"Central Banking in the 21st Century: Implications of Economic and Financial Globalization"

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Challenges to policymakers have become increasingly thorny as economic prospects continued to worsen in the developed world. Financial market conditions have also deteriorated substantially over the past several months. The dollar has strengthened due to a strong flight to quality process in the light of lack of credibility of policies in the developed countries. The euro is unable to meet the demands of a group of countries with significant asymmetries. Then, the yen is acting as a safe heaven with all the economic difficulties that Japan is facing this year, which triggered Bank of Japan's intervention to weaken the currency. It is striking to watch how central banks in the developed world are now struggling with challenges that were typical for us in emerging markets to preserve financial stability, while maintaining price and output stability.

This is precisely what I will address in my remarks. I will start with an overview of the recent global economic and financial developments. Then, against this backdrop, I will focus on the challenges for central bankers. While the presence of uncertainty limits the effectiveness of monetary and financial sector policy, the trade-offs between the monetary and financial stability functions are becoming increasingly challenging. I will briefly discuss the sources of uncertainty on the conduct of monetary and financial policy. I will then move on to end up reviewing the central bank's objectives and instruments from the standpoint of an emerging market policymaker.

Europe is in the verge of a collapse in the absence of the right policies. Rather than creating the conditions to restore growth (I expect a mild recession for the Euro Area next year), unachievable fiscal efforts and tighter of financial conditions are likely to end up, inevitably, in a series of debt restructuring process. Under current uncoordinated policies, the only open question is if they are going to take place orderly or disorderly. One example: at the time when credit is essential to keep the economies alive, banks have been asked to meet higher capital requirements and to mark-to-market sovereign bonds, which triggered a sell-off of government debt all across the board, regardless of its quality.

Yields and bond spreads of many Euro Area sovereign bonds have increased substantially despite recent intervention of the ECB. Italy's 10-year bond yields are close to 8%. In my view, the way out for Europe is building conditions for growth to resume quickly. Ireland is a good example: it has been required a more gradual fiscal adjustment compared to Greece and is the only troubled economy that has been able to perform well amid higher exports. However, together with the intervention of the central bank to preserve financial stability, the fiscal adjustment is inevitable. In Jackson Hole earlier this year Stephen Cecchetti from the BIS presented a paper where he analyzed debt and economic activity

in industrial countries to conclude that there is a clear linkage: when public debt is in a range of 80 to 100% of GDP, further increases in debt may begin to have a significant impact on growth. High debt is bad for growth is the bottom line.

In the U.S. the situation is better but it far from great. Despite all the efforts, the credit market has never returned back to normal, unemployment is persistently high, consumption continues to be restrained. The levels of indebtness both for the public and private sectors are still excessive. Besides, U.S. banks also have substantial exposure to the debt of troubled Euro Area countries.

Therefore, while it is clear that deleveraging must come from other parts of the world, not all emerging market region will be equally affected. Eastern Europe will take the core of the heat. Asia and Latin America will be less affected this time. This is reflected by the fact that most of the central banks in emerging Europe have already started to cut rates while in Latin America and Asia are still mostly on hold. But there are differences among countries even within these regions on the magnitude, effects and reactions to capital outflows. I will go back to this important point later in my presentation.

While the situation in Europe will, no doubt, affect emerging markets, I believe there is significant evidence that emerging markets –and Asia and Latin America in particular-are less sensitive to turbulences in the developed world. And this even the case compared to the 2008-2009 event. South-south trade has doubled in the last ten years and increased further in 2010 and 2011. Growth momentum is strong, inflation is well-contained, the current account is reasonably balanced, fiscal and monetary policy space for countercyclical stimulus is ample and domestic financial soundness indicators are solid.

Latin America is not the exception. In my region, the exposure is more relevant through the impact on commodity prices and an eventual collapse in the banking systems. But, both channels have shown strong resilience based on solid fundamentals. The region is expected to grow 4.5% in 2011 with sound macroeconomic policies as the hallmark for most of its countries. At this point, and given what is going on all over the world, it is evident that there is no unique recipe. However there is set of common principles and global concepts that each country must adapt to its particular circumstances:

In my region most of the economies arrived to the crises showing strong fiscal positions with solid institutions such as fiscal rules and stabilization funds. Fiscal responsibility including better liability management in most of our countries has ceased to be discussed in terms of the left or right—it has simply been accepted as common sense. However, the tools and institutions vary significantly from country to country.

