, another undersecretary appointed by the Secretary of Finance, the Governor of the Banco de México, and other two members of the Board of Governors of the Banco de México appointed by the Governor compose the Foreign Exchange Commission. The Secretary of Finance has the casting vote in case of a tie.

Table 1

MEMBERSHIP OF THE COUNCIL FOR STABILITY OF THE FINANCIAL SYSTEM (CESF) AND ITS TECHNICAL COMMITTEE¹

<i>Financial Authority²</i>	<i>Council (9 members)</i>	<i>Technical Committee (14 members)</i>
Secretariat of Finance and Public Credit (SHCP)	Secretary (chair) Undersecretary	Undersecretary (chair) 3 high-ranking representatives
National Banking and Securities Commission (CNBV)	President	3 Vice Presidents
National Insurance and Surety Commission (CNSF)	President	1 Vice President
National Commission for the Pensions System (Consar)	President	1 Vice President
Institute for the Protection of Banking Savings (IPAB)	Executive Secretary	1 Assistant Secretary
Mexican central bank (Banxico)	Governor 2 Deputy Governors	1 Deputy Governor 3 General Directors

¹ Additional information about the Council for Stability of the Financial System can be found in <www.cesf.org.mx> (in Spanish).

² SHCP (Secretaría de Hacienda y Crédito Público), CNBV (Comisión Nacional Bancaria y de Valores), CNSF (Comisión Nacional de Seguros y Fianzas), Consar (Comisión Nacional de Ahorro para el Retiro), IPAB (Instituto para la Protección del Ahorro Bancario), Banxico (Banco de México).

thorities that conforms the Council (see again Table 1). The Technical Committee can make recommendations and proposals to the Council regarding the risks to financial stability and how to manage crisis situations.

It is essential to realize that the CESF is not a financial authority by itself, but a cooperative forum of financial authorities, which can make recommendations to the financial authorities. The financial authorities then decide whether to implement the recommended policies that lie within the scope of their legal mandate. Thus, a clear and adequate set of operating rules that promote strong communication and coordination

among the financial authorities is paramount for the effectiveness of the Council.

Based on the decree, the Council designed and approved its operating rules, which includes the following features:

- a) The Secretariat of Finance and Public Credit (SHCP) is the lead institution in the Council.
- b) The Banco de México plays a central role as member and the Executive Secretary of the Council.
- c) In the event of disagreements in policy recommendations within the Council, a majority vote resolves the controversies.
- d) In the case of a tie, the SHCP has the casting vote.

The arrangement determined by these rules seems natural within the present legal framework of the Mexican financial system. Either the SHCP itself or its financial-regulatory agencies undertakes a substantial part of the activities concerning financial policy, regulation or supervision, deposit insurance and bank resolution. Therefore, the basic governing rules of the Council mirror the legal framework of the Mexican financial system. Rules like these allow the Council to operate without building up a new institutional framework.⁴

Having a council in charge of supervising financial stability has another significant advantage. The CESF not only brings the financial authorities that rule how the financial intermediaries and financial markets operate together, but also gathers those authorities who are in charge of the key macroeconomic goals. Some of them are projecting and coordinating the country's National Development Plan, formulating and

⁴ Based on a recent cross-country analysis of existing and emerging macroprudential policy frameworks, Erlend W. Nier, Jacek Osipiński, Luis I. Jácome, and Pamela Madrid (2011) conclude that the available resources, the history of existing arrangements, legal traditions, and the political economy are factors that might have significant effects on the institutional model chosen by countries for macroprudential policy. All these factors were relevant to define the institutional framework of macroprudential policy in Mexico.

implementing the fiscal policy, managing the federal public debt, and maintaining price stability. Therefore, the CESF is a forum in which the main economic policy players exchange views on financial stability from a wider economic policy perspective than they would do otherwise.

Lastly, it should be emphasized that central banks should play a crucial role for the success of financial stability councils. As pointed out by Governor Carstens (2011):

In measuring and monitoring systemic risk closely to foresee threats to a country's financial stability and taking measures to mitigate them, autonomous central banks have two key advantages over other financial authorities. First, because their mandates are oriented toward macroeconomics, central banks already have the infrastructure in place to watch over the economy and the financial markets as a whole. Second, because they are autonomous, they might be more inclined to take away the punch bowl just as the party gets going.

The macroeconomic, systemic, and long-term perspective of the economy implanted in the autonomous central banks' spirit represents an element that should not be missed in the core of any financial stability council that makes policy recommendations. The Banco de México has the enormous responsibility of bringing and maintaining such approach in the CESF.

Banco de México's Mandate

The Mexican Constitution, the cornerstone of all legislation in the country, establishes that the country shall have a central bank that will be autonomous in the execution of its functions and management. It also determines that the primary objective of the central bank is to achieve price stability and that no authority can command the central bank to dispense financing.

The purposes of the Mexican central bank are specified in the Bank of Mexico Act. According to this law, the first purpose of the Banco de México is to provide local currency to the Mexican economy. However, in pursuing such as objective, the main priority of the Mexican central bank shall be ensuring the stability of the domestic currency's pur-

chasing power, which means achieving and preserving price stability. The other purposes of the Mexican central bank are to promote the sound development of the financial system and the appropriate functioning of the payment systems.

In order to secure price stability, during the late 1990s and early 2000s, the Banco de México gradually adopted a monetary policy framework based on inflation targeting. The target is defined in terms of the inflation rate that is measured by a national consumer price index, which includes the prices of goods and services, but excludes the prices of assets.⁵ Because of this, the conduct of monetary policy by itself does not guarantee financial stability, in the sense that it does not explicitly take into account the surging of asset price bubbles.⁶

However, the efficacy of monetary policy could be lessened or even nullified by financial instability, as financial instability may disrupt the monetary policy transmission mechanisms. Hence, financial instability dwindles the central bank's means to accomplish the inflation target. Therefore, maintaining financial stability is a necessary condition for achieving and preserving price stability.

Financial stability is also a condition for achieving the other targets of Banco de México. On the one hand, financial stability favors the sound development of the financial system, as it promotes savings, intermediation, and proper risk sharing. On the other hand, the degree of stability of the financial system affects its size, strength, and efficiency, which ultimately influences the functioning of the payment systems.

Furthermore, price stability also reinforces the sound development of the financial system and the appropriate functioning of the payment systems, as it bolsters savings, efficient allocation of resources, and

⁵ The national consumer price index (INPC) includes the residential rents and owners' equivalent rents and, therefore, partially reflects the price of houses.

⁶ A prudent monetary policy does not prevent the formation of credit bubbles neither, as in any market economy the credit to the private sector is an endogenous phenomenon. Nevertheless, a prudent monetary policy could contribute to diminish the incidence of credit bubbles by eradicating one of the fundamental causes of credit overexpansion: the excessive growth in high powered money.

long-term planning. Finally, the sound development of the financial system and the appropriate functioning of the payment systems contribute to financial stability, which, as mentioned before, contributes to monetary policy efficacy and price stability attainment, closing a virtuous cycle.

In sum, price stability, the financial system's sound development, the appropriate functioning of the payment systems, and financial stability are all intertwined. As a consequence, an explicit mandate for the first three targets includes also the fourth purpose. Hence, adding a mandate for financial stability seems redundant in the case of the Banco de México.

Macroprudential Policy in Mexico

As in other countries, the financial authorities in Mexico are currently invigorating the analysis and design of macroprudential policies. With the creation of the CESF, a crucial step to enhance macroprudential cooperation among financial authorities has taken place.

The policies with macroprudential character are not a new phenomenon in the country. Such policies and collaboration among authorities needed to define and implement them have taken place in Mexico for a while. Nevertheless, the creation of the CESF represents a new phase in the conduct of the financial policy in Mexico. It should provide a renewed emphasis on prudential policy based on a systemic approach.

The capabilities of the Council include both microprudential and macroprudential policy recommendations. However, usually there is not a clear line between them. For instance, it is frequently said that microprudential polices focuses on containing individual risks, to protect depositors ultimately, while macroprudential focuses on restraining systemic risk, to prevent contagion from financial distress to the real economy. This conceptual separation seems to be a useful benchmark for designing macroprudential tools, but some difficulties arise from the fact that some instruments could have both microprudential and macroprudential effects.

In any case, the experience of the global crisis of 2008-2009 suggests that even though some microprudential instruments might serve macroprudential purposes, and vice versa, additional and proper prudential instruments that center on systemic risk are required.⁷

In Mexico, there are banking and financial market instruments that already are used for macroprudential purposes (see Table 2). To understand why these instruments are considered macroprudential, it is convenient to review the definition of macroprudential policy. A formal definition of macroprudential policy does not exist in Mexico—in the sense that it is written in a legal statute—, but it could be said that an operational definition, based on the analysis undertaken jointly by the Banco de México and the SHCP to design the CESF, is in place already. The operation definition of macroprudential policy in Mexico could be defined as follows:

A policy consisting of recollecting information and designing indicators to measure systemic risk effectively, as a means of identifying potential risks to financial stability early and implementing measures and actions to minimize such risks, as well as to maximize the resilience of the financial system to the different shocks.

Note that there are two critical elements in the definition: the timely prevention of systemic risk and the resilience of the financial system to different shocks. (The recollection of information and the design of indicators to measure system risk, mentioned in the beginning of the definition, are an essential part of the timely prevention of systemic risk.) Thus, *any device that serves at least one of these purposes could be tagged as macroprudential*, as it is the case of the instruments shown in Table 2.

