



# Employees' Retirement System of Rhode Island

## Review of 2011 Asset Liability Study

Presented by:

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# *Agenda*

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- Asset Liability Study - Background
- Development of PCA Capital Market Assumptions
- Current Capital Market Trends



# *Background*

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# *Discussion of the 2011 Asset-Liability Study*

PROCESS REVIEW

- As part of its ongoing planning and fiduciary process, the Rhode Island SIC is conducting an asset-liability study;
  - Last Asset / Liability Study conducted 2003
- Project output will be a strategic asset allocation policy that incorporates SIC view of plan risk



# *A Brief Review of Asset/Liability Concepts*

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- Types of Investment Allocation:
  - Strategic Allocation – a long-term policy decision
  - Tactical/Dynamic Allocation – to enhance performance by opportunistically shifting the asset mix of a portfolio in response to changing patterns in the capital markets; to manage risk by shifting the policy mix in response to a changing risk environment
- Importance of Strategic Allocation:
  - Strategic allocation policy explains over 90% of an investment portfolio's *return volatility*
  - Strategic allocation is one of the most important decisions for pension fund trustees



# *Discussion of the 2011 Asset-Liability Study*

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## Robust Asset Liability Study

- Utilizes PCA's 2011 Capital Market Assumptions
- Incorporates member, financial, and plan benefit data in an independent actuarial model
- Examine key plan financial metrics
  - Funding Ratio - ending value and volatility (the journey)
  - Contribution Level - ending value and volatility (the journey)
  - Liquidity
- Select asset allocation policy with characteristics that best meet SIC risk objectives
- Project timeline: typically 4 months



# *Discussion of the 2011 Asset-Liability Study*

## STUDY OBJECTIVES

- An asset-liability study incorporates an analysis of both sides of a pension system's balance sheet as well as flows in and out of the system
  
- The objectives of an asset-liability project are threefold:
  1. **Develop an understanding** of how the **financial condition** of the ERSRI Plan **might vary** based on investment outcomes of the ERSRI investment portfolio
  
  2. Given the variability in (1.), **establish a consensus definition** and view of the **risk(s)** the SIC should bear
  
  3. Once a view/tolerance for risk has been established, **select an appropriate long-term investment strategy** (i.e., asset allocation policy portfolio)



# *Discussion of the 2011 Asset-Liability Study*

## PROCESS TIMELINE

### **Wednesday, March 23, 2011 SIC Meeting**

(PCA)

- Introduction of process
  - Asset Liability project objectives / goals
  - Proposed timeline
- PCA Capital Market Assumptions and how they were derived
- Role of assets

EFI begins modeling plan liabilities based on member data

### **Wednesday, April 27, 2011 SIC Meeting**

(PCA)

- Discussion of model and model output (in general terms)
- Asset class constraints
- Other

EFI liability modeling continues





# *Discussion of the 2011 Asset-Liability Study*

## PROCESS TIMELINE

### **Wednesday, May 25, 2011 SIC Meeting**

(PCA and EFI)

- Introduction of Asset liability model to the SIC
- Discussion of plan-level risk tolerance
- First model output available – findings and discussion
  - Cost (level & volatility)
  - Funding ratio (level & volatility)
  - Asset allocation
  - Other

### **Wednesday, June 22, 2011 SIC Meeting**

(PCA and EFI)

- SIC selection of asset allocation policy portfolio, subject to prior discussions about SIC's tolerance for overall plan risk

# Discussion of the 2011 Asset-Liability Study

ERSRI PORTFOLIO

## Current Portfolio

## Proposed Portfolio

Asset Class	Objective / Role	Income vs. Appreciation	Liquidity	Objective / Role	Income vs. Appreciation
U.S. Equity	Growth	Mostly Appreciation	Liquid	Growth	Mostly Appreciation
non-U.S. Equity	Growth	Mostly Appreciation	Liquid	Growth	Mostly Appreciation
Private Equity	Growth	Appreciation	Illiquid	Growth	Appreciation
Real Estate	Growth / Income	Appreciation / Income	Illiquid	Income / Growth	Income / Appreciation
Real Return	Inflation Orientated	Appreciation / Income	Mixed	Inflation Orientated	Appreciation / Income
Fixed Income	Protection / Growth	Income / Appreciation	Liquid	Protection	Income

