



Ref: CESR/08-1014

**Transparency of corporate bond, structured finance product and  
credit derivatives markets**

**Consultation Paper**

**19 December 2008**



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## Introduction

### Section 1 Background information

1. In August 2006, the European Commission (Commission) requested CESR to provide initial assistance on non-equity markets transparency by conducting a fact-finding exercise in relation to cash bond markets. In October 2006, CESR provided its response to that request (Ref. CESR/06-599). In November 2006, the Commission asked for further assistance from CESR, requesting technical advice on a range of questions. In August 2007, CESR published its technical advice, which was prepared on the basis of a public consultation (Ref. CESR/07-284b) and an open hearing. A feedback statement explaining the proposals was also published (Ref. CESR/07-538).
2. The main points arising from CESR's advice can be summarised as follows:
  - There was no evidence of a market failure (in the form of externalities, information asymmetry, market power and sub-optimal supply of public goods) that would have warranted regulatory intervention;
  - The perceived absence of market failures was greater for wholesale market participants, who appeared to have access to all necessary trading information. However, different conclusions were drawn for other market participants (small intermediaries) and retail investors who were considered to have limited access to trading information. In this case, it was recognised that greater post-trade transparency could be of some benefit;
  - It was found that there was a lack of comprehensive, harmonised information on the nature and size of EU bond markets. A difficulty in obtaining statistics on the activity on bond markets was also noted;
  - Adverse impacts on liquidity as a result of a market transparency regime were considered possible. However, it was recognised that little academic research relating specifically to the effects of greater transparency on bond markets was available; and
  - It was concluded that markets should be left to develop their own flexible transparency arrangements, bearing in mind that new requirements relating to best execution could potentially drive a further voluntary increase in transparency.
3. In April 2008, the Commission published a report under Article 65(1) of the Markets in Financial Instruments Directive (MiFID), which required the Commission to report to the European Parliament and to the Council on the possibility of extending requirements relating to pre- and post-trade transparency to transactions in classes of financial instruments other than shares<sup>1</sup>. The Commission came to the conclusion that *“there does not seem to be, at this point in time, a need for regulatory intervention at community level in terms of expansion of the current transparency provisions of MiFID to financial instruments other than shares. Existing national arrangements appear to work satisfactory”*. As regards a potential concern of appropriate retail access to market prices of bonds, the Commission encouraged *“all designers and implementers of self-regulatory solutions, including ICMA and SIFMA, to consider carefully the design parameters so that retail access to realistic and up-to-date prices is broadened and deepened to the fullest extent possible consistent with ensuring that liquidity is not impaired”* and endeavored to *“monitor closely whether the self-regulatory initiatives develop satisfactorily, attract adequate adherence and geographical coverage, and are utilized*

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<sup>1</sup>The report is available on the Commission's website under [http://ec.europa.eu/internal\\_market/securities/isd/mifid\\_reports\\_en.htm](http://ec.europa.eu/internal_market/securities/isd/mifid_reports_en.htm).

*by investors”.*

4. In October 2007, the G7 Ministers and Central Bank Governors asked the Financial Stability Forum (FSF) to undertake an analysis of the causes and weaknesses that have produced the turmoil that broke out in the summer of 2007 and to set out recommendations for increasing the resilience of markets and institutions. In April 2008, the FSF published a report on “Enhancing Market and Institutional Resilience” (hereinafter, the FSF Report).
5. The FSF Report provides a detailed analysis of the causes and weaknesses which produced the turmoil seen in financial markets since June 2007. It also sets out recommendations for increasing resilience of both markets and institutions going forward. The FSF Report notes the exceptional boom in credit growth and leverage in the financial system, which preceded the crisis in financial markets. This boom was fed by a long period of benign economic growth and an environment of low interest rates that fuelled the amount of risks that borrowers and investors were willing to take on. Institutions aggressively expanded the market for securitisation of credit risk and at the same time became over-reliant on the performance of the credit rating agencies.
6. The FSF Report goes on to explain some of the processes which further exaggerated the impact of the crisis, namely the pooling and retransferring of structured products that appeared to meet the high rating standards of credit rating agencies as well as the regulatory incentives enabling banks and other financial institutions to keep these assets off-balance sheet. The losses in the US sub-prime market are cited as the trigger for global events. Institutions quickly sought to deleverage exposures and hold more liquid assets and became unwilling to provide term liquidity to others. This had a severe impact on the liquidity of short term wholesale money markets.
7. The FSF Report acknowledges some of the steps that have been taken to help restore liquidity to the markets, for example central bank liquidity operations, and that financial institutions have taken steps to rebuild capital and liquidity cushions. However, the FSF Report calls for action on a global scale and in particular puts forward recommendations in areas such as: a) strengthening prudential oversight of capital, liquidity and risk management; b) enhancing transparency and valuation; c) changing the role and use of credit rating agencies; d) strengthening the authorities’ responsiveness to risk; and e) creating robust arrangements for dealing with stress in the financial system.
8. The key section of the FSF Report relevant to CESR’s current work is on enhancing transparency and valuation. The recommendations in this section are divided into: i) measures designed to improve risk disclosures; ii) measures to improve standards for off-balance sheet vehicles and valuations; and iii) measures for increasing transparency in structured products. Under this latter section, market participants and regulators are asked to expand the information provided about securitised products and their underlying assets noting that disclosures relating to structured products need to improve; that increased transparency about underwriting standards is needed; and that investors need to be provided with better information to ensure that they can carry out the appropriate due diligence.
9. Recommendation III.13 of the FSF Report relates to post-trade transparency in secondary markets. Specifically the FSF Report requests securities market regulators to work with market participants *“to study the scope to set up a comprehensive system for post-trade transparency of the prices and volumes traded in secondary markets for credit instruments”*. The FSF Report states that *“post-trade information about prices and volumes in the secondary market is critical to the reinforcement of valuation practices for credit instruments and as supplementary information on the scale of risk transfers. Starting in 2008, regulators will work with market participants to study the scope to establish such a system for post-trade information”*.
10. In light of the above, in April 2008, CESR considered it opportune and timely to review whether the conclusions contained in its technical advice to the Commission on non-equity markets transparency (published 9 August 2007, Ref. CESR/07-284b) remain robust in light of recent market events (see press release Ref. CESR/08-303).

11. Since April 2008, several new European and global initiatives have been launched to assess the role of transparency in non-equity markets, in particular in relation to structured finance products. Among others, in the Declaration of the Summit on Financial Markets and the World Economy of 15 November 2008, the Leaders of the Group of Twenty stated the following: “We will strengthen financial market transparency, including by enhancing required disclosure on complex financial products [...]” Furthermore, the IOSCO Technical Committee announced on 24 November 2008 that it has formed a Task Force to examine ways to introduce greater transparency and oversight to unregulated market segments, such as OTC markets for derivatives and other structured finance products.
12. CESR is of the view that, in general, trade transparency is an essential element of efficient and well-functioning securities markets. However, at the same time CESR is conscious of the fact that it is only one of the tools contributing to the achievement of this goal and plays a different role in relation to different financial instruments and markets. As a consequence, the characteristics of the respective instruments and markets have to be taken into account when deciding on an appropriate level of transparency for various types of instruments and markets. This is reflected also in the division of this consultation paper into two parts, the first of which deals with the transparency of corporate bond markets while the second one covers the transparency of structured finance products and credit derivatives.
13. Particularly in the case of the instruments covered in the second part of this consultation paper, possible trade transparency initiatives have to be viewed in connection with the other initiatives undertaken regarding these markets. For example, the Commission has set up a Working Group on Derivatives that considers, among others, the need for the establishment of one or more CCP-clearing solutions for CDS contracts. In addition, the various work streams regarding product disclosure, credit rating agencies as well as amendment of the CRD and accounting rules have particular relevance for these instruments (see section 5 of Part II for further details).

<b>Section 2      Objective and scope of the consultation paper</b>
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14. The objective of the consultation paper is, on the one hand, to review whether the CESR’s original conclusions in August 2007 on trade transparency in the bond markets remain appropriate in light of experiences from the recent market turmoil. On the other hand, the paper is part of the work of CESR to address some of the recommendations of the FSF. The paper concentrates on the transparency of markets for private debt instruments, focusing on post-trade transparency and covering retail markets as well as wholesale markets.
15. The work undertaken by CESR has been developed in two parts to cover the different private debt instruments affected by the recent financial market turmoil. The financial instruments covered in the first part of the consultation paper are those that were subject to the earlier CESR work, i.e. cash corporate bonds (investment grade and high yield). The second part of the consultation paper extends the work to include Asset Backed Securities (ABS), including Residential Mortgage Backed Securities (RMBS) and Commercial Mortgage Backed Securities (CMBS), Collateralised Debt Obligations (CDO), Asset Backed Commercial Papers (ABCP) and Credit Default Swaps (CDS). However, despite this approach to divide the work in two parts, it is worth noting that post-trade transparency of the cash corporate bond markets is key for the price discovery and valuation of specific structured products. As noted in an IIF report (July 2008)<sup>2</sup>, *“in the case of underlying assets that had proven to be sufficiently liquid, the primary valuation (...) did not entail the use of a valuation model but instead, relied on market quotes (both at the underlying asset and the structured products level)”*.
16. The review of the appropriateness of CESR’s previous conclusions on corporate bond market transparency has taken into account the reports prepared within the last year by CESR, the Commission and relevant external bodies. The review has included three main elements:

<sup>2</sup> Institute of International Finance (IIF), “Final report of the IIF committee on Market Best practices: principles of Conducts and Best Practice Recommendations”, July 2008.

- assessing the experiences on the functioning of the TRACE system (the Financial Industry Regulatory Authority's Trade Reporting and Compliance Engine) in the United States, particularly during the recent market turmoil;
  - inviting industry experts (buy-side and sell-side) and representatives of retail investors to give their opinion; and
  - setting up a framework for the monitoring and evaluation of the self-regulatory initiatives.
17. In reaching a view on whether CESR's original advice remains appropriate, CESR has particularly considered developments since June 2007.
18. MiFID entered into force on 1 November 2007. This has implications on the considerations within the consultation paper in two ways:
- Firstly, Member States had the option under recital 46 of MiFID to extend transparency requirements to bond markets. Italy exercised this option, which took effect in April 2008. However, it is too early to accurately assess the impact these requirements have had on Italian bond markets. A description of the Italian regulatory regime as well as a description of trade information currently available in EU Member States is provided in Section 6 of Part I of the consultation paper.
  - Secondly, MiFID has seen the introduction of requirements which are designed to deliver enhanced investor protection. Obligations on firms to act in the best interests of their clients include the provision of information about products and services that is fair, clear and not misleading, on the basis of which clients can make informed decisions; the provision of suitable advice; and the proper handling of client orders as well as best execution.
19. The consultation paper does not seek to revisit the pattern of recent events but acknowledges that markets have undergone one of the most significant periods of turmoil over a number of decades.

### **Section 3 Public consultation and timetable**

20. CESR invites responses to this consultation paper. In addition to general comments, we would appreciate receiving your views on the specific questions presented. All contributions shall be submitted online via CESR's website under the heading Consultations at [www.cesr.eu](http://www.cesr.eu) by 19 February 2008.
21. CESR will consider the responses to the consultation and publish a final paper during the summer of 2009. A feedback statement to the public consultation will also be published.

**PART I: CORPORATE BONDS**

**Section 1 Objective and scope of Part I of the consultation paper**

22. The objective of this part of the consultation paper is to review whether the CESR's original conclusions in August 2007 on trade transparency in non-equities markets remain appropriate in light of experiences from the recent market turmoil. It concentrates on the transparency of markets for corporate bonds, focusing on post-trade transparency and covering retail markets as well as wholesale markets.
23. As part of the current evidence gathering process, CESR has:
- assimilated information from European regulators;
  - received an update from the Financial Industry Regulatory Authority (FINRA) on the workings of TRACE and the potential lessons which can be learned from this;
  - hosted a session with some industry experts from both the buy and sell-side and a representative of the retail side, in order to hear experiences and to gather evidence of operating in bond markets over the last year; and to obtain views on whether greater post-trade transparency would have lessened the impact of recent events; and
  - hosted a session with ICMA and SIFMA representatives in order to get information on the characteristics of the self-regulatory initiatives in place or in process of being implemented.
24. This part of the consultation paper discusses some further background to the issue of non-equity transparency for cash corporate bonds. It is structured to respond to the following questions:
- a) The recent market turmoil has once again raised the issue of market failures on which CESR already provided some highlights in its advice to the Commission in August 2007. To which extent can the recent financial market turmoil be analysed as a market failure in the corporate bond market? Has the recent financial market turmoil raised issues related to a lack of information available to the different categories of market participants (retail investors, small market participants as well as wholesale market participants)?
  - b) The recent financial market turmoil triggered a complex and multifaceted credit crisis. Although trade transparency in the corporate bond market cannot be considered a solution to the multilayered issues raised by the credit crisis, could additional post-trade transparency be of help during a market crisis and in more normal times, providing increased certainty around valuations, benchmark prices as well as greater information to participants about pricing?
  - c) MiFID entered into force on 1 November 2007. Is it still the case that trade information available on corporate bond markets is considered sufficient by market participants to comply with best execution requirements? Did new best execution requirements voluntarily lead to market participants increasing transparency of trading?
  - d) The potential adverse impacts of a market transparency regime on liquidity in non-equity markets have previously been cited as a reason against introducing mandatory transparency requirements. Since August 2007, new academic studies are available,

specifically addressing the issue of benefits and drawbacks arising from greater transparency on bond markets. In addition, the US experience in this area is further advanced to demonstrate whether an adverse impact on liquidity has been registered as a consequence of an increased level of transparency. Is there still evidence of any adverse impact of market transparency (as a result of mandatory requirements or self-regulatory initiatives) on liquidity, dealer margins, capital commitment and trading strategies? What can be learned from the U.S. TRACE experience?

- e) Some market-led initiatives have emerged to provide trading information on bonds to the market. Does the market show the proper commitment to provide trade information that meets the criteria that CESR identified in its last advice to the Commission? Are the criteria proposed by CESR still valid in light of recent financial market turmoil?
25. In terms of the structure of this part of the paper, section 2 analyses whether elements of market failures and a lack of post-trade information in the market have come to light during the recent financial market turmoil. Section 3 sheds some light on the potential benefits and drawbacks arising from greater post-trade transparency. Section 4 considers the impact of TRACE on trading of corporate bonds in the US and its effects on the market during the current credit crisis, and provides some thoughts on differences of the EU markets and their regulatory environment. Section 5 analyses the recent market-led initiatives designed to improve transparency. It also recalls the criteria identified by CESR when determining whether self-regulatory solutions are adequately addressing the identified issues. Section 6 highlights trade information currently available in some EU Member States. This part of the paper concludes with recommendations in Section 7.

<p><b>Section 2      Recent financial market turmoil: evidence of market failures in the corporate bond market and lack of post-trade information available in this market</b></p>
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26. The purpose of this section is to evaluate whether new evidence has come to light during the financial turmoil which suggests there is evidence of a market failure and/or lack of post-trade information in the corporate bond markets.

**Summary of CESR's previous advice**

27. CESR previously concluded that there was no evidence of market failures that would warrant mandatory transparency for European bond markets. However, it did note that whilst wholesale investors may have adequate access to pre- and post-trade information on prices and volumes, smaller participants including retail investors could benefit from improved access to this information. In order to address this point the industry committed to introduce self-regulatory initiatives. The impact of these is discussed in section 5.
28. CESR's previous advice acknowledged that the scope for and extent of information asymmetries may differ according to the bond traded with greater levels of information available for government bonds compared to less liquid corporate bonds.
29. CESR also acknowledged that there is a strong interaction between the cash bond markets and the derivatives markets with the latter being used as a tool to inform pricing for the cash market. Whilst sophisticated investors will be better placed to understand this inter-relationship, therefore suggesting evidence of an information asymmetry, it can also be argued that less sophisticated investors will ultimately benefit from this inter-relationship due to the positive impact it tends to have on liquidity and efficient pricing.

**Market failures relevant to the cash bond market**

30. In its previous advice, CESR specifically highlighted the market failures of 'information



asymmetry' and 'externalities' as being potentially relevant for bond markets<sup>3</sup>.

31. As mentioned in CESR's earlier advice, there are a number of ways in which trading transparency might be linked to these market failures:
- Some market participants may have limited access to trading information, or find it prohibitively expensive to obtain. This may affect their ability to determine a fair price at which to trade and, in the case of an investment firm, may impact its ability to obtain best execution for its clients.
  - Differences in the access to information may allow some market participants to exploit others in a systemic way ("exploitation of information").
  - The relationship between transparency, competition and liquidity may be complex – in part because it is sometimes difficult to define what is meant by 'liquidity' as a concept. In some markets, a high degree of transparency may encourage participants to enter, improving trading volumes and bidding down costs and spreads. However, in other markets – notably, those reliant on dealer-provided liquidity – greater transparency may increase the risk of committing capital and providing prices. Ultimately, this could result in a net withdrawal of liquidity, to the detriment of all participants.

#### **Issues highlighted during the financial crisis**

32. When considering whether the financial crisis has highlighted an information asymmetry in the corporate bond market one must first consider access to pricing information. There is no evidence to suggest that the sources providing this information changed during this time.
33. In order to ascertain if there is a problem in the corporate bond market which may be symptomatic of a market failure, the following aspects are examined in light of current developments:
- A) effects on market liquidity;
  - B) effects on bid-offer spreads;
  - C) effects on the relation between the CDS and corporate bond market; and
  - D) effects on valuations.

#### **A) *Market liquidity***

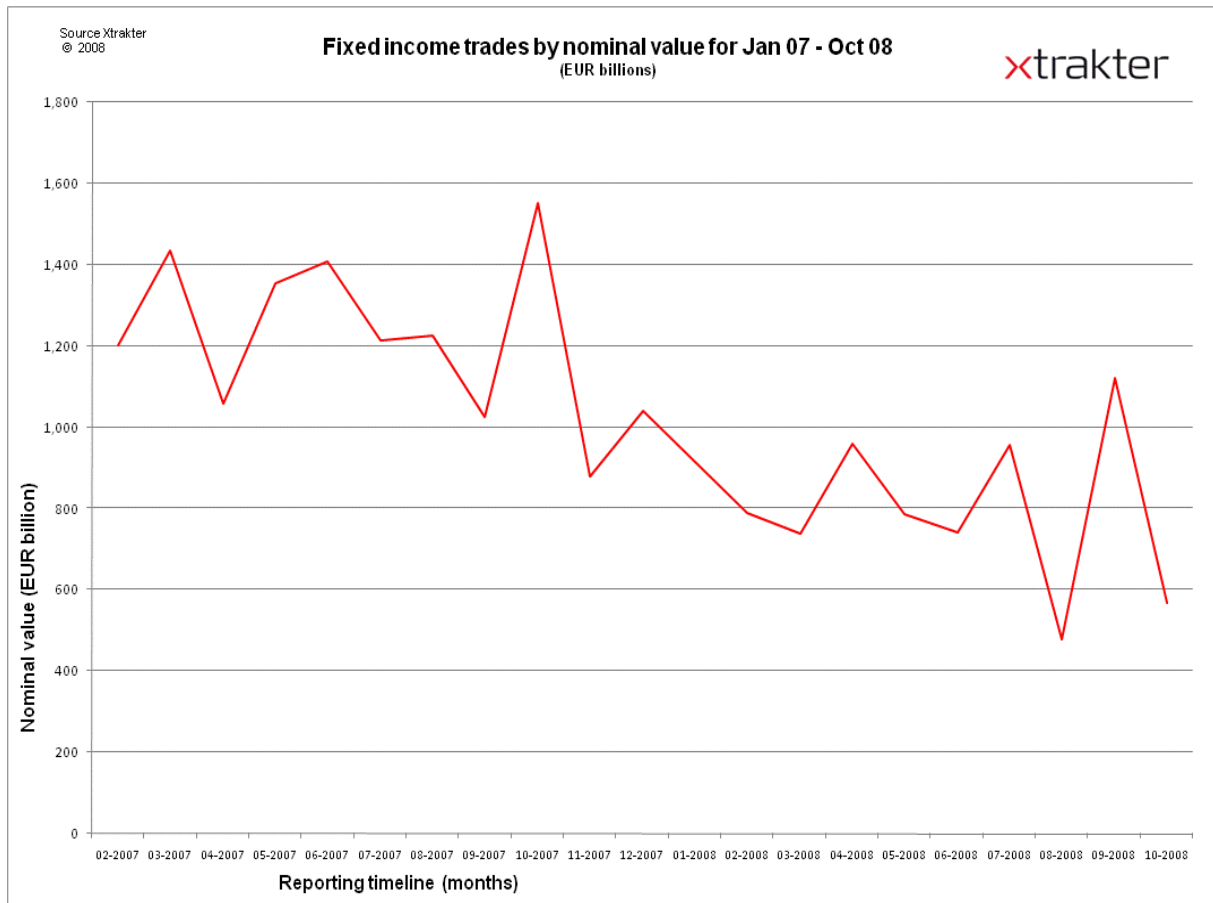
34. A sharp retreat of market liquidity since mid-2007 has caused difficulties to execute trades of corporate bonds. This was the case for wholesale as well as retail and small participants. More sophisticated investors generally have better access to information on prices and volumes, but they were more heavily affected by the changes to market liquidity than smaller and retail investors. This can suggest that during high risk, volatile trading conditions the likely behaviour of market participants may be to withdraw liquidity from the market. On the other hand, it can also be argued that the opacity of trading information is a source of increased information asymmetry between buyers and sellers and that a lack of post-trade transparency further negatively affected the liquidity shortage at this time.
35. The stresses that market intermediaries faced on their funding liquidity lead to a withdrawal

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<sup>3</sup> An information asymmetry, as a market failure, arises where one group of market participants has more and/or better information than another group. The latter group may make poor trading decisions because of this information shortfall. Externalities will arise when a decision of one market participant does not account of costs (negative externalities) or benefits (positive externalities) imposed on other parties not directly involved in the transaction decided..

or reduction in the degree of liquidity they deployed in market making. This applied to both the corporate bond market and the structured product market and was particularly problematic for the latter. As banks continue to deleverage their balance sheets it is likely that reduced market liquidity in many asset classes will continue for some time.

36. A more general observation is that all dealers change the nature and degree of interaction with a market in stressed times. Dealers are allocating a now scarce resource (capital) to where they now believe is the profitable allocation. In this respect, it could be argued that the natural consequence of increased credit concerns, tighter credit constraints imposed by increased market volatility and higher funding costs is that dealers will scale back their trading sizes and positions which will reduce the tradable market depth. However, the change in the market behaviour during the crisis could also reasonably be interpreted as a result of a lack of post-trade information further drying up liquidity.
37. The chart below shows the volume of secondary trading of corporate bonds from January 2007 to October 2008. We can see that volumes have dropped off sharply - falling by more than 50%<sup>4</sup>.



**B) Widening of bid-offer spreads**

38. Lower market liquidity was accompanied by a widening of bid-offer spreads and reduced market depth. Whilst the widening of bid-offer spreads may be an indication of a lack of competition during normal trading conditions, this is likely to reflect increased uncertainty

<sup>4</sup> Data includes all corporate bond trades including convertibles, straights and floaters which are reported to Xtrakter. Off-database trades, repos and cancelled trades have not been included. Volumes have been converted to Euros.



and volatility in stressed conditions. Indeed a widening of bid-offer spreads can be expected during stressed times as market participants reprice the asset to reflect increased market risk.