⁷ For instance, Beverly Hirtle, Til Schuermann and Kevin Stiroh (2009) conclude that a purely microprudential perspective is not sufficient to maintain financial stability. They suggest improvements to the Supervisory Capital Assessment Program (SCAP) to strengthen the joining of macro- and micro-prudential approaches to create a better supervisory framework that address a wider range of supervisory objectives.

Table 2

SOME INSTRUMENTS OF MACROPRUDENTIAL POLICY IN MEXICO

<i>Currently in used</i>	<i>Main purpose</i>
<i>Bank system instruments¹</i>	
Limits on maturity mismatch in foreign currency (1992, 1997) ²	To contain banks' currency risk.
Limits on lending to related counterparties (1994, 2001, 2008, 2011) ²	To restrain banks' exposures to shareholders' credit risks.
Limits on interbank exposure (2001)	To curb interbank contagion risk.
<i>Financial markets instruments</i>	
International reserve accumulation (1996-2001, 2010-2011) ³	To improve the credit profile of the country. To protect against a reversal of capital flows.
Flexible limits on investment for pension funds (2010) ¹	To prevent massive sales and feedback to the financial markets' volatility.

¹ The first year in parenthesis is the year in which the instrument was adopted. Subsequent years correspond to revisions.

² These instruments are also believed to serve microprudential purposes.

³ In parenthesis appears the period in which the instrument was in force.

The older instrument in the list shown in Table 2 is *the limits on maturity mismatch in foreign currency* for banking institutions, which was established by the Banco de México in 1992. According to the central bank's rules, the liabilities in foreign currency of all banks must not exceed a limit, which is defined in terms of their tier 1 capital. In addition, the banks should maintain a minimum of liquid assets denominated in foreign currency, the exact amount being determined in terms of the banks' short-term net cash outflows in foreign currency. The objective of these prescriptions is to rein in the main sources of currency risks that banks face in their balance sheets. The effectiveness of

this instrument has been proved already. During the global crisis of 2008-2009, no bank in Mexico faced up to any foreign currency liquidity problems as it occurred in other economies that did not use this macroprudential instrument.⁸

The CNBV established in 1994 *the limits on lending to related counterparties*, the second macroprudential instrument in the list, to restrain banks' exposures to shareholders' credit risks and to avoid conflicts of interests. According to this regulation, any lending to related counterparties in excess of a threshold should be subtracted from tier 1 capital, which imposes a significant cost to the banks if the threshold is trespassed. The last revision occurred in March 2011, when the said limit was decreased from 50% to 25% of core capital. The exposures subjected to the limit include deposits, loans, net positions in derivatives and securities holding different from shares. This prudential instrument seems to be relevant particularly in countries like Mexico, where a large share of bank assets is owned by foreign banks.

The CNBV also set up in 2001 a *limit on interbank exposure*, which includes among other things net positions in derivatives and repurchase agreements with the purpose of curbing interbank contagion risk. As a consequence of this and other factors, the banks in Mexico have improved their management of counterparty risk in the last decade, and the interbank exposures did not represent a source of systemic risk in the 2008-2009 global crisis.

For the containing of financial markets risks, two measures stand out for their macroprudential content. The Banco de México instrumented the first from August 1996 to June 2001 and from February 2010 to November 2011. It consists of a monthly put-option auction

⁸ For instance, soon after Lehman Brothers collapsed in 2008, a currency crisis surfaced in Eastern Europe. In some countries of this region, local banks had large liabilities in foreign currency that they used to finance domestic mortgage loan borrowers. However, when the global crisis burst, the funding of these banks was reversed to the liquidity crisis in Western Europe, leaving the banks unable to roll over their foreign currency debt. This caused turmoil in local financial markets.

that enables the option holders to sell dollars to the central bank as a means to facilitate the stocking of international reserves.⁹ The *international reserve accumulation* as an instrument of macroprudential policy has the purpose of improving the credit profile of the country in the international markets and protecting the national economy from an unexpected reversal of capital flows from abroad. The buildup of foreign currency reserves, together with the two-year flexible credit line with the IMF, has reinforced the Mexican capacity to face new outbreaks of global instability.

The CNBV implemented the last instrument in the list in February 2010. It consists in a rule that establishes that in periods of financial stress VaR limits for pension funds' portfolios increase to pre-specified levels. That is, the regulation limiting VaR for pension funds was modified to allow higher VaR limits in periods of extreme volatility than in periods of normal volatility. This is done to prevent massive sales and feedbacks to the financial markets' volatility. This measure also helps to protect the value of the saving accounts as the corresponding portfolios are made primarily of long term assets, whose value will normally recover once the turmoil is over. Absent this rule, the regulation would be obliged pension funds to take losses in periods of financial stress that could be eventually undone otherwise.

The Technical Committee of the CESF is currently working to expand the macroprudential toolkit. Two instruments that are currently under study are caps on loan-to-value ratio and a countercyclical/time-varying capital requirement.

In order to detect the piling up of systemic risks timely and to be prepared to act preemptively, the Council agreed to create five working groups. The first group is dedicated to the standardization and collection of information useful to monitor financial stability. The second group is in charge of detecting risks and vulnerabilities in the financial system,

⁹ This instrument is consistent with the floating exchange rate regime prevalent in Mexico. It does not target any level of the foreign exchange rate and the mechanism used is transparent, pre-set, and automatic.

looking for identifying threats promptly. The third group is responsible for designing indicators and methodologies to measure systemic risk.¹⁰ The work of the third group should complement the analysis of risks and vulnerabilities formulated by the second group. The fourth group is dedicated to guaranteeing the transparency of the information to both market participants and the public in general. Finally, the fifth group is devoted to assessing the systemic risks in financial markets.

Bases to Build up the Toolkit

In order for a country to implement an operative macroprudential policy, the authorities responsible for procuring financial stability should have at their disposal a set of macroprudential instruments that are feasible, coherent, and effective. The big question is how to build up such an ideal toolkit. To answer this question, first it is helpful to recognize that there is no such thing as a standard toolkit that fits the needs of all jurisdictions. In terms of the design and selection of macroprudential tools, the particular characteristics of the jurisdictions should be taken into account. Nevertheless, some general guidelines could be taken into account for the buildup of the toolbox, which are related to topics that frequently rise in policy discussions.

One of them is the tradeoff between financial stability and economic growth. In this matter, it should be acknowledged first that from an empirical point of view, measuring the impact of macroprudential policy on economic performance is far from straightforward, so the actual effects are not obvious. Nevertheless, from a theoretical point of view, as a macroeconomic topic, it is crucial to distinguish between short run and long run. In the long run, as it happens with price stability, financial stability should foster economic growth. In the short run, the situation

¹⁰Measuring systemic risk is one of the most challenging endeavors in the financial stability realm. As remarked by Deputy Governor Manuel Sánchez (2011, p. 2): “Available concepts of systemic risk are vague and too wide to be operationally useful. If any policy framework is to be designed and applied in a meaningful way to counteract systemic risk we need to narrow this concept and make it more precise”.

could be different: financial stability might have some adverse effect on the rate at which the economic activity expands. Presumably, on some periods, a stable economy will grow at a slower rate than an instable economy, but the latter will recurrently boom before crashing. Since ongoing wellbeing is the ultimate goal, a macroprudential policy that conveys to financial stability should be pursued always. Nevertheless, the policy design ought to be carefully crafted by choosing the prudential instruments that imply the lowest cost in terms of implementation and adjustment.

Another principle is that each macroprudential instrument within the toolkit should be clearly defined and the specific objective that it targets –either to contain systemic risk or to improve the resilience of the financial system– overtly identified. Furthermore, the expected benefits and potential cost, including distortions and other limitations of the instruments, should be critically assessed, taking into consideration their possible interactions with other instruments.

According to a recent international survey on the organizing framework of macroprudential policy,¹¹ the instruments more frequently mentioned by the jurisdictions as potentially useful to attain financial stability are *caps on loan-to-value, countercyclical/dynamic provisioning, limits on net open currency position, and countercyclical/time-varying capital requirements*. How to evaluate whether these instruments should be included in the macroprudential toolkit? In principle, a cost-benefit analysis of each instrument should be carried out before adopting it; even better, this analysis should be undertaken on different feasible sets of instruments rather than on individual instruments, as the effects of some instruments might be correlated.

The caps on loan-to-value ratios head the list in Table 3 since it is the macroprudential instrument most frequently mentioned. It has the objective of reducing procyclicality of credit growth in the economy, which is beneficial in terms of financial stability. However, the expected costs

¹¹ This survey was undertaken in the Money and Capital Markets Department of the IMF, by a team coordinated by Cheng Hoon Lim (2011).

of implementing it should also be considered. For example, as this instrument is applied uniformly to all regulated financial intermediaries, regardless of their characteristics, theoretically some potential costs in terms of efficiency may arise. This could be the case if some intermediaries are better skilled to assess the quality of potential borrowers than others and they use loan-to-value ratios –probably together with other credit variables– to screen borrowers. In this situation, if the caps on loan-to-value are set too low, the screening capacity of financial intermediaries could be reduced. Additionally, a limitation of this instrument is that it could be circumvented easily through different ways, for instance, by overstating the value of the assets. Therefore, for some jurisdictions the caps on loan-to-value could have an expected net benefit, while it could be less clear for others.

