MINUTES

Meeting of the Investment Committee
of the Board of Trustees of the
State Universities Retirement System
Thursday, February 1, 2018, 9:00 a.m.
State Universities Retirement System
Northern Trust
Global Conference Center – 1st Floor
50 S. LaSalle St., Chicago, IL

The following trustees were present: Mr. Mark Cozzi, Chair; Mr. Aaron Ammons, Mr. Tom Cross, Mr. Dennis Cullen (via conference call), Dr. John Engstrom, Mr. Paul R. T. Johnson Jr., Mr. Craig McCrohon, Dr. Steven Rock and Mr. Antonio Vasquez.

Others present: Mr. Martin Noven, Executive Director; Mr. Doug Wesley, Chief Investment Officer; Ms. Ellen Hung, Deputy CIO; Ms. Bianca Green, General Counsel; Ms. Kimberly Pollitt, Mr. Joe Duncan and Mr. Shane Willoughby, Senior Investment Officers; Mr. Brian DeLoriea, Investment Officer; Ms. Kelly Valle, Investment Analyst; Mr. Steve Hayward, Director of Internal Audit; Ms. Kristen Houch, Legislative Liaison; Ms. Kelly Carson and Ms. Annette Ackerman, Executive Assistants; Ms. Mary Pat Burns of Burke, Burns & Pinelli; Mr. Kevin Leonard, Mr. Tim Bruce and Ms. Kristin Finney-Cooke of NEPC, Mr. Elliott Mallen of UNITE HERE; and Ms. Bekki Missaggia of Financial Daily News.

Investment Committee roll call attendance was taken. Trustee Cozzi, present; Trustee Cross, present; Trustee Cullen, present (via conference call); Trustee Giertz, absent; Trustee Johnson, present; Trustee McCrohon, present; and Trustee Rock, present.

Trustee Mark Cozzi made the following motion:

- That the trustees be allowed to participate via conference call for all meetings on February 1-2, 2018, pursuant to Section 7(c) of the Open Meetings Act.

Trustee Steven Rock seconded and the motion carried with all trustees present voting in favor.

APPROVAL OF MINUTES

Trustee Cozzi presented the minutes from the Investment Committee meetings of December 7, 2017, December 19, 2017, January 8, 2018, January 9, 2018, January 16, 2018 and January 17, 2018.

Trustee Paul Johnson made the following motions:

- That the minutes from the December 7, 2017 Investment Committee meeting be approved as presented.

- That the minutes from the December 19, 2017 Special Investment Committee meeting be approved as presented.

- That the minutes from the January 8, 2018 Investment Committee meeting be approved as presented.

- That the minutes from the January 9, 2018 Investment Committee meeting be approved as presented.

- That the minutes from the January 16, 2018 Investment Committee meeting be approved as presented.

- That the minutes from the January 17, 2018 Investment Committee meeting be approved as presented.

Trustee Rock seconded and the motions carried with all trustees present voting in favor.

APPROVAL OF CLOSED MINUTES

Trustee Cozzi presented the closed minutes from the Investment Committee meeting of January 8, 2018, January 16, 2018, and January 17, 2018.

Trustee Johnson made the following motion:

- That the closed session minutes from the January 8, 2018 Special Investment Committee meeting be approved as presented and remain closed.

- That the closed session minutes from the January 16, 2018 Special Investment Committee meeting be approved as presented and remain closed.

- That the closed session minutes from the January 17, 2018 Special Investment Committee meeting be approved as presented and remain closed.

Trustee Rock seconded and the motion carried with all trustees present voting in favor.

CHAIRPERSON'S REPORT

Trustee Cozzi did not have a chairperson's report.

CHIEF INVESTMENT OFFICER REPORT

Mr. Doug Wesley introduced the new deputy CIO; Ms. Ellen Hung. Ms. Hung provided a brief summary of her background and said she looks forward to working with the SURS Board of Trustees. Mr. Wesley acknowledged Ms. Kelly Valle for recently passing Level I of the Chartered Financial Analyst (CFA) exam. Lastly, Mr. Wesley noted that the Illinois comptroller recently set the fiscal year 2019 effective rate of interest at 6.75 percent which is slightly higher than what the SURS board approved in December 2017.

OPTIONS STRATEGIES OVERVIEW (EDUCATIONAL TOPIC)

Mr. Tim Bruce of NEPC presented an overview of options markets. During the presentation, Mr. Bruce reviewed terminology commonly used and the mechanics of options markets. In addition, Mr. Bruce discussed the volatility risk premia and introduced various strategies. Ms. Kim Pollitt briefly reviewed the search process that resulted in the selection of the finalist candidates who will present to the Investment Committee.

The educational topic lasted for 25 minutes ending at 9:35 a.m.

CONSIDERATION OF EQUITY INDEX OPTION RISK PREMIA CAPTURE STRATEGIES

CLOSED SESSION

Trustee Johnson moved that the Investment Committee go into closed session pursuant to §2(c)(7) of the Open Meetings Act to consider the sale or purchase of securities or investments or to consider an investment contract. Trustee Aaron Ammons seconded and the motion carried in a roll call vote.

Trustee Cozzi	-	aye
Trustee Cross	-	aye
Trustee Cullen	-	aye
Trustee Giertz	-	absent
Trustee Johnson	-	aye
Trustee McCrohon	-	aye
Trustee Rock	-	aye

RETURN TO OPEN SESSION

Upon a motion by Trustee Cozzi, seconded by Trustee Johnson, the motion carried and the Investment Committee resumed its meeting in open session.

Trustee Johnson moved:

- That AQR Capital Management be retained to manage an options-writing strategy for SURS and funded with an initial allocation of approximately 0.5 percent of the total fund, subject to completion of successful contract negotiations.

- That Gladius Capital Management be retained to manage an options-writing strategy for SURS and funded with an initial allocation of approximately 0.5 percent of the total fund, subject to completion of successful contract negotiations.

- That Neuberger Berman be retained to manage a put-writing strategy for SURS and funded with an initial allocation of approximately 1 percent of the total fund, subject to completion of successful contract negotiations.

Trustee Rock seconded and the motions carried with the majority of trustees present voting in favor. Trustee Craig McCrohon abstained.

PROCUREMENT POLICY REVIEW

Discussion of this agenda item was deferred to a later date.

REVIEW OF NEPC 2018 INVESTMENT OUTLOOK AND CAPITAL MARKET ASSUMPTIONS

Mr. Kevin Leonard of NEPC reviewed the process by which NEPC develops capital market assumptions and how those assumptions have changed. Key market themes and opportunities were also discussed. Mr. Leonard then presented NEPC's expected long-term returns for the SURS portfolio, based on the current asset allocation.

A copy of the NEPC presentation titled "2018 Themes Opportunities Asset Class Assumptions" is incorporated as part of these minutes as **Exhibit 1**.

FIXED INCOME ASSET CLASS REVIEW

Mr. Joe Duncan provided a fixed income asset class review. In the review, Mr. Duncan discussed the various components within the SURS fixed income portfolio including passive, core, core plus, unconstrained, TIPS and emerging market debt.

A copy of the SURS presentation "Fixed Income Asset Class Review," along with NEPC's "Fixed Income Review and SURS Dashboards" are incorporated as part of these minutes as **Exhibit 2** and **Exhibit 3**.

COURTLAND PARTNERS CONSENT TO MERGER

CLOSED SESSION

Trustee Tom Cross moved that the Investment Committee go into closed session pursuant to §2(c)(7) of the Open Meetings Act to consider the sale or purchase of securities or investments or to consider an investment contract. Trustee Johnson seconded and the motion carried in a roll call vote.

Trustee Cozzi	-	aye
Trustee Cross	-	aye
Trustee Cullen	-	aye
Trustee Giertz	-	absent
Trustee Johnson	-	aye
Trustee McCrohon	-	aye
Trustee Rock	-	aye

OPEN SESSION

Upon a motion by Trustee Johnson, seconded by Trustee Rock, the motion carried and the Investment Committee resumed its meeting in open session.

Trustee Johnson made the following motion:

- That Blue Bay Asset Management be terminated as an emerging markets debt (EMD) manager.

- The assets be reallocated to three existing EMD managers in the following amounts:
    - Colchester Global Investors - $30 million
    - Progress Investment Management - $50 million
    - Prudential – Remainder of assets

Trustee Rock seconded and the motion carried with all trustees present voting in favor.

DISCUSSION REGARDING ALTERNATIVE INVESTMENT FEE ISSUES

Mr. Wesley and Mr. Steve Hayward reviewed the current oversight and monitoring of the private equity fees conducted by current service providers. Mr. Wesley discussed the approach to the private equity fee review stating staff has had discussions with service providers to obtain their feedback. Mr. Hayward discussed the audit experiences of other public funds. After further discussion, it was determined that an education presentation would be held at a future meeting.

A copy of the SURS presentation titled "Private Equity Fees" is incorporated as part of these minutes as **Exhibit 4**.

INFORMATIONAL ITEMS NOT REQUIRING COMMITTEE ACTION

The following items were provided for reference and are incorporated as a part of these minutes:

1. **Exhibit 5** – SURS Projected Funding Status
2. **Exhibit 6** – Defined Contribution Consultant Search Update
3. **Exhibit 7** – Core-Plus Real Estate Search Update
4. **Exhibit 8** – SURS Summary Work Plan FY 18-19
5. **Exhibit 9** – 2018-2019 Schedule of Meeting Dates

RECESS

At 3:35 p.m., Trustee Johnson made the following motion:

- That the Investment Committee meeting be recessed until 9:00 a.m. on February 2, 2018.

Trustee Antonio Vasquez seconded and the motion carried with all trustees present voting in favor.

Respectfully submitted,

Mr. Martin Noven
Secretary, Board of Trustees

MMN/kc

THEMES, OPPORTUNITIES & ASSET CLASS ASSUMPTIONS

NEPC 2018 INVESTMENT OUTLOOK

January 2018

NEPC Research

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

INTRODUCTION
THEMES AND OPPORTUNITIES

NEPC, LLC

THEMES AND OPPORTUNITIES

Key Market Themes

Key Market Themes are factors that define global markets and can be expected to both evolve and remain relevant without a clear timeline of conclusion. At times, themes may be challenged. Disruption of a theme will likely produce significant volatility and change market dynamics. Our intent is for clients to be aware of these themes and understand their implications.

Current Opportunities

Current Opportunities are investment ideas that represent an action with the goal of improving investment outcomes relative to an investor's strategic asset allocation. It is not our intent that the full list of opportunities be implemented. Rather, we encourage a focus on the actions that offer a material benefit to each client's strategic allocation relative to their unique objectives and constraints. These investment ideas are likely to change more frequently as market dynamics and valuations shift over time.

THEMES AND OPPORTUNITIES

The outlook for developed market equities outside the US has improved

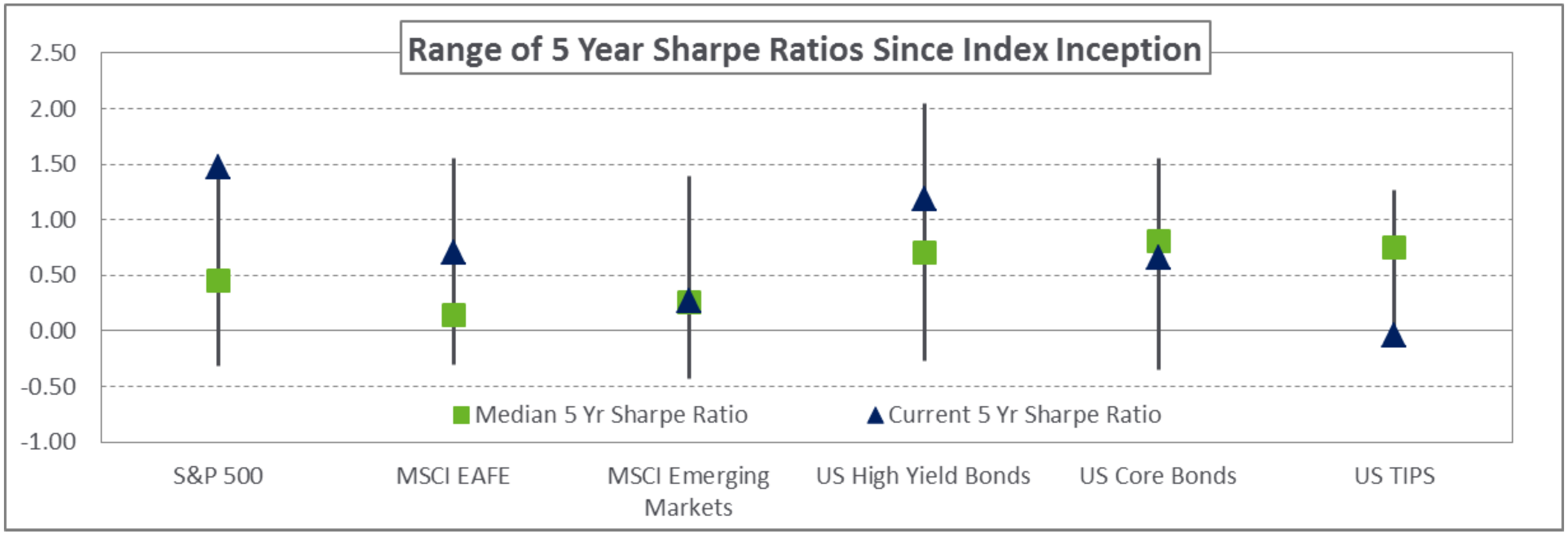
Growth conditions across the globe are on the upswing supported by easy financial conditions and an improved corporate earnings outlook

We encourage reducing exposure to assets that have outperformed expectations over a prolonged period such as US stocks and high yield

Tilt exposure to assets underperforming expectations in recent years, particularly emerging market equities, developed market equities, and US TIPS

Market stability must not elicit complacency, we encourage investors to increase exposure to strategies that mitigate market drawdowns

Look to rebalance “safe haven” fixed income exposure back to strategic targets



Index Inception: S&P 500 - 1926, MSCI EAFE – 1970, MSCI EM – 1988, US High Yield – 1983, US Core Bonds – 1976, US TIPS – 1997

Source: Ibbotson-Morningstar, eVestment, Sharpe Ratio range spans 5th to 95th percentile

2018 THEMES AND OPPORTUNITIES

Key Market Themes

- Extended US Economic Cycle
- Synchronized Economic Resurgence
- Federal Reserve Gradualism
- China Transitions
- Globalization Backlash

Current Opportunities

- Trim US Equity Gains
- Overweight Non-US Developed Market Equities
- Maintain a Market Overweight to Emerging Market Equities
- Allocate to TIPS from Core Bonds
- Reduce Return Seeking Credit Exposure
- Fund Emerging Local Debt
- Add Macro Hedge Funds
- Add Long Volatility Exposure

KEY MARKET THEMES

NEPC, LLC

KEY MARKET THEMES

Extended US Economic Cycle

Synchronized Economic Resurgence

Federal Reserve Gradualism

China Transitions

Globalization Backlash

KEY MARKET THEMES

Extended US Economic Cycle

Economic cycles do not die of old age

The US economy is in an extended expansionary cycle despite being eight years removed from the last recession

Financial health of US consumers and ongoing recovery of the housing market continue to drive economic growth

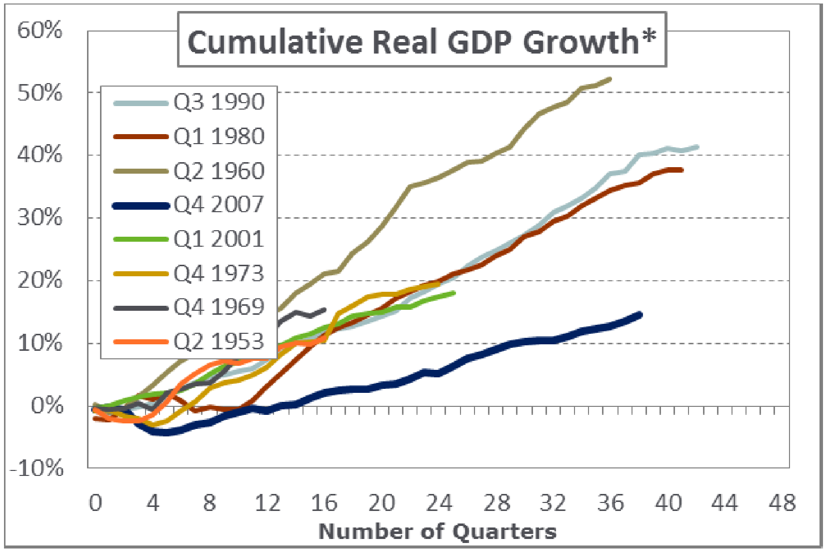
A prolonged US economic expansion can support a continued rally for US equities despite elevated valuation levels

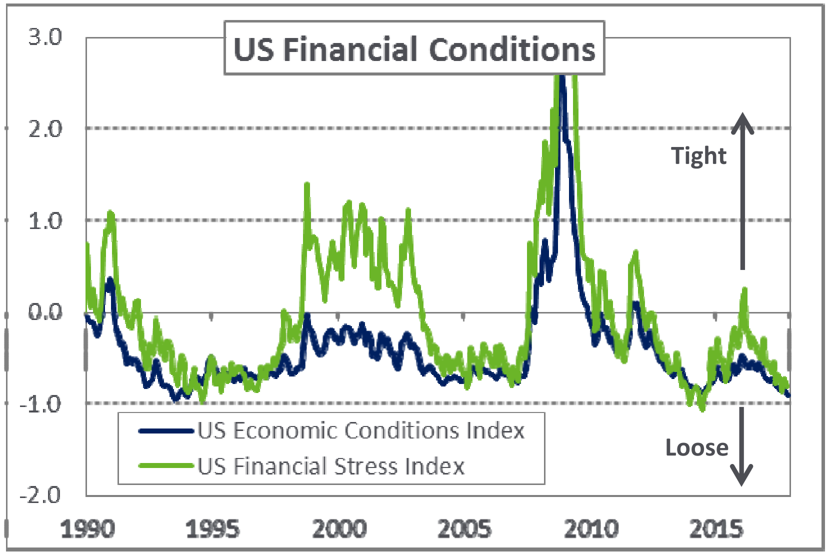
US financial conditions remain loose and support steady economic gains

Low inflation provides a foundation for positive economic conditions and reinforces the Fed's gradual monetary policy approach

Moderating US dollar strength is another form of easy financial conditions, benefiting global trade flows and credit creation

Reversal in these easy conditions may be fueled by actions outside the US, such as a misstep by global central banks and/or increased volatility in the Chinese yuan





*Source: (Top) Bloomberg, *Cumulative GDP growth from prior cycle peak*
Source: (Bottom) Federal Reserve Bank of Chicago and Kansas City

KEY MARKET THEMES

Extended US Economic Cycle

Excess capacity remains in the system and provides fuel for the expansion

Labor market gains have been robust but slack remains as many have not returned to the workforce

Muted wage gains and low inflation metrics are reflective of the excess capacity remaining in the US economy

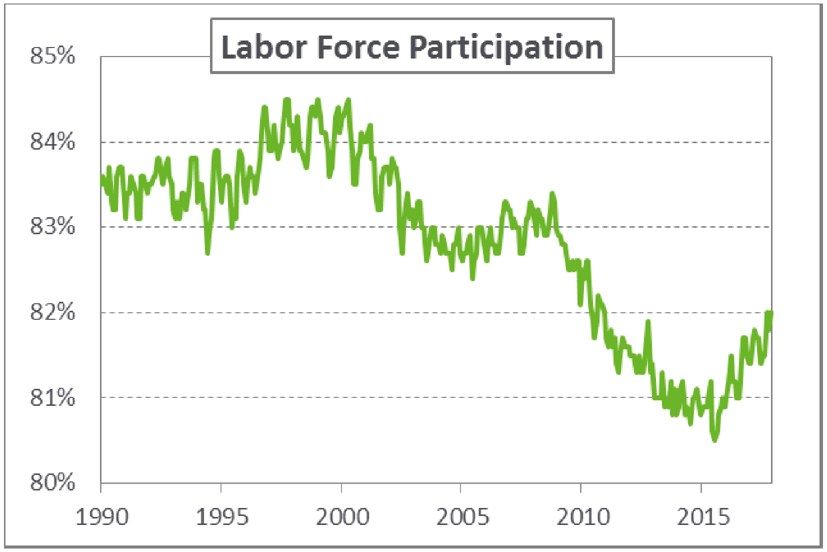
Tax cuts and fiscal stimulus can potentially remove spare economic capacity and be a catalyst for an uptick in inflation measures

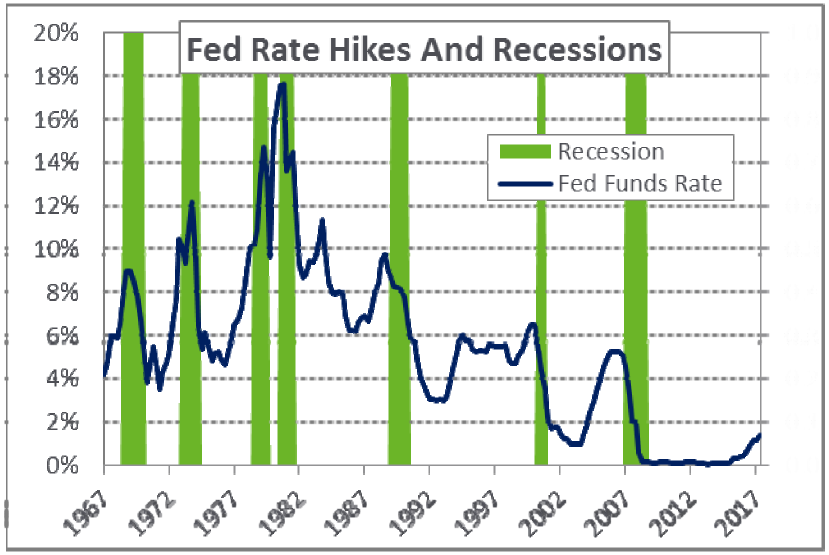
US recession concerns are muted

An acceleration in inflation leading to a tightening of financial conditions has historically been a catalyst to end economic expansions

However, improved US household balance sheets have room to expand and support further consumer spending gains

Improving global economic conditions reinforce an expansion of the US economy as global growth factors synchronize





Source: (Top) Federal Reserve Bank of St. Louis

Source: (Bottom) Federal Reserve, NEPC

KEY MARKET THEMES

Synchronized Economic Resurgence

Global economic conditions are improving in a synchronized fashion

Coordinated global growth factors reinforce economic gains across the globe and are distinct from the extension of the US economic cycle

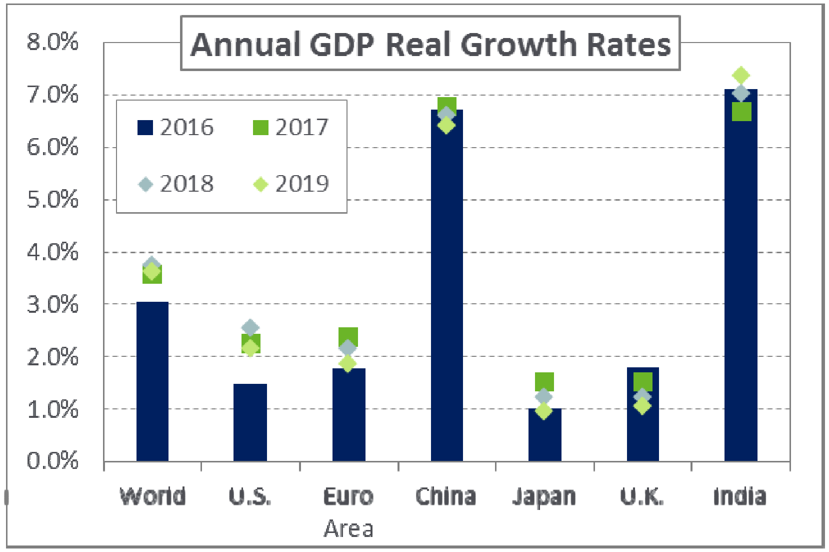
Non-US corporate revenues and equities are best positioned to benefit from a widespread boost in global economic conditions

