

Credible Alertness Revisited

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It is a pleasure to be part of such a distinguished panel.

In my remarks today, I will discuss three topical issues facing central banks, in particular in light of recent events: the relationship between asset prices and monetary policy; the effectiveness of our standard interest rate instrument; and the design of non-standard monetary policy measures such as the European Central Bank's (ECB) enhanced credit support. The ongoing financial crisis has highlighted the importance of old issues and raised some new questions, for which I will try to offer an ECB perspective. Exactly four years ago, here in Jackson Hole, I spoke about "credible alertness" in monetary policy.¹ Today it seems opportune to revisit this concept in light of recent events.

1. "Leaning Against the Wind" and Monetary Analysis

The best way to manage a crisis is to avoid it. Given the important role played by asset markets in recent macroeconomic dynamics, the experience of the past few years has given renewed impetus to the debate on asset prices and monetary policy. Would making monetary policy more responsive to asset market developments have avoided the financial crisis? More generally, should monetary policy "lean against the wind" of surging asset prices?

The academic debate on this issue is ongoing. For instance, there is currently disagreement regarding the appropriate models and simulations to use when weighing up the pros and cons of such an approach.² Within policy-oriented discussions, there has been scepticism about leaning against the wind for three reasons.³ First, there have been reservations about the possibility of identifying asset price misalignments or “bubbles” in real time. Second, doubts have been expressed regarding the ability of interest rate increases of a plausible magnitude to contain surging asset prices once these have achieved a momentum of their own. Third, it has been argued that any damage to the economy stemming from an asset price correction can be contained by prompt and aggressive easing of monetary policy.

What have recent events taught us about leaning against the wind? Allow me to address each of these three reservations in turn, beginning with the identification of asset price misalignments in real time.

A number of central bankers were pointing to the underpricing of risk and the excessive pace of credit expansion in 2006 and 2007.⁴ While remaining prudent as regards our qualification of the situation, many of us felt uneasy about the growing financial imbalances emerging in that period. The increasing risks identified by the ECB’s monetary analysis from 2005 onwards, with money and credit growth accelerating to double-digit levels, are well documented.⁵ All of this suggests that it was clearly not impossible to identify (albeit not with precision) the emergence of financial imbalances and misalignments in the pricing of risks—and therefore also in the pricing of assets—in the years preceding the crisis.

Research findings increasingly support this view. Work at the BIS and the ECB shows that monetary and credit indicators can provide an early warning where asset price developments are unsustainable.⁶ Of course, such indicators are not perfect. There is undoubtedly a risk of mistakenly leaning against asset price developments that are justified on fundamental grounds. But policy-makers continually confront such informational problems. Many indicators used prominently in the formulation of policy decisions are subject to revision and difficult to measure in real time. Indicators of asset price misalignments are no different. But I do not believe that such difficulties

should be seen as a fundamental obstacle to making an assessment of the risks posed by excessive asset price developments on the basis of the information available to us.

Turning to the second reservation expressed in the literature: what of the assertion that interest rate increases will be unable to halt an asset price surge? *Prima facie*, to the extent that an asset price bubble promises to deliver large capital gains, a small change in policy interest rates is unlikely to alter the balance between the costs of financing the bubble and the expected profits from investing in it. From this perspective, a policy of leaning against the wind would appear to have limited value.

It is interesting to see, however, that recent research identifies channels through which even a small change in policy rates can have important implications. For example, the profitability of financial institutions that systematically borrow short and lend long can be significantly affected by even a small change in policy interest rates, triggering the closing-out of leveraged positions and the moderation of asset price growth.⁷ To the extent that policy rate changes break private sector herding behaviour or reveal central bank intentions and private information, even a small change in policy rates can have a significant impact on asset price developments.⁸ Such research suggests that a policy of leaning against the wind may have greater impact than previously thought.

Turning to the third reservation: what of the alternative approach—i.e., waiting until an asset bubble bursts and then easing policy aggressively so as to contain the adverse effects on real activity and inflation? Recent experience has clearly demonstrated the limitations of such a strategy. Unprecedented policy action has failed to prevent a sharp fall in economic activity in the context of the financial crisis.⁹ Moreover, an *ex ante* approach of this kind risks creating moral hazard on a large scale, thereby helping to place the system in a metastable situation, i.e., a state of potential instability. By contrast, a strategy of leaning against the wind could reduce moral hazard: By behaving more symmetrically, a central bank can encourage more responsible behaviour on the part of investors and make a crisis less likely.

Over the past few years, both experience and developments in the literature appear to support a shift in favour of the adoption of some form of leaning against the wind. However, having spent 16 years facing the successive challenges of operational central banking, I am doubtful that such a strategy can be implemented in a mechanical way. The uncertainties remain too great, and perhaps always will. What is required is a significant degree of judgement, embedded in a rule-based framework for policy making, which encapsulates the essence of leaning against the wind without suggesting that central banks are in a position to manage closely—much less target—developments in asset prices.

In the case of the ECB, the medium-term orientation of our two-pillar monetary policy strategy calls on us to consider the implications that financial imbalances and asset price misalignments and their unwinding have as regards the outlook for price developments at longer horizons. Given that our mandate requires the maintenance of price stability on an ongoing and continuous basis, rather than at any specific arbitrary horizon, we consider it important to monitor the slow accumulation of unsustainable financial imbalances, which pose a threat to macroeconomic and price stability over the longer term. Maintaining a medium-term orientation, keeping a close eye on monetary and credit dynamics, and adopting a broader, stability-oriented view of policy making—which are key elements of the ECB's monetary policy strategy—support this approach.

