

# Lessons from the crisis : Monetary policy and financial stability

L. Aucremanne  
S. Ide

## Introduction

This article examines the link between monetary policy and financial stability in the context of the recent financial and economic crisis. It aims to draw lessons from those recent events and to examine the implications for monetary policy. More specifically, it asks whether, apart from its price stability mandate, monetary policy should play a more significant and pro-active role in safeguarding financial stability. The underlying motive behind that discussion, focused on the respective aims of price stability and financial stability, is of course to investigate how monetary policy could best contribute towards the performance of the macroeconomy in the broad sense.

This question has recently formed the focus of numerous publications and speeches by well-known researchers and/or policy-makers<sup>(1)</sup>. This reveals that it is clearly too soon to draw definite lessons, and that there is as yet no post-crisis consensus on monetary policy, whereas before the crisis a consensus had emerged among central banks and academics in recent decades. The link between monetary policy and financial stability is currently the top priority of both theoretical research and more practical research conducted by central banks and the academic world, and that is likely to remain so in the coming years. It is therefore obvious that only provisional lessons can be drawn at the moment.

The layout of this article is as follows. The first section discusses the so-called pre-crisis consensus on monetary

policy. The second section looks at the lessons which can be drawn from the crisis and examines to what extent they have cast doubt on the pre-crisis consensus. The final section sets out the conclusions.

## 1. The pre-crisis consensus on monetary policy

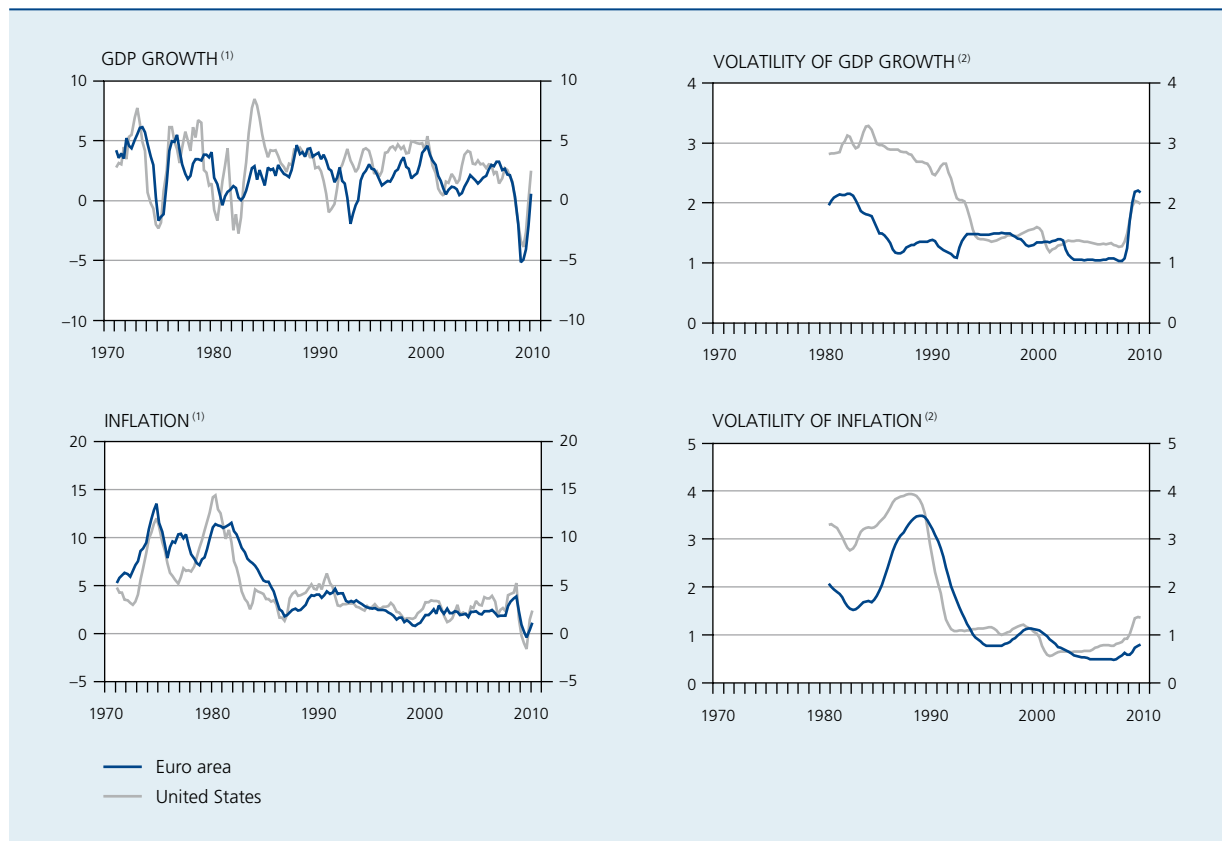
This section starts by considering the main economic developments of recent decades, since they form the background against which the pre-crisis consensus on monetary policy has emerged. It then reviews the main elements of that pre-crisis consensus and examines in more detail the specific link between monetary policy and financial stability. Finally, it comments briefly on the Eurosystem's monetary policy strategy in that context.

### 1.1 From "Great Inflation" to "Great Moderation"

In recent decades, the monetary policy debate has focused mainly on the link between inflation and economic activity, while the issue of financial stability or instability has taken a back seat. The reason probably is that, in the period following the Second World War, the advanced economies did not really encounter any serious financial crises; as demonstrated by the work of Reinhart and Rogoff (2009), that is in stark contrast to the scale of the pre-war financial turbulence and the extent of the recent global financial crisis. Conversely, inflation and growth were more volatile, especially when – in the 1970s, following the oil shocks and monetary policy decisions which later proved inappropriate – inflation accelerated sharply

(1) Notably Bean (2009), Bernanke (2010), Bini Smaghi (2009), Blanchard et al. (2010), BRI (2009a), Cecchetti, Disyatat et Kohler (2009), Kohn (2009), Goodhart (2009), Papademos (2009), Taylor (2007) and Trichet (2009, 2010), ...

**CHART 1**      **MACROECONOMIC FLUCTUATIONS SINCE 1970**  
(quarterly data)



Sources: Fagan et al.(2005), Thomson Reuters Datastream, OECD.  
(1) Percentage changes compared to the corresponding quarter of the previous year.  
(2) Standard deviation over moving periods of 40 quarters.

both in the United States and in most of the countries which would later make up the euro area. By the early 1980s, a policy of disinflation had been introduced. Experience had indicated that tolerating inflation had not promoted more sustained economic growth or falling unemployment, but instead had derailed inflation expectations and caused monetary instability, which in turn had had negative repercussions on growth and employment.

