Lucas Papademos: Monetary policy and the "Great Crisis" – lessons and challenges

Speech by Mr Lucas Papademos, Vice President of the European Central Bank, at the 37th Economics Conference "Beyond the Crisis: Economic Policy in a New Macroeconomic Environment", organised by the Austrian National Bank, Vienna, 14 May 2009.

*   *   *

I. Introduction

In less than three months, two years will have passed since the eruption of the financial market turbulence which progressively evolved into the deepest and broadest financial and economic crisis since the 1930s. There is no doubt that the global and European economies are going through a "great crisis", one of exceptional proportions, in terms of its impact, scope and duration. Moreover, the crisis appears to be "beyond compare" because although it does share important features with previous crises, it is also characterised by some unique ones relating to both its causes and its dynamics. I should like to thank you for inviting me to address this prestigious conference and talk about the lessons from this crisis for monetary policy and the challenges that lie ahead in the new macroeconomic environment that is likely to emerge.

The current crisis has raised a number of important issues concerning the prevention and management of crises and allows us to draw relevant lessons for both market participants and policy-makers. The analysis of the underlying causes and contributing factors as well as of the events and processes that determined its evolving nature and intensity over time points to several conclusions about the role of public authorities – central banks, supervisors and governments – in safeguarding financial stability and about the effectiveness of the existing institutional framework and available policy instruments in achieving this objective. It also raises questions on the functioning of financial markets and institutions, in particular their capacity to price, allocate and manage risk efficiently.

In my remarks, I will focus on the role monetary policy can play and the contribution it can make to prevent a financial crisis and – if one occurs – to minimise its impact on the financial system and the broader economy. More specifically, drawing lessons from the current crisis, I will address the following questions:

- what is the role of monetary policy in dealing with a financial crisis and in helping to safeguard the stability of the financial system, while at the same time ensuring the preservation of price stability?
- what has been the effectiveness of the monetary policy instruments and the other "non-standard" measures taken by central banks, and notably the ECB, in order to mitigate the effects of the crisis on the economy, by promoting the orderly functioning of money markets and fostering the provision of credit to the private sector?
- as conditions normalise, we need to look beyond the crisis – indeed the theme of the conference invites us to do – and a crucial issue is: what is the appropriate exit strategy and its implementation modalities that can ensure the preservation of price stability and the gradual return to conditions where markets do not need to rely on the unprecedented measures of central bank financing and government bank support?
- finally, what is the appropriate conduct of monetary policy in the post-crisis macroeconomic environment that is likely to emerge? In particular, what can monetary policy do to reduce the likelihood that a financial crisis, like the current one, occurs again and, thus help to prevent its potential adverse effects on economic activity and price stability?

II. Dealing with the financial crisis: the role of monetary policy and liquidity management

Let me now first concentrate on the role of monetary policy – and more generally central bank policies – in dealing with a financial crisis and how this role can be performed in a manner that is compatible with the preservation of price stability. In doing so, I will highlight the actions taken by the ECB during the current crisis and I will assess their effectiveness.

The ECB and the Eurosystem have as primary objective the maintenance of price stability. At the same time, the Eurosystem aims to safeguard financial stability.[1] The two policy goals are, in general, positively related. Price stability is a necessary condition for financial stability, which in turn is essential for the effective transmission of monetary policy. Disturbances that result in a severe financial market turbulence, which disrupts the intermediation process and threatens the stability of the financial system, are likely to have adverse consequences for economic activity and price stability. But this is not always the case, as other factors or processes can counteract the impact of financial market stresses on price developments. There are occasions when the constellation of disturbances affecting the economy can lead to situations that pose policy trade-offs.

When assessing the role of central bank policy in supporting financial stability, it is important to distinguish between a change in the monetary policy stance – that is, a change in the policy rate and/or an expansion of central bank money – and the management of liquidity that aims to mitigate the impact of shocks on the interbank money market so as to ensure its orderly functioning and the efficient transmission of monetary policy impulses to the economy. This distinction is crucial both for substantive reasons and in order to better understand the rationale of the policies pursued by the ECB – the various measures taken, be they standard or non-standard – aimed at counteracting the effects of the crisis on the financial system, economic activity and price stability.

