



**North Carolina Department of State Treasurer  
Investment Advisory Committee | March 5, 2015**

# **Investment Program Review**

**Aon Hewitt**  
Retirement and Investment

Investment advice and consulting services provided by Aon Hewitt Investment Consulting, Inc., an Aon Company.



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# Section 1: Overview of Aon Hewitt Investment Consulting

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# Biographies

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## Kristen Doyle, CFA

Partner

- § As Public Fund Client Practice Leader, leads the firm's focus on developing and supporting public funds
- § Advises large, complex clients with a focus on public pension funds with aggregate assets in excess of \$600 billion
- § Leads the Trust Services Team , a team of specialists that focus on custody, securities lending and transition management
- § Global Head of Transition Management, responsible for managing the transition support provided to clients on a global basis
- § CFA Charterholder
- § B.A. in Economics from Denison University

## Michael McCormick

Senior Consultant

- § Manages one of AHIC's client advisory groups, has extensive experience working with a variety of client types
- § 8 years of investment experience with AHIC
- § Extensive experience working with large, complex investment programs including several direct private equity, hedge fund, opportunistic and real asset portfolios
- § Performed investment program reviews for multiple large public pension funds
- § Currently a candidate for Level II of the CFA
- § B.B.A. in finance and economics from Loyola University Chicago

# Unbiased Judgment from a Leading Institutional Advisor

Full suite of services, including delegated solutions, specialty consulting, and fiduciary services

Independent and objective advice—  
**100%** of revenue derived from consulting clients

**488** U.S. investment consulting clients:

- § Endowments and foundations
- § Corporate and public pension plans
- § Taft-Hartley and union benefit plans
- § Higher education 403(b) plans
- § 401(K) Plans
- § 457 Plans
- § VEBA's

**\$1.7 trillion** in U.S. client assets under advisement, with over **\$36 billion** in U.S. client assets under delegated management\*

More than **270** U.S. investment consulting professionals; more than **600** worldwide

More than **85** professionals dedicated to Investment Manager Research, including more than **35** dedicated to alternative strategies

\*As of June 30, 2014.

# A Firm With Deep Resources

## Aon Hewitt Investment Consulting

§ **Steve Cummings**, President

§ Senior Management Team (6)

### Client Advisory Group

§ 71 Consultants  
§ 40 Perf. Specialists  
§ 13 yrs avg experience

### DC Practice

§ 1 Leader  
§ 15 Staff  
§ +10 yrs experience

### Inst. Advisory Solutions

§ 1 Leader  
§ 2 Specialists  
§ 12 yrs avg experience

### Fiduciary Services

§ 3 Specialists  
§ 22 yrs avg experience

### Global Manager Research

§ 9 Leaders  
§ 80 Researchers  
§ 12 yrs avg experience

### Global Asset Allocation

§ 1 Leader  
§ 9 Staff  
§ 13 years avg experience

### Delegated Solutions

§ 5 Leaders  
§ 50 Support Staff  
§ +15 yrs avg experience

### Investment Policy Solutions

§ 2 Leaders  
§ 10 Researchers & Staff  
§ 15 yrs avg experience

### Trust & Custody

§ 1 Leader  
§ 6 Staff  
§ +5 years avg experience

### Support Services

Technology Support (Aon Hewitt) | Marketing (Aon Hewitt) | Operations (6) | Administrative (20)

As of 12/31/2014

# We Serve Diverse and Sophisticated Institutional Investors

## Representative List of Clients

### Public Pension Funds

- Arkansas Teacher Retirement System
- Florida State Board of Administration
- Ohio Public Employees Retirement System
- Nebraska Investment Council
- New Jersey Division of Investment
- New York State Teachers Retirement System
- San Diego City Retirement System
- South Carolina Retirement System
- Teacher Retirement System of Texas

### Endowed / Not-for-Profit

- Casey Family Programs
- Colorado Trust
- Consumer Reports
- Masonic Homes of California
- National Collegiate Athletic Association
- Paso del Norte Health Foundation
- University of New Mexico Foundation
- University of Illinois
- U.S. Conference of Catholic Bishops

### Corporate Defined Benefit

- Alaska Airlines
- Allegheny Technologies
- BAE Systems
- BMW of North America
- BlueCross BlueShield Ass.
- Cummings Engine
- Ernst & Young
- Home Depot
- Monsanto Company
- National Grid USA
- NextEra
- Reed Elsevier
- Safeway
- Steelcase

### Other Clients

- Federal Thrift Savings Plan
- U.S. Department of Labor

\*Representative list of clients. It is not known whether the listed clients approve or disapprove of AHIC or the advisory services provided.

