Mario Draghi: Monetary policy and new financial instruments

Speech by Mr Mario Draghi, Governor of the Bank of Italy and Chairman of the Financial Stability Forum, at Session I on Challenges in the World's Financial Markets of the 2007 Money and Banking Conference "Monetary Policy Under Uncertainty", hosted by the Central Bank of Argentina, Buenos Aires, 4 June 2007.

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1. Introduction

In my talk on "*Monetary Policy and New Financial Instruments*" I will first review some of the most important financial innovations we have seen in recent years, and the consequences they have had for financial markets and institutions. Then I'll discuss some of the implications for financial stability policies, before closing with some thoughts on the implications for monetary policy.

2. The recent wave of financial innovation

While there have been many changes in how financial markets function in recent years, perhaps the most striking changes have come in the area of credit risk. Large banks in the developed markets are rapidly moving away from the traditional business of making loans and holding them to maturity. Increasingly they see their business model as originating credit claims (or packaging claims originated by others) and selling them, often in seniority-based tranches, to investors. As a result, the process of disintermediation – which was already well underway in many markets in the 1980s and 1990s – has accelerated. Credit is now something that is largely bought and sold on markets, rather than held for the long term on the balance sheets of financial intermediaries.

The increased trading of securitized credit instruments has accompanied, as both cause and effect, the explosive growth in the market for credit derivatives. Meanwhile, derivatives and structured products in other risk categories, such as interest rates, foreign exchange and equities, have also continued to grow in volume and complexity.

Rapid innovation in financial instruments has accompanied – again, both as cause and effect – increased activity by non-traditional financial players, notably hedge funds and private equity funds. As institutions, of course, these are not themselves new. But there has been a qualitative shift in the size and scope of their activity. They have gone from being niche players to being key participants and drivers of innovation in a broad range of markets and transactions.

The growth of hedge funds is part of an ongoing realignment of the roles of different categories of financial institutions. Hedge funds now account for a large share of trading in many core market segments, and manage a steadily increasing share of the assets of the world's pension funds and university endowments. At the same time, traditional asset managers have adopted hedge-fund-like strategies, including taking on leverage and adopting short positions. Some hedge funds are taking a prominent role in credit markets, either as direct providers, as investors in the riskiest tranches of funded or synthetic CDOs, and by providing liquidity to the credit derivative market. The rise of stand-alone CDO vehicles as a channel for credit intermediation in turn has altered and potentially reduced the role of traditional banks in credit markets. Private equity funds have assumed an important role in restructuring corporate assets, with the help of innovative loan structures and financing techniques that rely on hedge funds as traders and investors. And the boundaries between the functions and behaviour of private equity funds and hedge funds have blurred as well.

In some respects it's still too early to forecast the full consequences of these developments. But we can already see some of the changes in financial systems that have resulted. Let me suggest some of the consequences that these changes may have, for financial markets, for financial institutions, and for how we go about fulfilling our responsibilities as central bankers.

With respect to markets, the most critical change has been the increased liquidity and transferability of risk. Not only are there ever more instruments and markets in which all kinds of risks can be hedged or traded; there is also a growing pool of counterparties willing to take one or the other side of a risk-transfer transaction – as long as the price is right. When analysts talk about the increased liquidity of markets, this is what they're referring to: in more and more markets, an asset can readily find a buyer at a price that does not command too great a liquidity premium.

One reason for this is that many of the new instruments are capital-efficient, meaning that traders do not need to allocate a large amount of up-front capital to adopt the relevant exposure. A second factor helping to increase market liquidity is that more and more players are structurally better at providing it. For example, institutional investors with long investment horizons have now become the largest investors in private equity and hedge funds. Because these investors can agree to lengthier "lock in" periods, in normal times, hedge funds and private equity funds can provide ready liquidity to markets because they themselves do not need to worry about meeting the liquidity needs of their investors. The funds may, however, face liquidity demands from other counterparties, particularly in times of stress – a point I'll come back to in a moment.