Since the financial turbulence erupted in summer 2007, financial and economic developments as well as central bank policy responses can be usefully examined and assessed over two time periods. During the first period, from early August 2007 until early October 2008, the ECB did not ease the stance of monetary policy – as defined by its key policy rates – to address financial market tensions. On the contrary, in July 2008, it raised its key policy rates by 25 basis points to counter increasing inflationary pressures and medium-term inflation risks. But from the onset of the crisis in August 2007, the ECB took swift and decisive action to provide liquidity in the interbank money market to alleviate the stresses and ensure, to the maximum extent possible, that liquidity problems would not turn into solvency problems, and that systemic risk would be effectively contained.

During this period the Eurosystem engaged in active liquidity management adjusting the intertemporal distribution of liquidity provision within the reserve maintenance period, but without changing the total supply of bank reserves over the entire maintenance period (of, in most cases, 28 days). At the same time, the maturity profile of the refinancing operations was altered, with more central bank liquidity provided to banks for periods up to 3 months (and as of March 2008, also up to 6 months), and correspondingly less in the weekly main refinancing operations, so that the overall supply of central money was kept broadly unchanged. As a result, between the end of June 2007 and the end of September 2008, the balance sheet of the Eurosystem increased only moderately by about 100 billion euro.[2]

To sum up, for more than a year since the eruption of the financial market turmoil, the unfavourable combination of, on the one hand, persisting and increasing inflation risks and,

---

[1] See Mission Statement of the Eurosystem (www.ecb.europa.eu).

[2] At the end of September 2008, the size of the balance sheet of the Eurosystem was EUR 1013 billion, an increase of 11% compared to its size at the end of June 2007, before the turmoil erupted.

on the other, substantial stresses in the financial systems and risks to its stability required a "separation" of the monetary policy stance from the management of liquidity. The former was defined so as to achieve the primary objective of preserving medium-term price stability. The latter aimed at, and was effective in, mitigating pressures in the money market and tensions in other financial markets, as measured, for example, by CDS spreads and corporate bond risk premia, which gradually eased.

With the collapse of Lehman Brothers in September last year, the crisis entered a new phase: it intensified greatly and abruptly, spread across economic sectors, and broadened globally, affecting advanced, emerging and developing economies. Risk aversion rose dramatically and confidence plummeted, as shown by several indicators, stresses in the banking system increased, the money market became dysfunctional, and world economic activity weakened substantially accompanied by a sharp drop in world trade and a marked decline in commodity prices.

The sudden and substantial deterioration in financial market conditions and the macroeconomic environment changed the outlook for price stability and inflation risks diminished significantly in the euro area and globally. At the same time, the risks to financial stability increased. In response, the ECB and other major central banks eased monetary policy and injected large amounts of liquidity, also employing non-standard policy measures. Over the past seven months, since the financial crisis deepened and broadened, the ECB has reduced its key policy interest rate by 325 basis point, to now 1%. The magnitude of the monetary policy easing over such a short period of time is unprecedented and highlights the exceptional policy response to the crisis. Equally unprecedented has been the expansion of liquidity provided by the ECB in the interbank money market.

Indeed, the provision of liquidity by the ECB to the euro area banking system has been extraordinary in size and scope, and has involved implementation of non-standard measures. Following the Lehman Brothers bankruptcy last September, banks became ever more reluctant to lend to each other as a result of a sharp increase in the perceived risks of counterparty default and a continued lack of transparency about the health of banks' balance sheets.[3] To reduce banks' severe funding problems, the ECB took unprecedented steps and increased its intermediation activity. Since last October, the ECB has provided unlimited funding in euro at fixed interest rates over periods up to six months against an expanded list of eligible assets for use as collateral in Eurosystem refinancing operations. In addition, the ECB has supplied liquidity in other currencies, notably US dollars, on a basis of a swap agreement with the Federal Reserve. This extraordinary expansion of liquidity provided to euro area banks is reflected in the growth of the Eurosystem's balance sheet. Between the end of June 2007 and the end of April 2009, the balance sheet increased by about EUR 600 billion, and had reached EUR 1.51 trillion which is equivalent to 16% of the nominal GDP in the euro area. By comparison, the size of the Federal Reserve System balance sheet had reached 14% of the US nominal GDP at the end of April.

