

**2000 GENERAL INSURANCE CONVENTION
25-28 OCTOBER**

RCB AT LLOYD'S

Presenter: Richard Rodriguez

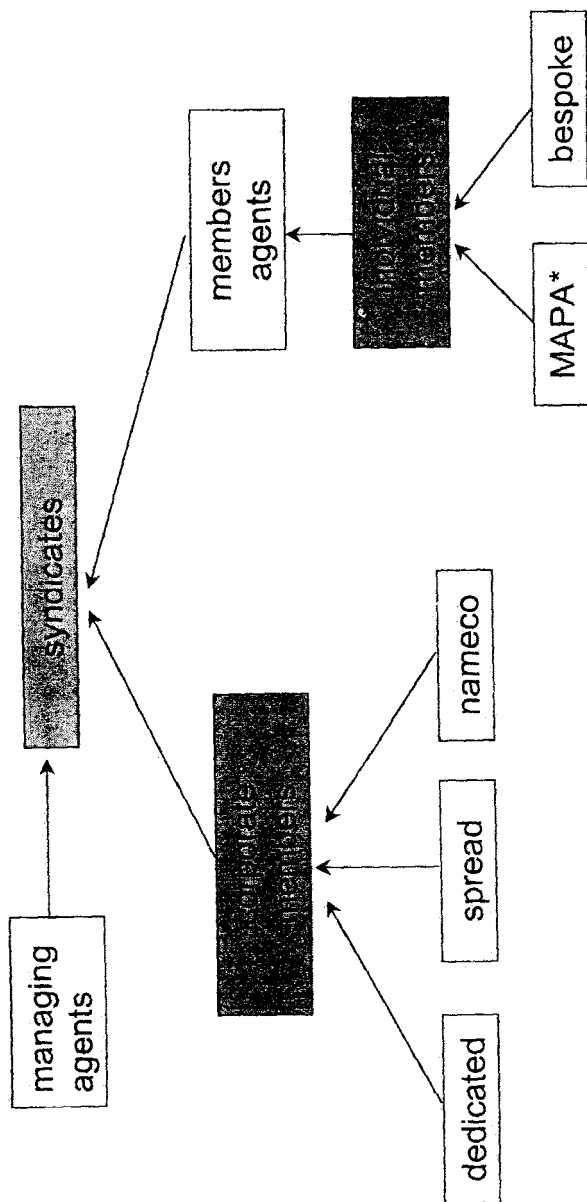
GIRO 2000

**Workshop on the Lloyd's Risk
Based Capital System**

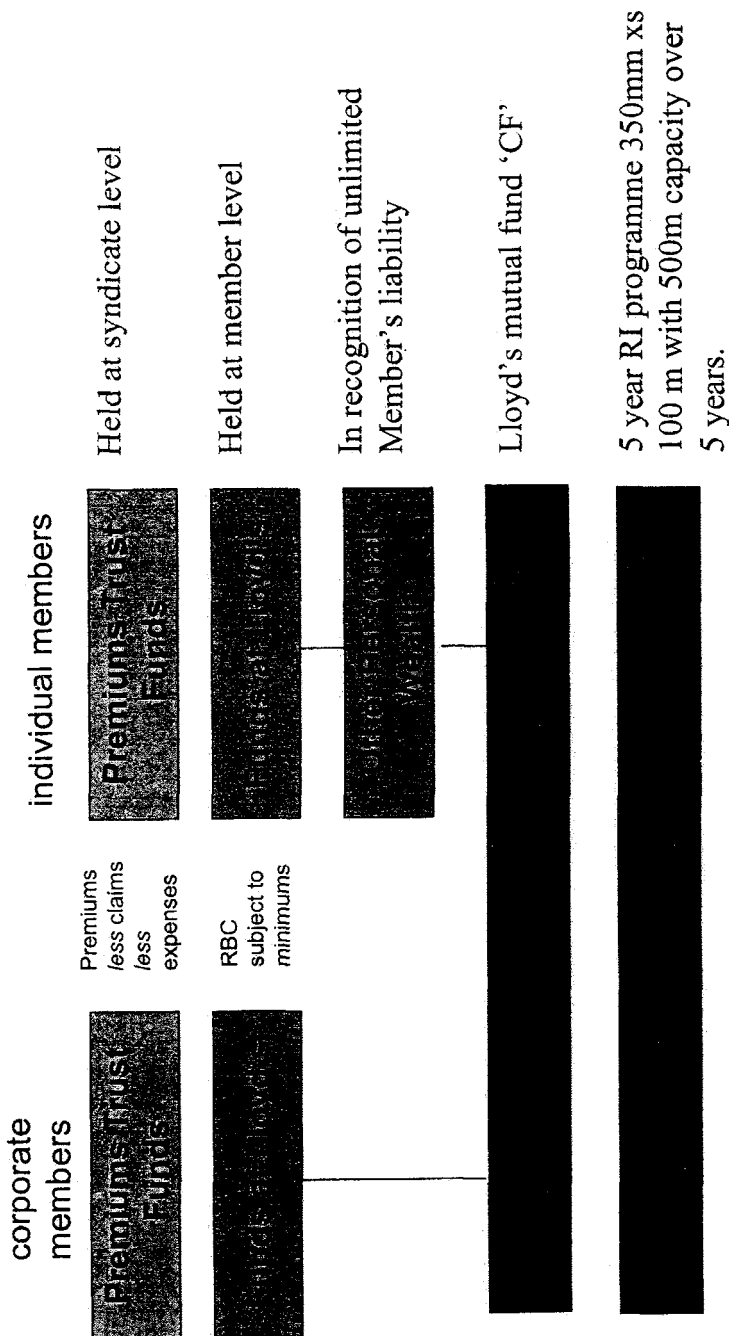
By

Richard Rodriguez

Relationships



Lloyd's Chain of Security



RBC System in Overview

Lloyd's RBC system:

Determines each **member's** Funds at Lloyd's (FAL) requirement by

- Using premium as the measure of exposure
- Calculating for each year of account, the **expected loss and volatility** of each member's portfolio (allowing for diversification)
- Quantifying the member's RBC for each year of account by using the Gamma distribution and the Expected Loss Cost (ELC)
- Calculating the member's overall RBC by combining the RBC for each year of account (allowing for diversification)
- Applying minimum capital standards for members

RBC Landscape

- **Underwriting risk**
 - Reflects the risk of premium inadequacy of the business to be written (based on syndicate business plans).
- **Reserving risk**
 - Reflects the risk of reserve inadequacy on business that has been written
- **Reinsurance**
 - Allows for each syndicates reinsurance programme through its planned reinsurance expenditure
 - Allows for reinsurance effectiveness (bad debt) by reducing the planned reinsurance spend
 - Net claim loss profiles based on market averages

RBC Landscape (continued)

- **Reinsurance To Close (RITC)**
 - Used in the determination of reserving risk
 - Based on the assumption that an open year will take on via RITC the reserving risk of years which close into it
 - Calculation takes into account actual timing of anticipated closure using market level parameters

RBC Landscape (continued)

- **Diversification across classes of business**
 - A member's portfolio in any underwriting year is a combination of classes of business, each having their own expected loss and volatility
- **Diversification across years of account**
 - This recognises the fact that the capital required for all years of account combined may be less than that of the sum of each years capital. Credit is dependent on the number of assumed underwriting years
- **Diversification across managing agents**
 - This recognises the fact that a member's portfolio may be more diversified if they write on more than one managing agent.
- **Loadings**
 - Authorisation
 - Underwriting Agents Department (UAD)
 - Prudential Supervision Committee (PSC)
 - Syndicate specific

RBC Landscape (continued)

