

# **Enterprise Risk Management in Banking**

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Enterprise Risk Management Symposium  
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## Outline

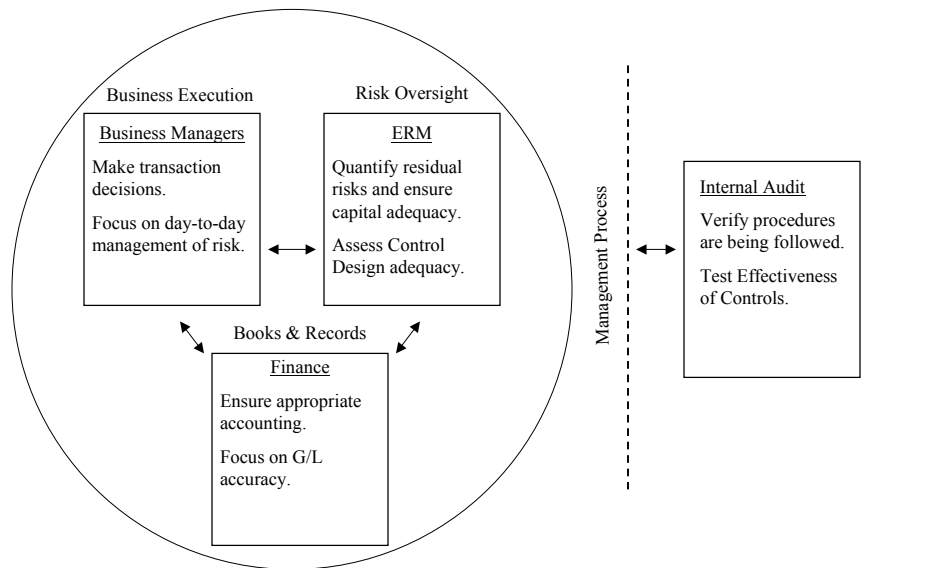
- ◆ Implementing Risk Governance.
- ◆ Goals & Impediments for Risk Management.
- ◆ Implementation of Enterprise Risk Management.
- ◆ Assessing Models

## Risk Governance

### Components for Managing Risk

- ♦ Business managers are responsible for hedging decisions, funding strategies, product development, pricing, loan underwriting, etc.
  - Business managers are also responsible for appropriate execution of procedures to mitigate operational risk for their areas.
- ♦ Enterprise Risk Management ensures that risk limits are appropriate for the nature and complexity of business activities and are consistent with the Board's risk appetite.
  - ERM also provides ongoing assessment of risk exposures and the adequacy of risk mitigation techniques, and works with business managers to address control gaps, as needed.
- ♦ Internal Audit is responsible for verifying that controls are in place and testing to ensure that controls are functioning properly.
  - Internal Audit also provides recommendations on control design, but must be careful so as not to dictate the design of controls that they subsequently audit.

## Risk Governance



## Risk Governance

### Desired ERM Functions

- Develop methodologies to measure risks (e.g., market, liquidity, credit, etc.).
- Conduct independent price-checking.
- Research on valuation of exotic and illiquid instruments.
- Conduct stress testing and scenario analysis.
- Determine economic capital adequacy and reserves.
- Determine appropriate regulatory capital calculations (Basel II criteria).
- Perform independent model validations.
- Conduct research on limit exceptions and resolution analyses, as needed.
- Develop methodologies to measure risk-adjusted return performance criteria.
- Conduct risk and control assessments and associated reporting.
- Develop and maintain risk management policies, procedures and related documentation.

## Goals & Impediments

### Goals for Risk Management

- ◆ Enable the Board of Directors to fulfill its responsibilities for risk governance.
- ◆ Ensure proper risk management ownership by business managers.
- ◆ Enable business managers to manage risk vs. eliminate risk.
- ◆ Validate the effectiveness of business managers' risk management activities.
- ◆ Communicate timely risk exposure information to Senior Management and the Board.
- ◆ Maintain a cost-benefit focus on risk management.
- ◆ Work with business managers to ensure compliance with risk policies and regulations.

## Goals & Impediments

### Impediments for Risk Management

- ◆ “Risk Silos” can create ineffective information flows and can result in the inefficient utilization of resources.
- ◆ Consolidated supervision of Business Execution, Finance, and Risk Management may not result in appropriate balance in decision-making.
- ◆ In the capacity of “in-house consultant”, ERM may not function as a full partner in the Bank’s management process.
- ◆ Operational risk management should focus on operational exception resolution, confirming the successful implementation of management remediation, and facilitating readiness for new activities, as needed.

## Implementation

### Methods for Achieving Goals

- ◆ Consolidate Risk Management groups under Enterprise Risk Management to exploit expertise within ERM.
  - Establishes an integrated and consistent approach for risk identification, measurement, monitoring, and risk control.
  - Facilitates the development of a standardized risk information framework and process to ensure it is usable across the Bank.
  - Establishes centralized authority to specify measurement methodologies and risk limits for market risk, liquidity risk, and counterparty credit exposure.
  - Facilitates alignment of common skills & technical expertise to improve resource efficiencies.
  - Provides ERM will functional responsibilities to enable inclusion into the Bank’s management process.
- ◆ Change risk assessments from process-driven approach to ongoing analysis and concise regular reporting of key risk exposures and associated risk trends.

