



Northern Trust's Institutional Client Conference

Global Vision, Focused Execution

Leveraging the Investment Decision Process: Dynamically Managing Beta and Alpha

Sanjay Muralidhar

Chief Executive Officer, M^{cube} Investment Technologies, LLC



Northern Trust

Copyright © 2005 by Northern Trust Corporation

A little about M^{cube} Investment Technologies

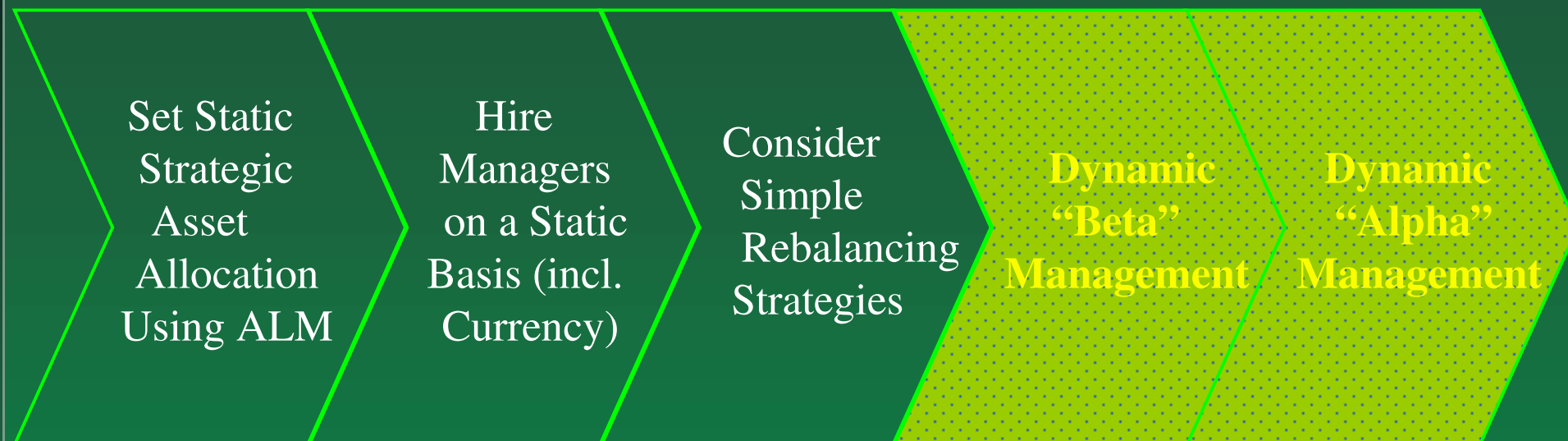
- ◆ Founders with experience in public (World Bank), corporate (Squibb, Readers Digest) and asset management companies (JP Morgan, FX Concepts)
- ◆ Developing web-based products to help investors make better decisions
- ◆ Have written books and papers on effective asset management
- ◆ Flagship product: AlphaEngine being used by large and small public and corporate funds globally, asset managers and fund of hedge funds



www.mcubeit.com



Roadmap: From Static to Dynamic Portfolios



- ◆ Traditional approach – excess returns from external managers
- ◆ New approach – Add excess returns from informed decisions
- ◆ Transparency and governance are critical



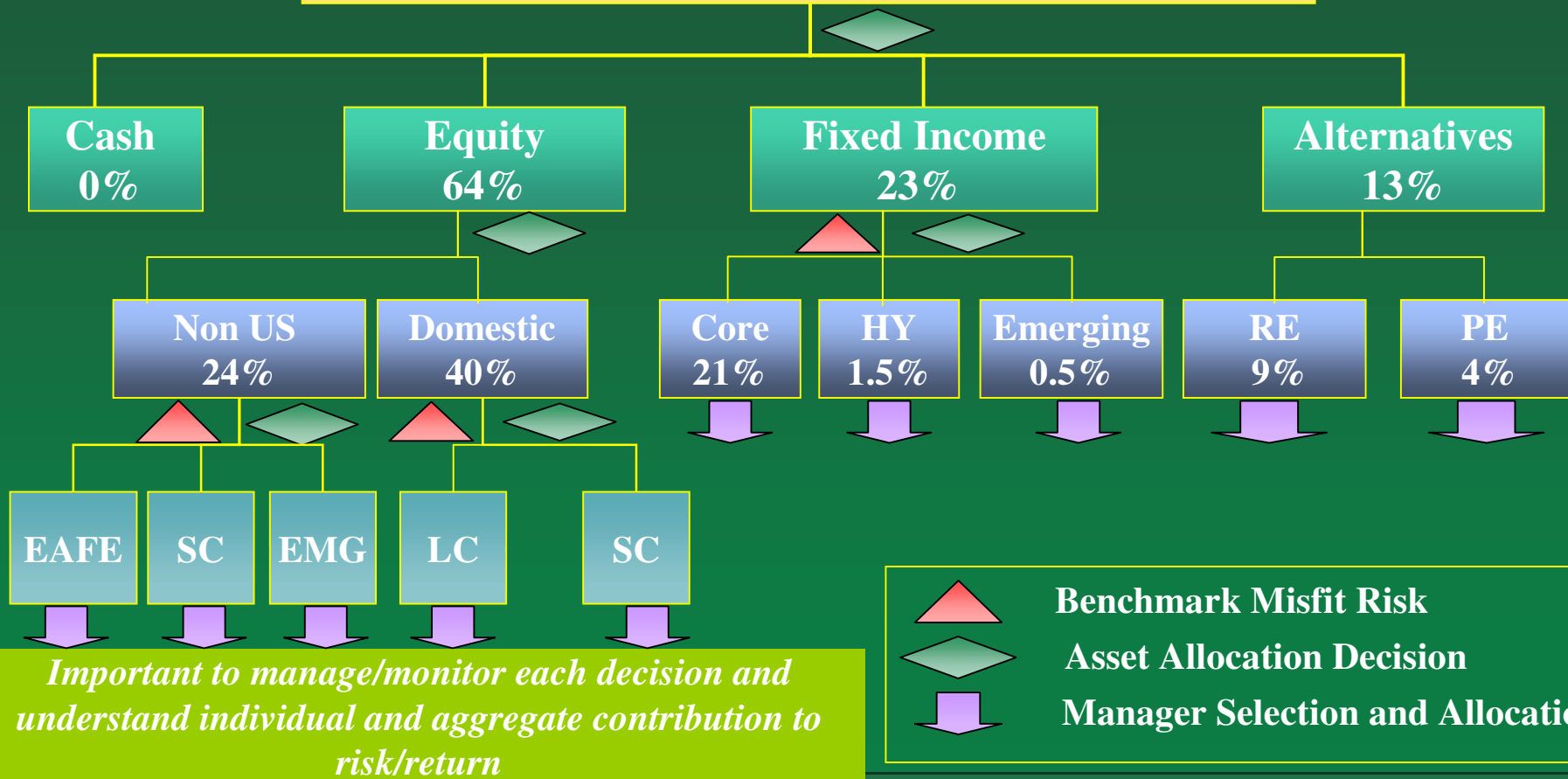
Typical Client's Investment Philosophy

- ◆ Asset allocation: key source of return
- ◆ Ranges will be maintained through a disciplined rebalancing program
- ◆ Diversification by and within asset class is the primary risk control element
 - Diversification in the selection of assets for the target allocation
 - Diversification in the selection of managers for mandates



Investment Decision Process: Many Embedded Decisions

Total Portfolio/Liabilities



The “Old” Static Framework for Beta

- ◆ Passive: Calendar or range-based rebalancing
- ◆ +/- 3% or +/-5% range around target allocation
- ◆ When range hit, go either to range or target or in-between
- ◆ What happens within range? Usually, this is not clear!
- ◆ Policy requires discretion = Tracking Error!



The “Old” Static Framework for Alpha

- ◆ Single asset class focus: Optimize information ratio on active managers for a risk budget
- ◆ M^3 measure shows why this is incorrect (for single and multi-manager portfolios)
- ◆ Modigliani²: Could hire a low IR manager!
- ◆ Dynamic management of alpha: Cash flows make pension funds active – already make decisions on who to give money to and when!



*Passive Rebalancing: Can Be “Risky”**

- ◆ Buy and Hold: Let Portfolio Drift
 - ◆ -0.08% annualized return; 1.1% tracking error
 - ◆ Worst drawdown = -2.57% (multi-year period)
- ◆ +/-3% range for all asset classes**
 - ◆ Impact: -0.12% annualized return for 0.24% tracking error
 - ◆ Worst drawdown: much lower at -1.02%

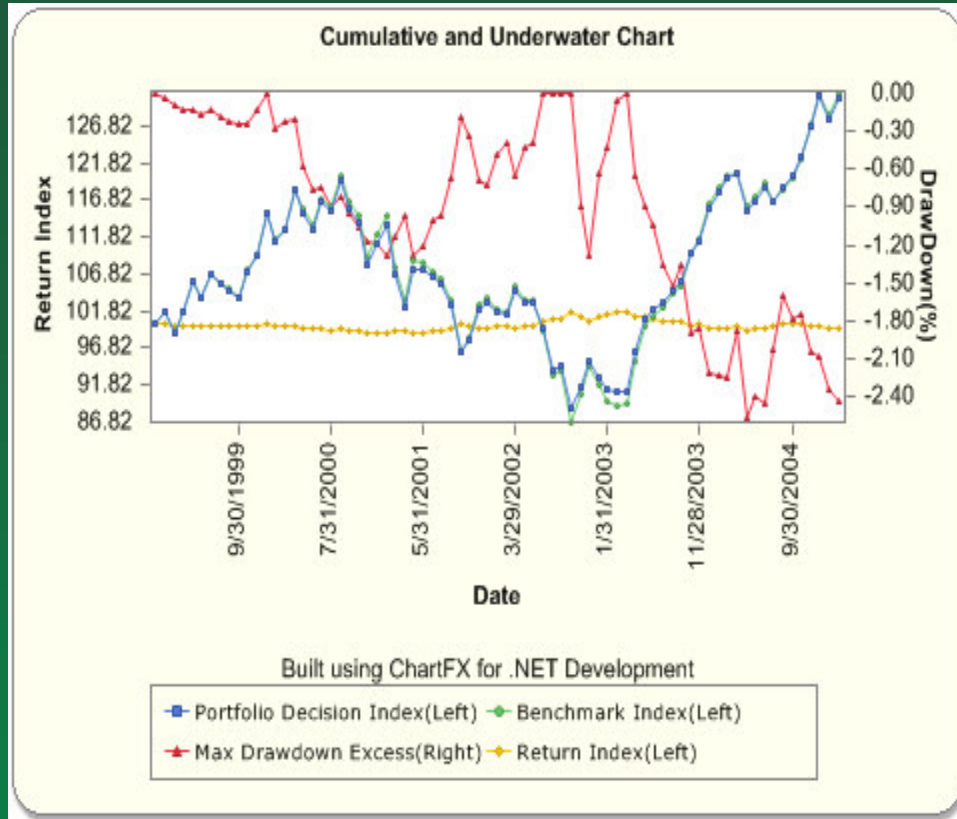
**Rebalancing was evaluated from 01/99 – 02/05. No transaction costs assumed*

***Range-based rebalancing = if any asset drifts to the range limit, all assets are rebalanced to benchmark*



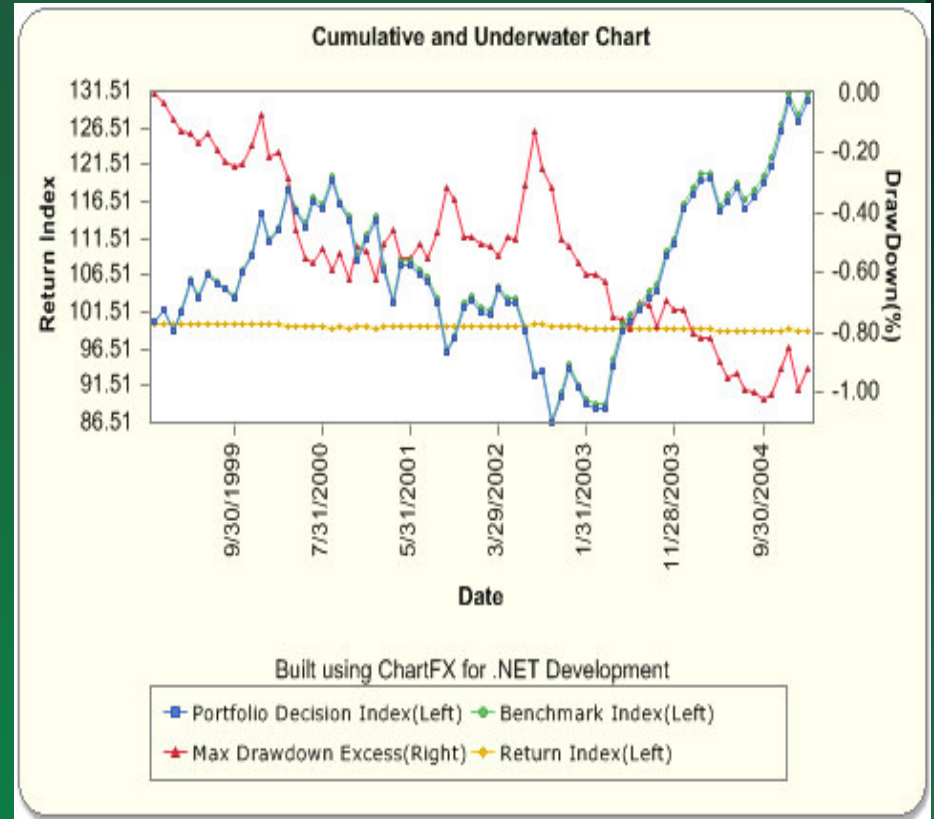
“Passive” Rebalancing: Not Cost/Risk Neutral

Buy and Hold



Annualized Excess Return: -0.08%
Drawdowns can be large!!

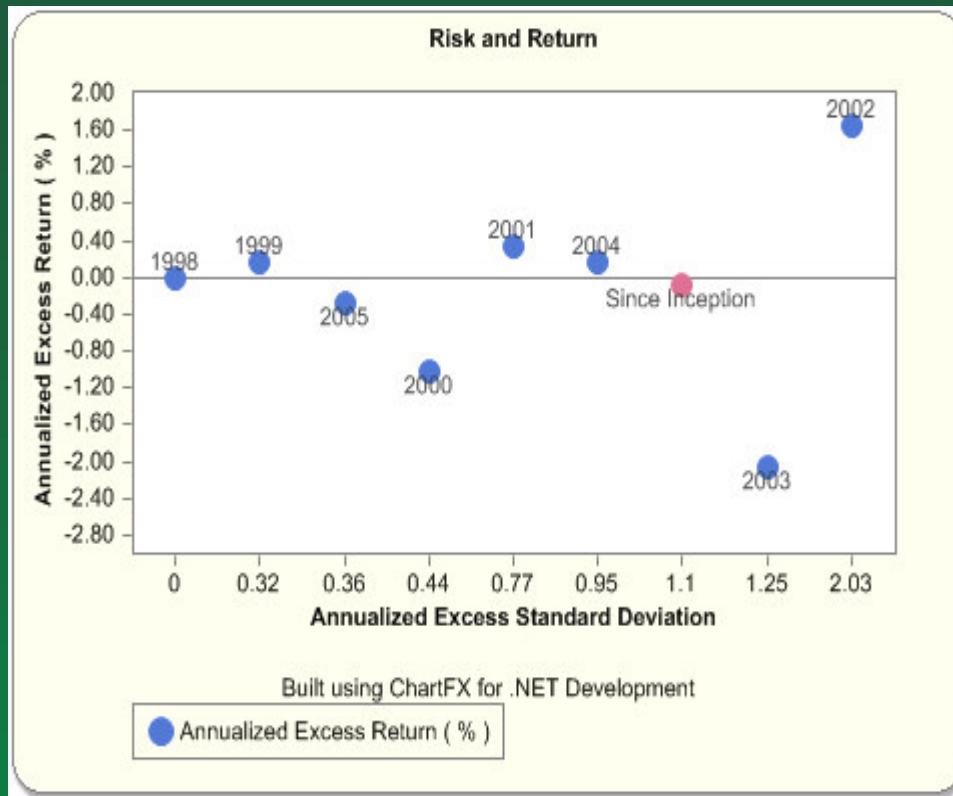
Rebalancing



Annualized Excess Return: -0.12%
Extended Drawdown

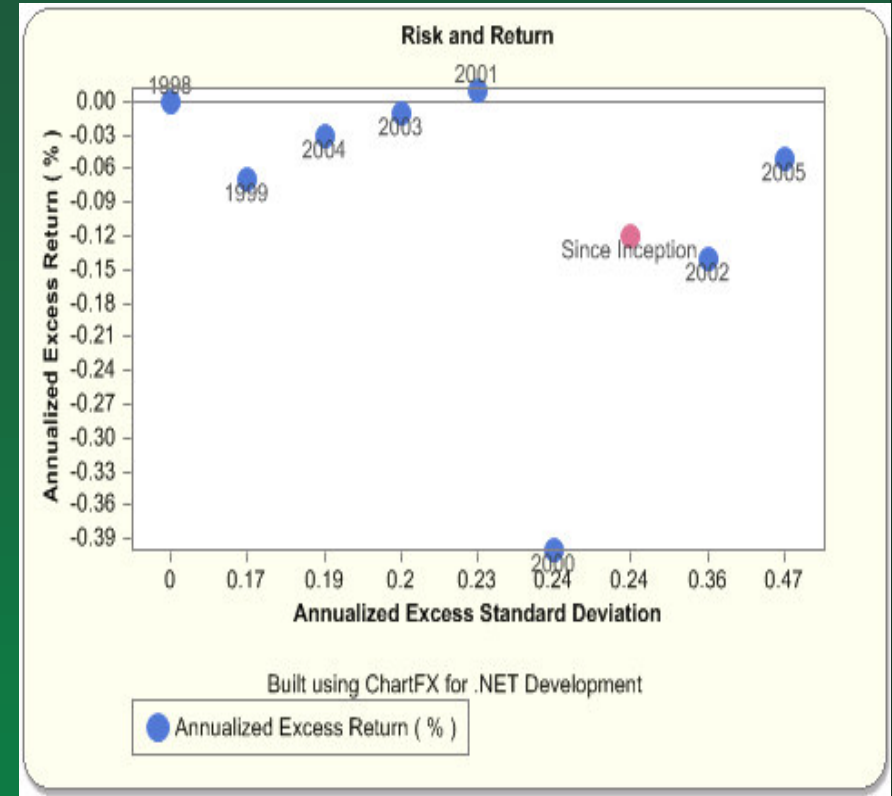
“Passive” Rebalancing: Not Cost/Risk Neutral

Buy and Hold



Annualized Excess Return: -0.08%

Rebalancing



Annualized Excess Return: -0.12%

Most years negative



Rebalancing – Comprehensive Approach

- ◆ The current rebalancing policy takes an implicit view within the target ranges. It is a buy and hold strategy within the asset ranges
- ◆ Make implicit decisions explicit and manage fund risk effectively
- ◆ Rebalance fund assets using state-of-the-art investment practice thereby improving governance, transparency and alpha



Understanding Diversification or “Low Correlations”

- ◆ Also means asset class performance will go through cycles – this aspect is often ignored
- ◆ Intelligent staff cannot sit by as markets evolve
- ◆ Managers can have low correlation with each other
- ◆ Manager cyclicalities – why fund a manager who is starting to underperform?
- ◆ Role of cash flows in implementing DYNAMISM



Informed Decisions within Ranges – Dynamic Beta Management

- ◆ Portfolio rebalancing is an “active” decision
- ◆ Use cash flows to structure fund appropriately
- ◆ Investment decision process creates opportunity
 - ◆ Large cap vs. Small cap
 - ◆ Core vs. HY vs. EMG
 - ◆ EAFE vs. EMG vs. Small

Can staff use discretion to create value?

Key: Have a robust, transparent, consistent process



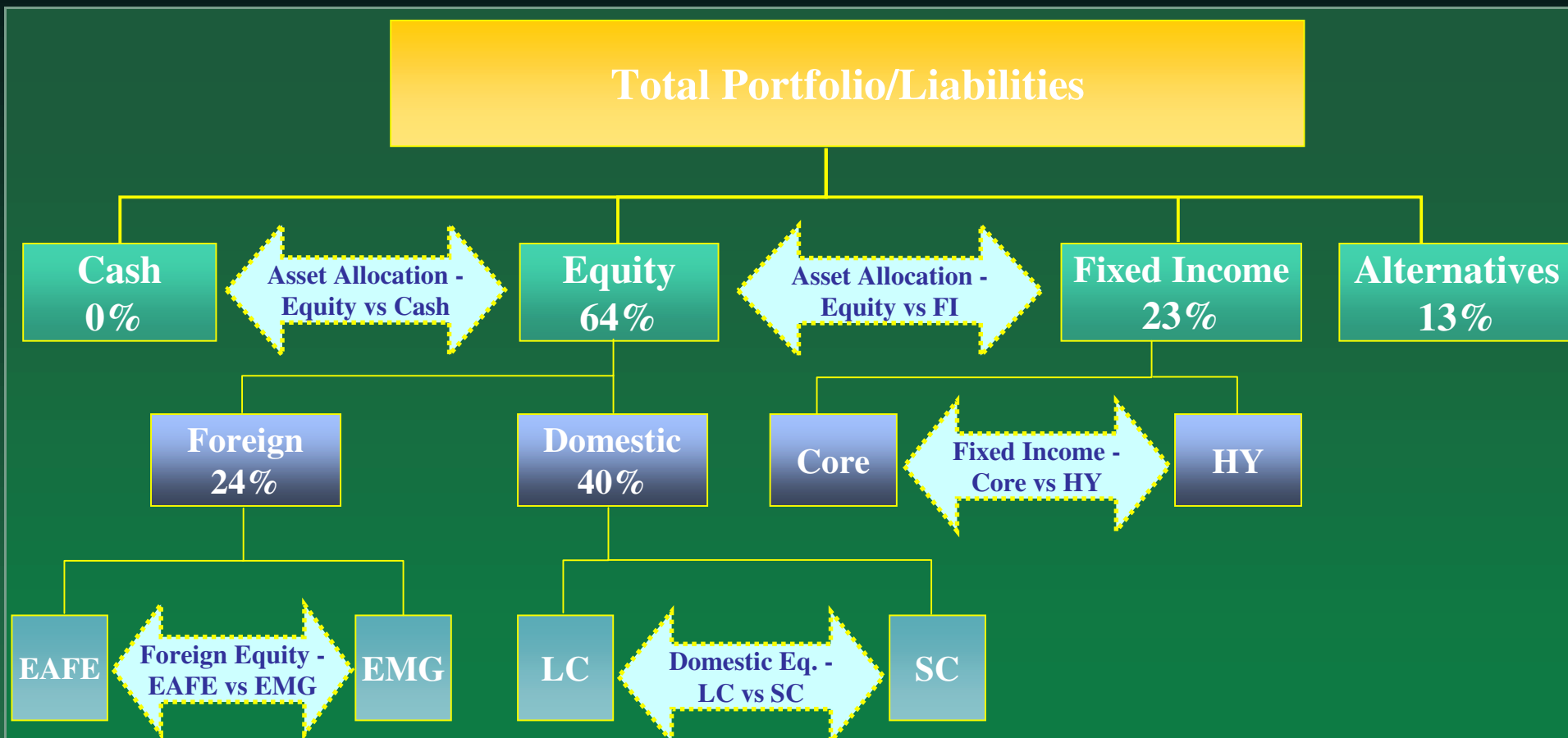
Improving the Quality of Decisions – Simple Steps

- ◆ Clear investment objectives followed by consistent evaluation and performance metrics
- ◆ Test variety of rules to use for specific decisions
- ◆ Many resources can be tapped
 - ◆ Internal staff – have ideas that are underutilized
 - ◆ Research: many articles on when asset classes do well
 - ◆ Leverage external managers/relationships – Verizon example
- ◆ Transparency and process key for good governance

“Prudence is Process”



Focused on a Few “Beta” Decisions



Chose a few decisions to make the point

Developed multiple rules to diversify the risk for each strategy



Description of “Beta Management” Rules

- ◆ Equity vs. Fixed Income vs. Cash
 - ◆ Price of Oil; Slope of Yield Curve, Equity Momentum, “Halloween Rule”; Fed Model
 - ◆ Annual Turnover was only 5%
- ◆ Equities (EAFE vs. EMG; Large vs. Small Cap)
 - ◆ Liquidity, EMG spreads; VIX, Yield Curves, Credit
 - ◆ Annual Turnover was only 5%
- ◆ Bonds (HY vs. Governments)
 - ◆ Equity performance and VIX; Yield Curve, Halloween
 - ◆ Annual Turnover was only 4%



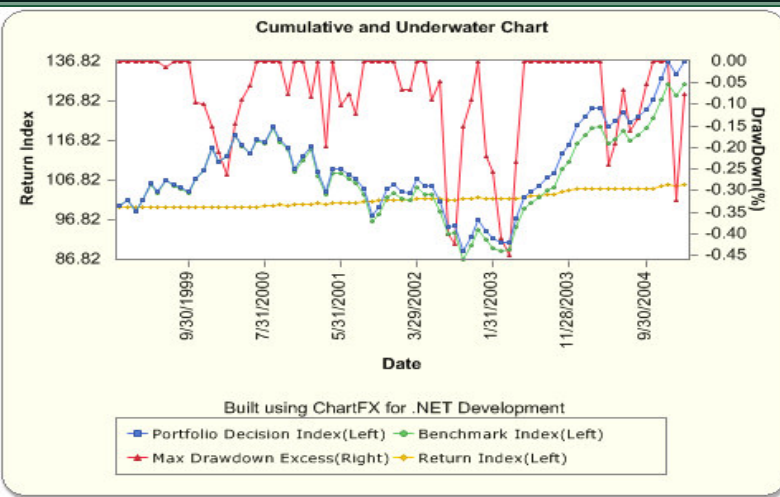
Impact on Entire Fund

- ◆ Improved overall performance - better return/risk profile
- ◆ Drawdown at total fund level is much lower
- ◆ Translates to \$7 million/yr for every \$1 billion AUM

	Excess Annualized Return	Tracking Error	Information Ratio	Worst Drawdown	Confidence in Skill	Success Ratio
Buy and Hold	-0.08%	1.10%	-0.07	-2.57%	48%	47%
Strict +/-3% Rebalancing	-0.12%	0.24%	-0.5	-1.02%	11%	40%
Informed Decisions	0.71%	0.48%	1.4	-0.45%	99%	65%



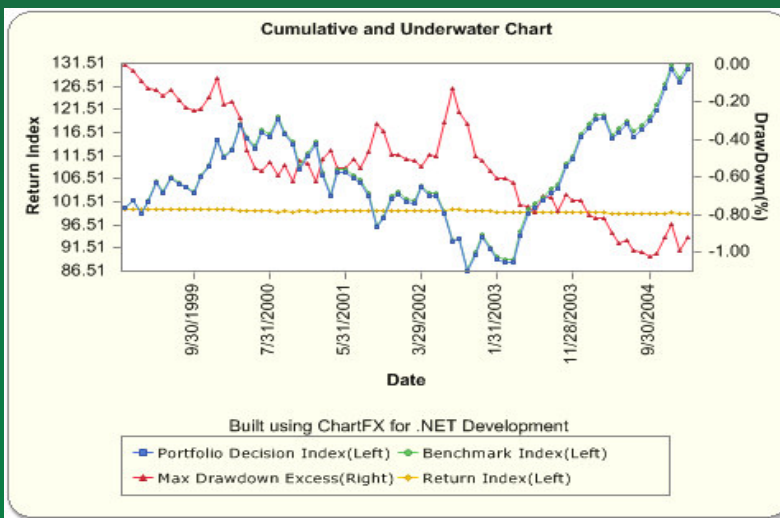
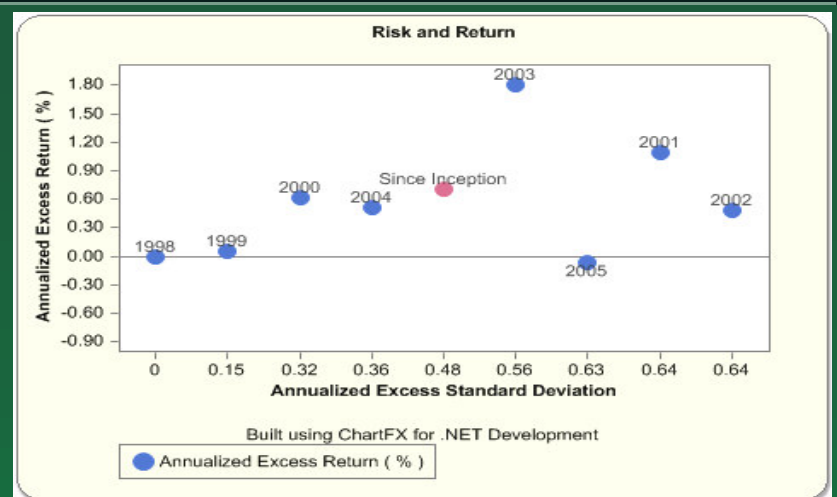
Risk Management = Good Governance + Avoiding Mistakes



**Informed
Decisions**

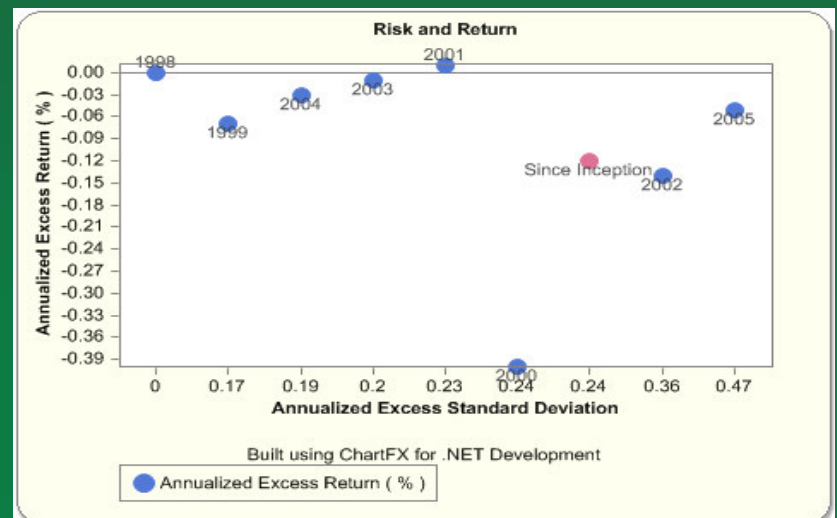
**Ann. Excess Ret:
0.71%**

Drawdown is 1/2!!



Rebalancing

**Ann. Excess Ret:
-0.12%**



Ideas for “Alpha” Management

- ◆ UK vs. Euro ex-UK managers: favor the manager in market with a higher interest rate
 - ◆ Added 0.37% annualized over a static mix
- ◆ Govt. bonds: favor the manager with greatest momentum over last 3 months
 - ◆ Added 0.27% annualized over a static mix of 4 mgrs
- ◆ Convertible Arbitrage vs. Fixed Income Arbitrage
 - ◆ Allocate to managers depending on VIX and OAS
 - ◆ Added return over static with 12% turnover!



Summary

- ◆ Many clients focus only on static asset allocation, rebalancing and static allocations to external managers
- ◆ Improve pension fund management to improve funded ratio – Dynamic Beta and Alpha
- ◆ Cheaper/more valuable source of return at total fund level (than any other “alpha” option)
- ◆ All portfolio decisions impact returns/risk - implement disciplined process for all decisions
- ◆ Size doesn't matter - such practices are within scope of moderate sized funds through AlphaEngine (e.g., SBCERA is \$4.5 bn in size with only 3 investment staff)



Disclaimer

This presentation contains the views of Mcube Investment Management's Research Team as of the date on the cover. It is provided for limited purposes, is not definitive investment advice, and should not be relied on as such. The information presented in this report has been developed internally and/or obtained from sources believed to be reliable; however, Mcube Investment Technologies does not guarantee the accuracy, adequacy, or completeness of such information. References to specific securities, asset classes, and/or financial markets are for illustrative purposes only and are not intended to be recommendations. All investments involve risk and investment recommendations will not always be profitable. Mcube Investment Technologies does not guarantee any minimum level of investment performance or the success of any investment strategy. As with any investment there is a potential for profit as well as the possibility of loss.

This information is not meant to provide guidance with respect to pension plan administration in any country. Mcube Investment Technologies makes no representation that the techniques described in this document comply with the law of any country. This information is not intended as legal or investment advice.

This material is for institutional investors.



Appendix

*Informed Decisions/Managing Beta: Improved Risk/Return **

- ◆ Asset allocation level: Keep return relative to “Buy and Hold”; lower risk relative to Rebalancing
- ◆ Stay within passive rebalancing guidelines
- ◆ Add returns at every level of IDP – alpha compounds

	Excess Annualized Return	Tracking Error	Information Ratio	Worst Drawdown	Confidence in Skill	Success Ratio
Asset Allocation level	0.16%	0.19%	0.81	-0.21%	98%	57%
Domestic Equity	0.08%	0.19%	0.43	-0.35%	85%	55%
Foreign Equity	0.04%	0.12%	0.36	-0.21%	82%	53%
Fixed Income	0.04%	0.07%	0.57	-0.18%	92%	56%

Institutional Client Conference

**All Decision regimes were evaluated from 01/99 – 04/05. Transactions costs were higher for sub-asset class level. Decision making frequency was monthly Source: AlphaEngineTM*



Northern Trust

Dynamic Alpha and Beta Management can Lower A-L Risk

Option	Ann. Growth in Surplus	Volatility of Surplus	Prob. Funded Ratio < 105% at y/e
Static SAA	-0.72%	6.64%	34%
+ Managers	-0.64%	6.59%	29%
+ Rebalancing	-0.57%	6.72%	28%
+ Dynamic β	+0.29%	7.00%	21%
+ Dynamic α	+0.34%	6.96%	19%

Annualized Liability Return (Benchmark) = 8.2%





Leveraging the Investment Decision Process: Dynamically Managing Beta and Alpha

THANK YOU



Northern Trust

Copyright © 2005 by Northern Trust Corporation