90 DAY WORK PLAN

NEPC FOLLOW-UP PRESENTATION

March, 2018

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BOSTON | ATLANTA | CHARLOTTE | CHICAGO | DETROIT | LAS VEGAS | PORTLAND | SAN FRANCISCO

INTRODUCTION

EXECUTIVE SUMMARY

NEPC has worked with Staff to develop a 90 day work plan with the goal of identifying priorities related to asset allocation and manager reviews

- NEPC will present the work plan to the Committee at the March meeting and look for feedback as well as any necessary additions

To date, NEPC has partnered with Staff and SIC managers to gain perspective on the SIC asset allocation and manager implementation

- NEPC & Staff conducted a working onsite in March to further discuss expectations and areas of focus
- NEPC has conducted calls/meetings with SSGA, PIMCO, and WAMCO and will continue reaching out to the remaining managers over the next few weeks

WORK PLAN: PHASE 1-3

Board/Committee Items

Staff Items

Phase 1	Phase 2	Phase 3
Discuss Asset Allocation Implementation	Existing Manager Review	SIC Risk Analysis
Present Work Plan	SSGA QVM Update & Review	Re-occurring Quarterly Call With Treasurer
Begin Performance Data Collection	Initiate Manager Search (as needed)	
Actuarial Data Collection	Quarterly Performance Report	

WORK PLAN: MONTHLY SIC MEETINGS

	SIC Meetings	NEPC Items
Phase 1	March	Present Draft Work Plan Discuss Asset Allocation Implementation
Phase 2	April	Existing Manager Review
	May	SSGA QVM Manager Presentation & Review Initiate Manager Search(s) - if necessary
Phase 3	June	SIC Risk Analysis

PHASE 1-3

PHASE 1: AA IMPLEMENTATION

NEPC to discuss implementation of SIC's current asset allocation with the Committee

- Discuss implementation and funding of SIC's 1.0% target to Commodities
- In addition, discuss the implementation of the SIC's 2.8% target to Liquid Credit and the custom mandates of the existing managers

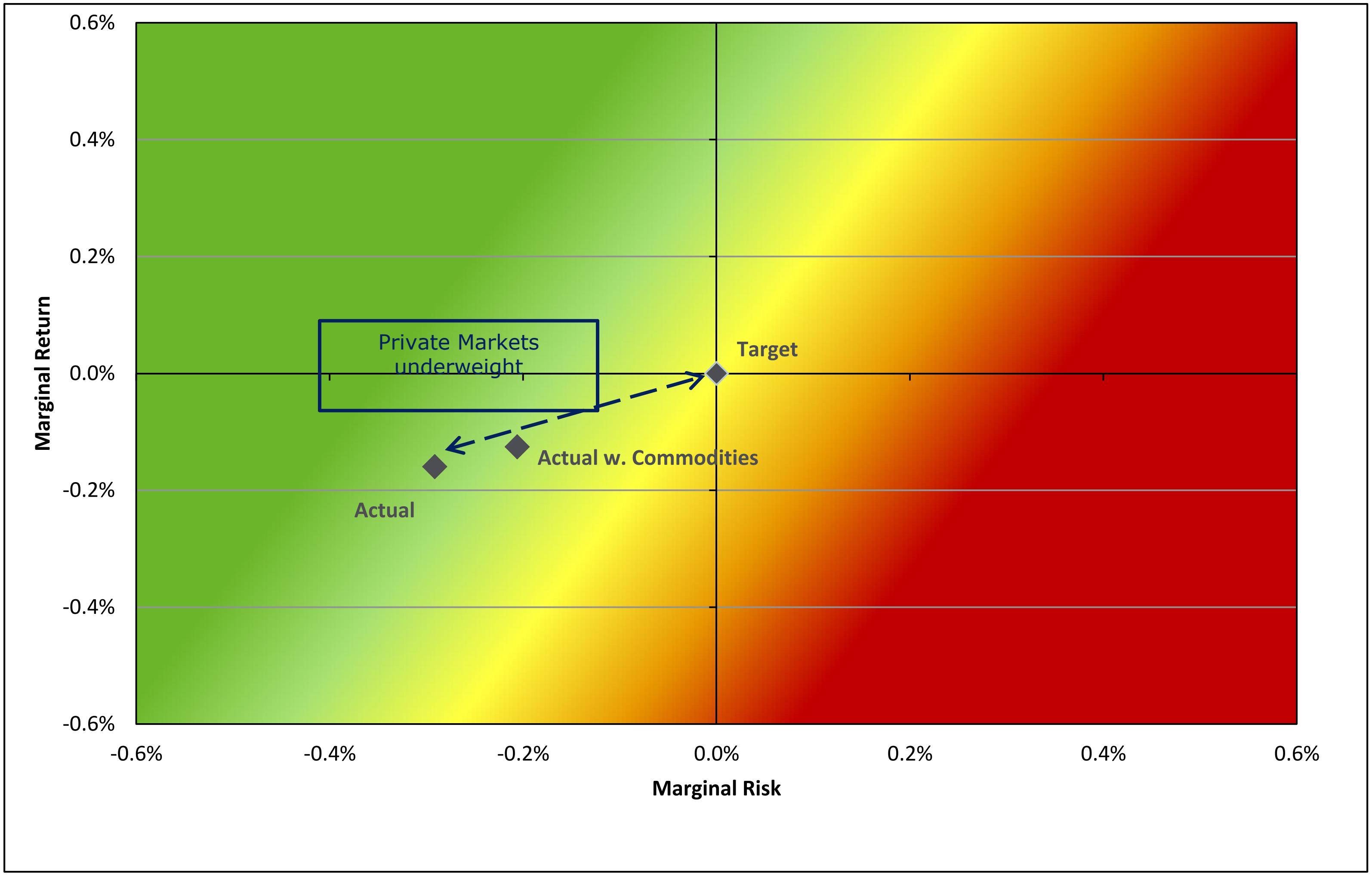
Review implementation of Liquid Credit allocation

