COMMITTEE OF EUROPEAN SECURITIES REGULATORS

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CONSULTATION PAPER

Addendum to CESR's consultation paper on the format and content of Key Information Document disclosures for UCITS (Ref. CESR/09-552)

Deadline for contributions: CESR invites responses to this consultation paper by **10 September 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.

Background

In its consultation paper on technical advice at level 2 on the format and content of Key Information Document Disclosures for UCITS (Ref. CESR/09-552), published on 8 July 2009, CESR proposed the use of a synthetic indicator as the preferred option for funds' risk and reward disclosure.

In order to arrive at this preference, CESR has taken into account, inter alia, the findings from the European Commission's testing exercise, which revealed that investors have a strong preference for the inclusion of a synthetic indicator in the KID. The testing also revealed that investors seem to be more confident in their ability to compare funds and assess their level of risk when they are provided with a synthetic risk and reward indicator based on a numerical scale.

However, CESR also acknowledged that a move towards the inclusion of a synthetic risk and reward indicator requires agreement on the methodological elements underlying the computation of such an indicator. This will ensure that all UCITS funds are classified into the risk and reward scale according to the same criteria throughout the European Union, with no potential prejudice to the level playing field.

CESR has therefore elaborated a specific methodology for the computation of the synthetic risk and reward indicator of UCITS funds, as presented in Annex I of its consultation paper (Ref. CESR/09-552). In the formulation of its proposal, CESR benefited from the work of both regulators and industry representatives.

The methodology has been tailored to cover the particular features of the different types of fund and, in particular, to satisfy the following criteria:

- applicability to as many funds as possible;
- no room for manipulation;
- easy implementation by UCITS providers;
- easy and effective supervision by regulators;
- stability against normal trends and fluctuations of financial markets.

At the time of the publication of the consultation paper, CESR had not yet finalised some elements of the proposed methodology. In particular, the proposal still needed to be fine-tuned with respect to:

1) the definition of upper and lower bounds for the volatility intervals ('buckets').
2) the detailed explanation of the risk classification process for structured funds.

This addendum complements the consultation paper by including an explanation of CESR's proposals on the items above.

Stakeholders are advised to take into account the information contained in this addendum, together with the consultation paper (Ref. CESR/09-552), when providing their views on the synthetic risk and reward indicator.

Methodological elements for the computation of the synthetic risk and reward indicator

1. GENERAL METHODOLOGICAL APPROACH

As stated in the consultation paper (Ref. CESR/09-552), the synthetic risk and reward indicator (SRRI) should be based on the volatility of the returns (past performance) of the fund. Volatility is a well-known and well-established concept in finance, a measure conceptually easy to grasp and, at the same time, able to capture the effects of very different risk factors. Insofar as risk exposures cause fluctuations in the net asset value (NAV) of a fund, the volatility of its returns will reflect the loadings on all risk and reward drivers from which the fund generates returns.

Volatility should be estimated over an historical period of 3 to 5 years (3 years if volatility is computed using at least weekly returns, 5 years for funds with less frequent – at most monthly – returns). Volatility of the relevant returns of the funds should be computed, and then rescaled to a yearly basis, using the standard statistical methods:

$$\text{returns (} r_f \text{) volatility} = \sigma_f = \sqrt{\frac{m}{T-1}\sum_{t=1}^{T}(r_{f,t} - \bar{r}_f)^2}$$

where the returns of the fund $r_{f,t}$ are measured over T periods (T = number of years **x** number of non-overlapping return observation periods included in one year) of 1/m years, hence, m=52 and T= 156 for weekly returns;

and where $\bar{r}_f$ is the arithmetic mean of the fund returns over the T periods:

$$\bar{r}_f = \frac{1}{T}\sum_{t=1}^{T} r_{f,t}$$

The SRRI should therefore translate the volatility of the returns into a general indication concerning the overall level of risk of the fund. In practice, the synthetic risk and reward indicator will correspond to an integer number designed to rank the fund over a scale from 1 to 6, according to its increasing level of volatility, hence, risk. The following illustration of the risk scale was provided in the consultation paper.

Example of a fund that would fall into category 2:

Graphic or visual explanations

Risk and reward scale chart

⇦ Typically lower rewards				Typically higher rewards ⇨	
⇦ Lower risk					Higher risk ⇨
1	**2**	3	4	5	6

However, the consultation paper did not include a detailed illustration of how UCITS should be classified along the risk scale. In particular there was no reference to the specific intervals ('buckets') of volatility which should correspond to the different risk classes.

2. DEFINITION OF THE VOLATILITY 'BUCKETS'.

CESR has considered a range of alternatives and factors in order to formulate its proposal concerning the upper and lower bounds of the volatility buckets needed for the classification of funds along the risk scale.

In particular, CESR has considered carefully the issues relating to the stability of the risk classification over the normal cycles which characterise financial markets. In this respect, CESR did not consider it desirable to develop an SRRI involving frequent migrations of category since:

1. the KID (hence the disclosure of the risk and reward level of the fund) will not be usually revised more than once per year;

2. frequent and extensive migrations of funds across risk classes might give investors cause for concern over the stability and reliability of the indicator.

However, CESR also acknowledges that in order to be useful for investors, the risk classification of funds should provide sufficient discriminatory power to avoid the crowding of many funds in only one or a few buckets.

