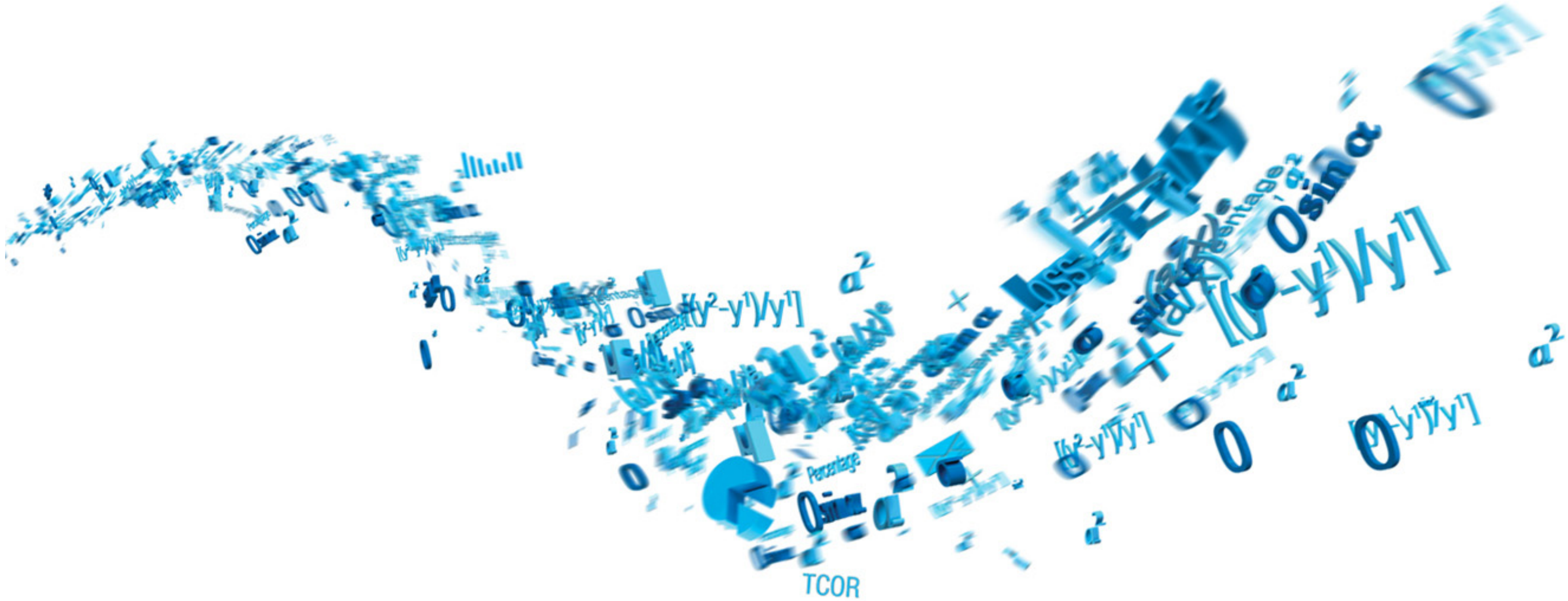


Joint Meeting of the NIC and PERB
Capital Market Assumptions

November 2016

Aon Hewitt
Retirement and Investment

Empower Results®

Capital Market Assumptions

- What are they?
  - Aon Hewitt's asset class return, volatility and correlation assumptions
  - Long-term; based on 10-year and 30-year projection periods
    - Forward looking assumptions
    - Best estimate assumptions (50/50 better or worse)
    - Market returns; i.e., no manager alpha (other than hedge funds and private equity which are entirely actively managed)
  - Global geographic coverage
  - Updated quarterly

Coverage

Equities	Bonds	Alternatives
All major regions covered including emerging markets	Nominal U.S. and non-U.S. government bonds	Hedge funds
	Inflation-linked government bonds	Real estate (total market and core)
	Corporate bonds	Private equity
	High yield	Infrastructure
	Emerging market debt	Commodities

Current Assumptions (10-Year): Expected Returns and Volatility (as of June 30, 2016)

Asset Class	Expected Nominal Return	Expected Risk (Volatility)
U.S. Equity	6.5%	17.4%
Global Equity (Developed & Emerging)	7.1	18.5
International Equity (Developed)	7.3	20.0
Emerging Markets Equity	7.5	30.0
TIPS	2.4	4.5
Core Fixed Income (Market Duration)	2.1	3.5
High Yield Bonds	5.1	12.0
Bank Loans	4.0	7.0
Non-US Developed Bonds (Unhedged)	1.1	10.0
Emerging Market Bonds (USD)	4.0	13.0
Hedge Funds (FoF)	3.4	9.0
Real Estate (Total Market)	5.8	12.5
Private Equity	8.5	24.0
U.S. Inflation (CPI)	2.1	--

Current Assumptions (30-Year): Expected Returns and Volatility (as of June 30, 2016)

Asset Class	Expected Nominal Return	Expected Risk (Volatility)
U.S. Equity	6.4%	17.5%
Global Equity (Developed & Emerging)	7.2	19.0
International Equity (Developed)	7.2	20.0
Emerging Markets Equity	7.5	30.5
TIPS	3.1	4.5
Core Fixed Income (Market Duration)	2.9	5.0
High Yield Bonds	5.4	12.0
Bank Loans	4.4	7.5
Non-US Developed Bonds (Unhedged)	2.1	11.0
Emerging Market Bonds (USD)	4.9	13.5
Hedge Funds (FoF)	3.8	9.5
Real Estate (Total Market)	5.7	12.5
Private Equity	8.5	24.5
U.S. Inflation (CPI)	2.1	--

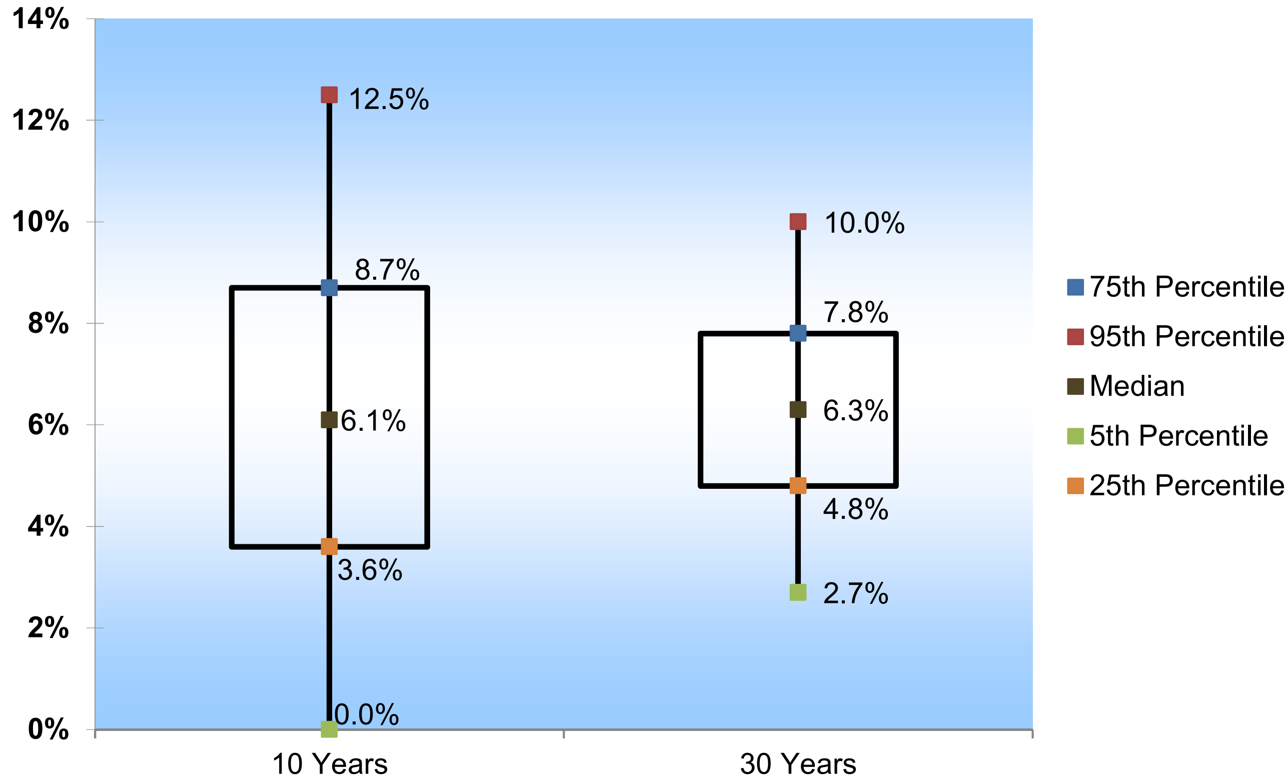
Projected Returns

	Long-Term Policy Allocation	Annualized Return (10 Year Forecast)	Standard Deviation (10 Year Forecast)	Annualized Return (30 Year Forecast)	Standard Deviation (30 Year Forecast)
U.S. Equity	29.0%	6.5%	17.4%	6.4%	17.5%
Non-U.S. Equity	13.5	7.6	20.9	7.5	21.0
Global Equity	15.0	7.1	18.5	7.2	19.0
Fixed Income*	30.0	2.8	3.8	3.5	4.7
Private Equity	5.0	8.5	24.0	8.5	24.5
Real Estate	7.5	5.8	12.5	5.7	12.5
Total Fund	**100.0%**	**6.1%**	**12.1%**	**6.3%**	**12.3%**

- We understand that the Defined Benefit Plan's actuarial assumed rate will be lowered from 8.0% to 7.5% in July of 2017, and the Cash Balance Benefit Plan's actuarial assumed rate will be lowered from 8.0% to 7.5% in January of 2018
- Lowering the actuarial assumed rates for the DB and CBB Plans increases the probability that they will be achieved
- Given existing market conditions, meeting or exceeding 7.5% is still likely to prove challenging in our view

*Modeled as 20% core bonds, 1.5% international bonds, 3.5% high yield bonds, and 5% bank loans

Projected Returns (cont'd)



- Based on our capital market assumptions and the defined benefit plans' asset allocation targets, the defined benefit plans have about a 1 in 3 chance of meeting or exceeding the assumed rate of return of 7.5% over the next 10-to-30 years

AHIC 10-Year Assumptions: How Expected Returns Have Evolved Over the Past 5 Years

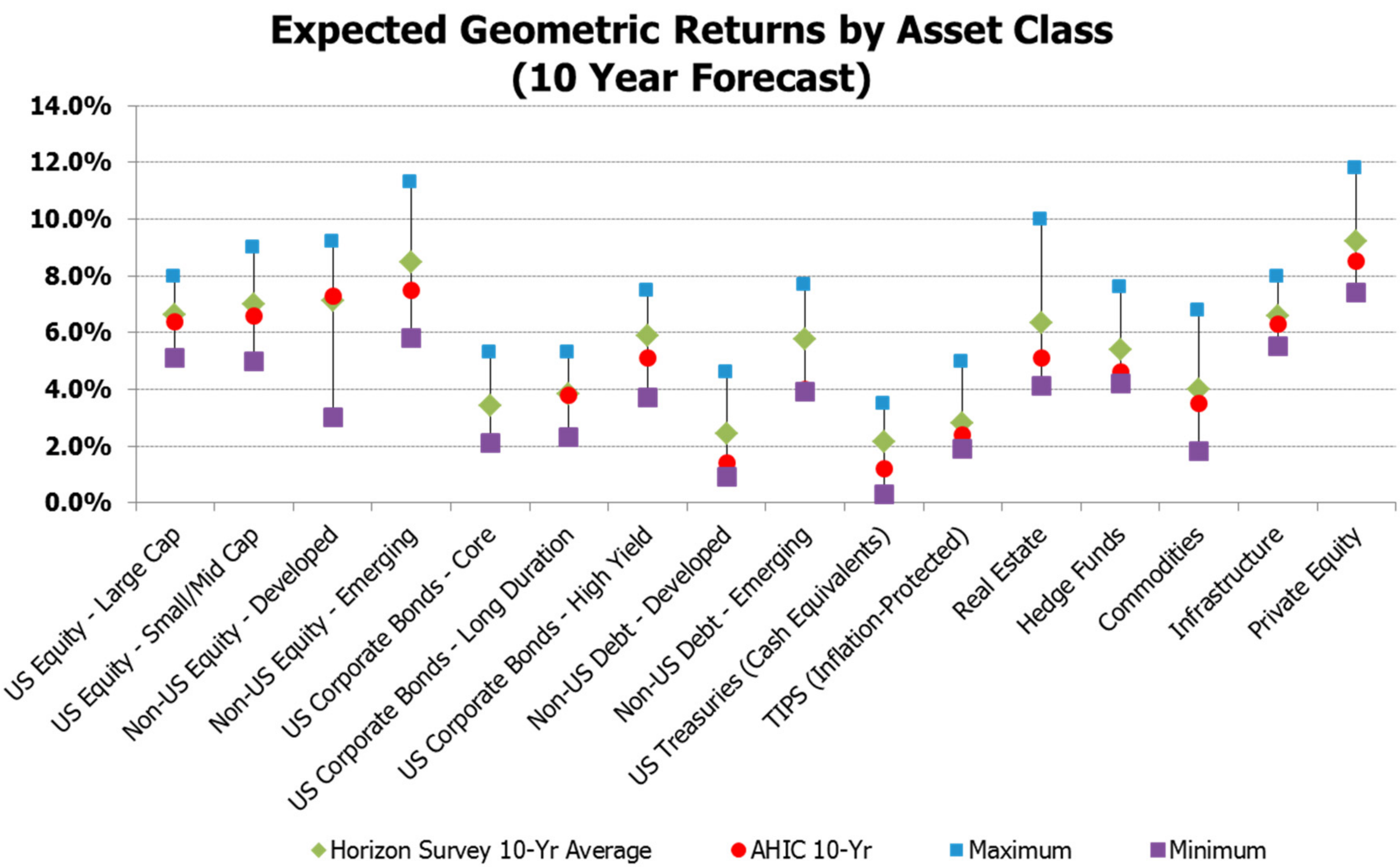
Asset Class		Expected Nominal Return				
	6/30/16	2015	2014	2013	2012	2011
Large Cap U.S. Equity	6.4%	6.6	6.7%	7.1%	7.5%	8.0%
Small Cap U.S. Equity	6.6	6.8	6.9	7.3	7.7	8.2
Global Equity	7.1	7.1	7.1	7.5	8.3	8.9
International Equity (Developed)	7.3	7.1	7.2	7.3	8.4	9.1
Emerging Markets Equity	7.5	8.4	8.4	8.9	9.4	9.8
Cash (Gov't)	1.2	1.8	2.2	2.5	1.3	1.5
Core Fixed Income (Market Duration)	2.1	2.7	2.9	3.3	1.9	2.6
High Yield Bonds	5.1	5.9	4.2	4.6	3.9	5.9
Hedge Funds Universe[1]	3.4	3.8	5.0	5.2	5.2	5.7
Real Estate (Broad Market)	5.8	6.6	7.0	7.2	7.4	7.3
Private Equity	8.5	9.0	9.0	9.3	9.7	9.8
Inflation	2.1	2.0	2.2	2.1	2.3	2.1

[1] Hedge Fund Universe assumptions are capital market assumptions for fund of hedge funds

- Our return expectations have generally decreased over the past five years

Color Key
Increased from 2011
No Change from 2011
Decreased from 2011

AHIC Forecasts vs. Peers: Ask 35 Consultants and…



SOURCE: Horizon Actuarial survey of 2016 capital market assumptions from 35 independent investment advisors
Expected returns of the survey are annualized over 10-years (geometric).
AHIC expected returns are annualized over 10-years as of June 30, 2016

