



First Monetary Policy Research Workshop in Latin America and the Caribbean
“MONETARY POLICY RESPONSE TO SUPPLY AND ASSET PRICE SHOCKS”

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CONCLUDING REMARKS

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1. Introduction

There is little doubt that the reduction of inflation toward low levels in both industrial and emerging economies has been one of the major achievements of the last fifteen years. Central banks have had an important influence on this result. However, in this era of relative price stability, asset prices have exhibited pronounced cycles in many industrial countries – even more pronounced than in periods of major instability. For example, nominal house prices have risen notably in recent years in the United Kingdom, Spain, Ireland, the United States, New Zealand and Australia. Another example has been the bubble and subsequent burst of stock market prices in the late 1990s.

Large swings in asset prices are a major concern for policy makers since asset price booms and busts have large effects on the dynamics of aggregate demand, output, and inflation. A rapid increase in house or equity prices could generate strong aggregate demand pressures due to the rise in household wealth or easier access to borrowing, translating into over-employment, large current account deficits and high inflation. But when asset prices burst, balance sheets deteriorate and wealth is destroyed, constraining consumption and investment and leading to recession and possible deflation.

These facts have motivated more research on should monetary policy react to asset price booms? and if the answer turn out to be affirmative then which form should the intervention take? Some of this research suggests that central banks should be ready to pinch asset bubbles, while other findings conclude that monetary policy actions would have little effects, if any, on asset prices – and they may come too late. In the latter case monetary policy should react after an asset price correction has taken place to mitigate its effect on aggregate demand and inflation.

Asset price shocks have not been the only threat faced by policy makers during the recent past. Supply shocks, in the form of large oil price shocks, were a source of worldwide stagflation in the 1970s and 1980s. This time, the large oil price hike of 2004-2005 has had significantly weaker worldwide effects on inflation and output than in previous decades, in

all likelihood a result of both technology and policy improvements. The stability of inflation and inflation expectations, anchored in a framework of stronger, more independent, more transparent, and more credible monetary institutions and policies, may take part of the credit for this favorable outcome.

But there are several remaining challenges for the design and conduct of monetary policy. In my closing remarks of this First Monetary Policy Workshop in Latin America and the Caribbean, organized jointly by the Bank of England and the Central Bank of Chile, I will start by summarizing Chile's experience in the fight against inflation. I will argue that credibility building has been a cornerstone to anchor inflation expectation and thus to reduce inflation. Then I will move into a brief discussion of the policy challenges faced today by central bankers, strongly related to the two issues that are the main focus of this workshop. I will conclude with the lessons that can be derived from these two days of fruitful discussion of frontier research on monetary policy.

2. The Conquest of Low Inflation in Chile

Since the 1980s, anchored in theory and international practice a world consensus has emerged that the central role of monetary policy is to aim price stability and the importance of central bank independence as a necessary foundation for conducting a fully effective monetary policy, independent of political pressures and cycles.

Chile has not escaped the worldwide trend toward central bank autonomy. In 1989 a new constitutional law for the CBC was enacted. Along with granting technical and financial independence to the Bank, this law defines the objectives to be pursued by the Central Bank of Chile: to ensure the stability of the value of the national currency and the normal functioning of domestic and foreign payments. The law establishes that Central Bank of Chile policies must take into consideration the general orientation of government policies and coordinate and exchange information with the executive branch of government.

At the start of the 1990s, Chile's economy was on a high-growth path. However, price instability was still a source of major policy concern. Inflation stood at 27% in 1990 due to previous expansionary policies and the effects of the oil price shock associated to the Gulf War. The recently appointed board of the newly independent Central Bank adopted in 1990 a stabilization strategy aiming to a gradual reduction of inflation based on an active monetary policy, combined with limited exchange-rate flexibility within a gradually widening exchange-rate band that had been in place since 1984.

