Monetary policy has played a major role in the run up to the financial crisis

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The thesis that I will present you today draws from an article that I published in "Central Banking" at the beginning of 2010. It was the result of a reflection and work that I had embarked upon several years ago.

At the time, the article received almost no reaction. But over the last ten years or so a number of economists have also been writing on the subject. And central bankers have lately started to pay attention to the linkages between monetary policy and asset bubbles. Furthermore the recent establishment in Europe and in the US of Systemic Risk Councils entails for central banks the duty to analyse permanently macro economic and financial risks and to make recommendations (including on monetary policy matters) in order to prevent the recurrence of crises like the one we are been living through and that has had so dramatic negative consequences in terms of growth, employment and fiscal policies.

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A number of central bankers and their economic advisors tend to consider that monetary policy played little or no role in the run-up to the crisis. On this view, the financial upheaval was mainly the result of an external macroeconomic shock, made worse by the imprudent behaviour of some financial institutions.

Their argument can be summarised as follows:

- inflation (C.P.I.) has been low and stable over the years; therefore, the fundamental objective of monetary policy (price stability) has been achieved;
- the financial crisis was basically the result of "excess savings" and balance-of-payment surpluses of major emerging economies. This caused the surge in housing and other asset prices, and enabled the US current-account deficit to be financed. The excess liquidity created by these imbalances was not caused by monetary policy;
- another factor that explains the crisis is the behaviour of a number of financial institutions (in particular "non banks", hedge funds, investment banks ...) that went too far in leveraging their capital.

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I.I believe this argument is seriously misleading and that the explosion of credit - which is a monetary phenomenon - was a major factor behind the crisis

For example, the ratio of US private sector debt to GDP skyrocketed from 112% in 1976 to 295% in 2008. In Britain, the ratio of households' mortgage debt to disposable income has surged from 80% in 1991 to 140% in 2008. In the United States, credit expanded by around 10% to 15% per year from 2004 to 2008 when economic growth in nominal terms was around 5% (the corresponding figures for the eurozone are 8 % to 10 % for a nominal GDP growth of 4 %).

This explosion of debt was bound to have monetary consequences. "Loans create deposits" as the textbooks used to teach us. Many central banks - and in particular the Federal Reserve which allowed real interest rates to hover around zero for several years - pushed up credit expansion which, in turn, impacted on the monetary aggregates.

On the external front, we know - from the research done by Jacques Polak in the 60's - that it is the evolution of net domestic assets (credit to the economy and to the public sector) that is the main determinant of current-account imbalances.

So, given the importance of credit for both domestic and external monetary stability, it is something of a mystery that central banks don't seem to have paid much attention to it as an indicator, even though traditionally credit growth has been a major element in the analysis and tool box of monetary policy-makers. At the very least, the magnitude of the credit bubble should have raised questions about the adequacy of monetary policies.

Central bankers' response to this view goes something like this: "as inflation (CPI) remained subdued, it would have been irresponsible for us to tighten our policies and increase interest rates at the risk of curtailing economic growth and increasing unemployment". But the implication of such an answer would be to limit the operation of monetary policy to the achievement of a strict concept of inflation targeting - prices of goods and services - (or of a "non-inflationary potential growth targeting" as was the case in the United States).

Now, after the crisis has struck and left massive casualties in its wake (US: - 4,5% shift of GDP between 2007 and 2009 and close to 10% unemployment), even the most convinced defenders of central banks' past policies should concede that it would have been appropriate to monitor the credit indicators more closely and act upon them. In any case, they agree on the proposal for a "systemic risk council" in order to avoid a repetition of past experience. Some even tend to agree that if regulatory instruments prove insufficient, monetary policy could be used as a supplementary tool.

At this point of the analysis, I would like to stress five of the "monetary" aspects of the credit bubble:

- The expansion of credit which fueled domestic demand was a powerful contributor to the increase in asset prices. Furthermore, high asset prices produce wealth effects which, in turn, fed into the credit bubble (the richer you believe you are, the more you are tempted to borrow especially when the banking sector - as it was particularly the case in the United States and Britain - is able to "extract value" from rising housing prices). Strong risk appetite in an environment of low interest rates led to a deterioration of risk quality, to a weakening of due diligence and to very thin spreads. Further, the adoption of "mark to market" accounting compounded the surge in asset prices and its wealth effects, since "paper" profits and valuations increased in "good times" and gave the impression that collateral was plentiful and of good quality.
- Low US interest rates (which were even negative in real terms from late 2002 to mid 2005) generated a perverse process: the lower the rates the more risk was taken. Therefore the probability of a crisis increased. The crisis, when it broke out, required, in turn, low interest rates to preserve the financial system. This has been called the "low interest rate trap"[1].

