Working Paper

MONETARY POLICY CHALLENGES FOR EMERGING MARKET ECONOMIES

Gill Hammond, Ravi Kanbur and Eswar Prasad

Monetary Policy Challenges for Emerging Market Economies[1]

By

Gill Hammond[2], Ravi Kanbur[3] and Eswar Prasad[4]

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[1] Introduction to Gill Hammond, Ravi Kanbur and Eswar Prasad (Editors), *Monetary Policy Frameworks for Emerging Markets*, Edward Elgar, forthcoming. The Table of Contents is given in the Appendix. The views expressed here are those of the authors and not necessarily those of the Bank of England.

[2] Director, CCBS, Bank of England. Email:gill.hammond@bankofengland.co.uk

[3] T.H. Lee Professor of World Affairs, International Professor of Applied Economics and Management, and Professor of Economics, Cornell University. Email; sk145@cornell.edu

[4] Nandal P. Tolani Senior Professor of Trade Policy, Cornell University and Senior Fellow, Brookings Institution. Email: eswar.prasad@cornell.edu

Abstract

This paper introduces a significant new collection of papers on monetary policy in emerging market economies, written by leading analysts and policy makers. Does existing economic theory provide lessons that are pertinent for designing effective monetary policy frameworks in emerging markets? What can be learnt from cross-country studies and from experiences of individual countries that have adopted different approaches? While country-specific circumstances and initial conditions matter a great deal in formulating suitable frameworks, are there clear general principles that can serve as a guide in this process? These are among the issues addressed in the dialogue between academics and policy makers represented in this volume. In this paper, we provide an overview of the main issues, linking them to broader debates in the academic literature as well as an assessment of how individual countries have chosen to respond to specific policy challenges and what the consequences have been. We discuss many controversies where there are still sharp differences in views between and amongst theorists and practitioners. We also delineate a few key analytical issues where there is still a yawning gap between theory and practice. In the process, we set out a broad agenda for further research in this area.

Introduction

Emerging market economies have now become one of the most dynamic and economically important groups in the world economy. As these economies become larger and more integrated into international trade and finance, they face an increasingly complex set of policy challenges. Given their important role in the world economy in terms of population and sheer economic size, addressing these challenges effectively has important economic, social and political implications even beyond their national borders.

Monetary policy is typically the first line of defense against a number of internal and external shocks that these economies are now exposed to, so it is important to get it right. However, emerging market economies face a number of difficult challenges in designing monetary policy frameworks that work well in terms of promoting monetary and financial stability. Despite their rising economic might, many emerging market economies still have relatively underdeveloped financial markets and institutions, per capita incomes that still lag far behind those of advanced industrial economies, and a significant fraction of their population still living in poverty. This puts a number of constraints on the effective formulation and implementation of macroeconomic policies.

Does existing economic theory provide lessons that are pertinent for designing effective monetary policy frameworks in emerging markets? What can be learnt from cross-country studies and from experiences of individual countries that have adopted different

approaches? While country-specific circumstances and initial conditions matter a great deal in formulating suitable frameworks, are there clear general principles that can serve as a guide in this process?

To address some of these issues and create a forum for a dialogue between senior policymakers and academics, the Bank of England and Cornell University organized a conference in London on July 17-18, 2007. The conference produced a rich and productive set of interactions amongst senior central bank officials from a large number of emerging market central banks and academics working on different aspects of monetary policy formulation. This volume contains a selection of papers presented at the conference.

The discussions at the conference were very broad ranging. A sampling of the issues covered includes the following: What are the particular challenges faced by central banks in emerging markets? What are the pros and cons of different monetary policy frameworks? Has rising openness to trade and financial flows made monetary policy less effective in achieving domestic objectives? How should monetary policy respond to shocks of uncertain nature (demand/supply; transitory/permanent)? What institutional frameworks can help in increasing the effectiveness of monetary policy transmission in less developed economies? What role do policies towards capital account liberalization have in devising appropriate monetary policy strategies? How should monetary policy in emerging market economies respond to large exogenous shocks such as the worldwide surge in food and fuel prices, or the possible spillovers from financial shocks such as the sub-prime crisis in the United States?

The chapters in this book tackle some of these difficult issues. The contributors recognize that there are unlikely to be clear or general answers to many of the questions confronting central bankers in these challenging times. Nevertheless, the contributions of both academics and policymakers facilitate a revealing discussion of the interaction between theory and practice. For instance, theoretical work on the optimality of an inflation target as the prime objective of monetary policy has been influential in guiding the increasing adoption of inflation targeting regimes around the world (see De Gregorio, Chapter 3, this volume). But the discussion also highlights the substantial gaps that still exist between what can be learnt from existing theoretical and empirical research and the practical challenges that confront central bankers.

