NEPC, LLC

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ABC Taft-Hartley Defined Benefit Plan

Asset-Liability Study

May 24, 2010

One Main Street, Cambridge, MA 02142 | TEL: 617.374.1300 | FAX: 617.374.1313 | www.nepc.com

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Introduction

- **This report presents the results of the asset-liability study conducted on the ABC Taft-Hartley Pension Plan**

- **The goals of the asset allocation study are to:**
  - Review the current and projected financial status of the pension plans over the next 5-10 years
  - Assess the appropriateness of the current asset allocation relative to the expected progress of liabilities and cash flows
    - Analyze the benefits of asset class diversification
  - Recommend alternative asset allocation targets for the Plan

- **Past changes in asset allocation have diversified the Plan more broadly than the typical pension plan**
  - Decreased overall exposure to equities
  - Increased allocations to Credit Opportunities, Real Estate, and Global Asset Allocation

- **Opportunities exist to further diversify the Plan through asset allocation**
  - Further reduction of US equities to fund Emerging Market Equities and Debt
  - Reallocation from Credit opportunities to Core bonds and into Commodities

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Background and Key Issues

- **"Perfect storm", again**
  - Decreasing discount rates and the worst asset returns since the Great Depression have hit pension plans across all industries once more
  - Volatility remains a risk in the market

- **US corporate pension rules have been changing towards a more marked-to-market basis**
  - Pension Protection Act became effective in 2008
  - Financial Accounting Standard 158 requires funding shortfall be reported on corporate balance sheets

- **ABC Taft-Hartley Pension Plan is a Taft-Hartley Plan - required to follow their own contribution rules under ERISA and PPA**
  - Discount rate for liabilities is set at a stable rate
    - Liabilities are not affected by minor shifts in interest rates
  - More asset smoothing is allowed than under corporate plan rules

- **Reduction of risk is a key concern**
  - In 2010, the Plan is expected to be in the "Green Zone"
  - For the next five years after 2010, the plan is expected to be in the "Yellow Zone", unless additional contribution commitments are made or extraordinary investment returns are earned

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Plan Review

Plan Characteristics and Assumptions

- **Based on January 1, 2009 Actuarial Valuation report from Milliman**
- **Plan Provisions**
  - Benefit formula:
    - Schedule of $ per year of service, based on hours worked per year
    - Possibly reduced if employer contributions are not met
  - Funding method:
    - Unit Credit
    - Rolling 10-year amortization of Unfunded Actuarial Liability
  - Asset valuation method:
    - 5-year smoothing of investment gains and losses
    - Restricted to within 80% and 120% of Market Value
- **Actuarial Assumptions**
  - Assumed investment return for contribution purposes:
    - 7.0% for all plans
  - All other relevant economic & non-economic assumptions are the same as those used in the valuation
    - Mortality - Retirement
    - Disability - Withdrawal
  - Benefit provisions (vesting and eligibility requirements) as stated in the valuation reports
    - 2% Cost of Living increase assumed on applicable retiree benefits

Plan Summary

Plan Funded Status

	1/1/2009 Funding	1/1/2010 Estimated Funding
1. Number of Participants		
a. Active	2,370	
b. Retired and Beneficiaries	1,944	
c. Inactive and Terminated Vesteds	1,450	
d. Total	5,764	
2. Actuarial Accrued Liability (ABO) (in $ millions)	$272	$282
5. Actuarial Value of Assets (in $ millions)	$193	$228
Funded Status (5 divided by 2)	71.0%	80.7%
6. Market Value/Fair Value of Assets (in $ millions)	$161	$196
Funded Status (6 divided by 2 or 4)	59.2%	69.4%

Source: Actuary (Milliman): 1/1/2009 Funding valuation and 1/1/2010 preliminary valuation results letter dated March 9, 2010. Estimated 1/1/2010 Funding liabilities and Actuarial Value of Assets calculated by NEPC .

