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Volume Title: International Dimensions of Monetary Policy

Volume Author/Editor: Jordi Gali and Mark J. Gertler, editors

Volume Publisher: University of Chicago Press

Volume ISBN: 0-226-27886-7

Volume URL: <http://www.nber.org/books/gert07-1>

Conference Date: June 11-13, 2007

Publication Date: February 2010

Chapter Title: Panel Remarks

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Chapter URL: <http://www.nber.org/chapters/c0790>

Chapter pages in book: (627 - 634)

ments—such as the extraordinary decreases in the cost of transmitting data and the opening up of Eastern Europe, China, and India—are reshaping trade flows and the domestic influence of international developments in ways that may surprise us.

Indeed, a global dimension seems to be part of some of the more puzzling macroeconomic developments over the past several years: the growth and persistence of the U.S. current account deficit; the restraint on labor compensation and increase in business profits in so many locations; the damped global demand from businesses for capital goods despite high profitability; and the long period of low long-term interest rates, damped volatility, and low risk spreads in most financial markets. Many of these developments occurred simultaneously in a number of regions of the world and were unexpected or difficult to explain using purely domestic factors. Many involved cross-border flows of goods, services, labor, physical investment, and financial capital in ways that probably would not have been feasible ten or twenty years ago.

But as I suggested at the outset, these puzzling or unprecedented elements of globalization have not revolutionized the conduct of monetary policy. The changes have mostly been gradual, with modestly evolving effects on the needed policy settings. And none of these developments mean that monetary policymakers cannot still be held accountable for the stability of prices and output in their local economies. But as the puzzles suggest, we do need to recognize that the pace of global integration has picked up and that our understanding of its implications is far from complete. As policymakers and as economists, we need to keep working on enhancing our knowledge and our abilities to integrate shifting international influences into the conduct of monetary policy.

Rakesh Mohan

Introduction

In these panel remarks I will try and present the key dilemmas we are facing in India, but that I believe almost all the developing countries in Asia are also facing. The result is that none of us are really following what seem to be well accepted principles of monetary policymaking. And yet we have collectively exhibited the highest growth in the world in the last twenty-five years and over, while also experiencing generally low inflation.

In recent years, the growing integration of goods and financial markets has transformed the environment in which monetary policy operates. While monetary policy has been successful in keeping inflation low in many countries since the early 1990s, some are arguing that its ability to do so in the

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future can be questioned. Domestic inflation may no longer be a function of domestic slack; rather, it is the global output gaps that perhaps matter for domestic inflation. On the one hand, the integration of China, India, and other EMEs has helped to enhance global supply, but on the other hand their impact on global demand for commodities is leading to inflationary pressures. Similarly, long-term interest rates are increasingly influenced by trends in the global savings-investment gap and, as has been discussed in this workshop, are bearing a weaker relationship with short-term policy rates. There is also some disconnect between current account balances and exchange rate movements on the one hand and between exchange rates and prices on the other hand. This raises some questions over the efficacy of the exchange rate channel. Furthermore, risk premia remain close to record lows, even as global imbalances and the threat of disorderly adjustment persist. Finally, despite the glut of global liquidity, consumer price inflation remains relatively benign, notwithstanding some hardening over the past year. The question that arises is whether the glut will eventually lead to higher goods and services inflation or to that in asset prices. Indeed, interestingly the price and output stability witnessed in major economies in the last two decades has not been accompanied by stability in asset prices and exchange rates. These monetary policy puzzles raise a number of issues on the conduct of monetary policy in open economies: the conclusion of this conference is perhaps that these are really not puzzles—at least in Europe and the United States (Mohan 2005).

Concerns and Dilemmas

Against this backdrop let me set out the concerns and dilemmas facing authorities in the emerging market economies (EMEs), particularly in Asia, in the conduct of monetary policy in a globalized world.

In view of the rising trade openness, economies are more vulnerable to external demand and exchange rate shocks. This can necessitate significant changes in trade and other current account flows in a short span of time, as was reflected in the aftermath of the Asian financial crisis when a number of economies in this region had to make substantial adjustments in their current accounts. Central banks are required to take into cognizance such eventualities in the conduct of monetary policy.

Currently, the more serious challenge to the conduct of monetary policy, however, emerges from capital flows in view of significantly higher volatility in such flows as well as the fact that capital flows in gross terms are much higher than those in net terms. Swings in capital flows can have a significant impact on exchange rates, domestic monetary and liquidity conditions, and overall macroeconomic and financial stability.

