

**Asociación de Mercados Financieros
Bankers and Securities Dealers' Association of Iceland
Danish Securities Dealers Association
Euribor ACI European Commission Working Group
European High Yield Association (EHYA)
European Primary Dealers' Association (EPDA)
European Securitisation Forum (ESF)
Finnish Association of Securities Dealers
International Swaps and Derivatives' Association (ISDA)
London Investment Banking Association (LIBA)
Norwegian Securities Dealers' Association
Swedish Securities Dealers' Association
The Bond Market Association (TBMA)**

15 September 2006

Call for Evidence

Pre- and post-trade transparency provisions of the markets in Financial Instruments Directive (MiFID) in relation to transactions in classes of financial instruments other than shares

Preamble

1. We believe that maintaining an optimal level of transparency is an important component of well working capital markets and we welcome the opportunity provided by the Commission's Call for Evidence to contribute to setting the framework for the Commission's Report under Article 65(1) of MiFID. This response forms our joint high-level response to the Call for Evidence. EHYA, EPDA, ESF, ISDA and the U.S. Corporate Credit Division and Asset Managers Division of TBMA are submitting complementary but individual market specific responses to the Commission.
2. References to "transparency" in this letter means to pre- and post-trade price transparency, unless otherwise specified.

Better Regulation

3. The Commission is obliged by MiFID to produce this Report, irrespective of whether or not investigating non-equity market transparency would or would not be a priority for regulatory investigation in a purely risk-based regulatory regime. We understand this point and hope that in preparing this Report, the Commission is able to hold firm to the commitment to 'better regulation' expressed by Commissioner McCreevy, for example in a speech on 10 March 2005:

‘We should only regulate where there is a clear market failure and where the economic benefits of regulation far outweigh the regulatory burden’.

In terms of the current debate, the Commissioner’s various comments on ‘better regulation’ have raised industry expectations that the burden of proof will not be on the industry to demonstrate that regulation is not necessary, rather, if the Commission’s Report contains any recommendations to mandate transparency, these will be accompanied by credible economic evidence pointing to:

- ? The presence of significant market problems that are unlikely to be mitigated by market forces over a reasonable period of time; and
- ? A strong likelihood of a net economic benefit from any regulatory action.

If there is doubt that a net benefit will arise, or if the Commission does not have enough information to decide either way, then regulatory action should not be proposed.

4. Since the finalisation of MiFID, including Article 65(1) we and others have worked to increase the amount of independent research, information and analysis available on the non-equity markets in the EU. To date, there remains no evidence of significant problems in the operation of these markets open to mandated transparency as a solution.

General comments on the Call for Evidence

5. The Call for Evidence contains a welcome commitment from the Commission to approach the Report with an open mind on possible outcomes. This means the Commission will need to consider how to take forward comments on the Section 3.3 exposition of the possible policy rationales for mandatory transparency and the related Question 5 focus on determining whether there are observable or demonstrable problems with respect to the possible policy rationales for mandatory transparency.
6. In particular, there are well accepted public policy reasons not to pursue complete, and immediate transparency in all markets, and, in order to avoid the risk of a pro-regulation bias inadvertently creeping in to the Commission’s work, it will be important for the Commission to balance the current section 3.3 and Question 5 of the Call for Evidence with an explicit exposition of the policy rationales for not mandating transparency.
7. With this in mind, we have slightly re-worked the issues raised in some of the questions and hope this helps the Commission to achieve its ‘better’ regulation objectives for this review.

Equity vs non-equity markets

8. Question 7 of the Call for Evidence contains the welcome recognition that equity and non-equity markets are different, reflecting, in general, the fundamental economic differences between equity and non-equity financial instruments. More generally, it is essential that the Commission carries out its transparency review

with a clear understanding not only of the important differences between equity and non-equity markets, but also of the different market structures and products across the various non-equity products .

9. We attach in the Annex a document entitled “Fundamentals of Bond, Derivatives and Structured Products Markets” to assist the Commission, and some of the individual signatories to this response will provide the Commission with details on the particular non-equity markets they represent. However, at a high level it is worth summarising what generally makes equity markets different from non-equity markets, accepting that at the margin, some of these differences may be blurred.
10. Equity markets are significantly more homogeneous than non-equity markets reflecting the fact that the prime motivation for investment in a company’s equity is capital gain (reflecting predicted cash flows and investment opportunities). There is a natural limit to the number of products necessary to meet this demand compared to non-equity and this is illustrated by the fact that a company may have hundreds of debt issues outstanding at any point in time, but probably only one or two issues of equity.
11. The other critical difference is that future cash flows from equity are, in general, significantly more uncertain, and broadly, the secondary markets represent the only way of realising the underlying investment (plus or minus any capital gains or losses). This contrasts greatly with non-equity markets where future cash flows are much more certain and contract delivery rather than the secondary market is the ‘bottom-line’ means by which the underlying investment is realised.
12. This means that compared to secondary non-equity markets, secondary equity markets for listed companies are naturally more inclined to operate most efficiently through an exchange type model, rather than a dealer model, with much greater liquidity in a smaller number of securities per listed company, with optimal transparency vis-à-vis optimal opacity at a much higher level than in non-equity secondary markets.

Questions for consultation

1. *Do you have any comment on the proposed scope of the Report?*

The Commission has taken a reasonable approach to determining the scope of the Report.

2. *Do you consider this classification scheme to be sufficient for the purposes of the review?*

The focus of this question is on the high-level classification of non-equity instruments, rather than the priorities of the review, which are the focus of Question 4. The Commission is required by Article 65 of MiFID to focus on ‘non-equity’ instruments, but, practically, cannot include all instruments and needs to work with sensible degree of granularity on the classification of non-equity instruments. Some of the signatories to this response will highlight in

their individual submission certain technical inaccuracies regarding such classification, otherwise the Commission's proposed classification seems broadly reasonable.

3. *Do you consider there are possible policy rationales for mandatory transparency we have not listed?*

*'The very existence of most financial markets depends on striking a balance between transparency, thought to promote competition, fairness and investor protection, and opacity, in the interest of encouraging ongoing participation of both end-customers and liquidity providers'*¹

As set out in the introduction to this response, and consistent with the Commission's commitment to better regulation, we think the Commission's focus needs to be on assessing whether or not market forces in the markets under review are likely to be capable broadly of striking the right balance between opacity and transparency, producing evidence of any conclusion that they are not, and evidence that mandating transparency will produce a net benefit. Limiting attention simply to the policy rationales for mandating transparency runs the risk of not achieving this focus, creating a pro-regulation bias that we believe is unintended. We have commented on the Commission's current policy rationales below with a view to helping to set a balanced context for the Commission's analysis.

