OPERATING FUNDS IN A RISING RATE ENVIRONMENT

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OPERATING FUNDS: ACHIEVING THE OPTIMAL BALANCE

CRITICAL OBJECTIVES

- Higher returns in low-return environment
- Improve days cash on hand (DCOH)
- Maximize liquidity

MAJOR CONSTRAINTS

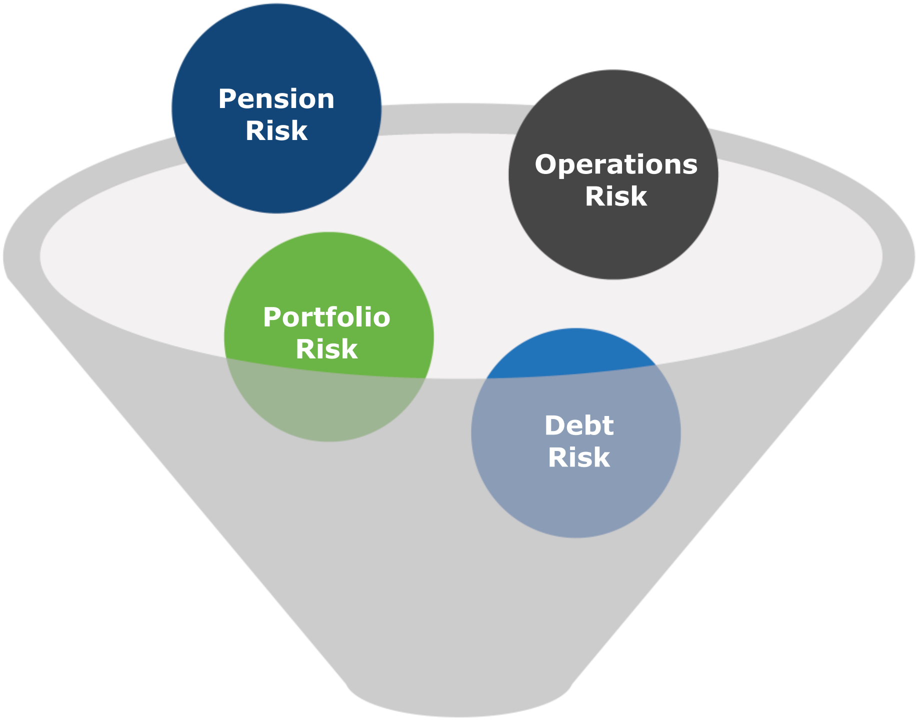
- Operational needs
- Rating agencies
- Debt covenants