Have the policy actions taken by the ECB been effective? They have resulted in a significant improvement in money market conditions, which contributes to the financing of the economy and helps contain the impact of the crisis on economic activity and price developments. The *spread* between the three-month unsecured rate, Euribor, and the three-month overnight index swap rate (Eonia swap rate), a widely-used measure of interbank market tensions, declined by almost 130 basis points over the past seven months, from the highs of above 180 basis points recorded in October 2008 to just below 60 basis points in mid-May 2009. Moreover, the *levels* of money market rates have declined even more from the peaks reached last October. For example, the three-month Euribor rate was 1.27% in the middle of

---

[3] The effects of asymmetric information and counterparty credit risk on the structure of the interbank market and various policy responses are analysed in Heider et al. (2009).

this week (13 May), more than 400 basis points lower that its peak value (5.39%) last October. These are favourable developments also relative to those observed in other major money markets, where interest rate spreads and levels have been declining sharply as well.[4]

The transmission of the policy rates to money market interest rates is an important step but it is also an intermediate one. The structure of the euro area financial system, with the dominant role played by the banking system in the financing of the economy, implies that the transmission of the ECB's policy rates to the euro area bank lending rates is of utmost relevance for economic activity. Until October 2008, the borrowing costs of households and firms seemed to have increased compared to the policy rate, as bank lending standards tightened and bank interest rates followed the path of the Euribor rate. But the substantial reduction in policy rates and the unlimited provision of liquidity to the banking system over the past seven months have resulted in a decline in bank lending rates, particularly as regards short-term credit.

Nevertheless, financing conditions have remained tight and credit growth to the private sector has decelerated, partly as a consequence of the deleveraging of banks' balance sheets and persisting stresses in the bank wholesale funding markets. After a prolonged period of "search for yield" by investors and the accompanying excessive growth of credit and leverage, the large writedowns on bank assets, the reduced bank profitability and the low confidence in the health of the banking system have forced banks to embark on a process of deleveraging. Needless to say, the ongoing structural adjustment in the banking sector and low confidence cannot be counteracted by monetary policy. To address these developments and help strengthen banks' balance sheets, governments have provided a significant amount of support to banks in Europe and elsewhere, through capital injections, the provision of government guarantees on new bank debt as well as asset relief schemes aiming at removing troubled assets from banks' balance sheets.[5] The common goals of these government measures are to safeguard financial stability, help restore the provision of credit to the economy and bolster confidence in the soundness of the financial system and in the prospects of the economy.

At the current juncture, a key feature of the current crisis is a mutually reinforcing interaction between, on the one hand, the weakening of economic activity and rising unemployment, and, on the other hand, the process of deleveraging of banks' balance sheets and the persisting bank stresses in some bank funding markets. The weakening of economic activity could lead to a further deterioration in bank balance sheets and prolong the deleveraging process. This could limit the willingness of banks to supply credit, which would adversely affect economic activity and increase the likelihood that banks will suffer further credit losses and tighten their lending standards. The deleveraging process and the emergence of a strong adverse feedback loop between the real economy and the financial sector will undoubtedly affect the impact of monetary policy and will make it harder to assess its effectiveness. This also underscores the importance of the effective implementation of the government measures to strengthen bank balance sheets and other policy actions that can improve the functioning of funding markets.

At its most recent meeting on 7 May, the Governing Council decided to lower the interest rate on the main refinancing operation of the ECB by 25 basis points to 1% and keep the interest rate on the deposit facility unchanged at 0.25%. We also agreed on important measures of "enhanced credit support", aimed at encouraging banks to expand credit to the private sector, improve market liquidity and funding conditions for banks and enterprises and, more

---

[4] For example, the corresponding US money market spread, three-month Libor rate minus the OIS, declined to just under the 100 basis point mark last month.

[5] In the euro area, banks had received just over EUR 113 billion of capital injections from governments and around EUR 300 billion of government guarantees until early May 2009.

generally, enhance the transmission of monetary policy actions to the real economy. These measures include the purchase of euro-denominated covered bonds issued in the euro area, the provision of central bank liquidity to the banking system with a maturity of 12 months, and making the European Investment Bank an eligible counterparty in the Eurosystem's monetary policy operations.