AHIC Versus Peers (2016 Horizon Survey)—10-Year Forecast

	Horizon Survey		AHIC		
	10 Year Horizon		10 Year Forecasts		
Asset Class	Expected Return	Expected Risk	Expected Return	Expected Risk	Diff
US Equity - Large Cap	6.6%	16.9%	6.4%	17.0%	-0.2%
US Equity - Small/Mid Cap	7.0%	21.0%	6.6%	23.0%	-0.4%
Non-US Equity - Developed	7.1%	19.5%	7.3%	20.0%	0.2%
Non-US Equity - Emerging	8.5%	26.4%	7.5%	30.0%	-1.0%
US Fixed Income - Core	3.4%	6.0%	2.1%	3.5%	-1.3%
US Fixed Income - Long Duration Corp	3.8%	10.5%	3.8%	11.5%	0.0%
US Fixed Income - High Yield	5.9%	11.0%	5.1%	12.0%	-0.8%
Non-US Fixed Income - Developed	2.4%	7.6%	1.4%	5.5%	-1.0%
Non-US Fixed Income - Emerging	5.8%	11.6%	4.0%	13.0%	-1.8%
Treasuries (Cash Equivalents)	2.1%	2.8%	1.2%	1.0%	-0.9%
TIPS (Inflation-Protected)	2.8%	6.5%	2.4%	4.5%	-0.4%
Real Estate	6.4%	14.7%	5.1%	11.5%	-1.3%
Hedge Funds	5.4%	8.4%	4.6%	9.0%	-0.8%
Commodities	4.0%	18.5%	3.5%	17.0%	-0.5%
Infrastructure	6.6%	13.8%	6.3%	14.5%	-0.3%
Private Equity	9.2%	23.1%	8.5%	24.0%	-0.7%
Inflation	2.2%	1.8%	2.1%	1.0%	-0.1%

Notes (Horizon Survey):
Source: Horizon Actuarial survey of 2016 capital market assumptions from 35 independent investment advisors
Expected returns are annualized (geometric).

Notes (AHIC Forecasts):
AHIC Forecasts are for Q3 2016
US Equity - Small/Mid Cap forecasts represents AHIC forecasts for US Small Cap
US Fixed Income - Long Duration forecasts represents AHIC forecasts for Long Duration Credit
Non-US Fixed Income - Developed forecasts represents AHIC forecasts for Non-US Fixed Income - Developed (50% Hedged)
Non-US Fixed Income- Emerging forecasts represents AHIC forecasts for Non-US Fixed Income- Emerging Sovereign USD
Real Estate forecasts represents AHIC forecasts for Core Private Real Estate
Hedge Funds forecasts represents AHIC forecasts for Hedge Fund-of-Funds (Buy List)

Reasons for Differences

- Methodology
- Time Horizon
- Arithmetic vs. Geometric forecasts
- Alpha (active management)
- Inflation
- Investment Fees
- Asset class definition

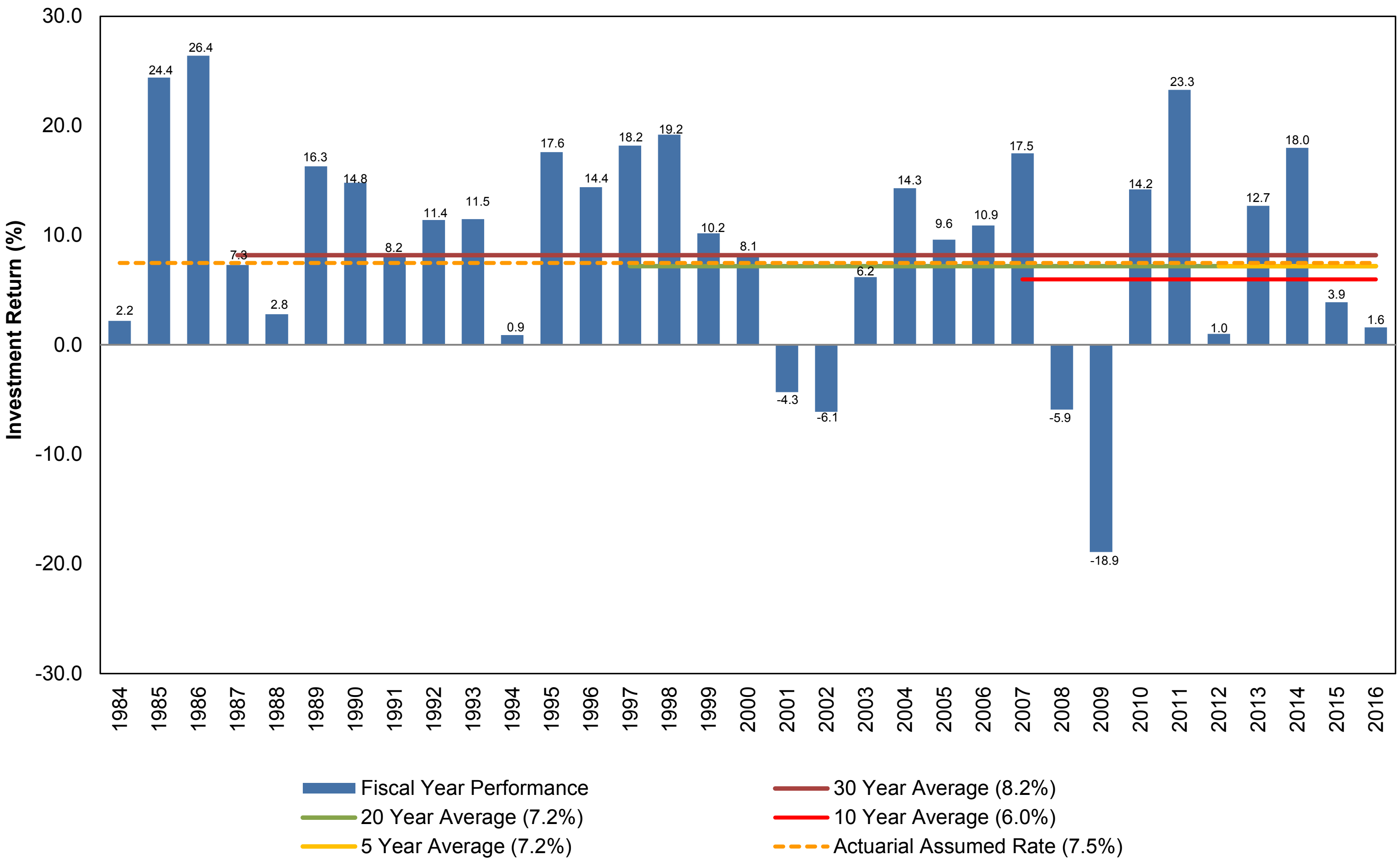
AHIC Versus Peers: Observations

- Compared to 2015, 2016 survey results under the 10-year forecast do not indicate much change in return assumptions of both risky assets (equity-like) and fixed income asset classes
  – Equity return assumptions are lower by an average of 0.1%
  – Fixed income return assumptions are higher by an average of 0.1%
  – Alternative asset class return assumptions are lower by an average of 0.1%
- 2016 AHIC 10-year forecast assumptions tend to be lower than the survey average
  – AHIC equity assumptions are driven by market valuations, earnings growth expectations and assumed payouts to investors. Recent experience suggests strong equity market performance has been driven more by increasing valuations than increasing profits. As markets have become more expensive, our equity return assumptions have consequently fallen
  – AHIC fixed income assumptions reflect falling yields and flattening of yield curves during the first two quarters of 2016, as well as an expectation that rises interest rates will occur more slowly than what was previously assumed
  – AHIC alternative asset class assumptions are generally lower due to methodological and inflation forecast differences compared to survey participant forecasts
- In conclusion, AHIC assumptions appear somewhat more conservative than peers included in the 2016 Horizon Survey of capital market assumptions

