Depositary And Trustee Association

Investment Management Association

Risk Management Process:
Guide for Managers of
UK UCITS and AIFs

June 2014

This document is intended to provide a helpful indication of some of (but not all) the kinds of controls and procedures that may be adopted by AFMs. They are in no way conclusive or exhaustive and in many cases will need to be adapted to fit the size of the authorised fund, its investment objectives and policy, the expertise of the manager's staff and any requirements that may be imposed upon the authorised fund and/or the manager either contractually or by regulation. AFMs should consider seeking appropriate external professional advice as regards the procedures, practices and controls appropriate to their own particular use of derivatives. This should include discussions with the depositary of the fund.

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DEFINITIONS

For sake of simplicity this document uses the following generic terms:

AIF	Alternative Investment Fund (as defined by AIFMD)
AIFMD	Alternative Investment Fund Managers Directive (2011/61/EU)
AIFMD Level 2	Commission Delegated Regulation No. 231/2013 supplementing AIFMD
Authorised fund	a UK authorised UCITS, NURS or QIS
AIFM	Alternative Investment Fund Manager (as defined by AIFMD)
AFM	authorised fund manager - a unit trust manager or an authorised corporate director of an OEIC
CESR	Committee of European Securities Regulators (now ESMA)
CESR's Guidelines	CESR's Guidelines on Risk Measurement and the Calculation of Global Exposure and Counterparty Risk for UCITS dated 28 July 2010 (CESR 10/788)
CESR's Principles	CESR's Risk Management Principles for UCITS dated February 2009 (CESR 09/178)
COLL	the FCA's Collective Investment Schemes Sourcebook
Commitment Approach (UCITS)	the notional exposure to which the scheme is or could be committed to a third party taking account of reasonably foreseeable market movements.
Commitment Approach (AIFMD)	as defined by Article 8 of AIFMD Level 2
Depositary	a unit trust trustee or an OEIC depositary
Derivative	future, option, contract for difference, forward foreign exchange contract
EAD	EU Eligible Assets Directive (2007/16/EC).
Embedded Derivatives	See appendix
EPM	Efficient Portfolio Management
ESMA	European Securities and Markets Authority (formerly CESR)
FCA	Financial Conduct Authority
FSA	Financial Services Authority
FUND	the FCA's Investment Funds Sourcebook
Gross Exposure (AIFMD)	Is the exposure based on the absolute value of all positions, assets and liabilities, held by the AIF in financial instruments. The gross exposure of derivative instrument consists of the equivalent position in the underlying asset
Hedging	is defined by CESR as *"combinations of trades on financial derivative instruments and/or security positions which do not necessarily refer to the same underlying asset and where the trades on financial derivative instruments and/or security positions are concluded with the sole aim of offsetting risks linked to positions taken through the other financial derivative instruments and/or security positions"*
Higher Volatility Fund	is defined in the FCA Handbook Glossary as: *(a) a regulated collective investment scheme which is:* *(i) a scheme where the investment policies which the operator adopts, or proposes to adopt, mean that, as a result of making*

	investments in warrants or derivatives, or through borrowing that is not temporary in nature, movements in the price of units are likely to be significantly amplified; or *(ii) an umbrella with a sub-fund that would fall within (i) if that sub-fund were a separate scheme; or* *(b) an authorised fund dedicated to units in:* *(i) a number of regulated collective investment schemes; or* *(ii) sub-funds of one or more umbrellas that are regulated collective investment schemes;* *any one of which falls within (a)*
IMA SORP	the latest Statement of Recommended Practice for financial statements of authorised funds issued by the Investment Management Association
Investment Manager	referred to in the FCA Handbook Glossary as an *"investment adviser"* and defined as: *a person who is retained by an ICVC, its directors or its ACD or by a manager of an AUT under a commercial arrangement which is not a contract of service:* *(a) to supply any of them with advice in relation to the authorised fund as to the merits of investment opportunities or information relevant to the making of judgments about the merits of investment opportunities; or* *(b) to exercise for any of them any function concerning the management of the scheme property*
Leverage (AIFMD)	as defined by AIFMD "any method by which the AIFM increases the exposure of an AIF it manages whether through borrowing of cash or securities, or leverage embedded in derivative positions or by any other means" It is expressed as a ratio between the exposure of an AIF and its Net Asset Value
Netting	is defined by CESR as *"combinations of trades on financial derivative instruments and/or security positions which refer to the same underlying asset, irrespective – in the case of financial derivative instruments – of the contracts' due date; and where the trades on financial derivative instruments and/or security positions are concluded with the sole aim of eliminating the risks linked to positions taken through the other financial derivative instruments and/or security positions."*
Notional Exposure	Exposure of a derivative calculated on the basis of: a) the amount of equivalent cash that would be involved in the transaction to gain exposure of the actual underlying security to the derivative; and b) appropriately adjusting the cash equivalent to reflect reasonably foreseeable current and future market events. Options should be delta adjusted.
NURS	Non-UCITS Retail Scheme
OEIC	Open Ended Investment Company
OTC Derivative	Over-the-Counter derivative transaction
QIS	Qualified Investor Scheme
Risk Limit System	as defined by the FCA Glossary and UCITS *"a documented system of internal limits concerning the measures used by a management company to manage and control the relevant risks for each UCITS it manages, taking into account all the risks which may be material to the UCITS, as referred to in the second paragraph of article 38(1) of the UCITS implementing*

	Directive and ensuring consistency with the UCITS' risk profile."
Stress testing	a process undertaken by AFMs to gauge the impact of extreme financial or economic events on the value of the portfolio at a specific point.
UCITS	Undertaking for Collective Investment in Transferable Securities - UK authorised unit trusts or OEICs that fulfil the requirements to enable them to be promoted throughout the European Union
UCITS IV	Directive 2009/65/EC of the European Parliament and of the Council of 13 July 2009
VaR basis of calculating market exposure	a modelling process that uses Value at Risk (VaR) techniques

Introduction

CESR (now ESMA), through its Investment Management Expert group, conducted a survey on how the EU Recommendations 2004/383/EC of 27 April 2004 on the use of financial derivative instruments for undertakings for collective investment in transferable securities (UCITS) had been implemented in the different EU jurisdictions. The survey was also aimed at assessing whether CESR Members required risk management systems for all UCITS, including those not invested in derivatives.

As a result, CESR undertook to produce guidelines and principles for the industry on risk management for UCITS and to issue specific technical and quantitative guidance on global exposure, leverage and counterparty risk in relation to financial derivatives.

CESR published its Risk Management Principles for UCITS in February 2009. The paper proposed a framework of guidelines in respect of risk management and outlined the key elements of the risk management process.

In July 2009, the EC issued the re-cast UCITS Directive ("UCITS IV"), which included additional legislation regarding the management company passport, master/feeder funds, cross border mergers, notifications and the Key Investor Information Document. Of these additions, UCITS IV Level 2 provisions (2010/43/EU) on management companies included specific requirements regarding an AFM's operation of its risk management process, supported by CESR's Level 3 guidance entitled "Guidelines on Risk Measurement and the Calculation of Global Exposure and Counterparty Risk for UCITS" published in July 2010.

UCITS III, which enabled the wider use of derivatives, highlighted 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.*" This was further enhanced by the *"Commission Recommendation 2004/383/EC of 27 April 2004 on the use of financial derivative instruments for undertakings for collective investment in transferable securities (UCITS)"* (which, following UCITS IV, is no longer in force). The Eligible Assets Directive also provided extra requirements on derivatives, which were incorporated by (then) FSA regulation and are included, where necessary, in this document.

The requirements of UCITS III equally apply to UCITS IV. Article 51 of Directive 2009/65/EC states *"A 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 in regard to 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."*

The Directive on Alternative Investment Fund Managers ("AIFMD") came into force on 21 July 2011. Member States were required to transpose AIFMD into national law by 22 July 2013. The Commission has also enacted delegated measures (AIFMD Level 2).

AIFMD regulates managers (AIFMs) of any collective investment undertaking – of whatever legal structure; whether open-ended or closed-ended; whether authorised, listed or unregulated - which is not a UCITS. This captures a wide range of UK vehicles, including NURSs, QISs, unauthorised unit trusts, charity funds, investment trusts, and specialist vehicles such as hedge funds, private equity funds, venture capital funds and real estate funds.

AIFMD imposes detailed regulation on AIFs as well as on AIFMs since it introduces requirements on matters such as safekeeping of assets, leverage, risk management, liquidity management, and valuation and pricing. Most AIFMs will already be subject to the risk management requirements imposed by MiFID and/or UCITS. Therefore, according to the Commission, coherence with those requirements was a key factor in the design of the AIFMD Level 2 implementing measures. It acknowledged that the existence of a well-developed and proven regulatory framework for UCITS meant that there were no valid reasons to deviate from the UCITS requirements when developing the AIFMD implementing measures. The AIFMD implementing measures take a relatively general, principles-based approach due to the range of AIFs subject to the requirements.

In addition, the FCA's Principles for Business no. 3 states that a firm must take reasonable care to organise and control its affairs responsibly and effectively, with adequate risk management systems.

This document focuses on the risk management processes required by the FCA regulations in relation to the management of UCITS and AIFs but it should not be read in isolation. The primary reference point for users should always be the FCA Handbook. This guide should not be regarded as an alternative to referring to the Handbook.

The Guide does not, for example, address the inherent risks of instruments such as warrants, zero dividend preference shares, placements and underwritings etc. Neither is it a comprehensive reference guide to derivative instruments, markets etc.

Those AFMs that wish to take full advantage of the flexibility offered by UCITS and the NURS regime in COLL have to ensure their framework is of a more sophisticated and robust nature, in line with the FCA requirements and the principles outlined in CESR's Guidelines.

Regardless of the level of complexity, all AFMs are required to analyse and formally document how the proposed strategies impact risk within the Authorised Fund and to document their risk management framework (COLL6.12/ FUND 3.7.5R)). In relation to UCITS funds, CESR's Guidelines state that *"the use of a commitment approach or VaR approach or any other methodology to calculate global exposure does not exempt UCITS from the requirement to establish appropriate internal risk management measures and limits."*

This Guide also briefly considers counterparty exposure from OTC derivative transactions and the use of collateral to reduce such exposure.

General Requirements and Responsibilities

The FCA Handbook states that the FCA *"aims to focus and reinforce the responsibility of the senior management of each firm to ensure that it takes reasonable care to organise and control the affairs of the firm responsibly and effectively and develops and maintains adequate risk management systems. It is the responsibility of management to ensure that the firm acts in compliance with its regulatory requirements."* To this end, the FCA has specified a number of "controlled functions" which it sees as key within firms' operations, and has stated that individuals performing these important functions should be "approved persons". A number of the functions described in this section are likely to be undertaken by "approved persons".

This section of the Guide is intended to set out clearly some typical responsibilities regarding the risk management process. It is not meant to be prescriptive in nature and, in practice, structures will differ between firms, depending on their complexity, size and geographical nature. In all cases, fulfilling these responsibilities should be a key consideration and will be integral to developing an appropriate risk management process. Ultimately, the FCA will expect Boards to assume clear and distinct ownership of the risk management process.

Reference should be made to CESR's Principles, which *"proposes a framework for guidelines concerning risk management, providing principles and an outline of the key elements for a standard in the risk management process."*

Responsibilities of the Board of the AFM

- Agree the appropriateness of using derivative strategies for retail Authorised Funds.
- Establish and approve an effective policy and an appropriate supervisory structure for the use and risk management of derivatives, which is consistent with regulatory requirements and the investment policy and risk profile of the Authorised Fund.
- Nominate one or more senior individuals to be responsible for the AFM's use of derivatives in the Authorised Fund.
- Ensure that these individuals have an appropriate degree of independence from the investment manager.
- Ensure those responsible understand derivative instruments and that they report to the Board on the fund derivative positions and exposure.
- Make informed judgments on the fund derivative positions and exposure.
- Review the AFM's remuneration policies to ensure that they are not likely to encourage undue or inappropriate risks to be taken. Consideration should be given to factoring in measures such as compliance, prevention of loss (as well as the securing of profit) and long-term performance when setting the methodology for calculating bonus payments.
- Ensure that the AFM has appropriate legal experience, or obtains legal advice to consider whether appropriate legal agreements are in place to ensure the Authorised Fund's ownership and interests are legally recognised/protected;
- Ensure that where any functionality is outsourced to other providers, either internally or externally, that the Board retains ultimate responsibility for implementing the controls of the risk management process.
- Ensure that the processes and controls implemented under the risk management process are subject to periodic review as part of the internal audit. This may be supplemented by

additional review by the Authorised Fund's external auditor. However, additional charges may be made by the auditors as a result.

Responsibilities of the Risk Committee ("the Committee") or other appropriately empowered group or individual

- Ensure that the actual usage of derivatives is monitored and reviewed regularly by persons independent of those responsible for managing derivatives and complies with COLL/FUND and any other relevant FCA Handbooks, any applicable laws and Board policy on a consistent basis.
- Approve the qualifications and experience of senior managers and others who will be responsible for identifying and managing the risk associated with the Authorised Fund's use of derivatives and ensure that no undue reliance has been placed on too few specialists.
- Ensure that staff that are responsible for controlling risks and administering transactions are independent of those initiating the transactions and have the skills, experience and authority that enables them to challenge them effectively, as may be necessary.
- Ensure that staff have appropriate legal expertise, or obtain legal advice to negotiate legal agreements used by the Authorised Fund to ensure the Authorised Fund's ownership and interests are legally recognised/protected.
- Where appropriate, seek additional professional advice, and/or support, from external specialists to provide independent assessment and input where necessary.
- Consider carefully the role of external service providers and their capacity to fulfil their roles.
- Ensure that there are procedures that are adequately documented.
- Establish contingency plans to cater for staff changes and turnover. These may include the periodic rotation of staff who undertake key risk management functions and also succession planning.
- Be made formally responsible for ensuring new instruments, products and strategies are appropriately reviewed. Any new form of derivative strategy, particularly where new instruments or products are involved, must be subject to rigorous prior assessment and approval. This process should determine appropriate parameters, controls and limits, to ensure that any consequential risks are properly understood and within the relevant Authorised Fund's accepted level of tolerance to risk. Critically, the Committee and the individual investment manager or team responsible for the portfolio should have a common understanding of the new strategy.