In its search for a strategy to reduce inflation while ensuring low output costs, the Central Bank of Chile identified two major difficulties: low policy credibility and widespread backward-looking price indexation in goods, labor, and financial markets. The Central Bank adopted a forward-looking inflation target, which later become the explicit nominal anchor for conducting monetary policy, and decided to use the interest rate as the instrument to achieve the target. This strategy was adopted to overcome the consequences of backward-looking price indexation and related inflation inertia, to improve policy credibility, and to influence private-sector inflation expectations.

But it was only after the 1998 Asian crisis when the Central Bank decided to move toward a fully-fledged inflation-targeting regime. The Bank eliminated all remaining controls on international capital flows in 1998-2001 and replaced the exchange-rate band by a flexible exchange rate system in September 1999. Since 2001 the Central Bank has in place an indefinite inflation target range of 2-to-4% annual CPI inflation, centered on 3%. Annual inflation has averaged 2.2% during 2001-2004. However inflation has attained 4.1% in the 12 months through October 2005, largely due to the oil shock. The oil shock came at a time when the Central Bank was in a process of monetary policy normalization. This process was set in place to keep inflation forecast for 6 to 8 quarters ahead around 3%, when inflation pressures were envisaged raising from a shrinking output gap. However we could ask the question if the coming supply shocks, at this stage of the cycle, requires by itself a monetary policy response. This confirms the need of better understanding how to respond to supply shocks.

3. What are the Challenges ahead for Monetary Policy?

I would like to refer to six challenges for the conduct of monetary policy in Chile today, which are related to the main topics of this workshop.

(1) How uncertainty affects all dimensions that influence monetary policy decision-making

In Chile—as in any other country—monetary policy is subject to several sources of severe uncertainty. To the traditional doubts about the timeliness and quality of statistical data required to gauge the state of the economy at a given time, one must add uncertainty related to imperfect knowledge about the nature and persistence of shocks, and the structure of the models used for understanding economic signals and make projections. Knowledge is also limited regarding model parameters on technology, preferences of society, and preferences of policy makers. These types of uncertainties are more marked in emerging economies. Does this generalized uncertainty, that permeates central banks around the world, justify slower policy reactions to shocks to inflation or GDP? How should central banks weigh different projections, coming from different models, in their policy decisions? These sources of uncertainty raise the need to invest heavily in data, models, economic projections, and research, a task to which the CBC devotes large efforts. But at the end of the day, there still remain enough uncertainty to justify the formulation of monetary policy within a risk management framework that considers not only a central and most likely scenario but also low probability ones that entails high cost if they unfold.

(2) Range and horizon of the inflation target

As I said before, the CBC has in place a 2-4% target range for annual CPI inflation, focusing its monetary policy on attaining the center of the range that is 3%, in a policy horizon defined at 12 to 24 months. The target range and the length of the policy horizon reflect Central Bank tolerance of deviations from the inflation target, particularly if caused by temporary supply shocks that raise headline inflation. This is equivalent to acknowledging a tradeoff between the length of the policy horizon or the volatility of inflation and the volatility of output and employment. However this raises several questions, including the following. Is the present combination of a 2-4% target range for

annual inflation and a 12-24 month policy horizon optimal? How flexible should be the length of the policy horizon to the type and persistence of shocks? Is it advisable to review the length of the policy horizon as a way to consider asset prices or, in general, financial stability concerns in the conduct of monetary policy?

(3) Measurement and implications of inflation expectations

Among feasible monetary regimes, inflation targeting is the most sensitive to private expectations of future inflation. In addition, central banks have no direct control over private inflation expectations. Inflation is the result of pricing decisions by a large number of decentralized agents, whose actions are significantly influenced by their views on future aggregate inflation. Recognizing this fact, the Central Bank of Chile assigns a large policy weight to direct measures of expected inflation and inflation compensation derived from the differences between nominal and inflation-indexed interest rates. Here new concerns arise, including the following. How should we remove the inflation expectation component from inflation compensation measures? Why do inflation expectations and compensation apparently overreact to particular shocks? What is the most appropriate horizon for spending decisions by the private sector and for monetary policy decisions?