- Large exposure to Growth-related assets
  - By far the largest source of total fund return volatility (estimated 92%+ of total)
- Most expected return coming from appreciation
  - Appreciation is less certain than income
- Consider modestly reducing existing growth (appreciation) orientation of Real Estate and Fixed Income portfolios



# *Development of Capital Market Assumptions*

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# Development of PCA 2011 Capital Market Assumptions

	Expected Avg. Nominal Annual Return	Expected Geo. Compound Nominal Annual Return	Expected Risk of Nominal Returns (Annl. SD)
Cash	3.00	3.00	2.00
Treasury Infl. Protected Securities	3.75	3.60	6.00
Domestic US Fixed Income	3.30	3.20	4.50
International Fixed Income	3.30	2.80	10.00
Global Fixed Income	3.30	3.00	8.00
Core Real Estate	7.00	6.50	10.00
Real Return	6.50	6.20	8.00
Domestic Equity	8.75	7.30	17.00
International Equity	9.00	7.00	20.00
Global Equity	8.90	7.40	17.50
Hedged International Equity	8.90	7.10	19.00
Private Equity/Venture Capital	12.00	8.90	25.00
Inflation	2.75	2.75	2.00



## *PCA 2011 Capital Market Assumptions - Background*

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- Belief that the return tailwind institutional investors have seen from steadily declining interest rates over the last 30 years has run its course.
- The yield-to-maturity on high quality bonds have declined to such a low level that the return expectation from that asset class will likely be materially lower than what investors earned in the past two decades.
- Global Equity returns are likely to remain below long-term historical levels.
  - Global economic competition has increased as the former emerging markets continue to grow and have a larger influence on world markets.
  - Investment capital has become more mobile. The increase in financial flows also portends a more volatile environment where competition reduces the opportunity for capital to garner outsized returns before they are identified and exploited by the market.
- Further, since Fixed Income is the building block upon which equity returns are estimated, a decline in the Fixed Income expected return will, all else equal, reduce return expectations for global equities.

# Expected Return Assumptions Comparison

## 10 Year Arithmetic Returns %

	PCA	Russell	Ennis Knupp	Callan	Cliffwater	Wilshire	Average	Average not including PCA
<b>Cash</b>	3.00	3.40	2.75	3.00	2.50	2.50	2.9	2.8
<b>TIPS</b>	3.75	3.90	3.90	3.60	3.50	3.50	3.7	3.7
<b>U.S. Core Fixed Income</b>	3.30	4.40	4.50	3.80	3.10	4.00	3.9	4.0
<b>Core Real Estate</b>	7.00	6.70	6.80	7.85	8.90	6.50	7.3	7.4
<b>Real Return</b>	6.50	6.70		6.50	4.50	6.50	6.1	6.1
<b>U.S. Equity</b>	8.75	7.30	8.70	9.35	9.10	8.25	8.6	8.5
<b>Non-U.S. Equity</b>	9.00	7.40	8.90	9.50	9.20	8.50	8.8	8.7
<b>Private Equity</b>	12.00	9.60	15.10	13.10	12.90	12.50	12.5	12.6
<b>Inflation</b>	2.75	2.50	2.40	2.50	2.30	2.25	2.5	2.4

Note: Real Return for Callan and Cliffwater are Commodities

# Expected Return Assumptions Comparison

## 10 Year Arithmetic Returns %

	PCA	Consultant Average	Average not including PCA
Cash	3.00	2.9	2.8
TIPS	3.75	3.7	3.7
U.S. Core Fixed Income	3.30	3.9	4.0
Core Real Estate	7.00	7.3	7.4
Real Return	6.50	6.1	6.1
U.S. Equity	8.75	8.6	8.5
Non-U.S. Equity	9.00	8.8	8.7
Private Equity	12.00	12.5	12.6
Inflation	2.75	2.5	2.4

