The use of an Economic Capital Model within an Enterprise Risk Management framework

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December, 2007

Agenda

- **Standard & Poor's view of ERM**
- **The use of Economic Capital Models within ERM**

Standard & Poor's view of ERM

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The Value of Good Risk Management

The purpose of Risk Management is to…

1) **Identify and *__monitor significant risks__***
2) **Set *__risk limits__* for each risk to reflect the company's risk tolerances, competencies and resources**
3) **Design program to *__measure all risks consistently__* with fundamental objectives of the enterprise.**
4) **Execute the risk management programs to *__limit losses__* to within the company's risk tolerances**

The product of Good Risk Management is <u>a controlled risk taking environment</u>

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What Is the Difference Between Risk Management and ERM?

An <u>ERM</u> Program comprehensively applies Risk Management:

- **Across <u>ALL</u> of the significant risks of the Enterprise**
- **<u>Consistently</u> across the risks**
- **Consistently with the <u>fundamental objectives</u> of the enterprise**

An <u>ERM</u> Program reflects risk capital in:

- **Strategic decision making**
- **Product design and pricing**
- **Strategic and tactical investment selection**
- **Financial performance evaluation**

The product of a fully-realized ERM Program is the <u>optimization</u> of enterprise <u>risk adjusted return</u>

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ERM Evaluation Components

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ERM Quality Classifications

Excellent	▪ Advanced capabilities to identify, measure, manage all risk exposures within tolerances ▪ Advanced implementation, development and execution of ERM parameters ▪ Consistently optimizes risk adjusted returns throughout the organization
Strong	▪ Clear vision of risk tolerance and overall risk profile ▪ Risk Control exceeds adequate for most major risks ▪ Has robust processes to identify and prepare for emerging risks ▪ Incorporates risk management and decision making to optimize risk adjusted returns
Adequate	▪ Has fully functioning control systems in place for all of their major risks ▪ May lack a robust process for identifying and preparing for emerging risks ▪ Performing good classical “silo” based risk management ▪ Not fully developed process to optimize risk adjusted returns
Weak	▪ Incomplete control process for one or more major risks ▪ Inconsistent or limited capabilities to identify, measure or manage major risk exposures

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Our findings

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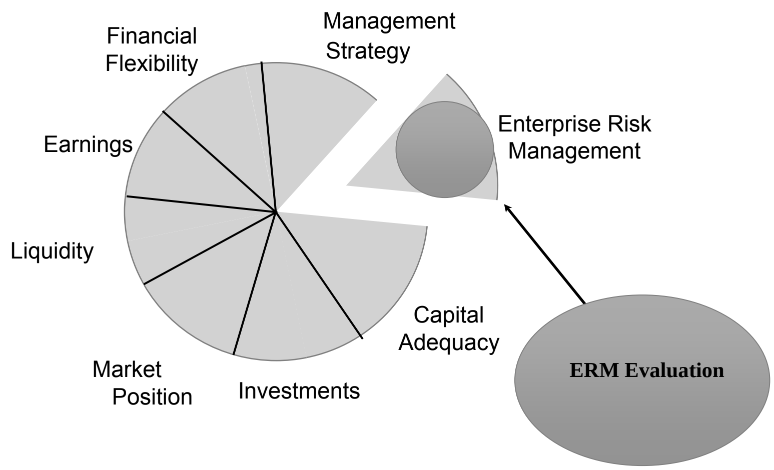
ERM Evaluation in the Ratings Process



