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CONSULTATION PAPER

**CESR's technical advice at level
2 on Risk Measurement for the
purposes of the calculation of
UCITS' global exposure**

Deadline for contributions: CESR invites responses to this consultation paper by **15 July 2009**. All contributions should be submitted online via CESR's website under the heading 'Consultations' at www.cesr.eu. All contributions received will be published following the close of the consultation, unless the respondent requests their submission to be confidential.



Introduction

1. On 13 January 2009 the European Parliament adopted in plenary session a proposal for a Directive containing amendments to the UCITS Directive 85/611/EEC. This followed approval by the Council of an identical compromise text at a COREPER meeting of 17 December 2008. The final approval of the new UCITS Directive by the Council is expected in June 2009.
2. On 13 February 2009 the European Commission submitted a provisional request to CESR for technical advice on the content of the implementing measures concerning the future UCITS recast Directive. The provisional mandate might have to be completed or supplemented following the adoption of the new Directive or where it would be useful to reflect new developments in areas covered by the mandate.
3. The provisional mandate is split into three parts:
 - I. Request for technical advice on the level 2 measures related to the management company passport;
 - II. Request for technical advice on the level 2 measures related to key investor information;
 - III. Request for technical advice on the level 2 measures related to fund mergers, master-feeder structures and the notification procedure.
4. The present consultation paper focuses on the advice to be rendered on the issue of **risk measurement** under the first part of the provisional mandate (Article 51(4) of the new UCITS Directive). It should be noted therefore that this paper is limited to the use of risk models such as VaR in the context of the **calculation of global exposure**. UCITS may use this or other models in its overall risk management process which is dealt with in CESR's Risk Management Principles for UCITS.
5. The outcome of this work will be divided between level 2 and level 3 measures. It is proposed that the principles surrounding risk measurement techniques will form part of the level 2 implementing measures and the detailed technical issues will be included in level 3 CESR guidelines.
6. CESR has been asked to deliver its advice on this part of the provisional mandate by **30 October 2009**.
7. This consultation paper should be seen as an interim step aimed at providing stakeholders with an early opportunity to give feedback on CESR's approach. CESR plans to publish a consultation paper in July setting out its proposed advice in all the areas covered under Parts I and II of the provisional mandate, including risk management. That paper will also cover issues related to impact assessment of the proposals on risk measurement. An open hearing will be held at CESR's premises towards the end of the consultation period; that hearing will include discussion of the issues set out in this paper.

Background

8. The amended Council Directive 85/611/EEC of 20 December 1985 on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities (UCITS), widened the scope of financial instruments in which UCITS can invest, to include financial derivative instruments. UCITS are permitted to use financial derivative instruments as part of their general investment policies as well as for hedging.
9. Directive 85/611/EEC imposes a range of risk limitation measures in relation to the use of financial derivative instruments including counterparty and global exposure limits. UCITS must establish an extensive system of risk limitation in order to ensure that the risks involved in using financial derivative instruments are properly identified, measured, managed and



monitored on an ongoing basis. This involves designing, implementing and documenting a comprehensive risk management process in order to meet the key requirement of investor protection.

10. The Commission Recommendation 2004/383/EC of 27 April 2004 (“the Commission Recommendation”) on the use of financial derivative instruments introduced basic principles for risk measurement to ensure equivalent and effective investor protection across all Member States. This recommended possible approaches to the assessment and measurement of market risk, leverage, global exposure and counterparty risk. It provided for the use of the commitment approach and VaR methodologies as market risk measurement techniques.
11. In February 2009 CESR published guidelines for UCITS in the field of risk management principles. The main aim of these principles is to ensure that all risks material to the UCITS are adequately managed and that the risk management process is appropriate and proportionate to the nature, scale and complexity of the UCITS under management
12. CESR also recommended that work be carried out on specific technical and quantitative issues regarding the measurement of global exposure, leverage and counterparty risk associated with the use of financial derivative instruments. In order to develop recommendations to the Investment Management Expert Group, a working group was established within the Operational Task Force comprised of representatives from Germany, the UK, Italy, Belgium, France, Ireland, Luxembourg and Spain. The following four areas of work were identified:
 - Commitment approach
 - VaR approach
 - Counterparty risk
 - Sophisticated/Non-sophisticated UCITS

Content of the technical advice in the area of risk measurement

13. Article 51(1) of the new UCITS Directive reproduces without changes the existing Article 21(1) of the UCITS Directive. It states that: *“The management or investment company shall employ a risk-management process which enables it to monitor and measure at any time the risk of the positions and their contribution to the overall risk profile of the portfolio. It shall employ a process for accurate and independent assessment of the value of OTC derivatives. It shall communicate to the competent authorities of its home Member State regularly the types of derivative instruments, the underlying risks, the quantitative limits and the methods which are chosen in order to estimate the risks associated with transactions in derivative instruments regarding each managed UCITS”.*
14. According to Article 51(4) of the new UCITS Directive the Commission must adopt, by 1 July 2010, level 2 implementing measures specifying the following:
 - a) criteria for assessing the adequacy of risk management process employed by the management company;
 - b) detailed rules regarding the accurate and independent assessment of the value of the OTC derivatives;
 - c) detailed rules regarding the content and the procedure to be followed for communicating the information referred to in Article 51(1) to the competent authorities of the management company's home Member State.
15. The Commission asked CESR to provide advice on each of the above-mentioned areas
16. CESR is invited to advise the Commission, to the extent possible, on requirements concerning **risk measurement** methods, such as the conditions for the use of different methodologies in relation to the identified types of risk and the specific criteria under which these methodologies



might be used. In relation to derivative instruments, CESR is in particular requested to recommend principles for calculating the global exposure related to derivative instruments, and measures that UCITS must undertake to ensure that global exposure relating to derivative instruments does not exceed the total value of its portfolio

17. When preparing its technical advice, CESR is encouraged to take into account:
 - a) CESR's **Risk Management Principles** for UCITS published on 27 February 2009 (Ref. CESR/09-178) and results of ongoing discussion on specific technical and quantitative issues regarding UCITS portfolio parameters for measuring global exposure, leverage and counterparty risk, to the extent that they are compatible with the provisions of the new Directive and as far as they fall within powers delegated in Article 51(4) of the new Directive;
 - b) the extensive work CESR has already been carrying out on similar MiFID implementing rules, with a view to increasing consistency between systems put in place by both directives;
 - c) any relevant provisions of European Community law as well as similar work carried out in the field of financial services in other European and international fora with regard to the definition of the various risks, their appropriate categorisation, and the means for their assessment; and
 - d) the principle of proportionality and the need to ensure a high level of investor protection and supervision.
18. CESR is also requested to consider to what extent the Commission Recommendation 2004/383/EC should be taken into account in the content of level 2 implementing measures.
19. While these level 2 measures form part of the arrangements to support the management company passport, the scope of any implementing measures will apply to all UCITS and not just where the UCITS and management company are located in different Member States.