Comments on the policy rationales for mandating transparency set out in the Call for Evidence

- i. The only credible policy rationale for mandating transparency is evidence of a market failure that is open to mandatory transparency as a cost-effective solution. This point needs to be set out clearly in the Commission's approach to the review, with the policy rationales for mandating transparency set within a 'market failure' context.
- ii. From this perspective, we have the following comments on the Commission's proposed policy rationales:

Investor protection

- ✍ Information asymmetries are not a market failure *per se*. If information gathering is costly, or valuable knowledge arises as a consequence of undertaking a costly activity (e.g. taking an own account position) then differences in trading information may efficiently continue to exist if the person who might benefit from that information does not perceive the benefit as sufficient to compensate the person generating that information. Part of the analysis that underlies the potential for a negative relationship between mandated transparency and loss of liquidity relates to this point. In particular, mandated transparency in the

¹ Centre for Economic and Policy Research (CEPR), 2006, 'European Government Bond Markets : transparency, liquidity, efficiency', p7.

above situation, without appropriate compensation, will remove the incentive to generate information, which in this case might be the incentive to maintain the provision of quotes in particular markets;

- ✍ The verification of best-execution and the valuation of positions relate to ‘information asymmetry’ as a potential market failure and should be set within this context. The points made in the bullet above apply here also in respect of when an information asymmetry may and may not be a market failure. Presumably if a fund manager were to find information valuable for valuation, then this is a cost of business, not a free good, that the fund manager should be prepared to pay for.

Market Efficiency

- ✍ The Commission needs to take care not to ‘over sell’ the impact of mandatory transparency on market efficiency, and to take care that it does not give a misleading impression that mandatory transparency will never damage market efficiency. The discussion in Section 3.3 of the call for evidence runs this risk. Mandatory transparency will not, as a matter of course, increase market efficiency, and it may in fact reduce it if it has the effect of leading to a withdrawal of players from the market or reducing market activity.
- ✍ In modern market economies, the starting point for a ‘better’ regulator is that market forces operate to produce an efficient outcome, including an optimal balance between transparency and opacity. Therefore the Commission, if it wishes to propose further regulation in one or more of the markets in which it has an interest, needs to produce evidence that market forces are not working well.²

Response to technological developments

- ✍ Neither of the arguments are policy rationales for mandating transparency. Moreover, with regard to the first argument on increased centralised trading, we think that the Commission’s presentation of market reality needs some fine tuning.
- ✍ The Commission’s statement that ‘in many markets, technological developments have increased reliance on more centralised, multi-lateral electronic trading, as opposed to bilateral negotiations’, is an overstatement of market reality. Most non-equity markets, including the more liquid segments, still rely heavily on voice trading and bilateral

² For example, one sign of market failure could be a low level of competition, creating the opportunity for some market players to exercise monopolistic or monopsonistic power and therefore make ‘above normal’ profits for themselves, reducing the extent to which other participants’ preferences are efficiently reflected in market development, where ‘efficiently’ refers to the economic point that, even in a hypothetical ‘perfect’ market not all participants will have all their preferences fulfilled in market outcomes.

negotiations³. The Commission is correct that these markets are indeed evolving rapidly in response to technological and other developments. Fundamentally however, those developments evolve around the existing market structure and are designed to facilitate existing trading relationships between market participants. If anything, these dynamics create a strong prima-facie case supporting our view that market forces are working well in those markets and hence there is no policy rationale for any intervention, whether mandated transparency or any other.

- ✍ Moreover, the fact that these developments may have created ‘an environment where transparency may be introduced or extended at a low cost’, is not a rationale for a ‘better’ regulator to mandate transparency. nor is the observation that ‘technological solutions developed as part of the MiFID implementation may become easily available’ Rather, and at best, these observations might provide politically compromised regulators with a means to reduce the net cost of mandating transparency when it is not clear that regulation is necessary. However, we do not think the Commission should operate from this position at this point in the review process, particularly if it is to fulfil the Commissioner’s desire to not regulate unnecessarily, and particularly, not to regulate unless there is evidence that a net benefit will emerge from that intervention.

4. Do you agree with our proposals for prioritisation of the review?

The difficulty the Commission faces is the potential size both of the scope of the review, and the analytical task for each potential market. In the absence of clear economic problems open to mandated transparency as a solution, the Commission is sensible to focus on those markets where it thinks retail activity is already high or is likely to increase. In practice, we think the Commission can further limit its focus to the first three instrument markets for the following reasons:

- ✍ The main political focus for this review appears to us to be the corporate bond markets;
- ✍ Retail participation in any non-equity markets may increase significantly however much of this will be via the advice route, increasing the extent to which optimal transparency is more of a wholesale than retail issue.⁴ The exception to this point is where retail investors participate *execution-only* in non-equity markets, suggesting that a further *prioritisation factor* could be those markets where ‘execution-only’ retail activity is likely to be greatest. We believe that MiFID restrictions on retail investor ‘execution-only’ access to markets, in particular, the

³ See, for example, page 13 of a recent TBMA Electronic Trading Survey, available at http://www.ehya.com/ads/tbma/etrade07/e-trade_revamp/eTradingSurvey.pdf

⁴ MiFID, properly implemented, already provides sufficient protection for retail investors accessing non-equity markets via advice and, in terms of best execution, all retail investors (including execution-only) should be able to rely upon competent authority implementation of the relevant MiFID provisions – including transaction reporting.

restrictions to do with derivatives and complex products, mean that in practice only the top two cash securities, and possibly high-yield cash bonds are likely to be bought execution-only by retail.

- ✍ In respect of the interest rate swaps' and credit derivatives' markets, derivatives do indeed play a role in the pricing of cash bond transactions, but this role is to support the price formation process in the cash markets. To echo the points recently made by FSA in their Feedback Statement on Transparency in the UK Secondary Bond Market, a substantial benefit of these markets has been to enhance the ability of dealers to provide liquidity in the cash markets. Therefore, investors' desire for pre-trade pricing information in the cash markets is met in part by firms using the interest rate swaps or credit derivatives markets as a means of determining the implied cash prices and obtaining underlying liquidity to support their indicative cash trading prices.
- ✍ We would also observe that the inter-relationship between cash and derivatives markets, can be considered in terms of both hedging and liquidity. First, it is important to differentiate between rates and credit – CDS is used for hedging risk in portfolios, interest rate swaps (IRS) is used for hedging interest rate risk. In government bond markets it is often more efficient to trade IRS or the Eurex future against Eurozone debt as a rate (and price) hedge. Second, that inter-relationship varies by bond market segment. Liquidity in IRS is broadly equivalent to liquidity in government bonds and liquidity in IRS and CDS is greater than liquidity in investment grade bonds. High yield and ABS (in particular the junior tranches) still remain relatively unexposed to CDS. The low average issue size of the debt obligations for the majority of high yield issuers does not lend itself to CDS. The situation is evolving however as the number of issuers with actively traded CDS continues to grow (from 25 to 40 in the last year). The prevalence of larger jumbo Leveraged Buy Outs (LBOs) will also increase the potential universe of high yield CDS, but will likely remain a relatively limited universe, at least as measured by percentage of total issuers.
- ✍ Consequently, we conclude that the underlying cash markets are enriched to varying degrees by their interaction with the interest rate swaps and credit derivatives markets, but that the prime observable is the cash market, and this should be the focus for the Commission's review, rather than the derivatives markets *per se*.
- ✍ More generally, the privately negotiated derivatives and securitised / structured products markets should not be a priority for inclusion in the Commission's review. While not always bespoke, they are nevertheless highly customised for a targeted investor base and comparability for secondary trading purposes is very limited. Also retail involvement is negligible and likely to remain so. The responses from ISDA and the ESF will go into more detail on this point.