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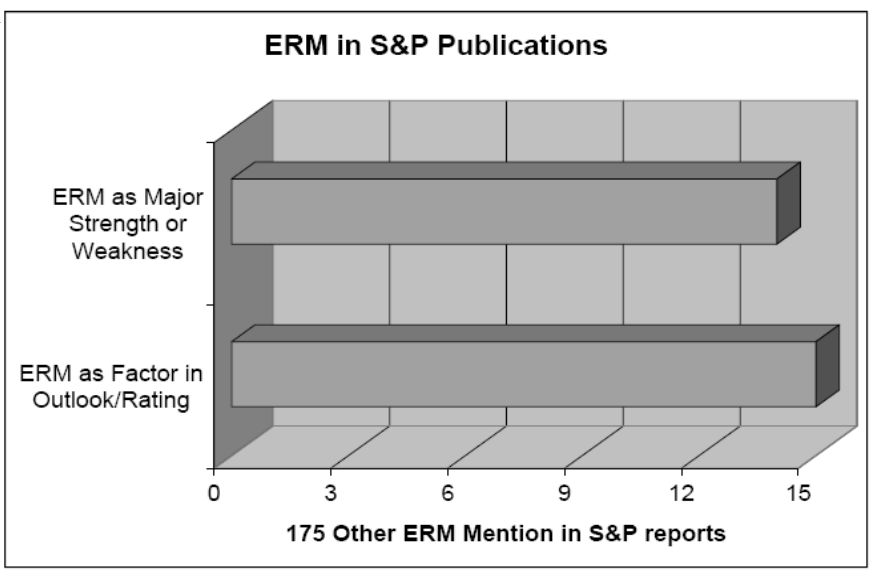
ERM in Publications



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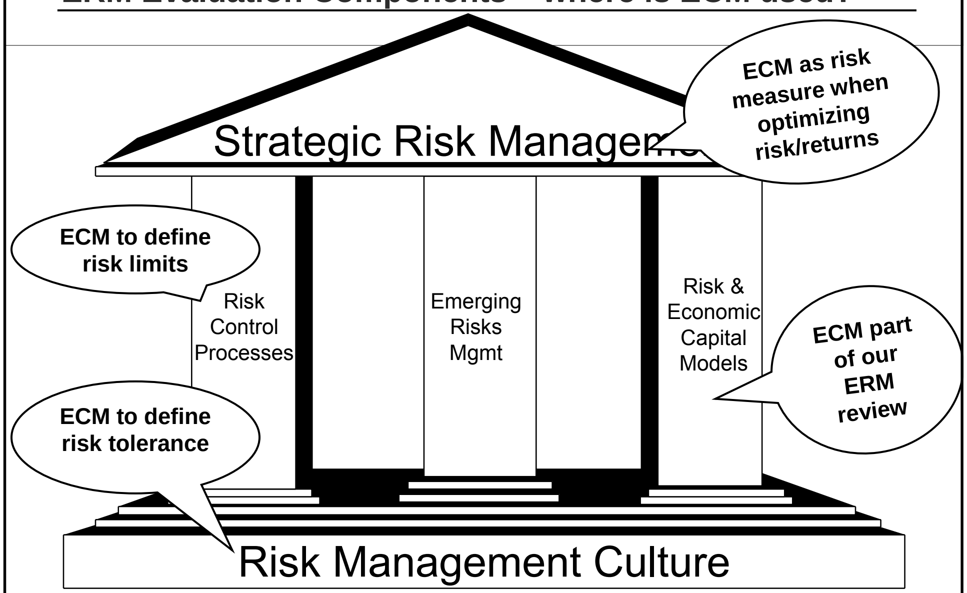
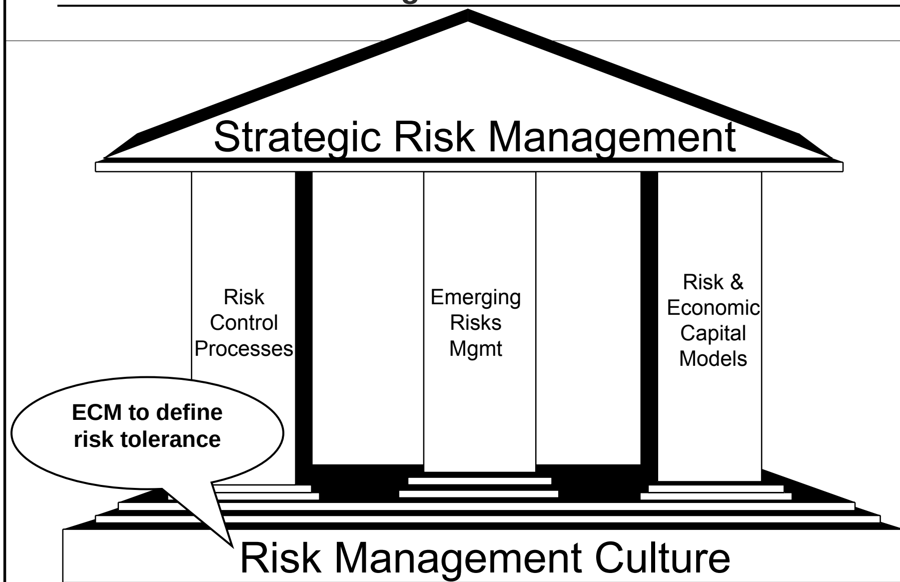
The use of Economic Capital Models within ERM

