Standard Formula Assumptions

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Agenda

• Market Risk
• Life Underwriting Risk
• Operational Risk
• Counterparty Default Risk
Assumptions vs Suitability

The legislation requires check of „deviation from assumptions underlying the SF“. (Art 45, 1c) The assumptions are described in a document from EIOPA. BUT The suitability of the formula for the company is something really different. Suitability could mean:
- The value is risk sensitive (higher risk = higher risk charge)
- The formula motivates for good risk management
- The results is approximately 99.5% percentile
General

• Diversification effects through correlation matrices aggregation
• SCR are calibrated using VaR method for 99.5% over a one-year period
• Some risks are not included
Market Risk (1)

- Assumptions
  - Sensitivity to volatility not material

**Interest Rate Risk**

- Assumptions
  - No volatility and changes in the shape
  - No material inflation or deflation risk
- Suitability
  - Shock up at least 100 bps?
  - No shock down when the rates are negative
Market Risk (2)

Equity Risk

- Assumptions
  - Well diversified
  - Mean reverting behaviour

- Suitability
  - The diversification in case of limited number of equities
  - Investments in financial institution? Overstated if most of the value is deducted from OF
Market Risk (3)

Currency Risk

• Assumptions
  o Currencies pegged to € will fluctuate within a limited band

• Suitability
  o Same shock for all currencies?
  o Calibration of the currencies pegged to euro (especially 1 in 200)

Property Risk

• Assumptions
  o Exposures in third countries as risky as European market
  o Long left-fat tail and excess kurtosis distribution

• Suitability
  o Extremely simple (25% shock)
Market Risk (4)

Spread Risk
• Assumptions
  o All spreads increase => only shock up and no diversification
  o Diversified pool for high credit exposures
• Suitability
  o No sovereign bonds risk?
  o Impact of the volatility adjustment – could lead to perverse motivations

Concentration Risk
• Assumptions
  o No geographical nor sector concentrations
  o No risk when below the threshold
  o Portfolio does not deviate materially from EU average portfolio (e.g. more bonds than equities)
• Suitability
  o No sovereign bonds concentration risk?
Life&Health (1)

• Assumptions
  o The volatility risk is considerably lower than the trend risk (CZ riders where the contract boundaries should apply?)
  o Portfolio well-diversified with respect to: age, gender, ... and geographical location.
    - That may be very challenging for small companies

Mortality Risk
• Assumptions
  o The company has a system to restrict adverse selection

Longevity Risk
• Assumptions
  o The annual mortality improvements follow a normal distribution
  o The avg mort rate for a person does not increase by more than 10% each year
• Suitability
Life&Health (2)

Disability Morbidity Risk

- Assumptions
  - Portfolio well diversified in likelihood and change in severity
- Suitability

Lapse Risk

- Assumptions
  - Increase and decrease are symmetrical shocks
  - Options in reinsurance are immaterial
- Suitability
  - Any reasoning for the maximum of 3 scenarios?
  - Mass lapse uses “positive surrender strain” only – but clients’ behaviour is not driven by that
  - The worst option of non-persistency for the company should be used – even in case it is not a reasonable option for the policyholder
Life&Health (3)

Expense Risk
• Assumptions
  o Expenses are predominantly from: staff costs, commission, IT, land and buildings occupied
  o The inflation is broadly under control (in the country)
• Suitability
  o Do higher expenses really mean that your expense risk is higher and vice versa?

Revision Risk
• Assumptions
  o All annuities are independent and their annual amount is assumed to be constant.
  o Average proportions of contracts in different stages
• Suitability
Life & Health (4)

Life Catastrophe Risk

- Assumptions
  - Restricted to mortality
  - Not to be applicable to the portfolio with longevity risk
- Suitability
  - Both assumptions above seems to be not realistic
Operational Risk

Operational Risk

• Assumptions
  o Standardised level of risk management
  o UL characteristics are similar to other products
  o Acquisition expenses are related to commission and do not increase the operational risk

• Suitability
  o Does larger business mean that the operational risk is higher?
Counterparty Default Risk

Counterparty Default Risk
• Assumptions
  o Type 1 – the LGD are independent outside of a group and not independent within a group
  o Exposures not captured in Type 1 and Spread Risk should be captured by Type 2
  o The recovery rates for risk mitigation techniques reflect best practices
• Suitability
Links

EIOPA document
New web:
Old web: