GN25(ROI): INVESTMENTS - DERIVATIVE INSTRUMENTS

Classification (see APC)

This Guidance Note is classified in relation to the code of professional conduct as *advisory*.

Scope

Worldwide.

Application

Actuaries who have to provide either:-

(i) an actuarial opinion on liabilities which has regard to the nature of assets; or

(ii) advice on risk exposures;

which in either case are, or could be, dependent on the use and control of derivatives.

Legislation or Authority

This guidance note is intended for any actuary giving actuarial advice or opinion to an insurance company, pension scheme or other financial institution. It encompasses the responsibilities of an Appointed Actuary (with particular reference to the European Communities (Life Assurance) Framework Regulations 1994). This guidance note is not intended to apply to insurance futures or options.

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1. INTRODUCTION

1.1 Increasing use is being made of derivatives such as futures, forwards, options and swaps by organisations advised by actuaries. These instruments allow organisations to manage their risk exposures in ways that often cannot be achieved by more traditional means. Yet these same characteristics also make it possible for risk exposures to be mismanaged, with potentially serious consequences.

1.2 The possible mismanagement of risk exposures is not a problem unique to derivatives. However, some forms of derivatives may be difficult to control or analyse. The underlying assets and liabilities may have artificial characteristics which are hard to follow and contracts may be complex in nature and involve market and counterparty risks of sorts not usually experienced with other investments. These challenges mean that it may be dangerous for actuaries to express a view as to the soundness of assets and liabilities without proper expertise in this area.

1.3 This Guidance Note deals with:-

1.3.1 the risks to be addressed by prudent management controls (Section 2);

1.3.2 assessing the adequacy of such controls and the provisions necessary to cover the exposures created (Section 3);

1.3.3 quantifying the financial impact of derivatives on the risk exposure and asset/liability management of a financial institution (Section 4);

2. PRUDENT MANAGEMENT CONTROLS

2.1 The management of an organisation advised by an actuary is normally the responsibility of a Board of Directors or Trustees. It is not normally the specific responsibility of the actuary (unless he or she sits on the relevant Board).

2.2 However, in certain instances the organisations concerned, or their policyholders or beneficiaries, may be expecting the actuary advising them to note deficiencies in the ways in which they are being run, including deficiencies in procedures involving derivatives.

2.3 The European Communities (Life Assurance) Framework Regulations 1994 require insurance companies to have "administrative and accounting procedures and internal control mechanisms which in the opinion of the Minister are sound and adequate" encompassing all of the insurers' activities, including the use of derivatives. Appointed Actuaries of life insurance companies will in general need to appraise themselves of whether these systems exist for investments and in particular whether suitable controls are in force concerning derivatives. This is because Appointed Actuaries need to satisfy themselves that suitable reserves or provisions exist including potentially some relating to derivative contracts. The appropriate sizes of these reserves or provisions may be influenced by the quality of the management controls in force.

2.4 The range of advice given by an actuary advising a general insurance company may depend on the terms of reference or employment of the actuary, and this may or may not include advice in relation to derivatives.

2.5 For a pension scheme an actuary is required to consider the nature of the assets held by the scheme and their appropriateness to the form and incidence of the liabilities.

2.6 The frequency of internal reporting and the frequency of any margining arrangements will generally be important in assessing the adequacy of management controls and where appropriate in meeting the actuary's duties of continuous review. For example, the actuary is likely to find helpful a schedule showing on, say, a daily basis the number and type of derivative transactions undertaken, the gross and net market exposures involved and the sensitivity of the portfolio to large market movements.

3. ASSESSING THE ADEQUACY OF CONTROL PROCEDURES

3.1 If the scope of the advice being given by actuaries involves them in assessing whether adequate controls exist on the use of derivatives then they should:

3.1.1 obtain from the Directors or others responsible for the management of the organisation copies of the objectives and policies agreed by the Directors for the use of derivatives. Where separate guidelines exist for different funds then the actuary should obtain copies of each set of guidelines. The actuary should also ensure that they understand how guidelines for the use of derivatives relate to overall investment guidelines.

3.1.2 ascertain to what extent compliance with these objectives and policies is monitored and enforced within the organisation and to what extent they:

- clearly define the instruments that may be dealt in by the organisation, and clearly define the margining arrangements required for the various instruments;

- identify limits on exposures or volumes (encompassing both credit risk and risks from market movements), where appropriate aggregating such exposures with those incurred through non-derivatives activities;

- delineate the type of counterparties with which the organisation can deal by reference to credit ratings;

- specify that contracts are the subject of legal advice, particularly where there may be mutual obligation between parties.

3.1.3 ascertain to what extent the organisation's use of derivatives satisfies statutory rules, prudential guidance or codes of practice published by relevant statutory authorities (e.g. the Department of Enterprise and Employment for insurance companies, the Central Bank of Ireland for banks and building societies).

3.1.4 ascertain whether senior management with responsibility for control of derivative instruments is sufficiently independent of those concerned with trading and day-to-day management of derivatives, has sufficient understanding of the derivatives contracts being used and is provided with sufficient statistics and information (suitably summarised) to be able to exercise effective management control.

The management of some types of derivative is dynamic, and the investment management team should be sufficiently large, and sufficiently skilled, to undertake this work.

When forming an opinion on these matters, an actuary may need to rely on the advice of other professionals (e.g. in relation to the values placed on derivatives in the preparation of accounts). Actuaries should indicate in their advice whether this is the case.

3.2 If the actuary is unable to form a view on the quality of the control systems, or believes that they are deficient, then the actuary may need to qualify the advice being given to this effect.

