2014
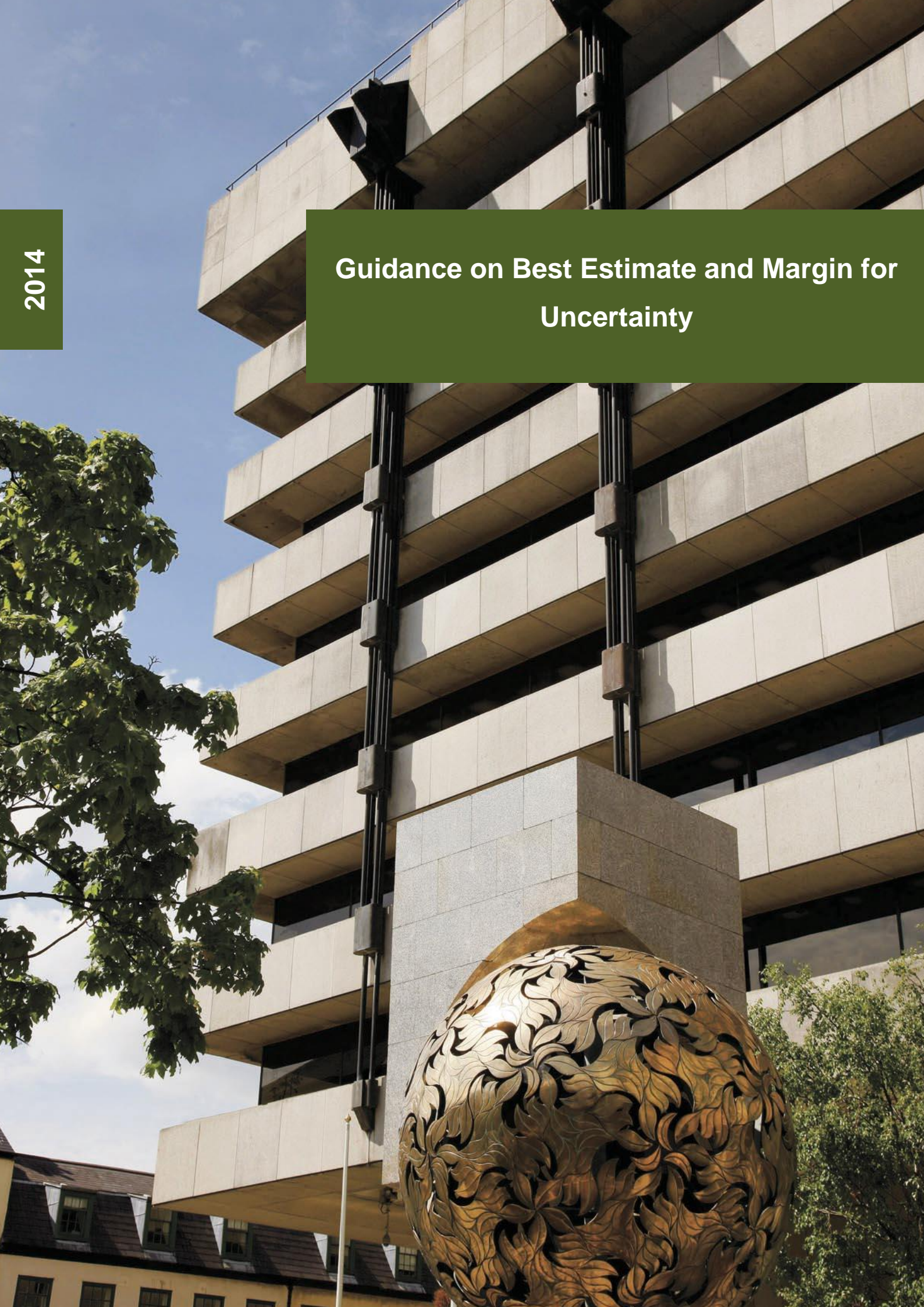
Guidance on Best Estimate and Margin for Uncertainty

Guidance on Best Estimate and Margin for Uncertainty

Contents

Introduction

1. The Best Estimate of the company's reserves, as stated in Requirement 21 of 'Reserving Requirements for Non-Life Insurers and Non-Life and Life Reinsurers', includes the following:

    a. All classes of business written by the company;

    b. Technical reserves, both gross and net of reinsurance;

    c. The following components of the technical reserves:

        i. Outstanding claim reserves;
        ii. Unearned premium reserves;
        iii. Additional amounts to cover unexpired risks, also referred to as an Additional Unexpired Risk Reserve;
        iv. Future claims handling expense reserves; and
        v. MIBI (Motor Insurance Bureau of Ireland) reserves and any equivalent reserve in other jurisdictions.