Robust monetary and financial frameworks, more flexible exchange rate regimes and balanced external accounts sustained on a previous process of foreign reserves accumulation are also part of this set of sound principles for macroeconomic policy management in the emerging world.

A clear example on how the circumstances constraint (but do not prevent) the application of these principles is the tendency towards de-dollarization in many countries in Latin America. A less dollarized economy with a lower pass-through has more flexibility to allow the exchange rate to float freely with no de-stabilizing effects on the economy. This why we have seen in countries such as Mexico and Colombia how the exchange rate has started to play a bigger role as a shock absorber (e.g. loosening domestic monetary conditions), minimizing the impact on economic activity (e.g. minimizing the need to adjust interest rates). Economic agents in these countries are learning how to deal with exchange rate volatility.

In any case, governments in emerging markets had additional degrees of freedom to adopt countercyclical policies to sustain domestic demand during the crisis. This is a fairly rare chance for developing countries, where pro-cyclical policies were usually the case.

But if there is something that the recent financial crisis has demonstrated is that being a central banker is not an easy task. Bernanke pointed out in Jackson Hole that the long-run impact of economic policy on growth is outside the province of the Monetary Authority. And, being a governor of an emerging market economy with a fragile institutional framework and a history of fiscal, financial and external dominance could be even more complex.

A vivid example of this unstable macroeconomic environment and its impact on monetary and financial sector policy is provided by the volatility of the central bank institutional framework. Emerging market economies and Latin American countries in particular, have a history of higher turnover of the central bank governor compared to developed economies. In the case of my country, the Central Bank of Argentina has had 55 different governors since its foundation in May 31, 1935. This yields an average tenure below a year and a half. On the other hand, the Federal Reserve shows an average tenure of 6.4 years between its creation in 1914 and 2010.

In fact, the intrinsic complexity of economic relations, the changing behavior of the economic structure and agents, forces monetary and financial policy to operate in a highly uncertain world.

The current global financial crisis scenario is perhaps the best illustration of the growing weight of uncertainty for conducting policy. In the developed world, central bankers are running out of tools while further adjustment is still in the pipeline in a context of credit squeeze and growing unemployment. In the emerging world, the challenges for central banks have shifted non-stop from dealing with strong capital inflows and serious risks of overheating to confronting severe capital outflows and the renewed weaknesses of the global economy. While enough consensus around monetary policy makers on how to prevent crisis has been reached, we are still in untested waters at the time of overcoming a crisis when it already took place. Uncertainty on the proper timing and extent for using the available instruments and the appropriate weight given to the different monetary and financial policy goals remains significantly high.

The analogy of the car driver is appropriate to describe the monetary policy process. In this analogy, the economy is represented by the car, the monetary authority is the driver and policy actions are taps on either the brake or the accelerator. Accordingly, if the economy is running too slowly, then policymakers cut rates (pressure the accelerator), thereby stimulating aggregate demand. On the contrary, if the objective is to reduce the level of output, then the Central Bank switches to the brake by raising rates.

However, monetary policy-making is far from simple, which renders the previous analogy misleading. First, policy-makers deal with informational constraints that are far more severe than those faced by real-world drivers. The second problem with this analogy arises from the central role of expectations in determining the impact of monetary policy actions. Therefore, if making monetary policy is like driving a car, then the car is one that has an unreliable speedometer, a foggy windshield, and a tendency to respond unpredictably and with a delay to the accelerator or the brake.

Monetary and financial policy in developed economies during the so called "great moderation period" tended to focus on price stability. Little regard was given to developments in asset and credit markets. Financial stability was left in the background, perhaps in the belief that it would follow from price stability and that risks could be properly limited by banks' self assessment mechanisms. In contrast, developing countries have long (and painfully) learnt the lesson of the importance of financial stability on macroeconomic performance —as evidence by recurring crises in the 1980s and 1990s.

Thus, if only a short time ago monetary policy could be adequately described by a simple "Taylor rule", nowadays a more complex central bank "reaction function" is called for. This entails a rebalancing of monetary policy objectives, putting the proper functioning of the financial system on par with macroeconomic stability.