5. To what extent do you consider there to be:

- a. observable or demonstrable problems with respect to the possible policy rationales for transparency identified above in relation to one or more of the instrument markets under review?*
- b. evidence that mandatory pre- or post-trade transparency would solve any of those problems?*

Sovereign debt, corporate debt and related derivatives markets

- i. Over the past eighteen months, new research and analysis on the first three EU instrument markets under review (including, by implication, related derivatives markets) has been presented, notably by the Financial Services Authority (FSA) in their Feedback Statement ‘Trading Transparency in the UK Secondary Bond Markets’ (published 5 July), The Bond Market Association (TBMA), and the two Centre for Economic Policy Research (CEPR)⁵ studies published on 24 May 2006. Although separate initiatives, this body of evidence supports a view of well working market forces in those markets characterised by a high degree of competition, rapid technological and market growth and developments, including, where appropriate, an increasing degree of pre- and post-trade transparency, and a lack of evidence that those markets are not capable of delivering a broadly optimal level of transparency at any point in time. We also think this body of evidence supports a view that mandatory pre- or post-trade transparency could damage these markets.
- ii. It is particularly important to note that the FSA, the regulator of most of the non-equity secondary trading in Europe and an experienced practitioner of the ‘better’ regulation approach championed by the Commission, has concluded, on the basis of a market failure analysis, that there is no case for regulatory intervention to mandate transparency in the markets it regulates, a conclusion we support.
- iii. Nevertheless, both the FSA and the CEPR suggest that there might be some merit in considering whether or not a benefit might arise from further ‘formal’ post-trade transparency in corporate debt markets. However the paucity of evidence of ‘problems’ taken together with a lack of evidence that benefits will arise, and some evidence that, mis-handled, more formal post-trade transparency could lead to a decline in liquidity, leads to a conclusion that an investigation of more formal post-trade transparency needs to be carefully handled, and ideally industry-led rather than imposed by regulators. We support this conclusion, note the related views of some institutional investors and plan to work with our members and other associations on this matter. A key element of our work will be to consider the extent to which the availability of pre-trade price information, when considered together with infrequent trading demand for most bonds means that benefits from further ‘formal’ post-trade transparency are unlikely. We will keep the Commission informed of our progress.

⁵ Not the ‘Centre for European Policy Studies’ as set out in the bibliography in Annex III of the Call for Evidence

High-yield corporate debt and asset-backed securities

- i. There are no indications at all that any of the markets covered by these categories do not exhibit a high degree of competition and a good capacity to take on board and reflect (where efficient) user preferences – i.e. there is no sign of market failure and therefore no clear prima-facie case for regulatory intervention. The responses from the EHYA and the ESF will go into more detail on these points.
- ii. However, reflecting both our view that it makes sense for the Commission to include high yield corporate debt within its review (but not asset-backed securities) and the relative absence of independent research on the efficiency of the EU high-yield corporate debt market, EHYA and LIBA are part of a consortium of associations who have commissioned independent research into the high-yield market. This research is expected to be completed by the end of November and we will keep the Commission informed of its progress.

Retail ‘Problems’

- i. While we are not aware of ‘problems’ that are symptoms of market failure open to mandatory transparency as a solution, we are aware that others have raised issues that they consider to be ‘problems’ in respect of retail investor activity in the corporate bonds. These concerns seem to concentrate on two points:
 - ✍ Inappropriate levels of retail exposure to sovereign or corporate defaults;
 - ✍ Low level of direct (as opposed to indirect, through funds) retail participation in bond markets
- ii. On the first issue, we believe that sensible implementation of MiFID is the appropriate regulatory tool for managing this risk. To the extent that ‘execution-only’ retail remains a concern, it is worth noting that in events such as the Parmalat default, well informed industry players such as investment banks and institutional investors were also caught out and sustained significant losses. Consequently mandated post-trade transparency is unlikely to be an effective regulatory protection for ‘buy and hold’ execution-only retail investors. Indeed, we are concerned that the focus on post-trade transparency on this matter distracts regulatory attention from the harder but ultimately more effective regulatory response of investor education - in particular, education of execution-only investors on two basic points – nominal interest return above the rate of inflation increases as risk increases, and the importance of maintaining a diversified portfolio.
- iii. On the second point we support the FSA statement⁶ in respect of UK retail participants that

⁶ FS06/4: Transparency – Secondary Bond Markets (July 2006), paragraphs 4.16 to 4.20.

‘there are very few direct UK retail participants in the secondary bond markets. We conclude that this limited participation is due mainly to a number of structural features of the bond markets that are unlikely to change in the near term. There is no doubt that trading information on bonds is, in general, considerably less easy for retail investors to access than information relating to equities. But access to transparency information does not appear to be a critical factor in determining participation. We note that those retail investors that do buy bonds tend to hold them for the long term, rather than trading them actively. To the extent that issues have been raised about retail participation in bond markets, we think they relate primarily to matters other than market transparency.’

The FSA Statement then goes on to conclude that *‘no case has been made for mandating greater transparency to address potential problems raised for retail investors in the UK. To the extent that additional transparency may be desired, we think an industry-led initiative to deliver targeted enhanced transparency would be a more effective solution than regulation’*.

- iv. We think the Commission should note the results of the FSA analysis and consider whether the conclusions apply more generally across the EU. For our part, we, in principle, support the notion of an industry-led initiative to enhance transparency for retail investors, and would be happy to enter into talks with the Commission during the course of the review on how this might be delivered.

6. *To what extent could recent and upcoming technological and market developments in relation to the instrument markets under review:*

a. contribute to a relatively inexpensive extension of mandatory transparency?

b. render mandatory transparency unnecessary?

As outlined already in this response and set out in more detail in the body of evidence cited in this response, we think it is clear that all of the markets under review are experiencing rapid technological and market growth and development, including, where appropriate, an increasing degree of pre- and post-trade transparency. We also note again that this evidence not only does not support a case for mandatory (i.e. regulatory driven) transparency, but raises the real potential that mandatory transparency could be harmful to the cause of well-working capital markets in Europe.

7. *To what extent are non-equity financial instruments different from equities so that lower levels of mandatory transparency in those markets may be justified?*

- i. As noted in the preamble to this response, we welcome the acknowledgement of the differences between equity and non-equity markets.

- ii. However, this question otherwise is confusing. If the focus is on mandatory (regulatory driven) transparency, rather than transparency naturally occurring as a result of market forces, then the only relevant justification for mandating transparency is the better regulation one we have already outlined. It is certainly not appropriate for a 'better regulation' regulator to place a burden of proof, either on itself or on the industry, to justify why mandatory transparency in equity markets should not be applied to non-equity markets, particularly when much of the relevant regulation in the equity markets was formulated without the use of market failure or impact analysis.
- iii. Low levels or an absence of 'mandatory' transparency are 'justified' if a regulator cannot demonstrate both that a market cannot be relied upon to deliver the optimal degree of transparency, and furthermore, that regulation is likely to produce a net benefit. As we have already outlined, on the basis of the evidence presented to date, we think it is very unlikely that this case can be made in respect of non-equity markets. We cannot comment on the comparison between equity and non-equity markets because we are not able to observe the counterfactual of equity markets without mandated transparency.
- iv. Mandatory transparency and actual transparency may be different. The fact that there is currently little mandatory transparency in non-equity markets, does not mean that there is no transparency in these markets, just that this transparency arises from market forces rather than regulation.
- v. Finally, the significant differences between equity and non-equity markets are well documented in the evidence cited in this response and also in the other associated responses from the co-signatories, and lead us to conclude that it would be surprising if the optimal degree of transparency in each did not differ.

