Discussion of Capital Market Return Expectations

Employees Retirement System of Rhode Island

April 13, 2011

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Background

Investment Earnings + Contributions = Benefit Payments + Expenses

Today's Presentation will focus on **Investment Earnings:**

Investment Earnings = Earnings on Income assets (Fixed Income) + Earnings on Growth assets (Equity)

- *Fixed Income* returns are expected to be lower than in the past
- To the extent economic growth is lower, *Equity* returns will be challenged to deliver at historical levels

Take-away: Long-term investors should expect lower capital market returns over the next decade than historical averages

CHANGED INVESTMENT LANDSCAPE

Changed Investment Landscape

THE WORLD HAS CHANGED FOR LONG-TERM INVESTORS:

- Factors that provided a tailwind in the past are expected to present a headwind
    - Lower Interest rate environment
    - Debt levels are higher
        - Government: to finance operations
        - Consumer: to fund purchases of housing and consumer goods
    - Growing capital flows increase the potential for global capital market volatility
    - Other influences

Take-away: Powerful secular trends have the potential to influence the investment landscape in a negative way for the next decade and possibly beyond

Changed Investment Landscape

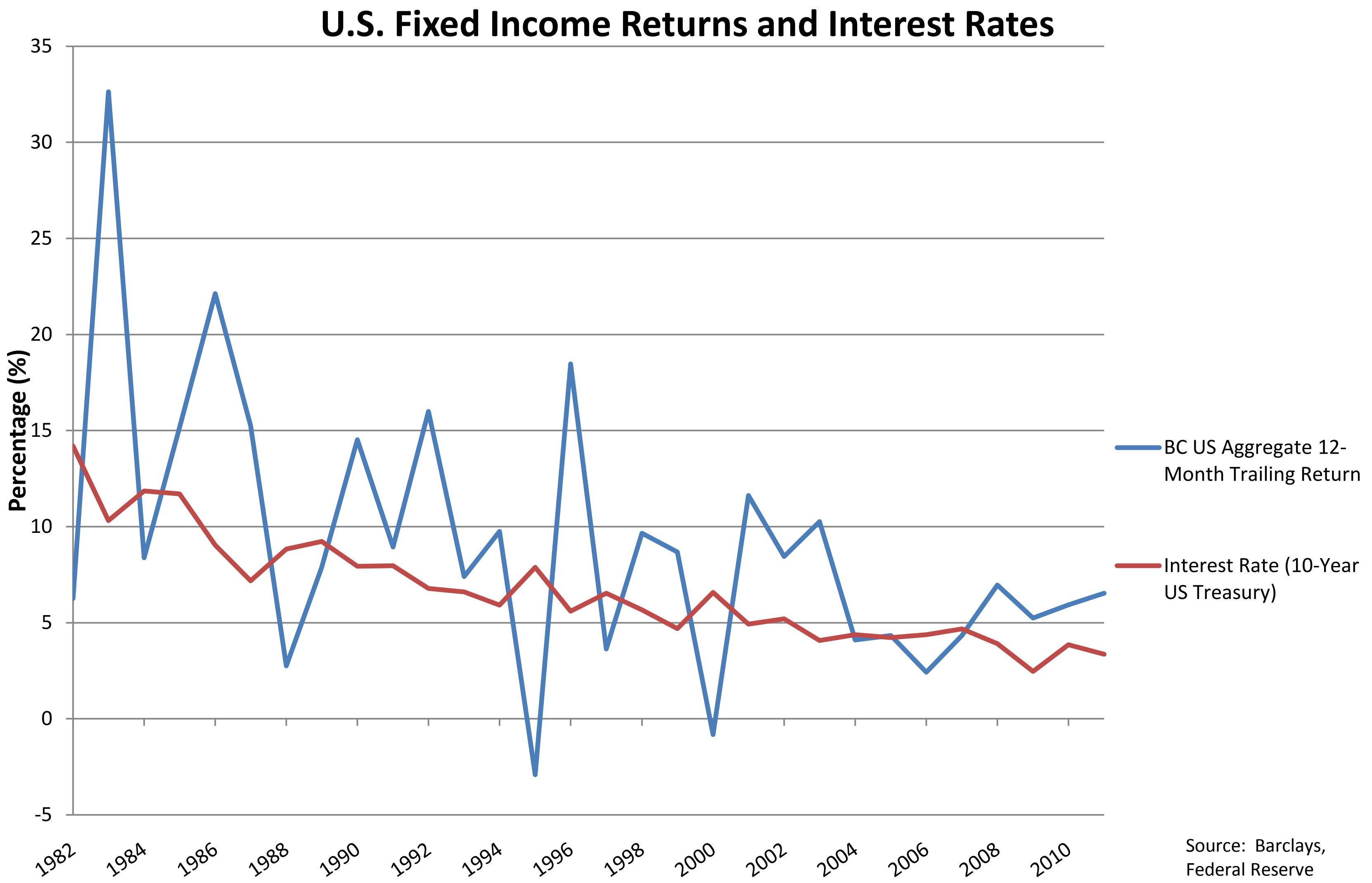
LOWER INTEREST RATE ENVIRONMENT:

- Indicates that future expected returns from Fixed Income will be lower than in the past

- Future Fixed Income market returns are relatively easy to estimate
    - Today's 10 year Treasury note's Yield-to-Maturity is a good predictor of a 10-year holding period return

Take-away: Rhode Island can expect a 3.3 – 3.5% return on 20%+ of the investment portfolio over the next decade

Declining Interest Rates: Fixed Income Tailwind



Source: Barclays, Federal Reserve

Changed Investment Landscape

DEBT LEVELS ARE HIGHER:

- The U.S. Government and the citizenry have over-extended their debt burdens. Western Europe and Japan also have heavy debt loads.

- Debt / Borrowing can stimulate economic activity in the near-to-mid term
  - However, Debt has a cost
    - Interest (debt servicing), and
    - Debt needs to be repaid

- When debt reaches high levels it can act as a brake on economic growth
  - Interest payments and debt repayment can crowd out future purchases and economic projects

Take-away: Debt financing burdens point to <u>Lower</u> economic growth prospects and potentially lower Equity market returns

Changed Investment Landscape

Federal Debt as % of GDP:

	End 1982	End 2010
Domestic Nonfinancial Debt	***4,361,700,000,000***	***36,295,000,000,000***
Federal Debt	***820,500,000,000***	***9,385,600,000,000***
GDP	***3,125,800,000,000***	***14,657,800,000,000***
Total Debt/GDP	**139.54%**	**247.62%**
Federal Debt/GDP	**26.25%**	**64.03%**

- Both government and consumer debt have increased in recent decades

Take-away: Debt can have the effect of pushing forward purchases at the expense of purchases in future years which would point to lower future economic growth.