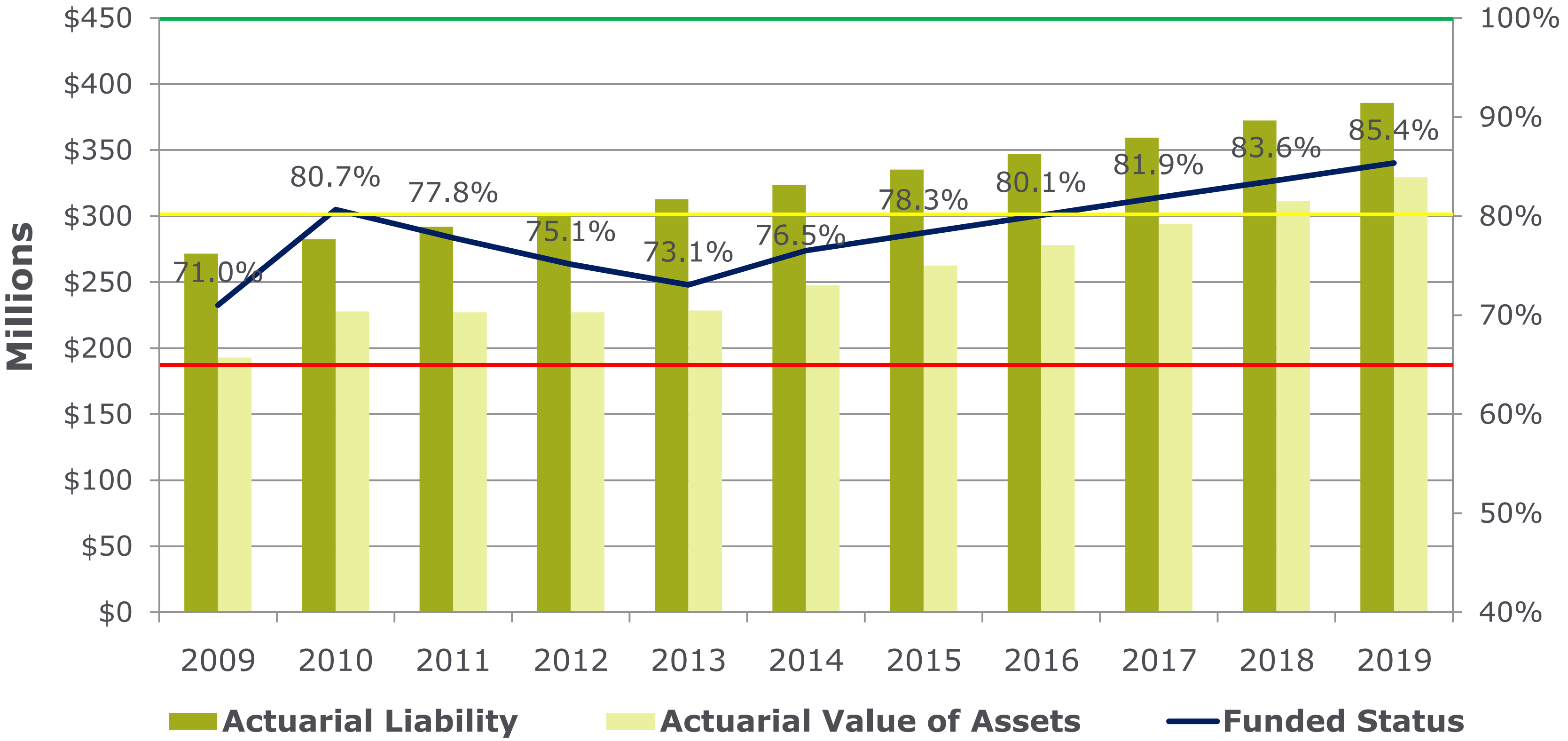
Deterministic Projection Assumptions

- **On the following two pages we show some deterministic projections of the Pension Plan**
- **The basis for all calculations were the actuarial valuation report as of January 1, 2009 (provided by Milliman)**
  - NEPC projected accrued liability, normal cost, and asset values according to Plan's methodology
- **Underlying assumptions are based on NEPC's 2010 asset class assumptions**
  - Assets are assumed to return 7.2%, the calculated expected return under the plan's Current asset allocation
  - Discount rate is assumed to remain level at 7.0%
- **Actual market return through December 31, 2009 was used, plus expected receivable contributions, with NEPC 2010 assumptions used for expected return after that date**
- **Benefit payments as projected by the actuary**
- **Contributions are assumed to increase by 3% per year from the 2009 average contribution rate of $4.98 per hour**
  - Annual hours worked are assumed to remain level at 1,350 per active participant
  - Active employees under age 65 count is assumed to remain level at 2,362

Deterministic Projections

- **Accrued Liability is forecasted to increase on average approximately 3.5% per year**
- **Plan funded status declines over the next five years into the "yellow" zone, then steadily improves if expected contributions are made and asset returns are as expected (7.2% under Current Asset Allocation using NEPC's 2010 5-7 year assumptions)**