# Thought Leadership

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## Recent

- § Are Custom Target Date Funds Right for Your Plan?
- § Conviction in Equity Investing
- § Fiduciary Considerations with Target Date Funds
- § Go Big or Go Home: The Case for an Evolution in Risk Taking
- § Harvesting the Equity Insurance Risk Premium
- § Inflation Risk and Real Return
- § Long Credit in Liability Driven Investments: A Tragedy of the Commons?
- § Measuring Success in Fixed Income
- § Public Funds Can Compete
- § Risk Parity and the Limits of Leverage
- § Tales from the Downside: Risk Reduction Strategies
- § The Opportunity Allocation
- § Alternative Assets: The Next Frontier for Defined Contribution Plans
- § Improving DC Plan Governance: A Call to Action
- § Hedge Fund Replication
- § Reinsurance Investing
- § Managing “End State” Pension Investments – How to Stay One Step Ahead of Your “Glide Path.”
- § Global Invested Capital Market
- § How Much Illiquid Assets Can Your Portfolio Handle?
- § Private Real Estate with Daily Valuation

## Recent (cont.)

- § A Holistic Approach to Incorporating Alternatives in Your Asset Allocation
- § Real Assets - One Size Does Not Fit All
- § Equity Market Neutral
- § Opportunistic Deep Value Investing – A Multi Asset Class Approach
- § Enhancing Returns through Medium-Term Views on Asset Allocation
- § Harvesting the Equity Insurance Risk Premium: Know Your Options
- § What’s in a Name: White-Label Funds in DC Plans
- § Opportunistic Strategies for Navigating a Changing Credit Landscape
- § Operational Risks and Your Custodian: A Perfect Match?
- § Deferred Annuities in Target Date Funds

## Work in Progress

- § Making Dynamic Investment Policies More Dynamic
- § DC Lifetime Income Solutions
- § Reinsurance Funds: Are they the Ultimate Diversifier?
- § Active vs. Passive in Fixed Income
- § The Small Cap Alpha Myth
- § Smart Beta

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## Section 2: Benchmarking Overview

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## Investment Objectives

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- § As set forth in the Investment Policy Statement for North Carolina Retirement Systems two of the key Investment Objectives are:
- Provide investment returns sufficient for the Fund to make timely payment of statutory benefits to current and future members and keep contribution rates at a reasonable level over the long-term. To achieve this, long-term projected investment returns should be generally consistent with the actuarial assumed rate of return, unless otherwise determined by the Treasurer<sup>1</sup>
  - Exceed composite benchmark returns for the Fund and broad categories of investments within reasonable risk limits and over market cycles
- § Setting appropriate benchmarks assists the IAC in monitoring and reviewing the performance of the Total Fund and its achievement of the above stated objectives
- § Benchmarks should be reviewed at least every 2 – 3 years by undertaking a comprehensive benchmark review
- Deliverable is typically a written report that reviews all asset class and total fund benchmarks validating the current benchmarks and/or making recommendations for any modifications
  - Benchmarks can also be reviewed in the context of an asset-liability or asset allocation study
  - If a new asset class is added or a new benchmark becomes available, they should be reviewed and IPS revised, if appropriate

<sup>1</sup>The Retirement Systems' actuary advises the applicable Retirement Boards of Trustees with respect to setting the actuarial assumed rate of return and annual required contributions. The Retirement Boards of Trustees have been granted the authority by the legislature to set the actuarial assumed rate of return for the Fund, which is currently 7.25%.

## Purpose & Types of Benchmarks

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- § Benchmarks are used to measure the performance of the Total Fund, asset classes, and individual managers over various time periods and across methodologies to determine the effectiveness of implementation of an investment program
  
- § There are many types of benchmarks that can be used to analyze relative performance of an investment
  - Broad market (MSCI ACWI IMI Index)
  - Style-specific (S&P 500 Value Index)
  - Risk adjusted returns (vs. benchmark Sharpe ratio)
  - Absolute return metric (i.e. 7% return target)
  - Real return target (i.e. CPI + 3%)
  - Peer universe (i.e. Public Funds >\$1 billion)
  
- § Careful attention should be paid to appropriateness when selecting the benchmark for a given asset class, manager, or strategy

## Properties of a Valid Benchmark

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- § **Broad Coverage:** Benchmarks should be market capitalization based and attempt to include the widest coverage of countries, sectors and number of securities
- § **Investable:** Easily replicable and liquid; refers to investors' ability to secure the return through passive management
- § **Transparent:** Rules-based methodology with transparency through to the benchmark's constituents and their weights and known in advance
- § **Appropriate:** Portfolio's assets are similar to the benchmark's, minimizes tracking error and is used by similar institutions