Table 3

COST-BENEFIT ANALYSIS OF MACROPRUDENTIAL INSTRUMENTS (INDIVIDUALLY)

<i>Instrument</i>	<i>Expected "benefit"</i>	<i>Potential "cost" or limitations</i>
Caps on loan-to-value ratio	To reduce procyclicality of credit growth.	Could limit efficiency gains from screening and signaling mechanisms Could be circumvented easily by overstating the value of assets.
Countercyclical/dynamic provisioning	To limit capital losses. To reduce procyclicality of credit.	Could overlook some macroeconomic conditions.
Limits on net open currency position	To limit bank's foreign currency risk.	Could overlook other potential sources of currency risk.
Countercyclical/time-varying capital requirements	To turn banks' capital sensitive to credit risk. To reduce procyclicality of credit.	Without timely information, it could increase output volatility.

Table 3 exhibits an illustration that summarizes some of the expected benefits and potential costs or limitations of the four macroprudential instruments mentioned above.

Changes in the Banco de México

A large part of the regulation and supervision of the financial system in Mexico is conducted by the SHCP or its financial regulation agencies. However, the Banco de México has some significant regulatory and supervisory powers, fundamentally on banks and brokerage firms. These functions have not changed as a result of the global crisis of 2008-2009.¹² However, key organizational changes in the Banco de México took place during 2010, some of which are directly linked to financial stability.

In October 6, 2010, it was created the Banco de México's Financial Stability Division, formally named the Directorate General of Financial Stability. This new area has the directive of identifying and evaluating potential threats to financial stability and designing measures and policies to prevent financial instability and alleviate the impact of financial crisis.

Within the Mexican central bank, the Financial Stability Division is in charge of collecting, analyzing, and disseminating information related to systemic risks; recommending macroprudential policies and regulations to maintain financial stability and increase the resilience of the financial system; finding deficiencies in the regulatory and supervisory frameworks that could harm the steadiness of the financial sector; and keeping track on the developments in the financial regulation at home and abroad. Since its formation, the Division has been endeavoring on the improving of the models it uses to assess credit, market, liquidity, and contagion risks to fulfill its responsibilities properly.

The Financial Stability Division also coordinates the efforts in matters of financial stability of the Banco de México with other Mexican

¹²Recent changes in the regulation and supervision undertaken by the Mexican central bank are related to issues in consumer protection, which have drawn the attention of the Congress since before the crisis.

authorities through the CESF. In fact, the Governor appointed the Division's Head as the secretary of the Council. Additionally, the Division actively participates in international groups working under the aegis of the Financial Stability Board (FSB) and the Basel Committee on Banking Supervision (BCBS).

The yearly Financial System Report that publishes the Banco de México since 2006 is now led by the Financial Stability Division.¹³ With the issue of the year 2011, the Banco de México adopted a refreshed approach in this report, with the purpose of emphasizing the evolution of systemic risks in the Mexican financial system.

The Financial Stability Report includes sections on the global and Mexican economy; the financial intermediaries and financial markets; the infrastructure of the financial system; the financial position of households, firms, and the public sector; and the contagion risk and stress tests on banks and brokerage firms. This report and the annual report published by the CESF are complements in terms of their contents. They are published about six-month apart one from the other, so the public has access to a report on the financial stability of the Mexican economy semiannually.

Final Remarks

The role of central banks in financial stability seems as imperative now as it has been always, but it does not appear to entail a need for establishing an explicit mandate on financial stability in their chart. At least for autonomous central banks oriented to price stability, as it is the case of the Banco de México, financial stability appears to be intrinsic to their current ends already.

Nevertheless, the global crisis of 2008-2009 revealed that the involvement of central banks in financial stability should be deeper and more inclined towards preventing financial instability than it has traditionally been. To do so, they should conduct their monetary policy to

¹³The Financial System Report can be downloaded in Spanish and English from the Banco de México's website on <www.banxico.org.mx>.

achieve price stability in the first place, as price stability favors financial stability.¹⁴ Unfortunately, price stability cannot ensure financial stability by itself, and financial stability requires an effective macroprudential policy.¹⁵

The design and implementation of macroprudential policy has been in the center of an intense debate worldwide in recent years. In contrast to price stability, financial stability comprises monetary and nonmonetary issues, which involve institutions beyond the central bank. Therefore, a necessary condition for strengthening financial stability is that a number of financial authorities should participate in building up and implementing the macroprudential policy.

This is especially true in countries like Mexico where, given legal traditions and existing arrangements, financial authorities separate from the central bank handle multiple activities in bank regulation and supervision. The gathering of different financial authorities whose legal-competence domain includes prevention and resolution, along with fiscal, monetary and other economic policies, also confers to developing a macro based, systemic approach to financial stability.

Nonetheless, this configuration presents some challenges. First, a clear set of operating rules that promote strong coordination, cooperation, and communication among the financial authorities is essential for the effectiveness of a financial stability council. The council governance rules should not only determine who the lead institution is, how

¹⁴Both Banco de México's Governor Agustín Carstens and Deputy Governor Manuel Sánchez have emphasized this point in different forums. According to Carstens (2011, p. 1), "In the first place, central banks should establish the foundation for the sound development of the financial sector by conducting monetary policy that is congruent with price stability"; and according to Sánchez (2010, p. 1), "Monetary policy, in turn, should be directed towards price stability, which is a central bank's best contribution not only to long-term economic growth, but also to financial stability".

¹⁵As Dudley (2011, p. 3) pointed out: "As I argued before, monetary policy will often, though not always, be too blunt a tool for such tasks [*establish standards that will be appropriate throughout the cycle –for both the boom period and the bust*]. Generally, it will be better to develop and use more surgical instruments designed to fit the particular circumstances".

they take decisions, and what means of transparency and accountability is in place, but also it must place the incentives of financial authorities to pursue an ongoing, long-term, and systemic approach. The central bank has the enormous task of maintaining the agenda of this council along this line.

Second, to implement a functioning and effective macroprudential policy, the authorities in charge of procuring financial stability should have at their disposal a collection of prudential instruments that are suitable, coherent, and effective. Here, it is necessary to create a tailor-suited macroprudential toolkit for each jurisdiction, which should evaluate all relevant expected benefits and costs of the instruments, taking into consideration that the effects of some instruments could be correlated with those of others.

Finally, although a financial stability council could have a chief function in terms of resolutions and resilience; it should place emphasis on developing some machinery with the purpose of detecting risks and vulnerabilities in the financial system in advance. The council should adopt a quantitative approach of the macroprudential policy to do so, by encouraging the standardization and collection of useful information to monitor financial stability and the construction of indicators and methodologies to assess systemic risk objectively. The council must promote that the financial authorities provide and analyze such data systematically, sharing and using it opportunely.

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K. G. D. D. Dheerasinghe

Comments on presentations

Deputy Governor Nor Shamsiah Yunus first draws the attention to the lessons learned from the crisis and goes on explaining the Bank Negara Malaysia's experience. Accordingly:

First, she drew our attention to the following lessons learned from the crisis:

- i)* Central Banks (CB) must play a bigger role in formulation and implementation of financial stability policy.
- ii)* Stronger role of CB in financial regulations and supervision may increase its effectiveness.
- iii)* Monetary and financial stability objectives need to be supported by clear statutory mandates, appropriate tools, legal safeguards and robust mechanisms.
- iv)* The need for a credible operating and governance framework that harnesses synergies between monetary, macroprudential and microprudential policies.

Secondly, she explained "the postcrisis Malaysian model" which has four pillars within the overall institutional framework in Malaysia to safeguard the financial stability:

Deputy Governor, Central Bank of Sri Lanka

- i) Clearly defined financial stability mandate and primary functions.
- ii) Enhanced powers to prevent, manage and resolve systemic crisis.
- iii) Strengthened institutional and governance arrangements.
- iv) Comprehensive financial stability framework.

In my opinion, the postcrisis lessons brought about further resilience to the overall institutional framework in Malaysia to ensure stability and no doubt would negate the impact of any future crisis.

Comments to Presentation by Mario Bergara

Mr. Bergara explained the issues in detail. Referring to the crisis, he pointed out that it was originated in developed countries due to the failure of:

- i) the regulatory approach and of the organizational design of public intervention,
- ii) the decentralized governance as well as the *light supervision* approach, and
- iii) the supervision and regulation and the organization of the financial safety net.

He brought an interesting issue to the center of the discussion: “Everything was right except that the macro-prudential approach was lacking” and suggests that the discussion about the governance of macro-prudential policies might be *smuggling* a debate about the failure of decentralized regulations and the need for more centralized fashion.

Referring to the rationale for public intervention in financial markets, Mr. Bergara stressed the fundamental objectives of financial regulations and discussed some issues in hand, including:

- i) the governance issues pertaining to financial safety net with emphasis to conflict of objectives and coordination,
- ii) institutional determinants, and
- iii) degree of centralization of financial regulations.

Also he highlighted the process of migration from financial safety net to financial stability net. In his elaborations, Bergara highlighted:

i) Key roles of micro and macro perspectives, such as:

- The need for sound risk management of the financial system as a whole.
- How macro and micro approaches help to internalize externalities in both static and dynamic dimensions of financial system stability.
- The need for regulations to be risk focused, avoiding arbitrage incentives.
- The need for more understanding of Basel III proposals.
- Need for a balance between flexibility and reputation relating to rules vs. discretion.
- The need for inculcating a reasonable risk-taking behavior.

ii) Implications of systemic risk on rules and institutions:

- Systemic risks –exposure to common and correlated risks, interconnectedness, financial and real sector conglomerates, and regulatory arbitrage.
- Rules –need for risk based regulations, ownership of nonfinancial entities, regulatory treatment of public entities, and corporate governance.
- Institutions –financial safety net, centralized regulation, and stability framework.

iii) Implications of microprudential rules on macroeconomic policies:

- The impact of problems in individual institutions, the way in which problems in individual institutions are resolved, light tough regulation, and information gathering and sharing on macroeconomic policies such as credit channeling, macroeconomic variables, and fiscal and monetary aggregates, etcetera.