8. *What data sources do you consider relevant to the issues you have raised (if appropriate, cross-refer to your answers below)? Would you or your organisation be prepared to produce any relevant data if necessary?*

The individual responses from the co-signatories will cover this question.

9. *Are there academic or institutional papers or ongoing work that should be considered in preparing the Report not included in our bibliography?*

- i. The FSA policy statement cited earlier in this response is not included in the bibliography.
- ii. Please also note the earlier point that some of us have commissioned further research into the EU high yield corporate bond market.
- iii. We are aware of the ECB Occasional Paper entitled "Implications for liquidity from innovation and transparency in the European corporate bond market" just published. We are reviewing its findings.

10. *What conclusions do you draw from the existing academic debate and the ongoing work being conducted by the interested parties?*

- i. Our conclusions from the most directly relevant work are set out earlier in our responses to previous questions, particularly question 5.
- ii. We understand the Commission's interest in the US TRACE system as the only example of a mandatory post-trade dissemination engine. While we encourage the Commission to familiarise itself with such system and to seek feedback from US market participants, we ask the Commission to note (i) our reservations regarding the findings of SEC and NASD academic studies on TRACE (see TBMA U.S. letter); and (ii) we do not believe that such findings can be applied to the EU market for the reasons set out in the FSA paper. In particular the 'impact that TRACE has had on transactions costs for corporate bonds in the US is unlikely to be mirrored to the same extent in the UK or Europe. This is because the latter markets already have tighter spreads than the US, are differently structured and, in many areas, have greater pre-trade transparency than existed in the US pre-TRACE.'⁷

11. *In your view, how applicable is the academic or institutional literature concerning transparency in the cash equities markets to the present discussion?*

The fundamentally distinct differences between the relevant markets mean that this literature cannot be relied upon by policy makers.

12. *What similarities and what differences are there between US and EU markets that should be borne in mind when seeking to draw inferences from the TRACE experience in the US?*

See point ii in our answer to question 10. Leaving aside the significant differences in terms of regulatory and market infrastructure (ie single vs multiple regulators and clearing and settlement systems), one of the most critical factors to bear in mind is that competition in Europe has caused very high pre-trade transparency levels, leading to a less relevant role for post-trade transparency. Note that TRACE was introduced at a time where pre-trade transparency was limited in the U.S., and in those segments of the US market with no mandatory post-trade transparency, such as the US Treasury market, the appetite for post-trade information has diminished as pre-trade transparency has developed.

13. *To the extent that you have identified problems or believe that others may do so, do you agree that only EU-level action would be appropriate in the present case?*

- i. The main 'problem' we think needs addressing is the proper implementation of MiFID and retail investor education on bond markets, targeted to those

⁷ FS06/4: Transparency – Secondary Bond Markets (July 2006), paragraph 1.7.

investors who participate execution-only in bond markets. We see these as being primarily for Member State-level action, although the Commission may wish to maintain a watching brief on progress.

- ii. We also believe it is very important not to see local retail market issues, that in many cases reflect the history and culture of individual member states, as issues to do with the institutional European non-equity markets, that to a large part, operate out of London. For example, we think it is very possible that the still quite recent Italian experience of high and variable inflation, means that Italian retail investors may still look for high nominal returns on their investments, increasing the potential for risky investments. This is a local problem that requires a local solution.

14. *If you have identified problems or believe that others might do so, to what extent do you consider those problems would disappear as a natural product of market evolution in the short-to-medium term?*

Our answers to the questions above cover our views on this question, which broadly are that we don't see there are any problems, apart from the need to make sure that Member States properly implement MiFID. However, we do think it is clear, from the experience to date of market evolution, that an efficient balance between transparency and opacity is likely to be maintained in non-equity markets against an overall trend of increasing pre-trade and post-trade transparency.

15. *In respect of both pre- and post-trade transparency, are the four options the right ones to consider, and in particular should other options be considered?*

The four options appear to relate only to post-trade transparency, but the question is focused on pre- and post-trade transparency. Our general view is that we welcome the 'no change' option, but believe otherwise that any consideration of policy options is premature until it is clear whether or not any 'problems' exist that might require regulatory action, and what the nature of those problems might be.

16. *Would you, in light of your answers to the other questions, favour any of the four options in relation to pre- and post-trade transparency (or another option you might propose for consideration) in respect of transactions in any of:*

- ? ***Cash government bonds;*** ('no change' for both pre- and post-trade transparency)
- ? ***Cash investment-grade corporate bonds;*** ('no change' for pre-trade transparency. On post-trade transparency – 'no change' apart from industry-led work as set out earlier in our response)
- ? ***Cash high-yield corporate bonds;*** ('no change' – depending on the outcome of the research we have commissioned)
- ? ***Asset-backed securities;*** ('no change')
- ? ***Credit default swaps, interest rate swaps and bond futures;*** ('no change')
- or***
- ? ***Any other financial instrument you consider relevant.*** ('no change')

ANNEX

FUNDAMENTALS OF BOND, DERIVATIVES AND STRUCTURED PRODUCTS MARKETS⁸

BOND MARKETS FUNDAMENTALS⁹

1 *Bond markets are not centralised*

Equities generally trade almost exclusively on exchanges, and most of the liquidity in a particular share is found on one exchange. According to statistics from the Committee of European Securities Regulators, “in 95 % of all the cases, the most liquid [equity] market had at least five times the size of the second biggest [equity] market (using the criterion “volume” as well as the criterion “turnover”). In 90 % it had even more than eleven times the size of the next biggest [equity] market”.¹⁰ Because of this centralisation, investors with orders that fit into the size profile of orders on the exchange will route these orders to that exchange. As a result, bid and offer quotes for a share can easily be combined and a best bid and offer determined.

In contrast, although most bonds issued into Europe are listed on a European stock exchange, only an insignificant proportion of such bonds actually trade on exchange. Most bonds trade over-the-counter in a decentralised dealer market¹¹.

There are a number of reasons for this. Whereas an equity investor must deal almost exclusively in the secondary market to buy and sell a share, a bond investor who is looking for yield can buy a bond and wait until redemption in order to realise his investment and thus never enter the secondary market. Also, while each share trades on the unique dynamics of a particular company’s future prospects, bonds are generally traded within groups according to their credit rating, maturity and yield. Finally, bond markets are much less concentrated than equity markets: according to FSA statistics there are 8,000 listed equities in the EU but over 200,000 bond issues in ICMA’s TRAX database.

As a result of the combination of these factors, other than for a small percentage, bonds do not trade continuously and in a centralised market as do equities. Because trading is sporadic there usually is not a natural investor when another investor wishes

⁸ This Annex has been extracted from TBMA/ICMA/ISDFA Joint response to FSA’s Discussion Paper, *Implementing MiFID’s best execution requirements* (DP 06/3). It focuses on European markets, although most of the principles and fundamentals are equally applicable to non-European markets.

⁹ “In the case of the bond markets, there are a number of characteristics that differentiate bonds from equities and which we consider to be particularly relevant to any assessment of appropriate transparency” (DP 05/5, #1.15).

