



Ninth Annual Conference of the Central Bank of Chile
“MONETARY POLICY UNDER INFLATION TARGETING”

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Monetary Policy under Inflation Targeting in Chile and around the World

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Dear First Deputy Managing Director of the International Monetary Fund,
Dear Central Bank Governors,
Dear Central Bank officials, professors and economists visiting from abroad,
Dear friends,

I am very pleased to welcome you to this Ninth Annual Conference of the Central Bank of Chile, which has become a traditional event in the discussion of central banking policies and for the economic development of our countries. This Annual Conference focuses on the subject “Monetary Policy under Inflation Targeting,” the monetary system that is gradually being adopted in countries around the world. I am not surprised at the great participation of central bankers from inflation targeting economies in this Conference. Thank you so much for coming down.

This year, our annual conference coincides with the eightieth anniversary of the creation of the Central Bank of Chile. The occasion calls for a brief retrospective account of our Bank, which will help to better understand its path to the present monetary policy framework in Chile. Next I will review some of the challenges facing monetary policy in Chile today, which motivate several of the topics that will be discussed during this conference, which I will also list shortly later on.

Eighty Years of the Central Bank of Chile and How Inflation Was Conquered in Chile

The Central Bank of Chile was created in 1925 as an entity apart from the Executive Power. That year, also two laws related with the Bank’s startup were enacted: the Monetary Law and the General Banking Act. The former established a gold standard, while the latter created the Superintendency of Banks to supervise commercial banks. The Central Bank was granted the monopoly for printing bills, which under said Monetary Law would be gold convertible.

But the foreign exchange regime and the Bank’s institutionality as set forth in 1925 weren’t strong enough to cope with the Great Depression with some success (it had enormous impact on the Chilean economy) and the growing demands for fiscal funding. These forced the abandonment of the gold standard, the imposition of foreign exchange

controls, the creation of multiple exchange rates and the beginning of trade. Since the Great Depression—except for very short spans of relative macroeconomic stability—, the country suffered decades of high, volatile inflation. The ultimate cause of this was the systematic expansion of credit on the part of the Central Bank, both to state-owned organizations and to the private sector. Inflation followed inevitably and caused the failure of stabilization attempts in the years 1950 and 1960.

The deterioration of the fiscal and monetary situation culminated in the early 1970s in a short hyperinflation. Fiscal stabilization adopted in 1976, later associated to a new fixed exchange rate experiment with financial liberalization, without proper regulation and supervision, resulted in only temporary inflation control, a generalized collapse of the banking system and a profound economic recession. By 1985, the main macroeconomic concerns were to regain fiscal order, normalize external payments, restore the financial system and prevent the acceleration of inflation.

In 1989, a new Central Bank's Constitutional Organic Law was enacted that mandated it to secure monetary stability and domestic and external payments, and granted it considerable autonomy to comply with this mandate.

When the renewed Central Bank began operating in 1990, inflation was close to 30% per annum. The new autonomous Board designed a strategy to gradually bring down the inflation rate and adopted, beginning in January 1991, a partial regime of explicit inflation targets announced each year. All that took place in a context of a foreign exchange band that still lacked the institutionality and transparency that any full-fledged inflation targeting regime must have. Despite these limitations, the Central Bank was very successful in achieving inflation rates very near its annual goals, along a gradual but monotonic convergence path to single-digit inflation. Average annual inflation dropped from 12.1% in the five years from 1991 to 1995 to 4.8% in 1996-2000.

With the adoption of a floating exchange rate in 1999, the inflation target emerged as the only nominal anchor of monetary policy. Simultaneously, in 1999-2000, the Central Bank formalized the conduct of its monetary policy into monthly meetings, it increased its capacity for analysis and projections and enhanced the transparency of its policies through the publication of a four-monthly monetary policy report (with forecasts for inflation and

growth) and the dissemination of communications and minutes of its monthly monetary policy meetings. It also adopted a target range for annual inflation, of 2% to 4%, centered in 3%, that would be in force indefinitely since 2001. The formalization of this inflation targeting scheme has continued in recent years, along with advances in the transparency of monetary policy. During the period 2001-2004, average annual inflation was 2.2%, and for the twelve months to September 2005 it rose to 3.9%, largely influenced by the recent oil price shock. In fact, core inflation rates are still below 3% per year.

Today Chile has an IT regime in place that is proven and credible, and that includes a floating exchange rate within an increasingly deep market to provide coverage against foreign exchange risks. Also, its fiscal accounts are in order, the financial system is robust and fully integrated into the world's capital markets. As a result, our country is more prepared than ever before to deal with external or internal shocks, and has the capacity to use a countercyclical monetary policy, which it has reinforced since the beginning of this decade.

