



INTERNATIONAL FORUM OF SOVEREIGN WEALTH FUNDS

Investment and Risk Management

# Proposed Best Practices in Investment and Risk Management for Sovereign Wealth Funds

**International Forum of Sovereign Wealth Funds**  
Investment and Risk Management Sub-Committee

# Sub Committee Members and Terms of Reference

“Sub-committee Two of the Forum has been established to provide a consultative forum that can effectively address and discuss matters relating to investment and risk for international Sovereign Wealth Funds”.



**Government of Alberta**  
Finance and Enterprise



**NEW ZEALAND  
SUPERANNUATION  
FUND**

*The word “risk” derives from the early Italian risicare, which means “to dare”. In this sense, risk is a choice rather than a fate.*

-Peter L. Bernstein, Against the Gods, The Remarkable Story of Risk.

## Topics to be Covered

- > **Risk Management as a Holistic Process**
- > **Lessons Learned from the Global Financial Crisis**
- > **Risk Management within the Investment Process**
- > **Analysis and Monitoring**
- > **Risk Solutions in Practice**

## Risk Management as a Holistic Process

**Investment risk for Sovereign Wealth Funds has many facets.**

- > **Liquidity Risk**
- > **Credit/Counterparty Risk**
- > **Operational Risk**
- > **Market Risk**
- > **Transparency Risk**
- > **Legal Risk**
- > **Reputational Risk**

## Lessons Learned from the Global Financial Crisis

**Important changes are taking place in the practice of risk management. These changes will influence how Sovereign Wealth Funds manage risk going forward.**

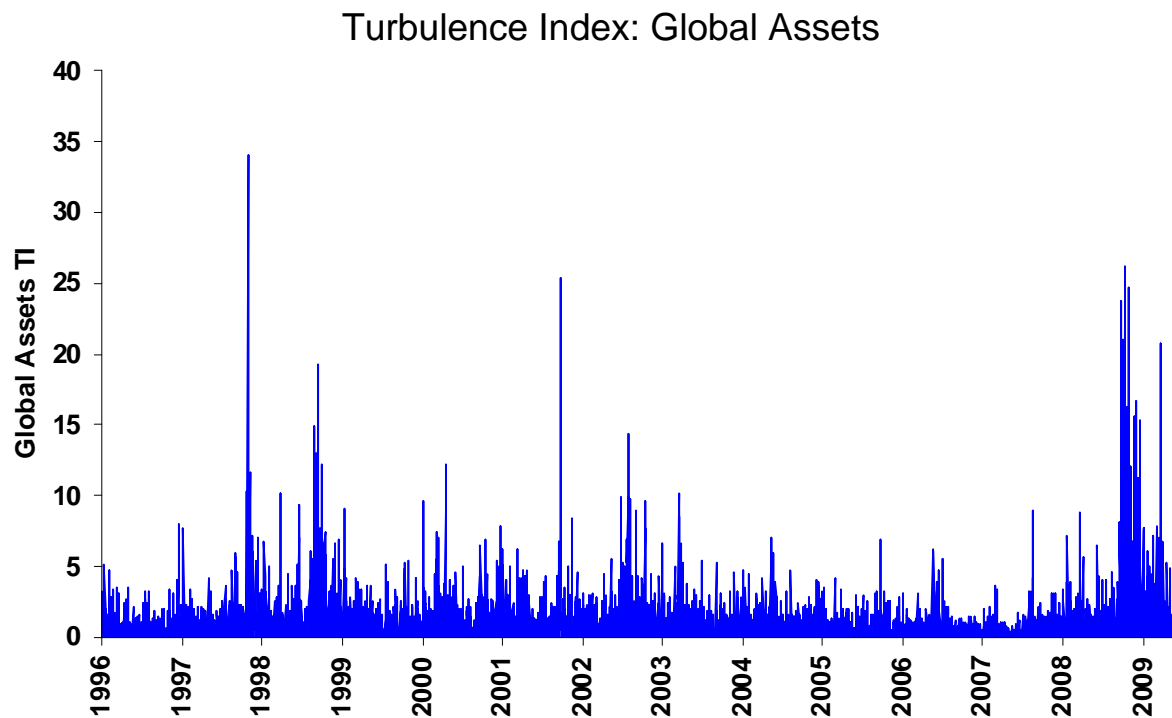
- > Risk parameters are highly unstable through time because noise-driven volatility differs from event-driven volatility.
- > Investors typically measure risk as exposure to loss at the end of their investment horizon, even though this view of risk ignores what might happen along the way.
- > During crises, when all investors head for the door at the same time, liquidity risk can become the most important source of risk.
- > Perhaps the most universally accepted precept of prudent investing is to diversify; yet this precept grossly over simplifies the challenge of portfolio construction.

