IFSWF Subcommittee #2

Good Practices in Investment and Risk Management

Sydney – May 2010

Presentation Overview

> Risk Group Terms of Reference

> Industry Good Practices in Investment and Risk Management

> Questionnaire Results

> SWF Good Practices in Investment and Risk Management

Good Practices Post-Crisis

'Shareholders, Board members, senior management, employees, advisers and auditors, need to review the extent to which changes in risk management need to take place within their firm.'

*- Financial Risk Outlook 2010**

**Financial Risk Outlook 2010,* published 10 March 2010 by the Financial Services Authority (FSA) , can be found at:

<http://www.fsa.gov.uk/pages/Library/Corporate/Outlook/fro_2010.shtml>

Terms of Reference (TOR) Item #1:

'To facilitate co-operation between SWFs in initiating, developing, and monitoring good practices in investment and risk management'

Industry Good Practice in Investment and Risk Management

Good practice calls for a comprehensive portfolio and risk management framework that quantifies portfolio risks in a manner that incorporates theoretical innovation but is also consistent with market dynamics faced by practitioners.

> The framework calls for macro investment policy design – including strategic asset allocation, currency hedging policy, selection of asset managers, and structuring exposure to alpha – by senior investment decision-makers.

> Portfolio construction should incorporate innovations in investment risk management, which include: multi-risk, event-sensitive, and full-scale optimization technologies; regime-dependent risk estimation; and measures of continuous exposure to loss.

> The portfolio should be subjected to rigorous stress-testing using regime-specific risk estimates that reflect a broad distribution of economic and financial scenarios, including systemic shocks.

> Implementation risk should be carefully managed, and post-implementation investment performance should be evaluated on a risk-adjusted basis.

Questionnaire Results

Investment and Risk Management Questionnaire - Results

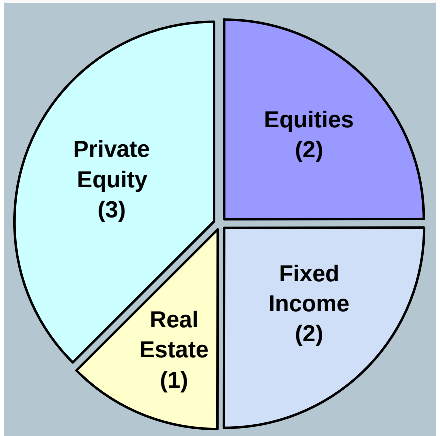
Several themes emerged from analysis of Questionnaire responses:

> Asset Allocation > Manager Selection > Security Selection

> The value of quantitative methods is widely recognized and appreciated, but risk of misguided application is real.

> VaR should be used, but SWF practitioners are largely unsatisfied with conventional measures.

What is the Most Challenging Asset Class?

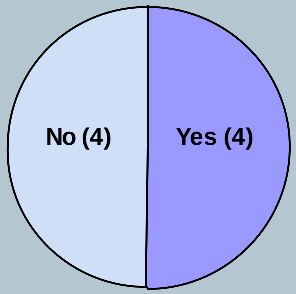


Investment and Risk Management Questionnaire - Results

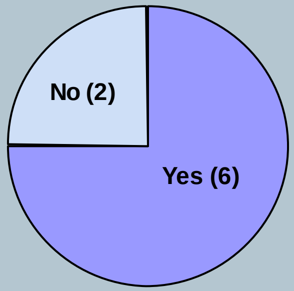
Several themes emerged from analysis of Questionnaire responses:

- Regime-specific risk estimation and assessment of correlation asymmetry should be used to construct and stress-test portfolios.
- Market and credit (counterparty) risks are ranked most important for the next 3 years (legal risk ranked least important).
- Portfolio performance should be monitored and stress-tests should be conducted on a monthly or quarterly basis.

Do You Use Currency Hedging?



Should SWFs Optimize Currency Hedge Ratios?



SWF Good Practice in Investment and Risk Management

SWF Good Practice in Investment and Risk Management

By considering industry good practices through the unique lens of an SWF market participant, SWF good practices can be reached.