The greater diversity of players and instruments, and the increase in liquidity, have had a profound impact on how financial markets function. Volatility and risk premia have fallen steadily over this period of rapid innovation. To a degree, this has reflected reduced real volatility. But, more fundamentally, markets have become structurally more efficient at pricing risks and arbitraging valuation differences across assets. Financial prices are now driven more actively towards fundamentals than before.

One consequence of this is that we are moving to a world where financial shocks are more easily absorbed than they used to be, because there is a larger pool of players available who are willing and able to switch quickly from one market to another. As a result, liquidity shortages in one market or financial sector can rapidly be made up by transfers of liquidity from another. This helps ensure that prices for related assets are broadly in line with one another.

But at the same time the risk of a broader shock, affecting several markets at once, may have increased. Such a shock could result from a fall in risk appetites of a broad range of participants, perhaps in conjunction with a fall in the liquidity available to hedge funds and other active traders. Hedge funds may be shielded from liquidity demands from their investors, by lock-up periods and withdrawal gates, but they still need liquid funds to meet margin calls on their positions. Those demands are likely to rise most steeply at times when markets are turbulent and the supply of liquidity, whether from other traders or from dealers and prime brokers, is likely to be reduced. If initial price movements trigger counterparty concerns, this could well generate deeper and more broad-based liquidity erosions that can pose risks of a systemic nature.

What are the implications of this new environment for financial institutions, particularly the ones that are subject to regulation? One important development is that improved trading and pricing of risks enable financial institutions of all kinds to manage their risks better. For the official sector, this is clearly good news. At the same time, however, competitive pressures from new players and new ways of doing "old business" pose challenges. Greater risk management capacity also means it is easier for participants to take on risks, which can reinforce moral hazard problems. The operating environment has also become riskier, with complex instruments posing risk management and valuation challenges even for the most sophisticated firms. A shock to profitability that reduces the credit standing of one or more large institutions, or leads banks to take on riskier strategies in order to reach a desired level of profits, could have systemic implications that authorities need to be aware of.

A critical question for the stability of global financial markets is whether the core intermediaries – the fifteen or twenty large global firms that make markets in the most widely traded derivatives and act as prime brokers to hedge funds – are adequately managing their counterparty and principal-based trading activities. The large dealers firms manage counterparty exposures through a combination of initial margin, variation margin, and allocations of their own capital. So far, these firms seem to be keeping their *direct* credit exposures to hedge funds and principal trading under control. However, there is evidence that competition for hedge fund business may be putting margining arrangements under pressure. It is also unclear whether firms have adequately protected themselves against *indirect* exposures to the consequences of greater leveraged activity, such as the risk of a sudden global shock to liquidity as I mentioned a moment ago. Firms are still devising methodologies to model such events and incorporate them in stress tests. But ultimately the best safeguard will be adequate capital and liquidity cushions.

3. Implications for financial stability policy

What do these developments mean for financial stability policy? In the new environment, risks seem to be dispersed more widely, but transparency about where risks are located has declined. This reduces the sectoral impact of real and financial shocks, but may also make it harder to anticipate which sectors are vulnerable to a shock. Even more than before, policy needs to move from a reactive

orientation, where we intervene in response to problems and threats, to a preventative stance in which systems are made more robust to potential shocks.

Certainly it's not the task of the official sector to stand in the way of innovation or improved efficiency. However, we do need to minimize the moral hazard risks that might come from the increased risk capacity of regulated firms. One way to do this is to redouble our efforts to use regulatory tools – risk-based capital requirements, prudential rules, disclosure that is aimed towards strong market discipline – to align the decisions of regulated firms more closely to market signals.

New instruments and trading patterns also call for the expansion or adaptation of the market infrastructure that underpin financial activity. Here, collective action problems among market participants can arise that prevent the market from finding appropriate solutions on its own. Giving the impetus that the markets need to resolve collective action problems is a key task of central banks and financial regulators. We've seen some creative examples of this in the last few years, for example the efforts of the Federal Reserve Bank of New York and the Financial Services Authority in London to press large dealers to reduce their backlogs of unconfirmed credit derivatives contracts and to create more resilient settlement arrangements for these transactions.