### The SWF Perspective

“The use of conventional VaR analysis needs to be reviewed. A full reassessment of risk should include a reassessment of the traditional tools available for risk management.”

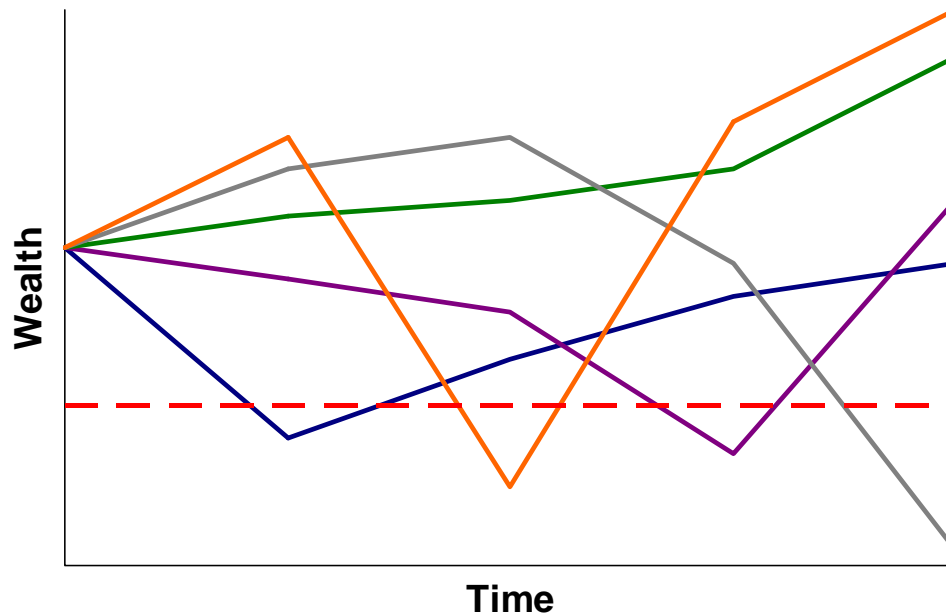
## Event-Driven Volatility: Market Turbulence

**In a turbulent period the returns of a set of assets are unusual: they constitute a multivariate outlier. Turbulence can arise from an unusual return of a single asset or from unusual interactions between assets.**



## Within-Horizon Risk Measurement

**Within-horizon probability of loss measures the likelihood that an investment will depreciate to a particular level from inception to any point during a specified horizon and not just at its conclusion.**