2. This Guidance relates only to the outstanding claims reserves, referred to as the claims liabilities below.

Best Estimate of Claims Liabilities

3. The Best Estimate of claims liabilities is a probability-weighted average of future expected payments arising out of current incurred claims liabilities and claims handling expenses, both reported and unreported. The Best Estimate should be based on an analysis of appropriate and valid historical, appropriately homogeneous claims experience obtained from specific company or market-based data, using reasonable and applicable statistical projection methodologies and subject to the following points:
   The estimate should for example:

    a. Not take account of the time value of money (unless annual explicit prior approval is obtained from the Central Bank of Ireland in case of non-life re/reinsurance business as required by legislation) ;

    b. Not include precautionary risk margins either explicit or implicit;

    c. Not incorporate unreasonable, unduly optimistic or pessimistic, or unrepresentative past development experience;

    d. Not include the emergence of events that may occur in the future but cannot reasonably be foreseen and are not reflected in historical company or available market data;

    e. Include an allowance for enacted legislation;

    f. Include an allowance for operational changes and recently enacted legislation that is not yet reflected in historical data; and

    g. Be based on stochastic and/or deterministic methods (subject to any method adopted being appropriate having regard to the characteristics of the insured risks).

4. The Signing Actuary should apply his or her expert judgement when considering whether any deviations from the above definition are necessary in order to ensure that the best estimate is a probability weighted average of future expected payments arising out of current incurred claims and claims handling expenses, both reported and unreported.

5. The Best Estimate is a point in time estimate and is likely to fluctuate as experience develops and progresses. The Best Estimate may both increase and decrease over the full development period of a portfolio of business.

6. Current legislation does not permit discounting of non-life insurance liabilities except in circumstances where permission has been obtained from the Central Bank.

7. Any items excluded from the Best Estimate (e.g. new types of claims, the potential effects of unpublished legislation etc.) should, if appropriate, be taken into account by the Board of Directors in setting the Margin for Uncertainty.

8. It is recognised that, while paragraph 3 above provides further clarity and helps to ensure more consistency between different Signing Actuaries' Best Estimates, in some instances they may cause the best estimate to be significantly different from a probability weighted average of future expected payments arising out of current incurred claims and claims handling expenses, both reported and unreported. The Signing Actuary should apply his or her expert judgement when considering whether any deviations from the above definition are necessary in order to ensure that the Best Estimate is a probability weighted average of future expected payments arising out of current incurred claims and claims handling expenses, both reported and unreported. These instances of expert judgement should be fully documented and justified in the report underlying the SAO.

Margin for Uncertainty

9. When booking reserves, the Board needs to consider the (possibly significant) proportion of possible outcomes that exceed the Best Estimate. Consequently, the booked reserves are typically greater than the Best Estimate. The amount by which the booked reserves exceed the Best Estimate is termed the Margin for Uncertainty.

10. In the majority of cases the Best Estimate (as defined above) will be the mean value of a range of possible outcomes.

11. Typically, the distribution of this range of possible outcomes will be right-skew (there is a limit on how much better the reserve can get, but they can get very much worse).

12. Given the right-skewness of the distribution of possible outcomes, there will be a significant proportion of possible outcomes that will be worse than the Best Estimate. Some will be significantly worse than the Best Estimate.

13. On the basis of the definition of Best Estimate set out above, and as a result of methodological shortcomings, the distribution of possible outcomes considered may not include certain adverse scenarios, such as (this list is not exhaustive):
    a. The emergence of a new type of claim;
    b. Low probability, high impact events (so-called "binary events"); and
    c. Effects from future market, technological, social or legislative changes.

Determining the Margin for Uncertainty

14. When determining the reserves to be booked, the Board should explicitly quantify, enumerate and justify the constituents of the Margin for Uncertainty. Factors to be considered in

determining the appropriate level of the Margin for Uncertainty include (this is not an exhaustive list):

   a. The level of uncertainty in the reserves;
   b. Changes in the claim environment;
   c. Exposure to latent claims or new types of claim; and
   d. Exposure to binary events.

15. Stress and scenario testing are key techniques that should be used in determining the Margin for Uncertainty. Where appropriate, statistical methods for quantifying the uncertainty in the reserves should also be employed.

16. Quantification of uncertainty should have regard to forward-looking consideration of risks and should not simply be based on methods that examine historic variability of reserves.