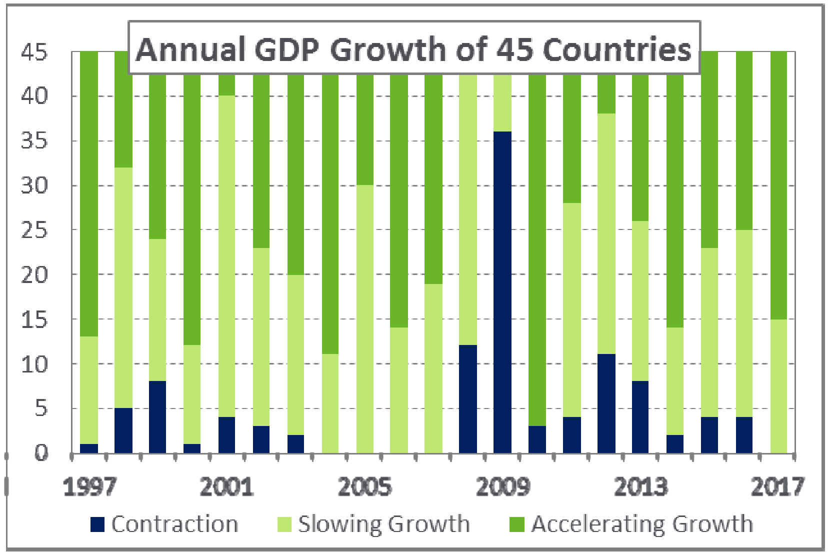
Positive growth rates harmonized across the globe are relatively rare

Conditions are the result of Europe, Japan, and large parts of the emerging world transitioning out of economic malaise

Persistence of the theme over several years would provide a substantial benefit to equity markets globally – specifically in Europe and Japan

Historically, periods of synchronized growth have been derailed by higher inflation levels and central banks tightening policy





Source: (Top) OECD
Source: (Bottom) OECD

KEY MARKET THEMES

Synchronized Economic Resurgence

Erosion of excess economic capacity is a catalyst to boost economic gains

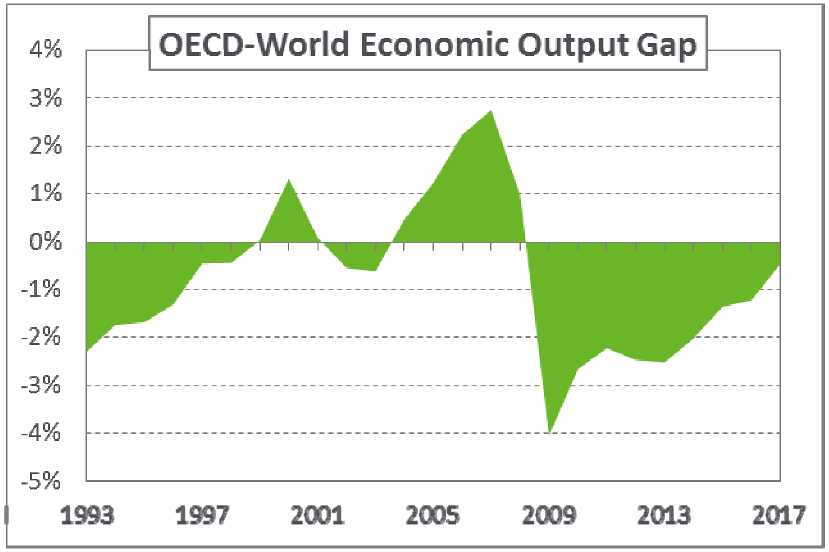
Despite recent labor market improvements, potential for labor reform in Europe and improved workforce participation in Japan offer multi-year benefits to economic growth

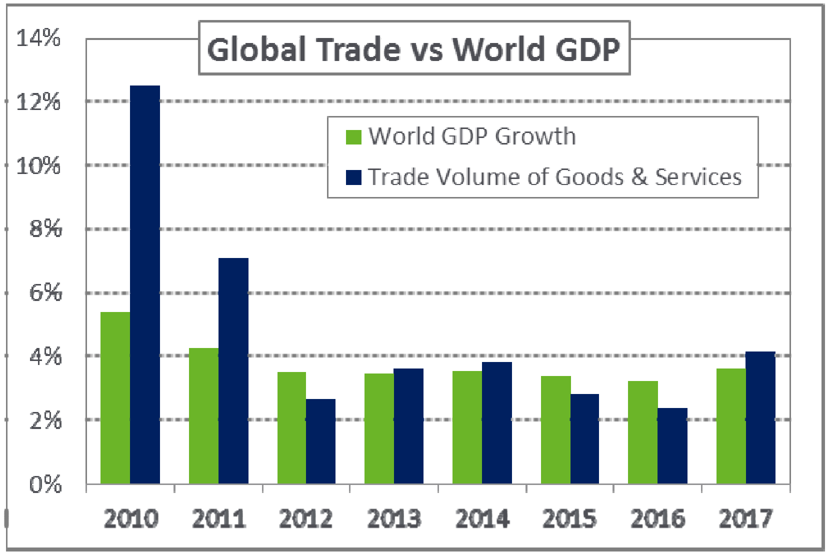
Material decline in emerging market inflation provides a cushion for real interest rates to fall and fuel an expansion of economic activity

Economic resurgence is delicate and can be disrupted by lingering global risk factors

US dollar strength, dislocation in China's credit expansion, and restrictive US trade policy pose the greatest threats

The foundation of synchronized economic resurgence is the continuation of positive trends associated with the other key market themes





Source: (Top) OECD
Source: (Bottom) IMF

KEY MARKET THEMES

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 as the disconnect between market expectations and Fed signaling has grown

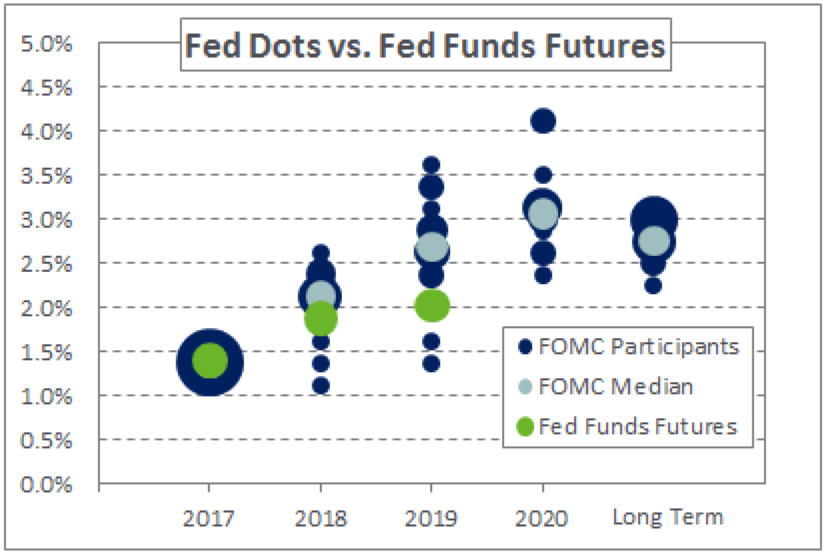
A relatively accommodative Fed is likely to continue, unless there is a dramatic acceleration in inflation

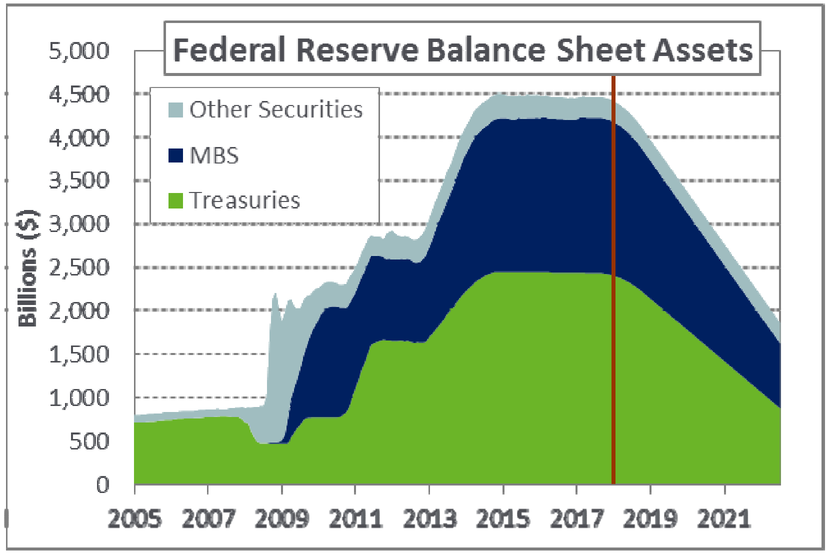
The Fed's balance sheet normalization is a low grade tightening of monetary policy but its impact is untested

Fed is expected to be careful and data dependent yet balance sheet disbursement into a strong economy will likely have tightening effects – in the same way balance sheet expansion had easing effects

The balance sheet will gradually shrink over time assuming conditions remain supportive

The gradual progression of balance sheet reduction combined with the accommodative policies of global central banks supports easy global financial conditions





Source: (Top) Bloomberg, NEPC
Source: (Bottom) Bloomberg, NEPC

KEY MARKET THEMES

Federal Reserve Gradualism

Gradualism is the policy of choice globally as the major central banks manage unprecedented initiatives

ECB's QE program is expanding but at a slower rate

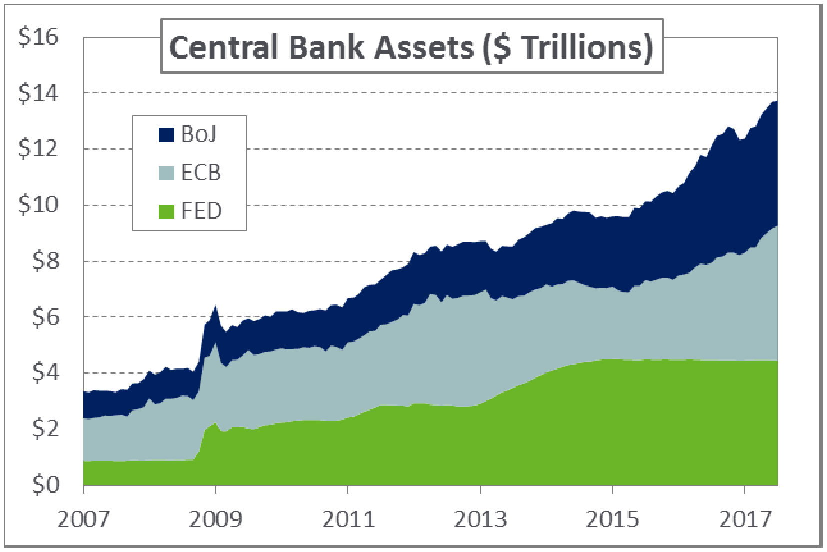
However, the reinvestment of balance sheet holdings is likely to continue for an extended period of time

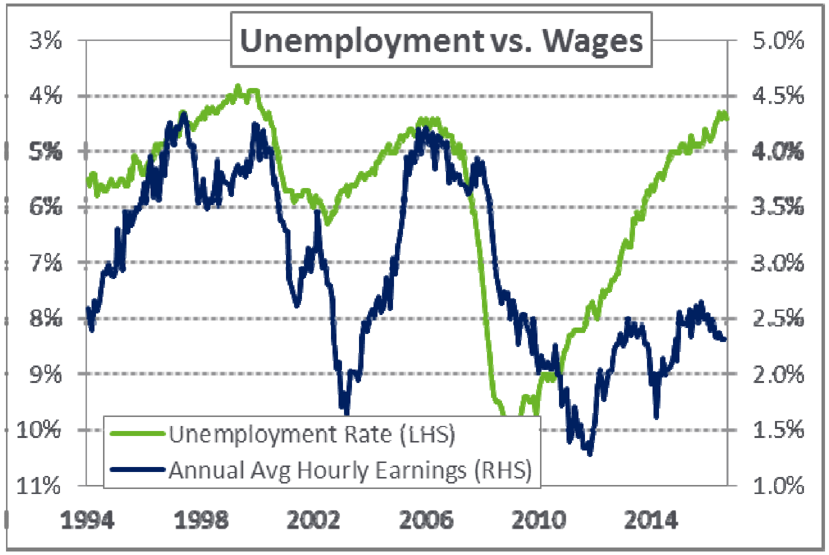
Bank of Japan's QE yield-curve control program has rapidly slowed bond purchases but solidified steepness in the yield curve

Inflation expected to shift marginally higher in the coming years

Improvements in wage growth and aggregate economic activity support modest upticks in inflation but still within the Fed's tolerance bands to gradually raise rates

Fed has stated a willingness to let the economy "run hot" and accept some inflation to repair the deflationary effects of the past decade





Source: (Top) Bloomberg, NEPC
Source: (Bottom): Bloomberg, FRED

KEY MARKET THEMES

China Transitions

China is the global growth engine but faces fundamental transitions

China's economic transition is pivoting from production and investment focused to a service and consumption based economy

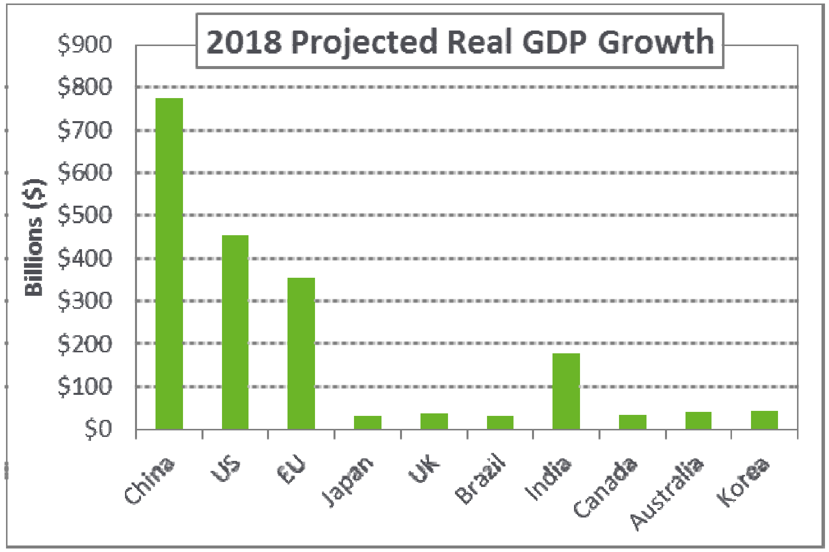
Fixed investment is required to sustain the production based economy and support employment as the rural population moves to urban centers

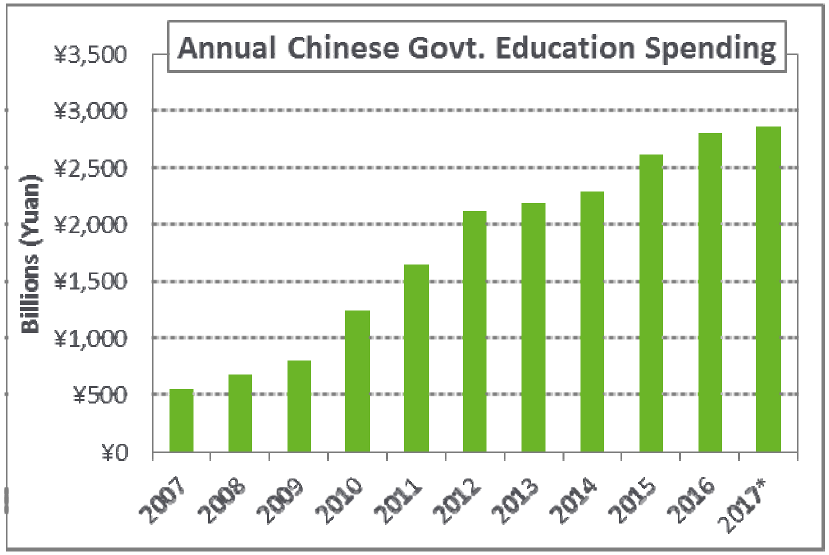
Any disruption to these transitions will have global repercussions due to China's role in the global economy

China must manage competing social goals in attempting to sustain growth

Engineering an orderly transition to a consumer-led economy requires supporting employment outside the major cities and improving quality of life metrics such as air quality in the urban centers

Future growth in a services based economy requires advancement in productivity, technology, and a more skilled labor force





Source: (Top) Bloomberg

*Source: (Bottom) Bloomberg, *Includes estimate for Nov/Dec 2017*

KEY MARKET THEMES

China Transitions

The PBOC is tasked with straddling a delicate path as the economy evolves

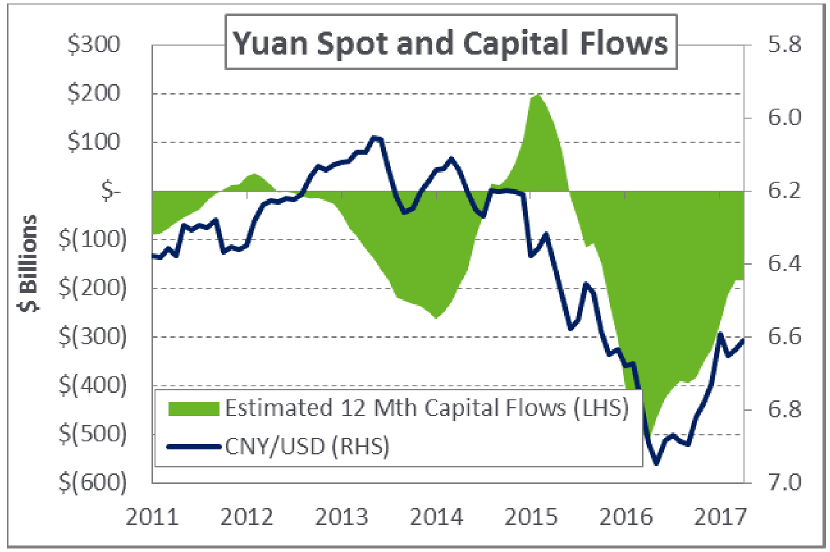
China maintains control of its currency and monetary policy but would have to make concessions to open its capital account and allow the free movement of capital in order to encourage investment

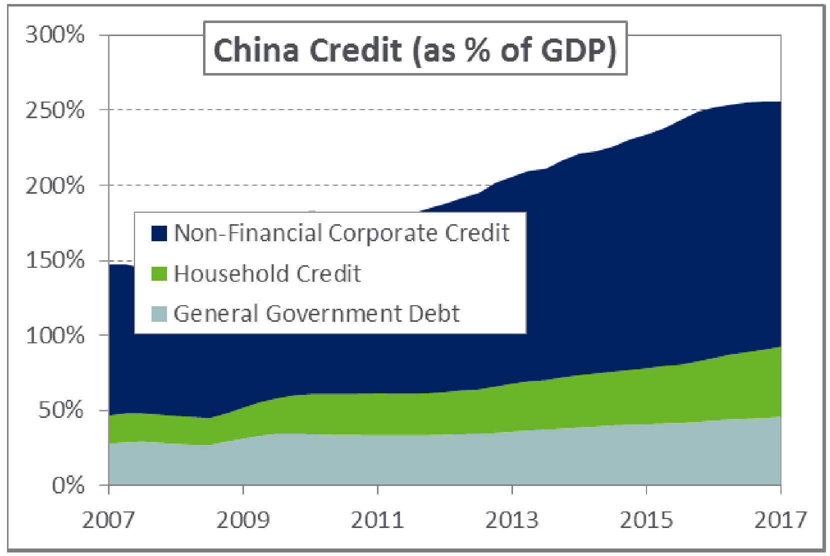
Restrictions on capital markets are slowly being eased, with an eye towards limiting social disruption

China's government is negotiating a balance of tightening credit expansion and support for economic growth

Continued credit expansion and real estate development risk inflating asset price bubbles and pose a systemic risk

Markets have responded positively to the PBOC's management of a more stable yuan as capital outflow pressure has eased but currency devaluation remains a tail risk





Source: (Top) Bloomberg, NEPC
Source: (Bottom) Bank of International Settlements

KEY MARKET THEMES

Globalization Backlash

Uneven economic growth and wage gains have fueled political discontent in the developed world

Election results in France have assuaged fears of political gridlock in the EU

Italian election in first half of 2018 is another potential flashpoint on globalization

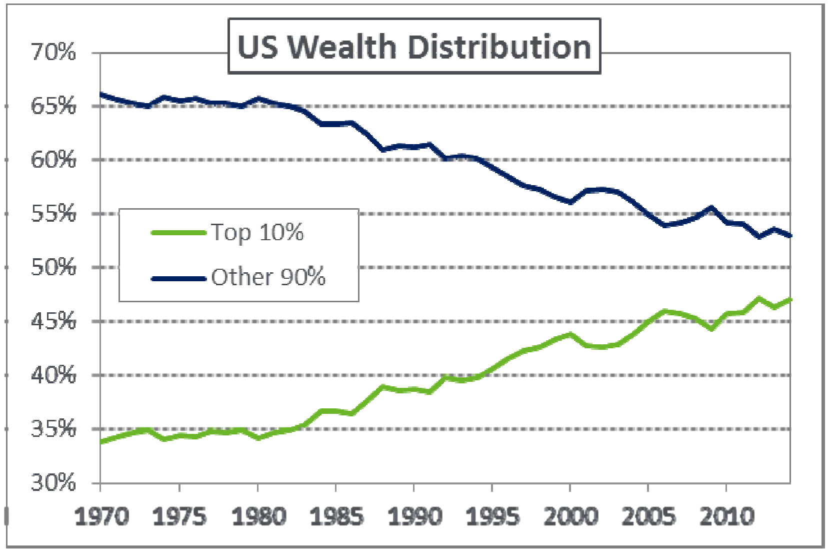
Anti-establishment political bias is likely a long term trend and potentially leads to higher levels of currency volatility over time

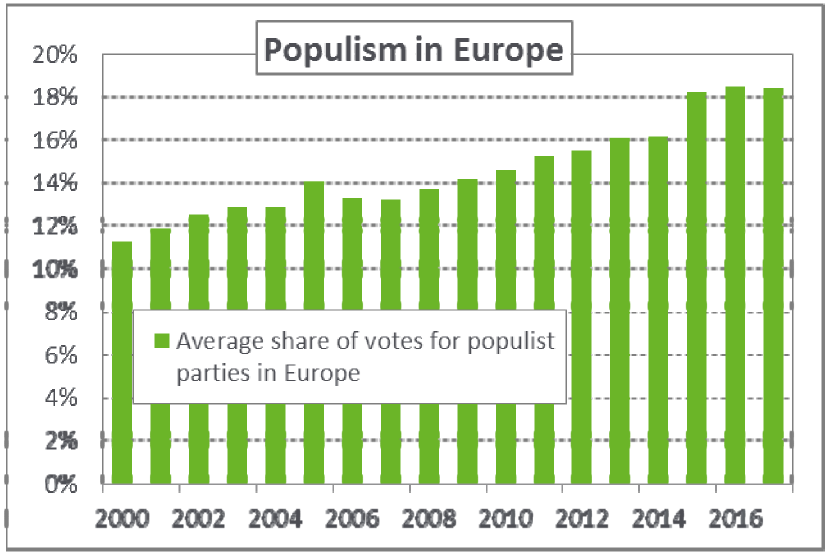
For many nations, a turn inward is associated with globalization fatigue

Often fuels greater expression of nationalism and increased geopolitical risks as multilateral relationships are reassessed

Populist movements destabilize the political order and shifts away from political orthodoxy heighten tail risks

However, equity markets often overreact to geopolitical concerns and sell-offs can be a buying opportunity for investors





Source: (Top) World Wealth & Income Database
Source: (Bottom) World Bank

KEY MARKET THEMES

Globalization Backlash

Major shifts in US trade policy did not materialize in 2017

However, a more aggressive protectionist policy would represent a material risk to global markets and the world economy

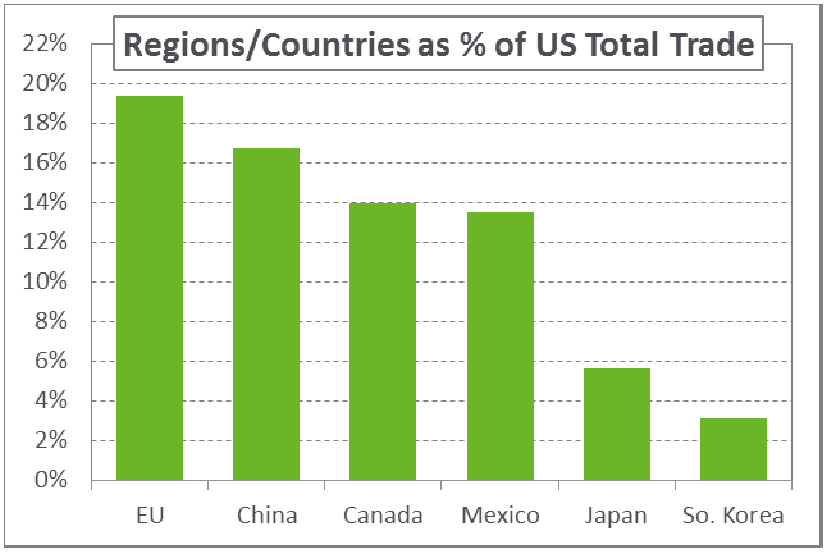
Markets have taken to interpreting the US administration's rhetoric with a grain of salt but ongoing NAFTA negotiations are a concern