The focal point of Bergara's message is on the complementary roles of micro and macro perspectives and stressed the fact that coordination between all agencies and their compliance with respective mandates would eventually ensure financial stability net.

Deputy Governor Dheerasinghe also commented on the experience of Sri Lanka. He elaborated on the macroprudential measures taken by the Government and the Central Bank of Sri Lanka even prior to the escalation of recent financial market turmoil. DG explained the improvements in macro economic variables –low inflation, low level of interest, low unemployment– and also deliberated on the new found investment opportunities available within the country as the 30-year ethnic conflict had finally come to an end.

Session 7

**Efficacy of Monetary Policy Implementation
Postcrisis: Scope for International
and Regional Cooperation?**

Lars Nyberg

Efficacy of Monetary Policy Postcrisis

Crises are devastating in many ways and the global financial crisis is of course a particularly compelling example. But crises also open up new perspectives in that they cause us to rethink current practices and theories and question old truths. If we succeed in drawing the right conclusions and implement appropriate changes, this would lead to a better development in the long run.

I would like to discuss three insights from the financial crisis that I find particularly important and interesting. They are not necessarily new insights, but they are insights that the crisis has brought to the fore in a quite forceful way. They all concern, in one way or another, factors that could cause monetary policy to not function in the way we are used to. They are also all relevant to the topic for this session, namely the efficacy of monetary policy post crisis and the scope for international and regional cooperation. And they are all in a sense examples of the unfortunate consequences of allowing the buildup of too much leverage and debt –or, more generally, of not “keeping one’s house in order”.

First, monetary policy in many countries has had an unusually hard time in the effort to counteract the recession and contribute to a recovery. Its efficacy seems to be weaker than normal. One hypothesis on why this is the case is that the recession is not a normal recession but a so-called balance sheet recession.

Deputy Governor, Sveriges Riksbank.

Secondly, even if monetary policy has small effects in the domestic economy it might have spillover effects to other countries that can be quite substantial, for instance, large capital inflows and risks for a sudden reversal of these flows. The impact of such spillover effects increases with the degree of financial integration. The effects are possibly also larger in the case of the unconventional monetary policies used by many central banks during the recession.

Thirdly, the level of financial integration is particularly high within a monetary union, which may create systemic risks. Monetary unions may have in-built fragilities that leave member countries vulnerable to changing market sentiment. Thus, the need to enforce mechanisms for fiscal discipline and effective macro-prudential policies is even greater in a monetary union.

Weaker Monetary Policy when Agents Are Consolidating their Balance Sheets

The recovery from the recent crisis has been remarkably slow in many countries. There are several explanations for this but one very reasonable hypothesis is that it has a lot to do with the fact that the recession was preceded by a large credit boom and an excessive buildup of leverage. This laid the foundations for what is known as a *balance sheet recession*, which several countries have undergone, and are still undergoing.

A balance sheet recession can be described as follows. Let us assume that we have experienced a large price rise on an important asset market, for instance, the property market, and that this rise has been largely financed through loans, as was indeed the case during the period preceding the recession. If prices then fall dramatically, many households and investors will be stuck with assets that have declined substantially in value, while the value of the loans used to finance these assets remains unchanged. In other words, their balance sheets look much worse than anticipated, which can create uncertainty regarding the outlook for the future. In this situation the participants in the economy may set a target that overshadows all others –to get rid

of enough of their debts. This means that their income will be used for amortization rather than consumption and investment for some time to come.

It is then of minor importance if interest rates are cut –economic agents are still mostly interested in consolidating their balance sheets. Even if the central bank steps on the monetary policy accelerator, the engine will not respond in the usual way.

It may take a fairly long time to consolidate the balance sheets, in some cases perhaps several years, and during this period there is a risk that the economy as a whole will weaken. It is only when the participants in the economy are satisfied with their balance sheets that they will begin consuming and investing again, and everything will return to normal. This is the kind of process that has long hampered Japan's economy, and many analysts believe that the United States and other countries are now undergoing a similar process.

Fortunately, not all recessions are balance sheet recessions –most of them are more normal recessions without any debt overhang and where demand recovers fairly quickly. For example, households' balance sheets in the United States have only shown prolonged weakening during the two most recent of the past six recessions.¹ Furthermore, not all balance sheet recessions are alike. But, as the recent crisis has shown, *if* there is a balance sheet recession it can be very deep and severe.

Balance sheet recessions have several implications. One is that the banks and the financial system need not be the main reasons why the economy is slow to recover from a financial crisis. The reason may instead be that households or companies need time to pay off their debts and put their balance sheets in order.

Another implication, perhaps the most important one, is that since it can be so hard to recover from a balance sheet recession, policymakers should do their utmost to avoid them in the first place. How this

¹ P. Amaral, "Households' Balance Sheets and the Recovery", *Economic Trends*, Federal Reserve Bank of Cleveland, September 2010.

should best be done is something that is intensely debated, and I do not have the time to go into that debate here. Let me just say that this is an area where I think there has been a great deal of rethinking in recent years.

The predominant view before the crisis seemed to be that since it is so hard to identify an unsustainable development in, for example, the housing market, central banks should refrain from taking any measures and instead focus on cleaning up the mess afterwards, if the worst comes to the worst. Today I would say that most people believe that considerably more resources and attention should be devoted to pre-emptive action –more generally, that monetary policy frameworks should better incorporate financial-stability considerations. This does not necessarily mean *leaning* with the policy rate. Supervision and the macro-prudential tools may instead be used. Neither does it necessarily mean that it is the central bank that should do the job. But it does mean that central banks and other authorities should take action at an earlier stage.

Cross-border Spillovers of Monetary Policy

The world is now more connected by cross-border financial flows than ever before. This has many positive aspects. But it also means that dramatic changes in the policy stance of central banks –like those during the financial crisis– can result in large and undesired crossborder spillovers. Moreover, due to balance sheet recessions and the fact that policy rates in many countries were quite low to begin with, many central banks have reached the lower bound for the policy rate. They have instead resorted to the use of unconventional monetary policies, such as quantitative easing, in order to help reactivate their economies.

While conventional monetary policy also has crossborder spillovers, the spillover effects of unconventional policies are potentially larger. Liquidity injections when the policy rate is at extremely low levels might result in capital outflows if domestic demand is weak, banks are reluctant to lend and investors' confidence is low. The countries on the receiving end of the capital flows will experience a currency appreciation

that will weaken the competitive position of the country's exports. The inflows may also lead to a rapid and undesired expansion of credit and to increased inflationary pressure. In addition, a major problem is that the receiving countries may be vulnerable to a later sharp reversal in flows –a so-called sudden stop, which dries up liquidity. These effects have led to claims that quantitative easing is basically a beggar-thy-neighbor strategy and that central banks, especially in large countries, to a larger extent should internalize the spillover effects of their policies. This issue is now high on the agenda of the G20 countries.

While international policy-coordination is a good thing per se, I am not overly optimistic as to what can be achieved in this respect. I think one of the more important lessons to be learnt is, once again, that it is crucial that every country keeps its house in order and, in particular, counteracts the buildup of too much leverage and debt. Without the lending boom that preceded the financial crisis, there would have been no balance-sheet recessions, considerably less need for expansionary monetary policy –including unconventional policies, a more limited loss of investor and consumer confidences, and hence fewer crossborder spillovers.

Interestingly, emerging markets have so far acquitted themselves remarkably well during the global financial crisis. This is most certainly due to the adjustments these economies made in response to the experience of a series of crises in the late 1990s and early 2000s.² These adjustments include restoring public debt ratios to sustainable levels and strengthening financial sector regulation and supervision. In short, many emerging markets have indeed focused on putting their houses in order over the last 10 years. They are also able to resort to large buildups of foreign exchange reserves that, although socially costly, help to insure these countries against sudden capital stops and to limit the risks arising from banks' reliance on external funding.

² See, for instance, J. Aizenman and B. Pinto, *Managing Financial Integration and Capital Mobility –Policy Lessons from the Past Two Decades*, The World Bank (Policy Research Working Paper, no. WPS5786).

Challenges even more Pronounced in a Monetary Union

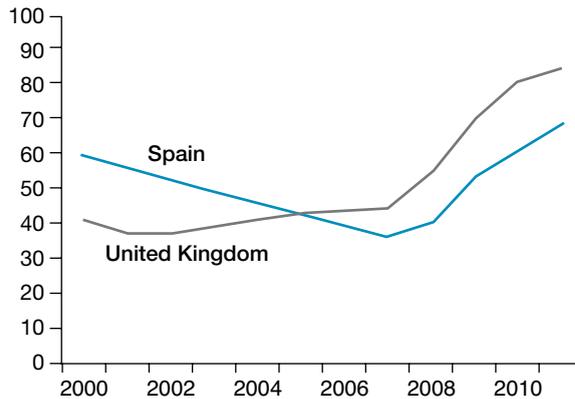
One important lesson of the euro area debt crisis is that the risks associated with large capital flow reversals are not merely endemic to emerging economies. The level of financial integration is particularly high within a monetary union. Indeed, this is one of the perceived benefits and is part of a broader European trend driven by efforts to establish a single market for financial services in Europe. The drawback, however, is that the high degree of financial integration also creates strong externalities. Financial problems in one country in the euro area are hard to isolate, as they tend to propagate rapidly through the system. In addition, large capital flows and the risk of sudden stops leave member countries vulnerable to changing market sentiment, in particular when the fear of sovereign risk arises.