(4) The policy horizon and the response to supply shocks

The classical tradeoff in the response of monetary policy to supply shocks in general, and to an oil price shock in particular, is currently faced by all central banks in the world. The ongoing oil shock has been reflected in the highest headline inflation rates recorded in many years. Setting aside the uncertainty with respect to the shock's persistence, should central banks react to the shock? The Central Bank of Chile's position is that its monetary policy does not react to the direct or first-round effects of the oil-price hike. But it does react if the shock has indirect or second-round effects on the prices of other goods, if pass-through from higher production costs (including wages) or prices indexed to past inflation threaten to drive projected inflation away from the center of the target range over the policy horizon. Monetary policy can also react if the oil price shock and its first-round effects raise inflation expectations over the policy horizon.

(5) Optimal response to foreign exchange rate shocks

The latter considerations also apply to the optimal response of monetary policy to exchange-rate shocks. In its conduct of monetary policy, the Central Bank of Chile does not react to exchange-rate disturbances beyond their effects on inflation and output, for several reasons. First, the pass-through coefficient from exchange-rate depreciation to inflation has dropped substantially in Chile. Second, the currency mismatch has been reduced in non-financial corporations which, in turn, are partly hedged against residual exchange-rate risks in an increasingly deep market to cover exchange-rate risks. Finally, the Central Bank of Chile maintains its option to intervene directly in the foreign-exchange market with sterilized operations, when such intervention is warranted in response to temporary exchange-rate volatility or misalignment.

(6) How to deal with exchange-rate and asset price/financial stability concerns

Central bankers and academics continue to debate the pros and cons of adjusting monetary policy in reaction to asset-price misalignments or bubbles. Experts on both sides have presented theoretical and practical arguments, but have failed to achieve a consensus on this subject. Some have argued, for example, that the best way for policy-makers to alleviate the impact of bubbles on inflation and growth is to adjust interest rates in response to asset-price misalignments. The arguments against using interest rates to face the instability caused by asset-price misalignments include the difficulty of central bankers in identifying imbalances in a timely and precise fashion, and the difficulty in justifying the action to the public. Facing these difficulties and uncertainties, it seems reasonable to avoid an active policy stance in response to asset-price shocks for the time being.

All the questions posted here introduce new challenges for central bankers in conducting monetary policy. These two days discussion had shed some light to improve the answer to these questions.

4. The First Monetary Policy Workshop

In the frame of this workshop, Ciccarelli and Mojon show that inflation has steadily declined during past decades in OECD economies. This fact motivates the search for a common cause of inflation, which the authors find in global inflation, explaining a large part of inflation in individual OECD countries. They show evidence of a long-run relationship between global inflation and national inflation, which implies that deviations of domestic inflation from global inflation tend to zero. However, global inflation is still the aggregate of inflation in individual countries, hence affected by monetary policy in each country. Thus the questions about country monetary policy addressed in this workshop are still valid.

Should monetary policy react to asset price shocks? If the answer is yes, how large should be the response? The first step is to decide which asset categories should be of concern to the monetary authority. Simon Potter, based on the relationship between consumption and wealth in the U.S., provides evidence that the marginal propensity to consume is more sensitive to housing wealth than stock market wealth. From this evidence it emerged that housing prices should be the wealth component to focus. Considering this, it does not come as surprise that several papers in the workshop were concerned with the evolution of house prices for monetary policy decisions. However, it is difficult to disentangle transitory changes from permanent changes, which makes it very hard to identify ex ante any bubble.

In the same vein, but using cross-country evidence and reviewing the previous literature, Brian Doyle and co-authors argue that, considering the difficulties in recognizing a bubble, central banks should concentrate on keeping inflation low. Nevertheless, the authority should follow the evolution of house prices for financial stability concerns, since an association has been observed between declining house prices and deteriorating bank loans. On the other hand, mortgage loans tend to exhibit lower risk levels, which make them less likely to create systemic banking problems.