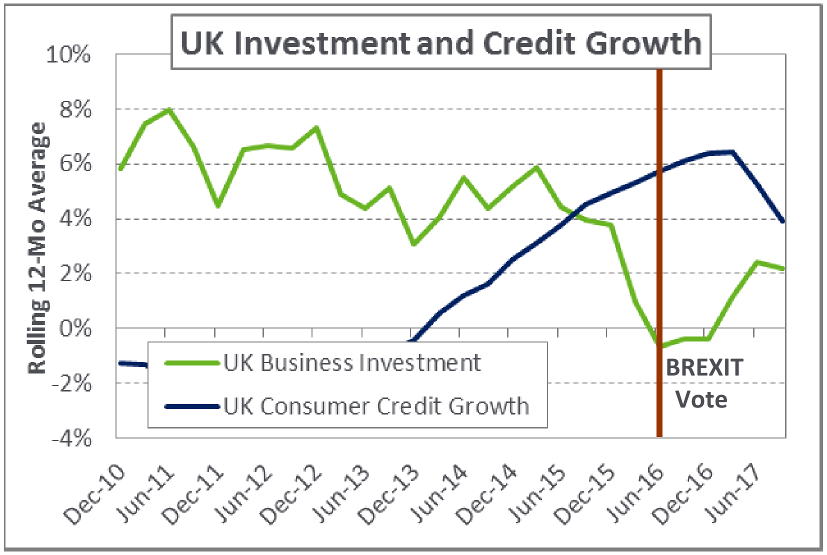
The UK serves as a live case study for the effects of globalization backlash

While it is early in the process, economic metrics across the country have turned lower in the 18 months since UK voted to leave the European Union

Expected disruption to financial regulations, customs controls, and business confidence in the UK are proving to be a cautionary tale for a turn away from globalization

However, the economic unease of voters remain and popularity of anti-establishment political parties poses a risk to the global economic order





Source: (Top) Federal Reserve Bank of St. Louis
Source: (Bottom) Bloomberg

CURRENT OPPORTUNITIES

NEPC, LLC

CURRENT OPPORTUNITIES

Trim US Equity Gains

Overweight Non-US Developed Market Equities

Maintain Overweight to Emerging Market Equities

Allocate to TIPS from Core Bonds

Reduce Return Seeking Credit Exposure

Fund Emerging Local Debt

Add Macro Hedge Funds

Add Long Volatility Exposure

CURRENT OPPORTUNITIES

Trim US Equity Gains

US stocks have posted strong returns over the last 9 years

US stocks are "priced for perfection" with valuations and profit margins hovering near secular highs despite the recent earnings growth improvement

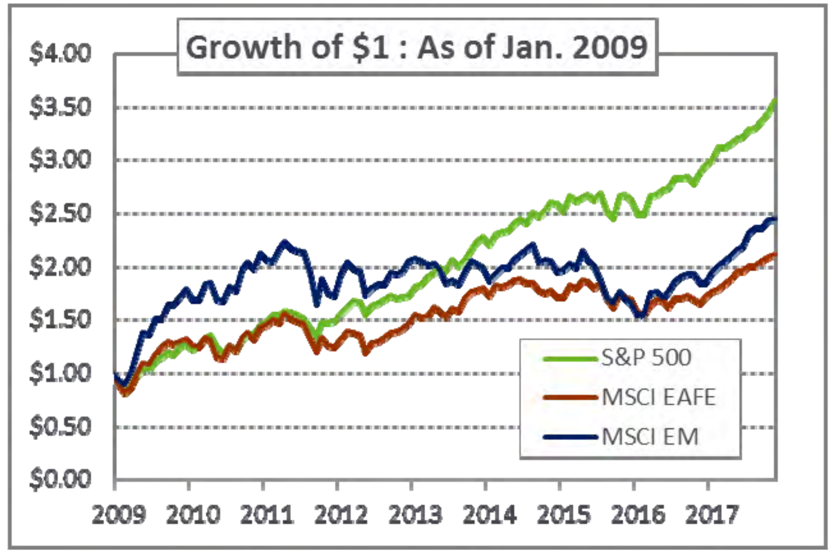
However, a prolonged US economic expansion can continue to support a rally in US equities, specifically small-cap stocks that may benefit from corporate tax cuts

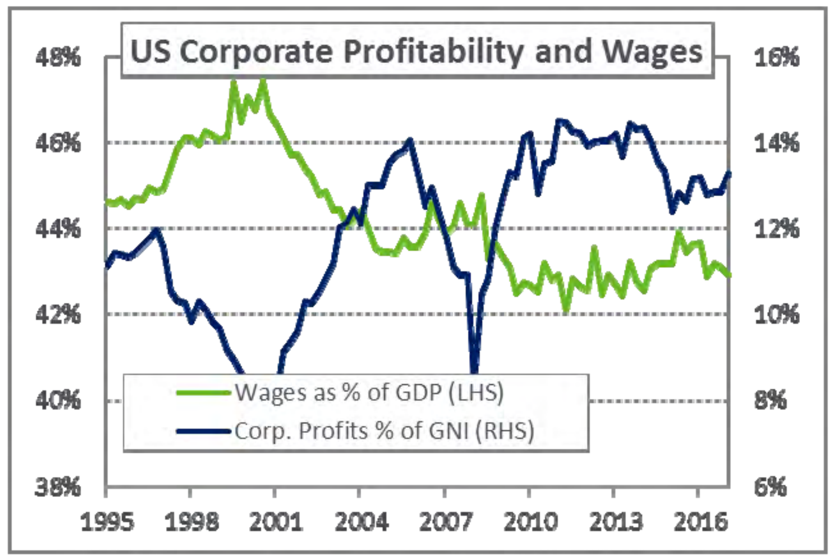
Reduce US large-cap exposure to fund global equity strategies

Opportunity for alpha generation and total return is greater outside the US

US equities are also a viable funding source for private market commitments

Should US equity markets decline materially, look to rebalance to exploit market volatility





Source: (Top) Federal Reserve Bank of St. Louis
Source: (Bottom) S&P, MSCI, Bloomberg

CURRENT OPPORTUNITIES

Overweight Non-US Developed Market Equities

A multi-year earnings recovery in EAFE markets offers the potential for an elevated return

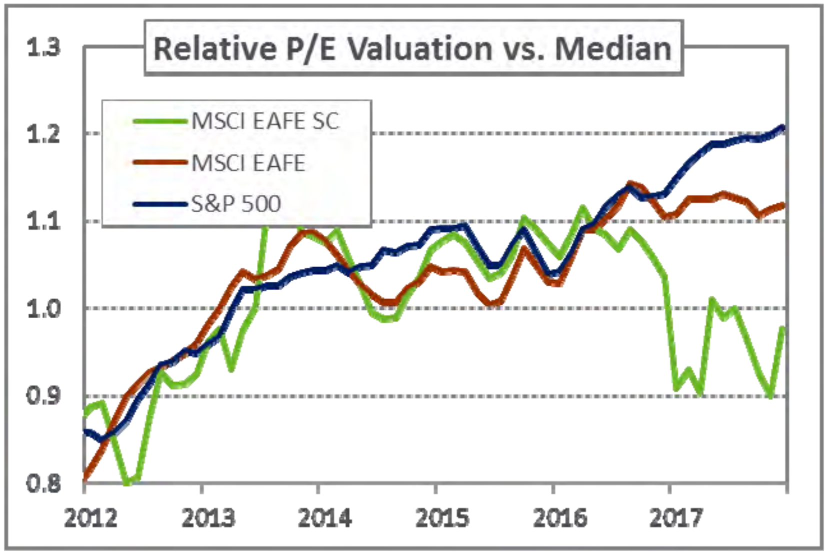
Catalysts for outperformance are present with improving economic conditions in Europe and continued corporate governance improvements in Japan

Earnings recovery appears to be taking hold in Europe where an uncertain political outlook has gained clarity

Non-US small cap and global equity are preferred for implementation

These strategies offer the best opportunity to exploit valuation discrepancies among stocks across countries and sectors

Hedging a portion of non-US developed currency exposure remains a strategic recommendation



Source: (Top) Bloomberg, NEPC
Source: (Bottom) S&P, MSCI, Bloomberg, NEPC

CURRENT OPPORTUNITIES

Maintain Overweight to Emerging Market Equities

Emerging equities offer the highest total return potential for investors

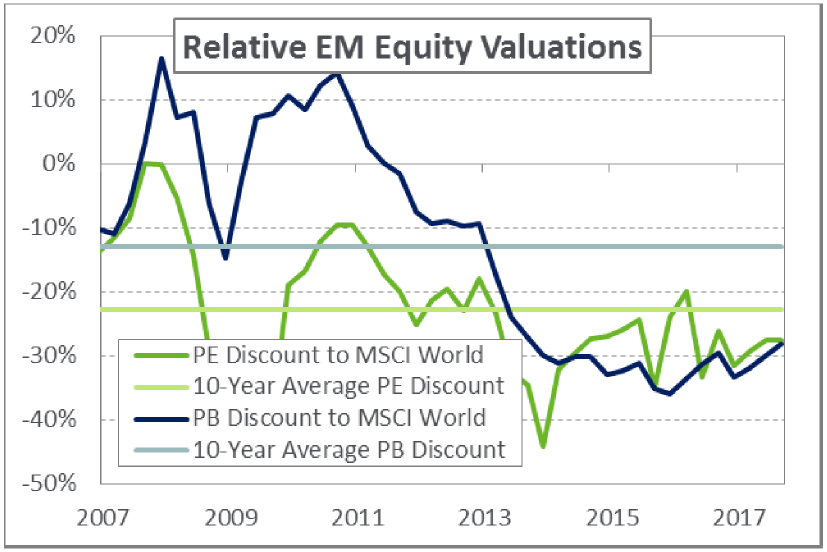
Valuation levels and fundamentals suggest an overweight relative to global equity market cap weights (e.g. 15% to 20%)

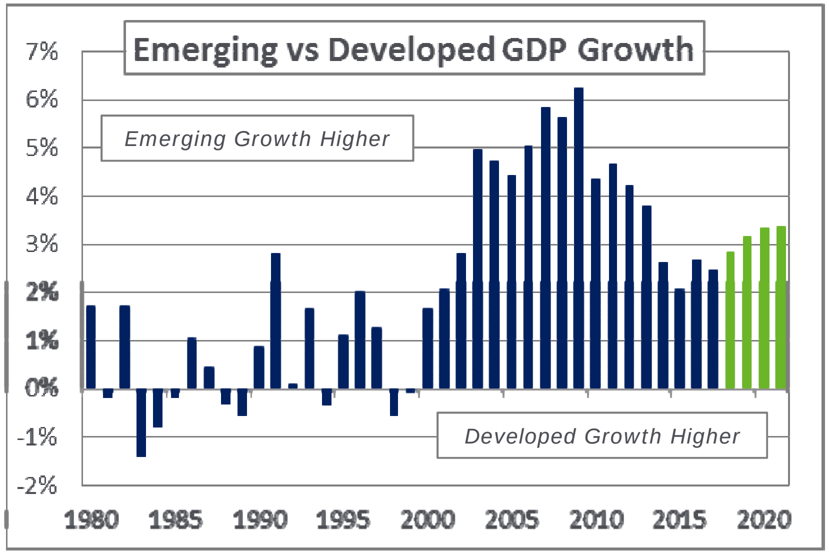
Growth premium relative to the developed world persists as economic conditions in EM improve due to synchronized global growth

High tracking error strategies offer greater flexibility to invest across emerging countries and are preferred to benchmark focused mandates

Opportunity set for excess return appears more abundant in EM versus developed markets

Strategies that invest down the market cap spectrum can offer investors more pure local growth exposure





Source: (Top) MSCI, Bloomberg
Source: (Bottom) IMF

CURRENT OPPORTUNITIES

Allocate to TIPS from Core Bonds

Duration exposure remains a key asset allocation building block for a diversified portfolio

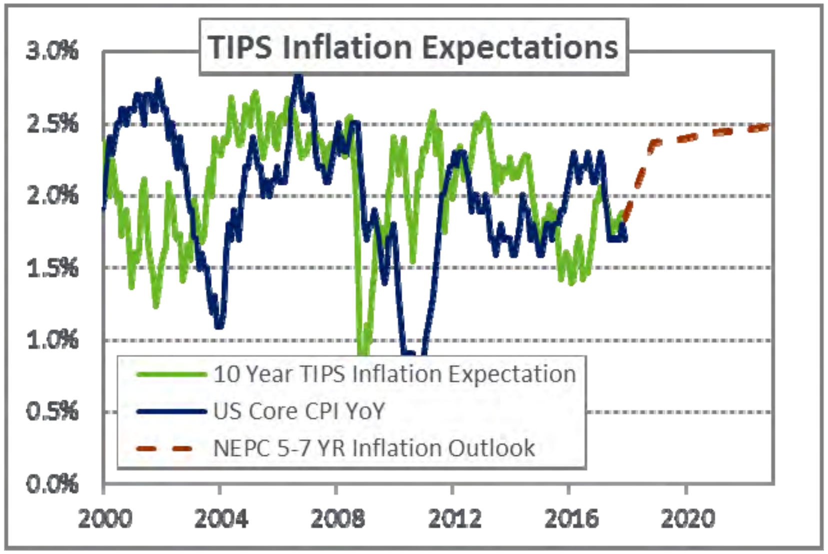
TIPS offer safe haven exposure with an explicit hedge for realized inflation and can be implemented with a low cost passive strategy

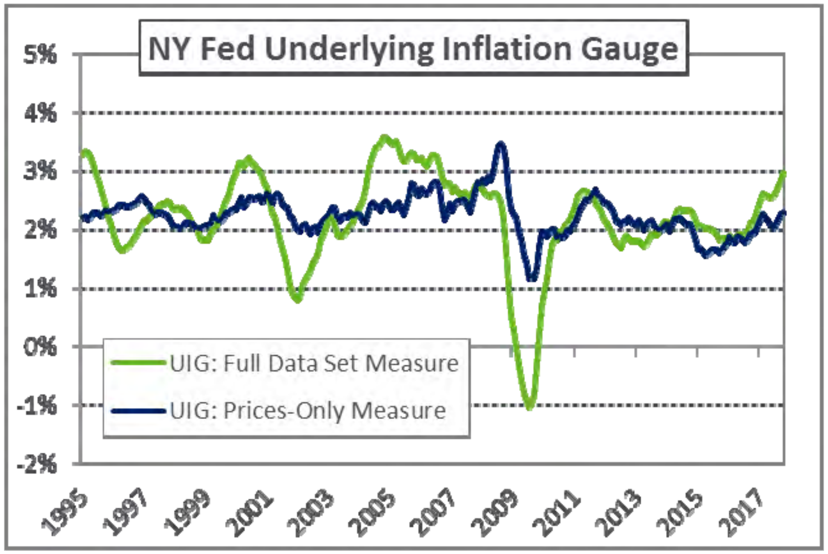
Current core bond yields offer limited cushion before taking on losses in a rising interest rate environment

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

CURRENT OPPORTUNITIES

Reduce Return Seeking Credit Exposure

Over the last 18 months, high yield bonds have provided strong gains

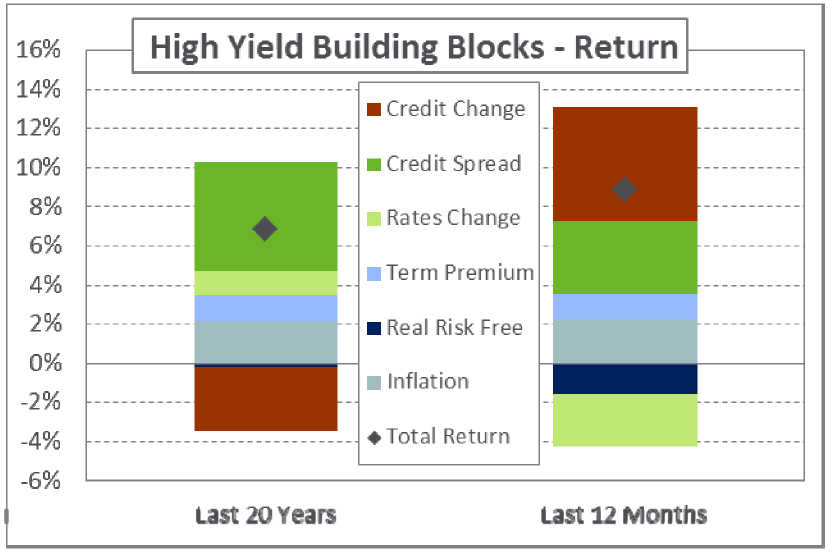
Attractive credit spreads seen in early 2016 have now fallen below historic medians and do not appear to fully compensate investors for the risk

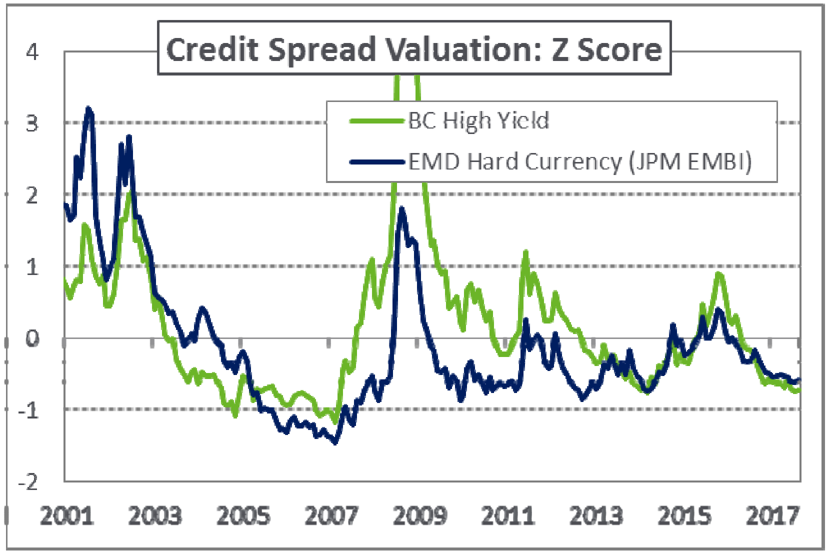
Reallocate gains from liquid credit markets to other areas of the portfolio (e.g. equity, private markets, safe haven fixed income)

Valuations of other credit sectors appear stretched with dollar based EMD also looking expensive

Recommend investors eliminate or reduce dollar-denominated emerging market debt as both sovereign and corporate spreads have tightened

We encourage reallocating the proceeds of dollar based EMD to a smaller mandate in EMD local or moving to other areas of the portfolio (e.g. equity, idiosyncratic credit opportunities)





Source: (Top) MSCI, Bloomberg
Source: (Bottom) IMF

CURRENT OPPORTUNITIES

Fund Emerging Local Debt

EM local debt offers an attractive total return opportunity

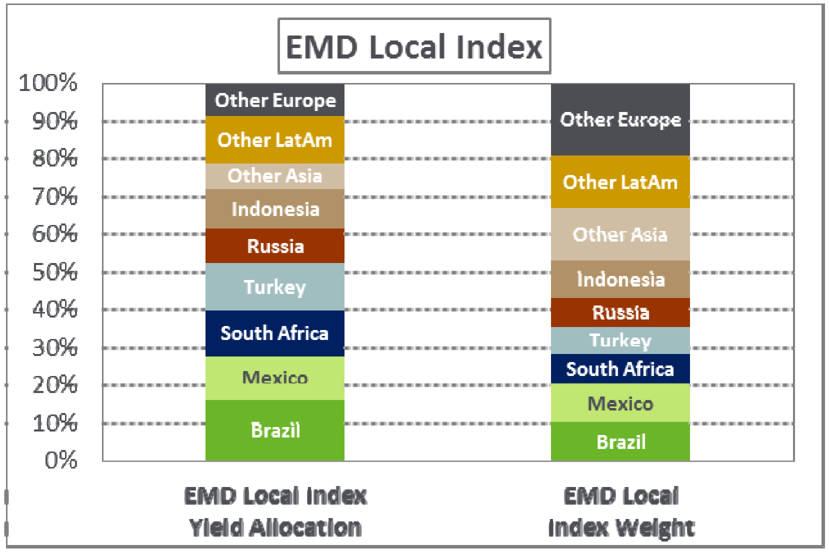
Above average index yield relative to developed world provides a cushion to offset potentially high currency volatility

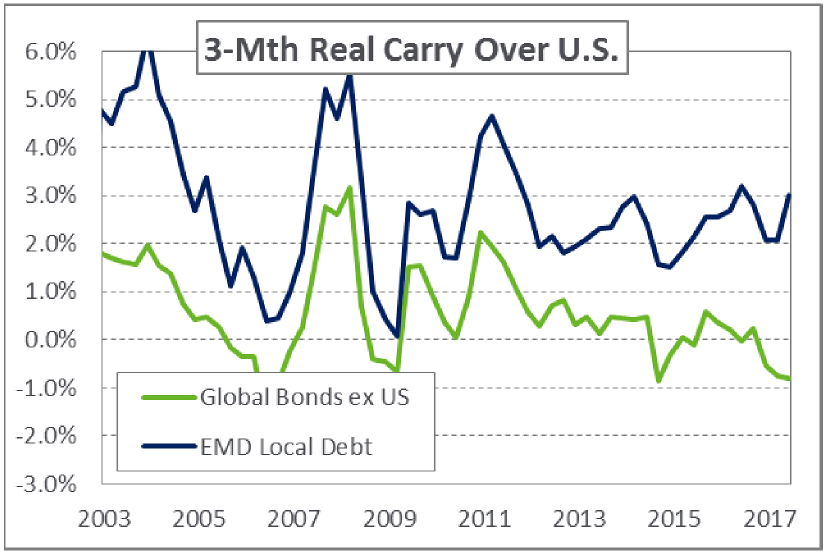
Valuations for many emerging market currencies remain attractive despite recent rally in select markets

For tactically oriented investors, look to fund emerging local debt from high yield and dollar denominated EMD

Preferred implementation is a stand alone EM local debt strategy

For investors with an existing dollar denominated EMD allocation, we encourage shifting the exposure to local currency debt but reduce the exposure size to account for the higher volatility of emerging local currency debt





Source: (Top) JP Morgan
Source: (Bottom) JP Morgan, Bloomberg, NEPC

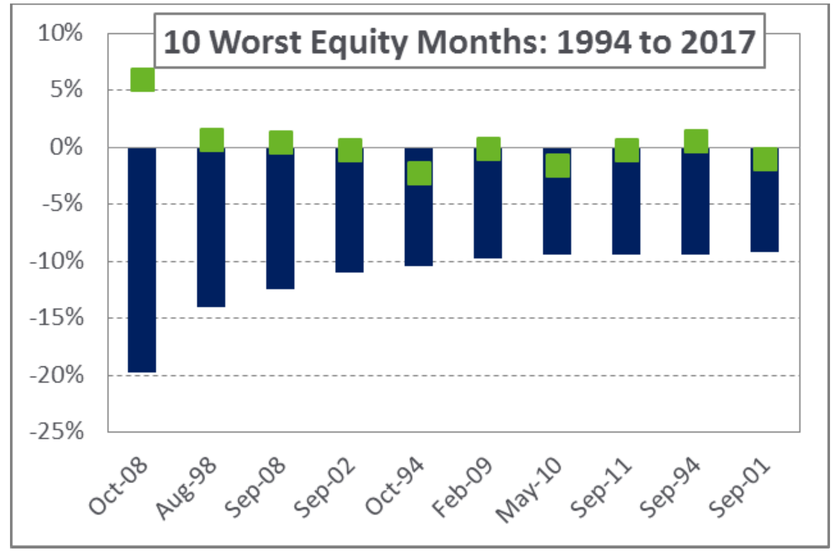
CURRENT OPPORTUNITIES

Add Macro Hedge Funds

Macro hedge fund strategies offer broad benefits to a total portfolio

Allocations of size (e.g. 5%) help to mitigate the left-tail of a portfolio return distribution