Moreover, that disinflation was accompanied by a marked decline in macroeconomic volatility. Since the mid 1980s, both inflation and economic growth have been less volatile than previously. That is why economists often talk of the “Great Moderation” (after the “Great Inflation” of the 1970s), a period of great macroeconomic stability which was suddenly interrupted by the recent financial crisis and the particularly severe recession which followed during 2008-2009.

There are several factors which could account for this “Great Moderation”. First, it could be simply attributable

to the fact that, during that period, the economy happened to experience essentially favourable macroeconomic shocks. It could also be due to structural changes in the economy, such as more flexible product and labour markets or better management techniques, e.g. in regard to stock management. Finally, a more efficient macroeconomic policy – and in particular a more efficient monetary policy – may also have helped to stabilise the macroeconomic environment. Opinions are divided on the relative importance of these explanations, but it was widely believed that a more efficient monetary policy had made a significant contribution. Over the years, in the macroeconomic context described above, a clear consensus on (good) monetary policy did in fact emerge. That consensus was based on the following elements.

### 1.2 Elements of the pre-crisis consensus

First, monetary policy-makers came to the understanding that the long-term pattern of inflation was determined by

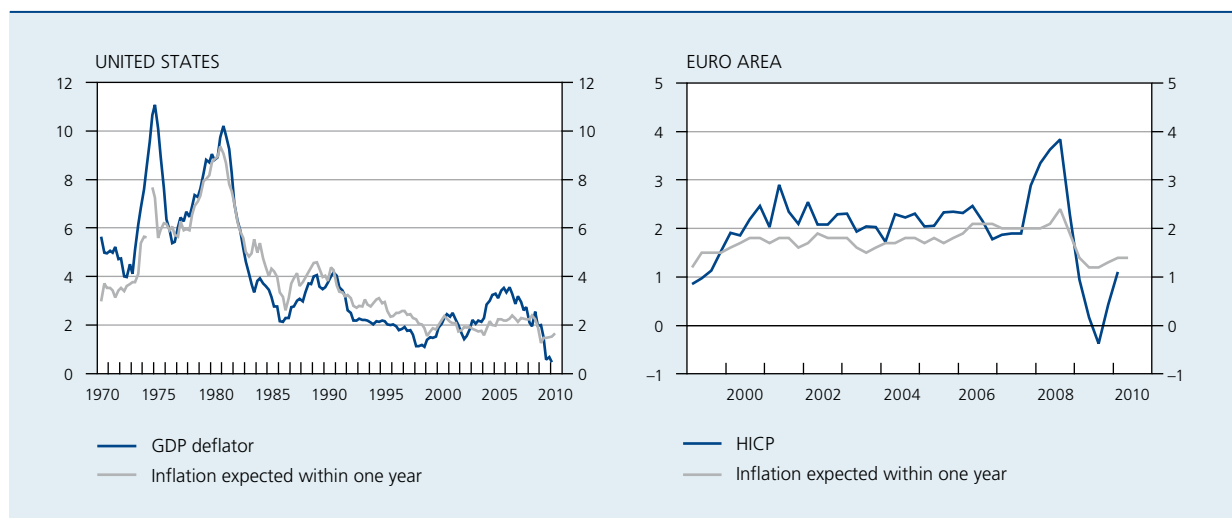
the prevailing monetary policy system. However, acknowledging that inflation is essentially a monetary phenomenon does not imply that real shocks cannot affect it. Shocks on both the demand and supply side of the economy have an impact on inflation, but the impact can be moderated if the central bank pursues a policy designed to stabilise inflation. However, if the central bank does not combat the inflationary pressure resulting from such shocks, but instead accommodates it, the impact will be considerably greater because of soaring inflation expectations. Thus, in all the advanced economies the first oil shock of the 1970s triggered a clear surge in inflation, although it was less marked in Germany precisely because monetary policy – even during that period – was aimed more at maintaining price stability. Today it is commonly assumed that monetary policy steers the long-term pattern of inflation, so that it should preferably aim at price stability.

A second element of this consensus on monetary policy is the idea that price stability does not have a cost in terms of economic activity, at least in the long term. It is in fact real – and not nominal – factors that determine economic growth and employment in the longer term. That is why the attempts of the monetary policy-makers in the late 1960s and in the 1970s to stimulate growth by paying the price of higher inflation were unsuccessful. What is more, such a period of monetary instability and high, volatile inflation has adverse consequences in terms of growth and employment owing to the rise in risk premiums, the distorted price signals and the resulting arbitrary distribution of incomes. The advantage of aiming at low and

stable inflation lies precisely in the prevention of those distortions. Thus, the understanding became widespread that the best way for monetary policy to contribute to sustainable economic growth was by guaranteeing price stability. Nevertheless, this emphasis on price stability does not mean that central banks are totally impervious to other economic considerations. Most central banks pursue some form of “flexible inflation targeting” (terminology taken from Svensson, 1999). Apart from the emphasis on the main aim of price stability, in the short term they take account of other considerations, such as developments in economic activity. The aim is to avoid the excessive volatility in economic activity and nominal interest rates which could accompany “strict inflation targeting”. While the dual aims of price stability and sustainable economic growth in the long term are not contradictory, and are even complementary, monetary policy may in fact face dilemmas in the short term, e.g. in the case of supply shocks, and a gradual response is often advisable.

A third element of the pre-crisis consensus on monetary policy is the major role played by inflation expectations in the inflation process. Economic agents are forward looking when setting prices and wages, thus taking account today of expectations regarding inflation in the future. The central bank’s credibility in regard to the maintenance of price stability is therefore crucial. For instance, the excess inflation of the 1970s led to higher inflation expectations, whereas the disinflation seen in the 1980s initially brought only a very gradual decline in those expectations. At first, there was little faith in the central

**CHART 2 INFLATION EXPECTATIONS**  
(percentage change compared to the corresponding quarter of the previous year)



Sources: Thomson Reuters Datastream, Federal Reserve Bank of Philadelphia Survey of Professional Forecasters, ECB Survey of Professional Forecasters.

bank's promise to reduce inflation, so that inflation expectations exceeded observed inflation for quite some time. That complicated the task of monetary policy in regard to price stability: a more restrictive policy was needed, and that had a short-term cost in terms of economic activity. In sharp contrast, during the past decade inflation expectations have remained firmly anchored because the monetary authorities have pursued a credible policy aimed at price stability. As a result, inflation expectations in the United States hardly increased at all in the wake of the rising inflation experienced in 2005-2007. In the euro area, for which long time series on inflation expectations are not available, inflation expectations also remained firmly anchored during 2007-2008, whereas the increasing commodity prices triggered a sharp surge in inflation. In both the United States and the euro area, the marked fall in inflation during the crisis also had only a limited impact on inflation expectations.