> *'The use of conventional VaR analysis needs to be reviewed. A full reassessment of risk should include a reassessment of the tools available for risk management.'*

> *'The experience of the past several months has demonstrated that reliance on historical measures of risk, particularly when the historical period used was arguably abnormally stable, [can be misleading].'*

> *'Performance and risk measurement have always been an integral part of the [organization]. The risk and performance unit was established as an independent unit reporting directly to the Managing Director.'*

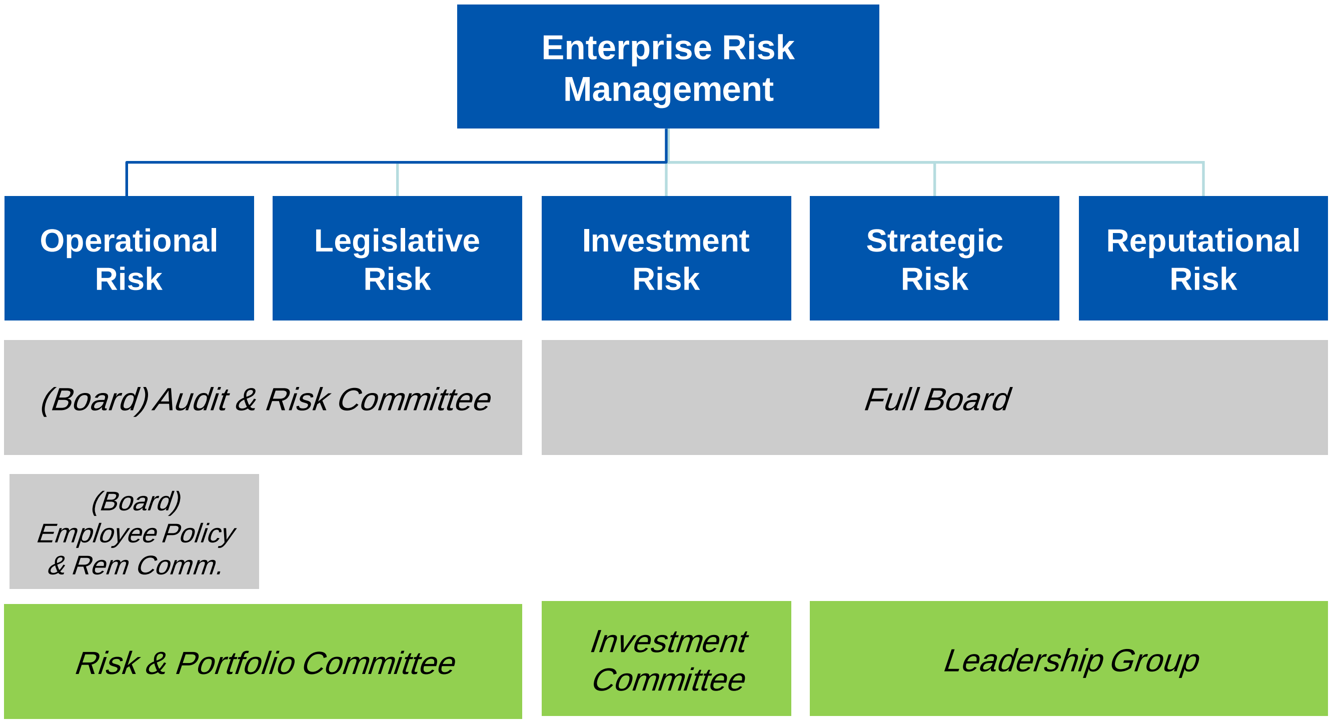
> *'Risk management is about being comfortable that the return expected on the portfolio is adequate compensation for the risk exposures.'*

Good Practice in Context

While each SWF must be managed with its unique objectives and circumstances considered foremost, there are several identifiable good practices that are applicable to most SWFs.

An Example of SWF Good Practice in Organizational Structure

Five risks managed under an enterprise framework, and suggested committee oversight responsibility for risk:



* The Leadership Group and Full Board remains **accountable** for all risks, however risk **review and monitoring** is shared between various board and management committees.

Good Practice – Current Areas of Focus

Industry participants utilize sophisticated analysis when considering the macro issues in investment and risk management.

- *Improving portfolio resilience to inflation* – Multi-goal optimization and conditional parameter estimates to enhance portfolio performance in specific market regimes without deviating too far from the strategic asset mix.
- *The opportunity cost of delaying a portfolio transition* – Relative loss analysis to estimate the probability that a legacy portfolio will underperform its new benchmark over a range of time horizons.
- *Optimization with fat tails* – Full Scale Optimization builds efficient portfolios using non-traditional, "kinked" utility functions to minimize the chance of breaching specific loss thresholds.
- *Excess returns: alpha or beta?* Regression-based factor analysis and risk attribution identifies sources of alpha and separates sector, size, value, and beta tilts from stock picking skill.

Controlling Portfolio Duration

Optimized rebalancing maintains portfolio duration within asset allocation constraints.

Backtesting shows that periodic rebalancing can reduce deviations from target duration while staying within tolerance bands around the strategic asset mix.