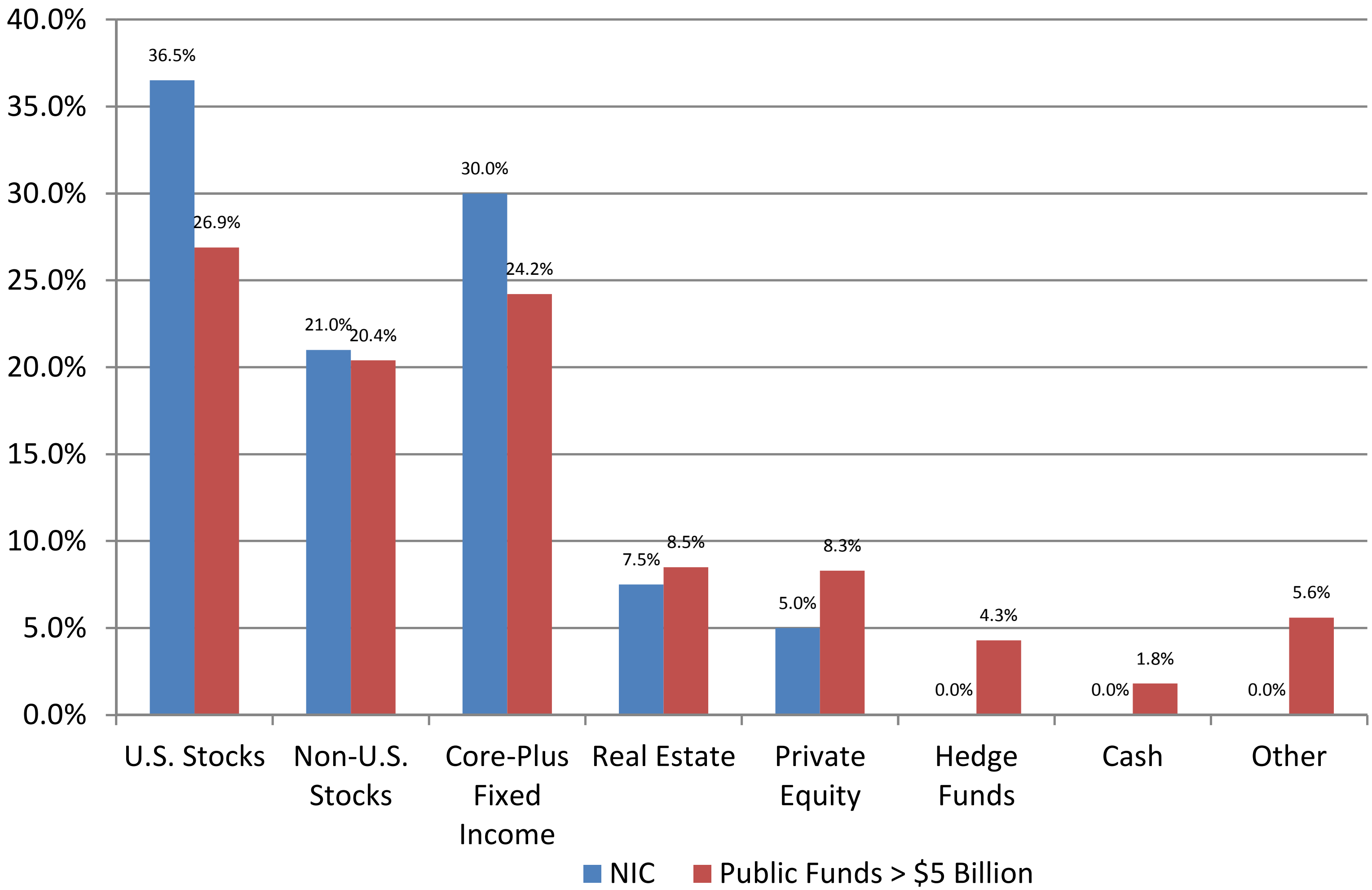
Appendices

Appendix I: NIC DB Plan Historical Fiscal Year and Cumulative Period Performance

NIC DB Plan Fiscal Year Performance
As of June 30, 2016

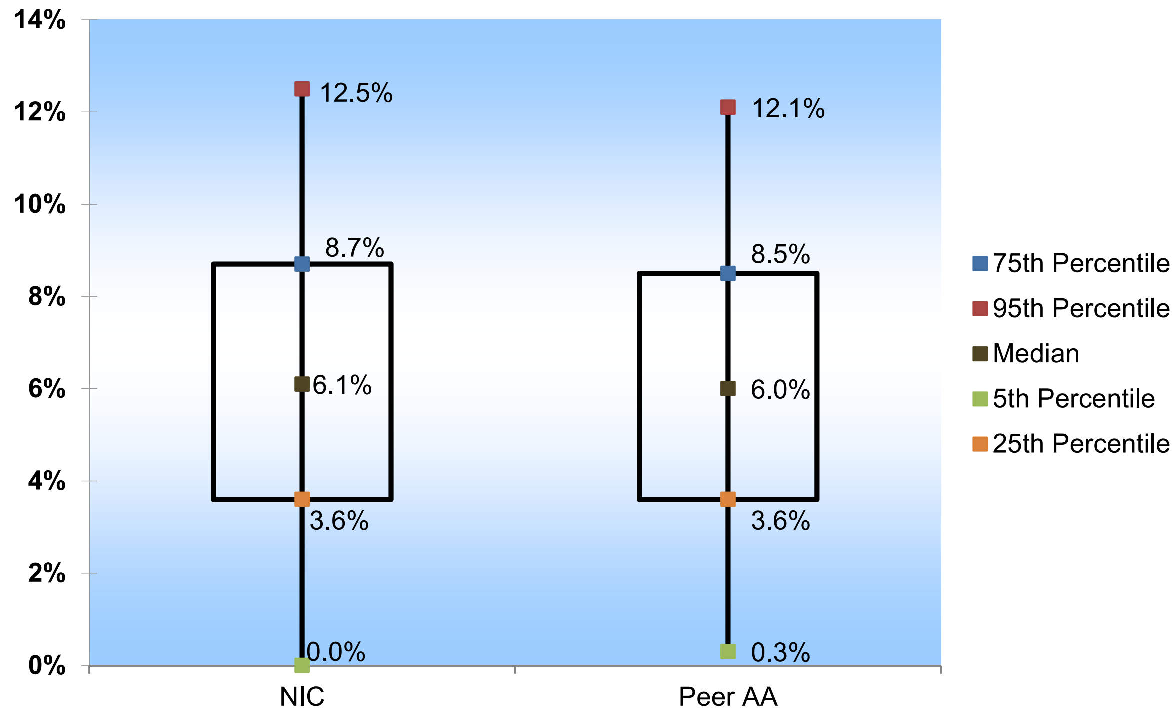


Appendix II: Asset Allocation – NIC vs. $5 Billion+ Public Funds*



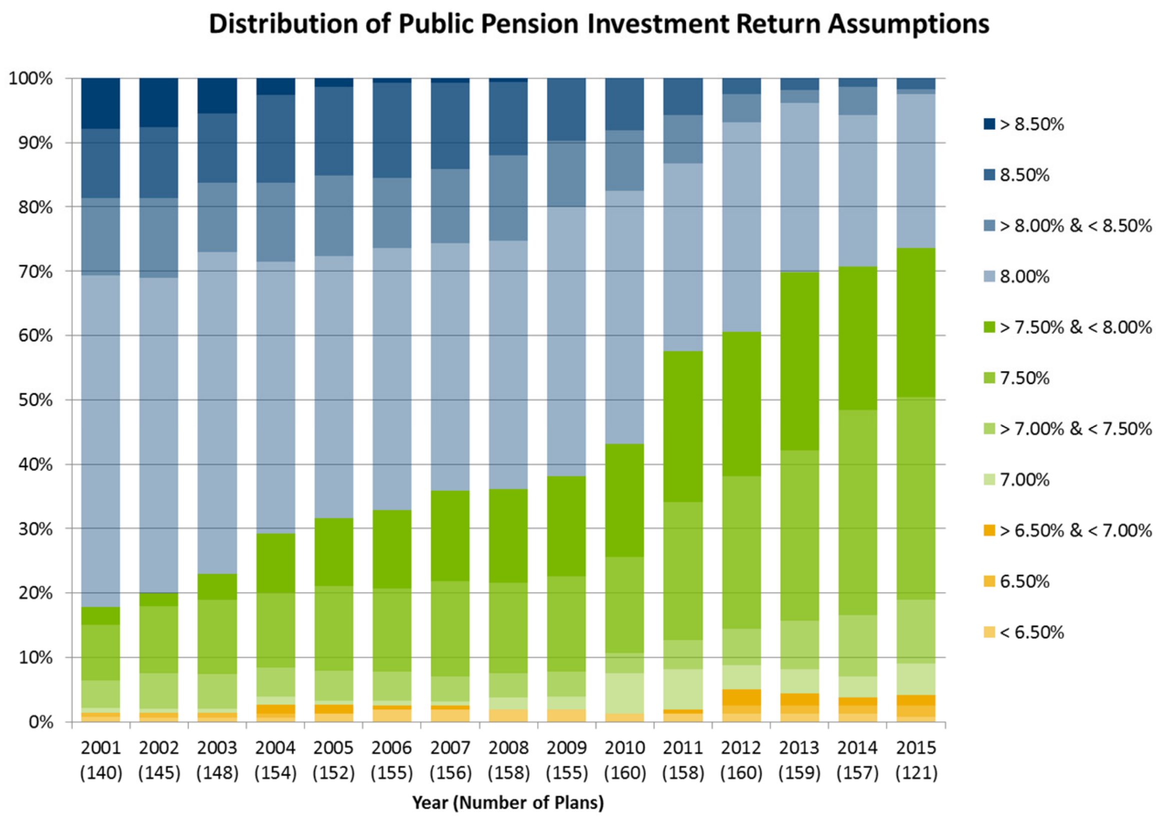
*Greenwich Associates – Institutional Investors Market Trends 2015