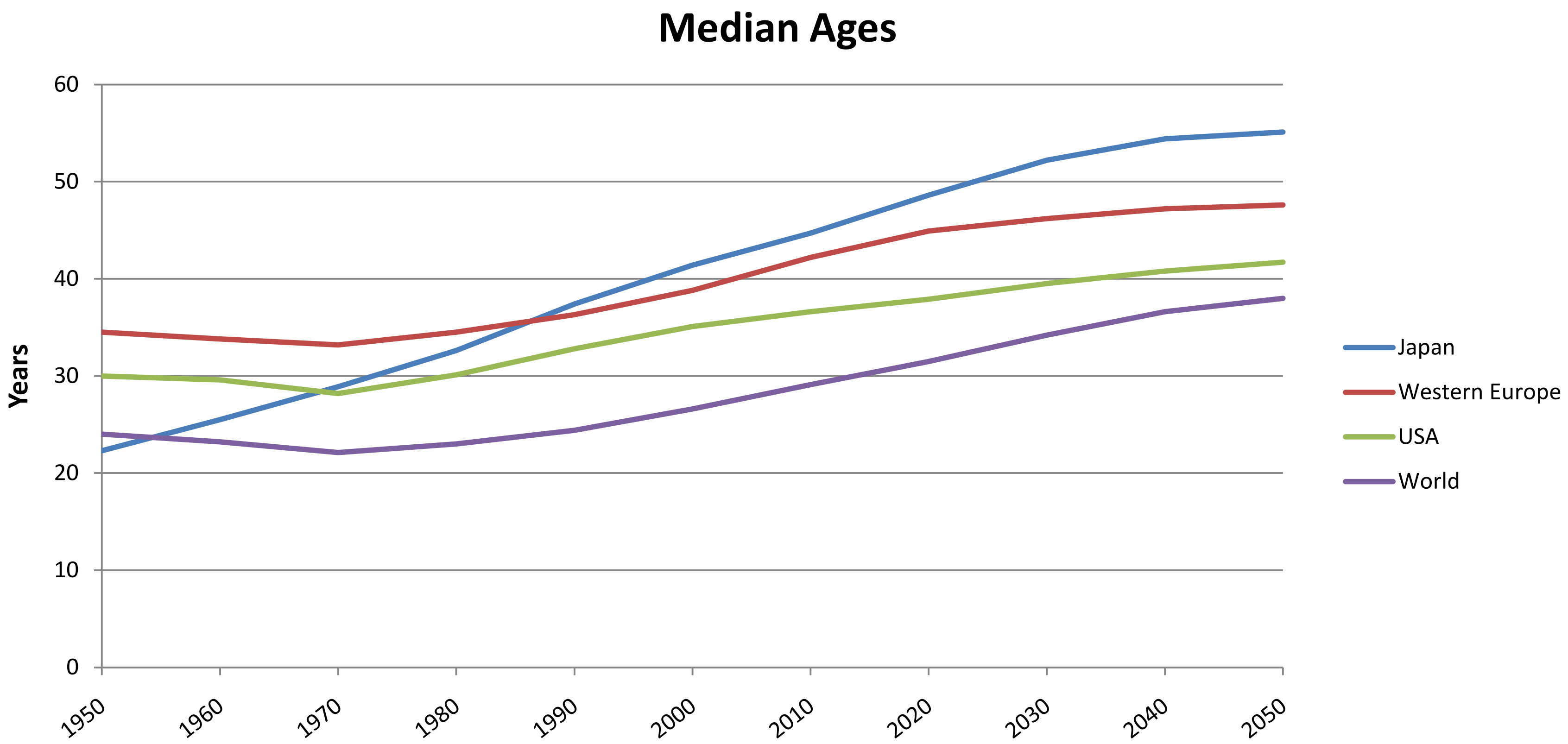
Changed Investment Landscape

ADDITIONAL FACTORS CONTRIBUTING TO LOWER ECONOMIC GROWTH PROSPECTS IN THE DEVELOPED ECONOMIES:

- Aging populations
- Slowing population growth
- As a result Economic Growth is expected to be lower in the developed market economies

Take Away: Lower economic growth prospects in the developed markets point to lower Equity market returns

Changed Investment Landscape



- Developed market economies continue to age

Take-away: Aging population points to lower economic growth

Changed Investment Landscape

GROWING CAPITAL FLOWS INCREASE THE POTENTIAL FOR GLOBAL CAPITAL MARKET VOLATILITY:

- In general, global capital flows increase market efficiency – however, growing global capital flows could increase the probability of tail risk events (low probability events that trigger large equity market losses)

