

Nebraska Investment Council Capital Market Assumptions Endowments

September 2019

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, 2019)

Asset Class	Expected Nominal Return	Expected Risk (Volatility)
U.S. Equity	6.3%	17.4%
Global Equity (Developed & Emerging)	7.1	18.5
International Equity (Developed)	7.3	20.0
Emerging Markets Equity	7.9	27.0
TIPS	2.5	4.5
Core Fixed Income (Market Duration)	2.5	4.0
High Yield Bonds	4.0	12.0
Bank Loans	4.8	7.0
Non-US Developed Bonds (Unhedged)	1.0	10.0
Emerging Market Bonds (USD)	4.2	13.0
Hedge Funds (FoF)	3.6	9.0
Real Estate (Total Market)	6.1	14.2
Private Equity	8.7	25.0
U.S. Inflation (CPI)	2.1	--

Current Assumptions (30-Year): Expected Returns and Volatility (as of June 30, 2019)

Asset Class	Expected Nominal Return	Expected Risk (Volatility)
U.S. Equity	6.9%	17.9%
Global Equity (Developed & Emerging)	7.6	19.0
International Equity (Developed)	7.5	20.0
Emerging Markets Equity	8.1	27.5
TIPS	3.0	4.5
Core Fixed Income (Market Duration)	3.1	5.0
High Yield Bonds	4.9	12.5
Bank Loans	5.5	7.5
Non-US Developed Bonds (Unhedged)	2.1	11.0
Emerging Market Bonds (USD)	4.7	14.0
Hedge Funds (FoF)	4.0	10.0
Real Estate (Total Market)	6.2	14.3
Private Equity	9.6	25.5
U.S. Inflation (CPI)	2.1	--

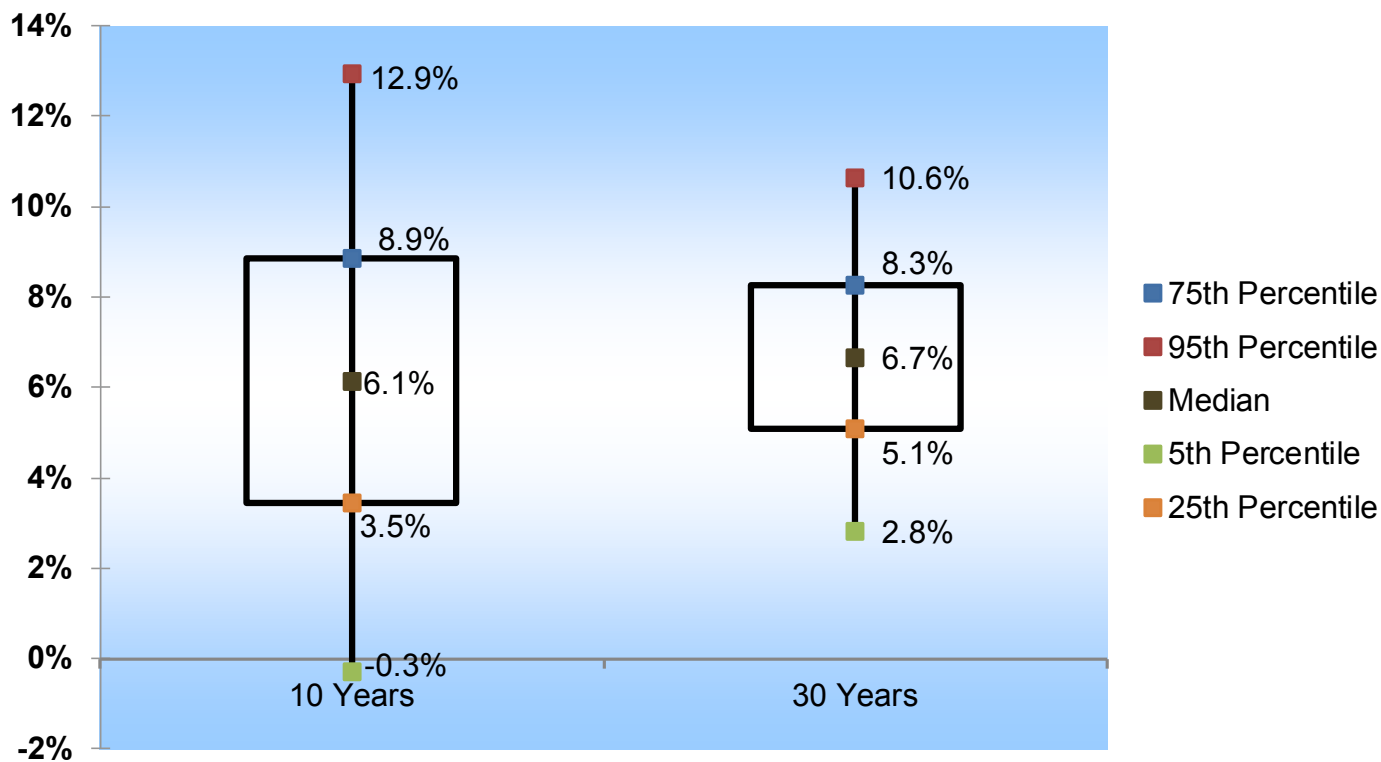
Health Care Endowment -- Projected Returns