Taking this into account, the questions concerning: i) the length of volatility observation periods (i.e. the size of the daily or weekly returns sample to estimate volatility); ii) the number of risk categories; and iii) the width of the volatility buckets, were considered in parallel by CESR, as the stability of the risk classification, as well as its discriminatory power, will be determined by fixing these parameters.

2.1 CESR proposal for the volatility intervals

After considering the elements above, CESR has developed two possible grids of volatility that could be used for the classification of funds along the risk scale.

The first alternative (option A) has been designed to provide a grid of volatility intervals suitable to reflect, in ascending order, the increasing level of actual risk of the fund, as well as to provide a high degree of stability in the risk classification. The second alternative (option B) has been set up to provide a more uniform distribution of the different types of fund along the six risk classes, entailing however the risk of a potentially higher number of migrations. Both options are illustrated in the boxes below.

Box 1

Option A – Volatility intervals that would provide a high degree of stability

The first alternative has been formulated to provide a high degree of stability in the risk classification. In order to prepare this proposal, CESR has taken into account an empirical study concerning the potential extent and frequency of the migrations of funds across the risk classes. In this respect, the risk limits proposed below are the result of a stochastic optimization process using a large sample of number of European funds with the objective of representing the actual risk level of the fund and, consequently, **minimising the number of migrations**.

Risk Class	Annualized Volatility Intervals	
	σ min	σ max
1	0,01%	0,49%
2	0,50%	1,59%
3	1,60%	3,99%
4	4%	9,99%
5	10%	24,99%
6	25%	over 25%

The main findings of the study that has been used to obtain these volatility buckets are included in Annex I of this document.

Box 2

Option B – Volatility intervals designed to provide a higher discriminatory power

In formulating this proposal, instead of focusing solely on the frequency of migrations, CESR also intends to provide investors with a meaningful risk scale that enhances the comparability across the different types of fund included in the UCITS universe.

In this respect, CESR has designed the volatility intervals so as to avoid an excessive bunching of funds into one or two categories i.e. to ensure a more uniform distribution of the different types of fund along the six risk categories. In addition, the volatility intervals have been designed in such a way that the increase in risk levels from one category to another is not too large, so as to limit the chances of a situation where funds with significantly different underlying risk profiles could be classified in the same category.

Taking these considerations into account, the following grid of volatility buckets is proposed:

Risk Class	Annualized Volatility Intervals	
	σ min	σ max
1	0,01%	1,49%
2	1,50%	4,99%
3	5%	9,99%
4	10%	14,99%
5	15%	24,99%
6	25%	over 25%

As noted above, this alternative could potentially lead to a higher number of migrations.

Questions for consultation

1. Do you agree with the criteria considered by CESR to formulate its proposals regarding the volatility intervals? Are you aware of any other factors that should be considered?

2. Which option (A or B) do you see as more appropriate for the KID?

3. Would you like to propose any other alternative for the volatility intervals? If so, please explain your reasoning.

2.2 Periodic updating of the SRRI – rules to assess migrations

As a general principle, whenever the KID is updated (at least once a year), the SRRI of the fund should be re-evaluated in order to determine whether there has been any change in its risk classification. If such a change has occurred, the new risk grading of the fund should be reflected in the updated version of the KID.

However, when carrying out this updating process, the question arises as to what should be considered as a change in the risk grading of the fund and should, therefore, trigger an update of its risk classification in the KID. In this respect, there are several circumstances of the risk classification process that could be relevant when establishing how changes between risk categories should be assessed.

For instance, it is worth noting that the historical volatility used for the risk classification is estimated from a data sample and is thus subject to a potential estimation (or sampling) error. In this respect, it could be potentially desirable to establish rules to prevent migrations between risk categories that are purely due to sampling errors.

Another situation that could raise some potential concerns is the case where the volatility of a particular fund is stable over time but oscillating around the threshold between two risk categories. In this situation, a strict rule for migration will cause the fund to move frequently between risk categories, while the underlying situation is that the risk profile of the fund is stable and not changing significantly over time.

To address these potential concerns, CESR has considered the merits of establishing some migration rules in order to minimise the probability of changes in the risk classification that are due to purely sampling errors, or changes that are not representative of a relevant variation in the underlying risk of the fund.

In particular, CESR has developed three potential rules that could be used to asses migrations between risk categories:

- Rule 1: Do not use any specific migration rule

This is the simplest case. Whenever the KID is updated the relevant volatility of the fund should be calculated according to the SRRI methodology. If the new estimated volatility falls within the limits of a different volatility interval to the one currently shown in the KID, the risk rating of the fund should be updated accordingly with the new risk category.

This method will be the easiest to implement, but it may not address the potential concerns of having non-statistically significant migrations.

- Rule 2: Establishing an 'observation period' in order to asses migrations

Another possibility would be to require that, in order for a fund to change its risk category, the new risk rating of the fund should have been consistently in place for a certain period of time. Under this rule, an observation period can be established, and the risk rating of the fund will be updated only if the relevant volatility of the fund has been consistent with the new risk category over the whole observation period.

Under this rule, the updating methodology of the SRRI will be as follows:

1. Whenever the KID is updated, the relevant volatility of the fund should be calculated according to the SRRI methodology.

