Banc Ceannais na hÉireann
Central Bank of Ireland
Eurosystem

2010

Guidance on the Risk Management of Derivatives

Contents

1. General

A derivative can be defined as: a financial asset or liability whose value depends on (or is derived from) other assets, liabilities or indexes (the "underlying asset"). Derivatives are financial contracts and include a wide assortment of instruments, such as forwards, futures, options, warrants, swaps and composites.

Derivative products have inherent risks that must be managed properly. As with traditional investment activities, insurance companies must address credit, market, liquidity, cashflow, operational and legal risks in their derivatives activities. The nature and the degree of these risks will depend on how derivatives are used. The growing complexity, diversity and volume of derivatives products, made possible by academic research and rapid advances in technology and communications, pose increasing challenges in managing these risks.

Article 1 of Annex III of the European Communities (Non-Life Insurance) Framework Regulations 1994 (S.I. No. 359 0f 1994) ('Non-Life Regulations'), and Article 1 of Annex V of the European Communities (Life Assurance) Framework Regulations 1994 (S.I. No. 360 0f 1994) ('Life Regulations') both merely define a derivative instrument as 'a futures contract, an option or a contract for differences'.

The use of derivatives in connection with assets covering technical reserves is specifically controlled by regulations. The regulations do not formally limit the use of derivatives in relation to a company's free assets. It is essential that each insurance company has a clear and prudent policy on the use of derivatives for all purposes and that the necessary controls are in place to ensure that this policy is implemented.

2. Context

This document is a reformatted version of the original guidance document issued by the Department of Enterprise, Trade & Employment in July 2001. No fundamental changes have been made to the original guidance.

3. Introduction

These Guidelines cover the main aspects of devising a policy on the use of derivative. It is based very closely on the 'Supervisory Standard on the use Derivatives by Insurance Companies' as issued by the International Association of Insurance Supervisors.

The implementation of the Guidelines needs to be tailored to the particular circumstances of individual companies. For example, the Central Bank of Ireland does not expect that smaller insurance companies, such as captives, will have the same level of formalisation as implied by these Guidelines. Still, it is considered vital that companies however small address the issues contained in this document and formalise policies and procedures no matter how briefly.

It should also be noted that all insurance companies are required to submit a Directors' Compliance Certificate with their Annual Returns. This Certificate states, inter alia, that the company's practice in relation to the management of derivatives comply with these Guidelines.

4. Regulations

4.1 Conditions of Use

Articles 2 (9) & 12 of Annex V of the Life Regulations, and Articles 2 (9) & 12 (3) of Annex III of the Non-Life Regulations specifies the conditions under which a derivative instrument may be used in connection with assets covering technical reserves:

The conditions for the use of derivatives are open to interpretation and the considerations involved can be complex.

i. It is traded on a regulated market or the counterparty is an approved credit institution;
ii. The underlying assets are admissible assets under the asset valuation rules;
iii. It contributes to a reduction of investment risks or facilitate efficient portfolio management; and,
iv. Having regard to the nature and amount of assets which it holds and to its liabilities, the company will have, at the settlement date assets to fulfil its obligations under that instrument.

4.2 Link to Admissible Assets

It is of primary importance that derivatives only be used "in connection with" other admissible assets. For example, a purchased put option would not meet the condition unless the underlying stock were held and a purchased call option would do so only if used in connection with liquid assets. If the use of the derivative involved significant gearing or if a significant penalty could arise in some reasonably likely circumstances, then the condition would not be met.

4.3 Risk Management

The use of derivatives would be interpreted as:

- contributing to efficient portfolio management where their use enabled a reasonable investment strategy to be effected more readily or more flexibly or more economically without any corresponding significant increase in investment risk; and,
- contributing to a reduction of investment risks where their use reduced mismatching with a broadly positive or neutral effect on investment risk or reduced investment risk with a broadly positive or neutral effect on the matching position, due regard being had both to the credit risk and to the market risk components of overall investment risk.

4.4 Sufficient Assets

The company should be assured of having sufficient assets of the right kind to meet any

obligation under the terms of a derivative instrument as and when the obligation arises.

4.5 Value of Rights under a Derivative Contract

The value of rights under a derivative contract shall be:

(a) in the case of a listed derivative instrument, the amount which would be reasonably paid by way of consideration for an immediate transfer or assignment thereof; or

(b) in the case of an unlisted derivative instrument which the insurance underwriting

(i) has entered into with an approved counterparty (approved credit institution); and,

(ii) reasonably believes may be readily closed out by entering into a further approved derivative instrument with an approved counterparty,

the amount that would reasonably be paid by way of consideration for closing out that instrument.

This value is reduced by the amount of any cash or assets that are either paid or transferred, at the relevant date, in respect of that instrument.