The approach to regulation of hedge funds has been much discussed over the years. After extensive debate following the 1998 LTCM crisis, political and financial authorities agreed an "indirect approach". This approach relies on the counterparties who provide hedge funds with leverage – largely regulated banks or investment banks – to exercise appropriate discipline in their lending and dealing with hedge funds. Counterparties are expected to impose limits on their exposure to a hedge fund that takes on excessive leverage, is engaged in excessively risky strategies, or is not sufficiently forthcoming with information about their risk exposures.

This indirect approach has generally worked well in containing the financial stability risks posed by hedge funds. It is a joint effort, involving first and foremost the exercise of discipline by the private sectors, with supervisors buttressing that discipline when competitive pressures erode it. As markets grow and evolve we need to work constantly to ensure that all of the relevant parties are doing what they need to do.

This is the message that came out of the Financial Stability Forum's recent update of its 2000 report on highly leveraged institutions. In the update we set out five recommendations – addressed to supervisors, hedge fund counterparties, investors, and the hedge fund industry – that FSF members agree are likely to be most effective in financial stability risks related to hedge-funds Three of the recommendations are addressed to supervisors. They are urged to press dealer firms to strengthen counterparty risk measurement and management, especially where instruments are new and complexity is high. They will also work with firms to strengthen their capacity to assess and mitigate their exposures to the market liquidity erosions I mentioned earlier. Lastly, supervisors will evaluate the case for developing more systematic data on core institutions' global credit exposures to hedge funds. A fourth recommendation calls on counterparties and investors in hedge funds to demand and act upon appropriate information from hedge fund managers, while a fifth urges the hedge fund industry to review and enhance existing sound practice benchmarks for hedge fund managers.

I would like to dispel the notion that this indirect approach is a light approach. In particular, for supervisors to be able to judge the adequacy of firms' risk management processes and to induce more conservatism where this is needed, they must establish – continuously – where the frontier in terms of risk management practices is. And they must then set out expectations about changes that firms individually and collectively must make, and oversee firms' implementation of necessary changes. An extensive review by the main supervisory authorities of how the largest banks and prime brokers in the world manage their hedge fund related risks is now underway. Separately, the hedge fund industry has begun to take steps to strengthen existing sound practice guidance, notably in the areas of risk management, valuation practices and disclosures to investors and counterparties. We will be following progress in these areas very closely in period ahead.

4. Implications for monetary policy

The widespread innovations in the financial markets that I just mentioned – the expansion in the use of marketable instruments, the rise of new players, the development of derivatives and structured products markets – have brought important changes in the way monetary policy is conducted, communicated and transmitted to the economy.

First of all, the transmission mechanism is changing. While the effect of monetary policy on the availability and cost of bank credit is decreasing, monetary policy actions have prompter effects on a whole range of financial market yields and asset prices. The latter development may be positive, if our intentions are communicated well and correctly interpreted by investors. It could be detrimental, if it causes more volatility.

Our decision-making process is also changing. We have at our disposal a wide range of new information from asset prices, which enables us to gauge market expectations more carefully and take them into account. However, the interpretation of other crucial variables, such as monetary and credit aggregates, is more difficult than in the past, although by no means less important, and calls for renewed research efforts.

Let me address some of these issues in turn.

4.1 Monetary policy, asset securitization and the changing role of banks

The role of the banking system in the transmission of monetary policy decisions to the economy – the so called "bank lending channel" – was once central. It is now rapidly diminishing. Compared with the traditional way of thinking, this is a sea change.

Banks were previously at the centre of the monetary transmission process. The existence of asymmetric information on the quality of borrowers assigned a special role to banks in assessing firms' creditworthiness and providing external finance; the sensitivity of banks' checking deposits to interest rate changes gave monetary policy a powerful tool with which to affect banks' funding and intermediation activity.