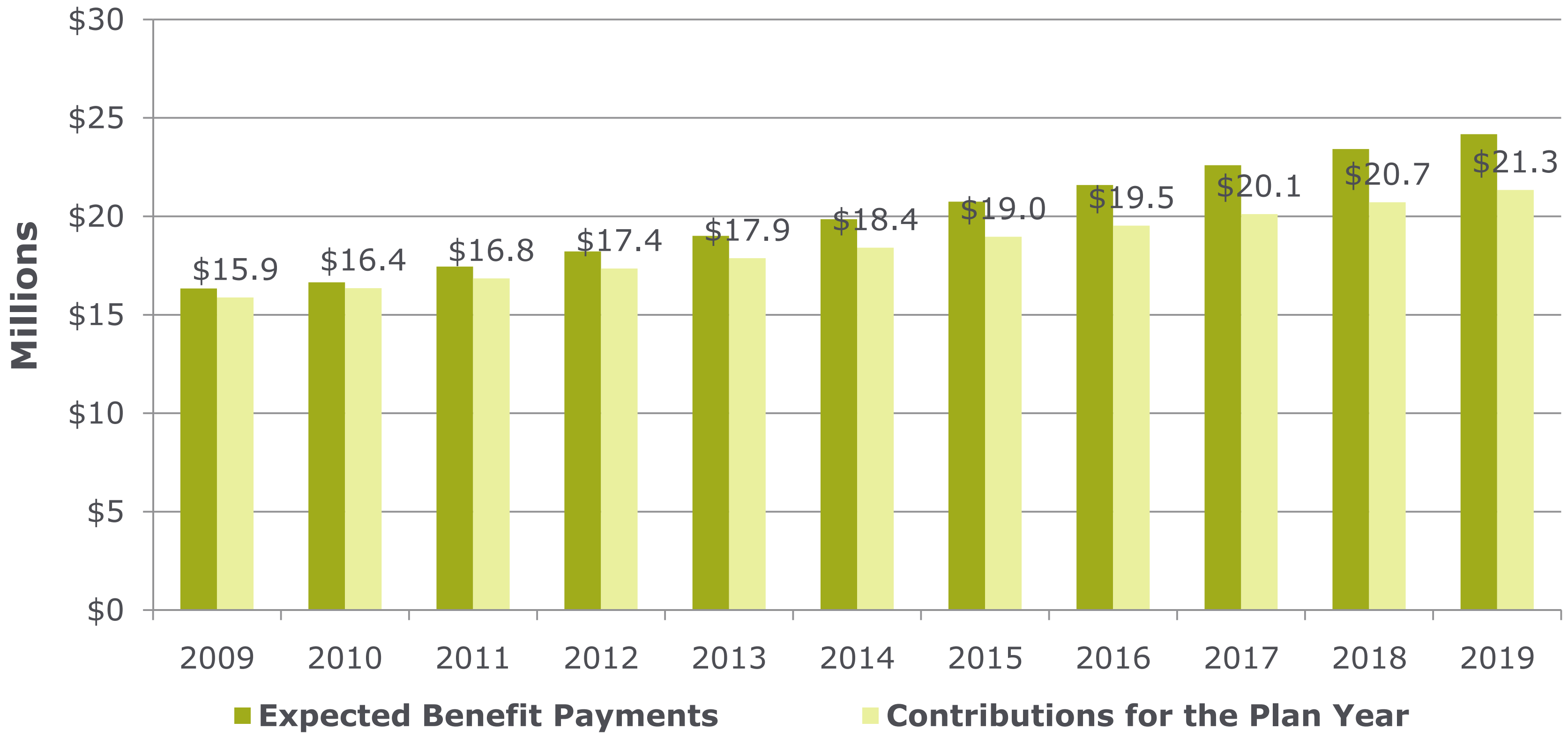
Projection of Funded Status under Current Asset Allocation



Deterministic Projections

- Plan contributions are forecasted to increase at 3% each year over the projection period
- Expected benefit payments grow steadily, and are anticipated to be in excess of expected contributions
- Additional investment return or contributions will be necessary to offset the difference

Projection of Plan Contributions under Current Asset Allocation



Potential Asset Mixes

	Current Target	Mix A	Mix B	Mix C
Cash	0%	0%	0%	0%
Large Cap Equities	30%	20%	15%	18%
Small/Mid Cap Equities	10%	10%	5%	8%
Int'l Equities	10%	10%	10%	10%
Emerging Int'l Equities	0%	5%	5%	5%
Total Equity	**50%**	**45%**	**35%**	**41%**
Core Bonds	20%	20%	30%	15%
Credit Opportunities	5%	5%	0%	0%
EMD	0%	5%	5%	5%
Total Fixed Income	**25%**	**30%**	**35%**	**20%**
Real Estate	10%	10%	10%	8%
Private Equity	0%	0%	0%	5%
Hedge Funds - Low Vol	0%	0%	0%	6%
Hedge Funds - Mod Vol	0%	0%	0%	0%
Commodities	0%	0%	5%	5%
Total Alternatives	**10%**	**10%**	**15%**	**24%**
Global Asset Allocation	15%	15%	15%	15%
Real Assets	0%	0%	0%	0%
Total Other	**15%**	**15%**	**15%**	**15%**
Expected Return (compound)	7.2%	7.3%	7.0%	7.7%
Expected Risk (volatility)	11.0%	10.6%	9.0%	10.8%
Sharpe Ratio	0.43	0.46	0.50	0.48

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Potential Asset Mixes

The goal is to decrease risk without losing return potential

- **Current Allocation**
  - Based on 12/31/09 target
- **Mix A**
  - Moves 5% from Large Cap equities into Emerging Markets equities
  - Moves 5% from Large Cap equities into Emerging Markets Debt
- **Mix B**
  - Reduces Large and Small Cap equities another 5% each and adds 10% to Core Bonds
  - Shifts 5% from Credit Opportunities to Commodities
- **Mix C**
  - NEPC “best ideas” portfolio, with further diversification into many asset classes
  - Total equities are reduced to 41%
  - Fixed income allocation reduced to 20%
  - Alternatives allocation increased from 10% or 15% to 24%
  - GTAA allocation remains at 15%

Risk Budgeting

Risk Budgeting

- **Risk budgeting considers the portfolio from a total risk perspective rather than total return view**
- **A way to determine the contribution to overall portfolio risk by each asset class in the portfolio, based on**
  - Asset class volatility assumptions
  - Correlations between asset classes
- **Shows the benefit of diversification within a portfolio**
  - Risk exposures in relation to allocation size
- **When considered in surplus space (assets and liabilities together), can determine the contribution to overall risk from interest rate exposure**
  - Most relevant for corporate pension plans but important for all pension plans regardless of regulations