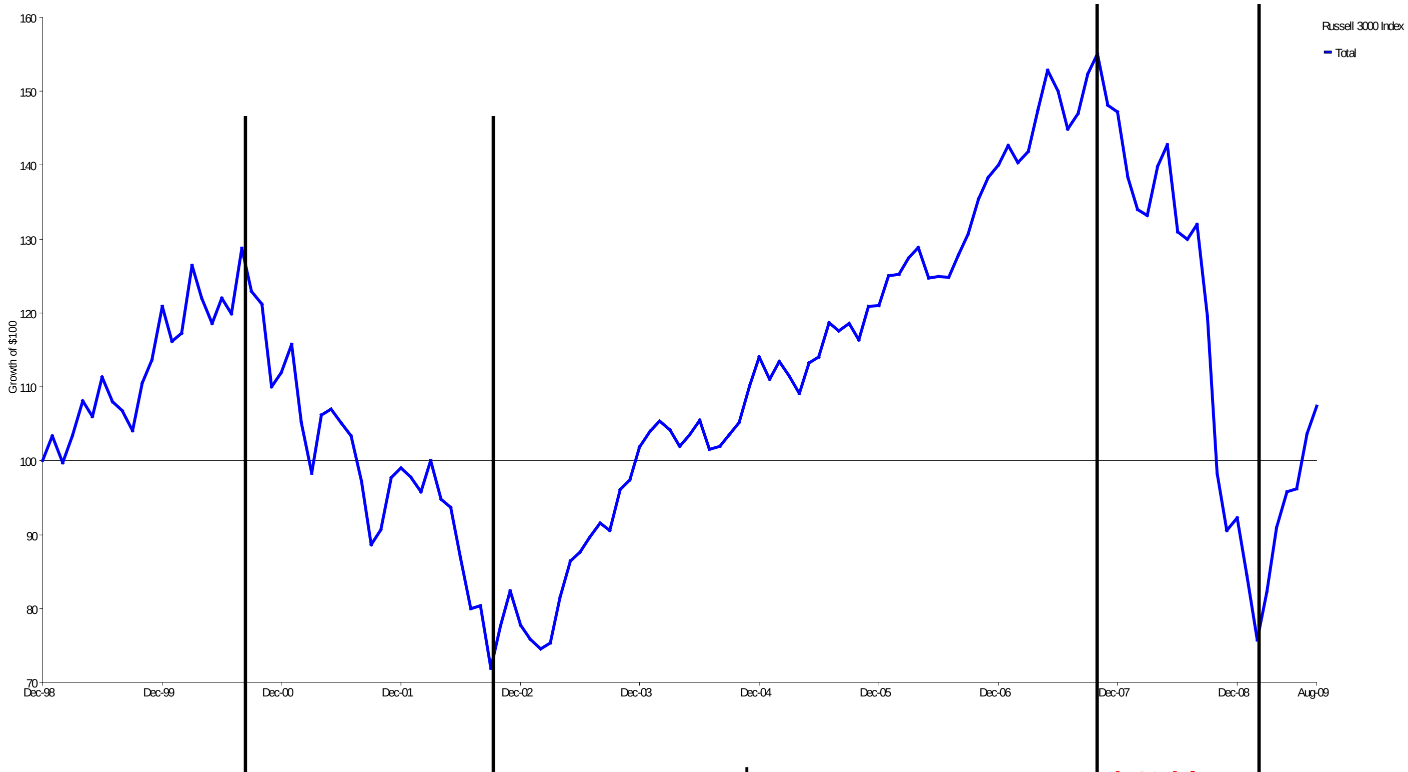
- Greater interconnectedness of the global financial system increases the likelihood of a global financial market contagion (U.S. sub-prime problem)
  - What would appear to be a relatively minor local event can turn out to have a larger impact on the global financial system

- Large trade imbalances continue to stress the global financial system

Take-away: As financial wealth becomes more equally distributed globally the potential for market volatility increases as various economic interests compete in the marketplace

Equity Market: Recent Volatility

Growth of U.S. Equities?