In this paper, we provide an overview of the main issues discussed, linking them to broader debates in the academic literature as well as an assessment of how individual countries have chosen to respond to specific policy challenges and what the consequences have been. We discuss many controversies where there are still sharp differences in views between and amongst theorists and practitioners. We also delineate a few key analytical issues where there is still a yawning gap between theory and practice. In the process, we set out a broad agenda for further research in this area.

Background

To set the stage for the discussions in this book, we begin by reviewing the objectives of monetary policy, the particular challenges faced by central bankers in emerging market economies, and some recent developments that have heightened these challenges.

Objectives of monetary policy

There is a general recognition in the academic literature and in advanced industrial economies that the primary role for monetary policy is price stability (see Bernanke et al., 1999). Other objectives such as promoting growth and employment are seen as secondary to this. This has been reflected in increasing independence for central banks and new laws that give central banks statutory responsibility for price stability (for example, Ghana, as discussed by Sowa and Abradu-Otoo in chapter 16 of this volume). The rationale is that the best way that a central bank can promote growth and employment is by keeping inflation low and stable.

Central banks are also responsible for financial stability; this has come to the fore during the credit crisis that started in 2007. Even those central banks that are not responsible for prudential regulation are usually responsible for maintaining the stability of the financial system as a whole. In response to the current market turbulence, the financial stability objective has become more pre-eminent, with monetary policy aimed at restoring and maintaining the stability of the financial system. Indeed, the dual role expected of monetary

policy in responding to a financial stability shock--the credit crunch--at the same time as a price stability shock—highly volatile oil and commodity prices--has posed particularly challenging dilemmas for central banks. On the institutional side, some central banks are being given a greater role in promoting financial stability.

The situation is rather more complex in emerging market economies, however. While price stability is seen as important in these economies as well, financial stability is a key responsibility since in most emerging markets central banks are also responsible for prudential regulation (Nijathaworn and Disyatat, chapter 2, this volume; and Singh, chapter 7, this volume). Moreover the political economy context in these countries makes it much harder for central banks to be insulated from other objectives, including the promotion of output and employment growth.

This is the essence of the challenge facing central bankers in emerging market economies: While it has only one instrument - usually short term interest rates - monetary policy in many emerging market countries is seen as responsible for promoting high growth, keeping inflation low and stable, and maintaining financial stability (Goodfriend and Prasad, chapter 8 in this volume, discuss this with specific reference to China). And even this one instrument is subject to a variety of constraints.

Constraints on monetary policy in emerging markets

Central banks in emerging markets face a unique set of challenges. These are in part

institutional and in part technical, but both of these act as severe constraints on monetary policy implementation.

The key institutional constraint is the lack of central bank independence. In some countries, this takes the form of the central bank being statutorily under the purview of the finance ministry. In some countries where the central bank is in principle independent, there is still the reality that it can be buffeted by various political forces, especially the finance ministry (as argued by Dragutinovic, in the case of Serbia, chapter 12, this volume). Hence, central banks are always treading a fine line in terms of maintaining their legitimacy and independence in difficult circumstances.

Furthermore, irrespective of the degree of statutory independence, operational independence of the central bank is in some cases circumscribed by constraints such as an exchange rate objective. Maintaining the exchange rate at a particular level or within a specific range can often limit the room that the central bank has in using policy instruments such as the interest rate to pursue an independent domestic monetary policy aimed at managing domestic activity and inflation (Goodfriend, 2004).

Fiscal dominance is another key problem facing emerging market central banks. In many of these countries, long term fiscal discipline is lacking and monetary policy is often an adjunct to fiscal policy, particularly since the latter is seen as having important redistributive functions. An unsustainable fiscal policy, characterized by continuing high levels of government budget deficits and public debt, acts as a severe constraint on

monetary policy as the central bank then has to take account of the government's debt management objectives in setting interest rates, rather than focusing exclusively on the price stability objective. It also makes it harder to manage inflation expectations (see Sims, 2005).

Moreover, monetary policy is often hampered by a weak transmission mechanism related to the underdevelopment of the financial system (for example the case of Zambia, discussed by Kalyalya, chapter 17, this volume). In particular, a fragile banking system can make it difficult for a central bank to aggressively use policy interest rates to achieve domestic objectives as large changes in interest rates can have potentially devastating consequences on the balance sheets of weak banks.