López for Colombia, and Roi and Mendes for Canada, use DSGE models to arrive at similar conclusions. In the case of Colombia, López argues that a more efficient monetary policy should concentrate on inflation deviations from targets rather than on house prices. Roi and Mendes show that the optimal target horizon would be between 10 and 12 quarters, if the shocks were similar to those experienced during the past 25 years. If the economy is exposed to house price shocks, the optimal target horizon lengthens to two quarters, independently if the monetary policy reacts or not to the house price shock. The latter result implies that house prices do not carry much information on output gap and expected future inflation.

Considering a DSGE for Chile's small open economy, Caputo and Liendo show that there are no welfare gains in reacting to exchange-rate shocks. They also report that monetary policy has not reacted systematically to exchange-rate shocks in Chile, but has responded persistently to inflation deviations from targets and to the output gap, as in a conventional monetary policy reaction function.

The second issue addressed in this workshop was the monetary policy response to supply shocks. Two papers discussed the evidence on how monetary policy has reacted to different shocks in the past. Evans and Marshall develop for the U.S. a methodology for identifying nominal and real shocks, and, among the latter, between shocks to technology and the marginal rate of substitution. These shocks largely explain inflation and output variation. However, monetary policy has little impact on real output but a large impact on asset prices. They find that Fed policy exhibits a small response to supply shocks but a strong response to marginal rate of substitution shocks.

Paul Castillo and co-authors, studying the high inflation period of the 1970s, find that the persistence of the oil price shocks was responsible for this situation rather than a passive monetary policy. Moreover, the data exhibit an inflation-risk premium that is consistent with a monetary policy that partially offsets supply shocks, as opposed to the idea that the monetary policy followed in that period was passive. This result is a warning against being complacent during the current oil-price shock.

This workshop has also shown that the response of monetary policy to supply shocks depends on the degree of uncertainty about the persistence of inflation shocks and the objective functions of central banks. On the first topic, Ramos and co-authors show that the optimal policy response to cost-push factors depends on inflation persistence in Mexico. On the second topic, Castañeda and Castillo argue that implementation of inflation targeting, instead of output stabilization, would be a better policy to offset oil shocks in Guatemala.

Using a general equilibrium model with staggered prices for a small open economy, Da Costa and co-authors analyze the evolution of economic variables to an oil shock in Brazil, considering different policy rules adopted by the CB. Their main conclusion is that regardless the rule the central bank adopts, the potential output falls after an adverse oil-price shock. However, the response of inflation and interest rates will depend on the existing monetary rule. Finally Medina and Soto, developing and using a DSGE model for the Chilean economy, show that the size of monetary policy reaction to oil price shocks and the output costs of this reaction depend on the structure of the economy and the target pursued by the monetary authority.

5. Conclusions

I would like to highlight the following conclusions of this workshop.

1. To better understand the dynamics of domestic inflation it is useful to keep an eye on global inflation trends, since this common factor seems to be an important driving force behind national inflation levels.
2. There is no strong evidence in favor of including asset price shocks in the reaction function of monetary policy makers. Considering the uncertainty in identifying persistence, timing, and nature of asset price shocks, an active policy is not recommended for the time being. However it is crucial to monitor asset prices for financial stability concerns and for their incidence in inflation measures.

3. The empirical evidence suggests that the start of an asset price boom coincides with a period of loose monetary policy. Asset prices are generally positively correlated with business cycles. Hence monetary policy tightening in response to higher projected inflation during the expansionary phase of the business cycle cannot be interpreted as a response to the asset price boom but often coincides with such boom.
4. Monetary policy should respond to second-round effects of supply shocks to keep inflation under control. However the magnitude of the policy reaction and the cost involved would depend on the structure of the economy, the uncertainty about the true model, and the objective function of the central banker.

These are tentative conclusions and answers provided by this workshop. I would expect to see more stimulating research on these issues in the years to come.

A Final Remark

I would like to close this productive workshop by thanking the Centre for Central Banking Studies of the Bank of England, and particularly its Director, Mario Blejer, for sharing organization of the workshop. Within the Central Bank of Chile, I thank Rodrigo Fuentes and Klaus Schmidt-Hebbel for their work in preparing this event, skillfully assisted by Fabián Gredig and Mónica Correa.