## Benchmarking Principles

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- § Aon Hewitt Investment Consulting's (AHIC) benchmarking philosophy is built on research conducted by Sharpe and others and is consistent with Modern Portfolio Theory which identifies the market portfolio as the most efficient portfolio to own
- § We believe the benchmark for any asset class or strategy should include all, or substantially all, the investment opportunities in that particular market and be constructed without bias
- § Investors should stray away from the market portfolio only when they believe they are compensated to do so
- § It is important to note that there are certain markets, mainly the private markets, where broad published benchmarks either do not exist or are of limited value. In these markets, appropriate benchmarks would represent the opportunity cost of the allocation or mode of implementation

# Total Fund Benchmarking

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- § We believe the best Total Fund Policy Benchmark should be a passive representation of the broad asset classes included in the established asset allocation policy
  
- § We believe that all benchmarks and policy allocations should be determined in advance
  - Asset transition timelines and weights should be determined in advance
  - If a Plan decides to deviate from the policy allocation, the effect of maintaining an asset allocation which deviates from policy should be measured and reported (i.e. measure whether being overweight public equities detracted or added to overall performance for the Total Fund relative to the Policy Benchmark)
  - If the policy allocation is determined to be no longer appropriate, the policy should be amended in advance of the change
  - Changes to the asset class benchmarks should flow through to the Total Fund Policy Benchmark
  
- § Other Total Fund Benchmarks (mainly used for long-term periods: 25+ years):
  - Absolute Return Target (i.e. Actuarial Assumed Rate of Return)
  - Real Return Target
  - Opportunity Cost Benchmark (e.g. mix of public stocks and bonds)

# Trends In Benchmarking

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## § Transitioning to broader investment mandates

- All cap investment mandates within U.S. and non-U.S. equity (MSCI Investable Market Index)
- Global equity mandate as opposed to separate U.S. equity and non-U.S. equity components

## § Private equity: reduced premium over public equity “opportunity cost” index

- And utilization of a global equity index (i.e. MSCI IMI) vs. U.S. equity index (i.e. Russell 3000 Index) as “opportunity cost” index

## § Private real estate

- Use of the NCREIF ODCI (vs. NPI) to benchmark core real estate exposure
- NCREIF ODCI + premium for non-core real estate
- To some extent utilization of a peer universe (challenges: depth of universe, timing of data availability, & applicability)

## Private Market Benchmarking (Total Fund Benchmarking)

Asset Class	Most Commonly Used Benchmark	Alternative Benchmark
Private Equity	Public Market Index + Premium	Peer Universe
Core Real Estate	NCREIF ODCE	--
Non-Core Real Estate	NCREIF ODCE + Premium	Peer Universe
Hedge Funds	HFR Suite of Indices	CPI + Premium or Absolute Return

- § Benchmarking private asset classes has many challenges (timing, applicability, depth, tracking error, etc.)
- § The table above provides an overview of the most commonly used benchmarks for private equity, real estate, and hedge funds
  - We find these benchmarks to be common among peers and other institutional investors
- § As peer benchmarks in private equity and private real estate become more robust, more plans are moving to adopt, for shorter time periods (~<10 years)

# NCRS Total Fund Benchmarks

Implementation Benchmark		
Asset Class	Target Weight	Primary Benchmark
<b>Rates and Liquidity</b>	<b>29%</b>	
Investment Grade Fixed Income	28%	10% iMoneyNet First Tier Institutional Money Market Funds Net Index and 90% custom BOAML Core Investment Grade Index
Cash	1%	iMoneyNet First Tier Institutional Money Market Funds
<b>Growth</b>	<b>58%</b>	
Public Equity	42%	MSCI All Country World Investable Market Index & beta adjusted MSCI ACWI IMI Index
Private Equity	6%	Burgiss Group Private iQ indices: 50% Buyout, 20% Venture Capital, and 30% Special Situations and Distressed Securities
Non-Core Real Estate	3%	Burgiss Group Private iQ indices: 80% U.S. Non-Core Real Estate (Opportunistic and Value- Added) and 20% Non-U.S. Non-Core Real Estate (Opportunistic and Value-Added)
Opportunistic Fixed Income	7%	50% HFRX Distressed Securities Index, 20% HFRX Relative Value Index, 15% Credit Suisse Leveraged Loan Index, and 15% BOAML High Yield Index
<b>Inflation Sensitive and Diversifiers</b>	<b>11%</b>	
Inflation Sensitive	6%	33.0% Bank of America Merrill Lynch 1-3 Years U.S. Inflation-Linked Treasury Index, 17% Dow Jones-UBS Commodities Index, and 50% of the dynamically weighted combination of the benchmarks of investments classified within Private Natural Resources or Other Real Assets and Diversifiers
Core Real Estate	5%	80% NCREIF ODCE Index and 20% FTSA/EPRA/NAREIT Global Index
<b>Multi-Strategy</b>	<b>2%</b>	Weighted combination of the HFRX Multi-Strategy Hedge Fund Index, net of fees, and the market value weighted benchmarks for any other total fund strategies within the Portfolio