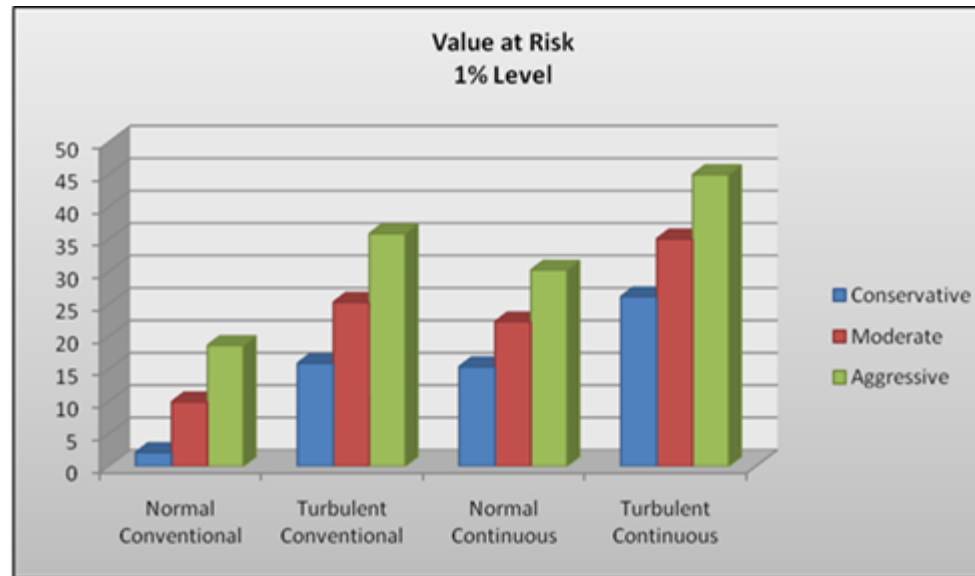




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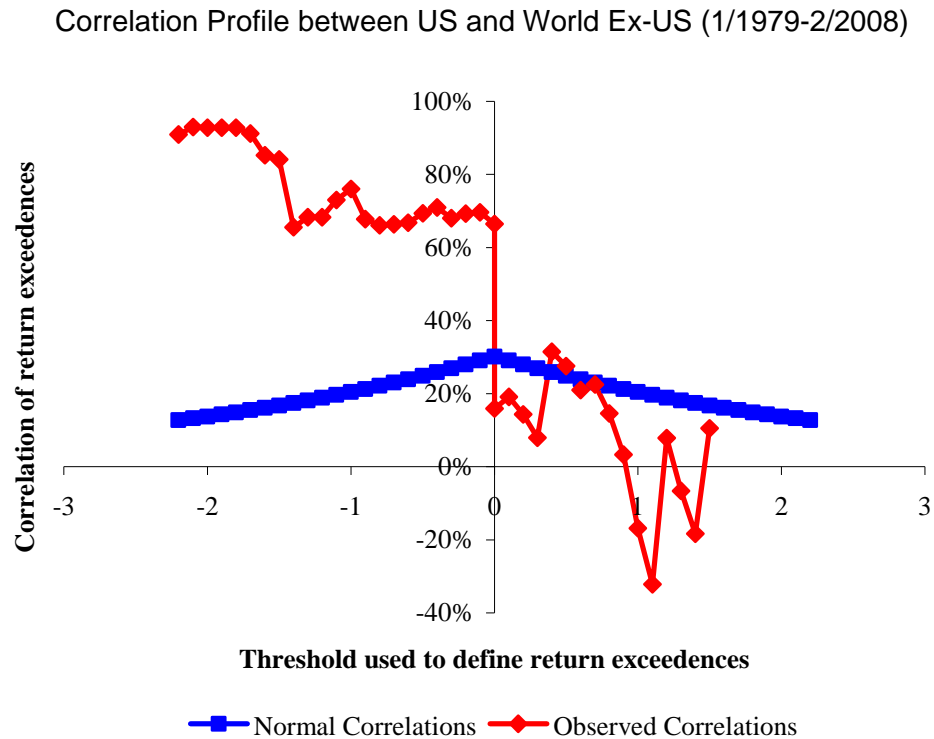
Value at Risk for a Globally Diversified,  
Multi-Asset Class Portfolio



Source: "Asset Allocation," *Windham Investment Review*, Fall 2007

## The Myth of Diversification

**Financial theory and quantitative tools must bend to real world complexities:  
Diversification may break down in difficult market environments.**