Our monetary analysis provides us with a framework within which to assess the dynamics of asset prices, money and credit from a medium-term perspective. For example, monetary analysis was decisive in our decision to keep the ECB policy rate at 2%, instead of reducing it further, in the summer of 2004 and to start raising it in late 2005. On both occasions, the strength of money and credit growth in the euro area, with liquidity already ample, pointed to risks to price and macroeconomic stability over the medium term that went beyond those identified by standard forms of economic analysis. One of these risks was the sustainability of asset price developments.¹⁰ These policy decisions were taken in the face of some criticism from those who regarded monetary indicators as old-fashioned, including parts

of academia. However, with the (admittedly considerable) benefit of hindsight, most observers now take the view that such decisions were correctly timed and appropriately judged.

More generally, it was always foreseen that the close monitoring of monetary developments would provide a framework for addressing asset price misalignments.¹¹ However, viewing asset price dynamics through the lens of monetary developments integrates them into an overall framework directed towards the achievement of our goal: price stability. One particular focus of our monetary analysis is the low-frequency trend in money and credit developments and the associated emergence of imbalances. This focus allows us both to assess risks to price stability in the medium to long term and, simultaneously, to embed some implicit leaning against excessive money, credit and asset price growth in our interest rate decisions.

As part of our strategic decision to enhance monetary analysis,¹² the ECB has conducted research looking at monetary and credit developments so as to better understand their impact on macroeconomic outcomes. Interaction with asset price dynamics plays an important role in this work.¹³ Increasingly, the results of this research are being integrated into our regular assessment of monetary developments, which is one source of input for our policy decisions.

My understanding is that the importance of monitoring money and credit developments is generally recognised by central bankers and more and more also by academia. Of course, recognising their importance does not necessarily simplify the task of interpreting those developments. Experience has shown that ongoing financial innovation complicates the interpretation of the monetary data. This remains a substantial practical challenge—but one that must be addressed. Making the analysis of money and credit developments operational is a key area for new research.

A year ago, here at Jackson Hole, Tobias Adrian and Hyun Song Shin argued that structural changes to the financial system require the definition of new monetary indicators.¹⁴ There has recently been a focus on the build-up of leverage *within* the financial sector, through loans between banks and loans to various special-purpose financing

vehicles, some of which may be located offshore. This kind of approach forms part of the comprehensive assessment of monetary developments undertaken at the ECB, which extends well beyond the monitoring of headline aggregates.¹⁵ We recognise that considerable progress still needs to be made. However, overall, our maintenance of both the statistical basis for monetary analysis and the necessary staff expertise at a time when the value of such work was being very much called into question has, in my view, helped us significantly in taking important decisions in recent years.¹⁶

Taking everything into account, I would say that we feel encouraged to continue relying on our two-pillar strategy, noting that considerable further progress still needs to be made in various areas of research that are part of our enhancement of monetary analysis.¹⁷

2. Credibility, Alertness and Steady-Handedness

I will now turn to my second topic: the effectiveness of interest rate decisions. Even in the face of the exceptional challenges of recent years, the standard interest rate instrument has remained a crucial component of the central bank armoury as regards monetary policy.

Our interest rate decisions should be judged on their effectiveness, understood as the contribution they make to the achievement of the ECB's objective of maintaining price stability. Effectiveness requires that policy decisions be transmitted to the economy, so as to influence private price-setting behaviour and thus developments in the price level. In this respect, understanding the transmission mechanism of monetary policy is crucial. There is a considerable amount of academic literature in this area,¹⁸ to which researchers at the ECB have contributed in important ways.¹⁹

In this literature, it is widely recognised that households' and firms' spending decisions are affected by longer-term interest rates, rather than the very short-term rates steered in monetary policy operations. Moreover—especially in a bank-based financial system, such as that of the euro area—many borrowers' decisions are influenced by bank lending rates, rather than market rates. Consequently, in order to be effective, policy rate changes must influence rates at longer maturities and be passed through to rates on bank loans.

Viewed from this perspective, conferring a degree of persistence on developments in policy rates may be crucial.²⁰ A central bank with a reputation for implementing persistent interest rate changes will be able to convince market participants that an initial interest rate change will be maintained for some time and/or followed by additional changes in the same direction. Such expectations will have a strong, immediate impact on the money market yield curve at longer maturities, because money market rates are largely determined by expectations of future policy rates. Persistent policy changes are also more likely to affect bank lending rates, because a persistent rate change is more likely to be passed through. Both channels will allow the effectiveness of changes in the policy rate to be enhanced.²¹

Of course, when taking our decisions, we are not mechanically bound by such observations on monetary policy, despite the intellectual elegance of the underlying models. Nevertheless, I can recognise the pattern of the ECB's interest rate decisions in this stylised characterisation. The lower-frequency component of the interest rate cycle—which is driven by long-lasting or persistent developments in policy rates—influences economic behaviour and, ultimately, the evolution of price developments much more than the high-frequency component associated with the exact timing and magnitude of any one policy decision. Whether interest rates increase by 25 or 50 basis points in one month or another is less important than our ability to steer the longer-maturity rates of relevance to spending decisions. While the former may dominate ECB watchers' commentaries, it is the latter that gives us the leverage to stabilise longer-term inflation expectations and fulfill our mandate.

