

The Role of Central Banks after the Financial Crisis

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As a response to the global financial crisis of 2008-2009, we witnessed a period of unprecedented central bank activism. Many central banks, particularly in developed economies, implemented diverse policy actions. Central banks around the world reduced monetary policy rates to their lower bounds and announced their explicit commitment to keep these rates at that level for a prolonged period of time. Some of them went further, including the purchasing of private securities, lending to financial institutions other than banks and exchange rate interventions.

All these actions contrast with how monetary policy was conducted during the so-called “great moderation”, which extended since the mid 1980s. During this period, most central banks relied exclusively on short term interest rate management in order to achieve their goals. This dramatic change of events has led many observers to argue that central banks forgot about a crucial task in their mandates—financial stability—and/or they were imprudent for thinking that an adequate management of the short term interest rate would suffice to secure price and financial stability at the same time. In either case, the argument goes, the global financial crisis should lead central banks to reevaluate their role in this new era.

There is no doubt that we have the responsibility to carefully assess the recent events. We need to do it in order to improve our understanding of the economy and in order to improve our macroeconomic policy design, so as to avoid crises, but also handle them appropriately. In my view, many of the lessons will not be new, but they draw from lessons from previous experiences, but forgotten in academic and policy circles in industrialized countries.

I will start my discussion on the new role for central banking after the recent financial crisis by discussing the factors that were behind it. Understanding these factors will be crucial to analyze if and how the objectives of central banks should be modified and potential tradeoffs between competing objectives. Finally, I will discuss the interactions between price and financial stability and the challenges for central banks in the new times.

What Caused the Financial Crisis?

There are many candidates being pointed out as the culprits of the financial crisis of 2008-2009. Many have blamed monetary policy. In my opinion, even though monetary policy may have played a role, it was a secondary one.¹ The argument blaming

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¹ For further discussion on this issue, see De Gregorio (2010).

monetary policy for the current crisis claims that low interest rates combined with large current account surpluses in emerging economies, particularly Asian and oil-exporting countries, created an abundance of liquidity that triggered excessive increases in asset prices (that is, a bubble). This was particularly acute in the housing market. When the bubble burst, the crisis erupted.

This argument contends that monetary policy failed to act in a timely fashion and allowed severe imbalances to accumulate. Nonetheless, soaring asset prices do not necessarily result in a crisis like this one. Moreover, the financial systems of most emerging markets proved to be resilient despite significant monetary loosening before the crisis. A financial crisis requires the combination of two factors: a surge in the value of a set of assets that will eventually collapse, and vulnerability of the financial system to the collapse in these assets prices.

In the recent crisis the key assets were houses and structured credit products. The key vulnerabilities arose from the exposure of highly leveraged institutions—many of which had a substantial maturity mismatch—to these assets. These factors combined led to a degree of vulnerability that neither markets nor regulators anticipated. Closer attention must therefore be paid to the financial fragility that accompanied this process—both to the factors that led to the distortions in asset prices and to the factors that amplified the crisis once the adjustment took place. Let me touch briefly on two of these factors:

- The first is financial innovation. Despite a lot of public debate and criticism I believe that financial innovation is essentially welfare enhancing. However, we must not forget that financial innovation can also become a form of circumventing regulation. The way some securitized assets were used was the clearest case of this abuse. They were structured in a way that only secure tranches remained in the balance sheets of banks, and the others were sold, many times to off balance vehicles, allowing credit to expand with a weak capital base. The result was excess demand for certain securitized assets, and excess exposure of highly leveraged intermediaries to these assets. Moving forward, financial innovation needs to move in step with regulation to ensure that it adds value and is not just a form of evading regulation and aggravating financial fragility.
- The second is liquidity transformation. Along with important benefits, liquidity transformation entails significant risks. We have known the vulnerabilities of liquidity transformation in the presence of aggregate shocks for a long time; in fact, many countries paid very dearly for this risk before central banks were set up to provide aggregate liquidity. However, in many high income countries central banks had centered on regulating and providing liquidity facilities for deposit banks, leaving out large fractions of the financial sector that saw substantial developments in non-bank liquidity transformation, such as SIVs, money market mutual funds and investment banks. When trust in the value of the underlying assets held by these intermediaries evaporated, many saw themselves suddenly unable to service their obligations, forcing central banks in many countries not only to expand the terms and collateral of liquidity provision but also to seek ways to extend liquidity to non-banking agents.