Long-Term Policy Benchmark		
Asset Class	Target Weight	Primary Benchmark
Rates and Liquidity	33%	Bank of America Merrill Lynch 5+ Years U.S. Treasury Index
Growth	57%	MSCI All Country World Investable Market Index
Inflation Sensitive	4%	Bank of America Merrill Lynch 1-3 Years U.S. Inflation-Linked Treasury Index
Diversifiers	6%	Dow Jones-UBS Commodities Index

# Preliminary Observations of NCRS' Total Fund & Asset Class Benchmarks

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- § NCRS' Total Fund and asset class benchmarks are explicitly defined in the investment policy statement
  
- § The Total Fund benchmark is a weighted average of the underlying asset class policy benchmarks, which follows best practice and peer practice
  
- § NCRS utilizes broad published indices, where available, to benchmark the asset classes
  
- § We look forward to further discussion regarding the structure of the asset classes, and potential enhancements to the current benchmarking process
  
- § **Proposal:** AHIC proposes to provide the IAC at the May meeting with a comprehensive review of NCRS' current Total Fund and asset class benchmarks
  - ***Deliverable:*** Written report with findings, analysis and recommendations for discussion

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## Section 3: Asset Allocation Discussion

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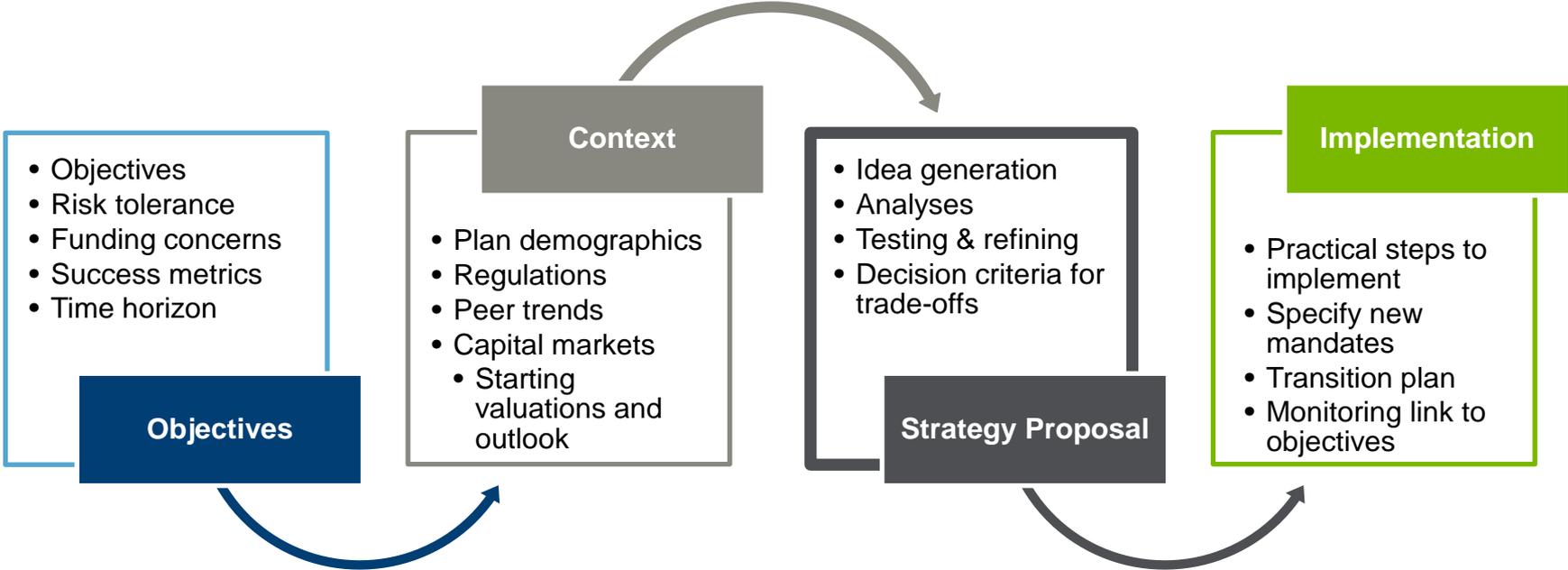
## Long-Term Asset Allocation

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- § Research and empirical evidence have shown that the asset allocation decision (how a portfolio is allocated among various asset classes) has the most significant impact on investors' success over the long term.
  
- § Commonly cited and well regarded research indicates that the asset allocation decision explains over 90% of an investor's return over time.
  