ERM Evaluation Components – where is ECM used?



ECM within Risk Management Culture



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ECM within Risk Management Culture

What do we look for?

- **Highly qualified risk management staff**
- **Regular communication with board on risks positions and risk management programs**
- **Clear and wide known risk management policies and procedures**
- ***<u>Manager's compensation is linked to the achievement of risk management objectives (RoEC, RoEV)</u>***
- **Company's governance structure supports effective risk management**
- **Risk measurement and monitoring is independent from risk taking and management**
- ***<u>Clearly articulated risk preference, appetite and tolerance, translated into risk limits</u>***

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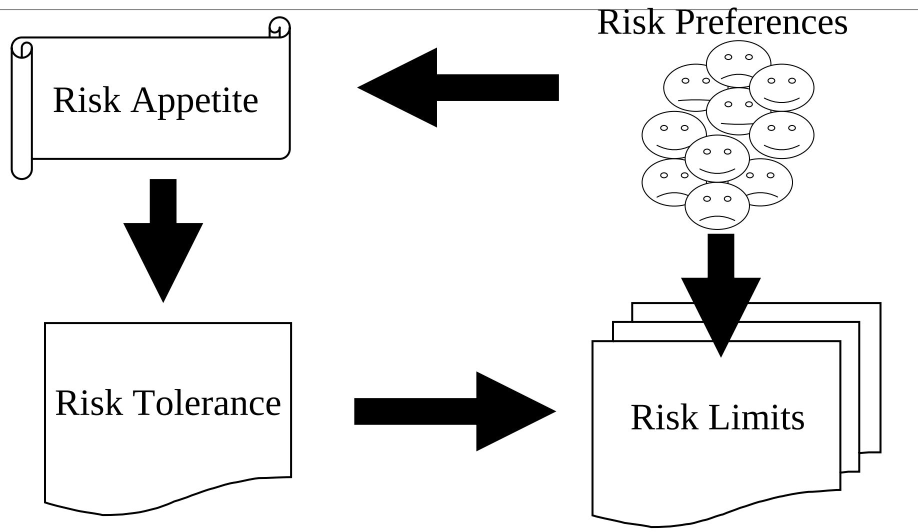
Process to set Risk Tolerance & Limits



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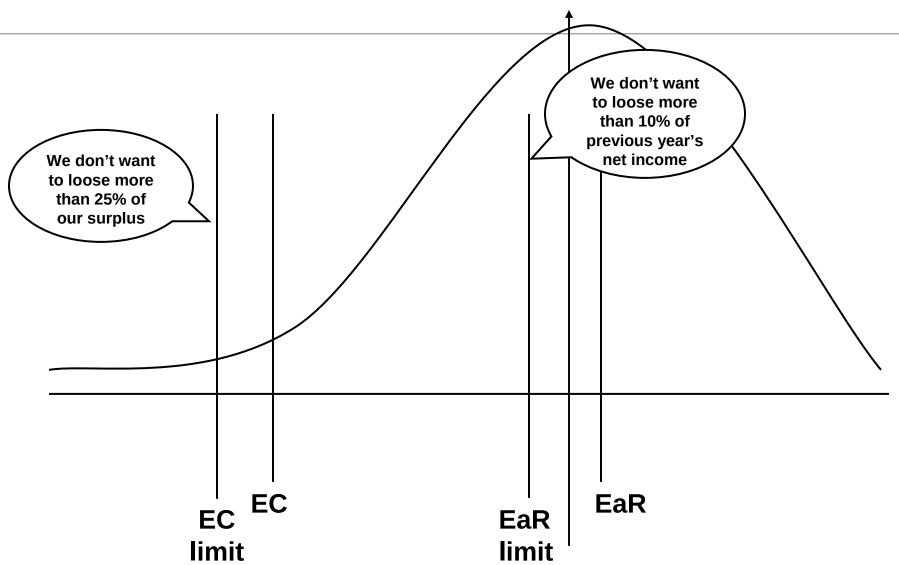
Risk Appetite