17. Generally, the greater the uncertainty in the reserves the greater the Margin for Uncertainty should be. In particular, where there is greater uncertainty than might normally be expected, due to factors such as (this is not an exhaustive list):

   a. Data quality issues;
   b. Mergers and acquisitions making the historical claims profile less reliable;
   c. Changes in claims handling; and
   d. Changes in the claims environment;

then the Margin for Uncertainty should generally be higher.

18. Where there have been recent changes in the claims environment this can add to the uncertainty in the reserves. This is due to the changes making the historic loss development less relevant to the future, and also because the impact of the changes may not be known for certain.

19. Expected future changes in the claim environment also add to the uncertainty in the reserves. Again, this is due to the changes making the historic loss development less relevant to the future, and because the impact of the changes may not be known for certain. Additionally, the timing and exact nature of the changes may not be known with certainty.

20. Examples of changes in the claim environment are the introduction of the Injuries Board (IB) and changes in the circuit and district court thresholds. Integral changes could include changes in claims handling philosophy or changes in key personnel.

21. Where there is exposure to latent claims, new types of claims or binary events, the true underlying distribution of possible outcomes will be more skew than would otherwise be the case. The Board needs to consider adverse scenarios when setting the Margin for Uncertainty. In such cases, the adverse scenarios may be considerably worse than the Best Estimate, and a substantial Margin for Uncertainty may be appropriate.

22. Stress and scenario tests allow the Board to attempt to quantify the possible impact of adverse scenarios.

23. The Board should enumerate the constituents of the Margin for Uncertainty when booking the reserves. This may include:

   a. Statistical buffer over Best Estimate;
   b. Impact of various scenarios and stresses considered;
   c. Allowance for diversification effects (all scenarios are unlikely to occur at once); and
   d. Consideration of the Board's Risk Appetite Statement.

24. Appendix 1 provides an example of how a Board might use Statistical Assessment or Stress and Scenario testing to determine an appropriate Margin for Uncertainty. The approaches outlined in Appendix 1 are relatively straightforward. Companies may consider more sophisticated approaches.

Appendix 1: Guidance on Best Estimate and Margin for Uncertainty

Example Company – XYZ Insurance Limited, a large domestic personal and commercial lines insurer

Statistical Assessment

Where appropriate (i.e. there is a sufficient volume of claims data to give credible results), a statistical quantification of the uncertainty in the reserves should be performed. The example company uses a bootstrap method.

XYZ Insurance Limited is writing a set of portfolios that has experienced significant, but not unexpected, variability in reserve run-off patterns over the last 20 years. A typical multi-line general insurer may fall into this category, writing motor, household, commercial liability and property, marine etc. In these circumstances, it is appropriate to perform a statistical quantification such as a bootstrap.

The Board of XYZ Insurance Limited has a stated policy of reserving at the 80th percentile of the bootstrap distribution. In this example, the actuarial best estimate reserves are set at €500m (the case reserves plus IBNR / IBNER plus the claims handling expense provision). The 80th percentile reserve margin from the bootstrap is €25m resulting in total reserves of €525m.

In situations such as these where these statistical methods are appropriate, it is also expected that the Board will use a combination of these methodologies and stress and scenario testing.

In some cases, a statistical method such as the above is not appropriate, e.g. where the portfolio has significant high excess layer exposures, and thus past observed volatility may not represent adequately the true risks inherent in the portfolio. In these circumstances, stress and scenario tests should be employed as the main tool.

Stress and Scenario Testing

Boards should perform stress and scenario tests which are appropriate to their portfolios.

The Board should consider using a series of stress tests covering the main sources of uncertainty that could impact the reserve run-off.

Such scenarios might include:

a) A period of significant inflationary pressures impacting the claims environment (e.g. there might be a reasonable expectation of such a scenario following a period of full employment in the economy and significant increases in GDP);

b) Emergence of a new latent claim impacting on one or more specific lines of business (e.g. employer's liability), perhaps over a period of years (this possibility might, for example, be signalled by new scientific papers);

c) A realisation that changes in claims practice (e.g. to achieve efficiency) have had impacts on claims development that have not been fully recognised in the determination of reserves. e.g. a change in claims practice slowed down claims development, and thus the actuary may have underestimated the best estimate;
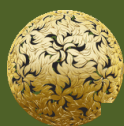
d) A change in the jurisdiction of the courts, leading to an increase in the adjudication of claims in the lower courts and an increase in claims inflation; and

e) A period of significant growth in the property market, leading to significant increases in rebuilding costs for outstanding property claims.

The Board should include company-specific scenarios, and in addition should consider including any known scenarios that have been experienced in the wider market, in particular (to the extent that information is readily available in the public domain) any that have led to prior company failures.