



Public Equity Portfolio Review

Presentation to the Investment Advisory Committee

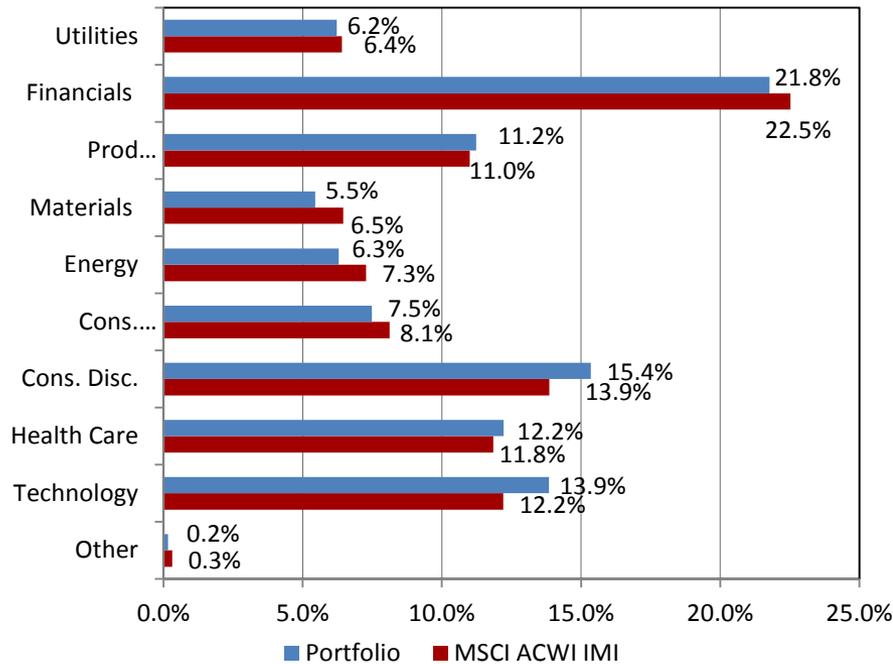
March, 20, 2015



North Carolina Department of State Treasurer
Investment Management

Learn. Invest. Grow. Prosper.

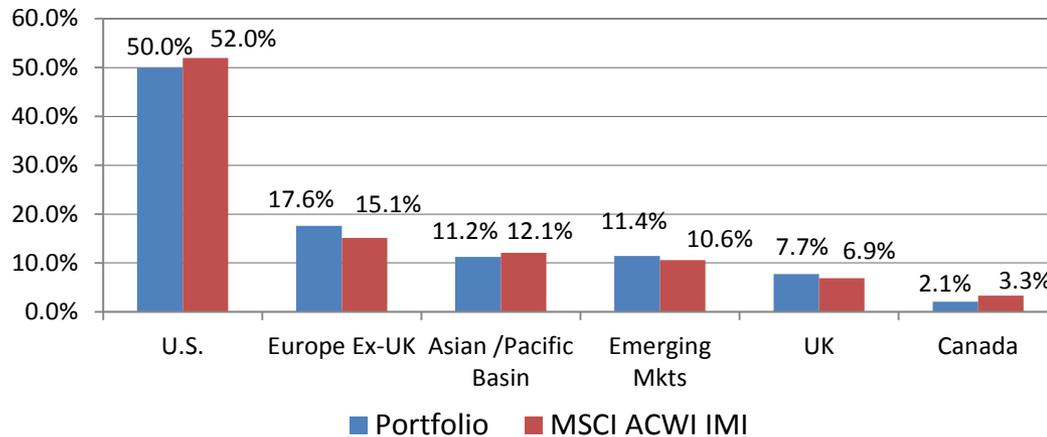
Total Equity Sector Allocation



Portfolio Characteristics

	Portfolio	MSCI ACWI IMI
Price/Earnings	20.1	20.2
Dividend Yield	2.10	2.29
Price/Book	2.25	2.22
Debt/Equity	0.92	0.93
Market Cap (\$ Weighted Median)	33,152	33,949
Return on Equity - 1 Year	16.5	15.8