III. The exit strategy from the extraordinary policy measures taken during the financial crisis

To sum up, the monetary policy responses of the ECB and the other major central banks to the current crisis, especially since its deepening and broadening last October, have been extraordinary – indeed, they can be labelled "unprecedented". But they have been appropriate in the light of the severity and scope of the crisis, and its potential effects on the financial system and price stability. Unprecedented has been the size of monetary policy easing since last autumn; unprecedented has been the amount of liquidity provided by the Eurosystem to the banking system at different maturities and in different currencies and the related expansion of its balance sheet; and unprecedented has been the use of "non-standard" measures to provide central bank liquidity and support the provision of credit to the private sector. These facts underscore the importance of the adoption on an appropriate exit strategy from the extraordinary macroeconomic stimulus, the government bank support schemes and the non-standard monetary policy measures.

The features of the appropriate exit strategy and the pace of its implementation will depend on several considerations, but let me emphasise two: The first is the overriding goal to effectively counter any risks to price stability over the medium to longer-term and ensure that medium-term inflation expectations remain firmly anchored to price stability. The second is the need to progressively reduce the reliance of the banking system, and more generally of the financial sector and the economy, on support mechanisms and non-standard measures which are of exceptional and temporary nature, and to restore the normal functioning of markets. To this end, once financial conditions and the macroeconomic environment improve, the non-standard monetary policy measures taken should be quickly unwound and the liquidity provided should be absorbed in a timely manner.

The effective implementation of the exit strategy will have to address a number of issues. The ease with which the central bank can revert from the non-standard to normal operating procedures in a smooth manner will depend on the resolution of the underlying reasons for the dysfunctioning of the money market. In particular, transparency and confidence in the reliability of the reporting of market participants' exposures to toxic assets and highly risky loans must be such that adverse selection, which has been a cause of dysfunction of the money market, ceases to be a problem. Moreover, any changes in the operational framework should be clearly communicated by the central bank with sufficient lead time to allow market participants to prepare and adjust their liquidity management. The ECB and the Eurosystem are committed to pursuing such a timely and transparent communication policy.

Another issue of relevance for the implementation of the appropriate monetary policy stance in the context of an exit strategy is the careful assessment of the extent to which parts of the monetary policy transmission mechanism have been affected by the financial market turbulence, and the implication of this for the conduct of monetary policy. For example, during the crisis the ratio of the broad monetary aggregate M3 to the monetary base M0 has dropped rapidly and substantially because the provision of liquidity by the central bank is only partly transmitted – and to a much lesser extent than in normal times – to the bank credit market and the real economy. Once the economy recovers and the deleveraging of banks' balance sheets is complete, the value of this "money multiplier" will start reverting to normal. Vigilance and appropriate policy responses are therefore needed to avoid an excessive expansion of credit to the economy. These concerns may seem premature at the present juncture of tight financing conditions, but is important to be prepared so that the exit strategy

is implemented effectively and we avoid sowing the seeds of credit and asset market excesses in the future that could constitute a risk to price stability.

One attractive feature of most non-standard measures used by the ECB is that they can be easily unwound and that the liquidity provided can be withdrawn automatically at the maturity of the refinancing operations. Of course, the relative advantages of different non-standard measures with regard to their unwinding should be judged against their effectiveness in providing the necessary credit support during the crisis. And the effectiveness of different measures depends on the economy's financial structure, for instance the extent to which the financing of the economy relies on the banking system, as is the case in the euro area, or it is market-based, as is the case in certain other advanced economies.

Finally, the timing of implementation of an exit strategy will clearly depend, first and foremost, on the outlook for price stability, which is partly related to the pace of economic recovery and the return to normality in financial markets. Recently, we have observed an increasing number of positive signs suggesting that the economy is stabilising and that the recovery may start sooner than previously envisaged, despite the further strong deterioration of economic activity in the first quarter of this year. However, the available economic data and survey indicators point to a stabilisation at very low levels and economic activity in the euro area is likely to gradually recover in the course of 2010. The monetary policy stance and the non-standard measures taken so far will ensure the preservation of price stability over the medium term and will progressively provide further support to economic activity.