- § AHIC believes that the asset allocation of an investment program should reflect the structure of the Plan's liabilities, and the overall risk tolerance of the Plan's fiduciaries
  - We recommend our clients perform an asset liability study every three to five years

# Pension Investment Strategy Development

## Sample Project Flow

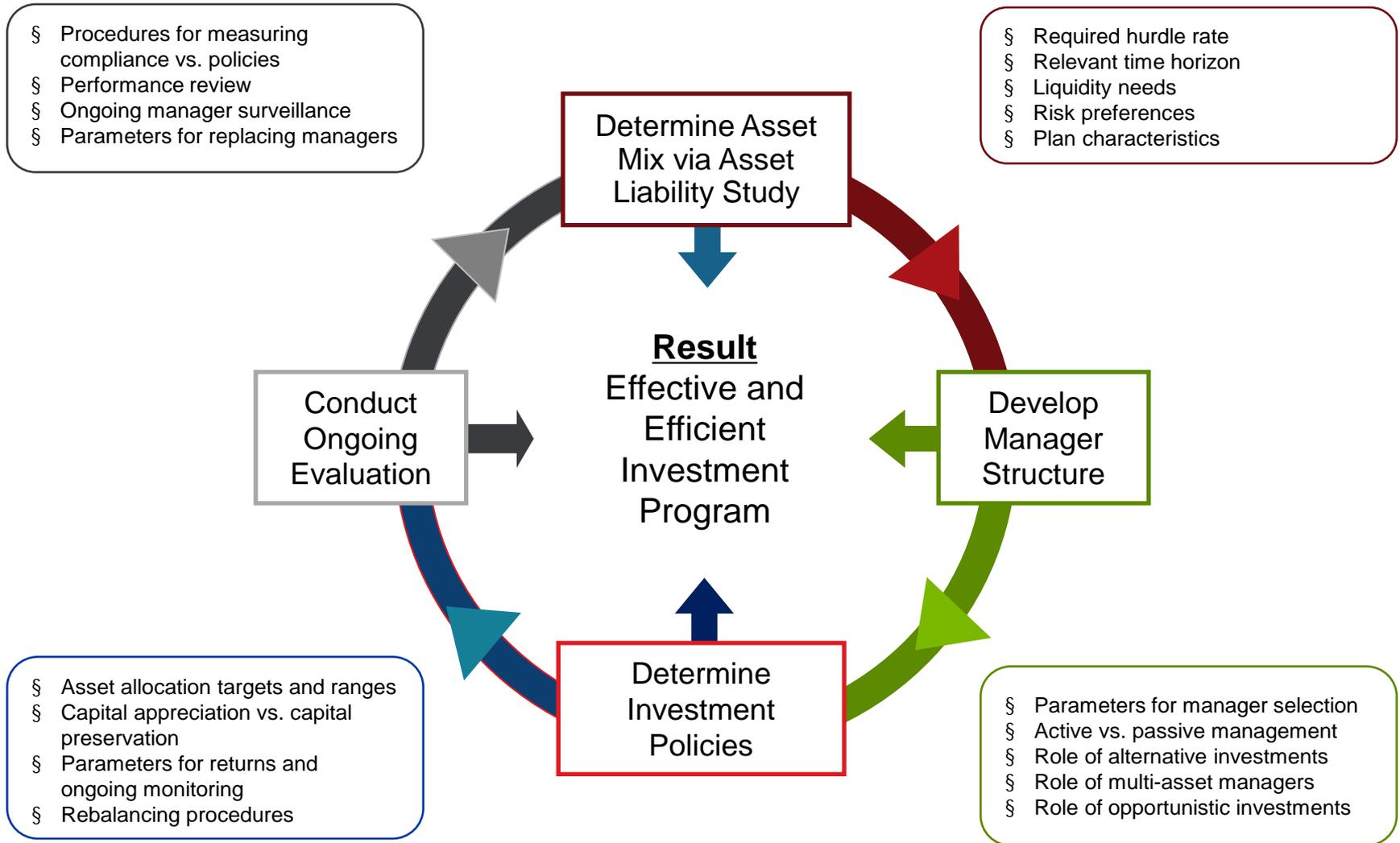


# Investment Policy: Driving Factors



<b>Governance</b>	Most Flexible	§ More opportunistic § More alternatives § Greater reliance on active risk	§ More strategic § Less alternatives § Greater reliance on market risk	§ Most Strategic
<b>Risk Tolerance</b>	Higher Risk Budget	§ More alternatives § Greater Reliance on active risk	§ Less alternatives § Less reliance on market risk	§ Lower Risk Budget
<b>Time Horizon</b>	Longest	§ Most illiquid alternatives (liquidity premium) § Return-seeking over diversification in risk premiums	§ No illiquid alternatives § Diversification over return-seeking	§ Shortest
<b>Portfolio Size</b>	Largest	§ More alternatives § Greater reliance on market risk § Market impact?	§ Less alternatives § Greater reliance on active risk	§ Smallest