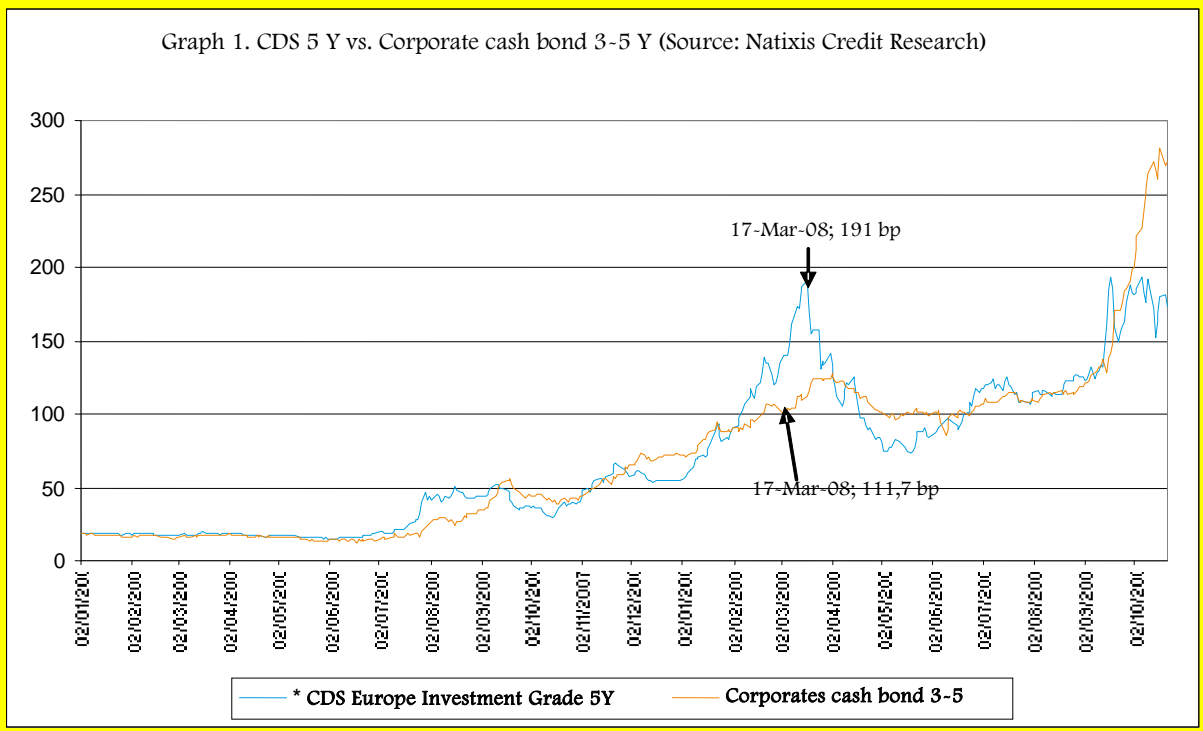
39. Even markets which are generally regarded as highly transparent (e.g. the German Bund market) also experienced declines in market liquidity and a widening in bid-offer spreads during the crisis.

**C) *The CDS market***

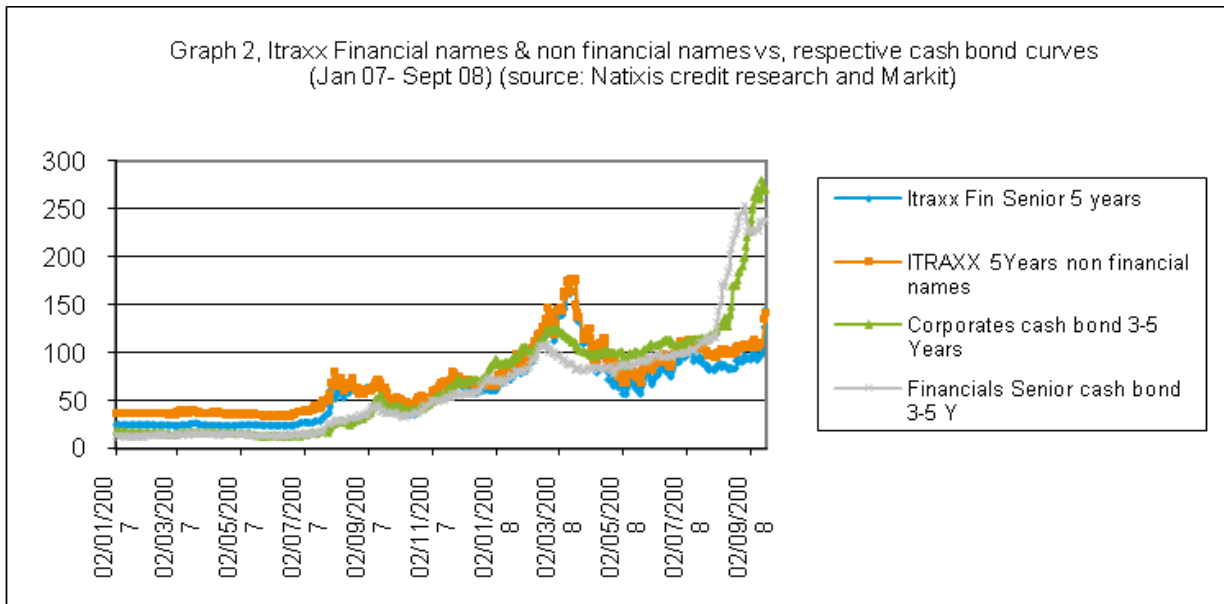
40. As noted in CESR's original advice, activity in the derivatives market, most notably the CDS market, is often effectively used as a means of price formation for the underlying cash bond market and also as a means of reference pricing. More generally the growth in the CDS market has enabled market participants to more effectively manage their risk. Recent activity in the CDS market suggests that this inter-relationship may not be working as effectively in difficult market conditions. When considering this, it is important to note that pricing in the cash market will reflect credit risk and funding risk, whereas pricing in the CDS market will focus on credit risk and counterparty risk.
41. Although the price relationship between a spot instrument and its corresponding derivative can fluctuate over time, one can observe that since the start of the financial crisis the spread between the two instruments has been moving erratically. As illustrated in graph 1 below, when facing the turbulence in the credit markets, the European cash bond market reacted in a less volatile way in Q1 2008. At the beginning of 2007, the iTraxx<sup>5</sup> index (focus on A rating category) level was in line with the corresponding cash bonds curve. However, since July 2007 this relationship has changed with the spread on the five-year European iTraxx, which follows the CDS for investment-grade corporates, widening significantly above the cash market curve. The spread subsequently reversed and entered in a more stable period with the spread between the two instruments more closely aligned although still sensitive to price changes until mid-September of 2008. During October 2008 a significant widening of the spread on the cash bond market above the iTraxx curve can be observed.

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<sup>5</sup> iTraxx is the brand-name for the family of credit default swap index products covering regions of Europe, Japan and non-Japan Asia. They form a large sector of the overall credit derivative market. The indices are constructed on a set of rules with the overriding criterion being that of liquidity of the underlying Credit Default Swaps (CDS). Credit Default Swap indices allow an investor to transfer credit risk in a more efficient manner than using groups of single CDSs. The most widely traded of the indices is the iTraxx Europe index composed of the most liquid 125 CDS referencing European investment grade credits.



\* This curve is the same as Itraxx 5 Y but calculated by Natixis Credit Research on a continuous series basis (the average maturity of the names incorporated within the index is constant, i.e. 5 years).



Graph 2 shows no major differences between the Itraxx index composed of non-financial names and the one composed of financial names nor between the cash bond curve of the financial names vs. non financial names.

42. This deviation is largely due to different responses of the two markets to changes in credit conditions. In particular, the CDS market appears to move ahead of the bond market in price

discovery<sup>6</sup>.

43. Empirical research has found that CDS and bond spreads respond differently to a change in credit conditions as investors first use the CDS market to adjust their positions. In normal times, this can reduce volatility in the cash bond market but in times when market participants are subject to an acute change in credit conditions this is not the case.
44. Another empirical study looked specifically at the role of the CDS market in price discovery for European corporate credit markets from January 2004 to October 2006. This period includes a period of market turbulence in the corporate credit markets in spring 2005 which was caused by the downgrades of Ford and General Motors. It shows that both the corporate bonds and CDS contribute to price discovery with the CDS market generally slightly dominating. However, the contribution to price discovery is not stable over time and the research finds that the contribution of the CDS market has fallen significantly during the turbulence in corporate bond markets in spring 2005.<sup>7</sup>
45. The above evidence could represent a rebalancing of supply and demand as investors take into consideration a number of components such as technical factors in both the cash and CDS market, the dollar price, swap spreads and covenants. In this respect, information relating to prices and volumes does not appear to be the driving force of movements in the curve. However, as the markets came under increasing strain because of the financial turmoil, liquidity in the CDS markets began to dry up too, raising doubts about their value as an indicator of risk and funding cost. In normal times, CDS have thrived but as the markets experienced severe problems, also weaknesses have been exposed. In this context, it can be argued that the cost of hedging for corporate bonds was artificially wide because the lack of liquidity has exacerbated trades led by some investors such as hedge funds involved in credit arbitrage strategies<sup>8</sup>. The spread-widening may have posed problems for corporate issuers' ability to raise money or roll over debt in capital markets as investors were in consequence demanding much higher interest rates to buy corporate bonds and thus asking to match the corporate cash bond levels at the CDS level. The magnitude of this excess co-movement<sup>9</sup> increases when credit quality becomes worse.
46. With spreads in the CDS market widening more or less sharply than for cash corporate bond markets, recent events may suggest that the CDS market is not a reliable proxy for calculating the price of the cash market in all circumstances or that price signals given by CDS premiums and Itraxx spreads should be used only in connection with other available indicators (e.g. bid-ask spreads).
47. From a policy standpoint the key question is whether this change in relationship is a short term reaction to reflect extraordinary circumstances and the previous interaction with the CDS and cash markets will return in the future or whether this relationship is unlikely to return going forward.

#### **D) *Corporate bond valuation***

48. During the credit crisis of 2007 and 2008, the issue of accurate marks on the security positions held by banks, hedge funds and mutual funds as well as the calculation of the net asset value (NAV) has been a significant issue for some market participants with problems not

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<sup>6</sup> Haibin Zhu, An empirical comparison of credit spreads between the bond market and the credit default swap market, BIS Working Paper No. 160 (August 2004); <http://www.bis.org/publ/work160.pdf?noframes=1>

<sup>7</sup> Niko Doetz, Time-varying contributions by the corporate bond and CDS markets to credit risk price discovery, Deutsche Bundesbank Discussion Paper, Series 2: Banking and Financial Studies, No. 08/2007 (July 2007); [http://www.bundesbank.de/download/bankenaufsicht/dkp/200708dkp\\_b\\_.pdf](http://www.bundesbank.de/download/bankenaufsicht/dkp/200708dkp_b_.pdf)

<sup>8</sup> These strategies consist for instance in betting on potential defaults amongst corporates and their expected positive impacts on the protections seller.

<sup>9</sup> As an illustration on the excess co-movement of the CDS prices see Viral V. Acharya, Stephen M. Schaefer, Yili, Zhang, Liquidity Risk and Correlation Risk: A Clinical Study of the General Motors and Ford Downgrade of May 2005 (December 2007), CEPR Discussion Paper No. DP6619; available at SSRN: <http://ssrn.com/abstract=1140548>



confined to complex products<sup>10</sup>. Some participants at the session organised by CESR for buy-side industry experts expressed the view that additional post-trade transparency could assist in valuing portfolios more accurately.

49. The International Accounting Standards Board<sup>11</sup> has recently published its thoughts about the use of transaction prices for assisting in the valuation of portfolios, particularly in inactive markets. The report concludes that results of disorderly transactions are not determinative when measuring fair value and that transaction prices in inactive markets would likely not be determinative of fair value but may be inputs when measuring fair value.
50. CESR lacks data on how the dispersion in corporate bond valuations has developed in European markets and on the development of valuation dispersion in the US during the credit crisis in 2007 and 2008. However, it can be noted that timely, consistent, accurate and widely accessible data on bond prices is helpful for calculating net asset values, which bond funds typically calculate on a mark-to-market basis.

### Conclusions

51. There is no question that markets have experienced an unprecedented period of turbulence and as noted in the analysis above the impact of recent events can be interpreted in a number of ways. CESR notes that:
  - liquidity in the corporate bond market has severely contracted in recent times with impacts on the availability of post-trade information for both the wholesale and retail sector;
  - bid-offer spreads in the corporate bond market were widened and market depth substantially reduced;
  - in terms of a potential asymmetry of information, investors across the board experienced a lack of post-trade information. Some market participants may have limited access to trading information, or find it prohibitively expensive to obtain; and
  - the inter-relationship between the cash market and CDS market is operating in a way which may hamper price discovery in the cash market.
52. Therefore, CESR is of the view that it would be useful to consider whether the introduction of greater post-trade transparency would help to restore market liquidity going forward (both in times of crisis and in normal trading conditions) and to help address wider issues which have been brought to light during the crisis such as those relating to accurate valuations.

#### **Questions to market participants:**

Q1: Do you believe the situation described above may be symptomatic of a market failure?

Q2: Have you perceived a potential asymmetry of information between market participants?

#### ***Market liquidity:***

Q3: In your view, what were the key reasons which have led to sharply reduced liquidity in secondary trading of European corporate bonds since 2007?

<sup>10</sup> See Gjergji Cici, Scott Gibson, John J. Merrick, Missing the marks: dispersion in corporate bond valuations across mutual funds (May 2008); electronic copy available at: <http://ssrn.com/abstract=1104508>

<sup>11</sup> [http://www.iasb.org/NR/rdonlyres/OE37D59C-1C74-4D61-A984-8FAC61915010/0/IASB\\_Expert\\_Advisory\\_Panel\\_October\\_2008.pdf](http://www.iasb.org/NR/rdonlyres/OE37D59C-1C74-4D61-A984-8FAC61915010/0/IASB_Expert_Advisory_Panel_October_2008.pdf)



Q4: Do you believe that additional post-trade transparency of European corporate bonds would have helped maintain liquidity in stressed market conditions? Can you please explain why?

***Bid/offer spread:***

Q5: In your view, what were the key reasons for the widening of the bid/offer spreads for European corporate bonds?

Q6: Do you believe that greater post-trade transparency would have been helpful in limiting the widening of the bid/offer spreads we have observed for European corporate bonds?

***CDS/corporate bonds relationship:***

Q7: Do you use CDS prices for pricing European corporate cash bonds? If so, what are the key benefits?

Q8: Which methods of bond price valuation do you use in the current market turmoil? Do you think that the CDS market is still a reliable indicator for bond price valuation?

Q9: The spreads between the CDS and corporate cash bonds have widened significantly in the first quarter of 2008. Did this widening of the spreads make it more difficult to price European corporate bonds? If so, do you think that additional post-trade transparency of corporate bond prices would have helped you to price European corporate bonds? How do you assess the situation since mid-September 2008?

Q10: Do you expect that the relationship between the CDS market and the cash bonds market will return to what has been observed historically once market conditions stabilise? If not, can you please articulate the reasons?

***Valuation:***

Q11: Have you experienced difficulties in valuing corporate bond holdings? If so, what were the main reasons?

Q12: Would additional post-trade trade transparency in distressed market conditions help valuation?

**Section 3 Potential benefits and drawbacks of increased post-trade transparency**

53. This section sums up the potential benefits and drawbacks arising from greater post-trade transparency in corporate bond markets, partly with a view to the recent market turmoil.

**A) Efficiency of the price discovery process, access to information and reduction of transaction costs**

54. While retail investors and small participants are less able to obtain trading information on corporate bonds (although those who use an intermediary are likely to have indirect access to some information), in normal market conditions large investors can typically obtain quotes from dealers and information disseminated by data vendors. As reflected in CESR's response to the Commission on non-equity markets transparency (07-284b), one of the benefits of improving transparency would be that retail investors and small/medium sized firms would benefit from better access to existing information sources. Post-trade transparency could also increase the efficiency of the price discovery process opening the information to all kinds of investors, may reduce bid-ask spreads, reduce search cost for investors and foster competition amongst dealers.

**B) Provision of liquidity**

55. There is little academic literature related specifically to the effects of greater transparency on liquidity. However, some studies<sup>12</sup> and some market participants interviewed by CESR during the preparation of this consultation paper emphasise that greater post-trade transparency could have a negative impact on liquidity because it would reduce incentives on liquidity providers to participate in corporate bond markets. A rigid post-trade transparency regime for corporate bonds may also lead to an unintended redesign of the market structure itself and may reduce the timeliness of execution. If market participants have to publish transactions executed before they have the possibility to lay off their position resulting from the transaction, the positions may become visible. There are concerns that market participants therefore refrain from taking these positions or from participating in the bond market, particularly under less liquid market conditions.
56. According to a study by Lagana et al. (2006)<sup>13</sup>, post-trade transparency may have different consequences on market liquidity in times of crisis than in normal market situations. In distressed market conditions herding behaviour by investors is likely to occur, i.e. an investor's selling decisions are related to the selling decisions of other investors at the same time. As a consequence of this, trading liquidity can be negatively impacted. This study also highlights that low post-trade transparency does not improve systemic liquidity, as it is likely that the information gap left by an absence of post-trade transparency would, in stressful times, be filled by speculative rumours.
57. Goldstein et al. (2007)<sup>14</sup> conducted a controlled experiment on the effect of post-trade transparency in US corporate bond markets. They compared liquidity for BBB-rated corporate bonds which are covered by TRACE with comparable bonds which are not covered by TRACE for a period from July 2002 to February 2004. They analysed trade volume and trade frequency for both actively traded and thinly traded bonds. Overall they found that increased post-trade transparency has no significant positive or negative impact on liquidity. However, for thinly traded bonds they diagnosed that increased post-trade transparency leads to a decline in traded volume.

C) Compliance with other regulatory requirements (such as best execution) and investor protection

58. European corporate bond investors may benefit from the provision of more post-trade data in order to verify the execution data they obtain. The difficulty in obtaining trade information could create problems for intermediaries in complying with the best execution obligations laid down in MiFID as it might affect their ability to identify the venue that offered the best terms for execution and to monitor execution quality for the purpose of reviewing its best execution policy. Post-trade transparency may also help investment firms to comply with other MiFID requirements intended to enhance investor protection, such as information disclosure to clients and suitability assessments, to address concerns regarding retail protection by delivering better prices to investors and protecting them from inappropriate investments. Post-trade transparency requirements might reduce investor complaints around prices and volumes as investors could verify the execution data they are provided with.

D) Corporate bond valuation

59. Weaknesses in valuation in circumstances in which markets become unavailable have become apparent from the turmoil. Even though market transparency is less essential for bonds as there is more information available to assess their intrinsic value, it could help to “correctly” price this kind of assets which could mean that portfolios were more accurately valued. The impacts of post-trade transparency on valuation accuracy for corporate bonds have been analysed for the US market by Cici et al. (2008). They look at the dispersion of corporate bond end-of month valuations across mutual funds in the US before and after the

<sup>12</sup> Centre for Economic Policy Research, European Corporate Bond Markets: transparency, liquidity, efficiency, (May 2006).

<sup>13</sup> Marco Laganà, Martin Perina, Isabel von Koeppen-Mertes, Avinash Persaud, Implications for liquidity from innovation and transparency in the European corporate bond market, ECB Occasional Paper No. 50 (August 2006); <http://www.ecb.int/pub/pdf/scpops/ecboep50.pdf>

<sup>14</sup> Michael A. Goldstein, Edith S. Hotchkiss, Erik R. Sirri, Transparency and liquidity: a controlled experiment on corporate bonds, Review of Financial Studies 20 (2), (2006), p. 235 – 273.



introduction of TRACE. They cover a time period from 1995 to the end of 2006. They conclude that the dispersion in bond price estimates by mutual fund managers for bonds covered by TRACE decreased significantly after the introduction of TRACE. To a lesser extent they also observe a decrease in valuation dispersion for bonds which are not subject to TRACE post-trade transparency. However, we lack data on US valuation differences in the recent crisis and data on the situation in European markets.

F) Impact on indices

60. Greater transparency on bond prices and volumes could potentially provide more comprehensive information for the production of bond indices and have a potentially positive effect on the quality of bond indices in Europe.

**Questions to market participants:**

Q13: Do you agree with the potential benefits and drawbacks described above? Please provide evidence supporting your opinion. Please explain how the potential drawbacks might be mitigated.

Q14: Are there other main benefits or drawbacks of increased post-trade transparency in the bond markets which CESR needs to consider?

**Section 4 Experience in the U.S market: the TRACE system**

61. TRACE is a system operated by FINRA<sup>15</sup> for mandatory reporting and disclosure of over-the-counter (OTC) secondary market transactions pertaining to eligible fixed-income securities. All brokers/dealers who are FINRA members and deal with TRACE-eligible securities are required to report their OTC transactions in these securities to TRACE. Upon reporting, FINRA disseminates certain data to the public. The functionalities of TRACE, including the scope of instruments covered, information disclosed as well as the delay of disclosure, are described in detail in Annex 1.

62. On the basis of recent research undertaken and opinions of EU market participants voiced vis-à-vis CESR or otherwise made public, this section further analyses the impact of TRACE on trading of corporate bonds in the US and tries to summarise the effects of TRACE on the market during the current credit crisis. The alleged benefits and drawbacks of the implementation of TRACE arising from academic research and opinions from EU market participants and the impact of TRACE on the US market are discussed, followed by some remarks about the resilience of TRACE during the recent credit crisis and the differences of the US and the EU markets and transparency regimes.

**The impact of TRACE on the US market**

63. The effect of TRACE on the US corporate bond market has been the subject of a number of academic research studies. While some consider that the introduction of TRACE has increased market efficiency and reduced transaction costs, others argue that its implementation in the US market has had a negative impact on the market.

***Market liquidity***

64. The evaluation of the effect of TRACE on the liquidity of the US bond market largely depends on the definition of liquidity. As seen in various research studies, the concept of liquidity can

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<sup>15</sup> After the merger of the National Association of Securities Dealers (NASD) and the New York Stock Exchange's regulation committee on 30 July 2007, FINRA was founded and took on the responsibilities for TRACE which was formerly developed and operated by NASD.

be used to describe multiple properties of trading in securities markets. Liquidity has been defined in terms of tightness (i.e. the bid-ask spread), market depth (i.e. market's ability to sustain relatively large market orders without impacting the price of the security), trade volume, resilience, trading cost as well as the ease of transacting.