Calculation of Global Exposure using the Commitment Approach

1.1 Context

Article 51(3) of the new UCITS Directive provides that:

“A UCITS shall ensure that its global exposure relating to derivative instruments does not exceed the total net value of its portfolio.

The exposure is calculated taking into account the current value of the underlying assets, the counterparty risk, future market movements and the time available to liquidate the positions. This shall also apply to the third and fourth subparagraphs.”

Global Exposure is understood to be a measure of the incremental exposure and leverage generated by a UCITS through the use of financial derivative instruments. A UCITS cannot have global exposure greater than its NAV. A UCITS total risk exposure may not exceed 200% of its NAV on a permanent basis (excluding potential increase of overall risk exposure by means of temporary borrowing of up to 10% of UCITS' NAV), which means that the global exposure of a UCITS may at most be doubled through the use of financial derivative instruments.

Given that the counterparty risk associated with over-the-counter (OTC) financial derivative instruments is specifically limited for a given entity through the provisions of article 52(1) and given that the global exposure relating to financial derivative instruments is, anyway, limited to 100% of the UCITS' NAV through the provisions of Article 51(3), the global exposure concept can be reduced to its market risk dimension.

Questions

- 1. Do you agree with the proposed approach in relation to the calculation of global exposure?**
- 2. Should the counterparty risk involved in an OTC derivative be considered in the calculation of global exposure**

1.2 Scope of the Commitment Approach

The Commitment Approach, in compliance with the rules hereafter, is appropriate for measuring the global exposure laid down by Article 51(3) of the new UCITS Directive. The calculation process has to be applied to all the positions in financial derivative instruments, whether used as part of the UCITS' general investment policy or as part of techniques and instruments (efficient portfolio management). Only those positions on financial derivative instruments that, at the level of the UCITS, generate incremental exposure are included in the calculation.

If transferable securities or money market instruments embed financial derivative instruments that qualify as embedded derivatives according to the provisions of Article 51(3) of the new UCITS Directive, Article 10 of Directive 2007/16/EC and point 23 of CESR's guidelines concerning eligible assets for investment by UCITS, then the global exposure, issuer concentration and leverage calculation rules apply to the embedded FDI element. A UCITS therefore needs to be able to separate embedded FDI from the host instrument in order to meet regulatory requirements.

If UCITS are authorised to avail themselves of repurchase transactions or securities lending transactions in order to generate additional leverage through the reinvestment of collateral, these transactions must be taken into consideration for the determination of the global exposure. The calculation process has to include any reinvestment of collateral in financial assets that yield a return greater than the risk-free rate.

Questions

- 3. Do you agree with the proposed approach or can you suggest an alternative approach?**



- 4. Do you agree that the incremental exposure/leverage generated through techniques such as repurchase and securities lending transactions should be included in the calculation of global exposure?**

1.3 Commitment Approach Calculation: General Principles

For a given position in a financial derivative instrument, the Commitment Approach calculation converts the position into the equivalent position in the underlying asset of that derivative. The above mentioned conversion process is to be implemented for all financial derivative instruments with the exception of those positions specifically mentioned below.

The total commitment arising from the use of financial derivative instruments equals the sum, in absolute terms, of the individual commitments corresponding to the individual positions in financial derivative instruments, after taking due consideration of any netting and hedging effects according to the rules laid down hereafter. Financial derivative instruments that comply with the netting and hedging criteria may be disregarded from the total commitment calculation.

For positions on financial derivative instruments having a limited loss payoff function, like long positions on plain vanilla options or protection buyer CDS positions, two calculation methods were discussed within the Technical Working Group on risk measurement:

- Option 1: UCITS may refer to a risk-based approach and the maximum theoretical loss may be used as reference amount for the commitment calculation. This would mean that for a long position on an equity call, the exposure amount would come down to the market value of the option contract (for example, a UCITS is long 1 call contract on share xyz with the current MV of the option at €4, then the exposure would equal €4, and if the MV tomorrow was €5, the exposure would be €5 etc.) or for a protection buyer CDS contract the sum of the premiums to be paid during the lifetime of the contract.
- Option 2: UCITS convert the position into the equivalent position adjusted by the delta (which takes into account the likelihood of settlement) in the underlying asset.

CESR wishes participants in the consultation process to assess the relevance of the proposed options.

Questions

- 5. Does option 1 correctly assess the market risk linked to investment in the corresponding instruments, and if so please explain?**
- 6. Does option 2 correctly assess the market risk linked to investment in the corresponding instruments, and if so please explain?**
- 7. Do you have any comments or other suggestions regarding other possible measurement approaches?**

1.4 Commitment Approach Calculation – Conversion Method

UCITS shall convert the positions in financial derivative instruments into the equivalent positions in the underlying asset by taking the market value of the underlying asset or, if appropriate and conservative, the notional of the financial derivative contract.

This conversion method shall be applied to all the financial derivative instruments (with the exception of those specifically mentioned below) for which the use of the market value of the underlying asset leads to an adequate and accurate exposure amount with regard to the specific risks relating to that product.