Total Equity Regional Allocation



NCRS Public Equity Net Performance

As of March 31, 2015

	Market Value (\$MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Public Equity	\$40,069	2.79	5.09	11.85	10.02	6.41
Benchmark ²		2.58	5.11	10.92	9.23	6.73
Domestic Portfolio	\$18,833	1.95	11.29	16.44	14.79	8.47
Russell 3000		1.80	12.37	16.43	14.71	8.38
Large Cap	\$15,315	1.25	11.31	16.03	14.47	8.15
Russell 1000		1.59	12.73	16.45	14.73	8.34
Mid Cap	\$2,149	5.01	12.73	18.50	16.49	10.22
Russell Mid Cap		3.95	13.68	18.10	16.16	10.02
Small Cap	\$1,368	5.18	8.43	17.27	14.87	8.92
Russell 2000		4.32	8.21	16.27	14.57	8.82
Non-US Portfolio	\$18,125	3.62	(1.18)	7.14	5.02	5.56
Custom Benchmark		3.55	(1.34)	6.52	4.69	4.38
Global Portfolio	\$2,766	3.84	9.63	16.97	13.23	-
MSCI ACWI		2.31	5.42	10.75	8.99	6.44



A Very Busy Year

FY 2015 Objectives	Accomplishments
Implement the new strategic asset allocation	<ul style="list-style-type: none">• Funded \$1.5 B 0.4 beta portfolio• Hired AF Advisors, selected a managed account provider• Conducted due diligence on 22 hedge fund managers
Ensure compliance, good corporate governance, and up-to-date contracts	<ul style="list-style-type: none">• Created corporate governance committee, hired 2 corporate governance analysts, ensured divestment proxy voting compliance• Completed renegotiations of 12/36 IMAs with fee savings of nearly \$1 million annually
Determine whether or not we can improve the current portfolio structure	<ul style="list-style-type: none">• Consolidated Non-US equity passive mandates• Laid groundwork for internal passive management
Enhance internal team capabilities	<ul style="list-style-type: none">• Hired a replacement Portfolio Manager – Norman Schiszler• Conducting a search for a consultant for long-only equity
Other	<ul style="list-style-type: none">• Assisting SRP governance