Appendix II: Asset Allocation – NIC vs. $5 Billion+ Public Funds* (cont'd)



- Above we compare our 10-year forecast for NIC's policy target allocation to the average public fund allocation depicted on the previous slide
- As shown, the forecasts are quite similar

Appendix III: Investment Return Assumptions of Peer Public Funds

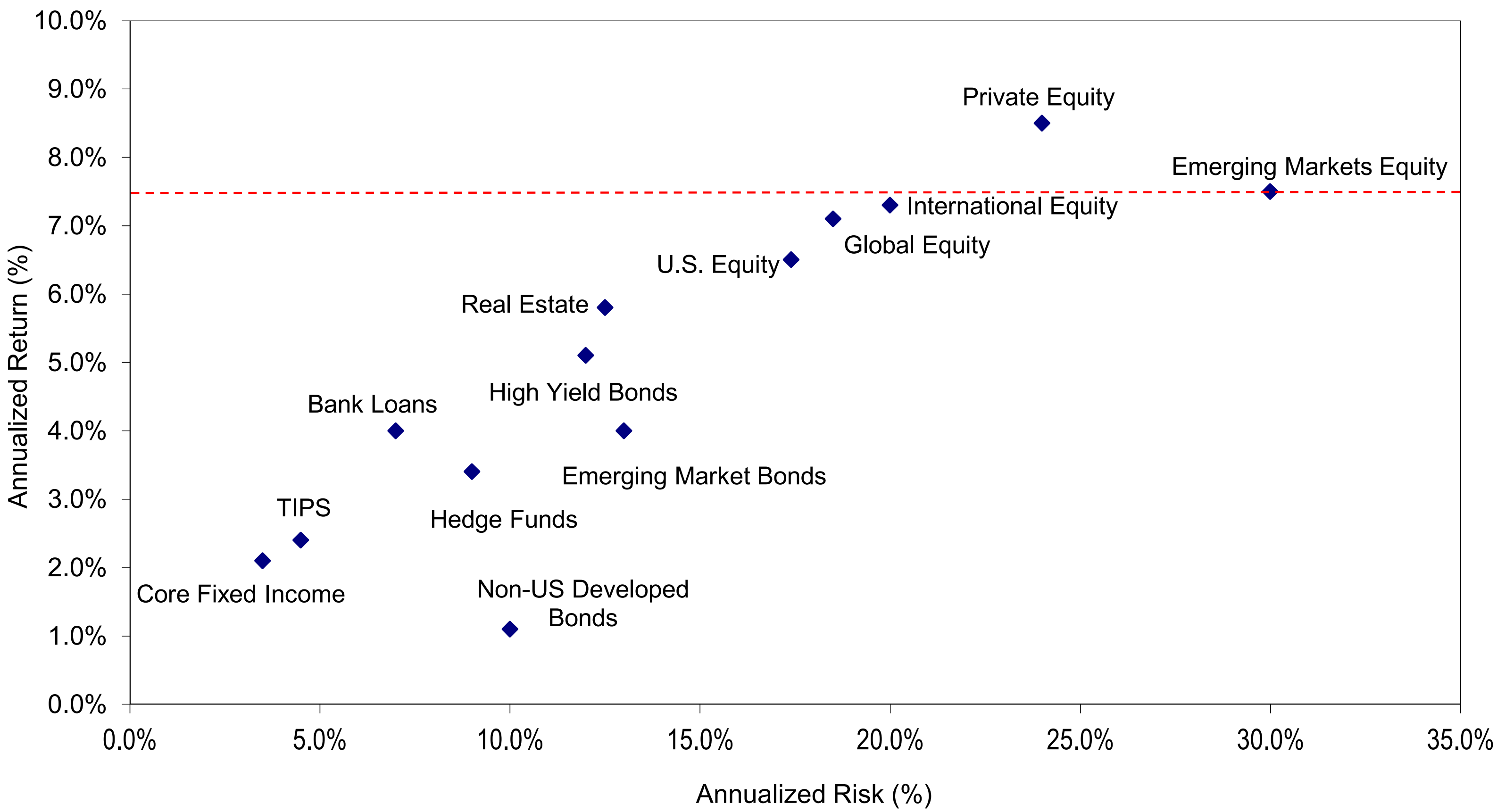


- The chart to the left illustrates the trend in investment return assumptions over the past 15 years according to information compiled by the Public Plans Data (PPD)
- The median Investment return assumption has declined from 8.00% in 2001-2010 to 7.50% based on the latest survey data

Source: Public Plans Data (publicplansdata.org) as of October 2016

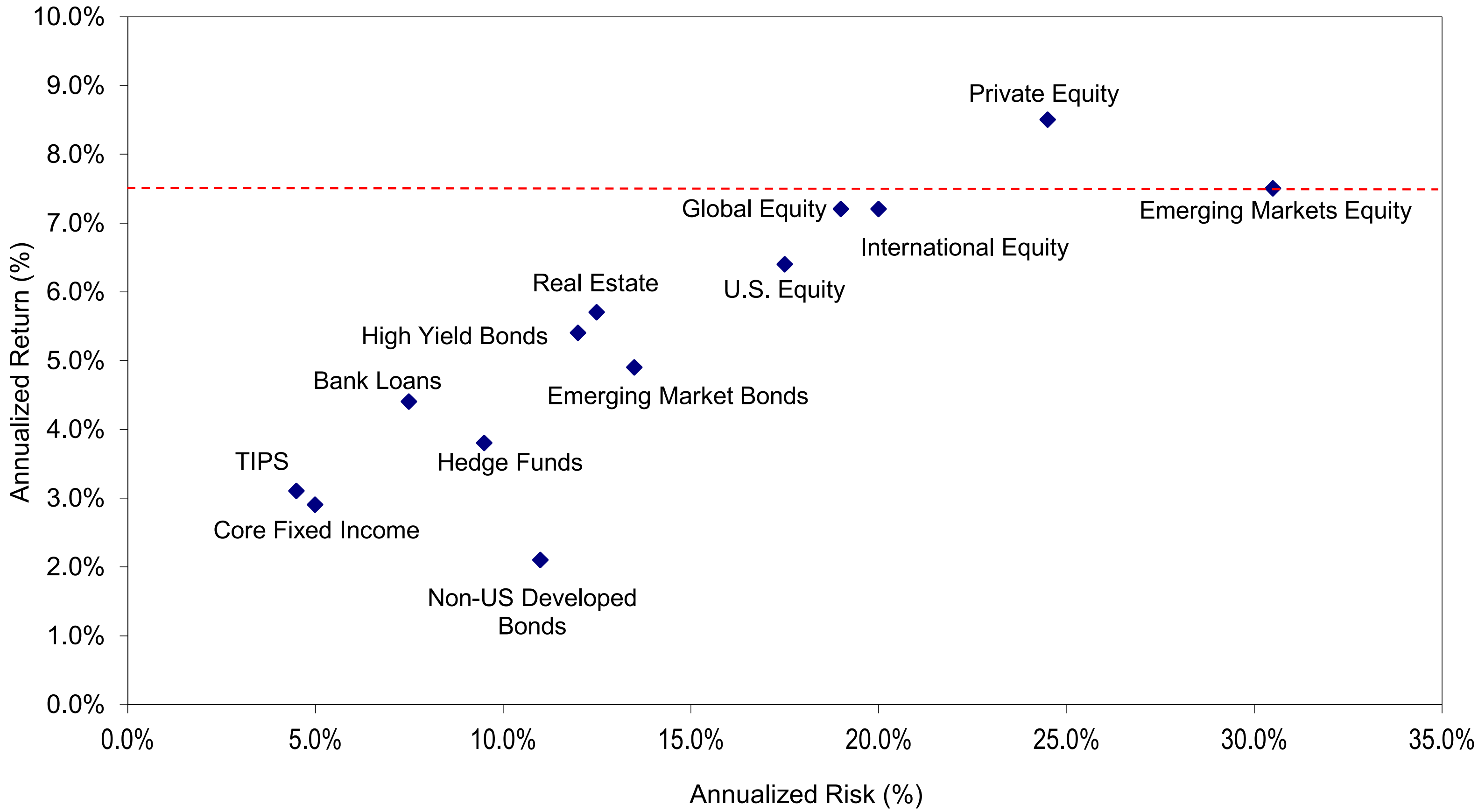
Appendix IV: AHIC Forward Looking Return Expectations by Asset Class

