



# **ERM Mini-Seminar**

**James Lam**  
**President, James Lam & Associates**

Sponsored by Society of Actuaries  
December 9, 2003

# James Lam's biography

## Professional

- President, James Lam & Associates
- Founder and President, ERisk
- Partner, Oliver, Wyman & Company
- CRO, Fidelity Investments
- CRO, Capital Markets Services Inc., a GE Capital company

## Industry Activities

- PRMIA Blue Ribbon Panel Member
- GARP 1997 Financial Risk Manager of the Year
- Published over 50 articles and book chapters
- Quoted in Wall Street Journal, Financial Times, and CFO Magazine

## Academic

- Adjunct Professor of Finance, Babson College
- Lectured at Harvard Business School as the subject of a HBS case study
- MBA, UCLA School of Business
- BBA, Baruch College

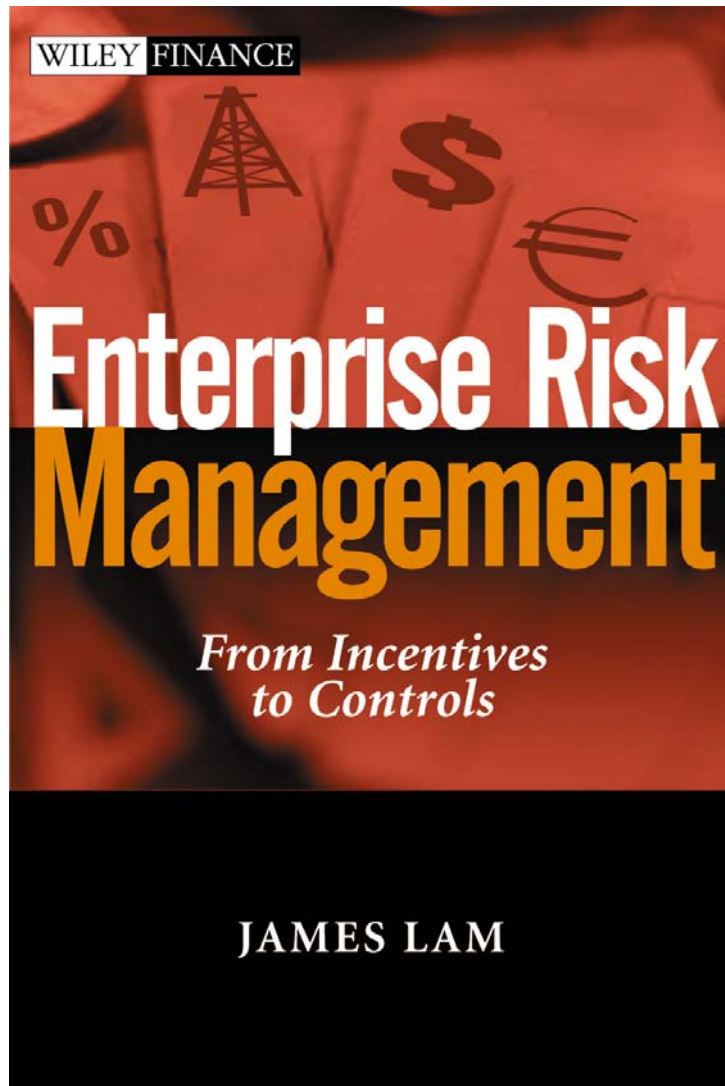
## Consulting projects

- ERM vision and strategy
- Credit risk management
- Market risk management
- Operational risk management
- Business/product strategies
- Board-sponsored investigations
- Training/education programs

# Consulting clients



## Top-10 selling book



### Definition of ERM:

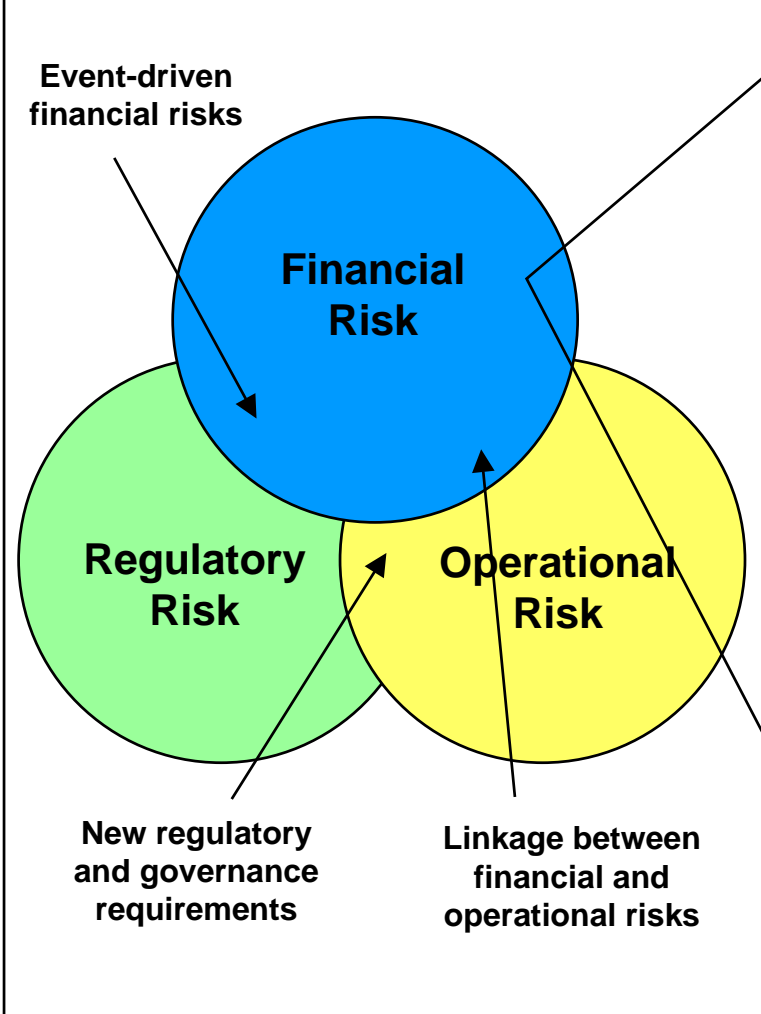
***“An integrated framework for managing credit risk, market risk, operational risk, economic capital, and risk transfer in order to maximize firm value.”***