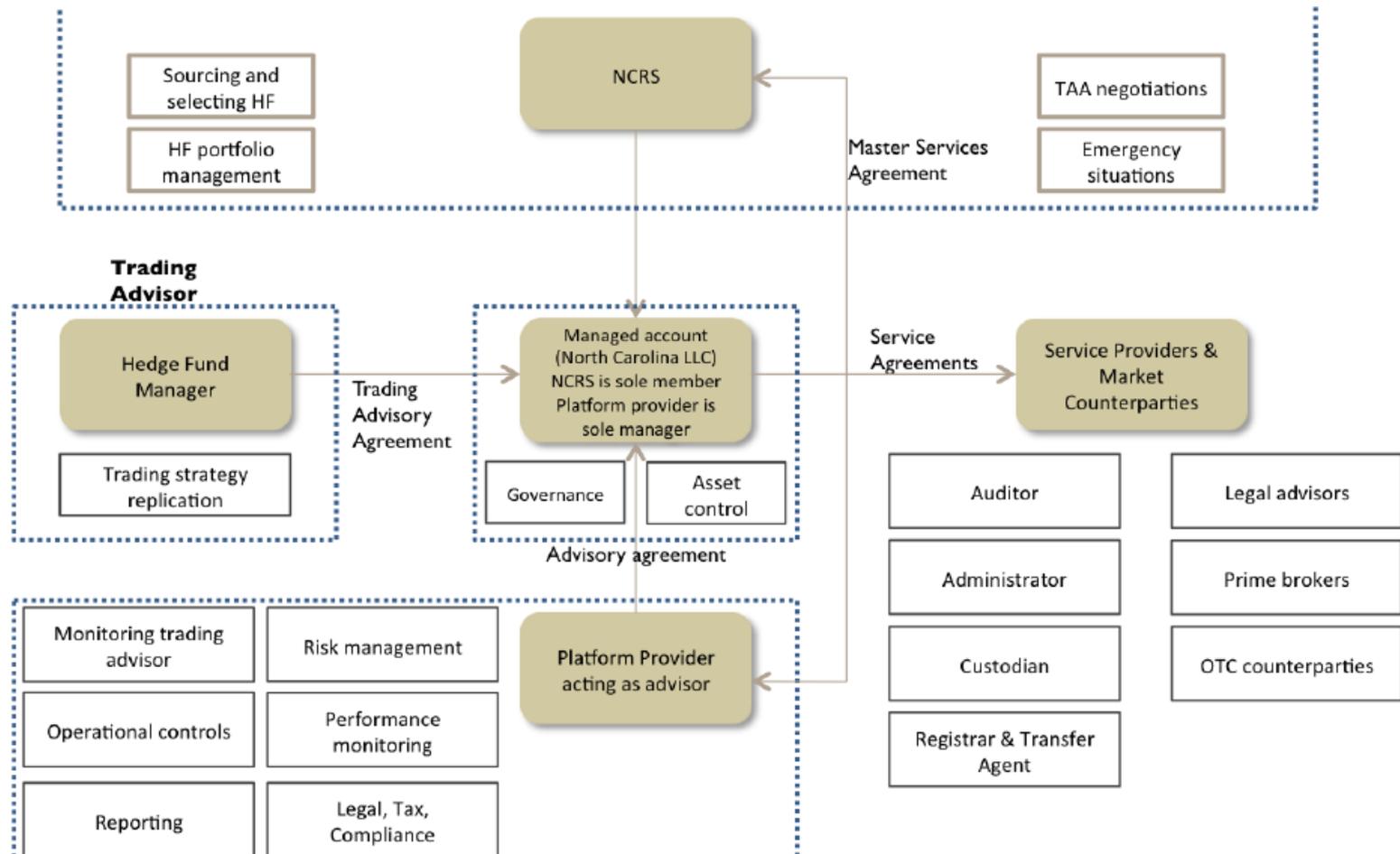


Hedged Equity Phased Deployment

- **Phase I:** construct a liquid “staging portfolio,” funded incrementally using a low-cost, passive strategy (0.4 beta MSCI ACWI).
 - Purpose
 - to quickly implement and rebalance the new strategic asset allocation (SAA)
 - To permit NCDST to trade liquidity for lower fees with hedge fund managers
 - To allow for opportunistic funding of hedge fund strategies
- **Phase II:** construct a managed account platform and populate with hedge fund managers in 3 tranches.
- **Phase III:** Investigate other strategies for the staging portfolio including emerging hedge fund managers.



What will a managed account look like?



Finishing the Work We Started



"I got it this far—don't stop me now."

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Finishing the Work We Started

FY 2016 Objectives	Accomplishments
Implement the new strategic asset allocation	<ul style="list-style-type: none">• Construct managed account platform• Fund Tranche A and B hedged equity managers• Conduct due diligence on Tranche C
Ensure compliance, good corporate governance, and up-to-date contracts	<ul style="list-style-type: none">• Complete renegotiation of 24/36 IMAs
Determine whether or not we can improve the current portfolio structure	<ul style="list-style-type: none">• Review Total Equity structure with consultant• Potential Global Equity search(es)• Continue work on internal passive management• Investigate improvements over passive hedged equity staging portfolio• Investigate emerging hedge fund managers
Enhance internal team capabilities	<ul style="list-style-type: none">• Hire a consultant for long-only equity



Question:

Are emerging hedge fund managers worth the cost and effort?

- Novus Research reviewed 27 articles (44% were peer reviewed journals) published between 2002-2013.¹
 - Average of 6,195 number of funds and 12 years of data
 - 63% concluded AUM growth hurt performance
- Small hedge funds outperform large hedge funds by 3.65 percent per year after adjusting for risk.²
- Aggarwal and Jorion³ found strong evidence of outperformance during the first two to three years of fund existence. Controlling for size, each additional year of age decreased performance by 48 basis points, on average. Cross-sectionally, early performance by individual managers was quite persistent, with early strong performance lasting for up to five years.
- Fund of hedge funds typically charge 1% and 10%

¹ Novus Research, "How AUM Growth Inhibits Performance," May 2014.