Risk-Return
AHIC 10 Year Capital Market Assumptions



Appendix IV: AHIC Forward Looking Return Expectations by Asset Class (cont'd)

Risk-Return
AHIC 30 Year Capital Market Assumptions



Meeting of the Nebraska Investment Council Capital Market Assumptions – Endowments

November 2016

Aon Hewitt
Retirement and Investment

Capital Market Assumptions

- In the joint meeting with the PERB, we covered our capital market assumptions and long-term return and volatility forecasts for the DB/CBB Plans
- The slides that follow provide similar forecasts for the Health Care and 50/50 Endowments based on their respective asset allocation targets
  - Health Care Endowments:
    - Nebraska Medicaid Intergovernmental Trust
    - Nebraska Tobacco Settlement Trust
  - 50/50 Endowments:
    - Permanent School Fund
    - Early Childhood Education Endowment Fund
    - Nebraska Veterans' Aid Fund
    - Cultural Preservation Endowment Fund
    - Agricultural College Endowment Fund
    - Permanent University Endowment Fund
    - Nebraska Environmental Endowment Fund
    - State College Endowment Fund
    - Bessey Memorial Trust Fund

Current Assumptions (10-Year): Expected Returns and Volatility (as of June 30, 2016)

Asset Class	Expected Nominal Return	Expected Risk (Volatility)
U.S. Equity	6.5%	17.4%
Global Equity (Developed & Emerging)	7.1	18.5
International Equity (Developed)	7.3	20.0
Emerging Markets Equity	7.5	30.0
TIPS	2.4	4.5
Core Fixed Income (Market Duration)	2.1	3.5
High Yield Bonds	5.1	12.0
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Non-US Developed Bonds (Unhedged)	1.1	10.0
Emerging Market Bonds (USD)	4.0	13.0
Hedge Funds (FoF)	3.4	9.0
Real Estate (Total Market)	5.8	12.5
Private Equity	8.5	24.0
U.S. Inflation (CPI)	2.1	--

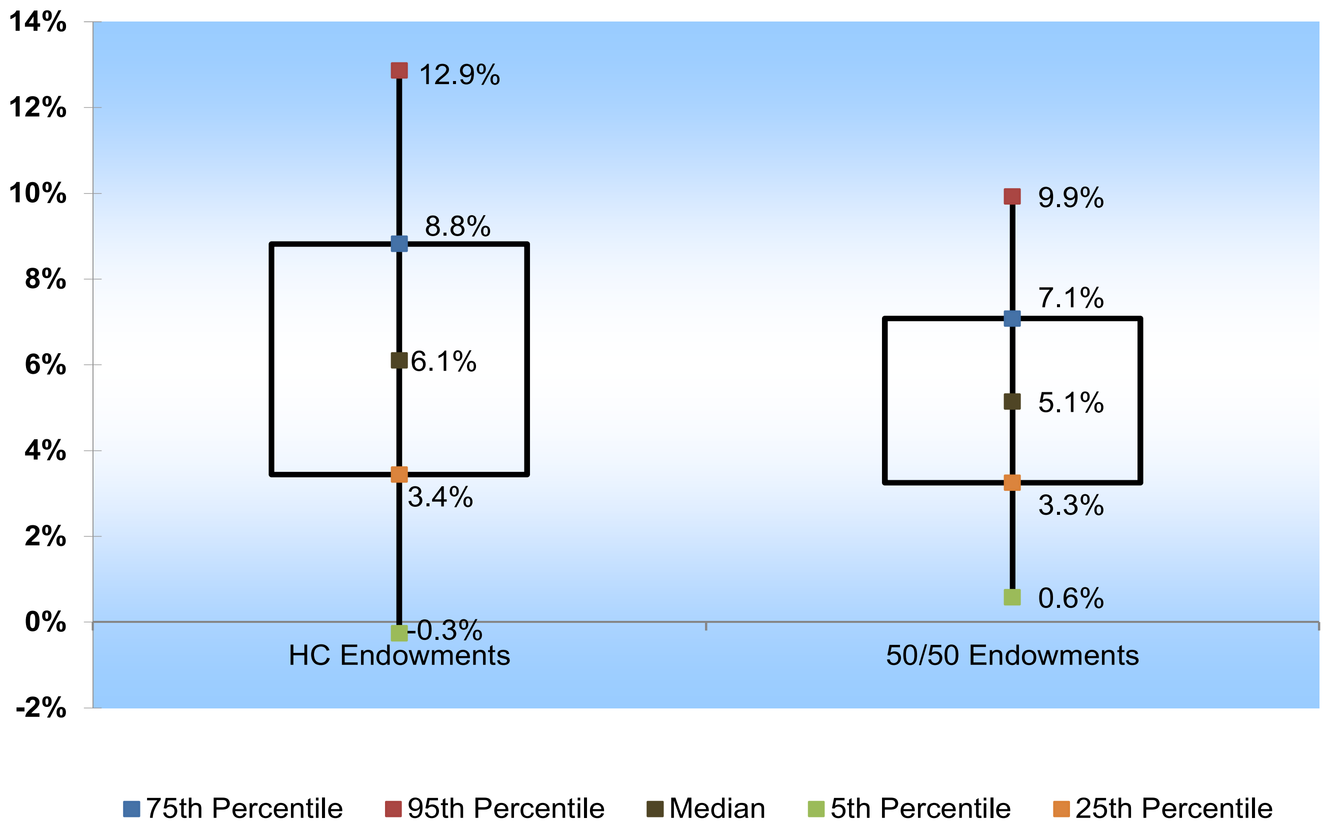
Projected Returns and Volatility – Health Care and 50/50 Endowments

	Health Care Endowment Policy Target Allocation	Annualized Return (10 Year Forecast)	Standard Deviation (10 Year Forecast)	50/50 Endowment Policy Target Allocation	Annualized Return (10 Year Forecast)	Standard Deviation (10 Year Forecast)
U.S. Equity	40.0%	6.5%	17.4%	25.0%	6.5%	17.4%
Non-U.S. Equity	15.0	7.6	20.9	10.0	7.6	20.9
Global Equity	10.0	7.1	18.5	5.0	7.1	18.5
Fixed Income	25.0	2.1	3.5	50.0*	2.5	3.8
Private Equity	5.0	8.5	24.0	5.0	8.5	24.0
Real Estate	5.0	5.8	12.5	5.0	5.8	12.5
Total Fund	**100.0%**	**6.1%**	**12.7%**	**100.0%**	**5.1%**	**9.0%**

