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Risk management principles for UCITS

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INTRODUCTION

Background

1. A risk management process is key in protecting investors from risks to which UCITS are exposed in relation to the performance of the activity of collective portfolio management. Recent market turbulence events have emphasised the need for a comprehensive approach to risk management and for high standards of risk management.

2. The present European legislation in the field of collective portfolio management is rather limited as regards risk management. Article 5f(1)(a) of the UCITS Directive establishes the obligation for the home Member State to require asset management companies to have adequate procedures and internal control mechanisms in place. More detailed provisions are set out in Article 21 of the Directive, which focuses on principles for the measurement and management of risks associated with the positions in derivatives. In 2004 the European Commission issued a Recommendation[1] to supplement the above provisions on the use of financial derivatives by UCITS. The Recommendation, however, stresses the general principle according to which "all material risks" incurred by the UCITS should be accurately measured.

3. CESR, through its Investment Management Expert Group[2], carried out a survey on how the 2004 Recommendation had been implemented in the different EU jurisdictions. The survey was also aimed at assessing whether CESR Members require risk management systems for all UCITS, including those not investing in derivatives. 25 Members responded to the survey. The responses highlighted different approaches to risk management as well as to the implementation of the 2004 Recommendation.

4. On the basis of the priorities expressed by CESR Members, it was decided that CESR

[1] Recommendation 2004/383/EC of 27 April 2004.
[2] The CESR Investment management Expert Group is chaired by Lamberto Cardia, Chairman of the Italian Commissione Nazionale per la società e la borsa (CONSOB).

would embark on further work concerning:

a. specific technical and quantitative issues regarding UCITS portfolio parameters to measure global exposure, leverage and counterparty risk concerning financial derivative instruments;

b. the definition of guidelines for the industry as well as supervisory authorities in the risk management area.

5. Convergence work in the above areas would be helpful in preventing regulatory arbitrage, fostering mutual confidence and delivering investor protection.

6. CESR's view is that sound risk management systems require organisational requirements and specific safeguards and diligences in order to ensure that all risks material to the UCITS are adequately managed. Such requirements and good practices would be set out through common principles in order to both foster convergence among competent authorities and provide useful guidance to market participants.

7. In particular, this paper 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.

8. The following principles should apply to both designated asset management companies and investment companies that have not designated a management company (self-managed UCITS). Definitions of key terms used in this paper are included in the following section ("Definitions").

9. The principles proposed by CESR reflect the need to ensure, on the one hand, that investors are adequately protected and, on the other hand, that the risk management process is appropriate and proportionate in view of the nature, scale and complexity of the asset management company's activities and of the UCITS it manages.

10. The principles will be complemented by a paper on the aforesaid technical and quantitative issues regarding UCITS portfolio parameters to measure global exposure, leverage and counterparty risk concerning financial derivative instruments.

DEFINITIONS

1. Company: either the designated UCITS III management company or the self-managed investment company.
2. Board of Directors: the board of directors of the Company.
3. Senior Management: the person or persons who effectively direct the business of the Company according to Article 5a 1(b) or Article 13a(1) second indent of the UCITS Directive.
4. Supervisory Function: the function appointed to examine and evaluate the adequacy and effectiveness of the risk management process.
5. UCITS: a collective investment scheme constituted according to the provisions of the Directive 85/611/EC as amended.
6. Outsourcee: a third party to which a Company may delegate the performance of risk management activities.

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RISK MANAGEMENT FOR UCITS - LEGISLATIVE BACKGROUND

1. Article 5f 1.(a) of the UCITS Directive provides that "*...the competent authorities of the home Member State, having regard also to the nature of the UCITS managed by a management company, shall require that each such company has sound administrative and accounting procedures, control and safeguards arrangements for electronic data processing and adequate internal control mechanisms...*".
2. Similar requirements are laid down for those investment companies that have not designated a management company, by Article 13c of the UCITS Directive.
3. Under Article 21 of the UCITS Directive "*the management or investment company 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; it must employ a process for accurate and independent assessment of the value of OTC derivative instruments. It must communicate to the competent authorities regularly and in accordance with the detailed rules they shall define, 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*".
4. Furthermore, the 2004 Recommendation outlines some basic elements concerning risk management practices and systems which should be taken into consideration by CESR Members. In particular, it recommends that "*...risk-measurement systems...are adapted to the relevant risk-profile of a UCITS...*" and "*...accurately measure all material risks related to the UCITS...*".
5. Finally, when engaging in individual portfolio management, asset management companies are also subject to risk management requirements imposed by MiFID. In particular, Article 13(5) of the MiFID level 1 Directive states that firms *"...shall have... effective procedures for risk assessment..."*; this requirement is further explained by Article 7 of the MiFID level 2 Directive as the obligation:

   "… (a) to establish, implement and maintain adequate risk management policies and

procedures which identify the risks relating to the firm's activities, processes and systems, and where appropriate, set the level of risk tolerated by the firm;

(b) to adopt effective arrangements, processes and mechanisms to manage the risks relating to the firm's activities, processes and systems, in light of that level of risk tolerance;

(c) to monitor the following:

(i) the adequacy and effectiveness of the investment firm's risk management policies and procedures;

(ii) the level of compliance by the investment firm and its relevant persons with the arrangements, processes and mechanisms adopted in accordance with point (b);

(iii) *the adequacy and effectiveness of measures taken to address any deficiencies in those policies, procedures, arrangements, processes and mechanisms, including failures by the relevant persons to comply with such arrangements, processes and mechanisms or follow such policies and procedures".*

RISKS RELEVANT TO UCITS

1. This paper is focused on the risks to which UCITS investors could be exposed in relation to the performance of the activity of collective portfolio management by the Company. This is without prejudice to the obligations of the asset management company to comply with the risk management requirements imposed by the MiFID level 1 and 2 Directives when providing the service of individual portfolio management.

2. From the point of view of investors, UCITS are subject to financial risks and to certain operational risks that can materialize into capital losses or poor investment performance.

3. Among financial risks, market risk is typically referred to as the risk of fluctuations in the market value of the securities invested by the funds, which may vary over time (volatility clusters are well known in finance) reflecting different market conditions.

4. Theory suggests that, when financial transactions take place within efficient environments (markets populated by a plethora of marginal and symmetrically informed investors), asset prices embed all available information and, as a consequence, market risk can be considered as the only value-related relevant risk factor, either at the level of each security held by the fund or at the level of the entire portfolio.

5. However, since markets are often hit by discontinuous flows of information (that is, information is often incomplete and asymmetrically distributed), or are dispersed and consequently not able to produce a robust stream of prices (in the case of OTC bilateral trades), financial exposure to some classes and types of asset (ABS, OTC derivatives etc.) eligible for UCITS investment should be logically traced back to different risk determinants, which cannot be factored into a single risk driver.

6. With respect to such positions, market risk can still be thought of as capturing the exposure to standard movements in micro-economic and/or macro-economic variables (sales, profits, equity *premia*, interest rates, exchange rates). However, the other risk

factors, such as credit, counterparty and liquidity risk, are often interpreted as representing the possible impact of events which may impair the trading conditions of certain securities (illiquidity) or the credit rating of specific issuers (default) or counterparties of bilateral transactions (insolvency). Specific risks, such as credit or liquidity risk, may also refer to the exposure to sudden sharp changes in the macro-economic environment (such as a widening of risk *premia* - a “flight to quality”- or a downgrading of a specific sector or sovereign exposures).

7. An important issue worth noting is that, when factors other than market risk become relevant, the overall financial exposure of an investment fund may depend also on additional specific risk drivers that emerge only at the aggregate portfolio level. This is the case, for instance, for concentration risk or for certain aspects of liquidity risk, when liquidity is understood as the ability of a UCITS to meet, at a reasonable cost, its obligations (redemptions or debt reimbursement) as they become due.

8. From the point of view of UCITS investors, operational risks are attached to the different features and quality of the trading, settlement and valuation procedures operated by the Companies, which may increase the chances of losses due to human or technical errors.