Responsibilities of the AFM

Prior to approving the use of any new type of derivative instrument, the relevant departments/business units of the AFM should satisfy the Risk Committee that:

- it is consistent with the AFM's management capabilities, including:
  - capability of efficiently executing, settling, administering and pricing the new instrument;
  - all relevant front and back office staff have received any necessary instrument specific training; and
  - any necessary manual work-arounds to fund valuation systems have been fully tested and documented;

- the risks and rewards of their use have been assessed and documented by persons independent of the investment managers and dealers;
- the policies and control procedures developed by the AFM's senior management are appropriate and documented. Such assessment should cover accounting and control procedures, IT and systems implications, relevant legal or regulatory approvals, and appropriate sign-offs in all relevant areas by the AFM's senior line management;
- appropriate legal agreements are in place to ensure the Authorised Fund's ownership and interests are legally recognised/protected (for example, ISDA or CSA documentation;
- appropriate records are kept to enable disclosures to be made in accordance with the IMA SORP[1];
- investors have been properly informed (via the Prospectus, KIID requirements etc, including if the Authorised Fund should be classified as a higher volatility fund) of intended revisions to derivative strategies and instruments to be used;
- the Depositary has been consulted.

In accordance with FCA Training & Competence requirements, the AFM's framework of internal controls must be effectively implemented, carried out and monitored by persons with sufficient knowledge and authority to discharge their duties and the principles, as set out in this Guide. All members of the AFM's staff with responsibility for managing risk and all those involved with the execution and settlement of transactions and their supervisors must be adequately trained and have sufficient knowledge and authority to discharge their duties effectively. They should also be aware of the need to observe, and keep up-to-date with, internal control procedures.

Processes should be formalised that address the:

- selection, approval and monitoring of brokers and other counterparties and any other service providers. The process should be proportionate to the nature, scale and complexity of the broker or counterparty and the services offered/provided. Consideration should be given not just to their fees and commissions, but also to, among other things, their financial strength, management structures, operational and legal capacity to undertake the relevant business, effectiveness of systems and procedures for dealing with contingencies whether or not they are trading for their own account, and the legal agreements they are prepared to enter into. The selection process should be the subject of documented assessment and regular review, where possible, by personnel independent from those involved in trading to avoid potential conflicts of interest;
- authorisation of individuals to negotiate, approve, and deal in / execute transactions;
- setting of procedures for and overseeing of day-to-day transactions and the observance of any restrictions, both internal and external, on the power of parties to enter into particular transactions.

Clear written policies and procedures should be established for managing the risks facing Authorised Funds that are sufficient to identify, measure, manage, mitigate and report on all forms of market risk that may be generated by adverse movements in equity, bond, currency or other market prices, indices or rates or changes in the volatility of such movements. These:

[1] http://www.investmentuk.org/assets/files/consultations/2014/20140513-SORP2014.pdf

- must be consistent with the relevant COLL Sourcebook requirements;
- should be embedded in the culture of the AFM and its employees;
- should be targeted at identifying breaches of key controls (e.g. unauthorised trading activities, market manipulation, embezzlement of funds, insider dealing, excessive and speculative trading, errors and incompetence).

Where appropriate, limits and limit procedures for derivative exposure that are consistent with the COLL/FUND Regulations, or the investment objectives of each fund, if further restricted, should be designed and documented. Details should cover reporting lines, authorisations, action on breaches of limits and reports to the AFM or Depositary of any significant limit excesses.

Responsibilities of the Investment Manager

As part of the process for approving a strategy, the investment manager should provide evidence to the Committee that demonstrates the following points have been considered (and should therefore document key elements of relevant discussions):

- The investment objectives of the Authorised Fund and its investment policy contained within its Instrument of Incorporation and Prospectus.
- The intended derivative strategies and confirmation that these do not conflict with the investment objectives.
- Any constraints on the derivative strategy, e.g. permitted instruments, size, geographical and market limitations.
- The fund's appetite for risk, the main risks and how the investment manager intends to address such risks, e.g. avoidance, hedging or acceptance of that risk.
- The overall impact of the new strategy/instrument on the fund's risk profile.
- Any regulatory constraints.
- The planned processes for monitoring derivative positions.
- Whether appropriate legal documentation is in place with brokers and other counterparties.
- Confirmation that the opinion of the Depositary has been sought.

Responsibilities of the Depositary

The Depositary should take reasonable care to review the appropriateness of the risk management process in line with its duty set out in relation to investment and borrowing powers (COLL 6.6.14R). This is likely to incorporate an ongoing review for appropriateness and when there are substantive or material changes to the process.

The Depositary may consider, amongst other things:

- The AFM's procedures to determine that actual usage of derivatives is reviewed regularly by independent persons and that the usage of derivatives complies with stated policies or strategies;

- The process the AFM’s Committee or other appropriately identified body/person adopts to ensure appropriately qualified and experienced people are employed and that levels of expertise are maintained;
- The terms of reference of the Committee or other appropriately identified body/person;
- The AFM’s policy on VaR measurement techniques and that appropriate stress testing and back testing has been implemented;
- The legal agreements used by the Authorised Fund to ensure the fund’s ownership and interests are legally recognised/protected;
- The AFM’s derivative exposure measurement and assessment model for appropriateness; in particular, the controls in place to ensure that exposure remains in line with the Authorised Fund’s objectives, internal limits, where appropriate, and regulatory requirements;
- The procedures employed covering the independent price verification and valuation undertaken by the AFM and that the pricing model agreed for OTC derivative positions is appropriate and in line with the regulatory requirement in COLL 5.2.23 R3;
- The provision of management reports on derivatives to appropriate senior managers on a timely basis and whether they contain relevant, reliable and comprehensive information, in line with the terms of the committee or other appropriately empowered group or individual.

Independent Price Verification

In order to produce reliable derivative exposure reports on which management decisions can be based, market parameters (instrument prices, data sets, interest rates and foreign exchange rates) fed into the approved derivative exposure measurement and assessment models must be checked for integrity and reasonableness.

Market parameters may be input into approved derivative exposure measurement and assessment models manually or by automated feeds, which may give rise to manual input error, linkage error, systems error (when links fail) or third party input error. Policies and procedures should be developed to identify and correct these errors by comparing previous sets of market parameters (i.e. closing prices and rates) to current end-of-day market parameters, investigating the reasons behind large variations, and taking the appropriate action.

Responsibility should be allocated to appropriate and skilled staff who are independent of those responsible for trade execution. If this is not possible, the variations should be checked or audited on a regular basis by an independent area such as Internal Audit.

In the case of OTC products, some form of independent pricing will have to be sourced either from within the AFM's organisation (where there is a sufficient degree of expertise to do so), or possibly externally from an institution other than the product provider.

As a function of its oversight responsibility, the Depositary may request evidence of independent price verification (e.g. regarding valuations – COLL 5.2.23 (2) (a)).

Regular Internal Reporting Requirements

Regular, intelligible and timely reports, which focus attention on key risks, should be supplied to those with responsibility for managing market, credit and operational risk to ensure that the reporting and internal control systems of the organisation are such that the responsible parties can be assured that transactions are being undertaken in accordance with the stated objectives and strategy (e.g. in the case of hedging transactions, that the underlying instrument or rate is properly identified) and in compliance with COLL/FUND and COBS Sourcebook Requirements.

Management should receive regular information on risk exposure and the usage of derivatives in a form which is understood by them and which permits them to make informed judgments as to the level of derivative exposure in accordance with an agreed reporting framework that clearly sets out the report types, the frequency of the reports, the responsibility for producing them and the recipients of them.

Adequate training programs should be provided to ensure relevant skills are built up and maintained to understand, measure, manage, mitigate and report on the various risks faced by the fund, including market risk, credit risk, operational risk and legal/regulatory risk.

As part of its duty of oversight, the Depositary may consider such reports and the consequent actions taken by management.

Timely reports on fund activities should be prepared, checked and circulated to the responsible parties by competent staff, independent of the AFM's investment activities, which provide, where appropriate:

- a reasoned description of each fund's exposure, including, if appropriate, relevant portfolio VaR analysis;
- details of likely future activity;
- details of the level of operational exceptions (for example, errors on timely trade capture and generally for middle/back-office operations statistics on transaction processing status);
- evidence of completed reconciliations of all items in the trade life cycle, including cash, mark-to-market margining, stock, unmatched and failed trades;
- details of utilisation against exposure limits, giving details of any regulatory or internal exposure limits breached in the period and action taken;
- where appropriate, stress test/scenario results.

A formal process should be established to ensure that trigger levels are set by the Committee. The trigger levels for escalating issues to the Committee should be based on the materiality and duration of the exposure limit breach. Careful consideration should be given to the timing of these escalation reports to ensure that reports may be disseminated and, where necessary, acted upon in an appropriate time period.

Specific UCITS Requirements

Permanent Risk Management Function (COLL 6.11.2 R)

AFMs are required to establish and maintain a permanent risk management function.

The permanent risk management function must be hierarchically and functionally independent from operating units, except where such independence would not be appropriate and proportionate in view of the nature, scale and complexity of the AFM's business and of each scheme it manages.

The AFM must be able to demonstrate that:

(a) appropriate safeguards against conflicts of interest have been adopted so as to allow an independent performance of risk management activities; and

(b) its risk management process satisfies the requirements of COLL 6.12.3 R (Risk management process) or, where appropriate, the relevant UCITS Home State measures implementing article 51 of the UCITS Directive.

Where the risk management is not hierarchically and functionally independent, the AFM should nevertheless be able to demonstrate that its risk management process satisfies the requirements of COLL 6.12.3 R (Risk management process) and that in particular, the appropriate safeguards have been adopted.

Duties of the permanent risk management function (COLL 6.11.4 R)

(1) The permanent risk management function must:

(a) implement the risk management policy and procedures;

(b) ensure compliance with the risk limit system, including statutory limits concerning global exposure and counterparty risk, as required by COLL 5.2 (General investment powers and limits for UCITS schemes) and COLL 5.3 (Derivative exposure) or, where appropriate, the relevant UCITS Home State measures implementing articles 41, 42 and 43 of the UCITS implementing Directive;

(c) provide advice to the governing body, as regards the identification of the risk profile of each scheme it manages;

(d) provide regular reports to the governing body and, where it exists, the supervisory function on:
(i) the consistency between the current level of risk incurred by each scheme it manages and the risk profile agreed for that scheme;
(ii) the compliance of each scheme it manages with the risk limit system referred to in (b); and
(iii) the adequacy and effectiveness of the risk management process, indicating in particular whether appropriate remedial measures have been taken in the event of any deficiencies;
(e) provide regular reports to the senior personnel outlining the current level of risk incurred by the relevant scheme and any actual or foreseeable breaches to their limits, so as to ensure that prompt and appropriate remedial action can be taken; and

(f) review and support, where appropriate, the arrangements for the valuation of OTC derivatives, as referred to in COLL 5.2.23 R (OTC transactions in derivatives), COLL 5.2.23C

R (Valuation of OTC derivatives) and in this rule or, where appropriate, the relevant UCITS Home State measures implementing article 44 of the UCITS implementing Directive.

(2) The permanent risk management function must have the authority and access to all relevant information necessary to fulfil the duties set out in (1).

CESR's Guidelines indicate that the following tasks should be carried out by the risk management function when using VaR:-

a) sourcing, testing, maintaining and using the VaR model on a day-to-day basis;

b) supervising the process relating to the determination of the reference portfolio if the UCITS reverts to a relative VaR approach;

c) ensuring on a continuous basis that the model is adapted to the UCITS's portfolio;

d) performing continuous validation of the model;

e) validating and implementing for each UCITS a documented system of VaR limits consistent with its risk profile that is to be approved by senior management and the board of directors;

f) monitoring and controlling the VaR limits;

g) monitoring on a regular basis the level of leverage generated by the UCITS;

h) producing on a regular basis reports relating to the current level of the VaR measure (including back testing and stress testing) for senior management.

The VaR model should undergo a validation by a party independent of the building process for ensuring that the model is conceptually sound and captures adequately all material risks. This validation process must also be carried out following any significant change to the model. A significant change could relate to the use of a new product by the UCITS, the need to improve the model following the back testing results, or a decision taken by the UCITS to change certain aspects of the model in a significant way.

The risk management function should perform ongoing validation of the VaR model (this includes, but is not limited to, back testing) in order to ensure the accuracy of the model's calibration. The review should be documented. Where necessary, the model should be adjusted.

Risk management policy and risk measurement

Risk management Process (COLL 6.12.3R)

(1) An AFM must use a risk management process enabling it to monitor and measure at any time the risk of the scheme's positions and their contribution to the overall risk profile of the scheme.

(2) AFM's must regularly notify the following details of the risk management process to the FCA and at least on an annual basis:

(a) a true and fair view of the types of derivatives and forward transactions to be used within the scheme together with their underlying risks and any relevant quantitative limits; and

(b) the methods for estimating risks in derivative and forward transactions.

The risk management process should take account of the investment objectives and policy of the scheme as stated in the most recent prospectus.

An AFM is expected to demonstrate more sophistication in its risk management process for a scheme with a complex risk profile than for one with a simple risk profile. In particular, the risk management process should take account of any characteristic of non-linear dependence in the value of a position to its underlying.

An AFM should take reasonable care to establish and maintain such systems and controls as are appropriate to its business as required by SYSC 4.1 (General requirements).

The risk management process should enable the analysis required by COLL 6.12.3 R to be undertaken at least daily or at each valuation point, whichever is more frequent.

The AFM should undertake the risk assessment required by COLL 5.2.20R (7)(d) (Permitted transactions (derivatives and forwards)) with the highest care when the counterparty to the derivative transaction is an associate of the authorised fund or the credit issuer.

Risk management policy (COLL 6.12.5 R)

(1) An AFM must establish, implement and maintain an adequate and documented risk management policy for identifying the risks to which that scheme is or might be exposed.

(2) The risk management policy must comprise such procedures as are necessary to enable the AFM to assess the exposure of each UCITS it manages to market risk, liquidity risk and counterparty risk, and to all other risks, including operational risk that might be material for that scheme.

(3) The risk management policy must address at least the following elements:

(a) the techniques, tools and arrangements that enable the AFM to comply with the obligations set out in this section and COLL 5.3 (Derivative exposure);
(b) the allocation of responsibilities within the AFM pertaining to risk management; and
(c) the terms, contents and frequency of reporting of the risk management function referred to in COLL 6.11.2 R (Permanent risk management function) to the governing body, senior personnel and, where appropriate, to the supervisory function.

(4) To meet its obligations in (1), (2) and (3) an AFM must take into account the nature, scale and complexity of its business and of the UCITS it manages.

Monitoring of risk management policy (COLL 6.12.7 R)

(1) An AFM must assess, monitor and periodically review:

(a) the adequacy and effectiveness of the risk management policy and of the arrangements, processes and techniques referred to in COLL 6.12.5 R;
(b) the level of compliance by the AFM with the risk management policy and with those arrangements, processes and techniques referred to in COLL 6.12.5 R; and
(c) the adequacy and effectiveness of measures taken to address any deficiencies in the performance of the risk management process.
(2) The AFM must notify the FCA of any material changes to the risk management process.