Global capital flows reflect not only the domestic economy's growth prospects but also reflect the relative interest rate differentials. Reflecting the fairly low interest rates in major advanced economies, the search for yield

has led to a large volume of capital inflows to emerging economies, vastly in excess of current account deficits, and, in many cases, such capital flows are in addition to continuing surpluses on current accounts. In fact, according to the World Bank's *Global Development Finance 2007*, reserve accretion of all EMEs put together is roughly equal to total net private flows to them. Large capital flows can render domestic currencies overvalued and can get intermediated to speculative activities such as real estate/stock markets. In their efforts to maintain external competitiveness and financial stability, the central banks in EMEs have absorbed the forex surpluses. Further, in view of the price stability objective, these central banks have sterilized the monetary impact of their foreign exchange intervention operations through open market operations (OMOs), issuances of central banks bills, treasury bills and bonds, further liberalization and, more recently, greater flexibility in exchange rates. Given the large volume of capital flows, central banks in the past year have also been forced to resort to unorthodox methods, such as raising reserve requirements of banks in order to manage the liquidity situation. And, in the case of Thailand, controls on inflows—including the use of unremunerated reserve requirement—have also been imposed.

Furthermore, external borrowings of many emerging market economies are usually denominated in foreign currency. Large devaluations not only lead to inflation but can also cause serious currency mismatches with adverse impact on balance sheets of borrowers (banks as well as corporates), as has been discussed. A financial accelerator mechanism can exacerbate these effects and threaten financial stability.

The experience of living with capital flows since the 1990s has fundamentally altered the context of development finance, while also bringing about a drastic revision in the manner in which monetary policy is conducted. The importance of capital flows in determining the exchange rate movements has increased considerably, rendering some of the earlier guideposts of monetary policy formulation possibly anachronistic. On a day-to-day basis, it is capital flows that influence the exchange rate and interest rate arithmetic of the financial markets. Instead of the real factors underlying trade competitiveness, it is expectations and reactions to news that drive capital flows and exchange rates, often out of alignment with fundamentals. Capital flows have been observed to cause overshooting of exchange rates as market participants act in concert while pricing information.

In the fiercely competitive trading environment where exporters seek to expand market shares aggressively by paring down margins, even a small change in exchange rates can develop into significant and persistent real effects. A key point is that for the majority of developing countries, which are labor-intensive exporters, exchange rate volatility can, therefore, have significant employment, output, and distributional consequences. Moreover, if large segments of economic agents lack adequate resilience to withstand volatility in currency and money markets, the option of exchange rate

adjustments may not be available, partially or fully. Therefore, the central bank may need to carry out foreign exchange operations for stabilizing the market. On the other hand, in the case of advanced economies, the mature and well-developed financial markets can absorb the risks associated with large exchange rate fluctuations with negligible spillover on to real activity. Consequently, the central banks in such economies do not have to take care of these risks through their monetary policy operations.

The experience with capital flows has important lessons for the choice of the exchange rate regime. The advocacy for corner solutions is distinctly on the decline. The weight of experience seems to be tilting in favor of intermediate regimes with country-specific features, without targets for the level of the exchange rate, the conduct of exchange market interventions to ensure orderly rate movements, and a combination of interest rates and exchange rate interventions to fight extreme market turbulence. In general, emerging market economies have accumulated massive foreign exchange reserves as a circuit breaker for situations where unidirectional expectations become self-fulfilling. It is a combination of these strategies that will guide monetary authorities through the impossible trinity of a fixed exchange rate, open capital account, and an independent monetary policy.

For developing countries, considerations relating to maximizing output and employment weigh equally upon monetary authorities as price stability. Accordingly, it is difficult to design future monetary policy frameworks with only inflation as a single-minded objective. Thus, the operation of monetary policy has to take into account the risks that greater interest rate or exchange rate volatility entails for a wide range of participants in the economy. Both the fiscal and monetary authorities inevitably bear these risks. The choice of the exchange rate regimes in some developing countries, therefore, reveals a preference for flexible exchange rates along with interventions to ensure orderly market activity, but without targeting any level of the exchange rate. There is interest in maintaining adequate international reserves and a readiness to move interest rates flexibly in the event of disorderly market conditions.

Indian Specifics

Like other EMEs, the conduct of monetary policy is increasingly influenced by the evolving dynamics of capital flows. In this context, a brief discussion of a few relevant stylized facts of the Indian economy would be useful. First, real gross domestic product (GDP) growth has recorded strong growth since 2003–4, averaging 8.6 percent per annum over the four-year period ending 2006–7. This growth is significantly higher than world economic growth. This would suggest that equilibrium real interest rates for a country like India would be higher than world interest rates. Second, inflation in India has averaged between 4.5 and 5.0 percent, which remains higher than that in major advanced economies. These growth and infla-

tion differentials taken together would lead to nominal interest rates being relatively higher in a growing economy such as India. Moreover, the growth in India has been achieved in an environment of macroeconomic stability. Thus, both push factors and pull factors have made India as an attractive destination of global capital flows. Third, since the early 1990s, India has witnessed a progressive opening up of the economy to external flows. There has been a sustained increase in capital flows and capital flows have remained significantly in excess of the current financing need. Fourth, it is pertinent to note that, unlike many other economies running surpluses on their current account, India has been running a deficit (except for three years) on the current account. The current account deficit has averaged close to 1 percent of GDP since the early 1990s and this would suggest that the exchange rate in India has been fairly valued.

