



PRICE AND FINANCIAL STABILITY IN MODERN CENTRAL BANKING

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Introduction

It is a pleasure to address this audience at the main gathering of Latin American economists, which brings together not only the best and more promising from our region, but also great scholars from other parts of the world.

During my professional life I have had many challenges and jobs. I was in politics as Minister in three portfolios a decade ago, and had of course to deal with politically sensitive issues. Then I moved to the Central Bank. Many people tend to think that life in a central bank is a quiet one. It is true, it is very low key compared to politicians', but requires hard work. During my tenure as Governor we have had to deal with rising inflation, then the largest financial crisis in the postwar period, followed by an earthquake, a change of the government coalition after twenty years, and, more recently, inflationary shocks, exchange rate pressures and now the European crisis and an increasingly weakened global economy.

This preamble is not to give my biography, but just to mention some of the things I have done in my professional life, and to add that one of my most difficult and rewarding jobs so far was to organize the LACEA conference in 1999. As a university professor we have access to limited funds, so fundraising becomes a tedious, but necessary task. Then, organizing the program and all the details is tough, and above all it is a task that has a strict deadline and everything has to happen in just a few days. I had the privilege to meet and work with the co-chairman, Dominique Hachette, an extraordinary economist and friend. Our weekly meetings in his house were really a pleasure, and we miss him a lot.

So, let me start by expressing my sincere congratulations and gratitude to the organizers. However, I will not talk about organizing conferences, but about central banking. In particular, I will refer to the new challenges facing central banks after the crisis and their role in securing price and financial stability.

Central Banks and Price Stability

Many years ago we reached consensus that central banks should focus mainly on ensuring low inflation. Moreover, there were some scholars and practitioners that argued that price stability should be the only objective of central banks, so the goal would be more credible and monetary policy more effective in achieving stability. However, we didn't know how exactly or operationally to achieve this target. Some central banks tried to target monetary aggregates, others to peg nominal exchange rates, and others to use an eclectic mix of indicators. Two decades ago, some central banks started conducting monetary policy targeting a specific value or range for the rate of inflation. This trend started with New Zealand in 1990, and was followed by Canada, the United Kingdom, Australia and Sweden in the early 1990s. This is a case in which policy development led academic advances. Progress in the academic front provided further impetus to the adoption of inflation targets as new models were developed to provide the theoretical underpinnings of inflation targets and the basis to conduct empirical work (Galí and Gertler, 2007).

This view was further justified by the success of monetary policy around the world in providing stability, not only in the inflation front, but also in activity and employment. The evidence that output volatility declined significantly in the US since the mid eighties was first reported by Kim and Nelson (1999), and later called the Great Moderation by Stock and Watson (2003).¹ Several factors could be behind this fact, such as technical progress, better policies, deeper financial markets, and sheer good luck. Although there is no final verdict, there is evidence that points to the role of better macro policies (Galí and Gambetti, 2009). However, it is interesting to note that emerging market economies also enjoyed a Great Moderation, but it came in the second half of the 1990s, much later than in developed economies, which coincides also with the time in which inflation was conquered, supporting the hypothesis that it was good policies rather than good luck (De Gregorio, 2008). It is easy to discredit the Great Moderation in the current juncture. However, the resilience of emerging market economies to the global crisis was impressive. Indeed, emerging markets had a recession, but much milder than in the past and with a remarkable recovery. And this was, of course, the consequence of much better macroeconomic management.

The case of Chile illustrates this point. We did suffer a recession, but the size of the initial impact and the speed of the recovery were quite different from previous episodes. In the second half of 1998, affected by the Asian Crisis, Chilean GDP fell by 4.3% quarter to quarter. Returning to the initial GDP level took us one year. But, comparatively, the unemployment rate more than doubled between the beginning of 1998 and mid-1999, reaching almost 12% and staying high, around 9.5%, until 2005. The effects of the 2008-2009 crisis were very different. Economic activity fell, but less than in the previous episode, by 3% between the end of 2008 and mid- 2009. The recovery was much faster and only two quarters after the downturn, by the end of 2009, GDP was comparable to the pre-crisis level. The growth rate after having recovered the initial output level was also different. Considering the first six quarters after having reached this point, in the beginning of 2000, the economy grew at an average annual rate of 4.4%, whereas between the first quarter of 2010 and mid-2011 the economy grew an average annual rate of 6.3%.