65. Some early studies on TRACE have found that market liquidity has increased post TRACE in the US corporate bond market. These research studies hold that the increased transparency reduced the bid-ask spread<sup>16</sup>. It has also been observed that the increased transparency has led to a substantial decrease in investor's trading cost which develops in an analogous manner to the tightness of spreads. A decrease in trading cost can be attributed to various reasons including its effect on the competitive environment of the dealer market<sup>17</sup>. Another reason mentioned for this decline in trading cost is that increased transparency can facilitate enforcement of rules against mark-ups<sup>18</sup> in securities trading.
66. These initial studies on TRACE were criticised because of their limited definition of liquidity. It was argued that spreads were only one measure of liquidity. Another measure of liquidity would be trade volume. The market would be more susceptible to reduced liquidity in a price transparency mandated environment. It has therefore been voiced that a trade volume analysis in the TRACE price dissemination environment would have been quite useful and relevant. Furthermore, Bao/Pan/Wang (2008) recently articulated that, although the bid-ask spread is a direct and potentially important indicator of illiquidity, it does not fully capture many important aspects of liquidity such as market depth and resilience<sup>19</sup>. The authors used different analysis<sup>20</sup> in their report and found that the magnitude of illiquidity captured by their illiquidity measure is related to but goes beyond the information contained in the quoted bid-ask spreads. This study concluded that there is limited understanding of corporate bond liquidity partly due to the lack of clarity on a definition of liquidity. Without a clear definition or a credible measure, it is difficult to reach definitive conclusions on the factors influencing market efficiency.
67. Some of the market participants invited by CESR to present their views indicated that they do not have a direct experience of TRACE as they were typically not trading TRACE corporate bonds. Other market participants of the sell-side interviewed by CESR believed that TRACE has had a negative effect on market liquidity. They expressed the general view that trade transparency typically makes it possible to ascertain when a dealer has taken a large position and the price he has paid. Knowledge of the dealer's inventory may allow market participants to forecast the dealer's upcoming trades to be undertaken to rebalance inventory which may in turn cause price movements adverse to the dealer. Based on this, dealers would not want to commit capital any more because investors would immediately know where the trade happened, and the dealer would not be able to make money from committing its capital.
68. Furthermore, industry experts pointed out that the early TRACE studies were generally conducted during a time of relatively benign and improving credit conditions, reduced volatility and credit spread tightening. Consequently, it is claimed that the methodologies should be further refined and the results confirmed before these conclusions could be accepted as a basis for policy development.

### *Corporate bond valuation*

69. While research has focused on the salutary impacts of TRACE on bond trade execution costs,

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<sup>16</sup> See Fany Declerck, *Liquidity, Competition and Price Discovery in the European Corporate Bond Market* (2008), with references to some of the previous studies.

<sup>17</sup> It has been observed that in an opaque market well informed dealers may be able to extract rents from less informed customers and dealers may not want to disclose executed trades because they profit from the associated reduction in price competition.

<sup>18</sup> It is a violation of NASD Rule 2440 for a member to buy or sell securities "at any price not reasonably related to the current market price of the security".

<sup>19</sup> Jack Bao, Jun Pan, Jian Wang, *Liquidity of Corporate Bonds*, March 2008.

<sup>20</sup> The authors used two properties of illiquidity: 1. market frictions such as costs, constraints for trading and capital flows, 2. illiquidity's transitory impact to the market.

as pointed out by a recent research<sup>21</sup>, it has been also noted that TRACE has directly benefited investors and traders by increasing the precision of corporate bond valuation and consequently decreasing the bond price dispersion - which is related to bond specific characteristics typically associated with market liquidity and value uncertainty - amongst investors even for bonds that were not initially included in the list of reporting securities. Overall, the research indicated that at the individual bond level, regardless of credit rating or issue size, pricing marks across a fund became much tighter once TRACE was implemented. Additionally, another recent study<sup>22</sup> indicates a strong relation between the price dispersion, trading activity and liquidity-related variables (i.e. amount issued, maturity, age, rating, bid-ask spread and trading volume).

### ***Institutional and retail bond trading***

70. One structural feature of the corporate bond market is the combination of institutional and retail bond trading. The US corporate bond market has a significant retail participation<sup>23</sup> (unlike most European markets with the notable exception of Italy) but is dominated by large institutional traders in terms of volume traded. This may have trade disadvantages for retail investors. In such a situation, if retail investors have less access to information than institutional, their search costs are higher and they cannot properly monitor dealer rent seeking. The retail trades carry transaction costs about five times the size of those for institutional trades<sup>24</sup>.
71. According to Bessembinder/Maxwell (2008), a number of articles in the financial and trade press establish that trading costs declined substantially with post-trade disclosure, particularly for retail and small participants' trades. These articles are in line with the statistical evidence that indicate that the introduction of post-trade transparency in the corporate bond markets have significantly reduced the cost that investors pay to dealer firms for executing their trades in corporate bonds. The authors also recognised that the availability of transaction prices has made additional trading strategies feasible. In particular, investors using quantitative investment strategies or algorithmic trading would have larger amounts of more timely data to analyse now. TRACE has improved the viability of the electronic market and increased retail traders' willingness to submit electronic limit orders by allowing traders to choose limit prices with enhanced knowledge of market conditions. With disclosure, customers are able now to assess the competitiveness of their own trade price by comparing it to recent and subsequent transactions in the same and similar issues<sup>25</sup>.
72. On the other hand, the corporate bond market in terms of volumes traded is overwhelmingly institutional<sup>26</sup>, and - according to market participants - institutional investors already had good access to multiple sources of price information. It has been criticised that there was no demonstrated market failure to warrant the implementation of TRACE in the US market, including for the less liquid bonds. Most of the corporate bonds would be inherently illiquid and, except shortly after issuance, would not trade very frequently. As regards the impact of the structure of the bond market on liquidity, Declerck (op. cit, 2008) states that the institutional features of the bond market tend to reduce its liquidity.<sup>27</sup> Corporate bonds would attract a specific type of investors – insurance companies and investment funds – which tend

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<sup>21</sup> Gjergji Cici, Scott Gibson, John J. Merrick, Missing the Marks: Dispersion in Corporate Bond Valuations Across Mutual Funds (July 2008); available at SSRN: <http://ssrn.com/abstract=1104508>

<sup>22</sup> Rainer Jankowitsch, Amrut J. Nashikkar, Marti G. Subrahmanyam, Price Dispersion in OTC Markets: A New Measure of Liquidity (April 2008); available at SSRN: <http://ssrn.com/abstract=1100704>

<sup>23</sup> FINRA counts as 'retail trades' all trades below a volume of 100.000 US\$.

<sup>24</sup> Tavy Ronen, Xing Zhou, Where did all the Information Go? Trade in the Corporate Bond Market, (April 2008).

<sup>25</sup> Hendrik Bessembinder, William Maxwell, Transparency and the Corporate Bond Market, Journal of Economic Perspective (2008).

<sup>26</sup> According to the presentation of Steve Joachim of FINRA on 12 June 2008, the overall volume of trades in all credit qualities by non-retail customers (i.e. trades above US\$100,000) is 98,7 %.

<sup>27</sup> Declerck (op.cit) indicates that too many trading days between the transaction and its impact on market pricing may be due to the lack of post-trade transparency in the European market. Therefore, the study recommends that a system similar to TRACE be put in place, as an increase in transparency would accelerate the incorporation of transactions related information into market pricing.

to follow buy and hold strategies. Liquidity in the corporate bond market would therefore arise from dealers committing risk capital to market making<sup>28</sup>. According to a small survey of high yield investors<sup>29</sup>, referred to in several SIFMA presentations<sup>30</sup>, 54 % of them believe that TRACE has negatively affected dealers' willingness to commit capital or provide liquidity.

### ***Market and information efficiency***

73. Market and information efficiency are important issues which have been the subject of a substantial amount of theoretical and empirical research in financial economics. One of the important issues that affect market efficiency is transparency. Several theoretical studies have examined the effect of transparency on market efficiency, and they show that expected trading costs for uninformed traders are lower in a more transparent market. Ronen and Zhou (2008) found in their report that bonds are traded in an efficient market in a manner similar to equity. They indicated that their results, combined with other evidence of low trading costs for larger bond trades, imply that the relatively larger information content of institutional trades does not negatively affect dealer participation, neither in terms of the speed nor costs. Specifically, the phased in reporting time decreases within the TRACE regime would have shown enhancements in the (already swift) price discovery process. As reporting lags for TRACE bonds decreased from 75 to 15 minutes, retail trades would have exhibited increasingly faster price reactions surrounding information events, while institutional trades would not have exhibited slower reactions. TRACE was found to shorten the response time to corporate news for retail investors<sup>31</sup>.
74. Other research indicates that in the presence of information asymmetries, less-informed traders would often be dissuaded from participating in a limit order market knowing that their orders will tend to be "picked off" by better-informed traders if the price is too aggressive but left to languish if not aggressive enough. Bessembinder/Maxwell (2008) also discovered that in the absence of transaction reporting and disclosure customers find it difficult to know whether their trade price reflects market conditions. The introduction of TRACE would have reduced dealers' information advantage relative to customers and cross-sectional variation in the degree to which customers are well-informed regarding bond values.

### **Resilience of TRACE during the credit crisis**

75. In light of the credit crisis, Bao/Pan/Wang (2008) found high levels of correlation between illiquidity and market conditions, especially during times of market crisis. Markets become less liquid as volatility rises during crises. While liquidity improved from 2003 through 2007, liquidity would have diminished during the latter part of 2007. According to their research, the shift in the liquidity measure was dramatic in late 2007 with the subprime turmoil. Moreover, the liquidity reduction was found to be greater for large trades than small trades. Similarly, they observe that liquidity diminishes more as the credit spread widens and when the equity and bond markets "underperform". The authors found that illiquidity rises in times of market stress. In August of 2007 when the subprime crisis hit the market, the illiquidity measure jumped dramatically, nearly a four standard deviation event.
76. The credit crisis has resulted in significant reductions in volumes. Customers' volumes exhibited large year over year decreases from September through December 2007. According to FINRA, dealers have expressed the view that TRACE exacerbated the credit crisis. However, non-transparent Rule 144A volumes declined more than transparent bonds since October 2007. Retail-sized customer trades have increased in investment grade securities as high yield trades declined during the credit crisis.

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<sup>28</sup> Fany Declerck, Liquidity, Competition and Price Discovery in the European Corporate Bond Market (2008).

<sup>29</sup> Interviews were conducted with 15 high-yield bond portfolio managers including 9 hedge funds, 4 asset managers and 2 insurance companies.

<sup>30</sup> Presentation by Michael Decker, FINRA's TRACE and the U.S Corporate Bond Market (September 2007); Bertrand Huet-Delaherche, Non-equity Markets Transparency (November 2007).

<sup>31</sup> Tavy Ronen, Xing Zhou, Where did all the Information Go? Trade in the Corporate Bond Market (April 2008), p.6.

77. The question therefore is whether transparency has helped in curbing the credit crisis. FINRA is of the opinion that transparency may not be a solution in itself but would be a piece of the puzzle. The data collected by FINRA shows that from the 3rd quarter 2007 onward volumes decreased across the board with the largest declines seen in trades with a volume of more than US\$ 25 Mio. and Rule 144a securities<sup>32</sup>. This disproportionately high decline of the latter securities may suggest that the lack of mandated post-trade transparency had a negative impact on this section of the market during the crisis i.e. caused volumes to further retreat. Equally, one could conclude that given the liquidity impacts highlighted above it is probably not surprising that this section of the market became more acutely risk-averse and withdrew their participation from the private placement market for reasons other than the lack of transparency.

### Conclusions

78. The debate about the proper method to define liquidity, the impact of increased transparency on liquidity and optimal transparency of the corporate bond markets is likely to continue. The evaluation of TRACE's effects seems to depend to a large extent on the definition of liquidity. However, the reduction of trading costs for corporate bonds and the correlated tightening of bid/ask spreads in the US market seems to be one effect to which the introduction of TRACE has definitely contributed.
79. Corresponding to this positive effect for customers, demonstrated by empirical research conducted so far, a negative side-effect could potentially occur for the buy-side because dealers reportedly refrained from market making activities, and timely trading of large blocks became delayed due to the necessity to search for counterparties, particularly in the less liquid segments of the bond market.
80. Declerck's research report, covering a period until mid-2007, establishes that Euro denominated bonds are more frequently traded than US corporate bonds. This suggests that the European corporate bond market was relatively liquid compared to its US counterpart before the financial crisis occurred. It also shows the impact of competition on transaction costs and reflects the integration of financial markets in the Eurozone. Investors and banks from all the Eurozone countries can trade in bonds from all these countries. This increases the number of potential investors as well as the number of dealers, resulting in greater liquidity.
81. It has to be noted that the MiFID regime (that currently applies to shares only) and the trade reporting and disclosure of OTC trades in corporate bonds in the US differ in more than one aspect:
- MiFID does not know a single self-regulatory agency such as FINRA where investment firms have to report to. Rather, investment firms must report their transactions regarding financial instruments admitted to trading on a regulated market generally to the home competent authority (transaction reporting regime);
  - MiFID requires investment firms (whether trading as a principal or a broker) to publish the volume, price and time after the trade by themselves or third parties, while the US system relies on a dissemination of some of the reported data by a single self-regulatory authority.
  - In terms of the amount of trading information to be disseminated to the public, under MiFID the information to be published by investment firms about OTC transactions in shares admitted to trading on regulated markets only covers volume, price and time of the conclusion of the transaction; the data disseminated by TRACE is wider;

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<sup>32</sup> Presentation by Steve Joachim of FINRA on 12 June 2008 at the CESR premises. Rule 144a securities are private placements which typically take place between a small number of sophisticated investors. The data for these assets is not publicly disseminated although it is collected by TRACE under its transaction reporting function.

- MiFID allows for deferred publication of large transactions; the delays in the TRACE were removed in 2006. Instead, the volume of a transaction is not exactly disclosed if it exceeds a certain threshold for a large trade;

82. Although the introduction of a regime for post-trade transparency of corporate bonds in Europe could have benefits in terms of a trading cost reduction, particularly for retail customers and potentially small buy-side investors, this reduction would probably not have the same extent as in the US market because the bid/ask spreads are already tighter in the Eurozone. This said, it seems that with the financial turmoil, the spread gap between the US and European corporate bond markets is less obvious than before, specially for high grade corporates. It should however be noted that the introduction of post-trade transparency would also serve other purposes than the reduction of transaction costs that was focussed on prior to the recent market turmoil. The consideration to adopt a corporate bond market transparency regime therefore has to carefully take into account the differences of the markets, the differences in regulation as well as the costs and benefits associated, bearing in mind recent events and actual experiences at US and EU level in this area.

**Questions to market participants:**

- Q15: What are your personal experiences with TRACE? Please specify whether you are directly trading in the US corporate bond markets on the buy or sell side.
- Q16: Do you see other benefits or drawbacks of the introduction of a TRACE-like post-trade transparency regime for OTC trades in corporate bonds in Europe?
- Q17: Are you of the view that the more notable volume declines experienced for 144a securities, compared to securities which are covered by TRACE, is due to a lack of post-trade information? Please provide a rationale.

**Section 5 Market-led initiatives in the trade transparency area: ICMA and SIFMA**

83. CESR and the Commission have previously considered a market-led approach to the provision of trade information on non-equity markets to be the most appropriate solution for increasing post-trade transparency in the bond market both in terms of facilitating greater access to information by retail clients and at the same time avoiding unintended negative consequences which may arise from prescribing mandatory requirements.
84. As already underlined in last CESR advice to the Commission, “CESR agrees that it is wise to consider whether an industry-led solution could be developed if an increase in transparency is deemed appropriate”. However, in recognising the value of self-regulatory solutions to address issues of access to information about bond markets, CESR underlined the importance of being sure that the development and effectiveness of such initiatives should appropriately respond to certain regulatory objectives to be achieved.
85. In its advice to the Commission, CESR considered the following criteria as a framework for valuing the appropriateness of any market-led initiatives in the area of post-trade transparency for retail bond markets:
- the depth and breadth of the information provided, including the kind of bonds and information covered, the institutions caught by the requirements, how data is presented (e.g. aggregated or provided on a trade-by-trade basis) and whether data about volumes is offered;
  - the appropriate coverage both in terms of geographical distribution and market share;

- the timeliness of the data (e.g. data on a near real-time basis or information provided with end-of-day publication); and
- the delivery mechanism employed, which needs to be: (i) appropriate for the intended recipient; (ii) well-advertised, easily accessible source of information; (iii) user-friendly display/presentation of trading information, given the needs of the particular target group; (iv) equal access to all investors within the target group afforded, irrespective of where they were located within Europe.

86. CESR still recognises that the industry may be particularly well-placed to deliver a solution for markets that, by their nature, are cross-border/multi-jurisdictional. However, as already mentioned in the last advice to the Commission, “if the industry were asked to deliver greater transparency, it would have to demonstrate a clear commitment to doing so; otherwise, it might undermine regulators' confidence in the industry's ability to deliver solutions of its own. The progress of such initiatives should be monitored and their impact analysed”.
87. The Commission's final report refers to two industry initiatives designed at improving post-trade transparency in the retail bond market. These are the International Capital Market Association (ICMA) *standard* of good practice and its data reporting/publication service and the Securities Industry Financial Market Association (SIFMA) educational and price information website 'investing-in-bondseurope'. At this stage, CESR is not aware of any other self-regulatory initiatives either in place or in the process of being implemented, which are targeted at improving post-trade transparency for bonds.

***ICMA Standard of Good Practise***

88. The ICMA initiative comprises of a standard of good practice and a reporting function whereby ICMA members report data on bond transactions. The website BondMarketPrices.com was launched on December 3, 2007 as a dedicated online portal providing free of charge data on higher quality investment grade bonds with a large issue size, offering retail investors and market participants access to information on a number of bonds. The service is an asset of Xtrakter Ltd. using data from its TRAX2 trade reporting services, which focuses on post-trade reporting of trades with the following characteristics:
- a) bonds covered: bonds must have 1 year or more to maturity, have a current rating of “A-“ or above, have an issue amount of EUR 1 billion or above;
  - b) trade information provided: information on high, low and median trade prices and average closing bid and offer quotes, together with monthly trade volume and average daily number of trades, covering transactions between EUR 15,000 and EUR 1 million;
  - c) timing of information disclosed: high, low and median trade prices and average closing bid and offer quotes for each bond covered are published at the end of each trading day; figures related to monthly trade volume and average daily number of trades are published with a minimum of one month's delay (i.e. data for July would be published at the beginning of September).
89. Xtrakter's commercially available database has static data on 21,000 bonds of which approximately 12,000 are “priced” bonds – i.e. bonds that have had trades reported or for which dealer quotes have been submitted to Xtrakter in the previous six months. Of these 12,000 bonds, currently approximately 2,300 qualify according to the parameters of ICMA's Standard of Good Practice ( $\geq$ EUR 1 bn or equivalent in currency,  $\geq$ 1 year to maturity,  $\geq$ A-S&P rating). Currently trades are being reported and published on [www.bondmarketprices.com](http://www.bondmarketprices.com) on a daily basis for about 1,200-1,500 bonds though the actual bonds traded each day will vary. Of the 12,000 priced bonds mentioned about 7,500 are issued by EU issuers and about 4,500 by non-EU issuers. Most, but not all, of these bonds are admitted to trading on an EU regulated market but an increasing number are admitted to trading on an MTF. There are 32 members on ICMA's Council of Reporting Dealers, of which 12 are outside the UK (five in Paris, one in Milan, one in Copenhagen, two in Frankfurt, one in Brussels, one in Stockholm and one in Zurich).



90. ICMA has committed to review the Standard and the Service in December 2008 - after a year in operation. ICMA's Regulatory Policy Committee will consider what, if any, improvements need to be made to the Standard. Xtrakter is currently considering what improvements, that are cost-effective, can be made to the system.

***SIFMA retail-focused fixed income website***

91. SIFMA has announced its intention to extend its US retail-focused fixed income website and implement it at European level. The initiative ([www.investinginbondsEurope.org](http://www.investinginbondsEurope.org) – EU IIB) is a partnership in Europe among SIFMA, SIFMA members, market participants and an educational foundation to build an educational, non-profit, non-commercial five language website about bonds.
92. The site will be in five languages and will provide data covering circa 1,200 bonds focusing largely on pre-trade information, market news/analysis on government, sub-sovereign, corporate and collateralised bonds as well as an education section.
93. The audiences targeted are, at the beginning, retail investors and retail investors familiar with equities but new to bonds, although some information will be useful for sophisticated retail investors. The website has four “Market at a Glance Pages” covering four asset classes across the bond market: Government; Sub-Sovereign; Corporate; Collateralised which
- have at least one price data console with search and sort functions;
  - have market news;
  - have related market commentary and analysis (feeds are donated by members); and
  - have related indices, economic indicators and benchmarks.
94. There are also a “Learn More Section” (with six educational components to provide information in context: Bond Basics; What You Should Know; Buying and Selling Bonds; Types of Bonds; Strategies; Bonds at Your Stage of Life), a “Market Analysis and Commentary”, a “Newsfeed”, a “Calculators” (general basic bond calculator; currency converter), a “Resource Centre” with links to useful European investor education/informational resources as well as all EU Member States’ main financial regulators and tax authorities, and a “Glossary”.
95. Data feeds including price feeds and indices are provided. In particular:
- Markit providing one corporate aggregate pre-trade selected (liquid) pricing feed; price feeds on circa 1,200 bonds;
  - Tradeweb providing five pre-trade pricing feeds for government (European and US Treasuries); sub-sovereign (Euro and Dollar denominated (includes Supras)); collateralised (covered bonds); price feeds on circa 1,200 bonds;
  - two rating agencies’ data feeds serving the five consoles;
  - at least 80 indices from at least five different donors;
  - 25 individual economic indicator feeds overall and charted for relevant market pages (donated by Reuters); and
  - five key Benchmark Rate feeds (LIBOR, Euribor, BOE, ECB, FedRate)



**Conclusions**

96. CESR notes that self-regulatory solutions have so far focused on transparency which is characterised by:
- aggregated data instead of information on a trade-by-trade basis;
  - the provision of information on prices/quotes on an aggregated and delayed basis and, in the case of ICMA, the publication of information on volumes with a significant delay; and
  - limited coverage in terms of issues and transactions covered and institutions which provide trading information to be published.
97. Of the two market-led initiatives, ICMA's service is more focused on providing post-trade transparency information. CESR considers that the services provided by the industry including ICMA should be enhanced in terms of content and timing of information provided to the public.

**Questions to market participants:**

- Q18: Please provide information on your experience, if any, in terms of timing, content and access to information of the market-led solutions outlined above. What is your assessment of the effectiveness of the present self-regulatory initiatives?
- Q19: Please provide comments on the characteristics that market-led initiatives should, in your view, have.

**Section 6 Trade information currently available in Member States**

98. Efforts have been made by the industry to develop transparency arrangements. These range from trade information provided by multilateral venues (such as regulated markets and Multilateral Trading Facilities) to initiatives organised by trade associations which try to strike a balance between improving transparency and avoiding damage in terms of liquidity provision. Furthermore, new initiatives specifically targeted at areas of the market which have been particularly impacted by the credit crisis e.g. structured products have recently been announced.
99. In terms of the trade information made available by multilateral venues in EU Member States, a survey conducted among CESR Members (see summary of the responses to a questionnaire in Annex 2) shows that, in most cases, the market benefits from pre- and post-trade transparency also for financial instruments other than shares admitted to trading on a regulated market or on an MTF. For non-equity financial instruments admitted to trading on a regulated market, market operators are in many Member States required to set up a transparency regime to ensure fair and orderly trading. For transactions in non-equity financial instruments, the market operator often publishes or at least discloses to market participants some information about prices and quantities within a time period suited to the traded instrument, the method of trading and the amount of the transaction<sup>33</sup>. A similar approach applies to trading on MTFs. For financial instruments other than shares admitted to trading on a regulated market which are traded on the facility, the MTF operator often publishes or at least discloses to market participants some information about buying and selling interests. The information shall be sufficient to enable its users to form an investment judgement, taking into account the nature of the users (e.g. number and type of facility members) and the types of the financial instrument traded (e.g. whether or not it is admitted

<sup>33</sup> See Annex 2.

to trading on a regulated market, usual trading methods)<sup>34</sup>.

