CNMV
Comisión Nacional del Mercado de Valores

The sub-prime crisis: some lessons for financial supervisors

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Monografía nº 31
Julio 2008

This paper was prepared for the 27th SUERF Colloquium - New Trends in Asset Management: Exploring the Implications. Munich, June 2008. It has benefited from conversations of the author with several people, including Soledad Abad, Carlos Arenillas, Javier Aríztegui, Victor Rodríguez, Miguel Férnandez-Ordóñez, Paulino García, Raquel García, Ramiro Losada, Eduardo Manso, Montserrat Martínez, Silvia Beca, José María Roldán and Julio Segura. However, neither they nor the CNMV necessarily agree with the views expressed in the paper.

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ISBN: 978-84-87870-82-8

Depósito Legal: M-36179-2008
Imprime: Técnicas Gráficas Forma, S.A.

Abstract

The recent market turmoil following the crisis of sub-prime mortgages in the US has provided rich evidence of some serious deficiencies in the world financial system. This paper provides some elements for reflection on how to address them. The issues analysed in the paper are classified around four key words: transparency, credit rating agencies, liquidity and supervisory arrangements.

As the market turmoil is mainly driven by a confidence crisis among market participants, improving transparency is a necessary condition to avoid similar episodes in the future. This entails improving disclosure of risk exposures by financial institutions. In particular, more complete public information on implicit exposures to off-balance sheet vehicles is warranted. In addition, investors and issuers would benefit from some additional guidance by accounting standard setters on appropriate valuation techniques for illiquid instruments. Accounting principles, however, should remain faithful to the concept of fair value measurement for instruments in the trading books of financial institutions. In that connection, any attempt to utilise financial information as a prudential policy tool should be resisted.

Transparency regarding financial institutions should be complemented with more enhanced monitoring of the process of financial innovation. This would include eliminating spurious forces (such as regulatory arbitrage or lax credit assessment practices) that currently invite the issuance of highly complex structured products. In addition, information flows between originators, vehicles and investors should be improved and more standardisation of instruments should be promoted. Moreover, transparency requirements should be tightened up for non-equity markets – those most affected by the turmoil.

Credit rating agencies have done a poor job of assessing different types of structured products. Recent proposals by the FSF and IOSCO to improve the current Code of Conduct are welcome, in order to promote the use of robust methodologies, prevent conflicts of interest and increase transparency, comparability and competition. At the same time, the extent of the problems identified should convince public officials to find effective ways to monitor these agencies beyond the self-regulation schemes now in place in most jurisdictions. The possibility of establishing, at a global level, an independent body to issue and monitor compliance with more specific rules than those contained in the current code of conduct deserves to be seriously considered.
The lack of liquidity in a number of wholesale markets urges measures to increase activity in non-equity markets through product standardisation and the consolidation of trading platforms for non-equity instruments in the eurozone. Problems of liquidity in interbank markets have been effectively mitigated by central bank ac-

tions. Those, such as the Eurosystem, with more flexible collateral and counterparty eligibility criteria have been the best positioned to provide the required liquidity to those institutions adversely affected by abnormal market conditions. There is scope however to increase the transparency of the Eurosystem's collateral policy, particularly in relation to the valuation methods which it currently applies to eligible illiquid instruments. In the regulatory sphere, there is a need to enhance supervisory control of the liquidity risk of credit institutions, at least through Pillar 2 of Basel II. Moreover, accounting standard setters should reflect on the benefit of requiring disclosures on variables – such as maturity mismatches – that would help investors to assess companies' liquidity risk. Finally, regulators may have to consider whether standard investment funds (of the UCITS category) should be subject to stricter controls of their portfolios' liquidity.

The recent turmoil has evidenced that prudential supervision and aggregate liquidity management are two closely related functions which might best be assigned to a single institution: the central bank. It has also shown that the degree of transparency that well functioning markets require will not always coincide with that which makes it easiest to cope with a situation of stress in the banking sector. This provides arguments for organising financial supervision along the lines of a "twin peaks" model: one institution (the central bank) being responsible for the prudential supervision of all types of financial institutions, while another institution supervises good practices in financial services markets.

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1. Introduction

Since the summer of 2007, the world has been undergoing a prolonged period of turbulence in financial markets. Its origins lay in a particular segment of a national market: that of sub-prime mortgages in the US. However, the effects spread rapidly across the global financial system.

The main diffusion channel has been structured product markets. A large part of sub-prime mortgages were securitised: sold by credit institutions to off-balance sheet vehicles which financed those purchases by issuing securities. These securities were sold to institutional investors located worldwide, or at times to other vehicles which issued higher-rated instruments backed by packages of the original securities, normally with additional credit enhancements. The risk entailed by sub-prime mortgages was therefore distributed among a wide variety of international investors. The substantial increase in defaults experienced last summer, and the failure of some entities (monolines) to bear the losses they were supposed to cover generated write-downs in the balance sheets of a number of institutions exposed to structured products linked to sub-prime mortgages. However, not all the impact of the sub-prime crisis on global financial markets can be explained in terms of the widespread exposure to bad quality mortgages originated in the US. The crisis has also hit markets in financial instruments without any linkage to the US sub-prime mortgage markets.

In addition to a significant depreciation of some classes of financial instruments, the turmoil has generated a substantial and generalised reduction of activity in several primary and secondary markets. The result was a failure of pricing mechanisms that limited the funding available to financial institutions with or without exposure to sub-prime assets, and this, in turn, occasioned a serious distortion in the regular real-sector financing mechanisms of many economies around the world.

Those developments have opened a rich debate on the aspects of the global financial system which may have helped generate or intensify the turmoil. Four areas at least deserve special attention.

The first issues to focus on are those related to market transparency. The significant contagion effects on a wide range of markets can only be explained as a confidence crisis. The stress faced by holders of sub-prime related instruments led some market participants to suspect that other instruments and/or other financial institutions apparently unaffected by the sub-prime crisis could in fact be exposed to the same or similar problems. When a confidence crisis erupts, it is normally the consequence of a transparency deficit. This deficit could refer to information on the real situation of relevant institutions, on the nature of some of the instruments traded in financial

markets or on the supply and demand conditions of the markets where those instruments are traded.

The effects of the crisis have spread to the global financial system by way of structured product markets. Since those markets rely heavily on the assessments made by credit rating agencies (CRAs), the work undertaken by those agencies also merits careful scrutiny. They play a key role as translators of available financial information into the language of investment decisions.

Both transparency issues and the role of CRAs are key inputs to any analysis of the causes of the confidence crisis that has swept global financial markets. And given that an important direct consequence has been a drought in interbank and some private bond markets, a third element that merits analysis is the supervision and regulation of liquidity conditions in wholesale markets and on the balance sheets of financial firms.

Finally, the episode of market turbulence has affected the activity of several public agencies –including central banks, security markets and banking supervisors – and a number of international organisations and financial forums. This makes it a good scenario against which to test the effectiveness of different organisational arrangements for financial regulation and supervision.

This paper attempts to provide an overview of what the author believes are the main lessons from the crisis. This overview takes due account of the proposals put forward by relevant international bodies such as the Financial Stability Forum (FSF), the International Monetary Fund (IMF), the International Organisation of Securities Commissions (IOSCO) or the Basel Committee on Financial Supervision (BCBS). However, it takes issue with some of the initiatives put forward and adds some reflections of its own, in most cases from the perspective of a securities markets supervisor.