- PCA core fixed income assumption lower than the average
- PCA inflation assumption higher than the average



# *Capital Market Trends*

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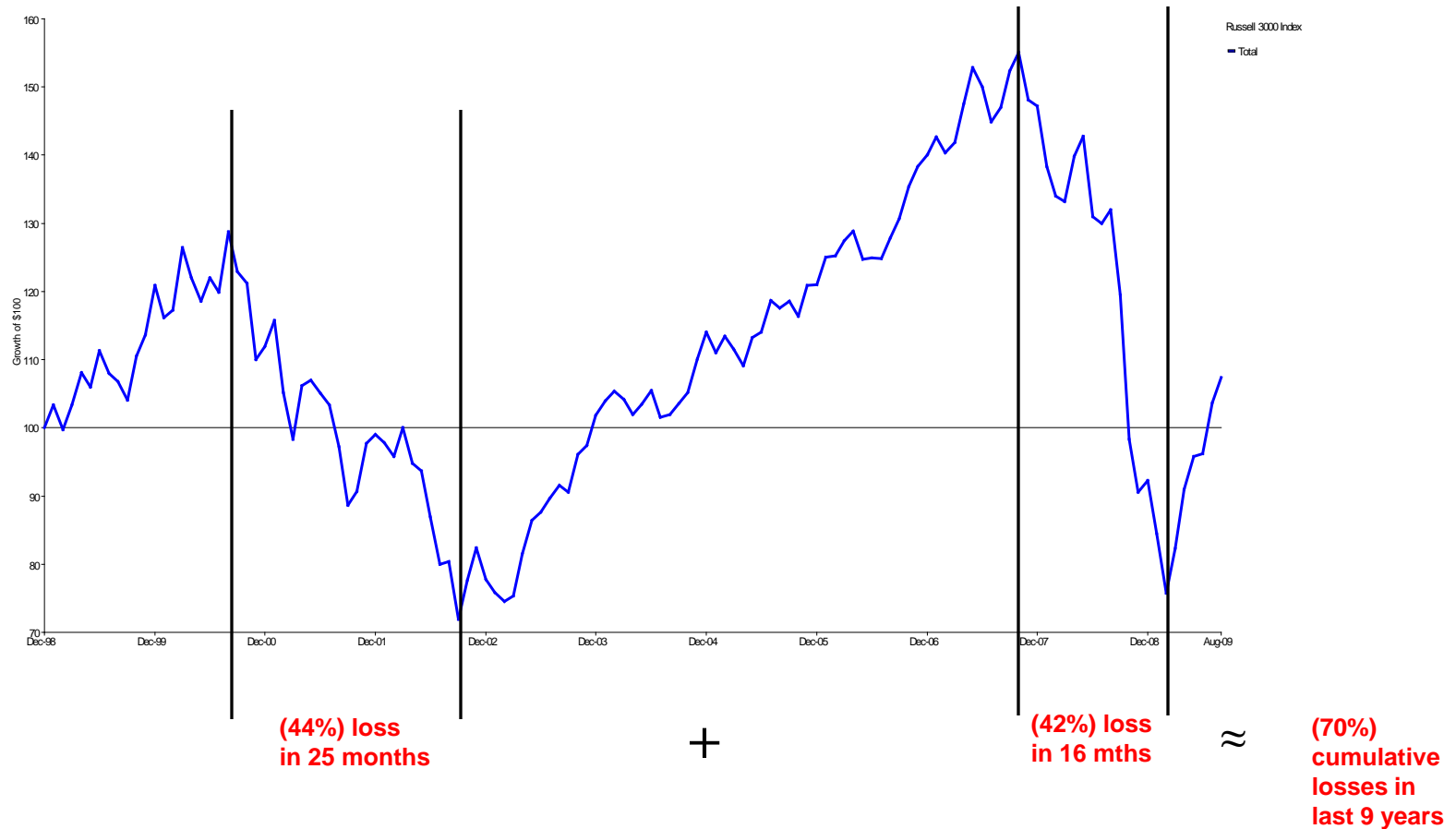
## Capital Market Trends