NEPC ADVANTAGES

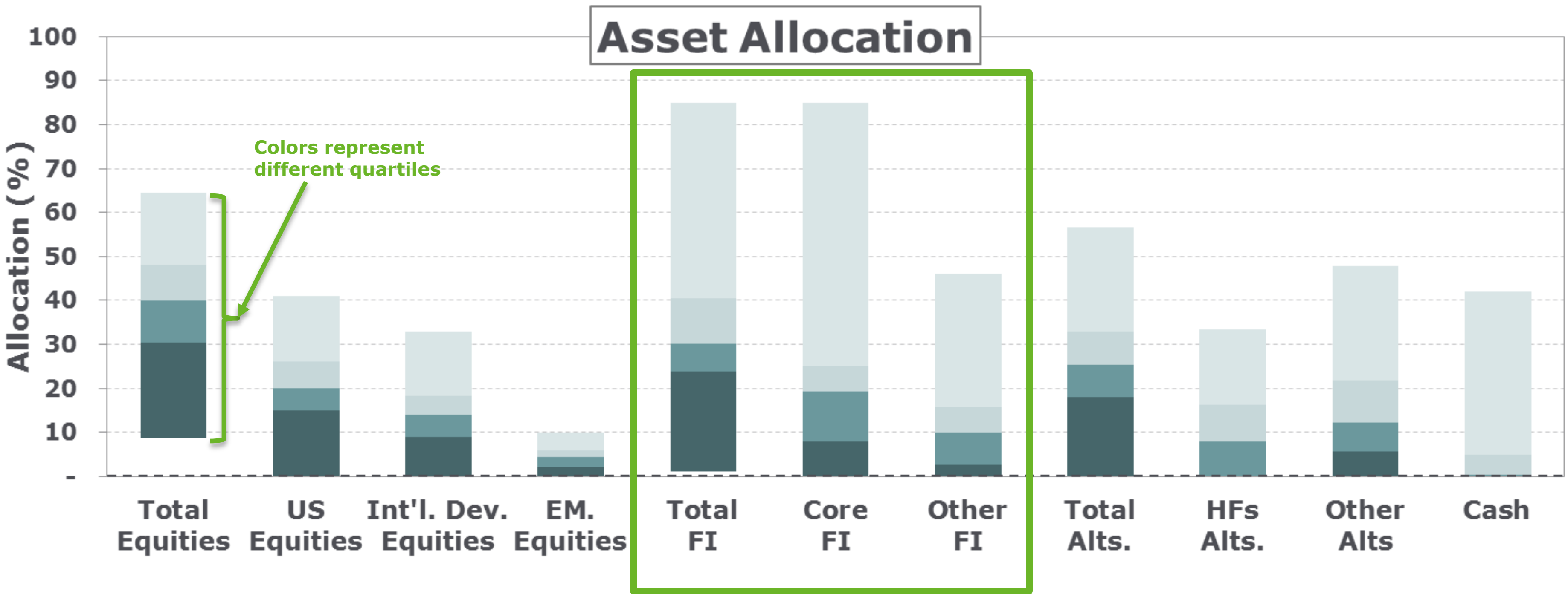
Experience · Tools · Return Generation

ENTERPRISE RISK MANAGEMENT

We built the Enterprise Risk Management model as smarter way to look "under the hood" of a health system. It helps identify and assess risk within the context of asset allocation. It is a real-world paradigm with inputs and outputs that provide a roadmap.