100. However, there are no similar transparency requirements for non-equity financial instruments either admitted to trading on a regulated market or an MTF but traded outside those platforms or for financial instruments not admitted to trading on a regulated market or an MTF. The only exceptions are Member States where decision has been made to exercise the option under Recital 46 of MiFID.
101. The option under Recital 46 of MiFID has been exercised in Italy. Prior to this, Italian markets were already characterised by a high level of transparency and, on the basis of the information available, the regulatory framework has not had a negative impact on liquidity and investments strategies.
102. In Italy bonds were (and are) traded on retail regulated markets, wholesale regulated markets, multilateral MTFs and a number of bilateral ATs. The current Italian transparency regime on non-equity financial instruments is characterised by a flexible approach which does not prescribe specific transparency requirements for trading venues in terms of the timing and content of the information to be made available to the public. Regarding investment firms' obligations, the regime focuses on post-trade transparency obligations and allows intermediaries to benefit (in terms of content and timing of obligations) from the framework in place for transaction reporting purposes. In particular, Consob Regulation requires:
- a) regulated markets, MTFs and systematic internalisers to set up and maintain a transparency regime for financial instruments traded on the systems operated by them. The approach focuses on market-led solutions, so that regulated markets, MTFs and systematic internalisers may design their transparency rules, specifically taking into account the market microstructure, the nature of the financial instrument, the amount traded and the type of market participants involved with specific attention to retail investors' involvement;
  - b) investment firms to make public post-trade transparency information on transactions concluded outside regulated markets, MTFs and systematic internalisers on financial instruments other than shares admitted to trading on Italian regulated markets. Investment firms shall make public the information concerning the date and time of the transaction, the details of the financial instrument involved, as well as price and quantity of the transaction concluded. The obligations apply to transactions below or equal to the amount of EUR 0,5 million. For transactions exceeding this threshold, investment firms are allowed not to publish the quantity and instead provide an indication that the transaction exceeds the threshold. In terms of timing, the information has to be published with reference to each transaction by the end of the working day following conclusion of the transaction.

<b>Section 7</b>	<b>Conclusions and recommendations</b>
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103. Since summer 2007, corporate bond markets have experienced significant stress. CESR has observed developments which may be symptomatic of a market failure in the following areas:
- a) **Market liquidity.** Liquidity in the corporate bond market has severely contracted in recent times with impacts on the availability of post-trade information for both the wholesale and retail sector. The sharp retreat of market liquidity since mid-2007 has caused difficulties to execute trades of corporate bonds. This has been the case for both wholesale, retail and small participants.
  - b) **Bid-offer spreads.** Lower market liquidity was accompanied by a widening of bid-offer spreads and reduced market depth. Whilst the widening of bid-offer spreads may be an indication of a lack of competition during normal trading conditions, this is likely to

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<sup>34</sup> Art. 14(1) and (2) of MiFID.

reflect the current increased uncertainty and volatility.

- c) ***The CDS market as a proxy of bond price transparency.*** Activity in the credit derivatives market (CDS) has often been effectively used as a mechanism for determining the price of the underlying cash bond market. Whilst it is not clear whether the behaviour of CDS spreads during the credit crunch is due to issues in the CDS market or to problems in the corporate bond market, the recent market conditions indicate that the CDS market has not been a reliable proxy for calculating the price of the cash market during most of this year;
  - d) ***Valuation of portfolios.*** Without a timely, consistent, accurate and widely accessible data on bond prices it is difficult to calculate the net asset values, which bond funds typically calculate on a mark-to-market basis. Some market participants expressed the view that accurate valuations have been problematic in recent times for more complex products (such as asset-backed securities) as well as for cash corporate bonds and that additional post-trade transparency may assist with accurate valuations of portfolios. However, there is no data available on how valuation dispersion was impacted by the credit crunch and it is not easy to quantify the impact of post-trade transparency on valuation dispersion in European markets.
104. The potential market failure which is particularly relevant for the corporate bond market is information asymmetry. When considering this issue it is important to bear in mind the structure of European bond markets. The wholesale sector accounts for a large part of market share, although in some countries there is active retail participation. Whilst wholesale market participants have been highly impacted by recent financial market turmoil, participants interviewed by CESR have so far declared to have adequate access to pre- and post-trade information on prices and volumes; on the contrary, retail investors as well as smaller market participants and some buy-side participants emphasise a lack of price transparency and the benefits from improved access to trade information.
105. The difficulty in obtaining trade information could create problems for intermediaries in complying with the best execution obligations laid down in MiFID as it might affect their ability to identify the venue that offered the best terms for execution and to monitor execution quality for the purpose of reviewing their best execution policy. European corporate bond investors may also benefit from the provision of more post-trade data in order to verify the execution data they obtain.
106. In summary, there has been evidence of markets operating in a way which we are not accustomed to and in particular significant declines in market liquidity have been witnessed. CESR is not of the view that insufficient post-trade transparency was the key reason behind such difficulties, nor does it believe that additional post-trade transparency would be able to solve the different problems experienced in the corporate bond market as a singular measure. However, CESR believes that there would be value for market participants in receiving access to greater post-trade information. The design of a transparency regime for bonds is not an easy task due to the number of factors that need to be taken into account. The industry has a deep and informed knowledge of market strategies and dynamics and market-led solutions in this area could still be considered appropriate provided that they can deliver an adequate level of post-trade transparency in a timely manner and are subject to close external monitoring. However, market forces may fail to reach the adequate level of transparency and market participants might not have the proper incentives to reach the optimal outcome.
107. CESR is aware that differences in financial instruments and specific trading needs of market participants are key factors to be taken into account when designing a transparency regime for non-equity instruments. Since equity and bond markets considerably differ, price transparency rules applied to equity markets may not be suitable for bond markets and increased transparency may not have the same effect on price formation and liquidity.
108. The industry continues to emphasise the absence of any evidence on the presence of market failures, concluding that there is no need for a regulatory intervention in this area. Wholesale participants generally seem to be content with the level of access to transparency information

and acknowledge that the reduced information about quotes and prices was a result of the lack of trading taking place. Access to trade transparency information for smaller participants, including retails, is even lower.

109. In its earlier advice to the Commission, CESR considered whether it would be feasible and/or desirable to extend mandatory transparency only to certain segments of the market or certain types of investors. CESR noted that, as a matter of principle, transparency requirements that might arise from harmonised EU level arrangements should take account of several factors, including:
- d) whether or not the bonds are admitted to trading on a regulated market or are traded on several platforms;
  - e) the nature of trading in the instruments – e.g. the proportion of trading occurring on MTFs and regulated markets compared to bilaterally;
  - f) the type of market participants; and
  - g) the type of end investors who hold these instruments.
110. During its former consultation process, CESR received a wide range of responses to the question in its consultation paper on segmenting transparency requirements. It was suggested that segmented transparency – designed to take into account the particular circumstances of the bond in question, or targeted particularly at given investor groups (most obviously retail participants) – seemed sensible. Market participants also stated that such segmentation could be delivered regardless of whether a mandatory or an industry-driven solution was adopted. But others argued that differentiating transparency requirements would be difficult to deliver in practical terms and might overlook the fact that, in reality, many of these market segments were interlinked.
111. Subject to careful design, various segmentations could be contemplated. Accordingly, CESR is considering whether an approach which distinguishes between the needs of participants active in the wholesale market from those active in retail market might be appropriate. CESR is keen to obtain the industry's view on this approach and, where relevant, how best to distinguish between wholesale and retail markets in order to improve the content and timing of information made available.
112. In conclusion, CESR recognises the importance of transparency for the efficient functioning of markets generally, and is willing to explore with market participants whether additional post-trade transparency could play a role in supporting a return to more normal market conditions in the corporate bond markets and be of value thereafter. In particular, CESR seeks market participants' views on the following matters:

***Depth and breadth of the information to be provided:***

- a) types of corporate bonds to be covered;
- b) publication on a trade-by-trade basis and/or publication of certain aggregated information over a selected period of time;
- c) publication of the following trade information:

If trade-by-trade information:

- Trading day and time
- ISIN code (or an alternative identifier, if not available)
- Trade price



- Trade volume

If aggregated information:

- ISIN code (or an alternative identifier, if not available)
  - Price information over a selected period of time (e.g. high, low)
  - Volume information over a selected period of time (e.g. average volume)
  - Last quotation date
  - Last transaction date
- d) possibility for volume to be published only when below a certain size (a given threshold could be designed to avoid any risk of market impact).

***Timeliness of the data***

- e) timing of the information to be published: close to real-time or at the end of the trading day or at the end of the working day following the trading day.

***Delivery mechanism***

- f) Cost-effective way of delivering additional transparency: industry-led solution or mandatory transparency requirements.

***Other data related to the corporate bond in question***

- g) Issue date, maturity, coupon price, yield spread, rating.

**Questions to market participants:**

Q20: Do you think that the introduction of additional post-trade information on prices could help restore market confidence and maintain market liquidity in times of future crisis?

Q21: Do you believe that additional post-trade transparency of European corporate bond markets would contribute to liquidity in normal market conditions? Can you please explain why?

Q22: To what extent can corporate bond markets be characterised as wholesale or retail markets? How would you distinguish between wholesale and retail markets? What are the differences across the EU?

Q23: What would be the benefits and the downsides of a harmonised pan-European transparency regime for:

a) the wholesale market;

b) the retail market.

Please provide arguments and fact-based data on the potential impact.

Q24: Is the reduced reliability of the CDS market as an indicator/proxy for calculating the value/price in the cash market under certain market conditions an issue which calls for more post-trade transparency of cash corporate bonds?

Q25: Do you think that transparency requirements could help address wider issues such as those relating to accurate valuations?

Q26: What would be the most cost-effective way of delivering additional transparency an industry-led solution, possibly based on a road map set by regulators, or mandatory regulatory post-trade transparency requirements?

a) the retail market.

b) the wholesale market;

Please, provide a rationale.

***Technical issues***

Q27: Which should be in your view the key components of a post-trade transparency framework for corporate bonds? Please provide your view with respect to depth and breadth of information as well as to timeliness of data as described above.

Q28: Should the information on the volume be reported only below a certain size, what would be the threshold to avoid any risk of market impact?

Q29: Would you see some benefits in a step-by-step implementation, starting with the most liquid bonds, as employed when TRACE has been introduced?

## PART II: STRUCTURED FINANCE PRODUCTS AND CREDIT DERIVATIVES

### Section 1 Objective and scope of Part II of the consultation paper

113. The objective of this part of the consultation paper is to consider whether increased post-trade transparency in the markets for structured finance products (SFPs) and credit derivatives would be appropriate in light of the experiences of the recent market turmoil. The paper concentrates on post-trade transparency of markets for Asset Backed Securities (ABS), including Residential Mortgage Backed Securities (RMBS) and Commercial Mortgage Backed Securities (CMBS), Collateralised Debt Obligation (CDO), Asset Backed Commercial Paper (ABCP), and Credit Default Swaps (CDS).
114. Section 2 provides background information on the period of turbulence in financial markets and highlights the expansion of new financing techniques based on securitisation. Section 3 describes the main characteristics of the SFP and CDS markets in order to help analyse whether a post-trade transparency regime could be envisaged for these types of products. In particular, the following information is provided:
- the main characteristics of SFPs (e.g. structure, tranching, cash-flows, different product types, role of indices);
  - the market for SFPs (e.g. size of the overall market and by product type, admittance to trading on a regulated market, degree of secondary trading);
  - the key players involved in the market for SFPs; and
  - the sources of information available to market participants and the public.
115. Section 4 gives an overview of the key issues arising from the recent crisis in relation to SFPs and CDS. Section 5 describes the key initiatives addressing issues which arose during the current turbulence. Section 6 discusses the role of post-trade transparency in European securitised and credit derivatives markets. Section 7 sets out CESR's conclusions.

### Section 2 Background

116. Between 2003 and 2007 the global economy boomed and global GDP rose at an average of 5% a year. The housing booms experienced in the US and in many other countries had their origin in low interest rates, cheap credit and strong growth. A long period of benign economic and financial conditions increased the amount of risk that borrowers were willing to take on.
117. The expansion was also fuelled by new financing techniques based on securitisation and a weakening of lending standards, particularly in the United States. The epicentre of the crisis is well known to be the so-called subprime segment of the US housing market, where loan-to-value ratios had been raised over time, often exceeding one. The main diffusion channel for financing the credits granted was through structured product markets in which mortgages and credits were securitised and sold by credit institutions. The pooling of credit assets generated complex structured products that appeared to meet the credit rating agencies' criteria for high ratings. Financial guarantors (e.g. monoline insurance companies) also contributed to the perception of high quality investment opportunities. In addition, an indirect channel of contagion occurred, following from the dramatic rise in CDS spreads and lending rates in the interbank market where lending rates reached record levels for an extended period and markets became shallow.

118. Financial institutions established off-balance sheet funding and investment vehicles, which invested in these sorts of products and benefited from regulatory and accounting incentives. These financial institutions underestimated the risks that negative economic conditions would pose to these investments.
119. These securities were sold to institutional investors or to other vehicles which again issued in turn instruments backed by the original securities. In some instances these investors misunderstood the asset compositions of these kinds of products.
120. In August 2007 the problems in the sub-prime markets triggered a reversal in market risk taking and this led to a severe contraction of activity in the interbank market and a substantial rise in risk premia. The confidence crisis spread the turmoil, increased market uncertainty and reduced liquidity, provoking questions about the quality of structured credit products and concerns around valuations. The increase in defaults in structured products underlying assets and the failures to bear the losses they were supposed to cover generated write-downs in the balance sheets of those institutions exposed to structured products linked to credits. Similarly, in the CDS market, increased calls for collateral from counterparties, due to worsening financial conditions of third parties, also hit protection sellers.
121. The financial market turmoil brought to the forefront a number of shortcomings: risk exposures, valuations of structured products and off-balance sheet vehicles proved to be opaque and very diverse in terms of scope and detail. Furthermore, at the instrument level, the information provided to the market by institutions involved in the securitisation process proved to be relatively poor, especially in relation to nature and quality of underlying asset pools. This lack of transparency both on exposures to instruments and at the level of the instrument itself contributed to the loss of market confidence which in turn contributes to disruption in various segments of the financial markets. The complexity and opacity in their instruments also led to an over-reliance on ratings and rating agencies.

<b>Section 3      Description of the markets for structured finance products and credit derivatives</b>
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122. The purpose of this section is to provide information on the characteristics and size of the markets for structured finance products and credit derivatives as well as information on key market participants and investors.

***Securitised Markets***

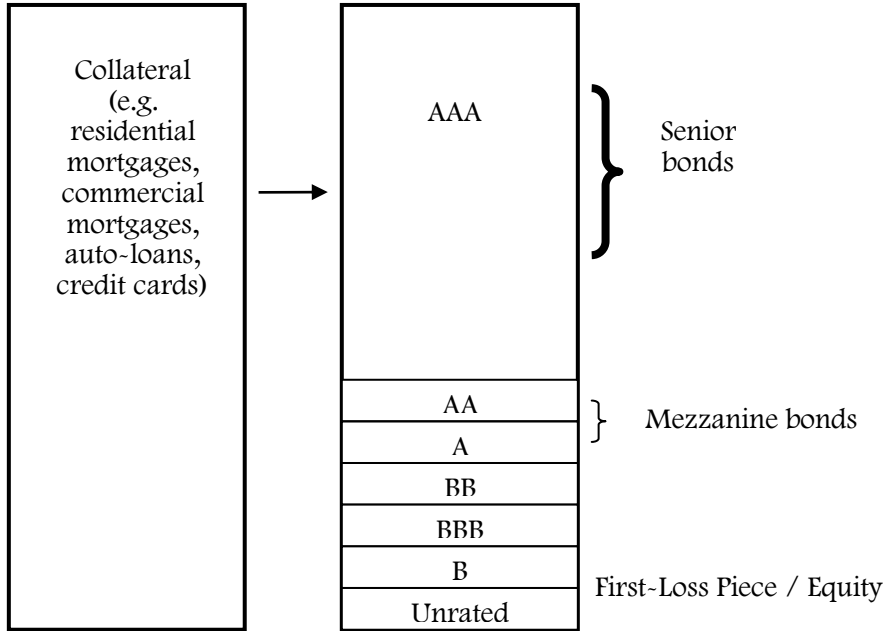
**A)      Asset Backed Securities**

***Product characteristics***

123. Asset Backed Securities (ABS) are issued through a special purpose vehicle (SPV) and are backed by specific assets such as residential mortgages, commercial mortgages, credit card loans or auto-loans. The cash flows to pay the interest and principal on the bonds are directly derived from the cash flows on the underlying assets whose performance determines the performance of the securities issued by the SPV.
124. ABS are structured so as to have internal credit enhancement. The most common method for credit enhancement is the subordination of some bonds to others. The more protected bonds are called senior bonds and the least protected ones equity or first loss. The bonds between equity/first loss and senior bonds are called mezzanine bonds (see Figure 1 below). In the event of underperformance of underlying assets, equity/first loss bondholders will be the first to suffer a loss.
125. The more senior bonds represent the largest part of the capital structure. According to Moody's Investor Service, at the end of March 2008, 85% of European securitisation products rated by Moody's carried an AAA rating at the time of issuance.



**Figure 1**



126. The following table summarises the main ABS securities in Europe.

**Table 1** - Main ABS securities in Europe

<u>Residential Mortgage Backed Securities (RMBS)</u>	They are issued by banks and backed by an underlying pool of residential mortgages. There can be some distinctions between prime RMBS and sub-prime/non-conforming RMBS although there is no consensus about what constitutes a sub-prime/non-conforming mortgage in Europe.
<u>Commercial Mortgage Backed Securities (CMBS)</u>	They are issued by banks and backed by an underlying pool of commercial mortgages.
<u>Credit card ABS</u>	These are generally issued by a bank and backed by largely unsecured obligations owed by individuals to the issuer of the card.
<u>Auto-loan ABS</u>	These are issued by auto finance companies and are backed by underlying pools of auto-related loans. Auto-loans ABS are classified into three categories: prime, non-prime, and sub-prime.

127. An ABS index (ABX.HE) based on tradable credit derivative indices linked to the price of US sub-prime MBS was established in 2006 and is administered by Markit. Some market participants suggest that the presence of such an index has helped the ABS market maintain a degree of liquidity during the crisis. There is currently no ABS index in Europe.

***The market for ABS securities***<sup>35</sup>

128. In terms of market size, in Europe, RMBS accounts for the largest market share. As of Q2

<sup>35</sup> Source: ESF securitisation data report Q1 2008.

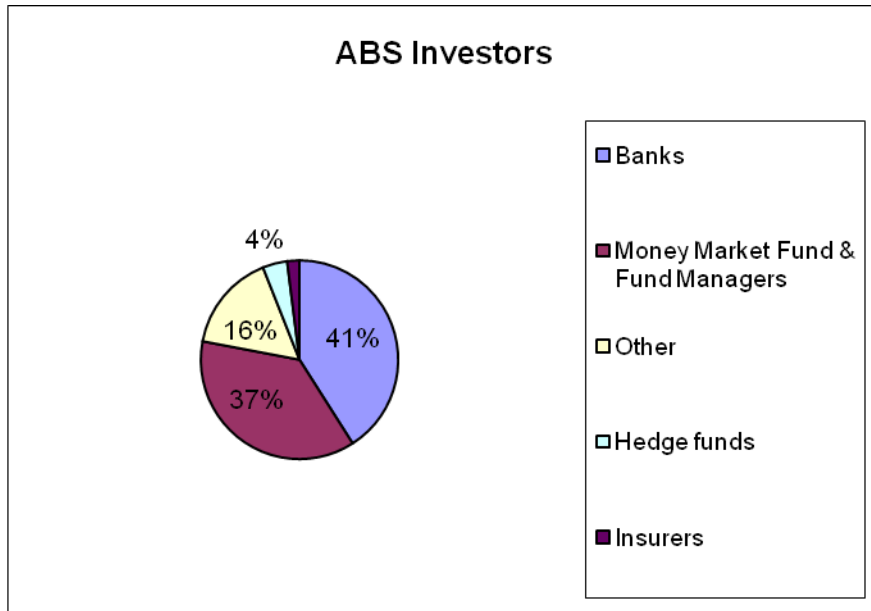
2008, the volume of RMBS outstanding represented €789.2bn, compared to €141.5bn for CMBS and €183.8bn for all other ABS. The market turmoil of the second half of 2007 resulted in a sharp decline of RMBS, CMBS and other ABS issuance in Europe. Q1 2007 saw total issuance of €103bn compared with €38bn in Q1 2008. However, in the second quarter of 2008 there was a sharp increase of issuance to €160bn. However, it appears that the vast majority of newly created securitised products are being retained by originators primarily to use as collateral for central bank liquidity facilities<sup>36,37</sup>, with only very small reference to volumes being sold in the primary market.

- 129. The US securitisation market is five times the size of the European one and the largest globally. Within Europe, the UK is the largest market for MBS and other ABS with a total value of €473 bn outstanding as of Q2 2008, followed by Spain (€157bn), the Netherlands (€148bn), Italy (€113bn), Germany (€55bn) and France (€27bn).
- 130. Most RMBS, CMBS and other ABS are admitted to trading on regulated markets and thus are subject to initial and on-going disclosure requirements. However, these products never actually trade on a regulated market. All trading is OTC, majority of investors adopt a buy and hold strategy. Any secondary trading that does take place, is likely to be concentrated in the AAA RMBS sector. Liquidity in all products has sharply declined since the recent market turbulence. Anecdotal estimates suggest there are now between 50 and 100 trades per week on secondary markets (many relating to distressed selling) compared to 250 trades per week before the crisis.

***Investors***

- 131. Banks are the biggest investor group in the European RMBS, CMBS and other ABS market. The other significant investors are money market funds and fund managers.

**Chart 1**

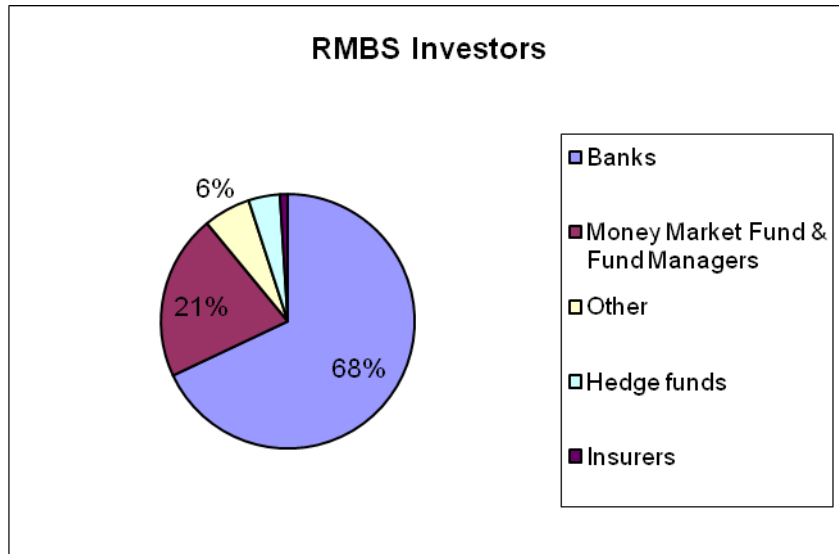


Source: ESF securitisation data report Q1 2008

<sup>36</sup> According to a presentation given by the American Securitisation Forum, 91% of European issuance in Q2 2008 was retained for repo with EU central banks.

