


The Actuarial Profession
making financial sense of the future

Colin Ledlie
Past Chair of ERM Practice Executive Committee



Actuaries and ERM
ERM Guide Networking Event

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Actuarial Risk Management Heritage

- Institute of Actuaries founded in 1848 (Faculty 1856)
- Insurance
- Pensions
- Investment & Risk Management
- Wider Fields
- Strong Mathematical & Statistical foundation
- Financial Risk Management
 - Market Risk (bonds, equities property)
 - Insurance Risk (mortality, longevity, property & casualty, persistency)
 - Credit Risk

Challenges to the Professional

- Different types of risk
 - Operational Risk
 - Strategic Risk
 - Project Risk
- Enterprise Risk Management

Profession's Response

- Strong focus on Risk Management
- Enterprise Risk Management recognised as a distinct practice area since 2008
- Development of ST9 Specialist Technical Exam
- Chartered Enterprise Risk Actuary (CERA)

ST9 Syllabus: ERM framework

- Best practice ERM framework and structure within an organisation
 - The importance of governance, culture and behavioural aspects
 - Centralised risk function and role of CRO
 - Link to strategic aims
- Risk frameworks in regulatory environments on a global basis
 - Including (but not restricted to) Basel II, Solvency II and Sarbanes-Oxley

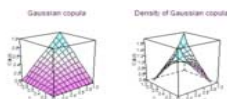
ST9 Syllabus: ERM framework contd

- The role of regulators and credit agencies in the evaluation of risk management functions
- The relevance of ERM to all other stakeholders, including agency risk
- Determination of risk appetite
 - Risk capacity, risk profile, risk tolerance, risk limits
- The overall risk management process / cycle
- Different definitions and concepts of risk
- Risk taxonomy
- Contagion



ST9 Syllabus: Quantitative methods

- Risk measures and their properties
- Analysis of time series, including model selection
 - Financial and insurance data
 - Qualitative as well as quantitative techniques
- Methods of risk aggregation, including:
 - Different correlation approaches
 - Copulas
- Tail distributions, tail dependence and extreme value theory



ST9 Syllabus: ERM modelling

- Risk identification
- Quantifiable v. non-quantifiable risks
- Best practice use of models in the overall ERM decision-making process
 - Model risk and parameter risk
- Assessment of market, credit and operational risks
- Development of an Economic Capital model
- Techniques for allocation of capital across an organisation

ST9 Syllabus: Risk management tools & techniques

- Risk optimisation
- Responses to risk
- Recommendation of different risk mitigation approaches
 - With transfer and without transfer
 - Balancing benefits v adverse impacts / constraints
- Tools and techniques for managing market, credit and operational risks
- Residual risks



ST9 Syllabus: Case studies

- Lessons learned?
 - Enron
 - Barings Bank
 - Equitable Life
 - Maxwell
 - Recent "credit crunch"
 - Many others...
- Examples of good ERM practice too!



CERA

- International working parties
- Minimum learning objectives requirement
 - Includes the IAA basic educational syllabus
- Accreditation process
 - Quality and scope of syllabus and exams
 - Quality of examination process and controls
 - Own accreditation awarding powers
- "CERA" designation = Chartered Enterprise Risk Actuary
 - International recognition