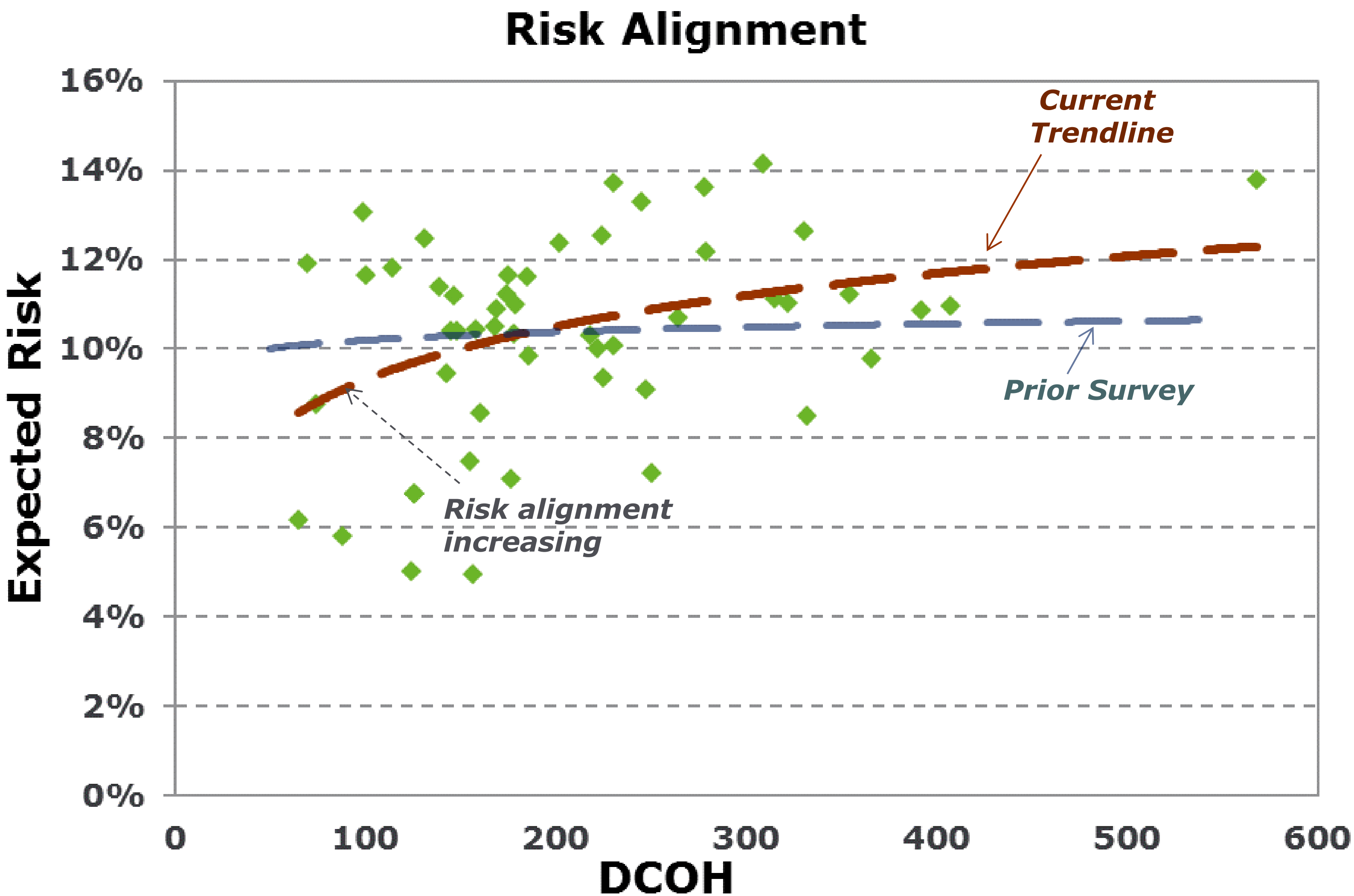


ASSET ALLOCATION VS. TOTAL UNIVERSE



- **Results for the 2017 Operating Fund Survey will be released this quarter**
- **Operating pools with significant allocations to fixed income need to be aware of and comfortable with their total organizational interest rate risk exposure**