4.6 Aggregate Exposures

For the purposes of determining the aggregate exposure of derivative instruments, the company shall be deemed at the valuation date to have acquired or disposed of the assets that are subject to the derivative contract.

5. Risk Management Practices

5.1 Written Policies and Procedures

The primary components of a sound risk management process for derivatives include written policies and procedures that:

i. clearly delineate lines of responsibility for managing risk;

ii. set in place adequate systems for measuring risk;

iii. create appropriately structured limits on risk taking;

iv. prescribe comprehensive and timely risk monitoring and reporting;

v. establish effective independent internal controls; and

vi. are made known to all staff dealing with derivatives.

The process of risk management for derivatives activities should be integrated into the insurance company's overall risk management framework to the fullest extent possible.

5.2 Formal Organisational Structure

A formal organisational structure should be established to monitor and manage the risks inherent in any investment activity undertaken by the insurance company. Risks arising from derivatives activities (market, credit, liquidity, cashflow, operational and legal risk) should be monitored and managed in an integrated manner with the similar risks arising from non-

derivatives activities so that senior management can regularly assess risk exposures on a consolidated basis.

5.3 Risk Management Function

The overall risk management function should allocate resources to measuring risks specific to derivatives activities, comparing them against pre-determined risk limits and reporting to senior management. Therefore the responsibilities of the risk management function should include:

i. setting detailed limits for each major type of risk involved in the insurer's derivatives activities, as appropriate. These limits should be consistent with the company's overall risk management process and with the adequacy of its capital position;
ii. formally noting and promptly reporting breaches;
iii. reviewing risk management activity over the past period; and
iv. monitoring compliance with the approved overall risk management strategy, counterparty credit lines, and limits.

5.4 Risk Measurement Systems

Systems for measuring the various risks arising from derivatives activities should be comprehensive and accurate, such that risk can be measured and aggregated across trading and non-trading activities on an organisation-wide basis and, as appropriate, on a group-wide basis, at any given time. These systems will vary from company to company, however they should be:

i. sufficiently robust to reflect the scale of the risks and the activity undertaken;
ii. capable of accurately capturing and measuring all significant risks in a timely manner; and
iii. understood by all relevant personnel at all levels of the insurer.

5.5 Monitoring

Once risk management policies and limits have been put in place, adequate procedures should be established for monitoring compliance with those policies and limits. These procedures should assist prevention and enable the early detection of non-compliance with the risk management policies. In many cases this will involve some form of daily monitoring.

5.6 Stress-Testing

The risk management function should assess the robustness of the risk policies and limits. To do this, regular stress testing should be undertaken for a wide range of market scenarios and changing investment and operating conditions. Once an insurer has identified those situations to which it is most at risk, it should ensure that it puts in place appropriate policies and procedures to manage them effectively.

5.7 Reporting

The risk management function should regularly report to appropriate levels of senior management and to the Board of Directors. The frequency of reporting should provide these individuals with adequate information to judge the changing nature of the insurer's risk profile. The reports should indicate how the derivatives activities are meeting the stated objectives and complying with approved policies and procedures.

6. Board of Directors

6.1 Overall Risk Management Strategy

The Board of Directors should set the company's overall risk management strategy, including the purposes for which derivatives may be used. The Board should establish and approve an appropriate policy for the use of derivatives that is consistent with the objectives, strategy, overall risk appetite of the insurance company, and the Regulations.* This should include lines of responsibility and a framework of accountability for derivatives functions. The policy should be communicated to all staff dealing with derivatives.

6.2 Internal Guidelines

The Board of Directors should approve written internal guidelines relating to the types of derivatives to be used, the purposes and conditions of their use and the counterparties admissible. Approval should be based on:

i. compliance with legal and regulatory restrictions;
ii. a full analysis of the risks, the objective of which is to ensure that the Board is fully aware of any adverse effects which could result from the use of derivatives. On a regular basis, the Board should receive reports on and evaluate the risk exposure of the organisation and should re-evaluate the risk management procedures and policies; and
iii. confirmation that remuneration policies are structured to avoid potential incentives for excessive risk taking and that remuneration for the back office and risk management functions is fully independent of investment results.

The Board of Directors should ensure that approved policies and procedures are in place before derivatives activities commence.

6.3 Overall Asset/Liability Management

Derivative exposure should be considered in the context of the Regulations and the insurance company's overall asset/liability management

* This should be done as part of the broader formulation of the strategic investment policy; see 'Guidelines for Insurance Companies on Asset Management' issued by the Central Bank.

strategy. In particular, derivative exposures combined with exposure to other financial instruments should not result in a net exposure which is inconsistent with the insurance company's investment strategy.