The lack of well-developed financial markets means that the interest rate channel of monetary policy transmission is less effective. Further, the lack of market integration within these countries means that there are asymmetrical regional responses to monetary policy, as shown by Fielding in chapter 14 of this volume. Consequently, the lags in the effects of monetary policy on economic activity are even more long and variable than in industrial economies. The absence of deep and liquid financial markets also means that there is limited feedback from the market about monetary policy—central banks in industrial economies rely on these market signals for feedback about the effects of their policy actions on market sentiment and expectations.

Other institutional rigidities can also undermine the effectiveness of monetary policy. For instance, inflexible labor markets can lead to substantial inflation persistence, which again makes it harder for monetary policy to reliably manage economic activity.

Other challenges

One structural change that is making it more difficult to isolate monetary policy from external influences is the increasing openness of the capital account in emerging market economies. Even in countries that have de jure capital controls, financial flows are increasingly able to find their ways around those controls. Greater trade openness, the rising sophistication of domestic and international investors, and the sheer volume of financial flows have all made it increasingly difficult to keep capital bottled up when the incentives for it to cross national borders are strong enough. A prime example is that of China where, despite the determined efforts of the authorities to tighten controls on inflows, money has been pouring in through different channels in recent years (see Prasad and Wei, 2007). An open capital account of course makes it much harder to maintain an independent monetary policy when the central bank is also trying to manage the exchange rate (this is the Mundell-Fleming "impossible trinity").

A different type of problem of capital flows arises in heavily aid dependent low income economies, particularly in Africa. Aid flows are significant, but can be volatile, depending on political and other factors. How should governments, and monetary policy, respond to these volatile flows to the government? Buffie et Al., (chapter 6, this volume) argue that a

key aspect is how credibly the government can commit to time paths of expenditure and absorption. If an aid boom is perceived to be temporary, the markets' fear of the looming fiscal problems can lead to capital outflows and inflation. An appropriate strategy, it is argued, could be to reduce deficits to some extent along with purchases of internal debt. In Chapter 13 of this volume, Adam et al. further support the case for temporary reserve accumulation in the face of aid driven capital flows.

Recent circumstances have made monetary policy formulation even more challenging in emerging markets. Rising worldwide food and energy prices in 2007 and the first half of 2008 created a dilemma for central bankers in these economies who were endeavoring to manage inflationary expectations while they are under political pressures to avoid stifling growth by tightening monetary policy. This episode highlights the difficulties in formulating strategies for responding to commodity price shocks. Existing theoretical models yield what seems like a naïve and simplistic answer that central banks should target only the core component of the price index and let prices for food and energy, which tend to be flexible prices, adjust according to market conditions. In less developed economies, expenditures on food tend to constitute a large share of total consumption expenditures, which makes it difficult for central banks in these economies to be seen as leaving those prices to market conditions.

In addition to institutional constraints, central banks in emerging market economies face a number of technical challenges in implementing monetary policy and particularly inflation targeting. In an inflation targeting regime, the central bank needs the technical capacity to

model the economy, understand the transmission mechanism and forecast inflation and output. Structural changes in the economy, such as greater openness, mean that modeling and forecasting techniques must evolve, and that the past can b a less reliable guide to the future. These issues are discussed in by Aron and Muellbauer in chapter 15 of this volume in the case of South Africa. Central banks also need good macroeconomic data to inform their decisions. Finally, they need a communication strategy as an integral part of their inflation targeting framework, as argued, for example by Niedermayer for the Czech Republic (chapter 11, this volume).

Options for Monetary Policy Frameworks

Each country has specific institutional features and circumstances that determine how monetary policy decisions are formulated and implemented. Nevertheless, it is possible to identify a set of broad frameworks that have been used by emerging market and other economies. We begin by evaluating these options, in terms of their durability and effectiveness in achieving monetary policy objectives.

1. Managed exchange rate. The exchange rate provides a nominal anchor that is quite useful for some countries, especially those with low levels of financial and institutional development, and/or central banks that lack credibility (Husain, Mody and Rogoff, 2005). For economies that are highly open to trade, which is the case for many emerging markets, high nominal exchange rate volatility complicates domestic macroeconomic management and can have adverse effects on investment, employment and output growth. Given these

potential advantages, many emerging markets have chosen to use the exchange rate as a nominal anchor to varying degrees.

