The Actuarial Profession
making financial sense of the future

European and Market-Consistent Embedded Values

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Agenda

- Background to embedded values
- EEV
- MCEV
  - What it is
  - Issues
- Managing using MCEV

Background to embedded values

- Traditional EV approach
- Present value of projected shareholder cash flows
- Single deterministic projection using
  - Estimates of future economic and non-economic experience
  - Economic experience includes risk premia, e.g.:
    - Return on equities and properties = risk-free + risk premium
    - Return on corporate bonds = risk-free + credit spread – expected defaults
- Discounted at “risk discount rate” intended to reflect risks to shareholders of the expected cash flows not emerging

Issues with traditional approach

- Stock market falls, declines in interest rates since 1999
- Guarantees and options becoming more onerous – not clear how these are reflected in the traditional approach
- Subjectivity of risk discount rate
- Potential bias towards riskier assets – increases expected return, may not increase RDR (sufficiently)
- More sophisticated projection / modelling available
- Move towards "fair value" accounting, realistic balance sheet etc

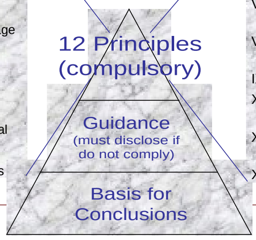
EEV – the aims and expectations

- "The launch of European Embedded Value marks a very important step forward for the European life assurance industry. We are determined to do everything we can to provide investors with financial information that is both **transparent** and **consistent** across the major companies. We believe this new approach represents a sound basis for the future of life assurance company reporting."
  Jos Streppel, Chairman of the CFO Forum and CFO of AEGON at the launch of the Principles (May 2004)

European Embedded Value

European Embedded Value Principles

- I. What is EEV?
- II. Business Coverage
- III. Definitions
- IV. Free Surplus
- V. Required capital and cost of capital
- VI. Value of in-force covered business



European Embedded Value Principles

- VII. Financial Options & Guarantees
- VIII. New Business & Renewals
- IX. Assumptions
- X. Economic Assumptions
- XI. Participating Business
- XII. Disclosure

EEV – Principles

- Principles formalise current EV practice
- Important steps forward in some areas,
  - Disclosure
  - Consistency of economic assumptions
  - Valuation of financial options and guarantees (FOG)
- But lack of explicit guidance leaves room for a wide range of interpretations and practices:
  - Financial Options and Guarantees
  - Allowance for risk

Main areas of divergence

- Cost of FOGs
  - Must be assessed on stochastic basis
  - But not necessarily market-consistent
  - Can allow for management discretion
  - No requirement to allow for policyholder behaviour
- Allowance for risk
  - Allow in RDR / cost of FOGs / locked-in capital
  - But guidance on how to set RDR limited
  - Different levels of capital assumed locked in

Setting the RDR in an EEV

- "Top-down"
  - Based on WACC
  - No differentiation by product line etc
  - Suitability of the RDR is not clear
- "Bottom-up"
  - By looking at risks being run
  - For market risk, calibration to MCEV increasingly used

What is an MCEV?

- Value shareholder cashflows as they would be valued if traded in the financial markets, taking into account their financial characteristics
- Equivalent to:
  - Market value of assets, less
  - Market-consistent value of liabilities

A market-consistent value

The basic elements

- Traded assets are valued at market value
- Insurance liabilities
  - Liabilities with no FOGs valued at risk-free rates
  - FOGs valued using option pricing techniques
  - Unit-linked discounted at unit growth rates (risk-free)
- Non-economic assumptions (e.g., mortality, morbidity, lapse)
  - Best estimate
  - Because these are diversifiable (not correlated with the market)

Issues still to be standardised

- What is “the risk-free rate”
  - Gilt curve?
  - Swap curve?
  - Somewhere in between?
- Allowance for policyholder behaviour in FOGs
- Whether / how to allow for non-market risks
  - Effect of “frictional costs”

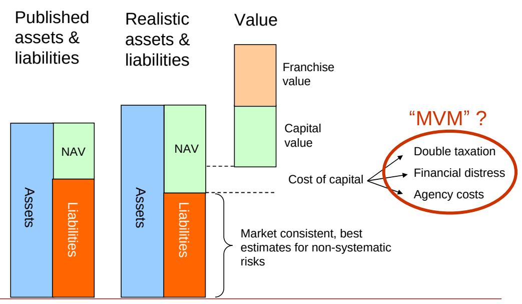
Examples of frictional costs

- Taxation effects
  - Double taxation
  - Asymmetries (e.g. carrying forward tax losses)
- "Financial distress" costs – transfers of value to:
  - Competitors (lost business, goodwill)
  - Employees (redundancy costs)
  - Professional partners (administrators, consultancy, legal)
  - Investment banks (capital raising)
- Agency costs
  - Executive remuneration
  - Misguided acquisitions

Market value margins

- Market Value Margins are (in theory) the price which would need to be paid to a third party on an arm's length basis to transfer the risk to that party
- Can be considered to be a proxy for frictional cost
- Where a market price can be observed, can calibrate the allowance to / using this
- MVMs can perhaps be approximated using
  - Percentile approaches to assumptions
  - Cost of capital approaches

A market-consistent framework



Other considerations

- Some argue that frictional costs should not be allowed for on (avoidable) market risk.
- Some argue that "financial distress costs" should not be allowed for in the value of in-force business – as they arise from a desire to maintain franchise value, and so should be attributed to new business.
- Others argue that a stable series of in-force cash flows should be more valuable than a volatile one, as this reduces the expected future capital-raising costs to finance new business.

Conclusions on MCEV methodology

- Still some way to go to achieve consistency of approach
- Analysts may not yet realise how far!
- But more objective for setting allowance for market risks

Impact of move to MCEV

- Overall impact will depend on how well the RDR reflected risks
- Products likely to be adversely affected
  - Spread-based
  - "Geared" product structures
- Products likely to be positively affected
  - Ungeared product structures
  - Protection products etc with low market risk

Managing under MCEV

- Economic value added is difference between Embedded Value Earnings and Required Return (RR)

  Value added = MCEV earnings - Required Return
- Required Return must be determined (previously the RDR would be used)
- Split by RR for market risk and for non-market risk

Impact on value-adding strategies

- Taking on investment risk will increase expected profits but also increase required return
- May destroy value if frictional costs are allowed for or if increases cost of FOGs
- Strategic / tactical asset allocation may add value with hindsight
- Can add value if improve best estimates of non-market risk
- Reducing risk may improve value
- Optimising diversification benefits

New business

- Will add value if MCEV at point of sale > 0
- Need to consider shareholders' required return on franchise value

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