# Discussion outline

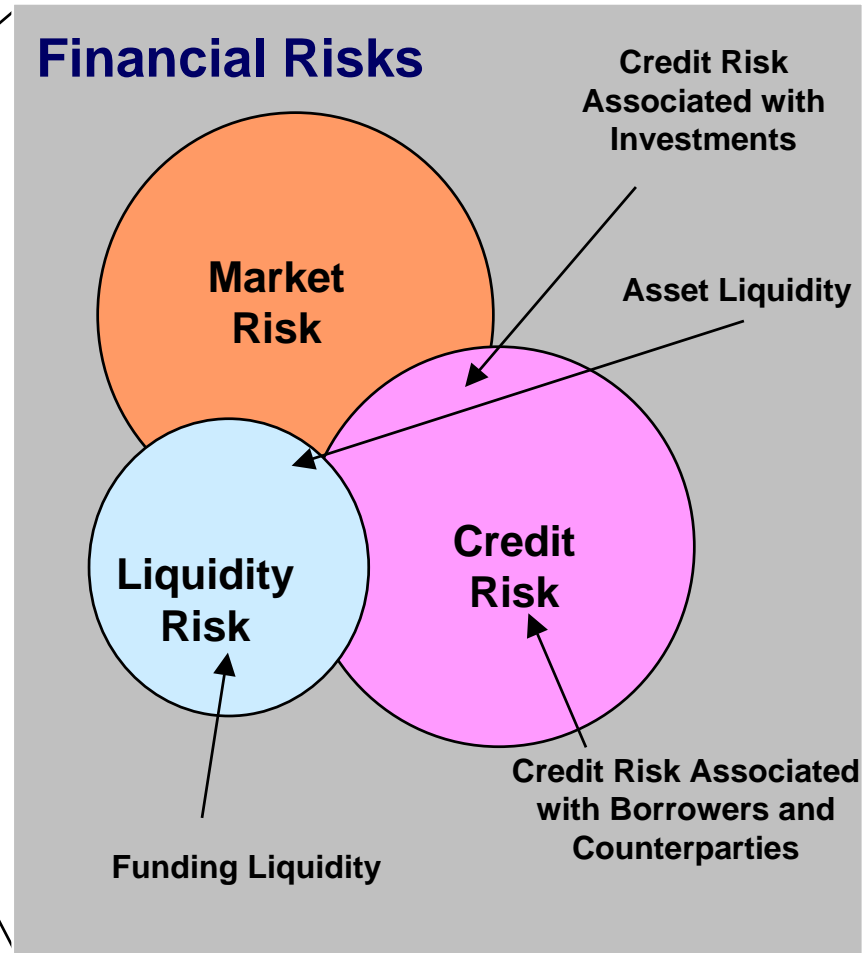
- The business case for ERM
- Lessons learned and best practices
- ERM going forward – 10 Predictions