Consider implementation and funding of Commodities target

	Target	Actual (2.28.18)	Difference	Target Ranges*
US Equities	20.8%	23.0%	2.2%	
Int'l Equities	14.4%	18.5%	4.1%	
Emerging Int'l Equities	4.8%	4.6%	-0.2%	
Total Equity	**40.0%**	**46.1%**	**6.1%**	**+/- 2%**
Private Equity	11.3%	6.0%	-5.3%	
Non-Core Real Estate	2.3%	2.1%	-0.2%	
Opp. Private Credit	1.5%	0.3%	-1.2%	
Private Growth	**15.1%**	**8.4%**	**-6.7%**	**+/- 4%**
HY Infrastructure	1.0%	1.7%	0.7%	
REITs	1.0%	0.0%	-1.0%	
Liquid Credit	2.8%	4.3%	1.5%	
Private Credit	3.2%	0.9%	-2.4%	
Income	**8.0%**	**6.9%**	**-1.2%**	**+/- 2%**
Treasury Duration	4.0%	4.0%	0.0%	
Systematic Trend	4.0%	3.6%	-0.4%	
CPC	**8.0%**	**7.6%**	**-0.4%**	**+/- 2%**
Core Real Estate	3.6%	5.1%	1.5%	
Private Infrastructure	2.4%	1.6%	-0.8%	
TIPS	1.0%	2.4%	1.4%	
Natural Resources	1.0%	0.0%	-1.0%	
Inflation Protection	**8.0%**	**9.1%**	**1.1%**	**+/- 3%**
Investment Grade Fixed	11.5%	11.1%	-0.4%	**+/- 2%**
Abs. Return	6.5%	6.9%	0.4%	**+/- 2%**
Cash	3.0%	3.4%	0.4%	**+/- 2%**
Vol. Protection	**21.0%**	**21.4%**	**0.4%**	
Short-Term Tactical	**0.0%**	**0.3%**	**0.3%**	

*The above target ranges were approved at the September, 2016 meeting

PHASE 1 (CONT.): CURRENT VS. TARGET ALLOCATION



PHASE 2

NEPC to conduct a review of and recommendation on the SIC Managers

NEPC to review each manager and its role within the portfolio

The goal of the exercise is to provide the Committee with a buy, hold, or sell recommendation on each active manager