The FCA has stated that, when they applied for authorisation from the FCA under the Act, the ability of UK UCITS management companies to comply with the requirements in COLL 6.12.7 R would have been assessed by the FCA as an aspect of their fitness and properness in determining whether the threshold conditions set out in Schedule 6 (Threshold conditions) of the Act were met. Firms are further advised that their compliance with these requirements is subject to review by the FCA on an ongoing basis in determining whether they continue to meet the threshold conditions.

Measurement and management of risk (COLL 6.12.9R)

(1) An AFM must adopt adequate and effective arrangements, processes and techniques in order to:
(a) measure and manage at any time the risks to which that a UCITS is or might be exposed; and
(b) ensure compliance with limits concerning global exposure and counterparty risk, in accordance with COLL 5.2.11B R (Counterparty risk and issuer concentration) and COLL 5.3 (Derivative exposure).

(2) For the purposes of (1), the AFM must take the following actions for each UCITS it manages:
(a) put in place such risk measurement arrangements, processes and techniques as are necessary to ensure that the risks of positions taken and their contribution to the overall risk profile are accurately measured on the basis of sound and reliable data and that the risk measurement arrangements, processes and techniques are adequately documented;
(b) conduct, where appropriate, periodic back-tests in order to review the validity of risk measurement arrangements which include model-based forecasts and estimates;
(c) conduct, where appropriate, periodic stress tests and scenario analyses to address risks arising from potential changes in market conditions that might adversely impact the UCITS;
(d) establish, implement and maintain a risk limit system for each UCITS;
(e) ensure that the current level of risk complies with that risk limit system; and
(f) establish, implement and maintain adequate procedures that, in the event of actual or anticipated breaches to that risk limit system, result in timely remedial actions in the best interests of unitholders.

(3) The arrangements, processes and techniques referred to in (1) should be proportionate in view of the nature, scale and complexity of the business of the AFM and the UCITS it manages and be consistent with the UCITS' risk profile.

Liquidity Risk Management (COLL 6.2.11R)

An AFM must employ an appropriate liquidity risk management process in order to ensure that each UCITS it manages is able to comply at any time with COLL 6.2.16 R (Sale and redemption).

Where appropriate, the AFM must conduct stress tests to enable it to assess the liquidity risk of the UCITS under exceptional circumstances.

An AFM must ensure that, for each UCITS it manages, the liquidity profile of the investments of the scheme is appropriate to the redemption policy laid down in the instrument constituting the scheme or the prospectus.

See also the DATA/IMA Authorised Funds: Liquidity Management - A Guide

» Version 1 - reflects the FCA rules for firms which are not yet authorised as full-scope Alternative Investment Fund Managers or will be small authorised UK Alternative Investment Managers of authorised AIFs (September 2013)
» Version 2 - reflects the rules for firms which are authorised as full-scope Alternative Investment Fund Manager (September 2013)

CESR guidelines Risk management principles for UCITS

In February 2009, CESR proposed a framework for guidelines concerning risk management, providing principles and an outline of the key elements for a standard in the risk management process.

General principles concerning risk management from the perspective of UCITS investors

CESR's paper outlined the key principles concerning risk management which should be complied with in order to ensure protection of UCITS investors. These principles mainly relate to:

(i) the governance and organisation of the risk management process;
(ii) the identification and measurement of risks relevant to the UCITS;
(iii) the management of risks relevant to the UCITS;
(iv) monitoring and reporting.

http://www.esma.europa.eu/content/Guidelines-Risk-management-principles-UCITS

UCITS Global Exposure – calculation methodologies

A consistent and readily verifiable method of measuring derivative exposure is essential. The primary consideration for an Authorised Fund is compliance with the cover requirements in the COLL Sourcebook (e.g. Chapter 5). The method used to measure and monitor exposure must be driven by the complexity and sophistication of the instruments and strategies used.

AFMs are required to select an appropriate methodology to calculate global exposure which must be calculated on at least a daily basis. Where AFMs use complex investment strategies and have more than a negligible exposure to exotic derivatives then advanced methodologies must be used. In addition, an advanced methodology must be used where the commitment approach does not adequately capture the market risk of the portfolio. Intra-day calculations may also be required depending on the investment strategy and composition of the portfolio.

The following is a brief guide to the detail included in CESR's Guidelines on Risk Measurement and the calculation of Global Exposure and Counterparty Risk for UCITS dated 28 July 2010 (CESR/10-788):-

Commitment Approach

The global exposure calculated under the commitment approach must not exceed 100% of the net asset value of the Authorised Fund.

The Definition and Scope of Global Exposure is outlined in Box 1 of CESR's Guidelines.

Box 2 describes the steps that must be taken when calculating Global Exposure using the Commitment Approach.

Box 2 also contains details of the conversion methodologies to be used for each derivative instrument and includes explanatory text and some worked examples.

Box 3 contains details of the characteristics that must be fulfilled for a derivative to be excluded from the calculation.

Box 4 explains that a financial derivative instrument relating to a financial asset is not taken into account when calculating the commitment if (a) the combined holding by the Authorised Fund of a derivative relating to a financial asset and cash which is invested in risk free assets is equivalent to holding a cash position in the given financial asset and (b) the derivative instrument is not considered to generate any incremental exposure and leverage or market risk.

Box 5 defines the netting and hedging arrangements that can be used to reduce global exposure under the commitment method.

Box 6 provides detail on when a UCITS can net positions and the explanatory text provides some detailed examples.

Box 7 contains the details and methodology in respect of the duration-netting rules.

Box 8 provides details of where hedging arrangements can be taken into account, together with examples in the explanatory text.

Box 9 explains the criteria for Efficient Portfolio Management Techniques. Examples of transactions are provided in the explanatory text.

Value at Risk Approach

The aim of the VaR model approach is to provide an estimate of the worst expected loss on a derivative position resulting from market movements over a period of time with a given confidence level under normal market conditions. There are a number of methodologies for calculating VaR. These include historical simulation, variance-covariance, Monte Carlo or a hybrid of these.

The choice of the appropriate model remains the responsibility of the AFM. When selecting the VaR model, the AFM should ensure that the model is appropriate with regard to the investment strategy being pursued and the types and complexity of the financial instruments used (see Box 17).

Box 10 outlines the general principles and requirement in relation to VaR.

Box 11 outlines the different approaches to VaR, Relative VaR and Absolute VaR, and includes criteria that must be taken into account in relation to the choice of approach.

The Relative VaR approach including its methodology is described in Box 12 and the Absolute VaR approach in Box 13.

The minimum requirements for the VaR approach are covered in Box 14 and the Quantitative requirements and calculation standards in Box 15.

Risk coverage and the criteria for the completeness and accuracy of the risk assessment are covered in Box 16 and 17.

The requirements for Back Testing and Stress Testing are covered in Boxes 18 and 19. Box 20 outlines the quantitative requirements for Stress Testing. Qualitative requirements are described in Box 22.

Box 23 covers additional safeguards including the requirement to monitor leverage on a regular basis.

Disclosure Requirements

Disclosure requirements are outlined in Boxes 24 and 25, as follows:

Prospectus

AFMs are required to disclose the following in the prospectus (Box 24):

- The method used to calculate the global exposure (i.e. commitment approach, relative VaR or absolute VaR).
- Authorised Funds using VaR should disclose the expected level of leverage and the possibility of higher leverage levels in the prospectus.
- Leverage should be calculated as the sum of the notionals of the derivatives used.
- When using the relative VaR approach, information on the reference portfolio should be disclosed in the prospectus.

Annual Reports

AFMs are required to disclose the following in the Authorised Fund's annual report (Box 25):

- The method used to calculate the global exposure (i.e. commitment approach, relative VaR or absolute VaR).
- Where Authorised Funds use the relative VaR approach, information on the reference portfolio should be disclosed.
- The VaR measure of the Authorised Fund should be disclosed. The information provided should at least include the lowest, the highest and the average of the VaR limit calculated during the financial year. The model and inputs used for calculation (calculation model, confidence level, holding period, length of data history) should be disclosed.
- Authorised Funds using VaR should disclose the level of leverage employed during the relative period.
- Leverage should be calculated as the sum of the notionals of the derivatives used.

OTC Counterparty Risk Exposure

Box 26 deals with the conditions that must be met in order for Collateral to reduce counterparty risk exposure.

Box 27 outlines the counterparty and issuer concentration limits.

Cover Requirements

COLL 5.3.3A sets out the basic requirements for cover. In summary, the main requirement is that all derivative positions are covered globally by the assets of the Authorised Fund. It is important that cover is calculated on a frequent basis to ensure that it is adequate for the exposure of the scheme. The AFM should take into account any reasonably foreseeable future market movements, counterparty risks and the time available to liquidate positions when determining the available cover. In addition the available cover may need to be adjusted for other commitments (see below).

In this regard it is particularly important to consider for any 'short' strategies the degree of correlation exhibited between the exposure and the cover being employed. The AFM should be satisfied that the correlation level is sufficient to comply with the disclosures made in the firm's RMP and with COLL requirements.

When assessing the cover requirements of an Authorised Fund's derivative positions, consideration should be given to making provisions/fair value adjustments arising from, for example, illiquid, large-size positions that may prove difficult to unwind at other than below-market prices.

In establishing the amount of cover available, consideration should be given to other known amounts that the Authorised Fund is already committed to, such as placings and underwritings, warrants and assets held as individual cover or other assets used for margin purposes.

ESMA's Guidelines on ETFs and other UCITS issues

ESMA issued its Guidelines on ETFs and other UCITS issues in December 2012. Amongst other things, the Guidelines contain rules that should be applied by a UCITS when entering into OTC financial derivative transactions and efficient portfolio management techniques. ESMA's final report on revision of the provisions on diversification of collateral was published in March 2014.

Efficient portfolio management techniques

Paragraph 25 states that a UCITS should inform investors clearly in the prospectus of its intention to use the techniques and instruments referred to in Article 51(2) of the UCITS Directive and Article 11 of the Eligible Assets Directive. This should include a detailed description of the risks involved in these activities, including counterparty risk and potential conflicts of interest, and the impact they will have on the performance of the UCITS. The use of these techniques and instruments should be in line with the best interests of the UCITS.

Paragraph 26 requires UCITS that employ efficient portfolio management techniques to make sure that the risks arising from these activities are adequately captured by the risk management process of the UCITS.

Paragraph 27 states that techniques and instruments relating to transferable securities and money market instruments should not a) result in a change of the declared investment objective of the UCITS; or b) add substantial supplementary risks in comparison to the original risk policy as described in its sales documents.

Paragraph 28 requires the UCITS to disclose in the prospectus the policy regarding direct and indirect operational costs/fees arising from efficient portfolio management techniques that may be deducted from the revenue delivered to the UCITS. These costs and fees should not include hidden revenue. The UCITS should disclose the identity of the entity(ies) to which the direct and indirect costs and fees are paid and indicate if these are related parties to the UCITS management company or the depositary.

Paragraph 29 requires that the revenues arising from efficient portfolio management techniques, net of direct and indirect operational costs, to be be returned to the UCITS.

Paragraph 30 states that a UCITS should ensure that it is able at any time to recall any security that has been lent out or terminate any securities lending agreement into which it has entered.

Paragraph 31 states that a UCITS entering into a reverse repurchase agreement should ensure that it is able at any time to recall the full amount of cash or to terminate the reverse repurchase agreement on either an accrued basis or a mark-to-market basis. When the cash is recallable at any time on a mark-to-market basis, the mark-to-market value of the reverse repurchase agreement should be used for the calculation of the net asset value of the UCITS.

Paragraph 32 states that a UCITS entering into a repurchase agreement should ensure that it is able at any time to recall any securities subject to the repurchase agreement or to terminate the repurchase agreement into which it has entered.

Paragraph 33 clarifies that fixed-term repurchase and reverse repurchase agreements that do not exceed seven days should be considered as arrangements on terms that allow the assets to be recalled at any time by the UCITS.

Paragraph 34 states that a UCITS entering into efficient portfolio management transactions should take into account these operations when developing their liquidity risk management process in order to ensure they are able to comply at any time with their redemption obligations.

Paragraph 35 requires the UCITS' annual report to contain details of the following:

- the exposure obtained through efficient portfolio management techniques;
- the identity of the counterparty(ies) to these efficient portfolio management techniques;
- the type and amount of collateral received by the UCITS to reduce counterparty exposure; and
- the revenues arising from efficient portfolio management techniques for the entire reporting period together with the direct and indirect operational costs and fees incurred.

The UCITS' annual report should also contain details of the following in the context of OTC financial derivative transactions and efficient portfolio management techniques:

a. where collateral received from an issuer has exceeded 20% of the NAV of the UCITS, the identity of that issuer; and
b. whether the UCITS has been fully collateralised in securities issued or guaranteed by a Member State.

Financial derivative instruments

Paragraph 36 states that where a UCITS enters into a total return swap or invests in other financial derivative instruments with similar characteristics, the assets held by the UCITS should comply with the investment limits set out in Articles 52, 53, 54, 55 and 56 of the UCITS Directive. For example, when a UCITS enters into an unfunded swap, the UCITS' investment portfolio that is swapped out should comply with the aforementioned investment limits.

Paragraph 37 requires that for a UCITS entering into a total return swap or investing in other financial derivative instruments with similar characteristics, the underlying exposures of the financial derivative instruments shall be taken into account to calculate the investment limits laid down in Article 52 of the UCITS Directive.

Paragraph 38 requires the prospectus of a UCITS using total return swaps or other financial derivative instruments with the same characteristics to include the following:
a) information on the underlying strategy and composition of the investment portfolio or index;
b) information on the counterparty(ies) of the transactions;
c) a description of the risk of counterparty default and the effect on investor returns;
d) the extent to which the counterparty assumes any discretion over the composition or management of the UCITS' investment portfolio or over the underlying of the financial derivative instruments, and whether the approval of the counterparty is required in relation to any UCITS investment portfolio transaction; and
e) subject to the provisions in paragraph 39, identification of the counterparty as an investment manager.

Paragraph 39 states that where a counterparty has discretion over the composition or management of the UCITS' investment portfolio or of the underlying of the financial derivative instrument, the agreement between the UCITS and the counterparty should be considered as an investment management delegation arrangement and should comply with the UCITS requirements on delegation.

Paragraph 40 requires the UCITS' annual report to contain details of the following:
a) the underlying exposure obtained through financial derivative instruments;
b) the identity of the counterparty(ies) to these financial derivative transactions; and
c) the type and amount of collateral received by the UCITS to reduce counterparty exposure.