RISK ALIGNMENT INCREASES



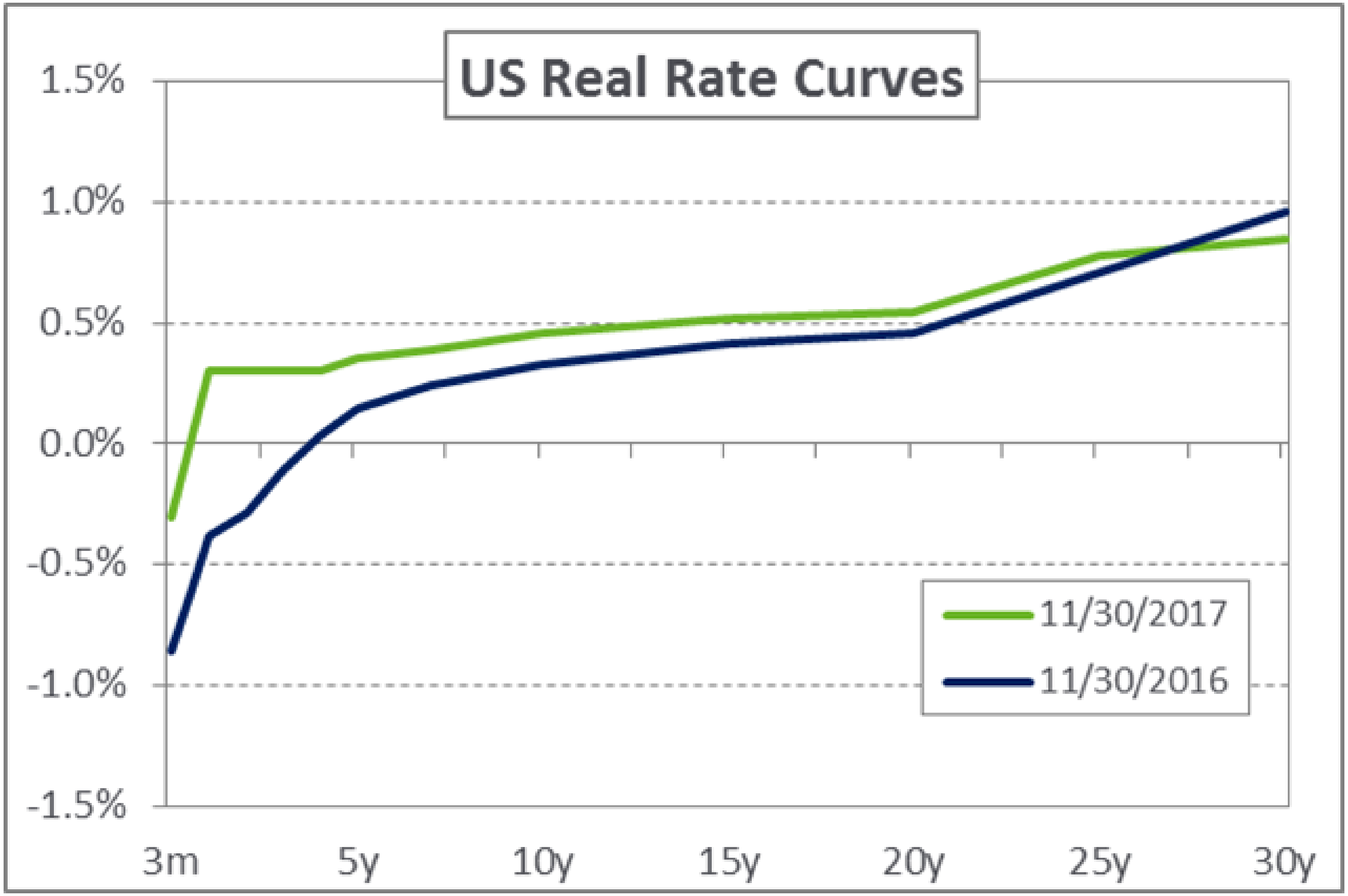
MARKET OUTLOOK

5-7 YEAR RETURN ASSUMPTIONS

	Asset Class	5-7 Year Return	Change 2018-2017	Volatility
	Cash	2.00%	+.25%	1.00%
	US Inflation	2.50%	-	-
Equity	Large Cap Equities	5.25%	-.50%	17.50%
Equity	International Equities (Unhedged)	7.50%	+.25%	21.00%
Equity	Emerging International Equities	9.00%	-.50%	28.00%
Equity	Private Equity	8.00%	-.25%	23.00%
Rates/Credit	Treasuries	2.25%	+.25%	5.50%
Rates/Credit	Core Bonds	2.75%	+.10%	5.99%
Rates/Credit	Municipal Bonds 1-10 Year	2.50%	-	5.50%
Rates/Credit	High Yield Bonds	3.75%	-1.00%	13.00%
Rates/Credit	Private Debt	6.50%	-.75%	13.00%
Real Assets	Commodities	4.75%	-	19.00%
Real Assets	REITs	6.50%	-	21.00%
Real Assets	Core Real Estate	5.75%	-.25%	13.00%
Multi-Asset	US 60/40*	4.54%	-.24%	10.99%
Multi-Asset	Global 60/40*	4.91%	-.13%	11.78%
Multi-Asset	Hedge Funds*	5.83%	-.10%	9.07%

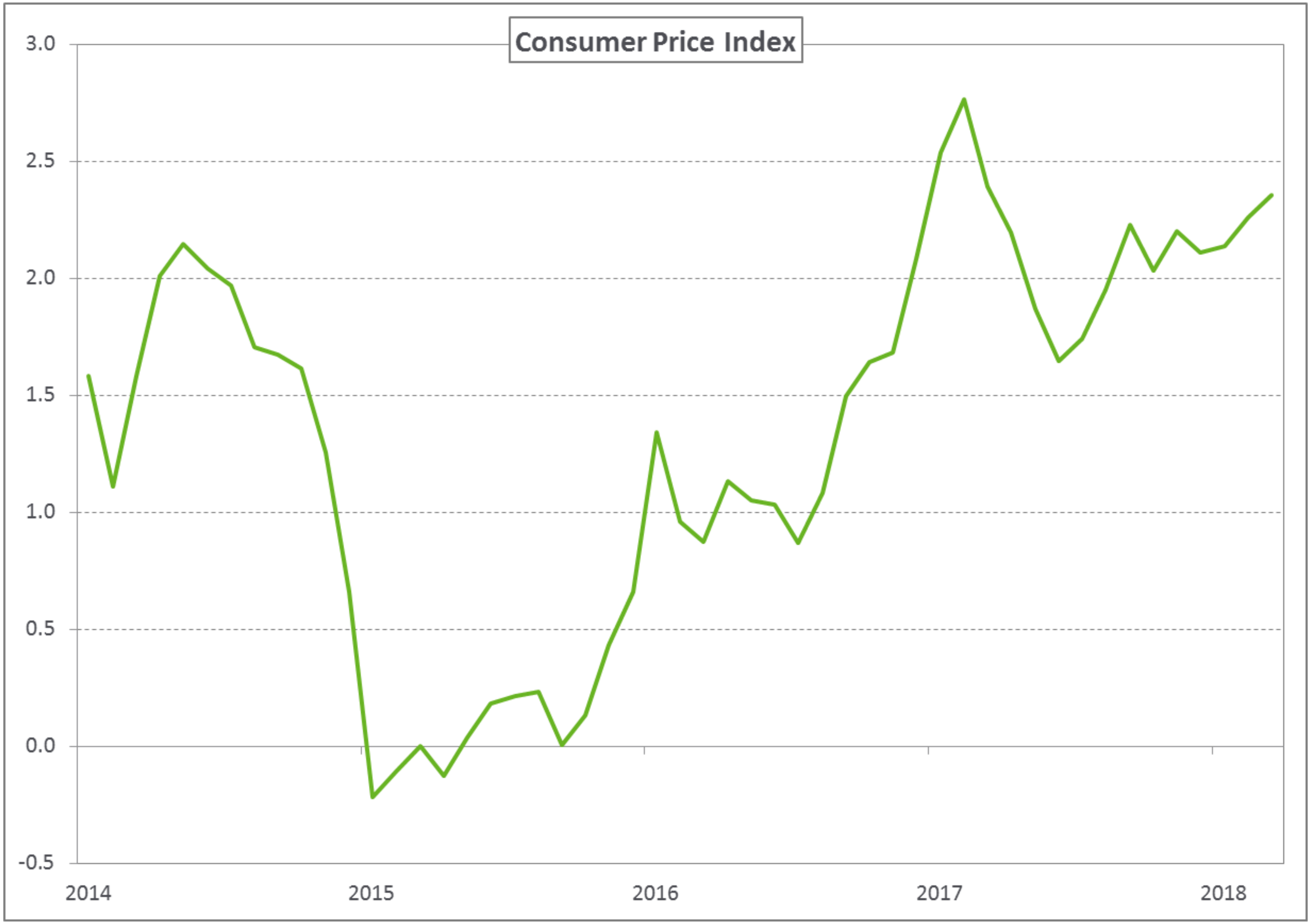
**Calculated as a blend of other asset classes*

US REAL RATES



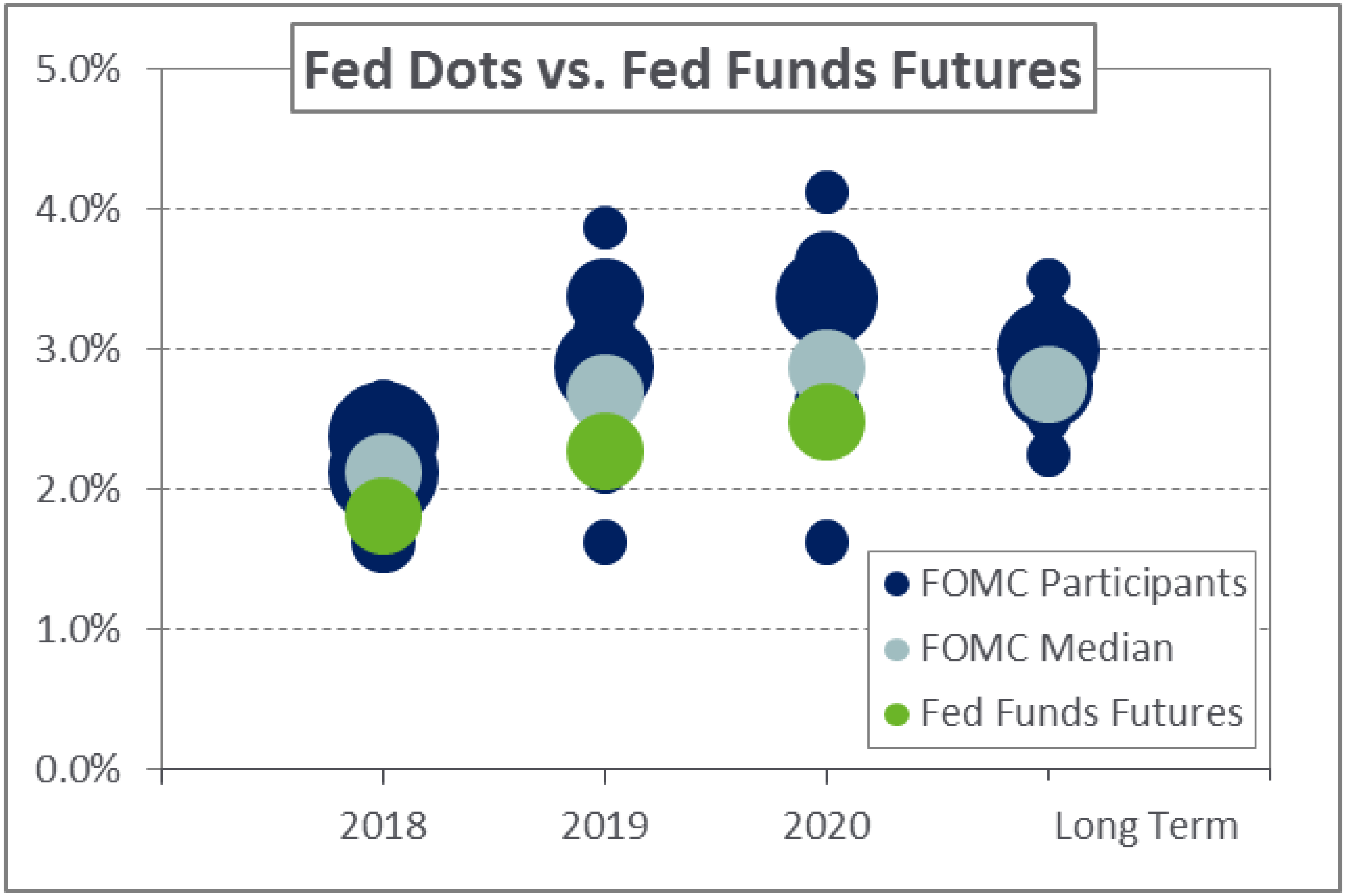
- **Real yields are marginally higher relative to last year**
- **Long-term expectations for real yields remain positive but low in the US**

