



# Vermont Pension Investment Committee

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## Asset/Liability Study

February 10, 2009

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# Agenda

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- Summary
- Key Issues
- Current Plan Status
- Risk Analysis
- Projection Analysis
- Conclusions
- Appendix



# Summary

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- Due to recent extraordinarily bad markets, each System's funded status has declined significantly since the July 1, 2008 actuarial valuations
  - Aggregate funded status estimated to be 58% on a **market value** basis as of 12/31/2008
  - With **asset smoothing** and a 0% return assumed during the first half of 2009, aggregated funded status estimated at 67% as of 6/30/2009
- Funded status is expected to improve over a 10 year horizon if assets earn the assumed actuarial interest rate
  - 8.25% for TRS and ERS; 8.00% for MERS
- Current allocations are expected to achieve the actuarial return assumption, especially given higher expected future returns

# Purpose

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- To assist the Trustees in developing a long-term asset allocation strategy
  - Which asset classes should be represented in the portfolio
  - Long-term target percentages to be allocated to each asset class
- Recommend revisions, if any, to change current asset mix targets
- Refine Investment Policy Statement, as needed, to communicate strategy to investment managers

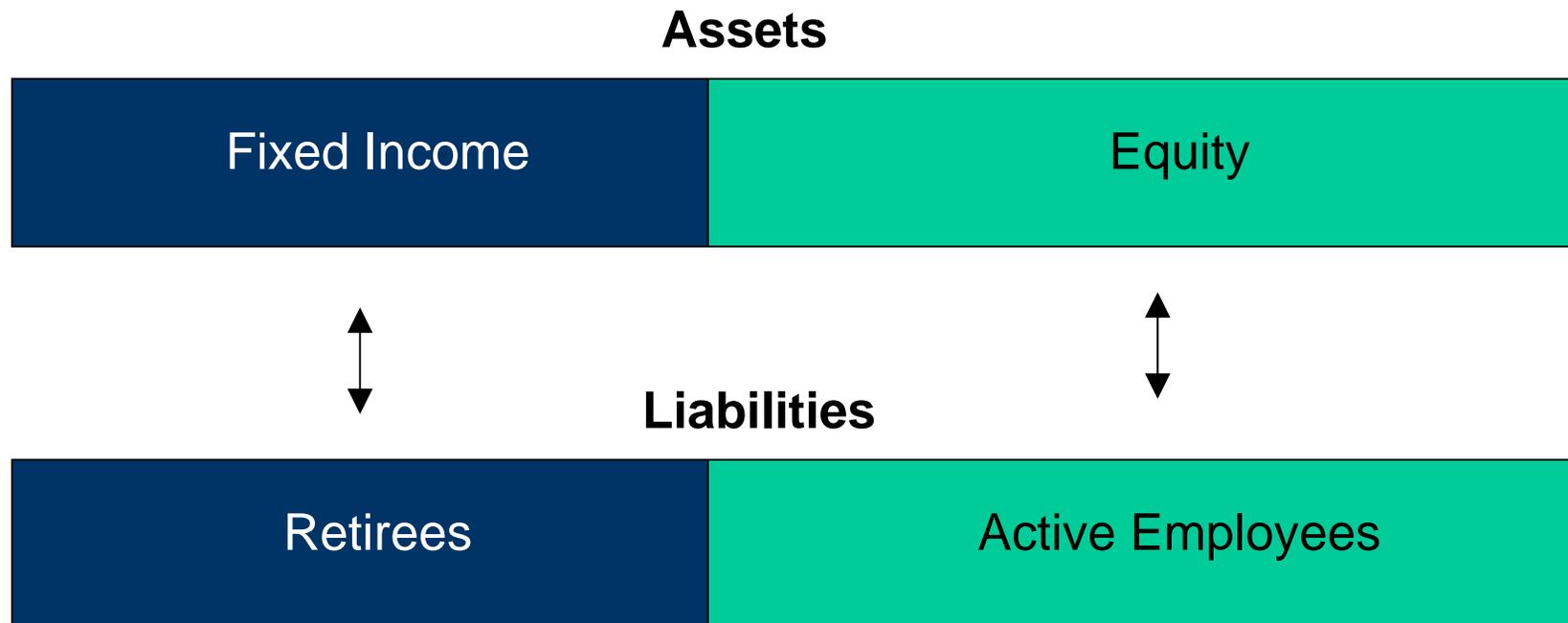
# Methodology

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- Review the current and projected financial status of the Plans over the next ten years
- Assess appropriateness of current and prospective asset mixes relative to the expected progression of liabilities and cash flows
  - Project pension liabilities and benefit payments
  - Project asset growth and contributions levels
- Plans projected on a combined basis
  - Given drop in funded status, asset/liability profiles are more similar

# Plan Linkages

- At a basic level, assets and liabilities have a key link



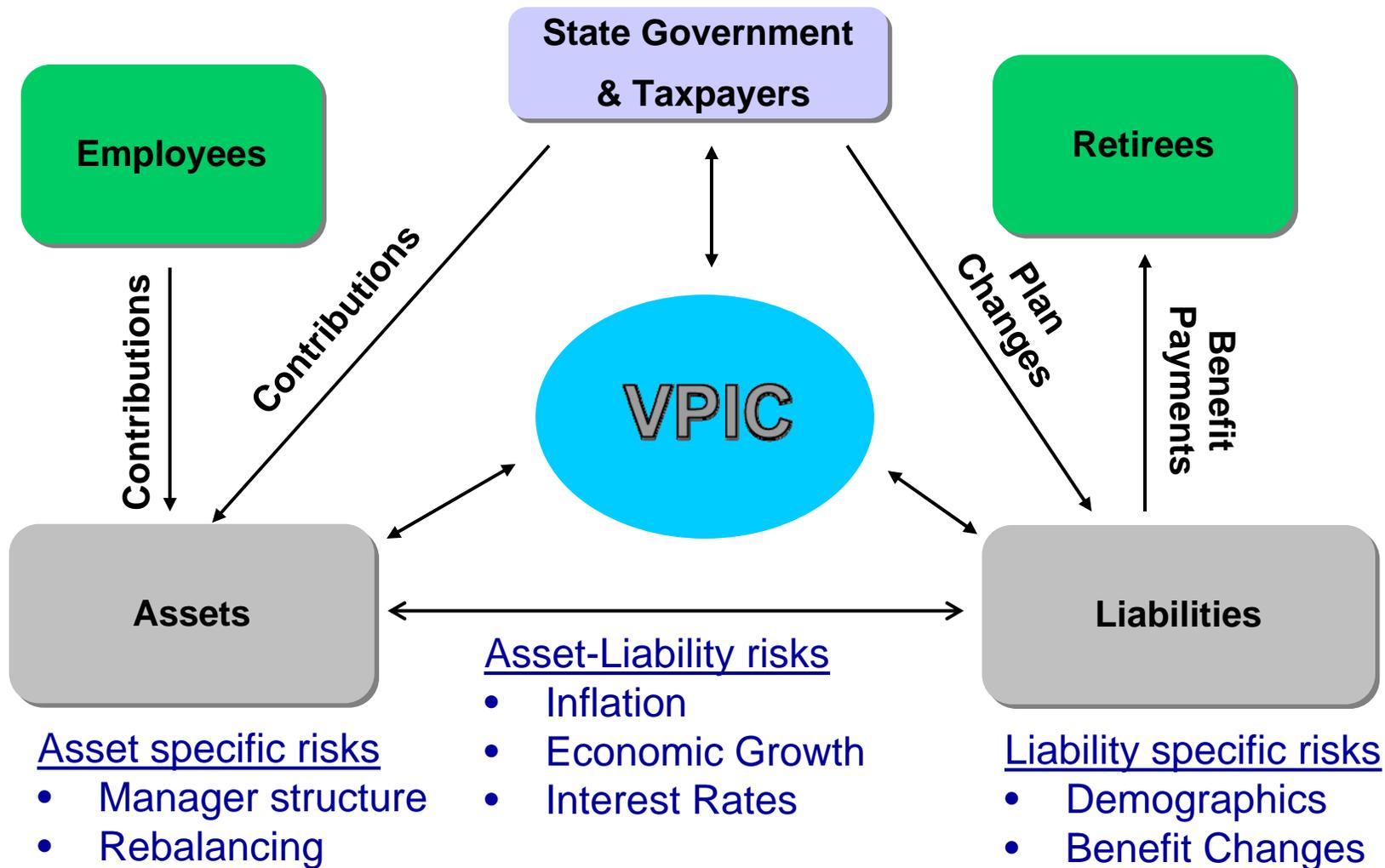
## Characteristics

- Stable income streams
- Shorter time horizon

## Characteristics

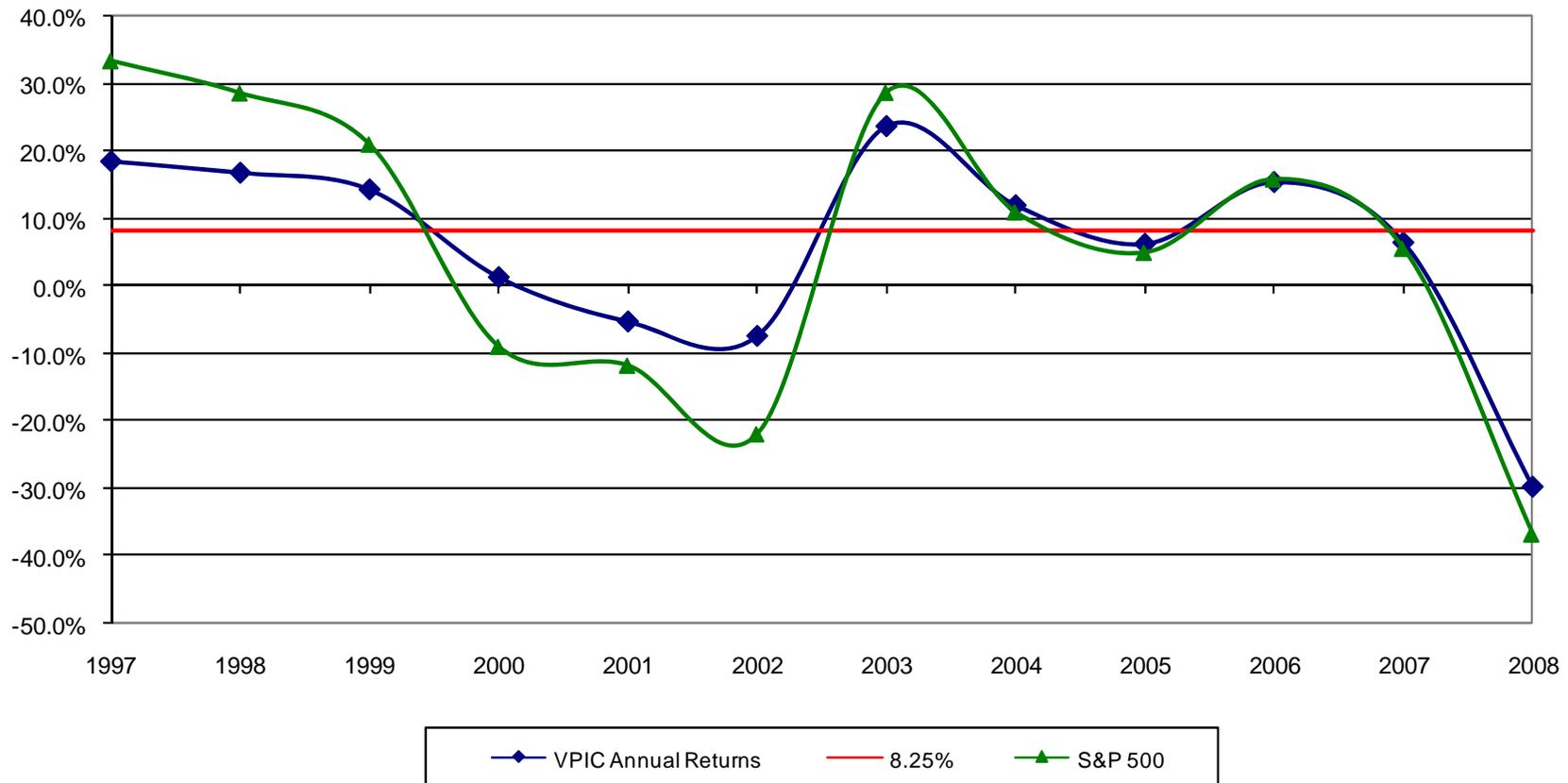
- High expected growth
- Minimal income expectations
- Longer time horizon