Until recently, the notion of uncertainty was not systematically embedded into the theoretical body of monetary policy. The "world", as defined by a given model, was considered to be perfectly known by decision makers. Consideration was given, at the most, to the notion of risk which, unlike uncertainty, entails knowing the probability distribution function of an event. However, thanks to the contributions made by Walsh, research on the conditions under which the monetary policy develops has underlined uncertainty as a core issue.

The different uncertainty sources are reflected in the specific problems that Central Banks face when designing and implementing the monetary policy. Even more, they restrain the way information is processed and the procedures to determine the most adequate intervention and operation rules.

As pointed out by Sargent, uncertainty can be especially intense in transition economies. In these countries, the "right" model, the value of structural parameters, the transmission mechanisms or the nature of shocks are not accurately known. Under such circumstances, the lessons drawn by agents can sharply increase uncertainty, translating into adaptive responses that alter the economic structure on a permanent basis. In exploring the

policymakers' task, several papers have shown the significant challenges posed by the analysis under uncertainty. Thus, the authors have emphasized that optimal policies in some countries may perform poorly under different conditions. This has led to the notion of "robustness": it is highly desirable that monetary policy rules sustain themselves against changes in the economy's behavior. For example, a given policy may be considered optimal and simultaneously have negative consequences if the true model differs from the model assumed. Instead, an alternative policy could be somewhat less effective if the economic model coincides with the model undertaken. Simultaneously, it could also be less harmful if the operating conditions go against those initially assumed. Against this backdrop, a second best –though not necessarily optimal under all potential circumstances– could be considered more robust than the first alternative.

Under such circumstances, the risk management approach proposes a forecast-based policy. It combines economic models with the opinion of the experts to project scenarios. It is singular because it focuses on the analysis of the probability distribution of economic outcomes. Therefore, low-probability –but potentially harmful— events are included in the analysis. Under this approach, what matters is the distribution of them, and not just the average or most likely outcome, to decide monetary policy actions.

Simple instrumental rules may have a good performance similar to that of much complex "optimal" reaction functions. There is consensus on the fact that pursuing such rules may provide an adequate reference framework for decision-making by monetary authorities. Unusual –and sometimes usual– circumstances require giving a preeminent role to the analysis and judgment of monetary policymakers, in line with the principles of the "risk management" approach. Model-based rules should thus be an important supplement to the judgment based on the careful analysis of empirical evidence and data, but they cannot replace it.

When designing and implementing monetary policy, it is necessary to take these considerations into account, as well as the characteristics of the local and international macroeconomic environment. Otherwise, the monetary policy will not only be inconsistent but will also become an additional source of uncertainty, as it occurred in Argentina. Recurrent macroeconomic instability episodes have been one of the most distinctive features of the aggregate operating dynamics of this country. It is not a coincidence that, in the last 25 years, the Argentine economy has been off the dynamic economic stability path (defined as the range between two standard deviations from the long-term trend) one third of the time, against 18% for Australia or 25% for Brazil. These countries are comparable in terms of resources and position in the world; therefore, Argentina is expected to be somewhat symmetrical regarding the impact of external shocks.

When designing the monetary policy, it is relevant to consider the fiscal, financial and external conditions of the economy. In economies where society has developed a high risk aversion and the need to prevent the next crisis becomes a priority objective, the demand for macroeconomic policy coordination is more critical. If there are doubts about

the inter-temporal solvency of any policy set, the monetary policy conventional room for maneuver can be limited. Likewise, the effectiveness of the traditional tools is affected.

Based on a study performed by Sturzenegger and Levy Yeyati, only 50% of the countries that adopted the inflation-targeting model –where there is theoretically no intervention by the Central Bank in the exchange rate market– are effectively pursuing a free floating regime policy. Moreover, after the Lehman Brothers collapse almost all emerging markets with inflation targeting had to intervene in the foreign exchange market to avoid excessive volatility.

The monetary and financial policy options are part of an extensive review of the importance central banks should assign to the various goals set, particularly, what role and weight should be given to price stability, output stability and financial stability. The monetary policy paradigm is clearly changing —financial stability has come to play a role it has never played before in the central bank agenda worldwide: it is no longer taken for granted.

In developed countries financial stability has historically been a tool rather than an objective, taking into account the depth of their capital markets. In developing countries, instead, with a long history of recurrent crises, financial stability was already an explicit part of central bank objectives. In fact, financial stability as an explicit goal has been for years very common throughout the emerging world.