# Bringing It All Together: Comprehensive Approach to Investment Policy and Asset Allocation

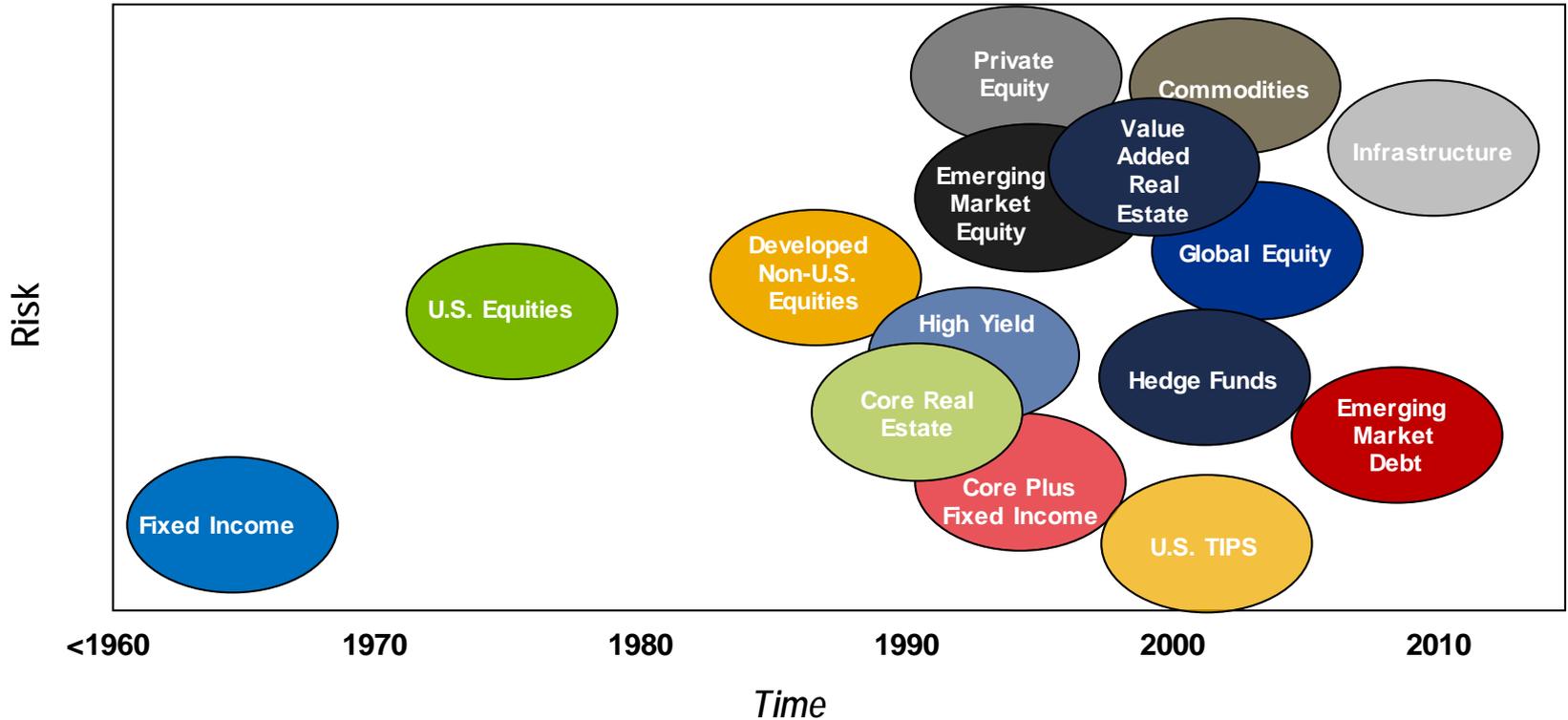




## Section 4: Public Plan Asset Allocation Comparison

# The Evolution of Institutional Investors' Asset Allocation

The "Institutionalization" of Various Asset Classes



§ The asset allocation of institutional investors has and likely will continue to evolve over time.

\*The chart provided above is for illustrative purposes based on AHIC's experience working with Institutional.