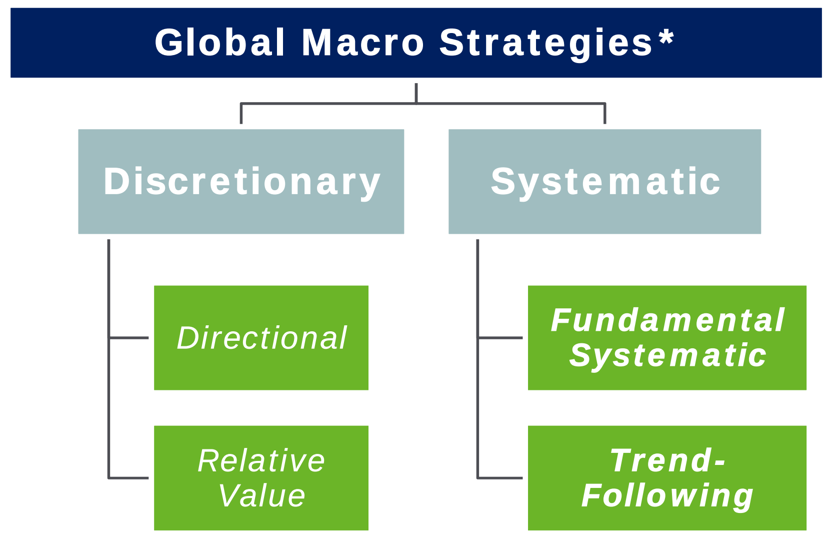
Investors should be targeted in their approach to portfolio construction as manager selection is paramount



Fund systematic global macro from broad based GAA and hedge fund of fund strategies

Systematic strategies tend to exhibit low correlation to equity markets and are strong diversifiers within a total portfolio

Many systematic macro strategies exhibit “crisis alpha” or excess performance in risk-off periods



Source: (Top) eVestment, HFRI

**Not intended to be an all inclusive Macro sub-strategy list*

CURRENT OPPORTUNITIES

Add Long Volatility Exposure

Volatility levels for global markets are near historic lows

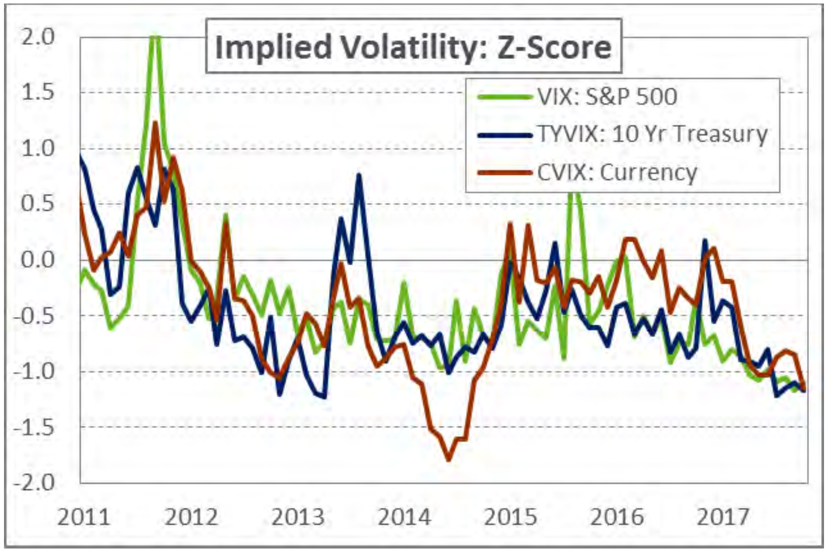
Long volatility exposure positively benefits from rising asset class volatility and an allocation of 1% to 2% can provide a significant return contribution should volatility normalize

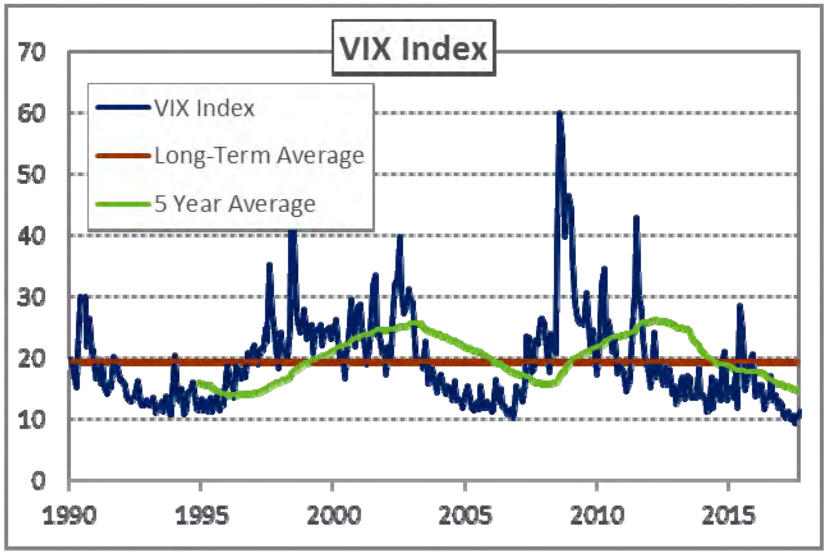
Exposure is not without risk. Losses would be expected if market volatility continues to decline. Discipline of a multi-year time horizon is required should volatility levels move slowly back to normal levels

Long volatility strategies with positive carry are the only implementation option we recommend

Purchasing S&P VIX is a costly method to implement long volatility exposure due to the negative roll yield of the VIX curve

Suited for opportunistic investors and ideally funded from traditional GAA strategies





Source: (Top) Bloomberg
Source: (Bottom) Bloomberg

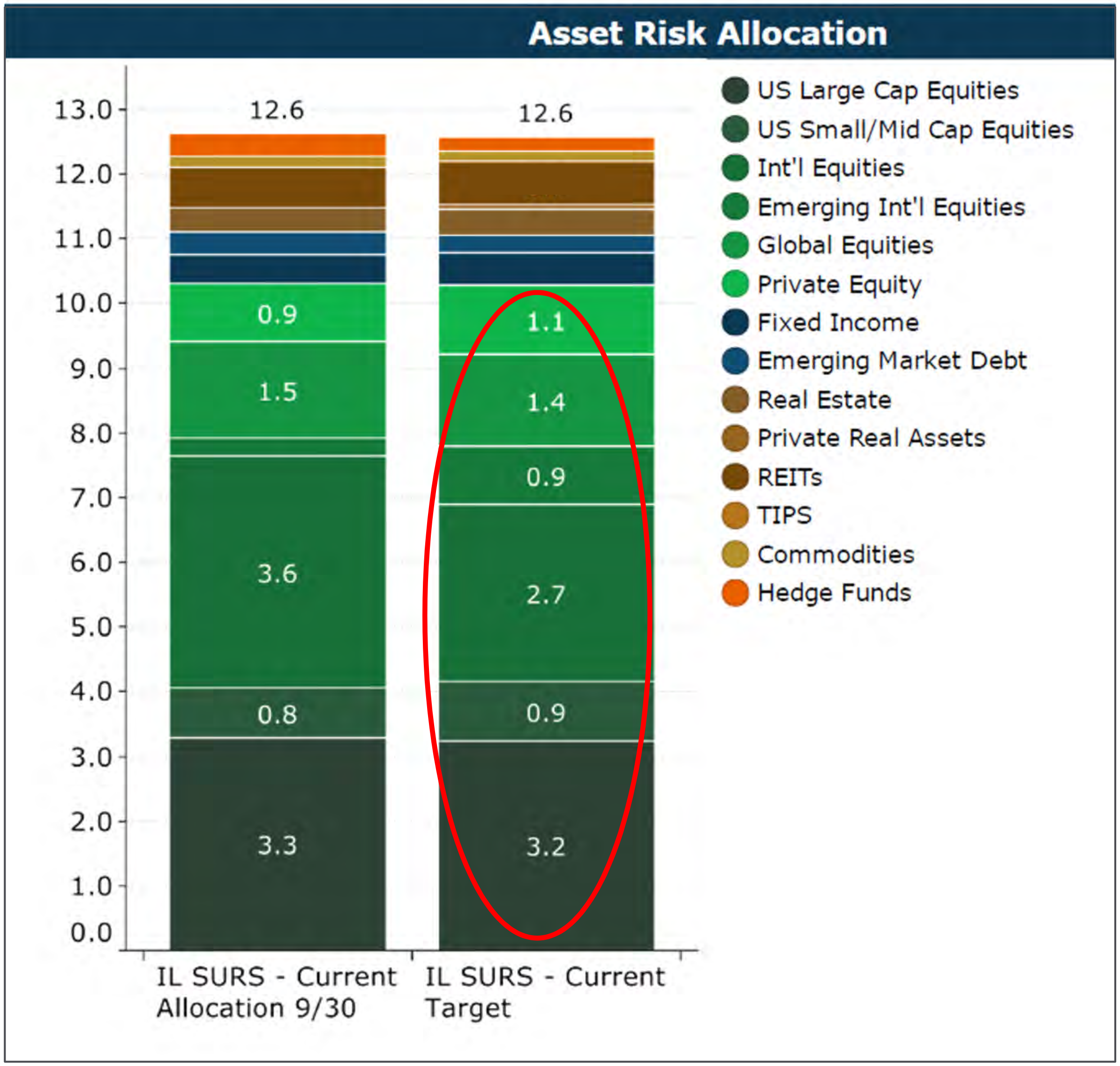
IL SURS PORTFOLIO

IL SURS ASSET ALLOCATION

	Asset Class	Current Policy Allocation (%)	Allocation as of 9/30/17 (%)
	Cash	0.0	0.40
Equity	US Large Cap	20.0	20.4
	US Small/Mid Cap	5.0	4.3
	International Equity	15.0	19.1
	Emerging Market Equity	4.0	1.3
	Global Equity	8.0	8.3
	Private Equity	6.0	5.1
Fixed Income	Fixed Income	19.0	17.7
	Emerging Market Debt	3.0	3.2
Real Assets	Real Estate	6.0	5.7
	Real Assets	1.0	0.0
	REITS	4.0	3.9
	TIPS	4.0	3.7
	Commodities	2.0	1.9
Return Seeking	Hedge Fund	3.0	5.0
5-7 Years	Expected Return	6.13	6.16
	Expected Standard Deviation	12.60	12.56
	Expected Sharpe Ratio	0.33	0.33
30+ Years	Expected Return	7.29	7.35
	Expected Sharpe Ratio	0.36	0.37

Notes: Market Value as of 9/30/17

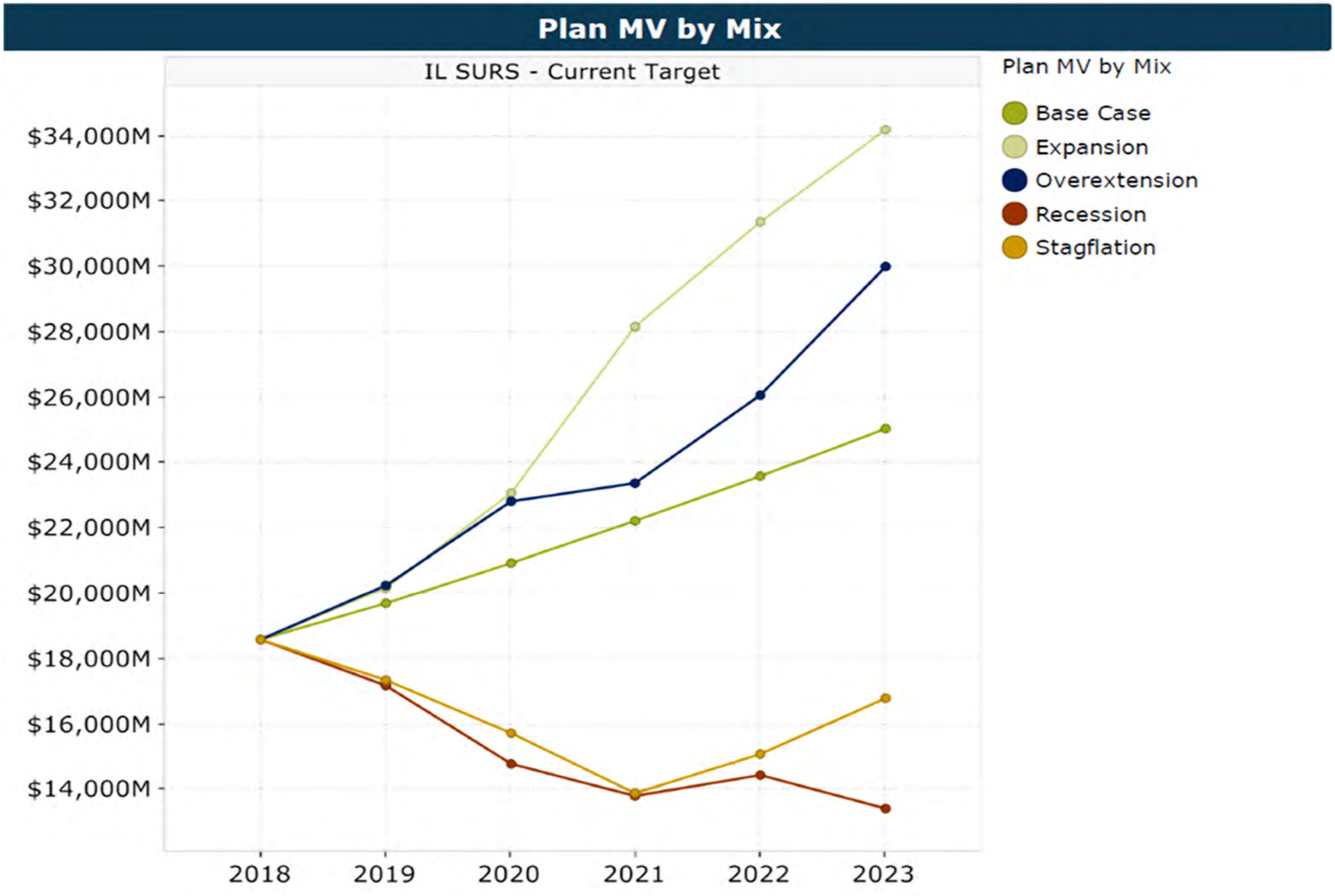
ILLINOIS SURS RISK ALLOCATION



Approximately 81% of the portfolio's risk allocation is attributed to equity-like investments.

Market Value as of 9/30/17

ILLINOIS SURS SCENARIO ANALYSIS



Note: Analysis is based on projected returns using IL SURS market value as of 9/30/17 and are not adjusted for project cash in/outflows

INTRODUCTION
ASSET CLASS ASSUMPTIONS

NEPC, LLC

2018 ASSET CLASS ASSUMPTIONS

NEPC asset class assumptions offer both an intermediate (5-7 years) and long term (30 years) forecast horizon

- November 30th market data is used for inputs to the asset class models

The 5-7 year return expectations for US credit and equity asset classes are broadly lower due to continued increases in valuation levels

- Credit-based asset class expectations have declined considerably from prior year, with credit spreads moving below long-term medians across most sectors

The outlook for non-US equities remains attractive over 5-7 years supported by improvement in corporate earnings and economic growth

We anticipate US inflation will gradually move higher and average 2.5%

We continue to refine and enhance our process where appropriate

- The asset class assumption for Real Estate has been split into Core and Non-Core to offer a distinction between the volatility and return profile
- Core has a greater income orientation with broad exposure to commercial real estate beta and Non-Core is oriented to capital appreciation with increased use of leverage

ASSUMPTION DEVELOPMENT

Capital market assumptions are published for over 40 asset classes

- Assumptions include 5-7 year and 30 year return forecasts, average annual volatility expectations, and correlations

The 5-7 year forecast is designed to capture the return outlook for the current investment cycle

- 30 year return assumptions reflect a long-term outlook and are informed by the historical relationships among asset classes

Assumptions are published annually on December 15th and use market data as of November 30th

- Assumptions are developed by the Asset Allocation Committee and approved by the Partners Research Committee (PRC)

Return assumptions are developed with proprietary valuation models and rely on a core building block methodology

Asset Allocation Committee	
September	Asset Allocation Committee Assumptions Kickoff Finalize List of New Asset Class Assumptions
October	Review Draft of Asset Class Return Assumptions Discuss Outlook with NEPC Research Beta Groups
November	Finalize Volatility and Correlation Assumptions Final Update of Asset Class Models (As of 11/30)
December	Review Model Output and Create Return Assumptions Present Draft to the PRC Publish Assumptions on December 15th

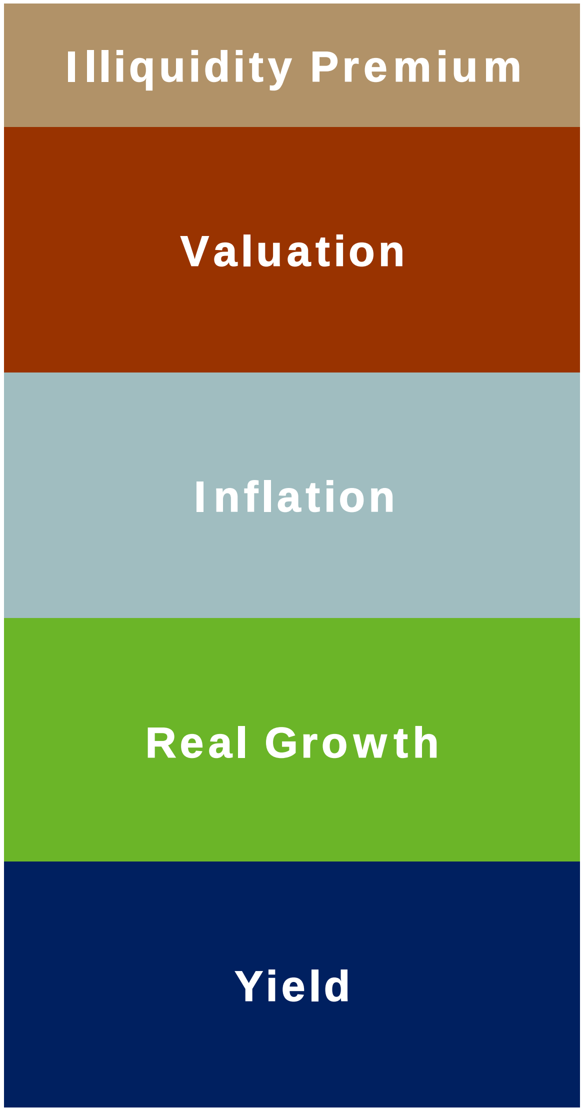
BUILDING BLOCKS METHODOLOGY

Forward-looking asset class models incorporate current and forecasted market and economic data to inform expected returns

Quantitative inputs combined with qualitative factors and investor sentiment (capital flows, etc.) drive the 5 to 7 year return outlook

Components are combined to capture core drivers of return across asset classes – forming the foundation of our building blocks framework

Building blocks will vary across equity, credit, and real assets

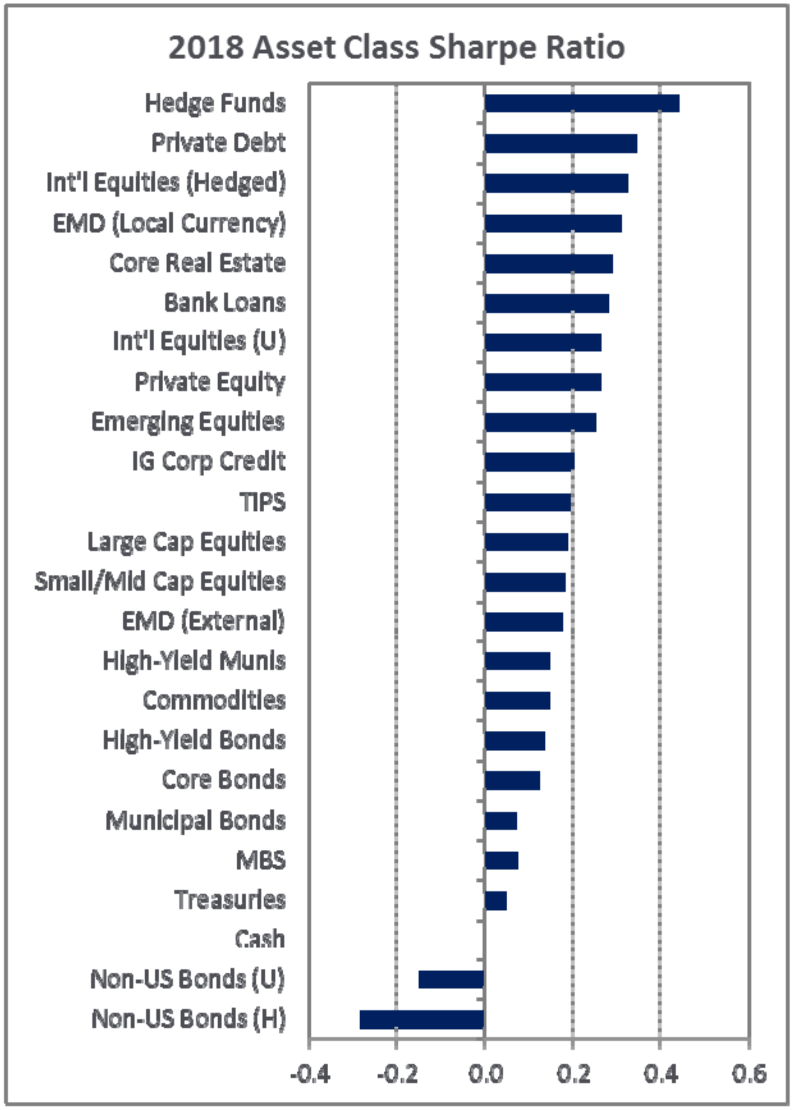


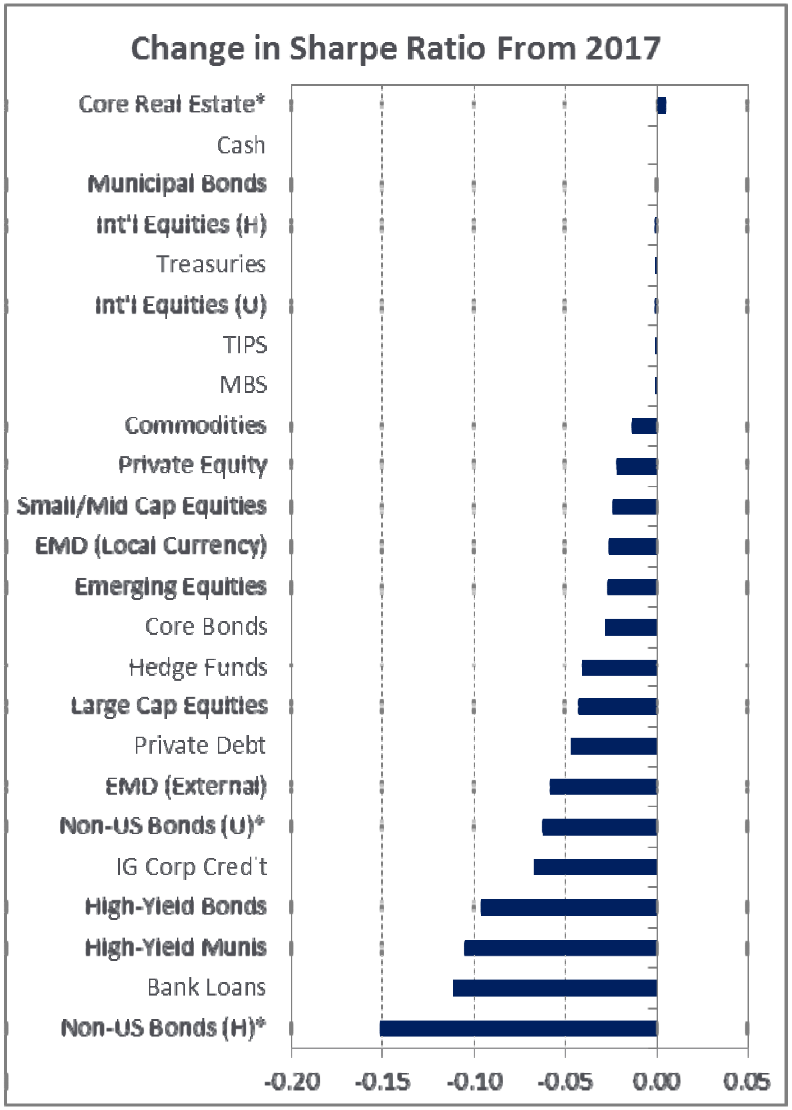
5-7 YEAR RETURN ASSUMPTIONS

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

**Each calculated as a blend of other asset classes*

RELATIVE ASSET CLASS ATTRACTIVENESS





Source: NEPC

**Impacted by methodology changes for Core Real Estate (reduction in volatility) and Non-US Bonds (formerly was Global Bonds)*

MACRO ASSUMPTIONS

INFLATION OVERVIEW

Inflation is an integral component of our asset allocation assumptions

Represents an essential building block for developing asset class returns

Inflation building blocks are model driven and informed by multiple sources for both the US and global asset classes

Includes forecasts from international organizations (e.g. IMF), local consumer and producer price indices, break-even inflation expectations, and global interest rate curves