I am not suggesting that the optimal solution is simply to expand the liquidity safety net. This would entail serious moral hazard problems. I do think, however, that we need to

be aware of which agents carry out this role, and consider prudential regulation and ex-post liquidity provision if they are deemed to be systemic (and if we have the mandate). In many emerging market economies (EMEs) we are well aware of the risks of liquidity transformation—in particular when it is done in foreign currency. As a precautionary tool, most EMEs have built up significant stocks of international reserves.

Nor am I arguing that monetary policy cannot play a role in the creation of bubbles. It can, although not so much through the level of the interest rate as through the broad monetary policy strategy with which financial turmoil is addressed. I am referring to the popularly known Greenspan put. This strategy of relaxing monetary policy once a bubble bursts certainly makes the creation of bubbles more likely. But while the mop-up strategy worked in some earlier episodes, it failed miserably during the biggest collapse in decades. I will return to this point below.

In summary, financial fragility played a crucial role in explaining the origin and magnitude of the crisis. But financial fragility was related to poor regulation more than monetary policy. Having said this, it can be still argued that the original sin in this case was a “relaxation” (loosening) of their financial stability responsibilities by some central banks, the inability of the existing supervisory bodies to adequately monitor aggregate financial stability.

The Objectives of Central Banks

Given the magnitude of the financial crisis we faced, there is always a discussion on whether the objectives of central banks were the right ones or if they should be changed. As I mentioned before, the financial crisis was mainly related to a poor implementation of a key task of central banking. Nevertheless, it will be useful for the ensuing discussion of the challenges of implementation of central bank tasks to evaluate first their current objectives.

Should the objective of price stability be changed? Broadly speaking the answer is no. For a start, central banks need to retain a clear mandate for price stability. Inflation is costly and should be avoided, and this has to be done by the monetary authority. On this issue let me refer briefly to some proposals for increasing the inflation target to avoid the possibility of hitting the lower bound of monetary policy and potentially falling into a liquidity trap. Our hard won experience indicates that we can have a relatively low inflation target (let’s say 2% or 3%) and still be able to deal appropriately with the challenges that the lower bound on interest rate imposes. Indeed, there was no emerging market that was limited by low inflation to undertake expansionary monetary policy. Indeed, the unprecedented monetary loosening in Latin America was possible precisely because of the conquest of inflation that took place in the last couple of decades.

The critical issue when interest rates are at their lower bound is the credibility of monetary policy. If monetary policy is capable of committing to keep the interest rate low for all the time needed to stimulate the economy, the inflation target level issue becomes less relevant. Credibility allows for higher levels of flexibility. Flexibility in this case includes the set of actions that many central banks implemented in order to

deal with the need for stimulating the economy once the monetary policy rate reached the lower bound.²

One extra point regarding the prescription of having a higher inflation target. If the proposal for developed economies is having an inflation target of, say, 4%, the inflation target for an emerging market economy should presumably be somewhat higher, given the larger shocks that affect them. But with an inflation target of 4% or even more, we cannot exclude that mechanisms that automatically recover purchasing power are going to be developed. It is not difficult to picture a scenario in which we could end up having more wage inertia due to indexation. In addition, inflationary expectations could become more volatile. This, in turn, will significantly reduce the gains of having a higher inflation target in the first place.

A credible commitment to stable inflation also generates greater stability of the business cycle, allowing less costly unemployment fluctuations. Indeed, a reason for the great moderation the global economy experienced for an extended period of time was in part due to a better management of monetary policy and not only to good luck.³ Therefore, a credible commitment to price stability increases welfare by reducing both, inflation and unemployment volatility.

Despite the big consensus regarding the need to preserve price stability as a central goal of monetary policy, some analysts have argued that such a concept should be expanded to include asset prices. By allowing significant deviations of asset prices from their “fundamentals”, central banks planted the seeds of financial crisis. Therefore, it has been argued that monetary policy should respond to asset prices. I think this approach is too narrow. As I already mentioned, the financial crisis was not only related to the burst in asset prices but mainly to its interaction with financial fragility. Asset price bubbles and financial fragility are part of a more complete (and complex) concept: financial stability. Dealing with an asset price bubble with monetary policy is not that simple.