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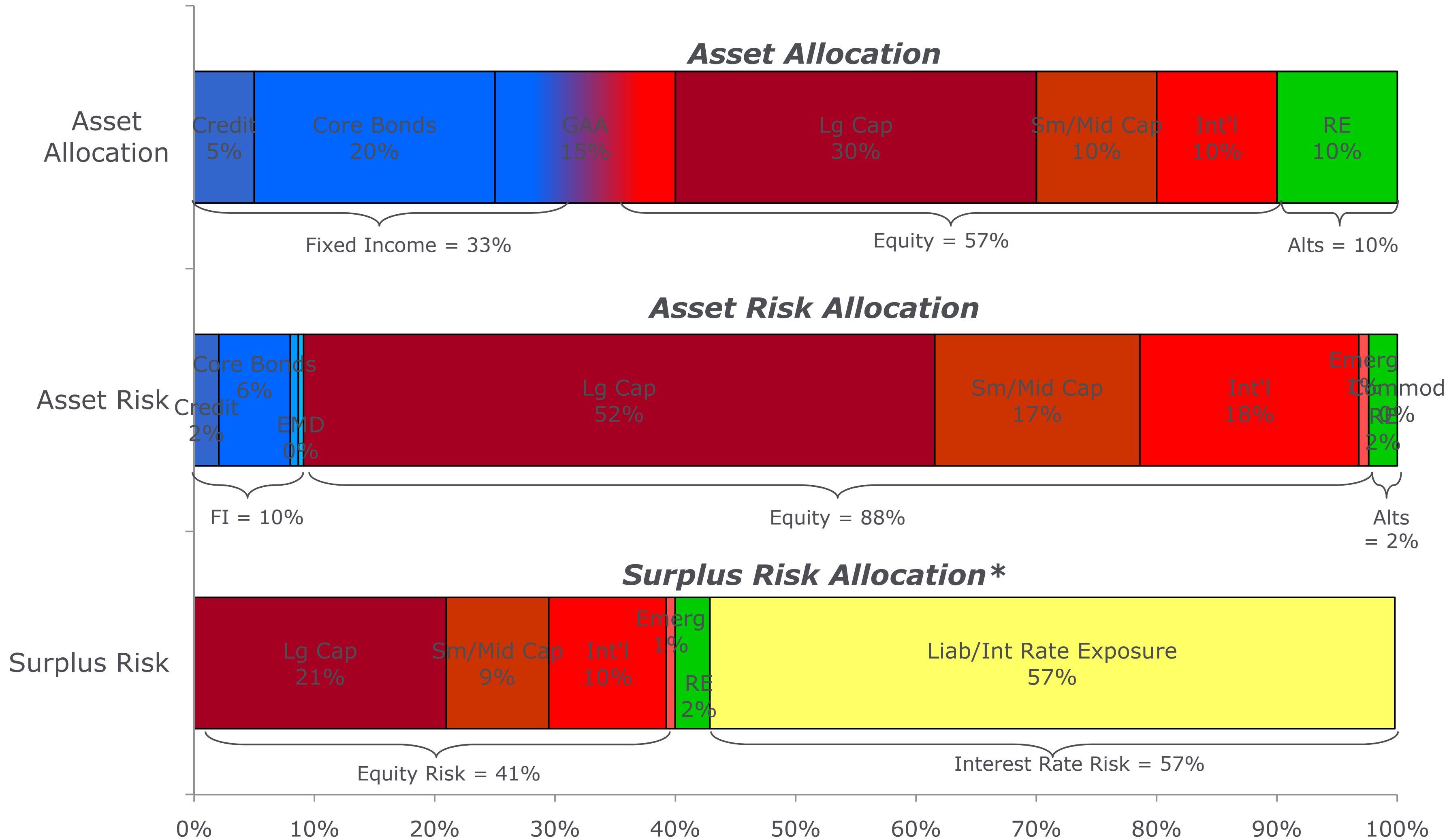
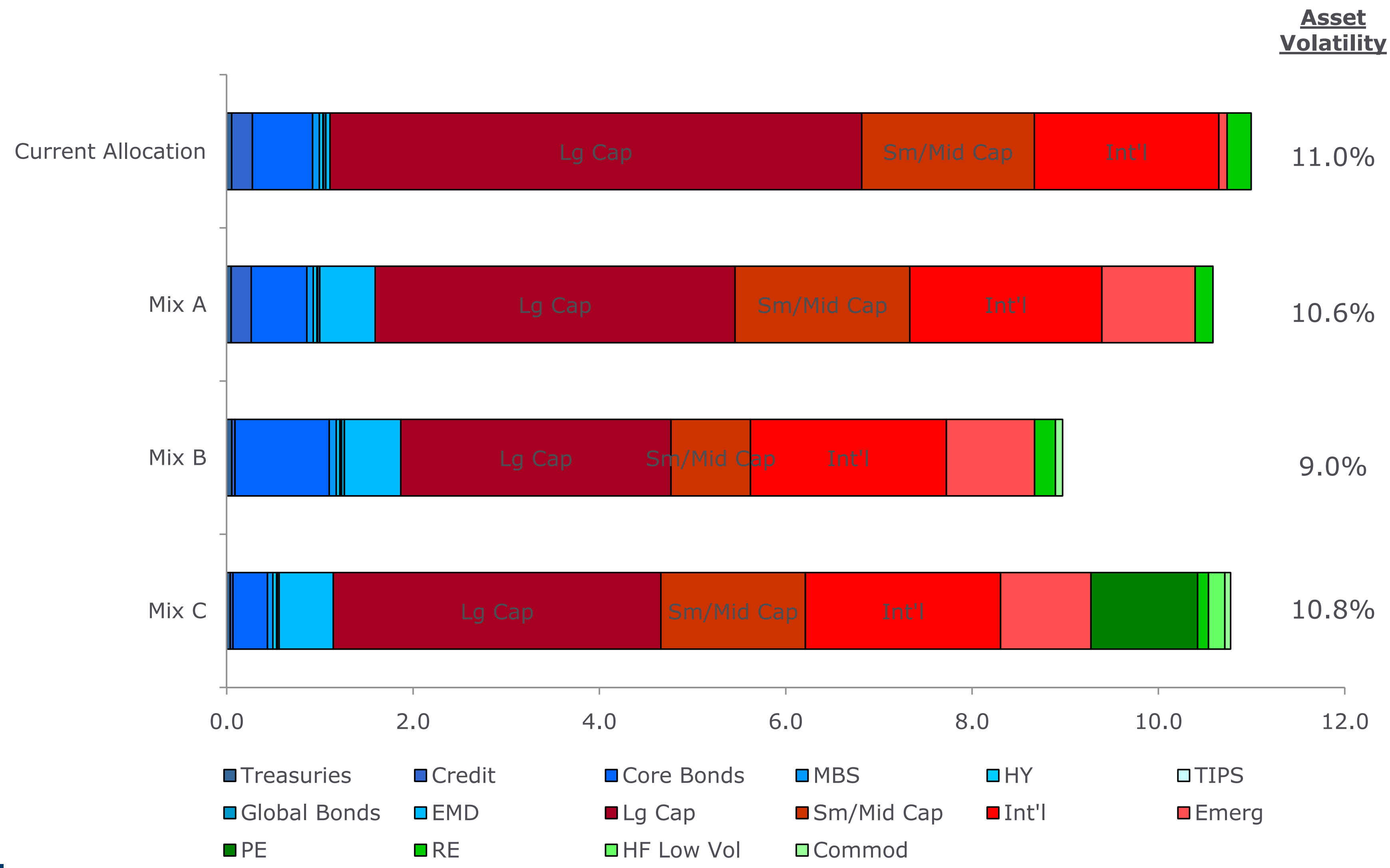
Current Target Allocation Risk Analysis