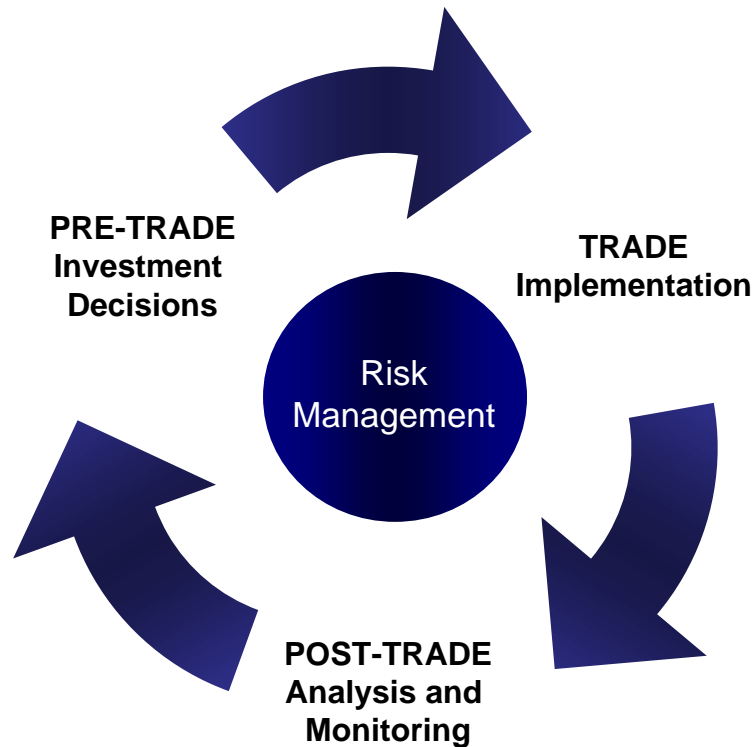
Source: Kritzman, Chua, and Page, "The Myth of Diversification", Forthcoming in the Journal of Portfolio Management, Fall 2009.

### The SWF Perspective

"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]."

## Risk Management as a Holistic Process

**Risk management involves all phases of the investment process and feedback between post-trade measurement and asset allocation is crucial.**



### The SWF Perspective

“Performance and risk measurement have always been an integral part of the Fund. The risk and performance unit was established as an independent unit reporting directly to Senior Management.”

## Pre-Trade: Investment Decisions

**Risk management addresses the important macro issues of investment management, such as:**

- > How to determine risk tolerance?
- > How to determine the optimal strategic asset allocation?
- > How to structure exposure to alpha?
- > How to incorporate assets with non-normal return distributions?