A strict version of a managed exchange rate is a hard peg (currency board or dollarization), although there are a variety of other intermediate versions (for an early discussion of exchange rate regime options for emerging markets and the constraints on some of these regimes in a world of mobile capital, see Williamson, 1998). The common feature is that this option involves the loss of monetary autonomy and the "importing" of monetary policy from abroad. The virtue is that pegging the domestic currency to the currency of a country whose central bank has credibility in maintaining low and stable inflation helps keep domestic inflation low. However, experience has shown that, even with a hard peg, fiscal discipline and sound structural policies are necessary to deliver good inflation and growth outcomes. Otherwise, currency pegs quickly become unsustainable.

Other forms of a hard peg include monetary unions such as the euro area. The logic of this approach is that linking monetary policy among a group of similar countries may facilitate a common response to common shocks, while acting as a disciplining mechanism on other policies in individual countries. There is also some evidence that currency unions promote trade and investment flows within the union. Some argue that the benefits from currency blocs means there will be an inevitable move by regional countries to monetary unions, and far fewer individual currencies in the future. For a good summary of the literature see de Grauwe (2000). The downside is that, in periods when business cycles across countries in the union are not well synchronized or when they get hit with different shocks, navigating a

common monetary policy could be difficult.

A different option is to have an exchange rate that is tightly managed against one currency or a basket of other currencies. This arrangement can co-exist with an open capital account only in countries such as Singapore that have high levels of financial development and other good policies. But this is not an easy combination for most emerging markets to manage.

In general, managed exchange rate regimes require a large array of capital controls since large volumes of flows can make exchange rate management very difficult, in addition to stripping away monetary policy autonomy. There are of course currency boards such as Hong Kong and countries with exchange rate targets and well-disciplined macro policies (e.g., Singapore) that are able to manage their exchange rates effectively while keeping their capital accounts fully open. But in most other developing economies, especially those with weak macro policies and underdeveloped financial markets, capital controls are seen as an important buffer required to mitigate exchange rate volatility.

2. Flexible exchange rate and monetary targeting. This usually involves a managed float, where the currency is managed within a relatively tight band, although the size of this band varies across countries and, within countries, over time. Examples are Bangladesh, Sri Lanka, Tanzania, Uganda and Zambia (Kalyalya, chapter 17 in this volume, discusses the Zambian case). Monetary aggregates provide visible targets that are relatively easy to measure, making them appealing to economies with underdeveloped financial systems.

One complication is that monetary aggregates are increasingly distorted by financial integration and globalization. Moreover, in economies where the rate of productivity growth is highly volatile, there isn't a stable relationship between monetary aggregates, on the one hand, and economic activity and inflation on the other. Consequently, many of these countries are in fact looking to move towards an alternative regime such as inflation targeting, but lack the institutional and technical pre-requisites. Goodhart (chapter 4 in this volume) challenges the view that money does not matter, arguing that there continues to be a strong empirical relationship between money and prices.

3. Inflation targeting with managed float. Many countries have adopted inflation targeting but manage the exchange rate, ostensibly to "lean against the wind" in smoothing out short-term volatility in exchange markets. In practice, this approach often involves substantial exchange market intervention as countries have a fear of letting their currencies float freely. Examples of countries that the IMF classifies as "inflation targeters with managed float" constitute a diverse group, including Colombia, Ghana, Indonesia, Romania and Thailand (see Sowa and Abradu-Otoo on Ghana, chapter 16 in this volume, and Nijathaworn on Thailand, chapter 2 in this volume).

A variant of this is the approach adopted by the Reserve Bank of India, which does not have a formal inflation objective but whose senior officials nevertheless mention the range of inflation that they are comfortable with in an attempt to anchor inflationary expectations. The RBI also manages the exchange rate quite actively at times, and its senior officials have argued that this is a pragmatic approach that gives them a degree of freedom in

running monetary policy effectively (Mohan and Patra, chapter 9 in this volume).

4. Inflation targeting with exchange rate flexibility. More and more countries, both from the group of advanced industrial economies as well as the emerging market economies, are moving towards this monetary regime. Even a number of countries that at present have one of the other regimes discussed above, have indicated that they view this regime as the end game for the evolution of their own monetary frameworks.

Indeed, part of the apparent inevitability of moving to this regime is that, in every country, capital accounts are becoming increasingly open over time in de facto terms, irrespective of the capital control regime. This makes it harder to manage exchange rates for any sustained period without exposing the exchange rate regime to speculative attacks. The Chinese experience suggest that it may yet be possible to maintain a tightly managed exchange rate while the capital account is becoming more open, but only by maintaining extensive financial repression, which in turn has large welfare costs (see Prasad, 2008).