Management of collateral for OTC financial derivative transactions and efficient portfolio management techniques

The guidelines on collateral management modify Box 26 of the existing guidelines on Risk Measurement and Calculation of Global Exposure and Counterparty Risk for UCITS (CESR/10-788) with respect to criteria to be respected by collateral received in the context of OTC financial derivative transactions.

Paragraph 41 states that the risk exposures to a counterparty arising from OTC financial derivative transactions and efficient portfolio management techniques should be combined when calculating the counterparty risk limits of Article 52 of UCITS Directive (This provision modifies Box 27 of the existing guidelines on Risk Measurement and Calculation of Global Exposure and Counterparty Risk for UCITS with respect to the limit of counterparty risk arising from efficient portfolio management transactions).

Paragraph 42 requires all assets received by UCITS in the context of efficient portfolio management techniques to be considered as collateral for the purpose of the guidelines and should comply with the criteria laid down in paragraph 43 below.

Paragraph 43 states that where a UCITS enters into OTC financial derivative transactions and efficient portfolio management techniques, all collateral used to reduce counterparty risk exposure should comply with the following criteria at all times:

a) Liquidity – any collateral received other than cash should be highly liquid and traded on a regulated market or multilateral trading facility with transparent pricing in order that it can be sold quickly at a price that is close to pre-sale valuation. Collateral received should also comply with the provisions of Article 56 of the UCITS Directive.
b) Valuation – collateral received should be valued on at least a daily basis and assets that exhibit high price volatility should not be accepted as collateral unless suitably conservative haircuts are in place.
c) Issuer credit quality – collateral received should be of high quality.
d) Correlation – the collateral received by the UCITS should be issued by an entity that is independent from the counterparty and is expected not to display a high correlation with the performance of the counterparty.
e) Collateral diversification (asset concentration) – Collateral diversification (asset concentration) – collateral should be sufficiently diversified in terms of country, markets and issuers. The criterion of sufficient diversification with respect to issuer concentration is considered to be respected if the UCITS receives from a counterparty of efficient portfolio management and over-the-counter financial derivative transactions a basket of collateral with a maximum exposure to a given issuer of 20% of the UCITS' net asset value. When a UCITS is exposed to different counterparties, the different baskets of collateral should be aggregated to calculate the 20% limit of exposure to a single issuer. By way of derogation from this sub-paragraph, a UCITS may be fully collateralised in different transferable securities and money market instruments issued or guaranteed by a Member State, one or more of its local authorities, a third country, or a public international body to which one or more Member States belong. Such a UCITS should receive securities from at least six different issues, but securities from any single issue should not account for more than 30% of the UCITS' net asset value. UCITS that intend to be fully collateralised in securities issued or guaranteed by a Member State should disclose this fact in the prospectus of the UCITS. UCITS should also identify the Member States, local authorities, or public international bodies issuing or guaranteeing securities which they are able to accept as collateral for more than 20% of their net asset value. This derogation does not affect the other criteria for collateral management as set out in paragraphs 41 to 47 of the guidelines.
f) Risks linked to the management of collateral, such as operational and legal risks, should be identified,
managed and mitigated by the risk management process.
g) Where there is a title transfer, the collateral received should be held by the depositary of the UCITS. For other types of collateral arrangement, the collateral can be held by a third party custodian which is subject to prudential supervision, and which is unrelated to the provider of the collateral.
h) Collateral received should be capable of being fully enforced by the UCITS at any time without reference to or approval from the counterparty.
i) Non-cash collateral received should not be sold, re-invested or pledged. *(This modifies Box 9 of the existing guidelines on Risk Measurement and Calculation of Global Exposure and Counterparty Risk for UCITS (Ref. CESR/10-788) with respect to the prohibition of reinvestment of non-cash collateral received in the context of efficient portfolio management transactions).*
j) Cash collateral received should only be:
- placed on deposit with entities prescribed in Article 50(f) of the UCITS Directive;

- invested in high-quality government bonds;
- used for the purpose of reverse repo transactions provided the transactions are with credit institutions subject to prudential supervision and the UCITS is able to recall at any time the full amount of cash on accrued basis;
- invested in short-term money market funds as defined in the Guidelines on a Common Definition of European Money Market Funds.

Paragraph 44 requires re-invested cash collateral to be diversified in accordance with the diversification requirements applicable to non-cash collateral.

Paragraph 45 requires a UCITS receiving collateral for at least 30% of its assets to have an appropriate stress testing policy in place to ensure regular stress tests are carried out under normal and exceptional liquidity conditions to enable the UCITS to assess the liquidity risk attached to the collateral. The liquidity stress testing policy should at least prescribe the following:
a) design of stress test scenario analysis including calibration, certification & sensitivity analysis;
b) empirical approach to impact assessment, including back-testing of liquidity risk estimates;
c) reporting frequency and limit/loss tolerance threshold/s; and
d) mitigation actions to reduce loss including haircut policy and gap risk protection.

Paragraph 45 requires a UCITS to have in place a clear haircut policy adapted for each class of assets received as collateral. When devising the haircut policy, a UCITS should take into account the characteristics of the
assets such as the credit standing or the price volatility, as well as the outcome of the stress tests performed in accordance with paragraph 47. This policy should be documented and should justify each decision to apply a specific haircut, or to refrain from applying any haircut, to a certain class of assets.

Paragraph 47 requires the prospectus should to clearly inform investors of the collateral policy of the UCITS. This should include permitted types of collateral, level of collateral required and haircut policy and, in the case of
cash collateral, re-investment policy (including the risks arising from the re-investment policy).

See also **DATA/IMA Guide to ESMA's Guidelines on ETFS and other UCITS Issues**

Specific AIFMD Requirements

Risk management systems (Article 38 AIFMD Level 2 Regulation)

Risk management systems are comprised of the relevant elements of the organisational structure of the AIFM, with a central role for a permanent risk management function, policies and procedures related to the management of risk relevant to each AIF's investment strategy, and arrangements, processes and techniques related to risk measurement and management employed by the AIFM in relation to each AIF it manages.

FUND 3.7.5R requires an AIFM to implement adequate risk management systems to identify, measure, manage and monitor all risks relevant to each AIF investment strategy and to which each AIF is, or may be, exposed.

It must, at least:

(a) implement an appropriate, documented and regularly updated due diligence process when investing on behalf of the AIF, according to the investment strategy, objectives and risk profile of the AIF;

(b) ensure that the risks associated with each investment position of the AIF and their overall effect on the AIF's portfolio can be properly identified, measured, managed and monitored on an ongoing basis, including through the use of appropriate stress testing procedures; and

(c) ensure that the risk profile of the AIF corresponds to the size, portfolio structure and investment strategies and objectives of the AIF as set out in the instrument constituting the fund, prospectus and offering documents.

An AIFM must:

(1) review the risk management systems with appropriate frequency and, in any event, at least once a year; and

(2) adapt them whenever necessary.

Assessment, monitoring and review of the risk management systems (Article 41 AIFMD Level 2)

AIFMs are required to assess, monitor and periodically, at least once a year, review:

(a) the adequacy and effectiveness of the risk management policy and of the arrangements, processes and techniques referred to in Article 45;
(b) the degree of compliance by the AIFM with the risk management policy and with the arrangements, processes and techniques referred to in Article 45;
(c) the adequacy and effectiveness of measures taken to address any deficiencies in the performance of the risk management process;
(d) the performance of the risk management function;
(e) the adequacy and effectiveness of measures aiming to ensure the functional and hierarchical separation of the risk management function in accordance with Article 42.

The frequency of the periodic review shall be decided by the senior management in accordance with the principle of proportionality given the nature, scale and complexity of the AIFM's business and the AIF it manages.

In addition to the periodic review referred to in paragraph 1, the risk management systems shall be reviewed where:

(a) material changes are made to the risk management policies and procedures and to the arrangements, processes and techniques referred to in Article 45;
(b) internal or external events indicate that an additional review is required;
(c) material changes are made to the investment strategy and objectives of an AIF that the AIFM manages.

The AIFM is required to update the risk management systems on the basis of the outcome of the review referred to in paragraphs 1 and 2.

The AIFM is required to notify the competent authority of its home Member State of any material changes to the risk management policy and of the arrangements, processes and techniques referred to in Article 45.

Risk Management Function (Article 39 AIFMD Level 2 Regulation)

An AIFM shall establish and maintain a permanent risk management function that shall:

(a) implement effective risk management policies and procedures in order to identify, measure, manage and monitor on an ongoing basis all risks relevant to each AIF's investment strategy to which each AIF is or may be exposed;

(b) ensure that the risk profile of the AIF disclosed to investors in accordance with point (c) of Article 23(4) of AIFMD is consistent with the risk limits that have been set in accordance with Article 44 of AIFMD Level 2;

(c) monitor compliance with the risk limits set in accordance with Article 44 and notify the AIFM's governing body and, where it exists, the AIFM's supervisory function in a timely manner when it considers the AIF's risk profile inconsistent with these limits or sees a material risk that the risk profile will become inconsistent with these limits;

(d) provide the following regular updates to the governing body of the AIFM and where it exists the AIFM's supervisory function at a frequency which is in accordance with the nature, scale and complexity of the AIF or the AIFM's activities:

(i) the consistency between and compliance with the risk limits set in accordance with Article 44 and the risk profile of the AIF as disclosed to investors in accordance with Article 23(4)(c) of AIFMD;

(ii) the adequacy and effectiveness of the risk management process, indicating in particular whether appropriate remedial measures have been or will be taken in the event of any actual or anticipated deficiencies;

(e) provide regular updates to the senior management outlining the current level of risk incurred by each managed AIF and any actual or foreseeable breaches of any risk limits set in accordance with Article 44, so as to ensure that prompt and appropriate action can be taken.

The risk management function shall have the necessary authority and access to all relevant information necessary to fulfil the tasks set out in paragraph 1.

Functional and hierarchical separation (FUND 3.7.2 R)

An AIFM must functionally and hierarchically separate the functions of risk management from the operating units, including from the functions of portfolio management.

An AIFM must, in any event, be able to demonstrate that:

(a) specific safeguards against conflicts of interest allow for the independent performance of risk management activities; and

(b) the risk management process satisfies the requirements of this section and is consistently effective.

Article 42 AIFMD Level 2 Regulation

The risk management function shall be considered as functionally and hierarchically separated from the operating units, including the portfolio management function, only where all the following conditions are satisfied:

(a) persons engaged in the performance of the risk management function are not supervised by those responsible for the performance of the operating units, including the portfolio management function, of the AIFM;

(b) persons engaged in the performance of the risk management function are not engaged in the performance of activities within the operating units, including the portfolio management function;

(c) persons engaged in the performance of the risk management function are compensated in accordance with the achievement of the objectives linked to that function, independently of the performance of the operating units, including the portfolio management function;

(d) the remuneration of senior officers in the risk management function is directly overseen by the remuneration committee, where such a committee has been established.

The functional and hierarchical separation of the risk management function in accordance with paragraph 1 shall be ensured throughout the whole hierarchical structure of the AIFM, up to its governing body. It shall be reviewed by the governing body and, where it exists, the supervisory function of the AIFM.

The competent authorities of the home Member State of the AIFM shall review the way in which the AIFM has applied paragraphs 1 and 2 on the basis of the criteria laid down in the second sub-paragraph of Article 15(1) of AIFMD

Risk Management Policy (Article 40 AIFMD Level 2 Regulation)

AIFMs are required to establish, implement and maintain an adequate and documented risk management policy which identifies all the relevant risks to which the AIFs it manages are or may be exposed.

It shall comprise such procedures as are necessary to enable the AIFM to assess for each AIF it manages the exposure of that AIF to market, liquidity and counterparty risks, and the exposure of the AIF to all other relevant risks, including operational risks, which may be material for each AIF it manages.

The AIFM shall address at least the following elements in the risk management policy:

(a) the techniques, tools and arrangements that enable it to comply with Article 45;

(b) the techniques, tools and arrangements that enable liquidity risk of the AIF to be assessed and monitored under normal and exceptional liquidity conditions including through the use of regularly conducted stress tests in accordance with Article 48;

(c) the allocation of responsibilities within the AIFM pertaining to risk management;

(d) the limits set in accordance with Article 44 of this Regulation and a justification of how these are aligned with the risk profile of the AIF disclosed to investors in accordance with Article 23(4)(c) of AIFMD;

(e) the terms, contents, frequency and addressees of reporting by the permanent risk management function referred to in Article 39.

The risk management policy shall include a description of the safeguards referred to in Article 43, in particular:

(a) the nature of the potential conflicts of interest;
(b) the remedial measures put in place;
(c) the reasons why these measures should be reasonably expected to result in independent performance of the risk management function;
(d) how the AIFM expects to ensure that the safeguards are consistently effective.

The risk management policy referred to in paragraph 1 shall be appropriate to the nature, scale and complexity of the business of the AIFM and of the AIF it manages.

Safeguards against conflicts of interest (Article 43 Level 2 Regulation)

1. The safeguards against conflicts of interest referred to in Article 15(1) of AIFMD shall ensure, at least, that:

(a) decisions taken by the risk management function are based on reliable data, which are subject to an appropriate degree of control by the risk management function;

(b) the remuneration of those engaged in the performance of the risk management function reflects the achievement of the objectives linked to the risk management function, independently of the performance of the business areas in which they are engaged;

(c) the risk management function is subject to an appropriate independent review to ensure that decisions are being arrived at independently;

(d) the risk management function is represented in the governing body or the supervisory function, where it has been established, at least with the same authority as the portfolio management function;

(e) any conflicting duties are properly segregated.

2. Where proportionate, taking into account the nature, scale and complexity of the AIFM, the safeguards referred to in paragraph 1 shall also ensure that:

(a) the performance of the risk management function is reviewed regularly by the internal audit function, or, if the latter has not been established, by an external party appointed by the governing body;

(b) where a risk committee has been established, it is appropriately resourced and its non-independent members do not have undue influence over the performance of the risk management function.

3. The governing body of the AIFM and, where it exists, the supervisory function shall establish the safeguards against conflicts of interest laid down in paragraphs 1 and 2, regularly review their effectiveness and take timely remedial action to address any deficiencies.

Risk limits (Article 44 AIFMD Level 2 Regulation)

AIFMs are required to establish and implement quantitative or qualitative risk limits, or both, for each AIF they manage, taking into account all relevant risks. Where only qualitative limits are set, the AIFM shall be able to justify this approach to the competent authority.

The qualitative and quantitative risk limits for each AIF shall, at least, cover the following risks:

(a) market risks;
(b) credit risks;
(c) liquidity risks;
(d) counterparty risks;
(e) operational risks.