# NCRS Asset Allocation Relative to Peers

Asset Class	NCRS Policy	CEM PEER Data*	AHIC** Peer Average	BNY Mellon Public > Billion \$ Universe***	1	2	3	4	5	6	7	8	9	10	11	12
<b>Global Equity</b>	<b>39%</b>	<b>50%</b>	<b>45%</b>	<b>47%</b>	<b>53%</b>	<b>45%</b>	<b>55%</b>	<b>45%</b>	<b>19%</b>	<b>56%</b>	<b>31%</b>	<b>45%</b>	<b>48%</b>	<b>50%</b>	<b>46%</b>	<b>50%</b>
U.S. Equity		23%				20%	37%	29%					21%	31%	30%	35%
Non-U.S. Dev. Markets Equity		18%				15%	14%						18%	11%	11%	12%
Emerging Markets Equity		8%				10%	5%	16%					9%	8%	6%	3%
<b>Private Equity</b>	<b>9%</b>	<b>10%</b>	<b>12%</b>		<b>6%</b>	<b>12%</b>	<b>7%</b>	<b>18%</b>	<b>21%</b>	<b>7%</b>	<b>16%</b>	<b>10%</b>	<b>11%</b>	<b>19%</b>	<b>9%</b>	<b>10%</b>
Buyouts/Venture Capital	4%												9%		13%	8%
Debt Related Private Equity	3%												7%		6%	1%
Opportunistic Private Equity	2%												7%		6%	1%
<b>Alternative Investments</b>	<b>8%</b>	<b>3%</b>	<b>8%</b>	<b>19%</b>	<b>12%</b>	<b>9%</b>	<b>0</b>	<b>6%</b>	<b>15%</b>	<b>5%</b>	<b>18%</b>	<b>5%</b>	<b>8%</b>	<b>0%</b>	<b>12%</b>	<b>5%</b>
Absolute Return						4%		6%	10%				5%	5%		4%
Equity Oriented Hedge Funds	3%					5%										4%
Credit Orient Hedge Funds	3%											8%				3%
Opportunistic Investments	2%	3%			12%				5%	5%	10%			3%		5%
<b>Real Assets</b>	<b>12%</b>	<b>10%</b>	<b>12%</b>	<b>5%</b>	<b>10%</b>	<b>15%</b>	<b>10%</b>	<b>17%</b>	<b>22%</b>	<b>7%</b>	<b>8%</b>	<b>14%</b>	<b>7%</b>	<b>10%</b>	<b>7%</b>	<b>15%</b>
Commodities and Other Real Assets	4%	1%						7%	8%		3%	4%		3%	2%	5%
Real Estate	8%	9%			10%		10%	10%	14%	7%	5%	10%	7%	7%	5%	10%
<b>Fixed Income</b>	<b>31%</b>	<b>26%</b>	<b>21%</b>	<b>28%</b>	<b>18%</b>	<b>18%</b>	<b>27%</b>	<b>11%</b>	<b>21%</b>	<b>25%</b>	<b>25%</b>	<b>25%</b>	<b>23%</b>	<b>21%</b>	<b>20%</b>	<b>20%</b>
Domestic Fixed Income	28%				18%	13%	17%	11%	1%	18%	10%	15%	10%	12%	12%	20%
International/Global Fixed Income							2%		8%	5%	9%		5%	7%		
High Yield/Bank Loans	1%								6%	2%	6%	10%	5%	2%	5%	
TIPS	2%					5%			6%				3%		2%	
Mortgages							8%								1%	
<b>Cash Equivalents</b>	<b>1%</b>	<b>1%</b>	<b>2%</b>	<b>2%</b>	<b>1%</b>	<b>1%</b>	<b>1%</b>	<b>4%</b>	<b>3%</b>	<b>0</b>	<b>2%</b>	<b>1%</b>	<b>3%</b>	<b>0%</b>	<b>5%</b>	<b>0</b>

\* Data Sourced from CEM Investment Benchmarking Results presentation performed as of December 2013

\*\* Peer data is based on a universe of AHIC's 12 largest public pension plans with total assets ranging from \$14 to \$146 billion.

\*\*\* BNY Mellon peer information is based on actual peer weights. The alternative investment allocation includes private equity.