It is precisely because credibility and inflation expectations are so crucial that much importance is nowadays accorded to the institutional aspects of monetary policy. A fourth element of the pre-crisis consensus therefore concerns the creation of a framework forcing the monetary policy authority to concentrate on the aim of price stability. That fosters credibility, leads to better anchoring of inflation expectations, and ultimately facilitates the stabilisation of inflation. The establishment of such a binding framework is the practical reflection of the lessons drawn from the "discretion" versus "commitment" debate in the literature<sup>(1)</sup>. There are several important factors here. The existence of an explicit mandate – maintaining price stability – is one. In addition, many central banks have translated that mandate into a quantitative inflation target, offering a nominal anchor for inflation expectations and encouraging accountability. The adoption of a clear strategy with regular central bank communication on the subject means that the policy also becomes more predictable and therefore more effective, since it thus becomes easier to steer expectations. However, that transparency and predictability do not mean that monetary policy is implemented mechanically according to some rule: although the decisions conform to a clearly stated strategy, the policy-maker still has some discretion and can therefore be flexible in implementing the strategy. In reality, the economy is far more complicated than the highly simplified economic models demonstrating the superiority of the "commitment" approach, so that the policy-maker needs to have a degree of flexibility. Practical experience has also shown that the central bank should

preferably be independent in the exercise of its mandate. That also enhances credibility, though the central bank must still be accountable for its actions and motivations. That is the only justification for a high degree of independence. Moreover, the obligation to render account permits clarification of the strategy pursued.

### 1.3 Monetary policy and financial stability in the pre-crisis consensus

Before the outbreak of the crisis, a fairly broad consensus had also emerged in regard to the link between monetary policy and financial stability. Thus, it was generally accepted that by guaranteeing price stability, monetary policy was making a considerable contribution towards the maintenance of financial stability, for example by reducing the risks associated with financial contracts, which are generally concluded in nominal terms. Preventing deflation also promotes the maintenance of financial stability, since it avoids a significant increase in the real burden of existing debts. The greater predictability of monetary policy may equally help to maintain financial stability since it makes it easier to estimate the likely impact of certain financial decisions, such as the conclusion of a variable rate mortgage loan. Conversely, financial stability was regarded as a key – if rarely binding – constraint for monetary policy, since financial instability can seriously disrupt the monetary transmission mechanism. Since that transmission mechanism had hardly ever been disrupted by a serious financial crisis in recent decades, that aspect had become a minor consideration in current thinking.

Despite the recognition of that long-term complementarity between the aims of price stability and financial stability, it was obvious from the start that while the pursuit of price stability was an essential aim, it could not be sufficient in itself to ensure financial stability. However, the dominant view did not attribute a more active role to monetary policy, but considered that financial stability must be achieved primarily by an appropriate prudential policy in terms of regulation and supervision. Yet it must be said that the consensus on that aspect was not as broad as the consensus on the role of monetary policy mentioned above, in regard to inflation and growth respectively. That debate centred largely on whether or not monetary policy should take account of asset prices, and if so, how and to what degree.

In that connection, the dominant view was that monetary policy-makers should take account of asset prices and other financial variables only in so far as they have implications for the future trend in activity and inflation over a period normally taken as relevant for monetary

(1) At first, the focus was on the inflation bias (Kydland and Prescott, 1977): "discretion" leads to higher inflation, but does not improve economic activity. Later, there was more emphasis on the stabilisation bias: "commitment" leads to a better trade-off in the short term between inflation stabilisation and stabilisation of the output gap (cf. for example Clarida, Gali and Gertler (1999)).

policy (usually little more than two years). It was only considered appropriate to respond if rising asset prices were accompanied by wealth effects which propelled growth and thus generated inflationary pressure. Asset prices and financial variables were therefore not aims in themselves, but merely ordinary variables in the broad range of indicators forming the basis of the central bank's growth and inflation forecasts. A more explicit response to a rise in asset prices beyond what was necessary to stabilise inflation – for example, to prevent the development of a bubble – was generally regarded as inappropriate. However, there were also divergent opinions on the subject. Various observers – such as Cecchetti et al. (2000), numerous publications by the Bank for International Settlements (BIS), White (2006), etc. – have shown that a central bank should really take account of asset prices and financial imbalances beyond their implications for inflation forecasts over a two-year horizon. They constantly warned against the serious macroeconomic consequences of the bursting of a bubble, including the impact on price stability, since deflationary pressure may develop in such circumstances. They therefore advocated looking beyond the usual horizon and curbing any strong surge in asset prices, a policy known as “leaning against the wind”. However, the dominant view was still that asset prices should not become a supplementary aim of monetary policy. In simple terms, that view was based on five main arguments<sup>(1)</sup>.

First, it is difficult to identify bubbles in real time. In principle, there appears to be no reason to assume that monetary policy-makers are in a better position to distinguish between rising asset prices caused by improved fundamentals and the formation of a bubble. While central banks have an accurate idea of the optimum level of inflation, that is not the case for asset prices.

Second, in the past, the bursting of a bubble has not always led to serious financial instability and major macroeconomic fluctuations. Part of the reason may lie in the aforesaid fact that financial instability was rarely a serious issue after the Second World War, at least not until recently, or that any bubbles which did occur appeared on less crucial markets. Moreover, there was the impression that a very accommodating monetary policy could largely limit the impact of a burst bubble on the real economy.

The third argument was that, once a bubble had burst, it was always possible to make drastic cuts in interest rates in order to limit the macroeconomic damage caused by the crash. This strategy of “cleaning instead of leaning” was therefore often applied in the recent past, and at first sight was reasonably successful, e.g. after the 1987 stock market crash and the bursting of the dotcom bubble, and

that strengthened the feeling that it was not really important for monetary policy to prevent bubbles.

The fourth argument was that the interest rate instrument is not very suitable for preventing financial imbalances. It was originally assumed that large interest rate adjustments are needed to prevent bubbles. Ordinary sized interest rate hikes are probably not very significant in comparison with the capital gains which investors expect in the bubble development phase. Moreover, interest rates are not an accurately targeted instrument, whereas the emergence of bubbles on particular markets might require a more specific approach. Finally, it is preferable to intervene at an early stage in the bubble, although that is precisely when it is most difficult to identify the bubble. Later, when the bubble is easier to detect, it is more difficult to tighten monetary policy because that could actually accelerate the bursting of the bubble and even intensify its adverse impact on the real economy. This implies that, according to the dominant view, “leaning against the wind” may have a high price in terms of macroeconomic volatility, at least across the usual horizon relevant for monetary policy, and is also difficult to implement in practice.