## Implementation

### IDENTIFY, MEASURE, MONITOR & CONTROL RISKS

- ◆ *“On-Desk” Risk Manager (Identify, Monitor & Control)*
  - Oversight of LOB => Approvals (business plan; transactions; limit exceptions).
  - Requires knowledge of products & market conventions; Market intelligence.
- ◆ *Risk Analytics (Identify & Measure)*
  - Create/Build/Validate risk measurement methodologies & models.
  - Requires Finance & Mathematics skills; Ability to Write Code to ensure results.
- ◆ *Risk Information (Monitor & Control)*
  - Maintain Risk Mgmt Policies; Develop & distribute Risk Reports.
  - Requires knowledge of regulations & best practice; Strong communication skills.

## Assessing Models

- Purpose

Products or transactions covered by model and how the model is used (e.g., valuation, risk measurement, compliance purposes, decision-making).
- Reports

Output results generated by the model.
- Theoretical Basis

A description of the model’s underlying logic as well as the mathematical equation(s) that are used within the model. There should also be an explicit statement regarding the reasonableness of those equations in relation to the model’s intended use and a discussion of if/when the model’s results might not be valid.

## Assessing Models

- Reference adjustments to the methodology

In some instances, systems resources and data constraints may have resulted in changes during implementation from the model's original theoretical construct. If possible, impact of such adjustments upon the model's precision or accuracy should be estimated. For example, this could be achieved by providing closed-form equations or empirical comparisons quantifying the difference between theoretical and actual constructs.

- ♦ Identification of model's underlying data

Inputs to the model, such as rate curves, prices and their corresponding sources. This should also include procedures for determining the model's parameters.

## Assessing Models

- Sensitivity of results to changes in parameters and data inputs

Closed-form solutions or estimates of the result sensitivity to changes in parameters, or empirical results presented in tabular form showing the range of values of the model's output(s) for a range of values for parameters and input data.

- Demonstration of computational accuracy

If practical, comparison of model's output using parallel calculations from a prototype model developed according to the model's stated algorithms and inputs.

- Demonstration of predictive accuracy

Comparison of model's output using other relevant model results and/or market-observed results.

Questions & Answers

**STANDARD  
& POOR'S**

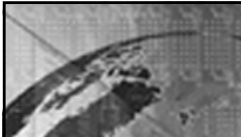


**Enterprise Risk Management Symposium  
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**Concurrent Session 6  
Tuesday May 3<sup>rd</sup>, 2005  
ERM in Banking**

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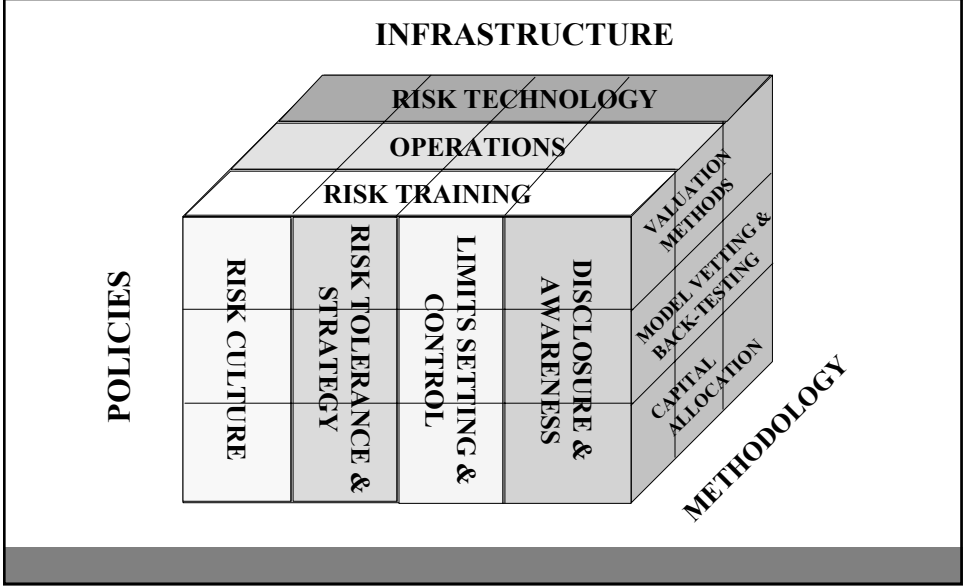
*The McGraw-Hill Companies*



**Assessing ERM Practices in  
Banking**

**To enhance our assessment of the quality  
and robustness of an institutions' risk  
management practices.**

# Assessing ERM Practices: The PIM approach



# At the end of the day it's the Risk Culture!





**Q&A?**