(44%) loss
in 25 months

+

(42%) loss
in 16 mths

≈

(70%)
cumulative
losses in
last 9 years

Take Away: Large equity market declines have occurred more frequently than expected

Equity Market Expectations

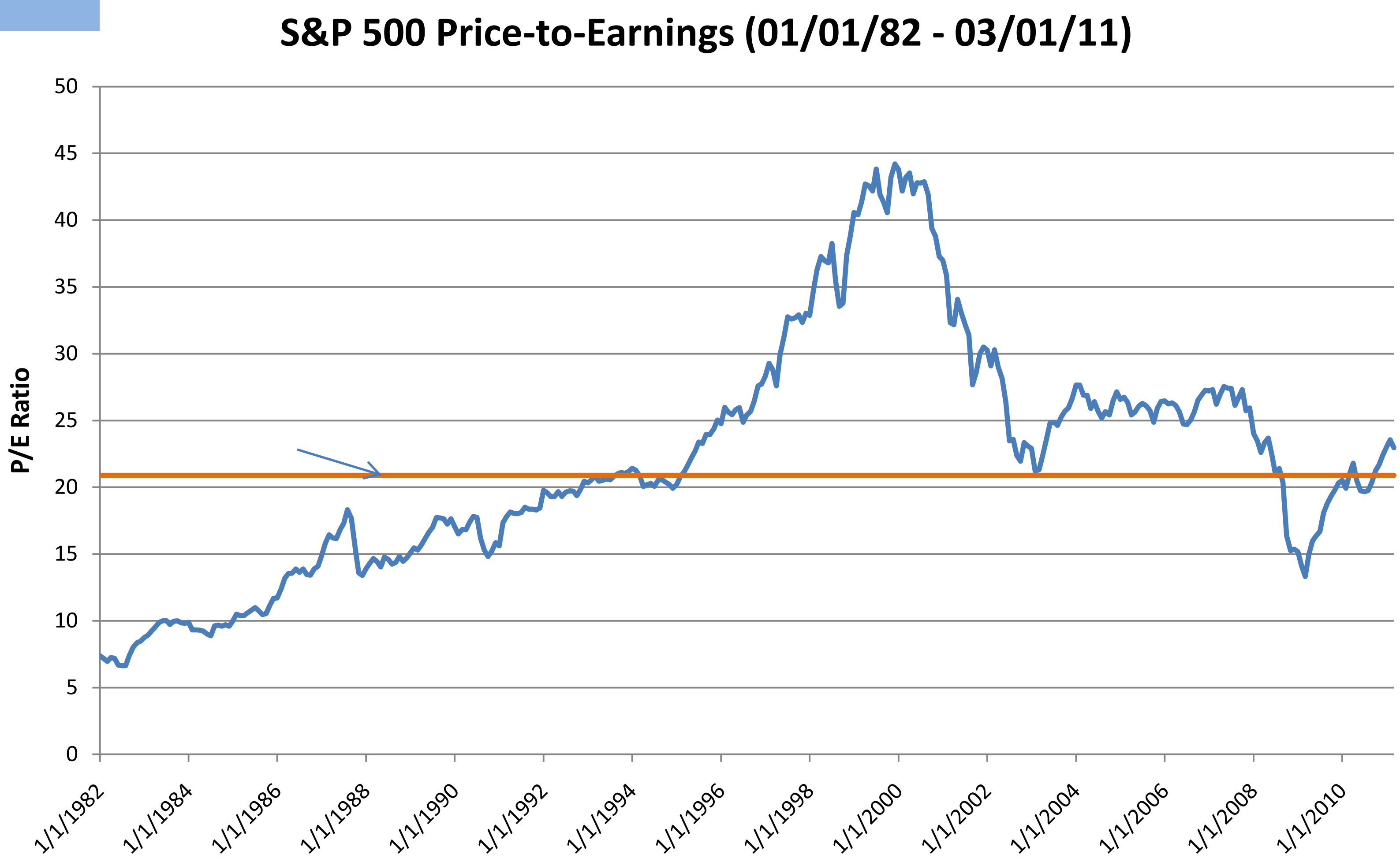
- There are several structural conditions that present a headwind for future equity market return prospects

- In addition, Equity markets are not priced cheap
  - Current U.S. price / earnings ratio = 22.4 x

- Most major equity bull markets started from very low valuation levels
  - i.e. 1982 price / earnings ratio = 7.8 x

Take-away: Equity markets are not priced cheaply. It is unlikely that a sustainable long-term bull market for equities would start from current market valuation levels