# Risk linkages

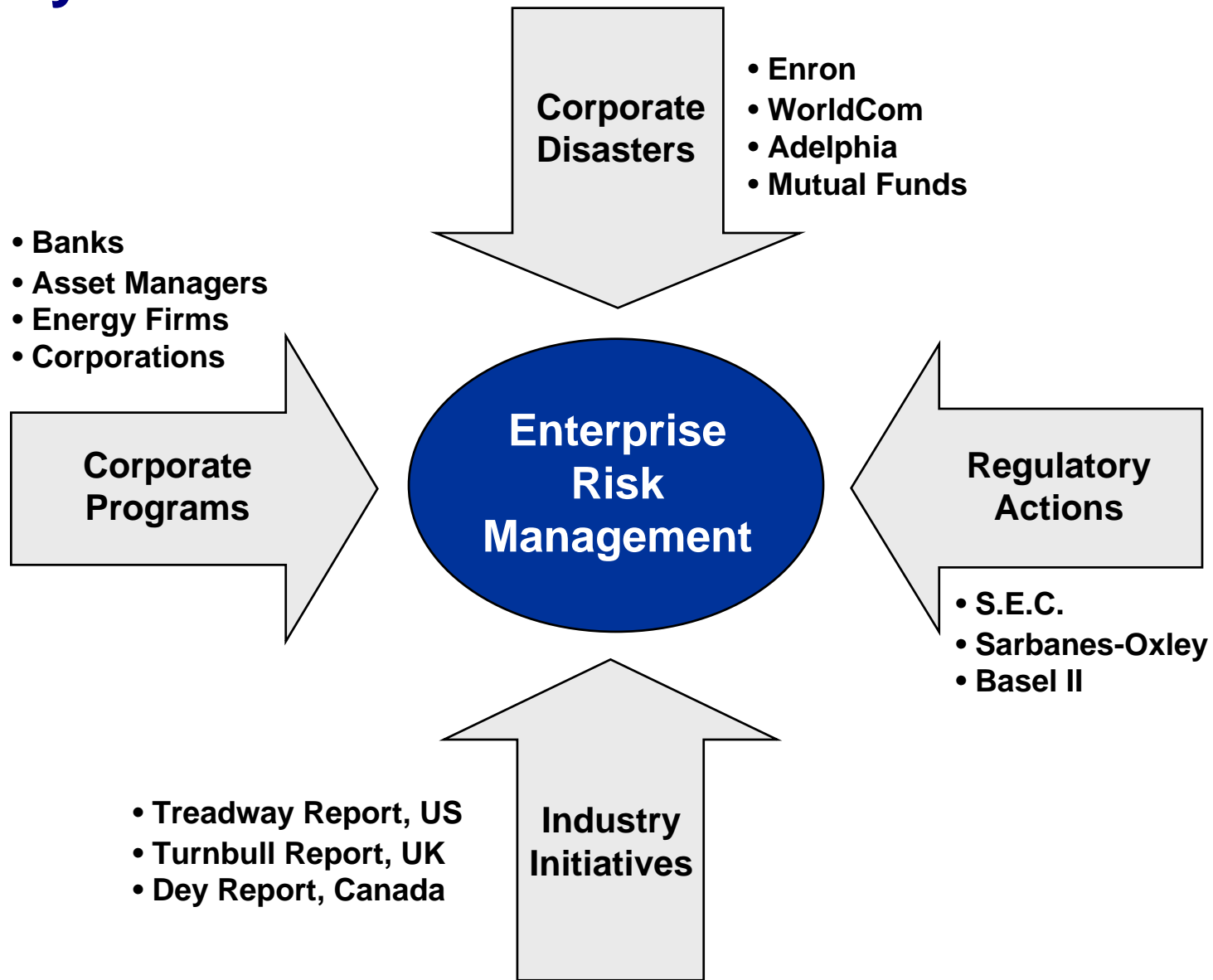
## Enterprise-Wide Risks



## Financial Risks

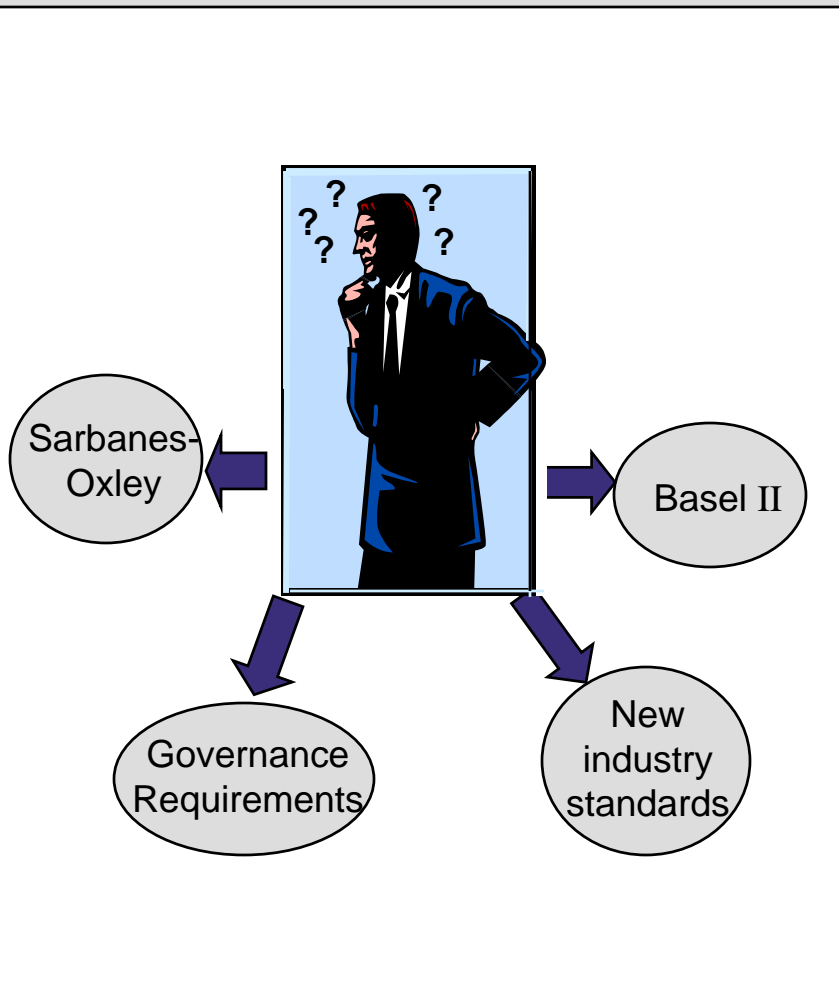


# Key risk trends

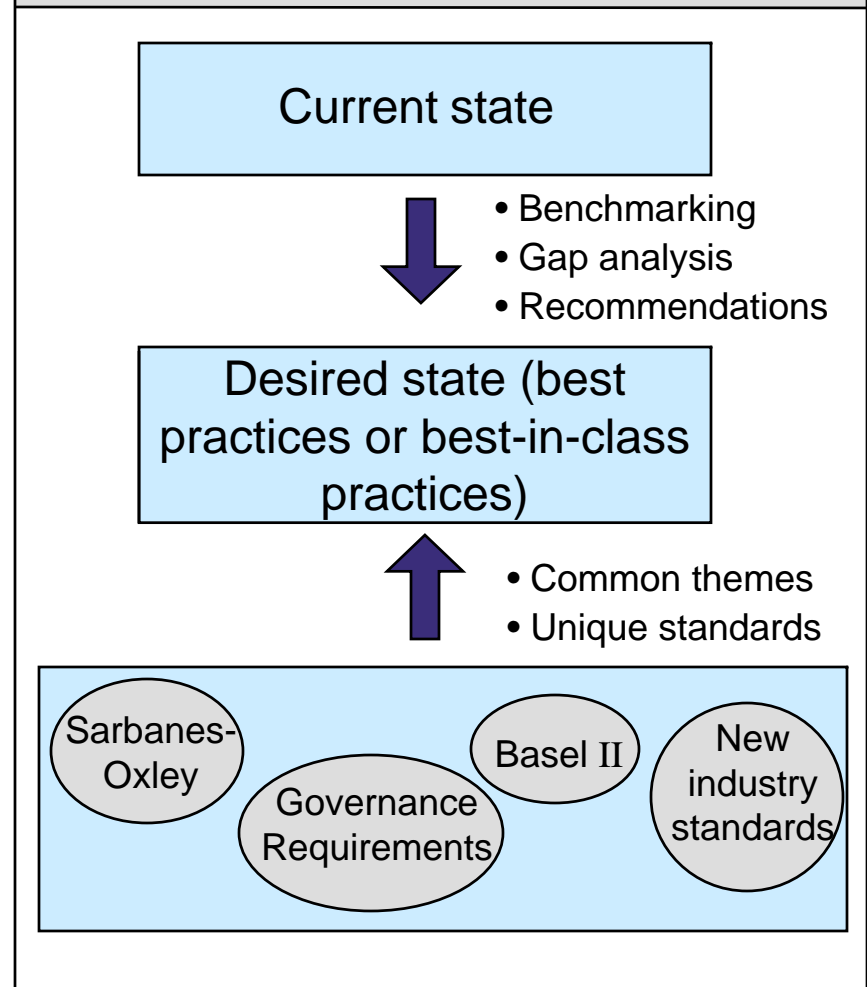


# Practical approach to ERM

## Reactive Approach



## Proactive Approach



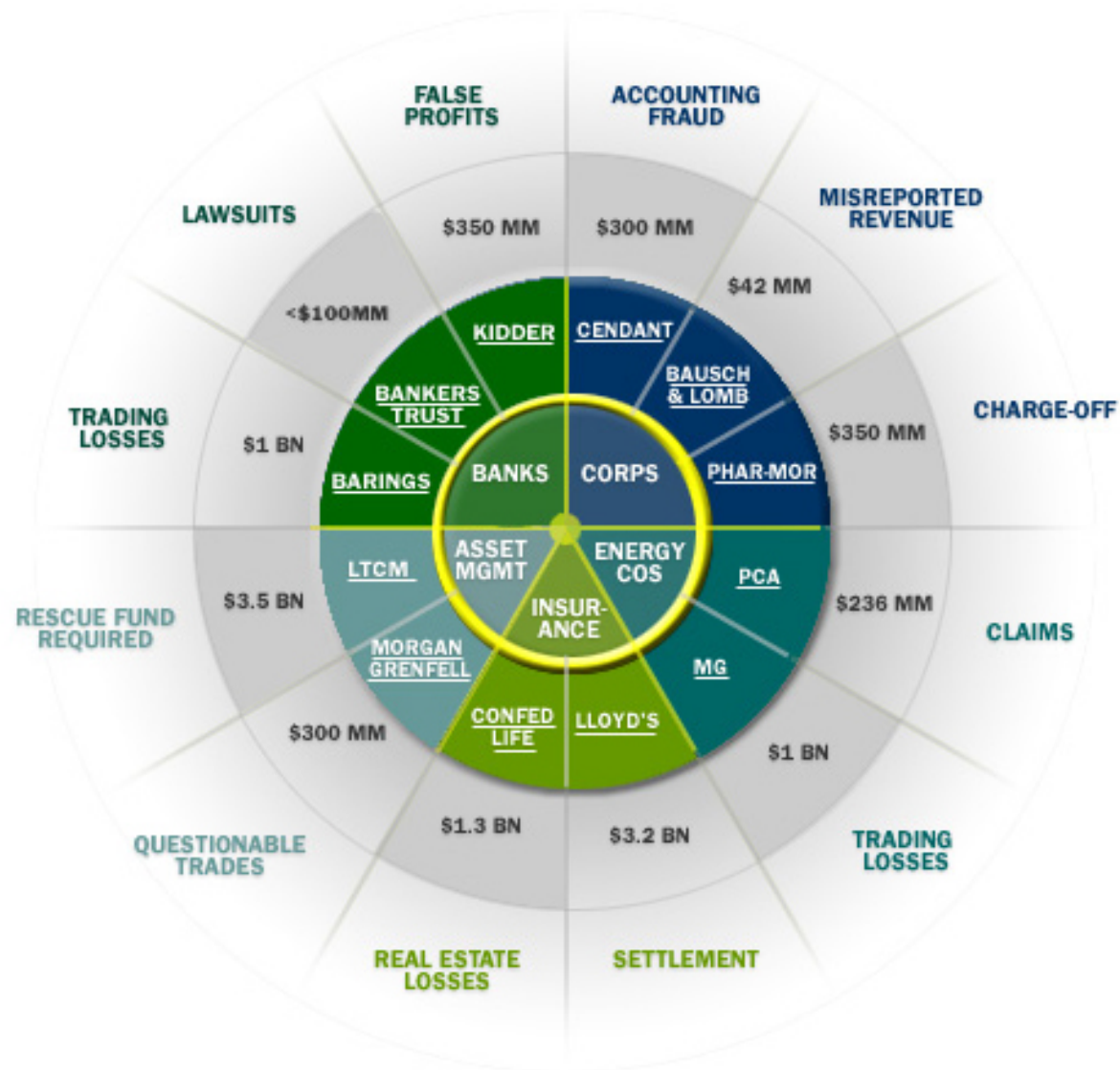
# Benefits of risk management

<u>Benefit</u>	<u>Company</u>	<u>Actual Results</u>
Market value improvement	Top money center bank	Outperformed S&P 500 banks by 58%
Early warning of risks	Large investment bank	Identified over 80% of future losses; risk limits cut by 1/3 prior to Russian crisis
Loss reduction	Top asset management company	30% reduction in the overall loss ratio; up to 80% loss reduction at business units
Regulatory capital relief	Large commercial bank	\$1 billion regulatory capital relief, or about 8-10%
Insurance cost reduction	Large manufacturing company	20-25% reduction in annual insurance premium