Following the list of analytical priorities outlined above, the paper is organised around four key words: i) transparency, which is covered in section 2; ii) credit rating agencies, the subject of section 3; iii) liquidity, dealt with in section 4; and iv) organisational arrangements, dealt with in section 5. These are followed by a final section with concluding remarks.

2. Transparency

One of the unique elements of the current turmoil has been a generalised crisis of confidence affecting different participants in the process of channelling funds from savers to investors. This explains why difficulties in a highly specific market in the US extended rapidly over a wide range of financial markets worldwide and affected financial institutions which had virtually no effective exposure to sub-prime products.

The best remedy to solve a confidence crisis is to ensure an appropriate degree of transparency. This requires the availability of sufficient information on aspects like the solvency of financial product issuers, the risk characteristics of the issued instruments and the conditions under which they are currently trading.

2.1. Transparency of issuers: the fair value debate

Most analysts concur that the losses stemming from the sub-prime crisis have not yet been fully reported by financial institutions. In particular, the IMF speculated last April that at least one third of estimated subprime-related losses remained unreported. (see IMF, 2008).

It is clear that a prerequisite for the restoring of market confidence is a rigorous calculation and full disclosure of the write-offs associated to instruments affected by the market turmoil. This constitutes a relevant challenge for firms, auditors and supervisors. But, whatever the scale of losses, a cause for concern is that they were largely the result of exposures which were not easily identifiable ex-ante by investors, or even supervisors. Specifically, financial institutions' exposure to vehicles like conduits or Special Investment Vehicles (SIVs) was not fully recognised in their published financial statements. Indeed, contingent liquidity obligations vis-à-vis those vehicles were often poorly recognised or absent..

There is now broad consensus that the full implementation of the new capital accord (Basel II) will provide more control on exposures to these vehicles (through Pillar 1) and also more information (through Pillar 3). Yet, a more forceful enforcement of current consolidation rules for SIVs might be warranted[1] . In any event, additional efforts are needed to improve disclosures on exposure to off-balance-sheet vehicles. In this connection, the FSF's call to financial institutions to release exposures to sub-prime related

1. See, in particular, IAS 27,28 and 31 SIC 12 in IASB (2008

instruments and to the International Accounting Standard Board (IASB) and the US Federal Accounting Standard Board (FASB) to adopt more convergent an complete disclosure standards must be viewed as a welcome development.

A more controversial issue in this domain is that of a possible reform in the valuation rules for financial instruments. Accounting principles require instruments in the trading books of financial institutions to be stated at fair value: i.e. at market prices when the market is active or using a model in which market inputs are maximized when there is no active market. Some claim that fair value accounting may not be a sound approach when markets are under stress. Two arguments have been put forward to substantiate this position. First, when trading is thin and security prices are not aligned with their fundamental values, the application of current fair value rules can give a false picture of the firm's economic reality. Second, in today's circumstances, fair value measurement promotes "dramatic write-downs of sound assets that adversely affect market sentiment, in turn leading to further write-downs, margin calls and capital impacts in a downward spiral ...(that) worsen liquidity problems and contribute to the conversion of liquidity problems into solvency problems." (IIF, 2008)

In relation to the first argument, it is clear that the dearth of activity in some markets –particularly for structured products – represents a challenge to the application of the fair value principle. At the same time, a possible misalignment of prices with fundamental values can hardly constitute a strong argument to propose a discontinuation of the mark-to-market approach.

Fair value is defined by the IASB as "the amount for which an asset could be exchanged or a liability settled between knowledgeable, willing parties in an arm's length transaction[2]". Despite its name, then, fair value is not meant to express an instrument's fundamental or equilibrium value, but is rather an estimate of the price at which it could normally be sold in the market. Unless observed market prices are heavily contaminated by distressed sales – e.g. liquidation of companies – they represent the best measure of fair value, even though markets may at times overreact to positive or negative news. And even if asset prices are considered excessively high or low by the preparers of financial statements, they will still be consistent with a fair representation of the current economic reality of the firm.

The possibility that fair-value-based accounting rules could be unduly procyclical has been long debated in the literature. The starting point for analysis of this issue should always be that accounting systems are simply information devices that help managers communicate their company's economic reality in a faithful manner. An accurate evaluation of a firm should take into account not only current business conditions but also expected future cash flows, possibly in different cyclical situations. Fair value is perfectly consistent with this approach, in that the market prices of assets are supposed to represent the present discounted value of the expected income streams associated to each instrument. The discount factor to be applied to future cash flows incorporate a number of elements, including the willingness of market participants to take on risk. As this willingness is typically procyclical, fair values,

2. See IAS 39.9 in International Financial Reporting Standards (IFRS) issued by the IASB.

like market asset prices, tend also to be procyclical. Consequently, the intrinsic value of firms' assets will normally be positively correlated with economic activity. One would then expect firms' financial statements to be consistent with that structural feature of the economic reality they are meant to represent.

It is true, however, that the reporting of capital losses due to adverse market conditions may trigger reactions that could eventually contribute to amplifying market corrections. In particular, we have seen in the recent crisis how incipient declines in asset values have been followed by margin calls and asset sales that have generated subsequent price falls and, in some cases, detracted from market liquidity. Yet it is by no means clear how accounting principles – a set of conventions aiming at facilitating a systematic communication on firms' financial situation – could themselves generate destabilising spirals. Indeed, margin calls are typically the result of private contracts in which the parties acquire commitments that are contingent on market prices. Moreover, asset sales are sometimes triggered by companies' internal decision rules aimed at limiting capital losses in an adverse market situation. Although this phenomenon could represent a coordination failure in capital markets and serve to aggravate market turbulence, the blame can hardly lie with norms designed to inform outsiders about a firm's economic reality.

It could be argued, finally, that, due to regulatory capital requirements, fair value accounting can place undue pressure on banks' capital when markets are falling, triggering either asset fire sales or a desperate search for additional equity. While it is hard to deny that such destabilising effects may occur in stressed markets, the right response is not to call for changes in accounting rules -i.e. *to shoot the messager*- but to employ adequate prudential policies. The latter could perhaps incorporate features to mitigate the procyclical effects of minimum capital requirements, for instance by establishing capital buffers that could be fed in good times and expensed in bad times, in the spirit of Spain's system of dynamic provisions. Using prudential policy tools would seem a more efficient way to address financial stability concerns than distorting the criteria used to report financial information.

In any event, the most powerful argument for the fair value measurement of the instruments in bank trading books is the absence of a reasonable alternative. There have recently been some proposals to adjust fair value measurement to make it less sensitive to short-term movements in market prices. One idea is that financial statements should value instruments at their average market price over a given period (say 6 to 12 months) rather than on the corresponding reporting date (see Zielve et al., 2008). This proposal is seriously misguided. It essentially means that the information provided by issuers would no longer represent their financial situation at a specified date, but an arbitrary combination of different situations at different moments over the more or less recent past. Although, by definition, this approach could smooth out the effects of market volatility on financial statements, it would be at the heavy cost of underreporting the actual impact of relevant market developments.

A more sophisticated proposal has recently being made by a set of financial institutions (see IIF, 2008). The idea is to temporarily adopt a "refined valuation methodology" for instruments traded in markets which seem illiquid or dislocated. This consists essentially in allowing firms to measure some illiquid eligible financial instruments at the lower of book value at the time of application or amortised cost.

What the IFF is proposing basically is to prevent a chain of revise-downs in the value of certain instruments – typically structured products – by setting a floor level equivalent to amortised cost. In addition, the IIF calls on accounting standard setters to adopt a more flexible reclassification of instruments from the trading book category (measured at fair-value) to the held-to-maturity (or banking) book (measured at amortised cost).