¹⁰ CESR’s Advice on Possible Implementing Measures of the Directive 2004/39/EC on Markets in Financial Instruments, 27 June 2004, page 107

¹¹ “These differences appear to explain...why the trading methods in UK bond markets are substantially different from those in equities. Whereas the major part of ...trading in UK equities has gravitated to electronic order-book trading. So far this is not the case in UK bond markets. Dealer-provided liquidity remains a central feature of the market and the majority of bond trading in the UK remains dealer-based. This is an important factor when considering the appropriateness of transparency arrangements.” (DP 05/5, #1.16)

to buy or sell a bond. Thus, investors rely on dealers to provide liquidity where no natural contra-side exists to their trade.

A large portion of all secondary market volumes are traded by voice in both the inter-dealer and the dealer-to-customer markets.

Most of the inter-dealer (B2B) bond market is intermediated by voice brokers, with few very limited exceptions, such as a large part of the covered bond market, where dealers may quote prices to one another. Inter-dealer trading also occurs on e-trading platforms, mainly in respect of government bonds and for smaller sizes.

In the dealer to customer (B2C) space, most trading volume also occurs over the telephone or via Bloomberg messages between dealers and their clients. Many dealers have developed proprietary e-trading systems (known as single dealer systems) in which their clients can view the firm's inventory and enter into buy, and, sometimes, sell transactions. Further and as more fully described in paragraph 7 below, the small percentage of bonds that are liquid and trade frequently may be traded on multi-dealer B2C e-trading platforms¹².

The combination and complementary nature of electronic and voice trading in all segments of the EU bond market (albeit weighted differently depending on the sector) provides the market infrastructure for achieving efficient price formation and discovery across all such segments for institutional investors and private client intermediaries who are customers of most of the dealers on B2C platforms and have access to several dealers through voice trading¹³.

2 Because bonds do not generally trade on exchanges, there is not a class of exchange-designated market makers in bonds

Institutional investors are well aware of the dealers that make markets in bonds in various asset classes. As mentioned above, they can be contacted by telephone, through their proprietary trading systems, or as "price makers" on e-trading platforms, meaning that they list their inventory for sale at, typically, indicative prices and, in response to a request for a quote from an authorised client, they will (but are not required to) quote a price to buy designated bonds from the customer.

In the equity market, the determination of which firms are market makers is made on a security-by-security basis. Because there are so many more bond issues than equity issues, dealers in bonds generally stand ready to buy and sell bonds in an entire sector, rather than merely those of a single issue or issuer. Even with respect to some of the

¹² "The predominant form of trading in UK bond markets is based around the bond dealer. Dealers trade with clients either on a purely bilateral basis or, increasingly in some market segments, via multi-dealer trading platforms. There is also significant inter-dealer trading, either directly or, more commonly, through interdealer brokers, who provide dealers with anonymity. Open order-book trading, as used in equity markets, has yet to establish a place in the UK bond markets." (DP 05/5. #2.26)

¹³ "Both in Europe and in the United States, market structures have evolved – in very different ways, as within the EU itself – to give the present coexistence of electronic and OTC markets, offering different environments that seem suited to different types of transactions." (CEPR Government Bond Report, page 6)

more complex and structured bonds, where it is possible that only one dealer originally underwrote the bonds, it is common for multiple dealers to be willing to provide secondary market liquidity to institutional investors who have a relationship with such dealers.

This highlights an important characteristic of bond markets which is not found in equity markets, namely that bonds with similar terms are often good substitutes for each other. The shares of a chemical company, for example, are not equivalent to the shares of another chemical company, since investors buy shares to benefit from future price changes which will depend on the profitability of the specific company. Bonds issued by different companies with the same maturity, coupon, credit rating and other terms will, however, provide very similar investment returns in terms of income and likelihood of repayment at maturity - the objectives of bond investors. Unless a client insists on purchasing a specific bond, which may have a high illiquidity premium, a dealer may be able to offer a bond with almost identical investment characteristics from his inventory at a better price¹⁴.

3 *As a result, there is no central or dominant pool of liquidity in bond markets*

As a result, and in further contrast with the equity market, there is no central or dominant pool of liquidity in bond markets, except in the most highly liquid of markets, such as certain government bonds, supra-national organisations and large investment grade corporates. Because most bonds do not trade frequently, there is never a constant source of buyers for all bonds and investors rely on the ability of dealers, individually or collectively via telephone or e-trading systems, to provide liquidity. Liquidity is thus very dynamic and much more so in fixed-income than in equity markets¹⁵. Because most bonds do not trade frequently, it is also difficult and costly to “short” bonds (another difference with equities). Therefore, a dealer’s willingness to provide liquidity will depend on its ability and the time needed to hedge and/or offset its trade so as to enable quotation in the first place. In times of market stress, dealers are often the only parties willing to provide a quote and to hold positions until a market imbalance is righted.

4 *As a further result, dealers do not generally quote executable 2-way prices*

¹⁴ “Whereas, a corporate normally has only a single fungible class of equity...it may make multiple issues of bonds, for different time periods, for different purposes and with different characteristics. It is not uncommon for larger companies to have tens of bonds outstanding, and some financial groups may have hundreds or, in some cases, several thousand. While there are some 8,000 listed equities in the EU, ICMA’s TRAX database contains more than 200,000 bond issues. This results in a very long tail of relatively small, and generally highly illiquid, issues – an important point in any transparency discussion.” (DP 05/5, #2.20)

¹⁵ “A second characteristic of the bond market is that ...the liquidity profile of many issues changes far more dramatically over time than that of most equities. This reflects the fact that although some bonds are actively traded on a regular basis, the market overall is much more of a ‘buy and hold’ market than the equity market. While most equities experience trading spikes around financial announcements and corporate events, many... also see material levels of daily trading on an ongoing basis. By contrast, many bonds trade very actively during the first few days after issue but then trade very little over the rest of their lives.” (DP 05/5, #2.21).

Because of the very large number of bonds outstanding and the infrequent interest in trading the vast majority of bonds¹⁶, dealers do not continuously quote 2-way prices for bonds other than the most liquid ones. When they do quote, they may quote indicative or 1-way prices on their proprietary trading systems or on multi-dealer e-trading platforms in which they participate. They will quote a bid price to buy those bonds at the request of a client, but are unlikely to quote an offer price unless they hold the security in portfolio, since it may be difficult and costly to cover a “short”, depending on the characteristics (in particular the liquidity) of the bonds in question. Occasionally, dealers will quote 2-way executable prices, but generally not for large trades. However, even when a firm does not publicly quote 2-way prices, it will respond to a client request to quote a price at which it is willing to buy or sell bonds including up to very large sizes. The spread between the bid and offer will reflect the dealer’s view as to the risk in reversing the position taken on from the client including the cost of capital it needs to commit to make its balance sheet available to carry the position, as well as other benefits it provides to investors, including research, providing market intelligence and help with portfolio valuations.

As in equity market block trades, large sized bond trades can be at a significant discount/premium to the prices displayed for more “normal” sized trades for that issue.

5 *Bond markets are mostly principal markets*¹⁷

Dealers sell securities from, and buy securities into, their trading portfolios. Many such dealers provide liquidity to their clients by buying bonds from them even though they do not have and may not find an ultimate buyer to which to on-sell the bonds. Most of their trades are therefore done on an at-risk basis; i.e. they do not have both a buy and sell order at the time they enter into a transaction.

This is the model around which most dealers in bond markets are organised. Institutional investors understand that they act for their own account and not as an agent for them. They further understand that dealing on own account is a different concept from that of order routing for the purposes of order handling and execution.