	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	30.5%	6.3%	17.4%	6.9%	17.9%
Non-U.S. Equity	13.0	7.7	20.5	7.9	20.6
Global Equity	21.5	7.1	18.5	7.6	19.0
Fixed Income*	25.0	2.1	2.4	2.7	3.5
Private Equity	5.0	8.7	25.0	9.6	25.5
Real Estate	5.0	6.1	14.2	6.2	14.3
Total Fund	100.0%	6.1%	12.8%	6.7%	13.1%

- The table above presents our median return and volatility forecasts for the Health Care Endowment over 10 and 30 year periods

*Modeled as 22.5% Intermediate G/C Bonds, 2.5% Cash

Health Care Endowment -- Projected Returns (cont'd)



- The chart above presents a forecasted distribution of outcomes for the Health Care Endowment over 10 and 30 year periods

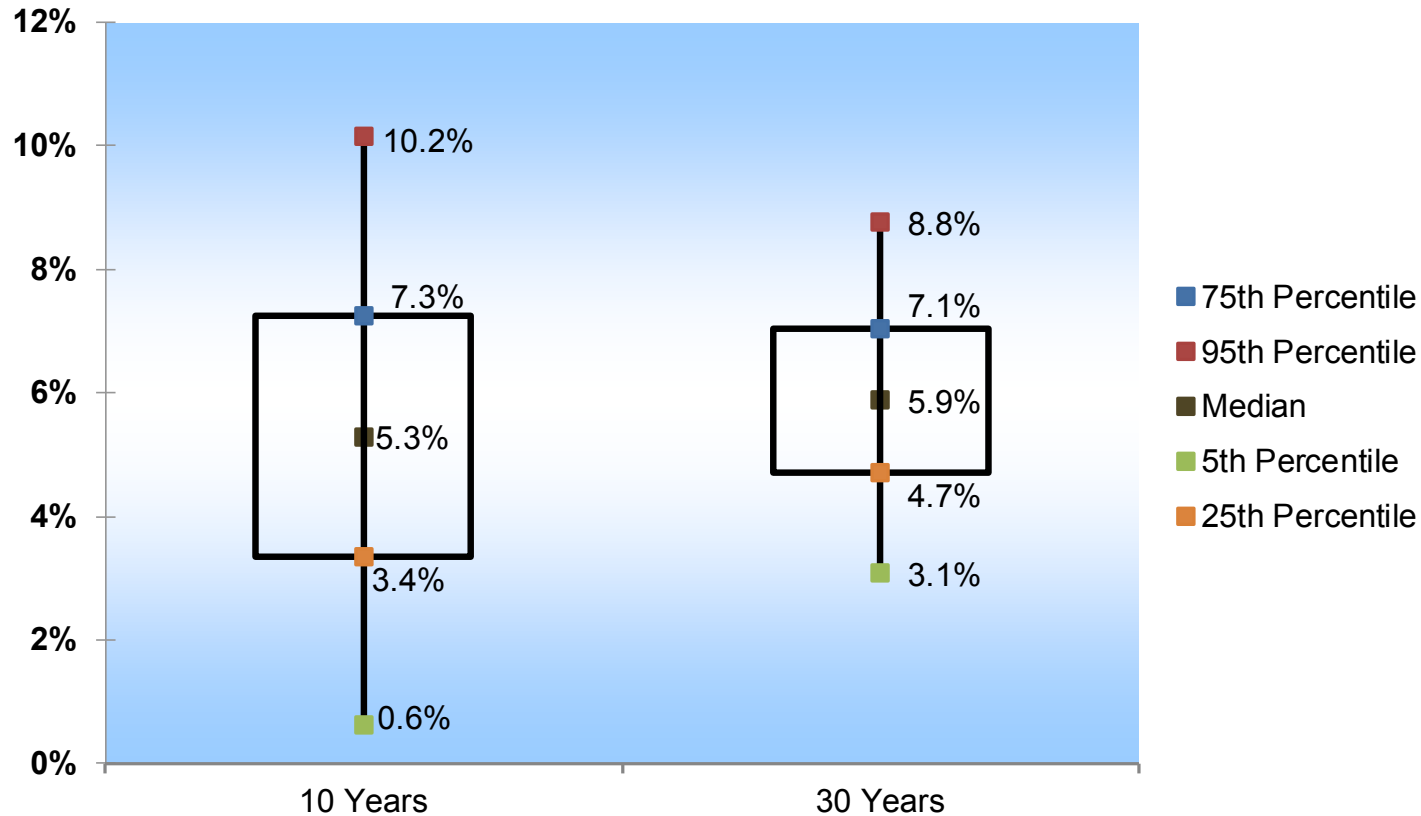
50/50 Endowments -- Projected Returns

	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	19.0%	6.3%	17.4%	6.9%	17.9%
Non-U.S. Equity	8.0	7.7	20.5	7.9	20.6
Global Equity	13.0	7.1	18.5	7.6	19.0
Fixed Income*	50.0	2.8	4.3	3.4	5.1
Private Equity	5.0	8.7	25.0	9.6	25.5
Real Estate	5.0	6.1	14.2	6.2	14.3
Total Fund	100.0%	5.3%	9.2%	5.9%	9.5%

- The table above presents our median return and volatility forecasts for the 50/50 Endowments over 10 and 30 year periods

*Modeled as 43.75% Core U.S. Fixed Income, 6.25% HY Bonds

50/50 Endowments -- Projected Returns (cont'd)



- The chart above presents a forecasted distribution of outcomes for the 50/50 Endowments over 10 and 30 year periods