Finally, attention was systematically drawn to the fact that additional policy dilemmas would be created. For example, that is so if the central bank faces a favourable and persistent supply shock which causes inflation to fall, whereas that same shock may engender excessive optimism about the future on the financial markets, and could lead to a bubble. In that case, it is necessary to tighten policy in order to prevent the bubble, but in such circumstances inflation control actually requires an easing of policy. Moreover, such policy dilemmas hamper communication and may make the eventual decision less transparent. Furthermore, the independence of monetary policy may also be at risk because other policy areas such as regulation and supervision have a significant influence on financial stability. The maintenance of price stability thus becomes more complicated because the advantages outlined above of a simple but clear framework are lost, with possible adverse effects on the anchoring of inflation expectations.

#### 1.4 The monetary policy strategy of the Eurosystem in the light of the pre-crisis consensus

The monetary policy strategy of the Eurosystem is largely in line with the pre-crisis consensus outlined above. For instance, price stability is indubitably the primary objective of monetary policy. That is even expressly spelt out

(1) Cf. in particular Giavazzi and Mishkin (2006) for a fuller account.

in the Treaty on the functioning of the European Union. Furthermore, the Treaty also stipulates the independence of the central bank, and it states that monetary policy should support general economic policy in the Union, without prejudice to the goal of price stability. The aims of that policy include sustainable, non-inflationary growth and high employment. In regard to financial stability, the Treaty stipulates that monetary policy should contribute to the effective implementation by the competent authorities of the policy on prudential supervision of credit institutions and the stability of the financial system. Not only does that again indicate the priority of the price stability objective, but it also explicitly acknowledges that other institutions (supervisory and budgetary authorities) have a key responsibility in regard to financial stability.

The ECB Governing Council then defined a clear strategy for putting the price stability mandate into practice. That strategy first gives a quantitative definition of price stability, defining it as an increase in the HICP of less than but close to 2 p.c. in the medium term in the euro area. Both the aim of low inflation and the quantification of that aim are entirely in line with the pre-crisis consensus. The stipulation that stability is to be maintained in the medium term is also important, because it allows a degree of latitude in the short term to take account of other considerations – such as the prevention of excess volatility in interest rates or economic activity – and therefore permits a gradual policy response. The monetary policy strategy of the Eurosystem is also based on an analytical framework comprising two pillars: economic analysis and monetary analysis respectively, each being intended to detect risks to price stability at different horizons. This unique two-pillar strategy means that the Eurosystem pays explicit attention to financial developments, more so than other central banks. However, it should be noted that the monetary analysis was initially aimed at identifying risks to price stability rather than financial imbalances, since it originated from the long-term link between the trend in the money supply and inflation. Nonetheless, monetary analysis has gradually focused more on aspects of financial stability. Thus, on the basis of its monetary analysis, the ECB Governing Council repeatedly expressed its concern, during the years preceding the recent financial crisis, over the movement in property prices in certain euro area countries.

Like other modern central banks, the Eurosystem is open about its strategy and the way in which it is implemented: monetary policy decisions are explained in detail in the light of that strategy, setting out the justification for the policy pursued. As a result, monetary policy has become ever more predictable. In the first twelve years of monetary union, this has effectively stabilised inflation

at a level corresponding to the quantitative definition of price stability and ensured that inflation expectations are firmly anchored. The stabilisation of inflation was also accompanied by a high level of macroeconomic stability in the euro area, at least prior to the eruption of the recent financial crisis.

## 2. Lessons from the crisis

This section draws a number of provisional lessons from the crisis and examines the extent to which they cast doubt on the pre-crisis consensus on monetary policy. Of course, it is still too soon to draw definite lessons. Not only is the crisis not entirely over – in recent months it actually entered a new phase – but it will take time to analyse these experiences in depth. Yet some lessons are already fairly clear.

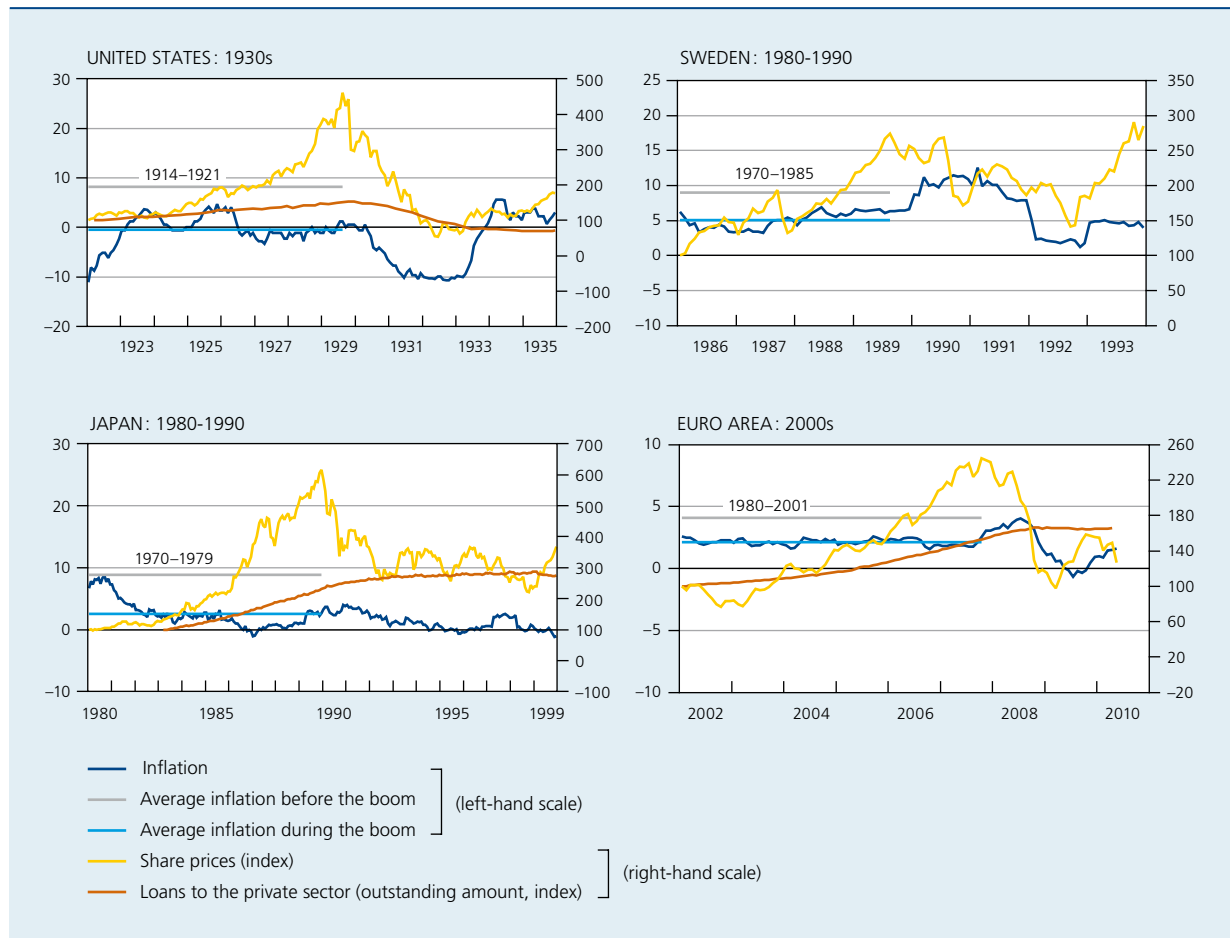
### 2.1 Price stability is not sufficient to maintain financial stability and macroeconomic stability in general