When setting risk limits, the AIFM shall take into account the strategies and assets employed in respect of each AIF it manages as well as the national rules applicable to each of those AIFs. Those risk limits shall be aligned with the risk profile of the AIF as disclosed to investors in accordance and approved by the governing body.

Risk measurement and management (Article 45 Level 2 Regulation)

AIFMs shall adopt adequate and effective arrangements, processes and techniques in order to:

(a) identify, measure, manage and monitor at any time the risks to which the AIFs under their management are or might be exposed;

(b) ensure compliance with the limits set in accordance with Article 44.

The arrangements, processes and techniques referred to in paragraph 1 shall be proportionate to the nature, scale and complexity of the business of the AIFM and of each AIF it manages and shall be consistent with the AIF's risk profile as disclosed to investors.

3. For the purposes of paragraph 1, the AIFM shall take the following actions for each AIF it manages:

(a) put in place such risk measurement arrangements, processes and techniques as are necessary to ensure that the risks of positions taken and their contribution to the overall risk profile are accurately measured on the basis of sound and reliable data and that the risk measurement arrangements, processes and techniques are adequately documented;

(b) conduct periodic back-tests in order to review the validity of risk measurement arrangements which include model-based forecasts and estimates;

(c) conduct, periodic appropriate stress tests and scenario analyses to address risks arising from potential changes in market conditions that might adversely impact the AIF;

(d) ensure that the current level of risk complies with the risk limits set in accordance with Article 44;

(e) establish, implement and maintain adequate procedures that, in the event of actual or anticipated breaches of the risk limits of the AIF, result in timely remedial actions in the best interest of investors;
(f) ensure that there are appropriate liquidity management systems and procedures for each AIF in line with the requirements laid down in Article 46.

Leverage (FUND 3.7.7 R)

AIFMs are required to:

(a) set a maximum level of leverage which it may employ on behalf of each AIF it manages; and
(b) where the leverage arrangement allows the right to reuse collateral or the granting of a guarantee, set out the extent of that right or guarantee.

(2) An AIFM, in complying with (1), must take into account relevant matters including:

(a) the type of AIF;
(b) the investment strategy of the AIF;
(c) the sources of leverage of the AIF;
(d) any other link or relevant relationship with other financial services institutions which could pose systemic risk;
(e) the need to limit the exposure to any single counterparty;
(f) the extent to which the leverage is collateralised;
(g) the asset-liability ratio; and
(h) the scale, nature and extent of the activity of the AIFM on the markets concerned.

An AIFM must demonstrate that the leverage limits it sets under FUND 3.7.7R (1)(a) are reasonable and that it complies with those limits at all times.

AIFMs are required to report to the FCA any changes to the leverage limits they set

Leverage Calculation and Disclosure (Article 109 Level 2 Regulation)

Regular disclosure to investors

AFMs are required to disclose, on a regular basis:

(a) any changes to the maximum level of leverage which the AIFM may employ on behalf of the AIF as well as any right of the reuse of collateral or any guarantee granted under the leveraging arrangement;
(b) the total amount of leverage employed by that AIF.

Information on changes to the maximum level of leverage calculated in accordance with the gross and commitment methods and any right of re-use of collateral or any guarantee under the leveraging arrangements shall be provided without undue delay and shall include:

(a) the original and revised maximum level of leverage calculated in accordance with the Gross and Commitment Methods, whereby the level of leverage shall be calculated as the relevant exposure divided by the net asset value of the AIF;

(b) the nature of the rights granted for the reuse of collateral;
(c) the nature of guarantees granted; and
(d) details of changes in any service providers which relating to one of the items above.

Information on the total amount of leverage calculated in accordance with the gross and commitment methods employed by the AIF shall be disclosed as part of the AIF's periodic reporting to investors, as required by the AIF's rules or instruments of incorporation, or at the same time as the prospectus and offering document and at least at the same time as the annual report is made available.

AIFMs should consider the following when calculating leverage:-

The expected level of leverage should be calculated on the basis of current investment strategy of the AIF and in accordance with its investment powers.

Where hedging positions cannot be distinguished from investment positions, netting and hedging calculations should be used only where certain. Therefore, leverage on a gross basis may be similar to the commitment method.

For daily priced funds, the calculations should be made on a daily basis.

Reporting to Competent Authorities (Article 110 Level 2 Regulation)

The AIFM shall provide the following information when reporting to competent authorities:

(a) the main instruments in which it is trading, including a break-down of financial instruments and other assets, including the AIF's investment strategies and their geographical and sectoral investment focus;

(b) the markets of which it is a member or where it actively trades;

(c) the diversification of the AIF's portfolio, including, but not limited to, its principal exposures and most important concentrations.

The information shall be provided as soon as possible and not later than one month after the end of the period referred to in paragraph 3 below. Where the AIF is a fund of funds this period may be extended by the AIFM by 15 days.

For each of the EU AIFs they manage and for each of the AIFs they market in the Union, AIFMs shall provide to the competent authorities of their home Member State the following information in accordance with Article 24(2) of Directive 2011/61/EU:

(a) the percentage of the AIF's assets which are subject to special arrangements as defined in Article 1(5) of this Regulation arising from their illiquid nature as referred to in point (a) of Article 23(4) of Directive 2011/61/EU;

(b) any new arrangements for managing the liquidity of the AIF;

(c) the risk management systems employed by the AIFM to manage the market risk, liquidity risk, counterparty risk and other risks including operational risk;

(d) the current risk profile of the AIF, including:

(i) the market risk profile of the investments of the AIF, including the expected return and volatility of the AIF in normal market conditions;

(ii) the liquidity profile of the investments of the AIF, including the liquidity profile of the AIF's assets, the profile of redemption terms and the terms of financing provided by counterparties to the AIF;

(e) information on the main categories of assets in which the AIF invested including the corresponding short market value and long market value, the turnover and performance during the reporting period; and

(f) the results of periodic stress tests, under normal and exceptional circumstances, performed in accordance with point (b) of Article 15(3) and the second subparagraph of Article 16(1) of Directive 2011/61/EU.

The information referred to in the above paragraphs shall be reported as follows:

(a) on a half-yearly basis by AIFMs managing portfolios of AIFs whose assets under management calculated in accordance with Article 2 in total exceed the threshold of either EUR 100 million or EUR 500 million laid down in points (a) and (b) respectively of Article 3(2) of Directive 2011/61/EU but do not exceed EUR 1 billion, for each of the EU AIFs they manage and for each of the AIFs they market in the Union;

(b) on a quarterly basis by AIFMs managing portfolios of AIFs whose assets under management calculated in accordance with Article 2 in total exceed EUR 1 billion, for each of the EU AIFs they manage, and for each of the AIFs they market in the Union;

(c) on a quarterly basis by AIFMs which are subject to the requirements referred to in point (a) of this paragraph, for each AIF whose assets under management, including any assets acquired through use of leverage, in total exceed EUR 500 million, in respect of that AIF;

(d) on an annual basis by AIFMs in respect of each unleveraged AIF under their management which, in accordance with its core investment policy, invests in non-listed companies and issuers in order to acquire control.

Article 24 (4) Level 1 Directive

An AIFM managing AIFs employing leverage on a substantial basis shall make available information about the overall level of leverage employed by each AIF it manages, a break-down between leverage arising from borrowing of cash or securities and leverage embedded in financial derivatives and the extent to which the AIF's assets have been reused under leveraging arrangements to the competent authorities of its home Member State.

That information shall include the identity of the five largest sources of borrowed cash or securities for each of the AIFs managed by the AIFM, and the amounts of leverage received from each of those sources for each of those AIFs.

For non-EU AIFMs, the reporting obligations are limited to EU AIFs managed by them and non-EU AIFs marketed by them in the Union.

Where necessary for the effective monitoring of systemic risk, the competent authorities of the home Member State may require information in addition to that described in this Article, on a periodic as well as on an ad-hoc basis. The competent authorities shall inform ESMA about the additional information requirements.

In exceptional circumstances and where required in order to ensure the stability and integrity of the financial system, or to promote long-term sustainable growth, ESMA may request the competent authorities of the home Member State to impose additional reporting requirements.

See ESMA's Final Report: Guidelines on reporting obligations under Articles 3(3)(d) and 24(1),(2) and (4) of the AIFMD

See also ESMA's Opinion on the Collection of information for the effective monitoring of systemic risk under Article 24(5), first sub-paragraph, of the AIFMD.

Appendix I

KEY DOCUMENTS

The links below provide access to the key documentation.

1. Commission Recommendation 2004/383/EC of 27 April 2004 on the use of financial derivative instruments for undertakings for collective investment in transferable securities (UCITS)
2. FSA Handbook Notice 40 Use of financial derivatives for UCITS. Issued 20 January 2005
3. Commission Directive 2007/16 of 19 March 2007 which clarifies definitions of eligible assets for UCITS with regard to certain classes of assets
4. CESR's Guidelines concerning eligible assets for investment by UCITS issued 19 March 2007
5. FSA Handbook Notice 73 Implementing the Eligible Assets Directive and CESR's guidelines issued 29 February 2008
6. CESR's Guidelines - Risk management principles for UCITS issued 27 February 2009
7. Recast UCITS Directive 2009/65/EC of 13 July 2009
8. Commission Directive 2010/43/EU of 1 July 2010 implementing Directive 2009/65/EC of the European Parliament and of the Council as regards organisational requirements, conflicts of interest, conduct of business, risk management and the content of the agreement between a depositary and a management company.
9. CESR's Guidelines on Risk Measurement and the Calculation of Global Exposure and Counterparty Risk for UCITS
10. FSA Finalised Guidance: Derivatives risk management practices (DRMP) across the investment management industry
11. Directive 2011/61/EU on Alternative Investment Fund Managers
12. Commission Delegated Regulation No 231/2013 of 19 December 2012
13. ESMA's Guidelines on ETFs and other UCITS Issues
14. ESMA's revision of the provisions on diversification of collateral in ESMA's Guidelines on ETFs and other UCITS issues

Appendix II

Categories of Risk

The AFM is required to analyse risks arising from the fund's portfolio and document how the proposed investment strategy will impact such risks. Examples of the principal risks that the AFM should consider in relation to an Authorised Fund are listed below.

Basis Risk - the risk of loss due to a divergence in the difference between the derivative used as a hedge against the property that constitutes the underlying position. They will therefore be subject to different prices, rates or values that may change over time and this may have an adverse impact on the hedging arrangement. The same is true where short-dated contracts are used to hedge long-dated positions.

Cash Flow Risk - the risk that an Authorised Fund will have insufficient cash to meet its obligations, including margin calls necessary to sustain its position in an exchange-traded contract (e.g. where short-dated futures contracts are used to hedge long-dated OTC transactions or where additional margin calls are made intra-day) and relevant OTC contracts.

Collateral risk – 1) the risk arising from under-collateralisation (when receiving collateral) or over-collateralisation (when giving collateral), which gives rise to counterparty risk (see below); or 2) the risk arising from the reinvestment of collateral, which could give rise to a capital loss.

Counterparty Credit Risk - the risk that the counterparty to a transaction could default before the final settlement of the transaction's cash flow.

Legal and Documentation Risk - the risk that, in the event of counterparty default or a dispute, an Authorised Fund may be unable to enforce or rely on rights or obligations arising under contractual arrangements entered into by the Authorised Fund, or on the Authorised Fund's behalf, with brokers or other counterparties.

Liquidity Risk – the risk that a particular asset or security cannot be traded quick enough at its market price, possibly resulting from a dislocation in a market. Also, as positions/contracts increase in complexity and are more bespoke, the ability to unwind a position at market prices could be significantly impacted. (The same may be said of large positions.)

Market Risk - the risk of losses due to adverse movements in equity, bond, commodity, currency and other market prices, indices or rates or changes in the anticipated or calculated volatility of these movements (i.e. volatility risk).

Operational Risk - "*the risk of direct or indirect loss resulting from inadequate or failed internal processes, people and systems or from external events*" (The New Basel Capital Accord, 2001). CESR, in its consultation on risk management principles, states that the operational risks should be ones that are relevant to the UCITS and therefore the investor.

Valuation Risk - the risk that the valuation of a specific transaction may not be accurate. This risk may increase with the complexity of the transactions entered into or where assets are domiciled in different timezones.

Appendix III

VaR Models

Historical Simulation

The process requires historic returns, daily or weekly, to be reorganised from worst to best. There is no normal distribution assumption as the model assumes that history will repeat itself and therefore enable prediction of the probability that a certain loss will reoccur with a certain level of confidence.

Variance – Covariance method (also known as the Delta Normal Approach)

This method assumes that returns are normally distributed. It requires an estimated average, or expected return, and standard deviation/portfolio volatility. 2.33 standard deviations give a confidence level of 99% and 1.65 standard deviations give a confidence level of 95%.

Monte Carlo Simulation

This method is considered by many to be the most complex and is certainly data intensive. By creating random outcomes it aims to support the future prediction of VaR by increasing the number of simulated returns used. It is not uncommon for the simulation to reflect tens of thousands of returns. The results from the simulated returns are used in the same way as the two other models by predicting a VaR with a certain confidence level.

Appendix IV

Example of the total asset and leverage calculation for a derivative

The example below describes the exposure created by the acquisition of a call option on the underlying index DJ Euro STOXX 50. It then compares how this call option would be valued if it was marked-to-market and if it was valued on the basis of the value of the underlying. A call option gives the right to the buyer to buy the underlying asset, here the Euro STOXX 50 index, at a predetermined price ('strike price') and date ('expiration date'). The owner will exercise his right at the expiration date, if the price of the index is above the strike price, because then he can get the asset/index for less than when he would buy it on the market. If the price is below the strike price, he will not exercise the option but will buy the asset/index on the market. The option mechanism gives the opportunity to the option holders to gain large exposure with low invested amounts.

Call option on DJ Euro STOXX 50 (market data of 15.02.2012):
Strike price: 2,500€
Expiration date: 20.04.2012
Call price: 99,60€
Contract size: 10
Delta*: 0,54

Market value of DJ Euro STOXX 50 index: 2,510.13€

* When the index price moves by 1%, the option price moves in the same direction by 0,54%

With this option, the owner potentially holds 10 units in the DJ Euro STOXX 50.

The market value of the option therefore is: 10x 99,60€;

The potential exposure equals 10 units of a price of 2,510,13€ and with a delta weighing of 0,54, i.e. 10 x 2510,13 x 0,54 = 13,554.70€.

The leverage in the option calculated with the gross method equals the exposure divided by NAV in this simplistic example of only one asset which is a derivative: 13,554.70/996,00 = 13.6

Total asset calculation and leverage

AuM of the option if valued at its market price: 996.00€
AuM of the option if valued at the value of the underlying: 13.554.70€

Leverage embedded in the option: 13.6

This example shows that buying 10 calls for a price of €996,00 gives a equivalent exposure in the underlying index of €13,554.70.