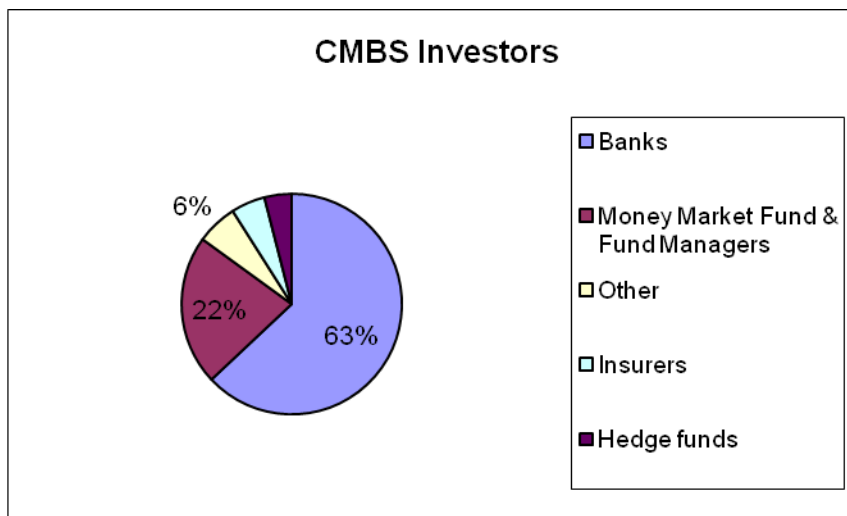
<sup>37</sup> The volume of eligible ABSs to ECB repo operations constitutes approximately 60% of the entire outstanding European securitisation market. The annual average share of ABS pledged as collateral increased to 16% in 2007 up from 12% in 2006 (source: José Manuel Gonzalez-Paramo ECB, speech at Global ABS conference, 1 June 2008).

Chart 2



Source: ESF securitisation data report Q1 2008

Chart 3



Source: ESF securitisation data report Q1 2008

**B) Collateralised debt obligations**

*Product characteristics*

132. A CDO is a type of asset-backed security and is constructed from a portfolio of fixed income assets including corporate loans and mortgage backed securities. A special purpose vehicle (SPV) issues notes to investors in order to raise funds that are invested in a portfolio of those fixed income assets, held by the SPV as collateral for the notes.

*Types of CDOs*

133. CDOs can be subdivided into four categories:

- CLOs (collateralised loan obligations): where the underlying assets are loans;

- CBOs (collateralised bond obligations): CDOs other than CLOs;
- CDO-squareds: CDOs where the underlying asset pool is CDOs; and
- ABS CDOs: CDOs where the underlying asset pool is ABS<sup>38</sup>.

134. There are three main transaction structures of CDOs:

- Cash CDO. This is the most common type of CDO structure used. Cash CDOs rely on the cash flows generated from a portfolio of fixed income assets to pay returns to investors holding CDO notes. It does not rely upon the sale of assets to satisfy interest and principal payments. Instead, subordination is sized so that the after default cash flow of assets is expected to cover debt tranche principal and interest with some degree of certainty. They are commonly backed by a collateral of bonds and loans (whose legal title is transferred to the purchaser).
- Synthetic CDOs. Rapid growth and liquidity in the credit derivatives market has led to the emergence of synthetic CDOs. Instead of referencing assets that can generate cash flows, synthetic CDOs reference credit derivatives, usually credit default swaps (CDS). They acquire credit protection from investors via CDS (in return for a premium payment) in order to synthetically replicate the funding structure of cash CDOs (without the purchase of assets). Synthetic CDOs have two structures, funded and unfunded structures<sup>39</sup>;
- Hybrid CDOs. These products utilise the funding structures of both cash and synthetic CDOs;

135. Cash CDOs are tranching into different credit risk classes - equity, mezzanine, senior, and super-senior tranches - to cater to the different risk-return profiles of investors. The equity tranche is the most junior tranche. Investors in equity tranches could lose their principal as they absorb the first losses on the collateral pool. But they are compensated by receiving all the remaining returns after all the other investors receive their returns specified in the contract. The mezzanine tranche, though not subject to the first loss, could still face considerable default risk and is typically rated as A/BBB. The senior tranche is rated AAA, and the super-senior tranche is rated above AAA (adopting S&P rating system). In the case of synthetic CDOs, all tranches, from equity to super-senior, have to be sold in order to finalise the deal.

### *Standardisation*

136. Standardisation depends upon the asset class (loan, mortgage, etc.) and the jurisdiction, the structure itself is very similar with some minor tweaks to it (details of the cash flow diversion triggers, ability to defer repayment of interest or not, etc.). A first categorisation is indeed the seniority of the tranche and its associated rating.

137. Cash CLOs are relatively standardised, the main difference being the structural adjustments

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<sup>38</sup> Starting in 2004, structured finance assets became the dominant asset in arbitrage CDOs. The surging demand for these assets helped push spreads down, so much so that the bond insurers and real estate investors were priced out of the market. This event was key: CDOs were willing to accept loans that traditional investors would not have accepted, and originators began originating riskier loans. This also allowed more aggressive underwriting of subprime RMBS pools, as these investors were not conducting due diligence on originators to the same extent as the traditional investors in these pools.

<sup>39</sup> In a funded synthetic CDO, the SPV sells a portfolio of CDSs to the arranger. Accordingly, the SPV buys some collateral assets against the sold-out portfolio and, if a bond that is linked to one or some of the CDSs defaults, it sells part of the collateral to make a payment to the arranger. In order to buy the collateral assets, the SPV has to issue to investors the CDO notes, and investors have to pay the principal at the inception of the deal. In the mean time, investors receive CDS premiums, but face a loss of the principal when defaults happen. As in a cash CDO structure, equity tranche investors absorb the first losses on the collateral assets in return for the highest return.

required by the managers, each of them requiring different levels of flexibility. Regarding portfolio transparency (a key first step to ensure transparency and standardisation), the major hurdle remains the limited disclosure regarding the underlying loans, due to (a) bank secrecy laws, preventing banks to disclose financial information; and (b) private nature of the loans, with some financial sponsors unwilling to disclose the loan information to non-lenders.

138. Synthetic CDOs are very standardised, legal documentation template has been created by ISDA (Master CDS Tranche Confirmation Agreement) to make the contracts more easily transferable.

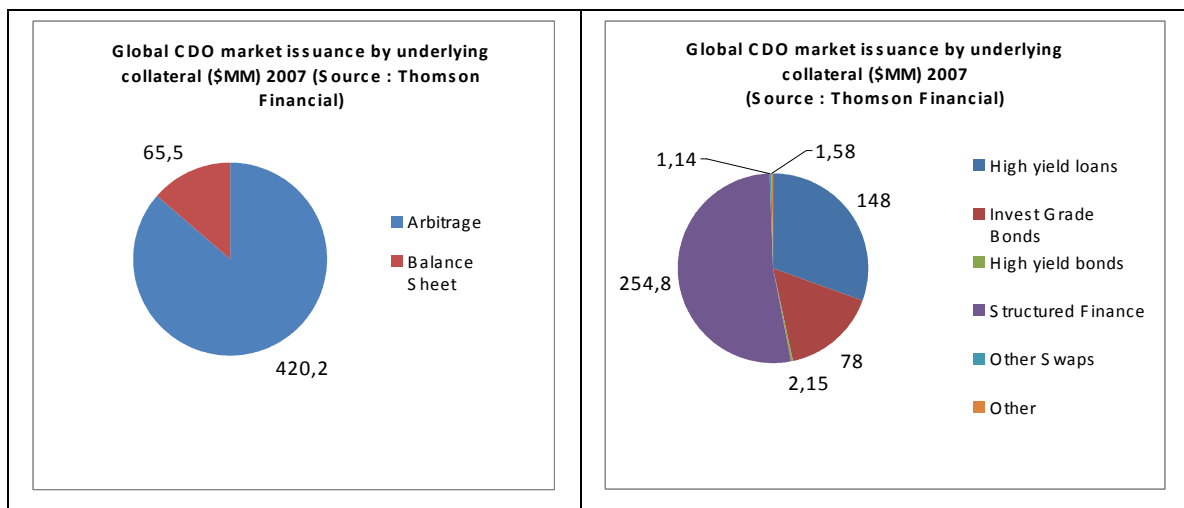
**Uses**

139. CDOs enable issuers to achieve a broad range of financial goals, which include the off-balance sheet treatment of securitised exposures, the reduction of minimum regulatory capital requirements, and access to alternative sources for asset funding and liquidity support. In the case of off-balance sheet transactions, the issuers unload defined asset exposure to third parties in order to change their balance sheet composition or debt maturity structure.
140. Where arbitrage transactions take place, the issuers act as active portfolio managers who acquire assets for arbitrage purposes only. Arbitrage CDOs generate profit from the difference of funding costs and returns on securitised assets.

**The market for CDOs**

141. In terms of notional amount outstanding, the European CDO market size is about €272.6bn as of 30 June 2008 which represents almost 20% of the entire structured finance products market in Europe. The global issuance of CDOs from 2004 to Q4 2007 totaled \$1.47 trillion. Only \$17.3bn worth of CDOs issued in Q2 2008 compared to \$175.9bn in Q2 2007.
142. CDOs were dramatically affected by the financial turmoil: whereas CDOs were the second most active segment of the European SFPs in 2007 with €122.4 bn of new issuance, as of 30 June 2008 the volume of CDOs new issues has only reached €18.9 bn<sup>40</sup>. In terms of CDO structures<sup>41</sup>, amongst the Cash CDOs, the most resilient products seem to be the “levered loans” whereas ABS CDOs seem more heavily impacted.

**Chart 4**



<sup>40</sup> ESF, Q2 report, 2008

<sup>41</sup> There is no CDO breakdown by underlying collateral available in the ESF reports.

*Secondary market liquidity and expected evolution*

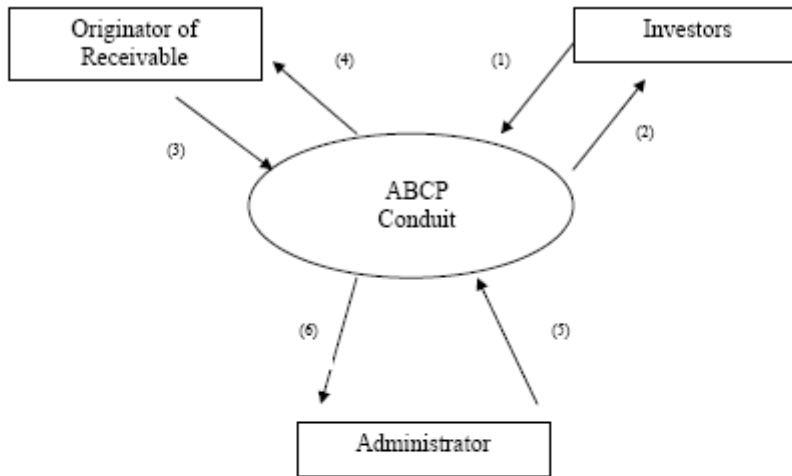
143. In terms of secondary market activity, cash CDOs are relatively illiquid (mostly held on a “buy and hold” basis) and trade by appointment only. The financial crisis has made little difference in that respect, with the exception that a significant number of potential buyers recently decided to retreat from this market. As regard to the synthetic CDOs, they have remained so far more liquid before and during the crisis. The main reason for this situation is that synthetic CDOs have been designed to be hedged as simply as possible via a combination of CDS and index tranches, so that their liquidity is duplicate of the liquidity of these underlying assets.
144. Market participants interviewed by CESR are of the view that within the domain of CDOs, certain types of products may not survive the subprime crisis. Those CDOs based on existing financial instruments (i.e. financial instruments already trading in the market) whose sole purpose was to repackage such instruments so as to extract a higher yield, often thanks to the use of financial leverage, for a proclaimed lower risk, based on some spurious correlation assumptions, may find it difficult to be further originated in the future. Other securitisations will need time before recovering, in particular until banks can access market under more normal conditions.

**C) Asset-backed commercial paper**

*Product characteristics*

145. Asset-backed commercial paper (ABCP) is a form of commercial paper that is collateralised by other financial assets. ABCP are typically short term investments that mature between 90 and 180 days. These instruments are constantly rolled over and issued by so-called conduits (including Structured Investment Vehicles). They are designed to be used for short-term financing needs for longer-term securities.
146. The basic framework of an ABCP conduit is summarized in the figure 3 below. The originating company sells assets, usually receivables, to a bankruptcy remote conduit. The conduit is often established by a commercial bank and purchases the receivables with commercial paper issued to institutional investors, usually money-market funds. The bank is referred to as the conduit’s sponsor (or administrator) and in exchange for fees it serves two valuable roles:
- provides conduit investors with liquidity; and
  - provides a credit enhancement.

**Figure 2**



This figure illustrates the basic features of an ABCP conduit. The events may be summarized as follows:

- (1) Investors contribute cash to the conduit.
- (2) Investors receive ABCP in return for investment.
- (3) Originators contribute receivables to conduit.
- (4) Originators receive cash from ABCP sale in return for receivables.
- (5) Administrator organizes transaction and provides liquidity and credit enhancement.
- (6) Administrator receives a fee for its services

Source: Bens, Daniel A. and Monahan, Steven J., *Altering Investment Decisions to Manage Financial Reporting Outcomes: Asset-Backed Commercial Paper Conduits and FIN 46* (September 19, 2007). Available at SSRN: <http://ssrn.com/abstract=1015582>

147. The main structures of ABCPs are summarised in the following table.

**Table 2** - Main structures of ABCPs

Single-seller conduits	Conduits based on a single collateral provider which sells assets to the conduit. These conduits are often managed by the finance subsidiary of a large company or by a bank for its own business.
Multi-sellers conduits	Conduits based on various collateral providers. For example, a bank can set up a multi-seller conduit to provide financing for a variety of bank clients. Collateral is mostly provided in the form of loans (i.e. trade, car, credit card, commercial and equipment loans/receivables). In addition, Multi-seller conduits such as hybrid conduits not only invest in loans but also in securities.
Repo/TRS Conduits	An SPV that funds highly rated financial institution assets through repo and total return swaps. Programme assets must mature before or at the same time as liabilities since there are no bank liquidity backstops.
Securities arbitrage conduits	Conduits that have been established especially to exploit arbitrage opportunities. The technique most often used is “maturity arbitrage” (on the term structure of credit spreads) by issuing

	short-term ABCP and investing the proceeds in longer-term assets. Another possible form of arbitrage is that done by banks, which seek arbitrage opportunities or capital relief associated with moving assets off the balance sheet. The exposure of these conduits to mortgages and CDOs is much larger than with single and multi-seller conduits.
Structured Investment Vehicles (SIVs)	Conduits which invest heavily in structured finance products (such as asset-backed securities) and obtain funds by issuing ABCP and medium-term notes and long-term capital notes <sup>42</sup> .

148. These securities can be regarded as the collateral underlying the ABCP issued, i.e. the “asset-backed” component of ABCP. Certain investors, or collateral entities want to obtain financing by selling certain assets to an ABCP conduit. These assets need to be “eligible”, i.e. they need to have a certain rating for conduits to purchase them. The ABCP conduit finances its purchase of the eligible assets by issuing ABCP, which is subsequently bought by investors in the ABCP market.
149. Structured Investment Vehicles (SIVs) are leveraged investment companies that raise third-party capital and leverage this capital by issuing debt in the commercial paper and medium-term note markets. Unlike ABCP conduits, SIVs generally do not seek to have 100 percent of their liabilities covered by liquidity support agreements. Instead, they hold a small amount of liquidity support and enough capital for the SIV to unwind its portfolio without inflicting losses on debt holders.
150. Rating agencies monitor the riskiness of the SIV’s portfolio relative to its capital as a condition of maintaining the SIV’s prime commercial paper rating.

***Recent market evolution***

151. Over the past several years, ABCP conduits and SIVs have been important purchasers of senior tranches in the Credit Risk Transfer (CRT) markets. They funded their investments in long-term CRT securities with short-term funding in the commercial paper and medium-term note markets. In this way they exposed themselves to maturity mismatch and like banks, conduits and SIVs - and by extension the CRT market itself - were vulnerable to a run by debt holders.
152. The ABCP market has been heavily hit by the 2007-2008 financial turmoil. When pressures stemming from the US subprime mortgage markets spilled over to structured finance products in August 2007, issuers of ABCP started to increasingly experience problems in finding investors willing to purchase these securities. The problem was that the exposure of ABCP programs to mortgage related financial instruments had grown very fast. As a result, investors completely lost confidence in ABCP when the subprime tensions mounted.
153. The ABCP conduits that were hit the hardest in the turmoil have been SIVs, which specialised in investing in structured finance products.

***The Market for ABCPs***

154. The global ABCP market reached \$1.5 trillion in outstandings by the end of June 2007. Of this, the European ABCP reached \$280 bn. Due to investor concerns over potential exposure to US subprime mortgages and RMBS and the ensuing ‘credit crunch’, global ABCP volumes have steadily declined, with European ABCP and US ABCP outstandings ending as of 1 August 2008 respectively at €109 bn and €497 bn. Activity in some ABCP programmes is returning to more normal issuance levels.

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<sup>42</sup> SIV funds consist between one third to more than 50% of ABCP; on average 35% of their liabilities consist of ABCP. SIVs also conduct “maturity arbitrage” by issuing short and medium-term paper and investing the proceeds in long-term credit assets. These conduits have significant investments in asset-backed securities.



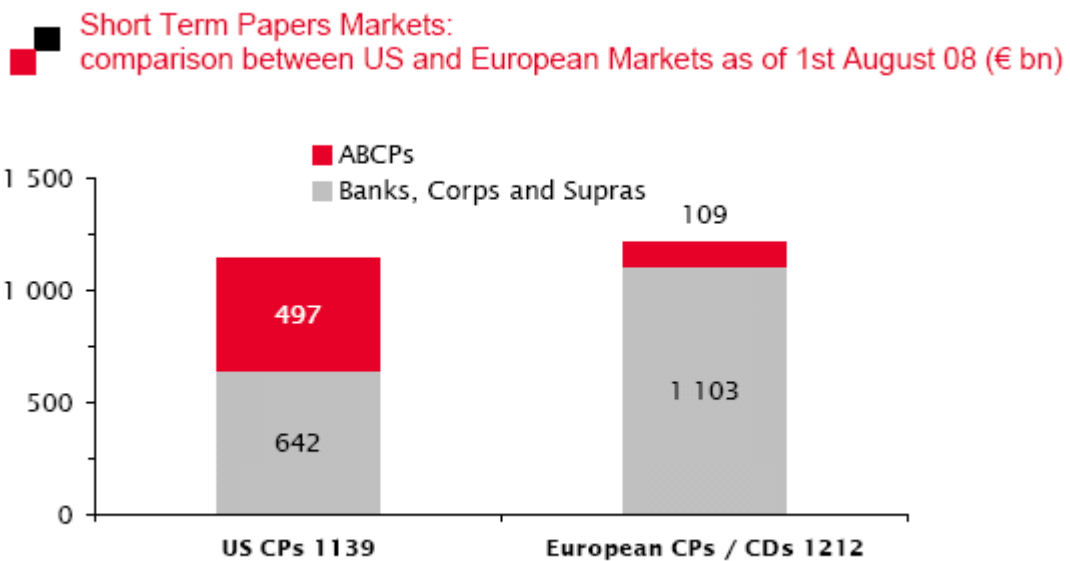
155. Specific events and factors were of particular importance in the decline of ABCPs. Firstly, some conduits had large ABS holdings that experienced huge declines. When investors stopped rolling over ABCPs, these conduits had to rely on guarantees provided by banks which were too large for the banks providing them. While these banks received support to meet their obligations, investor confidence was nonetheless damaged. Secondly, structures in other ABCP markets around the world unsettled investors, including different guarantee agreements and single-seller extendible mortgage conduits. Thirdly, general concerns about the banking sector have caused investors to buy less bank related product.

**Table 3** - European ABCP issuance

	Q1	Q2	Q3	Q4	Total
<b>2004</b>	34.7	36.2	44.5	51.3	166.7
<b>2005</b>	58.1	63.4	61.6	55.2	238.4
<b>2006</b>	74.7	84.1	96.5	111.8	367.1
<b>2007</b>	148.8	142.3	156.7	186.1	633.9
<b>2008</b>	120.9	106			226.8

Source: Moody's, Dealogic, ESF

**Chart 5**



Source: Société Générale Corporate & Investment Banking (market overview, 19 September, 2008)

***Credit Derivatives Markets***

156. The credit derivatives markets comprise a number of instruments. Credit default swaps represent, by far, the single most significant credit derivative instrument in terms of volume. Other credit derivative instruments are not covered in this consultation paper<sup>43</sup>.

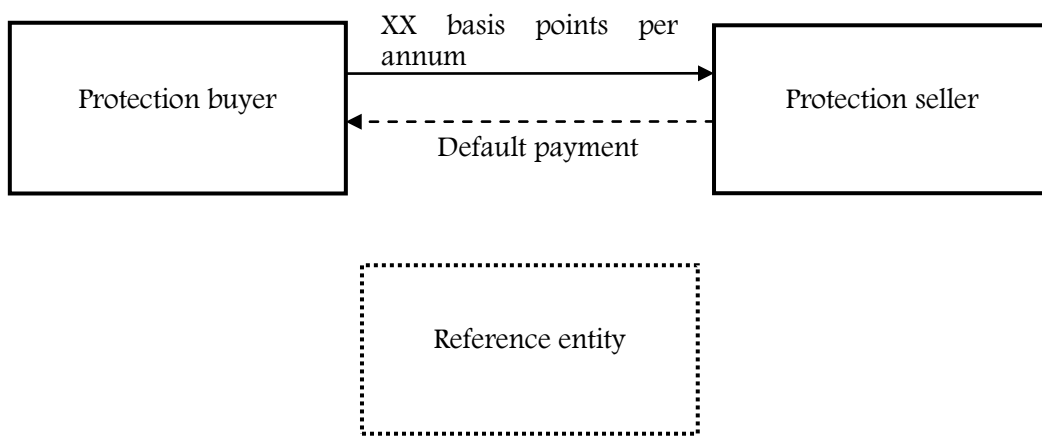
<sup>43</sup> Examples of credit derivatives not included in the scope of this consultation paper are total return swaps and credit linked notes.

**Credit Default Swaps**

**Product characteristics**

157. A CDS is a contractual agreement to transfer the default risk of one or more reference entities from one party to another. The protection buyer pays a periodic fee to the protection seller during the term of the CDS. If the reference entity defaults, declares bankruptcy or another credit event occurs, the protection seller must compensate the protection buyer for the loss. The protection buyer is entitled to protection on a specified face value (the notional amount) of reference entity debt. The reference entity is not a party to the contract nor must the permission of the reference entity be obtained before entering into a CDS.

**Figure 3**



158. The risks assumed in a CDS by the protection buyer and the protection seller are not symmetrical. Both the protection buyer and the protection seller will take on counterparty risk to each other. In addition the protection seller will be exposed to the risk of default of the reference entity. Current market conditions mean that in practice two CDS on the same reference entity can be priced differently due to counterparty risk.

159. The premium for a CDS is known as a CDS spread and is quoted as an annual percentage in basis points of the notional amount. Protection buyers will pay the protection seller the spread on a quarterly basis at four pre-determined dates – 20 March, 20 June, 20 September and 20 December. Positions are marked to market on a daily basis.