With this consideration in mind, our approach has often been characterised as “*steady-handed*.” The ECB has acquired a reputation for moving interest rates in a steady and persistent fashion over time. This is a conscious choice. Such deliberate and persistent moves strengthen transmission, thereby proving effective in achieving our objective of price stability.

When a central bank enjoys a reputation for implementing monetary policy in a steady-handed fashion, private sector expectations of future interest rates will move in a manner consistent with policy-makers'

intentions at all maturities in response to a policy announcement or measure. As a result, changes in policy rates will have significantly larger effects on aggregate demand and future price developments than would otherwise be the case. By implication, less extreme changes in policy interest rates will be necessary in order to achieve our goal. Our reputation for steady-handed—and thus effective—policy action will be bolstered. And more effective policy action will contribute to a successful track record in terms of meeting our objective, thereby delivering price stability.

An effective monetary policy need not, therefore, be an “activist” monetary policy, at least to the extent that activism is understood to imply significant immediate changes to policy rates in response to individual pieces of short-term economic “news.” While a central bank must always be ready to act in response to shocks that threaten price stability, a steady-handed approach, involving a modest initial change in policy rates followed by further moves in the same direction, may prove more effective. Therefore, criticising a central bank that is acting with a steady hand for being “behind the curve” rather misses the point: A gradualist approach of this kind may be the most effective antidote to the threat to price stability.

These considerations are all fairly general in nature. Yet they become especially important if policy rates threaten to become constrained by a lower bound. Even if the policy rate were to be constrained in this way, “flattening the yield curve” by reducing longer-term interest rates would ease monetary conditions if the outlook for price developments required it.²² In this context, the ability to signal the persistence of policy rate changes is particularly valuable.

That being said, I have always stressed that steady-handedness should not be confused with lethargy, incapacity or an unwillingness to act. If the risks to price stability over the medium term change significantly, it is incumbent upon the central bank to ensure that its monetary policy stance is adjusted immediately, in order to address this change in the assessment of risk. Policy-makers must always be ready to act promptly and decisively when this is required by a change in the situation. Delay for its own sake is never a good basis for policy decisions.

Choosing whether to change policy rates requires permanent *alertness*. If a new threat to price stability emerges, this must be identified promptly. Policy action can then be taken to ensure the achievement of the central bank's objective. However, in deciding how to adjust the policy stance in order to achieve this goal, conferring persistence on the policy rate may be desirable, to the extent that this maintains and strengthens transmission.

How should such persistence be communicated? Signalling the persistence of a policy change by stating that the new level of policy rates will be maintained "come what may" is problematic. An unconditional commitment of this kind runs directly counter to the need to maintain the flexibility to act in response to changing conditions in the future.²³ A statement of this kind will either (a) undesirably constrain the ability to respond to new circumstances as they emerge, or (b) simply be ignored when a new shock occurs. In the case of the former, the policy stance will not be appropriate and price stability will be placed at risk. In the case of the latter, the reputation and credibility of the central bank will suffer: Its communication will be ineffective. Neither outcome is desirable. This argumentation forms the basis for my oft-repeated statement at the ECB's monthly press conferences to the effect that the Governing Council "never precommits."²⁴

At the same time, avoiding any unconditional commitments does not mean that one cannot communicate as regards the policy outlook. On the contrary, it means making a fundamental statement, namely that future decisions will be guided only by the assessment of risks to price stability, without having to announce the level or path of policy interest rates foreseen over the coming months.

There appears to be a puzzle here. At first sight, the need to maintain a readiness to act in the face of changing circumstances appears to run counter to the need for steady-handedness in policy decisions. How can one always stand ready to change policy rates to contain new threats to price stability while simultaneously maintaining a reputation for conferring persistence on developments in interest rates?

As I argued on a previous occasion here at Jackson Hole, to understand this apparent paradox, we have to assemble not two, but

three building blocks providing insight into the ECB's conduct of monetary policy.²⁵

- First, policy decisions focus on the maintenance of price stability over the medium term. This supports our *credibility*, understood in terms of the solid anchoring of private medium- and longer-term inflation expectations at levels consistent with price stability.
- Second, we behave in a *steady-handed* manner, conferring persistence on developments in short-term interest rates so as to strengthen the transmission of monetary policy.
- And third, we are never precommitted as regards the future level or path of policy rates. On the contrary, policy rates are always conditional on the evolution of the outlook for price developments. We thereby remain *alert* and maintain a comprehensive and up-to-date assessment of the economic environment and are always ready to act decisively and promptly if the need arises in order to achieve our objective.

Credibility helps to understand the interplay between alertness—i.e., in particular, the absence of any precommitment—and steady-handedness. It means that there are no question marks regarding the capacity to act with full independence if and when this becomes necessary. It therefore allows a central bank's interest rate decisions to have the maximum impact, whatever the circumstances, and helps a central bank to achieve its goal—i.e., price stability—with a satisfactory degree of economy of means. Even more importantly, because credibility consolidates the anchoring of inflation expectations, the interplay between steadiness and alertness is self-reinforcing. A posture of permanent alertness relying on the ongoing vigilance of the central bank strengthens the solidity of the anchoring of inflation expectations. And in this perspective, steady-handedness itself appears to be both a consequence as well as a cause of the better anchoring of inflation expectations. Not surprisingly, the anchoring of inflation expectations appears to be at the centre of a “virtuous self-reinforcing triangle,” the vertices of which are credibility, alertness and steady-handedness.