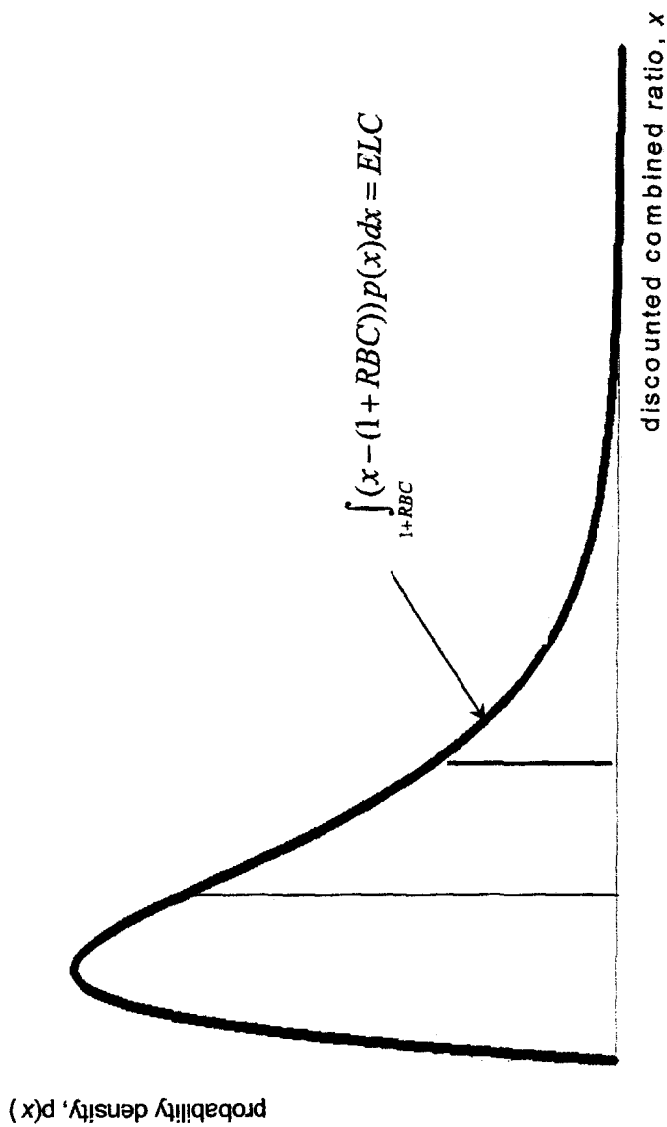
- **Expected Loss Cost (ELC)**

Lloyd's RBC system operates by equalising the expected loss cost for each unit of net premium or net reserve, reflecting both the size and the frequency of expected losses to the Central Fund