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- Fundamental belief: various asset classes perform differently through different economic and market environments – diversification is important
- 2008 was an exceptional and difficult year; many classes performed *in a similar manner*.
  - 2009 – 2010 have also been exceptional in the degree of the market's rebound
- The equity risk premium is volatile and, at times, may not reward an investor for the risk taken
- If you have exposure to **Equity** assets or assets that exhibit equity-like characteristics: Tail Risk is always present
- Investors, including the SIC are continually searching for alternative market segments that have equity-like expected returns and are less dependent on, and diversify away from, the equity risk premium

# Capital Market Trends

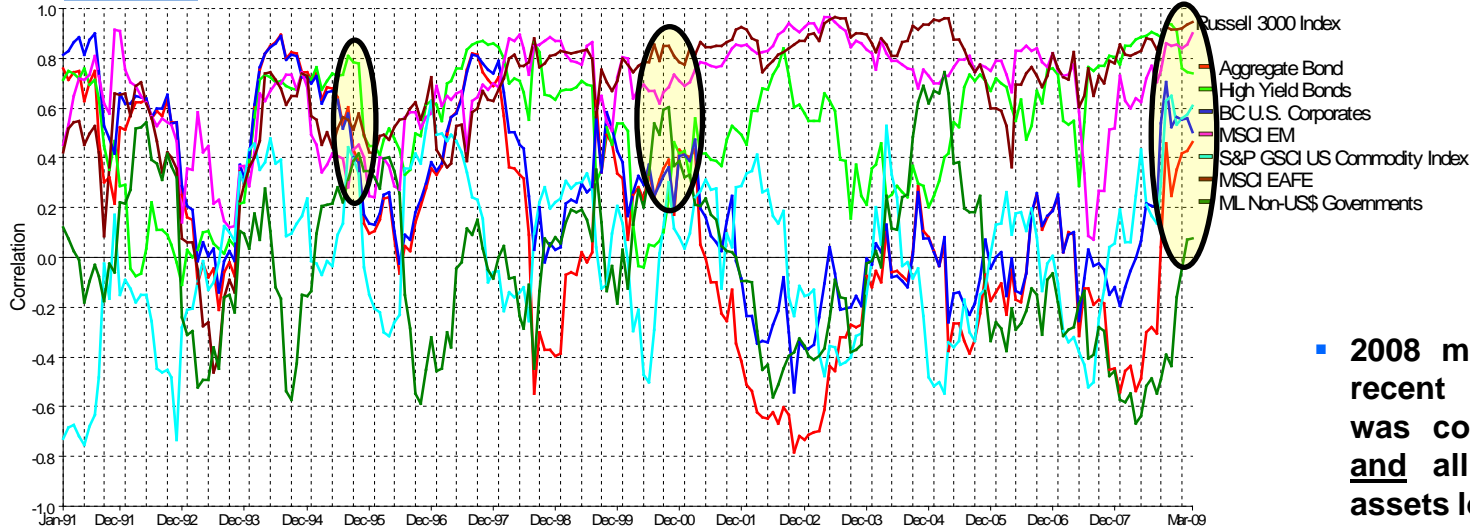
## Growth of U.S. Equities?



