



SOCIETY OF ACTUARIES

**ERM Symposium  
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**3A - Successes and Challenges in Integrating an  
Economic Capital Allocation and Risk/Return  
Framework**

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Where Cutting Edge Theory Meets Some of the Art Practice



## Successes and Challenges Integrating an Economic Capital Allocation and Risk/Return Framework

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Canadian Institute of Actuaries



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## Agenda



Where Cutting Edge Theory Meets Some of the Art Practice

- Primer on Economic Capital
- Panel Discussion
  1. The Difficulty of Conflicting Regimes
  2. Challenges of a Common Framework
  3. Business Implications of Capital Allocation
  4. Tone at the Top

## Why Do We Hold Capital?



What's Going On? There's More to It Than It Seems

- To protect against unexpected losses (risk based capital).
- To maintain minimum capital to asset ratios (leverage capital)
- To finance growth in the business (investment capital).
- Expected losses incurred on product lines are funded through pricing and/or earnings.

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## What is Economic Capital?



What's Going On? There's More to It Than It Seems

- Economic Capital (EC) is the difference between the economic value of assets and liabilities.
- Required EC is calculated in consideration of volatility and a desired level of financial security. For example, the amount of assets needed in excess of liabilities to withstand economic impacts to the enterprise in one out of every 100 years.
- Economic valuations are calculated based on market values, discounted cash flows and appropriate risk margins based on the cost of holding capital for contingent liabilities.
- EC is different than GAAP equity or GAAP capital and is not statutory surplus.

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## Regulatory and Rating Agency Capital



What's Going On? There's More to It Than It Seems

- Regulatory and rating agency capital is based on an accounting regime ( GAAP equity equals assets less liabilities in GAAP) and should be sufficient to maintain target leverage levels.
- It is also sufficient to pay unexpected losses under many circumstances.
- Noteworthy business failures of companies with sound ratings and regulatory metrics have shown that these approaches do not sufficiently account for the risks undertaken.

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## Economic Capital



What's Going On? There's More to It Than It Seems

- Economic Capital is a risk based concept and reflects the nature and level of risks inherent in the bank or insurance company's operations.
- Economic Capital usually involves a risk horizon selection, such as in the one year mark-to-market view.
- Economic Capital is calculated from a model which measures risk statistically, for example, Monte Carlo (i.e. stochastic) simulation of distributions of possible outcomes over a one year period and then the revaluation of the economic balance sheet.

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## Regulatory Capital is Moving in an Economic Direction



What Counts (Up) There Must Show (up) In Here

- Basel I & II
  - Basel I was not risk sensitive and did not address all risks.
  - The three Pillars of Basel II align minimum capital requirements more closely to bank's actual risk of economic loss and is informed by internal capital adequacy models.
- Solvency I & II
  - Solvency I was factor based and failed to adequately address the risks inherent in insurance enterprises.
  - Solvency II is principles based (and also has three pillars) and requires the use of risk based internal capital models (or regulatory capital will be imposed).

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## Capitalizing for the Unexpected



What Counts (Up) There Must Show (up) In Here

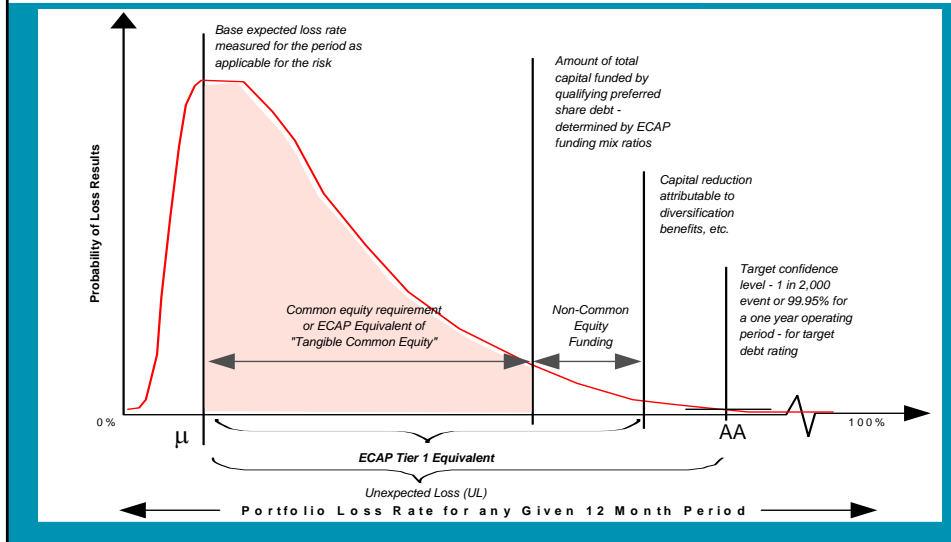
- Risk based capital is held to fund a one year potential “unexpected” loss defined by the potential volatility in losses relative to the average annualized or expected loss rate.
- Typically, banks capitalize themselves to support extreme “tail” loss events at a high confidence level to support a desired rating.

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# Capitalizing for the Unexpected



What Counts? (Don't Miss Out on the Good)



## Panel Discussion



What Counts? (Don't Miss Out on the Good)

### The Difficulty of Conflicting Regimes

- The impact/interactions of GAAP, statutory accounting and economic frameworks
- Binding capital constraints
  - Regulatory requirements
  - Rating agency capital versus required economic capital

## Challenges of a Common Framework

- Applying a common view of risk across different businesses
- Risk horizon considerations
  - Long term contracts (life) versus annual policies (p/c)
  - One year market consistent versus real world run-off methodologies

## Business Implications of Capital Allocation

- Unattainable targets/hard choices
- Reliance on tail risk?