This reflects the fact that *secondary markets in debt securities generally do not involve orders*. Institutional customers rarely place orders. They ask for the price quotes of several dealers and then may decide to transact at the best price. Where trades are for a large size, the investor may wish to transact with a single dealer at a price which may be poorer than that offered by other dealers for smaller sizes. Trading immediacy for a poorer price is often accepted by an investor because the

¹⁶ “Not only are average trade sizes larger than equities but trading frequency is significantly lower. Even the most heavily traded issues in the gilt market seldom trade more than 200 times a day – compared with at least ten times that figure for the most liquid equities. Similarly, the ICMA data show that, on a representative day in June this year, only about six non-government bonds (from a total of over 5,000 that traded that day) experienced 200 or more trades... This reflects the different investor profile in the bond markets compared with the equity market, with fewer active investors overall and a far higher proportion of institutional investors.” (DP 05/5, # 2.25)

¹⁷ “The predominant form of trading in UK bond markets is based around the bond dealer.... Open order-book trading, as used in equity markets, has yet to establish a place in the UK bond markets. ” (FSA DP 05/5, # 2.26)

alternative would be for the market to move away from him as the first dealer tried to unwind his trade while the investor was attempting to complete the rest of his transaction.

As a result, in bond markets price is not always the most important factor. And for some bonds, the most important factor is whether it is possible to deal in the bond at all. In the corporate bond market, “certainty of execution and settlement” is often more important than price.

Whichever the scenario, when a client requests a price from a dealer, there is an expression of interest, but no offer to buy. The dealer must receive further instruction from the client to trade at the proposed price (often the dealer will go back to the client with a price and be told that the trade was “done away” with a competitor). The client has the discretion to execute or not throughout this process. In most cases he does not entrust the dealer with an order to handle his request as agent.

Some dealers very occasionally act as brokers in the bond markets. This is particularly true where the firm has a fiduciary relationship with the investor and cannot act as principal. To execute an order to buy/sell a bond on a client’s behalf, a broker has to find a counterparty prepared to execute the trade. If several dealers are prepared to quote a price for the bond the broker will solicit prices from those with whom he has a business relationship. Alternatively he might employ a specialist broker (“brokers’ broker”) who may be able to poll a larger number of dealers but who, like the dealer, will of course charge for the service. It is right that a best execution obligation should apply to the broker. However, since - unlike equities - bonds are often sold and bought not on the basis of a specific issue or issuer, but on the basis of the generic bond terms (such as tenor, yield to maturity, credit rating and callability), servicing the client’s needs to buy/sell will involve ascertaining a market for bonds having those specified characteristics, rather than ascertaining a market for a specific bond.

A similarly rare situation may occur for a large block trade where the firm acts as riskless principal, ie it does not wish to assume the risk of the position and instead may “work the order” by seeking customer interest in purchasing the bond. In these circumstances, it is also right and accepted that a best execution obligation applies to the firm.

Finally, there may be situations where a firm is acting as dealer but also providing advice or owing similar duties to customers (For example, where firms provide advice on bond investments to clients on which those clients rely, or where retail and professional investors have sought retail client protections in this regard). Here again, it is right that there is an obligation to obtain best execution when executing an order against the firm’s own account.

6 Bond markets have developed price discovery mechanisms adapted to the diversity of bond instruments

Bond pricing can be simple or complex, depending upon the type of bond, its maturity, yield, credit rating and liquidity. At its simplest, for a bond of impeccable credit quality, it should be worth the discounted cash flow of its future principal and interest payments. However, a variety of macroeconomic factors can even affect the

prices of bonds of impeccable credit quality, including (i) current debt market yields, (ii) the current outlook for growth and inflation, (iii) potential changes in monetary policy, (iv) benchmark yield curves (for bonds priced as a spread to a benchmark curve), (v) prevailing rates in the OTC interest rate swap markets, the exchange-traded interest rate futures market and the repo market, and (vi) credit default swap curves. Different views on these economic factors may affect the decision of an institutional investor as to the current market value of a security.

Lower rated bonds, and even some on-the-run corporate and government bonds, are also subject to an “illiquidity premium” that compensates a potential holder for the perceived illiquidity of the issue, i.e. the fact that it may take more time and effort to find a buyer than for on-the-run issues.

Growth in the credit derivatives market has had an important impact on the price formation process for the cash market in bonds. It has significantly improved the ability of market participants to price – and therefore manage – credit risk.

7 E-trading platforms growth has brought efficiencies to trading in bond markets but has not altered any of the above market structure fundamentals

Since the mid-90s, a number of e-trading platforms have been developed by market participants to improve the efficient trading of bonds¹⁸. There are several different types of trading platforms and trading methodologies available on such platforms¹⁹. Fundamentally, the various trading structures and mechanisms available mirror the existing bond market structure and are designed to facilitate existing trading relationships between bond market participants.

The extent to which trading in different fixed income asset classes occurs on e-trading platforms rather than over the telephone depends on the degree to which the securities in the asset class are commoditised, the size of the trade, the rating of the security, its liquidity as well as overall market conditions (eg volatility). Hence more platforms trade government bonds, money market instruments and investment grade corporate bonds, where volatility is lower and liquidity higher, than trade high yield, ABS and emerging markets securities, where volatility is higher and liquidity lower²⁰.

Because bond trading involves search for price and negotiation rather than firm orders, investors’ preferred method of trading, and therefore the method mostly made available by dealer-to-customer platforms, is the Request For Quotes model.

Important points which may not always be obvious regarding e-trading:

- ✍ Investor participants on multi-dealer B2C platforms have more trading information than dealers. Whilst most institutional users have access to

¹⁸ “The trend towards more automated, multilateral trading facilities has been driven by market pressures to reduce transaction costs – which it appears to achieve.” (DP 05/5, # 2.35)

¹⁹ For further details, see TBMA 2005 Report *e-Commerce in the Fixed-income Markets*

²⁰ We estimate that approximately 45% of traded volumes in EU Government bonds, 20% in high grade corporate bonds and less than 5% in High Yield and ABS are conducted electronically.

several dealer prices via multi-dealer B2C platforms, the dealers that are put in competition on RFQ systems do not see each other's quotes.

- ✍ Multi-dealer B2C platforms provide tighter bid-offer spreads and larger sizes to investors than are available between dealers in the B2B space²¹. This is because of a cardinal rule in dealer markets: dealers provide liquidity to their customers, not to their competitors. The same observations can be made in respect of voice trading.
- ✍ The same quoting considerations as those set-out in section 4 above apply to quotes provided via e-trading systems. Therefore most price information available from B2C platforms is not firm until subject to a request for quote.
- ✍ Trading platforms do not create liquidity. With the exception of very few inter-dealer platforms that ask participants to provide continuous quoting obligations irrespective of investor interest, it is the dealers who voluntarily provide liquidity as per client demand. Trading platforms merely (though importantly) help facilitate this process.

8 *Secondary bond markets are overwhelmingly institutional*

In the EU, institutional investors are estimated to account for 95% of the primary bond market and probably more in secondary market volume terms²².

It is apparent from the above description of bond markets that for most bonds there is no readily available price on which to base a robust benchmark for best execution purposes.