As an initial step, NEPC has provided preliminary ratings for each manager until a more detailed review can be conducted in April

PHASE 3

Conduct Risk Analysis incorporating both asset allocation and liability info

Analysis is likely to include:

- Scenario Analysis
- Stressed Testing
- Liquidity Analysis

MANAGER EVALUATION

NEPC, LLC

NEPC RATING DESCRIPTORS & DEFINITIONS

Rating	Rating Descriptor	Definition
1	Preferred	A high conviction investment strategy. A 1 (Preferred) rated strategy has a compelling and sound investment thesis, and the manager is well-resourced and incented to execute on the thesis.
2	Positive	NEPC has a positive view of the strategy. Strategy has a compelling and sound investment thesis. The manager is sufficiently resourced and incented to execute on the thesis. Strengths outweigh the weaknesses.
3	Neutral	NEPC has a neutral view of the strategy. Strategy lacks a compelling investment thesis. There are no significant concerns with the manager.
4	Negative	Strategy lacks or has an unclear investment thesis. The strategy's weaknesses clearly outweigh its strengths.
5	Not Recommended	A strategy that lacks an investment thesis or NEPC has no confidence in the strategy's ability to execute on the thesis. Serious issues have been identified with the investment manager or strategy.
NR	Not Rated	NEPC has not performed sufficient due diligence on the product or manager.

EXISTING MANAGER REVIEW: USING NEPC'S MANAGER RATINGS

Active Manager Roster	Rating		Notes
Total Equity			
SSGA QVM Tilt	2	POSITIVE	
Income			
PIMCO Custom Credit*	3	NEUTRAL	NEUTRAL Rating until a more detailed review can be conducted
WAMCO Custom Credit*	3	NEUTRAL	NEUTRAL Rating until a more detailed review can be conducted
Harvest MLP Alpha	3	NEUTRAL	NEUTRAL Rating until a more detailed review can be conducted
Inflation Protection			
BBH US TIPS	1	PREFERRED	BBH is a Preferred manager on NEPC's US TIPS FPL
Vol. Protection			
Fidelity Core Constrained Fixed	1	PREFERRED	Fidelity is a Preferred manager on NEPC's Core Fixed FPL
Mackay Shields Core Inv. Grade	3	NEUTRAL	NEUTRAL Rating until a more detailed review can be conducted

*PIMCO & WAMCO are Preferred strategies on NEPC's Multi Sector Fixed Income Focused Placement Lists

APPENDIX

NEPC'S TEAM

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CONSULTING TEAM

- **Douglas W. Moseley, Partner**
  - Twenty-two years' investment experience
  - Member: Discretionary Committee; Traditional Due Diligence Committee;
  - Fixed Income Advisory Group
  - Previous affiliations: Massachusetts PRIM Board; State Street Bank & Trust
  - MBA, Bentley College; BS, University of Massachusetts
  - Board Affiliations: NCPERS Executive Board, Quincy Community Action Program

- **William Forde, CAIA, Consultant**
  - Seven years' investment experience
  - Member: Asset Allocation Committee
  - Previous affiliation: Brown Brothers Harriman
  - BA, Tufts University
  - Level 3 CFA Candidate

- **Kevin M. Leonard, Partner**
  - Twenty-five years' investment experience
  - Head of the Public Fund Consulting Practice
  - MML Public Fund Consultant of the Year (2012)
  - Member: Traditional Due Diligence Committee; Large Cap Equity Advisory Group
  - Previous affiliations: Segal Advisors; The Hannah Consulting Group; State Street Bank and Trust Company
  - BA, Assumption College

ADDITIONAL RESOURCES

- **Phillip R. Nelson, CFA**
  Partner, Director of Asset Allocation
  - Fifteen years' investment experience
  - Member: Asset Allocation Committee; Traditional Due Diligence Committee; Liability-Driven Investment (LDI) Advisory Group
  - Previous affiliations: Pinnacle West Capital Corporation; Yoshikami Capital Management; Merrill Lynch
  - BA, University of California Irvine