In tandem with the moves by central banks to adopt some form of inflation targeting, the academic literature has by and large come around to the view that this alternative is the best one for most advanced and middle-income economies. The inflation target provides a clear anchor for monetary policy, while exchange rate flexibility provides room for an independent monetary policy and a buffer against certain external shocks.

Rose (2006) marshalls evidence that this regime seems to deliver the best outcomes in

terms of output growth, low inflation and also lower exchange rate volatility than alternative regimes. He also notes that this regime is the most durable of the lot. However, it may be premature to declare that this is the best alternative; after all, it has not been around for very long and may not have been tested sufficiently under conditions of extreme duress. Furthermore, many countries introduced inflation targeting after 1990, a period when inflation has generally been moderate around the world. In terms of durability, the fact is that many countries lack credible alternatives since many of them turned to this regime after the breakdown of alternatives such as a fixed exchange rate regime. Nevertheless, experience indicates that in countries that have adopted inflation targeting, inflation expectations are better anchored and inflation persistence is lower (Levin et al. 2004).

Is the shift towards inflation targeting regimes well advised? We now provide a critical review of the theoretical and empirical evidence of the appropriateness of this regime for emerging market economies, and the potential complications faced by central banks that do adopt inflation targeting (see Mishkin, 2000, for an excellent alternative summary of these issues).

Benefits of an Explicit Inflation Objective

There is a great deal of evidence, both from individual country experiences and cross-country studies, that a central bank that is focused on price stability can be most effective at

delivering good monetary and macro outcomes.[5] Low and stable inflation has large macroeconomic benefits—it would stabilize GDP growth, help households and firms make long-term plans with confidence, increase investment, and thereby allow monetary policy to make its best possible contribution to long-term employment and output growth. It would also have financial market benefits--for instance, by enabling the development of a long-maturity bond market, which would assist in infrastructure financing and public debt management.

Monetary policy that has a single clearly-defined objective may be the best contribution that monetary policy can make to macroeconomic and financial stability and, therefore, to long-term growth. By contrast, trying to do too much with one instrument is a recipe for ineffectiveness, especially in difficult times. Moreover, the notion that monetary policy can itself raise long-term growth through activist policies is problematic—in fact, faith in that belief led to stagflationary episodes (economic stagnation coupled with high inflation) in the U.S. in the 1970s and 1980s (see Broaddus and Goodfriend, 2002).

Monetary policy nevertheless has a key role to play in encouraging investment in physical capital and galvanizing productivity gains, mainly by ensuring macroeconomic stability. Transparency and predictability of monetary policy are essential ingredients for achieving liquid financial markets, reducing fragility of financial firms and stabilizing capital flows.

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[5] The general discussion in this section draws on material from the volume edited by Bernanke and Woodford (2005). For a more specific discussion of these issues for emerging markets, see Jonas and Mishkin (2005) and, for a skeptical view on the relevance of inflation targeting for these economies, see Blanchard (2005).

A stable macroeconomic environment not only helps make cross-border capital flows more stable by giving domestic and foreign investors more confidence in a country's fundamentals, but it also helps in dealing with the inevitable vagaries of those flows.

It is sometimes argued that the process of switching to an objective of price stability entails a loss in output growth. This is true in countries where an inflation target has been used as a device to bring down inflation from a high level and to build credibility for a central bank that has lacked inflation-fighting credentials. One of the earliest inflation targeters—New Zealand—suffered this problem. An early form of inflation targeting was introduced in early 1988 in an attempt to bring inflation down from around 15 percent in the mid-1980s. Inflation was brought down to 2 percent by 1991, although with an adverse impact on growth and employment during that period. Output losses were also experienced at the time of introduction of inflation targeting in some Latin American economies. But in every one of these cases, inflation targeting was seen as a solution to high inflation and lack of central bank credibility. However, there is no reason why, if inflation is low and the central bank has a reasonable degree of credibility, switching to a focus on price stability rather than multiple objectives should have output costs.

One lesson from these episodes is that inflation targeting may not necessarily be the best monetary policy framework for bringing inflation down from high levels. This is because it depends on the ability to forecast inflation, which is more difficult when inflation is high and volatile. So a central bank risks losing credibility by getting the forecast wrong and having large target misses. Nevertheless, some countries like Chile and Israel have still

used inflation targeting successfully in purging entrenched high levels of inflation from their economies, More generally, however, inflation targeting is regarded as a good framework for *keeping* inflation low (Mishkin and Schmidt-Hebbel, 2005).