9. However, it must be noted that, as the burden of operational risks is principally placed upon the Company and its management, only those operational risks that also affect investors’ interests by their direct impact on the fund’s portfolio should be considered within the scope of this document.

LEVEL 3 MEASURES

<u>General principles concerning risk management from the perspective of UCITS investors</u>

1. On the basis of the previously mentioned legal provisions, it is possible to identify some 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.

2. All principles corresponding to the four areas mentioned above should be implemented as part of a coherent set of internal rules that govern the process of identification, measurement and management of the risks incurred by UCITS investors, hereafter referred to as the risk management policy of the Company.

3. Finally, principles regarding risk management at the company level are supplemented by supervisory principles which should guide the review of these processes for the purpose of investor protection.

PART 1 - SUPERVISION

Box 1: Supervision by competent authorities

1. The adequacy and effectiveness of the risk management process should be considered by the competent authorities as part of the process for licensing the UCITS/Company, and subsequently supervised on an ongoing basis.

4. Companies should comply at all times with the applicable laws and regulatory requirements on risk management.

5. The risk management process should be assessed by the competent authorities in the process for licensing the Company.

6. In the process for licensing each UCITS, competent authorities should assess if the risk management process remains adequate and effective having regard to the characteristics (such as the risk profile and investment strategy) and degree of complexity of the new fund to be managed. For these purposes, competent authorities may take into account the appraisal carried out at the time of licensing the Company and/or at subsequent changes of the risk management process.

7. The risk management process should be supervised by competent authorities on an on-going basis. Material changes to the risk management process should be notified to the competent authorities for their consideration. The purpose of the notification is to ensure that the competent authorities have the opportunity to intervene in appropriate cases.

PART 2 - GOVERNANCE AND ORGANIZATION OF THE RISK MANAGEMENT PROCESS

Box 2: Definition of roles and responsibilities

1. In order to fulfil the duty to identify, measure and manage the risks relevant to the UCITS, Companies should structure, operate and maintain an adequate risk management process, whose functioning and organisational rules should be established as part of the organisational rules adopted by each Company. The risk management process should be proportionate to the nature, scale and complexity of the Company's activities and of the UCITS it manages.

2. The risk management process should be appropriately documented, formalised and traceable in the procedures and organisational rules of the Company. The corresponding documents will be referred to as "risk management policy".

3. The risk management policy is approved, reviewed on a regular basis and, if necessary, revised by the Board of Directors.

4. The Board of Directors should be held responsible for the appropriateness and effectiveness of the risk management process and for the establishment and implementation of a robust and pervasive risk culture within the Company.

8. The risk management policy should establish a robust and transparent framework for

managing risks and ensure that there is appropriate segregation of duties, effective utilisation of resources and accountability.

9. The risk management policy should ideally take the form of a separate document. However, in light of the principle of proportionality, it can also be documented within the existing organisational and procedural rules. In the latter case, the different documents should allow for a clear identification of risk management roles, responsibilities and operating procedures.

10. In particular, with respect to the organisation and functioning of the process, the risk management policy should:

   (a) identify the allocation of roles and responsibilities for the different parts of the risk management process as elaborated in Box 3 below;

   (b) define the principles and methods for the periodic identification of the risks relevant to the UCITS;

   (c) set out the terms of the interaction between the risk and the investment management functions in order to keep the UCITS risk profile under control and consistent with the UCITS investment strategy;

   (d) define the reporting arrangements to the Board of Directors of the Company and to Senior Management as elaborated in Box 12.

11. The Board should ensure that the Company operates in an environment of full risk awareness and that risk considerations are appropriately taken into account in the Company's decision-making process.

Box 3: The risk management function

1. The risk management function should be appropriately resourced, and should operate in accordance with adequate standards of competence and efficiency.

2. The risk management function should be hierarchically and functionally independent from the operating units, where appropriate and proportionate in view of the nature, scale and complexity of the Company's business and of the UCITS it manages.

3. The risk management function should implement the risk management policy and procedures and report to the Board of Directors and Senior Management.