The behavior of the unemployment rate was totally different as well. After having risen from around 7.5% in mid-2008 to levels close to 11% in mid-2009, it began a period of fast decrease, returning to levels around 7% to 7.5% at the beginning of this year. The policy regime was crucial in this result. Fiscal policy implemented a sizeable economic stimulus package. Monetary policy also added a significant impulse to the economy, as the Bank took the monetary policy interest rate to its minimum and implemented additional measures to ensure the effectiveness of its actions. The effects of the 2008-2009 crisis were very significant, but the resilience of the Chilean economy and the effectiveness of its macroeconomic policies were even stronger.

Over time, inflation targeting regimes have evolved to what is now known as flexible inflation target (FIT). In this scheme, the central bank sets an inflation target, which is intended to be achieved in a given time horizon. As shown by Svensson (1997), inflation targeting implies inflation forecast targeting. Thus, the central bank's inflation forecast at

¹ A predecessor was Taylor (1998) who called this period the "long boom."

the policy horizon becomes the intermediate target.² In the case of Chile, our inflation target is three percent, and the time horizon is two years. As long as this target is credible, monetary policy will not only achieve inflation stability, but will also reduce the volatility of the business cycle.

Analytically, the FIT regime is based on the idea that the policymaker minimizes a loss function that penalizes both inflation deviations from the target and deviations of output from full employment. Therefore, what the FIT does is to optimize the tradeoff between output volatility and inflation volatility. The time horizon is what makes this scheme “flexible.” The target is not achieved in the short run since it also takes the output costs of achieving the target into account. A rigid inflation target is one in which the central bank only cares about inflation, and hence the horizon would be the shortest possible, enough for monetary policy to affect output. The longer the time horizon, the higher the weight of output volatility in the loss function (De Gregorio, 2007). The time horizon typically extends to two years, or a more ambiguous definition as “medium term.” As long as medium-term inflation expectations remain anchored, the monetary policy helps to reduce the volatility of other variables.

In addition, a FIT regime also requires a flexible exchange rate, so monetary policy can be conducted independently. However, a proper FIT should help to stabilize the currency as long as monetary policy should move *leaning against the wind*. For example, a persistent depreciation of the currency, other things equal, should increase the inflation forecast, although much more moderately than in rigid exchange rate systems. This effect should call for a tightening of monetary conditions, reducing pressures against the currency.

Many times it has been argued, especially in non-professional discussions, that inflation targets ignore output fluctuations. As I just argued, this is a mistake. Flexible inflation targets take into account activity and employment, and this is implicit in the choice of the time horizon. Moreover, a credible inflation target is efficient in terms of minimizing the tradeoff between output and inflation fluctuations, and also helps to reduce real exchange rate volatility. Indeed, a flexible inflation targeting regime can maximize welfare and perform much better than an exchange rate or monetary target.

What variables should a central bank consider when setting the interest rate? In the regime I just described, the answer to this question is pretty simple: anything affecting inflation over a two-year horizon. Variables such as inflation expectations, wages, output, unemployment, the exchange rate, commodity prices, and so on, have important effects on inflationary forecasts and must be taken into account when deciding the future path of monetary policy. However, it is also important that investors, wage and price setters understand and share the importance of these variables for the inflation process. Communication is essential, and that is the role of Monetary Policy or Inflation Reports, monetary policy statements, minutes, projections, speeches, and so forth.

² In order to avoid indeterminacy or multiple equilibria, the forecast must be the central bank’s forecast and not that of the market (Bernanke and Woodford, 1997).

A key question during the financial crisis was to which extent central banks should react to asset prices, such as housing or stocks prices. The answer from the perspective of inflation target should be: as long as they affect the forecast of inflation, they should be considered in the reaction function of monetary policy.

Asset price bubbles or distortions that may threaten financial stability should be considered when evaluating financial vulnerabilities, but not influence monetary policy if they do not have an impact on inflation. It is not clear that an increase in interest rates will be capable of stopping an increase in asset prices. The required adjustments might be so large that they could end up unnecessarily generating high unemployment and an undesired drop in inflation. Under inflation targeting, any interest rate movements that is inconsistent with inflation converging to the target may undermine the credibility of monetary policy, destabilizing inflationary expectations and weakening the effectiveness of monetary policy.

Using monetary policy to burst a bubble in asset prices is particularly complicated in emerging market economies, since bubbles in domestic assets generally take the form of an exchange rate appreciation caused by large capital inflows. Tightening monetary policy to burst the bubble may have perverse effects, since it induces further capital inflows and strengthens the currency. In this case, the interest rate is not the appropriate instrument. Exchange rate intervention could be a better policy tool.