# Plan Linkages



# Equity Risk

- Despite diversification into multiple asset classes, overall asset returns are still strongly driven by the stock market



Correlation of VPIC to the S&P 500 = .96 / Beta ~ .8

# Characteristics and Assumptions

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- Based on June 30, 2008 Actuarial Valuation reports from Actuary (Buck Consultants)
- Benefit formula:
  - Teachers: 1.67% of Final Average Pay x service
  - Employees: 1.67% - 3.33% of Final Average Pay x service, depending on Group
  - Municipal: 1.4% - 2.5% of Final Average Pay x service, depending on Group
- Funding method:
  - Individual Entry Age Normal for Teachers and Employees plans
  - Projected Benefit Cost method for Municipal
- Assumed investment return for contribution purposes:
  - 8.25% for Teachers and Employees
  - 8.00% for Municipal
- All other relevant economic & non-economic assumptions are the same as those used in the valuation
  - Mortality
  - Disability
  - Inflation
  - Marriage
  - Retirement
  - Withdrawal
  - Salary merit increases
- Benefit provisions (vesting and eligibility requirements) as stated in the valuation reports
- Asset valuation method:
  - Teachers and Employees: Expected Actuarial Value + 20% of the difference from Market Value
  - Municipal: Market Value less a 5-year smoothing of difference between actual and assumed investment returns
- Future workforce remains at current levels
- Reflects asset returns for through 12/31/2008
- No assumed future benefit changes

# Status as of June 30, 2008

	Teachers	Employees	Municipal	Total
<b>1. Number of Participants</b>				
a. Active	8,442	10,685	6,419	25,546
b. Retired	4,555	5,555	1,447	11,557
c. Inactive	900	2,929	486	4,315
d. Terminated Vested	789	705	2,035	3,529
e. Total	14,686	19,874	10,387	44,947
<b>2. Actuarial Accrued Liability (in \$ millions)</b>	\$1,985	\$1,464	\$344	\$3,793
<b>3. Actuarial Value of Assets (in \$ millions)</b>	1,605	1,377	349	3,331
Funded Status (3 divided by 2)	81%	94%	101%	88%
<b>4. Market Value of Assets (in \$ millions)</b>	1,501	1,282	327	3,111
Funded Status (4 divided by 2)	76%	88%	95%	82%

Source: Actuary (Buck), 6/30/2008 actuarial valuation reports



## Estimated Status as of December 31, 2008

<b>2. Estimated Actuarial Accrued Liability (in \$ millions)</b>	<b>\$2,048</b>	<b>\$1,513</b>	<b>\$360</b>	<b>\$3,922</b>
<b>3. Estimated Actuarial Value of Assets (in \$ millions)</b>	<b>1,328</b>	<b>1,139</b>	<b>284</b>	<b>2,750</b>
<b>Estimated Funded Status (3 divided by 2)</b>	<b>65%</b>	<b>75%</b>	<b>79%</b>	<b>70%</b>
<b>4. Market Value of Assets (in \$ millions)</b>	<b>1,106</b>	<b>949</b>	<b>236</b>	<b>2,291</b>
<b>Funded Status (4 divided by 2)</b>	<b>54%</b>	<b>63%</b>	<b>66%</b>	<b>58%</b>

- Assets have fallen significantly since June 30, 2008, decreasing funded status
- Actuarial Value of assets helps smooth out losses and funded status decline
- Actuarial Value of assets expected to be limited to 120% of Market Value in 2009

Source: 12/31/2008 estimates calculated by NEPC



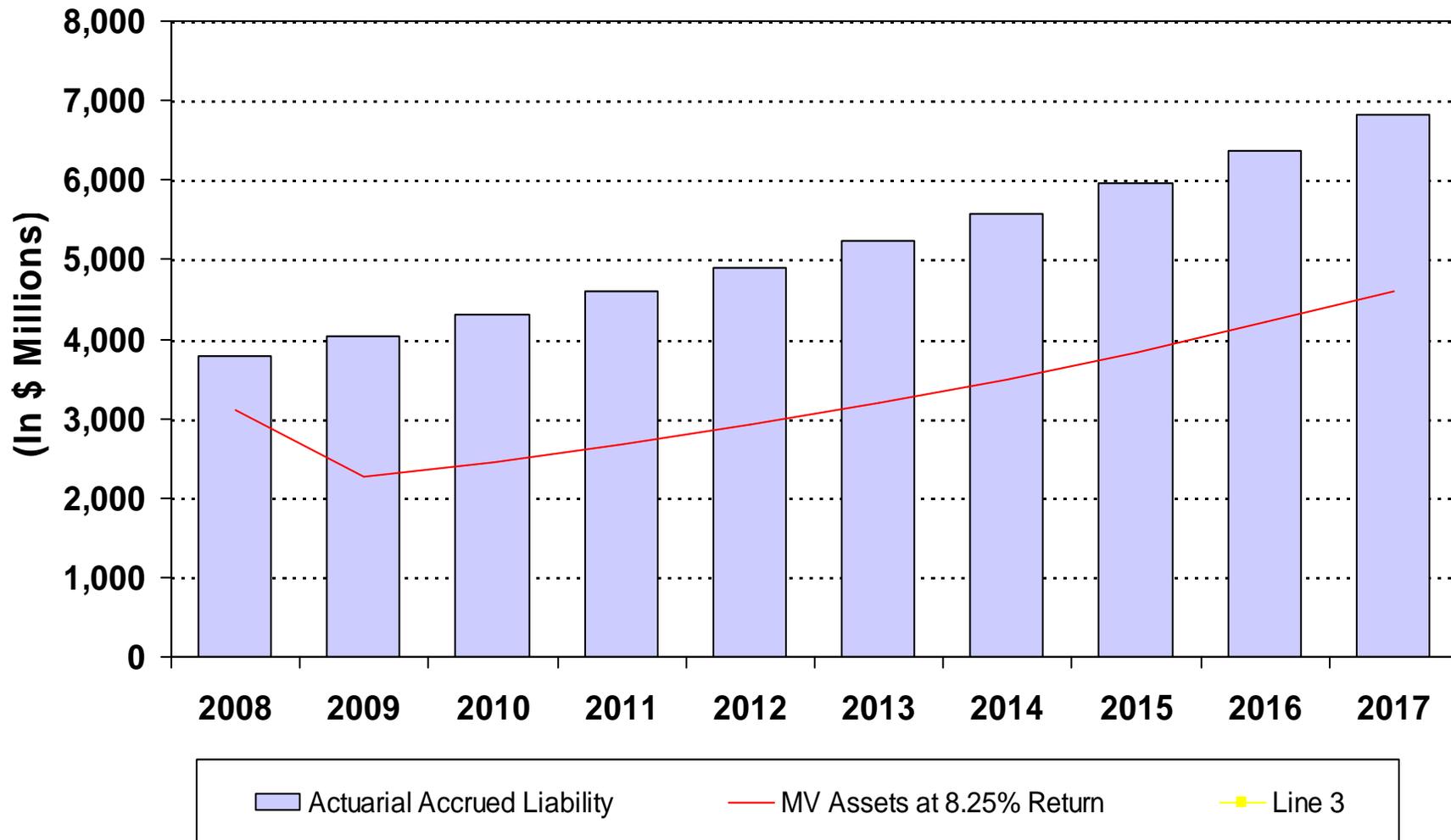
# Projection assumptions

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- July 1, 2008 actuarial valuation reports from the actuary were the basis for all calculations
  - Projected accrued liability, normal cost, and contributions according to plan funding method
  - Salary assumed to increase at 4.5% per year
  - Unfunded accrued liability amortization reset each year for employer contributions over 30 years as of June 30, 2008
- Actual asset return for 2008 was used, with an assumption of 0% return from January through June 2009
  - After June 2009, assets assumed to perform according to specific scenario assumption for 4 years, then return to NEPC 2009 assumptions after 2013
- Contributions
  - Employer is assumed to contribute 100% of calculated contributions
  - Employees are assumed to contribute on average 5% of pay
- Benefit payments as projected by the actuary

# Funded Status

- Actuarial Accrued Liability (AAL) is forecasted to increase on average approximately 6.7% per year