Equity Market Expectations



Equity Market Expectations

<u>Equity Market Return Expectations are Challenged:</u>

Over long term:

Equity Market Return =
Dividend Yield of market + economic growth ± p/e multiple change

Today:	Div yield =	1.9%	(historically low yield level)
	Economic Growth =	3.0%	(lower growth than historic levels)
	p/e multiple change =	22.4 X	(higher than average – chance of future multiple expansion is not high)

Take-away: Historically low dividend yield, lower economic growth expectations and a fairly priced equity market are not predictive of strong equity market returns

10-YEAR CAPITAL MARKET EXPECTATIONS

Expected Return Assumptions Comparison

10 Year Arithmetic Returns %

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

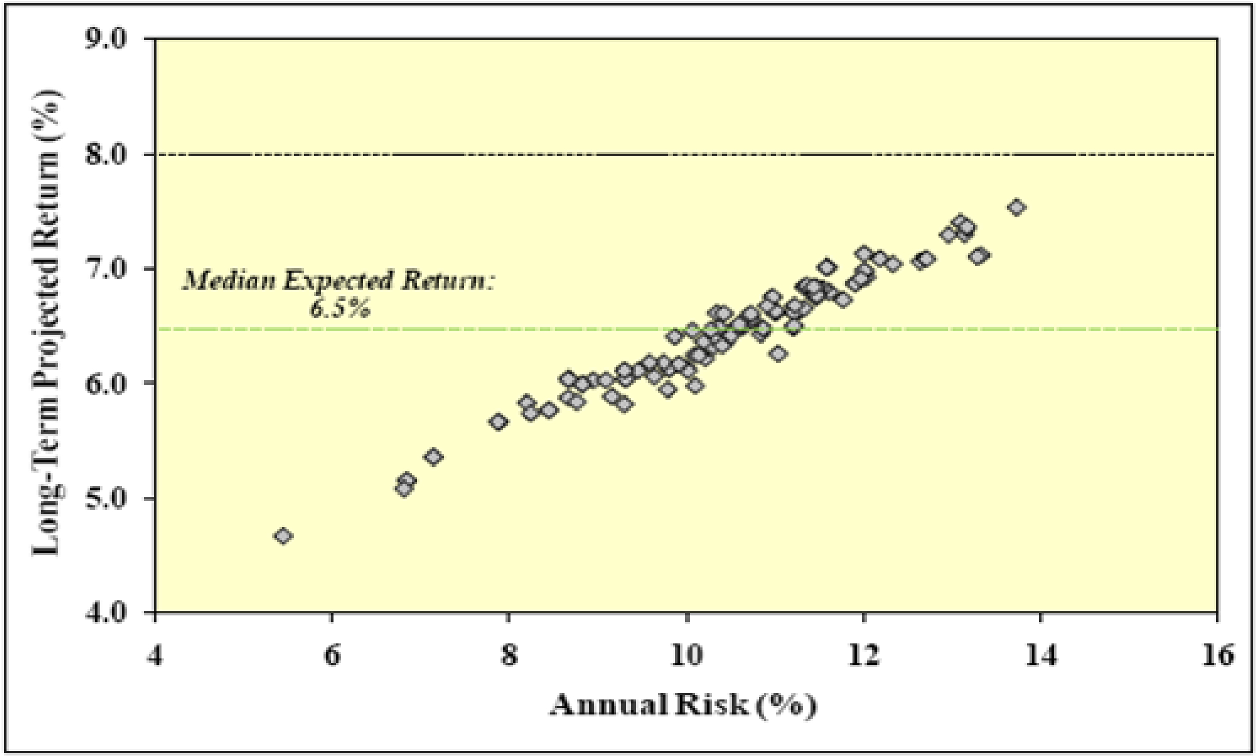
10 Year Expected Returns: Arithmetic and Geometric