In illustrating the Commitment Approach calculation, CESR considers it appropriate to provide an illustrative and non-exhaustive list of financial derivative instruments with the corresponding conversion method. For these products, CESR considers that the use of the market value of the underlying asset leads to an adequate and accurate exposure amount with regard to the specific risks



relating to these products:

Plain Vanilla Equity option:	market value of the underlying asset adjusted by the option's delta, i.e., number of contracts x number of shares x underlying price x delta
Plain Vanilla Bond option	market value of the underlying asset adjusted by the option's delta, i.e., principal x underlying price x delta
Plain Vanilla Warrant	market value of the underlying asset adjusted by the warrant's delta, i.e., number of contracts x number of shares x underlying price x delta
Index future	market value of the underlying asset, i.e., number of contracts x value of 1 point x index level
Bond future	market value of the underlying asset, i.e., number of contracts x notional x market price of cheapest-to-deliver adjusted by conversion factor ¹
Forward FX	principal (i.e. market value of underlying asset) of the forward contract – normally viewed as the market value of the currency leg of the FX contract
Interest rate swap	notional of the swap contract (fixed leg)
Credit default swap	protection seller: market value of the underlying asset protection buyer: option 1: sum of premiums to be paid during lifetime of contract / option 2: market value of the underlying asset (see discussion re this measurement technique in paragraph 1.3)
Total Rate of Return Swap²	1) for the basic TRORS contract market value of the underlying asset (respectively notional) 2) for non-basic TRORS contract: sum (in absolute terms) of the market value of the underlying asset of both legs (respectively the notional for both legs)

A UCITS is not permitted to use the calculation method set out above in the case of financial derivative instruments for which the conversion of the position in the financial derivative instrument into the equivalent position in the underlying asset by taking the market value of the underlying asset (or, if appropriate and sufficiently conservative, the notional) does not provide for an adequate and accurate assessment of the risks relating to that product. Financial derivative instruments that do not qualify for the standard conversion method are, for instance, digital options (or binary options), barrier options, variance swaps or more complex options with a highly volatile delta.

In this case, if a conservative estimate of the commitment amount can be applied, the UCITS may do so. With regard to these products the commitment amount could, for instance and if possible, equal the maximum potential loss that could arise from the position. For binary options that would mean that, instead of the delta weighted market value of the underlying asset, the maximum potential loss should

¹ The conversion factor is the factor used to "equalise" for the difference in issue terms between the notional bond underlying a bond futures contract and the real bonds eligible for delivery. When multiplied by a bond futures price, the conversion factor translates the futures price to an actual delivery price for a given deliverable bond, as set at the delivery date of the corresponding contract (ref www.eurexchange.com).

² The determination of the commitment for a protection buying position through a TRORS on the basis of a contract's notional value only applies in those cases where the buyer does not hold the underlying asset in the portfolio.



determine the commitment amount. (Please note that for some financial derivative instruments, such as binary “asset or nothing” options, it may be impossible to compute a maximum potential loss and an alternative conservative approach must be adopted.)

However, as this approach does not take into account the sensitivity to market movements, it should be used only if these investments represent an ancillary part of the UCITS investments, and do not impact significantly the level of risk of the UCITS.

Questions

8. **Do you agree with the proposed approach, in particular the inclusion of a non-exhaustive list of financial derivatives?**
9. **Do you have any alternative suggestions for the conversion method?**
10. **Are there other types of financial derivative instruments which should be included in the paper?**
11. **Are you aware of any type of financial derivative instrument where global exposure cannot be calculated using the commitment approach?**

1.5 Types of financial derivative instrument which are not included in the global exposure calculation

Where the use of a derivative does not result in any incremental exposure for the UCITS the underlying exposure is not included in the commitment calculation. For example, a TRORS, the purpose of which is to swap the total return of a financial asset held in the UCITS portfolio for the total return of another financial asset, need not be taken into consideration for the purpose of the calculation of the total commitment when the swap in question does not subject the UCITS to the market risk of the asset held and when it does not include either leverage clauses or other additional risks as compared to a pure and simple holding of the reference financial asset. This reasoning can be extended to cases in which the performance swap involves several assets or even the entire portfolio. CESR considers that there is no incremental exposure arising from such a use of the TRORS as there is simply a substitution of the exposure of another financial asset for the exposure on a financial asset directly held in the UCITS portfolio. As a consequence, if a TRORS exchanges the exact performance of assets held by the UCITS against other assets, for the purposes of calculating the commitment of the UCITS, those assets, the performance of which is exchanged, are replaced in the portfolio by the performance of those received. For example, TRORS that do not provide incremental exposure or leverage (i.e. exposure is created on an un-leveraged basis) as calculated using the commitment approach will not have to be taken into account in the commitment approach calculation process.

Another example that could be considered is where a UCITS holds financial derivative instruments and cash, the derivative instruments concerned are not considered to generate incremental global exposure (leverage) up to the value of such cash positions. UCITS that employ cash-equivalent instruments that generate an investment return (e.g. money market instruments) must calculate their global exposure in the normal manner.

Questions

12. **Do you agree with the approach regarding TRORS and derivatives with cash or an equivalent position?**

1.6 Sensitivity approach for derivatives on interest rates in the commitment calculation

For interest rate related financial derivative instruments that only expose the UCITS to general interest rate risk, UCITS may use a sensitivity-based approach instead of the standard Commitment Approach. The aim of the sensitivity approach is to have a more risk-based approach to interest rate instruments than the standard approach proposed in paragraph 1.4. Indeed, there is a much larger



range of risk and volatility between interest rate instruments of various maturities than there is between two different equity indices: the sensitivity of a 20-year bond can indeed be 80 times bigger than the sensitivity of a three-month money-market instrument. The sensitivity approach allows UCITS to take this particular feature of interest rate instruments into account.

Under this method, the commitment related to a financial derivative instrument is calculated in a similar way to the one used in the standard method (market value of the underlying asset or notional), except that the amount is multiplied by the ratio between the sensitivity (or modified duration) of the financial instrument and the maximum sensitivity of the portfolio.

➤ The standard definition of the sensitivity (or modified duration) of a financial instrument is equal to the opposite of the derivative of the market value of that financial instrument with respect to the interest rate, divided by the value of the instrument.