This view is particularly problematic in small open economies. The increase in valuation of asset prices in these economies is usually the result of a large exchange rate appreciation coupled with large capital inflows. Attempting to stabilize asset prices with monetary policy could be counterproductive, since an increase in interest rates to contain the rise in asset prices could induce greater inflows and carry trade operations that might end up appreciating the currency even further.

As to the role of central banks in financial stability, the change should come not in the need to have this mandate but in how we define it and the priority given to it. We must bear in mind that central banks have played a historical role in the stability of deposit taking banks. However, the current crisis shows that we need to carefully revise this narrow definition of financial stability, or at the very least recognize that it is impossible to safeguard deposit taking banks without ensuring the adequate functioning of other key markets or financial intermediaries.

Defining and monitoring “financial stability” is a difficult task. Central banks have been carrying out significant efforts in order to improve the monitoring of the financial sector

² For expositions of monetary policy implementation at the lower bound, see Bernanke and Reinhart (2007), Bernanke (2009) and Murray (2009).

³ For evidence in the U.S., see Galí and Gambetti (2009) and for emerging markets, De Gregorio (2008).

in the form of financial stability reports. Based on our recent experience we know that close monitoring of asset prices, credit flows and the current account deficit is required. Moreover, substantial work also needs to be done in monitoring the vulnerabilities of both bank and non bank agents—including financial intermediaries, firms and households. Finally, understanding interconnections in the financial system—be they via balance sheets, asset markets or risk perceptions—is also a key component of financial stability monitoring. The challenges in doing all of this are both conceptual and practical, as we often rely on a statistical toolbox best aimed at capturing macroeconomic trends and less suited for the analysis of the whole distribution and, in particular, tails risks, which are crucial for financial stability analysis.

Although most central banks have an explicit financial stability objective, for some of them it was a secondary issue for many years, as GDP was growing strong and banks and firms displayed sound balance sheets. Now things have changed dramatically. As of last year, financial stability became the key factor driving monetary policy management in developed countries. It should remain at the same level of priority as price stability in the future to avoid a repetition of recent events.

The Interaction between Price Stability and Financial Stability

I think that probably the main challenge that emerges from the recent crisis is in the conduct of policies by central banks—and in particular in the interaction between the two key objectives I mentioned above, price stability (PS) and financial stability (FS).

Let me begin by discussing the interaction between financial and price stability in normal times, that is, before an event leading to a period of financial turmoil like the one we witnessed in late 2008.

In many cases there is no conflict between setting short term interest rates to pursue financial stability and price stability. For example, faced by a change in future income perception that leads to higher consumption, debt levels and rising inflation, rising rates will be conducive to both PS and FS.

In several other cases, however, the optimal short term policy decision for FS and PS conflict and additional tools are required. I will argue that these cases fall into two broad categories.

The first is when the monetary policy framework itself can amplify financial vulnerabilities. Financial agents take the distributions of asset prices into account when determining their risk exposure, and as such, they adjust their portfolios according to the policy framework. The problem arises because policies cannot always bring stability when faced with unusual shocks, which may even require changes in the policy regime. There are some important examples of this.

One example is currency mismatches. In the 1980s and 1990s, many emerging markets put in place exchange rate systems that limited or altogether eliminated perceived foreign exchange rate risk. The objective was, in most cases, to reduce inflation. And in many cases the success was remarkable on this front. However, not surprisingly, firms, households and financial intermediaries were reluctant to hedge currency risk in this setting—accumulating liabilities in foreign currencies to finance assets in local

currencies. When an external shock, or an increasing exchange rate misalignment, forced the countries to abandon the peg, the value of debts skyrocketed leading to very severe financial crises, as in Chile 1982 or Argentina 2002. Indeed, in these cases there is also a moral hazard issue, since currency mismatches tend to be exacerbated under the promise that the exchange rate will remain fixed, and if changes occur, the authority will have to bail out those who believed in their commitment.

The popularly known Greenspan put, is another example. This strategy of relaxing monetary policy once a bubble has burst—although fully consistent with price stability—encourages risk taking by financial intermediaries, firms and households. As the burst of the housing bubble showed, this strategy is not always advisable.