An Appointed Actuary in this position should make these concerns known to the Board and, in so far as they may adversely affect policyholders' reasonable expectations, should make suitable allowance for them in calculating the aggregate mathematical reserves to be established for insurance liabilities.

The materiality of derivative holdings in assessing such issues should be judged in the context of the exposure or risk of loss on a cautious basis and not necessarily on the value assigned to them in the valuation of assets or liabilities.

4. QUANTIFYING THE FINANCIAL IMPACT OF DERIVATIVES

4.1 When assessing whether suitable reserves or provisions exist in respect of derivative contracts entered into by an organisation:

4.1.1 An actuary should note that some types of derivatives are always assets, some are always liabilities but some may change from being assets to liabilities (or vice versa) during their lifetime.

4.1.2 An actuary should consider carefully whether the values placed on both traded and "over-the-counter" (i.e. ones not traded on an exchange) derivatives adequately reflect their realisable values or, if the derivative constitutes a liability, whether the provision or reserve established is at least sufficient to meet an appropriate estimate of the cost of closing out the derivative position involved. Depending on the purpose of the advice, appropriateness might require the application of prudence. The actuary should also note that for over-the-counter derivatives obtaining a reasonable estimate of market value may be difficult. These estimates may need to be provided by third parties. If the estimates are prepared in-house by the actuary then care should be taken to ensure that any computer programs used are suitably controlled, validated and documented.

Particular care may be needed if the organisation is replicating or hedging the effects of derivative exposures using "dynamic hedging" or other portfolio insurance techniques.

4.1.3 Actuaries should bear in mind the degree to which the derivative asset or liability matches a corresponding liability or asset (whether insurance or otherwise) of the organisation. To do so in an insurance context they will need to take into account both the possibility that the relevant insurance policies may not remain in force until maturity, and also the terms if any on which it is possible to close out the derivative transaction prior to its maturity.

The realisable value of or liability arising from some derivatives can change rapidly as markets move. Actuaries should be careful, if they need valuations as at a given date, not to rely unduly on valuations struck even a short time from that date. For many sorts of derivatives it is desirable for organisations to revalue or "mark to market" their derivatives daily to avoid calculating internally misleading exposures and valuations.

4.1.4 An actuary should bear in mind the impact that derivative positions can have on the organisation's investment portfolio if extreme movements in markets occur (e.g. the potential impact of meeting margin requirements, having positions involuntarily closed if such margin payments cannot be met, or how the effects of market movements can be potentially exacerbated by the use of derivatives).

4.1.5 The pension scheme actuary should consider whether to make an allowance for the presence of derivatives when determining the actuarial basis for valuation of both assets and liabilities.

4.2 Appointed Actuaries of life insurance companies should also note:

4.2.1 Although the Appointed Actuary may technically be responsible for determining the mathematical reserves required for insurance liabilities only, GN1(ROI) makes it clear that they must do so only after taking into account how the company's assets and other liabilities (including derivatives) have been valued, taking into account the degree to which assets match liabilities (whether those liabilities are insurance or non-insurance in nature).

4.2.2 The Appointed Actuary should pay particular attention to "uncovered" derivative positions and in particular the requirement under Article 3 of Annex IV of the European Communities (Life Assurance) Framework Regulations 1994 to make appropriate provision against the effects of possible future changes in the value of the assets on their adequacy to meet the liabilities since there may be need to comment on it under Schedule 4. Under the European Communities (Life Assurance) Framework Regulations 1994 such positions would normally have nil or negative value and thus be subject to sound and adequate administrative and accounting procedures and internal control mechanisms.

4.2.3 The Appointed Actuary should also ensure that appropriate allowance has been made for the aggregation of conterparty risk and market exposures (e.g. when applying admissibility limits) for all investments including both assets and liabilities. The Appointed Actuary should also, where possible, ensure that suitable controls are in place to ensure that the company can control the impact of these aggregations e.g. on the amount of inadmissible assets being held.

4.2.4 When establishing an appropriate provision under Article 3 of Annex IV of the European Communities (Life Assurance) Framework Regulations 1994, account should be taken of the impact derivative positions might have on the overall financial position of the company. The Appointed Actuary needs to be aware that some derivative positions may exaggerate the effect of market movements whilst others may mitigate them and that their effects also depend on other assets and liabilities of the company. Prudent provision must be made against the effects of possible future changes in the value of assets in accordance with Article 3.

4.2.5 The Appointed Actuary will also need to consider the effect derivative positions may have on the income or redemption yield of the portfolio, to bear in mind the ability of some derivatives effectively to convert income into capital gain or vice versa, and the guidance given in Paragraph 6.6 of GN1(ROI).

The yield on the portfolio is used to guide the Appointed Actuary on the choice of some of the assumptions used in the valuation of insurance liabilities, and may also affect the maximum rate of interest acceptable to the regulator when valuing the liabilities for solvency purposes. Appointed Actuaries should satisfy themselves that adjustments they make to the portfolio yield to take account of the company's derivative positions are both appropriate in the context of the purpose of their valuation, and, if relevant, are permitted by the appropriate legislation. Such adjustments should also take into account any increased default risk from the holding of assets in derivative form.

4.2.6 Should the company pay insufficient regard to prudential advice given, the Appointed Actuary must consider the responsibilities of Paragraph 3.2 of GN1(ROI).

4.2.7 The Appointed Actuary must ensure continuous assessment of derivative holding to fulfil the responsibilities under Paragraph 4.1 of GN1(ROI).

4.2.8 The Appointed Actuary should pay due regard to specific responsibilities in relation to derivatives investments as set out in Paragraph 6.11 of GN1(ROI).