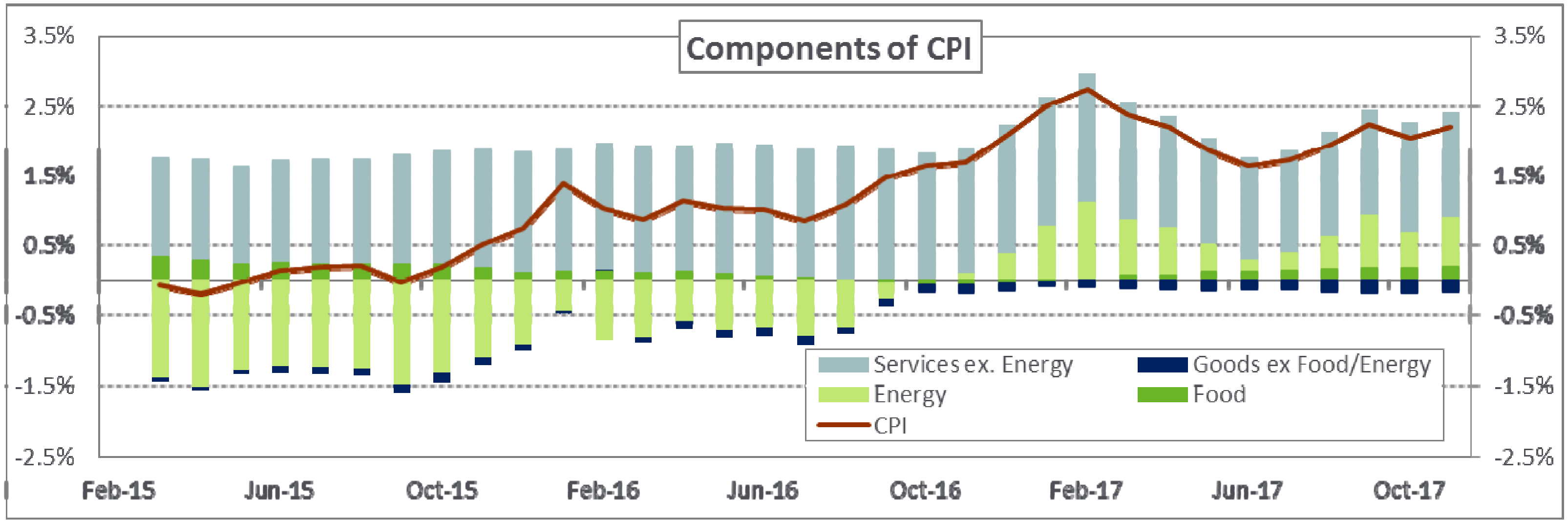
US inflation is based upon the TIPS breakeven inflation curve adjusted for expectations of economic activity, employment, and capacity levels

Global inflation expectations are informed by consensus forecasts across countries along with implied inputs from global bond curves

The 30 year global inflation forecast assumes purchase power parity holds across the globe and country specific inflation levels converge to a terminal value

Region	5-7 Year Inflation Assumption	30-Year Inflation Assumption
United States	2.50%	2.75%
Global	3.00%	3.25%

US INFLATION



Source: Bloomberg, NEPC

Low inflation continued throughout 2017 despite strong economic growth, tightening labor market, and early signs of wage gains

These metrics were thought to help inflation accelerate, yet the Fed's 2% inflation target has been a difficult target for the US economy to maintain

A seemingly transitory drop in certain CPI elements, such as healthcare costs and vehicles, have minimized price pressures in 2017 even as the impact from energy prices has turned positive

The Fed's preferred inflation measure, the personal consumption expenditures (PCE), remains below their 2% target

However, other more inclusive indicators such as the NY Fed Underlying Inflation Gauge, point to an increase in inflation in the coming years, but still below the long-term average

GLOBAL INFLATION

In most developed economies, core inflation has failed to reach or exceed central bank targets despite improved domestic demand and labor markets

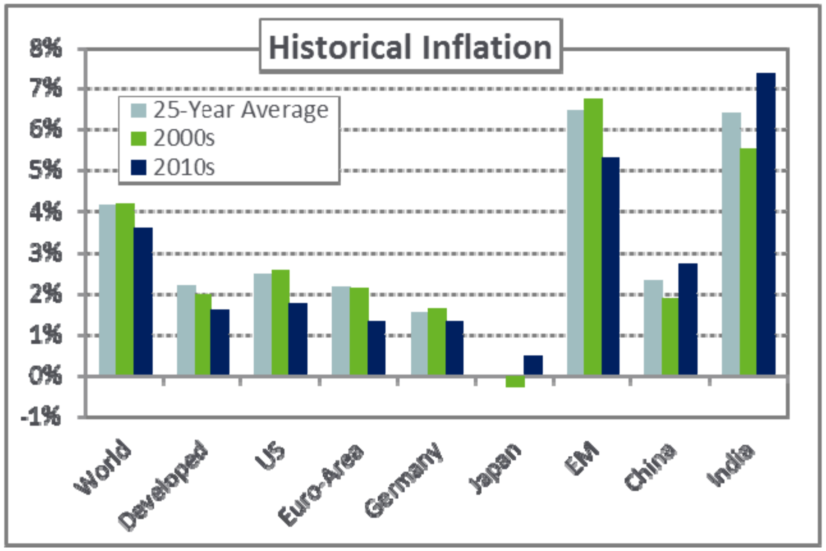
Ultra accommodative monetary policy remains in place for Europe and Japan to fuel higher levels of inflation

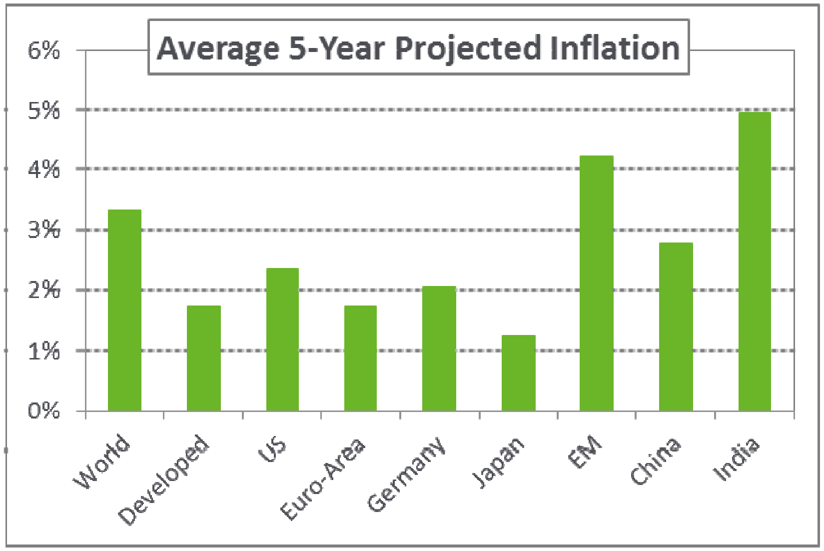
The UK is an exception to this trend as significant depreciation of the pound has led to higher consumer prices

Emerging market inflation has broadly declined over the last 24 months

This is in part due to the large fiscal correction and prudent monetary policy actions that followed the currency declines of prior years

Core inflation particularly in Russia and Brazil have declined significantly as the effect of high real interest rates weakens inflationary trends





Source: (Top) IMF, NEPC
Source: (Bottom) IMF, NEPC

US CASH EXPECTATIONS

Cash is the basic cornerstone of all asset class forecasts

The assumption flows through as a direct building block component or as a relative value adjustment (cash + risk premia)

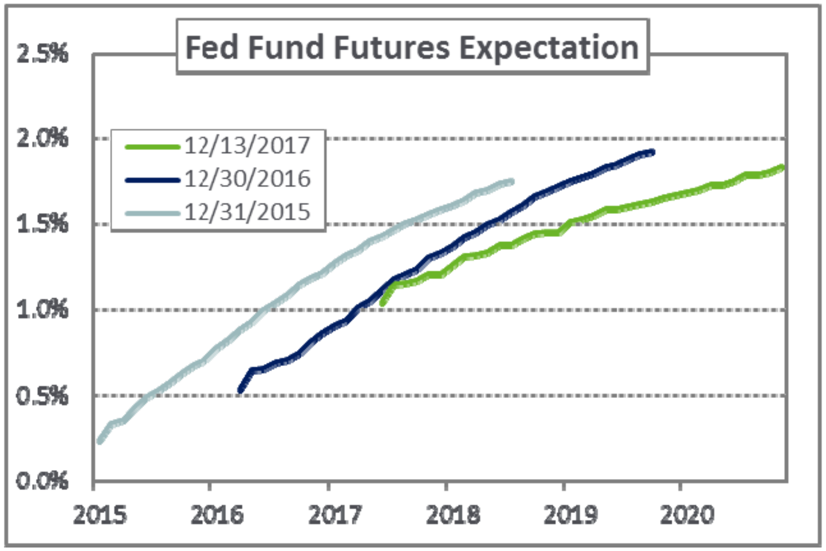
The longer-term cash assumption is a result of the inflation assumption in conjunction with our forecasted real interest rate path

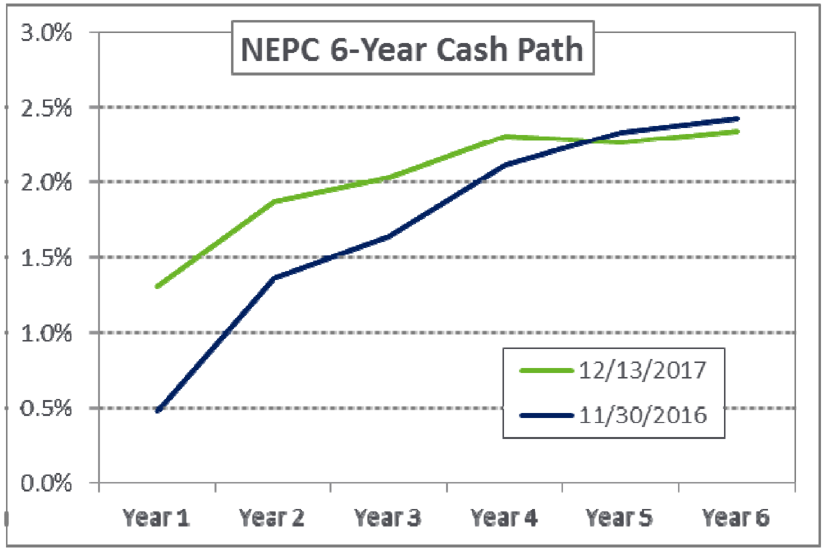
After three Fed rate hikes in 2017, expectations for increased short term interest rates project higher still

A progressively flatter yield curve has formed as longer-term rate expectations remain muted

Market prices reflect only two rate hikes in 2018, despite FOMC expectations of three

A key risk to our overall investment outlook is the ending of Fed gradualism and rate increases beyond market expectations





Source: (Top) Bloomberg
Source: (Bottom) Bloomberg, NEPC
Charts as of 12/13/2017

US INTEREST RATE EXPECTATIONS

Real yields are marginally higher relative to last year

Continued strength in economic data and expectation of future Fed rate hikes have improved the outlook for real yields

While higher, real rates remain below long-term averages, reinforcing the subdued outlook for fixed income

Long-term expectations for real yields remain positive but low in the US

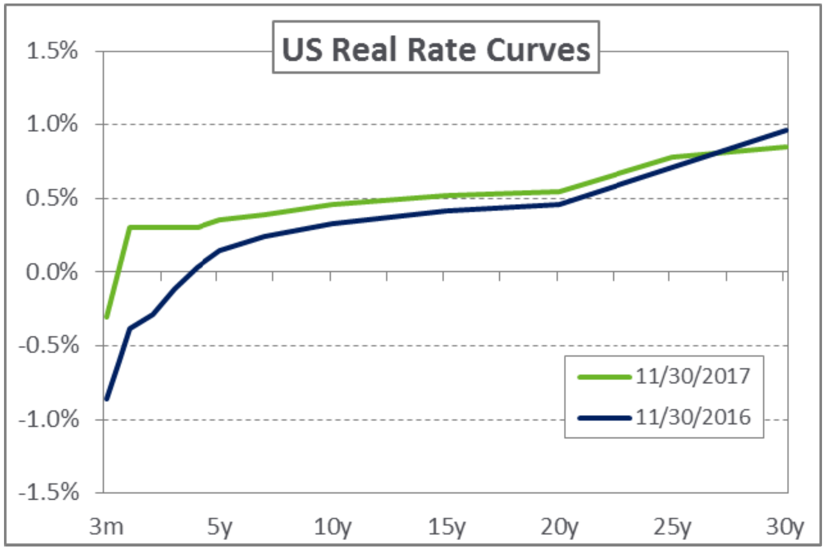
Low real rates depress the return outlook for risk assets over the long-term

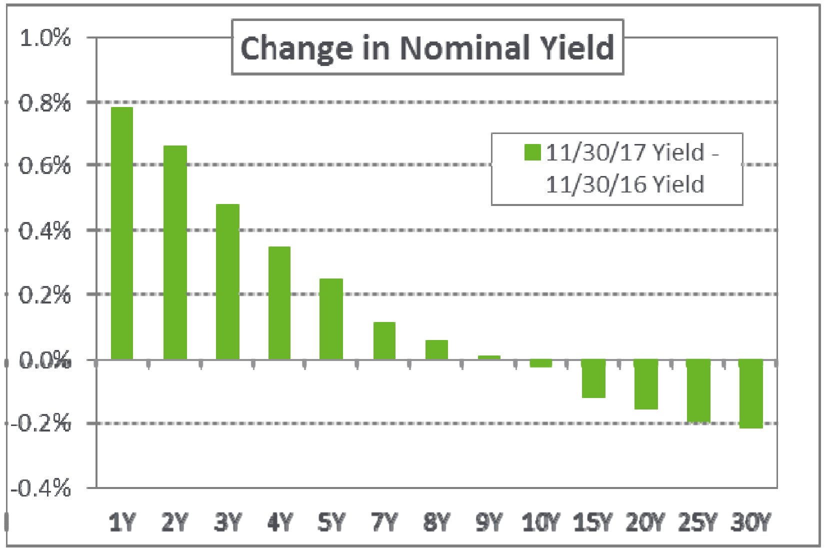
Interest rate increases have been slower than what the market has discounted

Additional uncertainty surrounding the path of rates is possible in 2018

Potential disruption with the confirmation of new Fed Chairman Jerome Powell

Tax cuts could push interest rates higher due to the larger federal deficits and debt issuance needs





Source: (Top) Bloomberg, NEPC
Source: (Bottom) Bloomberg

GLOBAL INTEREST RATE EXPECTATIONS

Government bond yields remain low and negative in much of the developed world

European sovereign yields have declined relative to Germany as political and economic risk declines

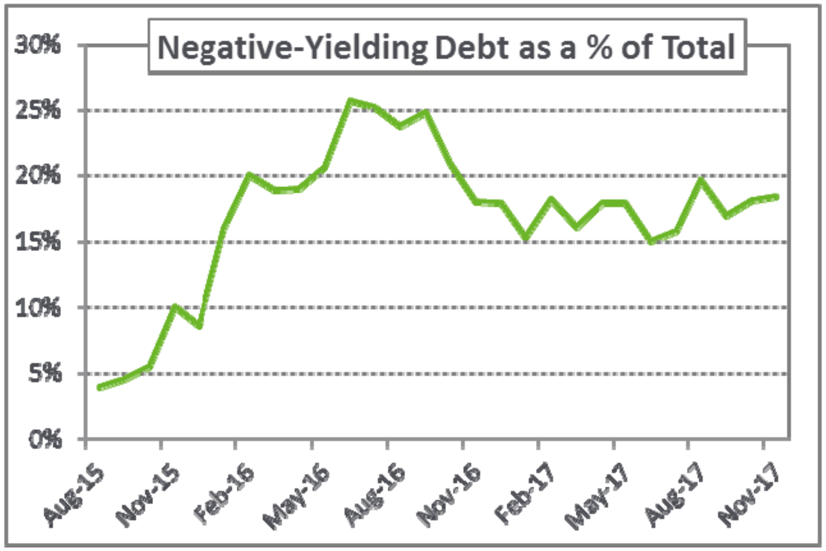
Spain and other periphery nations have showed positive economic momentum

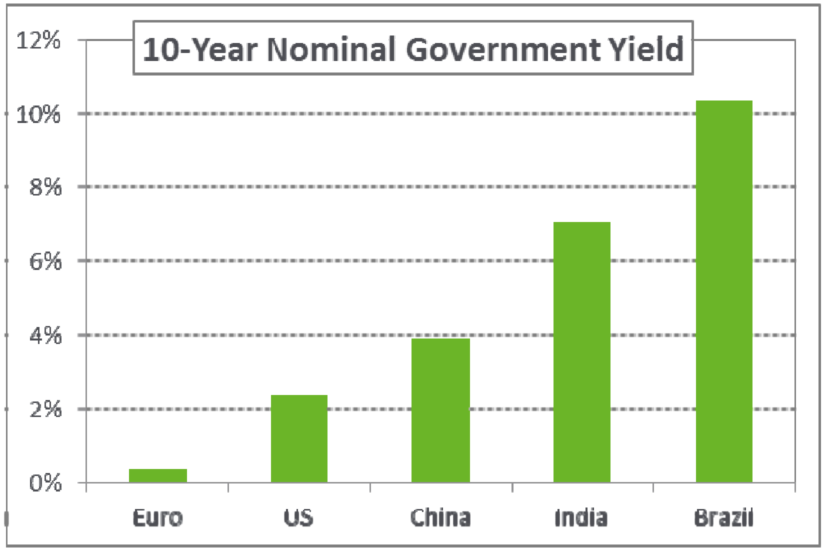
France's election of Emmanuel Macron was seen as a stabilizing event for the country and the EU as a whole

Emerging market local interest rates are attractively priced as real yields remain elevated

Emerging market yields continue to retain a healthy premia over developed world rates

Additionally, positive real rates provide a larger cushion for EM central banks to cut interest rates and ease monetary conditions





Source: (Top) Bloomberg
Source: (Bottom) Bloomberg

EQUITY ASSUMPTIONS

NEPC, LLC

EQUITY: ASSUMPTIONS

Equity Building Blocks	
Illiquidity Premium	The additional return expected for investments carrying liquidity risk
Valuation	An input representing P/E multiple contraction or expansion relative to long-term trend
Inflation	Represents market-specific inflation derived from index country revenue contribution and region-specific forecasted inflation
Real Earnings Growth	Reflects market-specific real growth for each equity asset class as a weighted-average derived from index country revenue contribution and forecasted GDP growth
Dividend Yield	Informed by current income distributed to shareholders with adjustments made to reflect market conditions and trends

Asset Class	5-7 Year Return	Change 2018-2017
US Large Cap	5.25%	-.50%
US Small/Mid-Cap	5.75%	-.25%
International (Unhedged)	7.50%	+.25%
International (Hedged)	7.82%	+.25%
International Small Cap	7.75%	+.25%
Emerging International	9.00%	-.50%
Emerging Intl. Small Cap	9.25%	-.75%
Private Equity	8.00%	-.25%
Hedge Funds – Long/Short	6.25%	-
Global Equity	*6.88%*	*-.33%*

EQUITY: REAL EARNINGS GROWTH

Global growth was stronger than expected during 2017

Synchronized global growth is likely to persist with continued favorable market growth conditions

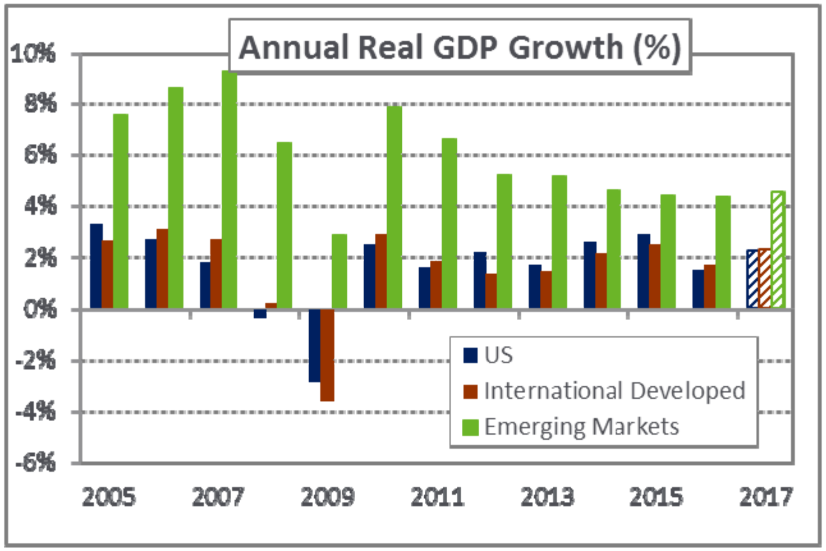
The broad outlook for developed economies has improved as a real earnings recovery has begun

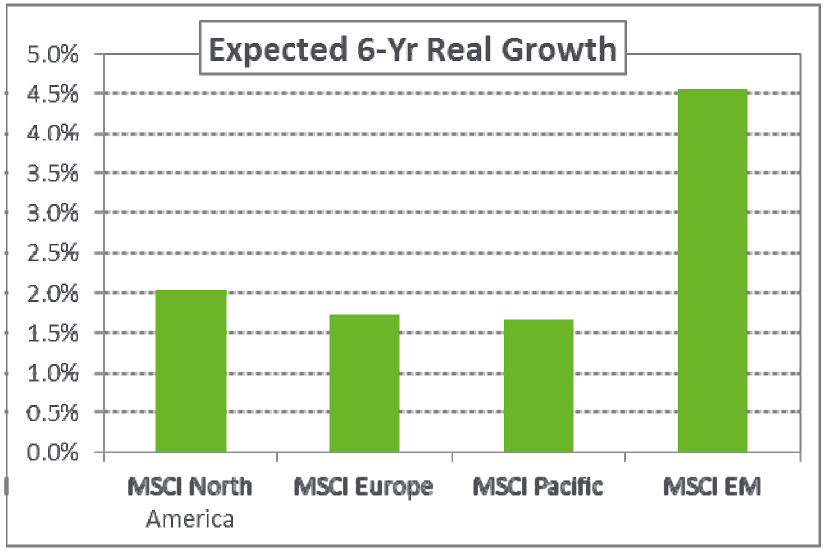
The UK remains a notable outlier as the country continues sorting through Brexit

Emerging economies are broadly expected to continue strong growth

Chinese real growth is expected to slow in future years as the country transitions to a more consumer based economy

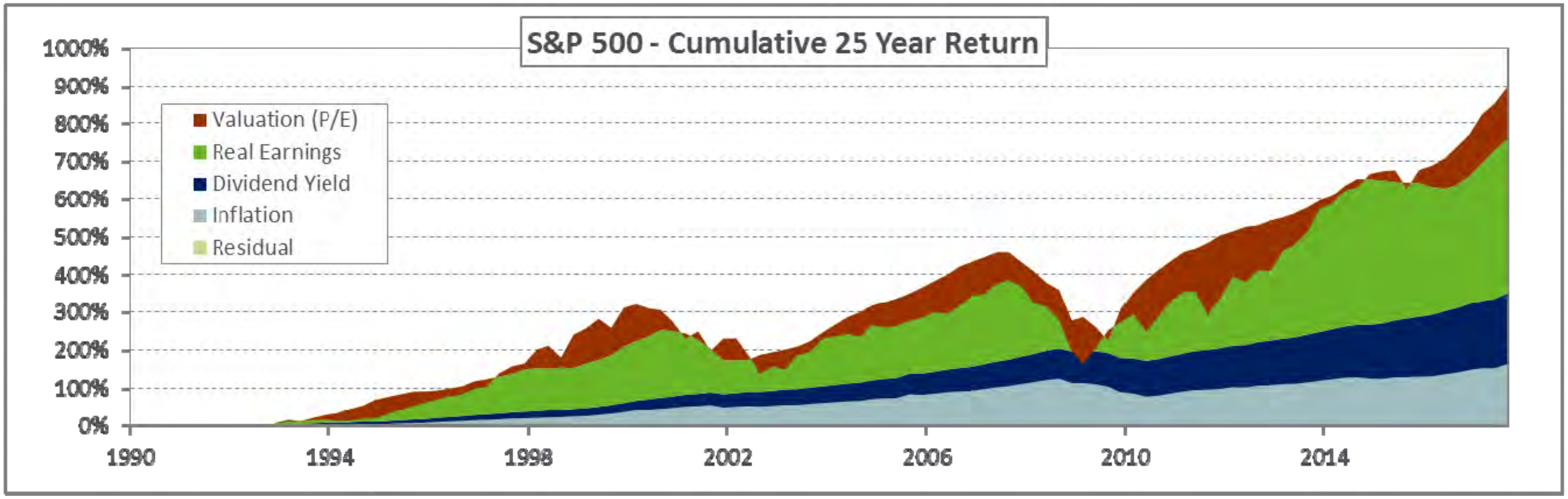
Reforms in India and southeast Asia are expected to boost investment, productivity, and per-capita growth