The recent financial crisis demonstrated that efforts to achieve price stability were necessary but certainly not sufficient in themselves to ensure financial stability. Although the pre-crisis consensus did not claim that the pursuit of low and stable inflation would always ensure financial stability, the importance of a policy specifically aimed at financial stability had faded somewhat into the background. In that regard, the experience of the recent crisis differs little from earlier periods of financial instability. During the run-up to a financial crisis, high inflation seldom appeared to be a problem; quite the contrary. That is evident from four periods in which substantial financial imbalances built up: the 1930s in the United States, the years 1980-1990 in Sweden, 1980-1990 in Japan and the current crisis for which data for the euro area are shown here. On each occasion it is evident that, during the bubble formation phase, inflation was relatively low, on average<sup>(1)</sup>. It is also notable that after the bubble had burst, inflation generally fell sharply, in some cases actually becoming negative. In other words, while price stability is not sufficient to prevent the formation of bubbles, the bursting of a bubble clearly generates deflationary pressure, and hence downside risks to price stability.

Moreover, in contrast to some of the assumptions in the pre-crisis consensus, the recent financial crisis clearly

(1) In regard to inflation during the period 1914-1921 in the United States, it must be said that it was probably influenced significantly by the First World War.

**CHART 3** PRICE STABILITY AND FINANCIAL STABILITY<sup>(1)</sup>  
(percentage change compared to the corresponding period of the previous year, unless otherwise stated)



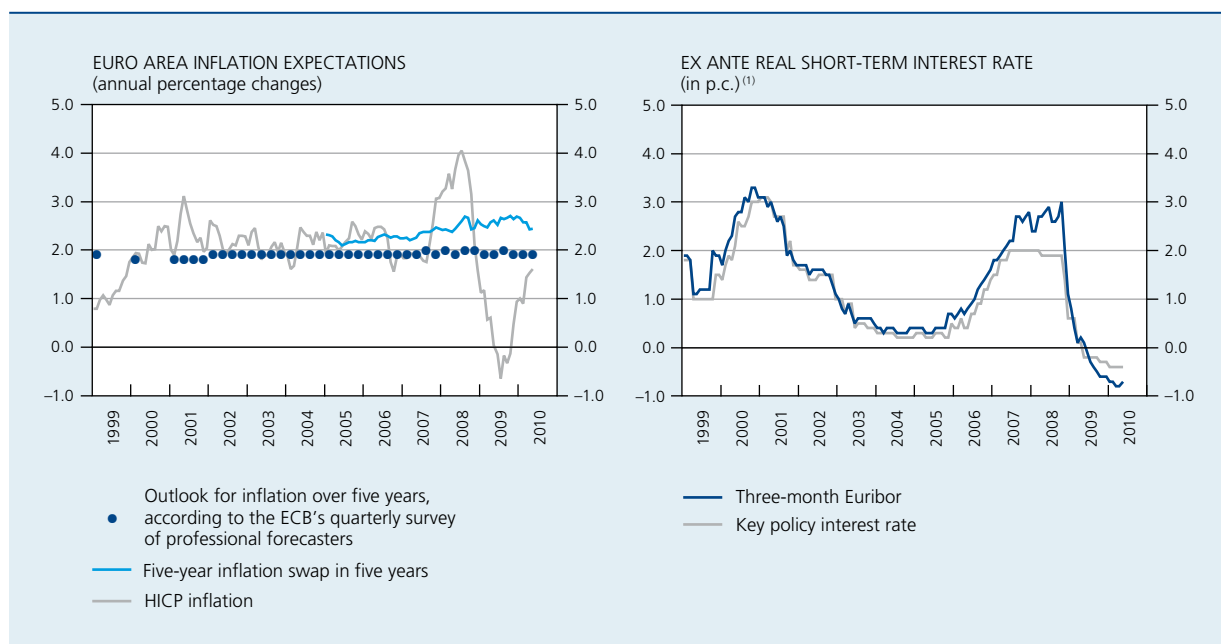
Sources: Bureau of Labor Statistics, Ohio State University, Thomson Reuters Datastream, Federal Reserve Board.  
(1) Inflation measured by the CPI. Share prices in the United States: Dow Jones, for Sweden: Affarsvarlden Index, for Japan: TOPIX, and for the euro area: Datastream Euro Share Price Index. Loans to the private sector are outstanding amounts recorded by the banks. For Sweden, no data are available on loans to the private sector for the period in question.

shows that under certain circumstances the bursting of a bubble can certainly create considerable financial and macroeconomic instability. That is also evident from historical research conducted by the IMF (2009): economic recessions accompanied by a financial crisis are on average more protracted and deeper than others.

The current crisis also shows that a fragile financial system can seriously disrupt the transmission of monetary policy. Moreover, managing the macroeconomic consequences of the bursting of a bubble can put a heavy strain on the monetary authorities: the two aspects go hand in hand because, in principle, any serious disruption of the transmission mechanism implies a need for stronger monetary policy impulses. During the post-war period, it was often possible to offset the macroeconomic consequences of financial crises by

drastic easing of the monetary policy interest rate, but the latest crisis has shown that, in certain circumstances, the traditional interest rate instrument may be rapidly exhausted and that central banks had to make extensive use of unconventional monetary policy measures in order to generate additional monetary impulses once short-term interest rates had reached their lower limit, on the one hand, and also to correct specific malfunctioning in the monetary transmission, on the other hand. Owing to its severity, this crisis also caused a substantial deterioration in public finances, a recurrent feature of serious financial crises, as is evident from historical research by Reinhart and Rogoff (2009). To sum up, in the immediate future there is little room for manoeuvre if the economic crisis were to take a turn for the worse. In regard to fiscal policy, the time has come to consolidate public finances,

**CHART 4** INFLATION EXPECTATIONS AND REAL SHORT-TERM INTEREST RATE IN THE EURO AREA



Sources: Thomson Reuters Datastream, Bloomberg and ECB.  
 (1) Interest rate deflated by inflation expected in one year's time on the basis of the ECB's quarterly survey of professional forecasters.

as is clear from recent developments on the market in government securities.