2. If the new estimated volatility falls within the limits of a different risk bucket (i.e. a potential change of the risk classification has occurred), the relevant volatility of the fund should be estimated for each of the 3 previous months.

3. Only if the volatility figure calculated for each of the 3 previous months is consistent (i.e. falls within the new volatility interval) should the risk rating of the fund be updated accordingly to reflect the new risk category.

This alternative may address the potential concerns of having non-statistically significant migrations, but it also requires a higher number of calculations.

- Rule 3: Using different thresholds in order to assess migrations

An alternative would be to require funds to evaluate the migrations using different entry and exit levels to the ones used for the initial classification. In this case, the entry and exit levels for migrations could be specified so that they minimise the possibility of having migrations due to purely statistical errors.

For example, the new limits could take the form of a safety margin that could be added to the initial threshold to minimise the occurrence of non-statistically significant migrations. In this respect, since the general estimation method of the SRRI is based on a data sample of 3 years of weekly data, the standard error of the estimated volatility will be of a magnitude around 6%.

number of observations		relative standard error of volatility	rounded
156	weekly	5.68%	6%
60	monthly	9.21%	10%

Taking this into account, a possible solution to minimise the migration due to sampling errors will be to specify a new threshold for the migration that is constructed by adding one standard error band around either side of the initial volatility limits.

For instance, if a fund is currently classified within the 10-15% volatility interval, the new thresholds for migration will be calculated as follows. A fund's estimated volatility should have increased above 0.15*(1+0.06) = 15.9% in order to migrate upwards. Similarly, its estimated volatility should have decreased below 0.10*(1-0.06) = 9.4% in order to migrate downwards.

As an illustration, applying these calculations to all the volatility buckets (and taking as an example option B) the following table could be formed:

	limits		migrate	
category	lower	upper	down	up
1	0,01	1,49	-	1,6
2	1,5	4,99	1,4	5,3
3	5	9,99	4,7	10,6
4	10	14,99	9,4	15,9
5	15	24,99	14,1	26,5
6	25	inf	23,5	-

In statistical terms, this approach will have the effect of reducing the probability of a fund migrating to an adjacent bucket, and then migrating back to its original bucket by pure chance, to only 5% (since 2 standard errors comprises a 95% probability interval).

Questions for the consultation

4. Do you agree that introducing some rules for assessing migration is desirable?

5. If so, which option (2 or 3) do you think is more appropriate?

6. Would you like to propose any other rule for assessing migrations? If so please explain your reasoning.

3. SPECIFIC ISSUES REGARDING THE COMPUTATION OF VOLATILITY

In the following two sections, CESR sets out its proposals on calculation of the SRRI for funds for which the general methodological approach as described in Section 1 may not be appropriate. This includes funds with an insufficient return history (section 3.1), funds with predetermined risk or reward targets (section 3.2) and structured funds (section 4). In order to address the challenges posed by these types of fund, CESR's proposals rely to varying extents on the use of a Value at Risk (VaR) measure. CESR recognises that VaR presents a number of advantages and drawbacks as a measure of risk. For example, while VaR may be more suited to calculating the SRRI for funds that have asymmetrical return distributions, it may be less able to capture particular types of risk, such as fat tail risks. In such cases, corrective measures may be needed to ensure an appropriate approach to the calculation of the indicator.

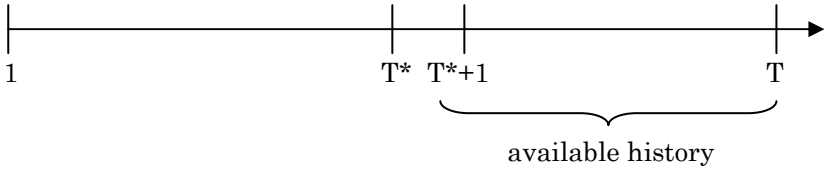
In this context, CESR recalls that its proposals as set out in the consultation (Ref. CESR/09-552) would require the SRRI to be accompanied by a narrative description of the main risks relevant to the fund's overall risk profile (see in particular point 1 of Box 5B).

It has been observed that there could be a potential for firms to develop new funds with the harmonised methodology expressly in mind so as to arrive at a particular risk and reward classification. CESR notes that the risk of 'gaming' a given methodology is inherent to any calculation methodology, including those used for other purposes, and that in all cases, a narrative description may also be used to mislead investors.

3.1 New funds and funds with insufficient history : the case of market funds

The computation of volatility may be problematic for those UCITS funds that have not been in existence long enough to generate the required time series of relevant returns.

This is typically the case of new funds or funds which have recently revised – to a material extent – their investment policy. In these circumstances, in fact, the relevant fund returns history is available only from period T*+1 (date of inception or of validity of the new investment policy) to T (most recent date):



However, the lack of an appropriate history of past returns should in general not represent a problem for 'market funds', that is, those funds that are managed so as to predominantly reflect the risk and reward profile of some predetermined segments of the capital market. This is typically the case of funds that are managed closely against a benchmark. In fact, their target asset allocation should generally allow the identification of meaningful and appropriate model portfolios for such funds. Therefore, the methodology for the computation of the SRRI of these funds may be adjusted accordingly, so as to comprise the following steps:

i) take the relevant available fund returns history over the periods from T*+1 to T;

ii) identify the fund's representative model portfolio, target asset mix or benchmark;

iii) calculate the returns of the fund's representative model portfolio, target asset mix or benchmark over the periods from 1 to T*, deducting from calculation the figure for ongoing charges (and, where appropriate and possible, any performance fees) borne by the fund;

iv) chain-link (concatenate) both return series to one series over the full T periods;

v) estimate the annualised historical volatility according to the general formula.