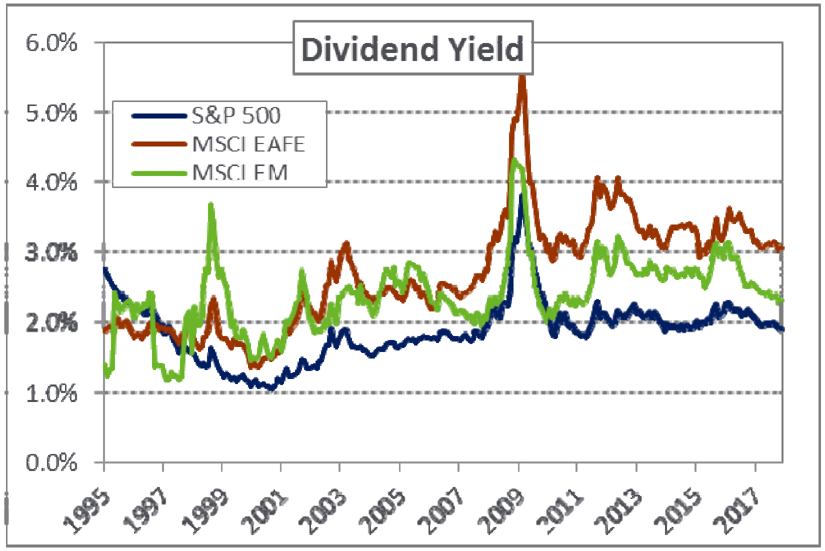
Source: (Top) Bloomberg, NEPC
Source: (Bottom) IMF, MSCI, Bloomberg

EQUITY: DIVIDEND YIELD



Real dividends per share have increased over time, but prices have increased at a faster rate, leading to falling yields

International and Emerging Markets continue to offer a more attractive dividend yield relative to the US



Source: (Top) S&P, NEPC, Bloomberg
Source: (Bottom) S&P, MSCI, Bloomberg

EQUITY: VALUATION

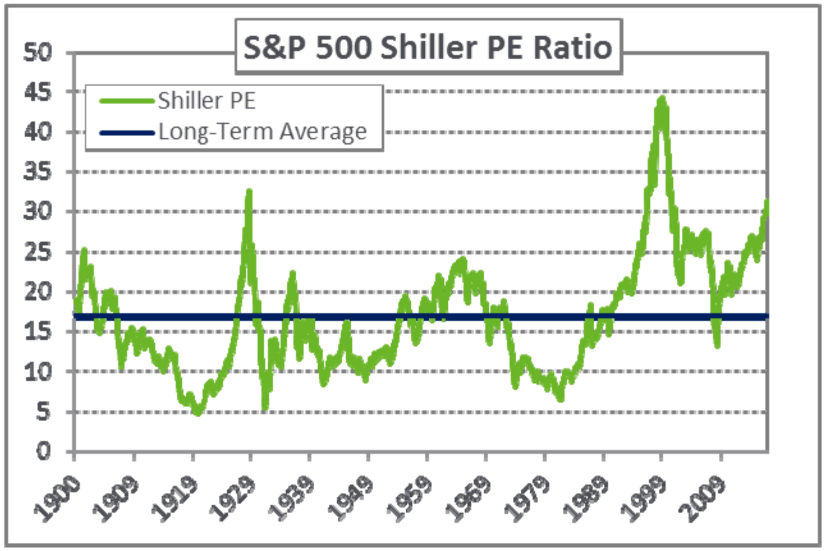
Global equities broadly pushed higher in 2017 supported by macroeconomic data, robust earnings, and easy financial conditions

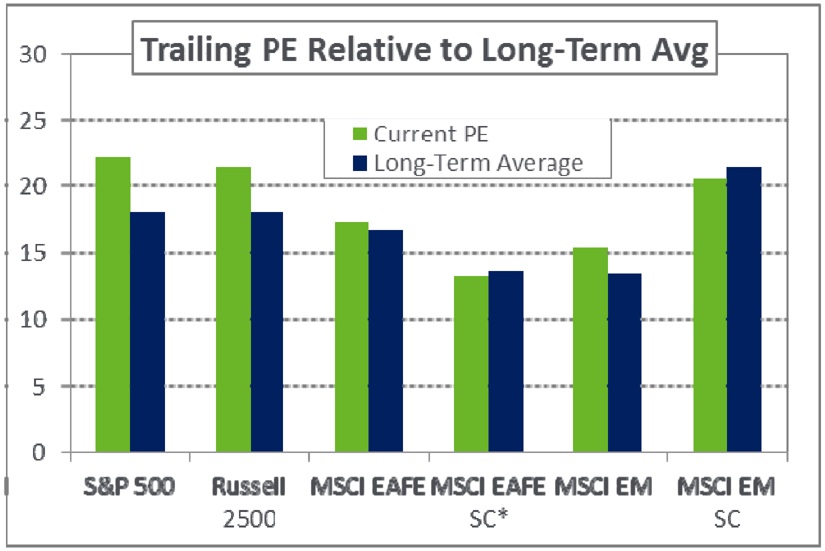
While earnings growth in the US came in stronger than expected, price gains continued to outpace – leading to further P/E multiple expansion

Recovering corporate earnings for international developed markets have allowed valuations to remain relatively attractive

A multi-year earnings recovery in Europe and Japan offers the potential for an elevated return in these markets

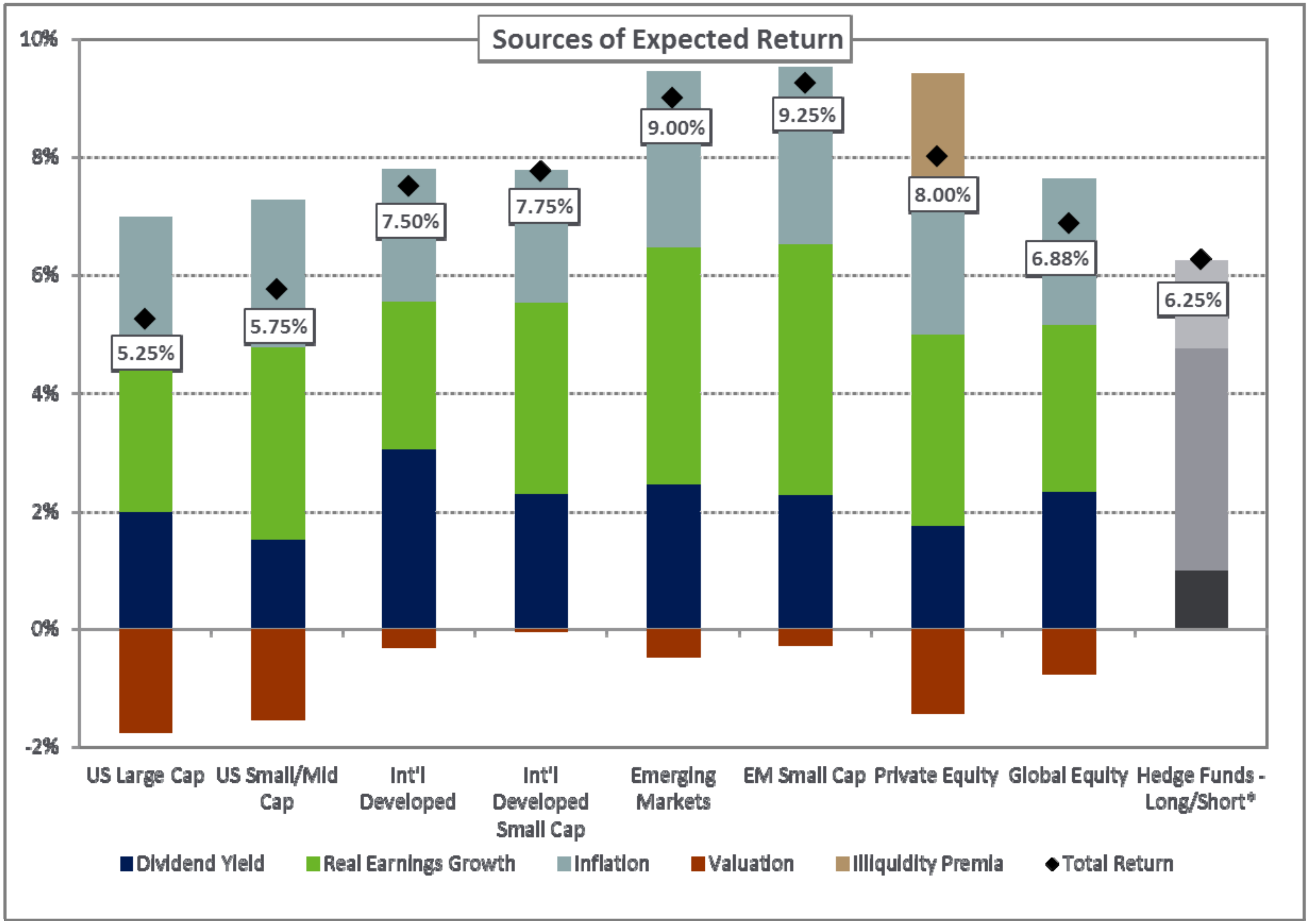
While emerging market equities posted the strongest gains for 2017, valuations remain close to long-term averages relative to domestic markets





Source: (Top) S&P, Shiller
Source: (Bottom) S&P, Russell, MSCI, Bloomberg
*Reflects index-adjusted positive P/E values

EQUITY: BUILDING BLOCKS



Source: NEPC
*Hedge Funds are discussed in detail in the Multi-Asset section

RATES & CREDIT ASSUMPTIONS

RATES & CREDIT: ASSUMPTIONS

Rate & Credit Building Blocks	
Illiquidity Premium	The additional return expected for investments carrying liquidity risk
Government Rates Price Change	The valuation change resulting from a change in the current yield curve to forecasted rates
Spread Price Change	The valuation change resulting from a change in credit spreads over the duration of the investment and highly sensitive to economic cycles
Credit Deterioration	The average loss for credit securities associated with an expected default cycle and recovery rates
Credit Spread	Additional yield premium provided by securities with credit risk
Government Rates	The yield attributed to sovereign bonds that do not have credit risk associated with their valuation

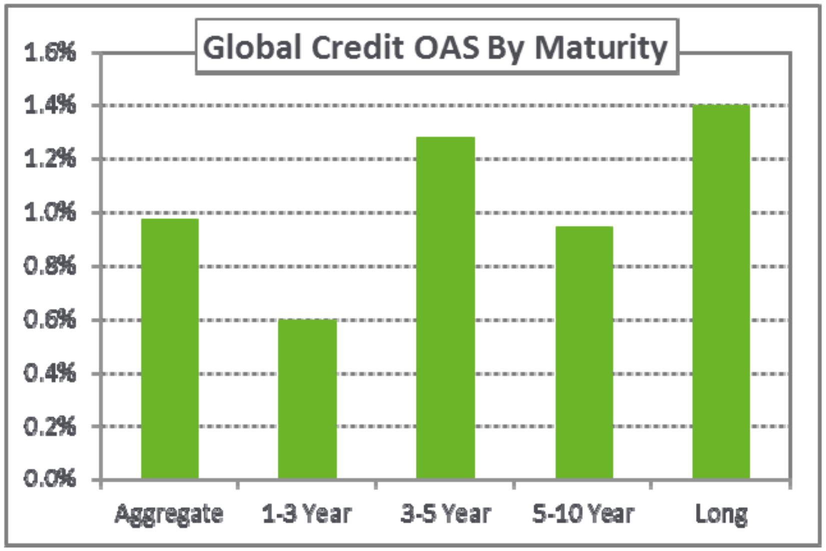
Asset Class	5-7 Year Return	Change 2018-2017
Treasuries	2.25%	+.25%
Investment-Grade Corporate Credit	3.50%	-.25%
Municipal Bonds	2.50%	+.25%
TIPS	3.25%	+.25%
High-Yield Bonds	3.75%	-1.00%
High-Yield Municipal Bonds	3.75%	-.50%
Bank Loans	4.50%	-.75%
Non-US Bonds (Unhedged)	0.50%	-.50%
EMD (External)	4.25%	-.50%
EMD (Local Currency)	6.00%	-.75%
Private Debt	6.50%	-.75%
Core Bonds	*2.75%*	*+.10%*

RATES & CREDIT: CREDIT SPREAD

Strong global growth and yield-seeking investor behavior has compressed credit spreads

Economic growth usually translates to tighter credit spreads due to a lower probability of defaults

In Europe, the ECB's decision to include corporate bonds in its quantitative easing program has also contributed to smaller credit risk premiums globally



Low borrowing costs have encouraged record issuance in both investment grade and high yield bonds

Passive ownership of credit has increased significantly, even with a larger denominator

The outlook for US credit is subdued with limited return opportunities as credit spreads trade below long-term medians

Source: (Top) Barclays, Bloomberg
Source: (Bottom) SIFMA

RATES & CREDIT: RATES PRICE CHANGE

Rates price change include changes in the level of interest rates, changes to the shape of the curve, and roll down

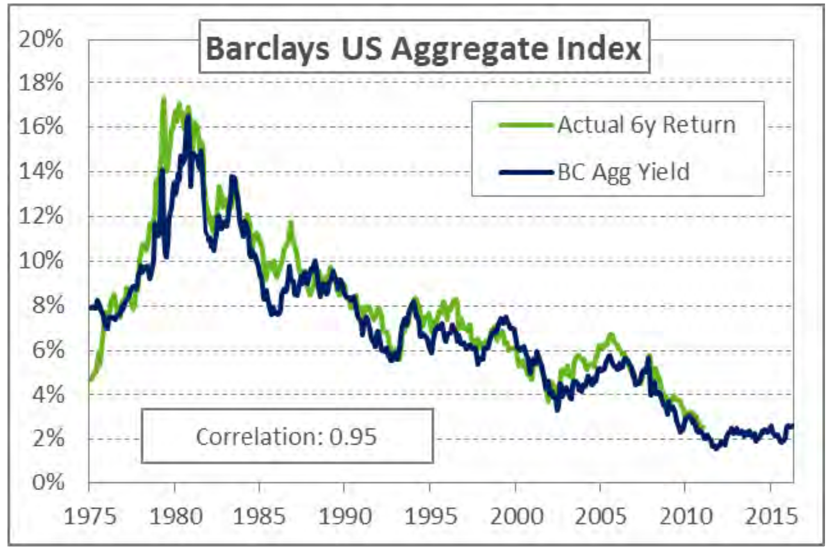
Roll down refers to expected price change due to aging of a bond along the curve

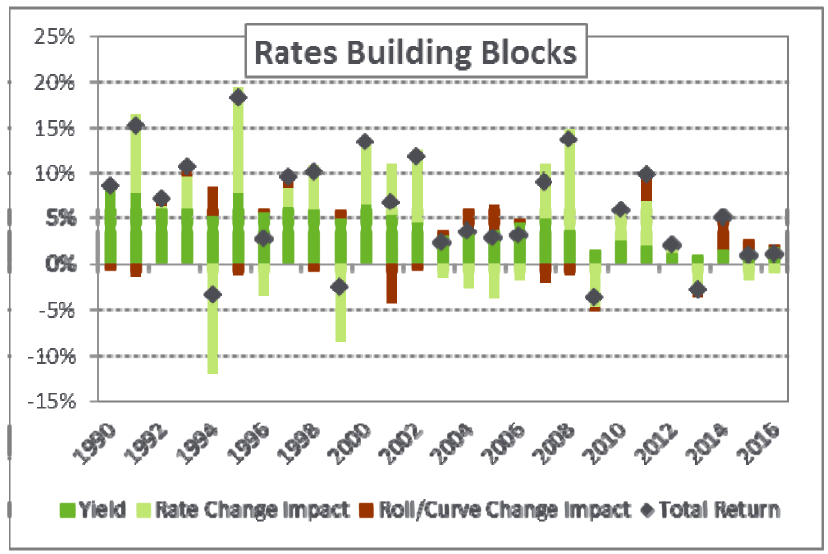
Rate change impact often dominates total return and is a likely detractor in the coming cycle, given expectations of modestly higher rates

Path of interest rates for each market is tied to both central bank actions and inflation expectations

Roll down offers some relief to rising rates when yield curves are steep

As yield curve flattens this can be a drag, pushing investors to shorter duration bonds





Source: (Top) Barclays, Bloomberg, NEPC
Source: (Bottom) Barclays, Bloomberg, NEPC

RATES & CREDIT: SPREAD PRICE CHANGE

Credit spreads continued to tighten throughout the year and remain below long-term averages

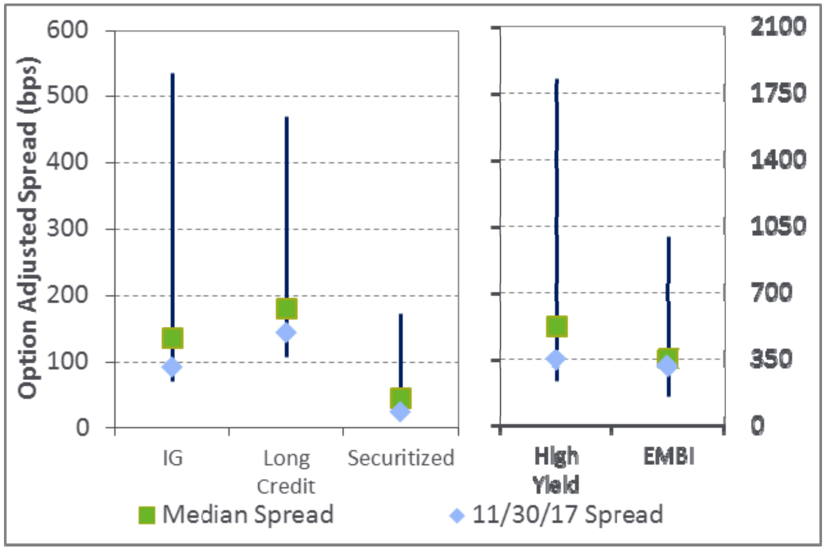
With positive economic indicators and strong technicals, spreads could grind lower

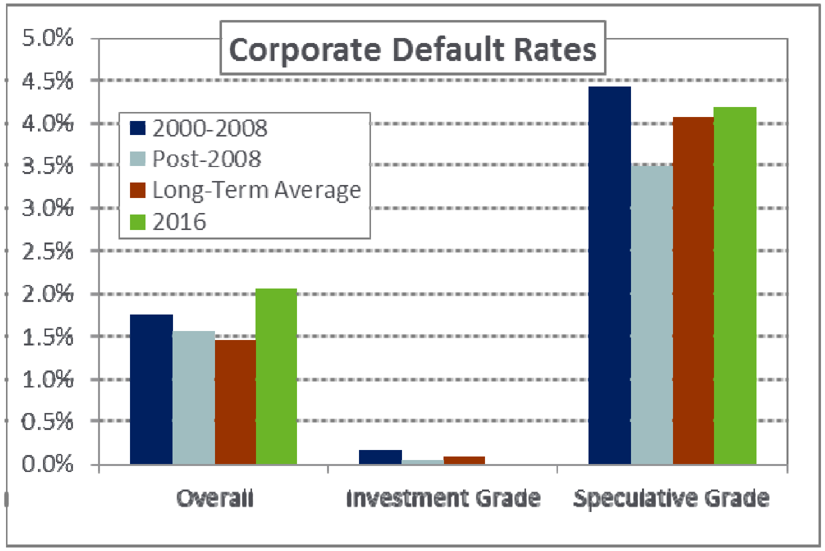
The number of defaults increased last year as a result of the depressed energy and natural resources sector

Over 50% of credit defaults occurred within the energy sector

Nearly all other sectors experienced default rates well below long-term averages

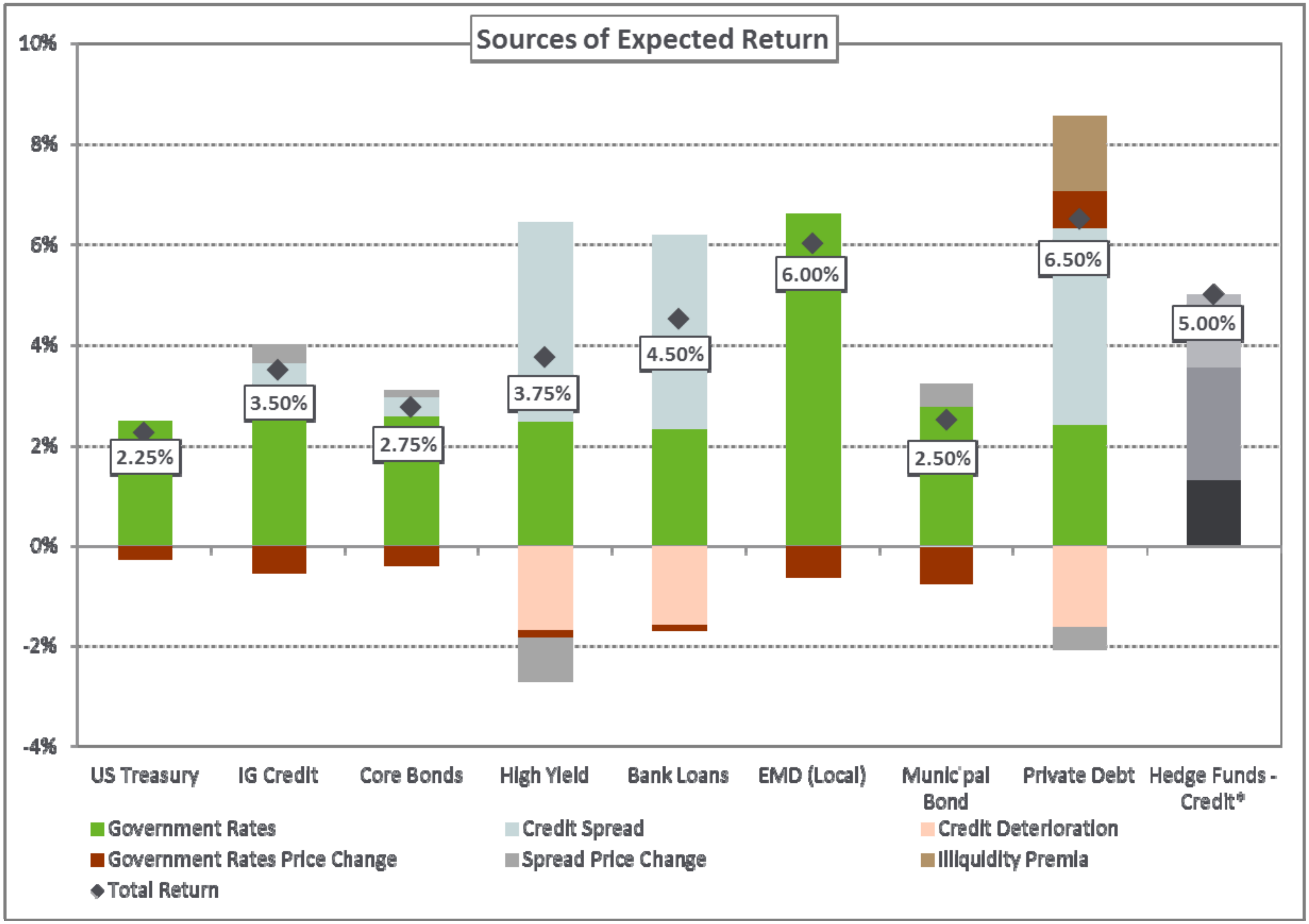
Credit spreads near historic lows suggest investors are receiving less compensation for taking on risk





Source: (Top) JPM, Bloomberg, NEPC. As of 01/31/2000
Source: (Bottom) S&P, NEPC

CREDIT: BUILDING BLOCKS



Source: NEPC

*Hedge Funds are discussed in detail in the Multi-Asset section

REAL ASSETS ASSUMPTIONS

NEPC, LLC

REAL ASSETS: ASSUMPTIONS

Real Assets Building Blocks	
Illiquidity Premium	The additional return expected for investments carrying liquidity risk
Valuation	The expected change in price of the underlying asset reverting to a long-term real average or terminal value assumption
Inflation	Incorporates the inflation paths as defined by TIPS breakeven expectations and NEPC expected inflation assumptions
Real Earnings Growth	Reflects market-specific real growth for each equity asset class as a weighted-average derived from index country revenue contribution and forecasted GDP growth
Real Income	Represents the inflation-adjusted income produced by the underlying tangible or physical asset