# Discussion outline

- The business case for ERM
- Lessons learned and best practices
- ERM going forward – 10 Predictions

# The Wheel of Misfortune



# Key lessons learned

- Lesson #1      **Know Your Business**
- Lesson #2      **Establish Checks and Balances**
- Lesson #3      **Set Limits and Boundaries**
- Lesson #4      **Keep Your Eye on the Cash**
- Lesson #5      **Use the Right Yardstick**
- Lesson #6      **Pay for the Performance You Want**
- Lesson #7      **Balance the Yin and the Yang**

# Establishing an ERM framework

## ERM Framework

### 1. Corporate Governance

Establish top-down risk management

### 2. Line Management

Business strategy alignment

### 3. Portfolio Management

Think and act like a “fund manager”

### 4. Risk Transfer

Transfer out concentrated or inefficient risks

### 5. Risk Analytics

Develop advanced analytical tools

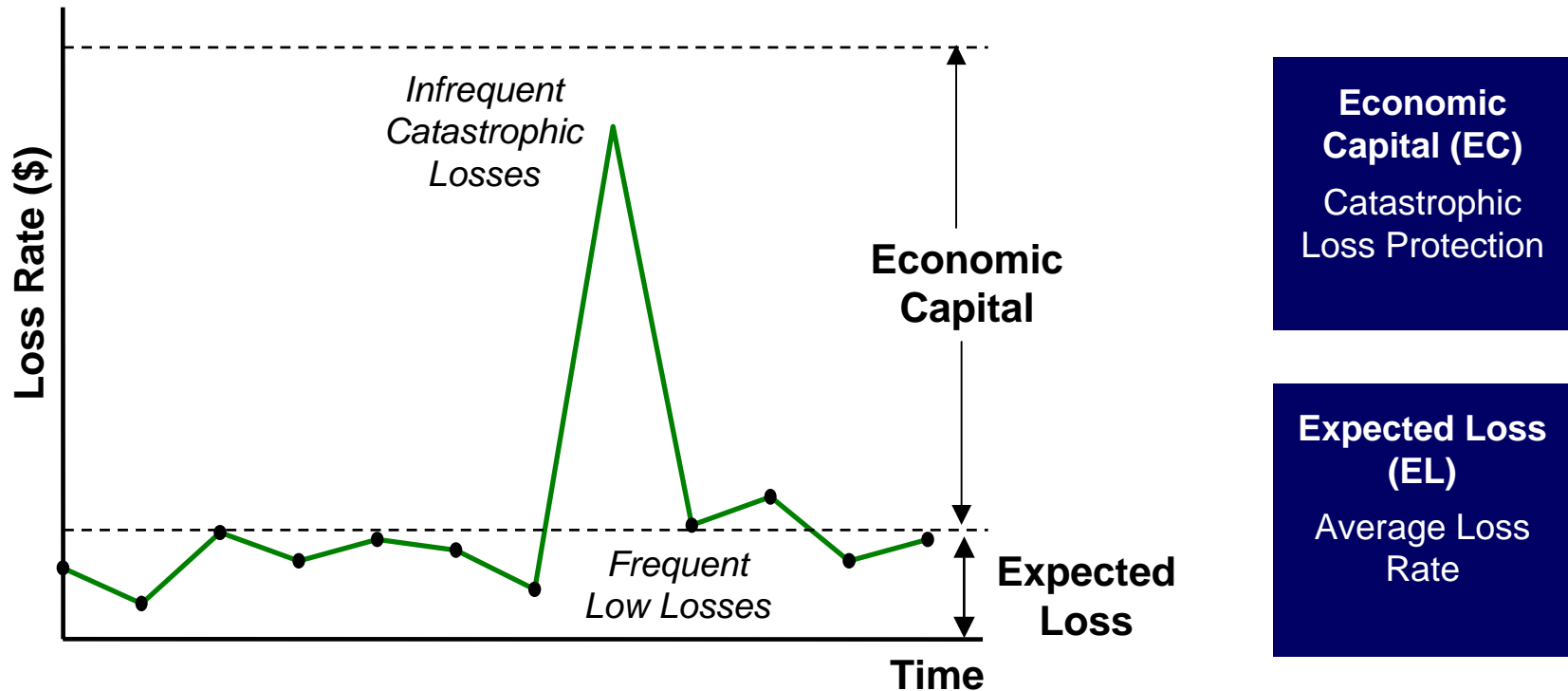
### 6. Data and Technology Resources

Integrate data and system capabilities

### 7. Stakeholders Management

Improve risk transparency for key stakeholders

# Credit Risk Management



## Expected Loss

- Anticipated average loss rate
- Cost of doing business, cover through pricing and provisioning
- $EL = f(\text{probability of default, exposure at default, severity})$

## Economic Capital

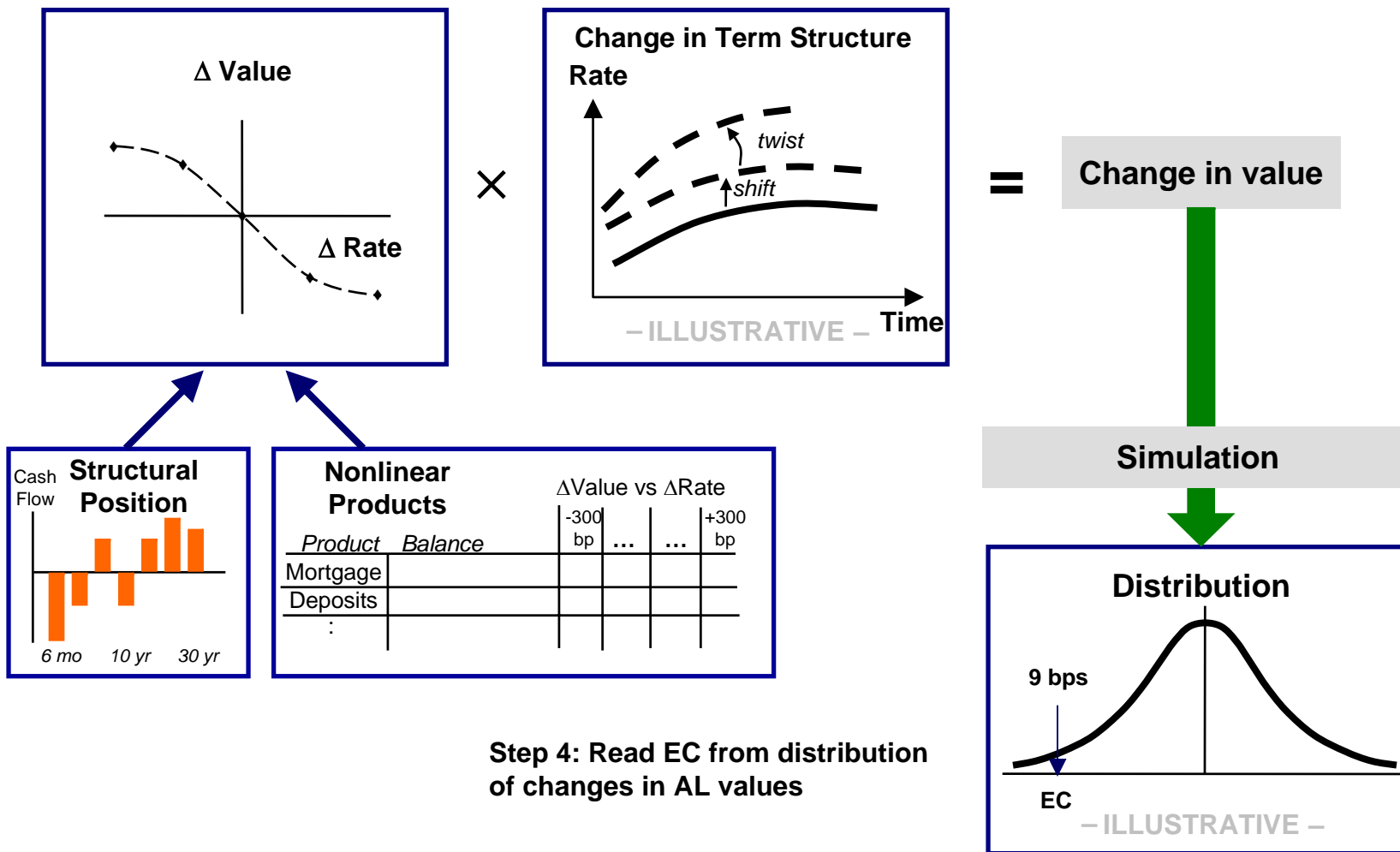
- Covers catastrophic losses
- Risk inherent in business, cover through capital allocation and adequacy
- $EC = f(\text{probability of default, exposure at default, severity, default correlation})$