- Our forward looking return and volatility projections for the Health Care and 50/50 Endowments are illustrated above

*Modeled as 43.75% Core Fixed Income, 6.25% High Yield Fixed Income

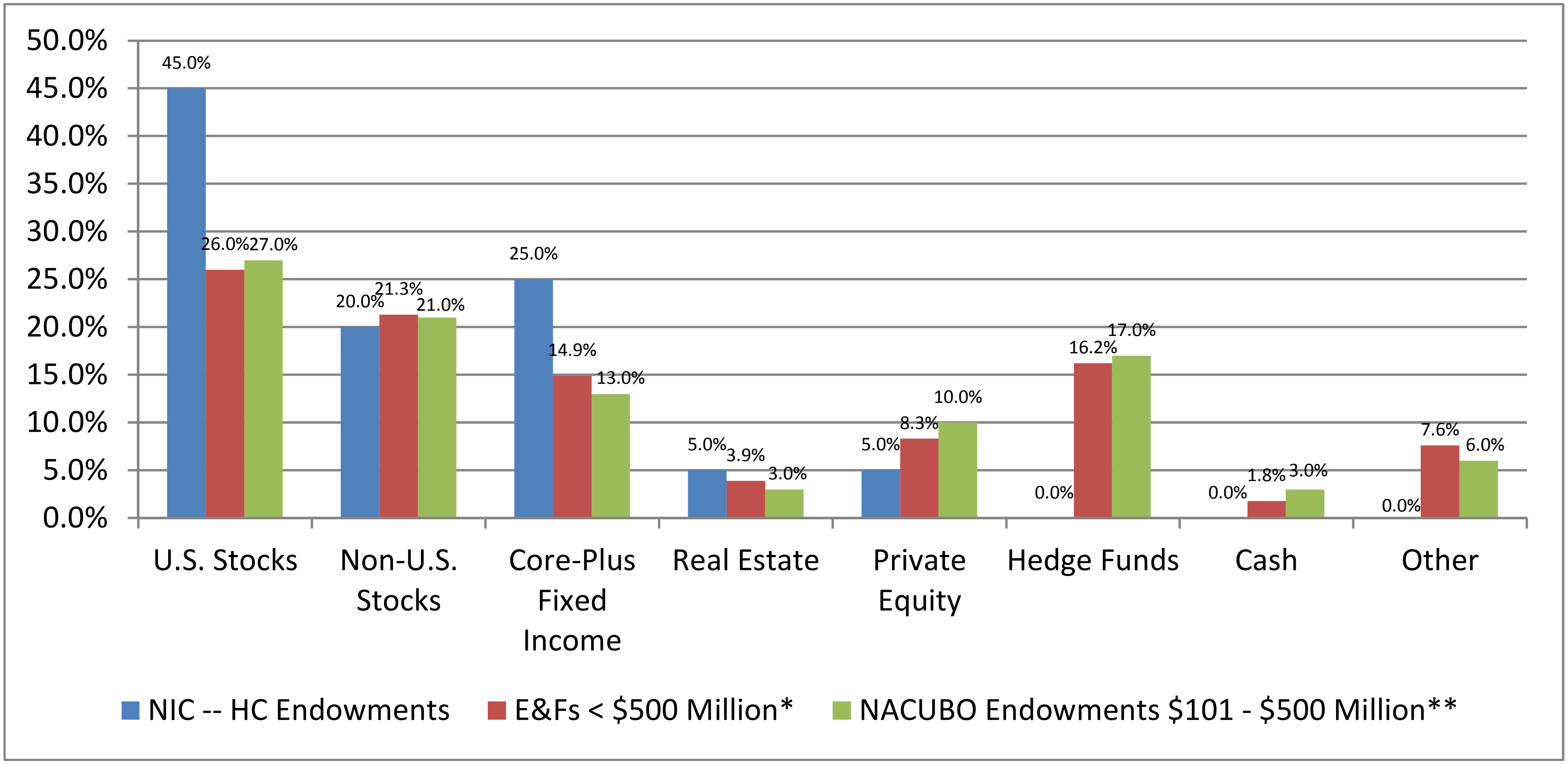
Projected Returns and Volatility – Health Care and 50/50 Endowments (cont'd)



- The forecasted range of outcomes over the next 10 years for the Health Care and 50/50 Endowments is depicted above
  - The Health Care Endowments have a higher median return expectation as well as a wider range of possible outcomes due to their heavier emphasis on equities relative to the 50/50 endowments

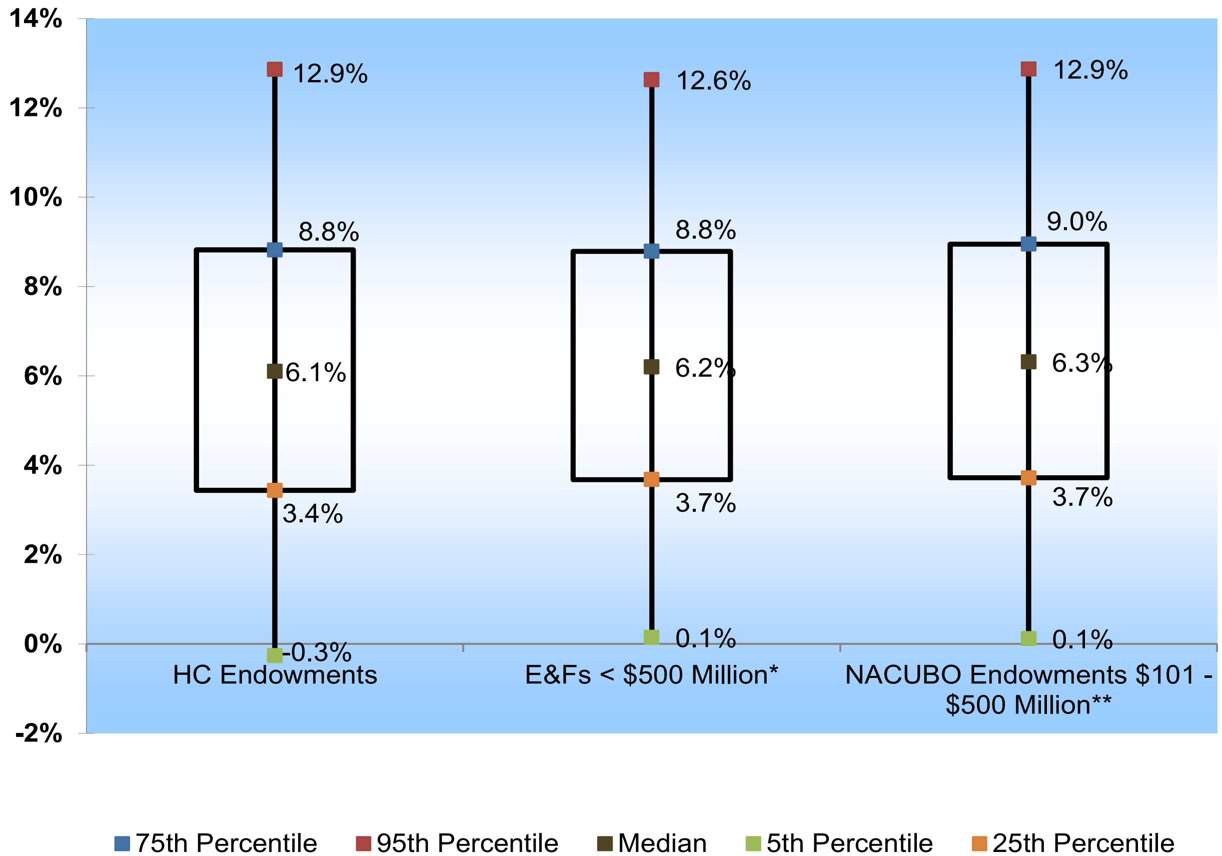
Appendices

Appendix I: Asset Allocation – NIC HC Endowments vs. Similar Sized Peers



*Greenwich Associates – Institutional Investors Market Trends 2015
**2015 NACUBO Commonfund Study of Endowments