This proposal would help issuers to avoid hefty write-downs of devalued assets. However, it entails a significant rupture with the spirit and letter of IFRS. If accepted, it would imply consolidating an asymmetric procedure of financial reporting: when the market is booming or even bubbly, market prices remain a good reference for the valuation of instruments and the reporting of capital gains; however, when markets are under stress, managers can avoid reporting the impact of that stress on their capital and profits. This bias could severely undermine the faithfulness of financial statements and threaten the integrity of capital markets. Moreover, the proposal would not actually remove the stress from banks' portfolios, it would just make it less explicit for investors and supervisors.

Notwithstanding the above, the current turmoil has made it clear that some aspects of financial reporting principles require a thoroughgoing review. This review should touch basically on two aspects: specific valuation techniques and disclosure practices.

The IASB has admitted that valuation principles are, at present, unduly complex (see IASB, 2008 b). They contemplate a relatively large number of categories of instruments subject to different valuation methodologies, and there is an evident need for some form of streamlining.

As stated, IFRS require firms to use market prices to estimate fair value in the presence of an active market. It no such market exists, they have to fall back on a valuation technique. It may be worth providing firms with added guidance on the concrete criteria they should use in deciding to use one or other procedure to calculate fair value. Some additional references to help assess the suitability of specific market inputs for valuation techniques, particularly proxies for the credit risk of structured products without an active market, would also be welcomed by the industry[3] .

But probably it is in the field of disclosure where there is most room for substantive improvements. Financial statements should, as a rule, contain more information on the techniques used to value financial instruments, including market references, the structure of models, assumptions, inputs and risks arising from model uncertainty.

2.2. Product transparency

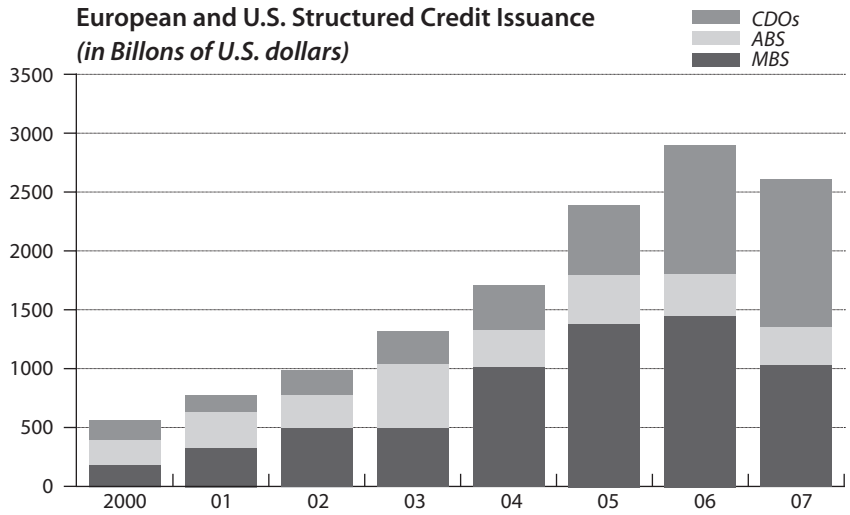
Another element which has contributed to the geographical extension and intensity of market distress has to do with the uncertainty surrounding the risks of structured products.

3. At the time of writing this paper, banking supervisors (BCBS and CEBS) and securities supervisors (CESR) are working on procedures and associated disclosures. However official guidance can only be provided by the IASB itself. Following a request by the FSF, this issue has also been included in its short-term agenda.

There is now little doubt that structured financial products have contributed to the efficiency of the global financial system. On the supply side, securitisation has allowed banks to more flexibly manage their credit risk exposure, as well as enhancing their ability to obtain funding at a time when deposits were more dynamic than the demand for loans. From investors' point of view, asset-backed securities give them access to banks' credit risk while enlarging their choice of instruments. Moreover, as credit risk exposure has become more spread out across different types of investors, structured finance may also have had some positive effects on overall financial stability. Therefore, from a social welfare point of view, the emergency of structured financial products is unquestionably a favourable development. It has helped complete markets and has opened the door to a more efficient distribution of credit risk across the whole financial system.

Despite these benefits, there is growing evidence that the phenomenon may have gone too far, too quickly. Although there is little official data on these markets, the available information indicates that the issuance of main structured products – such as asset-backed securities (ABS), mortgage-backed securities (MBS) and collateralised debt obligations (CDO) – in the US and Europe reached US$ 2,500 billion in 2007, despite the deceleration of the last quarter. This is more than five times the equivalent figure for the year 2000. (see graph 1)

GRAPH 1



SOURCE: *Inside MBS & ABS*. JPMorgan Chase & Co.; and European Securitization Forum.
Note: CDOs = collateralized debt obligations; ABS = asset backed securities, including auto, credit cart, etc., and excluding MBS: and Mbs = mortgage backed securities, excluding U.S. agency MBS.

Interestingly, this rapid increase in the issuance of structured products is not only due to the securitisation of commercial loans but, especially, to the significant acceleration of CDOs. These are securities issued against already existing securities, normally ABS, typically with additional credit enhancements. By diversifying riskier tranches of ABS, CDOs generate larger volumes of the investment grade securities eagerly demanded by institutional investors due to regulatory or internal portfolio constraints. However, they do not represent new investment opportunities; just the repackaging of already existing risk-return profiles. In this sense, the pace that structured product issuance has reached cannot be entirely rationalised as a welfare-

improving response to the demand from investors to amplify their opportunity set. Indeed, there are signs that behind that phenomenon lurk some spurious reasons that have pushed issuance volumes to excessive highs.

Specifically, an important driving force behind securitisation has been regulatory arbitrage. The Basel I Capital Accord allowed banks to free regulatory capital when they moved commercial loans to off-balance-sheet vehicles, even if the originator retained substantial exposure to the transferred assets. Moreover, the very processes of securitisation and structuring generate income – in the form of fees – which is often partly appropriated by the originator itself. Finally, as we know now, rating agencies contributed significantly to the boom by failing to properly assess the underlying default risk. Particularly dubious was the practice of generating investment grade securities through CDOs, as it relied on estimates of the pay-off correlations of the underlying loans which were downward biased.

It seems likely that regulatory reforms will contribute to more sustainable dynamics for structured products. The full implementation of Basel II will ensure that off-balance-sheet exposures are subject to commensurate capital requirements. At the same time, the new accord implies higher capital requirements for holdings of below-investment-grade paper. Moreover, the BCBS is currently studying raising capital requirements for highly rated complex instruments, such as CDOs of ABS. These regulatory changes may significantly reduce banks' incentives to hold structured products on their balance sheets, as well as induce a rebalancing of their preferred funding routes in favour of more traditional instruments like covered bonds.

At the same time, wherever credit risk transfer through securitisation continues to be pursued, its buyer public will increasingly comprise institutional investors outside the heavily regulated banking sector. As a consequence, a larger range of investors may become directly or indirectly exposed to instruments which are currently owned by credit institutions. This strengthens the need for greater transparency on the risk-return characteristics of structured products; something that can only be achieved through more exacting disclosure obligations and the further standardisation of complex instruments. In most countries, the prospectuses of securities issued by securitisation vehicles offer fairly comprehensive information on the nature and historical default records of the underlying loans. However, they do not always give enough information on originators' willingness to retain credit risk by purchasing the risky tranches issued by the vehicle. The recent sub-prime crisis has shown that investors can legitimately expect that when originators retain a substantial part of the underlying credit risk, the institution's due diligence procedures on the securitised loans will be more reliable.