As illustrated above, the methodology assumes that a representative index, proxy portfolio mix or benchmark can be identified for such 'new' funds, with returns available over the period [1,T*]. However, although this is often the case, the availability of suitable portfolio models or proxy indices or benchmarks cannot be assumed in all circumstances. As a consequence, a solution of 'last resort' should be identified as part of the methodology.

In this respect, CESR believes that, when market funds pursue the risk and reward profile of some market segments which are represented by indices (or benchmarks or proxy portfolio asset mixes) whose return history is not sufficiently long, the SRRI of these funds should have regard to the volatility of such indices as estimated from the simulation of their yearly returns. This simulation process should take into account all the available information, should be carried out under the assumption of risk neutrality, and should be adjusted to reflect the effects of the ongoing costs that are charged to the funds, as described above in indent (iii).

The methodology for the identification of relevant volatility for UCITS other than market funds that have an insufficient return history is explained in the following paragraphs.

3.2 Computation of volatility for funds with predetermined risk or reward targets

Given the well-established classification of the universe of funds into three key types:

(a) funds which optimise the risk by sub-optimising the returns;

(b) funds which optimise the returns by sub-optimising the risk;

(c) funds which optimise the distance from a given portfolio model;

the identification of the relevant volatility may also need some adjustments in the case of funds that employ investment policies oriented to pre-determined risk or reward targets. In its consultation paper, CESR refers to these funds as 'strategy funds', and distinguishes between: (1) absolute return funds; (2) total return funds; and (3) life cycle/target maturity funds.

In fact, the overall risk profile of these funds depends on the dynamic asset mix which is actively determined by the managers, which may either pursue a specific risk target or limit (as in the case of 'absolute return' funds) or, on the contrary, aim to achieve the specific reward objective sought by the strategy (as in the case of 'total return' funds and life cycle/target maturity funds).

However, as the portfolio composition of strategy funds is meant to change substantially over time, it seems unlikely that its overall risk can be appropriately and exhaustively represented having regard only to the historical volatility of the funds.

As a consequence, CESR has developed the following adjustment mechanisms which should ease the identification of the relevant volatility according to the particular features of the three types of strategy fund mentioned above.

3.2.1 Absolute return funds

Absolute return funds are usually managed in line with a pre-determined risk limit (in the form of a volatility or VaR exposure limit), thereby placing them in category (a) as set out above. The existence of such an ex-ante risk 'budget' should also be taken into account for the computation of the SRRI. Therefore, the proposed methodology should consist of the following steps:

- when a full T-period return history is available, take the maximum of:

  (a) the actual historical annualized volatility; and

  (b) the annualized volatility that is consistent with the risk limit or target of the fund.

- for new funds that lack sufficient data history, and for funds that have recently revised their investment policy, consider the annualized volatility that is consistent with the risk limit or target of the fund.

If the risk target or limit of absolute return funds takes the form of a VaR measure, the relevant volatility required for ranking the risk of the fund should be derived through adequate and consistent reverse engineering of the VaR measure under the assumption of risk neutrality. For example, for a 1 year 95% confidence level VaR, the relevant volatility may be assumed as:

σ_f = (VaR + 1 year zero coupon risk free rate) / 1.65

3.2.2 Total return funds

Total return funds aim to achieve certain reward objectives by participating in both equity and fixed-income markets, thereby placing them in category (b) as set out above. The range of these funds is remarkably broad, including UCITS that provide some sort of capital protection by means of dynamic trading strategies (such as Constant Proportion Portfolio Insurance (CPPI) and Variable Proportion Portfolio Insurance (VPPI)).

The portfolio allocation of total return funds across assets and asset classes may change rapidly over time, following market dynamics or according to managers' views. As a consequence, the active and dynamic nature of their investment policies requires the methodology for the identification of the SRRI of total return funds to be integrated as follows:

- when a full T-period return history is available, take the maximum of

(a) the actual historical annualized volatility of the returns;

(b) the annualized volatility of the returns of the pro-forma asset mix that is consistent with and representative of the investment policy of the fund and;

(c) the target volatility of the fund, as also embedded in a different type of risk limit (such as a VaR target), if any.

- for new funds that lack sufficient data history, and for funds that have revised their investment policy substantially over the most recent T periods, take the maximum of (b) and (c) above.

3.2.3 Life cycle / target maturity funds

The asset allocation of life cycles and other similar funds tends to become more defensive as the target maturity date approaches. Since the portfolio composition may change substantially over time, though not as a consequence of active management (these funds can be thought of as following a 'passive dynamic asset mix'), it may be that not all of the return history of such funds is representative of their current overall risk profile. It follows that life cycle and other similar funds aim either at consolidating a given objective in terms of return (and thus belong to category (b) as set out above) or at minimising the distance from a given portfolio model (and thus belong to category (c)).