There is no unique or generally accepted definition for financial stability. As well, when it comes to making financial stability an operational factor, disagreement among relevant actors arise, something that is somehow different with price stability goals.

On top of that, there is also a lack of available instruments to achieve financial stability, whether it is a developed or emerging market economy. In this regard, one of the key tools is to have a proper financial regulation. This should also be consistent and well-integrated with the monetary policy framework. This means, for instance, developing a macro-prudential framework that could help to link both approaches.

There we have reached a point where economic theory is having a hard time keeping up with praxis. Recent literature has shown results that are ambiguous vis-a-vis to those produced by the usual "technology." As regards the rules implemented via the interest rate channel, in the past 15 years the conventional wisdom was that short-term interest rates could be used to change the whole curve and thus affect economic agents' decisions. Recent work shows that this is not the case and that the impact of short-term rates on real variables is substantially different.

The same applies to the managed floating exchange rate regimes. Empirical studies that refined the analysis started by several academics argue against sharp fluctuations in the domestic currency, mitigating excessive volatility, especially in developing countries with rather shallow capital markets and limited access to hedging instruments. By mitigating fluctuations without disregarding the fundamentals, this approach combines

the needs of the various segments of the economy while preserving consistency with the whole of economic policy. Recent literature factors into the analysis segmentation and restricted access to markets, the most relevant conclusions suggest that the narrower the local markets and the fewer the instruments to hedge out currency risk, the better a managed floating exchange rate regime is to maximize social welfare. In a context of imperfect functioning of foreign exchange markets and incomplete capital markets, the adverse effects of a significant depreciation either on inflation or wealth is not negligible.

The experience shows that despite the use of a combination of measures, emerging market economies struggled to cope with the deleterious effects of capital flows. In my view the most important challenge for a central banker in an emerging economy is how to manage the effect of capital flows on the volatility of the exchange rate. We have experienced very significant volatility, with valuations reducing very rapidly at the time of capital flows reversals and the converse with the resumption of flows. These changes have had no relationship to any macro developments in the respective domestic economies. I could not agree more with Prasad's definition of "flight to liquidity" for the "flight to safety" process that is going on nowadays.

One key feature of the most recent process of financial volatility due to the situation in Europe is, however, that flows seem to discriminate a bit more, also in their outward fluctuations. In 2008-2009, capital outflows in the emerging world due to flight to quality took place all across the board, regardless of the domestic fundamentals. Limited discrimination took place but only at the region-level (e.g. emerging Europe vis-à-vis Asia and Latin America). Now, there are countries that have experienced more capital outflows than others depending of their specific macroeconomic conditions, exposures and space to pursue countercyclical policies. And, this phenomenon took place even within regions as reflected by country risk indicators.

While overall emerging markets regained ground in October, in Latin America, CDS and EMBIG spreads for countries like Argentina, Venezuela and Ecuador reflected the largest fluctuations, surpassing the 1000 basis points during the periods of higher volatility given their procyclical policies. While the Brazilian real and the Mexican peso experienced volatility as reflected by a more depreciated currencies, the pressure receded rapidly and the domestic financial markets stabilized amid solid policies. Countries like Chile, Colombia and Peru showed strong resilience: their currencies and financial markets stabilized quickly. Today these countries have lower country risk than AAA-countries like France.

This is the case all over the emerging world arch. Countries like Australia, as other economies in Latin America, benefited significantly both directly through exports and indirectly through commodity prices by the strong performance of Asia.

On the other hand, Russia and Turkey, are highly exposed to demand from Europe through the trade channel. These economies were badly hit back in 2008-2009 and are facing extreme pressure again now. In Turkey, with a current account deficit of about 10% of GDP, the lira weakened about 30% since last year. The Central Bank intervened

heavily in the foreign exchange rate market through a number of measures, including direct intervention and reduced reserve requirements on fx liabilities. On the other hand, in Russia the central bank allowed for a depreciation of the ruble amid domestic residents capital flight and limited intervention to avoid significant exchange rate volatility. Domestic resident capital flight accounts for about 5% of GDP, almost about the size of a current account surplus that is highly dependent on oil prices. Despite the ruble gain some ground lately, pressure will not recede.