OTC DERIVATIVES MARKETS FUNDAMENTALS

With an OTC derivative, no instrument exists unless and until a pair of counterparties contract some form of risk transfer between them. As such, the terms of any OTC derivative are freely negotiable. In keeping with this, the instrument is not transferable.

In other words, there is no provision for a continuous "secondary" market, as there can be for certain securities. In this (limited) sense, the functioning of the "market" in OTC derivatives is akin to that for insurance, where risk is transferred contractually. These transfers do, of course, have effect over significant terms (commonly for five years, and frequently for ten years or more).

²¹ See slides and explanatory comments appended to this Annex B. They compare and contrast the prices and liquidity available for the same security (10 year German Bund) at the same time on a B2C and on a B2B platform.

²² "It is estimated that just 1% of UK households are direct holders of UK government securities (gilts), and even fewer directly hold corporate bonds. This compares with an estimated 20-30% of households that own shares....UK indirect retail participation in the bond markets has been growing...However, the fact that retail investors have a relatively large proportion of their savings in bonds does not necessarily mean that they are also active or significant users of the secondary markets." (DP 05/5, # 2.13 & 2.14)

The role of OTC derivatives is to shift risk between parties in a pure form, separately from any financial instruments, which may bundle together more than one form of risk. For instance, an investment in corporate bonds can entail credit risk and interest rate risk. Each of these risks can be isolated and transferred separately using OTC derivatives.

This risk-isolating characteristic of OTC derivatives means that their applicability is universal: any party that faces financial risk will potentially have some use for derivatives.

In practice, the earliest use of OTC derivatives was in relation to corporate treasury operations (by non-financial entities) and this application has been an important constant to this day. The primary mission of such entities is typically *not* to run financial risk; they can therefore benefit from shifting such risk to others, while focusing on their core “business” risk.²³

In order to be able to shift risk, such entities must find a party willing to bear it. Financial-services firms are prepared to do so, in expectation of being able to manage the resultant risk exposures. In other words, in common with other OTC markets, a crucial role is played by the financial-services firm acting as principal. (Consistent with this, inter-dealer brokers provide value in this market by seeking out such capacity on an anonymous basis.)

Entities that do take on risk in this way may then hedge it in the wholesale markets (using other OTC derivatives, listed derivatives or positions in securities and other financial instruments). But they will not necessarily do so position by position. They are more likely to manage each category of risk – whether interest rate, credit or other – as an overall “book”.

Because OTC derivatives are powerful tools, their appeal has proved as popular as theory would suggest. In turn, as more financial-services firms have seen a business opportunity in offering risk-transfer services in the form of OTC derivatives, and more capital is dedicated to this activity, such services have become more accessible to a wider range of parties, including smaller corporate entities. Applications that make certain forms of derivative accessible to a wide range of investors (including retail investors) have also been developed, for instance structured notes and deposits. Each of these economically significant developments, however, ultimately depends on the entities who are prepared to commit risk capital to acting as principal.

In line with the development pattern outlined above, there has been a certain amount of standardization of the risks transferred by means of OTC derivatives. Thus, one may readily be quoted a rate for, say, a five-year fixed-floating interest rate swap in a major currency, to begin today. And one may also find a quote for a five-year swap tomorrow; and the day after that; and this time next week. But tomorrow’s contract is a new five-year contract, as are each of the subsequent contracts. It is emphatically

²³ Strictly, OTC derivatives allow any entity to target the level of risk that they are willing to assume. For example credit derivatives can be used by a banking entity to take *on* credit risk on a given reference entity, where it believes that the contract will adequately reward it to do so.

not the same instrument as today's, even though a similar amount of risk is being traded.

It is, of course, possible in some cases to reverse a position taken on through derivatives. However, this requires one of three actions, each of which will themselves entail some further measure of negotiation.

✍ *Offsetting transaction.* This is the most commonly used method of reversing a position. One of the parties engages in a separate, equal but opposite contract (often with a third party rather than with the original counterparty), and thereby neutralises the (market-risk) effect of the first contract.

✍ *Novation.* With the consent of the original counterparty to the transaction, a party engages a third party to step into the trade in its place.

✍ *Termination.* The two parties can agree to terminate the transaction.

In all three cases, the relevant parties will take into account the current value of the contract and this will reflect what one might term “neutral factors” (such as the market price of the underlying asset). For all that, though, the market remains bilateral and trading takes place by appointment. This is true, whether the products are referred to as “plain vanilla” or “exotic”, since these terms are merely relative.²⁴

In all this, any notion of an order, a central venue or a best price is false. The best price for a unique, bilateral contract is by definition the price at which the parties agree to transact, since no other parties can be used as substitutes for that transaction.

As discussed in more detail in the following section of this Annex, where structured products entail a combination of derivatives and bonds, exactly the same considerations apply.

Such e-trading platforms as exist in the OTC derivatives market do not fundamentally alter any of the above. Similarly to other OTC markets, they provide a means of communication between potential counterparties, but do not in any way change a bilateral contract into a standardised, freely transferable instrument. Specifically and categorically, these platforms are not exchanges.

Because of the bespoke nature and complexity of OTC derivatives, it is not easy for investment firms to obtain independent prices from other sources to establish a price (as would be the case for an off-exchange transaction in equities). Information from published price sources may be of limited direct relevance even where it is available, since transaction terms are individually negotiated and the terms on which a party is willing to enter into trades may also depend on, for example, the creditworthiness of the parties and the collateralisation, netting or other credit risk mitigation techniques that are in place between them (unlike a cash market transaction in equities, where

²⁴ These arrangements for OTC derivatives are different from the somewhat specialised case of exchange-traded derivatives, where the terms of trading are standardised, with the specific intention that the contracts be transferable (notably, by novation to a central counterparty) and where it is expressly envisaged that there should be a continuous ‘secondary’ market. This note does not deal with the case of such ‘listed’ derivatives.

these factors will normally not be relevant). As with any principal market, the pricing of an OTC derivatives contract may also depend on the risk-profile of the financial-services firm at the point of negotiating the contract.

It is also often not easy for a firm to obtain a comparable price or valuation from another investment firm. Many OTC derivatives are by definition customised specifically for an individual client and consequently often confidential to that client; it may be difficult to maintain client confidentiality if the price of the product had to be independently verified through another investment firm to prove best execution. Also, a firm may not wish, for competitive reasons, to give another investment firm all of the components to the transaction if it is proprietary in nature, which may make it difficult to establish a comparable price. In addition, some of the parameters required to value complex products may require a judgment to be made, and the models used to calculate the price or valuation may vary between firms causing pricing anomalies, which means that prices may not be directly comparable. In any event, other firms may be reluctant to provide valuations for transactions which they will not execute.

STRUCTURED PRODUCT MARKETS FUNDAMENTALS

There are a wide variety of structured products of three main types

(i) First, *securitisation transactions* typically involve the sale of assets by an issuer to a Special Purpose Vehicle (SPV) which then issues tranching notes solely backed by those assets (or sometimes in combination with derivatives used as asset hedges). Even amongst the largest tranches of the most well-known frequent residential mortgage-backed securities (RMBS) issuers, there is a lack of comparability between tranches of transactions because the assets and the structures are different. This means that they will, in many cases, particularly for the unrated and lower-rated mezzanine tranches, fall into the illiquid end of the spectrum of fixed income products.