The idea that aiming at price stability would be sufficient to ensure macroeconomic stability proved to be an illusion. More specifically, it is evidently inadvisable to adopt a *laissez-faire* policy in regard to cumulative financial imbalances, and it is obvious that policy-makers should do more than simply limit the macroeconomic impact during a downturn. That is perhaps the most important lesson to be learnt from the crisis, but it does not necessarily mean that monetary policy itself should tackle the formation of financial imbalances, let alone take sole responsibility for that. It is in fact necessary to assess to what degree monetary and prudential policy respectively should be deployed for that purpose (cf. below).

## 2.2 Inflation expectations firmly anchored, even during the crisis

However, the above remarks do not imply that monetary policy geared to price stability made it more difficult to combat the macroeconomic consequences of the crisis. On the contrary, the firm anchoring of inflation expectations enabled the monetary policy-makers to respond appropriately. When the financial crisis spread to the real economy, and inflation fell sharply and even

became negative as a result of the decline in commodity prices, that steep fall in inflation had very little impact on inflation expectations. The reduction in the nominal key interest rates thus led to a marked fall in the *ex ante* real interest rate, which actually became negative. Since it is precisely the latter rate that is important for economic activity, a very expansionary monetary policy was therefore feasible. That would have been impossible if inflation expectations had been insufficiently anchored and had mirrored the decline in inflation. Such a downward uncoupling of inflation expectations is specifically one of the principal mechanisms triggering a deflationary spiral. Deflation would in turn have seriously hampered the ongoing process of debt deleveraging, and would therefore have placed additional stress on financial and macroeconomic stability.

For the future, it is therefore crucial to take full account of the need for effective anchoring of inflation expectations – one of the key elements of the pre-crisis consensus.

## 2.3 Recurrent patterns can help to identify financial vulnerabilities

The difficulty of identifying financial imbalances in real time has already been mentioned. That difficulty was one of the main arguments against the use of asset prices as



an additional monetary policy objective. Of course, that is equally true in the case of prudential policy. Nonetheless, recent research has revealed patterns which recur systematically in the run-up to a serious financial crisis. Moreover, the current crisis largely confirms those patterns.

It is not so much the actual rise in asset prices that causes a problem, but the combination with rapidly rising debt leverage. Historical analysis has also shown that the most damaging bubbles have been those concerning house prices<sup>(1)</sup>. The two aspects are closely linked. Although a sharp fall in both share prices and house prices leads to a substantial wealth loss, the impact on the financial system varies. Rising share prices are not generally accompanied by an increase in the debt leverage of households or institutional investors, so that the bursting of such a bubble does not directly threaten the financial system, and the macroeconomic implications are therefore confined to negative wealth effects for private consumption and a negative impact on investment resulting from the rise in corporate financing costs. In contrast, rising house prices are generally accompanied by a sharp increase in the debt leverage of both households and financial intermediaries. If those prices fall, that puts severe pressure on the balance sheets of the economic sectors concerned, triggering additional transmission mechanisms: there are mutual feedback effects both between the real economy and the financial economy, and between financial institutions and financial market segments. In that context, it is not surprising that recent research<sup>(2)</sup> has also revealed the existence of recurrent patterns – mainly in credit, monetary aggregates and asset prices – which help to identify the development of financial imbalances. It is also clear that the accumulation of current account deficits leads to increased vulnerability in many cases. Further research on this subject is obviously desirable. It could offer angles for more detailed monetary analysis under the Eurosystem's two-pillar strategy. Over the years, that analysis has progressed from a virtually one-sided approach – suggesting a direct, positive link between monetary developments and the longer-term risks to price stability – towards a more eclectic approach which also establishes a link with both the economic cycle and the risks to financial stability.

Despite the progress on the analysis front, it would not be true to say that the identification of financial imbalances in real time is no longer a challenge, as many of the findings on that subject are based on *ex post* analysis. They also present an average pattern for the various crises, so that those findings cannot be regarded as reliable predictors of individual crises. There is therefore still a relatively high risk of failing to spot an impending crisis, and thus adopting a policy which is too passive, alongside the risk of a false alarm and hence an overly pro-active policy. Both

situations generate costs in the form of excessive macroeconomic variability, but the current crisis – owing to its unusual severity – has shown that the costs resulting from the first type of policy errors may be greater than the costs of the second type of errors. Moreover, this type of real time uncertainty over the accuracy of the policy pursued does not only occur in this context but is inherent in the actual conduct of the policy. For example, it is equally difficult to obtain an accurate assessment of the inflationary or deflationary pressure present in the economy, owing to the uncertainty surrounding the measurement of the output gap in real time. But in that case, such uncertainty does not prompt the policy-maker to adopt a passive approach. It only encourages caution in the use of both the uncertain indicator and the available policy instruments.

#### 2.4 Implications for monetary policy and (macro) prudential policy

It is clear from the foregoing that, in view of the scale of the current financial and economic crisis, on the one hand, plus the fact that understanding of the patterns associated with the formation of financial imbalances has gradually improved, economic policy can and should pay more attention to the management of financial vulnerabilities. This article has so far left unanswered the question whether that is a task for monetary policy, prudential policy, or both. Of course, there is also the question of possible interactions between these two aspects of policy.

In that regard, it is worth looking further into the causes of the current financial and economic crisis. It is evident that both macro- and microeconomic factors have played a role. At macroeconomic level, the “Great Moderation” mentioned earlier reached its zenith on the eve of the crisis and created what with hindsight proved to be an exaggerated sense of security. Moreover, following the bursting of the dotcom bubble, monetary policy had been eased significantly, primarily in the United States. Fears of deflation – fuelled partly by cheap imports from the emerging economies – prompted the monetary authority to keep interest rates exceptionally low for a lengthy period. Finally, the capital flows associated with the global imbalances caused distortions in the prices of many assets, and subsequently helped the contagion to spread to various countries and economic regions, so that the crisis became global. More particularly, the risk-free long-term interest rate was further depressed by the massive accumulation of foreign exchange reserves by

(1) Cf. in particular Reinhart and Rogoff (2009).

(2) Cf. in particular Borio and Lowe (2002), Detken and Smets (2004), Bruggeman (2007), Adelid and Detken (2007), Borio and Drehmann (2009), Gerdemesier et al. (2009).