[1] See Franceso Giavazzi – Alberto Giovannini. July 19, 2010 (© vox EU)

- The systematic pegging to the US dollar of a number of currencies of structural surplus countries (China, Middle Eastern countries, etc.), entailed a significant increase in liquidity and has resulted in lower interest rates. No one could deny that intervention on the foreign exchange markets is a monetary policy decision. The International Monetary Fund and its shareholders have allowed the massive accumulation of excess dollar denominated reserves by surplus countries, thus condoning the consequent surge in international liquidity.
- Deregulation and financial innovation have allowed financial institutions (particularly investment banks and hedge funds) to increase their leverage [2]. The abuse of off-balance sheet operations (SIVs, conduits, etc.) and of securitization of complex and opaque products significantly contributed to the expansion of credit. For a given amount of regulatory capital, these institutions could lend much more by accelerating the "rotation" of their own funds and getting off their balance sheets the loans they had extended to their clients. The conjunction of an easy monetary policy and weak regulation favoured the expansion of financial products (like Adjusted Rate

Mortgage - A.RM.) with rates indexed on short term low interest rates. This considerably increased the transmission channel of monetary policy and contributed to the crisis.

- "Credit bubbles" (like the housing bubble that the US experienced in the years 2000) "can be much more detrimental than the bubbles that are not financed with debt such as the internet bubble"[3] . The banking system had come to rely increasingly on wholesale funding and on the "shadow banks" which could increase their leverage without regulatory constraints. As a result, a large part of the credit bubble was financed on a very short term basis (essentially overnight collateralized loans). As long as asset prices were up, firms could easily borrow given the higher value of their collateral. But this increase in borrowing led to overcapacity in the economy which eventually resulted later in a sharp downturn. When the cycle reversed, the "loss spiral" had enormous amplification effects. Indeed, investors, as soon as the value of their assets tumbled, saw their net worth collapse, and hence, their ability to borrow dwindle. They were left with one alternative: reduce their positions by selling assets when prices were falling. To make things worse, margin calls and haircuts started hurting investors when asset prices declined and forced them to sell, which in turn depressed assets further and increased margin calls.

One can understand, given the high leverage of US investment banks in particular, how much the financial system got into debt (i.e. in the US, from 1978 to 2008, the net debt of financial institutions related to GDP soared from 16% to 121%). Thus the terrible consequences resulting from the vicious cycle just described. Can one reasonably argue that the five monetary issues that I have just analyzed have nothing to do with monetary policy and with the responsibility of central banks?

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When liquidity and credit surge in an environment of low interest rates while the C.P.I. remains stable (in large part because of the low wage costs associated with imports from emerging countries) and as exchange rate flexibility can no longer play its role as a safety valve, the only outlet is the increase in asset prices. The bubbles were a natural accompaniment of low interest rates and of an inappropriate and asymmetric monetary stance. Indeed, monetary policy was eased to avoid a downturn with far greater speed and decisiveness than were displayed during periods of gradualist tightening when the economy was overheating. This was an invitation to moral hazard, since it created the expectations that central banks would take remedial policy action if asset prices were to fall [4].

One illustration of this asymmetric approach to monetary policy is the liquidity injection by the Fed to prevent a feared, but mistaken, deflationary tend in 2002. This overreaction produced a massive demand bubble [5] .

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II. To avoid the repetition of such events, central banks will have to start again monitoring the expansion of credit and therefore bubbles.

The objective is certainly not to "target" asset prices. Central banks cannot, of course, determine the "right" value of assets. This "targeting" objective is often presented, by those who defend the Central Bank "status quo", as if it were the alternative solution. This is, in part, aimed to discredit the idea that we need central banks to react sufficiently early on to emerging bubbles.

The objection is often that central bankers are not in a position to identify a bubble.