As a consequence, the SRRI computation methodology for life cycle / target maturity funds needs to be modified as follows:

- when a full T-period return history is available and the fund has not changed its target asset mix over this full period, take the actual historical volatility;

- for new funds that lack sufficient data history, and for funds that have recently and substantially revised their target portfolio allocation:

i) take the relevant fund return history;

ii) identify the fund's current benchmark, representative portfolio model or any other proxy asset mix, and compute the returns of such indices including the effects of the ongoing costs of the fund;

iii) combine both returns series to estimate the relevant annualized volatility according to the usual formula introduced above in paragraph 1.1.

4. THE SPECIAL CASE OF STRUCTURED FUNDS

The common characteristic of structured funds is that their investment policies generally employ financial mechanisms which mitigate exposure to the volatility of the asset mix, indices or market segments to which these funds generally link their returns.

Structured funds can sometimes be assisted by a guarantee (a 'hard floor'), which ensures investors can recover all, or part of, the capital initially invested in the fund. These capital guarantees can be unconditional (some level of protection is always guaranteed) or conditional (the guarantee can be reduced, or even disappear entirely – a knock-out feature), according to some contingency. This contingency may be an event, for instance a decrease in the value of a reference index (i.e. below a certain level the guarantee no longer applies in full or at all).

In other cases, structured funds provide some degree of capital protection but no strict guarantee; in particular, the protection target ('soft floor') can be specified in terms of a statistical confidence level (for example 95% probability) and maintained by a management strategy to meet a pre-determined risk measure (such as a VaR-type).

In effect, structured funds generally provide investors with algorithm-based contingent payoffs that are linked to the dynamics of specific (classes of) assets, market indices or reference portfolios; these payoffs are promised at certain pre-determined dates, which correspond to the finite maturity (that may be variable according to some pre-determined criteria) of the funds.

To achieve their objectives, structured funds generally use complex techniques and instruments (i.e. derivatives with non-linear payoffs) which make their return distributions markedly asymmetrical. In addition, the investment strategy of structured funds generally means that their exposure to market indices or asset classes (and hence their risk profile) can change quite quickly and drastically over time.

Given both the asymmetry of their return distributions and the changing nature of their risk exposures, neither the historical volatility of structured funds, nor the volatility associated with their current asset mix, can be deemed representative tools for evaluating their risk profile.

In order to address these particular concerns, the consultation paper (Ref. CESR/09-552) proposed that the risk profile of structured funds would be best evaluated by looking at the potential loss that the fund would have obtained under different market conditions. In particular, it was proposed that the risk profile of structured funds should be evaluated by first computing the VaR of the fund under historical simulation and then expressing this VaR measure as the corresponding annualized volatility.

This approach has the advantage that it tackles specifically the drawbacks that a historical volatility measure may have. In this respect, since the VaR measure is focused on the loss side of the return distribution, it can therefore take into account any potential asymmetries that such distributions may present.

In addition, by computing the return that the fund would have obtained under different market conditions, the risk measurement process is focused on evaluating the overall strategy of the fund, as well as it current particular risk exposure. This approach might be more appropriate for evaluating the risk profile of a structured fund, since, as noted above, the risk exposures derived from its current portfolio composition can change quite quickly and drastically.

4.1 SRRI computation methodology for structured funds

Taking into account the factors above, CESR recommended in its consultation paper (CESR/09-552) that the risk classification for structured funds should be calculated by taking the maximum of:

(a) the annualized volatility corresponding to the 95% VaR at maturity (as explained in Box 4);

(b) the annualized volatility corresponding to the 95% VaR in 1 year's time (as explained in Box 3).

This proposal is based on the consideration that, although most investors in structured funds tend to hold their investment until maturity, a structured UCITS must also remain open for redemption at any time (as mandated by the Directive). Therefore, the relevant risk for investors cannot be represented simply by assuming that the investor will hold the fund until maturity.

In particular, in the case of an early redemption, structured funds will generally provide investors with returns that could be very different from the pay-offs promised at maturity or from the capital protection targets.

By taking the maximum of both the risk in 1 year's time, and the risk at maturity, CESR is taking a conservative approach that will flag to investors the higher of both risks. Nevertheless, since (a) and (b) can be substantially different, CESR proposes that a specific disclaimer for structured funds should be added to indicate, where appropriate and relevant, that the fund might have a different (lower or higher) level of risk if the investment is held until maturity or, conversely, redeemed before that date.

Box 3

COMPUTATION OF VAR-BASED VOLATILITY OF STRUCTURED FUNDS OVER A 1 YEAR HOLDING PERIOD.

The computation of volatility of structured funds over a 1 year holding period should be carried out according to the model illustrated below

$\ln(R_{fund}) \sim N((i_{rf} - \frac{\sigma_w^2}{2}) \times 52; \sigma_w \sqrt{52})$; where:

$N(\mu;\sigma)$ is the usual Gaussian distribution with mean equal to μ and volatility equal to σ ;

$\ln(R_{fund})$ is the (log)return of the fund over 1 year, that is, $R_{fund} = \frac{NAV_{1year}}{NAV_0}$;

σ_w is the volatility of the weekly (log)returns of the fund;

i_f is the weekly rate equivalent, in the compound interest regime, to the 1 year zero coupon risk free rate (r_f) known at the time of the computation, hence, $i_{rf} = \frac{\ln(1+r_{rf})}{52}$.