	Expected Avg. Arithmetic Annual Return	Expected Geometric (Compound) Annual Return
Cash	3.00	3.00
Treasury Infl. Protected Securities	3.75	3.60
Domestic US Fixed Income	3.30	3.20
International Fixed Income	3.30	2.80
Global Fixed Income	3.30	3.00
Core Real Estate	7.00	6.50
Real Return	6.50	6.20
Domestic Equity	8.75	7.30
International Equity	9.00	7.00
Global Equity	8.90	7.40
Hedged International Equity	8.90	7.10
Private Equity/Venture Capital	12.00	8.90
Inflation	2.75	2.75

- Arithmetic return – average return you can expect in any year
- Geometric return – average compounded return
  - Incorporates return volatility
  - Geometric returns are lower than Arithmetic returns

Projected Public Fund 10 Year Returns

Projected Return & Risk Forecasts for State Pension Plans



Return and Risk based on Wilshire's Capital Market Assumptions and States' Asset Allocation Policy

Source: Wilshire Consulting - 2011 Wilshire Report on State Retirement Systems

ERSRI PORTFOLIO

ERSRI: Cash Flow

- The plan is mature, as a result outflows exceed inflows

- This is due in large part to the increasing number of retirees relative to active members
  - Active Members to Retiree/Beneficiaries (Source: GRS)
    - 1999   1.47:1
    - 2009   1.01:1

- FY 2010 cash flow statistics:
  - Inflows: $510.8 mil.
  - Outflows: $834.6 mil.
  - Net: **($323.8 mil.)**

Take-away: A mature plan does not have the luxury of waiting for growth to materialize. Benefits have to be paid today. A low interest rate environment makes meeting benefit payments more difficult.

ERSRI Portfolio: Expected Return

Based on Portfolio policy asset mix and PCA 2011 Ten-year capital market assumptions the expected **compound return is 6.7%**

The probability of ERSRI's current policy portfolio achieving the following compound return thresholds over the 10 year investment horizon are calculated to be as follows:

Compound Return Threshold	7.25%	7.50%	7.75%
Probability of Exceeding Threshold	**44.6%**	**42.5%**	**39.4%**

The compound returns are net of fees, but do not assume any potential added value from active management.

In addition, these compound returns do not include ERSRI's administrative expenses, which are likely to be between 5bp-10bp of plan assets.

Take-Away: Given the PCA capital market return assumptions and the current portfolio policy asset mix

- The probability of achieving at least a 7.5% compounded return is 42.5%
- The probability of achieving a compounded return below 7.5% is 57.5%

CONCLUSION

CONCLUSION:

Powerful secular trends are likely to restrain capital market rates of return for the next decade and possibly beyond

1. The Rhode Island portfolio can expect a 3.3 – 3.5% return from Fixed Income, which represents 20%+ of the investment portfolio, over the next decade

2. Moderate economic growth prospects in the developed markets point to lower Equity market returns

3. As financial assets become more equally distributed globally (Sovereign Wealth Funds and growing middle classes in the developing counties) the likelihood of increased market volatility increases as various economic interests compete in the marketplace (2008 and 2001)

Over the next decade long-term investors should expect lower capital market returns than historical averages

Addendum

ERSRI 9.21% Return since 1984

source: GRS Actuarial Experience Study June 2011

What does it mean?

Starting Point Matters

	1984	13.32 % RETURN	1998	5.24% RETURN	TODAY	?
SP500 DIVIDEND YIELD	5.5%	→	1.67%	→	1.77%	→
PRICE/EARNINGS RATIO SP500 (TEN YEAR AVERAGE)	<10		>35		>25	
ACTUAL PE RATIO SP500	9.3		24.5		18.2	
LONG TERM TREASURY YIELDS	13%		5.65%		4.4%	
CASH YIELD	10%		4.92%		0.14%	

Take-Aways

- Past investment returns are explained better by their starting point than their ending point
- Conditions in the financial markets today are much more similar to the conditions that existed in 1998 than in 1984
- Future investment returns are more likely to reflect returns since 1998 (5.4% return) than returns since 1984 (9.2% return)