Another relevant deficiency is the scant information that originators typically transmit on the performance of securitised assets. Existing regulations are fairly lax about originators' reporting commitments in respect of the securitised assets they administer. In most jurisdictions, they are not even obliged to directly notify impairments of the securitised loans to the corresponding special purpose vehicles. Information requirements for vehicle managers are also relatively limited and unsystematic. And though they notify significant developments that may potentially affect securities, they are not legally required to present regular financial statements.

The solution to this transparency deficit in structured products will require a joint effort by securities market supervisors and the industry. The strengthening of information requirements for originators and vehicles will probably necessitate direct regulatory action. There is however some scope for self-regulation as regards the harmonisation of prospectuses, including information on originators' intentions.

Another area which the industry can usefully work on is that of standardisation. The development of a small number of standard products – or categories of products – would facilitate due diligence by investors, asset managers and rating agencies. This would also help promote more liquid markets for those instruments, increasing their attractiveness for institutional investors. Finally, standardisation may aid asset managers and securities market supervisors in assessing the suitability of each specific instrument for different types of investment or pension funds.

2.3. Market transparency

The transparency deficit refers not only to the financial situation of relevant parties or to the nature of financial instruments, but also to the conditions under which securities are actually traded on the market.

The amount of information available on market conditions differs widely across instruments and countries. In general, equity markets are subject to stringent transparency requirements, including access to bid-ask quotes (pre-trade transparency) and to the volumes and prices of transactions effectively conducted (post-trade transparency).

The situation regarding non-equity markets is much more heterogeneous across countries. In general, for transactions conducted outside exchanges – a large majority of the involving private bonds and derivatives – the extent of pre and post transparency is very limited indeed.

A relevant exception is the US markets where a Trade Reporting Publication System (TRACE)[4] provides detailed post-trade information on a wide range of fixed-income securities. This system covers both on-market and off-market transactions.

The current EU regulation introduces demanding criteria for pre and post-trade transparency in regulated stock markets, but establishes no requirements for other instruments[5]. Moreover, most Member States have not imposed additional disclosure obligations, although some regulated bond and derivates markets do publish some, usually limited, post-trade information.

Behind the absence of regulation on the transparency of non-equity markets lie a number of arguments of differing strength. It has been contended, for instance, that participants in non-equity markets are sophisticated institutional investors. Such investors often have access to the information provided by dealers, so may not be

4. The system was established in 2002.

5. See the Directive on Markets in Financial Instruments (MiFID), Articles 44 and 45.

too concerned about the lack of public disclosures. Another argument is that trading intentions in certain non-equity markets, such as those of corporate bonds, have traditionally been based on internal valuations of the traded instruments. In this situation, the actual transaction prices or volumes may not be that relevant.

Yet the most effective argument which has been made against regulating transparency is that good public knowledge of market conditions could eliminate the information advantage on which dealers' business is based. According to this view, a high degree of transparency may kick market makers out of price-driven markets, thereby reducing liquidity.

The European Commission used those arguments to conclude in a recent report (see EC, 2008) that "there does not seem to be at this point of time, a need for regulatory intervention at Community level in terms of an expansion of the current transparency provisions of MiFID to financial instruments other than shares". However, this report was produced using inputs from different sources that were mostly submitted before the sub-prime crisis. Indeed, recent developments make some of the arguments wielded against tighter regulation of transparency requirements in non-share markets a lot less forceful. In particular, although most participants in private bond and derivative markets are institutional investors, they do not all have sufficient capacity to value the complex structures which are now traded on those markets. Timely information on the prices and volumes of concluded transactions is therefore useful for both investment decisions and accurate fair-value reporting. At the same time, although direct participation by retail investors is at present very limited, they may still have a natural interest in monitoring the management performance of the intermediaries through which they indirectly participate in the market. Also, supervisors are charged with monitoring investment firms' compliance with the due diligence provisions of current regulations. For both purposes, the availability of timely information on market conditions is of considerable import.

There remains however the concern that transparency could damp down market activity if it excessively reduces dealers' role and reward. The strength of this effect is arguably far from clear from either a conceptual or empirical point of view. In principle, market activity does not primarily depend on the benefit that dealers obtain from their market-making activity. If markets are more transparent, investors (even retail investors) will be more willing to participate, and this could itself contribute to boosting issuance and trading activity.

The empirical evidence on the link between transparency and liquidity is inconclusive at best. The launch of TRACE in the US has clearly helped reduce transaction costs and bid-ask spreads, although there has been no direct analysis of its effects on trading volumes.

In the light of the deficient degree of transparency in non-equity markets and the evidence of how this deficiency has adversely impacted on the markets worst affected by the recent turmoil, it makes sense to promote additional disclosures of prices and volumes in these markets. This is indeed one of the recommendations of the FSF report. At the same time, although the risk is limited, some caution is probably warranted when designing and implementing transparency requirements, in view of their possible impact on market liquidity. Specifically, the regulator should

concentrate on post-trade transparency, since pre-trade transparency provides lower value-added for investors and places more impediments on the counterparty-search job conducted by dealers. In addition, a gradual approach may be helpful – as in the case of TRACE in the US. Transparency requirements should be imposed on markets in relatively liquid instruments – such as some corporate and covered bonds – and subsequently applied to other more complex assets. And a reasonable lag should be envisaged in transaction reporting, on a transitional basis at least. Although the goal must be to bring reporting as close as possible to the trading date, provisionally allowing a few days' delay will help dealers adjust more smoothly to the new information requirements.

Ideally, regulators should work closely with market participants throughout this process. But they should also remain keenly aware that the interests of institutions, who act as dealers and therefore profit from the absence of easily available information, may not fully coincide with those of investors.

Al European level, in line with the gradual approach suggested above, it may be premature to amend the relevant Directive, which only came into force in November 2007. One option would be for the Commission to issue a recommendation to Member States to go beyond the minimum requirements of the MiFID by extending post-transparency conditions to some non-equity markets.

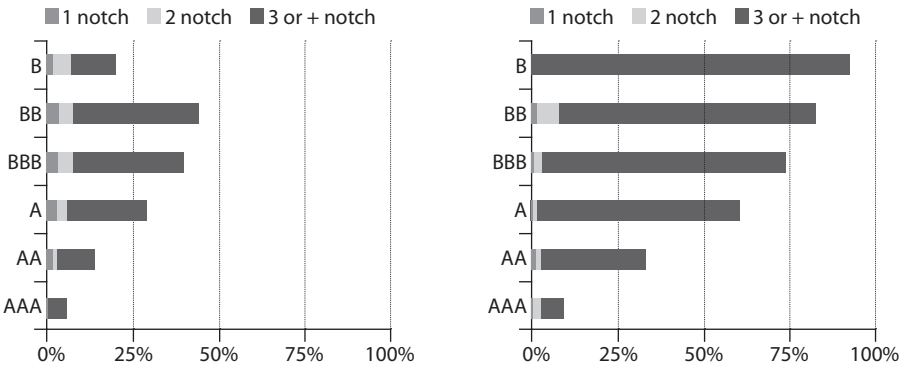
3. Rating Agencies

Credit rating agencies (CRAs) performed a key role in the developments following the sub-prime crisis in the US. As we have seen, the effects of the crisis spread across the entire financial system and affected many large financial institutions worldwide through the medium of structured product markets. These markets rely heavily on rating agencies, which offer investors a credit risk evaluation of the different tranches of sometimes highly complex structured products. And it now looks certain that without investors' confidence in the accuracy and due diligence of rating companies, the popularity of instruments like ABS, MBS, CDOs etc. would have been considerably less.