A stance of credible alertness is, in my view, one of the most important features of monetary policy in “normal times”—to the extent

that the concept of “normal times” has a meaning for central bankers! It is even more useful when we suddenly encounter very exceptional circumstances, as has been the case since mid-2007 and especially since September 2008.

The features of such exceptional circumstances are not only that they occur largely unexpectedly or that they make inference based on past observations inadequate, but also that the complex intertwining of economic relationships characterising this turbulent period can hardly be captured by our mostly linear models. These are times in which the “flap of a butterfly’s wings” causes tornadoes (chaos theory).²⁶ Quickly recognizing the limitations of our analytical tools during these episodes is essential in order to avoid making inappropriate decisions.

One can identify three important reasons for “heightened alertness” in periods of turbulence of the “Lorenzian” type. Firstly, to the extent that very small initial changes are capable of triggering extremely large changes after a sufficient period of time, it is essential to quickly establish a lucid diagnosis and swiftly make the decisions necessary to avoid as much as possible adverse future developments.

Secondly, a common feature in the development of highly turbulent episodes is that central banks have to cope with abnormally rapid modifications in the economic and financial environment. These changes might be highly unexpected, erratic and trigger abrupt changes in the risks to price stability. In such exceptional circumstances, credible alertness is vital, and swift decision-making should not be hampered by *ex ante* considerations other than the delivery of price stability, and, by way of consequence, the anchoring of inflation expectations is of the essence.

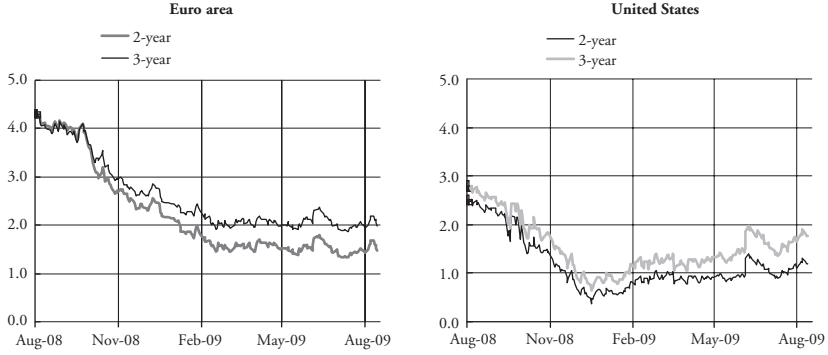
Indeed—and this is the third reason—the risk of unanchoring inflation expectations, whether upward or downward, is particularly acute in such circumstances. Thus, it is all the more important to make very clear to markets that, *ex ante*, they can always map the expected path of the policy rates relative to the evolution of macroeconomic conditions on the basis of the unambiguous goal of very solidly anchoring inflation expectations.

Some of these points can be illustrated in the context of the recent financial turmoil. Let us take the decision to increase rates in July 2008, 11 months after the turbulence began in August 2007. This decision was criticised *ex post* by some people, particularly following the intensification of the crisis in mid-September 2008, two-and-a-half months after our decision. I take it that in the perspective of credible alertness, it has been an important and opportune decision. The risks to price stability had increased significantly by the end of the first half of 2008. Perhaps paradoxically in a period of financial turbulence, we also saw medium-term inflation expectations beginning to rise, signalling a serious risk of the unanchoring of these expectations. Our decision demonstrated our determination to continue solidly anchoring inflation expectations, including in the turbulent circumstances that we had to cope with. This demonstration of alertness proved extremely useful in the period that followed, after mid-September, when we had to guard against both deflationary risks in the short term and inflationary risks in the medium and longer term.

After the acute intensification of the crisis (and following the reduction of the ECB's policy rates in October 2008), nominal yields at two- and three-year maturities fell in the euro area, as shown in Chart 1. This partly reflected private expectations that the cut in policy rates would prove persistent. At the same time, as revealed by the developments in break-even rates illustrated in Chart 2, private expectations regarding euro area inflation remained correctly anchored, even at these relatively short horizons. By implication, real rates at such maturities fell substantially, as shown in Chart 3. To the extent that real rates are the relevant determinant of private spending—as canonical models of transmission would suggest—the evidence points to significant monetary easing in the euro area. This very significant monetary easing was made possible by changes to the policy rate that were of a magnitude permitting us not to run into lower-bound constraints.²⁷

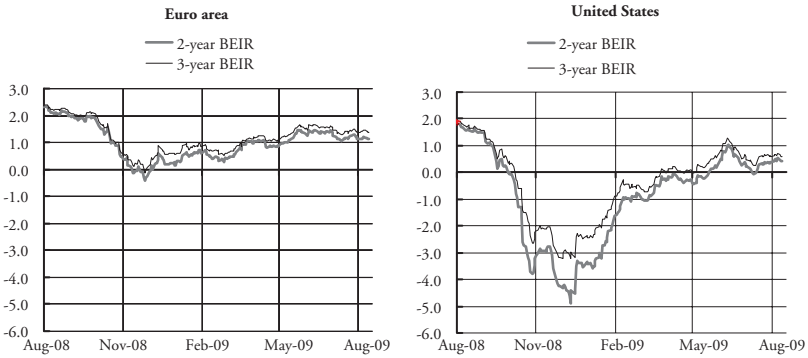
Of course, extracting relevant information from financial market prices—as is implicit in these charts—is particularly difficult at times of market turmoil, when liquidity premia and safe-haven effects may be larger than normal. Such caveats imply a need for caution when