An additional example of the role of central bank policies on risk taking is the “great moderation” itself. There is an interesting stylized fact across banks in different countries. In countries where GDP is more volatile, bank leverage is lower, and banks (by either choice or regulation) put more capital aside to deal with uncertainty.⁴ This being the case, it is not hard to imagine that a period of declining volatility in prices and output leads to increased risk taking across several economies.

By stating this, I am not suggesting that we should aim at higher volatility. However, we need to recognize the impact that price stability has on financial vulnerabilities (financial fragility), and adjust financial regulation accordingly.

Let me now turn to a second source of conflict between interest rate policies that target PS and FS: an innovation that simultaneously leads to increased aggregate demand becoming a risk for FS that coincides with a positive aggregate supply shock. Two examples come to mind. The first is the current concern regarding capital inflows and financial stability. Many have argued—rightly, I think—that large capital inflows could simultaneously lead to increasing financial vulnerabilities without posing an inflationary problem because of the appreciation of the local currency. The correct reaction for PS—keeping loose monetary conditions—is not necessarily the correct reaction from an FS standpoint. The second is the build up to the global financial crisis in the US and Europe. One of the reasons that monetary policy did not react to rising household debt, was that global supply factors had been contributing to drive prices down.

Central banks need to oversee price stability and financial stability. One instrument (namely, the interest rate) is often not enough for pursuing two objectives. More generally, the two objectives should be addressed with more than one instrument. The choice of instrument will depend on both the cause of the financial fragility and the institutional setting of each country. For a start, central banks should work closely with “micro-prudential” supervisors, communicating potential risks so that these can be incorporated into the supervision process or into changes in regulation. A regional house bubble would be a good example of this kind of coordination, with supervisors adjusting provisions accordingly. In addition, central banks should consider macro-prudential regulation that adjusts capital, liquidity or asset quality regulation through the cycle or in periods of higher risk taking.

⁴ Chapter V, Financial Stability Report 1st half 2009, Central Bank of Chile.
http://www.bcentral.cl/publicaciones/politicas/pdf/ief2009_1.pdf

Finally, central banks should not discard using their balance sheet to “correct” the prices of financial assets when these asset prices are leading to increased vulnerabilities in the financial system. In EMEs this is typically the case of a boom where there are signs that the currency may be strengthening beyond its fundamentals, in which case a mechanism of self-insurance, such as accumulation of reserves, may help to smooth the transition and to have the economy well-prepared for potential reversals of capital flows. In the case of Chile, we have intervened three times in the exchange rate market since the currency was allowed to float in 1999. In the first two cases (2001 and 2002) events in international financial markets led to rapid depreciations, unrelated to country fundamentals. In the last case—2008—we considered it prudent to build up reserves in a period in which the exchange rate was below fundamentals and global financial markets were under extreme stress.

Let me now refer to the interaction between financial and price stability from an ex-post perspective, i.e. once a financial shock (crisis) has hit the economy. From an ex-ante point of view I discussed that there are occasions in which these two objectives may not be completely aligned. From an ex-post perspective, these objectives are in general consistent, which will reinforce the need for strengthening the ex-ante dimension of financial stability.

Suppose that a shock in financial markets (of a domestic or external nature; based on fundamentals or simple contagion) hits the economy. This shock will result in an increase in the cost of capital, bringing down investment and aggregate demand. The reduction in aggregate demand reduces output and therefore also reduces inflationary pressures. This example shows that dealing with this “financial shock” is usually—and I will be explicit regarding this conditionality—consistent with pursuing price and output stability. From this ex-post perspective, financial and price stability can be addressed simultaneously.

The instruments that monetary policy can use to deal with these financial shocks will depend on the nature of the financial shock. The dose will depend on the initial conditions of the economy and the magnitude of the shock. A simple example is dealing with uncertainty in financial markets that increases demand for liquidity, which requires the provision of liquidity by the central bank. Is this consistent with price stability? Yes, indeed. If the financial shock consists of a collapse in asset prices that weakens balance sheets and leads to further declines in asset prices, the economic contraction can be substantial. The monetary policy response in this case will be to reduce interest rates, consistently with price stability (as in Bernanke and Gertler, 1999).