The emerging signs of deterioration of securitised sub-prime loans in the summer of 2007 triggered an intense downgrading wave that affected a wide range of structured products. As graph 2 shows, a large majority of sub-prime-exposed securitisation instruments rated single A or below were revised down, normally by three or more notches. Moreover, as much as 10% of AAA instruments were also downgraded. The wave of rating revisions also significantly affected securitisation instruments backed with prime loans. For example, more than a quarter of sub-prime-free securitisation bonds rated A or below suffered some degree of downgrade, usually three or more notches. This process undoubtedly exacerbated the confidence crisis and contributed to the abnormal behaviour of prices and volumes in several wholesale financial markets.

U.S. RMBS Q12005-Q32007 period issues downgrades from original rating

GRAPH 2



Source: Standard and Poor's.

The work conducted by different international forums (FSF, IOSCO, CESR..) and, to some extent, the self-examination performed by agencies themselves (see CRAs, 2008) have revealed a certain consensus on the deficiencies affecting the work of CRAs. These can be classified into four categories: methodology, organisation, transparency, and misperceptions of agencies' role.

On methodology, CRAs do not normally perform a thorough analysis of the data submitted by issuers. Moreover, calculations of expected losses – on which ratings are based – often use models which have not proved robust to recent events. In particular, estimates of the payoff correlations of securitised assets were clearly set too low, thereby exaggerating the scope for risk diversification and triggering an excess of investment grade instruments.

On procedures, CRAs have long been criticised for not adopting sufficiently effective measures to control internal conflicts of interest. In particular, CRAs typically provide issuers with consultancy services which may come into conflict with their core business of providing accurate credit quality assessment. These conflicts become more acute when dealing with structured products. Many structured product issuers have, as an objective, the generation of a sufficiently large volume of highly rated instruments. This places pressure on CRAs that may distort the rating process. Finally, the generalised downgrading of instruments in the last few months suggests CRAs have not been diligent enough in revising their initial ratings when conditions change. This may be partly because agencies are reluctant to modify ratings so as not cast doubts on the accuracy of their initial assessments.

On transparency, while admitting that CRAs have made an effort in recent years to inform about their valuation models and performance record, there is still considerable room for improvement. In particular, performance indicators may not be readily comparable from one CRA to another. Also, more information on assumptions made and on the uncertainty surrounding credit analyses would give investors a better understanding of the scope of the credit assessments.

On agencies' role, one widely shared conclusion from recent developments is that investors may have attached too much weight to credit ratings. Investors have tended to consider ratings a sort of sufficient statistic on the underlying quality of the rated instruments. Highly rated assets are often perceived as carrying not only low credit risk but also low market or liquidity risk. Moreover, the fact that ratings are based on a specific, partial measure of credit risk – expected loss – has been given little consideration in investment strategies. Regulation may have contributed to this widespread misunderstanding of the meaning of ratings. In particular, new capital requirement rules – Basel II – make intensive use of ratings without discriminating much between equally rated instruments of differing liquidity or complexity.

This agreement on the main shortcomings of the work done by CRAs has led to a general consensus on the key avenues for reform. These include a tightening up of the code of conduct – produced by IOSCO –- to which all leading CRAs voluntarily subscribe. Indeed, IOSCO has recently released a new code of conduct which incorporates more stringent requirements on CRA methodology, transparency and organisation (see IOSCO 2004, 2008). It also makes sense to revisit Basel II, and de-

velop a more fine-tuned treatment of different types of instruments with the same rating. In this connection, the Basel Committee on Banking Supervision (BCBS) is studying a possible increase in capital requirements for holdings of highly rated complex products.

However, some of the ideas put forward are a lot more controversial. For example, the FSF has suggested using specific rating codes for structured products. The reasoning behind this idea is, in principle, sound. The rating of a structured product is technically a more difficult job than that of more standard fixed-income securities. Moreover, as the importance of low probability high-impact events (the so-called tail risk) is probably higher than for regular instruments, ratings provide a less robust measure of credit risk. Another suggestion is that CRAs should also assess the liquidity of the markets where rated instruments are traded and modify their current rating codes accordingly.

Although those proposals would provide investors with more complete information on the quality of rated instruments, they could also add to the confusion about what ratings really mean. As a minimum, ratings should help investors compare the credit risk of different types of instruments. Therefore different credit rating codes for different types of instruments would sooner or later invite the industry to establish code-to-code conversion tables. And that would be a tortuous route to come back to where we started. Further, if CRAs enlarged on the risk concepts to be assessed, they would inevitably be faced with new methodological challenges. And in the meantime, investors would perceive, more strongly than now, that CRAs provide a comprehensive assessment of instrument quality, so would have even less incentive to seek out complementary information or analysis.

An alternative to expanding the taskload of CRAs is to make them focus more clearly on what they are supposed to do well. In other words, they should concentrate on providing accurate estimates of the expected loss of instruments of differing complexity. They should also strive to get across as clearly as possible the risks surrounding their assessments, giving some indication of how ratings would change in the presence of specific circumstances. Differentiation between complex and non complex instruments should come through risk analysis rather than through different codes which may become confusing. This, together with a more nuanced use of ratings by regulators and educational actions by private and public bodies, would help investors understand what ratings actually mean, reducing their somewhat excessive role in today's financial markets.

Probably the most contentious issue in the debate on credit rating agencies concerns the regulatory approach to controlling their activities. At present, two different models coexist. In the US, the SEC has powers to set specific rules – besides the IOSCO code of conduct – for agencies and assess compliance with the same. On the basis of this assessment, the SEC issues a quality certificate conferring the status of Nationally Recognised Statistical Rating Organization (NRSRO). In the rest of the world, CRAs are subject to few regulatory requirements and little official supervision[6]. In

6. In the banking regulation area, national authorities may determine the eligibility of ratings from some CRAs in the computation of capital requirements.

Europe, for instance, the Committee of European Securities Regulators (CESR) conducts a relatively informal annual assessment of compliance with the IOSCO code.

The recent turmoil, as well as past financial crises, provide ample evidence that the self-regulatory approach has not performed well. Moreover, there are reasons to believe that pure self-regulation or soft regulation (around the IOSCO code) may not be a sensible approach from a social welfare standpoint. There are at least four types of arguments to justify this claim:

- First, this industry satisfies many of the conditions of a natural oligopoly. CRAs need to be widely recognised in the market for their work to be appreciated by investors and regulators. This implies strong barriers to entry that impede competition. Without sufficient competition there is normally little incentive to improve quality standards and pursue effective methodological innovations.
- Second, even if CRAs had to compete among themselves to capture higher market share, it is not necessarily true that this would imply an improvement in average quality. As CRA clients are typically issuers rather than investors, more intense competition could actually put more pressure on them to satisfy issuers' desire to obtain good ratings.
- Third, although the review of the IOSCO code will mark an important step forward, it is clear that the rules need to be more detailed in order to make CRAs' work sufficiently reliable. In particular, the code does not go far enough in providing methodological guidelines and templates for the disclosure of performance data and the detailed reporting of conflict of interest controls. The problem is that the more detailed the rules the more complex their design and the more frequently they will need revising. And this task lies beyond the current IOSCO remit.
- Fourth, effective rules need effective enforcement mechanisms. It is hard to imagine that this could be done by the industry itself – comprising only a handful of relevant players. Enforcement should be the responsibility of entities with the means, powers and incentives to penalise non compliance with existing rules.