In the years following the adoption of the euro in 1999, capital flowed from the core countries of the euro area, such as Germany, France and the Benelux countries, to the periphery countries, such as Greece, Ireland, Portugal and Spain. These capital inflows did in some cases, in Spain and Ireland in particular, contribute to property booms and burst bubbles. They also allowed countries in need of structural reforms in order to restore their international competitiveness to avoid implementing such reforms and instead to accumulate deficits in their current accounts year after year. A high degree of financial integration and large capital flows within the monetary union created vulnerabilities for some countries. Ideally, of course, these vulnerabilities should have been identified and plans for how to deal with them drawn up already when the monetary union was designed. However, this was never done.

As an example of the problems that may arise, it is instructive to look at the situation in Spain and the UK.³ While as a percentage of GDP the UK sovereign debt is higher than the Spanish sovereign debt, the yields on Spanish bonds are more than 200 basis points higher than on UK

³ This comparison is discussed in more detail in a paper by Paul De Grauwe, *The Governance of a Fragile Eurozone*, CEPS Working Document, No. 346, May 2011.

Figure 1

GENERAL GOVERNMENT DEBT
 (percentage of GDP)


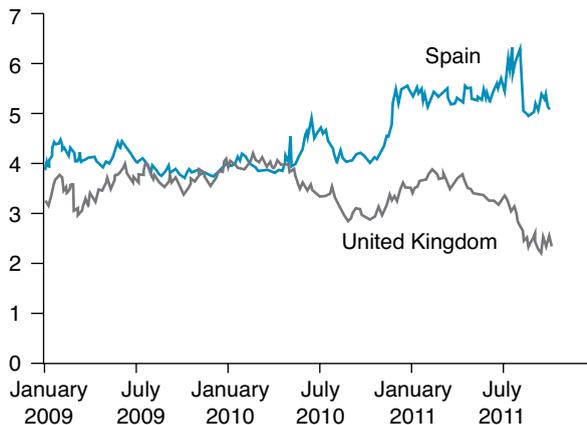
Source: European Commission.

bonds (Figures 1 and 2). Thus, the markets seem to expect a more favorable development in the UK and price a higher risk of default on Spanish government bonds than on UK government bonds.

Why is this? One explanation is the following. If investors were to fear that the sovereign risk in the UK had suddenly increased, they would sell UK bonds, thus driving up interest rates. The pounds resulting from the sales would be sold in the foreign exchange market. The pound would depreciate and eventually somebody else would therefore be willing to buy pounds. The money stock in the UK would remain unchanged. The situation in Spain is quite different. When the fear of sovereign risk arises, euros resulting from the sale of Spanish bonds flow into other euro area countries, the money stock in Spain shrinks, and eventually there may be a liquidity crisis. In this sense, the situation in Spain is reminiscent of the liquidity crisis experienced by emerging countries that have to borrow in a foreign currency when faced by a reversal of capital flows.

Figure 2

GOVERNMENT BONDS
(yields in percentage)



Note: Government bonds with approximately 10 years left to maturity.
Source: Reuters Ecowin.

It can be argued that the member countries of a monetary union in a sense are confronted with the same kind of risks as emerging economies that, because of underdeveloped financial markets, are forced to issue their debt in a foreign currency. In the same way as emerging economies, member countries can be confronted with sudden capital flows reversals, leading to a liquidity crisis and in some cases to a sovereign debt crisis. One could even argue that in many ways member countries are in fact less well prepared than emerging economies to deal with this type of problem. As I have noted, over the last 10 years, many emerging economies have taken measures that have made them less vulnerable to sudden stops.

Furthermore, when a crisis occurs in a monetary union, member countries do not have automatic stabilizing mechanisms that can help alleviate the problem. In particular, they do not have their own currency that can depreciate in the face of large current account deficits, thereby

boosting exports and growth. Instead, these countries may have to go through protracted and painful periods of internal devaluation that have large negative consequences on the countries' growth potential. As a country's ability to service its sovereign debt is strongly correlated to its growth potential, the internal devaluation problem exacerbates the country's sovereign risk. The interest rates paid on government bonds increase, which, in turn, can make the recession worse and lead to even higher budget deficits. Of course, in such a situation, it is very difficult and perhaps even impossible to use budgetary policies to stabilize the business cycle.

Europe Today

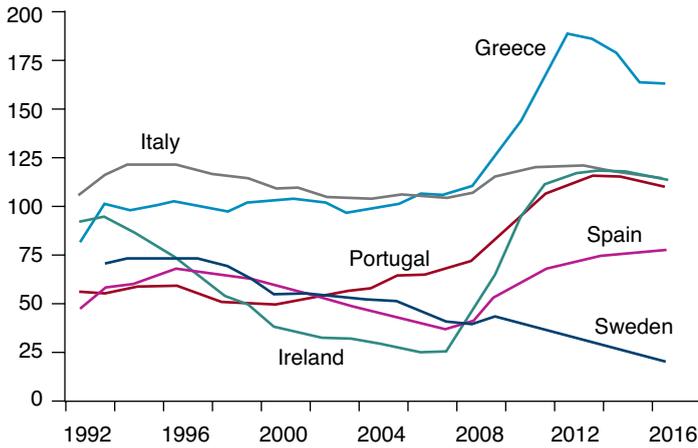
The financial crisis has revealed the close links between sovereign and bank finances. It put a heavy burden on already weak public finances in several EU countries. As a result, sovereign indebtedness has increased quite dramatically and the ratio of public debts to GDP exceeds the so-called Maastricht criteria of 60% by a large margin in many countries (Figure 3).

In the current situation, there is a need for both short-run emergency measures to deal with the immediate problems and for longer-run measures to prevent a similar development in the future, or at least reduce the risk of it. On a general level, the crucial element in the short run is to restore the confidence of consumers, markets and investors. This is of course easier said than done. But an important component of a strategy to achieve this is to put public finances on a sounder footing.

It is probably true that for at least some of the countries now deep into the red –but certainly not all of them– public-debt problems represent more of a symptom than a cause. For some countries, the public-debt problem arose as a consequence of extensive bail-outs of their banks when they got themselves into trouble. But this is of course not to say that getting public finances in order is not a necessary part of the adjustment, or that the situation would not have been more favorable if the fiscal situation had been better when the financial crisis started.

Figure 3

**GENERAL GOVERNMENT DEBT
(percentage of GDP)**



Source: IMF.

The adjustment of public finances undoubtedly entails a difficult balancing act. Central banks can help in this process in the usual way –by stimulating demand, which will be hampered by the temporary fiscal tightening. But fundamentally, the debt problem has to be solved at the political level; it is not a task for monetary policy.

Masahiro Kawai

Scope for Regional Exchange Rate Policy Coordination in Asia

In this paper, I discuss the issue of economic integration and cooperation in Asia and particularly the value of exchange rate policy coordination. The question is whether there is a case and scope for regional exchange rate policy coordination in Asia.

The 1997-1998 Asian financial crisis highlighted the value of regional monetary and financial cooperation. As a result, several initiatives were started in its aftermath, such as the Chiang Mai Initiative, the Economic Review and Policy Dialogue process, the Asian Bond Markets Initiative, and the Asian Bond Fund program. Today we face the consequences of the 2007-2009 global financial crisis, that is, USA monetary policy easing, particularly the second round of quantitative easing (QE2), the USA public debt problem, the euro area sovereign debt and banking crisis, and global financial market turmoil. Many emerging economies in the Asian region are being affected in a similar way by these common shocks from the global capital markets.

Given the rising regional economic interdependence in Asia, international spillovers of macroeconomic policies and developments are becoming significant and there is greater scope for macroeconomic policy coordination. My message in this paper is that it would be easier

Dean, Asian Development Bank Institute. This paper is based on the author's presentation to the panel discussion at the SEACEN-CEMLA Conference in Kuala Lumpur on October 13-15, 2011.

for central banks in Asia to pursue their dual goals of price stability and financial stability if some regional exchange rate policy coordination is achieved. This sounds controversial and contradictory as exchange rate policy coordination often constrains the flexibility and autonomy of central bank policies. So the purpose of this paper is to articulate why emerging Asian economies should pursue exchange rate policy coordination.

I organize the paper as follows. In Section 2, I explain the rising trend of economic interdependence in Asia and suggest a case for policy coordination. In Section 3, I review Asia's exchange rate arrangements and show that major ASEAN currencies have moved in a similar way driven by market forces. In Section 4, I provide policy options to manage capital inflows and argue that some policy coordination is desirable for effective management of capital flows. In Section 5, I explore the scope for regional exchange rate policy coordination to achieve macroeconomic and financial stability in Asia. In Section 6, I offer concluding remarks.