Bringing Back Financial Stability to Central Banking

With the global financial crisis, there was a renewed discussion on the role of central banks in securing financial stability. This is not new. The first central banks (Sweden and the UK) were created in the 17th century, but no proper role for central banks was established, and indeed the Bank of England was founded to finance the war with France in the late 17th century (Davies and Green, 2010). It was not until the 19th century that the Bank of England was given the monopoly for the issue of banknotes and assigned the role of lender of last resort. Therefore, in the origins of central banking, its role was to secure the functioning of the payment system. Thus, financial stability was not new, although it was a secondary issue compared to the conduct of monetary policy, which gradually turned to focus on price stability. Indeed, having central banks mainly one instrument, the interest rate or the money supply, but not both, financial stability was mostly ignored.

This is not the case of emerging market economies, where after many financial crises, the role of financial stability was always central in policymaking. Indeed, the most relevant aspect of financial stability was in the international financial transactions area. For this purpose, central banks, most usually, manage exchange rate policies, hold international reserves and dictate norms to avoid currency mismatches and external payment crises. In Chile, the Central Bank's objectives are price and financial stability. The Constitutional Law explicitly establishes that "the Bank shall have as its purposes to look after the stability of the currency and the normal functioning of internal and external payments."

Indeed, the resilience of financial systems in emerging markets during the global financial crisis owes much to the fact that financial stability was already an important piece of the policy framework.

Three issues I would like to discuss regarding financial stability and monetary policy:

- First, was the crisis caused by monetary policy?
- Second, what are the instruments for financial stability?
- And third, what are the interactions between financial stability and monetary policy?

Regarding the cause of the crisis, I do not think monetary policy, conducted, for example, on the basis of a Taylor rule was the main culprit. Very low interest rates in advanced economies induced high risk-taking as financial institutions were searching for yields. Excess liquidity may sow the seeds for asset price bubbles and financial vulnerabilities,³ but to cause a huge financial crisis, some serious distortions in the financial system are required. Indeed, countries like Australia or Canada had very low interest rates, but their financial systems responded appropriately to the financial crisis. Chile also followed an interest rate cycle similar to that of the US and did not suffer a financial crisis. In some countries there could have been even a housing bubble, but there was not the degree of leverage as in the US, which was central in triggering the crisis. Indeed, it is useful to recall that asset price bubbles do not necessarily cause a financial crisis, as was the case with the tech bubble in the early 2000s. The bad combination is asset price bubbles with high leverage in the banking system.

However, monetary policy played a role in the crisis in the way it dealt with bubbles, deviating from the prescriptions to pursue price stability. This was the so-called “Greenspan put.” The rule followed by the Fed was not to react to the formation of a bubble, but to mop-up its effects after the bubble burst. This was done by providing unlimited amount of liquidity and sharp reductions of interest rates. Recent evidence confirms that including asset price deflation improved the fit of the Taylor rule (Hall, 2011), and hence markets were expecting an easing of monetary conditions when asset prices declined significantly. This point was already raised almost ten years ago by Miller et al. (2001), who argued that eliminating downside risk of asset prices feeds the bubble, so more bubbles were not only the result of irrational exuberance but was also “exaggerated by the faith in the stabilizing powers of Mr. Greenspan.”

Regarding the second question, on the instruments for financial stability, this is what has been termed macroprudential tools, as opposed to the microprudential regulation, which targets the health of specific financial institutions. One of the first tools used for financial stability was the dynamic provisions to housing loans implemented in Spain in 2000. It is still too early to have a full evaluation of this instrument, since it did not avoid a housing bubble, many small institutions dedicated to housing finance, the “cajas”, went bust during the crisis, but the overall Spanish financial system fared well through it all.

On the time dimension, the idea of macroprudential tools is to avoid the buildup of financial vulnerabilities in the upturn of the business cycle, and to have a cushion for the downturn. Financial systems tend to be procyclical, and hence some break system should

³ See, for example, Acharya and Naqvi (2010).

be implemented to avoid excessive risk-taking. This has been underlying the new rules in Basel III, especially in the definition of the countercyclical buffer of new capital requirements.

On the cross-section dimension, extra capital has been proposed for systemic institutions in order to make them more resilient to financial turbulences. But, the definition of systemic institutions is still blurred, and given the evolution of financial innovation, what today may be a non-systemic institution may eventually become systemic. Indeed, a non-systemic institution on a worldwide basis could be systemic from the point of view of particular economies.

Again, these issues are not new in emerging market economies, which in general have more capitalized banks. In Chile, most of the industry already satisfies the requirements that are supposed to be in place by 2019. Moreover, there are larger requirements for banks that have high market share.