Therefore, assuming that the payout of the structured fund is linked to the performance of the XYZ index, volatility should be estimated using the following procedure:

1. Calculate the 1-year performance of the XYZ index for each week included in a sample period covering the past 5 years (for a total 260 observations of the yearly returns of the XYZ index);

2. Simulate the (log)returns of the fund corresponding to the annual performances of the XYZ index calculated according to step 1. A pricing model of the fund portfolio is needed to carry out the simulation; this model should take into account the relevant market conditions (such as interest rate levels, volatility etc) at the time of the computation of the SRRI ;

3. Isolate the 5% percentile of the return distribution of the fund simulated according to step 2. This percentile, changed in sign according to international standards, corresponds to the historical simulation value at risk (VaR) of the fund with a holding period of 1 year and confidence level of 95%;

4. Reverse engineer the model introduced above to estimate the weekly returns volatility (σ_w) of the fund which is consistent with the VaR figure identified at step 3 and the risk-free rate (i_f) conditions valid at the time of the computation, that is, solve the following equation for σ_w :

$$VaR = -(i_{rf} - \frac{\sigma_w^2}{2}) \times 52 + 1.65 \times \sigma_w \times \sqrt{52}$$

5. Annualize the volatility according to the usual square root rule: $\sigma_A = \sigma_w \times \sqrt{52}$

Box 4

COMPUTATION OF VAR-BASED VOLATILITY OF STRUCTURED FUNDS ASSUMING INVESTMENT UNTIL MATURITY

In line with the approach presented in Box 3, the volatility corresponding to the 95% VaR at maturity of structured funds should be estimated from a historical simulation on the basis of the following model:

$$\ln(R_{fund}) \sim N((\bar{y}_{rf} - \frac{\sigma_w^2}{2}) \times T; \sigma_w \sqrt{T}) \ ;$$

where all symbols represent the same variables and parameters as in Box 3, with the exception of:

T, which identifies the number of weeks included in the (residual) time to maturity of the fund (recommended holding period of the fund) at the moment of the computation, hence, $R_{fund} = \frac{NAV^T}{NAV_0}$;

$\bar{y}_{rf}$, that represents the expected average weekly risk-free rate under the compound interest regime.

Therefore, assuming that the payout of the structured fund is linked to the performance of the 'XYZ' index, volatility should be computed as follows:

1 Calculate the performance of the XYZ index over a holding period equal to that of the fund (T) for each of the weeks included in a sample period covering the past 5 years (for a total 260 observations of the T-week returns of the XYZ index);

2 Simulate the (log)returns at maturity of the fund that correspond to the performances of the XYZ index as computed according to step 1;

3 Isolate the 5% percentile of the distribution of the (log)returns of the fund simulated at step 2. This percentile, changed in sign according to international standards, represents the historical simulation *VaR* of the fund at maturity with a confidence level of 95%;

4 Take the intensity (i_{rf}^t) of the weekly risk free rate, expressed in annual terms (r_{rf}^t), that applied to each (t) week in the sample period; compute the average of such rates in order to estimate the expected weekly risk free rate ($\bar{y}_{rf}$) over the holding period of the fund in the compound interest regime, this means:

$$\bar{y}_{rf} = \frac{\sum_t i_{rf}^t}{260}; \ i_{rf}^t = \frac{\ln(1 + r_{rf}^t)}{52}; \ t \in [\text{latest week in the sample} : \text{latest week in the sample} - 260]$$

5 Reverse engineer the model introduced above to estimate the weekly returns volatility (σ_w) of the fund which is consistent with the VaR figure identified at step 3, that is, solve the following equation for σ_w :

$$VaR = -(\bar{y}_{rf} - \frac{\sigma_w^2}{2}) \times T + 1.65 \times \sigma_w \times \sqrt{T}$$

6 Annualize the volatility according to the usual square root rule, $\sigma_A = \sigma_w \times \sqrt{52}$

Questions for the consultation

7. Do you agree with CESR's proposal concerning the methodology to compute the SRRI of structured funds? If not, please explain and, if possible, suggest alternatives.

8. Do you agree with CESR's proposal to use VaR as an (intermediate) instrument for the measurement of volatility? Is the proposed VaR-based approach appropriate to convey correct information about the relevant return volatility of structured funds?

9. Do you share the view that the solution proposed by CESR is flexible enough to accommodate the specific features of all (or most) types of structured fund? If not, please explain your comments and suggest alternatives or explain how the approach could be adjusted or improved.

10. Do you agree with CESR's proposal concerning the methodology to compute the VaR-based volatility of structured funds over a holding period of 1 year? If not, please explain your comments and suggest alternatives.

11. Do you agree with CESR's proposal concerning the methodology to compute the VaR-based volatility of structured funds at maturity? If not, please explain your comments and suggest alternatives.

Other possible approaches

In March 2009, CESR proposed a different approach for the computation of volatility for structured funds via the technical consultation (Ref. CESR/09-047). This approach was not taken forward in light of comments received. That approach was based on elements drawn from derivatives pricing theory ('delta representation'), consisting, in general, of the idea of using the contingent payoff profile at maturity to infer the positions (replicating portfolios) in zero-coupon bonds and in the relevant index (or mix of indices or assets) equivalent to the exposure of the fund. Volatility of structured funds would be approximated, consequently, by the volatility of such 'replicating' portfolios.