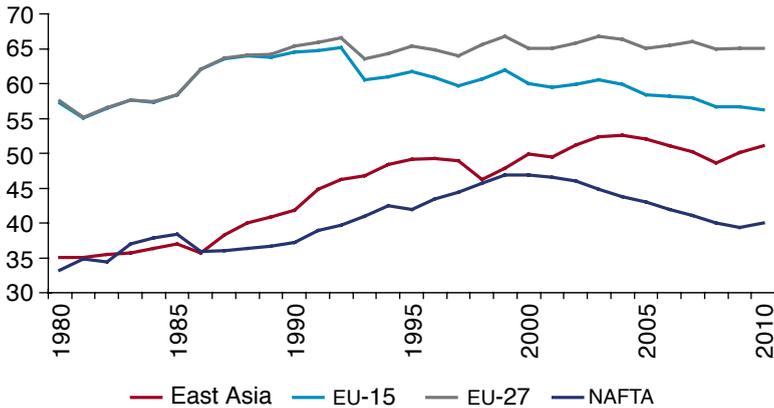
Rising Economic Interdependence in Asia

Asia has seen rising economic interdependence through trade, investment, and finance. Asia has become the global factory by creating supply chains and production networks supported by foreign direct investment by global multinational corporations and Asia's business enterprises. As a result, the intraregional trade share for Asia has risen to above 50%, surpassing that of the North American Free Trade Area (NAFTA) and approaching the levels of Europe, where EU-15 has achieved 56% and EU-27 65% (Figure 1). A gap exists between Asia and the European Union (EU) in regional trade integration, but the gap has been narrowing with Asia's upward trend. Differences exist between exports and imports as regional trade interdependence is higher on imports than on exports.

In recent years, Asian economies have been forging free trade agreements (FTA) with regional and outside partners. ASEAN has been the hub in this move as, after forming an ASEAN Free Trade Area, it has implemented the so-called ASEAN+1 FTA with the People's Republic of

Figure 1

EAST ASIA'S INTRAREGIONAL TRADE SHARE



China (PRC), India, Japan, Republic of Korea (henceforth, Korea), Australia, and New Zealand. These latter economies have also implemented or are negotiating FTA with each other and with non-Asian partners. Though the Trans-Pacific Partnership has been gaining traction, Asian economies are also discussing how they can create a region-wide FTA, such as an East Asia Free Trade Area among the ASEAN+3 countries (ASEAN member states plus the PRC, Japan, and Korea) and a Comprehensive Economic Partnership in East Asia among the ASEAN+6 countries (ASEAN+3 countries plus Australia, India, and New Zealand).

Asian economies have also achieved a degree of financial integration through the liberalization of cross-border financial businesses and transactions. However, the extent of regional financial integration is limited in comparison to trade integration largely because the individual national financial markets are not yet fully open and, hence only insufficiently integrated with each other due to limited capital account liberalization and the presence of various impediments to smooth international financial transactions. This is demonstrated in the limited

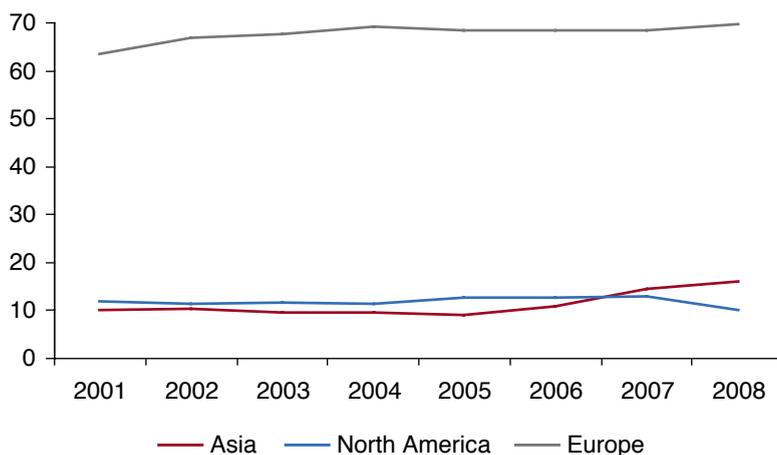
degree of regional financial interdependence in cross-border portfolio investment (Figure 2). The share of intraregional portfolio investment in Asia is only 15%, while Europe's about 70%. So Asia's challenge is advancing regional financial integration.

Asia's Exchange Rate Arrangements

Asia's exchange rate arrangements are diverse across economies. Japan has a freely-floating exchange rate arrangement; though the Japanese authorities sometimes intervene in the currency market, such intervention is no longer the norm for the country. Conversely, the PRC maintains a very tightly managed exchange rate regime by intervening regularly and heavily in the market. All other countries are adopting intermediate exchange rate arrangements somewhere between Japan's and the PRC's polar arrangements.

Figure 2

ASIA'S INTRAREGIONAL SHARE OF PORTFOLIO INVESTMENT



Source: IMF, Coordinated Portfolio Investment Survey.

The yen and the won particularly have moved in a very volatile way (Figure 4B), so this is a potential problem given the high and rising economic interdependence between the two countries. This is in contrast to the major ASEAN currencies that have been moving in a similar way driven by market forces.

Advanced economy experts often take the view that the best foreign exchange rate arrangement is one of fully-flexible exchange rates, supported by a fully-open capital account, and independent monetary policy. But adopting such a corner solution is not realistic for many emerging economies, including those in Asia. Policymakers in these economies tend to have a *fear of floating* as their foreign exchange markets are not so deep or large, exporters and importers do not have adequate hedging instruments against exchange rate volatility, and the degree of industrial diversification is not sufficient to cope with wild fluctuations in exchange rates. They are also reluctant to achieve full capital account openness, even though to do so may be desirable, because their financial markets are underdeveloped, shallow, not well diversified, and insufficiently resilient to absorb large capital inflows and/or to withstand sudden capital outflows. So a realistic option for emerging economies is to choose somewhere inside the trilemma triangle of the impossible trinity and to achieve monetary policy independence as much as possible without having fully-flexible exchange rates and a fully-open capital account.

Managing Capital Flows and International Spillovers

If emerging economies experience a prolonged period of capital inflows due to strong economic fundamentals, such as high rates of return on real investment, then policymakers may not have to be overly concerned about the capital inflows. In this case, the policy stance should be neutral, maintaining a sound macroeconomic policy framework, with the exchange rate playing an instrumental role to achieve price stability through, for example, market-driven currency appreciation to mitigate inflationary pressures. The currency appreciation can cause sectoral problems such as a squeeze on profitability in the export sector

—including damages to the exports of manufactured products— and gains to the import sector. But these impacts should be considered as a sign of the need for economic adjustment.

Persistent, large-scale capital inflows, beyond the recipient country's fundamentals and capacities to absorb them, could pose macroeconomic and financial risks and, hence, require proactive policy responses. This is the case particularly when the inflows are of a short-term nature and in a foreign currency. The reason is that these inflows can lead to macroeconomic instability (rapid currency appreciation, overheating, inflation), financial instability (double mismatches, excessive leveraging, asset price bubbles), and currency crisis risks (sudden stops and/or reversals of capital flows) —see Kawai and Lamberte (2010).

The most fundamental solution would be to enhance the capacity of domestic financial markets to cope with large capital flows by accelerating reforms to develop and deepen national financial markets and to put in place efficient market infrastructure. The presence of a deep and liquid financial market would make the domestic economy more resilient to large capital inflows and outflows. In emerging Asian economies, the growth of local-currency bond markets would also provide alternative channels for intermediating the ample domestic savings and foreign funds for domestic long-term investment and would help alleviate the burden put largely on the banking sector. However, this is not a panacea as foreign capital tends to flow into countries with relatively developed financial markets, as was seen in Korea before the global financial crisis. So this should be a continuous process until a country establishes a truly developed financial market.

Facing large scale, volatile capital flows and thus potential for excessive volatility of currency values, policymakers are advised to resort to a combination of policy measures to mitigate their impact: *i)* buying the inflows through sterilized intervention; *ii)* using macroeconomic policies such as monetary policy easing and fiscal policy tightening; *iii)* limiting capital inflows through prudential and regulatory measures, i.e., putting sand in the wheels; and *iv)* allowing currency appreciation. Here *i)* may be appropriate when inflows are deemed easily reversible

as larger reserves can provide a cushion in the event of sudden outflows. Macroeconomic policies *ii*) can be effective if inflation is low (for monetary easing) or there is a sign of economic overheating (for fiscal tightening). The measures in *iii*) include various prudential policy tools –such as limits on the foreign exchange positions of banks, restrictions on foreign currency loans for non-intended purposes, a tightening of foreign exchange liquidity positions, lower loan-to-value ratios, and lending restrictions on certain sectors to prevent asset price bubbles– and outright capital controls. Currency appreciation *iv*) is desirable if intervention is expected to pose macroeconomic and financial risks by allowing domestic credit to expand excessively which would lead to inflation and asset price bubbles.

It is important to note that managing capital inflows may have international implications so that coordinated responses would be desirable to maintain macroeconomic and financial stability. First, one country's policy to intervene in the foreign exchange market to prevent currency appreciation can have competitiveness implications for other countries which may be discouraged from allowing currency appreciation even when they face the risks of inflation and asset price bubbles. Second, prudential and regulatory measures to limit capital inflows can have the impact of diverting such capital to neighboring countries, which may not wish to receive inflows. Third, given the risks of currency and financial crises in emerging Asia, policymakers could agree on pooling foreign exchange reserves to create regional financial safety nets.