* Assumes liabilities are marked to market

Asset Risk Comparison



Risk Observations

- **The Plan's current allocation has 57% allocation to equities (including equities in GAA allocations) which equates to 88% of the asset volatility of the plan**
  - Plan is well diversified away from equity risk

- **Alternatives comprise 10% of the allocation but only 2% of the risk allocation**
  - Real Estate is a good diversifier with low correlations to most asset classes
  - Private Equity is a riskier asset class with higher correlations to public equities
  - Hedge Funds serve to diversify with less risk added per % allocation
  - Real Assets are a good diversifier and also inflation hedge

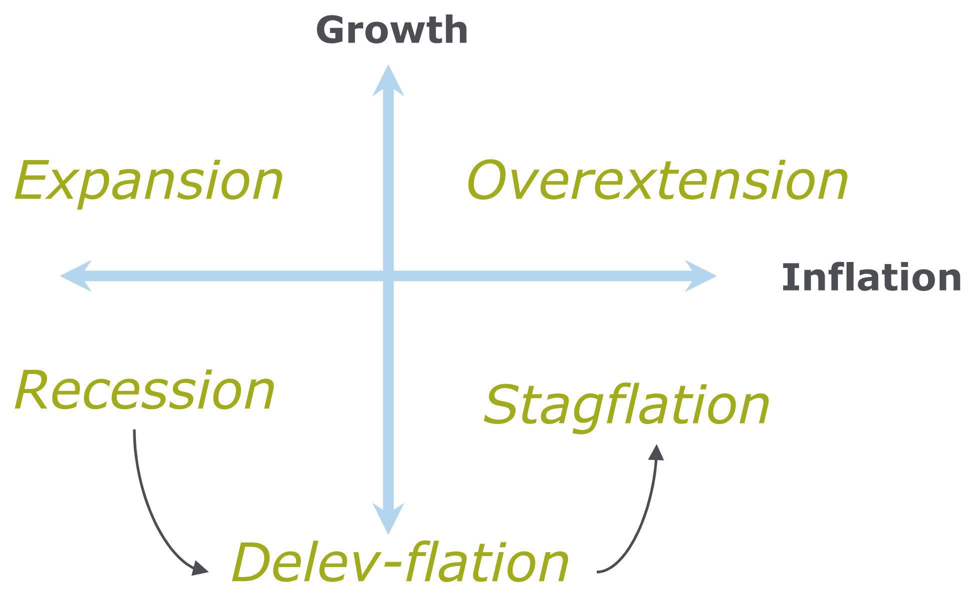
- **Consider lowering allocations to hedge funds and global opportunistic bonds and moving more towards core bonds**
  - Credit spreads continue to tighten