It is also argued by some that making low and stable inflation the objective of monetary policy creates a deflationary anti-growth bias, wherein inflationary pressures would be dealt with swiftly and decisively, but deflationary pressures would not be resisted as aggressively (McKinnon, 2006, implicitly makes this point in his discussion of Chinese exchange rate policy). In fact, there is no reason why there should be an asymmetric approach to inflation versus deflation. The Bank of England for example explicitly has a symmetric point target for inflation. In other countries where the inflation target is specified as a range, the norm is to treat the floor of the target range as seriously as the ceiling. Put differently, if growth falters, it is also likely to bring inflation down below the floor of the inflation objective, allowing the central bank to ease monetary policy. In this case again, the ability of the central bank to move aggressively with its policy instrument to maintain price stability (and thus growth), rather than being hamstrung by an exchange rate objective, is crucial (see Goodfriend, 2004).

Inflation targeting is sometimes seen as a rigid framework that ties the hands of central bankers and constrains their decision-making in some respects. In practice, however, the monetary policy frameworks of most central banks do give them discretion in reacting to shocks as to how quickly they aim to bring inflation back to target after a shock. And the

frameworks have evolved such that most are now described as "flexible inflation targeting."

In sum, focusing on low and stable inflation does not mean that short-term fluctuations in output and employment growth will be ignored in monetary policy formulation. This objective provides a framework for thinking about how other macro developments affect inflation and, therefore, how monetary policy should react to those developments. This provides some degree of flexibility to central bankers in reacting to different types of shocks and how persistent they are likely to be. Moreover, it can increase the independence and effectiveness of monetary policy by setting more realistic expectations about what monetary policy can and cannot achieve, and by focusing attention on future inflation (which monetary policy can influence) rather than current inflation, which it cannot as monetary policy can have an effect only with a lag. Finally, transparency about the monetary policy process allows financial market participants to plan for the already high volatility they need to deal with without it being augmented by policy volatility.

One should also not oversell the benefits of this regime. In particular, it is worth making the point that adopting an inflation targeting regime by itself will not confer credibility on a central bank (Mishkin and Schmidt-Hebbel, 2005). But this regime has often been adopted as part of a package of measures aimed at building stronger institutions. It provides a framework in which policymakers can make a greater political commitment to price stability, and, as in the case of Latin America, better fiscal policies. Thus, while inflation targeting may not be a macroeconomic panacea in itself, it can serve as a catalyst for a

broader set of reforms that can increase the credibility of the central bank and deliver better outcomes on inflation and macroeconomic stability more generally.

Problems with an Explicit Inflation Objective

In practice, inflation targeting poses a number of challenges for central bankers. One recent policy challenge for many emerging markets has been dealing with the volumes and volatility of capital inflows and outflows. Indeed, in some circumstances, these flows can drive monetary policy into a corner—for instance, in the cases of many economies in Asia that experienced large capital inflows during 2005-07 (Singh, chapter 7, this volume). This stoked domestic inflation, but central bankers in many of these countries found it difficult to raise interest rates to manage domestic inflation as that would have drawn in more inflows. Exchange rate appreciation would of course serve as a shock absorber in these circumstances, but many of these economies were wary of allowing their exchange rates to fluctuate by a wide margin, which complicated matters.

A related problem other than just the sheer volume of inflows is that it can be difficult to separate out long-term versus short-term speculative inflows. Unfortunately, re-imposition of capital controls to limit inflows, even in a selective manner, is not without problems; it often ends up being not just ineffective but even counter-productive as it injects uncertainty into an already unsettled environment. A case study of this is provided by the example of Thailand, which in December 2007 tried to impose a tax on short-term portfolio inflows. The market reaction was swift and brutal, with the stock market plunging by over 15

percent in one day, forcing the government to largely rescind the controls.

What are the policy options for emerging markets facing such circumstances, and how do the viable options vary for different types of economies? In the face of a surge in inflows, the central bank has a few options to control inflation.

A. Allow the exchange rate to appreciate. Exchange rate flexibility facilitates adjustment to relative prices, freeing up monetary policy to focus on the inflation objective. The downside is that the cost of hedging such exchange rate volatility falls on the private sector. In many emerging markets, financial underdevelopment means that currency derivatives and other instruments for hedging currency risk may not be available, putting an especially onerous burden on small and medium-sized enterprises that may not have easy access to hedging opportunities via international financial markets.