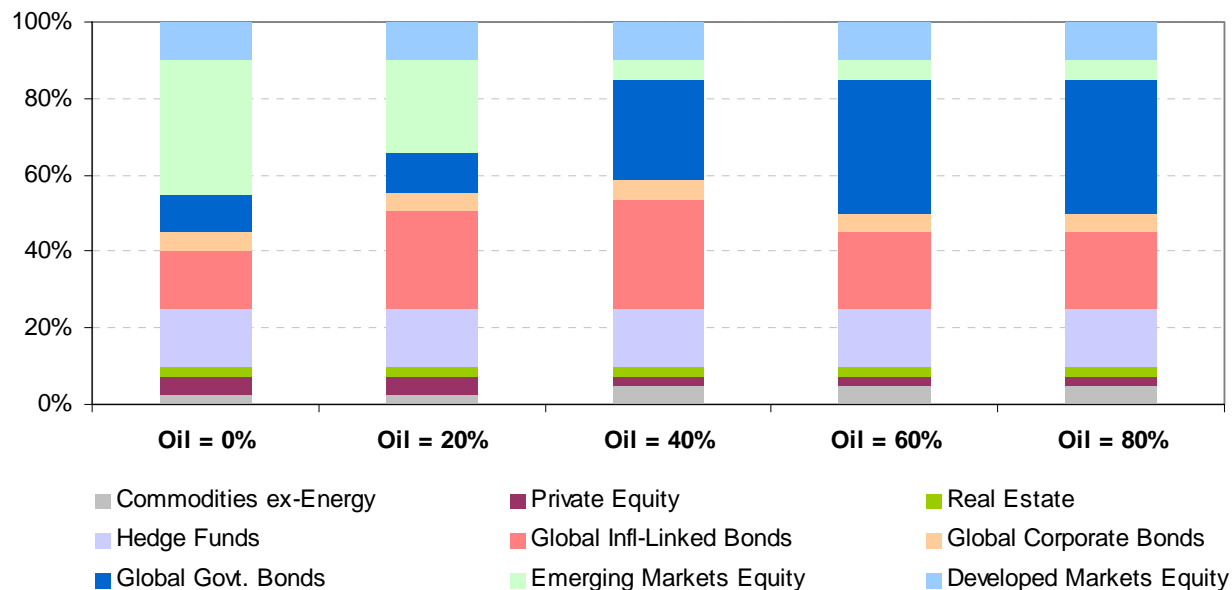
### The SWF Perspective

“Risk management is about being comfortable that the return expected on the portfolio is adequate compensation for the risk exposures.”

## Asset Allocation with Oil-in-the-Ground as an Asset Class

**When the fund is viewed in the broader context of the Sovereign itself, risk management includes consideration of the natural resource.**

Optimal Total Portfolio Weights vs. Oil Allocation



### The SWF Perspective

“The Fund does not invest in oil stocks; it’s important for us to diversify our exposure. In fact, we prefer to invest in alternative energy ventures.”

For an overview of a related framework for hedging the market risk of oil reserves, see: Gintschel and Scherer, *Journal of Asset Management* (2008), vol. 9, 3, 215-238.

## Risk Management as a Holistic Process

**Risk management involves all phases of the investment process and feedback between post-trade measurement and asset allocation is crucial.**



## Implementation

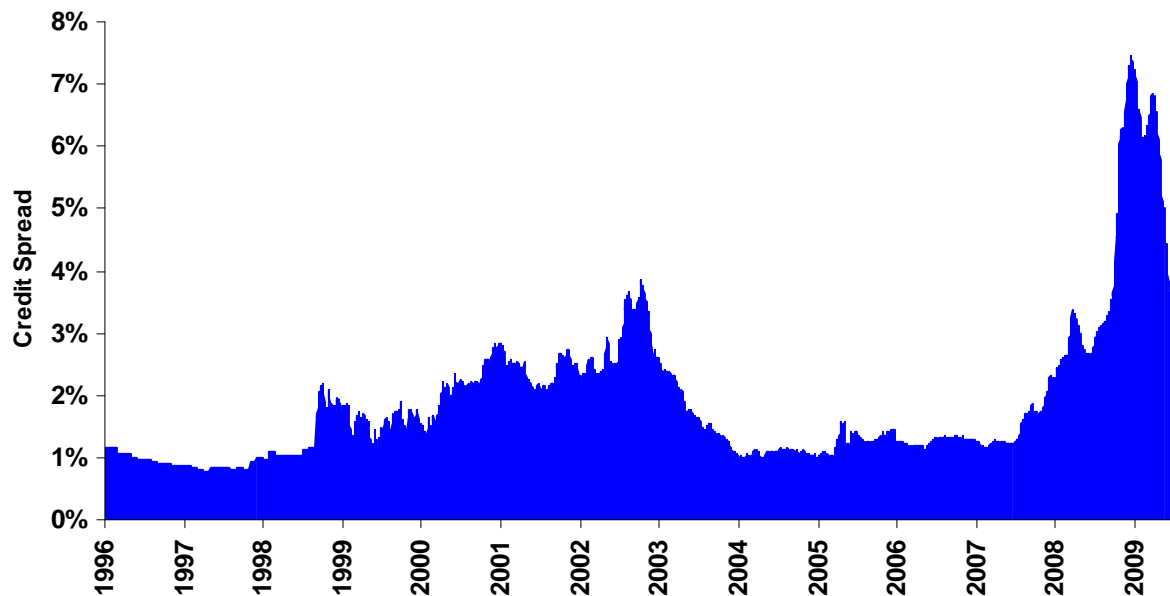
**Large funds face significant implementation shortfall, defined as the difference between performance on paper and in reality.**