Hot Topics for Monetary Policy under Inflation Targeting – in Chile and Elsewhere

A central bank's tasks never end. The experience accumulated over the past several years, both in Chile and in other countries, has brought new challenges and posed new questions on the conduct of monetary policy under inflation targeting. Among these burning questions, let me single out a few:

(1) How uncertainty affects all the 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 classical doubts about the timeliness and quality of statistical data necessary to gauge the state of the economy, one must add imperfect knowledge about the nature and persistence of the intense shocks that hit our economy, uncertainty on how appropriate are the models we use to understand economic signals and make projections and, ultimately uncertainty on the value of the models' parameters. Knowledge is also imperfect on the preferences of the society and of those responsible for the policies applied. Does this generalized uncertainty that permeates central banks around the world justify

slower policy reactions to shocks to inflation or GDP? How must dissimilar projections, coming from different models, be weighted in policy decisions? These and other questions raise the need to invest heavily in data, models and economic projections and research, a task to which the Central Bank of Chile devotes great efforts.

(2) Alternative assumptions for projections and public communication of the monetary policy interest rate and exchange rate

In the projections on the future course of the economy and the inflation rate, in the Central Bank we have shifted from using a fixed future MPR to a projection of future rates consistent with a monetary policy reaction equation that is part of the model used to project inflation and growth. For the real exchange rate, considering that it is not too distant from the estimated equilibrium real exchange rate, we now use the assumption that the long-term real exchange rate will equal the average real exchange rate observed during the last fifteen days until the statistics closing date for projections. In our public communication we deliver approximate boundaries for the assumed future trend of these variables. In the light of our own experience and that of other central banks, it is necessary to evaluate the practicality of using alternative assumptions and the advantages of a possible public dissemination of those assumptions.

(3) Range and horizon of the inflation target

The Central Bank has a 2-4% target range for annual CPI inflation, but directs monetary policy to achieve 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 reflects that the Bank will tolerate deviations away from the target range, particularly if caused by temporary supply shocks that raise headline inflation and recognizes that a tradeoff exists between the length of the policy horizon and the volatility of output and employment. This raises several questions, such as: Is the present combination of a 2-4 target range for annual inflation and a 12-24 month policy horizon optimal? How flexible should the extent of the policy horizon to the type of shocks—temporary vs persistent—of supply vs demand? 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?

(4) Measurement and implications of inflation expectations

Of all monetary schemes, the one based on inflation targeting is the most sensitive to private expectations regarding future inflation, because this is the main anchor of inflation and, together with output gaps, is also the main determinant of medium-term inflation. In addition, central banks have no direct control on such expectations. Inflation is the result of pricing decisions of a large number of decentralized agents, whose actions are significantly influenced by their views of what the future aggregate inflation rate will be. Recognizing this, in our Central Bank we assign great weight to direct measures of expected inflation and to inflation compensation derived from the differentials between nominal and inflation-indexed interest rates. Here, new concerns arise: How do we remove the inflation expectation component from said inflation compensation measures? Why do inflation expectations and compensation apparently overreact to specific shocks? What is the most appropriate horizon for spending decisions by the private sector and for monetary policy decisions?

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

The classical tradeoff in monetary policy's response to supply shocks in general, and to an oil price shock in particular, is being experienced since the last few days and months all over the world, and in Chile. Actually, the ongoing oil shock has resulted in the highest total inflation rate of many years. This shock has been the main determinant of the recent inflation leap to 3.9% in the 12-month period to September in Chile, to 2.6% in the Euro Zone, and to 4.7% in the US in the same period. Setting aside the uncertainty with respect to the shock's persistence, must we react to the shock? The Bank's position is that its monetary policy does not react (materially) to the direct or first-round effects of the oil hikes. But it does react if the shock has indirect or second-round effects on the prices of other goods, if a passthrough of higher production costs 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 shock unanchors inflation expectations over the policy horizon. However, these general responses are tinted by the intense uncertainty—observed both in Chile and around the world—regarding the shock's

persistence, its actual consequences and the magnitude of its indirect or second round effects.

(6) Optimal response to foreign exchange shocks

The above considerations can apply to the optimal response of monetary policy to parity shocks. In general, in its conduct of monetary policy, the Central Bank does not react to exchange rate movements beyond their effects on inflation and output. This because of the favorable response of the Chilean economy to increased exchange rate volatility that has been present since the late nineties. First, the pass-through coefficient from exchange rate depreciation to inflation has dropped substantially in Chile, to very low figures in the range of 20% to 30%, in the policy horizon. Second, the currency mismatch has been reduced in non-financial firms which, in turn, are being insured against residual parity risks generated by short-term exchange rate volatility in an increasingly deep market. Finally, the Central Bank reserves the option to intervene directly in the foreign exchange market with sterilized operations and in publicly announced conditions, if it evaluates that a temporary exchange rate volatility or misalignment so warrants.

