Risk Management for Pension Funds

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Process of Risk Management

- **Who, What, Why, When and How**
  - Primary Goal
  - Dynamic Process
  - Multi-Disciplinary
  - Team Approach
  - Product Comparison

- **Operating Environment**
  - Regulatory Constraints
  - Staff Availability and Skills
  - Funding Base
  - Reporting Requirements

- **Corporate Governance**
  - Fiduciary Responsibility
  - Strategy versus Tactics
  - Constituencies
  - Litigation
  - Role of Auditor

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Getting Started

- **Available resources**
  - Data
  - Documentation
  - People
  - Systems
- **Time Frame**
  - Short-Term Goals
  - Long-Term Goals
  - Beneficiary Payout Frequency
  - Reporting Frequency
- **Performance Standards**
  - With or Without Derivatives
  - Portfolio Approach versus Standalone
  - Fees

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Nuts and Bolts: Risk Measurement

- **Identification**
  - Portfolio
  - Standalone
- **Metrics**
  - Portfolio
  - Standalone
  - Ex Ante
  - Ex Post
  - Comparison
- **Model Risk**
  - Definition
  - Impact on Risk Identification
  - Examples

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Nuts and Bolts: Risk Management

- **Basis**
  - Portfolio versus Standalone Basis
  - Going Alone
  - Working with Outsiders
- **Products**
  - Futures
  - Natural offset
  - Options
  - OTC forwards
  - Swaps
- **Logistics**
  - Trading Costs
  - Reporting
  - Organization

Nuts and Bolts: Risk Control

- **Decision Makers**
  - Basis of Compensation
  - Influence and Authority
- **Checks and Balances**
  - Automated
  - Manual
  - Response Trigger
- **Monitoring**
  - Review Frequency
  - Basis of Monitoring
  - Conditions for Change

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Lessons Learned

- **Debacles**
  - Statistics
  - Common Themes
- **Policy Response**
  - Federal
  - State
  - Industry Associations
- **Moving Forward**
  - “Must Do” Aspects of Risk Management
  - Room for Improvement

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Biographical Information

Dr. Mangiero has conducted business analysis, valuations and deal evaluation and structuring for over fifteen years. A Chartered Financial Analyst and Accredited Valuation Analyst, she is certified by the Global Association of Risk Professionals as a Financial Risk Manager and is a member of their exam committee. She holds a Ph.D. in finance (minor in math), an MBA in finance, an M.A. in economics and a B.A. in economics and has done post-graduate computational finance work at Carnegie Mellon University.

She has written extensively about risk management and valuation for publications such as *Investment Lawyer*, *RISK*, *Risk Review*, *Valuation Strategies* and the *Expert Evidence Report*. Her book entitled *Risk Management for Pensions, Endowments and Foundations* for John Wiley & Sons, Inc. is due out in the summer of 2004.

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Derivative Instruments: Product Comparison

Instrument Class	*Futures*	*Over-the-counter Options*	*Swaps*
Credit Risk	Lower because of clearinghouse and daily settlement	Higher because of direct contracting with counterparty	Higher because of direct contracting with counterparty
Economic Risk	Depends since standardized terms make it harder to hedge exact underlying exposure but easier to value derivative instrument	Depends since customized terms make it easier to hedge exact underlying exposure but harder to value derivative instrument	Depends since customized terms make it easier to hedge exact underlying exposure but harder to value derivative instrument
Legal Risk	Lower due to regulation	Higher due to evolving case law	Higher due to evolving case law
Liquidity Risk	Lower for most contracts because of standardized terms	Higher especially for longer-term contracts	Higher but partially reduced because of intervening cash settlements
Operational Risk	Depends on quality of staff and technology systems in place to track and make daily settlement cash flow transfers	Depends on availability and knowledge of staff to monitor and possibly exercise options (Note: Systems may be required if many options are bought or sold.)	Depends on quality of staff and technology systems to track and make intervening settlement cash flow transfers

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Five C's of Risk Management

COMMITMENT
COMPREHENSION
CONTROLS
COMPUTERS
COMMUNICATIONS