RISING CPI DRIVEN BY ENERGY RECOVERY



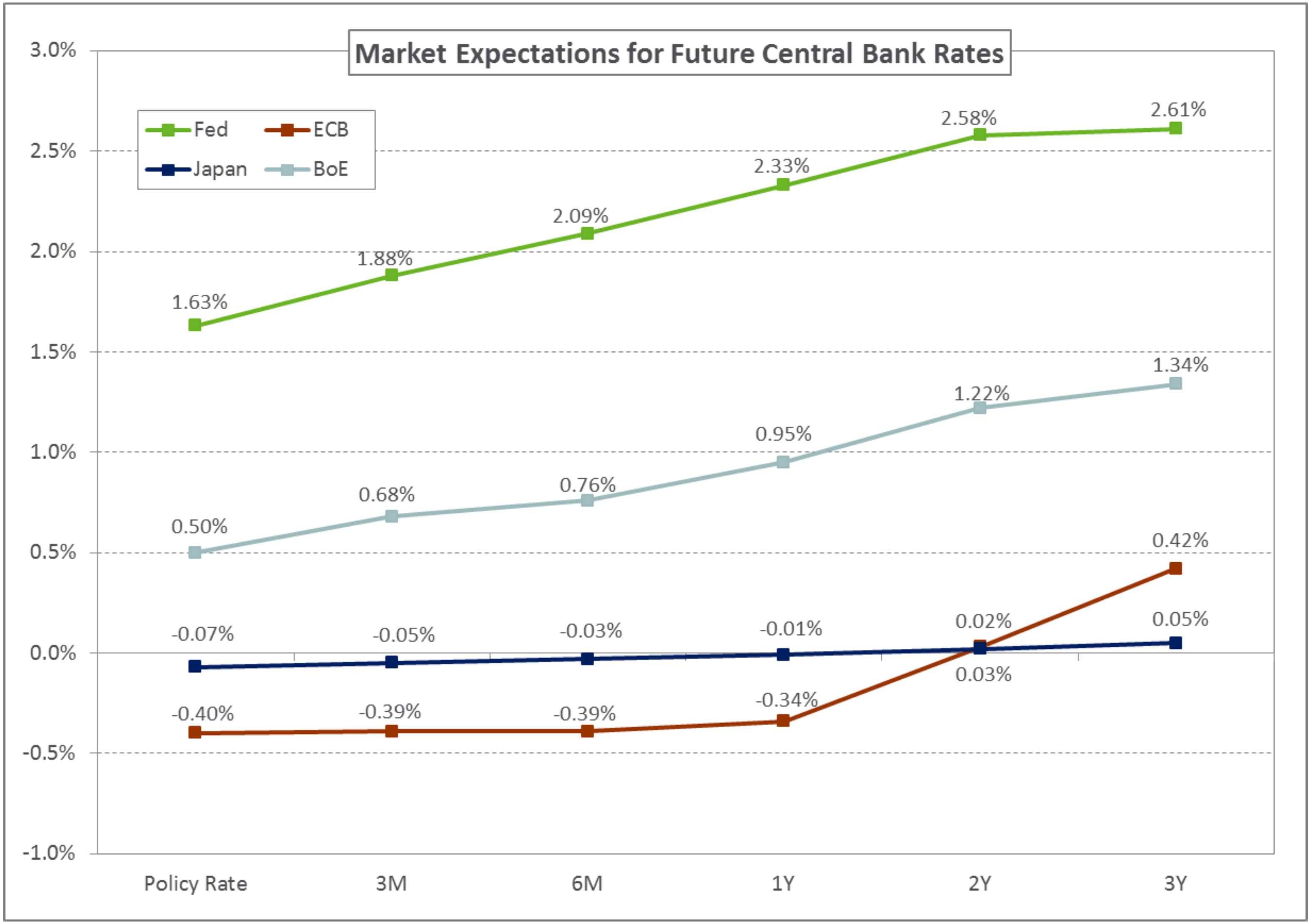
Source: FRED

FEDERAL RESERVE GRADUALISM



- **The Federal Reserve is expected to slowly increase interest rates**
- **Expected path of Fed policy through 2020 matters more than timing of the next hike**

SUBDUED RATE INCREASES EXPECTED



Source: Bloomberg; As of 04/25/2018
ECB rate uses the deposit facility rate, which defines the interest banks receive for depositing money with the central bank overnight

ALTERNATIVES TO CORE

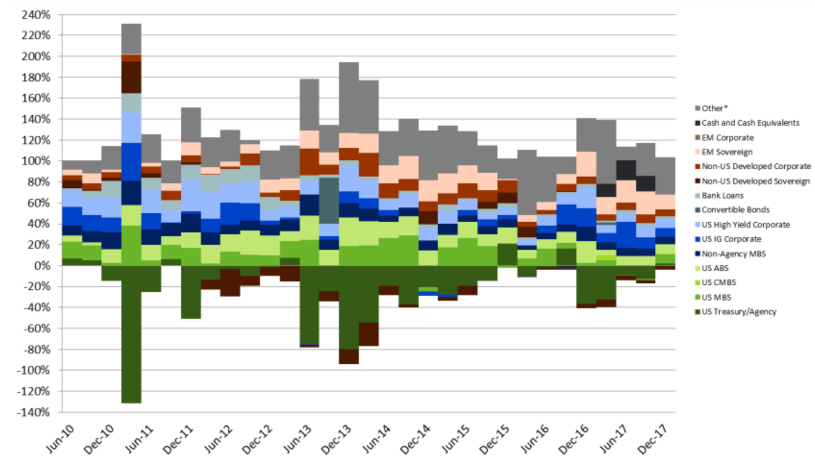
NEPC, LLC

CURRENT OPPORTUNITIES

Allocate to Absolute Return from Core

- **Absolute Return Fixed Income provides a liquid, diversified return source, uncorrelated to interest rate and equity markets**
  - Absolute Return represents global, unconstrained, benchmark agnostic income strategies that seek positive returns independent of market cycles
  - Can be used as a Core/Core Plus fixed income replacement as target volatility is similar
- **Most Absolute Return strategies are positioned in expectation of rising rates**
  - Many managers have a duration of less than half that of the Bloomberg Barclays Aggregate, which is currently near 6 years
  - The lower duration exposure will help protect against losses in a rising rate environment