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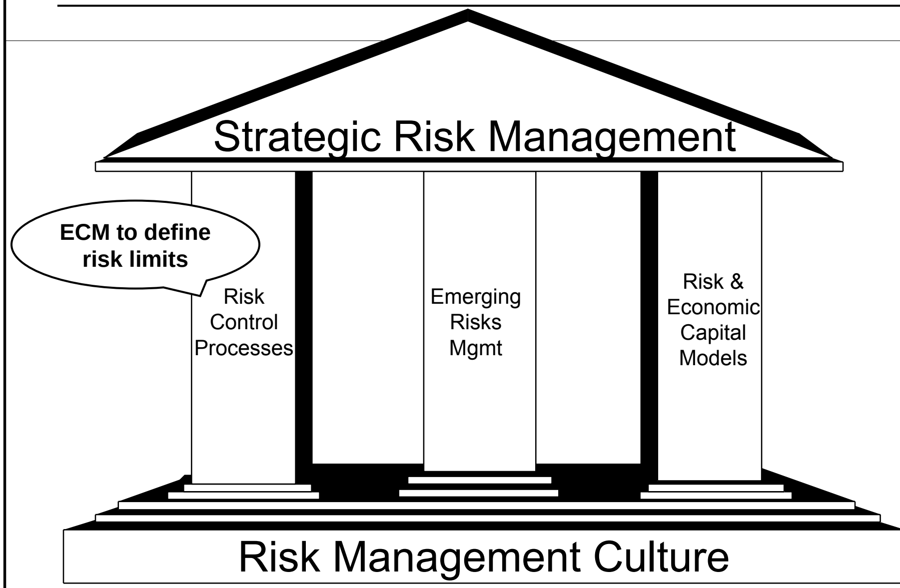
ERM Within Risk Control Processes



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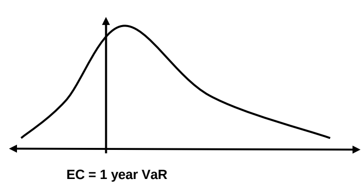
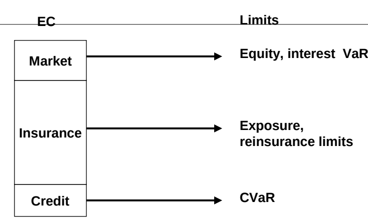
ECM in Risk Limits

- **EC by risk equal limit by risk**





- **Limits expressed in other terms than EC are then checked against overall EC tolerance and adjusted**
  - Rating for credit risk, % of assets for market risk, premium for exposure?
- **Risk positions tested against EC and EaR tolerances**
- **EC assigned to subsidiaries and/or business divisions**
- ***Return Adjusted Limits***