True, a system of official CRA regulation and supervision (by a securities markets supervisor for example) is far from problem free. Official agencies do not normally have the means and expertise to supervise complex assessment methodologies. This may partly explain why the SEC has long focused its supervision on CRAs' fulfilment of organisational requirements. More recently, it has also begun assessing performance on the basis of input provided by the CRAs, but little effort has been made so far to supervise methodological approaches (see Dittricht, 2006).

At the same time, excessive monitoring by a public agency may generate the perception of public responsibility for the accuracy of the work done by CRAs. In extreme cases, investors may be tempted to believe that an instrument possessing a high rating from a closely supervised CRA is free of all default risk. And more generally, a tight supervisory system may distort incentives for investors to factor the technical uncertainty surrounding ratings in their own analysis of investment opportunities.

Finally, a standard system of official regulation of CRA activity would typically be country-specific. Since most CRAs are global operators, this would imply a number of na-

tional supervisory agencies performing essentially the same task – a wildly inefficient setup that would also entail the risk of gross inconsistencies across jurisdictions.

Given the limitations of the self-regulatory regime and the shortcomings of a system of standard official regulation, it may worth exploring mixed solutions that could be applied at the global level. One possibility, for example, would be to establish independent bodies to conduct the work that in the US is performed by the SEC. This could involve a format such as two committees of technical experts. The first would set, and regularly revise, principles of good rating practices. The second would be responsible for monitoring compliance and administering a status of suitability process, with powers to name and shame non compliants. These committees would report to an oversight body made up of interested parties (investor associations, auditors, issuers), including national supervisors and relevant international organisations. This oversight body would appoint the members of the two technical committees, ensure that they work efficiently and comply with established due diligence procedures, and seek funding from public and private sources. CRA monitoring would thus come under a single global solution based on the work of groups of highly qualified professionals appointed, supervised and financed by a suitable mix of private and public sector representatives. This approach finds part of its inspiration in the working of the boards which currently design international accounting standards (IASB), international audit standards (IAASB) and international asset valuation standards (IVSB).

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4. Liquidity

After transparency and credit rating agencies comes a third key word, liquidity, introducing another set of lessons from the recent turmoil. In fact, among its most singular features was the slump in activity affecting various primary and secondary markets. Available measures of liquidity in financial markets show a marked decline since summer last year. For example, the synthetic indicator produced by the Bank of England (see graph 3) signals a substantial reduction in financial market liquidity after a period of around five years in which liquidity conditions were highly favourable.

Financial market liquidity (a) GRAPH 3

SOURCE: JBank of England, Bloomberg, Chicago Board Options Exchange, Debt Management Office, London Stock Exchange, Merril Lynch, Thomson Datastream an Bank calculations.

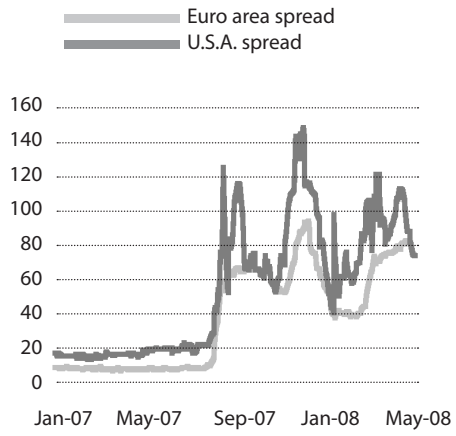
In particular, the amount of transactions in interbank markets worldwide beyond the very short term has been extremely low since August last year. Moreover, issuance and trading activity in markets for structured products like ABS, MBS and CDOs remain notably subdued.

This lack of market activity is the result of a quantity rationing which has pushed interest rates to very high levels. As we can seen from graph 4, three-month interbank

spreads over repo rates have touched 150 b.p. in the US and 100 b.p. in the eurozone, compared to normal intervals of between 10 and 20 b.p.. Market malfunctioning is even more evident in the case of structured products. Indices of ABS prices – such as ABX – have fallen sharply in the last few months (see graph 5). And the spreads corresponding to AAA securities have soared to around 12 p.p., substantially higher than those of lower rated standard corporate bonds.

Depo-repo spreads GRAPH 4

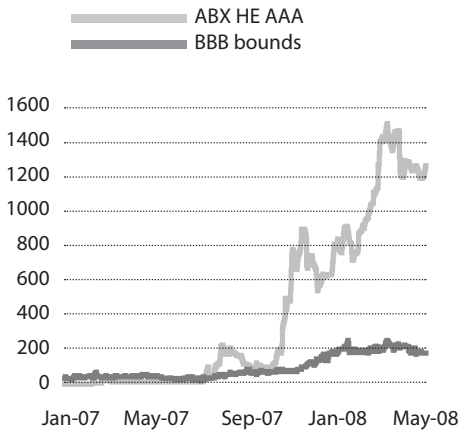
Basic points



Source: Datastream

Credit risk spreads GRAPH 5

Basic points



Source: Reuters and CNMV

These adverse liquidity conditions in wholesale markets coincided with the heightened funding needs of various financial institutions, particularly institutions exposed to conduits. These vehicles – which lie outside the consolidation perimeter of financial groups – were used by banks to issue securities backed by their commercial assets. Typically conduits would acquire banks' assets and finance their purchases by issuing short-term commercial paper. They also enjoyed an implicit guarantee from the originating banks to cover liquidity needs in case of adverse market conditions. As the market for these instruments virtually disappeared following the sub-prime crisis, financial institutions had to rescue their conduits either by providing them with liquidity or, more often, by repurchasing their assets. As a consequence, not only have liquidity risks become larger in the current turmoil, but banks' exposure to those risks have increased significantly. It was left to central banks to mitigate the problem by making their funding more accessible to institutions struggling to raise liquidity in wholesale markets.

These developments suggest at least three areas for reflection. First, the possibility for regulators and managers of market infrastructures to improve liquidity in wholesale markets; second, the limits on central bank support; and third, the treatment of liquidity.

4.1. Market liquidity

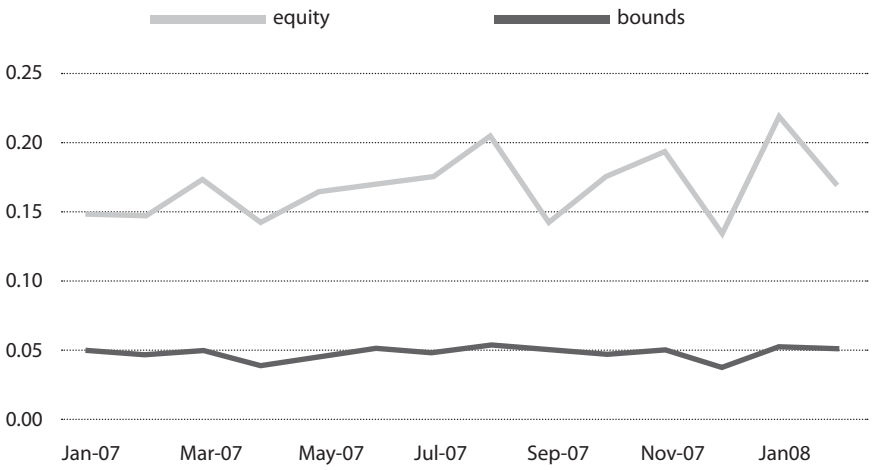
Market liquidity is normally defined as the ability by participants to liquidate (or issue) an asset in the market with little price impact. Thus defined, market liquid-

ity depends on two elements: i) the ability of potential investors to understand the nature of the transactions (either a loan or the exchange of a financial instrument) taking place on that market; and ii) the existence of mechanisms (trading platforms, market makers..) to effectively match up supply and demand.

The first element is linked to the existence of reliable information – provided by issuers, analysts, CRAs, etc – on all the relevant variables investors need to calculate the expected return and risks entailed by purchasing a financial instrument or granting a loan at prevailing market prices. From this angle, liquidity is related to other variables, like the transparency of issuers, products and markets and the conduct of CRAs, which have been covered in previous sections.

The second element is more directly linked to the functioning of the markets. At present, regulated markets tend to have limited liquidity requirements. In Europe, the Consolidated Admission Requirements Directive (CARD) establishes quantitative references – in terms of minimum volumes and free float – for shares to be admitted to trading on stock markets. However, no such formal requirements exist for the admission of non-equity instruments. In specific fixed-income markets, like those of public debt, the present trading platforms typically provide a satisfactory degree of liquidity. Moreover, covered bond markets in some countries –notably the jumbo-pfandbrief market in Germany [7]– are fairly liquid thanks to the work of market makers specializing in each listed instrument. Still the fact is that bond market turnover is always significantly lower than that of equity markets (see graph 6).

Monthly turnover of the equity and bonds listed in the developed countries exchanges GRAPH 6



Source: World Federation of Exchanges

At this stage, it may be excessive to legislate tighter liquidity requirements for non-equity markets, as this could cause the expulsion of a number of instruments that can hardly be traded on a frequent basis. Also, there is scope to pursue the development of pan-European markets for specific non-equity instruments such as covered

7. Other examples are the markets of obligations foncières in France and of letter de page in Luxembourg. See Mastroeni (2001)

bonds or some ABS. These pan-European markets could be equipped with reasonable liquidity by means of electronic platforms or market makers, though this would demand an important effort to harmonise the nature of instruments, issuance practices and the relevant national legislation.

4.2. The role of central banks

Action by central banks has helped financial institutions to mitigate the effects of the abnormal functioning of interbank and other wholesale markets. This action has not generally consisted of providing specific emergency loans to illiquid banks. Nor has it implied, of itself, a net injection of liquidity significantly exceeding normal volumes or a relaxation of the policy stance. The action has rather consisted in ensuring that liquidity injection operations reach a sufficiently large range of financial institutions, given the inability of the market itself to distribute available liquidity with sufficient speed.

This task has required central banks to make some adjustments to their regular operational procedures. In the case of the Eurosystem this has only meant conducting ad hoc tender operations to offer loans at other-than-standard maturities (see González-Páramo, 2008). However the US Federal Reserve and the Bank of England have also had to modify, albeit to differing extents, more substantive aspects of their respective operational frameworks, such as the range of counterparties in their tender operations and the list of assets accepted as collateral for central bank loans [8].

It is therefore clear that the Eurosystem's operational framework have proved more robust than that of other central banks. In particular, the policy of accepting a wide range of collateral – both public and private – has enabled many banks to obtain financing that was difficult to find on the market. Indeed the Eurosystem accepts instruments, such as highly-rated ABS and RMBS, whose markets – never very liquid – are currently particularly inactive. Note that with stricter eligibility criteria central banks could do little more than the private repo market to compensate the dearth of activity in the uncollateralised interbank market.

It could be argued that by accepting relatively complex instruments, the Eurosystem is taking on too many risks and buoying up the valuation of assets which would otherwise be less attractive to investors. However, provided credit risk is properly assessed, these instruments' peculiarity vis-à-vis other eligible assets is only their higher liquidity risk. In principle, central banks are best positioned to bear this type of risk. At the same time, market neutrality can be assured if central banks value illiquid instruments on a sufficiently frequent basis and following accurate and transparent procedures. In this regard, there could be some scope for the Eurosystem to improve the transparency of their valuations and the methods they follow to price relatively illiquid instruments.

8. The Federal Reserve has introduced three new facilities: the Primary Dealer Facility, the Term Auction Facilities and the Term Securities Lending Programme. The BoE enlarged the list of eligible collateral for the three-month tenders. Moreover, in April it introduced the Special Liquidity Scheme which establishes swap facilities to increase the availability of treasury bills to credit institutions in exchange for a wide variety of private fixed-income instruments.

Although their actions have been instrumental in preventing the abnormal market situation from deteriorating into a solvency crisis, there are obvious limits to what central banks can achieve in the current market circumstances. Financial institutions, in any event, have to undertake more complex liquidity management, as central banks cannot reasonably offer the range of financing facilities that a well-functioning market provides. Moreover, even by increasing the frequency of their operations and the range of eligible collateral and counterparties, central banks could do little to combat the frictions in money markets. In effect, as graph 3 shows, the spread between interbank deposit rates and repo rates remained very high even after extraordinary liquidity injections. Furthermore, frequent direct intervention by the central banks may be counterproductive in restoring market activity, as it may actually reduce incentives for borrowing institutions to pay the high premiums required by lenders. That is why actions by central banks outside their regular operating procedures should remain as limited as possible in scope and duration.

4.3. Regulatory issues

At present, the regulatory treatment of liquidity risk is significantly less stringent than for other types, notably market risk and credit risk.

In the banking sphere, the capital accord (Basel II) does not factor any liquidity risk measurement in the calculation of minimum capital requirements (Pillar 1). Moreover, there are no specific limits on exposure to non liquid instruments in trading books or on maturity mismatches. The supervisory approach tends to rely on the fulfilment of good liquidity management practices (see IIF, 2007 and BCBS, 2008). In this connection, what seems to be required is the strengthening of liquidity risk oversight, at least under Pillar 2. The BCBS's plans to issue guidance on the management and supervision of liquidity risk, as required by the FSF, are also a necessary step forward.

Nor is liquidity risk efficiently represented in financial reporting requirements. For example, the concept is not explicitly listed in IFRS among the factors preparers should incorporate in their valuation techniques (IAS 39.AG 82). Moreover, disclosure requirements (IFRS7) make only scant references to variables related to liquidity (see IASB, 2008). Preparers are supposed to disclose information on the maturity of their liabilities, but there is no similar requirement for the maturity of financial assets, making it hard for analysts and investors to assess the liquidity situation of firms. Some reflection by the IASB on these issues would seem warranted in view of recent financial markets events.

Finally, an area which has received insufficient attention in the ongoing debate on the implications of the market turmoil is the regulation of investment funds. In Europe, current regulation is based on the UCITS Directive. Investment funds covered by this Directive are meant to publish net asset values on a frequent basis and to redeem shares within a short period. For this reason, the Directive limits (to 10%) the share of the portfolio that can be invested in instruments which are not traded on regulated markets. However, there is no limit on investment in instruments which are listed on regulated markets but are not in practice actively traded. This is the case of many RMBS, ABS and CDOs. Through lower-rank norms, national regula-

tors have introduced additional safeguards of a relatively general natural. In Spain, for instance, managers are required to monitor the depth of the markets on which the instruments they hold are traded. In general, however, there is little regulatory protection against a large part of a UCITS' portfolio being invested in fairly illiquid assets. As such, EU securities supervisors should collectively assess the possibility of more direct liquidity controls on at least certain types of investment funds. This could entail establishing intermediate categories (between current UCITS and hedge funds) with different liquidity requirements depending on the flexibility of their redemption policies.