FOUNDATIONS OF ASSET-LIABILITY STUDY

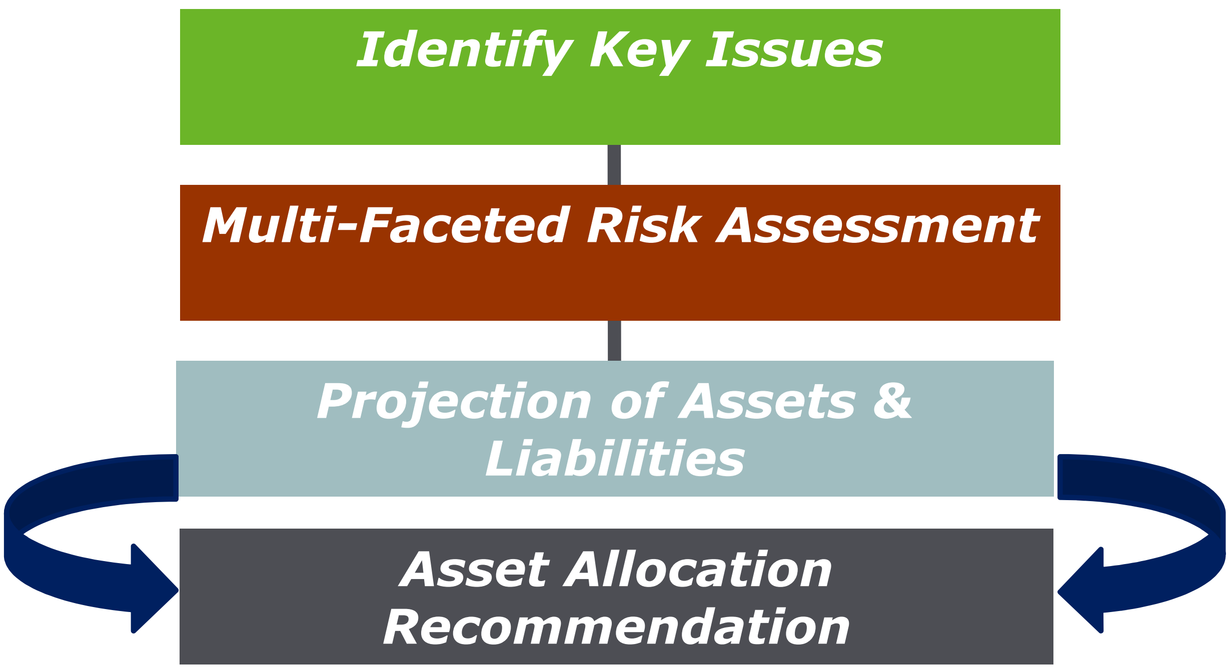
Understand and define objectives

- Fund benefit obligations, meet short and long-term liquidity requirements, and incorporate any investment constraints

Apply multiple perspectives/tools to build robust, objective driven asset allocation solution

- Identify opportunities for enhancing portfolio structure
- Align with the expected progress of liabilities and cash flows

NEPC typically conducts an Asset-Liability study in conjunction with any significant changes to a client's asset allocation