Some policy coordination is already in place, such as the multilateralization of the Chiang Mai Initiative (CMI) and the strengthening of the Economic Review and Policy Dialogue (ERP) process. More significant policy coordination would require intensive policy dialogue, without which policymakers in individual economies might resort to policies that disregard the implications for neighboring economies, including the adoption of competitive currency depreciation and asymmetric exchange rate policy that restrains appreciation pressures more substantially than depreciation pressures. Intensive policy dialogue and the ensuing policy coordination would be essential to avoid beggar-thy-

neighbor impacts of national policies and improve macroeconomic and financial-sector performance.

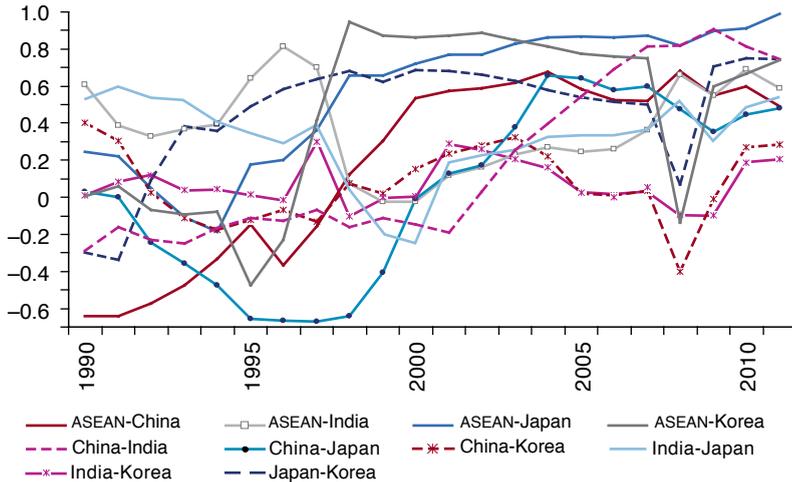
Scope for Regional Exchange Rate Policy Coordination

What is the scope for exchange rate policy coordination in Asia? Given the increasing integration among Asian economies, stable intraregional exchange rates will gain in value. If the Asian economies wish to achieve intraregional rate stability, their policymakers need to have similar exchange rate regimes and make concerted efforts to reduce large intraregional rate volatility. Given the global financial turmoil and the volatile capital flows, Asian policymakers should also have greater exchange rate flexibility against external currencies such as the US dollar and the euro to maintain macroeconomic and financial stability. What this means is that it is desirable for the Asian economies to have intraregional exchange rate stability and extra-regional exchange rate flexibility. Ideally, Asian policymakers should adopt similar exchange rate arrangements that are sufficiently flexible against external currencies and then try to avoid large intraregional exchange rate volatility. This might require a high degree of exchange rate policy coordination, but the reality is that it is not easy or possible to agree on exchange rate policy commitments due to a lack of underlying structural convergence in Asia.

Nonetheless, I argue that only informal and soft coordination would be sufficient to achieve intraregional rate stability and extra-regional rate flexibility. I have mentioned that market forces are creating similar exchange rate movements among some major ASEAN currencies, which would make it easy for the policymakers of these economies to maintain mutually relatively stable, not necessarily fixed, exchange rates. So if the PRC joins these ASEAN countries by allowing the renminbi to be more flexible and letting its exchange rate behave like the major ASEAN currencies, then it would not be difficult to achieve relatively stable intraregional exchange rates in emerging Asian economies. The renminbi exchange rate regime needs to be changed, and ASEAN policymakers can play a key role in inducing such a change.

Figure 3

GDP GROWTH CORRELATION COEFFICIENTS (10 year moving windows)



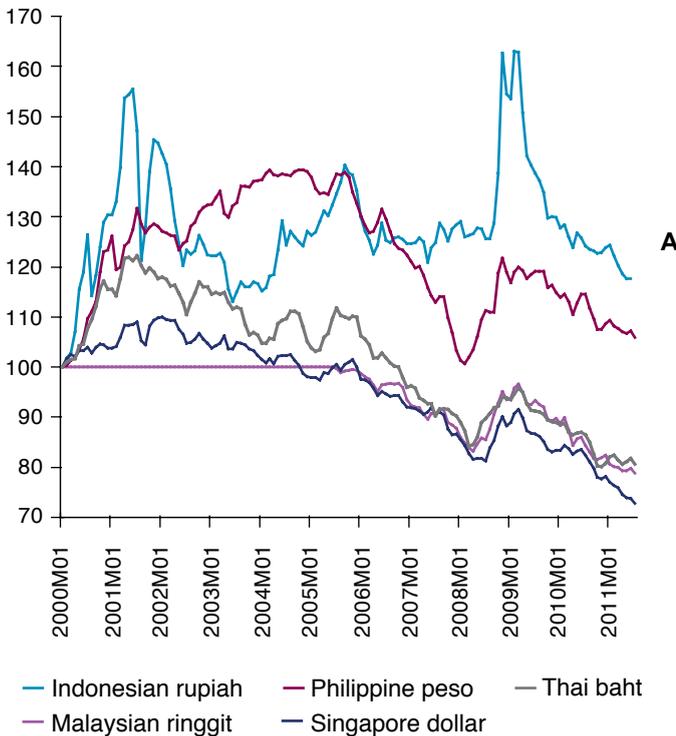
Note: Constructed by the author using IMF data.
Source: IMF, World Economic Outlook, database.

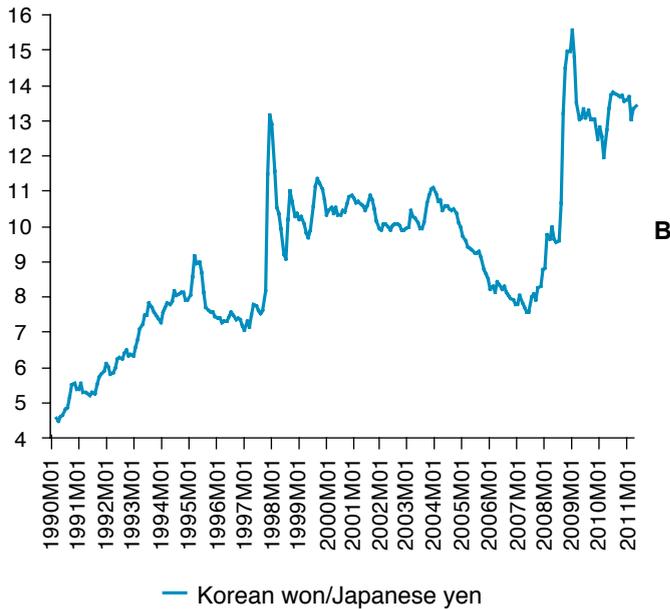
A trigger that can create environments conducive to such a change could be large-scale capital inflows that may happen due to another round of monetary policy easing in the USA (such as QE3) or a loss of confidence in the US dollar reflecting, for example, the rising public debt and the deteriorating international investment position. Under massive capital inflows, I have suggested that Asian economies would be better off if the region's policymakers allowed collective currency appreciation. If only one country's central bank allowed the currency to appreciate, its international price competitiveness would be damaged, making unilateral currency appreciation unattractive. If all central banks under similar capital inflow pressures allowed their currencies to appreciate, the outcome would be very productive for all (Kawai 2008).

So it is important that ASEAN and PRC policymakers agree on collective currency appreciation, through intensive policy dialogue; its first step is for the People’s Bank of China (PBOC) to move to a much more flexible exchange-rate regime and allow the renminbi to appreciate; and the second step is for ASEAN central banks to allow their currencies to appreciate. The PRC gains from this policy coordination

Figure 4

NOMINAL EXCHANGE RATES OF MAJOR ASEAN CURRENCIES VERSUS USD AND YEN-WON





Source: IMF, International Financial Statistics, CD-ROM.

as the PBOC can achieve the national objectives of price and financial stability because of the lesser need to intervene in the currency market and accumulate foreign exchange reserves, without losing international price competitiveness against ASEAN exporters. ASEAN countries can also gain as their central banks can direct monetary policy for domestic price and financial stability, without being concerned about the loss of price competitiveness in relation to the PRC. Emerging Asia as a whole may lose international price competitiveness against the rest of the world, but Asian exporters would be able to compete against those from Africa, Eastern Europe, and Latin America. As Asian exporters' competitors are Asians, collective currency appreciation will minimize the impact of the loss of international price competitiveness.

Asian policymakers should proceed with such informal and soft policy coordination through intensive policy dialogue. The immediate supporting actions would be to improve the quality of regional economic surveillance and the effectiveness of regional financial safety nets. The ASEAN+3 Macroeconomic Research Office, which has been set up in Singapore as the secretariat to support the CMIM and the ERPD process, must be strengthened with sufficient financial and human resources. The new policy dialogue among the finance ministers and central bank governors needs to be made substantive, focusing on exchange rates, capital flows, and macroeconomic and financial sector developments. The CMIM, which is a crisis-response liquidity pool with only USD 120 billion, is too small and must be greatly increased in size. Precautionary arrangements –like the IMF’s Flexible Credit Line and Precautionary Liquidity Line– need to be introduced to prevent a crisis. The CMIM is still in reality linked with the IMF program, but this link needs to be reduced and eventually eliminated. Then the CMIM can become independent and seek ways to work with the IMF, just as the EU is working with the IMF during the Eastern European and euro zone crisis situations. These institutional structures would be instrumental in supporting regional exchange rate policy coordination in Asia.