IV. Financial crisis prevention and monetary policy

The uncertainties associated with the transmission of monetary policy when the financial system is under stress and the implementation challenges of the exit strategy that I previously mentioned are only two reasons which highlight the need to prevent the build-up of financial imbalances in the first place. One of the lessons from the current crisis, which is also supported by recent research findings[6], is that monetary policy tools should be among the instruments to be employed to prevent asset market excesses and the systemic and deflation risks they entail. The events of the past two years have revived the debate on whether, and to what extent, monetary policy can be used to "lean against the wind" of emerging asset price bubbles; or whether monetary policy can indeed be conducted in what could be called a "symmetric" manner over the financial cycle, that is, being accommodative in an environment of falling asset prices, while being commensurately restrictive during a financial market boom.[7]

Let me elaborate on these issues by first looking at periods when financial markets are declining sharply. In general, market participants will expect public authorities, including the central bank, to take measures to mitigate the impact of a major crisis once it occurs. From the perspective of the central bank, a monetary policy easing, in all likelihood, would not only be supportive of financial stability, but it would also be appropriate for achieving the price stability objective, as inflationary pressures could be expected to diminish during a severe financial market downturn associated with a weakening of economic activity. For financial institutions, however, the expectation of being "bailed out" in a crisis is likely to encourage excessive risk-taking during boom times, or even fuel an asset price boom. The available evidence and recent research show that a higher, possibly excessive, level of risk-taking has been observed in the past during periods of persistently low interest rates.[8] In order to

---

6 E.g. Diamond and Rajan, 2008; Adrian and Shin, 2008; Maddaloni et al., 2008; Alessi and Detken, 2009; De Fiore and Tristani, 2009; Cecchetti et al, 2000; see also Taylor, 2009.

7 See pertinent discussion in Kohn, 2006 and 2008.

8 See Jiménez et al. (2007).

reduce such potentially dangerous side-effects of non-standard measures of liquidity provision and of the very low policy rates during a crisis, monetary policy would have to be sufficiently tightened during the financial boom phase. Such a policy would dampen financial market excesses through two channels. It would tend to reduce asset prices by increasing the rate at which an asset's future income stream is discounted. Most importantly, the anticipation of such a policy response would reduce the likelihood of a speculative bubble emerging in the first place, by affecting investment behaviour and reducing the level of risk incurred by financial intermediaries in their lending.[9]

Can such a "symmetric" monetary policy response to financial market cycles be effectively implemented? The ECB's monetary policy strategy offers an appropriate framework, and one that seems better suited than the traditional inflation targeting framework, for two main reasons: *First*, the ECB defines quantitatively its price stability objective – an inflation rate below, but close to, 2% – in a manner that would allow the conduct of a more restrictive monetary policy during a period of buoyant financial markets, even in an environment of relatively subdued inflationary pressures. In other words, "leaning against the wind" of booming asset prices by raising the policy interest rates would, even in the short to medium term, be compatible with the ECB's monetary policy strategy aiming at consumer price (HICP) stability. "Leaning against the wind" would likely result in lower inflation over the short term, but would be expected to be more effective in maintaining price stability over the longer term, by helping to prevent the materialisation of deflation risks when the asset bubble bursts.

Second, the ECB's analysis of monetary and credit developments aimed at identifying longer-term inflation risks can also provide signals of growing financial imbalances, which could in principle be used to implement a policy of "leaning against the wind".[10] Even if "leaning against the wind" would not be an explicit policy aim, the greater reliance on monetary and credit developments when defining the appropriate monetary policy stance would result in pursuing a tighter policy during times of booming financial markets and a more accommodative one in less favourable conditions. This is because asset price booms are often associated with strong money and credit expansion. Recent research, also by ECB colleagues, has shown that financial imbalances – especially the more "costly" ones – are usually related to a large build-up of leverage in the economy, which, in turn, is reflected in money and credit growth.[11] That said, a policy of "leaning against the wind" can not be implemented in a mechanical way in response to developments in monetary and credit aggregates. Not least because the recent experience has shown that rising asset prices are not necessarily closely associated with a significant increase in inflationary pressure that would call for a tightening of monetary policy. Structural factors, such as increases in trend productivity growth, technological innovation or the inflation-dampening effects of global competition can contribute to keeping inflation low when asset prices are rising. This can lead to situations where the use of the single monetary policy instrument, the interest rate, to pursue the objective of price stability might require a change in one direction, but financial stability considerations might point to a different direction.