There are other areas where we have already made significant progress, such as restrictions on currency mismatches, liquidity management and the use of derivatives. In all of these cases, the Central Bank of Chile has authority to set prudential regulation. For banks, these relate with authorizing the use of derivatives, regulation regarding market and liquidity risk, among others. In other areas, the Central Bank also has a say in “systemic” regulation, such as overall limits for Pension Funds. This scheme accommodates recent policy concerns, since it avoids the conflict of interests that arises from mixing the micro supervisor with the monetary authority, while preserving an institution that provides a broad look at the stability of the financial system. This being said, however, there is a need to continue strengthening coordination instances with other regulators. In this sense, the recent creation of a Financial Stability Committee in Chile should improve coordination among regulators and have a view on financial stability and risks. Over time, and as learning takes place, some legislation should be introduced in order to enhance the effectiveness of the Committee. In the Central Bank, evaluation of financial vulnerabilities and strengths is performed bi-annually in our *Financial Stability Report*.

Finally, regarding the interactions between macroprudential policies and monetary policy, I would like to make some comments.⁴ The traditional view has been influenced by the Tinbergen principle, by which there should exist as many instruments as policy targets. This view is reinforced by the fact that, as I argued above, the interest rate is too blunt of an instrument to deal with asset price bubbles and financial dislocations. Therefore, we can think of a separation between the interest rate —the monetary policy instrument to achieve the inflation target— and macroprudential tools to deal with financial stability.

However, and perhaps unfortunately, the separation is not that clear. As I discussed before, actions of monetary policy, such as the Greenspan put, may create financial instability. The financial crisis also showed that it has effects on the business cycle and, hence, it has implications on monetary policy. Moreover, the transmission channels of monetary policy could be broken down during a crisis. Therefore, the state of the financial system should

⁴ See also Bernanke (2011) for discussion on these issues.

have implications on the conduct of monetary policy of economies following a FIT regime since it affects the transmission channels and the business cycle.

Another issue is whether macroprudential tools may be used to complement monetary policy. For example, adjusting capital requirements over the cycle or introducing dynamic provisioning may have effects on the output gap, inflation and interest rates. This is similar to the case of automatic stabilizers of fiscal policy, which of course have implications on monetary policy. Therefore, there should not be conflicts between financial stability and price stability tools, as long as financial regulation reduces the procyclicality of the banking system. From the point of view of the inflation target, this is just part of the environment in which decisions have to be made.

Perhaps a more controversial issue is the use of macroprudential tools as a substitute for monetary policy. A recent case in some emerging markets has been the use of banks' reserve requirements to tighten credit by reducing the need to increase the interest rate, and collateral effects on asset prices, especially the exchange rate.

The advantage of using the interest rate for monetary policy is that we have relatively good knowledge of the transmission channels. Changes in monetary policy interest rates affect the cost of financing, asset prices and the availability of credit. The macroeconomic consequences of changing regulation are less well understood. Tightening restrictions on banks may create disintermediation and move credit to unregulated segments of the market. In addition, the latitude of changes in regulation is much more limited than that of interest rates. A more constructive approach may be to design rule-based countercyclical regulation with a clear purpose to minimize the risk of financial crisis. Nevertheless, we still need to learn more about the interactions between monetary and financial policies.

Final Remarks

A natural reaction to a crisis is to think that everything is wrong and that all must be changed. Emerging markets, and in particular Chile, performed well during the crisis, and above all during the recovery. Therefore, a first lesson must be on the factors that produced these good results, and macroeconomic management was certainly central to the rapid recovery. The financial system was resilient, which shows that the regulatory framework was appropriate. However, our role is not to congratulate ourselves for our achievements in the past, but to look at strengthening our macroeconomic framework.

As development proceeds, new challenges arise due to financial innovation, and it is extremely important to look for lessons while the crisis unfolds, to take advantage of financial development without risking financial stability. There is a need to study the interactions between monetary and financial policies further, especially given the challenges stemming from the global outlook.

Implementing monetary policy in a flexible inflation targeting framework has shown its benefits; incorporating financial frictions and the appropriate policies should help us to navigate better in a very uncertain world.

The crisis also left some lessons for the profession and the way we use our highly stylized models in policy-making. The narrow view is to think they are a precise description of how the world works, when in truth it is much more complicated. However, the other extreme view—and a very bad one for policy-making—is disregarding all that we have learned from academic work. We need to be humble about the extent of our knowledge, but we also have to be rigorous and serious about policies.

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