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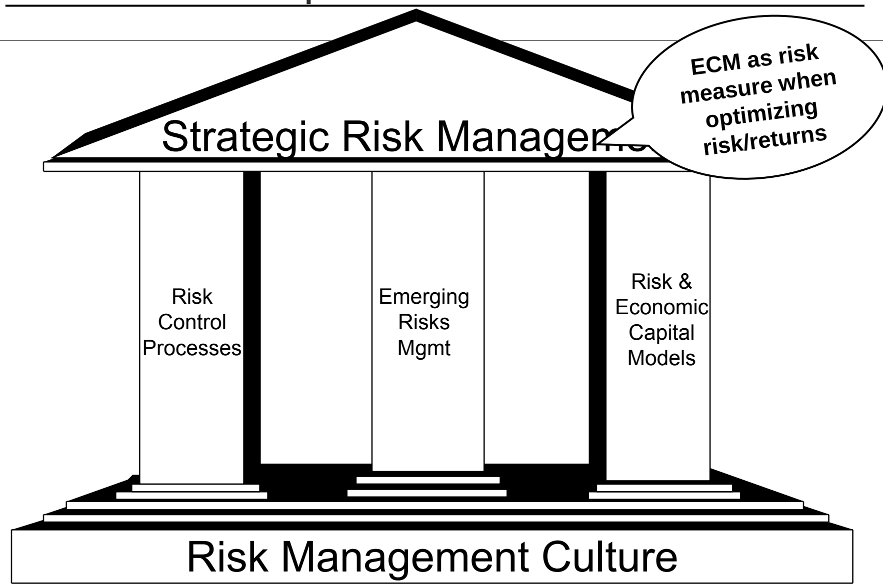
ERM Evaluation Components – where is ECM used?



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ECM within Strategic Risk Management

What do we look for:

- **Consistent view across all risks**
- Capability to assess trade-offs between different risk types
- Assessment of risk adjusted returns
- Capital budgeting
- Strategic investment allocation

Objective: To Optimize Risk-adjusted Returns

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ECM within Strategic Risk Management

Consistent view across all risks

=

Economic Capital to measure risk + chosen measure of income or value

Risk adjusted return to compare on a consistent basis

different activities in different businesses & regions

thus allowing informed strategic decisions.

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Strategic Risk Management

Why are we making SRM so important?

- **There are some companies with Superior Risk Management that we don't consider having Strong ERM:**
  - Companies with Superior Risk Management (Controls) will have volatility of earnings and incidence of losses within their tolerances
  - Companies with Strong/Excellent ERM will have low volatility of earnings, low incidence of losses **AND will maximize their risk/return relationship!**
- **Strategic Risk Management is the UPSIDE of Risk Management**

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Strategic Risk Management Practices

- **Impact of Strategic Decisions on risk profile and risk appetite is key part of the strategic decision making process.**
  - Risk Limits that are tied back to risk appetite & risk tolerance
- **Optimize the risk-reward result from a very quantitative approach.**
  - Activities with lower risk adjusted returns are regularly reviewed to either increase returns (or reduce risk)
- **Strategic Asset Allocation** – performed not just with regard to risk reward choices among investments but also reflecting the entire risk profile of the insurer, especially the aspects of the insurance liabilities that have a high correlation to capital
- **Risk-adjusted product pricing** including market consistent pricing of features that can be replicated by market traded instruments.
- **Capital budgeting** that is incorporates information about risk reward choices
  - Also includes decisions on dividends/stock buy-backs and other capital raising and distributing activities
- **Performance recognition and incentive compensation** linked to risk-adjusted financial results

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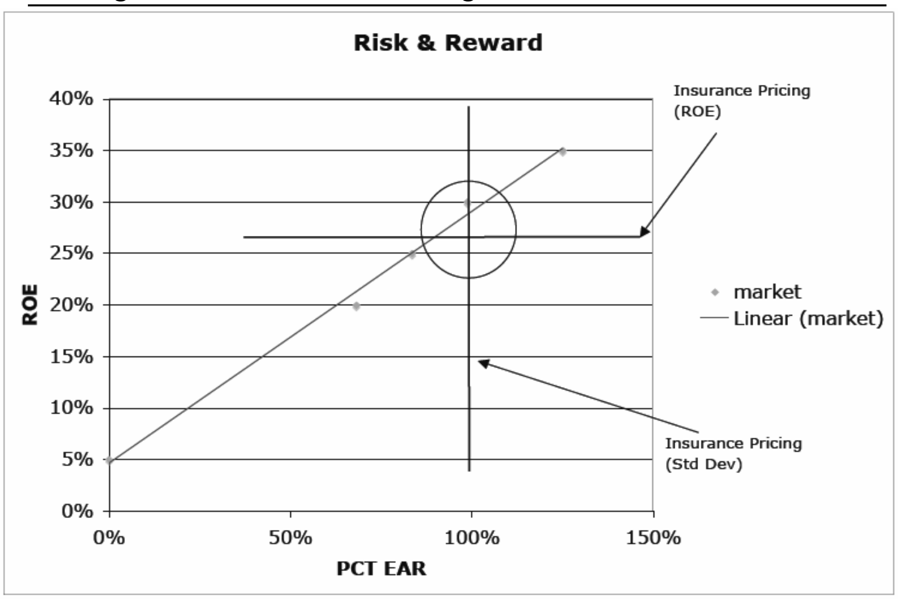
Pricing for Risk – is ECM Enough?