This seems to me to be a particularly weak argument. You did not need to determine scientifically the "right" value of, for example, houses in the United States in 2005-2006, to know that there was an excessive rise in prices. Everybody knew it. We certainly knew it better than we could forecast inflation or output gaps which are considered as "normal" judgements to be made by central banks. The National Bureau of Economic Research has recently published a paper [6] that shows how "rising home prices, falling mortgage rates and more efficient refinancing ... lured masses of homeowners to refinance their homes and extract equity at the same time, increasing systemic risk in the financial system". The paper establishes that these three trends have explosive results when they occur simultaneously. It shows "that home equity extractions alone can account for the dramatic increase in systemic risk posed by the US residential market, which was the epicentre of the financial crisis of 2007-2008".

What should central banks do under such ominous circumstances? Should they remain inactive? Wait for the burst and then "mop up" the mess by reflating? On the contrary, I believe that they should "lean against the wind" and that they can use different policy options to that effect.

1. They should lean against the wing to "improve macro-economic performance by reacting systematically to asset price misalignments, over and above their reaction to inflation forecasts and out put gaps" [7].

The reason for this view is that asset price bubbles create distortions in investment, consumption and inflation thus leading to excessive increases and then to severe falls in both real output and inflation [8].

Monetary policy can smooth and moderate these excesses and fluctuations through interest rate actions. My view is that a central bank would achieve a better performance if it encompassed in its

[2] Traditional controls on credit expansion by central banks were eliminated in the 70's and 80's. In 2004, US investment banks were practically exempted from leverage ratios. This decision played a major role in credit expansion.

[3] See Markus K. Brunneheier: "Bubbles, Liquidity and the Macroeconomy", NBER reports - n° 2, 2010

[4] See the "Geneva Report". Centre for Economic Policy Research and International Centre for Monetary and Banking Studies, 2000

[5] See Stanford Prof. John B. Taylor "Getting off track: how Government Actions and Interventions caused, prolonged and worsened the Financial Crises". Prof. Taylor states that there "in clear evidence of monetary excesses during the period dealing up to the housing boom".

[6] NBER: "Systemic Risk and the Refinancing Ratchet Effect", working paper n° 15362, by Amir Khandari, Andrew Lo and Robert Merton. See NBER Digest. December 2009.

[7] See Sushil Wadhwani: "Should monetary policy respond to asset price bubbles? Revisiting the debate", SUERF Colloquium, Munich, June 12, 2008

[8] See IMF, 2003 – World Economic Outlook

inflation targeting process the evolution of asset prices and not only CPI inflation and output gap.

One should have in mind that the cost of bubbles can be very high. The IMF has estimated on the basis of past experience that housing busts take on average 5 years to get normalized and are associated with output losses that can reach 8% of GDP.

Since asset prices variations do impact inflation and are the reflection of inflationary expectations, and given that central banks objective in to limit inflation, why should not they take into account asset price inflation in their policy tools?

2. Central banks can use different policy options:

a) adopt a less accommodative monetary policy. This can provide the market the right signals, make more credible the anti-inflationary stance (in its most comprehensive definition) and thus help to anchor future price expectations. If the market knew "ex ante" that monetary policy will react to emerging asset price bubbles, this might reduce the possibility of bubbles.

b) Adopt regulatory measures to moderate credit expansion in general or in specific sectors (i.e. setting dynamic provisioning, increasing reserve obligations, setting more stringent rules regarding loan to value ratios, etc). These could be used either as an alternative to a) or as a supplement to it.

Some might object that a) is too blunt an instrument to prevent a bubble from bursting and that regulatory measures are not always within the competence of central banks. These arguments are not convincing: interest rates should be used when needed to lean against the wind, and regulatory measures should be promoted by central banks if they are required to prevent financial instability. This is why the Report on the reform of the European supervisory system has proposed the creation of a "Systemic Risk Board" grouping the EU Central bankers and supervisors to detect early enough systemic risks and to propose precise measures (including regulatory ones) to deal with them [9].

Lastly, some may argue that if central banks were responsible not only for price stability but also for financial stability, this could entail conflicts between the two objectives and could weaken their main mission (price stability) or even their independence.

I believe, in the light of what has happened over the last two years that this is not a convincing argument.

Firstly, central banks have traditionally been in charge of both missions. The practice of the last ten years should not lead us to forget basic historical facts. Furthermore, a number of central banks are in charge of micro-supervision of banks. Secondly, bestowing on central banks and regulators the responsibility of acting to prevent financial crises can only strengthen their authority (and independence). And lastly, let us consider the monetary consequences of not acting to prevent bubbles. We have seen:

- The wealth effects of asset prices and the consequence of excessive credit expansion: they have, by themselves, contributed to over capacity, to output volatility and eventually undermined the foundations of a stable financial system (the ongoing deleveraging process will have major negative economic consequences especially in the most indebted economies like the US and the UK). Would it not have been wiser to tighten earlier - which, no doubt, would have entailed some pain - rather than let the enormous credit bubble expand and burst, thus resulting in a deep recession and in a surge in unemployment which seem incommensurate with what would have happened under the hypothesis of an earlier tightening?
- Once asset prices started to fall, the whole financial sector almost collapsed: enormous injections of central bank liquidity - short and medium term - and of public support were needed. We see how difficult it is for central banks to start thinking of an exit strategy. Is that massive intervention and "quantitative easing" policy consistent, in the longer run, with monetary stability? Some fear that inflation will come back when the huge liquidity created finds its way into the financing of the real economy. Some believe that the present degree of slack points more toward the risk of deflation. The fact that these expectations are so different poses a new challenge to central banks and to their credibility.

All in all, there seems to me little doubt that monetary policy contributed significantly to the emergence of the crisis.

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Thus time has come to question the monetary policy "operational model" that has prevailed over the last ten to fifteen years. Its basic principles have been tested throughout the crisis and have not, in my view, withstood the test.

It is somewhat paradoxical that in a world of increasing financial complexity, central banks have tended to oversimplify their operational policy. One single and narrowly defined objective has prevailed (with some limited variations): CPI targeting. One single policy tool has dominated: the use of official interest rates. And a blind eye has been turned by most to credit expansion and to the surge in asset prices. Actually, extracting value from high asset prices has become a main instrument for some important policy-makers to sustain growth. We have seen the dangers (destruction of value and generalised recession) of such artificial methods. I would also underline that this "consensus" on monetary policy is rather recent and that the history of central banking provides a host of more comprehensive objectives and operational tools.

In this regard, one can observe that "inflation-targeting" as it has been practised, was based on two to three years CPI forecasts. This short term horizon resulted in giving an insufficient weighting to price misalignments which are at the root of asset bubbles.

Contrary to the so-called "consensus" and avoiding any dogmatic approach, I consider that:

- financial stability should be part and parcel of the objective of promoting stable monetary conditions;
- asset bubbles can be recognized and eventually acted upon by central banks [10];
- credit expansion should be closely monitored, and moderated when needed;
- when action is to be taken, the earlier the better;
- actions and tools should be multifaceted (interest rates, reserves, changes in regulation, etc). In this regard, loan to value ratios are powerful tools to prevent excessive credit expansion;
- anchoring inflationary expectations on a long-term horizon is crucial, and
- introducing an anticyclical dimension in monetary policy (i.e. "dynamic provisioning" in good days to be run down in bad ones).

Nothing of this would or should lead to a weakening of central banks independence. On the contrary, providing central banks with a more comprehensively defined stability mandate could only enhance their credibility.

[9] The high level Group on Financial Supervision on the EU chaired by J. de Larosière, Brussels, February 25, 2009.

[10] Asset prices that are significantly higher than "fundamentals" (i.e. the present value of probable future cash flows) are a sign of inflationary expectations. Central banks should try to prevent or limit such misalignments so as to improve macro economic stability and limit the size of future market corrections.

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The theme that underlies this analysis is that financial institutions play a fundamental role in the transmission mechanisms of monetary policy. However, monetary policy-makers were not prepared, either analytically or operationally, to prevent or moderate the excesses of credit expansion that eventually brought the system down.

A large number of banks - with the prevailing anglo-saxon "Originate and Distribute" model - were providing investors with opaque and poorly understood financial products whose ratings by credit agencies were meaningless. This supply of complex financial products was met by an ever growing demand of investors whose liquidity was plentiful, in particular because of massive international imbalances and low interest rates. Through the securitization process, banks could "re-use" their capital to originate and distribute again [11]. Very low interest rates had therefore a much stronger transmission effect than in the past when global imbalances, securitization of complex products, financial globalization and the existence of a vast shadow banking system were non-existent or lesser.

The consequences were inevitable: the more liquidity was abundant, the easier was the short term funding - through interbank and commercial paper markets - for institutions (banks, mutual funds, pension funds, hedge funds, etc) that engaged in investing in these complex financial products.