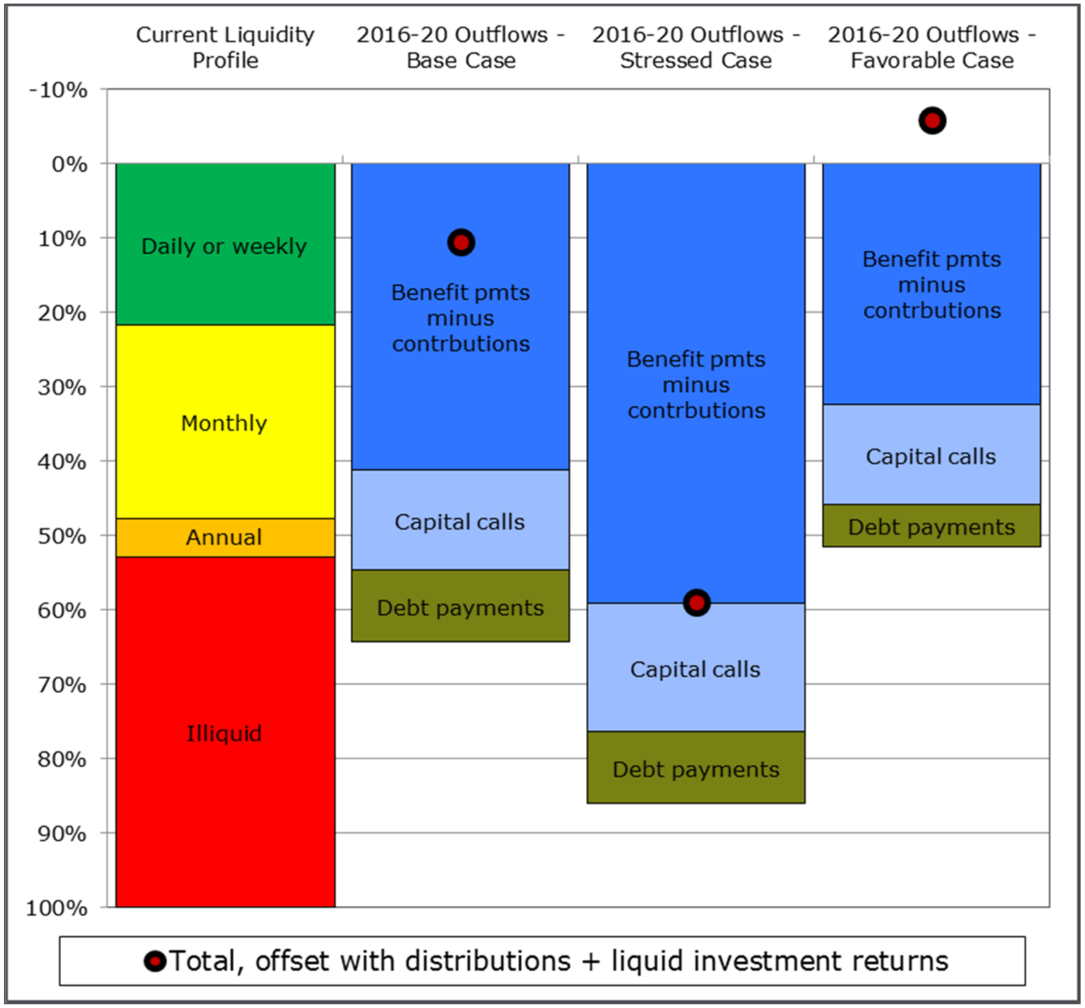
ANALYTICAL MODELING TOOLS

NEPC uses a variety of proprietary tools developed to assess strategic asset allocation changes and the impact of tactical adjustments

Approach	Advantages	Shortcomings
Mean-Variance	• Calculates most efficient portfolio for given volatility • Produces range of portfolios	• Relies on static assumptions and assumes normal distribution • Chosen constraints can drive results • Limits risk definition to volatility
Liquidity Analysis	• Recognizes a "risk" not captured in traditional tools: illiquidity • Highlights impact of changing cash flows (both investment-driven and exogenous)	• Requires portfolio specific cash flow and partnership details • Long-term planning tool – cannot easily adjust portfolio or compare different portfolios
Scenario Analysis	• Focuses on low-probability, high magnitude economic environments (tail risks) • Recognizes environmental biases of each asset class	• Offers opportunity to test risk tolerance to various outcomes but should not be used to construct best portfolio for each environment
Risk Budgeting	• Provides risk allocations • Recognizes that less efficient portfolios may have better risk balance	• Relies on mean-variance optimization assumptions • Defines risk as standard deviation • Ignores tail risks
Factor Analysis	• Recognizes underlying economic drivers of asset class volatility • Can identify risk concentrations across asset classes	• Requires intuitive belief of asset class relationships to underlying factors – less quantitative and more qualitative
Active Risk Budgeting	• Assesses which managers are driving risk-budget and calculates correlation of alpha's across manager line-up	• Relies on historical manager returns to set expectations of risk and correlation
Stochastic Forecasting	• Shows range of results based on Monte Carlo simulation • Includes natural feedback loops	• Percentiled results show ranges but not reasons • Each simulated trial represents a possible but highly unlikely path

Please note that all investments carry some level of risk. No investment strategy or risk management technique can guarantee returns or eliminate risk in any market environment.