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Strategic Risk Management - Examples

For Life Insurers:

- **Strategic trade-offs between products with:**
  - **Credit Risk**
  - **Interest Rate Risk**
  - **Equity Risk**
  - **Insurance Risks**
    - **Based on long term view of risk adjusted returns of products**
    - **Choosing which to write, how much to retain and which to offset**
- **Strategic trade-offs in Investment Selection**
  - **based on risks embedded in products**
  - **plus long term view of risk adjusted returns of investment choices**

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Strategic Risk Management - Examples

For Non-Life (P&C) Insurers:

- **Strategic Trade-offs among insurance coverages AND investments**
  - based on long term view of risk adjusted return
  - Recognizing significance of investment risk to total risk profile
  - Recognizing ceded reinsurance credit risk
  - Selecting which risks to write and which to retain over the long term
- **Some Insurers have 40% or more of their total capital tied to Investment risks**
  - An Insurer with Strategic Risk Management will be able to say why they chose to take that much Investment risk
    - Including discussing relative risk reward of Insurance choices and Investments
    - With consideration of diversification impact of Insurance vs. Investments
- **For Multi-line insurers/reinsurers**
  - Trade-offs between all investment & Insurance risks
  - Trade-offs between Life & non-life

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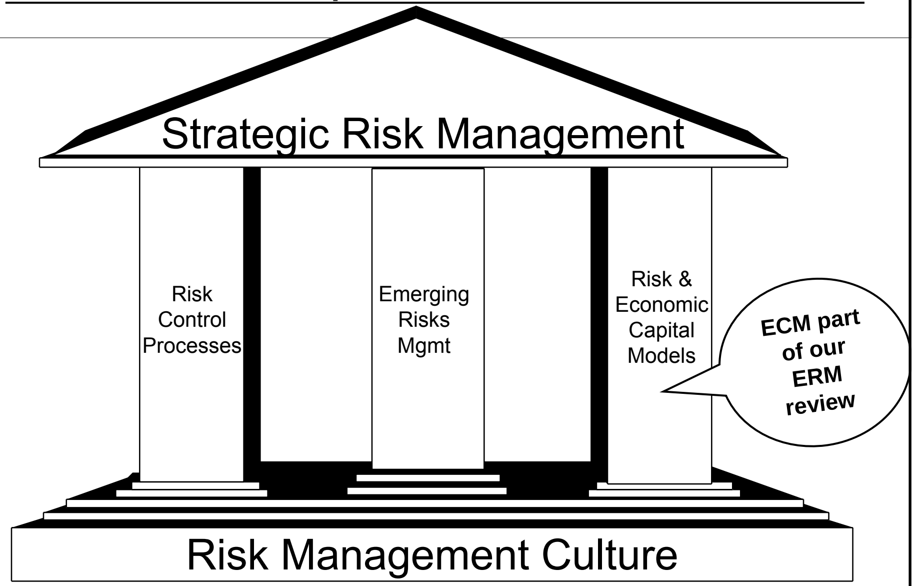
ERM Evaluation Components – where is ECM used?



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Economic Capital Models Review

For Insurers with Strong or Excellent ERM

- **Standard & Poor's will develop robust processes for evaluating insurers' internal economic capital models**
- **To be performed only for companies with effective ERM**
- **Evaluations of economic capital will be used in conjunction with existing static, risk-based measures**
- **Dynamic approach will enhance our existing and prospective view of capital adequacy**

Standard & Poor's can incorporate benefits of uncorrelated risks (diversification)

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Overview of S&P’s Economic Capital Model Review

S&P’s Economic Capital Model Review will enhance and build upon S&P’s analysis of insurers’ Enterprise Risk Management capabilities.