# Market Risk Management

**Step 1: Analyze sensitivity of asset and liability value to changes in interest rates**

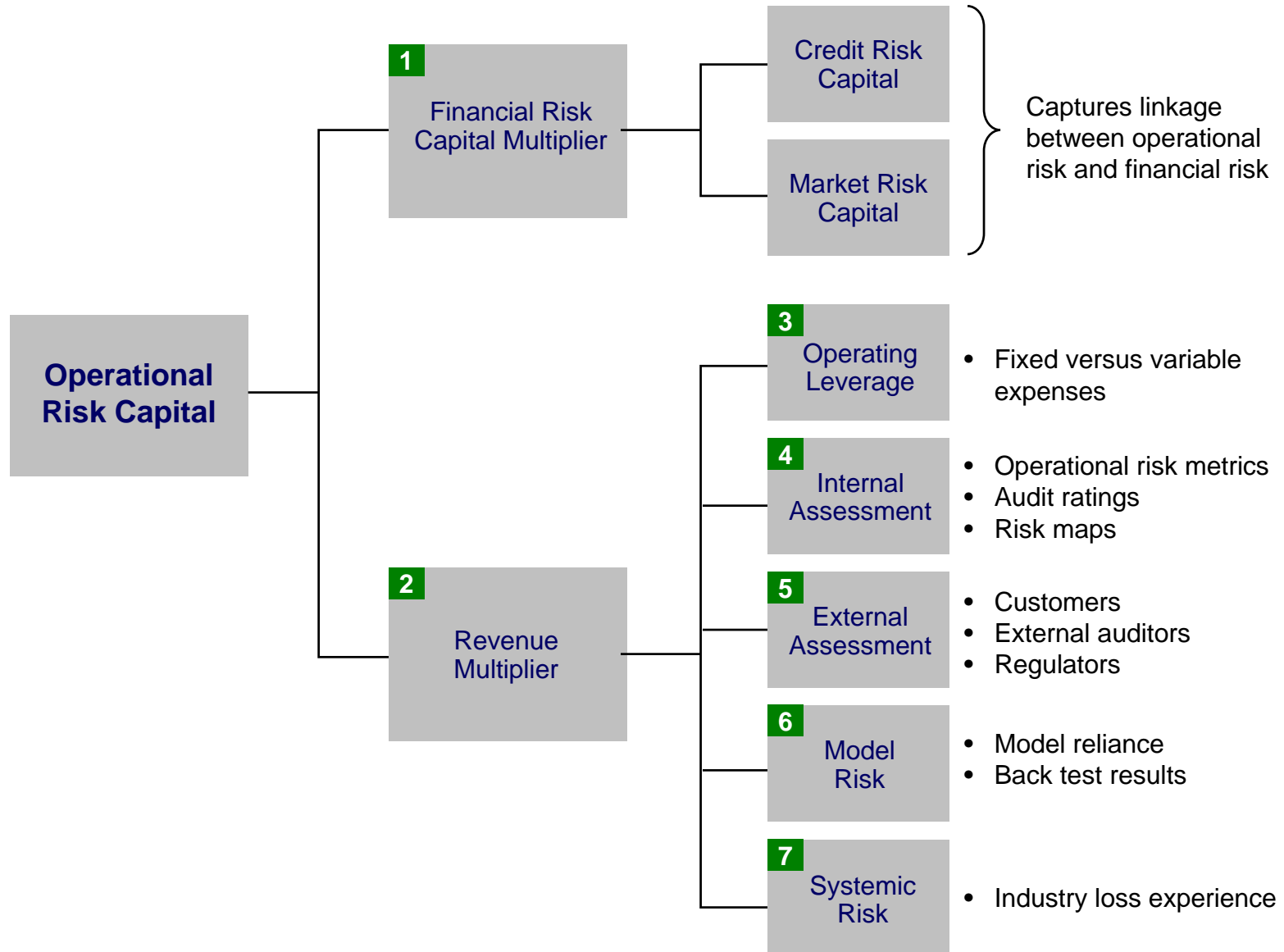
**Step 2: Simulate changes in term structure of interest rates**

**Step 3: Recalculate value of assets and liabilities (repeatedly)**



**Step 4: Read EC from distribution of changes in AL values**

# Unified Operational Risk Framework



# Operational Risk Management

Education

- New associates
- Management
- Business/Operational processes
- Best practices
- Lessons learned