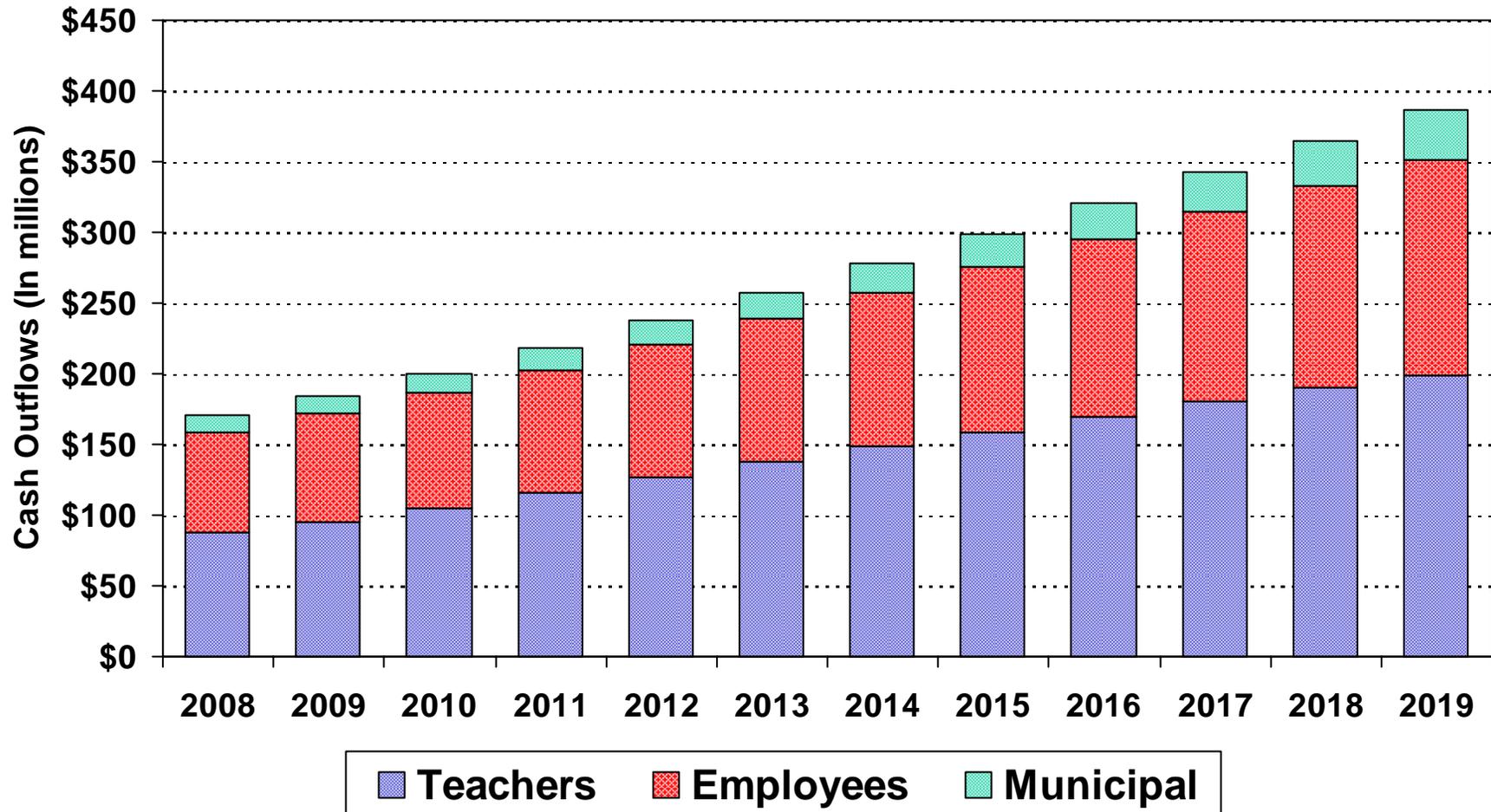


Initial actuarial liability provided by Plan Actuary. NEPC estimated actuarial liability for years beginning 2009.



# Projected Benefit Payments

- Benefit payments are expected to increase approximately 8% annually

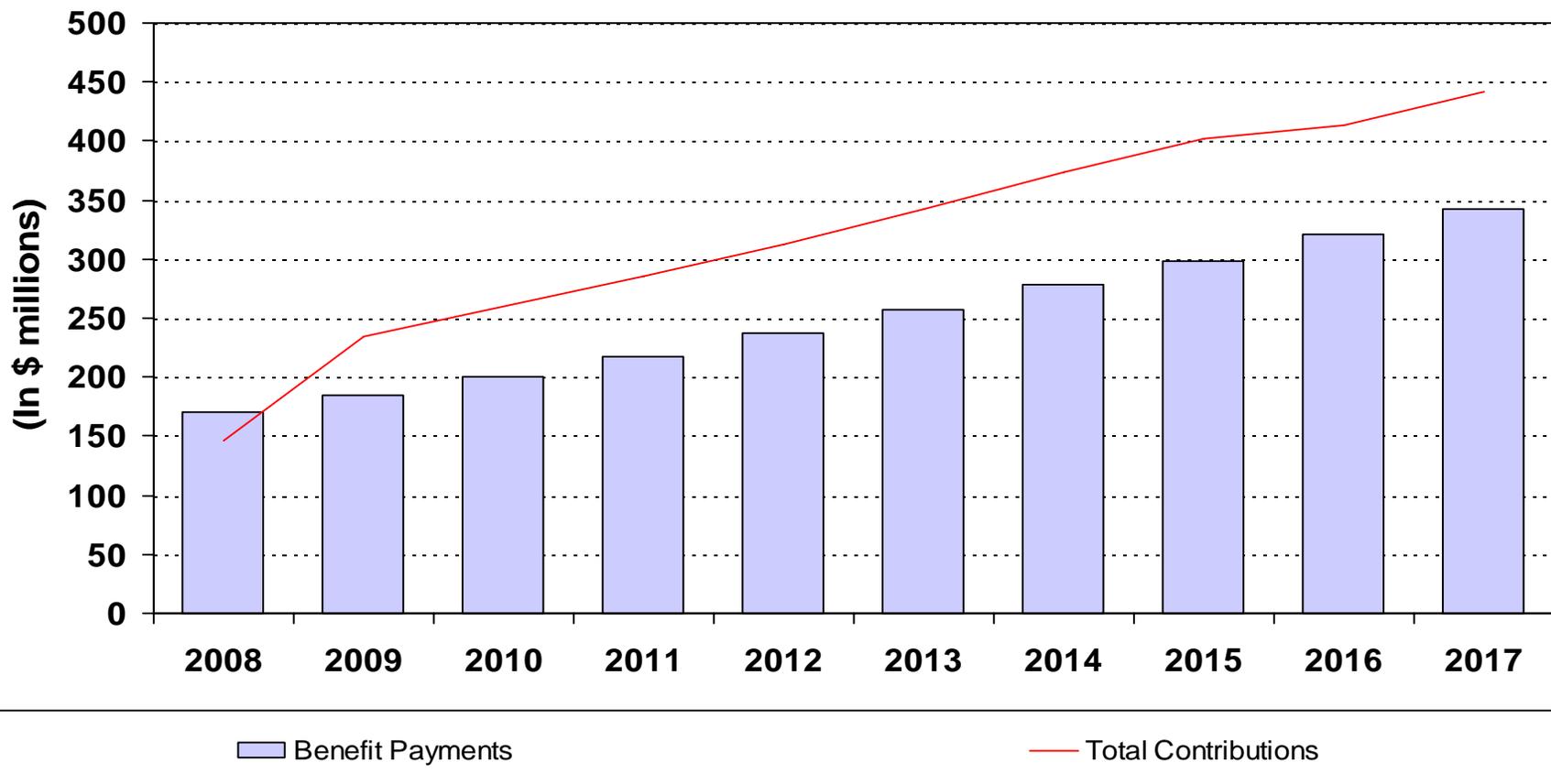


Source: Actuary



# Cash Flow Forecast

- Employee and Employer contributions cover current benefit payments and make up some of the unfunded liability
- Investment return left to cover the remaining shortfall, plus normal cost and growth of liabilities



*Includes projected employer and employee contributions*



# Summary of Liability Position

	Item	Status	Investment Implications
1)	Liability growth	Growth is moderate at 6.7% per year	Some degree of asset growth required
2)	Funded status	Underfunded after 2008 returns	Reduced flexibility to take above average risk
3)	Contributions	Increasing to cover unfunded liability	Investment return can help lower contribution requirements
4)	Cash outflows	8% of assets annually, before offset by projected contributions	Liquidity not an overriding concern
5)	Expected Return	Conservative given higher expected future returns	Assets should outgrow liabilities if expected return is met
6)	Demographics	Retired share of liability grows	Shortening time horizon

# Evolving Pension Landscape

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- The terrible markets and ongoing decline in long interest rates have heightened concern over pensions
  - Corporate pension plans have new contribution and accounting rules on a more marked-to-market basis
  - Public pension fund accounting based on Governmental Accounting Standards Board may eventually change as well
  - Moody's and Standard & Poor's have both staffed pension analysis groups for their bond ratings, which may spread to State pension commitments
- On a market basis, pension plans are very interest rate sensitive (have a long duration) and would benefit from increased duration of assets
- An illustrative allocation is examined
  - Current Policy with a long duration overlay

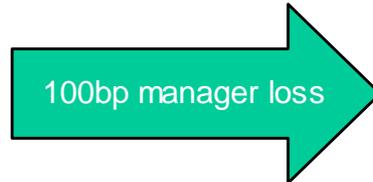
# Marked-to-Market Risk Illustration

What is the biggest financial risk facing the Plan...

**MV/AAL**  
**Funded Status**  
82%

## Manager underperformance?

Assets	3,112
Liabilities	<u>3,793</u>
Surplus/(Deficit)	(681)

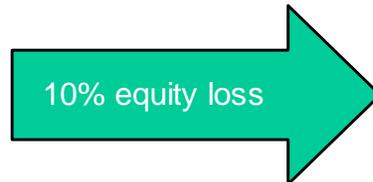


Assets	3,081
Liabilities	<u>3,793</u>
Surplus/(Deficit)	(712)

81%

## Equity Risk?

Assets	3,112
Liabilities	<u>3,793</u>
Surplus/(Deficit)	(681)



Assets	2,956
Liabilities	<u>3,793</u>
Surplus/(Deficit)	(837)

78%

## Interest Rates?

Assets	3,112
Liabilities	<u>3,793</u>
Surplus/(Deficit)	(681)



Assets	3,162
Liabilities	<u>4,362</u>
Surplus/(Deficit)	(1,200)

1.6 year duration

73%

15 year duration

### Assumptions

Current Asset Allocation; July 1, 2008 Market Value of Assets

Liabilities: 15 year duration; July 1, 2008 Accrued Liability



# Interest Rate Trend

- Are long-term interest rates low, or were the past 35 years high?