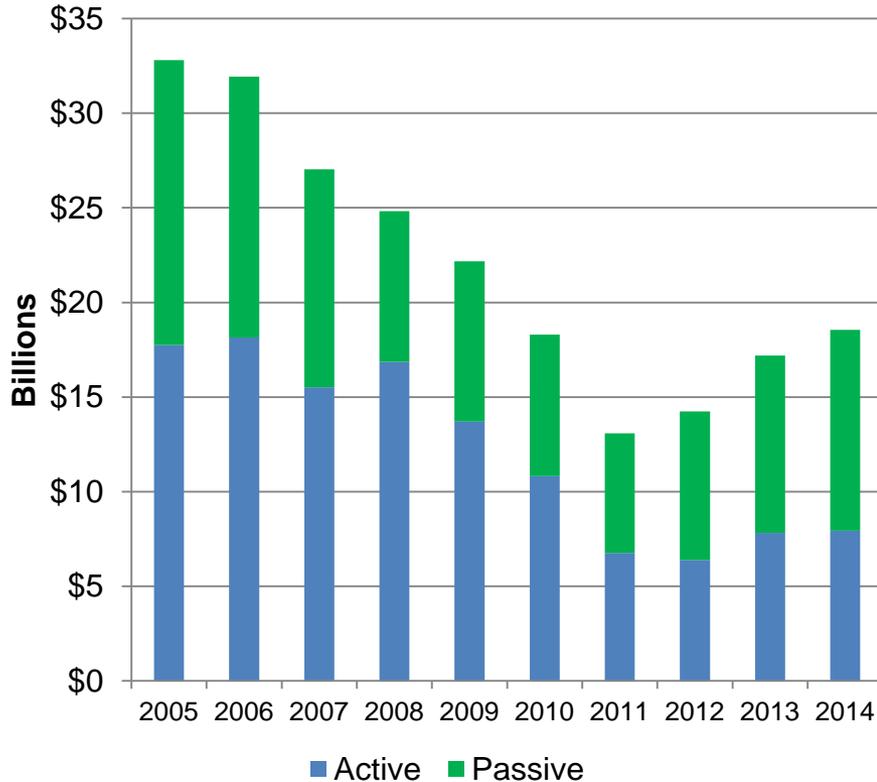
² Melvyn Teo, "Does Size Matter in the Hedge Fund Industry?" January 22, 2009. <http://ssrn.com/abstract=1331754>

³ Rajesh K. Aggarwal and Philippe Jorion, "The Performance of Emerging Hedge Funds and Managers," USC FBE Finance Seminar, August 7, 2009.