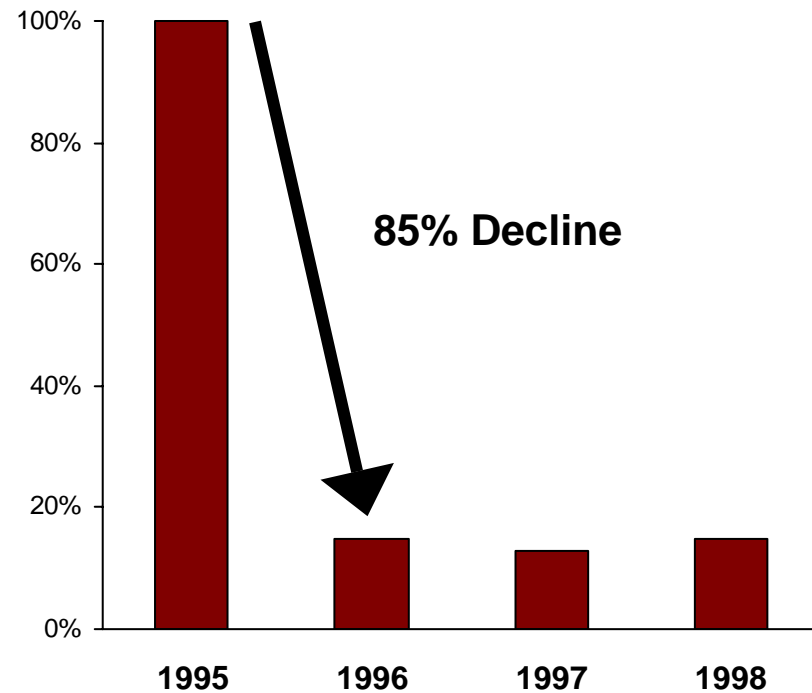
Risk Event Log

Event	Loss	Root Causes	Controls Needed

Risk Metrics



**Actual Loss Experience**



# Economic capital as common currency

## Credit Risk

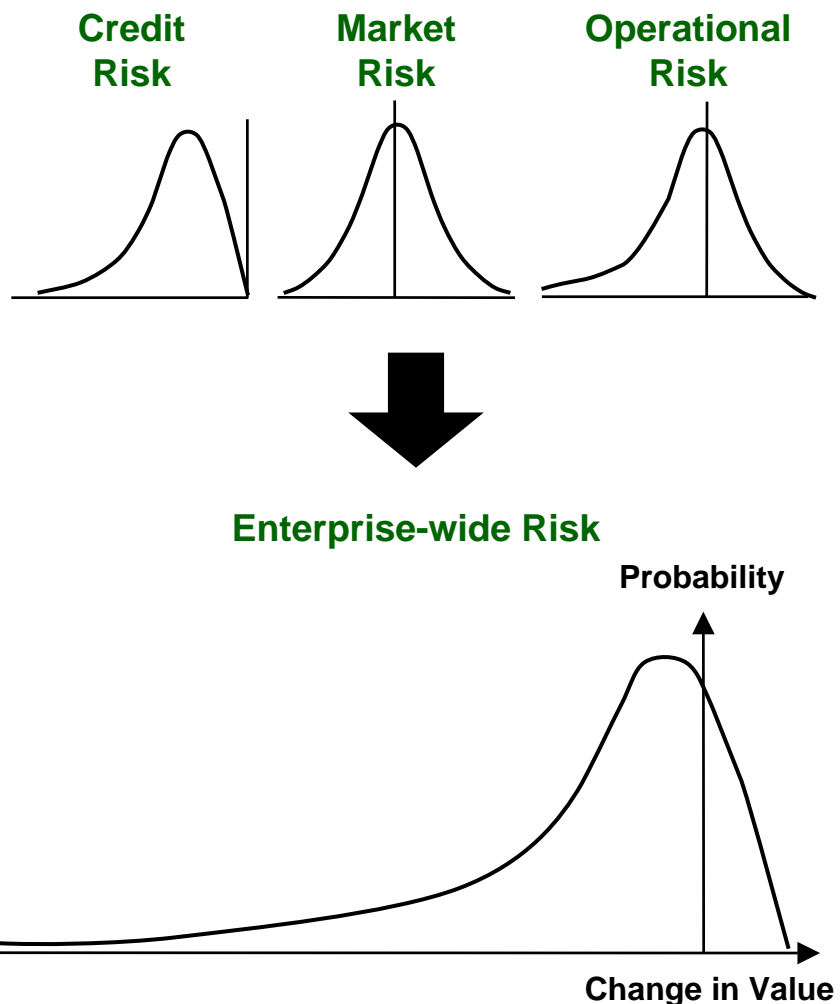
Earnings volatility due to variation in credit losses

## Market Risk

Earnings volatility due to market price movements

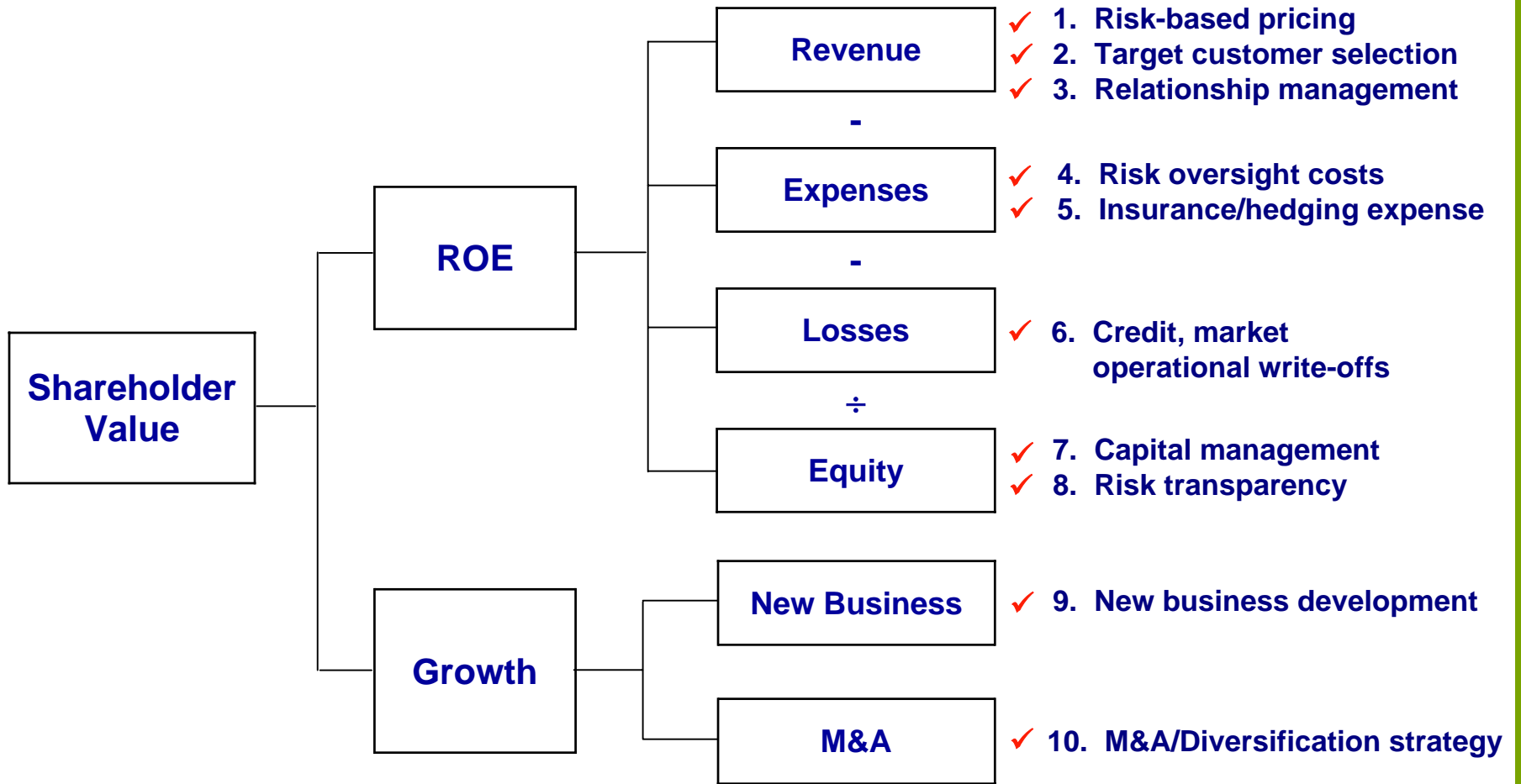
## Operational Risk

Earnings volatility due to changes in operating economics (e.g. volume, margins or costs) or one-off events



# Value creation through ERM

## Risk Management Impact



✓ Risk Management by Silos (5, 6)



✓ Integrated risk management (4-7)



✓ Enterprise risk management (1-10)

# Measuring profitability and pricing

**Exposure**  
**Margin**  
**Revenue**  
**Risk Losses**  
**Expense**  
     **Pre-Tax Net Income**  
**Tax**  
     **Net Income**  
**Economic Capital**  
**RAROC**