► Sources: *Federalreserve.gov, Citigroup*



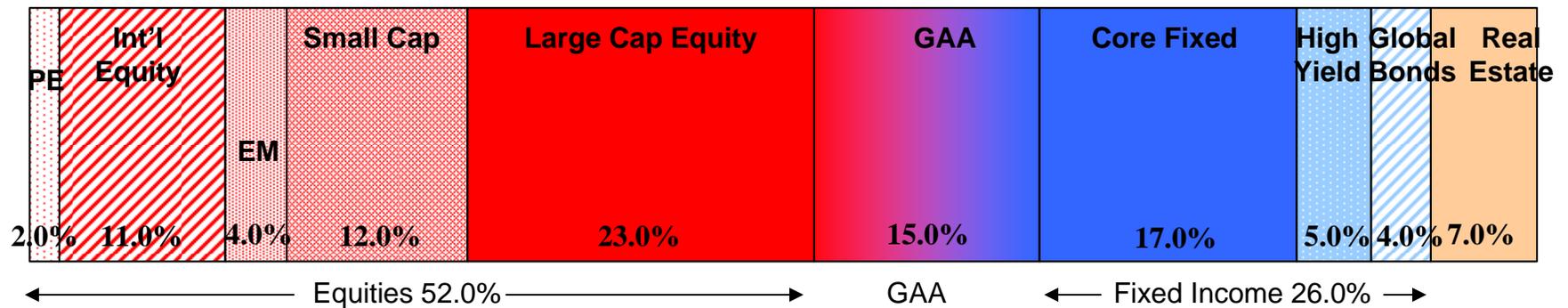
# Asset Allocation Mixes

	Policy	Current Allocation	Mix A	Mix B	Mix C
<b>Cash</b>	0%	0%	0%	0%	0%
Large Cap Equities	23%	25%	22%	15%	25%
Small/Mid Cap Equities	12%	11%	8%	5%	11%
Int'l Equities	11%	12%	16%	15%	12%
Emerging Int'l Equities	4%	2%	4%	4%	2%
<b>Total Equity</b>	<b>50%</b>	<b>50%</b>	<b>50%</b>	<b>39%</b>	<b>50%</b>
Core Bonds	17%	22%	12%	7%	0%
Global Bonds	4%	5%	4%	3%	0%
High-Yield Bonds	5%	5%	5%	4%	5%
LDI Solutions	0%	0%	0%	0%	27%
<b>Total Fixed Income</b>	<b>26%</b>	<b>32%</b>	<b>21%</b>	<b>14%</b>	<b>32%</b>
Real Estate	7%	8%	7%	7%	8%
Private Equity	2%	0%	2%	5%	0%
Hedge Funds Cons	0%	0%	0%	0%	0%
Hedge Funds Mod	0%	0%	0%	10%	0%
<b>Total Alternatives</b>	<b>9%</b>	<b>8%</b>	<b>9%</b>	<b>22%</b>	<b>8%</b>
Global Asset Allocation	15%	10%	20%	20%	10%
Real Assets	0%	0%	0%	5%	0%
<b>Total Other</b>	<b>15%</b>	<b>10%</b>	<b>20%</b>	<b>25%</b>	<b>10%</b>
<b>Expected Return</b>	<b>9.3%</b>	<b>8.9%</b>	<b>9.5%</b>	<b>9.6%</b>	<b>11.2%</b>
<b>Expected Risk (Asset Volatility)</b>	<b>13.2%</b>	<b>12.4%</b>	<b>13.5%</b>	<b>12.5%</b>	<b>19.6%</b>
<b>Sharpe Ratio</b>	<b>0.48</b>	<b>0.47</b>	<b>0.48</b>	<b>0.53</b>	<b>0.42</b>
<b>Surplus Risk</b>	<b>18.0%</b>	<b>17.4%</b>	<b>18.3%</b>	<b>18.2%</b>	<b>12.1%</b>

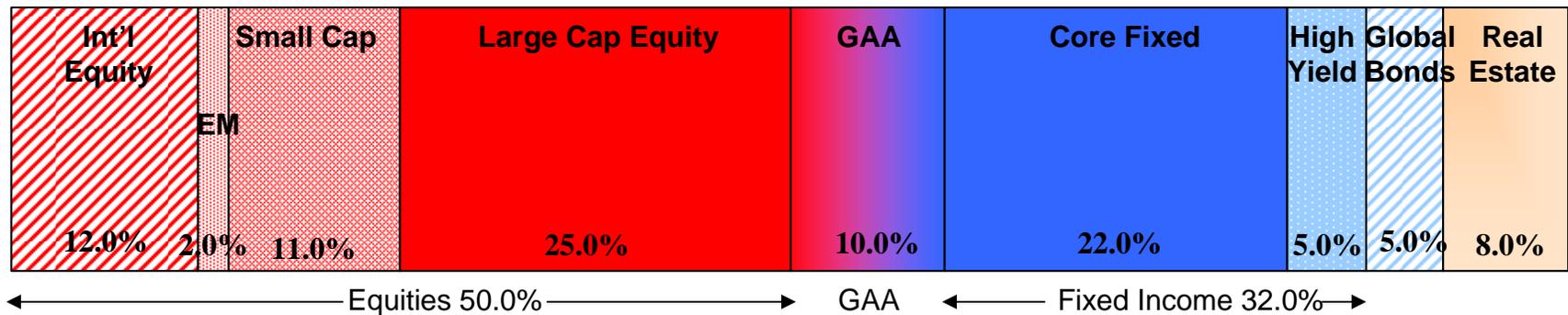
- Current Allocation reflects actual allocations at 12/31/08
- Mix A moves PIMCO All Asset into GAA, and reallocates domestic and international equity
- Mix B adds alternatives
  - Allocation to private equity, real assets, and hedge funds for more diversification and lower correlation to other asset classes
  - Asset risk decreases, while return expectations remain the same
- Mix C moves fixed income to LDI solutions
  - Extending duration of assets to hedge interest rate movements of liabilities
  - Technique used mostly by corporate plans
  - Asset risk increases, but surplus risk decreases