Asian central banks. Those reserves were invested mainly in American government paper. The low real interest rate encouraged the expansion of credit, and in many economies led to unsustainable property price rises. It also prompted a search for yield which led to riskier behaviour.

At microeconomic level, things first went wrong because consumers, investors, financial institutions and even rating agencies received and/or gave false signals, so that ultimately risk-taking steadily increased. That risk was in turn measured or estimated incorrectly, since the most recent period, though relatively long, was a time of unusually great stability. That in turn led to less stringent risk management. Finally, regulation and supervision proved to be too weak, because too much reliance was placed on the self-regulating effect of market discipline.

In the end, analysis of the causes of the crisis indicates that it was a complex interplay of various factors, rather than one particular factor, that was decisive. In that context, it is rather unrealistic to assume that either monetary policy or prudential policy could avert the formation of financial imbalances in the future. Moreover, if monetary policy had to carry all the responsibility, it could face serious dilemmas in certain circumstances, and would therefore have to strike a balance between the aims of price stability and financial stability. That would pose a threat to the hard-won credibility of inflation control, whereas that is of vital importance, as demonstrated by the crisis.

It is therefore beyond dispute that prudential policy needs to be strengthened and that macro-prudential policy has a key role to play, alongside the more traditional micro-prudential policy. While micro-prudential policy on regulation and supervision focuses on individual institutions, macro-prudential policy aims to limit systemic risk. The horizontal and vertical dimensions are both important here. The horizontal dimension refers to the fact that the entire financial system may get into difficulties as a result of the interconnections between individual institutions. The vertical dimension concerns procyclicality, i.e. the phenomenon of self-amplifying feedback mechanisms between the financial system on the one hand and the broader macroeconomy on the other. Procyclicality may contribute to the development of unsustainable upward movements, but in a downturn it may equally inflict serious damage on the financial system, causing a severe recession. The main instruments considered here are those which are used for the regulation and supervision of individual institutions – capital buffers, liquidity buffers,

maximum loan-to-value ratios, etc. – but their use is adjusted to a broader perspective.

By augmenting the financial system's resilience and containing procyclicality via the use of additional instruments, a successful macro-prudential policy together with an appropriate micro-prudential policy can facilitate the conduct of monetary policy. Limiting the procyclicality of the financial system makes it easier, in principle, for monetary policy to achieve macroeconomic stability and more particularly, to aim at price stability, but of course it is no substitute for that policy. Macro-prudential and monetary policy are therefore likely to be synchronised and mutually reinforcing in a phase in which policy is tightened or eased. Furthermore, specific macro-prudential instruments reduce the risk of serious policy dilemmas precisely because the two aspects of policy can move in opposite directions, depending on the circumstances, and therefore address specific challenges in an appropriate way. That could happen, for example, in situations where the financial system is vulnerable, but at macroeconomic level there are nevertheless upside risks to price stability. At that point, macro-prudential policy could be eased while monetary policy is tightened, therefore securing the necessary room for manoeuvre since there is less need to be concerned about the health of the financial system. Conversely, in certain circumstances, it may be desirable to ease monetary policy while tightening macro-prudential policy, e.g. in situations where there is no inflationary pressure whereas unsustainable developments are threatening the financial system. As stated earlier, that type of situation is not infrequent.

Viewed in that way, the question is whether it is sufficient to reinforce prudential policy and whether it is still necessary for monetary policy to aim to contribute more to financial stability. Nonetheless, it is rather unlikely that prudential policy will be sufficient on its own to safeguard financial stability in all circumstances. That is why it seems right that monetary policy itself should make a bigger contribution here than in the past. For one thing, the design of macro-prudential policy is still in its infancy, so that it is preferable, at least in the first instance, to adopt realistic aims and objectives. Also, monetary policy itself undeniably has an influence on the risk-taking behaviour of the various economic agents. It is therefore appropriate to take full account of that influence on risk-taking, which is also regarded as an additional monetary policy transmission mechanism, known as the risk-taking channel<sup>(1)</sup>. It operates in various ways<sup>(2)</sup>. Thus, a lower (risk free) interest rate exerts a positive effect on the valuation of assets and collateral, so that financial institutions are able to enlarge their balance sheet, and that is accompanied by greater risk-taking. Higher valuations are often

(1) Cf., for example, Bini Smaghi (2009), Borio and Zhu (2008).

(2) For empirical results, see in particular Gambacorta (2009), Adrian and Shin (2009) and Altunbas et al. (2009).

also accompanied by lower volatility, so that the usual yardsticks indicate a lower risk. Moreover, in a period of low nominal interest rates, a search for yield may develop because of a degree of inertia in the nominal returns which investors aim to achieve. That is attributable to a form of monetary illusion; certain nominal yields may also have been guaranteed, whether or not on a contractual basis, by pension funds or life insurers for example. Finally, monetary policy may have encouraged greater risks by tending in the past to react asymmetrically to the movement in asset prices – a widely accepted rule of the pre-crisis consensus – and the financial markets may have seen that as an insurance against risk-taking.

The fact that monetary policy is to contribute more towards safeguarding financial stability need not be at odds with the aim of price stability. The crisis specifically showed that too narrow a focus on price stability at a horizon of no more than two years may imply risks for financial stability and thus also for price stability in the longer term. By helping to safeguard financial stability, monetary policy therefore promotes the attainment of its own goal, and in effect assumes an extension of the monetary policy horizon. In the case of the Eurosystem's monetary policy, the medium-term stance offers the necessary scope for that. Moreover, a key role can be assigned to monetary analysis, though it should be noted that, in that case, its content would change. Traditionally, strong growth of the money supply and credit has been linked to upside risks to price stability, while the prevention of the formation of financial imbalances aims to limit the downside risks to price stability which accompany the bursting of a bubble. Although a strong monetary dynamic justifies the tightening of monetary policy in both cases, the reasons for the tightening are different.

### 2.5 An integrated analysis framework, but clearly defined mandates for monetary and macro-prudential policy

The strong interactions between the real economy and the financial economy on the one hand, and between a macro-prudential policy that reduces procyclicality and monetary policy on the other, require an integrated analysis framework in which those interactions are clearly defined. That makes it possible to assess the impact of the macro-prudential policy on the behaviour of the financial system, and to examine which are the most appropriate instruments. Moreover, that also means that the influence of the macro-prudential policy on the monetary policy transmission mechanisms can be analysed and taken into account in the conduct of monetary policy.

Development of such an integrated analysis framework is therefore a top priority for the research agenda in the immediate future. Central banks have a clear comparative advantage here, since they can combine their knowledge of the financial markets and the financial system with the macroeconomic analysis which they conduct in order to support monetary policy. This natural “macroeconomic reflex” makes central banks particularly suitable candidates for a key role in macro-prudential policy. That also facilitates the rapid exchange of expertise and information between monetary and macro-prudential policy, enhancing the effectiveness of both policy aspects.