Appendix V

Methods of increasing the exposure of an AIF

(from Annex I of Commission Delegated Regulation No 231/2013 of 19 December 2012)

1. **Unsecured cash borrowings**: When cash borrowings are invested they have the propensity to increase the exposure of the AIF by the total amount of those borrowings. Therefore, the minimum exposure is always the amount of the borrowing. It might be higher if the value of the investment realised with the borrowing is greater than the borrowed amount. To avoid double counting, cash borrowings that are used to finance the exposure shall not be included within the calculation. If the cash borrowings are not invested but remain in cash or cash equivalent as defined in Article 7(a) they will not increase the exposure of the AIF.
but remain in cash or cash equivalent as defined in Article 7(a) they will not increase the exposure of the AIF.

2. **Secured cash borrowings**: Secured cash borrowings are similar to unsecured cash borrowings but the loan may be secured by a pool of assets or a single asset. If the cash borrowings are not invested but remain in cash or cash equivalent as defined in Article 7(a) they will not increase the exposure of the AIF.

3. **Convertible borrowings:** Convertible borrowings are purchased debt which has the ability, under certain circumstances, to enable the holder or issuer to convert that debt into another asset. The exposure of the AIF is the market value of such borrowings.

4. **Interest rate swaps:** An interest rate swap is an agreement to exchange interest rate cash flows, calculated on a notional principal amount, at specified intervals (payment dates) during the life of the agreement. Each party’s payment obligation is computed using a different interest rate based on the notional exposures.

5. **Contracts for differences**: A contract for differences (CFD) is an agreement between two parties — the investor and the CFD provider — to pay the other the change in the price of an underlying asset. Depending on which way the price moves, one party pays the other the difference from the time the contract was agreed to the point in time where it ends. Exposure is the market value of the underlying asset. The same treatment must be applied to financial spread bets.

6. **Futures contracts:** A futures contract is an agreement to buy or sell a stated amount of a security, currency, commodity, index or other asset at a specific future date and at a pre-agreed price. The exposure is the market value of the equivalent underlying asset.

7. **Total return swaps:** A total return swap is an agreement in which one party (total return payer) transfers the total economic performance of a reference obligation to the other party (total return receiver). Total economic performance includes income from interest and fees, gains or losses from market movements, and credit losses. The exposure of the AIF is the market value of the equivalent reference assets which have a bearing on the economic performance of the swap.

8. **Forward agreements:** A forward agreement is a customised, bilateral agreement to exchange an asset or cash flows at a specified future settlement date at a forward price agreed on the trade date. One party to the forward is the buyer (long), who agrees to pay the forward price on the settlement date; the other is the seller (short), who agrees to receive the forward price. Entering into a forward contract typically does not require the payment of a fee. The exposure of the AIF is the market value of the equivalent underlying

asset. This may be replaced by the notional value of the contract where this is more conservative.

9. **Options:** An option is an agreement that gives the buyer, who pays a fee (premium), the right — but not the obligation — to buy or sell a specified amount of an underlying asset at an agreed price (strike or exercise price) on or until the expiration of the contract (expiry). A call option is an option to buy, and a put option an option to sell. The bounds of the exposure of the fund will be on the one side a potential unlimited exposure and on the other side an exposure that is limited to the higher of the premium paid or the market value of that option. The exposure between these two bounds is determined as the delta (an options delta measures the sensitivity of an option's price solely to a change in the price of the underlying asset) adjusted equivalent of the underlying position. The same approach must be adopted for embedded derivatives, e.g. in structured products. The structure should be broken down into its component parts and the effect of layers of derivative exposures must be adequately captured.

10. **Repurchase agreements:** The repurchase agreement normally occurs where an AIF 'sells' securities to a reverse-repo counterparty and agrees to buy them back at an agreed price in the future. The AIF will incur a financing cost from engaging in this transaction and will therefore need to re-invest the cash proceeds (effectively cash collateral) in order to generate a return greater than the financing cost incurred. This reinvestment of 'cash collateral' means that incremental market risk will be carried by the AIF and consequently must be taken into account in the global exposure calculation. The economic risks and rewards of the 'sold' securities remain with the AIF. Also, a repo transaction will almost always give rise to leverage as the cash collateral will be reinvested. In the event that non-cash collateral is received as part of the transaction and this collateral is further used as part of another repo, or stock-loan agreement, the full market value of the collateral must be included in the global exposure amount. The exposure of the AIF is increased by the reinvested part of the cash collateral.

11. **Reverse repurchase agreements:** This transaction occurs where an AIF 'purchases' securities from a repo counterparty and agrees to sell them back at an agreed price in the future. AIFs normally engage in these transactions to generate a low-risk money-market type return, and the 'purchased' securities act as collateral. Therefore no global exposure is generated; nor does the AIF take on the risks and rewards of the 'purchased' securities, i.e. there is no incremental market risk. However, it is possible for the 'purchased' securities to be further used as part of a repo or security-loan transaction, as described above, and in that case the full market value of the securities must be included in the global exposure amount. The economic risks and rewards of the purchased securities remain with the counterparty and therefore this does not increase the exposure of the AIF.

12. **Securities lending arrangements**: An AIF engaging in a securities lending transaction will lend a security to a security- borrowing counterparty (who will normally borrow the security to cover a physical short sale transaction) for an agreed fee. The security borrower will deliver either cash or non-cash collateral to the AIF. Only where cash collateral is reinvested in instruments other than those defined in Article 7 point (a) will global exposure be created. If the non- cash collateral is further used as part of a repo or another security lending transaction, the full market value of the securities must be included in the global exposure amount as described above. Exposure is created to the extent that the cash collateral has been reinvested.

13. **Securities borrowing arrangements:** An AIF engaging in the borrowing of securities will borrow a security from a security-lending counterparty for an agreed fee. The AIF will then sell the security in the market. The AIF is now short that security. To the extent that

the cash proceeds from the sale are reinvested this will also increase the exposure of the AIF. Exposure is the market value of the shorted securities; additional exposure is created to the extent that the cash received is reinvested.

14. **Credit default swaps:** A credit default swap (CDS) is a credit derivative agreement that gives the buyer protection, usually the full recovery, in case the reference entity defaults or suffers a credit event. In return the seller of the CDS receives from the buyer a regular fee, called the spread. For the protection seller, the exposure is the higher of the market value of the underlying reference assets or the notional value of the credit default swap. For the protection buyer, the exposure is the market value of the underlying reference asset.

Appendix VI

AIFMD Conversion methodologies for derivative instruments

(from Annex I of Commission Delegated Regulation No 231/2013 of 19 December 2012)

1. The following conversion methods shall be applied to the non-exhaustive list below of standard derivatives:

(a) Futures

Bond future: Number of contracts * notional contract size * market price of the cheapest-to-deliver reference bond
Interest rate future: Number of contracts * notional contract size
Currency future: Number of contracts * notional contract size
Equity future: Number of contracts * notional contract size * market price of underlying equity share
Index futures: Number of contracts * notional contract size * index level

(b) Plain vanilla options (bought/sold puts and calls)

Plain vanilla bond option: Notional contract value * market value of underlying reference bond * delta
Plain vanilla equity option: Number of contracts * notional contract size* market value of underlying equity share * delta
Plain vanilla interest rate option: Notional contract value * delta
Plain vanilla currency option: Notional contract value of currency leg(s) * delta
Plain vanilla index options: Number of contracts * notional contract size * index level * delta
Plain vanilla options on futures: Number of contracts * notional contract size * market value of underlying asset * delta
Plain vanilla swaptions: Reference swap commitment conversion amount * delta
Warrants and rights: Number of shares/bonds * market value of underlying referenced instrument * delta

(c) Swaps

Plain vanilla fixed/floating rate interest rate and inflation swaps: notional contract value
Currency swaps: Notional value of currency leg(s)
Cross currency interest rate swaps: Notional value of currency leg(s)
Basic total return swap: Underlying market value of reference asset(s)
Non-basic total return swap: Cumulative underlying market value of both legs of the TRS
Single name credit default swap:
Protection seller — The higher of the market value of the underlying reference asset or the notional value of the Credit Default Swap.
Protection buyer — Market value of the underlying reference asset
Contract for differences: Number of shares/bonds * market value of underlying referenced instrument

(d) Forwards

FX forward: notional value of currency leg(s)
Forward rate agreement: notional value

(e) Leveraged exposure to indices with embedded leverage

A derivative providing leveraged exposure to an underlying index, or indices that embed leveraged exposure to their portfolio, must apply the standard applicable commitment approach to the assets in question.

2. The following conversion methods shall be applied to the non-exhaustive list below of financial instruments which embed derivatives:

Convertible bonds: Number of referenced shares * market value of underlying referenced shares * delta

Credit linked notes: Market value of underlying reference asset(s)

Partly paid securities: Number of shares/bonds * market value of underlying referenced instruments

Warrants and rights: Number of shares/bonds * market value of underlying referenced instrument * delta

3. List of examples of non-standard derivatives with the related commitment methodology being used:

Variance swaps: Variance swaps are contracts that allow investors to gain exposure to the variance (squared volatility) of an underlying asset and, in particular, to trade future realised (or historical) volatility against current implied volatility. According to market practice, the strike and the variance notional are expressed in terms of volatility. For the variance notional, this gives:

variance notional = vega notional/(2 * strike)

The vega notional provides a theoretical measure of the profit or loss resulting from a 1 % change in volatility.

As realised volatility cannot be less than zero, a long swap position has a known maximum loss. The maximum loss on a short swap is often limited by the inclusion of a cap on volatility. However without a cap, a short swap's potential losses are unlimited.

The conversion methodology to be used for a given contract at time t is:

Variance notional * (current) variance_t (without volatility cap)

Variance notional * min [(current) variance_t volatility cap^2] (with volatility cap)

whereby: (current) variance_t is a function of the squared realised and implied volatility, more precisely:

(current) variance_t = t/T * realized volatility $(0,t)^2$ + (T – t)/T * implied volatility $(t,T)^2$

Volatility swaps

By analogy with the variance swaps, the following conversion formulae should be applied to volatility swaps:

Vega notional * (current) volatility_t (without volatility cap)

Vega notional * min [(current) volatility_t ; volatility cap] (with volatility cap)

whereby the (current) volatility_t is a function of the realised and implied volatility.

4. Barrier (knock-in knock-out) options

Number of contracts * notional contract size * market value of underlying equity share * delta

Appendix VII

AIFMD Duration netting rules

(from Annex I of Commission Delegated Regulation No 231/2013 of 19 December 2012)

1. An interest rate derivative shall be converted into its equivalent underlying asset position in accordance with the following methodology:

The equivalent underlying asset position of each interest rate derivative instrument shall be calculated as its duration divided by the target duration of the AIF and multiplied by the equivalent underlying asset position:

Equivalent underlying asset position = $duration_{FDI}$/ $duration_{target}$ * $CV_{derivative}$
where:

- $duration_{FDI}$ is the duration (sensitivity of the market value of the financial derivative instrument to interest rate movements) of the interest rate derivative instrument,

- $duration_{target}$ is in line with the investment strategy, the directional positions and the expected level of risk at any time and will be regularised otherwise. It is also in line with the portfolio duration under normal market conditions,

- $CV_{derivative}$ is the converted value of the derivative position as defined by the Annex II.

2. The equivalent underlying asset positions calculated in accordance with to paragraph 1 shall be netted as follows:

(a) Each interest rate derivative instrument shall be allocated to the appropriate maturity range of the following maturity-based ladder:

Maturities ranges
1. 0-2 years
2. 2-7 years
3. 7-15 years
4. > 15 years

(b) The long and short equivalent underlying asset positions shall be netted within each maturity range. The amount of the former which is netted with the latter is the netted amount for that maturity range.

(c) Starting with the shortest maturity range, the netted amounts between two adjoining maturity ranges shall be calculated by netting the amount of the remaining unnetted long (or short) position in the maturity range (i) with the amount of the remaining unnetted short (long) position in the maturity range (i + 1).

(d) Starting with the shortest maturity range, the netted amounts between two remote maturity ranges separated by another one shall be calculated by netting the amount of the remaining unnetted long (or short) position in the maturity range (i) with the amount of the remaining unnetted short (long) position in the maturity range (i + 2).

(e) The netted amount shall be calculated between the remaining unnetted long and short positions of the two most remote maturity ranges.

3. The AIF shall calculate its exposures as the sum of absolute values:

0 % of the netted amount for each maturity range,
40 % of the netted amounts between two adjoining maturity ranges (i) and (i + 1),
75 % of the netted amounts between two remote maturity ranges separated by another one, meaning maturity ranges (i) and (i + 2),
100 % of the netted amounts between the two most remote maturity ranges, and
100 % of the remaining unnetted positions.

Appendix VIII
Comparison of AIFMD & UCITS global exposure calculation methodologies

	UCITS commitment approach[2]	**AIFM commitment method**	**AIFM gross method**
1.	The global exposure of a UCITS calculated in accordance with the commitment approach is **the incremental exposure and leverage** generated through the use of derivatives and forward transactions	The exposure of an AIF calculated in accordance with the commitment method shall be the sum of the **absolute values of all positions**	The exposure of an AIF calculated in accordance with the gross method shall be the sum of the absolute values of all positions
2.			Exclude the value of any cash and cash equivalents
3.	An AFM must convert each derivative or forward transaction (including embedded derivatives) into the market value of an equivalent position in the underlying asset of that derivative or forward [CESR/10-788 Box 2]	An AIFM shall convert each derivative instrument position into an equivalent position in the underlying asset of that derivative [Annex II]	An AIFM shall convert derivative instruments into the equivalent position in their underlying assets [Annex II]
4.	An AFM **may** take account of netting and hedging arrangements	An AIFM **shall** apply netting and hedging arrangements	
5.			An AIFM shall exclude cash borrowings that remain in cash or cash equivalent
6.		An AIFM shall calculate the exposure created through the reinvestment of borrowings where such reinvestment increases the exposure of the AIF [the higher of the market value of the investment realised or the total amount of the cash borrowed]	An AIFM shall include exposure resulting from the reinvestment of cash borrowings, expressed as the higher of the market value of the investment realised or the total amount of the cash borrowed

[2] The "sum of the notionals" calculation is the same as the commitment approach before taking account of any netting or hedging arrangements (step 4).