# Asset Allocation

Target Policy Asset Allocation

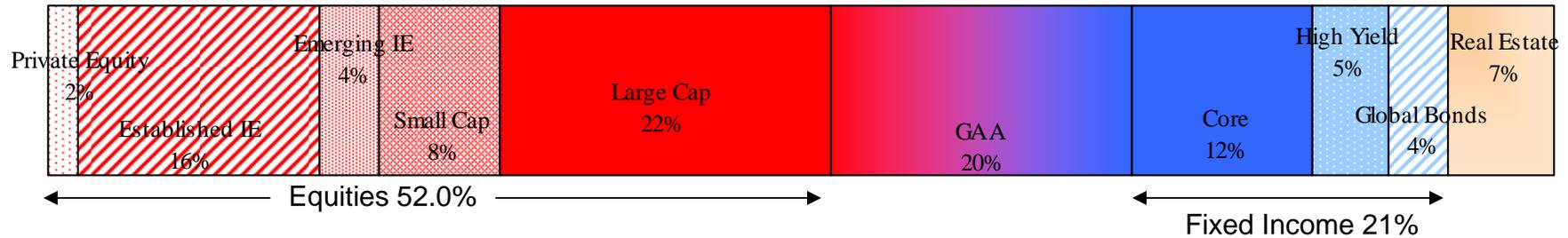


Current Asset Allocation

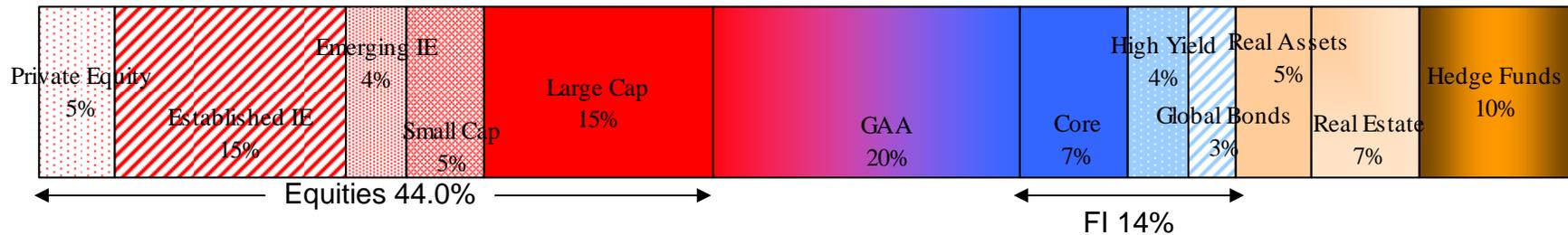


# Asset Allocation Mixes

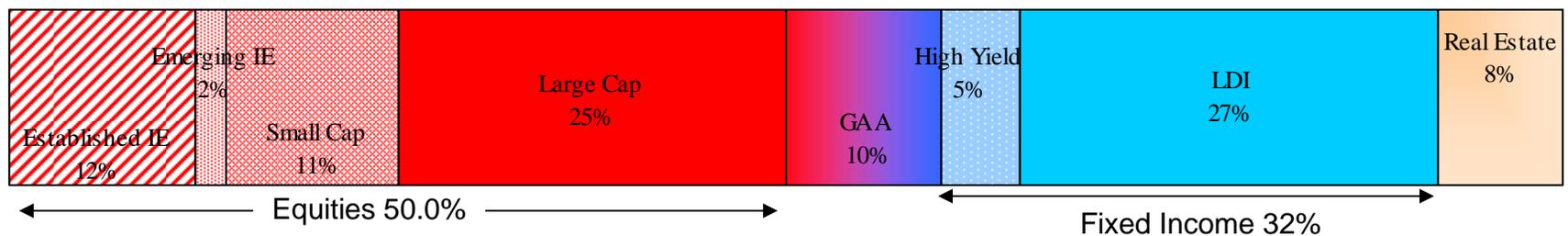
### Mix A – Rebalance GAA and Equities



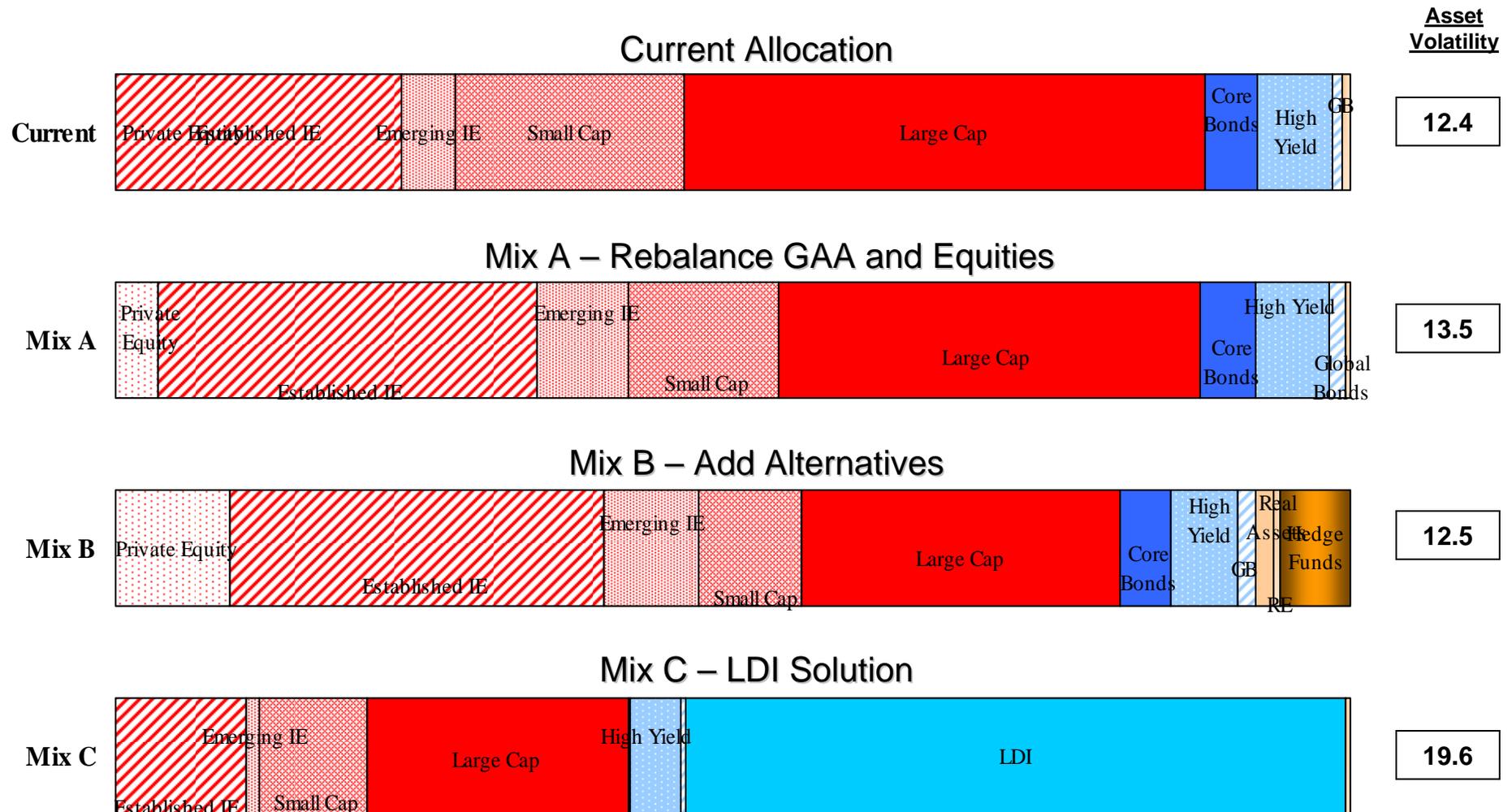
### Mix B – Add Alternatives



### Mix C – LDI Solution



# Risk Budgets

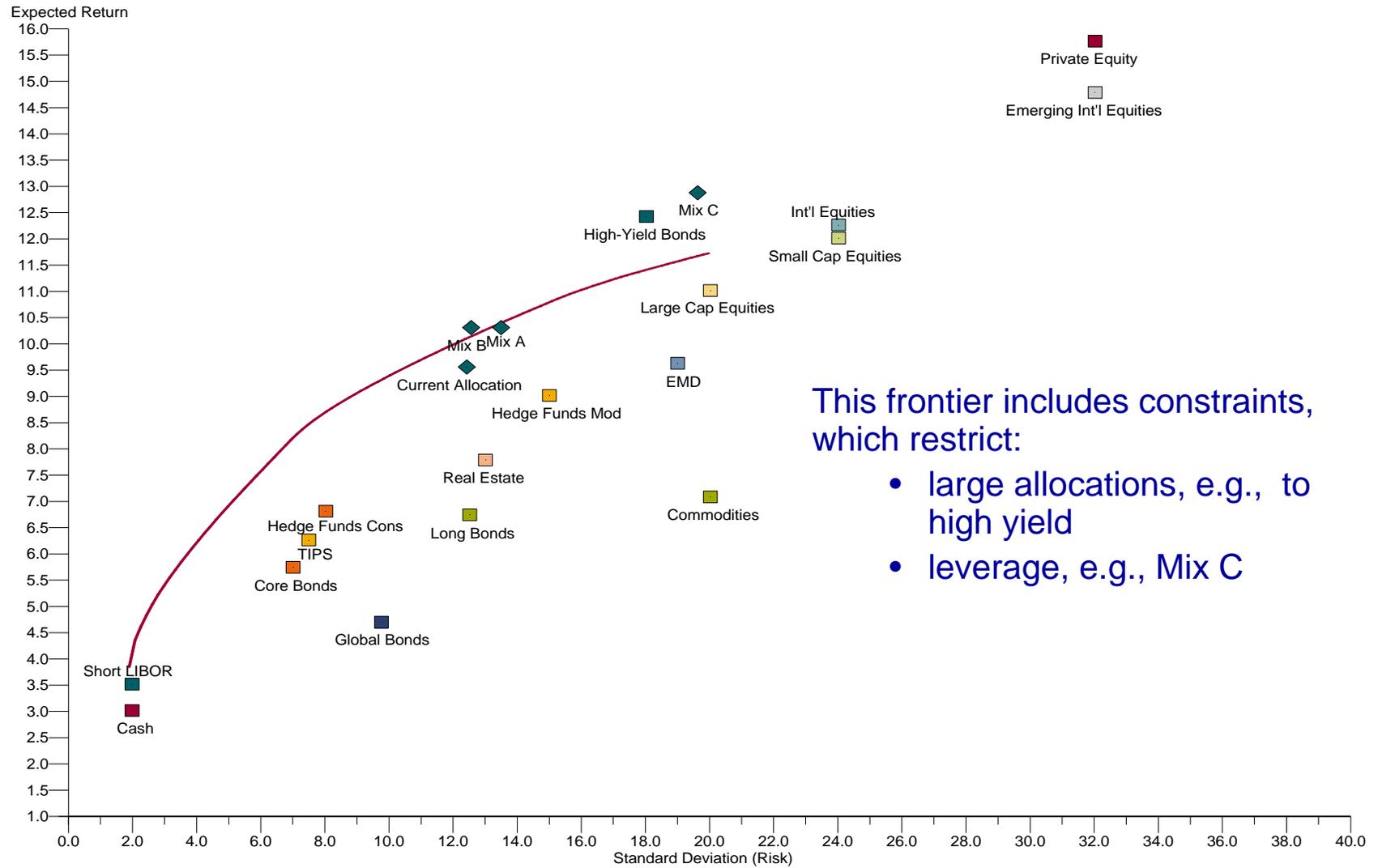


# Risk Budgeting Observations

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- Mix A has a minimal impact on relative risk posture, but does increase expected return and risk
- Mix B decreases the risk budget for public equities, with private equity and GAA strategies still contributing to a significant risk in total equity exposure
- Mix C has greatly increased risk coming from interest rate exposure
  - Only appropriate if directly used to match liabilities measured at market interest rates

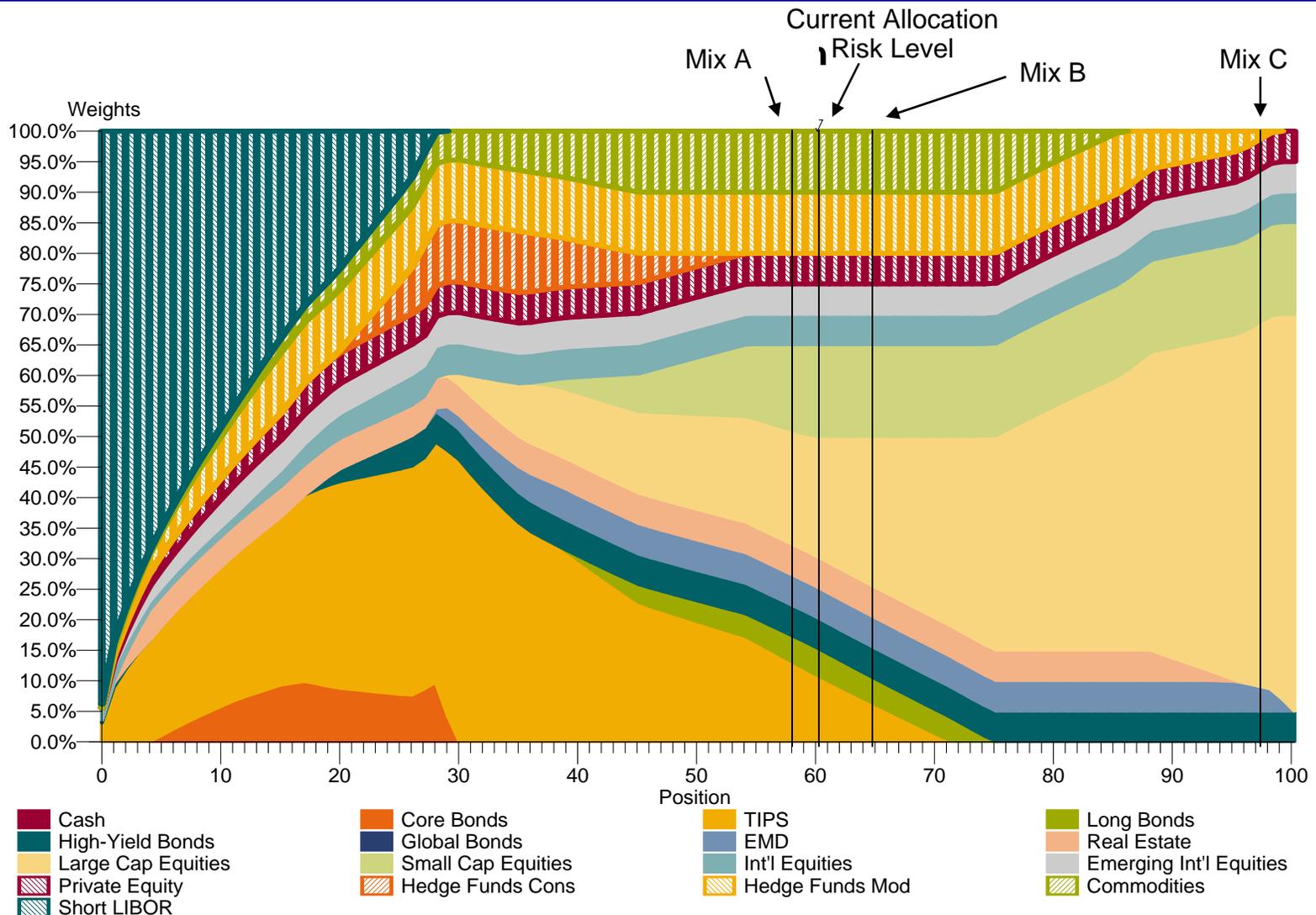
# Efficient Frontier



This frontier includes constraints, which restrict:

- large allocations, e.g., to high yield
- leverage, e.g., Mix C

# Allocations along Efficient Frontier



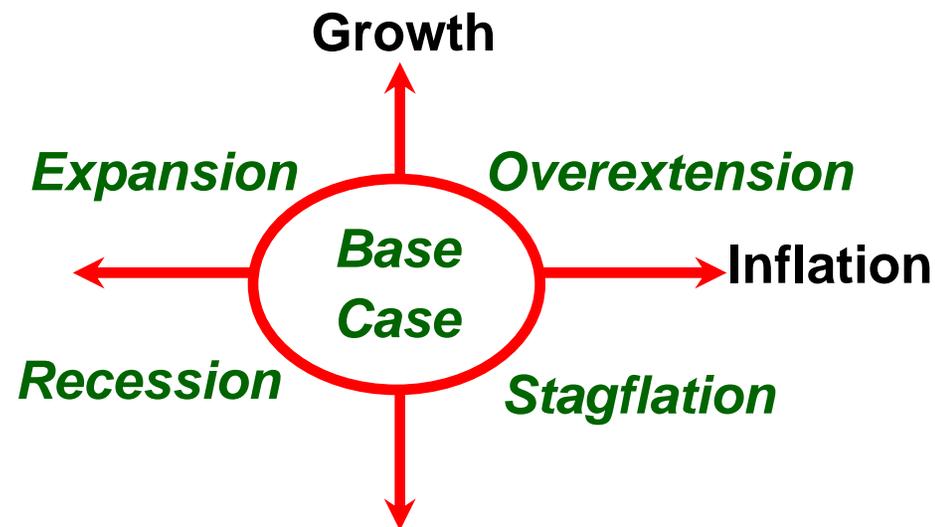
**Low Risk 0% Equity**

**High Risk 100% Equity**



# Scenario Analysis

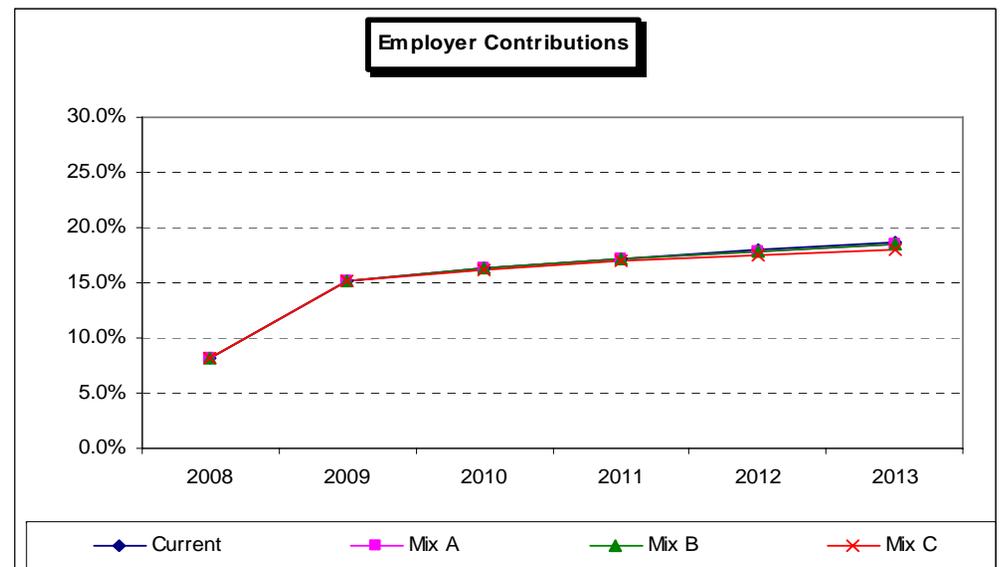
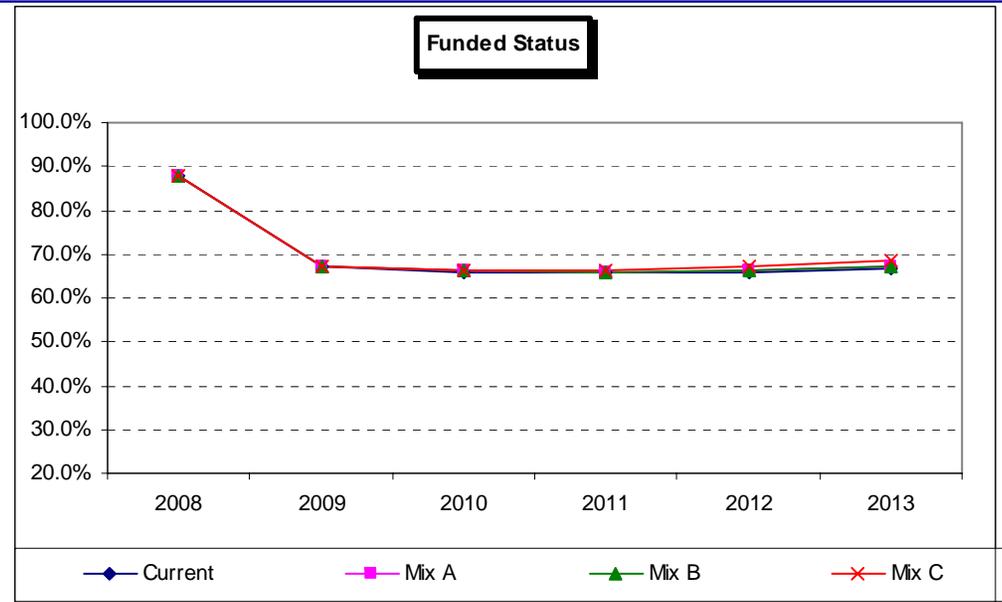
- NEPC Scenario Analysis allows plan sponsors to test the viability of alternative asset mixes under multiple economic scenarios
- Allows better understanding of risk exposures under contrasting inflation and economic growth regimes
- Can understand the effect on assets and liabilities (funded status)



- Scenarios assume a four year scenario and then a return to expectations

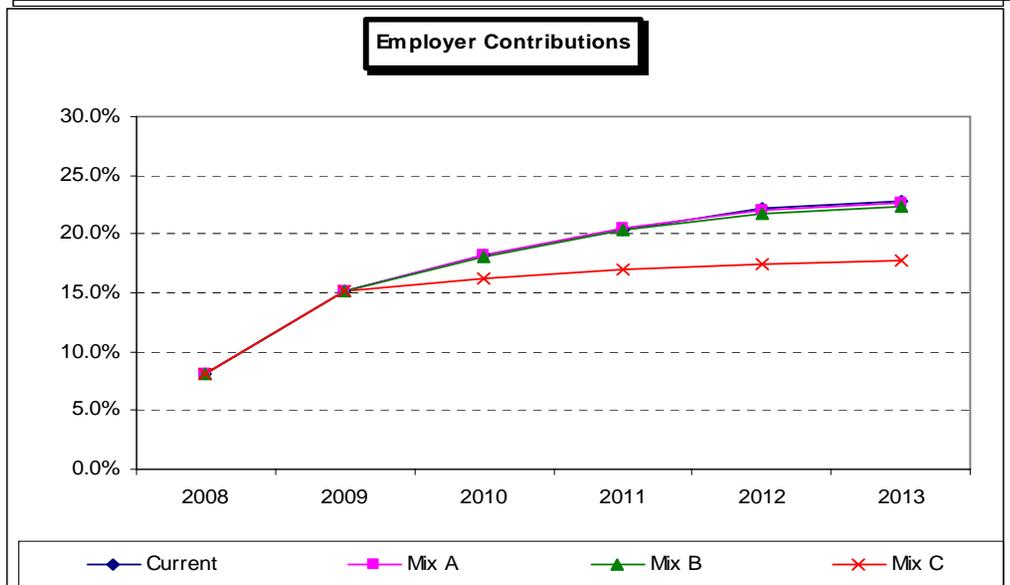
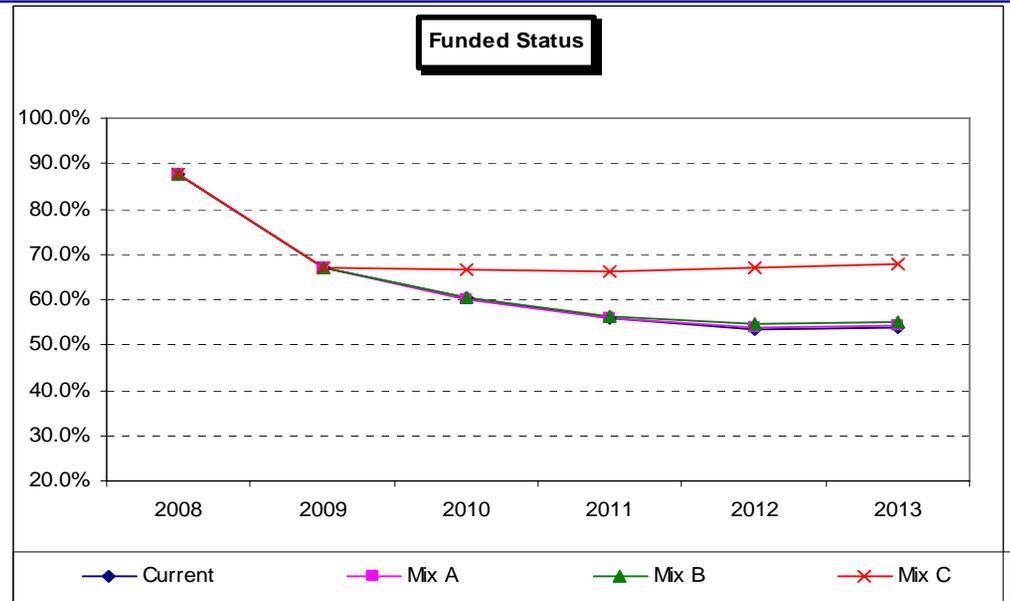
# Base Case Scenario

- Base Case scenario
  - No volatility
  - All asset classes perform according to 2009 NEPC 5-7 year assumptions
- Funded status decreased dramatically in 2008
  - Losses recognized for another four years under asset smoothing method
- Contribution increase due to amortization of larger unfunded accrued liability
  - Increase from 8% of payroll to 15% in one year, and up to 18% in 5 years



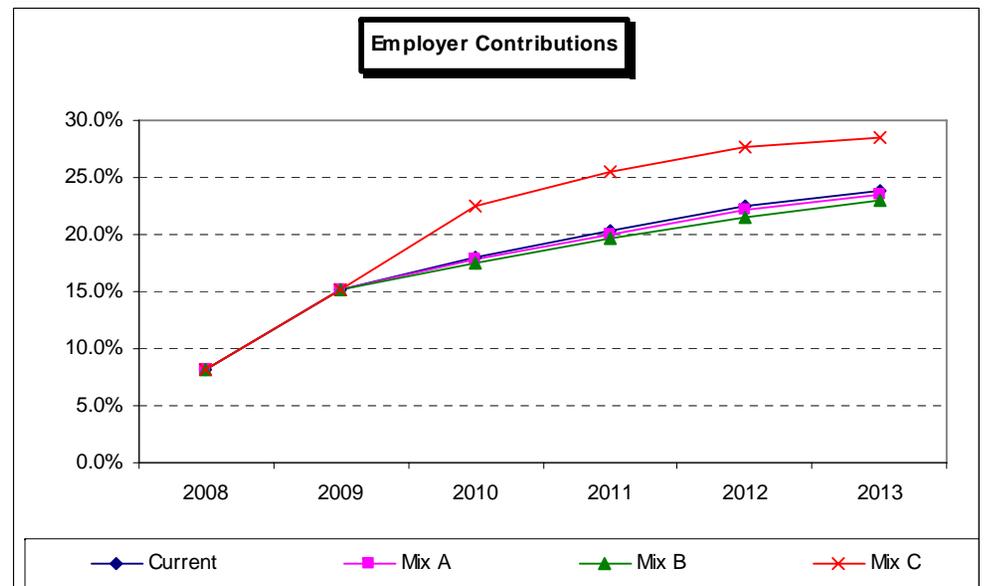
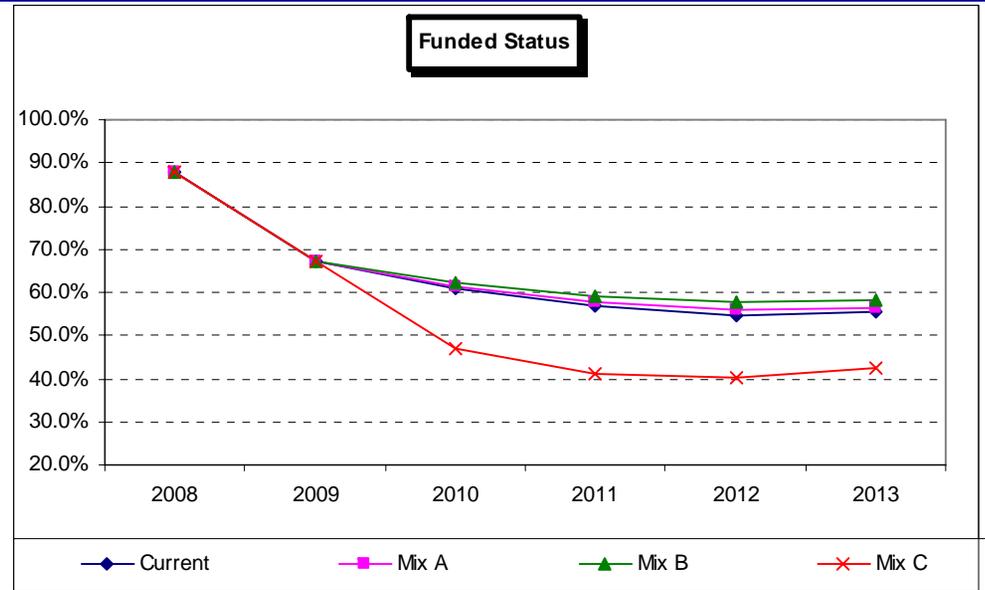
# Recession Scenario