(ii) Secondly, there are transactions that involve the issue of a bond or other security with an 'embedded' OTC derivative – either as a *primary “structured note” new issue offering through a debt or medium term note programme*, or alternatively created by *the repackaging desk of an arranging bank or trading desk*. By virtue of the inclusion of an OTC derivative, these structured notes raise the same issues as described above with regards to such derivatives. These products are normally tailored to meet specific client objectives, which makes all the considerations associated with OTC derivatives relevant.

(iii) Thirdly, if created by trading desks, these “*structured credit*” transactions can either be in all cash, all derivative or a combination.

Even where there is a bond or other security which is to be listed on exchange, the initial transaction will normally be made with the client to purchase the security on its creation and, given the proprietary nature of the structures, it will normally be difficult to obtain information on comparable prices or valuations. There will also normally be very little after-market trading in the security and, to the extent that the

firm does trade the security, it may be difficult to obtain comparable prices or valuations for similar reasons to those described above.

In these markets, it will therefore be difficult to distinguish anything which is comparable to a conventional “order” to which best execution duties would apply. The client may request a quote for or seek to negotiate a particular transaction with the firm as a principal but the firm should not be regarded as having the same duties to the client as it would where it accepts an order for execution and has discretion as to the manner of its execution.

In summary, imposing a wide variety of multiple benchmarks (to reflect the various components, such as asset classes and tranches or embedded derivatives) would simply create more of a fiction (and more of a burden), given that it ignores any interaction between those components, as well as the uniqueness of the package.

Pricing structured products

In all types of structured product, the pricing and terms of different transactions are not comparable. The underlying assets in the categories (i) and (iii) above are typically corporate bonds, corporate credit default swaps, asset backed securities (ABS), derivatives on asset-backed securities, or a combination.

The pricing of securitisations, structured notes and structured credit transactions ranges from somewhat complex to very complex, depending on the transaction. For instance, in each securitisation or structured credit transaction, two fundamental aspects need to be evaluated on a transaction by transaction basis a) asset characteristics, and b) structure characteristics, including the use of derivatives as hedges. Each broad category involves a multi-step evaluation process. We provide below an example of this pricing process on the most simple and well-recognised of asset classes – a UK residential mortgage securitisation transaction.

Regarding *asset* analysis, prior to pricing a transaction or development of a potential benchmark, a trader would need to evaluate the following aspects:

- 1) Geographic and borrower concentration: how granular is the pool in terms of number of borrowers, and what is the risk of a particular geographic area suffering an economic downturn, as well as correlation to the credit risk of assets from different geographic areas within that pool.
- 2) Perceived quality of the asset servicer: investors will generally require a wider spread for pools serviced by less-well known or smaller servicers, and less of a concession or no concession for large well known servicers.
- 3) Credit default probability: what is the historical arrears rate, historical default rate, variability of those rates, and prospects for recovery if defaults occur. This requires an analysis of the underwriting characteristics of the underlying mortgages (loan to value ratios, debt to income multiples, debt history etc., as well as analysis of the timing of arrears, defaults and recoveries, including lags and foreclosure costs). The trader will also need to make a pricing adjustment depending on whether the pool is backed by prime or rather non-

conforming assets, as well as an evaluation of any buy-to-let assets included in the pool. Pricing will also be affected by the type of mortgage itself (ie whether it is for a property purchase or a remortgaging/refinancing). Lastly, the trader will need to evaluate mortgage payment types, including fully amortising, interest-only, or reverse mortgages.

- 4) Eligibility criteria for asset substitution (for transaction with revolving features or substitution rights): if the quality of substituted assets could be worse than the initial pool, the trader will need not only to constantly obtain current pool information, but also evaluate the potential performance of those substituted assets.
- 5) Historical and projected principal repayment and prepayment rates: this will have a material impact on the weighted average life of a security. In the UK, for example, prepayment rates on prime RMBS have ranged from approximately 20 to 40% per year, and for non-conforming product, the rates typically range from 20-60% per year due to borrower's incentives to refinance at lower borrowing costs as their financial situation improves. It is unlikely that these prepayments will be constant for the life of the pool, so traders must continuously evaluate the timing of prepayments as well. Seasonality adjustments will also need to be made, since not only do prepayment rates vary depending on the time of year (they are typically higher in the summer), but also the impact of seasonality on default rates (which are typically higher after Christmas). This also includes an assessment of pool seasoning – even if asset pools have similar projected remaining weighted average lives, they could have very different payment characteristics depending on the coupons/rates that borrowers are paying and on changes in the macroeconomic environment since the assets were originated. Higher coupon mortgages are likely to prepay faster than current-coupon mortgages, even though the projected weighted average life for two pools may be similar.

Regarding *structure* analysis, prior to pricing a transaction or development of a potential benchmark, a trader would need to evaluate the following aspects:

- 1) Cash flow allocation sequence: each transaction will have a very specific cash flow allocation/waterfall sequence for both interest and principal that complicates pricing comparisons between various transactions. In some transactions, all principal is allocated sequentially, and in other transactions on a pro-rata basis amongst tranches, and in some it may switch between the two depending on certain asset criteria.
- 2) Credit enhancement structure and usage: each transaction will require an analysis of whether reserve funds are sized appropriately given the credit characteristics, and also whether they are fully funded or short of targeted levels. This will include checking whether any drawings have been made on liquidity facilities, since investors are likely to demand a wider spread if liquidity facilities have been tapped to cover temporary shortfalls.

- 3) Credit enhancement trigger analysis: each transaction will likely have a “trigger” mechanism whereby if certain credit related performance is breached, then cash flows are allocated in a different sequence, which will affect the timing of principal payments.
- 4) Derivatives: some transactions include interest rate swaps, caps, floors and options in order to reduce potential asset/liability mismatches within the structure. The trader must evaluate the quality of the counterparties and potential mismatches, particularly given actual pool performance.
- 5) Ratings and pool performance reports: the trader must identify which rating agencies have rated which tranches of a transaction and verify whether original ratings have changed or are under review, since a rating change in one tranche may affect the pricing of the other tranches. In addition, the trader will need to check current pool performance information to see how the pool may have changed subsequent to the offering circular being initially distributed.
- 6) Size of tranches: due to the cash flow sequencing process, most subordinated tranches will be relatively small. Since the subordinated tranches will be the most credit intensive, this small size and credit intensity will generally result in relatively wide bid/offer spreads. As a rule of thumb, the smaller the size, the less liquid the tranche.
- 7) Securities price: the spread at which an RMBS trades will depend on how far away from par the current price is, since prepayment rates will materially affect spreads. For example, a bond with an above-market coupon will probably trade at a higher yield as compared to a current or below-market coupon, since investors could actually lose money by buying a security above par and if rapid repayments occurred, then they would only receive par back.
- 8) Basel I and Basel II risk weightings: for bank investors, investor appetite, and therefore yield, will be affected by the credit risk weightings. For example, under Basel II, standardised-approach banks will have a 20% of 8% risk weighting for an AAA RMBS, while an investor bank using an advanced internal ratings-based approach could have a risk weight of 7% of 8%.

The above example illustrates the complexity of developing benchmarks for the most straight-forward asset class in Europe. For other transactions, such as structured notes, structured credit transactions and CDOs, the pricing considerations are typically even more complex than illustrated above, unless the transaction is a traded index such as CDX. Only for pools with exactly the same asset and structure composition as this index will benchmarking be theoretically feasible.