12. Companies should specifically identify in the risk management policy the relevant unit(s), department(s) or personnel in charge of carrying out the risk management tasks (the risk management function). The personnel should be identified at least in terms of the number of persons and their roles.

13. An efficient risk management function requires adequate resources and organisation. In particular, the risk management function should have the necessary personnel, with the skills, knowledge and expertise needed to fulfil the duties that are placed upon them.

14. The risk management function should employ sound processes, professional expertise and adequate techniques and systems.

15. Independence from the operating units is required for the risk management function to operate successfully. In addition, the method of determining the remuneration of the risk management function should not be likely to compromise its objectivity.

16. A separate risk management function serves the purpose to achieve an appropriate level of independence. However, it is necessary to allow flexibility in structuring the risk management framework since it may be disproportionate for a smaller Company to establish a separate risk management function.

    Where it is not appropriate or proportionate to have a separate risk management function, the Company should nevertheless be able to demonstrate that specific safeguards against conflicts of interest allow for an independent performance of the risk management activities.

17. The risk management function should provide advice to the Board of Directors for the identification of all risks relevant to the UCITS and provide on-going monitoring and measurement of those risks. The risk management function should implement the methods and procedures necessary for the above-mentioned purposes, including the drafting of the related documentation.

18. The portfolio manager is responsible for taking investment decisions compatible with the risk limits system. On the other hand, measurement of the corresponding risks and monitoring of the risk limit system is assigned to the risk management function. However, the risk management process should operate in parallel with, and should be intrinsically tied to, the investment process. The Company should ensure that regular communication channels are established between the risk management function and the portfolio manager for the risk management process to function effectively. That

implies an ongoing, dynamic risk management process, for which an appraisal only at intervals will not be sufficient.

19. The risk management function should report regularly to the Board of Directors and Senior Management, as elaborated in Box 12.

Box 4: Outsourcing

1. Outsourcing of risk management activities does not exempt Companies from retaining full responsibility for the effectiveness and appropriateness of the risk management process.

2. The Company should take the necessary steps to ensure that the Outsourcee is able to carry out the outsourced activities reliably and effectively and in compliance with applicable laws and regulatory requirements.

3. The Company should retain sufficient human and technical skills to ensure a proper and effective supervision on the carrying out of the outsourced activities. The Company should establish procedures for the periodic assessment of the Outsourcee's governance, technical and business environment to the extent that it is material to the quality and the appropriateness of the risk management process.

4. Outsourcing of the risk management function should not impair the ability of the competent authorities to monitor the adequacy and effectiveness of the risk management process and the Company's compliance with all its obligations.

20. Companies may delegate, for the sake of efficiency, the performance of risk management activities to a third party (Outsourcee) by written agreement. In medium and small-sized Companies outsourcing of risk management activities may serve to enhance the level of independence from the operating units.

21. Outsourcing of risk management activities should not impair the quality of the risk management process, oversight of which remains under the full responsibility of the Board of Directors.

22. The Company should take the necessary steps to ensure that the Outsourcee satisfies the requirements mentioned in this Box prior to entering an agreement with the Outsourcee and on an on-going basis. Outsourcing of risk management activities should always be preceded by appropriate technical due diligence concerning the systems, methods and information used by the Outsourcee, including an assessment of any potential conflict of interests.

23. The Outsourcee should have the technical ability and professional capacity to provide the outsourced activities reliably and effectively and in compliance with applicable laws and regulatory requirements. Prior to entering an agreement with the Company and, subsequently, an on-going basis, the Outsourcee should be satisfied that, having regard to the characteristics of the Company and the UCITS, it has the resources necessary to meet the above-mentioned standards of performance.

24. The Outsourcee should disclose to the Company any development that may have a material impact on its ability to carry out the outsourced activities effectively and in compliance with the applicable laws and regulatory requirements.

25. The Company should take appropriate action if it appears that the Outsourcee may not be carrying out the outsourced activities effectively and in compliance with the applicable requirements, including termination of the arrangement for outsourcing where necessary.