An alternative approach for structured funds – equally consistent with the requirements of the UCITS Directive to have effective risk management models, systems and procedures – could rely on tools and techniques to perform stochastic simulations concerning the risk and reward profile of such funds (such as Monte Carlo simulations of the return distribution), hence, to operate the computation of their SRRI. In fact, these models may easily allow for either the simulation of VaR figures or, directly, for that of the relevant volatility measures of structured funds. However, in these circumstances CESR should specify clear methodological instructions and requirements for the simulations – such as, in the first instance, compliance with the risk neutrality principle – in order to prevent divergences and arbitrage opportunities which may undermine the level playing field.

Additional questions for the consultation

12. Do you agree with CESR's decision not to promote further the adoption of the delta representation approach for the computation of volatility of structured funds?

13. Do you share the view that CESR's current proposal represents an improvement with respect to the delta representation approach? If not, please clarify why you believe that the delta representation approach may be more suitable to estimate the volatility of structured funds.

14. Do you consider it possible and appropriate to allow the use of Monte Carlo simulations for the computation of the SRRI of structured funds? If yes, please explain whether these methods are more suitable for the computation of VaR or, directly, for that of volatility measures.

15. Do you believe that it would be possible to avoid significant differences in the outcome of such simulations across management companies? What should be the key methodological requirements needed to avoid such divergences?

ANNEX I – EVIDENCE CONCERNING THE STABILITY OF THE VOLATILITY 'BUCKETS'

Fixing the upper and lower bounds to the volatility buckets requires a prior identification of an adequate forecasting model of future volatility patterns.

The proposed buckets are the results of a stochastic optimization process, where the intuitive relationship between volatility and loss measures (such as also the VaR – the Value at Risk) has been fully disentangled and exploited through use of stochastic models for the dynamics of fund returns volatility.

The proposed volatility buckets were tested in an empirical study on a sample of 544 European (from Luxembourg, United Kingdom, France, Italy, Germany and Spain) open-ended funds over the period from 1 January 2006 to 31 December 2008.

Table n. 1 Distribution of funds in the sample by country and Lipper Global category

Type of structure	Lipper Global		FR	DE	IT	LU	ES	UK	Total
Risk Target	Mixed Asset EUR Flex - Global		7	7	7	8	6		35
Return Target	Guaranteed		5				1		6
	Protected		5		1	3		1	10
Benchmark	Bond Emerging Markets Global	Monetary/Bond	2	1	5	4		1	13
	Bond EUR		5	6	5	6	5		27
	Bond EUR Corporates		2	2	3	5			12
	Bond EUR Long Term		2	3		5			10
	Bond EUR Short Term		4	5	6	8	3		26
	Bond Global		5	6	5	5	6	3	30
	Bond Global High Yield		1	1	1	6	1	3	13
	Money Market EUR		6	8	6	8			28
	Equity Emerging Mkts Europe	Equity	3	1		7		2	13
	Equity Emerging Mkts Global		2		5	6	1	6	20
	Equity Europe		4	6	5	7	6	3	31
	Equity Europe Sm&Mid Cap		6	6	2	7	1	6	28
	Equity France		6	2		2			10
	Equity Germany		2	8		7			17
	Equity Global		7	8	6	8	7	7	43
	Equity Italy		1		5	7			13
	Equity North America		5	6	4	6	2	4	27
	Equity Sector Information Tech		4	6	1	5	2	3	21
	Equity Spain		1	2		2	6		11
	Equity UK		3	1		8		3	15
	Mixed Asset EUR Agg - Global	Balanced	8	7	6	7	4		32
	Mixed Asset EUR Bal - Global		4	7	7	7	6		31
	Mixed Asset EUR Cons - Global		4	4	6	5	3		22
Total			**104**	**103**	**86**	**149**	**60**	**42**	**544**

This empirical analysis focused on the assessment of the actual risk level of the fund and of the migration risk, that is, the risk of funds migrating from one risk class to another over the business cycle, attached to the proposed calibration of the volatility buckets. The potential impact and frequency of these circumstances, in fact, may severely hamper the viability of the overall framework.

The findings from the analysis, however, provided sufficient comfort in this specific respect, as only few funds experienced migrations, and in any case no more than four, across risk classes during the observation period.