B. Intervene against appreciation. Some central banks in emerging markets have chosen to intervene aggressively in exchange markets to avoid excess volatility and also what they perceive as divergence from fundamentals. But prolonged intervention can cause a surge in reserve accumulation, which then exposes central banks to the risks of currency mismatches on their balance sheets and potentially large carrying costs on their reserve portfolios. In addition, this puts the onus on central banks to sterilize the intervention as the liquidity inflows would otherwise undermine domestic price stability. Sterilization of course has quasi-fiscal costs since the rate of return that has to be paid on sterilization bonds is typically higher than that earned on liquid instruments such as industrial country

treasury bonds that reserves are kept in. Such costs can mount very quickly as sterilization levels increase. These problems with intervention are emphasized by Goodfriend and Prasad (chapter 8, this volume) for China. However, the discussion of Brazil by Pires et. al. (chapter 10, this volume) shows that in some circumstances temporary reserve build up through intervention need not have large costs and can be part of a strategy that incorporates exchange rate smoothing. Levy-Yeyati and Sturzenegger (chapter 5, this volume) further strengthens the case for temporary intervention by presenting evidence on the link between relative undervaluation and growth.

C. Impose restrictions on capital inflows. This is becoming an increasingly unviable option as de facto financial openness increases. Selective and targeted controls are a seductive option for a central bank that is concerned about specific types of flows, but these tend to be ineffective as there are inevitably large loopholes to get around these controls. Comprehensive controls have large costs to economy and also tend to lose their effectiveness fairly quickly. But it remains an open question whether it is a viable, or ultimately counter-productive, short-run strategy for countries to hold on to whatever controls they have and thereby insulate themselves to the best possible extent against volatile capital flows (see Williamson, 2006).

D. Reduce restrictions on capital outflows. This is an appealing alternative to counter-balance inflows and take some of the pressure off the exchange rate. It may also have the advantage of generating many of the indirect benefits of financial openness that have been touted by various authors, including domestic financial development and opportunities for

international portfolio diversification by domestic investors. One problem is that, once controls on outflows are weakened in good times, it may be difficult to turn off the taps in bad times when domestic and international investors are heading for the exits due to a change in sentiment about an economy's prospects. This implies that opening up to outflows should be done in a controlled manner rather than as a one-shot full liberalization (see Prasad and Rajan, 2008).

The deepening of the financial crisis in the latter half of 2008 showed the fickleness of capital flows to emerging markets, with many of these economies facing significant outflows after a prolonged period of inflows. Many of the points discussed above in the context of a surge in inflows can be applied symmetrically to the case of outflows. One crucial difference, of course, is that large exchange rate depreciations can potentially be devastating for emerging markets, especially those that have large amounts of foreign currency denominated debt. Perhaps this strengthens the case for greater focus on exchange rate management, at least in terms of preventing abrupt massive depreciations of the domestic currency.

Difficult Choices and Outstanding Analytical Questions

How should an emerging market central bank go about picking from the menu of tough choices laid out above? As the country specific papers in this volume make clear, monetary policy on the ground is of course a matter of judgment rather than mechanical rules, but academic knowledge has an important role in providing guidance on the relative merits and

demerits of these choices. But only limited progress has been made so far in providing clear analytical guidance on these issues. And there are other related issues, where again much analytical work—both theoretical and empirical—remains to be done.

Until the financial crisis roiled world markets, many emerging markets that had been experiencing rapid productivity growth relative to their major industrial country trading partners were experiencing pressures for real exchange rate appreciation. What then are the relative costs, for instance, of accepting real exchange rate appreciation through nominal appreciation or inflation? For example, Levy-Yeyati and Sturzenegger (chapter 5, this volume) suggest that there are growth benefits to some undervaluation. Is it really true that holding down the nominal exchange rate results in inflation taking on the burden of adjustment? To answer such questions, a great deal more work needs to be done to understand whether the interest rate channel or the exchange rate channel is more important in emerging markets for transmitting the effects of monetary policy actions.

One response to the sort of conundrum laid out above is to argue that it is better for central bankers to adopt a pragmatic and flexible approach rather than a rule-bound framework. India's central bankers, for instance, have an inflation objective but do actively manage the exchange rate at times (also see Yi, 2001, for a Chinese central banker's views on this issue). Some policymakers seem to feel that this type of approach gives them a degree of operational freedom since they can keep market participants guessing and avoid giving markets one-way bets. But there are some potentially negative effects of such an approach, which have been in evidence in the Indian context. It makes outcomes of monetary policy

actions less predictable since the market is never entirely sure of how to interpret individual policy actions, therefore leading to market overreactions in some circumstances. This reduces the effectiveness of the monetary transmission mechanism. It also increases overall policy uncertainty, which isn't good for anchoring inflation expectations, or for growth and stability.