Companies should in any event take all reasonable steps to ensure continuity to the risk management process in case of interruptions to the outsourced risk management activities (unexpected breaches of the contract, an urgent need to revoke the mandate, major infringements by the Outsourcee etc…).

26. The Company, its auditors and the competent authorities should be able to obtain ready access to data related to the outsourced activities, as well as, if necessary, to the business premises of the Outsourcee. The Company should make available on request to the competent authorities all information necessary to enable the authorities to supervise the compliance of the performance of the outsourced activities with the applicable requirements.

PART 3 - IDENTIFICATION AND MEASUREMENT OF RISKS RELEVANT TO THE UCITS

Box 5: Identification of risks relevant to the UCITS
1. Relevant risks should be identified among all possible risks incurred by a UCITS, according to the methods and principles defined by the risk management policy of the Company.
2. The risk management process should assess and address all risks relevant to the UCITS.

27. The risk management process should regard as relevant the material risks that stem

from the investment objective and strategy of the UCITS, the trading style in managing the UCITS and the valuation process. Material risks should be understood as those risks that can be expected, with reasonable level of confidence, to directly affect the interest of unit-holders.

28. The risk management function is responsible for the identification of risks relevant to the UCITS. Its advice should therefore help the Board of Directors to provide a meaningful description of the risk profile of the UCITS. However, this identification process should not be a static exercise but, on the contrary, should be periodically revised to allow for possible changes to market conditions or the UCITS investment strategy.

29. The risk management function should carry out an appropriate identification of the material risks relevant to the UCITS. Over-reliance on single methodologies or specific risk management models (techniques, methods and technical instruments) should be avoided.

Box 6: Risk measurement techniques

1. The risk management policy of the Company should specify the techniques and tools that are deemed suitable to measure the relevant risk factors attached to the investment strategies and management styles adopted for the UCITS.

2. The risk measurement process should allow adequate assessment of the concentration and interaction of relevant risks at the portfolio level.

30. Measurement techniques should be appropriate and proportionate to the nature, scale and complexity of the Company's activities and of the UCITS it manages. These techniques include both quantitative measures, as regards quantifiable risks, and qualitative methods.

31. Ongoing risk management operations involve the computation of a number of quantitative measures (the risk measurement framework), which generally aim to address the effects of market risk, credit risk (including issuer risk and counterparty risk) and liquidity risk.

32. The computation of these measures is carried out by IT systems and tools, which may need to be integrated with one another or with the front-office and accounting applications.

33. Consequently, while the choice of the risk measurement framework should depend primarily on the characteristics of the investment strategies of the UCITS under management, this may also partly reflect the diversity in size and complexity of the business and organisation of the Companies. However, Companies should employ effective risk measurement techniques and review whenever necessary these techniques to ensure they remain appropriate solutions in the interest of investors.

34. If UCITS invest in structured financial instruments, the risks associated with any of the components should be appropriately identified and managed. Investment in structured financial instruments should be preceded by appropriate due diligence concerning the characteristics of the underlying assets and the overall risk profile of the instruments.

35. When quantitative measurement of the effects of some risk factors is not possible, or produces unreliable results, Companies may consider integrating and adjusting their figures with elements drawn from a variety of sources, in order to obtain a comprehensive evaluation and appraisal of the risks incurred by the UCITS.

36. This approach is also likely to apply to the assessment of non-quantifiable risks which, for the purpose of this paper, should be taken into account only in so far as they have a direct impact on the interest of UCITS investors (e.g. risks attached to the technical features of the trading, settlement and valuation procedures which directly impact UCITS performance).

37. The risk management techniques should be able to be easily adapted to allow for an adequate measurement of risks in periods of increased market turbulence.

Box 7: Management of model risk concerning the risk measurement framework

1. Companies should deal appropriately with the possible vulnerability of their risk measurement techniques and models (model risk).

2. The risk measurement framework should be subject to on-going assessment and revision, and its techniques, tools and mechanisms should be adequately documented.