Chart 1
2-year and 3-year Nominal Bond Yields
percent per annum



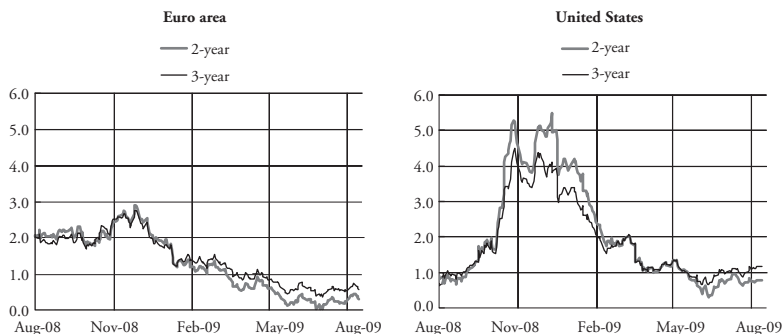
Note: Euro area data based on the triple-A euro area yield curve, published by the ECB. Daily data, last observation: 14-Aug-09 for euro area, 12-Aug-09 for United States.
Source: Euro MTS, ECB, Federal Reserve.

Chart 2
2-year and 3-year Break-even Inflation Rates
percent per annum



Note: Based on government bonds. Daily data, last observation: 14-Aug-09 for euro area, 12-Aug-09 for United States.
Source: Reuters, Federal Reserve, ECB.

Chart 3
2-year and 3-year Real Bond Yields
 percent per annum



Note: Based on index-linked government bonds. Daily data, last observation: 14-Aug-09 for euro area, 12-Aug-09 for United States.

Source: Reuters, Federal Reserve, ECB.

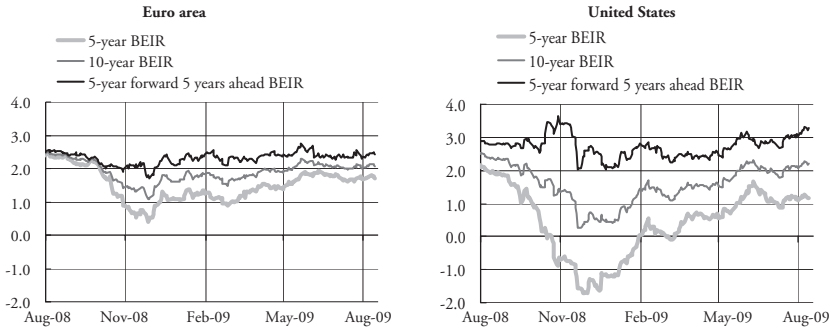
interpreting these developments.²⁸ Nonetheless, the evidence supports the view that a central bank's ability to ease monetary conditions—and thereby support the stabilisation of inflation and output—is significantly enhanced by its ability to anchor private expectations.

The effectiveness of the ECB's interest rate decisions is reflected in the continued credibility of the ECB's monetary policy. Notwithstanding the substantial economic and financial shocks experienced recently in the euro area, longer-term private inflation expectations have remained securely anchored at levels consistent with price stability. By way of illustration, the average private inflation forecast at the six- to ten-year horizon (as collated by *Consensus Economics*) was 1.9% in June 2009. Ten-year break-even inflation rates derived from indexed bonds also hovered at levels just below 2% (see Chart 4). Even at the peak of the crisis, there was no discernible doubt that the ECB would maintain price stability over the medium to longer term.

3. Non-Standard Measures: Enhanced Credit Support

I will now turn to the third element of my remarks, concerning the ECB's enhanced credit support. At times of turmoil and stress—when conventional channels for the transmission of monetary policy are blocked or impaired—central banks may need to act, possibly forcefully, so as to ensure that their policy decisions remain effective.

Chart 4
10-year, 5-year and 5-year Forward
5 years Break-even Inflation Rates
 percent per annum



Note: Based on government bonds. Daily data, last observation: 14-Aug-09 for euro area, 12-Aug-09 for United States. Source: Reuters, Federal Reserve, ECB.

Our non-standard measures should be viewed in this light. We define “enhanced credit support” as meaning the special and primarily bank-based measures that are being taken to enhance the flow of credit above and beyond what could be achieved through policy interest rate reductions alone. These measures were introduced to complement the reduction of interest rates, with the aim of ensuring that the easing of financial conditions triggered by policy rate cuts was fully transmitted to firms and households at a time of turmoil when financial markets and institutions were not functioning normally.

When significant tensions first emerged in the money market in early August 2007, the ECB was in the vanguard of moves to address the problem. More specifically, on August 9—within hours of the tensions first becoming apparent—we conducted a special liquidity operation, providing €95 billion to the market that same day. Other special operations followed in subsequent days. Thus, the ECB was the first central bank to engage in non-standard measures in response to the turmoil. The response was significant and rapid. Better evidence of the ECB’s alertness and readiness to act would be hard to find.