The tide was irresistibly mounting while central banks were focusing on CPI inflation.

It is noteworthy that economists had studied with care and precision the dangers of the "credit channel" in the Great Depression years. They had rightly pointed out that banks could be major transmitters and "shapers" of monetary policies: banks could tighten their loans because of upcoming defaults, because of high credit risk of borrowers, and therefore because of high cost of capital.

Why then didn't those economists pay more attention, during the boom years, to the reverse but symmetrical risks involved in the behaviour of financial institutions? Their profits were artificially inflated by accounting standards, their leverage and risk appetite were high in a context of low interest rates, and concerns on the credit risk of borrowers were reduced as securitization was supposed to "spread" the risk around.

The credit transmission channel was in fact much more powerful than assumed. Indeed it was paralleled and compounded by the increasing leverage of certain financial institutions (investment banks especially in the US, hedge funds, etc.) that behaved as banks (transforming short-term market funding into longer term assets) but were not subject to as stringent a regulation as banks were. The result was an enormous regulatory arbitrage towards hedge funds, off-balance sheet vehicles, SIV's sponsored by banks but, in theory, independently managed ...

These "parallel banks" turned out to be "accelerators" of credit expansion and, consequently, contributed to loosen monetary conditions. Most of them had little capital and were over-leveraged. The collateral they provided to their lenders was in many cases of dubious quality (CDO's were often accepted).

When the markets eventually understood that real estate prices were coming down, the whole structure crumbled. The shameful US practice of granting subprime mortgage to borrowers who were known by brokers as well as bankers and supervisors as unable to service their loans, became public. The financial products based on subprime mortgages - products that had been granted Triple A ratings by inept rating agencies - suddenly were seen as what they were: i.e. worthless. Banks and hedge funds suddenly lost their short-term funding and many did not have either the capital or the liquidity to survive. Those banks which had been imprudent had to be rescued at a great cost for tax-payers, and hedge funds were severely hit while they compounded (through the sale of their assets) the fall in markets. Securitization almost disappeared. Far from constituting an institutional buffer against falling markets, as they often had in the past, financial institutions had become so dependent on financial markets that they were the first to be impacted by the fall in asset prices and to exacerbate the market downturn.

Thus the old "negative" channel reappeared as in the 30's. But no one had really struck the alarm bell in the years of over-extension.

What explains this asymmetry? Is it the Great Moderation in inflation? Is it the illusion that markets would never fail? Is it the obsession of deflation that appeared a few years ago? Is it because of the implicit belief that cycles had disappeared and that productivity gains would ensure, forever, high and non-inflationary potential growth?

The least one can say is that the great recession with its millions of unemployed, its thousands of billions of bailouts, its spectacular rise and deterioration of central banks balance sheets, cannot be lightly discarded as the result of some external accidents. Tough questions have to be answered by policy-makers, governments, central banks, regulators, supervisors as well as by financial institutions. It is essential that they address the real causes of the crisis (major international imbalances, inadequate monetary policy in the context of asset price bubbles, excessive credit expansion, insufficient professionalism of supervisors, procyclicality of prudential regulation and accounting rules, insufficient liquidity, excessive leverage of major investment banks and of hedge funds, poor governance often leading to herd behaviours, short term biases and incentives, etc.) and that central banks get really involved in financial stability, so that the huge and unacceptable moral hazard problem that has plagued the world does not happen again.

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Are the present efforts to reform the system adequate? They are certainly, in many respects, a step forward in the right direction. But the emphasis on increasing capital buffers in the banking system seems to me somewhat misplaced. Insufficient capital was not, by far, the major cause of the crisis. Poor supervision and liquidity were the real problems and they must be addressed in a coherent way without jeopardizing the vital intermediation and transformation function of the banking system. More attention should be devoted to the likely expansion of the shadow banking system that will take advantage of the increasing capital constraints of the regulated banks. And without a comprehensive international macro economic surveillance, imbalances will continue to flourish......

In this respect, macro prudential oversight should play its full role in warning governments and markets about nascent deviations or bubbles. Let us hope they will fulfil their mission with independence, competence and forcefulness. ■

[11] By 2007, out of about 24 trillion dollars outstanding credit in the US, securitised loans accounted for 41%, while loans on the banks books took up 35% and bonds 24% (source : IIF Capital Markets Monitor, February 2010).