**Types of CDS**

160. The following table summarises the three main types of CDS.

**Table 4 - Main types of CDSs**

<u>Single name CDS</u>	These are the simplest form of CDS where the reference entity is an individual corporation (e.g. a bank) or government. There is a high degree of standardisation to these contracts.
<u>Basket CDS</u>	These are CDS with more than one reference entity (typically between three and ten). These include first-to-default CDS, full basket CDS, untranching basket and tranching basket known as a synthetic CDO. A CDS referencing

	more than ten entities is often known as a portfolio CDS.
<u>Index CDS</u>	An index CDS offers protection on all reference entities in the index with each entity having an equal share of the notional amount.

161. There are other types of CDS, including CDS of ABS although this is generally a niche market. The majority of CDS liquidity, for all types, is found in the five-year maturity.
162. The iTraxx Europe is the main European CDS index. Its constituents are selected via a dealer poll administered by the International Index Company and the reference entities for the CDS must be of investment grade and meet other criteria as well. The index comprises 100 non-financial credits (autos 10, consumers 30, energy 20, industrials 20, technology, media and telecommunications 20) and 25 financial credits, and each component is equally weighted.
163. Other indices include the iTraxx HiVol and the iTraxx Crossover. The iTraxx HiVol is a subset of the iTraxx 125 and includes the 30 credits perceived most risky. The crossover index is composed of 50 sub-investment grade credits. The indices are rebased twice yearly: 20 March and 20 September. Official pricing of the indices is collected by Markit and published on a daily basis

### *The market for CDS*

164. CDS transactions are traded OTC and consist of contracts between two counterparties. For each counterparty, the identity of the other is important for counterparty risk and other reasons. If one party wishes to transfer its position in the CDS to a third party then it will need the consent of its original market counterparty. With that consent, the original contract can be transferred or novated so it then effectively becomes a contract between the original market counterparty and the third party. So whilst there is not secondary trading of CDS in the more traditional sense, the CDS can in fact be sold onwards.
165. Secondary electronic trading of CDS is growing in Europe and now accounts for roughly 45% of all inter-dealer transactions<sup>44</sup>. However these figures will typically be higher for index CDS trading and the larger single names where the greater degree of standardisation lends itself to electronic trading. This is in contrast to the US where electronic trading for CDS is limited.
166. For CDS that are traded electronically the novation process is highly automated. Contracts will either be novated on an automatic electronic basis or there will be bilateral electronic transfer of rights.
167. The notional amount of the global CDS market is valued at \$54.6 trillion<sup>45</sup> for the first half of 2008. This represents a 37% decline from the \$62.2 trillion recorded for the second half of 2007. The reason for this decline is a result of the compression runs. Over the 12 month period the notional amount of outstanding CDS grew by 20%.
168. In terms of market share by product type, single name CDS accounted for 56%<sup>46</sup> of the value outstanding at the end of December 2007 compared to 44% for multi-name CDS, basket CDS, and Index CDS<sup>47</sup>.

### *Uses*

169. CDS are mainly used for the following purposes:
- a) Hedging: CDS are often used to manage the credit risk (i.e. the risk of default) which arises from holding debt. Typically the holder of, for example, a corporate bond

<sup>44</sup> Euromoney February 2008.

<sup>45</sup> International Swaps and Derivatives Association 2008 mid-year market survey.

<sup>46</sup> OTC derivatives market activity in the second half of 2007 – Bank for International Settlements May 2008.

<sup>47</sup> OTC derivatives market activity in the second half of 2007 – Bank for International Settlements May 2008.

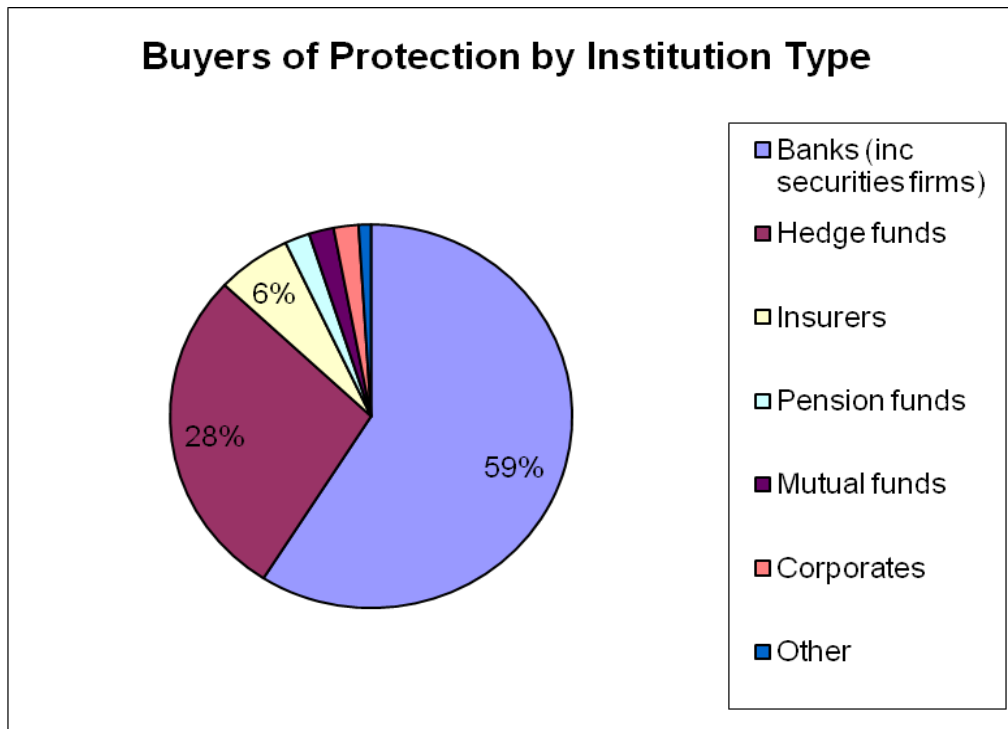
may hedge its exposure by entering into a CDS contract as the buyer of protection. If the bond goes into default, the proceeds from the CDS contract will cancel out the losses on the underlying bond; and

- b) Investment: CDS allow investors to anticipate changes in an entity’s credit quality, since generally CDS spreads will increase as credit-worthiness declines and decline as credit-worthiness increases. Therefore an investor might buy CDS protection on a company in order to speculate that a company will default as its credit-worthiness declines. Alternatively, an investor might sell protection if it thinks that a company is not going to default.

***Key market players***

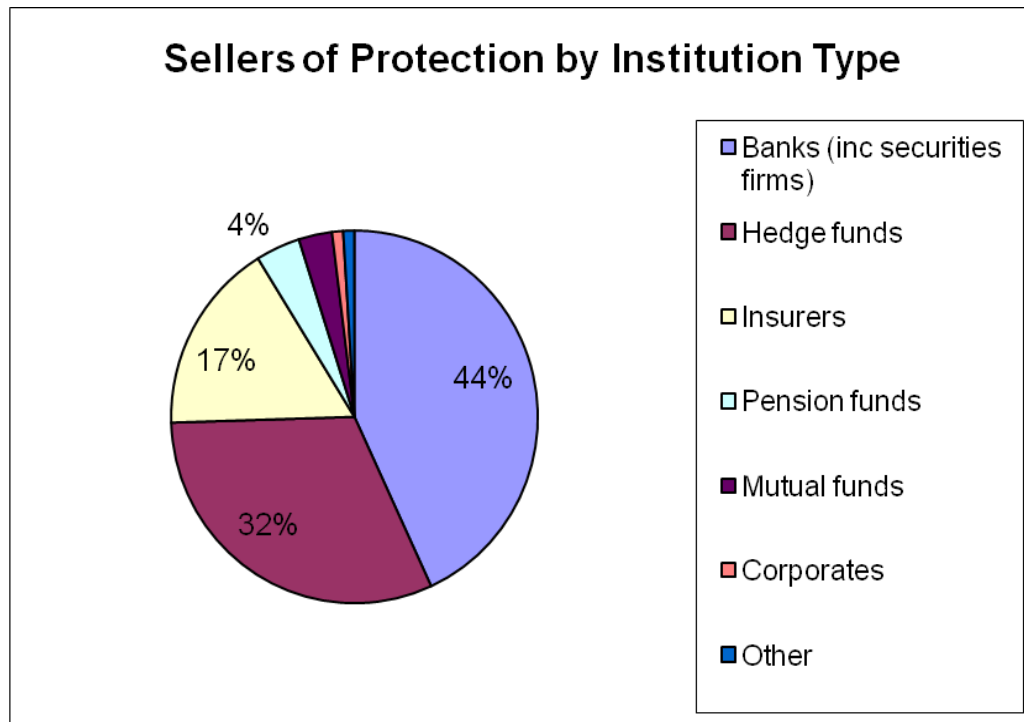
170. The charts below give a graphical representation of the key investors in CDS with banks being the most active participants in the CDS market both as buyers and sellers of protection.

**Chart 6**



Source BBA (2006)

**Chart 7**



Source BBA (2006)

171. In 2006 the top five CDS counterparties were<sup>48</sup> Morgan Stanley, Deutsche Bank, Goldman Sachs, JP Morgan Chase and Barclays.<sup>49</sup>

**Section 4 Key issues arising from the current crisis for structured finance products and credit derivatives**

172. This section provides a summary of events related to the subprime crisis and an overview on the key issues for structured finance products and credit derivatives.

173. In the summer of 2007, credit spreads began to increase reflecting growing investor risk aversion. This resulted from concerns about the subprime home market in the United States and the degree to which many institutional investors were exposed to potential losses through their investments in RMBSs, CDOs and other structured finance products. Even though they represented a higher risk of default, subprime RMBSs, other ABSs and home equity loan CDOs had proved popular investments among institutional investors because of high rates of return experienced in previous years. Also, new developments in ABSs' and CDOs' structure meant that even relatively low-risk tranches in which some traditionally cautious investors could invest ended up representing a greater risk than originally considered.

174. The turmoil in financial markets was triggered by a dramatic weakening of underwriting standards for US subprime mortgages, beginning towards the end of 2004. By the end of the following year, delinquency rates on subprime mortgages began to increase.

175. While originally designed to lessen investor risk through diversification such that an investor is not overly harmed by a default on a particular mortgage, under certain circumstances CDOs and other structured finance products seem to have led to a concentration of investor

<sup>48</sup> 2007 Fitch Credit Derivatives Survey: Rapid growth continues while new concerns emerge.

<sup>49</sup>BBA Credit Derivatives Report 2006  
[http://www.bba.org.uk/content/1/c4/76/71/Credit\\_derivative\\_report\\_2006\\_exec\\_summary.pdf](http://www.bba.org.uk/content/1/c4/76/71/Credit_derivative_report_2006_exec_summary.pdf)

risk. By the end of 2007, changes in expected default rates among the subprime mortgages created considerable uncertainty about the cash flow prospects of subprime RMBSs and CDOs.

176. The uncertainty caused credit markets to tighten and by mid-summer 2007 led to a liquidity crisis for some investors with significant positions in these securities. This liquidity crisis spread to other countries and other markets as well. As the subprime market crisis worsened, credit rating agencies began to downgrade ABSs and CDOs. These downgrades made investors even less willing to purchase ABSs and CDOs. The uncertainty regarding the quality of CDO ratings also had spill-over effects into other areas, particularly the commercial paper market. As noted before, RMBSs and CDOs and other assets were used as collateral for asset-backed commercial paper. As investors began to question the ratings assigned to certain CDOs and RMBSs, they also began to question the value of commercial paper ratings.
177. The credit market turmoil and the weakening of global bank balance sheets had fundamental short-term and long-term implications for corporations and financial institutions. In the first six months of the credit crunch, most companies were relatively unaffected, thanks to their continued strong free cash flow generation, few debt maturities, and the availability of corporate debt markets. Equity investors are now paying a valuation premium for companies with the financial flexibility provided by strong liquidity and the ability to fund growth internally.
178. Multiple factors seem to have contributed to and/or intensified the subprime crisis. These are:
- a) Risk management: weaknesses in risk management practices of market participants became apparent during the crisis. International market participants did not have suitable internal controls to understand and address the risks they were assuming when buying many types of structured finance products.
  - b) Transparency: a transparency deficit could have contributed to the current market crisis. This transparency can be broken down into two different types:
    - *Product Transparency*: securitisation allowed financial institutions to manage their credit exposure in an easier way, obtaining funds and enabling investors to access banks' credit risks through a choice of instruments. Financial institutions may not have offered investors enough initial and ongoing information on the structured products and the assets underlying them. This also seems to be the case with accurate risk disclosures. To the extent that public disclosures were required, the risk associated with these products may not have always been sufficiently clear or easily identifiable. Furthermore, investors, including institutional investors, may not have always had the capacity to examine properly the assets underlying structured products;
    - *Secondary Market Transparency*: the gap in transparency also refers to the conditions under which these types of products were traded on the market. Because these products tend to be heterogeneous and typically traded among a small number of institutional investors, the price discovery mechanism is different from what we observe for shares which are subject to stringent transparency requirements. In general, pre- and post-trade transparency is very limited as these products are traded mainly OTC.
  - c) Valuation: weaknesses in valuation practices and disclosures as well as difficulties associated with fair valuation for assets where liquidity has evaporated have become apparent during this crisis. Although most participants in markets for corporate bonds, structured finance products and credit derivatives are institutional investors, they have faced difficulties valuing thinly traded products. IFRS require firms to use market prices to estimate fair value in the presence of an active market relying on prices obtained in the markets when these are available. However, when these are not available, IFRS require firms to fall back on other valuation techniques.

- d) Credit Rating Agencies (CRAs): as financial markets have grown more complex, the role of the credit rating agencies has also grown in importance. The sources of concerns about CRAs include weaknesses in methodologies, insufficient transparency on assumptions, insufficient information on risk characteristics and insufficient attention paid to conflicts of interest. Many investors have relied on credit ratings without adequately understanding the underlying products or the risk associated with these products.
- e) Originate-to-distribute model (OTD): although the OTD model has had many advantages for years, this model weakened just before the beginning of the turmoil. The OTD model offered benefits to loan originators benefiting from greater capital efficiency and enhanced funding availability, to investors benefiting from a greater choice of investments and to borrowers benefiting from expanded credit availability. However, the OTD model also provided unbalanced incentives along the process for a lack of transparency about the product and poor management of the risks associated.
- f) Liquidity: the turmoil has also demonstrated the importance of liquidity and the importance of effective liquidity risk management. Financial institutions have proved to be vulnerable to a disruption in market liquidity. Contraction of liquidity in the interbank markets has led to liquidity strains between financial institutions.

## Conclusion

179. It is generally agreed that there has been a market failure in the securitised markets. As a result of this, regulatory intervention is proposed or is being considered in a number of areas. These include for instance:
  - new proposals governing capital requirements;
  - new rules governing the issuance of credit ratings; and
  - some amendments regarding accounting procedures
180. For CDS markets the problems have been of a slightly different nature. Nevertheless the deterioration of assets underlying the reference obligations as well as increasing concerns over counterparty risk led to widespread concerns about underlying exposures. The lack of transparency about positions and about the full extent of market-wide exposures led to heightened concerns amongst the market.
181. An overview of the initiatives referred to in paragraph 179 is provided in section 5. Whilst the limited degree of secondary trading transparency is generally not considered to be a leading cause of the market failure in securitised markets, section 6 explains the role that post-trade transparency could play in restoring confidence in markets and protecting investors.
182. Against this background, CESR notes that it would be relevant to conduct further analysis on the existence of market failures in the markets for structured finance products, possibly regarding ‘information asymmetry’ or ‘externalities’.
183. Over the course of the credit market crisis the difficulties of price valuation for complex financial instruments, particularly when the market for such instruments has become illiquid, is a key concern. To a considerable extent this issue arises in the context of instruments that are subject to fair value (or mark-to-market) accounting, but price valuation issues also arise for financial instruments that are not subject to mark-to-market accounting.
184. CESR notes that complex financial instruments like CDOs are characterised by a lack of price transparency. As mentioned by market participants, the valuation of complex financial products may depend largely on proprietary financial models and on inputs that might not be directly observable in the market. While certain firms have developed the capacity to evaluate such products, other firms may find it difficult to value their positions adequately.

185. Therefore this situation has forced some market participants to look for valuation sources elsewhere than in the secondary market and use indices such as the ABX. However, this situation might not reflect adequately the value of the complex financial instrument.
186. Some of the most leveraged SFPs have accounted for a large portion of the write-downs and losses incurred by large financial intermediaries, hedge funds, specialised financial institutions and other market participants. Moreover, even with optimal disclosure in the underlying documentation, the risk of loss associated with these instruments was not fully understood and poorly monitored by many market participants. This lack of comprehension was even more pronounced when applied to CDOs, CDOs squared, and related instruments, reflecting a complex array of factors (e.g. a lack of understanding of the limitations of valuation models and the risks of short-run historical data sets). As a consequence, these instruments displayed price depreciation and high volatility, causing both a collapse of confidence in a very broad range of structured product ratings and a collapse in liquidity for such products.
187. Model-derived values depended on certain key assumptions such as mortgage delinquency and default rates. When delinquency assumptions associated with the mortgage securitisations of 2005, 2006 and early 2007 proved to be far too low, the leverage and losses experienced by investors in these secondary and tertiary repackagings were far greater than anticipated.
188. The complexity of certain structured products led some investors, including the ones less familiar with those kind of products, to rely on ratings as they were the only or main source of information.

**Section 5      Key initiatives addressing issues arising from the current market turmoil**

189. To re-establish confidence in markets and in financial institutions, national authorities have taken steps designed to improve market confidence, to promote asset market liquidity, and to resolve problems in specific institutions.
190. On 12 October 2008, the Heads of States of the euro area issued a “Declaration on a concerted European action plan of the euro area countries”, in which they confirmed their commitment to act together in a decisive and comprehensive way in order to restore confidence and the proper functioning of the financial system, aiming at restoring appropriate and efficient financing conditions for the economy. They agreed on common principles to be followed by the EU governments, central banks and supervisors to avoid national measures adversely affecting the functioning of the single market and the other Member States. Such coordinated approach included initiatives aimed at:
  - i. ensuring appropriate liquidity;
  - ii. facilitating the funding of banks through various means;
  - iii. providing additional capital resources to financial institutions; and
  - iv. recapitalisation of distressed banks.
191. These principles were also endorsed by the European Council on 16 October 2008 for all Member States.
192. Several initiatives linked to structured finance products and credit derivatives have been launched in recent months addressing various issues arising from the current credit crisis. These initiatives have been led by a variety of parties including the financial services industry, governments, international organisations and supervisory authorities. Below those of particular relevance or otherwise related to post-trade transparency of structured finance



products and credit derivatives are considered<sup>50</sup>.

### **EU Industry Initiatives to Increase Transparency in the Securitisation Market**

193. Nine European and global trade associations<sup>51</sup> have set out several initiatives to improve the transparency of European securitisation markets<sup>52</sup>.
194. Two of these initiatives explicitly respond to the European Council of Finance Ministers' (ECOFIN) call in their roadmap of 4 October 2007 to 'enhance transparency for investors, markets and regulators'. In this respect, Industry Good Practice Guidelines for Pillar 3 Disclosure by Banks were developed which firms will be able to use in developing their first Pillar 3 disclosures in early 2009. Additionally, a quarterly available 'Securitisation Data Report' which consolidates aggregated European and US data about the securitisation markets (e.g. issuance activity, rating changes by country of collateral and collateral type, credit spread changes) has been developed in order to provide further transparency for market participants and assist policymakers in their monitoring and assessment of trends in the securitisation market<sup>53</sup>.
195. In addition to this, the EU Industry Initiative has focused on improvements of issuer disclosure and reporting, enhanced access to information by investors, increased standardisation and comparability and better valuation methods. In this respect, the associations have developed or are currently working on:
- an 'ABCP issuer disclosure code of conduct' to encourage consistent, relevant and regular reporting to investors in the ABCP market;
  - 'Issuer Transparency and Disclosure Principles' with asset-specific recommendations for transparency and reporting by issuers which are tailored to the needs of investors in different segments of the term securitisation market (e.g.: RMBS, CMBS, CDO, consumer ABS, insurance securitisation)<sup>54</sup>;
  - the associations will also endeavour to ensure that upfront and ongoing information about EEA listed public term transactions for RMBS, CMBS, other ABS and CDOs, (e.g. prospectuses, investor reports) will be made publicly available through the website of parties to the transaction or encourage commercial data providers to develop "data portals" where the information will be centrally available;
  - a centralised directory of known European RMBS issuer and CDO manager on the EFS website with links to various portals, issuers/managers, trustee or management companies, exchanges and data providers;
  - an improvement of the standardisation and digitisation of reporting templates and of the granularity of information in close cooperation with the American Securitisation Forum (ASF). This will take into account existing country specific reporting formats and initiatives for various securitisation products and provide an easily usable format at a relevant level of granularity (e.g. loan-by loan reporting) to credit rating agencies and

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<sup>50</sup> New commercial initiatives (e.g. by data providers) also intended to ameliorate or remedy shortcomings in the market of structured finance products will be left aside of this description.

<sup>51</sup> The nine associations are: Commercial Mortgage Securities Association, European Association of Co-operative Banks, European Association of Public Banks and Funding Agencies, European Banking Federation, European Savings Banks Group, European Securitisation Forum (ESF), International Capital Market Association (ICMA), London Investment Banking Association, Securities Industry and Financial Markets Association (SIFMA).

<sup>52</sup> An executive summary and the full list of documents are available at <http://216.105.99.40/dynamic.aspx?id=1518>.

<sup>53</sup> The first quarterly report for Q1 2008 has been issued end of March 2008. The reports are available at <http://216.105.99.40/dynamic.aspx?id=194>.

<sup>54</sup> The principles for RMBS and CMBS markets are expected to be published at the end of 2008, for other asset classes soon afterwards.



investors<sup>55</sup>. One of the work streams regarding standardisation will try to enhance the consistency of definitions (e.g. what constitutes subprime RMBS or non-conforming RMBS) and to facilitate the equal understanding of the products; and

- as a supplement to the other initiatives, ‘Investor Credit Assessment and Valuation Principles’ will be developed to help investors assessing the credit of a transaction independently from rating agencies and apply improved valuation principles if they are subject to mark to market rules.

### **Initiatives of the Commission**

196. Against the background of the ECOFIN roadmap of 4 October 2007 and the G7 Financial Stability Forum, the Commission has initiated various initiatives to address the shortcomings which became apparent in the current credit crisis. Among these initiatives, the Commission has issued – on the basis of advice by CEBS and ESME - a proposal to revise the CRD to reinforce financial stability, reduce risk exposure and improve the supervision of the cross-border business of banks. This proposal also includes tighter rules regarding the risk management for securitised products obliging originators to retain some risk exposures to these securities and investors to conduct a proper due diligence before entering into the investment. Furthermore, the Commission adopted a Regulation changing accounting standards to mitigate the consequences of the financial turmoil by allowing companies to reclassify assets held-for-trading into the held-to-maturity category. EEA financial institutions – as their US counterparts – will thus no longer have to reflect market fluctuations in their financial statements. Moreover, the Commission has published on 12 November 2008 a proposal for a Regulation of the European Parliament and of the Council with a new regulatory framework for CRAs ensuring, among others, their efficient registration and surveillance.

197. Regarding credit derivatives, the Commission has recently set up a ‘Working Group on Derivatives’ with the participation of representatives of CESR, CEBS and CEIOPS which should provide a detailed plan to establish one or more CCP-clearing solutions for CDS contracts until the end of 2008. This work will also consider some of the issues relating to the transparency of CDS market and in particular concerns about the lack of information on firm specific exposures. In light of this some exchanges and clearing houses in Europe and the US have announced their interest in establishing a global and/or regional CCP for CDS.