Asset Class	5-7 Year Return	Change 2018-2017
Commodities	4.75%	-
MLPs	7.25%	+.25%
REITs	6.50%	-
Core Real Estate	5.75%	-.25%
Non-Core Real Estate	7.00%	N/A
Private Real Assets: Energy/Metals	8.00%	-.25%
Private Real Assets: Infrastructure/Land	6.00%	-
Real Assets (Liquid)	*5.87%*	*-.05%*

REAL ASSETS: REAL INCOME

Equity-like investments: Real income represents the inflation-adjusted dividend yield

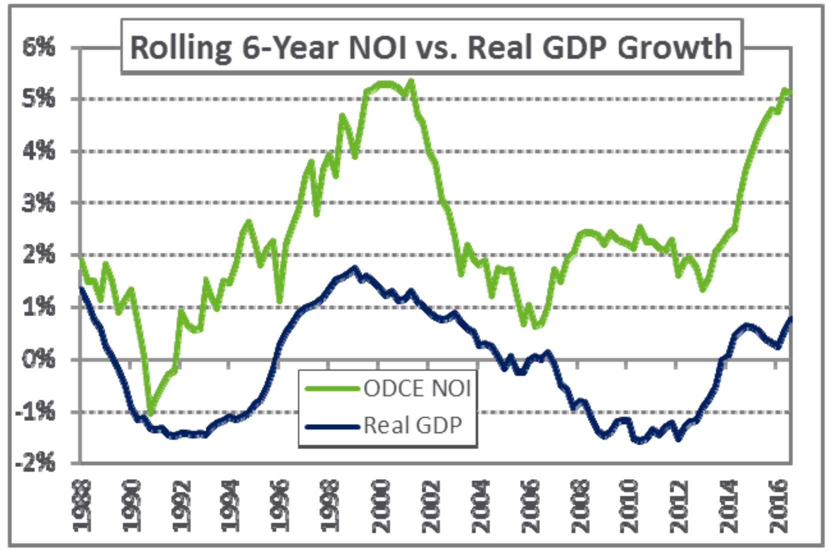
- Includes MLPs, natural resource equities, global infrastructure equities, and REITs
- Notably, MLP yields have increased relative to last year in combination with generally stronger balance sheets and a double-digit price decline

Real Estate: Real income growth is a function of Net Operating Income (NOI) growth

- Rolling 6-year NOI growth exhibits cyclically economic pattern and appears to be at or near its peak

Commodities: Real income is represented by collateral return

- A cash proxy is used to represent the collateral and as such, it represents the return on cash over the investment horizon



Real Asset Yields	11/30/16	11/30/17
MLPs	7.4%	8.1%
Core Real Estate	4.7%	4.6%
US REITs	4.6%	4.0%
Global REITs	4.2%	3.6%
Global Infrastructure Equities	4.1%	3.9%
Natural Resource Equities	3.0%	3.3%
US 10-Yr Breakeven Inflation	2.0%	1.9%
Commodity Index Roll Yield	-6.5%	-1.4%

Source: (Top) NCREIF, Bloomberg, NEPC
Source: (Bottom) NCREIF, Alerian, NAREIT, S&P, Bloomberg

REAL ASSETS: VALUATION

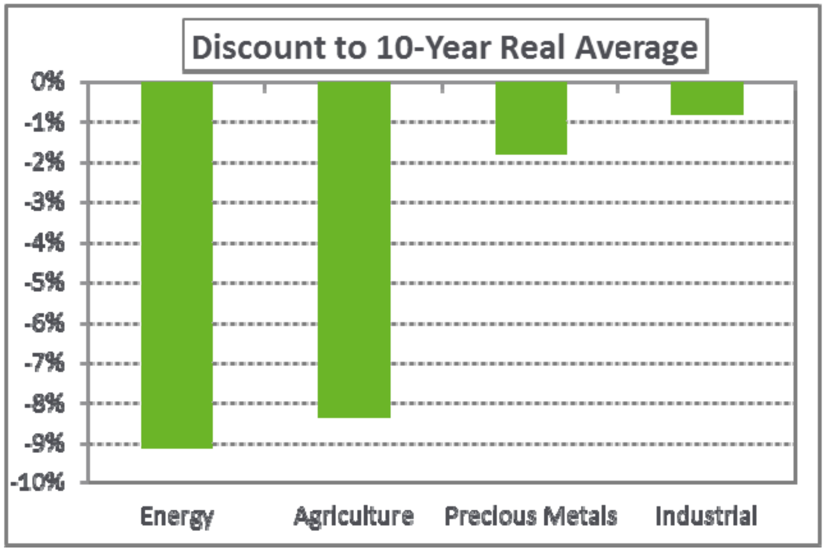
Change in commodity valuations can be attributed to both roll yield and change in spot price

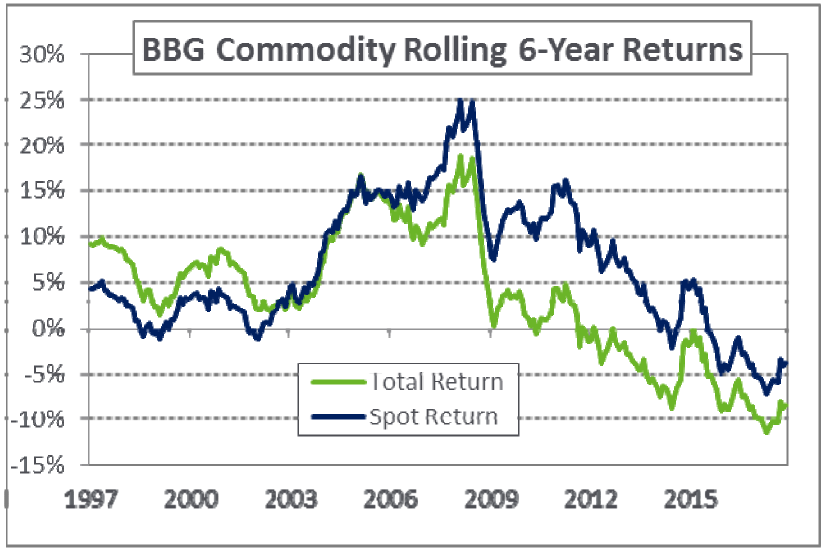
Commodity prices continue to trade below their long-term real averages, particularly in the energy and agriculture sectors

Roll yield continues to be a hurdle for investing in commodity futures

Post-2008, spot returns have had consistently higher returns than total return indices – demonstrating the impact of negative roll yield on overall investments

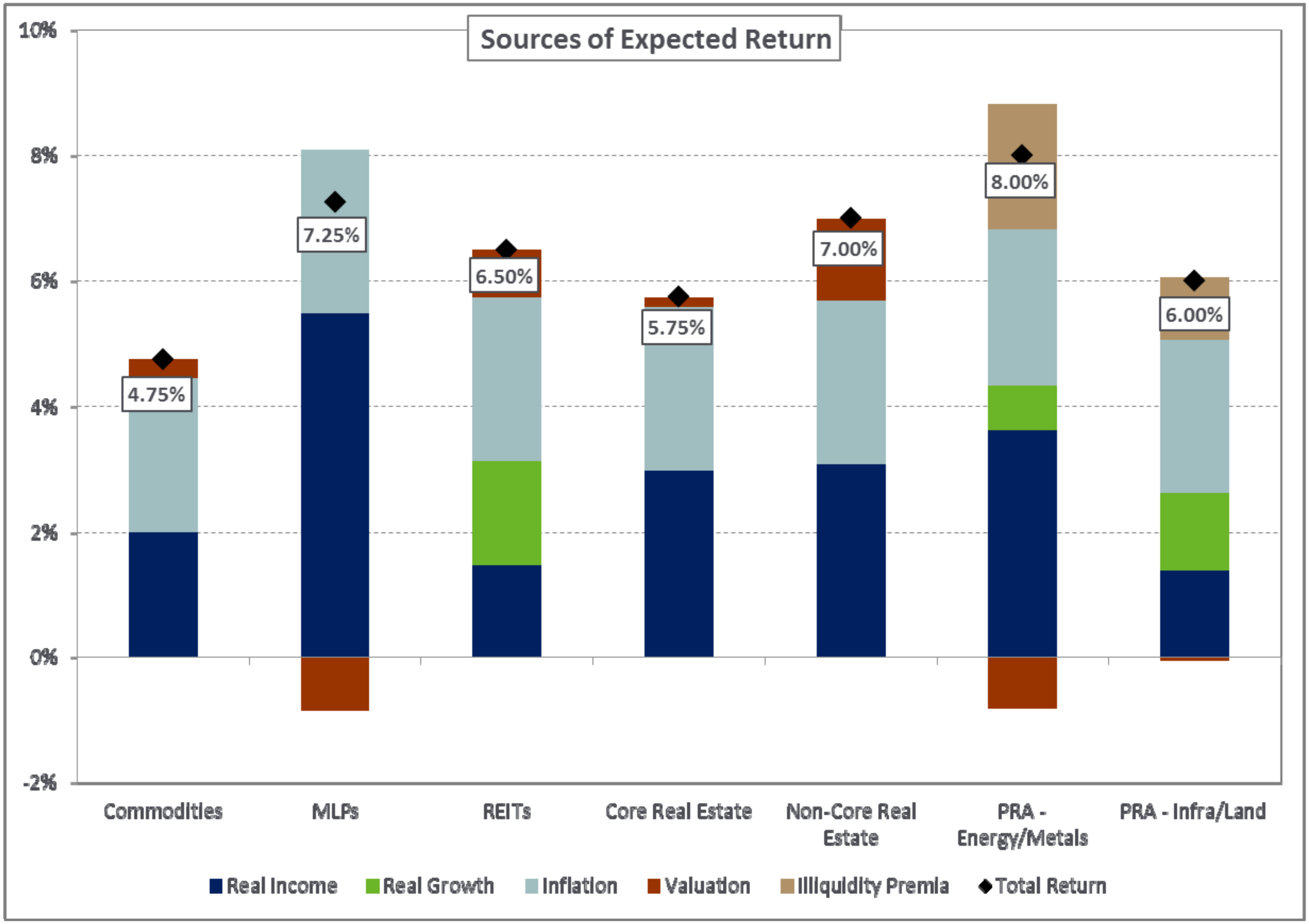
In the latter half of 2017, commodity prices rallied off mid-year lows, causing the negative roll yield to be much smaller relative to last year





Source: (Top) Bloomberg, NEPC
Source: (Bottom) Bloomberg, NEPC

REAL ASSETS: BUILDING BLOCKS



Source: NEPC

MULTI-ASSET & DERIVED COMPOSITES

NEPC, LLC

MULTI-ASSET & DERIVED COMPOSITES

Multi-asset assumptions are the result of the sum of equity, credit, and real asset building blocks

Global 60/40: 60% global equity and 40% global bonds

US 60/40: 60% US equity and 40% core bonds

Risk Parity 10% Vol: Average of 3 common risk parity exposures

GAA Strategies: Average of 3 common GAA exposures

Global Equity: Market weighted blend of MSCI ACWI IMI (US, Non-US Developed, Emerging)

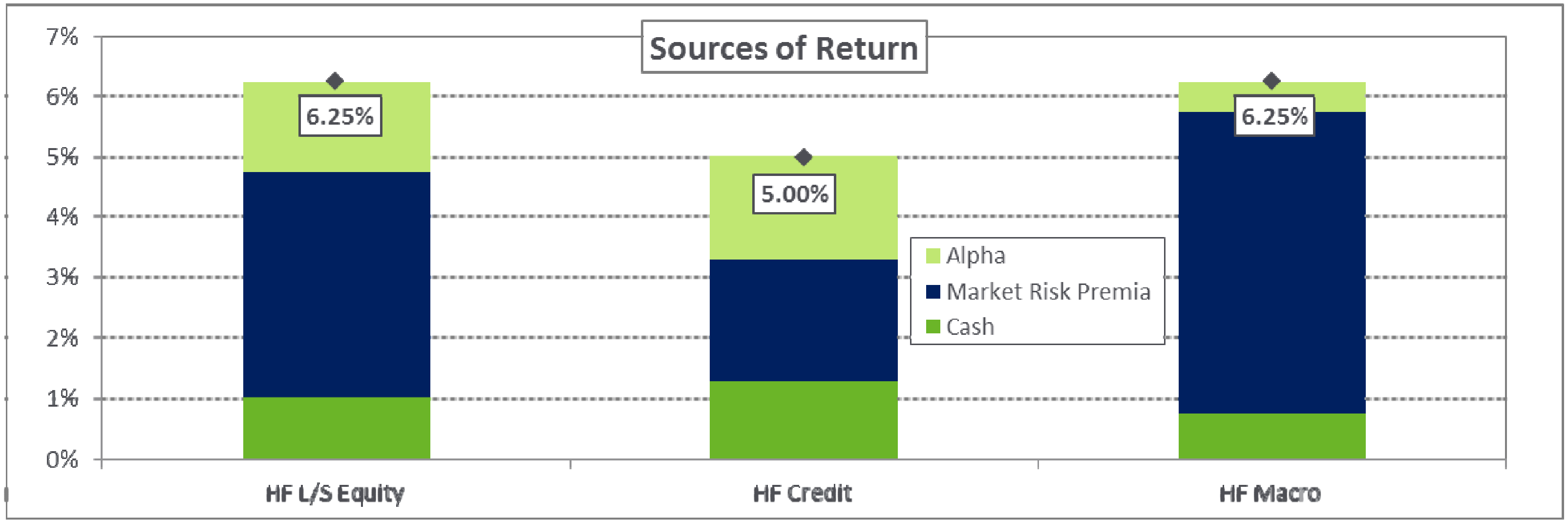
Core Bonds: Market weighted blend of Bloomberg Barclays US Aggregate Bond Index (Treasuries, IG Credit, MBS)

Real Assets (Liquid): Weighted blend of TIPS, global equities, REITs, and commodities

Hedge Funds: Weighted blend of 40% HF equity, 40% HF credit , and 20% HF macro

Asset Class	5-7 Year Return	Change 2018-2017
Global 60/40	4.91%	-.13%
US 60/40	4.54%	-.24%
Risk Parity 10% Vol	5.11%	+.04%
GAA Strategies	5.44%	-.11%
Hedge Funds – Macro Strategies	6.25%	-
Global Equity	6.88%	-.33%
Core Bonds	2.75%	+.10%
Real Assets (Liquid)	5.87%	-.05%
Hedge Funds	5.83%	-.12%

HEDGE FUND ASSUMPTIONS



Source: NEPC

	Equity	Credit	Macro
Underlying Market Beta	Global Equity	High Yield, $ EMD, Bank Loans	Relative Value (Rates, Equity, Commodities)

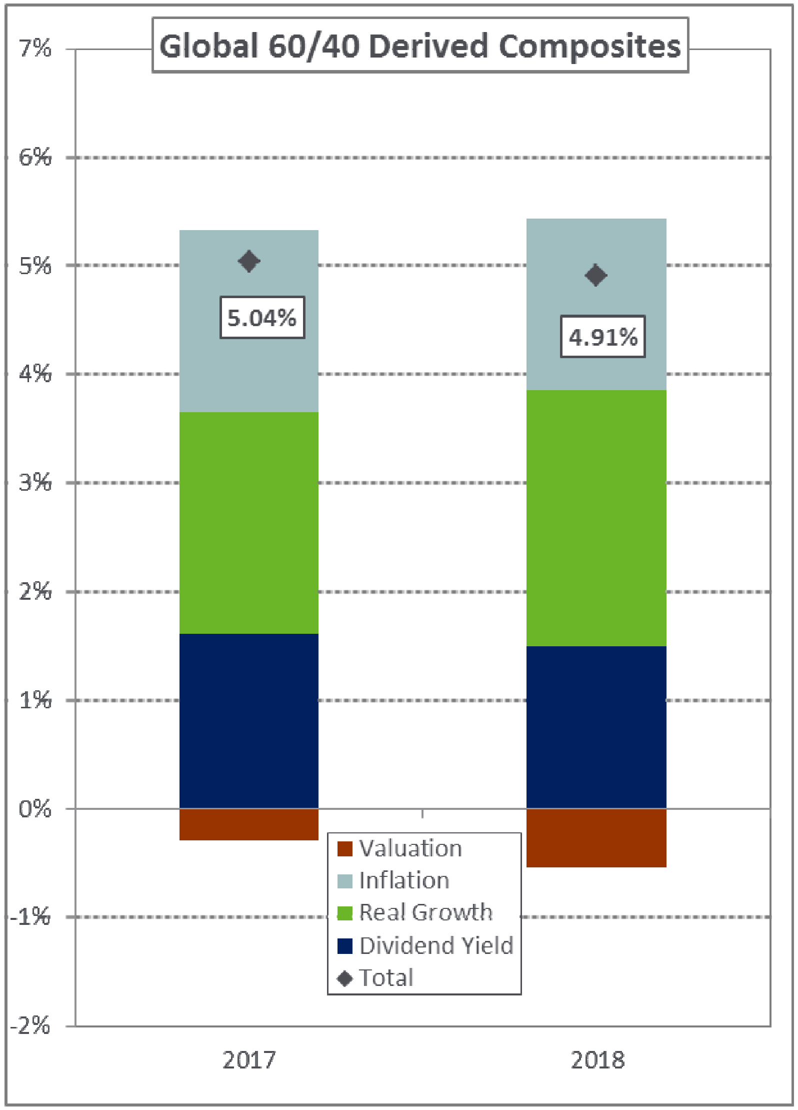
Hedge fund assumption constructed from building blocks of broad hedge fund categories

Build up of 40% Equity, 40% Credit, and 20% Macro-related strategies

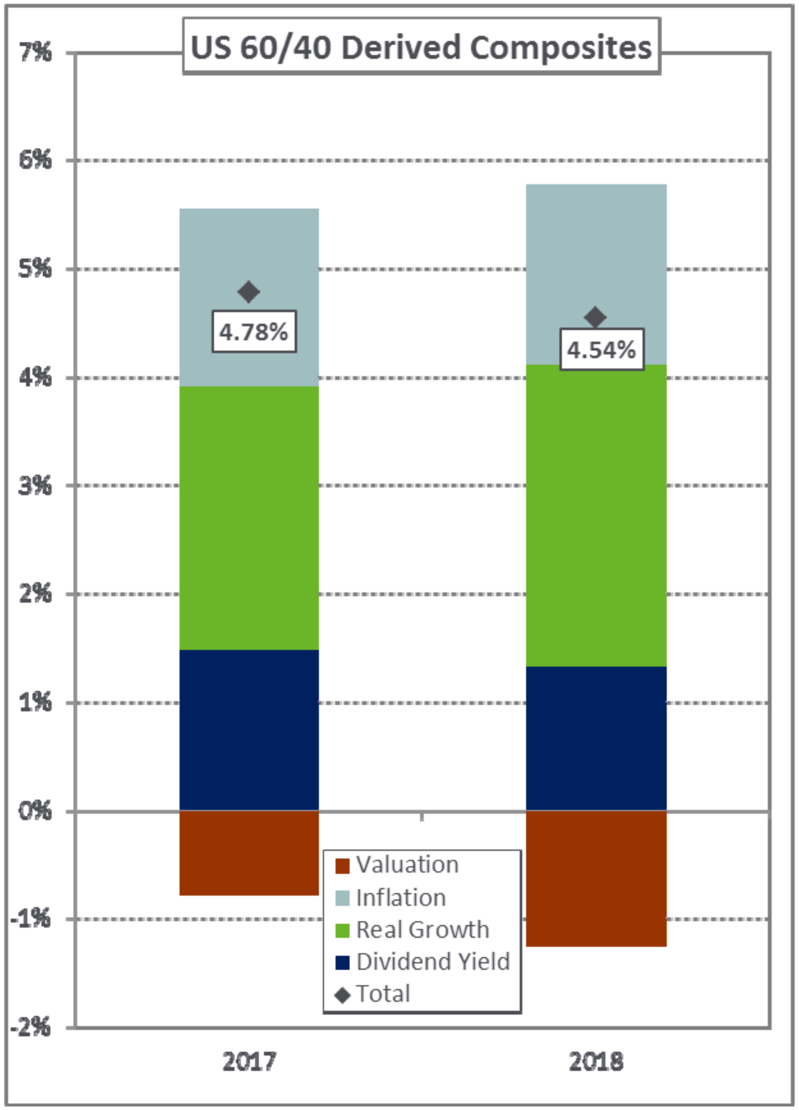
Based on analysis of historical return, risk and correlation for underlying strategies and total universe

Use NEPC-standard market betas as building blocks as well as an alpha component

GLOBAL VS. US 60/40 DERIVED COMPOSITES



Source: NEPC



Source: NEPC

APPENDIX

NEPC, LLC

2018 5-7 YEAR RETURN FORECASTS

Geometric Expected Return			
Asset Class	**2018**	**2017**	**2018-2017**
Cash	2.00%	1.75%	+0.25%
Treasuries	2.25%	2.00%	+0.25%
IG Corp Credit	3.50%	3.75%	-0.25%
MBS	2.50%	2.25%	+0.25%
Core Bonds*	2.75%	2.65%	+0.10%
TIPS	3.25%	3.00%	+0.25%
High-Yield Bonds	3.75%	4.75%	-1.00%
Bank Loans	4.50%	5.25%	-0.75%
Non-US Bonds (Unhedged)	0.50%	1.00%	-0.50%
Non-US Bonds (Hedged)	0.73%	1.09%	-0.36%
EMD External	4.25%	4.75%	-0.50%
EMD Local Currency	6.00%	6.75%	-0.75%
Large Cap Equities	5.25%	5.75%	-0.50%
Small/Mid Cap Equities	5.75%	6.00%	-0.25%
Int'l Equities (Unhedged)	7.50%	7.25%	+0.25%
Int'l Equities (Hedged)	7.82%	7.57%	+0.25%
Emerging Int'l Equities	9.00%	9.50%	-0.50%
Private Equity	8.00%	8.25%	-0.25%
Private Debt	6.50%	7.25%	-0.75%
Core Real Estate	5.75%	6.00%	-0.25%
Commodities	4.75%	4.75%	-
Hedge Funds**	5.83%	5.95%	-0.12%

* Core Bonds assumption based on market weighted blend of components of Aggregate Index (Treasuries, IG Corp Credit, and MBS).
** Hedge Funds is a calculated blend of 40% Equity, 40% Credit, 20% Macro-related strategies.

2018 5-7 YEAR RETURN FORECASTS

Geometric Expected Return			
Asset Class	**2018**	**2017**	**2018-2017**
Short Treasuries	2.25%	2.00%	+0.25%
US 10 Yr. Treasury	2.25%	2.00%	+0.25%
Long Treasuries	2.00%	1.75%	+0.25%
20+ Year STRIPS	1.75%	1.50%	+0.25%
Short Credit	2.75%	2.75%	-
Long Credit	4.00%	4.25%	-0.25%
Long Government/Credit*	3.26%	3.33%	-0.07%
Non-US Cash**	0.50%	0.25%	+0.25%
Non-US Inflation-Linked Bonds	1.75%	1.00%	+0.75%
Short High Yield	4.25%	5.00%	-0.75%
Municipal Bonds (1-10 Year)	2.50%	-	-
High Yield Municipal Bonds	3.75%	4.25%	-0.50%
Global Equity*	6.88%	7.21%	-0.33%
MLPs	7.25%	7.00%	+0.25%
REITs	6.50%	6.50%	-
Real Assets (Liquid)**	5.87%	5.92%	-0.05%
Non-Core Real Estate	7.00%	N/A	N/A
Private Real: Energy/Metals	8.00%	8.25%	-0.25%
Private Real: Infrastructure/Land	6.00%	6.00%	-
Hedge Funds - Long/Short	6.25%	6.25%	-
Hedge Funds – Credit	5.00%	5.25%	-0.25%
Hedge Funds – Macro	6.25%	6.25%	-

* Assumption based on market weighted blend of index components
** Custom weighted blend of underlying asset classes

2018 VOLATILITY FORECASTS

Volatility			
Asset Class	**2018**	**2017**	**2018-2017**
Cash	1.00%	1.00%	-
Treasuries	5.50%	5.50%	-
IG Corp Credit	7.50%	7.50%	-
MBS	7.00%	7.00%	-
Core Bonds*	5.99%	6.03%	-0.04%
TIPS	6.50%	6.50%	-
High-Yield Bonds	13.00%	13.00%	-
Bank Loans	9.00%	9.00%	-
Non-US Bonds (Unhedged)	10.00%	8.50%	+1.50%
Non-US Bonds (Hedged)	4.50%	5.00%	-0.50%
EMD External	13.00%	13.00%	-
EMD Local Currency	13.00%	15.00%	-2.00%
Large Cap Equities	17.50%	17.50%	-
Small/Mid Cap Equities	21.00%	21.00%	-
Int'l Equities (Unhedged)	21.00%	21.00%	-
Int'l Equities (Hedged)	18.00%	18.00%	-
Emerging Int'l Equities	28.00%	28.00%	-
Private Equity	23.00%	23.00%	-
Private Debt	13.00%	14.00%	-1.00%
Core Real Estate	13.00%	15.00%	-2.00%
Commodities	19.00%	19.00%	-
Hedge Funds**	9.07%	8.74%	-0.33%

* Core Bonds assumption based on market weighted blend of components of Aggregate Index (Treasuries, IG Corp Credit, and MBS).
** Hedge Funds is a calculated blend of 40% Equity, 40% Credit, 20% Macro-related strategies.