Since then, we have adopted various other non-standard measures with the aim of maintaining the flow of credit to households and companies. These non-standard measures represent our policy of

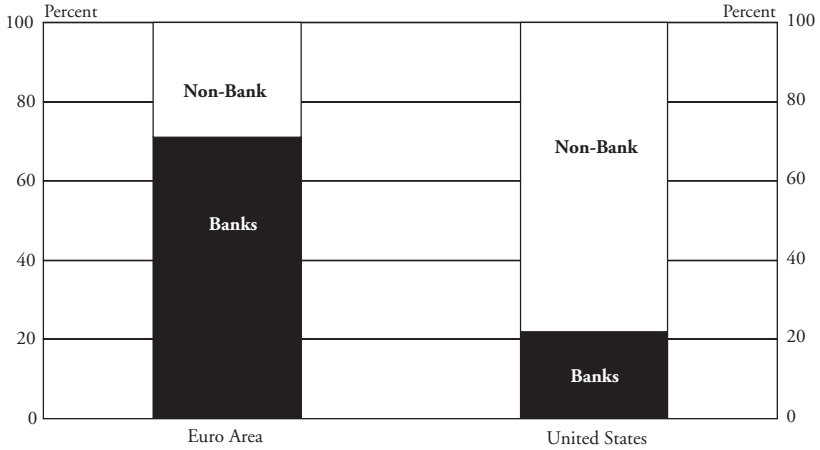
enhanced credit support for the euro area. There are five main elements of this approach²⁹: the introduction of full allotment at fixed rates in the provision of central bank liquidity via Eurosystem operations; the lengthening of the maturity of our operations, which now extend up to one-year operations; the further expansion of the list of assets that we accept as collateral in our operations; the provision of liquidity in foreign currencies, notably U.S. dollars provided by the Federal Reserve; and finally, the purchase of €60 billion of covered bank bonds in order to revive this market segment, which is important in Europe.

I would like to highlight in this context the very close cooperation that has been established between central banks. Without such trustful cooperation, global events could have been much more dramatic. This is particularly true for the period following the intensification of the crisis in mid-September 2008. Being in Jackson Hole, it is natural for me to mention very warmly the link established between the Federal Reserve and the ECB to supply foreign exchange on both sides of the Atlantic. In my view, this cooperation played a very important role in stabilising European financial markets.

The set of measures described above has fundamentally eased banks' liquidity constraints in the euro area, thereby supporting the extension of credit and the rolling over of maturing loans, even in challenging market conditions. One distinguishing feature of these non-standard measures is their focus on the banking system, reflecting the bank-centric structure of the financial sector in the euro area (see Chart 5).³⁰

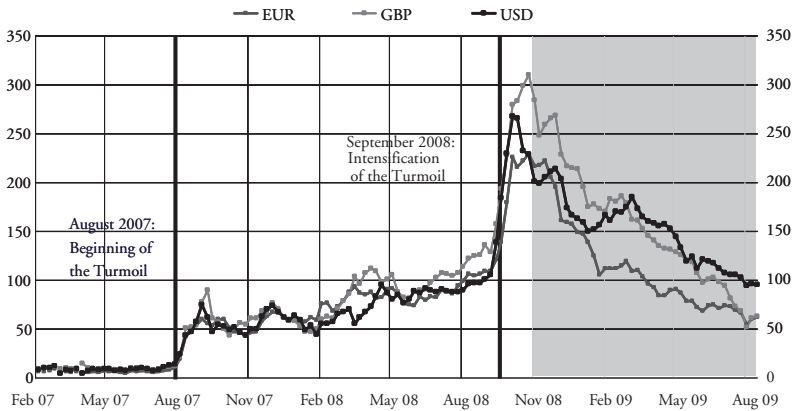
The ECB's approach contributed to contain the rise in money market spreads last autumn, before helping to reduce them substantially thereafter (see Chart 6). However, such measures alone were far from being sufficient in order to normalise conditions in the market. To the extent that ongoing tensions reflected financial institutions' need to take into account losses, increase capital and address a general lack of confidence, other public authorities—fiscal authorities, supervisors and regulators—and, ultimately, banks themselves needed to act. Further progress in this regard remains urgently required.³¹

Chart 5
External Financing of Non-financial Corporations



Note: Breakdown of the sources of external financing of non-financial corporations, in percent, average 2004–2008.
 Source: ECB *Monthly Bulletin*, April 2009.

Chart 6
Money Market Spreads
 Spread between 12-month deposit rate (EURIBOR, USD, LIBOR) and 12-month OIS rate, bps



Source: ECB, Bloomberg. Weekly averages of daily data, last observation: 17-Aug-09.

Against this background, it is crucial that central banks act to build and sustain confidence, which is a scarce commodity in times of crisis. Policy-makers must always display *sang froid*—if I may use a French synonym for “steady-handedness”—and keep their composure, particularly in the most demanding and turbulent of times. The design of the ECB’s non-standard measures reflects these concerns. To the extent possible, they are a continuation of our operational framework prior to the emergence of market turmoil. Moreover, from the outset, they have recognised the need for a credible exit strategy, so as to ensure the independence of the ECB and the credibility of its focus on price stability. The Governing Council will ensure that the measures taken are quickly unwound and the liquidity provided is absorbed once the macroeconomic environment improves.

4. Concluding Remarks

The exceptional challenges faced over the past two years have required monetary policy action unprecedented in terms of its nature, scope and magnitude. Very demanding circumstances have called for bold—yet solidly anchored—action as events have unfolded. We believe that what I would call the “virtuous triangle” of credibility, alertness and steady-handedness—jointly serving to solidly anchor inflation expectations—has served us well both in periods of relative calm and in very demanding and challenging uncharted territory.

Before coming, I read the conclusions I presented here in Jackson Hole exactly four years ago with some anxiety, as you can imagine... I saw that, fortunately, risks ahead had not been omitted: “We have to stand ready at any time to weather the materialisation of new risks. ...Being intellectually and conceptually ready is extremely important.” Now that we have a better idea of the dramatic ways in which risk can materialise in the present global economy, we are all, more than ever, convinced that being “intellectually and conceptually ready” means doing all that we can, in our own area of responsibility, to prevent the repetition of such dramatic events. This is the very demanding immediate task of the international community. And now that we see some signs confirming that the real economy is starting to get out of the period of “free fall”—which does not mean at all that we do not have a very bumpy road ahead of us—the largest mistake

we could make would be to forget the importance and the urgency of this task.