Fifth, the challenges for monetary policy with an open capital account get exacerbated if domestic inflation firms up. In the event of demand pressures building up, increases in interest rates might be advocated to sustain growth in a noninflationary manner, but such action increases the possibility of further capital inflows if a significant part of these flows is interest sensitive and explicit policies to moderate flows are not undertaken. These flows could potentially reduce the efficacy of monetary policy tightening by enhancing liquidity. Such dilemmas complicate the conduct of monetary policy in India if inflation exceeds the indicative projections. During 2006–7, as domestic interest rates hardened on the back of withdrawal of monetary accommodation, external foreign currency borrowings by domestic corporates witnessed a significant jump in India, leading to even higher flows. In case there are no restrictions on overseas borrowings by banks and financial institutions, such entities could also annul the efforts of domestic monetary tightening.

In this environment, leaving the exchange rate to be fully determined by capital flows can, as noted earlier, pose serious setbacks to exports and, over time, external sector viability. Indeed, as the Asian financial crisis showed, real appreciation can lead to future vulnerability and avoidable volatility in the economy. Thus, like other central banks grappling with the impossible trinity, the Reserve Bank has been operating in an intermediate regime. The Indian rupee exhibits substantial two-way movements and the Reserve Bank intervenes in the foreign exchange market to smoothen out volatility. A multipronged approach has been followed to manage the external flows to ensure domestic economic and financial stability. The key features of the package of measures include: liberalization of policies in regard to capital account outflows; encouraging prepayment of external borrowings; alignment of interest rates on nonresident deposits; and greater flexibility in the exchange rate. These measures have been supplemented with sterilization operations to minimize the inflationary impact of the flows and to ensure domestic financial stability. Operations involving sterilization are under-

taken in the context of a policy response, which has to be viewed as a package encompassing exchange rate policy, level of reserves, interest rate policy along with considerations related to domestic liquidity, financial market conditions as a whole, and degree of openness of the economy.

Sustained and large capital flows and their sterilization through open market operations, however, led to a dwindling stock of government securities with the Reserve Bank by early 2004. Given the provisions of the Reserve Bank Act, a market stabilization scheme (MSS) was introduced in 2004 to provide the Reserve Bank greater flexibility in its monetary and liquidity operations.¹ As noted earlier, large capital flows to EMEs, including India, in the past few years are partly the reflection of extended monetary accommodation by G-3 central banks. In case monetary conditions were to tighten further in the major advanced economies, the flow of capital to the EMEs could reduce vastly. Similarly, the possibility of increased risk aversion by foreign investors cannot be ruled out and this could be associated with large and sudden withdrawal from the EMEs as was evidenced in May and June 2006 and March 2007. Thus, authorities in the EMEs should be fully prepared for large and unanticipated withdrawal of funds by foreign investors. In such a scenario, a scheme like the MSS—absorption at times of heavy inflows and unwinding of balances at times of reversal/lower inflows—can smooth domestic liquidity conditions. Thus, the MSS, as operated in India, can be viewed as a truly market-based stabilization scheme.

In recognition of the cumulative and lagged effects of monetary policy, the preemptive monetary tightening measures that were initiated in September 2004 continued during 2006–7 and 2007–8. Between September 2004 and June 2008, the repo rate and the reverse repo rate were increased by 175 and 150 basis points, respectively, while the cash reserve ratio (CRR) has been raised by 200 basis points. In view of the need to maintain asset quality against the backdrop of strong and sustained growth in

1. In early 2004, it was recognized that the finite stock of government paper with the Reserve Bank could potentially circumscribe the scope of outright open market operations for sterilizing capital flows. The Reserve Bank cannot issue its own paper under the extant provisions of the Reserve Bank of India Act, 1934, and such an option has generally not been favored in India. Central bank bills/bonds would impose the entire cost of sterilization on the Reserve Bank's balance sheet. Besides, the existence of two sets of risk-free paper—gilts and central bank securities—tends to fragment the market. Accordingly, the liquidity adjustment facility (LAF), which operates through repos of government paper to create a corridor for overnight interest rates and thereby functions as an instrument of day-to-day liquidity management, had to be relied upon for sterilization as well. Under these circumstances, the Market Stabilization Scheme (MSS) was introduced in April 2004 to provide the monetary authority an additional instrument of liquidity management and sterilization. Under the MSS, the government issues Treasury bills and dated government securities to mop up domestic liquidity and parks the proceeds in a ring-fenced deposit account with the Reserve Bank of India (RBI). The funds can be appropriated only for redemption and/or buyback of paper issued under the MSS. The ceiling for the MSS is decided in consultation with the Government; on October 4, 2007, the ceiling was raised to Rs. 2,000 billion.