## Calculate ROE

\$100 mm

2.50%

\$2.5 mm

<0.5 mm>

<1.0 mm>

\$1.0 mm

<0.4 mm>

\$0.6 mm

\$2.0 mm

**30%**



## Calculate Pricing

\$100 mm

**2.20%**

\$2.2 mm

<0.5 mm>

<1.0 mm>

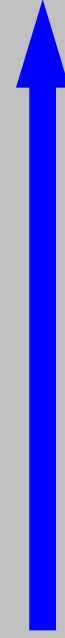
\$0.7 mm

<0.3 mm>

\$0.4 mm

\$2.0 mm

20%



# Rationalized risk transfer

## Different Structures

Derivatives

Structured Finance

Insurance

## Common Cost/Benefit Framework

$$\text{Ceded RAROC} = \frac{\Delta \text{ Return}}{\Delta \text{ Economic Capital}}$$

- $\Delta$  Return
  - Pay cashflows or insurance premium
  - Include transaction and ongoing management costs
  - Reduce Economic Capital 'benefit'
- $\Delta$  Economic Capital
  - Reduce Economic Capital held for risk
  - Increase Economic Capital counterparty exposure
  - Increase operating risk Economic Capital

# Monthly risk report

## Gross Losses Current

YTD

Operational Losses

Credit Losses

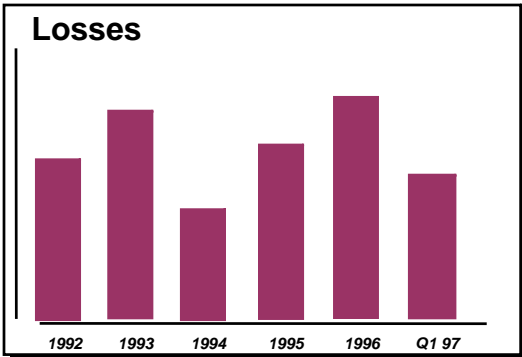
Market Losses

Other Losses

Sub-Total:

Loss/Revenue Ratio:

Accounting for  
actual losses  
incurred



## Risk Incidents

Incident

Exposure

Response

- 1.
- 2.
- 3.
- 4.

Reporting of risk  
incidents, exposures,  
and near misses

## Management Assessment

1. \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

2.

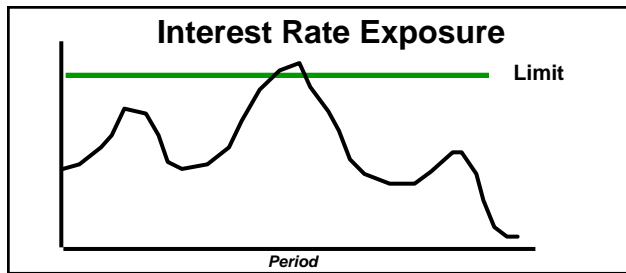
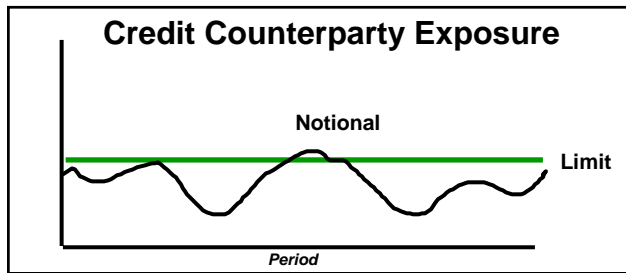
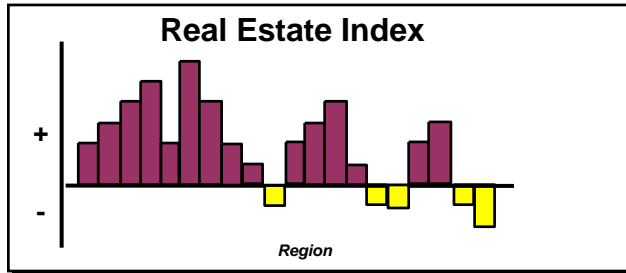
3.

4.

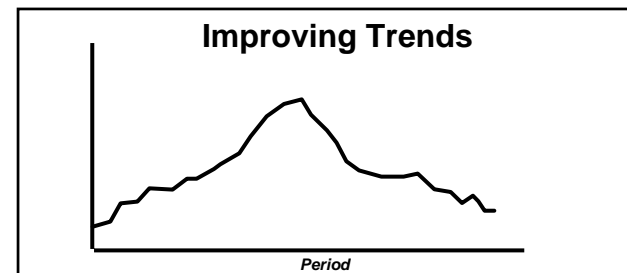
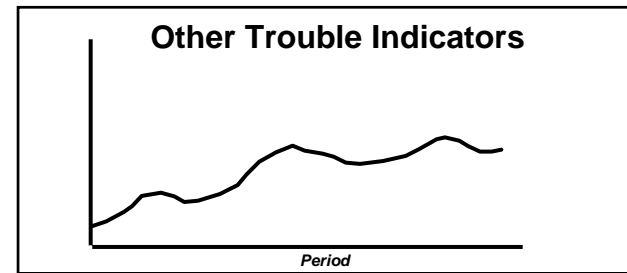
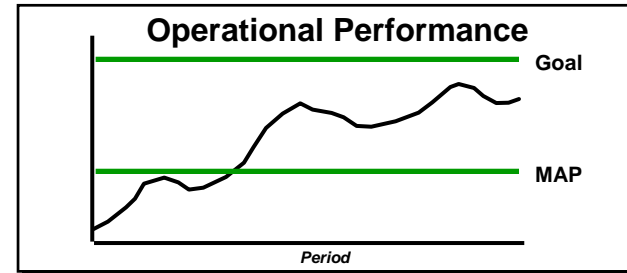
Management  
discussion of major  
risk issues ("what  
keeps me up at  
night")