Central Banks' Summit on Inflation Targeting

Some of the topics I just listed were discussed yesterday, Wednesday 19 October, in the Summit that the Central Bank of Chile organized with governors, board members and head economists from 25 central banks that either have inflation targeting regimes in place or are considering the adoption of one in the near future. Discussions were very fruitful, because they allowed for a constructive exchange of experiences and challenges among the attending central bankers, IMF officials and renowned academics, also present at this conference. Four issues were covered at the Summit: (i) the refinement of requisites for a successful adoption of inflation targeting, (ii) the influence of considerations such as financial stability and asset prices in the conduct of monetary policy, (iii) the assumptions behind and communication of future policy interest rates and parities, and (iv) how various forms of uncertainty affect the way monetary policy is conducted.

The Ninth Annual Conference of the Central Bank of Chile

The purpose of this Ninth Annual Conference of the Central Bank of Chile is to promote and discuss advances in economic research of interest for central banks, in matters relating with the conduct of monetary policy in inflation targeting regimes. The conference will gather new results from analytical investigation and empirical evidence on the conduct of monetary policy under inflation targeting and its effects on the Chilean economy and the world at large.

Anne Krueger, First Deputy Managing Director of the International Monetary Fund will follow me in this initial session, presenting the invited lecture of this conference, which will deal with IMF policies relating to the scope of price stability in member countries.

The second session is centered around theoretical works, with important implications of monetary policy, on optimal inflation targeting schemes. Lars Svensson will analyze an optimal inflation targeting (or inflation forecasting) system, examining the convenience of using and publishing the path of future monetary policy rates consistent with the projection model used by the central bank. Pierpaolo Benigno and Michael Woodford study the optimality of inflation targeting under various fiscal regimes, including cases of incompliance with the intertemporal budget constraint and when taxes have distorting effects.

Session III focuses on reviewing the inflation targeting regime in emerging economies. Nicoletta Batini and Douglas Laxton evaluate compliance with initial conditions and the macroeconomic consequences of adopting inflation targeting in developing countries, on the basis of a recent survey taken by themselves to 31 emerging economies' central banks. Luis Céspedes and Claudio Soto present new evidence that inflation dynamics in Chile has changed in the recent past, which they ascribe to the credibility gained by monetary policy. Rodrigo Caputo, Felipe Liendo and Juan Pablo Medina analyze interaction between the monetary policy and the structure of the Chilean economy during the inflation targeting period, estimating and calibrating a new dynamic stochastic general equilibrium model.

The following session presents new evidence on the world's experience with inflation targeting. Sebastián Edwards analyzes the relationship between inflation targeting and exchange rates in three areas: the exchange rate's effectiveness as a shock absorber, the exchange rate's volatility and the role of parities in the conduct of monetary policy. Stephen Cecchetti and Stefan Krause examine the optimality and the practice of weighting inflation rate targets and price level targets, providing evidence from countries with and without inflation targets. Frederic Mishkin and Klaus Schmidt-Hebbel present evidence on the macroeconomic and monetary policy effects in all inflation targeting countries, and compare them with earlier times and with non-inflation-targeting developed economies. Refet Gürkaynak, Andrew Levin and Eric Swanson present evidence for Canada and Chile, on the contribution of inflation targets to the anchoring of long-term inflation expectations, in comparison with a country that has no explicit target, the United States.

The Conference's fifth and last session will analyze the relationship between the optimal monetary policy and inflation targeting. Athanasios Orphanides and John Williams, using a model estimated for the US, show how under conditions of imperfect information the optimal policy rules are modified and how a monetary scheme based on the key elements of an inflation targeting regime seems to contribute to a higher macroeconomic equilibrium. Carl Walsh analyzes the relationship between inflation targeting and transparency, showing how the quality of central bank projections and their public communication can affect the outcome of monetary policy. To finish, Stephanie Schmitt-Grohé and Martín Uribe derive optimal but operational rules for monetary policy in a general equilibrium model calibrated for the US, under different initial conditions and different degrees of indexation to past inflation.

I would like to end these words by thanking Frederic Mishkin and Klaus Schmidt-Hebbel for their hard work in putting together this magnificent conference, and Mauricio Larraín and Mónica Correa for valuable assistance in organizing it. I also thank the large number of discussants of the papers for their dedication in preparing their remarkable interventions, which will undoubtedly contribute even more to our understanding of these important issues. To you all, dear participants, I wish two days of fruitful discussions and much learning.