Moreover, it has been argued that monetary policy is "too blunt a tool" to be effective in preventing the build-up of imbalances, because interest rate increases might need to be very large in order to have any effect on asset prices and risk-taking in periods of "irrational exuberance" in financial markets. Recently, three arguments, based on empirical evidence, have been advanced that would alleviate this traditional concern. *First*, the experience during

---

[9] See Diamond and Rajan, 2008; Cao and Illing, 2008.

[10] See Alessi and Detken (2009) and Gerdesmeier et al. (2009).

[11] See Detken and Smets, 2004; Adalid and Detken, 2007; Goodhart and Hofmann, 2008; Christiano et al., 2008); Baumeister et al., 2008.

the current crisis with off-balance sheet structured investment vehicles (SIVs) suggests that the profitability of such entities based on high leverage and maturity mismatch is very sensitive even to small changes in the spread between long and short-term interest rates. To the extent that the central bank is able to affect the slope of the yield curve, such a maturity mismatch and leverage would be curtailed.[12] *Second*, while central bank warnings about observed excessive risk-taking might not always trigger immediate corrective action, their explicit communication in conjunction with small changes in the key policy rate could have the desired effect. This is because a change in the policy rate would serve as a signalling device and increase the credibility of the central bank's risk assessment.[13] *Third*, by slightly increasing the price of leverage at an early stage of a developing boom, the central bank could break herding behaviour when the development of a bubble depends on investors observing other investors purchasing the bubble-prone asset.[14] Thus the view that monetary policy is too blunt a tool to lean against the wind of asset price booms could be challenged. But no consensus on this issue has yet emerged. The effectiveness of implementing a symmetric monetary policy will have to be assessed in practice.

My remarks have focused so far on lessons and challenges for monetary policy. However, other policies should certainly also be at the centre of attention when drawing lessons from the "Great Crisis", not least because other policies can complement and support the efforts of central banks to prevent and manage a crisis. The experience over the past two years has revealed several weaknesses in the financial system and highlighted important inadequacies in the regulatory and supervisory frameworks. Strengthening and broadening the regulatory framework as well as conducting macro-prudential supervision at the global and European levels are important priorities. In particular, the establishment of an effective framework for macro-prudential supervision and the development of the relevant analytical underpinnings, such as financial stability indicators as well as early risk warning and stress-testing models would greatly contribute to financial crisis prevention.

V. Conclusion

I started by characterising the current crisis as "great" and one "beyond compare". The crisis has also been a learning experience "beyond compare", for market participants and policy-makers, including central banks. What is essential now is to make sure that the lessons that have been identified from this experience are actually learnt, and that public policy and market behaviour adapt accordingly to benefit from those lessons. For monetary policy, this implies that financial stability considerations should be taken into account when formulating policy aimed at preserving price stability over the medium and longer term. In particular, close monitoring and deeper analysis of asset price movements, monetary and credit developments, and the build-up of financial imbalances and the emergence of systemic risk can provide valuable information for the conduct of monetary policy. The ECB's monetary policy strategy provides the framework for such an analysis. The more immediate challenge for monetary policy in the short and medium term is to strike a balance between, on the one hand, responding in a timely and effective manner to incipient risks to price stability as the economy recovers and market conditions normalise, and, on the other hand, winding down in a proportionate manner the support schemes and non-standard measures that have been implemented to mitigate the adverse effects of the crisis on the banking system and certain financial market segments. Finally, just as a crisis is a multi-faceted phenomenon, the public policy response cannot rely only on one policy instrument or the actions of one authority. The joint efforts and cooperation of central banks, supervisors and regulators are necessary for

[12] Adrian and Shin, 2008.

[13] Hoerova et al., 2008.

[14] Loisel et al., 2009.

effective crisis prevention and management. In this manner, we will also better address the challenges that lie ahead.

Thank you very much for your attention.

