



Risk Management for Endowments

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Risk Management Basics

- **Uncertainty of Realized Return**
- **Financial Risk Management Versus Hazard Risk**
- **Dynamic Process**
- **Integrated With Investment Strategy**
- **Good Information is Key**
- **Risk Management \pm Risk Minimization**
- **Risk Measurement Varies**



Endowments Face Many Risks

- **Concentration Risk**
- **Currency Risk**
- **Default Risk**
- **Inflation Risk**
- **Interest Rate Risk**
- **Legal Risk**
- **Liquidity Risk**
- **Lost Donor Risk**
- **Operational Risk**
- **Political Risk**
- **Prepayment Risk**
- **Reputation Risk**
- **Settlement Risk**

Endowments Are Different

- **Donor Preferences**
 - Asset Allocation
 - Liquidity
 - Disbursement Amounts
 - Required Rate of Return
 - Restricted Investments
 - Scrutiny

- **University Goals**
 - Strategic Plan
 - Compensation of Financial Professionals
 - Conflicts of Interest
 - Spending Rates
 - Restricted Investments
 - Technology Commitment

- **Performance**
 - Rolling Average
 - Transparency

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
 - Accountability versus Authority
 - Funding Base
 - Reporting Requirements

- **Corporate Governance**
 - Fiduciary Responsibility
 - Professional Liability Insurance Costs
 - Multiple Constituencies
 - Litigation
 - Role of Auditor



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
- Competing Standards

Nuts and Bolts: Risk Measurement

- **Identification**

- Portfolio
- Standalone

- **Metrics**

- Portfolio
- Standalone
- Ex Ante
- Ex Post
- Comparison

- **Model Risk**

- Definition
- Impact on Risk Identification
- Examples



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
 - Compatibility of Reports
 - Organization

Derivative Instruments: Sample Product Comparison

<i>Instrument Class</i>	<i>Futures</i>	<i>Over-the-counter Options</i>	<i>Swaps</i>
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

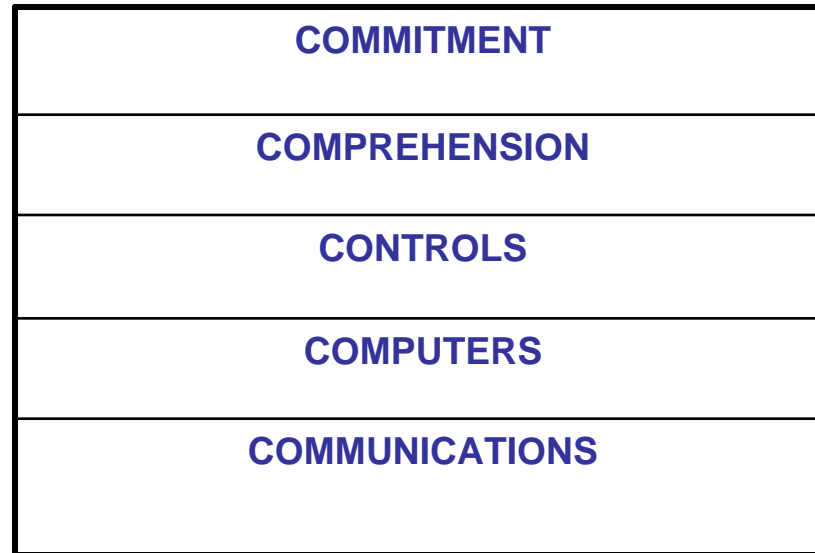
Nuts and Bolts: Risk Control

- **Decision Makers**
 - Basis of Compensation
 - Influence and Authority

- **Checks and Balances**
 - Automated
 - Manual
 - Response Trigger
 - Internal versus External

- **Monitoring**
 - Review Frequency
 - Basis of Monitoring
 - Conditions for Change

Five C's of Risk Management



Source: *Risk Management for Pensions, Endowments, and Foundations*

by Susan M. Mangiero (John Wiley & Sons, 2004)

Lessons Learned

- **Debacles**
 - Statistics
 - Common Themes

- **Policy Response**
 - Federal
 - State
 - Industry Associations

- **Moving Forward**
 - “Must Do” Aspects of Risk Management
 - Room for Improvement



Some Financial Web Sites

- <http://www.numa.com> (Numa Financial Systems)
- <http://www.erisk.com> (ERisk)
- <http://www.defaultrisk.com> (DefaultRisk.com)
- <http://www.iafe.org> (International Association of Financial Engineers)
- <http://www.garp.com> (Global Association of Risk Professionals)
- <http://www.isda.org> (International Swaps and Derivatives Association, Inc.)
- <http://www.prmia.org> (Professional Risk Managers' International Association)
- <http://www.bis.org> (Bank for International Settlements)
- <http://www.baselalert.com> (BaselAlert.com)
- <http://www.cpaspan.com/questions.htm> (AICPA's Common Sense Questions About Derivatives)



Biographical Information:

Susan M. Mangiero, AVA, CFA, FRM, Ph.D.

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. (2004) addresses financial corporate governance for trustees and other fiduciaries.

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Mr. Greg Dyra the Assistant Treasurer at Vanderbilt University responsible for ongoing assessment of the long term investing philosophy, asset allocation, public equity and fixed income investments and hedge funds for the \$2 billion endowment.

Mr. Greg Dyra has many years of experience in the investment field, having worked with organizations such as Mistral International, LLC and Summit Strategies Group. He was a portfolio manager and investment analyst at Northwestern University, overseeing asset allocation modeling for the \$3.0 billion endowment and evaluating managers in many asset classes including alternative investments, equities, fixed income and real estate. As a public accountant at Arthur Andersen, Greg served investment companies, an ultra high net worth individual and small business audit clients in Hamilton, Bermuda and Chicago, Illinois.

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