➤ The maximum sensitivity for a UCITS is equal to the higher of the following two values, as specified in the full prospectus: the absolute value of the maximum sensitivity and the absolute value of the minimum sensitivity. For instance, if the sensitivity interval mentioned in the prospectus is [-2; 4], the maximum sensitivity will be 4. If it is mentioned [-3; 1], the maximum sensitivity will be 3. As some UCITS may not disclose a sensitivity range in their prospectus, a default mechanism sensitivity should be defined and used only for UCITS that do not disclose a sensitivity range. This default maximum sensitivity should be conservative (low), as a situation where a UCITS has incentives not to disclose its sensitivity range to take a higher level of risk without appropriate investor disclosure would not be acceptable.

For example, the commitment of an interest rate swap is the sum, in absolute terms, of the individual commitments of the two legs, measured by the product of the notional of the contract and the ratio between the sensitivity of the leg and the maximum sensitivity. For an interest rate option, the calculation is similar, except that it takes into account the delta of the option.

This method allows the use of a risk-weighted approach to interest rate instruments, considering their specific nature; however, it does not take into account other risks that can be contained in such instruments such as credit risk. Therefore the exposure to credit derivatives cannot be taken into account through this approach and the standard approach proposed in the commitment paper should in such a case be maintained.

The value of derivatives calculated using this sensitivity approach is added to the value of all other positions in the portfolio using the commitment approach to calculate the UCITS' overall global exposure.

Questions

13. Do you agree with the proposed use of the sensitivity approach?
14. Do you consider that this should be compulsory for these types of derivative or optional for UCITS?
15. Do you agree with the analysis of the sensitivity approach described?
16. What quantitative level would you consider appropriate for the default sensitivity?
17. Do you have any additional comments or suggestions on this approach?

1.7 Commitment Approach calculation: netting & hedging effects

When proceeding to the calculation of the Commitment Approach, UCITS may benefit from netting and hedging effects and as such the global exposure calculation may be reduced appropriately for derivative instruments that meet the criteria.

The consideration of netting and hedging effects, as further described hereafter, can only be done for equivalent amounts of commitment, which means that if pursuant to the consideration of the netting or hedging effects, there remains a residual global exposure position on financial derivative instruments (e.g. over hedging), then the UCITS must include this residual exposure when calculating the global exposure.



In all cases, the application of any netting or hedging should not result in the UCITS neglecting obvious and material risks, and so the only allowed purpose of these transactions shall be to reduce the market risk of the portfolio. Specifically, the consideration of netting and hedging effects must not ignore positions on financial derivative instruments that are aimed at implementing specific investment strategies (example: long/short strategies, straddle strategies) designed to generate additional returns to the fund that, from a risk perspective, are not neutral for the UCITS. In such situations, the netting or hedging of these instruments is forbidden.

1.7.1 Consideration of netting effects

Netting can be done between financial derivative instruments and between financial derivative instruments and security positions (for instance stocks, debt securities).

Netting between long and short positions on financial derivative instruments is possible provided that they refer to the same underlying asset, regardless of the contracts' due date (for instance long call position and short call position on same underlying asset).

Netting between financial derivative instruments and assets held directly by a UCITS is possible provided that the two positions refer to the same underlying asset (for instance long cash position on share xyz and synthetic short position on share xyz).

1.7.2 Considering of hedging effects

CESR is considering whether it is appropriate to permit UCITS to hedge positions in derivatives against related security positions. In these circumstances positions in financial derivative instruments that are solely used for the purpose of hedging partially or totally the market risk (general and specific market risk) relating to positions of the UCITS may be netted against the related security positions provided that through the use of such derivatives an undeniable and manifest risk reduction at the level of the portfolio can be observed. For illustration purposes, one could think of a UCITS concluding bond future contracts to hedge the general interest rate risk relating to its positions on debt securities.

UCITS that want to benefit from such hedging effects must be able to demonstrate that the prices of both the positions to be hedged and the financial derivative instrument always move in opposite directions and demonstrate a strong and negative correlation in all market conditions. This would prohibit, for example, hedging a long equity portfolio with a stock index if the equity basket and the index have not been adequately chosen to maximise the risk reduction deriving from the hedging, or to hedge a long equity portfolio of natural resource companies with a short investment in a commodity index.

Questions

- 18. Do you agree with the proposals regarding netting?**
- 19. Do you have any additional comments and/or proposals?**
- 20. Do you consider that hedging as described above should be permitted?**
- 21. Do you consider that the strong correlation requirement should be further clarified by means of a quantitative threshold e.g. 0.9?**
- 22. Can you suggest a possible threshold e.g. for the minimum correlation between stock baskets? Please justify your answer based on relevant market data.**

1.8 Computation of concentration risk arising from the use of financial derivative instruments

The Commitment Approach, as detailed above, must be used by the UCITS to determine the issuer concentration limits arising from the use of financial derivative instruments in all cases. In addition, issuer concentration risk must include any counterparty risk associated with the same issuer in respecting the UCITS limits.

Questions



23. Do you agree with this proposal?

Definitions

1. Total Rate of Return Swap (TRORS) - See Sections 1.4 and 1.5

The basic TRORS contract is defined as a bilateral contract between a total return payer and a total return receiver whereby the total return payer pays the total return of a reference asset (i.e., short position on reference asset) and receives from the receiver of the total rate of return (i.e., long position on reference asset), in principle, a floating rate payment (for instance LIBOR) plus a spread.

The non-basic TRORS contracts as those where, instead of the floating rate payment leg, the TRORS refers to a fixed rate payment or to the total return of another reference asset.

2. Market Risk

Market risk includes both general market risk and specific market risk.

3. Delta factor

The delta factor presented in the option conversion formulae measures the sensitivity of the option price with regard to the underlying asset (e.g. bond, equity) price change. It describes numerically how similar the option behaves to the underlying asset. If the delta is close to zero, the option will hardly respond to movements in the underlying asset, which means the option does not behave like the underlying asset. If, on the other hand, the delta approaches unity, the option moves one-for-one with the underlying asset and so behaves very much like it.