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), "Financial Intermediaries, Financial Stability and Monetary Policy", *Federal Reserve Bank of Kansas City Symposium, Jackson Hole.*

Alessi, L. and C. Detken (2009), "'Real Time' Early Warning Indicators for Costly Asset Price Boom/Bust Cycles: A Role for Global Liquidity", *Paper presented at EABCN and CREI Conference on Business Cycle Developments, Financial Fragility, Housing and Commodity Prices, Barcelona, 21-23 November 2008, ECB Working Paper, forthcoming.*

Altunbas Y., L. Gambacorta and D. Marqués-Ibáñez (2009), "Securitisation and the Bank Lending Channel", *European Economic Review, forthcoming, available as the ECB Working Paper No. 838.*

Baumeister, C., Durinck, E. and G. Peersman (2008), "Liquidity, Inflation and Asset Prices in a Time-Varying Framework for the Euro Area", *paper presented at 2008 colloquium of the National Bank of Belgium.*

Cao, J. and G. Illing (2008), "Liquidity Shortage and Monetary Policy", *CESifo Working Paper No. 2210.*

Cecchetti, S.G., H. Genberg, J. Lipsky and S. Whadwani (2000), "Asset Prices and Central Bank Policy", *Geneva Report on the World Economy 2, CEPR and ICMB.*

Christiano, L., R. Motto and M. Rostagno (2008), "Monetary Policy and Stock Market Boom-Bust Cycles", *ECB Working Paper, No. 955.*

Diamond, D.W. and R.G. Rajan (2008), "Illiquidity and Interest Rate Policy," available at http://www.newyorkfed.org/research/conference/2009/cblt/Diamond_Rajan.pdf.

De Fiore, F. and O. Tristani (2009), "Optimal Monetary Policy in a Model of the Credit Channel", *ECB Working Paper, No. 1043.*

Detken, C. and F. Smets (2004), "Asset Price Booms and Monetary Policy", *ECB Working Paper, No. 364.* Published in H. Siebert (ed.) Macroeconomic Policies in the World Economy, Springer: Berlin.

Di Noia, C. and G. Di Giorgio (1999), "Should Banking Supervision and Monetary Policy Tasks be Given to Different Agencies?", *International Finance*, 2:3, 361-378.

Gerdesmeier, D., B. Roffia and H.-E. Reimers (2009), "Monetary Developments and Asset Prices", *ECB Mimeo*.

Goodhart, C. and B. Hofmann (2008), "House Prices, Money, Credit and the Macro-economy", *ECB Working Paper Series, No. 888*.

Heider, F., M. Hoerova and C. Holthausen (2008), "Liquidity Hoarding and Interbank Market Spreads: The Role of Counterparty Risk," available at http://ssrn.com/abstract=1362113.

Hoerova, M., C. Monnet and T. Temzelides (2008), "Money Talks: Information and Monetary Policy", *ECB Working Paper (forthcoming).*

International Monetary Fund (2009), "World Economic Outlook", April.

Jiménez, J., S. Ongena, J.-L. Peydró-Alcalde and J. Taurina (2007), "Hazardous Times for Monetary Policy: What do Twenty-Three Million Bank Loans Say About the Effects of Monetary Policy on Credit Risk?", *CEPR Discussion Paper 6514.*

Kohn, D. (2006), "Monetary policy and asset prices"; speech delivered at the European Central Bank Colloquium on "Monetary Policy: A Journey from Theory to Practice" held in honour of Otmar Issing, Frankfurt, Germany, 16 March.

Kohn, D. (2008), "Monetary Policy and Asset Prices Revisited"; speech delivered at the Cato Institute's 26th Annual Monetary Policy Conference, Washington, D.C., 19 November

Loisel, O., A. Pommeret and F. Portier (2009), "Monetary Policy And Herd Behaviour In New-Tech Investment", *mimeo.*

Maddaloni, A., J.L. Peydró and S. Scopel (2008), "Does Monetary Policy Affect Bank Credit Standards?", *mimeo.*

Papademos, L. "The dual crisis: economic impact, policy response and exit strategy", speech at the High-Level Panel Debate on "Europe in the Economic and Financial Crisis: How to bring back prosperity for everyone?", Brussels, 4 May.

Taylor, J.B. (2009), "The Financial Crisis and the Policy Responses: An Empirical Analysis of What Went Wrong", *NBER Working Paper Series No. 14631.*