Sample FPL Manager Sector Allocations



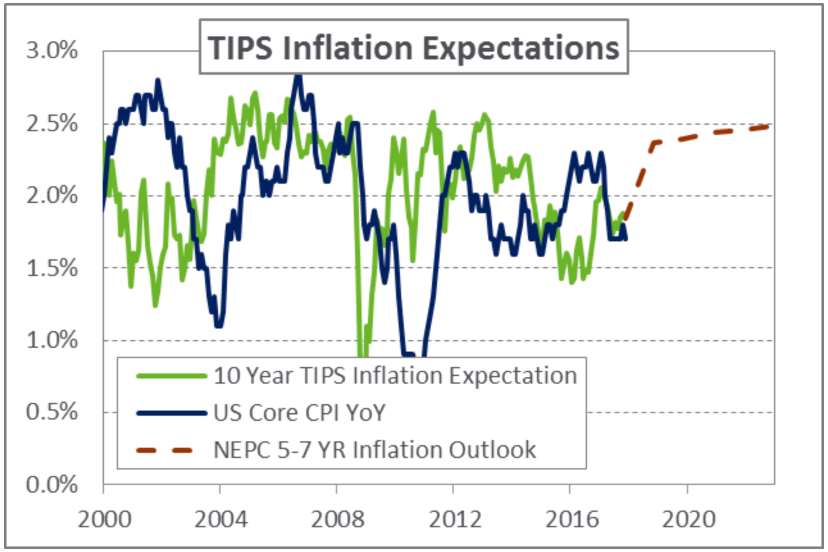
Firm/Product	Duration Emphasis	Weighted Average Coupon (%)	Yield to Maturity (%)	Average Maturity (Years)	Duration (Years)	Average Quality	Minimum Quality
Absolute Return Fixed Income							
FPL Manager #1	Core/All Durations	3.5	3.7	7.78	2.37	BBB	NA*
FPL Manager #2	Short	2.2	2.1	11.70	-0.17**	AA	B
FPL Manager #3	Short	3.7	5.1	3.26	1.69	BBB	CCC
FPL Manager #4	Core/All Durations	3.6	3.0	4.07	2.51	BBB	CC
FPL Manager #5	Short	2.8	3.4	2.01	1.39**	A	NA*
FPL Manager #6	Intermediate	2.1	4.3	8.48	5.00**	A	NA*

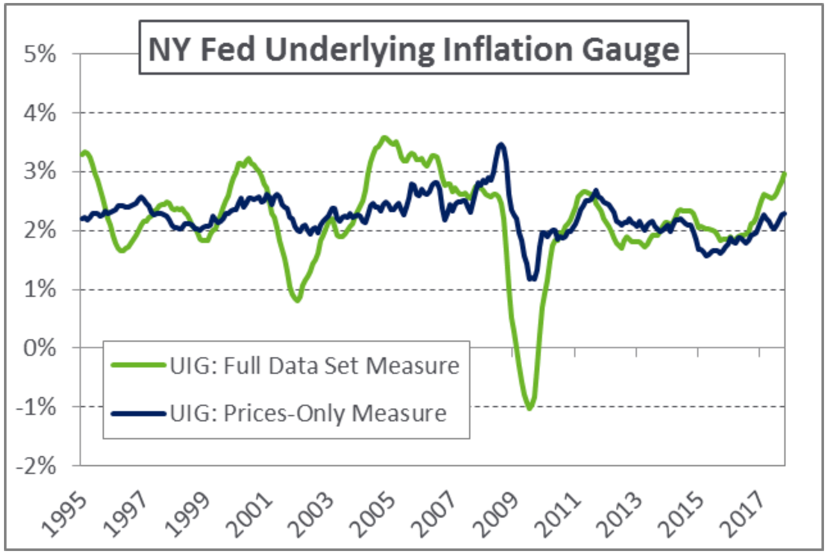
*No minimum quality issue
**Modified duration is not reported. Effective duration is shown.

CURRENT OPPORTUNITIES

Allocate to TIPS from Core Bonds

- **Duration exposure remains a key asset allocation building block for a diversified portfolio**
  - TIPS offer safe haven exposure with an explicit hedge for realized inflation and can be implemented with a low cost passive strategy
  - Current core bond yields offer limited cushion before taking on losses in a rising interest rate environment
- **Increase in inflation expectations would favor TIPS over nominal bonds**
  - TIPS yields are priced off real rates and sensitive to Fed tightening but a gradual path of normalization should mitigate the risk of a sharp rise in real interest rates
  - An allocation to TIPS diversifies core bond exposure and improves risk balance across economic environments





Source: (Top) Bureau of Labor Statistics, Bloomberg, NEPC
Source: (Bottom) New York Fed

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