Active-Passive Allocations Over Time

U.S. Equity Portfolio



Non-U.S. Equity Portfolio

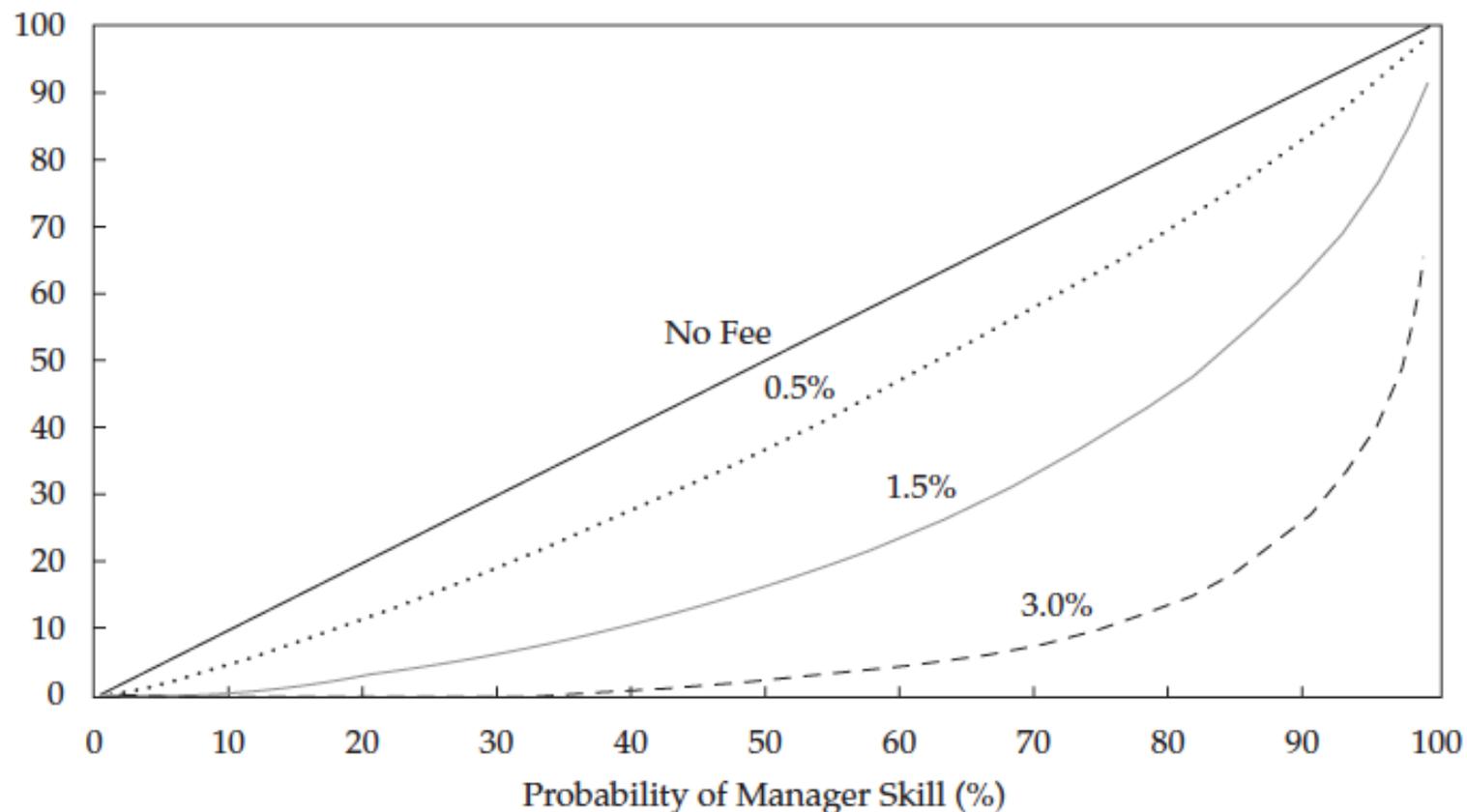


Question:

What is the proper trade-off between fees and active risk?

(active risk = 5 percent; time horizon = 10 years)

Probability of Investor Success (%)



Richard M. Ennis, "Are Active Management Fees Too High?" Financial Analysts Journal, Sept.Oct. 2005

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Question:

What are your preferences for Total Equity?

	Costs	Liquidity	Risk	Returns
TOTAL	?	?	?	?
Passive	1-5 bps	High	≈½ Stock market volatility	Market returns
U.S Active Long-Only Non-U.S. Active Long-Only	30-70 bps 40-70 bps	High	Stock market volatility and tracking error	50-200 bps Excess returns
Hedged Equity	200 bps + 20%	Lock-Ups	≈½ Stock market volatility*	250-450 bps Alpha

- How much excess return is desirable or possible?
- How much risk or tracking error can be comfortably undertaken with to obtain those excess returns?
- How much liquidity is needed? How much liquidity can be traded for lower fees? How much of a reduction in fees can be gained for lower liquidity?
- Do below average fees translate into below-average returns?



Is the US Equity Market Overvalued?



Source: Marquette Associates





Thank You!

Together we can build and maintain a fiscally strong and prosperous North Carolina.

www.NCTreasurer.com



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