LIQUIDITY ANALYSIS: POSSIBLE RANGE OF 5-YEAR CASH OUTFLOWS (EXAMPLE)



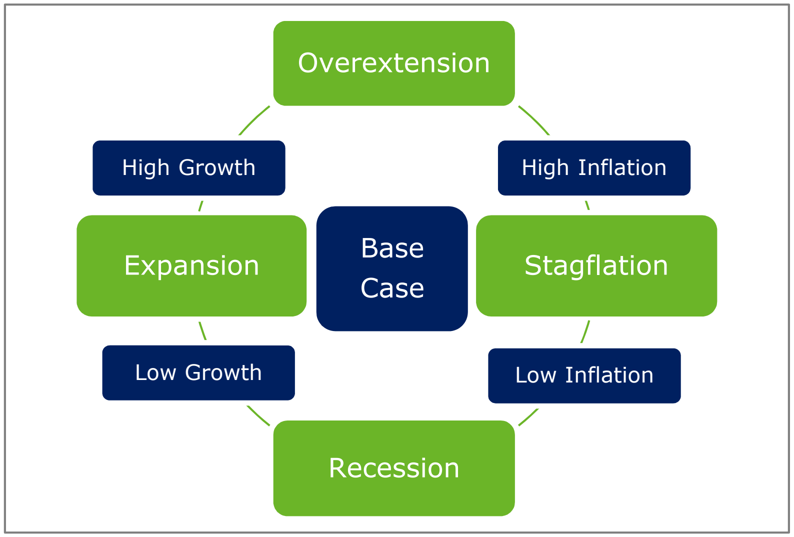
- **Base Case: negative net cash flows; some loss of liquidity**
- **Stressed Case: liquid assets wiped out; forced unwinding of some illiquid positions**
- **Favorable Case: positive cash flows; liquidity profile improves**

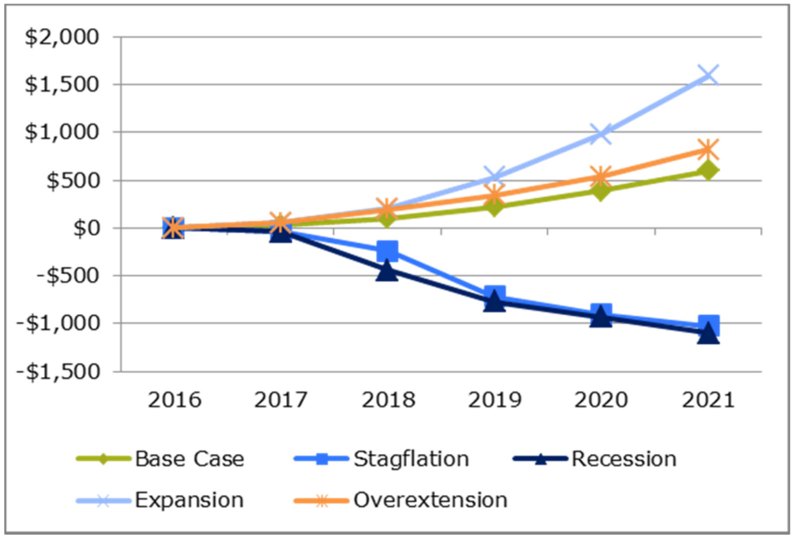
SCENARIO ANALYSIS

- **Scenario analysis tests the viability of asset mixes under multiple economic scenarios**

- **Advantages**
  - Allows better understanding of risk exposures under contrasting inflation and economic growth regimes
  - Can reveals risk tolerance under various economic environments
  - Scenarios can be customized to examine fund outcomes as markets adjust and specific risks become a concern

- **Disadvantages**
  - Doesn't reflect views on the likelihood of various economic environments





RISK BUDGETING: RISK ALLOCATIONS BY ASSET CLASS (EXAMPLE)