Table n. 2 Migrations between risk classes from 1 January 2006 to 31 December 2008

Type of structure	Lipper Global		Total no. of Migrations					
			0	1	2	3	4	5
Risk Target	Mixed Asset EUR Flex - Global		20%	49%	17%	14%	-	-
Return Target	Guaranteed		17%	67%	-	17%	-	-
	Protected		40%	50%	10%	-	-	-
Benchmark	Money Market EUR	Monetary/Bond	79%	18%	-	4%	-	-
			x	-	-	-	-	-
	Bond EUR		30%	63%	4%	4%	-	-
			-	x	-	-	-	-
	Bond EUR Corporates		42%	42%	-	17%	-	-
			-	-	x	-	-	-
	Bond EUR Long Term		10%	90%	-	-	-	-
			-	x	-	-	-	-
	Bond Emerging Markets Global		23%	54%	15%	-	8%	-
			x	-	-	-	-	-
	Bond EUR Short Term		31%	54%	8%	8%	-	-
			-	x	-	-	-	-
	Bond Global		17%	50%	20%	13%	-	-
			-	-	-	x	-	-
	Bond Global High Yield		23%	31%	8%	31%	8%	-
			x	-	-	-	-	-
	Equity Europe	Equity	-	84%	13%	-	3%	-
			-	-	x	-	-	-
	Equity Emerging Mkts Europe		-	54%	-	46%	-	-
			-	-	-	x	-	-
	Equity Emerging Mkts Global		20%	75%	-	5%	-	-
			-	x	-	-	-	-
	Equity Europe Sm&Mid Cap		-	75%	18%	7%	-	-
			-	x	-	-	-	-
	Equity France		-	80%	20%	-	-	-
			-	x	-	-	-	-
	Equity Germany		53%	41%	6%	-	-	-
			x	-	-	-	-	-
	Equity Global		21%	58%	2%	19%	-	-
			-	x	-	-	-	-
	Equity Italy		-	69%	-	31%	-	-
			-	x	-	-	-	-
	Equity North America		22%	67%	11%	-	-	-
			-	x	-	-	-	-
	Equity Sector Information Tech		38%	57%	5%	-	-	-
			-	x	-	-	-	-
	Equity Spain		-	45%	55%	-	-	-
			-	-	x	-	-	-
	Equity UK		-	33%	53%	7%	7%	-
			-	-	x	-	-	-
	Mixed Asset EUR Agg - Global	Balanced	6%	91%	-	3%	-	-
			-	x	-	-	-	-
	Mixed Asset EUR Bal - Global		16%	65%	13%	6%	-	-
			-	x	-	-	-	-
	Mixed Asset EUR Cons - Global		23%	59%	9%	9%	-	-
			-	x	-	-	-	-

Empirical evidence has indicated that most migrations took place within the riskier classes, suggesting that the problem is not very likely to affect the bottom of the risk scale, where its impact on consumer understanding may be more detrimental.

Table n. 3 Migrations between risk classes from 1 January 2008 to 31 December 2008

Type of structure	Lipper Global		Total no. of Migrations - 2008					
			0	1	2	3	4	5
Risk Target	Mixed Asset EUR Flex - Global		49%	49%	3%	-	-	-
Return Target	Guaranteed		67%	33%	-	-	-	-
	Protected		60%	40%	-	-	-	-
Benchmark	Money Market EUR	Monetary/Bond	79%	21%	-	-	-	-
			x	-	-	-	-	-
	Bond EUR		48%	52%	-	-	-	-
			-	x	-	-	-	-
	Bond EUR Corporates		67%	33%	-	-	-	-
			x	-	-	-	-	-
	Bond EUR Long Term		10%	90%	-	-	-	-
			-	x	-	-	-	-
	Bond Emerging Markets Global		31%	69%	-	-	-	-
			x	-	-	-	-	-
	Bond EUR Short Term		35%	62%	4%	-	-	-
			-	x	-	-	-	-
	Bond Global		30%	70%	-	-	-	-
			x	-	-	-	-	-
	Bond Global High Yield		31%	62%	8%	-	-	-
			x	-	-	-	-	-
	Equity Europe	Equity	77%	23%	-	-	-	-
			-	x	-	-	-	-
	Equity Emerging Mkts Europe		100%	-	-	-	-	-
			-	x	-	-	-	-
	Equity Emerging Mkts Global		45%	55%	-	-	-	-
			x	-	-	-	-	-
	Equity Europe Sm&Mid Cap		75%	25%	-	-	-	-
			x	-	-	-	-	-
	Equity France		20%	80%	-	-	-	-
			-	x	-	-	-	-
	Equity Germany		76%	24%	-	-	-	-
			x	-	-	-	-	-
	Equity Global		74%	26%	-	-	-	-
			x	-	-	-	-	-
	Equity Italy		100%	-	-	-	-	-
			x	-	-	-	-	-
	Equity North America		37%	63%	-	-	-	-
			-	x	-	-	-	-
	Equity Sector Information Tech		38%	62%	-	-	-	-
			-	x	-	-	-	-
	Equity Spain		45%	55%	-	-	-	-
			-	x	-	-	-	-
	Equity UK		33%	60%	7%	-	-	-
			-	x	-	-	-	-
	Mixed Asset EUR Agg - Global	Balanced	13%	88%	-	-	-	-
			-	x	-	-	-	-
	Mixed Asset EUR Bal - Global		45%	55%	-	-	-	-
			x	-	-	-	-	-
	Mixed Asset EUR Cons - Global		32%	68%	-	-	-	-
			-	x	-	-	-	-

In spite of the financial turmoil which characterised the end of the year, the data for 2008 reported in the table above essentially confirmed the evidence gathered by the study, assuming a role similar to that of a stress test concerning the robustness of the volatility buckets in order to represent the actual risk level of the funds. In fact, despite the larger number of funds experiencing migrations, the frequency of such shifts was in any event limited to only one, showing consistency with the requirement to update the KID at least once a year, as this allows the detection of most variations in the overall risk level of the funds.