### **Joint Global Initiative to restore confidence in the securitisation and structured credit markets**

198. A joint global initiative<sup>56</sup> endeavoured to identify and prioritise key issues to restart the market by conducting over 100 interviews and more than 400 surveys of securitisation market players. The following list sets out, in order of importance, the views of stakeholders:

- disclosure of information on underlying assets;
- confidence in data and assumptions informing valuation methodologies;
- confidence in valuation methodologies for individual securities;
- disclosure of collateral underwriting and origination practices;
- aligning incentives at the originator level
- standardisation and simplification of documentation;

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<sup>55</sup> The ASF reporting formats for the US are expected to be finalised end of 2008 and implemented in 2009. The EU implementation will be coordinated with the US implementation.

<sup>56</sup> The initiative was taken up by SIFMA, ASF, ESF and the Australian Securitisation Forum. The interviews and respective analyses have been conducted with the support of McKinsey. The report is available at [http://www.sifma.org/capital\\_markets/docs/Survey-Restoring-confidence-securitization-markets.pdf](http://www.sifma.org/capital_markets/docs/Survey-Restoring-confidence-securitization-markets.pdf).

- aligning incentives at the rating agency level; and
- public dissemination of actual trade prices for individual securities.

199. The report also found that the instruments perceived to return first were the less complex products, starting with Auto and Credit Card ABS at the end of 2009, then Student Loan ABS, Prime RMBS and CMBS in early 2009, followed by CLOs later 2009. Subprime RMBS, cash and synthetic CDOs were expected to return with a considerably reduced volume and not before 2010. The most complex of the structures such as CDOs of ABS were even predicted to never return.

200. Accordingly, the recommendations of the joint global initiative focus on similar measures as the EU Industry Initiative with a particular focus on the biggest market of RMBS<sup>57</sup>.

***Recommendations for improving key market practices:***

- Increase and enhance initial and ongoing pool information on US non-agency RMBS and European RMBS into a more easily accessible and more standardised format;
- Establish core industry-wide market standards of due diligence disclosure and quality assurance practices for RMBS;
- Strengthen and standardise the representations and warranties as well as repurchase procedures for RMBS;
- Develop industry-wide standard norms for RMBS servicing duties and evaluating servicer performance;
- Expand and improve independent, third-party sources of valuations and improve the valuation infrastructure and contribution process for specified types of securitisation and structured products; and
- Restore market confidence in the CRAs by enhancing transparency into the CRA process

***Recommendations for proactively guarding against future crises:***

- Establish a Global Securitisation Markets Group to report publicly on the state of the market and changes in market practices; and
- Establish and enhance educational programs aimed at directors and executives with oversight over securitised and structured credit groups, as well as investors with significant exposure to these products.

**Transparency initiatives by individual stakeholders**

201. Taking up the call for more centralised availability of information about listed ABS by the EU Industry Initiative, the Irish Stock Exchange (ISE) launched in mid-July 2008 a new transparency service to enhance information on ABS listed on ISE. Issuers will be able to make the prospectus, investor reports, supplementing documents such as indentures, collateral, swap and other related agreements as well as financial reports available to the public via the ISE website.

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<sup>57</sup> In the US, the ‘Project RESTART’ regarding the RMBS market has already been initiated by the ASF. The ideas of the Joint Global Initiative mirror this project in this respect.

**Section 6 The role of post-trade transparency**

202. The discussion about the need for additional transparency in European securitised and credit derivatives markets covers a number of key aspects. More specifically, these relate to:
- a) Transparency of the underlying assets – This relates to initial and ongoing disclosure of information on underlying assets of securitised products (such as performance indicators of the underlying mortgages in a mortgage-backed security);
  - b) Transparency of the structure of the product – This relates to information about the priority of payment and the ownership of controlling rights;
  - c) Trade transparency – This relates to information about traded volume and prices (and possibly other information) to be disseminated publicly to market participants shortly after a transaction is concluded;
  - d) Position transparency – This relates to firm-specific information about the positions held in certain products provided to regulators for prudential supervision and/or market monitoring. This information is not disseminated publicly and is used for regulatory purposes;
  - e) Transaction reports – This relates to detailed transaction specific information which participants to a transaction are required to send to supervisory authorities under MiFID. This information is not disseminated publicly; and
  - f) General information about the market – This includes various metrics such as the size of the market, liquidity, bid/offer spreads and the degree of concentration in market participants. This information is usually provided in aggregated form.
203. This consultation paper focuses solely on trade transparency, although CESR recognises the interaction between various aspects of transparency. In this regard, CESR welcomes recent initiatives undertaken by the industry to improve transparency for investors, markets and regulators of securitised and credit derivatives markets.
204. CESR also takes note of the industry commitments to develop good practices on securitisation disclosure, to issue on a quarterly basis an Industry Market Data Report, to supplement it with specific information on the secondary market and to implement initiatives to enhance information to investors. These initiatives may be helpful in increasing transparency of secondary market activity. CESR is of the view that transparency of trading in secondary markets can only be meaningful if there is adequate transparency along the transaction chain (e.g. issuer disclosure, product disclosure). This is particularly true for securitised markets.
205. The securitised and credit derivatives market is overwhelmingly institutional. The recent default of Lehman Brothers has brought to light that also retail investors (mostly high net worth individuals) from a number of European countries had invested in structured products<sup>58</sup>. Retail participation in structured products raises a set of different issues from those arising from wholesale/institutional participation.
206. Analysts, traders and investors require market quotes and valuations in a number of different contexts and for different reasons<sup>59</sup>:
- Indicative quotes are used for the determination of current mark-to-market portfolio values and for index development and are incorporated in consolidated price services;

<sup>58</sup> Retail investors in some Member States have rather invested in other kinds of debt products such as certificates issued by Lehman. However, these products are out of the scope of this consultation paper.

<sup>59</sup> Source: “An Analysis and Description of Pricing and Information Sources in the Securitised and Structured Finance Markets”, The Bond Market Association and The American Securitization Forum, October 2006.

- Structured and securitised finance risk management measurement systems, such as Value at Risk (“VaR”), rely on valuation and price determination under varying sensitivity analysis scenarios to set maximum exposure levels;
- Dealers and trading platforms provide quotes for conducting secondary market transactions. Price quotes may also be viewed on dealer pages from market data vendors.

207. CESR also takes note that in the context of post-trade transparency, an important factor is the extent to which any quote obtained reflects actual market transactions. A dealer quote generally is not a binding offer to buy, but the more it is based on actual market transactions the more likely it is to provide consistent and useful value. Considerations should also be given to the quality of the dealer quotes, how well their quotes represent fair value, and how past prices supplied by those dealers for the same or similar instruments have compared with subsequent actual transaction prices. In addition, CESR notes that when more transparency is available on how a price was set at, this gives greater credibility to the prices and might allow an investor to place more reliance on them.
208. The following paragraphs provide an overview of market price information currently available on a commercial basis for market participants. The paragraphs do not cover market-based inputs (such as interest rate spreads) or other inputs (such as various modelling tools) used to value ABS, CDOs, ABCPs or CDS which is outside of the scope of this consultation paper.

### **Securities Products Markets**

#### **A) *ABS Market***

209. Because RMBS, CMBS and other ABS are only traded OTC, there is no trading price available from European regulated markets or MTFs. Price information currently available to participants in European securitised markets comes from two types of sources: 1) dealer quotations and 2) average/consensus prices.
210. Dealer quotations are typically indicative prices provided by dealers on a request basis and are obtained by market participants keen to undertake a transaction. These dealer quotations are provided on a bilateral basis or within closed user groups and are not widely disseminated.
211. On the other hand, average/consensus prices are available at the end of the day for a very high proportion of European ABS via data vendors. Coverage is not only broad in terms of European ABS but also in terms of market participants as most European dealers active in the European ABS market contribute to these types of pricing services. These average/consensus prices are derived from contributors’ book of records and are relied upon by both sell-side and buy-side participants for price formation and portfolio valuation.
212. Because the end-of-day prices provided by the contributors are from their book of records the contributors may not have necessarily traded the particular instrument during the day. When a contributor trades a particular ABS during the day, it is expected to provide the price at which it traded, although there is no obligation to do so. When a contributor provides a price at which it traded, the traded price is typically not identified as such by the market data vendor, and the market data vendor will use this traded price just as another mark to be included in the average/consensus price. As a result, users of average/consensus prices will not know whether the consensus for a particular RMBS, CMBS or other ABS incorporates any traded prices and, if so, what the traded price was. In current market conditions the consensus price is unlikely to reflect the traded price although the two prices have historically been closer together.

**B) *Collateralised Debt Obligations Market***

213. CDOs are not listed and they are not admitted to trading on regulated markets. The market is typically dominated by private placements. Therefore there will be reduced information which is publicly available about the underlying product and its structure and there will be less pricing information available as these instruments rarely trade on a secondary basis.
214. One reason for not releasing data in real time is that CDOs are not so liquid so that real-time data may not be of much use. Another reason is concern about revealing the manager's proprietary trading strategy. Information is also limited by the fact that many CDOs are offered as private placements of securities or in derivative form. In some cases, even investors may not be allowed to access detailed information about the underlying portfolio, if it is forbidden by law or by the transaction's documentation. One reason for this is that borrowers may not want to disclose their data to unknown third parties.
215. Pricing information for CDOs is very limited especially as there is no secondary trading for these assets. Pre-crisis issuance price levels could be used for valuation purposes, but with scarce issuances now in the primary market this information is no longer available. This has meant that investors will now mark their portfolios using model based pricing rather than against market pricing levels. For complex CDO tranches, market participants, such as banks, hedge funds and other investors rely increasingly on third party valuation services. The starting point is Markit's consensus pricings. For synthetic CDOs, the Totem service<sup>60</sup> is used too. For cash CLO, where no information is available, consensus pricing is used also, but this consensus gathering is handled by dealers, based upon (a) competitors' transaction specific price information, (b) competitors' generic cash CLO spreads and (c) comparable asset classes and underlying asset class performance (structured finance, loans, etc.). For cash CDOs and managed synthetics, the valuation is generally market based with daily pricing on "pricing platform" for recent large synthetic deals. At the opposite end of the spectrum, SF CDOs (complex underlying ABS) are less liquid so that valuation is generally model based, with the greatest liquidity for index tranches, including pricing for standardised tranches on pricing platform.
216. However, as in the case for other securitised products, pricing in the European CDO market depends more on indicative or consensus prices than actual traded prices. One of the leading market data vendors prices almost 400 unique names (actual split is 300 CDO/80 CLO). It is worth noting that there is not the same depth for CDOs as for other securitised products. For instance, having one or two contributions is typical in this asset class because not many dealers are pricing alternate banks' structures.

**C) *Asset-backed Commercial Paper Market***

217. While ABS are typically listed/admitted to trading on regulated markets, ABCPs are rarely listed/admitted to trading on regulated markets and are typically issued upon demand and offered only to sophisticated institutional investors in private transactions.
218. The European ABCP markets diverge in terms of design: in some countries, the market is BtB designed, whereas it is fully intermediated in other countries; investors typically rely primarily on four sources of information - information memorandums, rating agency reports, issuer presentations, and programme sponsor-issued 'pool reports' to make informed investment decisions.
- Information Memorandums: the primary marketing document of the programme, which includes issuer description, terms and conditions, form of notes, and selling restrictions. This document is normally made available only to actual and potential investors permitted under the selling restrictions, because the commercial paper is sold

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<sup>60</sup> The Totem service provides the major market makers in OTC derivatives with definitive consensus market prices. The service encompasses the equity, interest rate, currency, commodity, credit and bond markets, providing matrices of vanilla prices and a selection of exotic products.

to institutional investors in the private placement market and usually is not listed on an exchange;

- Rating Agency Reports: almost all major programmes have top ratings from at least two rating agencies in order to be marketable. To obtain top ratings, issuers must meet structural and credit standards, satisfy documentation requirements, and be subject to ongoing monitoring and surveillance;
- Investor Presentations: most issuers prepare investor presentations outlining the structure of the programme including details on credit enhancement and liquidity facilities. Further, these could include detail on the sponsoring institution that manages the programme;
- Pool Reports: these reports, which are typically distributed on a monthly basis, broadly describe current assets and verify compliance with programme requirements. Pool reports are generally only made available to programme investors and potential investors, so as to safeguard sensitive client and competitive information. However, if requested and upon signing of a confidentiality agreement (in order to maintain required seller and receivable confidentiality), issuers may be able to provide detailed asset-by-asset level of portfolio holdings to investors.

219. Pricing information in the ABCP market is mainly provided by dealers on a bilateral basis (see table 5).

**Table 5**

Pricing Source	Type of Source	Price Type	Update	Markets Served
ABX.HE/ CMBX.HE	Index	Indicative	Daily	Mortgage ABS/CMBS
FT Interactive	Evaluated	Evaluated	End of day	ABCP, Agency MBS, CMO, Mortgage ABS, Non-Mortgage ABS, CMBS
Markit	Dealer (composite)	Composite quotes	End of day	Mortgage ABS (CDS index)
Reuters	Market Data Vendor and Evaluated	Executable/ indicative	Real-time	Agency MBS
Dealer	Dealer	Executable/ indicative	Real-time	ABCP, Agency MBS, CMO, Mortgage ABS, Non-Mortgage ABS, CMBS, CDO/CLO

Source: “An Analysis and Description of Pricing and Information Sources in the Securitised and Structured Finance Markets,” The Bond Market Association and The American Securitization Forum, October 2006.

**D) Credit Default Swaps Market**

220. As for securitised products, there are basically two types of price information currently available to participants in European credit derivatives markets: 1) dealer quotations and 2) dealer average/consensus prices. Brokers form a key source of price information in the CDS market, especially in light of the significance of electronic trading noted above. The key brokers in the CDS market include Creditex, Tullett Prebon, GFI and ICAP. Banks are also a



significant source of pricing information and pre-trade pricing indications will be distributed to clients on a daily basis.

221. Dealer quotations are provided on a bilateral basis (in response to request for quotes from clients). These quotes are typically not disseminated although some market data vendors do disseminate average dealer quotations on an intra-day basis. On the other hand, dealer average/consensus prices are available both intra-day and at the end of the day for a very high proportion of European CDS via data vendors. These average/consensus prices are derived from contributors' book of records and are relied upon by both sell side and buy side participants for price discovery and portfolio valuation.
222. Because prices provided by the contributors are from their book of records, the contributors may not have necessarily traded the particular CDS during the day. When a contributor buys or sells protection for a particular reference entity during the day, it is expected to provide the price at which it traded, although there is no obligation to do so. When a contributor provides a price at which it traded, the traded price is typically not identified as such by the market data vendor, and the market data vendor will use this traded price just as another mark to be included in the average/consensus price. As a result, users of average/consensus prices will not know whether the consensus price for a particular CDS incorporates any traded price and, if so, what the traded price was.
223. CDS spreads are widely available and generally perceived as reliable indicators of credit risk of reference entities. Until recently, information about CDS volume (eg. notional amount) was not widely available by reference entity, but the Depository Trust and Clearing Corporation (DTCC) has started to publish end of the week gross and net notional amount for the top 1000 reference entities.

#### **Questions to market participants**

- Q30: Does this analysis represent your practical experience regarding information relevant and available for pricing of each of the products covered by this consultation paper?
- Q31: Are there other sources of information available which you use for pricing and valuation purposes? Can you provide details regarding the respective role of pricing services using proprietary models and consensus pricing services?

#### **Section 7 Conclusions**

224. Although insufficient post-trade transparency may not have been the key reason behind the recent market turmoil and additional post-trade transparency would not be able to solve the different problems experienced in the structured finance market as a singular measure, CESR is of the opinion that post-trade information plays a role also in these markets. However, the appropriate level of transparency should be calibrated taking into account the relevant instruments, their trading methods as well as market participants active in the markets for these instruments. In light of the above, CESR is particularly interested in receiving the views of market participants on any specific technical, market impact or efficiency reasons that might limit the introduction of a post-trade transparency framework also for these instruments. The respondents to this consultation are invited to support these technical arguments with relevant evidence.
225. Useful post-trade information could include at least the issuer name and tranche name, the volume, the price and the transaction date. But given the variety of structured finance products, it might also be relevant to examine other information than price, volume and transaction date such as portfolio characteristics and asset class.

#### **Securitised Markets**



**ABS Securities**

226. In terms of post-trade transparency, little price information is available on most structured finance securities. Market participants attribute this to the lack of an established secondary market for these securities as most ABS investors follow a buy-and-hold strategy, with trades executed bilaterally between the investor and the dealer bank. As a result, for many product types, actual trade prices generally are not published in organised or centralised fashion, although market participants indicate that the dealer banks have access to this information.
227. CESR recognises the particular role played by average/consensus prices, particularly in an environment characterised by very low levels of trading. As noted before, even before the market turmoil, secondary trading in ABS in Europe was limited, and it has become even thinner with an estimated average of between 50 and 100 ABS trades currently taking place every week in Europe (and average/consensus prices are available for about 4,500 European bonds).
228. CESR is considering whether post-trade information (e.g. price, volume etc.) can play a role in the European ABS secondary market to support price formation, reinforce valuation practices and provide supplementary information about the scale of credit risk transfers. To that effect, CESR would like to obtain the views of market participants on the following questions.

**Questions to market participants:**

- Q32: What do you think are the benefits and/or downsides of a post-trade transparency regime for ABS? Please support your arguments with evidence and explain how the possible downsides could be mitigated.
- Q33: Do you believe that post-trade transparency would be desirable for all types of ABS? If not, can you explain which types of instruments/tranches (eg. AAA RMBS) should be subject to post-trade transparency?
- Q34: Would it be meaningful to segment a post-trade transparency regime between ‘higher liquidity’ ABS (ie. commoditised products, standardised structures, higher credit quality and homogeneous collateral) from ‘low liquidity’ ABS (i.e. bespoke products, non-standardised structures, lower credit quality, heterogeneous collateral)? In this case, could you explain what could be considered as low liquidity ABS?
- Q35: What post-trade information should be published? In addition to information about the price at which the transaction was executed, the volume and the time of the transaction, would there be any benefit in publishing information about portfolio composition, asset class, the initial interest (seller or buyer)? Is there any other information which would be relevant?
- Q36: When should post-trade information be published? Should it be published immediately after a trade has been concluded? Please explain rationale.
- Q37: Do you believe that a post-trade transparency regime should or could be implemented in connection with other regulatory interventions at the same time (e.g. relating to the quality of information of the underlying assets, standardisation of reporting)?
- Q38: Would you like to make any other observations relevant for CESR work on the need for post-trade transparency for ABS?
- Q39: Please indicate whether you represent an organisation which is involved in:
- a) originating ABS
  - b) selling ABS

- c) buying ABS
- d) providing pricing information on ABS; or
- e) rating ABS

### Collateral Debt Obligations

229. CESR notes that the pricing of European CDOs is amongst the most difficult tasks for users and market participants. Traders mostly refer to consensual/indicative prices rather than “executed transaction” prices. Traders are also referring to various benchmarks that serve to value quotes/prices. These benchmarks can rely i) on external quotations applicable for bonds/bonds or asset classes/asset classes or ii) on pure valuations models which serve to mark to market a specific asset. For synthetic CDOs, traders can also refer to dedicated tools (e.g. Totem) that allow traders to use proxy pricing for different tranches, portfolios, maturities, spread dispersions, etc.
230. CESR is considering whether post-trade information (e.g. price, volume etc.) can play a role in the European CDO secondary market to support price formation, reinforce valuation practices and provide supplementary information about the scale of credit risk transfers. To that effect, CESR would like to obtain the views of market participants on the following questions:

#### Questions to market participants:

- Q40: What do you think are the benefits and/or downsides of a post-trade transparency regime for CDOs? Please support your arguments with evidence and explain how the possible downsides could be mitigated.
- Q41: Do you believe that post-trade transparency would be desirable for all types of CDOs? If not, can you explain which types of structures/tranches (e.g. cash CDOs vs. synthetic CDOs) should be subject to post-trade transparency?
- Q42: Would it be meaningful to segment a post-trade transparency regime between ‘vanilla’ CDOs (i.e. comparable to the ABS with standardised structures, higher credit quality and homogeneous collateral) from Structured Finance CDOs (i.e. bespoke products, non-standardised structures, lower credit quality, heterogeneous collateral)? In this case, could you explain what could be considered as less “vanilla” CDOs?
- Q43: To what extent would post-trade transparency be helpful to reduce the bid and ask spread or price dispersion for a particular transaction/instrument?
- Q44: What post-trade information should be published? In addition to information about the price at which the transaction was executed, the volume and the time of the transaction, would there be any benefit in reporting information about portfolio composition, asset class, the initial interest (seller or buyer)? Is there any other information which would be relevant?
- Q45: When should post-trade information be published? Should it be published immediately after a trade has been concluded? Please explain rationale.
- Q46: When facing inactive markets, to what extent would a post-trade information regime be applicable? If not, could you detail the rationale for an alternative system when markets are no longer active?
- Q47: To what extent can observable prices in the secondary market help to test or promote internal valuation models?

- Q48: Do you believe that a post-trade transparency regime should or could be implemented in connection with other regulatory interventions at the same time (e.g. relating to the quality of information of the underlying assets, standardisation of reporting)?
- Q49: Would you like to make any other observations relevant for CESR work on the need for post-trade transparency for CDOs?
- Q50: Please indicate whether you represent an organisation which is involved in:
- a) originating CDOs
  - b) selling CDOs
  - c) buying CDOs
  - d) providing pricing information on CDOs; or
  - e) rating CDOs

**Asset Backed Commercial Papers**

231. Although conservative short term investors are concerned with capital preservation more than returns, CESR is of the view that post-trade transparency in the secondary market might help them value their short term exposures particularly during times of uncertainty.
232. Furthermore, money market funds must be able to meet redemptions at all times. They have been concerned that their investors – who may be less knowledgeable about ABCPs - might pull out funds given market events and headlines. An enhanced level of post-trade transparency on the secondary market for ABCPs might also be helpful to prevent this type of investor behavior.
233. CESR is considering whether post-trade information (such as prices and volume) can play a role in the European ABCP secondary market (to the extent that it exists) to support price formation, reinforce valuation practices and provide supplementary information about the scale of credit risk transfers. To that effect, CESR would like to obtain the views of market participants on the following questions.