The development of new financial products and intermediaries is radically reshaping this environment. Banks are taking on a new role in originating, pooling and distributing credit risks outside the banking system. In most markets the securitization of bank loans is booming, and this is affecting the way monetary policy operates. By disseminating information about firms, loan securitization is helping to reduce the spread between the cost of internal and external finance. The possibility to securitize loans and sell them to institutional investors, such as hedge funds, insurance companies and pension funds, eases banks' funding constraints for new lending. It also allows banks to transfer a substantial part of credit risk and reduce their capital requirements, making possible, other things being equal, a further increase in loans supplied.

We are devoting a good deal of research to the implications of securitization on the role of banks in the transmission mechanism. Ongoing research by the Bank of Italy and the ECB (using microdata on 3,000 euro-area banks over the last eight years)[1] finds that banks that make greater use of securitization are more sheltered from the effects of monetary policy changes: in response to increases in official rates, their lending activity shrinks less than does that of other institutions. Securitization therefore appears to reduce the overall effect of monetary policy on loan supply significantly.

This finding has important implications on how we assess policy. We can no longer limit ourselves to examining the state of the banking system and its credit risk in order to evaluate the effect of monetary policy on credit conditions and the stability of the financial system. While the banking system may still be the lever by which the entire financial system is controlled, other actors, often located far from where the loans are originated, have an increasing influence on credit supply. The changing distribution of credit risk in the economy may affect the way the transmission mechanism operates, in ways we do not yet completely understand.

The resilience of the financial system in the face of larger shocks has yet to be fully tested. Although credit risk will be less concentrated on banks, the financial risks that are being created by the system may actually be greater. It cannot be precluded that episodes of credit risk mispricing may be followed by abrupt adjustments, posing new challenges to the stability of the financial system as a whole. It is too early to tell whether the changes on the financial markets have determined the end of "credit cycles".

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[1] Y. Altunbas, L. Gambacorta and D. Marqués, "Securitisation and monetary policy", mimeo, May 2007.

4.2 Monetary policy and asset markets

While the role of banks in monetary policy transmission is diminishing, other channels are gaining in importance. To the extent that financial innovation makes markets more complete and more efficient, actual and expected changes in official interest rates are readily transmitted to a wide range of financial assets. Overall, the effects of policy decisions on financial markets are stronger and faster.

A more immediate impact of monetary policy on a wide range of asset prices may have favourable implications, since it provides monetary authorities with a powerful instrument for affecting the economy. Market expectations on future policy intentions move long-term rates and affect financing conditions, even before official interest rates are changed. The modification of asset prices affects consumption and investment decisions. If policy communication is effective, these changes may partly "do the job" for central banks.

At the same time, unless we are suitably careful the consequences may be disruptive. Policy actions that diverge from the pace expected by economic agents, which is built into long-term interest rates and other yields as well as into positions taken on the market, may upset markets, increase volatility and, in extreme cases, induce a simultaneous revision in positions, with potentially disorderly effects on liquidity and asset prices.

The concern not to destabilize financial markets is one reason why many central banks have striven in recent years to reduce the uncertainty arising from policy decisions. They are paying more attention to proper communication of their objectives, strategies and, with different nuances and practices, future intentions. A trend to greater gradualism in policy action has emerged in all the main industrialized economies (policy moves in excess of 25 basis points are now quite rare for major central banks) partly in response to the greater uncertainty over the impact of rate changes on the financial markets.

As the interplay between policy actions and market expectations gathers importance, we should also guard against the risk of what has been described by Alan Blinder as the "dog chasing its tail". It is fundamental that we to avoid a situation in which financial markets look at the central bank and the central bank looks at financial markets, both losing sight of the underlying factors that determine inflation.

In the Eurosystem, we consider it definitely desirable that our policy be predictable in order to reduce uncertainty and volatility in financial markets. However, our actions are ultimately dictated by the economic outlook, not the view of the financial market. In general it is better to avoid surprising the market, but there are times when it cannot be avoided, because we have new information or, more simply, different views from market participants. In these cases, effective communication is even more important. To deliver price stability over the medium term, it is essential that the leadership remain with the monetary authorities.