- > The risk of delaying the sale of a security intended for disposition or the purchase of a security targeted for acquisition can be substantial.
- > For large portfolios, structural changes must be managed in a risk-controlled and cost effective manner.
- > When rebalancing, investors must trade off the cost of sub-optimality with the cost of restoring the strategic asset allocation.
- > The alpha generated by active management strategies decreases as assets under management (AUM) increase.

## Liquidity Risk: Credit Spreads

**Credit spreads widen considerably in market crises.**

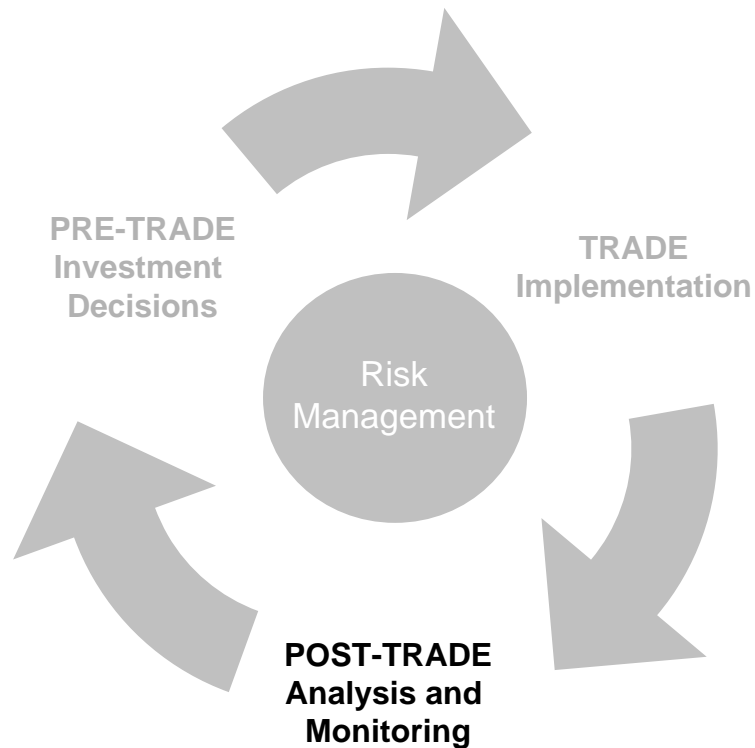
Credit Spreads: Corporate BAA – Treasury Bonds





## Risk Management as a Holistic Process

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## Risk Analysis and Monitoring

**Risk management involves all phases of the investment process and feedback between post-trade measurement and asset allocation is crucial.**

### Questions Addressed by Performance and Risk Measurement Unit

How are my investments doing – Gross and net?  
How are my investments doing – Against my peers?  
What are my investment managers really good at?  
How does that return compare to my benchmark?  
I'm away from my policy index – why?  
What is my true exposure?  
How did we fare in yesterday's downturn?  
What is my manager's value added?  
Did that security really contribute that much to my return?  
Is my cash exposure in line with my compliance guidelines?  
Am I exposed to country/sector/security concentration risk?  
Can't technology help me manage all this information?

### The SWF Perspective

“This Fund produces five comprehensive Performance and Risk Reports on a quarterly basis, which include ex-post and ex-ante risk analysis, as well as performance and style analysis.”

## Risk Solutions in Practice

- > **With a solid risk infrastructure in place, whether it is internal software or outsourced solution, how do you ensure the information presented is used to best effect?**
- > **What is the best format to disseminate the information?**
- > **How frequently should it be reviewed and by whom?**
- > **What is the process and governance around decision making?**