38. The quality of risk model-based forecasts should be demonstrably assessed. Essentially, the risk management function should run documented tests to verify that model-based forecasts and estimates correspond, with the appropriate confidence level, to the actual values of the relevant risk measures (back-testing).

39. Where appropriate, back-testing should be carried out for the techniques used in the

risk measurement framework; tests should be run prior to inception (model calibration and internal validation) and, subsequently, on an ongoing basis to check that the risk measurement framework remains viable and robust over time.

40. Companies should also assess in advance the validity range, market conditions and any inherent or assumed limits of their risk measurements, which generally result from the assumptions underlying the models or the estimation of their parameters. This assessment should be carried out, if needed, through additional diligences which include stress tests. Companies should review their risk management methods whenever needed.

41. Stress tests are usually meant to capture the possibility of rare and severe losses which could occur during market shocks, and which are unlikely to be measured by the models as they tend to follow structural breaks in the functional relationships between market variables (sudden shifts of crucial model parameters).

42. Stress tests should cover all quantifiable risks which affect, to a material degree, the value of the UCITS, with particular attention given to those risks which are not represented with sufficient accuracy by the risk models used. Such risks might include, for example, unexpected changes to price correlations or to asset (or even market) liquidity.

43. Stress tests may reflect subjective scenario hypotheses based on evidence concerning trading and market conditions (that may relate to either specific securities or an entire portfolio) during past periods of turmoil. However, such scenarios should not merely mirror historical conditions, but should elaborate on the assumption that similar dynamics could affect the risk factors arising from the UCITS' outstanding exposures.

44. When the investment strategy of the UCITS is based on specific trading or portfolio models and algorithms, the risk management function should be adequate to assess and control their use.

Box 8: The link between risk measurement and asset valuation
1. Risk measures should be computed having regard to sound and reliable data.
2. The risk management function should review and, if needed, provide appropriate support to the valuation process concerning exposures to assets requiring complex evaluation such as illiquid assets, structured securities and derivatives.

45. Without prejudice to the difference of the objectives pursued by the risk management and the valuation processes, there should be sufficient interaction between the two functions so as to allow mutual support, where necessary. That interaction may for instance result in the participation of both functions into the Company's valuation committee.

46. If robust market prices are available, the risk measures should be computed relying on a complete and adequate time series of marked-to-market values. However, when measuring risks of illiquid assets, risk managers should thoroughly check the robustness of their estimates, testing the data used for the computation against the valuations of actual comparable trades where available. Assumptions and models underlying pricing of assets requiring complex evaluation such as illiquid, structured financial instruments (whether or not they embed derivatives) or derivatives should be consistent with the risk measurement framework used by the Companies. These should be maintained and revised over time accordingly (using back-testing etc.).

PART 4 – MANAGEMENT OF RISKS RELEVANT TO THE UCITS

Box 9: Risk management procedures

1. The Board of Directors should approve the risk profile of each UCITS managed by the Company. In the initial definition of the risk profile of the UCITS, or in the event of its subsequent revision, the Board of Directors should be advised by the risk management function.

2. The risk management procedures should ensure that the actual level of the risks incurred by the UCITS remain consistent with its risk profile as approved by the Board of Directors.

47. The risk profile of the UCITS should reflect the level of the identified relevant risks that arise from its investment strategy, as well as their interaction and concentration at portfolio level.

48. Risk management procedures can be understood as the set of actions aimed at: (i) identifying and measuring the relevant risks; (ii) assessing their consistency with the UCITS risk profile; (iii) fostering through the appropriate reporting channels the adoption of remedial measures in case of deficiencies; and (iv) monitoring the efficacy of the action taken.

49. Prior to the definition, update or change of the risk profile, the Board of Directors

should consult the risk management function.

50. If the risk management function reports evidence that the actual level of risk incurred by the UCITS is not consistent with its target risk profile, the Board of Directors should take appropriate action in the best interest of unit-holders.

Box 10: Risk limits system

1. The risk management policy of the Company should provide, for each UCITS, a system of limits concerning the measures used to monitor and to control the relevant risks.