- Recession – low inflation, low growth
  - Current markets continue – continued flight to quality and loss of confidence
    - Equity markets fall
    - Bond yields fall
  - Interest-sensitive securities (bonds, especially long duration bonds) will perform well in this environment
  - Historical Example – early 1990s
  
- Funded Status cannot recover to previous levels, even with increased contribution levels



# Stagflation Scenario

- Stagflation – high inflation, low growth
  - Two problems – (1) the economy is not growing, (2) inflation has skyrocketed
    - Inflation is sticky – once it gets high, it stays high for several years
    - Fed has limited options to kick-start economy because easing only promotes further inflation
  - While equities are sagging and bonds are losing real value, real assets such as TIPS will perform well on a relative basis because they are linked to inflation
  - Historical Example – flat stock market and double digit inflation of the mid-1970s
- Employer contributions increase above 17% of payroll, and payroll also increases with inflation
- Funded Status declines to less than 60%



# Scenario Analysis Observations

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- All mixes except Mix C have very similar funded status and contribution projections
  - Actuarial methodology significantly smoothes results over time
  - Actual asset returns take many years to impact costs
  - Biggest determinant of costs is actuarial interest rate
  - Larger impact for 7/1/2009 actuarial valuation expected due to maxing out at 120% corridor above market value
- Mix C protects in a Recessionary environment, but loses significant amounts under Stagflation
  - Because current calculations do not vary with the level of interest rates, Mix C also has significant volatility
  - If similar strategy ever pursued, important to balance with real assets

# Economic Cost

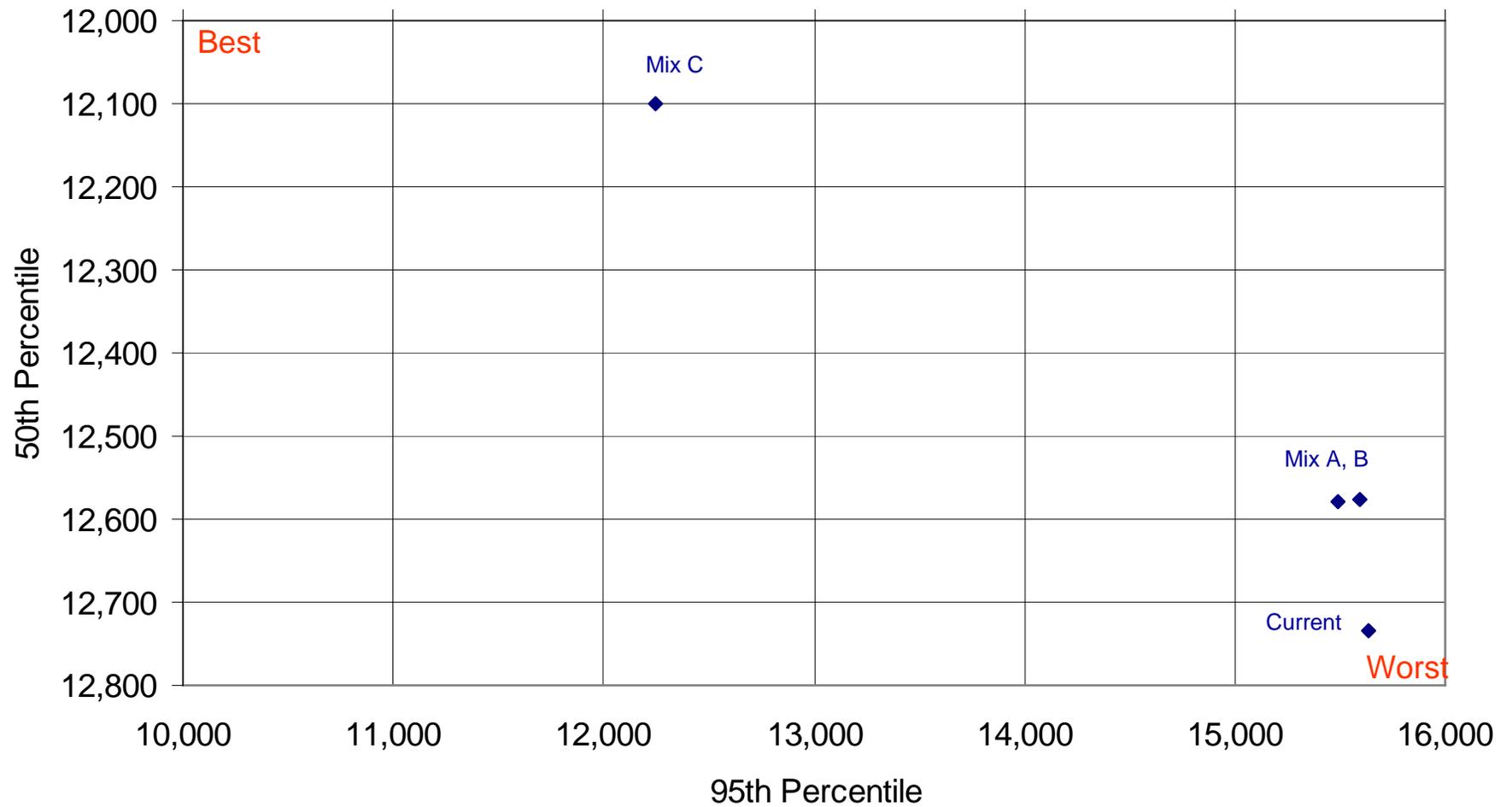
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- Defined as:
  - Present value of projected contributions
  - Terminal Deficit/(Surplus), calculated as Actuarial Liability minus Market Value of Assets, at the end of a ten year forecast period

Contributions made plus future funding needs (either through investment earnings or future contributions)

- Following graph uses economic cost to translate asset/liability results in efficient risk/reward framework
  - The left (reward) axis shows declining expected economic cost as we go up or “north” on the graph
  - The bottom (risk) axis shows declining worst case economic cost as we go left or “west” on the graph
  - Superior policies are “northwest”

# Economic Cost



# Summary and Recommendations

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- The large drop in assets will take many years to reverse
  - Some recovery from asset returns in a higher future-looking return environment
  - Some recovery from higher contributions
- Major risk remains from low growth environments (recession and stagflation)
  - Important to add risk parity manager that can benefit in both scenarios
- Actuarial methodology generates significant smoothing of results
  - Long-term trend lines instead of sudden jumps in costs
  - 7/1/2009 valuation likely impacted by actuarial asset capped at 120% of market value
  - Eventual marked-to-market changes could result in a portfolio like Mix C

# Appendix



# Background

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- We assume a return to “normal” markets within the next 7 years
  - Normal will not mean the levels of liquidity and leverage in early 2007
- The timing of normalization is unclear, and will occur at different times for different markets, e.g., credit before equity before economic growth
  - However, recovery may not follow a typical pattern, just as many aspects of the recession have not been typical
  - Recent events will influence markets for years to come; investors will remember how bad things can get
- There is a small but credible risk of a long-term deflationary spiral such as Japan in the 1990s or the world in the 1930s
  - Long-term inflation is more likely; the Fed has taken many unprecedented actions that won't be as simple to reverse as interest rates
- Important to use risk budgeting and scenario analysis as a complement to mean-variance assumptions in times of extensive uncertainty

# What is Normal?

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- **Functioning credit market**
  - Banks lending to companies, individuals and each other
- **Risk Premia**
  - Investors paid incrementally more to assume incremental risk
- **Capital Markets**
  - Company fundamentals to drive returns
  - Winners and losers in each industry
- **Expectations move towards more normal growth & inflation rates**

# 2009 NEPC Capital Market Observations & Expectations

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- **Global recession persists into 2009**
  - Deleveraging process will continue
  - Recovery may not follow past patterns
    - Just like the recession, we may not recognize the upturn until some time has passed
  - There is a small but credible risk of a long-term deflationary spiral
- **Volatility will continue**
  - Markets need to assess the emerging financial capital and governance landscape
  - Low short term inflation expectations, with risk of deflation
  - Longer term risks of high inflation
    - Unprecedented global central banks' actions to generate liquidity
  - Regulation of markets will increase, bringing some benefits but more frictional costs
  - Long term weakening of US Dollar may be matched by other currencies
- **As markets stabilize, opportunities for attractive returns will be available**
  - Providers of liquidity and patient capital will be in the best position to capitalize
  - Fundamentals will matter once again
  - Future-looking risk premiums should be the highest in decades, but are unlikely to recover 2008 losses for many years

## 2009 General Actions for Clients

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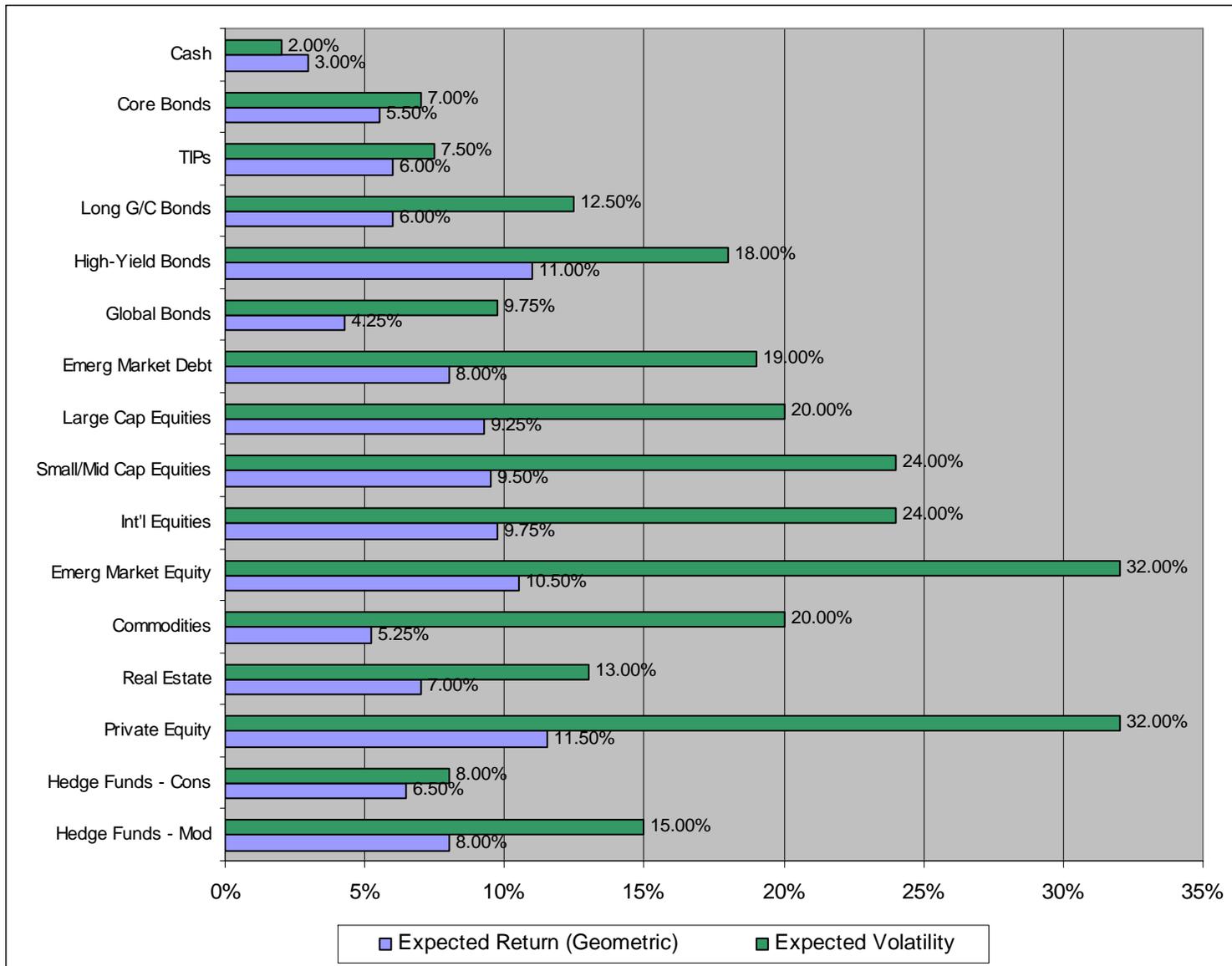
- **Position for opportunities but size risk positions appropriately**
  - High forward-looking risk premiums are attractive in most assets
  - Pricing of potential rebound in credit looks attractive relative to the upside in equity
  - Allocate to strategies most likely to capitalize on return to fundamentals – skilled traditional and alternative managers and credit opportunities
  - Consider strategies with lock-ups to protect capital flight
- **Consider broader risks of the total investment program**
  - Examine portfolio performance under different economic scenarios and tilt allocation to better protect capital in unfavorable environments
  - Where appropriate, allocate to interest rate and/or inflation sensitive securities to better match liabilities or spending needs
- **Prepare for continued market volatility**
  - Rebalance towards targets, but consider the tradeoffs of high transaction costs
  - Dollar-cost average to mitigate market timing risk
  - Consider strategies with broad diversification that can stabilize returns in uncertain environments – risk parity and global asset allocation
- **Assess liquidity needs and commit capital accordingly**
  - Balance long-term investment opportunities with near-term spending needs