- **Increasing diversification in the allocations shows a steady decline in portfolio risk**
  - Equities are reduced down to 35% in Mix B, 41% in Mix C
  - Alternatives increased from 10% to 15% in Mix B and 24% in Mix C
  - Global Asset Allocation remains at 15% - a good diversifier as managers can moved quickly when they see unique opportunities

Scenario Analysis

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 better understand the effect of the economy on both assets and liabilities (funded status)**

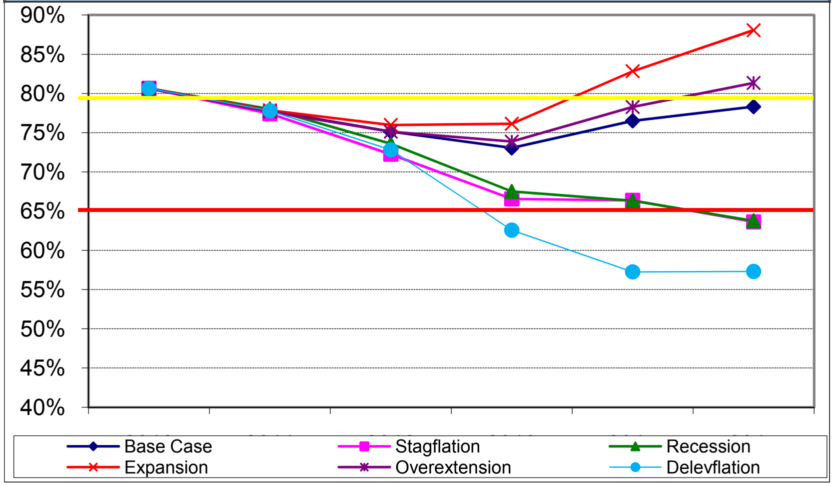


Scenario Analysis

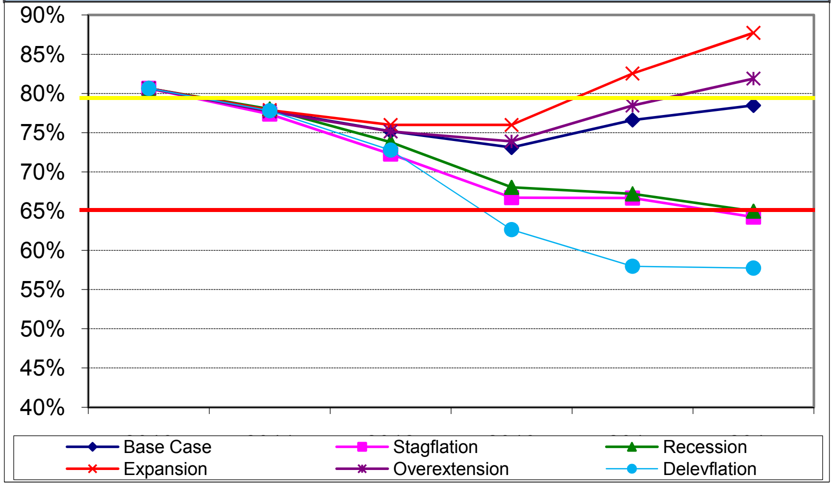
- **Base Case**
  - No Volatility
  - All asset classes perform according to 2009 NEPC 5-7 year assumptions (see Appendix for details)
- **Expansion – low inflation, high growth**
  - Economy is growing at a strong, but seemingly sustainable level
  - Bond yields are stable, inflation is manageable, equities and other high volatility asset classes perform quite well in this environment
  - Historical Example – 2004-2006
- **Overextension**
  - Economy is growing at a rapid pace, inflation increases significantly – booming times but at the cost of future growth
  - Bond yields move higher as a result of inflation, high yield does well with confidence in economy
  - Equities, real estate, and commodities fuel rapid expansion
  - Historical Example – Vietnam War Era (1967-1971)
- **Stagflation**
  - 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
- **Recession**
  - Economy stalls – there is a flight to quality as investors lose 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
- **Delev-flation**
  - A potential outcome from current financial crisis
  - Low/negative inflation in beginning years of forecast followed by rapid inflation due to massive government stimulus and policy incentive
  - Stocks move sideways as outcomes remain unresolved but move materially lower over forecast horizon
  - Nominal bonds lose value, inflation sensitive assets perform well