2



Calculation of Global Exposure using the Value at Risk (VaR) Approach

2.1 Definition of VaR

VaR measures the worst expected loss at a given confidence level (probability) over a specific time period under normal market conditions. For example if the VaR (1 day, 99%) of a UCITS equals \$4 million, this means that, under normal market conditions, the UCITS can be 99% confident that a change in the value of its portfolio would not result in a decrease of more than \$4 million in 1 day. This is also equivalent to saying that there is a 1% probability (confidence level) that the value of its portfolio could decrease by \$4 million or more during 1 day, but the level of this amount is not specified (i.e. it could be catastrophic).

Market practice in UCITS over the last number of years suggests that there are 2 main approaches to using VaR, namely the relative and absolute VaR measurement approaches. These are more fully described in paragraphs 2.6 and 2.9 below.

Questions

24. Do you agree with this definition? Do you have any alternative suggestions?

2.2 Compliance of the VaR methods with the provisions of Directive 85/611/EC

It is important to stress that Article 51(3) of the new UCITS Directive requires that “A UCITS shall ensure that its global exposure relating to derivative instruments does not exceed the total net value of its portfolio.” While the commitment approach calculates global exposure as a percentage of NAV (and clarifies the extent to which the UCITS is in compliance with the limit set out in Article 51(3) of the new UCITS Directive), VaR does not calculate global exposure in the same way; it measures the probability of risk of loss rather than explicit leverage levels. It is also important to note that Article 51(3) of the Directive also states that “the (global) exposure is calculated taking into account the current value of the underlying assets, the counterparty risk, future market movements and the time available to liquidate the positions”. Such wording envisages a risk-measurement methodology such as VaR as the VaR calculation explicitly respects these criteria.

Nonetheless, it is possible that when using VaR, a UCITS may generate higher levels of leverage than that which would be allowed were the same positions measured using the commitment approach. However, while the commitment approach might be more precise in measuring leverage (or global exposure) on a conservative basis, VaR is a better measure of market risk and, thus, might be more adequate to fulfil the requirements set out in the Risk Management Principles paper e.g. adequate assessment of market risk and in particular concentration and interaction of risks.

Given the above, it is important to consider how VaR enables a UCITS to comply with the requirements of the UCITS Directive and whether any additional requirements concerning the calculation of total leverage generated by the UCITS through derivatives should be considered. It is indeed clear that strategies such as 200% long and 200% short strategy on equities could meet all requirements for using a VaR approach (especially for the absolute VaR limit) while clearly generating a global exposure greater than 100% of NAV through derivatives (as calculated using the commitment approach).

Questions

25. Do you agree with the above approach?

26. What additional safeguards (if any) are necessary for UCITS which use VaR to calculate global exposure to ensure consistency with the total exposure limit of 200% of NAV?



2.3 Common VaR calculation models

A variety of models exist for estimating VaR. Each model has its own set of assumptions, its advantages and drawbacks. Common models include the parametric (variance-covariance) model, the historical simulation model and the Monte Carlo simulation model.

As every approach has its advantages and drawbacks, the choice of model must depend on the investments strategies and financial instruments used in the UCITS, and remain the responsibility of the UCITS. For example, a UCITS could choose to carry out a parametric VaR rather than a Monte Carlo VaR or use other methodologies based on e.g. volatility if it judges that the UCITS' market risks are adequately taken into account by this methodology.

2.4 Input used in the calculation of VaR

The UCITS must use input that best fits with the strategies and the behaviour of markets. The length of the data history used in the calculations has to be suitable. In particular, it must make a prudent decision between the need to take into account extreme situations and the importance of overweighting recent events. The observation period should be at least one year, this period may be shortened or recent events overweighted during extreme market conditions. Whatever the data used and the calculation of parameters, the UCITS has to test the models used in order to check that all parameters are well calibrated.

2.5 Organisation and means of a UCITS/asset management company using VaR

The risk management unit with responsibility for the VaR calculation should be independent of the units in charge of managing and marketing the UCITS. The UCITS should use VaR methods that are consistent with best market practices and are also in accordance with CESR guidelines on risk management principles for UCITS.

The model used must be internally validated by the UCITS by a function which is independent from that responsible for building the model. The model must be adequate and effective, integrated into the investment process of the UCITS, based on suitable back testing. UCITS should ensure that the VaR models used capture adequately all the risks linked to the portfolios and take into account all the cash and derivative instruments in the portfolio. It must develop documentation on the VaR models used, describing the operating principles of the models, the methods used to validate the models, the validity range of the models and the monitoring of the implementation.

The UCITS must carry out a complete and rigorous stress testing programme to identify events or factors which could substantially affect the portfolio's level of risk. The stress tests must be based on quantitative criteria (concerning market and liquidity risks) and provide for qualitative criteria. The UCITS must record and analyse the results of all calculations carried out in order to check that the models measure satisfactorily the UCITS' risks, which means in particular that performance tests must be run to check that the variations of UCITS' NAV are consistent with the measurements of risk (back testing), in accordance with CESR's paper on risk management principles for UCITS. If it appears that the back testing results reveal a too high percentage of exceptions, the UCITS must review the VaR model and make appropriate adjustments. Where the back testing results give rise to consistently inaccurate estimations and an unacceptable number of exceptions competent authorities reserve the right to apply stricter criteria to the use of VaR.

Questions

27. Do you agree with the approach outlined in paragraphs 2.3, 2.4 and 2.5?
28. Do you have any comments or suggestions?
29. Do you consider that VaR should be calculated at least daily?
30. What type of criteria should competent authorities take into account in an assessment of the VaR Models?
31. Do you consider that VaR models should be approved by competent authorities?



2.6 Definition of the relative VaR

Under the relative VaR approach, the calculation of the global exposure of the UCITS follows these steps:

- Calculate the VaR of the UCITS' current portfolio (which includes derivatives): different methods may be used to this end, see above for more details on VaR calculation methods;
- Calculate the VaR of a reference portfolio (which will be a non-leveraged derivative-free portfolio): the consistency with the VaR method and parameters used to calculate the VaR of the UCITS must be ensured;
- Check that the VaR of the UCITS is not greater than twice the VaR of the reference portfolio in order to ensure a limitation of the global leverage ratio of the UCITS to 2.