Endnotes

¹ Trichet (2005).

² Bernanke and Gertler (1999); Cechetti, et al. (2000); Goodhart and Hofmann (2006); Campbell (2008).

³ See, for example, Kohn (2007) and ECB (2005).

⁴ See, for example, the article in the *Financial Times* of January 29, 2007, with the headline: "Prepare for Asset Repricing, Warns Trichet." The article reported my view as: "'We are currently seeing elements in global financial markets which are not necessarily stable,' [Trichet] said, pointing to the 'low level of rates, spreads and risk premiums' as factors that could trigger a repricing."

⁵ Fischer, et al. (2008).

⁶ Borio and Lowe (2002); Detken and Smets (2004); Adalid and Detken (2007); Alessi and Detken (2009); Gerdesmeier, et al. (2009).

⁷ Adrian and Shin (2008).

⁸ See, for instance, Hoerova, et al. (2009).

⁹ Kohn (2008).

¹⁰ For example, in several of the Introductory Statements in 2005 and 2006 at the press conferences following Governing Council meetings, I noted, in the context of strong loan growth (for example, in December 2005), that "price dynamics in a number of housing markets need to be monitored closely" (<http://www.ecb.europa.eu/press/pressconf/2005/html/is051201.en.html>).

¹¹ For example, reference is made to such considerations in EMI (1997) in the context of a discussion of the main elements of the ECB's monetary policy strategy. See also Issing (2002).

¹² Stark (2007).

¹³ See, for instance, Christiano, et al. (2008) and De Santis, et al. (2008).

¹⁴ Adrian and Shin, *op cit*.

¹⁵ Some stylised facts are established in ECB (2008).

¹⁶ Stark (2008).

¹⁷ Papademos (2008).

¹⁸ See, for example, Bernanke and Gertler (1995), Christiano, et al. (1999), and Woodford (2003), as well as the references therein.

¹⁹ See, for example, Angeloni, et al. (2003), and Smets and Wouters (2003).

²⁰Goodfriend (1991); Rudebusch (1995); Woodford (1999, 2003).

²¹Woodford (1999) states that “one straightforward way to [ensure the effective transmission of changes in short-term policy rates so as to stabilise inflation] is to establish a reputation for maintaining interest rates at a higher level for a period of time once they are raised—or even for following initial small interest-rate changes by further changes in the same direction, in the absence of a change in conditions that makes this unnecessary.” Note the emphasis placed on conditionality at the end of the excerpt. This is developed below.

²²Krugman (1998); Reifschneider and Williams (2000); Bernanke and Reinhart (2004).

²³Buiter (1981) contains a more general discussion of the benefits of “contingent rules” (i.e., those involving conditionality) over “fixed rules” (i.e., those involving unconditional commitments).

²⁴ See, for example, the question and answer session at the ECB press conference held on April 2, 2009 (<http://www.ecb.europa.eu/press/pressconf/2009/html/is090402.en.html>).

²⁵Trichet (2005).

²⁶Lorenz (1972).

²⁷See the discussion in the question and answer session at the ECB press conference held on May 7, 2009 (<http://www.ecb.europa.eu/press/pressconf/2009/html/is090507.en.html>).

²⁸While these caveats are important, measures of private inflation expectations derived from surveys—which should be immune to liquidity and safe-haven effects—would tell a similar story.

²⁹ For more details, see Trichet (2009a).

³⁰ Trichet (2009b).

³¹ Reinhart and Rogoff (2008, 2009) are important reminders that financial crises can have deep and long-lasting consequences, especially on employment and asset prices.

References

- Adalid, R., and C. Detken (2007). "Liquidity shocks and asset price boom/bust cycles," ECB working paper no. 732.
- Adrian, T., and H.S. Shin (2008). "Liquidity, monetary policy, and financial cycles," *Current Issues in Economics and Finance*, FRB New York (January).
- Alessi, L., and C. Detken (2009). "'Real time' early warning indicators for costly asset price boom/bust cycles: A role for global liquidity," ECB working paper no. 1039.
- Angeloni, I., A. Kashyap and B. Mojon (2003). *Monetary policy transmission in the euro area*, Cambridge University Press.
- Bernanke, B.S., and M. Gertler (1995). "Inside the black box: The credit channel of monetary policy transmission," *Journal of Economic Perspectives* 9, pp. 27-48.
- Bernanke, B.S., and M. Gertler (1999). "Monetary policy and asset price volatility," in *New Challenges for Monetary Policy*, Federal Reserve Bank of Kansas City, pp. 77-128.
- Bernanke, B.S., and V.R. Reinhart (2004). "Conducting monetary policy at very low short-term interest rates," *American Economic Review* 94(2), pp. 85-90.
- Borio, C., and P. Lowe (2002). "Asset prices, financial and monetary stability: Exploring the nexus," BIS working papers no. 114.
- Buiter, W.H. (1981). "The superiority of contingent rules over fixed rules in models with rational expectations," *Economic Journal* 91, pp. 647-670.
- Campbell, J.Y. (2008). *Asset Prices and Monetary Policy*, Chicago University Press.
- Cechetti, S., H. Genberg, J. Lipsky and S. Wadhvani (2000). "Asset prices and central bank policy: What to do about it?" *Geneva Reports on the World Economy* 2.
- Christiano, L.J., M. Eichenbaum and C.L. Evans (1999). "Monetary policy shocks: What have we learned and to what end?" in J.B. Taylor and M. Woodford, *Handbook of Macroeconomics*, Elsevier, pp. 65-148.
- Christiano, L., R. Motto and M. Rostagno (2008). "Two reasons why money and credit may be useful in monetary policy," in A. Beyer and L. Reichlin (eds.) *The Role of Money: Money and Monetary Policy in the Twenty-First Century*, ECB, pp. 56-82.
- De Santis, R.A., C.A. Favero and B. Roffia (2008). "Euro area money demand and international portfolio allocation: A contribution to assessing risks to price stability," ECB working paper no. 926.
- Detken, C., and F. Smets (2004). "Asset price booms and monetary policy," in H. Siebert (ed.), *Macroeconomic Policies in the World Economy*, Springer.