ECM Review is the next step in the evolution of our credit analysis

- Deepen our assessment of risk management
- Advance our analysis of insurer’s capital needs
- Develop a more accurate and forward-looking view of credit

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Description of ECM Review Process

Economic Capital Model (ECM) Review Steps:

- **Desktop review**
  - quantitative and qualitative approach
  - detailed review of existing documentation
  - interviews with management
  - limited review of the model inputs, methodologies and validations
  - not an audit of a company’s model
- **Enhanced quantitative analysis**
  - May include quantitative analysis of sub-components of the model
  - where deemed necessary by S&P
- **Capital adequacy determined**
  - using both the S&P Capital model and insurer ECM results
  - modified by analyst adjustments

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What Are We Delivering?

Objective: Determine our degree of reliance on Insurer's ECM

Review will focus on insurer's ability to:

- estimate capital needed in extremely adverse situations
- demonstrate control processes with the input data
- validate processes for the output for subtotals within the model
- use the model to drive major management decisions

Detailed Report:

- Documentation of review
- Description of areas viewed more and less favorably
- Stated confidence level in model
- Adjustment to S&P's measure of capital adequacy

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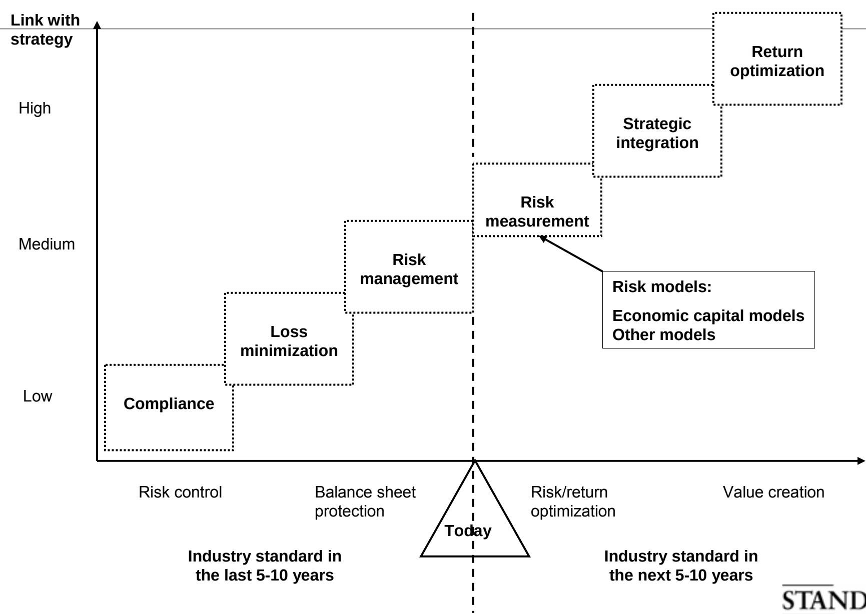
Conclusion: the Evolution of ERM and the Role of ECM



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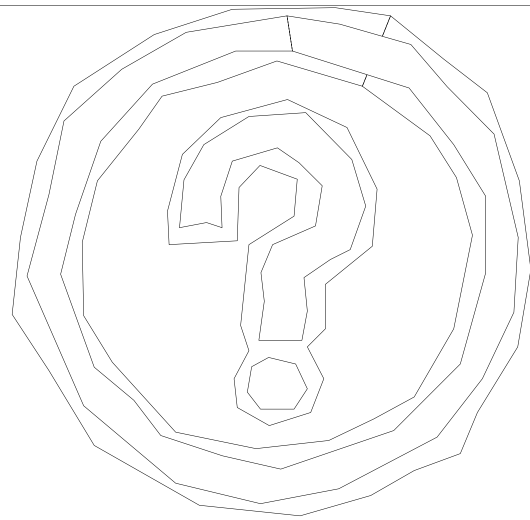
Questions?



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