# Monthly risk report (cont'd)

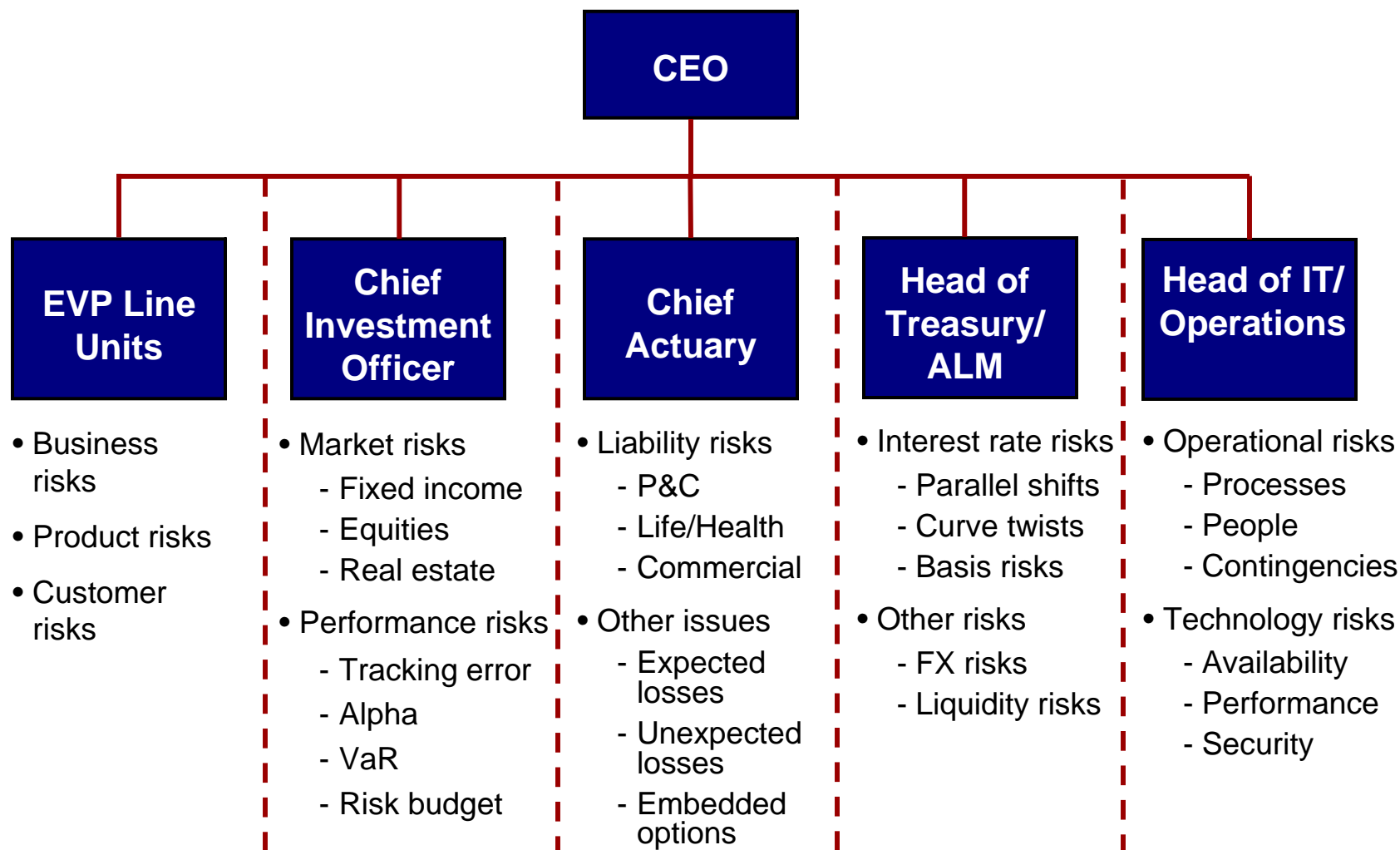
## Core Risk Measures



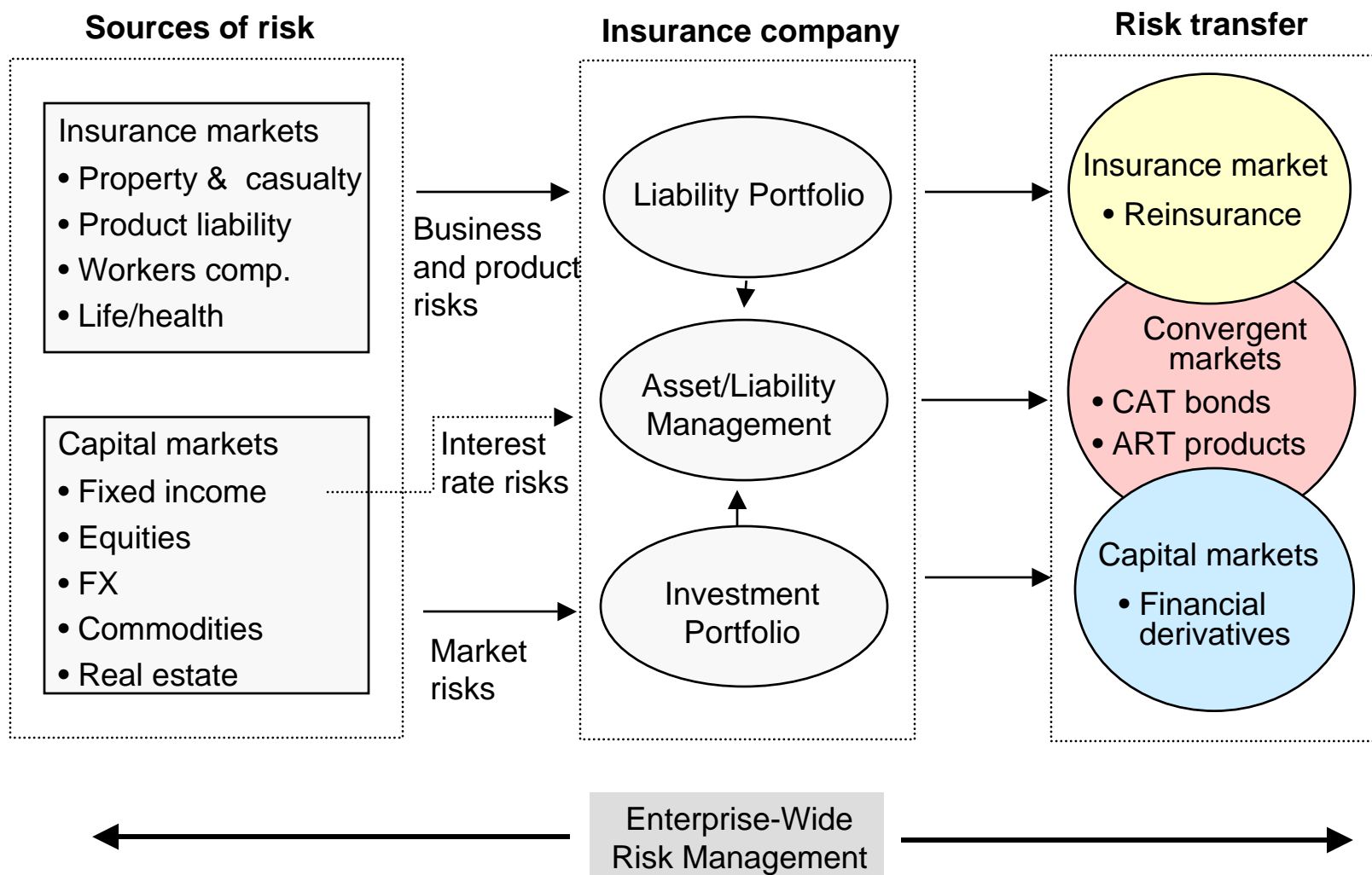
## Key Risk Trends



# Insurance company risk silos



# Insurance company ERM



# Balance the hard and soft side of risk

## Hard Side

- Measures and reporting
- Risk oversight committees
- Policies & procedures
- Risk assessments
- Risk limits
- Audit processes
- Systems

## Soft Side

- Risk awareness
- People
- Skills
- Integrity
- Incentives
- Culture & values
- Trust & communication

## Case study:

*GE Capital*

### Background

- New capital markets business
- Traders hired from foreign bank
- Aggressive business and growth targets

### 2-Year ERM Program

- Established risk policies and systems
- Instilled risk culture
- Survived “Kidder” disaster
- Captured 25% market share with zero policy violations
- Recognized as best practice

# Discussion outline

- The business case for ERM
- Lessons learned and best practices
- ERM going forward – 10 Predictions

## Ten predictions

1. ERM will become the industry standard
2. CROs prevalent in risk-intensive companies
3. Audit committees will evolve into risk committees
4. Economic capital in; VaR out
5. Risk transfer executed at enterprise level
6. Advanced technologies key to advancement
7. A measurement standard will emerge for operational risk
8. Economic accounting becomes standard
9. Risk becomes part of corporate and college programs
10. Salary gap among risk professionals continues to widen

## Q&A

### 1. ERM opportunities for actuaries

- Business requirements
- Skills requirements

### 2. ERM educational standards

- Undergraduate
- MBA
- Corporate (board, PRMIA PRM)

# Thank you

## James Lam's contact information

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