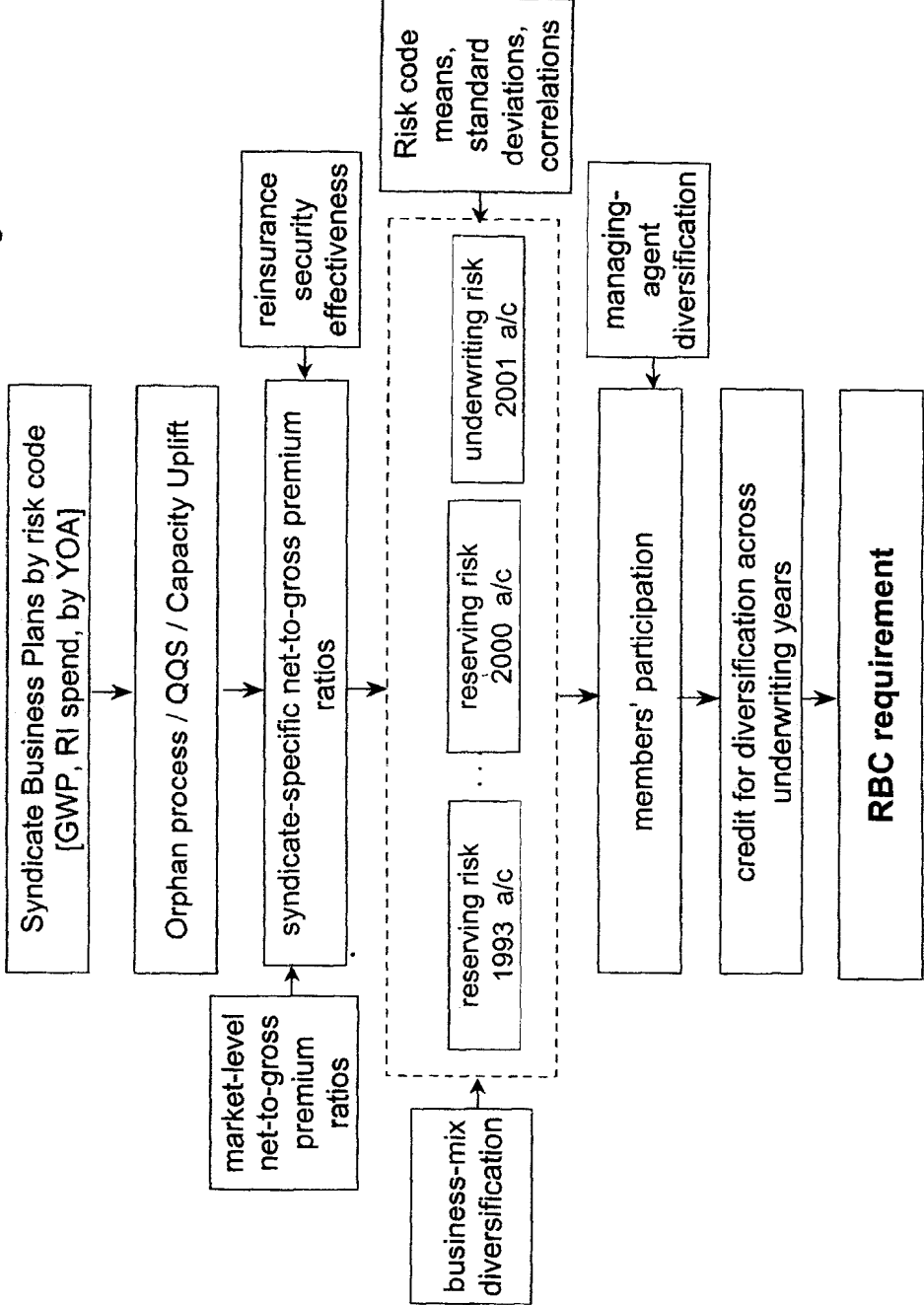
- **Quantifying RBC**

This is done by backing the expected loss and volatility of each member's portfolio for each underwriting year into a Gamma distribution and calculating the required RBC, given the ELC.

Distribution of Potential Outcomes



Schematic representation of the RBC system



Market level parameter requirements

- underwriting year net ultimate loss ratios
- claim run off patterns
- underwriting mean net ultimate loss ratio and volatility
- reserving mean net ultimate loss ratio and volatility
- correlation coefficient between classes of business
- managing agent diversification credit
- unallocated claim handling expenses and general expenses
- yield curves for discounting
- cross-year diversification credit

Reserving Ranges and Best Estimates - 1

- What is a Best Estimate?
 - Does it include margins for prudence?
 - Does it include an allowance for unusual adverse experience?
 - Is it a mean or a median, or something else?
 - Do we expect savings or charges against our Best Estimate in most cases?
 - How do we deal with outliers in our Best Estimate?
 - Why are some actuaries Best Estimates ALWAYS higher than other actuaries Best Estimates? Does this matter?
 - How can we tell if a Best Estimate is too low?
 - How can we tell if a Best Estimate is too high?
 - Is the Best Estimate the one which the CEO likes BEST?
 - When can we reserve below our Best Estimate?
 - Do we ever disclose our “true” Best Estimate or is it a secret?
 - Should increased uncertainty make our Best Estimate higher?

Reserving Ranges and Best Estimates - 2

- What is a Reserving Range?
 - Where does the Best Estimate live in the Range?
 - What does the lower end of the range mean?
 - Is it a mean or a median, or something else?
 - What does the part of the range below the Best Estimate mean?
 - Especially in a Statutory context.
 - Is the lower end of the range the “real” secret Best Estimate?
 - What does the upper end of the range mean?
 - Should all actuaries ranges be the same, regardless of the positioning of the Best Estimates?
 - Can we define a range as the scope for sensible Best Estimates?
 - Can we define a range as the scope for acceptable carried reserves?
 - Are these two things the same?
 - How wide should ranges be? Does it matter?