Scenario Analysis - Funded Status Projections

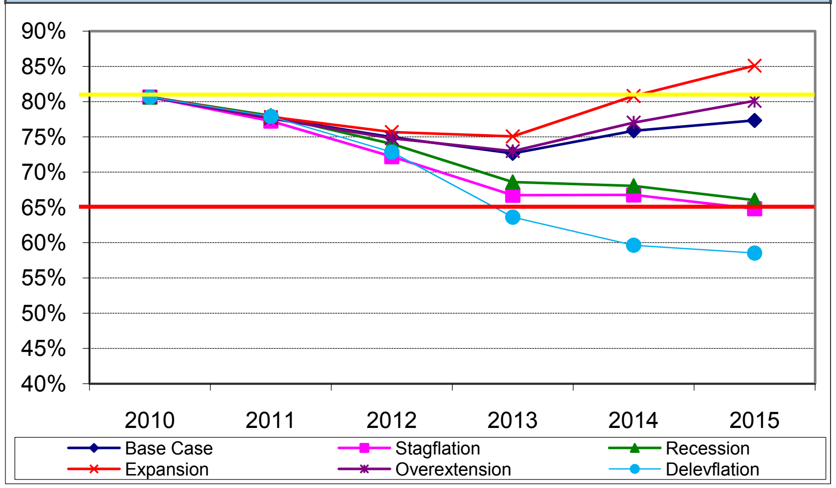
Current Allocation



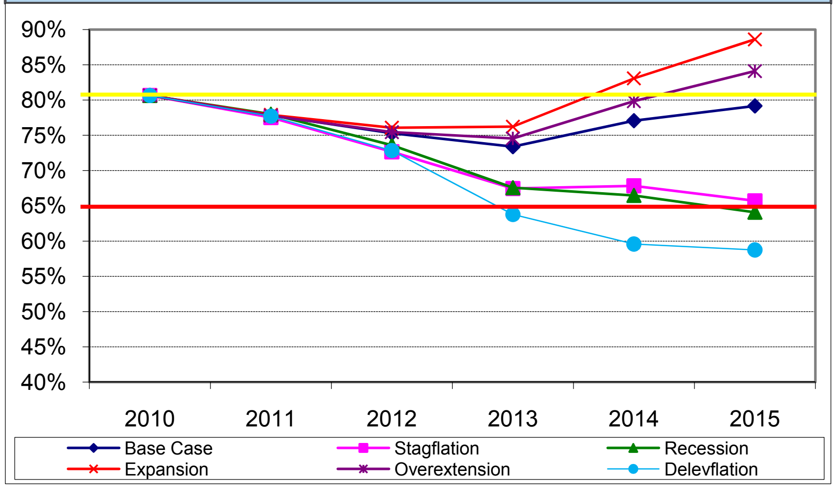
Mix A



Mix B



Mix C



Scenario Analysis Observations

- **Funded status at 1/1/2010 recovered nicely (81%) due to a stable discount rate and smoothed assets**
  - Only 40% of 2008 asset losses have been recognized so far
  - Actuarial Value of Assets were capped at 120% of Market Value at 1/1/2009
  - Assets recovered nicely during 2009
- **Future funding status will decline in the next few years unless increased contributions are made or assets recover significantly**
  - Remaining asset losses from 2008 will be recognized over the next few years
  - Additional unfunded liability will increase funding policy contributions through increasing amortization amounts
  - Funding Percentage shown in the charts above assume expected contributions are made each year to the plan
- **Future funded status is dependent on economic outcome**
  - Assets can out-earn liabilities in strong economic scenarios, thus stabilizing funded status and reducing contribution amounts
  - Funded status declines under Stagflation, Recession, and Delev-flation scenarios under all asset mixes

Scenario Analysis Observations *(continued)*

- **Under most scenarios, plan is expected to be in the Endangered or "Yellow Zone" status the majority of the time**
  - Plan is not expected to fall below Critical or "Red Zone" status unless extremely poor economy persists
  - Changes to contributions would materially change funded status results
- **Current Allocation and Mix A produce the widest array of returns in 2015**
  - Greater asset volatility will produce a wider range of results
- **Mix B has results that are tighter together, as asset volatility has been reduced through diversification**
  - Sacrificing some upside in Expansion scenario for protection in Delevflation scenario
- **In general, the different asset mixes have similar funded status and contribution projections due to smoothing techniques used**
  - Actuarial asset methodology smoothes investment returns by recognizing 20% of gains and losses per year
  - Level discount rate keeps liabilities stable

Appendix

NEPC 2010 5-to-7 Year Return Forecasts

2009 Assumptions	Return (Geometric Basis)	Risk
Cash	3.00%	2.00%
Core Bonds	5.50%	7.00%
TIPS	6.00%	7.50%
Long Bonds	6.00%	12.50%
High-Yield Bonds	11.00%	18.00%
Global Bonds	4.25%	9.75%
EMD	8.00%	19.00%
Large Cap Equities	9.25%	20.00%
Small/Mid Cap Equities	9.50%	24.00%
Int'l Equities	9.75%	24.00%
Emerging Equities	10.50%	32.00%
Commodities	5.25%	20.00%
Real Estate	7.00%	13.00%
Private Equity	11.50%	32.00%
Hedge Funds - Low Vol	6.50%	8.00%
Hedge Funds - Mod Vol	8.00%	15.00%