Conclusion

An increasingly integrated Asia will need more stable intraregional exchange rates. This would require both the convergence of exchange rate regimes within Asia toward greater flexibility in relation to the US dollar and the euro and concerted efforts to avoid intraregional exchange rate volatility. To achieve this, intensive policy dialogue on exchange rates, capital flows, and macroeconomic and financial-sector management is essential. Informal and soft exchange rate policy coordination may be built on the fact that market forces are creating similar exchange rate movements among several major ASEAN currencies. It is important that through intensive policy dialogue PRC policymakers agree to adopt a more flexible, yet managed, exchange rate regime similar to those of

major ASEAN countries and that ASEAN central banks agree to achieve collective currency floating. The current global financial conditions have the potential to provide impetus toward such policy coordination.

Though I have focused on the short-term view of regional exchange rate policy coordination, from a longer-term, more fundamental perspective, Asia will have to develop much deeper policy coordination mechanisms. The reason is that as Asia will soon become the world's largest economic bloc –for example, ASEAN+3 will exceed that of the EU and the USA by the mid-2010s– the region will eventually need its own currency. It is natural for Asia, as the world's largest economic bloc, to have its own currency rather than having to depend on the US dollar, because USA monetary policymaking will increasingly be less relevant for the global economy, particularly for a growing Asia. How can Asia develop a currency? Needless to say, it is crucial for the PRC to internationalize the renminbi by achieving capital account convertibility, but this will take many years. In addition, the PRC's capital account openness does not automatically guarantee that the renminbi will become an internationally dominant currency that could replace the US dollar, even in Asia. So a realistic approach would be to develop a basket of Asian currencies to nurture Asia's reserve assets and potentially a future currency. Given the euro crisis, Asians need to find a way to achieve this without disrupting both the Asian and global economies.

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Closing Ceremony

A.G. Karunasena

Closing Remarks

The SEACEN-CEMLA Conference on The Implementation of Monetary Policy: Lessons from the Crisis and Challenges for the Coming Years marks the first interface among top central bankers of the Asian and Latin-American regions under the banner of SEACEN-CEMLA collaboration, two of the most established regional training and research institutions in central banking on both sides of the Pacific. It aims to provide a unique opportunity for sharing of experience and lessons learnt from monetary policy responses to the recent global financial crisis, as well as identifying the challenges ahead in the formulation and implementation of monetary policy.

As we know, thanks to their concerted efforts in economic and financial reforms, both Asia and Latin America not only emerged from the global financial crisis relatively unscathed, but have also recovered relatively faster and stronger. Postcrisis, however, both regions were similarly faced with huge surge in capital inflows and strengthening of currencies, although the situation is now in reverse due mainly to heightened uncertainties and risks surrounding the strength of global recovery triggered by continuing weak growth and sovereign debt problems in advanced economies. As we have heard over the past two days, our two regions' complementary experiences and common

Executive Director, The SEACEN Centre.

challenges provide rich materials for fresh insights and new thinking for monetary policy design and formulation.

Having said that, the two-day conference has also indicated that, we don't know yet what is the best way to integrate financial stability consideration to the monetary policy framework. But we do know for sustainable economic growth, one just cannot focus on either monetary stability or financial stability alone. We need both.

The proceedings of the Conference, which will be published by SEACEN and CEMLA, will undoubtedly add not only to the understanding, but also forward looking ways forward for policy makers.

I also believe that the Conference is meeting the other objective, which is to provide an excellent platform for interregional networking and collaboration among central banks in Asia and Latin America. Despite the growing awareness in both regions of the need and importance to link up, economic relations in terms of trade, investment and financial ties have been still relatively low. In this regard, SEACEN is pleased and greatly honored to partner with CEMLA in the initiatives for dialogue and cooperation among central banks. In fact, this Conference is only a starting point of our joint strategic initiatives. With a view to promote thought leadership and discourse on cross-regional issues and challenges, a jointly organize conference such as this one will be planned annually. We have also agreed to promote cross-regional research studies and learning through sharing of information and network of subject matter experts. We are confident that the initiatives will serve as a sturdy springboard for mutually beneficial economic and financial relations between the two regions.

The success of this Conference would not have been possible without the collaboration and support of the host and sponsor: Bank Negara Malaysia and the co-sponsor: Banco de la República, Colombia. We are especially grateful to Governor Dr. Zeti for her guidance and support before the Conference, and for sharing her wisdom and insights in the special luncheon address and as a Panel Member during the Conference. We would also like to record our deep appreciation to Deputy Governor Muhammad Ibrahim for delivering the Welcome Address.

In the same vein, we wish to thank Governor Dr. Uribe, distinguished speakers, moderators and lead discussants, as well as delegates for your invaluable contribution to the Conference. To our co-organizer, Mr. Guzmán and CEMLA, thanks for helping us to take our first collaboration to a great start.

We look forward to fruitful partnership for the mutual benefits of Asian and Latin American economies. Last but not least, we would like to commend the organizing committee and secretariat team from Bank Negara Malaysia, CEMLA and SEACEN for working tirelessly behind the scene to ensure the smooth running and comfort of all delegates.

Javier Guzmán Calafell

Closing Remarks

First of all, I would like to thank Governor Zeti for hosting this event. We are all very grateful for the warm hospitality of Bank Negara Malaysia, and for giving us the chance to visit this beautiful city, and particularly these most impressive facilities at Sasana Kijang.

For CEMLA, co-ordinating the organization of this event with Bank Negara Malaysia, the SEACEN Centre and Banco de la República has been a most pleasant experience. In particular, I would like to express our gratitude to Dr. Karunasena, Brian Nunis, Victor Pontines, Gopinath R. Ramasamy and Jeffri Ramli from SEACEN, and to Dr. Mohamad Hasni Sha'ari, Nurmuhammad Wafi, and Mohamad Sharil Ismail from Bank Negara Malaysia, who worked very hard and efficiently to make this event possible.

I also wish to thank the speakers for their interesting and relevant presentations, as well as the moderators, lead discussants, and all other participants for their contributions to a dynamic exchange of experiences and a very fruitful discussion.

I am sure you will all agree with me that this has been an extremely useful Conference. It has provided us with the opportunity to learn from each other, and to discuss issues of the highest relevance for our central banks.

General Director, CEMLA.

I will not try to sum up the discussion, as this would be an extremely difficult task. Rather, what I will do is to refer to a few of the general issues that were discussed and which I found particularly relevant.

- First, there are many similarities in the challenges confronted by monetary policy makers in our regions.
- Second, the implementation of monetary policy in our economies will be far more complicated in the foreseeable future, as uncertainty has increased and there is a need to modify central bank mandates to include a financial stability objective. The crisis has made clear that macroeconomic stability is not sufficient to preserve financial stability, and that financial stability is fundamental for the effectiveness of monetary policy.
- Third, monetary and financial stability objectives need to be supported by clear mandates, appropriate tools, legal safeguards and robust mechanisms that ensure transparency and operational independence. In this process, it is important to be aware that the limits between monetary and macroprudential policies need to be further clarified, and additional work is required to assess the effectiveness of macroprudential policies.
- Fourth, clear communication and accountability for actions are two central elements of credible monetary policy frameworks. Multiple mandates can make this a challenge, especially if actions taken to address one mandate compromise the effectiveness of achieving the second.
- Fifth, the crisis has demonstrated that economic dynamics can become highly non linear. This, coupled with increased uncertainty and enhanced responsibilities for central banks, call for flexible monetary policy frameworks, with a longer terms focus.
- Sixth, a combination of factors is likely to result in substantial capital flows to emerging market economies in coming years. It is essential to enhance the capacity of central banks to monitor

and deal with the macroeconomic and financial stability consequences of these flows, especially since they are likely to be highly volatile. In addition, efforts are needed to ensure that these resources are used productively and enhance the recipient economies' growth potential.

- Seventh, a major lesson of the crisis is that in the face of tail risks, big policy moves, rather than gradualism, are required. Similarly, as tail risks arise, it is important that central banks take actions in advance to reduce the potential impact in case such risks materialize.
- Eight, in the face of the more complicated environment that has resulted from the global financial crisis, cooperation among central banks, both at the international and regional levels has become more relevant than ever. In this respect, it is very important to build the corresponding institutional set up during normal times, to be adequately prepared for times of crisis.

The idea of bringing together the central banks of Asia, Latin America and the Caribbean was considered of great relevance for our economies since many years ago. Governor Zeti explained yesterday that as a result the Governors of the central banks of Latin America and the Caribbean have been meeting annually since 2006 with the Governors of a number of Asian central banks. These meetings have been extremely useful to exchange views and to learn from each other, as well as to foster closer contacts and mutual understanding among the central banks of our regions.

The positive experience with these meetings led to the search for means to enhance even further cooperation among our central banks. As a result, during the V Meeting of Central Bank Governors of Asia, Latin America and the Caribbean, which was held in Washington last year, the governors of our central banks agreed to promote cooperation among our institutions through a number of initiatives, namely, the joint organization of events on selected topics, invitations to the

central banks of the two regions to events organized by CEMLA and The SEACEN Centre, the creation of communication channels to exchange information on activities organized by central banks in both regions, the preparation of joint studies on issues of mutual interest, and the beginning of internship and technical assistance programs to meet specific demands. We have been working together with SEACEN to give course to these proposals.

As you can imagine, this Conference is the result of these initiatives. In fact, as you know, it is the first of a series of annual events with alternate venues in Asia, and Latin America and the Caribbean. As Dr. Uribe already mentioned, next year the Conference will be held in Uruguay.

We are looking forward to seeing you in Latin America in 2012.

Thank you very much.



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