2. These limits should be approved by the Board of Directors, and be consistent with the risk profile of the UCITS.

51. The Company should define for each UCITS a set of limits (the risk limit system) that should be complied with by the UCITS to maintain consistency with the approved risk profile. The risk limit system should be consistent with the UCITS' investment strategy and comprise both legal and contractual limits as well as any other internal limits defined by the Company.

52. The risk limit system provides for an appropriate way to manage and control risk and should be respected as part of the ongoing risk management process.

53. The limit system should refer to the risk profile of the specific UCITS and should set appropriate limits for all potentially relevant risk factors. That is, it should cover all risks to which a limit can be applied and should take into account their interactions with one another. The Company should ensure that every transaction is taken into account in the calculation of the corresponding limits.

54. The limit system should be clearly documented. Records should also be kept of cases in which the limits are exceeded and the action taken.

Box 11: Effectiveness of the risk management process

The risk management policy should define procedures that, in the event of actual or anticipated breaches to the risk limit system of the UCITS, result in timely remedial actions.

55. The risk management process becomes effective when it allows actual control of the risk profile of the UCITS. In order to achieve this objective, the process should be

designed to trigger a prompt correction of the portfolio or other appropriate remedial action from fund managers if the UCITS' target risk limit is exceeded. The appropriateness of the corrective actions as well as of their timing should be evaluated in the best interest of unit-holders.

56. In order to ensure an efficient rebalancing of the portfolio, the risk management process should employ risk management tools and measurement techniques able to provide precise information about the most relevant risk factors to which the UCITS is exposed.

57. The risk management process should allow warnings to be generated so that appropriate corrective measures may be taken on a timely basis to prevent breaches. While ongoing warnings should primarily relate to the pre-determined limits set by the risk limit system of the UCITS, exceptional warnings may result instead from specific risk assessments addressing possible forecast scenarios that result from a particular concern.

58. In this context, stress tests may contribute to the generation of exceptional warnings, which should be adequately taken into account within the investment decision-making process.

PART 5 – MONITORING AND REPORTING

Box 12: Reporting to the Board of Directors and the Senior Management

1. Companies should implement and maintain effective internal reporting by the risk management function. The terms, contents and frequency of this reporting should be defined by the risk management policy.

2. Periodic written reports should be submitted to the Board of Directors, providing an in-depth analysis, where appropriate, of the consistency between the actual risks and the risk profile of the UCITS as approved by the Board of Directors.

3. The risk management function should report regularly to the Senior Management, and if necessary to the heads of the different operational departments, highlighting the current level of the risks relevant to the UCITS, and outlining any actual or foreseeable breaches to their limits to ensure prompt and appropriate action is taken.

59. The risk management function should provide periodic reports to the Board of Directors, which holds responsibility for the overall risk management process.

60. The risk management function should, as part of a formalised periodic reporting process, inform the Board of Directors regularly of the actual level of risk incurred by the UCITS.

61. The risk management function should also periodically report to the Senior Management, at the direction of the Board of Directors. These reports should set out the results of the controls relating to the risk profile of the funds, the overall adequacy of the risk management and the measures taken to address any deficiencies..

62. Reports from the risk management function should be delivered directly to the Board of Directors and Senior Management.

Box 13: Monitoring of the risk management process

1. The Board of Directors and the Supervisory Function, if any, should receive on a periodic basis written reports from the risk management function concerning: (i) the adequacy and effectiveness of the risk management process; (ii) any deficiencies in the process with an indication of proposals for improvement; and (iii) whether the appropriate remedial measures have been taken.

2. The risk management function should review and report on the adequacy and effectiveness of measures taken to address any deficiencies in the risk management process.

3. The risk management process should be subject to appropriate review by the Company's internal and/or external auditors.

63. The risk management function should periodically assess, and consequently report to the Board of Directors and any Supervisory Function, the adequacy and effectiveness of the structures, procedures and techniques adopted for risk management.

64. The Board of Directors should ensure that all aspects of the risk management process, including the risk management function itself, are subject to appropriate review. Such reviews may be carried out internally (e.g. by the internal audit function, if any) and/or by external auditors.