7.	An AFM must take into consideration repo contracts and stock lending transactions	An AIFM shall include other arrangements [convertible debt, repurchase or reverse repurchase agreements and securities lending or borrowing]	An AIFM shall include positions within repurchase or reverse repurchase agreements and securities lending or borrowing or other arrangements [convertible debt]
8.	An AFM need not take account of derivatives and forwards that do not generate incremental exposure		
9.	An AFM need not take account of temporary borrowing arrangements		
10		AIFMs managing AIFs that, in accordance with their core investment policy, primarily invest in interest rate derivatives shall make use of specific duration netting rules in order to take into account the correlation between the maturity segments of the interest rate curve.	

Appendix IX

Comparison of UCITS & AIFMD Global Exposure Requirements

UCITS Global Exposure Requirements

- Global exposure relating to derivative instruments must not exceed the total net value of the 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.

- Global exposure must be calculated on at least a daily basis.

Two methods – Commitment and VaR

- UCITS managers must select an appropriate methodology to calculate global exposure. The methodology should be based on the risk profile of the UCITS resulting from its investment policy (including its use of financial derivative instruments)

- With respect to the selection of the methodology used to measure global exposure, the commitment approach should not be applied to UCITS using, to a large extent and in a systematic way, financial derivative instruments as part of complex investment strategies.

Commitment

- The calculation of gross and net commitment must be based on an exact conversion of the financial derivative position into the market value of an equivalent position in the underlying asset of that derivative.

VaR

- A UCITS must use an advanced risk measurement methodology (supported by a stress testing program) such as VaR to calculate global exposure where (a) it engages in complex investment strategies which represent more than a negligible part of the UCITS' investment policy; (b) it has more than a negligible exposure to exotic derivatives; or (c) the commitment approach doesn't adequately capture the market risk of the portfolio.

- A global exposure calculation using the VaR approach should consider all the positions of the UCITS portfolio.

- A UCITS should always set the maximum VaR limit according to its defined risk profile.

- UCITS which calculate global exposure using a VaR methodology should regularly monitor their leverage.

Two VaR options – Absolute or Relative VaR

- For the purpose of calculating global exposure the UCITS can use the relative VaR approach or the absolute VaR approach

- The absolute VaR of a UCITS cannot be greater than 20% of its NAV.

- Relative VaR - the VaR of the UCITS portfolio must 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.

Disclosures

- The UCITS should disclose in its prospectus the method used to calculate of the global exposure (i.e. commitment approach, relative VaR or absolute VaR).

- UCITS using VaR approaches should disclose the expected level of leverage and the possibility of higher leverage levels in the prospectus.

- Leverage should be calculated as the sum of the notionals of the derivatives used.

- When using the relative VaR approach, information on the reference portfolio should be disclosed in the prospectus

- The UCITS' prospectus should disclose the possibility of higher leverage levels and also the expected level of leverage that might be reached. However, the disclosed expected level of leverage is not intended to be an additional exposure limit for the UCITS. The level of leverage may vary over time. Where the UCITS anticipates that expected levels of leverage may vary then prospectus disclosure could reflect the maximum expected levels e.g. "Leverage is not expected to exceed..." or the usually expected level of leverage together with the information on the possibility of higher leverage levels under certain circumstances (e.g. very low market volatility)

AIFMD - Leverage

- 'Leverage' means any method by which the AIFM increases the exposure of an AIF it manages whether through borrowing of cash or securities, or leverage embedded in derivative positions or by any other means.

- Leverage must be expressed as the ratio between the exposure of an AIF and its net asset value.

- AIFMs shall set a maximum level of leverage which they may employ on behalf of each AIF they manage as well as the extent of the right to reuse collateral or guarantee that could be granted under the leveraging arrangement.

- Two methods - Gross method and the commitment method. Commission to review the calculation methods no later than 21 July 2015.

- Gross Method includes derivative instruments, exposure resulting from the reinvestment of cash borrowings, repo or reverse repo agreements and securities lending or borrowing

- There is a requirement to exclude the value of any cash and cash equivalents under the Gross Method which does not apply to the Commitment Method.

- Commitment method - derivatives converted into an equivalent position in the underlying asset of that derivative, netting and hedging arrangements, and reinvestment of borrowings where such reinvestment increases the exposure of the AIF

Obligations relating to "leveraged" AIFs

- Reporting to investors and supervisory authorities

- Increased reporting obligations for AIFs employing leverage on a substantial basis (i.e. 3x NAV on a commitment basis)

- The AIFM has to set out the policy with regard to leverage when applying for authorisation

- The AIFM has to set a maximum level of leverage which it may employ on behalf of each AIF it manages

- AIFMs must demonstrate leverage limits are reasonable

Appendix X

UCITS & AIFMD Risk Management Comparison	
UCITS	**AIFMD**
Risk Management Process & Systems	
Article 51 (1) requires a UCITS management company to 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 in regard to 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.	Article 15 of the Directive requires AIFMs to implement adequate risk management systems in order to identify, measure, manage and monitor appropriately all risks relevant to each AIF investment strategy and to which each AIF is or may be exposed. AIFMs should review the risk management systems with appropriate frequency at least once a year and adapt them whenever necessary. Article 38 of the Level 2 Regulation describes risk management systems as "systems comprised of relevant elements of the organisational structure of the AIFM, with a central role for a permanent risk management function, policies and procedures related to the management of risk relevant to each AIF's investment strategy, and arrangements, processes and techniques related to risk measurement and management employed by the AIFM in relation to each AIF it manages."
Permanent Risk Management Function	
Article 12 (3) of the Level 2 Directive requires he permanent risk management function to: (a) implement the risk management policy and procedures; (b) ensure compliance with the UCITS risk limit system, including statutory limits concerning global exposure and counterparty risk in accordance with Articles 41, 42 and 43; (c) provide advice to the board of directors as regards the identification of the risk profile of each managed UCITS; (d) provide regular reports to the board of directors and, where it	Article 39 of the Level 2 Regulation requires AIFMs to establish and maintain a permanent risk management function that shall: (a) implement effective risk management policies and procedures in order to identify, measure, manage and monitor on an ongoing basis all risks relevant to each AIF's investment strategy to which each AIF is or may be exposed; (b) ensure that the risk profile of the AIF disclosed to investors in accordance with point (c) of Article 23(4) of Directive 2011/61/EU is consistent with the risk limits that have been set in accordance with

exists, the supervisory function, on: (i) the consistency between the current levels of risk incurred by each managed UCITS and the risk profile agreed for that UCITS; (ii) the compliance of each managed UCITS with relevant risk limit systems; (iii) the adequacy and effectiveness of the risk management process, indicating in particular whether appropriate remedial measures have been taken in the event of any deficiencies; (e) provide regular reports to the senior management outlining the current level of risk incurred by each managed UCITS and any actual or foreseeable breaches to their limits, so as to ensure that prompt and appropriate action can be taken; (f) review and support, where appropriate, the arrangements and procedures for the valuation of OTC derivatives as referred to in Article 44.	Article 44 of this Regulation; (c) monitor compliance with the risk limits set in accordance with Article 44 and notify the AIFM's governing body and, where it exists, the AIFM's supervisory function in a timely manner when it considers the AIF's risk profile inconsistent with these limits or sees a material risk that the risk profile will become inconsistent with these limits; (d) provide the following regular updates to the governing body of the AIFM and where it exists the AIFM's supervisory function at a frequency which is in accordance with the nature, scale and complexity of the AIF or the AIFM's activities: (i) the consistency between and compliance with the risk limits set in accordance with Article 44 and the risk profile of the AIF as disclosed to investors in accordance with Article 23(4)(c) of Directive 2011/61/EU; (ii) the adequacy and effectiveness of the risk management process, indicating in particular whether appropriate remedial measures have been or will be taken in the event of any actual or anticipated deficiencies; (e) provide regular updates to the senior management outlining the current level of risk incurred by each managed AIF and any actual or foreseeable breaches of any risk limits set in accordance with Article 44, so as to ensure that prompt and appropriate action can be taken.
The permanent risk management function shall have the necessary authority and access to all relevant information necessary to fulfil the tasks set out above (Article 12 (4) Level 2).	The risk management function shall have the necessary authority and access to all relevant information necessary to fulfil the tasks set out above (Article 39 Level 2).
Functional and hierarchical separation of the risk management function	
Article 12 requires management companies to establish and maintain a permanent risk management function which must be hierarchically and functionally independent from operating units Member States may allow management companies to derogate from this obligation where the derogation is appropriate and proportionate in view of the nature, scale and complexity of the management	Article 15 of the Directive requires AIFMs to functionally and hierarchically separate the functions of risk management from the operating units, including from the functions of portfolio management. The functional and hierarchical separation of the functions of risk management … shall be reviewed by the competent authorities of the home Member State of the AIFM in accordance with the principle of

company's business and of the UCITS it manages.	proportionality, on the understanding that the AIFM shall, in any event, be able to demonstrate that specific safeguards against conflicts of interest allow for the independent performance of risk management activities and that the risk management process satisfies the requirements of this Article and is consistently effective. Article 42 of the Level 2 Regulation states that the risk management function shall be considered as functionally and hierarchically separated from the operating units, including the portfolio management function, only where all the following conditions are satisfied: (a) persons engaged in the performance of the risk management function are not supervised by those responsible for the performance of the operating units, including the portfolio management function, of the AIFM; (b) persons engaged in the performance of the risk management function are not engaged in the performance of activities within the operating units, including the portfolio management function; (c) persons engaged in the performance of the risk management function are compensated in accordance with the achievement of the objectives linked to that function, independently of the performance of the operating units, including the portfolio management function; (d) the remuneration of senior officers in the risk management function is directly overseen by the remuneration committee, where such a committee has been established. The functional and hierarchical separation of the risk management function … shall be ensured throughout the whole hierarchical structure of the AIFM, up to its governing body. It shall be reviewed by the governing body and, where it exists, the supervisory function of the AIFM.

Control by senior management and supervisory function	
Article 9 of the Level 2 Directive requires the management company to ensure that its senior management: • ensures and verifies on a periodic basis that the general investment policy, the investment strategies and the risk limits of each managed UCITS are properly and effectively implemented and complied with, even if the risk management function is performed by third parties; • approves and reviews on a periodic basis the risk management policy and arrangements, processes and techniques for implementing that policy, as referred to in Article 38, including the risk limit system for each managed UCITS Management companies must ensure that their senior management receives on a frequent basis, and at least annually, written reports on matters of compliance, internal audit and risk management indicating in particular whether appropriate remedial measures have been taken in the event of any deficiencies.	
Due Diligence Requirements	
Article 23 (4) requires management companies when implementing their risk management policy, and where it is appropriate after taking into account the nature of a foreseen investment, to formulate forecasts and perform analyses concerning the investment's contribution to the UCITS portfolio composition, liquidity and risk and reward profile before carrying out the investment. The analyses must only be carried out on the basis of reliable and up-to-date information, both in quantitative and qualitative terms. Management companies shall exercise due skill, care and diligence when entering into, managing or terminating any arrangements with third parties in relation to the performance of risk management activities. Before entering into such arrangements, management companies shall take the necessary steps in order to verify that the	Under Article 15 of the Directive, AIFMs must: (a) implement an appropriate, documented and regularly updated due diligence process when investing on behalf of the AIF, according to the investment strategy, the objectives and risk profile of the AIF; (b) ensure that the risks associated with each investment position of the AIF and their overall effect on the AIF's portfolio can be properly identified, measured, managed and monitored on an ongoing basis, including through the use of appropriate stress testing procedures; (c) ensure that the risk profile of the AIF shall correspond to the size, portfolio structure and investment strategies and objectives of the AIF as laid down in the AIF rules or instruments of incorporation, prospectus and offering documents.

third party has the ability and capacity to perform the risk management activities reliably, professionally and effectively. The management company shall establish methods for the on-going assessment of the standard of performance of the third party.	
Risk Management Policy	
Article 38 (1) requires management companies to establish, implement and maintain an adequate and documented risk management policy which identifies the risks the UCITS they manage are or might be exposed to. The risk management policy shall comprise such procedures as are necessary to enable the management company to assess for each UCITS it manages the exposure of that UCITS to market, liquidity and counterparty risks, and the exposure of the UCITS to all other risks, including operational risks, which may be material for each UCITS it manages. The following elements must be addressed in the risk management policy: (a) the techniques, tools and arrangements that enable them to comply with the obligations set out in Articles 40 and 41; (b) the allocation of responsibilities within the management company pertaining to risk management.	Article 40 of the Level 2 Regulation requires AIFMs to establish, implement and maintain an adequate and documented risk management policy which identifies all the relevant risks to which the AIFs it manages are or may be exposed. The risk management policy shall comprise such procedures as are necessary to enable the AIFM to assess for each AIF it manages the exposure of that AIF to market, liquidity and counterparty risks, and the exposure of the AIF to all other relevant risks, including operational risks, which may be material for each AIF it manages. The AIFM shall address at least the following elements in the risk management policy: (a) the techniques, tools and arrangements that enable it to comply with Article 45; (b) the techniques, tools and arrangements that enable liquidity risk of the AIF to be assessed and monitored under normal and exceptional liquidity conditions including through the use of regularly conducted stress tests in accordance with Article 48; (c) the allocation of responsibilities within the AIFM pertaining to risk management; (d) the limits set in accordance with Article 44 of this Regulation and a justification of how these are aligned with the risk profile of the AIF disclosed to investors in accordance with Article 23(4)(c) of Directive 2011/61/EU; (e) the terms, contents, frequency and addressees of reporting by the permanent risk management function referred to in Article 39.
Management companies should ensure that the risk management	The risk management policy shall include a description of the safeguards

policy states the terms, contents and frequency of reporting of the risk management function referred to in Article 12 to the board of directors and to senior management and, where appropriate, to the supervisory function. Management companies must take into account the nature, scale and complexity of their business and of the UCITS they manage.	referred to in Article 43, in particular: (a) the nature of the potential conflicts of interest; (b) the remedial measures put in place; (c) the reasons why these measures should be reasonably expected to result in independent performance of the risk management function; (d) how the AIFM expects to ensure that the safeguards are consistently effective. The risk management policy should be appropriate to the nature, scale and complexity of the business of the AIFM and of the AIF it manages.
Assessment, monitoring and review of risk management policy	
Article 39 (1) of the Level 2 Directive requires management companies to assess, monitor and periodically review: (a) the adequacy and effectiveness of the risk management policy and of the arrangements, processes and techniques referred to in Articles 40 and 41; (b) the level of compliance by the management company with the risk management policy and with arrangements, processes and techniques referred to in Articles 40 and 41; (c) the adequacy and effectiveness of measures taken to address any deficiencies in the performance of the risk management process. Management companies must notify competent authorities of their home Member State any material changes to the risk management process. The Competent Authority of the management company's home Member State must review on an ongoing basis and accordingly when granting authorisation the above requirements.	Article 41 of the Level 2 Regulation requires AIFMs to assess, monitor and periodically, at least once a year, review: (a) the adequacy and effectiveness of the risk management policy and of the arrangements, processes and techniques referred to in Article 45; (b) the degree of compliance by the AIFM with the risk management policy and with the arrangements, processes and techniques referred to in Article 45; (c) the adequacy and effectiveness of measures taken to address any deficiencies in the performance of the risk management process; (d) the performance of the risk management function; (e) the adequacy and effectiveness of measures aiming to ensure the functional and hierarchical separation of the risk management function in accordance with Article 42. The frequency of the periodic review referred to above must be decided by senior management in accordance with the principle of proportionality given the nature, scale and complexity of the AIFM's business and the AIF it manages. In addition to the above periodic review, the risk management systems shall be reviewed where:

	(a) material changes are made to the risk management policies and procedures and to the arrangements, processes and techniques referred to in Article 45; (b) internal or external events indicate that an additional review is required; (c) material changes are made to the investment strategy and objectives of an AIF that the AIFM manages. The AIFM shall update the risk management systems on the basis of the outcome of the review referred to above. The AIFM shall notify the competent authority of its home Member State of any material changes to the risk management policy and of the arrangements, processes and techniques referred to in Article 45
Safeguards against conflict of interest	
A management company shall be able to demonstrate that appropriate safeguards against conflicts of interest have been adopted so as to allow an independent performance of risk management activities and that its risk management process satisfies the requirements of Article 51 of Directive 2009/65/EC (Article 12 Level 2 Regulation).	Article 43 states that the safeguards against conflicts of interest shall ensure, at least, that: (a) decisions taken by the risk management function are based on reliable data, which are subject to an appropriate degree of control by the risk management function; (b) the remuneration of those engaged in the performance of the risk management function reflects the achievement of the objectives linked to the risk management function, independently of the performance of the business areas in which they are engaged; (c) the risk management function is subject to an appropriate independent review to ensure that decisions are being arrived at independently; (d) the risk management function is represented in the governing body or the supervisory function, where it has been established, at least with the same authority as the portfolio management function; (e) any conflicting duties are properly segregated. Where proportionate, taking into account the nature, scale and

	complexity of the AIFM, the safeguards shall also ensure that: (a) the performance of the risk management function is reviewed regularly by the internal audit function, or, if the latter has not been established, by an external party appointed by the governing body; (b) where a risk committee has been established, it is appropriately resourced and its non-independent members do not have undue influence over the performance of the risk management function. The governing body of the AIFM and, where it exists, the supervisory function shall establish the safeguards against conflicts of interest laid down in paragraphs 1 and 2, regularly review their effectiveness and take timely remedial action to address any deficiencies.
Risk limits	
	Article 44 of the Level 2 Regulation requires an AIFM to establish and implement quantitative or qualitative risk limits, or both, for each AIF it manages, taking into account all relevant risks. Where only qualitative limits are set, the AIFM shall be able to justify this approach to the competent authority. The qualitative and quantitative risk limits for each AIF shall, at least, cover the following risks: (a) market risks; (b) credit risks; (c) liquidity risks; (d) counterparty risks; (e) operational risks. When setting risk limits, the AIFM shall take into account the strategies and assets employed in respect of each AIF it manages as well as the national rules applicable to each of those AIFs. Those risk limits shall be aligned with the risk profile of the AIF as disclosed to investors in accordance with point (c) of Article 23(4) of Directive 2011/61/EU and approved by the governing body.

Measurement and Management of Risk	
Article 40 requires Management companies to adopt adequate and effective arrangements, processes and techniques in order to: (a) measure and manage at any time the risks which the UCITS they manage are or might be exposed to; (b) ensure compliance with limits concerning global exposure and counterparty risk, in accordance with Articles 41 and 43. Those arrangements, processes and techniques shall be proportionate to the nature, scale and complexity of the business of the management companies and of the UCITS they manage and be consistent with the UCITS risk profile	Article 45 of the Level 2 Regulation requires AIFMs to adopt adequate and effective arrangements, processes and techniques in order to: (a) identify, measure, manage and monitor at any time the risks to which the AIFs under their management are or might be exposed; (b) ensure compliance with the limits set in accordance with Article 44. These arrangements, processes and techniques shall be proportionate to the nature, scale and complexity of the business of the AIFM and of each AIF it manages and shall be consistent with the AIF's risk profile as disclosed to investors in accordance with point (c) of Article 23(4) of Directive 2011/61/EU.
Management companies should take the following actions for each UCITS they manage: (a) put in place such risk measurement arrangements, processes and techniques as are necessary to ensure that the risks of taken positions and their contribution to the overall risk profile are accurately measured on the basis of sound and reliable data and that the risk measurement arrangements, processes and techniques are adequately documented; (b) conduct, where appropriate, periodic back-tests in order to review the validity of risk measurement arrangements which include model-based forecasts and estimates; (c) conduct, where appropriate, periodic stress tests and scenario analyses to address risks arising from potential changes in market conditions that might adversely impact the UCITS; (d) establish, implement and maintain a documented system of internal limits concerning the measures used to manage and control the relevant risks for each UCITS taking into account all risks which may be material to the UCITS as referred to in Article 38 and ensuring consistency with the UCITS risk-profile; (e) ensure that the current level of risk complies with the risk limit system as set out in point (d) for each UCITS;	AIFMs should take the following actions for each AIF they manage: (a) put in place such risk measurement arrangements, processes and techniques as are necessary to ensure that the risks of positions taken and their contribution to the overall risk profile are accurately measured on the basis of sound and reliable data and that the risk measurement arrangements, processes and techniques are adequately documented; (b) conduct periodic back-tests in order to review the validity of risk measurement arrangements which include model-based forecasts and estimates; (c) conduct, periodic appropriate stress tests and scenario analyses to address risks arising from potential changes in market conditions that might adversely impact the AIF; (d) ensure that the current level of risk complies with the risk limits set in accordance with Article 44; (e) establish, implement and maintain adequate procedures that, in the event of actual or anticipated breaches of the risk limits of the AIF, result in timely remedial actions in the best interest of investors; (f) ensure that there are appropriate liquidity management systems and procedures for each AIF in line with the requirements laid down in Article 46

(f) establish, implement and maintain adequate procedures that, in the event of actual or anticipated breaches to the risk limit system of the UCITS, result in timely remedial actions in the best interests of unit-holders.	
Liquidity Risk Management	
Article 40 of the Level 2 Directive requires Management companies to employ an appropriate liquidity risk management process in order to ensure that each UCITS they manage is able to comply at any time with Article 84(1) of Directive 2009/65/EC. Where appropriate, management companies shall conduct stress tests which enable assessment of the liquidity risk of the UCITS under exceptional circumstances. Management companies must ensure that for each UCITS they manage the liquidity profile of the investments of the UCITS is appropriate to the redemption policy laid down in the fund rules or the instruments of incorporation or the prospectus.	Article 16 requires AIFMs, for each AIF that they manage which is not an unleveraged closed-ended AIF, to employ an appropriate liquidity management system and adopt procedures which enable them to monitor the liquidity risk of the AIF and to ensure that the liquidity profile of the investments of the AIF complies with its underlying obligations. AIFMs shall regularly conduct stress tests, under normal and exceptional liquidity conditions, which enable them to assess the liquidity risk of the AIFs and monitor the liquidity risk of the AIFs accordingly. AIFMs shall ensure that, for each AIF that they manage, the investment strategy, the liquidity profile and the redemption policy are consistent. Article 46 of the Level 2 Regulation requires AIFMs to be able to demonstrate to the competent authorities of their home Member State that an appropriate liquidity management system and effective procedures referred to in Article 16(1) of Directive 2011/61/EU are in place taking into account the investment strategy, the liquidity profile and the redemption policy of each AIF.
	Article 47 of the Level 2 Regulation requires the liquidity management system and procedures to ensure that: (a) the AIFM maintains a level of liquidity in the AIF appropriate to its underlying obligations, based on an assessment of the relative liquidity of the AIF's assets in the market, taking account of the time required for liquidation and the price or value at which those assets can be liquidated, and their sensitivity to other market risks or factors;

	(b) the AIFM monitors the liquidity profile of the AIF's portfolio of assets, having regard to the marginal contribution of individual assets which may have a material impact on liquidity, and the material liabilities and commitments, contingent or otherwise, which the AIF may have in relation to its underlying obligations. For these purposes the AIFM shall take into account the profile of the investor base of the AIF, including the type of investors, the relative size of investments and the redemption terms to which these investments are subject; (c) the AIFM, where the AIF invests in other collective investment undertakings, monitors the approach adopted by the managers of those other collective investment undertakings to the management of liquidity, including through conducting periodic reviews to monitor changes to the redemption provisions of the underlying collective investment undertakings in which the AIF invests. Subject to Article 16(1) of Directive 2011/61/EU, this obligation shall not apply where the other collective investment undertakings in which the AIF invests are actively traded on a regulated market within the meaning of point (14) of Article 4(1) of Directive 2004/39/EC or an equivalent third country market; (d)the AIFM implements and maintains appropriate liquidity measurement arrangements and procedures to assess the quantitative and qualitative risks of positions and of intended investments which have a material impact on the liquidity profile of the portfolio of the AIF's assets to enable their effects on the overall liquidity profile to be appropriately measured. The procedures employed shall ensure that the AIFM has the appropriate knowledge and understanding of the liquidity of the assets in which the AIF has invested or intends to invest including, where applicable, the trading volume and sensitivity of prices and, as the case may be, or spreads of individual assets in normal and exceptional liquidity conditions; (e)the AIFM considers and puts into effect the tools and arrangements,

	including special arrangements, necessary to manage the liquidity risk of each AIF under its management. The AIFM shall identify the types of circumstances where these tools and arrangements may be used in both normal and exceptional circumstances, taking into account the fair treatment of all AIF investors in relation to each AIF under management. The AIFM may use such tools and arrangements only in these circumstances and if appropriate disclosures have been made in accordance with Article 108. AIFMs shall document their liquidity management policies and procedures, review them on at least an annual basis and update them for any changes or new arrangements. AIFMs shall include appropriate escalation measures in their liquidity management system and procedures, to address anticipated or actual liquidity shortages or other distressed situations of the AIF. Where the AIFM manages an AIF which is a leveraged closed-ended AIF, point (e) above shall not apply. Article 48 of the Level 2 Regulation requires AIFMs to implement liquidity management limits and stress tests as follows:- AIFMs shall, where appropriate, considering the nature, scale and complexity of each AIF they manage, implement and maintain adequate limits for the liquidity or illiquidity of the AIF consistent with its underlying obligations and redemption policy and in accordance with the requirements laid down in Article 44 relating to quantitative and qualitative risk limits. AIFMs shall monitor compliance with those limits and where limits are exceeded or likely to be exceeded, they shall determine the required (or necessary) course of action. In determining appropriate action, AIFMs

	shall consider the adequacy of the liquidity management policies and procedures, the appropriateness of the liquidity profile of the AIF's assets and the effect of atypical levels of redemption requests. AIFMs shall regularly conduct stress tests, under normal and exceptional liquidity conditions, which enable them to assess the liquidity risk of each AIF under their management. The stress tests shall: (a) be conducted on the basis of reliable and up-to-date information in quantitative terms or, where this is not appropriate, in qualitative terms; (b) where appropriate, simulate a shortage of liquidity of the assets in the AIF and atypical redemption requests; (c) over market risks and any resulting impact, including on margin calls, collateral requirements or credit lines; (d) account for valuation sensitivities under stressed conditions; (e) be conducted at a frequency which is appropriate to the nature of the AIF, taking in to account the investment strategy, liquidity profile, type of investor and redemption policy of the AIF, and at least once a year. AIFMs shall act in the best interest of investors in relation to the outcome of any stress tests. Article 49 states the investment strategy, liquidity profile and redemption policy of each AIF managed by an AIFM to be considered to be aligned when investors have the ability to redeem their investments in a manner consistent with the fair treatment of all AIF investors and in accordance

	with the AIF's redemption policy and its obligations. In assessing the alignment of the investment strategy, liquidity profile and redemption policy the AIFM shall also have regard to the impact that redemptions may have on the underlying prices or spreads of the individual assets of the AIF.
Leverage	
	Article 15 requires AIFMs to set a maximum level of leverage which they may employ on behalf of each AIF they manage as well as the extent of the right to reuse collateral or guarantee that could be granted under the leveraging arrangement, taking into account, inter alia: (a) the type of the AIF; (b) the investment strategy of the AIF; (c) the sources of leverage of the AIF; (d) any other interlinkage or relevant relationships with other financial services institutions, which could pose systemic risk; (e) the need to limit the exposure to any single counterparty; (f) the extent to which the leverage is collateralised; (g) the asset-liability ratio; (h) the scale, nature and extent of the activity of the AIFM on the markets concerned

Appendix XI

Embedded Derivatives

The UCITS Directive requires that all derivatives be considered for the application of Article 51 and Article 52. Therefore, it is important to consider such instruments in order to ensure that the Directive is not simply bypassed by embedding a derivative in another contract or financial instrument. In particular, Authorised Funds using structured financial instruments (SFIs) that embed derivatives must respect the principles of the Directive and consequently COLL 5.2.19. These include:

- The Authorised Fund must 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*" (Article 51);
- Global exposure relating to the embedded derivative within the SFIs must not exceed the total net value of its portfolio (Article 51(3));
- Authorised Funds using SFIs embedding derivatives should comply with the risk spreading rules required by Article 52 of the UCITS Directive.

An embedded derivative can be simply defined as a derivative instrument (option, future or contract for difference) that is embedded within another instrument or contract. Paragraph 10 of the IAS 39 provides more detail in defining an embedded derivative as "*a component of a hybrid (combined) instrument that also includes a non-derivative host contract with the effect that some of the cash flows of the combined instrument vary in a way similar to a standalone derivative. An embedded derivative causes some or all of the cash flows that otherwise would be required by the contract to be modified according to a specified interest rate, financial instrument price, commodity price, foreign exchange rate, index of prices or rates, credit rating or credit index, or other variable. A derivative that is attached to a financial instrument, but is contractually transferable independently of that instrument, or has a different counterparty from that instrument, is not an embedded derivative, but a separate financial instrument* ".

Common examples of embedded derivatives include;

- SFIs whose performance is linked to the credit quality of an asset or basket of assets;
- SFIs whose performance is linked to the performance of a bond index;
- SFIs whose performance is linked to the performance of a basket of shares with or without active management;
- SFIs with a nominal fully guaranteed, whose performance is linked to the performance of a basket of shares, with or without active management;
- Convertible bonds; and
- Exchangeable bonds.