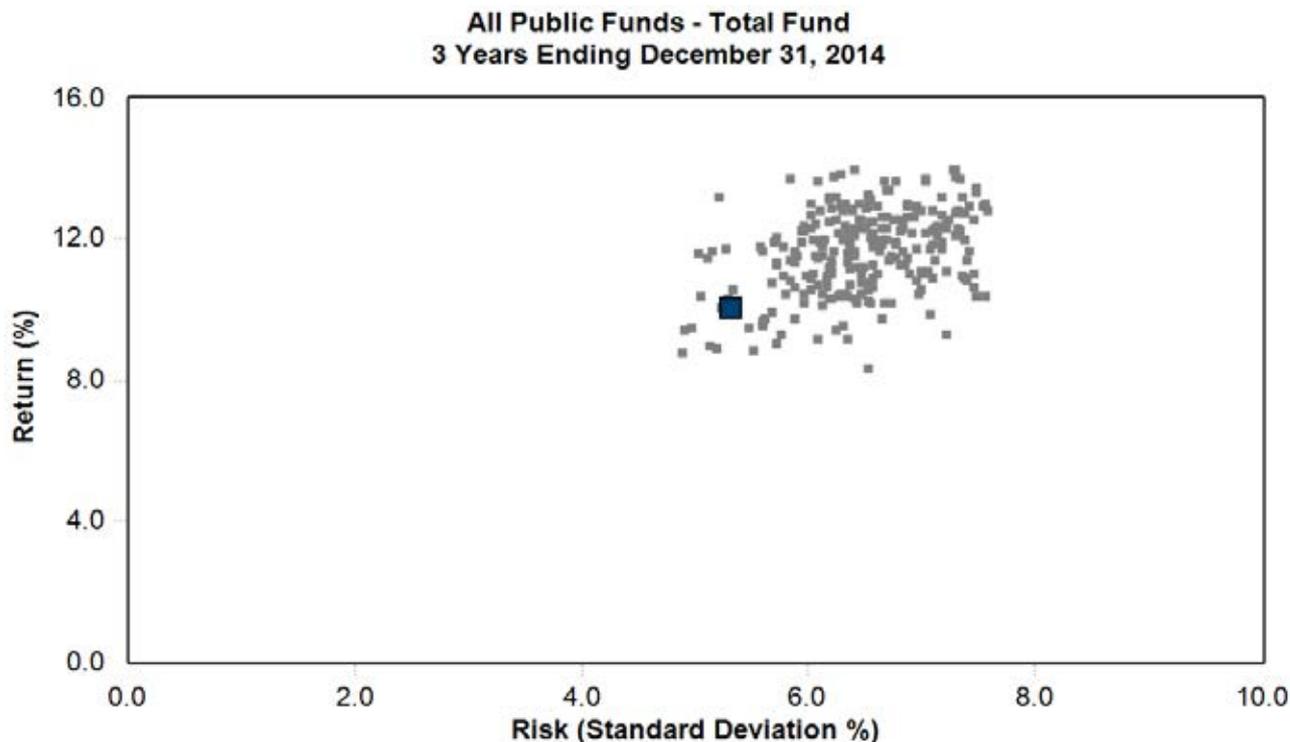
# Policy Allocation Changes (3-Year Changes in Targets )

Asset Class	AHIC Peer Average	BNY Mellon Public > Billion \$ Universe*	Peer Public Funds											
			1	2	3	4	5	6	7	8	9	10	11	12
U.S. Equity	-3%	-5%	-3%	-5%	-5%	-4%	-5%	-1%		-5%	-4%	1%	8%	-7%
Non U.S. Equity	-2%	1%	-3%		3%		-5%	-1%	1%	-5%	-2%	-10%	-2%	-1%
Private Equity	3%		2%	1%		4%	1%		2%	7%	1%	5%	4%	3%
Alternative Investments*	3%	9%	8%	5%			5%	2%		4%	8%	-1%	5%	2%
Real Assets	2%			1%		3%	3%			4%		1%	-1%	5%
Real Estate	2%		4%	1%		1%	5%			6%	2%		2%	4%
Domestic Fixed Income	-5%	-6%	-8%	-2%	-1%	-5%	-4%			-20%	-6%	5%	-18%	-5%
International/Global Fixed Income	1%	1%			2%		5%		2%		1%	3%		
High Yield	2%						-3%		3%	10%	3%	-2%	2%	
TIPS	-2%										-3%		-3%	
Cash	-1%				1%	2%	-2%		-7%			-1%	2%	

\* BNY Mellon peer information is based on actual peer weights. The alternative investment allocation includes private equity.

Color Key	
Allocation = Increased	
Allocation = Neutral	
Allocation = Decreased	
No Allocation	

## NCRS Asset Allocation Results



- § The analytic above highlights further the lower risk position of NCRS relative to peers
- § The Plan has underperformed peers over the trailing three year period, but at a lower level of volatility
  - We would expect the Plan to outperform during a declining investment market

# NCRS Asset Allocation Overview

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- § NCRS has a lower risk positioning than peer public funds
  
- § NCRS policy asset allocation was determined by Department of State Treasurer staff and the Treasurer to be the most efficient portfolio given the Fund's liabilities
  - The policy asset allocation reflects the circumstances of NCRS and its tolerance for risk
  - While knowing peer asset allocation is useful, we do not believe investment programs should make asset allocation decisions based on peers
  
- § **Proposal:** AHIC proposes to provide the IAC at the May meeting with a comprehensive peer review of asset allocation as well as other areas the IAC may be interested in evaluating (cost, risk exposures, asset class structure – i.e. active vs. passive, governance, etc.)
  - ***Deliverable:*** Written report with findings, analysis and recommendations for discussion



# Questions and Open Discussion