- ECB (2005). "Asset price bubbles and monetary policy," *Monthly Bulletin* (April) pp. 47-60.
- ECB (2008). "Box 2: Recent developments in the balance sheets of euro area credit institutions," *Monthly Bulletin* (December) pp. 25-28.
- EMI (1997). "The single monetary policy in Stage Three: Elements of the monetary policy strategy of the ESCB."
- Fischer, B., M. Lenza, H. Pill and L. Reichlin (2008). "Money and monetary policy: The ECB experience 1999-2006," in A. Beyer and L. Reichlin (eds.) *The Role of Money: Money and Monetary Policy in the Twenty-First century*, ECB, pp. 102-175.
- Gerdesmeier, D., B. Roffia and H-E. Reimers (2009). "Asset price misalignments and the role of money and credit," ECB working paper no. 1068.
- Goodfriend, M. (1991). "Interest rates and the conduct of monetary policy," *Carnegie-Rochester Series on Public Policy* 34(1), pp. 7-30.
- Goodhart, C., and B. Hofmann (2006). *House Prices and the Macroeconomy*, Oxford University Press.
- Hoerova, M., C. Monnet and E. Temzelides (2009). "Money talks: Information and monetary policy," ECB working paper series, forthcoming.
- Issing, O. (2002), "Why stable prices and stable markets are important and how they fit together," First Conference of the Monetary Stability Foundation, December 5, 2002, Frankfurt/Main.
- Issing, O. (2009). "In search of monetary stability: The evolution of monetary policy," BIS working paper series, March, no. 273.
- Kohn, D.L. (2007). "Monetary policy and asset prices," in *Monetary Policy: A Journey From Theory to Practice*, ECB, pp. 43-51.
- Kohn, D.L. (2008). "Monetary policy and asset prices revisited," speech at the Cato Institute's Twenty-sixth Annual Monetary Policy Conference.
- Krugman, P. (1998). "It's baaack! Japan's slump and the return of the liquidity trap," *Brookings Papers on Economic Activity* 98(2), pp. 137-187.
- Lorenz, E. N. (1972). "Does the flap of a butterfly's wings in Brazil set off a tornado in Texas?" Speech before the American Academy for the Advancement of Science, December 29.
- Papademos, L. (2008), "The role of money in the conduct of monetary policy," Beyer and Reichlin (eds.), *The Role of Money and Monetary Policy in the Twenty-First Century*, ECB.

- Reifschneider, D., and J.C. Williams (2000). "Three lessons for monetary policy in a low inflation era," *Journal of Money, Credit and Banking* 32(4), pp. 936-966.
- Reinhart, C. and K. Rogoff (2008). "This time is different: A panoramic view of eight centuries of financial crises," NBER Working Paper 13882.
- Reinhart, C., and K. Rogoff (2009). "The Aftermath of financial crises," *American Economic Review: Papers & Proceedings* 99(2), pp. 466-472.
- Rudebusch, G.D. (1995). "Federal Reserve interest rate targeting, rational expectations, and the term structure," *Journal of Monetary Economics* 35(2), pp. 245-274.
- Smets, F., and R. Wouters (2003). "An estimated dynamic stochastic general equilibrium model of the euro area," *Journal of the European Economic Association* 1, pp. 1123-1175.
- Stark, J. (2007). "Enhancing the monetary analysis," speech at the CFS conference "The ECB and Its Watchers IX," http://www.ecb.int/press/key/date/2007/html/sp070907_1.en.html.
- Stark, J. (2008). "The contribution of monetary and financial statistics to the conduct of monetary policy," in *A Strategic Vision for Statistics: Challenges for the Next Ten Years*, ECB, pp. 43-52.
- Trichet, J.C. (2005). "Monetary policy and 'credible alertness,'" in *The Greenspan Era: Lessons for the Future*, Federal Reserve Bank of Kansas City, pp. 523-45.
- Trichet, J.C. (2009a). "The ECB's enhanced credit support," keynote address at the University of Munich economic seminar, <http://www.ecb.europa.eu/press/key/date/2009/html/sp090713.en.html>.
- Trichet, J.C. (2009b). "The financial crisis and our response so far," keynote address at the Chatham House Global Financial Forum, <http://www.ecb.europa.eu/press/key/date/2009/html/sp090427.en.html>.
- Woodford, M. (1999). "Optimal monetary policy inertia," *Manchester School* 67(0), pp. 1-35.
- Woodford, M. (2003). *Interest and Prices: Foundations of a Theory of Monetary Policy*, Princeton University Press.