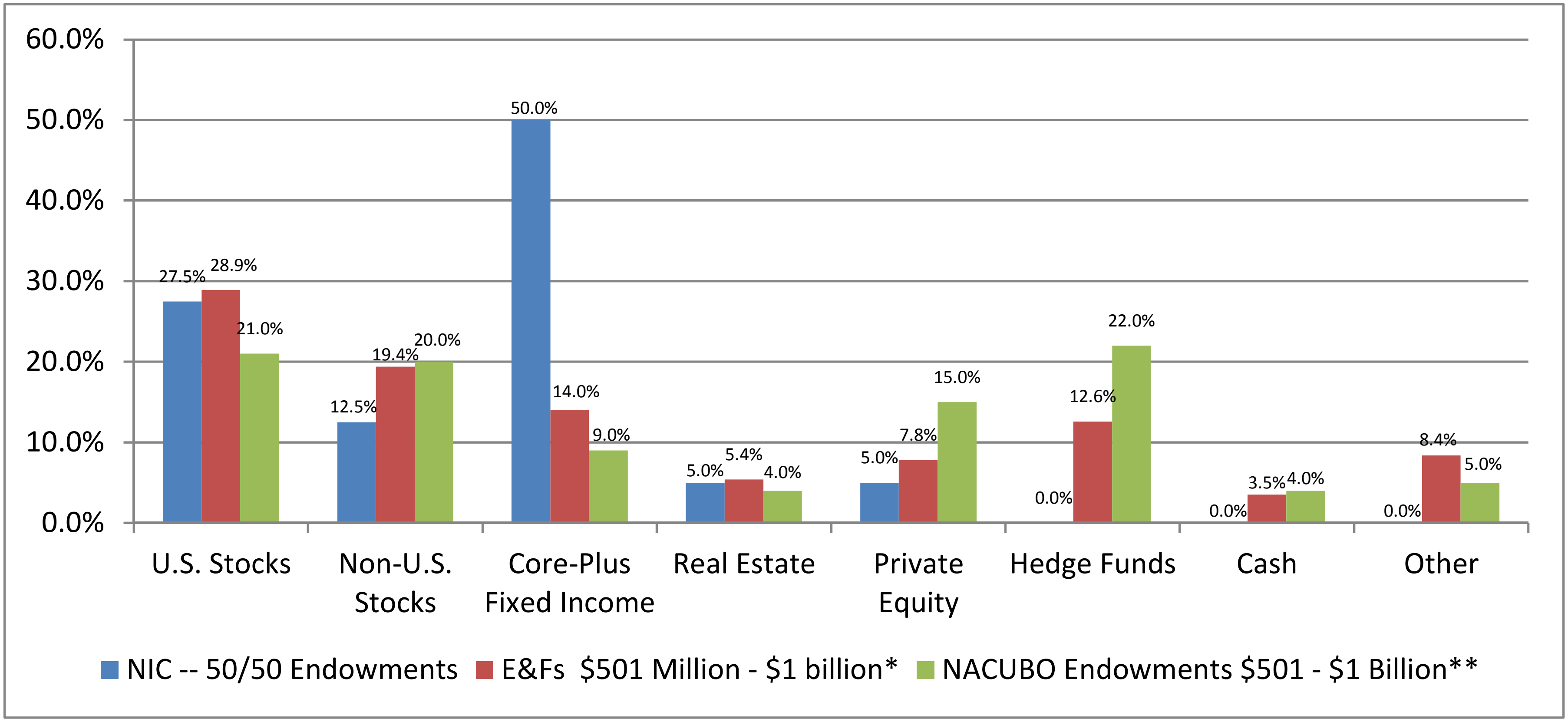
Appendix I: Asset Allocation – NIC HC Endowments vs. Similar Sized Peers (cont'd)



- Above we compare our 10-year forecast for the Health Care Endowments' policy target allocation to the average asset allocation of similar sized peers

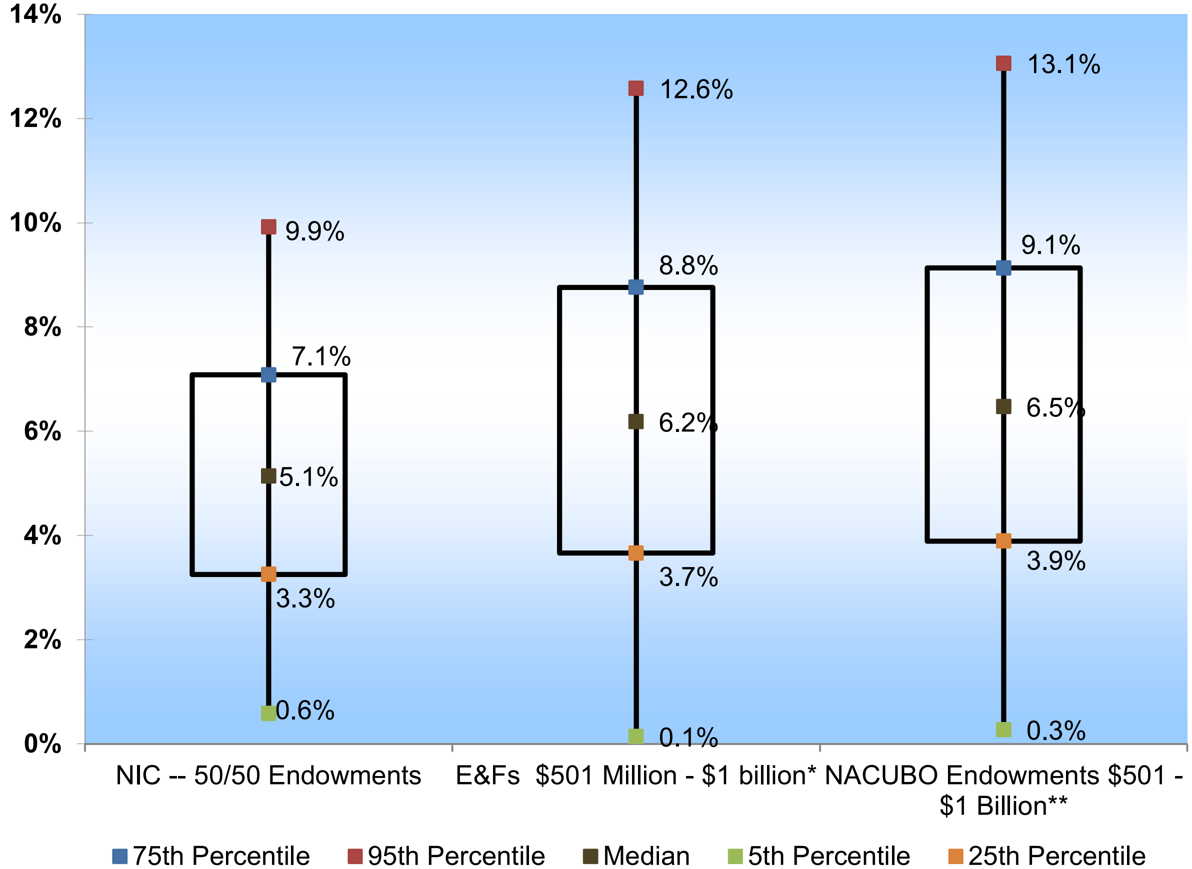
*Greenwich Associates – Institutional Investors Market Trends 2015
**2015 NACUBO Commonfund Study of Endowments

Appendix II: Asset Allocation – NIC 50/50 Endowments vs. Similar Sized Peers



*Greenwich Associates – Institutional Investors Market Trends 2015
**2015 NACUBO Commonfund Study of Endowments

Appendix II: Asset Allocation – NIC 50/50 Endowments vs. Similar Sized Peers (cont'd)



- Above we compare our 10-year forecast for the 50/50 Endowments' policy target allocation to the average asset allocation of similar sized peers

*Greenwich Associates – Institutional Investors Market Trends 2015
**2015 NACUBO Commonfund Study of Endowments