In Asia, external demand is important in the more open economies like Thailand (with the greatest dependence to European markets), Korea and Malaysia but the impact (and therefore the reaction) also varies from country to country. In China all the hopes are on increased domestic household consumption to sustain growth amid the expected decrease in external demand. India seems to be experiencing a drying-up of external liquidity, mainly through restrained credit from European banks in the domestic market. However, exports and FDI flows remain strong. The rupee depreciated about 10% in the last three months and continued to underperform through October. In Hong Kong the real estate market continues to slow.

Countries like Malaysia and Korea maintained their policy rates at 3% and 3.25% respectively. While Indonesia has acted aggressively cutting interest rates by 50 basis points last week in response to the global economic slowdown. It was also the first central bank to cut rates in mid-October. The government is prepared to use part of its surplus funds to buyback securities if turmoil is to intensify. In general, in many emerging market economies, stabilization fund has been established with the participation of state-owned banks and enterprises to smooth volatility in the domestic financial markets. This kind of approach with different layers but the same general guidelines has been in place all across the emerging world to preserve financial stability under the lead of the central banks.

Central banks have been ready to step in to counter the risk of a sudden reversal in capital flows through coordinated efforts with fiscal authorities. This is also the case in Latin America. In Colombia the central bank intervenes through a set of mechanisms to diminish exchange rate volatility. There is also coordination in Chile between the Central Bank and the Treasury to avoid excessive appreciation.

We have attempted to use various policy measures to smoothen the credit cycle in the face of this volatility, including coordinating banking regulation and supervision with monetary policy making (e.g. prudential measures supplementing monetary measures, forex operations and associated sterilization, to dampen the effect of volatile capital flows on the domestic credit markets) but this is still an ongoing challenge.

In my view, the strengthening of financial system balance sheets through sound regulation and supervision, including the built up of liquidity buffers such as foreign reserves accumulation to face external shocks and the reduced currency mismatches -one of the key sins of the past at least in Latin America- is an effective way to deal with volatile capital flows. The development of a domestic currency capital market is also a

corner-stone to allow the monetary and banking system to act as a shock smoother rather than a shock amplifier, proving for financial stability amid volatile capital flows. The monetary and financial framework in place should give priority to avoiding "the next crisis" and build buffers to minimize the effects of disruptions.

However, this is clearly not enough. Coordination between monetary, macroprudential and fiscal policy is critical to deal with capital flows. In particular, the Treasury should play an active role to ameliorate potential destabilizing effects of short-term capital flows as significant volatility in the foreign exchange rate market or domestic financial and monetary markets could become a threat to financial stability. Fiscal policy should not only focus on avoiding becoming an additional source of uncertainty but also should contribute lively to ensure financial stability through all its available tools, including tax, spending and liability management policies.

To conclude, monetary policy is managed under a high degree of uncertainty about the real economic structure and the way in which specific policy actions affect price evolution and the output level. This is particularly remarkable in emerging economies.

Against a backdrop of high uncertainty, in countries witch are still in transition towards a steady state and trying to overcome decades of a sharp decline, the monetary authority must provide and ensure monetary and financial stability. In these cases, the monetary regime cannot address an excluding objective and ignore the condition of the economy and its vulnerabilities. Building liquidity buffers, including foreign reserve accumulation and the development of a highly liquid and solvent financial system has been an effective tool for emerging markets to withstand the increased volatility of capital flows. The availability of such policies has expanded substantially the room for maneuver in the emerging world, allowing policymakers to act counter-cyclically in order to minimize the effects of external shocks on the real economy. In addition, fiscal policy should play an increasing role in smoothing out the destabilizing effects of sudden movements in capital flows. Fiscal policy should act decisively against shocks to stabilize the foreign exchange rate and the domestic monetary markets. The Treasury and the Central Bank should coordinate the intervention mechanisms and resources to deal with capital flows in order to minimize volatility in the domestic financial markets and avoid threats to financial stability.

The recent global crisis triggered an important lesson for policymakers in the developed world. Al lesson that we, emerging markets, have learnt the hard way in our history of recurrent crisis and macroeconomic volatility: while there is no unique recipe, there is a set of general principles that can be applied. They combine the use of models and also the idiosyncratic factors of each particular economy. But most importantly, they rely on the informed and professional judgment of the policymakers. The ability of the policymaker to acknowledge and build the best possible policies for each country and each particular situation by giving the right weight to each of these factors is what will, at the end of the day, make a difference for our citizens. Thank you