A different set of questions enters into the complicated relationship between monetary policy and financial markets. How should monetary policy react to asset price bubbles? Are there conflicts between the monetary policy and financial stability objectives? What are the implications for the optimal regulatory structure for banks and other financial institutions— is it better for the central bank not to be the direct regulator of banks, freeing it up to take monetary policy decisions without having to be constrained by worries about the repercussions on the banking system? (For a practitioner's perspective on these issues, see Reddy, 2008).

Events in 2007 and 2008 showed that faced with a looming financial crisis, a central bank cannot ignore the banking system when pursuing its monetary policy objective (see Mohan, 2007, for a related discussion). Events related to the U.S. bailout of Bear Stearns and the failure of Northern Rock in the U.K. show that conventional wisdom does not always hold—the U.S. Federal Reserve won at least a few plaudits for rescuing a non-bank institution while the Bank of England's reputation was damaged even though it was not the regulator of the bank in question.

There are also a number of practical issues that need to be confronted in the context of an inflation targeting regime. For instance, what is the right inflation rate to target? Theory tells us that monetary policy should target the inflexible component of price index—i.e., core inflation—and not attempt to offset certain relative price shifts that have no long-run implications for general CPI inflation. In practice almost all inflation targeting central banks target the headline measure of inflation. In emerging market economies, the reality is that a large part of the consumption basket of average household is accounted for by food and energy. The price of food, in particular, can rise rapidly, putting central bankers in a quandary since targeting core inflation then becomes politically unacceptable. Moreover, rising food and fuel prices have economic consequences that a central bank cannot ignore. For example, they may create upward pressure on wages as workers strive to maintain real incomes. Such second-round effects may result in higher inflation becoming entrenched and require a larger monetary policy response to bring inflation back to target. A different complication arises when there is a large divergence between inflation based on regional CPI or between urban and rural CPI inflation. What price index should central bankers really focus upon and why? What are the tradeoffs in terms of credibility and ease of communications versus effective monetary control of choosing different price indexes as the target?

Clearly, the list of unanswered questions far outnumbers those for which we have more or less arrived at plausible answers that both academics and practitioners can agree upon.

Bridging the Gaps between Theory and Practice

How can academic research contribute to improving the formulation of monetary policy and addressing in a concrete way the difficult challenges that central bankers face? Many practitioners feel that the academic literature has failed to come to grips with the complexities and messiness of policymaking in the real world. Mervyn King (2005), for instance, has gently noted that in some respects monetary practice is ahead of monetary theory. The discussion in the preceding sections has laid out a number of issues where theory has not provided clear-cut answers. But there are challenges in another dimension as well—incorporating the knowledge from existing theory (and related empirical evidence) into the policy making process.

Some obvious challenges in these two dimensions are as follows. Analytical models currently used by central banks have serious limitations. For instance, neo-Keynesian models that are still widely used in many policy institutions typically have very little role for money, despite a broad consensus that in the long run inflation remains a monetary phenomenon (Goodhart, chapter 4 in this volume). Dynamic stochastic general equilibrium models hold out a lot of promise in terms of formulating monetary policy but often have a limited role for the financial sector and for commodity prices (see Goodfriend and King, 1997; Goodfriend, 2002; Woodford, 2003). So the available models are not very helpful in thinking about how central banks should react to shocks such as sharp changes in food or fuel prices, or dislocation in financial markets. On the financial stability side, the development of macro models in which the real and financial sectors are linked together

can help seriously analyze issues of financial and macro stability in a general equilibrium context is still in its infancy

At the same time, theoretical models have not yet done a good job of figuring out how to model the formation of inflation expectations, which is a key input into monetary policy formulation. Despite the potency of the Lucas critique, models with backward-looking expectations still dominate, in part because of their tractability relative to models with forward-looking expectations.

Despite these caveats, the papers in this volume are also testament to the progress that can be made on these challenging issues through a process of interactive dialogue between central bankers and academics.

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Appendix

Monetary Policy Frameworks for Emerging Markets[6]

Edited by

Gill Hammond, Ravi Kanbur and Eswar Prasad

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