S&P Assessing Insurer Economic Capital Models

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S&P ERM Level III

- S&P will be doing intensive reviews of insurer Economic Capital Models (ECM)
- Insurer's will have to qualify for the review process
- The review may change S&P's opinion of
  - The quality of the ERM process
  - The level of capital needed to maintain or improve the rating

What will S&P ECM Review Result In?

- Better assessment of insurer Corporate Strategy
  - Attitude towards risk profile
  - Risk appetite and tolerance
- Improved overall ERM evaluation
  - Risk management culture
  - Strategic Risk Management
- Potentially adjust (lower) capital assessment
  - Credibility given to insurer ECM indicated capital
  - However, does <u>not</u> increase importance of capital

How will this Impact Ratings?

- Insurers who are able to demonstrate high "credibility" of their Economic Capital Model could end up with S&P adjusting their required capital by one rating category
- The result of a review by S&P will be the assignment of a Credibility factor
- That could mean as much as a **15% reduction** in capital needed to maintain your ratings level
  - More likely 1% to 3% in the short term
  - But will grow over time for best models

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Who Qualifies for Level III?

- Insurers with a Strong or Excellent ERM score
  - Usually those insurers will have
    - A good record of managing their risks – losses below peers
    - A robust process for managing their risks
    - A well developed risk management culture
    - An Economic Capital Model
    - Evidence of the importance of Strategic Risk Management at the firm

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Other parts of Qualifying for an ECM Review

- S&P will look for:
- ECM consistent with other models used by the insurer
- Tie of risk tolerance to ECM
- Strategic Asset Allocation tied to ECM
- Underwriting limits tied to ECM
- Performance measures using ECM

S&P's version of the "Use Test"

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Expect Zero Credibility if…

- No material validation work documented
- No justification for diversification benefit
- Less than 75% of business modeled
- Material unexplained differences between actual and projected results
- Not qualified for Level III review

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How S&P Wants to See It

- ECM output broadly consistent with S&P standard RBC capital review
  - One-Year time frame or Runoff
  - Value at Risk measure of Total Targeted Resources
  - Calibrated to S&P Ratings level confidence interval
  - Economic balance sheet adjustments
- This will facilitate assignment of credibility
- Could be different from what the insurer uses for own purposes

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Seven major Areas of Level III Review

Applied only to Overall Model

- Governance
- Results

Applied to sub modules

- Methodology
- Data Quality
- Assumptions and Parameterization
- Process and Execution
- Testing and Validation

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Governance

- Looking for:
- Modeling team with broad experience and training
- Documentation
  - Methods, assumptions, mathematical and empirical basis for models
- User Manuals and Guidelines
- Compliance with procedures

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Results

- Looking for:
- Quality of Results
- Reporting tools used
- Documentation
- Reconciliation of historical results to model
- Use of model – can S&P find evidence in the decision making processes

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Sub Modules

- Insurance
  - Underwriting
  - Reserving
  - Catastrophe
- Investment
  - Credit
  - Market
- Operational
- Criteria contains 20+ pages of detailed ideas on what might be considered Basic, Good or Superior models for each of the sub Modules

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Methodology

Looking for:
- Approach that captures fair picture of risk
- Comparison to industry practices
- Consistency among risks

Do not require:
- Stochastic Model as a general standard
  - But most modules require stochastic model for highest credibility

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Data Quality

Looking for:
- Attention to quality of data for
  - Current Asset holdings
  - Current Liabilities
  - Historical experience used to form assumptions
- Sufficient granularity of data
- Data for Stress Testing from adverse historical periods
  - Generally low standards for data quality (non-US issue)

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Assumptions and Parameterization

Looking for:
- Consistent process
- Consideration of tail dependencies
- Sensitivity Analysis

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Process and Execution

Looking for:

- Interface with databases and calc engines
- Interface with analysis and reporting systems

Testing and Validation

Looking for:

- Testing of Parameters, Assumptions, dependencies
- Validation of methodologies
- Documentation
- Static and Dynamic Validations
- Trend analysis
- Variance analysis

UW Risk (Pricing) Methodology Review

- BASIC
  - Based on company historic data
  - Net loss ratio modeling
  - Deterministic payout patterns
- GOOD
  - Assessment of future trends
  - Attritional and large loss modeling
  - Gross, ceded, net analysis
- SUPERIOR
  - Linked to macro-economic factors, capture emerging risks
  - Model losses, exposures, and prices
  - Detailed reinsurance analysis, stochastic payout patterns

UW Risk (Pricing) Additional Issues

- Relating to P&C Insurance Risk
- An expressed preference for overstatement of underwriting risk
- Expect allowance for emerging risks within underwriting
- Will look for recognition of the underwriting cycle
  - Expect separate modeling of prices and claims

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Reserving Risk Methodology Review

- BASIC
  - Reserves based on company historic data
  - Probability ranges based on small number of estimates, e.g. best case, high, and low projections
- GOOD
  - Stochastic approach will appropriate use of both company and industry development patterns
  - Gross, ceded, net analysis
  - Detailed A&E, mass tort, mold, etc modeling
- SUPERIOR
  - Linked back to pricing and marketing decision making
  - Reflects emerging issues, e.g. tort reform, inflation

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Catastrophe Risk Methodology Review

- BASIC
  - Reliance on 3rd party or industry models
  - Does not fully reflect company risk profile
- GOOD
  - Models adjusted to fully reflect company risk profile
  - Reflects non-modeled losses both for property and casualty
- SUPERIOR
  - Confirmation of assumption differences between vendor models and internal custom approaches
  - Reflects post event issues such as demand surge and potential reinsurer insolvencies

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Outcome

- "M" factor represents credibility
- S&P expects to start out with 20% - 25% credibility for first two years
- In that time review models of all Strong & Excellent ERM rated insurers
- Expect that the maximum M factor will increase after the first two years

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