The global exposure equals to $(\text{VaR UCITS} - \text{VaR Ref Portfolio}) / \text{VaR Ref Portfolio} \times 100$, and is less than 100%.

2.7 Limits of the relative VaR approach and proposed safeguards

The use of a relative VaR approach may require additional safeguards to ensure consistency with the global exposure limit as stated by the UCITS Directive. Indeed:

- The Value at Risk may not be an adequate tool to assess the leverage if the VaR itself does not capture all the risks of the UCITS;
- The reference portfolio must be appropriately chosen.

To illustrate this last bullet point, the following example can be used of a UCITS that would:

- invest 100% of its net assets in European stock market,
- take additional synthetic positions of 120% long positions and 120% short positions on European stock markets.

Then a simple calculation of the global exposure through the commitment approach may, in most cases, come to a 240% global exposure. However, depending on the selected VaR method (historical, Monte-Carlo) and the market data (ex: recent historical variations of the stock value), the VaR of the global portfolio may, as data are combined together, happen to be smaller than twice the VaR of a European stock market benchmark.

Another limit of the relative VaR approach is that the VaR for some reference portfolios may be quite high: the VaR of sectoral benchmarks in emerging countries can be very high, and thus allow for a very high risk allowance when doubled and, in some cases, this may be greater than local thresholds used by Member States for absolute VaR calculations.

A relative VaR method does not strictly limit the leverage of the strategies, as it allows UCITS to double the risk of loss under a given VaR model and not to double the exposure. However, it creates a clear link between the risk of loss of the reference portfolio and the risk of loss of the UCITS, and the similarity of risks between the reference portfolio and the UCITS' portfolio should prevent the UCITS using highly leveraged strategies. But as previously mentioned, the calculation of leverage does not replace risk management measures. Hence, the use of the relative VaR approach does not exempt UCITS from establishing appropriate risk management measures and limits.

There is a risk that some UCITS might be tempted to build the reference portfolio in a way that "games" the calculation of the relative VaR. In order to ensure that UCITS do not use relative VaR to generate excessive leverage the following additional requirements are proposed:

- The reference portfolio must not contain financial derivatives or embedded derivatives to avoid any leverage inside the reference portfolio itself; if short positions are used in the reference



portfolio, then the absolute sum of long and short positions must be equal to 100% of the NAV of the UCITS.

- The reference portfolio must have a risk profile that is very close, if not identical, to the UCITS' portfolio. The UCITS' portfolio must be scaled back to an unleveraged reference portfolio which must be consistent with the investment objectives and policies of the UCITS (as provided in the fund rules and the prospectus). It must also adhere to the investment limits (but not necessarily to the issuer limits) set out in the UCITS Directive). For the avoidance of doubt, a long-only benchmark cannot be used as a reference portfolio for a long/short strategy, since it would not entail a similarity of the risk profiles of the reference and UCITS portfolios.
- The reference portfolio can be based on a combination of unleveraged market indices that is consistent with the investment strategy, it can also be inferred from a target allocation, an asset allocation observed over the recent period, or a statistical analysis of the market risks of the portfolio. Where a choice must be made between different reference portfolios, the portfolio with the lower potential market risk level must be chosen. For the avoidance of doubt, this implies that an emerging markets index cannot be used as a reference for a portfolio invested in less volatile markets.
- If the modifications of the risk/return profile of the UCITS portfolio are very frequent or the definition of a reference portfolio is not possible, the relative VaR method should not be used.
- The UCITS must maintain a written procedure detailing the selection and approval of the reference portfolio.

Questions

- 32. Is the proposed 3-step relative-VaR approach adequate to limit the global exposure of a UCITS?**
- 33. Do you consider that the proposed limitations on the reference portfolio constitute reasonable and adequate safeguards to ensure that the relative VaR method does not result in the UCITS taking excessive risk or leverage?**
- 34. What additional safeguards (if any) do you consider necessary?**

2.8 Definition of Absolute VaR

The alternative VaR methodology that a UCITS can adopt is the absolute VaR approach. This, in simple terms, limits the percentage VaR that a UCITS can have relative to the NAV. Given that this measure is not referenced to a derivative-free portfolio as used in the relative VaR method, it is important that the absolute VaR limit is suitably conservative and reflects the existing non-derivative limits applied to UCITS when considering the risk of loss of, for example, the default of an issuer. Given that VaR measures the worst expected loss at a given confidence level (probability) over a specific time period under normal market conditions, it is proposed that absolute VaR with a 99% confidence level over a 20 working day holding period must not exceed 20% of the UCITS net asset value. This 20% limit can be equated to the 20% risk of loss on issuer-concentration.

The threshold is defined for a specific time period and a given confidence level but these two last parameters are scalable either upwards or downwards. The UCITS can use other parameters and the VaR limit can be scaled to the particular time period and confidence level chosen. In that case, the UCITS must convert the regulatory VaR threshold into a new one based on the chosen parameters by supposing the UCITS returns are independent and normally distributed³ and using the following concordance table.

Confidence level	Coefficient of normal distribution
99%	2.326
97.5%	1.96
95%	1.645
90%	1.282

³ This assumption is used only to allow UCITS to choose the parameters that best fit the UCITS' strategies.



$$\text{VaR}(y\%) \approx \text{coeff}(y\%) / \text{coeff}(x\%) \times \text{VaR}(x\%)$$

For example, if the UCITS uses a probability of 95% in its own processes, it can convert it using the coefficient of normal distribution: $\text{VaR}(99\%) \approx 2.326 / 1.645 \times \text{VaR}(95\%)$.

In the same way, it is possible to move from a time period to another one by using the square root of the time:

$$\text{VaR}(x \text{ days}) \approx \sqrt{x} / \sqrt{t} \times \text{VaR}(t \text{ days})$$

For example, $\text{VaR}(5 \text{ days}, 95\%) \approx \text{VaR}(20 \text{ days}, 95\%) / \sqrt{4}$.

Consequently, the regulatory absolute VaR constraint is equivalent to the following one:

$$\text{VaR}(95\%, 5 \text{ working days}) \approx 1.645 / 2.326 / \sqrt{4} \times \text{VaR}(99\%, 20 \text{ working days}) \leq 7\% \times \text{NAV}$$

The competent authority must not authorise a UCITS to go beyond these limits.

The UCITS may fix a lower threshold if it estimates that it is more appropriate considering its strategy and its risk profile.

Questions

- 35. Can the absolute VaR be considered as an appropriate way of measuring global exposure?**
- 36. Do you consider that the proposed thresholds are suitable? Can you suggest other thresholds?**
- 37. What are your views on the application of stricter criteria to difference types of asset classes e.g. bonds, equities?**

2.9 Additional safeguards to mitigate the risks related to the use of the absolute VaR approach

Absolute VaR measures potential loss rather than leverage. There is a risk that the use of the absolute VaR method could result in UCITS strategies using high levels of leverage with an inadequate risk management system that does not take into account fat tail risk. In addition, non sophisticated investors may not be able to understand the precise risk profile generated by the strategies.

UCITS that engage in arbitrage strategies, where the mixture of long and short strategies leads to fat tails (adverse movements of both long and short legs) but low VaR, may incorporate high levels of leverage. It is recommended that UCITS, resorting to leveraged arbitrage strategies while measuring their global exposure with absolute VaR, take appropriate additional measures to monitor their risk profile (use of stress-testing, CVaR or other methods able to detect the potential impact of low-probability market events). Investors should also be provided with sufficient information about the existence of leverage risk and the corresponding level of risk taken by the UCITS on the respective long and short legs. Under these conditions, the use of the absolute VaR method might result in the UCITS taking exposures that would not be consistent with the application of the commitment approach; this situation is justified by the fact that by using a more sophisticated and sensitive risk management system (VaR, completed by additional risk management measures), the UCITS may be authorised to take into account, through the VaR method, the risk-reduction effects of highly-correlated long and short positions.

Additionally, UCITS may hold assets where the risk profile cannot be adequately captured by the computation of an absolute VaR. Structured securities, credit-linked financial instruments or financial derivative instruments designed to limit the maximum loss at a given confidence level are examples of such assets. In these circumstances, it is advised that the use of absolute VaR should be forbidden unless appropriate additional risk management methods (such as stress-testing) ensures that both the maximum loss and the sensitivity to market movements in adverse conditions are consistent with the result of an amplification of market movements by a factor lower than 2 (maximum leverage).

In addition, there should be a requirement that the marketing of UCITS that exhibit a potentially high level of leverage should include specific due diligences and procedures from the person or entity in



charge of marketing the UCITS in order to ensure a good understanding of the specificities of the UCITS' risk profile by their clients or potential clients.

Questions

38. Do you consider the proposed safeguards, such as the use of appropriate additional risk management methods (stress-testing, CVaR) and the disclosure of the level of leverage, are sufficient safeguards when the absolute VaR method is used in the context of arbitrage strategies or complex financial instruments?
39. Should UCITS using strategies that are potentially highly leveraged under the absolute VaR method be subject to specific marketing provisions, either at the level of the UCITS (minimum initial investment) or during the marketing process?
40. Can you suggest alternative safeguards and/or requirements to avoid UCITS engaging in strategies which generate high levels of leverage?

3 OTC Counterparty Risk Exposure

3.1 Background and Introduction

Article 52(1) of the new UCITS Directive states that *“the risk exposure to a counterparty of the UCITS in an OTC derivative transaction may not exceed:*

10% of its assets when the counterparty is a credit institution referred to in Article 50 (1) (f), or 5% of its assets, in other cases.”

Additionally, Article 52(2) confirms that *“a UCITS may not combine:*

- *investments in transferable securities or money market instruments issued by,*
- *deposits made with, and/or*
- *exposures arising from OTC derivative transactions undertaken with a single body*

in excess of 20% of its assets.”

The Commission Recommendation clarified the requirements in relation to the calculation of counterparty risk exposure⁴. The Recommendation states that *“the exposure per counterparty in an OTC (should be) measured on the maximum potential loss incurred by the UCITS if the counterparty defaults and not on the basis of the notional value of the OTC.”* In calculating this exposure, UCITS are recommended to use the mark-to-market approach, including an add-on methodology to reflect the potential future exposure⁵.

A recent PWC comparative analysis⁶ noted that there is a lack of consistency in, inter alia, the calculation methodology for OTC counterparty risk across Member States. The report also details some of the different counterparty risk methods used by those Member States who have provided guidance in this regard.

3.2 OTC counterparty risk calculation methodology

Counterparty risk exposure measures how much a UCITS could lose if their OTC counterparty defaults. The additional safeguards required by the UCITS Directive that mitigate this risk exposure (such as daily valuation of OTC contracts, independent verification of such valuations, the requirement that OTC contracts are fully liquid and requirements on the credit quality of the OTC counterparty) should be taken into account in determining an appropriate methodology for calculating counterparty risk exposure across all Member States.

⁴ In addition to proposing the approach to calculate the exposure, the Recommendation also confirmed that the underlying constituents to index-based derivatives do not have to be combined with the issuer concentration limits referred to above.

⁵ By reference to Annex II of Directive 2000/12/EC

⁶ Investment Funds in the European Union: Comparative analysis of use of investment powers, investment outcomes and related risk features in both UCITS and non-harmonised markets (European Commission DG Internal Markets – 2007).



Due to the existence of these compensating controls and requirements in the UCITS Directive, CESR considers that the “add-on” for future credit exposure is not necessary as this inflates the risk exposure in a subjective manner. CESR also proposes that the use of risk-weightings should not be permitted. This approach greatly simplifies the calculation of counterparty risk while also recognising that the amount calculated represents the full current amount at risk.

It is therefore recommended that the counterparty risk associated with the use of OTC financial derivatives should be calculated as the positive MTM of the OTC contract.

A UCITS may net OTC exposures with the same counterparty in order to ensure adherence to the 5% or 10% limits. It is recommended that that netting positions with the same OTC counterparties be permitted provided legally enforceable (by the UCITS) netting agreements are in place. It should also be understood that the netting rules are only applicable to all OTC contracts with the same counterparty and not to any other exposures the UCITS may have to the counterparty.