4.3 Monetary policy and financial market indicators

Let me further observe that the development of financial markets and the introduction of new instruments affect not only monetary transmission but also our decision-making process. The availability of a wide range of new products gives us a wealth of information that we jacked even just a few years ago. By contrast, the traditional indicators are now harder to interpret.

We have at our disposal a large set of information from derivatives markets (futures, options, swaps) that is key to our decision-making. Prices on these markets allow us to estimate, with a degree of precision that a few years ago would have been unthinkable, the entire distribution of market expectations about crucial variables. We now have indicators of market expectations about inflation, growth and policy decisions, of the uncertainty surrounding those expectations, and even of investors' attitude towards risk. This helps us to produce better policy decisions: investors' expectations shape the way the economy is likely to react to our actions and are a source of information on the underlying economic trends.

However, the diffusion of new financial instruments is also likely to affect the information content of some of the indicators that central banks regularly monitor and that serve as a basis for policy decisions. The behaviour of money and credit is particularly affected by the emergence of new products and new players.

Ten years ago, most of M3 in the euro area was held by households and firms, whose behaviour as money-holders we could understand reasonably well. Only around 6 per cent was held by so-called non-bank intermediaries (which include mutual funds and "financial vehicle corporations" that

purchase, pool and repackage bank loans as marketable securities). This percentage is now almost twice as large, and about one fifth of M3 growth is accounted for by these intermediaries.[2] Their demand for money is likely to respond to different motives, and is harder to interpret. Moreover, marketable instruments (such as money market funds) now represent 14 per cent of M3, as against 10 per cent at the beginning of the nineties and only 5 per cent in the mid-eighties. They are held for portfolio purposes and are less directly connected to transactions and spending on goods and services.

These developments call for deeper analysis. It would be wrong to conclude, as some commentators seem to have done, that they require a reduction in the role of money in the strategy of central banks, and of the ECB in particular. The dynamics of monetary aggregates still conveys important information on the future evolution of prices, but in order to extract this information it is necessary to process a larger set of monetary data and take account of the significant impact of the recent financial innovations. All the central banks in the Eurosystem are committed to improving their analysis in this direction.

Ongoing research at the Bank of Italy is aimed at developing techniques to extract information from the common trend of a large set of monetary indicators (M3, but also its components, the monetary holdings of different sectors of the economy, and the counterparts of M3, including credit developments), using multivariate techniques (dynamic factor analysis) to get rid of noise. Our results indicate that the common trend derived from the various monetary components conveys useful information on the behaviour of inflation a few years down the road.[3] This confirms that the analysis of monetary variables remains essential in the conduct of monetary policy, provided it is based on the assessment of a large information set and sound economic interpretation.

This implies that we should not be complacent about the value of our current tools, which are clearly affected by the ongoing change in the euro-area financial landscape. However, playing down the importance of monetary and credit analysis would be a dangerous mistake. In this respect I believe that the "full-information" strategy adopted by the Eurosystem, based on cross-checking the signals derived from real and monetary variables, is probably the best to deal with the challenges posed by a changing environment.

5. Conclusions

I have offered a few thoughts on how financial innovation may affect monetary policy. Certainly, I have not exhausted the issues, but sought rather to highlight the key themes and the main lines of current thinking among central banks and other official institutions. We need the experience of a full credit cycle before drawing conclusions. As with any period of rapid innovation, there is a great deal of uncertainty about how critical variables – including credit aggregates, consumption, fixed investment, and inflation – will behave under different scenarios. Policymakers will need to be humble about what they do not know, and to be creative and flexible in dealing with the changes to the traditional relationships that are rapidly taking place. Conferences like this one are of vital importance to foster understanding of these developments and exchange views on what they mean for the tasks we face as central bankers.

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[2] G. Ferrero, A, Nobili and P. Passiglia, "The sectoral distribution of money supply in the euro area", Banca d'Italia, *Temi di discussione*, No. 627, 2006.

[3] A. Nobili, "A composite indicator for monetary analysis", Banca d'Italia, mimeo, May 2007.