6.4 Admissibility Rules

The variation in derivatives products is enormous. The Board of Directors should consider whether it is appropriate for the company to be involved in some types of derivatives, bearing in mind the Regulations and their admissibility rules. It may be appropriate to rule out or restrict the use of some types of derivatives where, for example:

i. the potential exposure cannot be reliably measured;
ii. closing out of a derivative is difficult considering the illiquidity of the market;
iii. the derivative is not readily marketable as may be the case with over-the-counter instruments;
iv. independent (i.e. external) verification of pricing is not available; or
v. the counterparty is not suitably creditworthy.

These characteristics would be inconsistent with the use of derivatives in connection with assets covering technical reserves.

6.5 Exposure Limits

The Board should consider setting exposure limits for derivatives taking account of the purpose of their use and the uncertainty caused by credit, market, liquidity, cashflow, operations and legal risk. Serious consideration should be given to having quantitative limits for the exposure to any one counterparty (taking account of the credit risk of the counterparty) particularly in relation to "over-the-counter" transactions.

Exposure limits for derivatives must be integrated into the overall limits set out in the insurance company's investment strategy. Risk exposures should be calculated on the company's total on and off balance sheet position. For example, in evaluating credit risk the Board of Directors should take into account all accumulated credit risks to which the insurer is exposed, whether they originate from derivatives, securities, reinsurance or other transactions.

The Board should ensure that the company has an appropriate capability to independently verify pricing when "over-the-counter" derivatives are used.

6.6 Internal Control Systems

The Board must ensure that the reporting and internal control systems of the insurer are designed to monitor that derivatives are being used in accordance with the stated objectives and strategy and legal and regulatory requirements. The Board must ensure that:

i. they receive regular information on risk exposure and derivatives usage in

a form which is understood by them and which permits them to make an informed judgment as to the level of risk on a mark-to-market basis;

ii. the systems provide accurate and timely information on risk exposure and derivatives positions and are capable of responding to ad hoc requests;

iii. they approve the internal control procedures relating to derivatives activities; and

iv. the internal controls include an adequate segregation of the functions responsible for measuring, monitoring and controlling derivatives activities from those conducting day-to-day derivatives transactions.

6.7 Sufficient Expertise

The Board of Directors should ensure that collectively they have sufficient expertise to understand the important issues related to derivatives and that all individuals conducting and monitoring derivatives activities have sufficient levels of knowledge and experience.

7. Senior Management

7.1 Written Policies and Procedures

Senior management should establish clear written operational policies and procedures for implementing the derivatives policy set by the Board. Their responsibility includes specifying lines of responsibility for managing risk, adequate systems for measuring risk, appropriately structured limits on risk taking, effective internal controls and a comprehensive risk-reporting process.

7.2 Level of Detail

The content of operational policies and procedures will be different for each insurance company but the level of detail should be consistent with the complexity and volume of derivative usage and the strategy and objectives of the insurer. They should include, as appropriate:

i. the purpose for which particular derivatives are to be used, including the circumstances in which derivatives transactions can be used and acceptable rationales for undertaking transactions;
ii. procedures for seeking approval for the usage of new types of derivatives: these should include addressing the extent to which there will be any trading activity and who should take decisions in this regard;
iii. procedures for the approval of counterparties and brokers;
iv. details of who is authorised to enter into derivatives transactions;
v. procedures by which senior management exercises control over derivatives activities;
vi. the quantitative limits to the use of each type of derivative;
vii. the quantitative limits to credit, market and other risks;
viii. procedures for monitoring liquidity risk;
ix. internal procedures covering front office, back office, measurement of compliance with counterparty credit lines and limits, control and reporting;

x. valuation procedures for risk management purposes on a mark-to-market basis or equivalent for over the counter transactions; and
xi. the identification of who should be responsible for the valuation. Valuations should be carried out by individuals independent of those responsible for trade execution or, if this is not possible, valuations should be independently checked or audited on a timely basis.

Accounting and taxation rules should also be taken into consideration in developing operational policies and procedures for the use of derivatives.

7.3 Allocation of Resources

Senior management should allocate sufficient resources to establish and maintain sound and effective risk management systems. These systems should be integrated with the front office, back office, accounting and reporting systems

7.4 Reviews

At least annually, senior management should review the adequacy of its written operational policies and procedures in light of the insurance company's activities and market conditions. The Board of Directors must approve changes to derivatives policies and procedures or reaffirm the existing policies.

8. Internal Controls

8.1 Staff Training

All individuals conducting, monitoring, controlling and auditing derivatives business should be suitably qualified and should have appropriate levels of knowledge and experience.