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

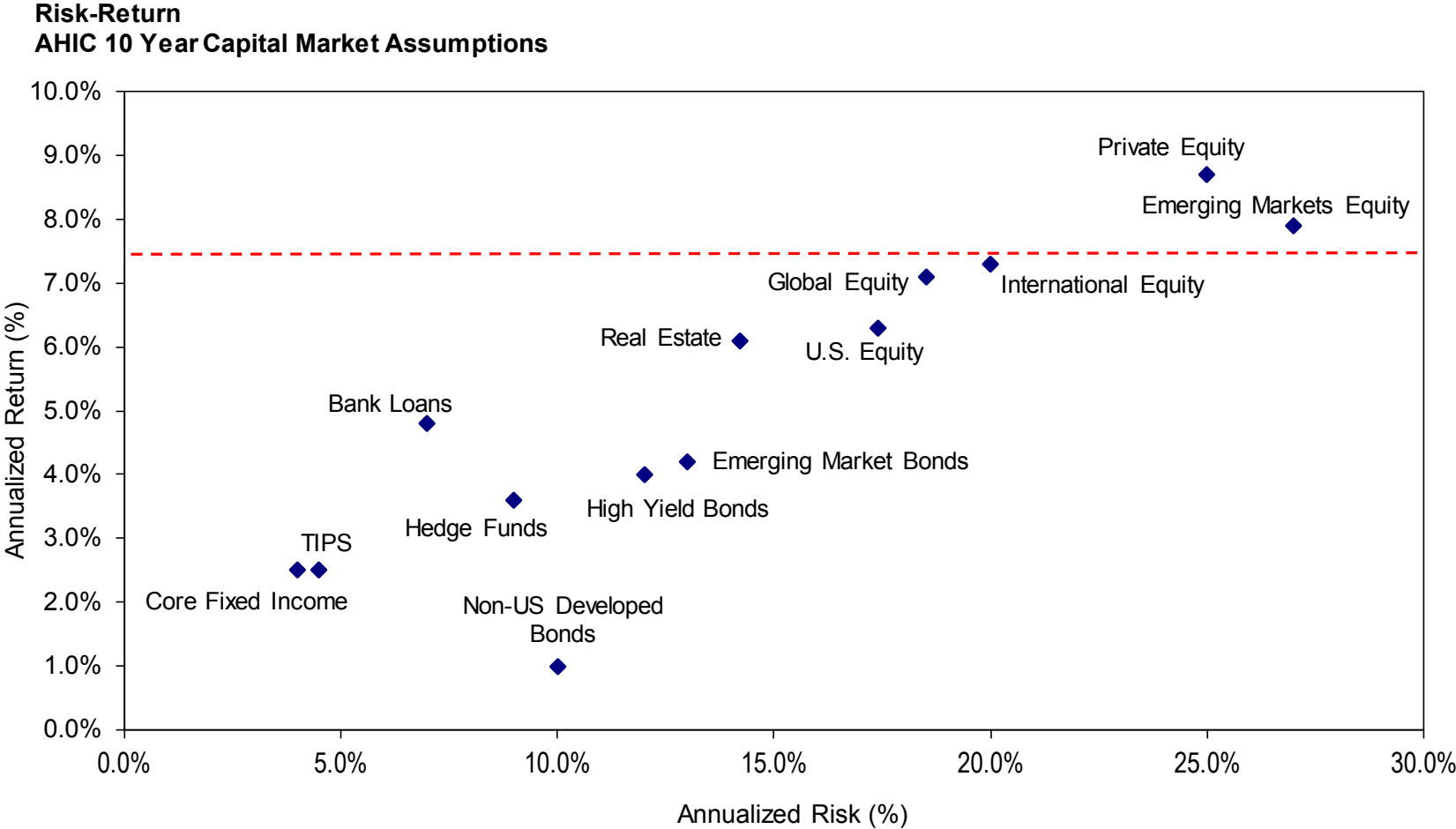
Asset Class	Expected Nominal Return								
	6/30/19	2018	2017	2016	2015	2014	2013	2012	2011
Large Cap U.S. Equity	6.2%	6.2%	6.3%	6.2%	6.6	6.7%	7.1%	7.5%	8.0%
Small Cap U.S. Equity	6.4	6.4	6.5	6.4	6.8	6.9	7.3	7.7	8.2
Global Equity	7.1	7.2	7.1	7.0	7.1	7.1	7.5	8.3	8.9
International Equity (Developed)	7.3	7.3	7.2	7.0	7.1	7.2	7.3	8.4	9.1
Emerging Markets Equity	7.9	8.1	7.6	7.4	8.4	8.4	8.9	9.4	9.8
Cash (Gov't)	1.8	2.8	2.0	1.3	1.8	2.2	2.5	1.3	1.5
Core Fixed Income (Market Duration)	2.5	3.5	2.7	2.1	2.7	2.9	3.3	1.9	2.6
High Yield Bonds	4.0	4.0	3.6	4.1	5.9	4.2	4.6	3.9	5.9
Hedge Funds Universe ¹	3.6	4.2	3.7	3.4	3.8	5.0	5.2	5.2	5.7
Real Estate (Broad Market)	6.1	5.9	6.0	5.4	6.6	7.0	7.2	7.4	7.3
Private Equity	8.7	8.2	8.7	8.2	9.0	9.0	9.3	9.7	9.8
Inflation	2.1	2.3	2.3	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 several years

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

Appendix I: AHIC Forward Looking Return Expectations by Asset Class



Appendix II: Estimated Yields

Health Care 6/30/2019			
	% Allocation	Actual Yield	Policy Yield
U.S. Equity	26.1%	1.9%	1.9%
Non-U.S. Equity	11.8%	3.2%	3.2%
Global Equity	21.6%	2.4%	2.5%
Fixed Income	30.0%	2.0%	2.0%
Real Estate	4.6%	4.1%	4.1%
Private Equity	5.9%	0.0%	0.0%
Total Yield	100.0%	2.2%	2.2%
50/50 6/30/2019			
	% Allocation	Actual Yield	Policy Yield
U.S. Equity	19.0%	2.6%	1.9%
Non-U.S. Equity	8.0%	3.2%	3.2%
Global Equity	12.7%	2.4%	2.5%
Fixed Income	48.6%	3.0%	2.9%
Real Estate	4.7%	4.1%	4.1%
Private Equity	7.0%	0.0%	0.0%
Total Yield	100.0%	2.8%	2.6%

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