# Development of Asset Class Assumptions

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- Relies on a combination of historical data and forward-looking analysis
- Historical data is used to frame current market environment as well as to compare to similar historical periods
  - Historical index returns
  - Volatility
  - Correlations
  - Performance during other downturns and subsequent recoveries
  - Average historical P/E, yield, etc.
- Forward-looking analysis is based on current market pricing and a building blocks approach
  - Return equals yield + changes in price (valuation, defaults, etc.)
  - Use of key economic observations to determine expected values of underlying factors (inflation, real growth, dividends, etc.)
  - Structural themes that can have long term effects on asset classes (supply and demand imbalances, US Dollar performance, etc.)
- Volatility and correlation expectations are based on a similar approach of historical performance with recognition of current environment and economic forces affecting future returns

# NEPC 2009 Risk/Return Assumptions



# 2009 Asset Class Correlation Assumptions

Asset Class	Cash	Core	TIPs	Long	HY	Global	EMD	Large	Smid	Intl	Emg	Comm	RE	PE	HF-C	HF-M
Cash	1.00															
Core Bonds	0.25	1.00														
TIPs	0.10	0.75	1.00													
Long Bonds	0.20	0.95	0.75	1.00												
High-Yield Bonds	-0.10	0.50	0.30	0.55	1.00											
Global Bonds	0.15	0.70	0.50	0.60	0.30	1.00										
Emerg Mkt Bonds	0.00	0.10	0.10	0.00	0.60	-0.10	1.00									
Large Cap Equities	0.00	0.25	0.00	0.25	0.60	-0.10	0.50	1.00								
Small/Mid Cap Equities	-0.10	0.05	0.00	0.15	0.70	-0.20	0.50	0.90	1.00							
Int'l Equities	-0.20	0.05	0.00	0.10	0.50	0.30	0.50	0.70	0.60	1.00						
Emerg Int'l Equities	-0.10	-0.15	-0.10	-0.25	0.55	0.00	0.70	0.55	0.50	0.60	1.00					
Commodities	0.00	0.00	0.30	0.00	-0.10	0.00	0.25	-0.10	-0.10	0.00	0.10	1.00				
Real Estate	0.40	-0.10	-0.10	-0.20	-0.10	0.00	0.00	0.00	-0.05	0.10	-0.10	0.05	1.00			
Private Equity	-0.10	0.15	0.00	0.10	0.60	0.00	0.25	0.75	0.85	0.50	0.25	0.00	0.00	1.00		
Hedge Funds - Con	0.50	0.40	0.40	0.40	0.35	0.10	0.10	0.30	0.30	0.15	0.10	0.05	0.00	0.20	1.00	
Hedge Funds - Mod	0.10	0.05	0.10	0.05	0.45	0.15	0.15	0.50	0.50	0.15	0.15	0.00	0.00	0.30	0.90	1.00

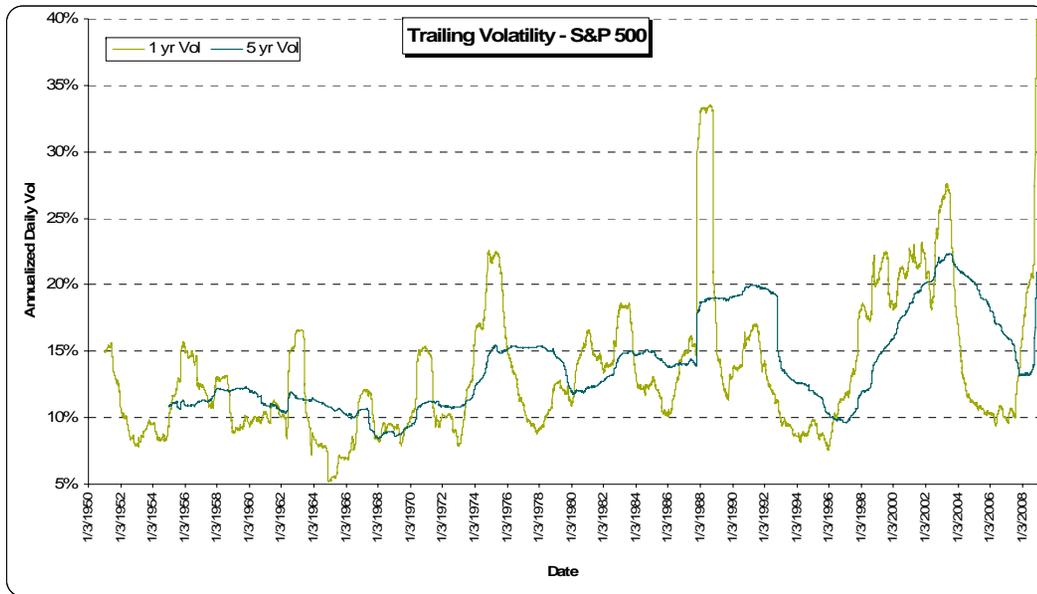
# Assumption Development - Large Cap Equity

## Sources of Return

- Valuation
- Real earnings growth
- Dividend yield
- Inflation

Return Source	Estimates of Historical Averages (1937 - 2008)	Current Values	Expected Forecast Values	Return Contribution
Valuation	15.8	11.2	15.0	1.75%
Real Growth*	2.5%	-0.5%	2.0%	2.00%
Dividend Yield**	2.2%	2.5%	2.5%	2.50%
Inflation	3.8%	3.7%	3.00%	3.00%
<b>Total Expected Return</b>				<b>9.25%</b>

\* Real GDP growth used as proxy for real earnings per share growth  
\*\* Dividend yield history from 1988 – 2008



## Volatility

- Historical annualized volatility = 15.8%
- Trailing 12 month volatility (Dec 2008) = 41%
- Current VIX Pricing ~ 44
- Volatility is conditional – spikes in volatility tend to result in extend periods of increased volatility
- Annual volatility expected to normalize over 5-7 years but this likely leads to 5-7 year volatility well above historical average
- 2009 5-7 year Volatility assumption = 20%

# Assumption Development – Core Bonds

- Sources of Return

- Yield
- Changes in value
  - Yield adjustments (duration)
    - Includes spread compression/expansion and changes to Treasury yields
    - Current Spread on Credit Component = 5.75%
    - Current Treasury Yield = 2.0%
    - Spread compression offset by rising Treasury yields
  - Downgrades/defaults

Return Source	Current / Historical Values	Expected Forecast Values	Return Contribution
Yield	5.0%	5.0%	5.00%
Yield Adjustment	n/a	-1.0%	0.75%
Duration	4.0	4.0	
7 yr Default Rate	3.0%	3.0%	-0.25%
Recovery Rate		40%	
<b>Total Expected Return</b>			<b>5.50%</b>

- Volatility

- Factors leading to increased volatility
  - Higher rate of defaults and downgrades
  - Less issuance (more concentration)
- 2009 volatility assumption = 7.00%

# Corporate Plan Changes

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- **Pension Protection Act**
  - Most rules effective January 1, 2008
  - Funding target eventually up to 100%
  - Actuaries have less flexibility in choosing assumptions
  - Benefits discounted using yield curve (no more use of expected return)
  - Increased penalties for underfunded plans
- **FASB 158**
  - Balance sheet is marked-to-market
  - No impact on income statement for now
  - Potential international accounting convergence towards UK FRS 17

# Economic Cost

	Fiscal Year Ending						Total Economic Cost
	2008	2009	2010	2011	2012	2013	
<b>Base Case</b>							
Current	\$780	\$2,015	\$2,213	\$2,402	\$2,579	\$2,744	\$12,733
Mix A	\$780	\$2,015	\$2,200	\$2,374	\$2,533	\$2,676	\$12,577
Mix B	\$780	\$2,015	\$2,200	\$2,374	\$2,533	\$2,676	\$12,578
Mix C	\$780	\$2,015	\$2,159	\$2,284	\$2,389	\$2,472	\$12,099
<b>Stagflation</b>							
Current	\$780	\$2,015	\$2,530	\$3,007	\$3,452	\$3,684	\$15,468
Mix A	\$780	\$2,015	\$2,508	\$2,977	\$3,404	\$3,621	\$15,305
Mix B	\$780	\$2,015	\$2,475	\$2,918	\$3,313	\$3,526	\$15,027
Mix C	\$780	\$2,015	\$3,070	\$3,699	\$4,185	\$4,374	\$18,122
<b>Recession</b>							
Current	\$780	\$2,015	\$2,550	\$3,048	\$3,512	\$3,733	\$15,638
Mix A	\$780	\$2,015	\$2,557	\$3,050	\$3,492	\$3,700	\$15,594
Mix B	\$780	\$2,015	\$2,544	\$3,031	\$3,459	\$3,665	\$15,493
Mix C	\$780	\$2,015	\$2,132	\$2,317	\$2,458	\$2,545	\$12,247

\* Present value discounted using market rate of 8.25%