Nevertheless, monetary and macro-prudential policy require clearly defined mandates and corresponding strategies, because that makes them more accountable and should permit full consolidation of monetary policy's hard-won credibility in regard to the price stability objective.

## Conclusion

The current financial and economic crisis has again highlighted the importance of financial stability and has clearly demonstrated that macroeconomic stability requires more than just price stability. The question is therefore whether, in the future, monetary policy should make a greater contribution to the maintenance of financial stability, and perhaps be given a broader mandate. That debate is still ongoing, but some key points are already becoming clear.

Thus, everyone agrees that financial stability benefits in the first place from a strengthening of prudential policy, and particularly from the conduct of a macro-prudential policy alongside the more traditional micro-prudential policy. While the latter focuses on individual institutions, macro-prudential policy aims to limit the systemic risk associated with two types of interaction, namely the interactions between financial institutions themselves, and those between the financial system and the macro-economy. A successful macro-prudential policy makes it easier to conduct monetary policy; it prevents monetary policy from being over-burdened or confronted by serious policy dilemmas, so that it can continue to focus on the primary goal of price stability. Indeed, the importance of firmly anchored inflation expectations and the credibility of the price stability mandate was also clear during the crisis.

Although this does not, in principle, imply any modification of the existing monetary policy frameworks, it nevertheless seems advisable for monetary policy itself to do more to safeguard financial stability. Above all, it is necessary to take account of the impact of that policy on the

risk-taking behaviour of the various economic agents. In addition, greater importance should be attributed to analysis of the formation of financial imbalances. That is not at odds with the priority of the price stability mandate, because the crisis clearly showed that risks to financial stability in the longer term also imply risks to price stability. However, it does assume an extension of the monetary policy horizon. If that horizon is actually extended, that should preferably be made explicit, as it would clarify the monetary policy strategy and increase accountability.

## Bibliography

- Adelid R. and C. Detken (2007), *Liquidity shocks and asset price boom/bust cycles*, ECB Working Paper 732.
- Adrian T. and H. Shin (2009), *Financial intermediaries and monetary economics*, Federal Reserve Bank of New York Staff Reports 398.
- Altunbas Y., L. Gambacorta and D. Marques-Ibanez (2009), *An empirical assessment of the risk-taking channel*, paper presented at the BIS/ECB conference "Monetary policy and financial stability", September.
- Bank for International Settlements (2009), Annual Report.
- Bean C. (2009), *The Great Moderation, the Great Panic and the Great Contraction*, Schumpeter Lecture at the Annual Congress of the EEA, Barcelona, 25 August.
- Bernanke B. S. (2010), *Monetary policy and the housing bubble*, Remarks at the Annual Meeting of the AEA, Atlanta, 3 January.
- Blanchard O., G. Dell'Ariccia and P. Mauro (2010), *Rethinking macroeconomic policy*, IMF Staff Position Note, February.
- Bini Smaghi L. (2009), *Monetary policy and asset prices*, Opening address at the University of Freiburg, Freiburg, 14 October.
- Borio C. and P. Lowe (2002), *Asset prices, financial and monetary stability: Exploring the nexus*, BIS Working Paper 114.
- Borio C. M. and M. Drehmann (2009), "Assessing the risk of banking crisis - revisited", *BIS Quarterly Review*, March.
- Borio C. and H. Zhu (2008), *Capital regulation, risk-taking and monetary policy: A missing link in the transmission mechanism?*, BIS Working Paper 268.
- Bruggeman A. (2007), *Can excess liquidity signal an asset price boom?*, NBB Working Paper 117.
- Cecchetti S., H. Genberg, J. Lipsky, and S. Wadhvani (2000), *Asset prices and central bank policy*, Geneva Report on the World Economy 2, CEPR and ICMB.
- Cecchetti S. G., P. Disyatat and M. Kohler (2009), *Integrating financial stability: new models for a new challenge*, Essay prepared for the joint BIS-ECB Workshop on "Monetary policy and financial stability", Basel, 10-11 September.
- Clarida R., J. Gali and M. Gertler (1999), "The Science of Monetary Policy: A New Keynesian Perspective", *Journal of Economic Literature*, vol. 37(4), pp. 1661-1707, December.
- Detken C. and F. Smets (2004), *Asset price booms and monetary policy*, ECB Working Paper 364.
- Fagan G., J. Henry and R. Mestre (2005), "An area-wide model for the euro area", *Economic Modelling*, 22, 39-59.
- Gambacorta L. (2009), "Monetary policy and the risk-taking channel", *BIS Quarterly Review*, December.
- Gerdesmeier D., B. Roffia and H.-E. Reimers (2009), *Asset price misalignments and the role of money credit*, ECB Working Paper 1068.
- Giavazzi F. and F. S. Mishkin (2006), An evaluation of Swedish monetary policy between 1995 and 2005.

Goodhart C. (2009), *Inflation targeting twenty years on*, dinner speech delivered at the Sixth Norges Bank Monetary Policy Conference, Oslo, 11-12 June.

IMF (2009), *Lessons for monetary policy from asset price fluctuations*, World Economic Outlook Chapter 3, October

Kohn D.(2009), *Policy challenges for the federal reserve*, Speech at the Kellogg School of Management, November.

Kydland F. E. and E. C. Prescott (1977), "Rules rather than discretion: The inconsistency of optimal plans", *Journal of Political Economy*, University of Chicago Press, vol. 85(3), 473-91, June.

Papademos, L. (2009), *Monetary policy and the 'great crisis': Lessons and challenges*, speech at the 37th Economics Conference "Beyond the crisis: Economic policy in a new macroeconomic environment" organised by the Österreichische Nationalbank, Vienna, 14 May.

Reinhart C. M. and K. S. Rogoff (2009), *This time is different: eight centuries of financial folly*, Princeton University Press.

Svensson L. E. O. (1999), "Inflation targeting: Some extensions", *Scandinavian Journal of Economics*, vol. 101(3), 337-361, September.

Taylor J. B. (2007), *Housing and monetary policy*, Proceedings, Federal Reserve Bank of Kansas City, 463-476.

Trichet J. C. (2009), *The crisis and its lessons*, Lecture at the University of Venice, Venice, 9 October.

Trichet J. C. (2010), *Commentary on "Fifty years of monetary policy: What have we learned?"* by Adam Cagliarini, Christopher Kent and Glenn Stevens, at the Symposium for the 50th anniversary of the Reserve Bank of Australia, Sydney, 9 February.

White W. R. (2006), *Is price stability enough?*, BIS Working Papers 205.