credit, monetary measures were reinforced by tightening of provisioning norms and risk weights. In the context of large capital inflows and implications for liquidity and monetary management, the interest rate ceilings on nonresident deposits have been reduced by 75 to 100 basis points since January 2007.

Concluding Observations

This is a brief snapshot of some of the issues facing Asian EMEs, and India in particular. In general, our monetary policies are not following conventional rules, but it would certainly be true to say that we do all emphasize low inflation and price stability, but in the context of financial stability as an equally important objective.

Globalization has clearly affected what we do. Globalization has transformed the environment in which monetary policy operates, leading to progressive loss of discretion in the conduct of monetary policy. Much of the discussion in this conference has, however, concluded that for the United States and European Union, globalization has little relevance for monetary policy making. This reminds me of a comment that T.N. Srinivasan made at a presentation I made in 1977 in my PhD thesis on a dynamic computable general equilibrium (CGE) model of India. I had concluded that my model exhibited the same quality of robustness that the Indian economy did: that nothing much happened to the model despite significant shocks to the system. His comment was: "Your model is so robust that you can throw it off the Empire State Building and nothing will happen to it!" Perhaps looking for the effects of globalization on U.S. monetary policy has the same problem. As the largest economy in the world whose currency is the key reserve currency, should we expect the same effects of globalization on monetary policy as we would on smaller economies?

With the opening up of the economies and greater integration, monetary authorities in EMEs are no longer concerned with mere price stability. Financial stability has emerged as a key objective of monetary policy, especially in emerging economies. The adverse implications of excess volatility leading to financial crises are more severe for low-income countries. They can ill afford the downside risks inherent in a financial sector collapse. Central banks need to take into account, among others, developments in the global economic situation, the international inflationary situation, interest rate situation, exchange rate movements, and capital movements while formulating monetary policy. At the same time, central banks in the EMEs would need to take initiatives to further widen and deepen their financial markets that can increasingly shift the burden of risk mitigation and costs from the authorities to the markets.

Several countries in Asia have followed a relatively flexible exchange rate policy to ensure smooth adjustment along with corrections in the world economy. Such flexibility has served these countries well. However, the world

has to guard against any new risks arising out of any large corrections in the exchange rates of the world's major currencies accompanied by rising inflation and interest rates. First, the protectionist tendencies need to be curbed in keeping with the multilateral spirit of trade negotiations. Second, we need to work collectively toward developing a sound international financial architecture, the lack of which, it may be recalled, has led to excessive caution on the part of developing countries in building large reserves. Third, given the need for financial stability alongside monetary stability, central banks need to be cautious before joining the recent trend of separating the monetary and supervisory authorities, particularly in view of the muted responses to the pricing channels of monetary policy.

José Viñals

I will focus my comments on the challenges posed by globalization to central banks of advanced countries and emerging markets in their pursuit of both *price stability* and *financial stability*.

Starting with the facts, the recent wave of globalization we have experienced over the past ten to fifteen years has coincided with a very favorable macroeconomic performance. Inflation has come down and been kept low, global growth has been high, and financial markets have performed quite well. Consequently, *prima facie* there is nothing that should lead us into thinking that globalization has made the life of central bankers more difficult. If anything, one might suspect that it may have on the whole made it easier.

Nevertheless, we should delve further into the issue to ascertain whether this impression is in fact correct. In this regard, I think it is useful to take into account the impact of globalization through both the economic (e.g., trade, competition) and financial (e.g., capital flows) channels on both advanced economies and emerging markets.

As concerns the *economic channel*, the available evidence suggests that globalization has provided a favorable backdrop for the conduct of monetary policies aimed at achieving or maintaining price stability. In advanced economies globalization has led both to lower low-skilled manufacturing import prices and to higher commodity import prices. These two opposing forces have, on balance, exerted a modest disinflationary effect in advanced countries in recent years. Although it is clear that such changes in relative prices cannot lead to any permanent consequences for the rate of inflation over the medium term (as this is chosen by the central bank), they have reduced measured inflation on a temporary basis. Moreover, as such changes in relative prices have been over a prolonged period, the downward