Questions

41. Do you agree with the proposed method for calculating counterparty exposure?
42. Can you suggest an alternative method?
43. Do you agree with the approach for netting arrangements?
44. Do you consider that additional netting rules should apply?

3.3 Treatment of collateral received

Collateral may be used to reduce counterparty risk exposure once the prudential collateral rules in Directive 2006/48/EC are applied and that the collateral:

- is marked-to-market on a daily basis and exceeds the value of the amount at risk;
- is exposed only to negligible risks (e.g. government bonds of first credit rating or cash) and is liquid;
- is held by a third party custodian not related to the provider or is legally secured from the consequences of a failure of a related party;
- can be fully enforced by the UCITS at any time.

It is recommended that these four principles identified above should be respected, with a strong view that the liquidity of any collateral received is of paramount importance. It is clear that a majority of Member States impose collateral rules by identifying the specific instruments that can be used as eligible collateral, while the Commission Recommendation uses principles as opposed to identifying specific instruments. Therefore it is proposed to develop a detailed set of regulatory principles which would provide a more robust and flexible approach, and that these principles would need to be more detailed than those set out in the Commission Recommendation.

The following set of high-level principles is therefore recommended:

- Liquidity – any collateral posted must be sufficiently liquid in order that it can be sold quickly at a robust price that is close to pre-sale valuation. Collateral should normally trade in a deep liquid marketplace with transparent pricing. Additionally collateral with short settlement cycles are preferable to long settlement cycles as assets can be converted into cash more quickly.
- Valuation – collateral must be capable of being valued on at least a daily basis and the possibility of “stale prices” should not be allowed. An inability to value collateral through independent means would clearly place the UCITS at risk, and this would also apply to “mark to model” valuations and assets that are thinly traded.
- Issuer credit quality – as collateral provides secondary recourse, the credit quality of the collateral issuer is important. This may involve the use of haircuts in the event of a less than “very high grade” credit rating. It should be reasonable to accept collateral on assets that exhibit high price volatility once suitably conservative haircuts are in place.
- Correlation – Correlation between the OTC counterparty and the collateral received must be avoided.
- Collateral diversification (asset concentration) – there is an obvious risk if collateral is highly concentrated in one issue, sector or country.



- Operational and Legal risks – collateral management is a highly complex activity. As such, the existence of appropriate systems, operational capabilities and legal expertise is critical.
- Collateral must be held by a third party custodian which is subject to prudential supervision not related to the provider or is legally secured from the consequences of a failure of a related party;
- Collateral must be fully enforced by the UCITS at any time.
- Collateral cannot be sold or pledged.

While it is clear that the above principles need more analysis and rules (for example specific haircuts), the benefit of such an approach would be to allow a flexible regulatory approach that would assist both home regulators and industry participants. It can also be argued that the role of collateral is as a risk mitigator and the question of whether such collateral should be UCITS compliant is not relevant.

Questions

45. **Do you agree with the proposed approach to agree a set of principles in relation to acceptable collateral to reduce counterparty exposure? Do you have alternative suggestions?**
46. **Do you consider that rather than following principles based approach specific instruments that can be used as eligible collateral should be indentified?**
47. **Should collateral be UCITS compliant in terms of asset eligibility and diversification?**

3.4 The treatment of collateral passed

Although Article 32 of the new UCITS Directive requires that the assets of the UCITS is entrusted to the depository for safe-keeping, it is clear that market practice requires collateral or margin to be passed by the UCITS in respect of a derivative transaction (whether exchange traded or OTC). Such passing of collateral represents a portion of the assets of the UCITS legally passing from the UCITS depository to the derivative counterparty (although the UCITS still bears the market and credit risks associated with such collateral). The UCITS Directives and Commission Recommendation are silent on this point.

It was agreed that the provision of collateral may form part of a derivative contract permitted by Article 50(1)(g) of the new UCITS Directive and is therefore not in conflict with Article 32.

It is clear that an exposure is created that represents a risk-of-loss to the UCITS (i.e. the loss of the collateral in the event of, say, a bankruptcy). It was therefore agreed that any collateral passed should be captured on a net basis (in the case of over-collateralisation) either in the issuer-concentration limit of 20% (Article 52(2)) or in the 5%/10% OTC counterparty limit.

Questions

48. **Do you agree that collateral passed to a derivative counterparty should be include in the either the 5%/10% OTC counterparty limit or the 20% issuer concentration limit?**
49. **Do you have any other suggestions as to how such collateral passed should be treated?**

3.5 Counterparty limits

It is recommended that more work is needed on the components of derivative transactions which should be included in the issuer concentration limit of 20%. This is particularly important in the case of potential netting transactions (for example between the cash security and the derivative contract) or where credit derivatives are used (such as bought credit protection on an issuer). Robust requirements are envisaged to ensure that no possibility for abuse or misinterpretation exists.

Questions

50. **What areas of further work should be carried out with regard to this?**



Sophisticated/Non-Sophisticated UCITS

The Commission Recommendation introduced the concept of sophisticated and non-sophisticated UCITS depending on the methodology used to calculate global exposure. In general non-sophisticated UCITS were recommended to use the commitment approach and sophisticated UCITS may use the VaR statistical approach.

Different practises have evolved in Member States regarding both the use of commitment versus VaR approaches and the distinction between a sophisticated and non-sophisticated UCITS. No common definition has emerged, for example some competent authorities define certain financial derivatives as sophisticated or complex, others consider the overall investment strategy and the majority of competent authorities do not provide any guidance in this area. This has resulted in confusion among industry participants (including investors) regarding these terms.

In general the decision regarding the methodology used to calculate global exposure is a matter for the UCITS. This decision is not so much based on the distinction between sophisticated or non-sophisticated but rather on the choice of the most appropriate methodology given the UCITS strategy and types of derivatives used.

It is proposed that provided proper safeguards and parameters are introduced governing the use of both the commitment and VaR approaches used to calculate global exposure the terms sophisticated and non-sophisticated have no relevance and should be abandoned.

Questions

- 51. Do you agree with the proposal to abandon the use of the term sophisticated and non-sophisticated UCITS?**
- 52. If you object to this proposal could you please provide reasons for this view?**