2010 Assumptions	Return (Geometric Basis)	Risk
Cash	2.00%	1.50%
Core Bonds	3.75%	7.00%
TIPs	3.50%	7.00%
Long Bonds		
High-Yield Bonds	8.00%	12.00%
Global Bonds	3.25%	10.00%
EMD	6.50%	15.00%
Large Cap Equities	7.75%	18.00%
Small/Mid Cap Equities	8.00%	23.00%
Int'l Equities	8.00%	21.00%
Emerging Equities	9.50%	29.00%
Commodities	4.75%	22.00%
Real Estate	7.00%	15.00%
Private Equity	10.00%	30.00%
Hedge Funds - Low Vol	6.25%	7.00%
Hedge Funds - Mod Vol	7.50%	12.00%
Treasuries	2.75%	5.50%
Credit	5.50%	7.00%
MBS	4.00%	9.00%
Private Debt	10.00%	19.00%

NEPC 2010 Asset Class Correlation Assumptions

Asset Class	Cash	LIBOR	Treasuries	Credit	MBS	TIPS	High-Yield Bonds	Global Bonds	EMD	Large Cap Equities	Small/Mid Cap Equities	Int'l Equities	Emerging Int'l Equities	Private Equity	Private Debt	Real Estate	Commodities	Hedge Funds Low Vol	Hedge Funds Mod Vol
Cash	1.00	0.75	0.20	0.15	0.25	0.00	-0.05	0.10	0.10	0.05	-0.05	-0.10	-0.10	-0.10	0.00	0.40	0.10	0.40	0.10
LIBOR	0.75	1.00	0.05	0.10	0.15	0.00	0.10	-0.05	-0.05	0.10	0.00	-0.10	-0.05	-0.10	0.05	0.45	0.05	0.40	0.05
Treasuries	0.20	0.05	1.00	0.95	0.90	0.80	0.35	0.55	0.10	0.40	0.10	0.15	0.00	0.05	-0.25	0.00	-0.05	0.05	0.10
Credit	0.15	0.10	0.95	1.00	0.90	0.70	0.50	0.50	0.30	0.45	0.25	0.20	0.10	0.25	0.05	-0.05	-0.05	0.15	0.30
MBS	0.25	0.15	0.90	0.90	1.00	0.70	0.45	0.45	0.20	0.45	0.20	0.20	0.05	0.15	0.00	0.00	-0.05	0.10	0.20
TIPS	0.00	0.00	0.80	0.70	0.70	1.00	0.20	0.40	0.20	-0.10	-0.10	-0.10	-0.10	0.00	0.05	-0.05	0.20	0.35	0.20
High-Yield Bonds	-0.05	0.10	0.35	0.50	0.45	0.20	1.00	0.10	0.60	0.60	0.60	0.40	0.45	0.60	0.65	-0.10	-0.10	0.45	0.50
Global Bonds	0.10	-0.05	0.55	0.50	0.45	0.40	0.10	1.00	-0.15	0.00	-0.10	0.40	-0.05	0.00	-0.40	-0.05	0.00	0.00	0.00
EMD	0.10	-0.05	0.10	0.30	0.20	0.20	0.60	-0.15	1.00	0.60	0.55	0.50	0.80	0.25	0.55	-0.10	0.10	0.30	0.25
Large Cap Equities	0.05	0.10	0.40	0.45	0.45	-0.10	0.60	0.00	0.60	1.00	0.80	0.60	0.45	0.75	0.40	0.10	-0.10	0.40	0.55
Small/Mid Cap Equities	-0.05	0.00	0.10	0.25	0.20	-0.10	0.60	-0.10	0.55	0.80	1.00	0.50	0.55	0.85	0.50	-0.05	-0.10	0.40	0.60
Int'l Equities	-0.10	-0.10	0.15	0.20	0.20	-0.10	0.40	0.40	0.50	0.60	0.50	1.00	0.50	0.50	0.40	0.00	0.00	0.25	0.25
Emerging Int'l Equities	-0.10	-0.05	0.00	0.10	0.05	-0.10	0.45	-0.05	0.80	0.45	0.55	0.50	1.00	0.25	0.45	-0.20	-0.15	0.20	0.25
Private Equity	-0.10	-0.10	0.05	0.25	0.15	0.00	0.60	0.00	0.25	0.75	0.85	0.50	0.25	1.00	0.00	0.00	0.00	0.20	0.30
Private Debt	0.00	0.05	-0.25	0.05	0.00	0.05	0.65	-0.40	0.55	0.40	0.50	0.40	0.45	0.00	1.00	-0.30	0.10	0.35	0.60
Real Estate	0.40	0.45	0.00	-0.05	0.00	-0.05	-0.10	-0.05	-0.10	0.10	-0.05	0.00	-0.20	0.00	-0.30	1.00	0.00	0.00	0.00
Commodities	0.10	0.05	-0.05	-0.05	-0.05	0.20	-0.10	0.00	0.10	-0.10	-0.10	0.00	-0.15	0.00	0.10	0.00	1.00	0.10	0.15
Hedge Funds Low Vol	0.40	0.40	0.05	0.15	0.10	0.35	0.45	0.00	0.30	0.40	0.40	0.25	0.20	0.20	0.35	0.00	0.10	1.00	0.90
Hedge Funds Mod Vol	0.10	0.05	0.10	0.30	0.20	0.20	0.50	0.00	0.25	0.55	0.60	0.25	0.25	0.30	0.60	0.00	0.15	0.90	1.00