**Questions to market participants:**

- Q51: What do you think are the benefits and/or downsides of a post-trade transparency regime for ABCPs? Please support your arguments with evidence and explain how the possible downsides could be mitigated.
- Q52: Do you believe that post-trade transparency would be desirable for all ABCPs, whatever their structures or maturities? If not, can you explain which types of structures should be subject to post-trade transparency?
- Q53: What post-trade information should be published?
- Q54: Would you like to make any other observations relevant for CESR work on the need for post-trade transparency for European ABCPs?
- Q55: Please indicate whether you represent an organisation which is involved in:
- a) originating ABCP
  - b) selling ABCP
  - c) buying ABCP

- d) providing pricing information on ABCP; or
- e) rating ABCP

**Credit Default Swaps**

234. CDS spreads are quite widely available in the marketplace for a quite wide range of reference entities and, unlike other asset classes, the recent market turmoil has not had the same impact on liquidity for CDS for European investment grade entities. CDS spreads are also often used as benchmarks.
235. As for securitised markets, CESR recognises the particular role played by average/consensus prices for the credit derivatives market. Nonetheless, CESR is considering the extent to which post-trade information (such as prices and volume) can play a role in the European CDS market to support price formation, reinforce valuation practices and provide supplementary information about the scale of credit risk transfers. To that effect, CESR would like to obtain the views of market participants on the following questions:

**Questions to market participants:**

- Q56: What do you think are the benefits and/or downsides of a post-trade transparency regime for CDS? Please support your arguments with evidence and explain how the possible downsides could be mitigated.
- Q57: Do you believe that post-trade transparency would be applicable to all types of CDS? If so, can you explain the rationale for which types of CDS (e.g. single name CDS) should be excluded from post-trade transparency?
- Q58: What post-trade information should be published? CDS spread, notional amount, reference entity, maturity?
- Q59: When should trade information be published? Should it be published immediately after a trade has been concluded? Please explain rationale.
- Q60: Do you believe that a post-trade transparency regime should or could be implemented in connection with other regulatory interventions at the same time (e.g. relating to the quality of information on the underlying assets, standardisation of reporting)?
- Q61: Would you like to make any other observations relevant for CESR work on the need for post-trade transparency for CDS?

## ANNEX 1

### Scope and functionalities of TRACE

Initiated by and under the auspices of the SEC, the NASD rules in respect of TRACE aiming at greater transparency of prices in the bond market were approved by the SEC between the period from 1998 to 2001. Accompanied by extensive consultations with market participants, the post-trade transparency system was phased in from 2002 to 2005 in three stages by gradually extending the kind of securities covered by the disclosure and reducing the delay of the reporting and disclosure<sup>61</sup>. This procedure permitted FINRA to study the impact of transparency on liquidity in the US corporate bond market and the firms affected to adjust to the new trading paradigm. Since January 2006, all transactions in public TRACE-eligible securities are disseminated immediately upon receipt<sup>62</sup>.

According to Rule 6210 of the NASD Rules, TRACE-eligible securities include all US dollar denominated debt securities under Rule 11310(d), investment grade or non-investment grade, issued by US and/or foreign private issuers and either registered under the Securities Act of 1933 (Securities Act) or issued pursuant to Section 4(2) of the Securities Act and purchased or sold pursuant to Rule 144A of the Securities Act. The system excludes debts issued by government sponsored entities, mortgage or asset backed securities, collateralized mortgage obligations and money market instruments.

Certain transactions are also excluded from the reporting obligations under TRACE. This applies particularly to: a) transactions that are part of a primary distribution; b) transactions in any TRACE-eligible security that are listed on a national securities exchange when the transaction is executed on and reported to the exchange and the information is publicly disseminated<sup>63</sup>; c) transactions where the buyer and seller have agreed to trade at a price substantially unrelated to the current market for the TRACE-eligible securities (e.g. to allow the seller to make a gift); d) transactions resulting from the exercise or settlement of an option or a similar instrument, or the termination or settlement of a credit default swap, other type of swap, or a similar instrument; and e) for the duration of a two-year pilot program, also transactions in TRACE-eligible securities that are not listed but executed on a facility of NYSE in accordance with NYSE Rules 1400 and 1401 and reported to NYSE in accordance with NYSE's applicable trade reporting rules and disseminated publicly by NYSE<sup>64</sup>.

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<sup>61</sup> The dissemination of information was phased in from the most liquid to the more illiquid segments. At TRACE's launch on 1 July 2002, information was disseminated for investment-grade bonds with an initial issue of \$1 billion or greater as well as for 50 non-investment-grade (high-yield) bonds. This initial set represented about 520 securities. Phase II, launched in March 2003, expanded public dissemination to include all investment-grade TRACE-eligible securities of at least \$100 million (original issue size), rated A3/A or higher as well as a group of 120 investment-grade TRACE-eligible securities rated Baa/BBB and 50 high yield bonds. This set increased the number disseminated to approximately 4,650 bonds. In Phase III, launched in October 2004 and February 2005, all publicly traded bonds were disseminated, except 'newly issued' and 'lightly traded' bonds.

<sup>62</sup> Before January 2006, most transactions were disseminated immediately upon their receipt by the TRACE System, although transactions over \$1million in certain infrequently traded non-investment-grade securities were subject to dissemination delays, as were certain transactions immediately following the offering of TRACE-eligible securities rated BBB or below.

<sup>63</sup> The majority of the corporate bonds that are issued by private and public corporations in the US market are traded OTC and according to the TRACE Fact Book (2007), p.2, this represents over 99% of total US corporate bond market activity. Some corporate bonds are traded on the NYSE. The average trade size on the NYSE is about 20 bonds, or approximately US\$ 20,000. The current NYSE Bonds trading platform (since April 2007) provides investors with the ability to readily obtain transparent pricing and trading information on bonds (including corporate bonds and convertibles) of all NYSE-listed companies and their subsidiaries without the companies having to list each bond issued. NYSE publishes both a real-time last sale data feed and a real time depth of book data feed of all bond transactions. Both feeds are available as subscriptions. These data feeds are also available through various quote vendors.

<sup>64</sup> The first transactions covered by this exemption occurred in April 2007.



The obligation to submit a trade report to TRACE applies to both parties of the transaction if both of them are FINRA members. If the transaction involves a FINRA member and a non-member, including a client, the member has the obligation to submit the trade report to TRACE.

For each trade, the dealer is required to identify the bond, and to report - among others - the date and time of execution, trade size, trade price, yield<sup>65</sup>, security identifier, capacity (i.e. as principal or agent), stated commission, counterparty identifier, whether the dealer bought or sold the transaction. Firms are required to report any transactions in TRACE-eligible securities within 15 minutes of execution<sup>66</sup>. However, in practice, approximately 90 percent of trades are received and disseminated within five minutes of execution<sup>67</sup>.

Not all of the reported information is disseminated to the public. The publicly disseminated information rather covers the bond identifier (i.e. the TRACE symbol), the quantity (expressed as the total par value), the time of execution, the price including any mark-up, mark-down or commission, the yield and, if the transaction was executed on a day when TRACE data is not disseminated, the actual day of execution of the transaction. FINRA has recently filed with the SEC to expand disseminated information to also show, for each disseminated transaction, whether the transaction is an inter-dealer transaction or a transaction with a customer and the member referenced is a buyer or a seller (or acts as agent on the buy or the sell side)<sup>68</sup>. This data is disseminated in real-time as soon as it is received by TRACE. According to Rule 6250(c), some TRACE-eligible securities, which are reported to FINRA, are exempt from dissemination because they are not registered under Section 5 of the Securities Act and the securities cannot be freely traded. This affects securities that are issued pursuant to Section 4(2) of the Securities Act and purchased or sold pursuant to Rule 144A under the Securities Act (Rule 144A securities).]

Trade size is provided for investment-grade bonds if the par value transacted is \$5 million or less and for non-investment grade bonds if the par value transacted is \$1 million or less. Otherwise, an indicator variable denotes a trade exceeding the maximum reported size<sup>69</sup>.

Investors can access this information on the FINRA's website which is freely accessible and free of charge for non-professional users<sup>70</sup> or by subscription through third-party vendors, including Bloomberg, MarketAxess, Reuters and Moneyline Telerate. Data vendors can access closing prices per security via FINRA's Bond Trade Dissemination Service (BTDS) feed.

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<sup>65</sup> The lower of the yield to call or the yield to maturity has to be reported.

<sup>66</sup> Reporting of transactions was phased in over time, from 75 minutes to 15 minutes (considered as real time) to provide for increased timely data to the public with minimal impact to reporting firms.

<sup>67</sup> Statement of Steve Joachim of FINRA during a presentation on 12 June 2008 at the CESR premises in Paris.

<sup>68</sup> This proposal was approved by SEC on 7 July 2008 pursuant to Release No. 34-58115; File No. SR-FINRA-2007-026 (<http://www.sec.gov/rules/sro/finra/2008/34-58115.pdf>).

<sup>69</sup> If the trade in an investment-grade bond (non investment grade bond) is larger than \$5 million (\$1 million), FINRA does not disseminate the exact quantity. Instead, only a '5MM+' ('1MM+') indicator will be displayed on the TRACE system.

<sup>70</sup> The information displayed on FINRA's website is not supposed to be used by professional market participants free of charge. Professionals have to pay a fee. FINRA checks the URL of the users of the website.

ANNEX 2

Transparency requirements on bond markets in EU Member States

Member State	Transparency requirements
Austria	Option under recital 46 of MiFID has not been exercised. Within the bounds of possibility all information are available on Bloomberg, Reuters.
Belgium	Recital 46 of MiFID was not exercised to extend transparency requirements to financial instruments other than shares. There are no legal requirements but the regulated markets include in their rule books some level of post trade transparency which is binding for its members on a contractual basis.
Denmark	Option under recital 46 of MiFID has been exercised inasmuch as there is a post-trade transparency requirement for mortgage bonds, covered bonds, corporate bonds and UCITS.
France	<p>The General Rulebook of the Autorité des Marchés Financiers (AMF) provides for pre and post trade transparency requirements for financial instruments other than shares admitted to trading on a Regulated market or on an MTF. The details are set out in the RM or MTF's rules. There are however no similar transparency requirements for financial instruments either admitted to trading on a RM or an MTF but traded outside those platforms or for financial instruments not admitted to trading on a RM or an MTF.</p> <p>For non-equity financial instruments admitted to trading on a regulated market, the market operator shall decide what information on buying and selling interests it will publish to ensure fair and orderly trading. This information shall be appropriate to the characteristics of the financial instruments concerned and to the method of trading (AMF General Regulation- Article 514-7).</p> <p>For transactions in such non-equity financial instruments, the market operator shall publish information about prices and quantities within a time period suited to the traded instrument, the method of trading and the amount of the transaction.</p> <p>This period shall be established in the market rules and shall make it possible to provide the market with adequate information. Publication shall occur at the latest on the opening of the trading session on the third business day after the transaction date (AMF General Regulation – Article 514-8)</p> <p>Under RM Rules, transactions in corporate debt instruments taking place in the central order book are published immediately. Outstanding orders in the central order book are also made visible in real-time. For transactions taking place on RM but outside the central order book, the RM publishes, before the opening of the next trading day, in an aggregated way, the highest and lowest price as well as the volume traded for each corporate issue traded the previous day.</p> <p>For financial instruments other than shares admitted to trading on a regulated market, traded on the facility, the MTF operator shall publish information about buying and selling interests. That information shall be relevant in view of the characteristics of the traded financial instrument, in particular whether or not it is</p>

	<p>admitted to trading on a regulated market, the method used to trade it, and the number and type of facility members and final investors holding the financial instrument. (AMF General Regulation - Article 522-4)</p> <p>For financial instruments other than shares admitted to trading on a regulated market, traded on the facility, the MTF operator shall publish information that is relevant in view of the characteristics of the traded financial instrument, in particular whether or not it is admitted to trading on a regulated market, the method used to trade it, and the number and type of facility members and final investors holding the financial instrument. (AMF General Regulation - Article 522-5)</p>
Germany	<p>The option under recital 46 of MiFID has been exercised by extending the transparency requirements to depository receipts in respect of shares. This extension is based on the fact that depository receipts are very similar to shares and therefore should also be regulated in the same way. However, no extension has been made to other securities like private debt instruments.</p> <p>The information available with respect to the trading of corporate bonds includes the data which is generally required for all financial instruments admitted to trading on regulated markets (see Annex of the CESR advice of July 2007). These general pre- and post-trade transparency requirements for corporate bonds are also applicable to corporate bonds traded on MTFs operated by a RM.</p> <p>According to Article 24(2) of the German Exchange Act (Börsengesetz), exchange prices must be properly fixed and correspond to the actual market situation of trading on the exchange. In particular, offers must be made accessible to trading participants and the acceptance of offers must be possible. According to Article 24(3) of the German Exchange Act, the exchange rules may also stipulate that before fixing the exchange price the best bid and ask limits must be disclosed. Furthermore, exchanges are obliged to notify promptly the exchange prices and the respective turnover to the trading participants (although exchanges may ask for an adequate remuneration). The term “exchange” covers regulated markets and MTFs operated by a regulated market. The exchange rules (Börsenordnung) shall provide further details.</p> <p>Beside pre-and post-trade information directly made available to trading participants by RM and MTFs and via information vendors (such as Bloomberg, Reuters) in real-time, a variety of trading information on corporate bond listed on a regulated markets and additional information on the bond (e.g. the prospectus, charts) is also publicly available with a short delay via several websites. For example:</p> <p><a href="http://anleihen.finanztreff.de/anleihen_uebersicht.htm">http://anleihen.finanztreff.de/anleihen_uebersicht.htm</a></p> <p><a href="http://www.boersenag.de/cgi-bin/ix.cgi?IXpg=hn1_index">http://www.boersenag.de/cgi-bin/ix.cgi?IXpg=hn1_index</a></p> <p><a href="http://boerse-frankfurt.com/pip/dispatch/en/pip/private_investors/anleihen/selectBonds">http://boerse-frankfurt.com/pip/dispatch/en/pip/private_investors/anleihen/selectBonds</a></p> <p><a href="http://www.boerse-muenchen.de/de/100836/100857/100942/bonds_aktuell.html">http://www.boerse-muenchen.de/de/100836/100857/100942/bonds_aktuell.html</a></p> <p><a href="http://www.boerse-stuttgart.de/eng_index.html">http://www.boerse-stuttgart.de/eng_index.html</a></p> <p><a href="http://www.bondboard.de">http://www.bondboard.de</a></p>





	<p><a href="http://anleihen.onvista.de">http://anleihen.onvista.de</a></p> <p>The information on these websites is addressed to (German) retail clients and is not limited to German corporate issuers but includes also all other corporate bonds traded on German RM and MTFs operated by RM.</p> <p>For example, Deutsche Börse (see link above) publishes a variety of trading data on bonds traded in different bond market segments of Deutsche Börse. This data includes –among others- last price, date and time, change from previous day, close of previous day, bid/ask spread, bid/ask volume in units, daily high/low, 52-week high/low, turnover, nominal turnover, volume in 30 days, yield in %, coupon, rating, maturity, price/turnover history and charts. The information is updated every 10 minutes.</p> <p>Usually, also all clients of online brokers (e.g. Cortal Consors) receive quotes of the broker on request and can compare these quotes with current prices of exchanges.</p>
<p>Greece</p>	<p>Option under recital 46 of MiFID has not been exercised. However, under national secondary law and more specifically according to CMC rule 8/452/1.11.2007, regulated markets should specify in their rulebook the pre- and post-trade transparency information to be made public in respect of all financial instruments admitted to trading in their systems. In Greece there is one regulated market for corporate bonds: the bond market of the Athens Exchanges (ATHEX). For bond trading in ATHEX the following pre- and post- trade transparency information is available to the public/market participants through data vendors:</p> <p>Pre-trade</p> <ul style="list-style-type: none"> <li>• security identifier,</li> <li>• Bid Ask price and YTM (first level only),</li> <li>• Bid Ask size and YTM (first level only),</li> <li>• Projected Opening Price (the value of the field is empty since in current bond market structure there is no call-auction)</li> </ul> <p>Post-trade</p> <ul style="list-style-type: none"> <li>• security identifier,</li> <li>• date and time of transaction,</li> <li>• transaction price,</li> <li>• transaction volume (number of bonds),</li> <li>• total number of bonds traded (until that time),</li> <li>• closing price,</li> <li>• opening price</li> </ul>

Ireland	Option under recital 46 of MiFID has not been exercised.
Hungary	<p>Option under recital 46 of MiFID has not been exercised. The existing trading transparency for listed bonds remained unchanged in Hungary, as detailed in the Annex of the CESR advice of July 2007.</p> <p>Information on transactions completed through the electronic trading system of the BSE is available on-line for BSE subscribers and with delay of 15 minutes free of charge for the public.</p> <p>Information on OTC transactions completed through the CCHD is available for the public in a consolidated form. The transactions are grouped by securities and type (sell/buy) of the transaction. The delay of the publication is one day in the case of daily CCHD trading information, and five day when publishing data reported by investment service providers on a weekly basis.</p> <p>Information on OTC transactions completed neither through the electronic trading system of the BSE or through the CCHD is available for the public in a consolidated form, not on a transaction basis, but grouped by securities on a weekly basis with a delay of five days</p>
Italy	<p>Option under recital 46 of MiFID has been exercised. Italian markets were already characterised by a high level of transparency. The regulatory framework and the transparency regime already in place in Italy (prior to MiFID implementation) have proved to work well in the past and, on the basis of the information available, did not have a negative impact on liquidity and investments strategies. In order to understand the major determinants of Consob’s approach on non-equity markets transparency and trading venues/investment firms decisions in the area, it should be noted that in Italy bonds were (and are) traded on retail regulated markets, wholesale regulated markets, multilateral ATs and a number of bilateral ATs. All the trading venues had a pre and post-trade transparency regime for transactions carried out on listed bonds, which was differentiated on the basis of the type of trading venue and participants (wholesale vs retail) and type of bonds traded. A certain degree of transparency was also available for unlisted bonds traded on ATs.</p> <p>The Italian current transparency regime on non-equities financial instruments (as a result of exercise of option under recital 46) is characterised by a flexible approach which does not prescribe specific transparency requirements of trading venues in terms of timing and content of information to be made available to the public. Furthermore, having regard to investment firms obligations, the regime focuses on post-trade transparency obligations and allows intermediaries to benefit (in terms of content and timing of obligations) from the “work” already done for transaction reporting purposes. In particular, Consob Regulation n. 16191 requires:</p> <p>a) regulated markets, MTFs and systematic internalisers to set up and maintain a transparency regime for financial instruments traded on the systems operated by them. In other words, the approach focuses on market-led solutions, so that regulated markets, MTFs and systematic internalisers may design their transparency rules, specifically taking into account the market microstructure, the nature of the financial instrument, the amount traded and the type of market participants involved with specific attention to retail investors involvement;</p> <p>b) investment firms to make post-trade transparency on transaction concluded outside regulated markets, MTFs and systematic internalisers on financial instruments other than shares admitted to trading on Italian regulated markets. Investment firms shall make public the information concerning the date and time of the transaction, the details of the financial instrument involved, price and</p>



	<p>quantity of the transaction concluded. The obligations apply to transactions below or equal to the amount of 0,5 million euro: for transactions exceeding such threshold investment firms are allowed not to show the quantity but simply an indication as to whether the transaction exceeds the threshold. In terms of timing, the information have to be published with reference to each transaction by the end of the working day following conclusion of the transaction.</p>
Latvia	<p>Option under recital 46 of MiFID has not been exercised.</p>
Luxembourg	<p>Option under recital 46 of MiFID has not been exercised. Currently, the Luxembourg Stock Exchange disseminates information (pre- and post-trade data) on all financial instruments admitted to trading on its regulated market or on its MTF. The following information is available to the public free of charge: The five latest best buy and sell orders with the number of orders placed at the posted price and the quantity; the latest quotes with the time, type of price and volume. The exchange users have access to all levels of information.</p> <p>Real time market data relating to pre- and post-trade information is sold by the Luxembourg Stock Exchange to distributors (i.e. data vendors) as well as directly to end users (including market makers, traders, brokers and fund managers). It is possible to subscribe to different levels of information pursuant to the needs and use of the client.</p>
Netherlands	<p>Option under recital 46 of MiFID has not been exercised in the regulation implementing MiFID in the Netherlands. We are however aware that Euronext is in favour of extending the transparency requirements to bonds and derivatives for reasons of level playing field between trading on the regulated market and OTC. Current AFM-policy is not to be in favour of this extension of the transparency requirements. The Ministry of Finance is the responsible authority for any change in the regulation.</p> <p>There is no change in the information for the Netherlands in the annex on existing transparency requirements for listed bonds (real time for pre- and post-trade transparency for on exchange trading, no public dissemination of off-market trading information).</p>
Poland	<p>Option under recital 46 of MiFID has been exercised. There is no difference in pre- and post-trade transparency requirements for all financial instruments that are admitted to trading on a regulated market and an MTF, including shares and bonds.</p>
Portugal	<p>Option under recital 46 of MiFID has not been exercised regarding corporate bonds. However, the Portuguese laws and Regulations exercised the relevant option, in the scope of systematic internalization, in order to extend the pre and post trade transparency requirements to warrants and certificates.</p>
Romania	<p>Option under recital 46 of MiFID has been exercised. The transparency requirements are identical both for shares and bonds traded on a regulated market.</p>
Spain	<p>Option under recital 46 of MiFID has not been exercised.</p> <p>Regarding to pre trade transparency, AIAF is a bilateral market where members trade on own account or on client's account. Therefore, according to AIAF Market Regulation, members may use telephone or electronic means for quoting prices on request. In addition, market members must quote firm prices for volumes up to 150.000 euros and could also use internal means for this purpose.</p> <p>On the other hand, the Fixed Income Electronic Market uses the same electronic</p>

	<p>platform as the stock market and it provides pre-trade information on best bid and ask prices and volumes in real time.</p> <p>In what concerns to post trade transparency, Circular 3/1999 from the CNMV about Trading Transparency on Official Securities Markets states:</p> <ul style="list-style-type: none"> <li>• Regarding the Fixed Income Electronic Market, the Circular says that last price and accumulated volume will be disseminated in real time for each traded issue.</li> <li>• Outcry fixed income market: opening price, high price, low price and last price will be published once the market closes. Before next day, traded volume must also be made public.</li> <li>• AIAF Market: traded volume, last price and yield for each traded issue will be published in real time (in practice, AIAF publishes prices and volumes as soon as they are sent by the settlement system, what means some delay: communication on the same day for members' trades or on the day before settlement for clients' trades).</li> </ul> <p>The AIAF Market Regulation states that prices from all trades between market members and clients should be published through any of the authorised systems. Information about all trades will be disseminated daily on electronic means (currently, data vendors, BME information system for market members and AIAF website disclose prices and volumes as soon as they are received daily by AIAF from the settlement system). Also, information about trades between market members will be available daily on newspapers. In addition, trades between market members and trades between market members and clients will be published on a daily bulletin (volume and mid price). Also, BME's information system and AIAF's website include historical prices for all issues.</p> <p>Traded prices and volumes from the Fixed Income Electronic Market are available to members through the electronic trading platform; also, Reuters and BME information system disclose traded prices and volumes in real time. In addition, Bolsa de Madrid's website publish prices with 15 minutes delay and a daily bulletin is also published with volume, high, low, mid and last prices.</p>
<p>Sweden</p>	<p>Option under recital 46 of MiFID has been exercised. There are transparency requirements for all financial instruments that are admitted to trading on regulated markets and multilateral trading platforms. For other financial instruments than bonds, the requirements are similar to the MiFID requirements for shares admitted to trading on a regulated market. The transparency requirement for bonds differs. The main differences are:</p> <ul style="list-style-type: none"> <li>• Aggregated information on prices and volumes has to be reported daily</li> <li>• The information is published before 09.00 the day after trading.</li> </ul> <p>Information about the trading in government and mortgage bonds is published in accordance with these requirements.</p> <p>There is currently a discussion with market participants to what extent the same requirements are applicable to corporate bonds.</p>

UK	<p>Option under recital 46 of MiFID has not been exercised</p> <p>In terms of information available quote vendors and trading platforms such as Tradeweb provide data on pre-trade pricing. Further coverage of pre-trade data is expected when the SIFMA website (<a href="http://www.investinginbondsEurope.org">www.investinginbondsEurope.org</a>) goes live. Publicly available post-trade data is limited to the information currently captured by the ICMA self regulatory initiative.</p>
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