- Heavy dependence on the public equity risk premium has caused havoc for cash-flow oriented sponsors/investors

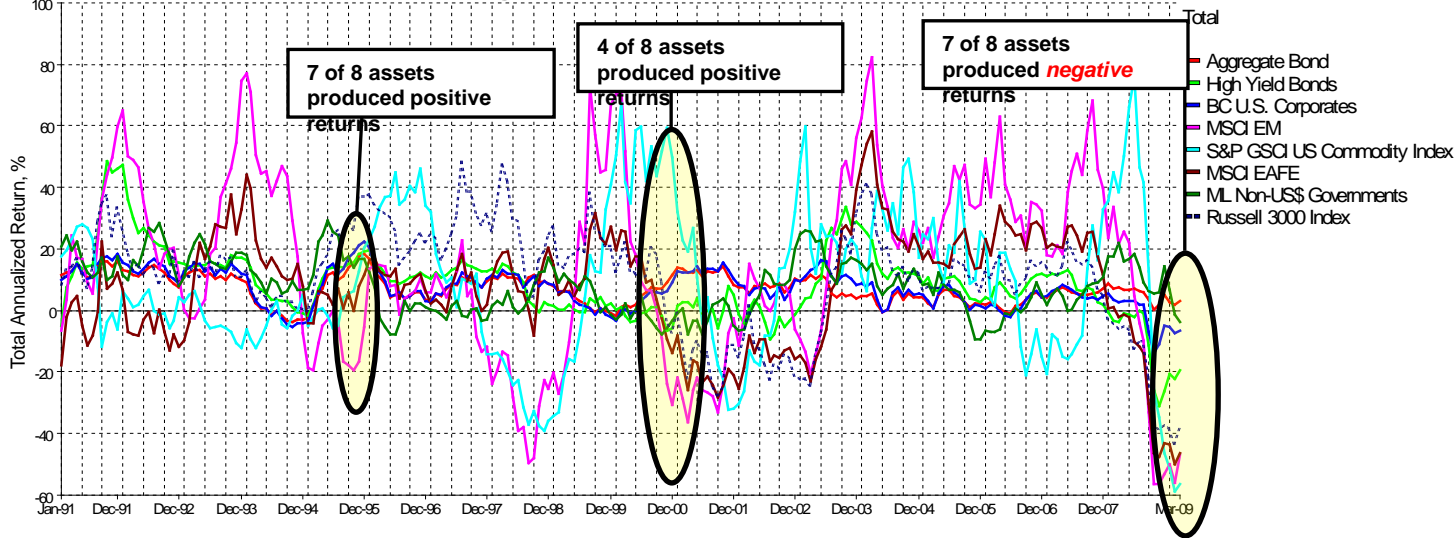
# Capital Market Trends

Rolling 12-Month Correlations



- 2008 marks the first time in recent memory when there was correlation compression and all major financial risk assets lost significant value

Rolling 12-Month Returns



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## *Appendix*

# Development of PCA 2011 Capital Market Assumptions

## CORRELATIONS

	Cash	TIPS	Core Fxd	Int IBds	Glb IBds	Real Est	Real Ret	US Eq	Intl Eq	Glbl Eq	Hed Intl	Priv Eq
Cash												
Treasury Infl. Protected Securities	0.20											
Domestic US Fixed Income	0.30	0.60										
International Fixed Income	-0.10	0.40	0.40									
Global Fixed Income	0.00	0.50	0.60	0.95								
Core Real Estate	0.30	0.00	0.00	-0.20	-0.20							
Real Return	0.20	0.60	0.30	0.00	0.00	0.25						
Domestic Equity	0.00	0.00	0.30	0.00	0.00	0.40	0.25					
International Equity	0.00	0.00	0.10	0.10	0.10	0.40	0.25	0.85				
Global Equity	0.00	0.00	0.20	0.05	0.05	0.40	0.25	0.90	0.90			
Hedged International Equity	0.10	0.00	-0.10	-0.10	-0.10	0.50	0.35	0.90	0.90	0.90		
Private Equity/Venture Capital	0.00	0.00	0.00	0.00	0.00	0.40	0.25	0.90	0.80	0.85	0.90	
Inflation	0.50	0.50	-0.20	-0.15	-0.20	0.40	0.60	0.20	0.20	0.20	0.20	0.10