5. Supervisory Arrangements

Several features of the current market turmoil provide useful input regarding the role of the different public bodies with responsibilities in the financial domain:

- First, as we have seen in the previous sections, the large spill-over effects from the US sub-prime crisis have revealed a number of deficiencies in the functioning of the financial system which have a genuinely global character. The problems identified, relating to the transparency regime of firms, products and markets, the role of CRAs or the regulatory treatment of liquidity risk, are common to all jurisdictions.
- Second, the turmoil illustrates an intense interaction between real and financial sector developments. Lax financial conditions generated imbalances in the real sector –particularly the US housing market – which, in turn, caused distress in first local and then global financial markets. This distress distorted the ability of financial institutions to obtain funds in wholesale markets, making them less willing to satisfy credit demand. And the credit supply adjustment is already intensifying the downward correction of economic activity.
- Third, recent experience shows that the line between financial institution's liquidity problems and insolvency risks is relatively thin, and that failure to manage the former may trigger the latter in a short period of time.
- And fourth, since much of the financial market turmoil arising from the sub-prime crisis has to do with a lack of confidence among market players, transparency emerges as a relevant ingredient of financial stability. At the same time, the policy debate in the heat of the turmoil has shown that not all involved parties have the same sensitivity towards the need to strengthen transparency requirements – including valuation and disclosure practices – for financial institutions.

The global nature of the problems identified in the functioning of the international financial system calls for global solutions. And the international community has reacted in a timely manner. Particularly promising is the work being conducted by the FSF on the basis of input from several international organisations – such as IOSCO, IASB, BCBS, etc. The FSF has set a demanding work agenda involving all relevant public and private parties which should deliver concrete actions before the end of this year. However, it is also clear that national authorities must move quickly to adopt common approaches in some specific areas. In particular, the proper functioning of the world financial system requires faster convergence on the financial information standards applied in different jurisdictions. And there is also clear scope for reducing regulatory differences vis-à-vis CRAs and non bank financial intermediaries. Finally, market transparency requirements should become more homogeneous across financial instruments and jurisdictions.

The interaction between the real and the financial sector invites central banks and financial regulators to enlarge their policy framework. First, it is increasingly clear that central banks should not base their interest rate actions on narrow approaches consisting of minimising the gap between expected consumer price inflation and a concrete target over a specified policy horizon. Central banks cannot only consider the most likely outcomes extracted from a standard macroeconomic model. They must factor the potential impact on macroeconomic stability of abnormal financial developments triggering significant imbalances, and the links between the latter and the policy stance. At the same time, regulators and risk managers must make proper allowance for macroeconomic developments affecting the solvency of financial institutions through the correlation of risks associated with different exposures. Moreover, while safeguarding the accuracy of public financial information, regulators should seek ways to ensure that capital requirement regulations do not unduly exacerbate financial market stress during cyclical downturns

The links between liquidity and solvency risks pose doubts about an institutional model which entrusts responsibility for prudential oversight and the system's liquidity management function to two separate agencies. Coordination failures between those two agencies may actually trigger a solvency crisis which could be avoided by prompt liquidity support. As the latter function is performed by monetary authorities, coordination failures would be minimised by assigning prudential responsibilities also to central banks. Moreover, recent experience, particularly in the eurozone, shows that a situation of liquidity stress in the banking sector can be handled without altering the policy stance or even the operational framework. In addition, the lesson that financial stability considerations should remain cleanly separate from monetary policy making, weakens the standard argument regarding conflicts of interest between these two functions. Indeed, if the internal organisation of central banks is sufficiently sound, the combination of both responsibilities may generate useful synergies.

Finally, on the priority to be attached to transparency, everyone would agree that the optimal degree of transparency does no imply the immediate release of all conceivable information. However, it is clear that the amount and accuracy of the information that market participants require to make informed investment decisions may not coincide with what some issuers or borrowers are willing to supply in a situation of stress that they may consider transitory. For example, in the ongoing debate on the fair value measurement of illiquid instruments, some financial institutions have advocated a flexible interpretation of the accounting standards that would have helped them reduce the impact of the turmoil on their balance sheets. Naturally, this would have damaged the ability of potential investors to assess the real situation of financial firms.

As such, we cannot rule out specific circumstances in which the degree of transparency required for the adequate functioning of financial markets clashes with the management requirements of a situation of distress in the banking sector. This may give rise to a conflict between two desirable social objectives.

This example endorses the idea of assigning responsibilities for market conduct and prudential oversight to two different, albeit well coordinated, institutions (twin peaks). This is, in essence, the regime now in place in countries like Australia and

the Netherlands and seems to be very much the way the US is heading (see US Treasury, 2008). The main virtue of this system is not to eliminate potential conflicts between transparency and financial system stability, but to make them explicit. This should increase incentives for authorities to find solutions that properly target both social objectives, without imposing artificial hierarchies like those that may appear if a single institution is entrusted with supervising prudential as well as conduct aspects.

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6. Concluding Remarks

Whenever a financial crisis arises, the international financial community initiates a debate on regulatory changes that may reduce the likelihood a similar crisis happening in future. And concern is often voiced that, in the heat of a crisis, regulatory authorities tend to overreact to events and strengthen existing prudential rules to an extent that may hamper the efficiency of the financial system. At times, the argument goes as far as to suggest that ensuring a permanently stable financial system is an impossible task, and any attempt to accomplish that goal by means of regulatory adjustments is not only ineffective but may be counterproductive. This line of thinking normally leads to the proposal of a minimal regulatory system, possibly accompanied by the ex-post provision of aid to those vulnerable savers most affected by the crisis.

The recent turmoil is not a good fit with these terms of reference. Many of the lessons of the crisis are not directly linked to a perceived inability of prudential regulation to ensure financial stability, but to the identification of market failures which impede the efficient functioning of financial markets and can cause serious distress.

Specifically, this paper has stressed that market mechanisms do not guarantee an adequate degree of transparency. In particular, available information on issuers' financial situation, on the nature of some of the products offered in the markets and on actual market conditions are often not sufficiently comprehensive. Credit rating agencies, on whom participants rely heavily in making their investment decisions, have failed to provide an adequate service, due mainly to the adverse incentives generated by the oligopolistic regime in which they operate. These are examples of important deficiencies which, as the recent turmoil shows, may impede the proper functioning of market pricing mechanisms, thereby preventing an adequate allocation of resources. The corollary is that there is scope for regulatory action aimed at correcting the market failures identified.

The paper has also drawn some lessons for the conduct of public authorities when there is evidence that markets are not working correctly. The best example is the role of monetary authorities when interbank markets fail to distribute liquidity in an effective manner. Our discussion has shown that, in this situation, central banks have a role to play in preventing major disruptions in the banking sector. We have seen also that this can be done without altering the policy stance, and without generating too much distortion in the functioning of regular market mechanisms.

It is argued that the concept of liquidity risk should feature more prominently in the regulation of bank and non-bank financial intermediaries. This is the issue which

comes closest to the standard debate on the pros and cons of financial regulation. Like any proposed strengthening of prudential rules, this suggestion may generate some sort of inefficiencies. As always, it is up to the political authorities to weigh such drawbacks against the potential benefits in terms of financial stability. However, it seems likely that the liquidity risks of credit institutions can be effectively controlled without modifying capital requirements and, therefore, without too large an impact on their income. A system of enhanced management and supervision of liquidity through internal models and reliable stress tests may suffice. Regarding investment funds, the question is simply for regulation to reflect more accurately – e.g. when establishing categories of funds – the logical link between the liquidity of both sides of their balance sheets.

In any event, a fruitful way to facilitate a socially acceptable balance between financial stability on one hand and efficiency on the other, is to assign oversight of the adequate functioning of all financial markets to an institution separate from the prudential supervisor, along the lines of the twin peaks model.

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