8.2 Systems

Adequate systems of internal control must be present to ensure that derivatives activities are properly supervised and that transactions have been entered into only in accordance with the insurer's authorised policies and procedures. The extent and nature of internal controls adopted by each insurer will be different, but procedures to be considered should include:

i. reconciliations between the front office, back office and accounting systems, to be carried out at an appropriate level depending on the extent of derivatives activity (as a guide, insurers which actively use derivatives should carry out reconciliations daily);
ii. procedures to ensure that any restrictions on the power of all parties to enter into any particular derivatives transaction are observed. This will require close and regular communication with those responsible for compliance, legal and documentation issues in the insurer;
iii. procedures to ensure all parties to the transaction agree with the terms of the deal. Procedures for promptly sending, receiving and matching confirmations should be independent of the front office function;

iv. procedures to ensure that formal documentation is completed promptly;
v. procedures to ensure reconciliation of positions reported by brokers;
vi. procedures to ensure that positions are properly settled and reported, and that late payments or late receipts are identified;
vii. procedures to ensure that all authority and dealing limits are not exceeded and all breaches can be immediately identified;
viii. procedures to ensure the independent checking of rates or prices; and
ix. procedures to monitor any derivative transaction which requires specific action (such as exercise of an option) or which contemplates delivery of an underlying asset so as to ensure that the transaction will either be closed out or that the insurer will be in a position to make or take delivery.

8.3 Reports

Regular and timely reports of derivatives activity should be produced which describe the company's exposure in clearly understandable terms and include quantitative and qualitative information. The reports should, in principle, be produced on a daily basis for senior management purposes; less frequent reporting may be acceptable depending on the nature and extent of derivatives activities. Upward reporting to the Board of Directors is recommended on at least a monthly basis. Reports should cover the following areas:

i. commentary on derivative activity in the period and the relevant period end position;
ii. details of positions by type of product;
iii. an analysis of credit exposures by counterparty;
iv. details of any regulatory or internal limits breached in the period and the actions taken thereto; and
v. planned future activity.

8.4 Oversight

The functions responsible for measuring, monitoring, settling and controlling derivatives transactions should be distinct from the front office functions. These functions should be adequately resourced.

8.5 Monitoring of External Asset Managers

Where external asset managers are used, the Board of Directors must ensure that senior management is in a position to monitor the performance of those managers against Board approved policies and procedures. The insurer must retain appropriate expertise and ensure that, under the terms of the contract, it receives sufficient information to evaluate the compliance of the asset manager with the investment mandate.

9. Internal Audits

9.1 Internal Audit Program

Insurance companies should have an internal audit program that includes coverage of their derivatives activities and ensures timely identification of internal control weaknesses and operating system deficiencies. The internal audit function must be independent of the functions and controls it inspects. Concerns with regard to derivatives activities should be reported to senior management and the Board.

9.2 Experience of risks inherent in Derivatives

Internal audit coverage should be provided by competent professionals who are knowledgeable of the risks inherent in derivatives.

Internal auditors should also periodically review derivatives operations to ensure compliance with the insurance company's regulatory obligations.

9.3 Evaluation of Internal Controls

Internal auditors should be expected to evaluate the independence and overall effectiveness of the institution's risk management functions. In this regard, they should thoroughly evaluate the effectiveness of the internal controls relevant to measuring, reporting and limiting risks. Internal auditors should evaluate compliance with risk limits and the reliability and timeliness of information reported to senior management and the Board of Directors.

Glossary

Cashflow risk:	the risk that the entity will not be able to finance its derivatives activities (for example, meeting margin calls on futures contracts.)
Composite:	a combination of two or more standard derivatives to achieve a specified objective.
Counterparty:	the other party with whom a derivatives contract is made.
Credit risk:	the risk that a counterparty will not pay an amount due as called for in the original agreement, and may eventually default on an obligation.
Liquidity risk:	the risk that the entity may not be able to, or cannot easily, unwind or offset a particular position at or near the previous market price because of inadequate market depth or because of disruptions in the market place.
Market risk:	is the risk to an institution's financial condition resulting from adverse movements in stocks, bonds, interest rates, exchanges rates, commodity prices and so on.
Operational risk:	the risk that deficiencies in information systems or internal controls will result in unexpected loss. This risk is associated with human error, system failures and inadequate procedures and controls. This risk can be exacerbated in the case of certain derivatives because of the complex nature of their payment structures and calculation of their values.

T +353 1 224 4000 **F** +353 1 894 4631 www.centralbank.ie insurance@centralbank.ie

Banc Ceannais na hÉireann
Central Bank of Ireland
Eurosystem

Bosca OP 11517, Duga Spencer, Baile Átha Cliath 1, Éire
PO. Box No 11517, Spencer Dock, Dublin 1, Ireland