In the aforementioned cases, policy interventions under financial stress, either lender of last resort (liquidity injections) or interest rate types, are consistent with PS and FS. But it may be the case that the magnitude of the financial shock is so severe that neither price nor financial stability may be fulfilled. The problem is not that these two objectives are mutually inconsistent, but that the shock is too large to be addressed with the standard tools. Nevertheless, the fact that the targets may not be achieved within the “policy horizon” does not mean that monetary policy cannot be effective to reduce the costs of the crisis. If something, output costs associated to the global financial crisis have been, so far, significantly lower than the ones we observed in previous comparable episodes. Macroeconomic policy has a lot to do with this. Let me now refer to what I call a new set of instruments and their consequences for monetary policy.

So far I have assumed that dealing with financial stress involves only “traditional” instruments. But if financial stress is too severe, some unconventional actions may be in order. In particular, if financial stress damages financial intermediation substantially, the channels through which “traditional” policy responses operate will be shut down. This is a “financial crisis”: a severe disruption of intermediation in financial markets.

The policy response in this case is going to depend crucially on the type of financial market we are operating in. During the recent financial crisis, we saw direct interventions of some central banks in financial markets. This direct policy intervention has been called credit policy. Given that financial intermediation is severely impaired, central banks have stepped in to replace private financial intermediaries. In this way, central banks avoid a collapse of the economy and the self-reinforcing forces of deflationary spirals. In economies where banks are the most important financial intermediaries, credit policy may be less effective. That may be the reason why in some emerging market economies, state-owned banks apparently played an important role in mitigating the recent crisis. And also why in the past, a common policy action following a financial crisis was to intervene private banks.

Coming back to credit policy, this policy has resulted in a significant increase in the balance sheets of central banks necessary to finance those operations. This increase in the balance sheets of central banks (reserves) has been pointed out as a source of inconsistency with future price stability. Increasing interest rates to secure price stability in the future will require undoing those operations, which could threaten financial stability. But central banks that are facing this challenge have an instrument that may be very useful in this situation: they have the ability to pay an interest rate on those reserves different from the monetary policy rate. This additional instrument should be enough to secure a smooth exit from their current situation without affecting price stability (see Cúrdia and Woodford, 2010). Again, price stability and ex-post financial stability are mutually consistent.

Nevertheless, some analysts have argued that if some unconventional policy interventions have been too extended, price and financial stability may not be consistent from an intertemporal perspective. In effect, some dimensions of unconventional monetary policy, in particular credit policy, involve a fiscal dimension. It has been argued that those fiscal aspects are likely to threaten monetary policy independence and therefore jeopardize price stability (Goodfriend, 2010). Although these concerns are relevant, I think that the key solution to them will be strengthening independence of central banks and generating a more resilient financial system as discussed before.

Let me close by addressing the conditionality statement that I made regarding dealing with financial shocks and price stability a while back. In the past, some emerging market economies were incapable of implementing countercyclical monetary policy. The reason was that a countercyclical policy implied a depreciation of the exchange rate, which was perceived as destabilizing. In effect, if liabilities are denominated in a foreign currency due to some ex-ante inflexibility in the exchange rate, and if the exchange rate pass-through is high due to poor credibility of monetary policy, a depreciation of the exchange rate increases inflation and reduces output. How vulnerable the economy is (in terms of a currency mismatches and exchange rate pass-through in this example) will make a big difference in terms of the policy response. In a

similar vein, ex-ante financial stability is crucial to reduce the vulnerability of the economy to shocks. It will be also crucial in reducing financial fragility.

Final Remarks

The world economy enjoyed a prolonged period of stability—with significant associated benefits—until the global financial crisis erupted. While it lasted, growth was high and stable, and inflation was low. However, this period of stability also encouraged financial markets to engage in an excessive search for yield without proper risk management. Such periods, where the job of monetary policy becomes easier, pose an important challenge to policymakers, regulators and the private sector to carefully monitor the build up of financial vulnerabilities.

In emerging markets we have lived through periods of bonanza that have led to severe imbalances that eventually culminated in costly crises and economic adjustment. Now it was the turn of industrial countries. We have learned the lessons, and our challenge now is to restore prosperity with more resilient financial systems. Central banks have an important role in this endeavor.

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