2018 VOLATILITY FORECASTS

Volatility			
Asset Class	**2018**	**2017**	**2018-2017**
Short Treasuries	2.50%	2.50%	-
US 10 Yr. Treasury	7.50%	7.50%	-
Long Treasuries	12.00%	12.00%	-
20+ Yr. STRIPS	19.00%	19.00%	-
Short Credit	3.50%	3.50%	-
Long Credit	12.00%	13.00%	-1.00%
Long Government/Credit*	11.26%	12.01%	-0.75%
Non-US Cash**	1.00%	1.00%	-
Non-US 10 Yr. Sovereigns**	6.50%	6.50%	-
Non-US Inflation-Linked Bonds (H)	5.50%	6.00%	-0.50%
Short High Yield	8.50%	9.00%	-0.50%
Municipal Bonds (1-10 Year)	5.50%	-	-
Global Equity***	18.22%	18.26%	-0.04%
MLPs	19.00%	20.00%	-1.00%
REITs	21.00%	21.00%	-
Real Assets (Liquid)****	13.06%	12.83%	+0.23%
Non-Core Real Estate	17.00%	N/A	N/A
Private Real: Energy/Metals	21.00%	21.00%	-
Private Real: Infrastructure/Land	12.00%	14.00%	-2.00%
Hedge Funds - Long/Short	11.00%	11.00%	-
Hedge Funds – Credit	9.50%	9.50%	-
Hedge Funds – Macro	9.50%	9.50%	-

* Assumption based on market weighted blend of index components
** Custom weighted blend of underlying asset classes

2018 30 YEAR RETURN FORECASTS

Geometric Expected Return			
Asset Class	2018	2017	2018-2017
Cash	2.75%	3.00%	-0.25%
Treasuries	3.25%	3.50%	-0.25%
IG Corp Credit	4.75%	5.00%	-0.25%
MBS	3.25%	3.50%	-0.25%
Core Bonds*	3.75%	4.00%	-0.25%
TIPS	3.75%	3.75%	-
High-Yield Bonds	5.50%	5.75%	-0.25%
Bank Loans	5.50%	6.00%	-0.50%
Non-US Bonds (Unhedged)	2.50%	2.75%	-0.25%
Non-US Bonds (Hedged)	2.77%	2.87%	-0.10%
EMD External	5.00%	5.75%	-0.75%
EMD Local Currency	6.50%	6.50%	-
Large Cap Equities	7.50%	7.50%	-
Small/Mid Cap Equities	7.75%	7.75%	-
Int'l Equities (Unhedged)	7.75%	7.75%	-
Int'l Equities (Hedged)	8.14%	8.14%	-
Emerging Int'l Equities	9.25%	9.50%	-0.25%
Private Equity	9.50%	9.50%	-
Private Debt	7.50%	8.00%	-0.50%
Core Real Estate	6.50%	6.50%	-
Commodities	5.50%	5.50%	-
Hedge Funds**	6.34%	6.47%	-0.13%

* Core Bonds assumption based on market weighted blend of components of Aggregate Index (Treasuries, IG Corp Credit, and MBS).
** Hedge Funds is a calculated blend of 40% Equity, 40% Credit, 20% Macro-related strategies.

2018 30 YEAR RETURN FORECASTS

Geometric Expected Return			
Asset Class	2018	2017	2018-2017
Short Treasuries	3.00%	3.00%	-
US 10 Yr. Treasury	3.50%	3.50%	-
Long Treasuries	3.50%	3.75%	-0.25%
20+ Yr. STRIPS	3.50%	3.75%	-0.25%
Short Credit	3.75%	3.75%	-
Long Credit	5.25%	5.75%	-0.50%
Long Government/Credit*	4.62%	5.04%	-0.42%
Non-US Cash**	2.00%	2.00%	-
Non-US 10 Yr. Sovereigns**	2.50%	2.50%	-
Non-US Inflation-Linked Bonds	3.00%	2.75%	+0.25%
Short High Yield	5.25%	5.75%	-0.50%
Municipal Bonds (1-10 Year)	3.25%	-	-
Global Equity***	8.24%	8.35%	-0.11%
MLPs	7.50%	7.50%	-
REITs	6.75%	6.75%	-
Real Assets (Liquid)****	6.75%	6.79%	-0.04%
Non-Core Real Estate	7.50%	N/A	N/A
Private Real: Energy/Metals	7.75%	7.75%	-
Private Real: Infrastructure/Land	6.25%	6.00%	+0.25%
Hedge Funds - Long/Short	7.25%	7.25%	-
Hedge Funds – Credit	5.25%	5.50%	-0.25%
Hedge Funds – Macro	6.25%	6.25%	-

* Assumption based on market weighted blend of index components
** Custom weighted blend of underlying asset classes

INFORMATION DISCLAIMER

Past performance is no guarantee of future results.

The goal of this report is to provide a basis for substantiating asset allocation recommendations. The opinions presented herein represent the good faith views of NEPC as of the date of this report and are subject to change at any time.

Information on market indices was provided by sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.

All investments carry some level of risk. Diversification and other asset allocation techniques do not ensure profit or protect against losses.

This report is provided as a management aid for the client's internal use only. This report may contain confidential or proprietary information and may not be copied or redistributed to any party not legally entitled to receive it.

Exhibit 2

STATE UNIVERSITIES RETIREMENT SYSTEM

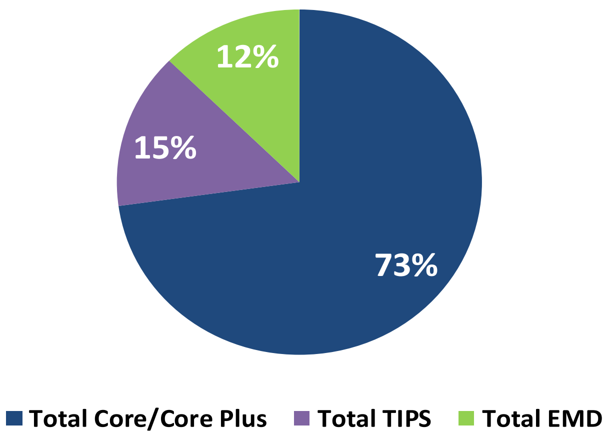
Fixed Income Asset Class Review

February 2018

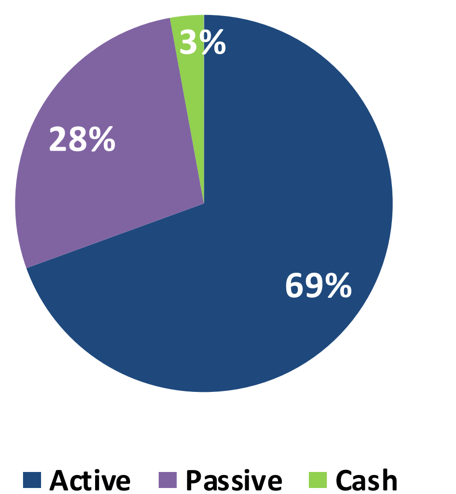
S·U·R·S
STATE UNIVERSITIES RETIREMENT SYSTEM

Fixed Income Portfolio Overview

- **SURS Current Fixed Income Exposure ~ $4.7 billion:**
  - Cash Flow Account ~ $136 million
  - Core Fixed Income ~ $730 million
  - Core Plus Fixed Income ~ $1.5 billion
  - Passive Fixed Income ~ $615 million
  - Absolute Return Fixed Income ~ $479 million
  - TIPS ~ $686 million
  - Emerging Market Debt ~ $593 million



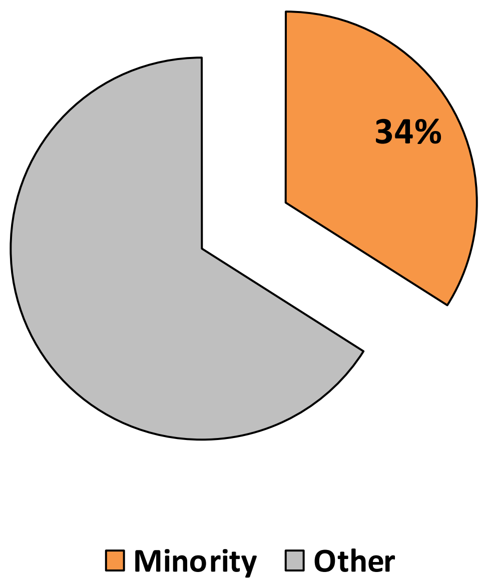
- **SURS Target vs. Actual Fixed Income Allocations:**
  - Fixed Income: Target = 19.0% Actual = 18.4%
  - TIPS: Target = 4.0% Actual = 3.7%
  - Emerging Market Debt: Target = 3.0% Actual = 3.2%
- **Active vs. Passive Allocations:**
  - Active Fixed Income = $3.3 billion or 69%
  - Passive Fixed Income = $1.3 billion or 28%
  - Cash = $168 million or 3%

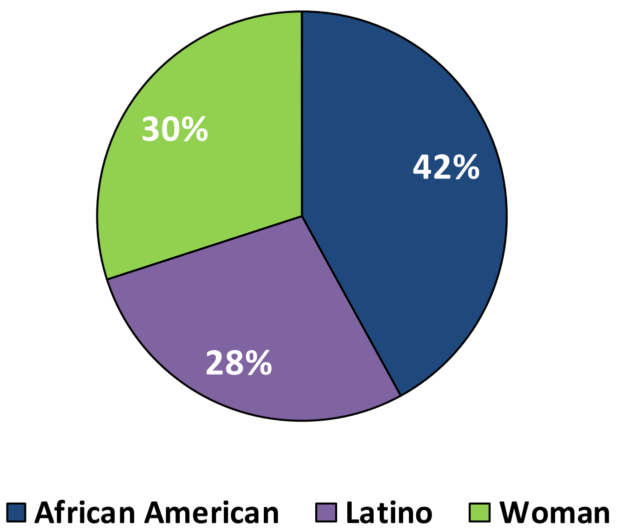


Data as of September 30, 2017

Fixed Income Portfolio Overview

- **SURS Minority Manager Exposure ~ $1.6 billion or 34% of Total Fixed Income:**





Managers: Progress, Pugh, Smith Graham, LM, Garcia, RhumbLine.

Data as of September 30, 2017

Bloomberg Barclays U.S. Aggregate Bond Index

- **The Bloomberg Barclays U.S. Aggregate Bond Index (previously known as the Lehman Brothers U.S. Aggregate Bond Index) was created in 1986 with history backfilled to January 1, 1976 and is the most commonly used benchmark for fixed income portfolios.**
- **Benchmark for approximately 60% of SURS fixed income assets.**
- **The index includes:**
  - U.S. Treasury Securities
  - Government Agency Securities
  - Corporate Securities
  - Mortgage Backed Securities
  - Asset Backed Securities
  - Commercial Mortgage Backed Securities

Source: barcap.com

S·U·R·S
STATE UNIVERSITIES RETIREMENT SYSTEM

Bloomberg Barclays U.S. Aggregate Bond Index

- **Selected Criteria for Inclusion in the Index:**
  - U.S. Dollar Denominated
  - Investment Grade (Rated Baa3/BBB-/BBB- or higher by Moody's/S&P/Fitch)
  - Fixed Rate Coupon
  - Minimum Par Amount Outstanding (Varies by Security Type)
  - At Least One Year Until Final Maturity
  - SEC Registered Securities (Bonds Exempt from Registration at the time of issuance and SEC Rule 144A Securities with Registration Rights are Eligible)
  - Only Fully Taxable Issues are Eligible
- **Examples of Securities <u>Not</u> Included:**
  - High Yield (Below Investment Grade) Securities
  - Tax Exempt Municipal Securities
  - Private Placements
  - Inflation Linked Bonds (TIPS)
  - Non-Agency Mortgages
  - Floating Rate Bonds
  - Non-Dollar Denominated Bonds

Source: barcap.com

S·U·R·S
STATE UNIVERSITIES RETIREMENT SYSTEM

Examples of Fixed Income Risk

- **Interest Rate Risk:** Bond prices on the secondary market can be higher or lower than the face value of the bond depending on the economic environment and market conditions, both of which can be affected by a change in interest rates.
- **Credit Risk:** Bonds carry the risk of default and/or being downgraded. Default would mean that the issuer would be unable to make principal and/or interest payments. A downgrade occurs when the rating agencies change their opinion of the issuer's creditworthiness.
- **Prepayment Risk:** The risk that the issuer of a security will repay principal prior to the bond's maturity date.
- **Liquidity Risk:** The risk that the manager might not be able to buy or sell a bond quickly for a price that is close to the true underlying value of the bond.
- **Currency Risk:** The risk of loss from fluctuating foreign exchange rates when an investor has exposure to foreign currency or in foreign-currency-traded investments.

S·U·R·S
STATE UNIVERSITIES RETIREMENT SYSTEM

Passive Fixed Income

- **Passive Fixed Income Managers Attempt to Add Value by:**
  - Replicating the risk/return characteristics of the Bloomberg Barclay's Aggregate Bond Index and the Bloomberg Barclays U.S. TIPS Index.
  - The Bloomberg Barclays U.S. Aggregate bond index contains over 9,400 securities, but many of those securities are not be easily available, so secondary market liquidity is constrained. As a result, passive managers must make some active calls when creating a portfolio in order to replicate performance and characteristics of the benchmark. State Street uses a combination of commingled funds and separate account holdings in order to track the index.
  - The Bloomberg Barclays U.S. TIPS Index contained 38 securities as of September 30, 2017. The RhumbLine portfolio held 38 securities in order to track the index.
- **Benefits of passive management include cost, liquidity, and reliability.**
- **SURS Managers:** State Street (U.S. Aggregate Index) & RhumbLine (U.S. TIPS Index).

S·U·R·S
STATE UNIVERSITIES RETIREMENT SYSTEM

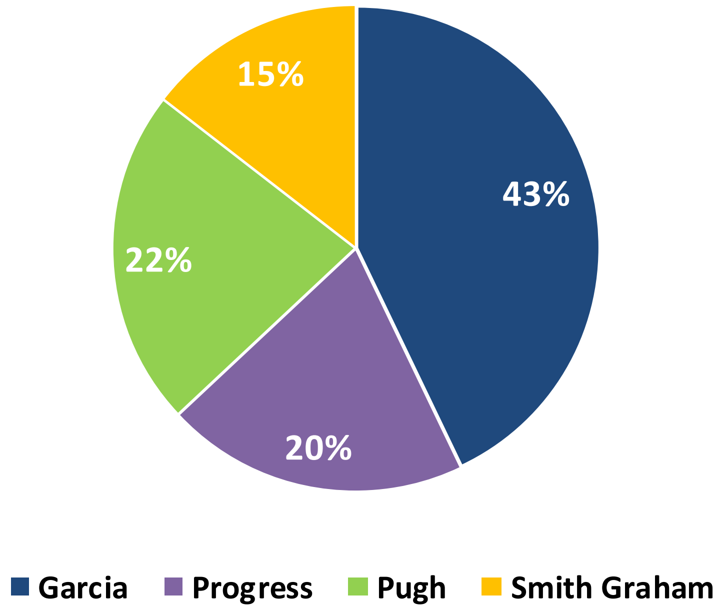
Core Fixed Income

- **Core Fixed Income Managers Attempt to Add Value by:**
  - **Duration Management:** Duration is a measure of interest rate risk. It is stated in years and indicates how much the price of a bond is likely to fluctuate when there is an up or down movement in interest rates. Duration is affected by the time to maturity and the coupon rate of the bond. Bond prices generally fall when interest rates rise, and rise when interest rates fall.
  - **Yield Curve Positioning:** Yield refers to the annual return on an investment. The yield on a bond is based on both the purchase price of the bond and the interest, or coupon, payments received. The yield curve is a line graph that plots the relationship between yields to maturity and time to maturity for bonds of the same asset class and credit quality. By anticipating movements in the yield curve, fixed-income managers can attempt to add value to their portfolios.
  - **Sector Allocation:** The broad opportunity set within the fixed income market: Government/Agencies, Mortgages, Credit, Cash.
  - **Security Selection:** Individual securities within the broad opportunity set.
- **Benefits include potential for higher returns and increased diversification.**

STATE UNIVERSITIES RETIREMENT SYSTEM

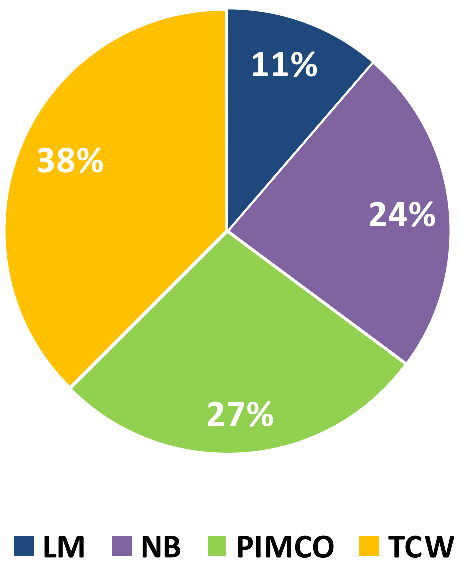
Core Fixed Income

- **SURS Managers:** Garcia Hamilton, Progress, Pugh, Smith Graham.



Core Plus Fixed Income

- **Core Plus Fixed Income Managers Attempt to Add Value by:**
  - Duration Management
  - Yield Curve Positioning
  - Sector Allocation
  - Security Selection
  - Tactical Allocation to "Plus Sectors" or Non-Benchmark Securities
    - Examples Include:
      - Non-Dollar Bonds
      - Emerging Market Debt
      - High Yield Bonds
      - Bank Loans
      - Preferred Stocks
      - Convertible Bonds
      - Municipal Bonds
      - Private Placement Securities



- **Benefits include potential for even higher returns and further diversification.**
- **SURS Managers:** LM, Neuberger, PIMCO, TCW MetWest.

S·U·R·S
STATE UNIVERSITIES RETIREMENT SYSTEM

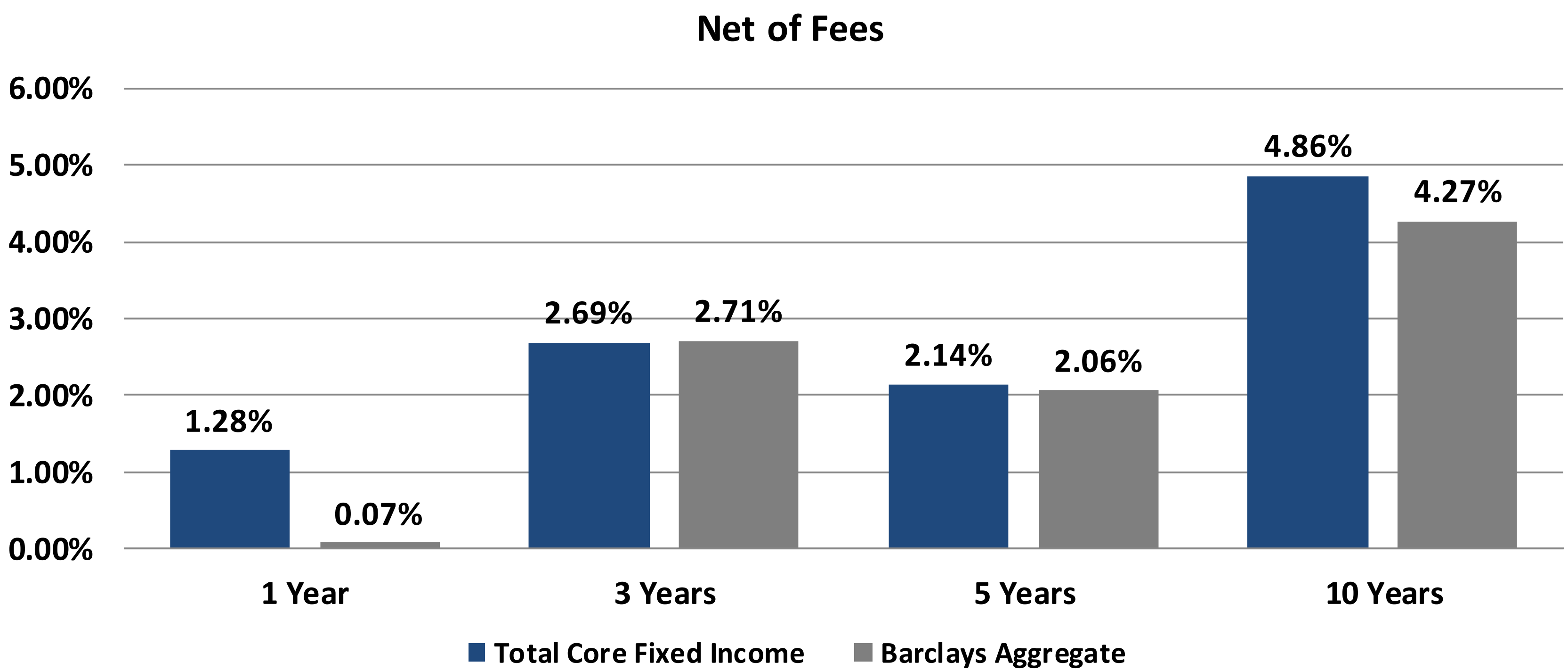
Unconstrained Fixed Income

- **Unconstrained Fixed Income Managers Attempt to Add Value by:**
  - Incorporating both a top down global view of the fixed income universe and bottom up fundamental approach to security selection to position the portfolio where the most attractive risk-adjusted values are across the investable universe.
  - Utilizing a broader range of discretion than the typical core plus fixed income managers.
  - Offering similar volatility, but with a different composition of risks, than traditional core plus fixed income managers.
  - Balancing risks across interest rates, credit, and currency to achieve positive returns in most market environments.
- **Benefits include low correlation with other fixed income strategies and diversification away from U.S. interest rate risk.**
- **Benchmark:** LIBOR + 3%.
- **SURS Manager:** PIMCO Unconstrained.

Exhibit 2

Total Core/Core Plus Fixed Income Performance

(as of September 30, 2017)



Treasury Inflation-Protected Securities

- **TIPS Managers Attempt to Add Value by:**
  - Anticipating movements in interest rates.
  - Duration management.
  - Capitalizing on market anomalies and inefficiencies when available.
- **Benefits include low credit risk, lower volatility inflation protection, and diversification.**
- **SURS made the decision to passively implement the TIPS allocation in April 2017.**
- **SURS Managers:** RhumbLine.

S·U·R·S
STATE UNIVERSITIES RETIREMENT SYSTEM

Barclays U.S. TIPS Index

- **The Barclays U.S. Treasury Inflation-Linked Bond Index measures the performance of the U.S. Treasury Inflation-Protected Securities (TIPS) market.**
- **TIPS are not included in the Bloomberg Barclays Aggregate Bond Index.**
- **The index includes:**
  - U.S. Dollar Denominated Inflation-Linked Securities
  - Public Obligations of the U.S. Treasury
  - 38 Securities as of September 30, 2017.

Source: barcap.com

S·U·R·S
STATE UNIVERSITIES RETIREMENT SYSTEM

Understanding TIPS

- Treasury Inflation-Protection Securities, or TIPS, are inflation protected bonds that are issued by the U.S. Treasury.
- The U.S. Treasury currently issues TIPS in 5-, 10-, and 30-year maturities.
- Their face value is adjusted in step with changes in the rate of inflation.
- The Treasury pays interest on the adjusted face value of the bond, creating a gradually rising stream of interest payments as long as inflation continues to rise.
- In a deflationary environment, the face value and interest payments would decrease, but still keep pace with the lower cost of goods and services.
- TIPS offer the government's assurance that investors will never receive less than the original face value of the bond at maturity, even in the event of deflation during the life of the bond.
- At maturity, a TIPS investor will receive the original face value plus the sum of all the inflation adjustments since the bond was issued.
- As a result, TIPS offer a "real" rate of return – the actual return of an investment after inflation is taken into account. A traditional bond offer a "nominal" or non-inflation adjusted rate of return.

Sources: TreasuryDirect.gov & PIMCO Educational Series - Understanding Treasury Inflation-Protected Securities (TIPS)

Exhibit 2

Total TIPS Performance

(as of September 30, 2017)

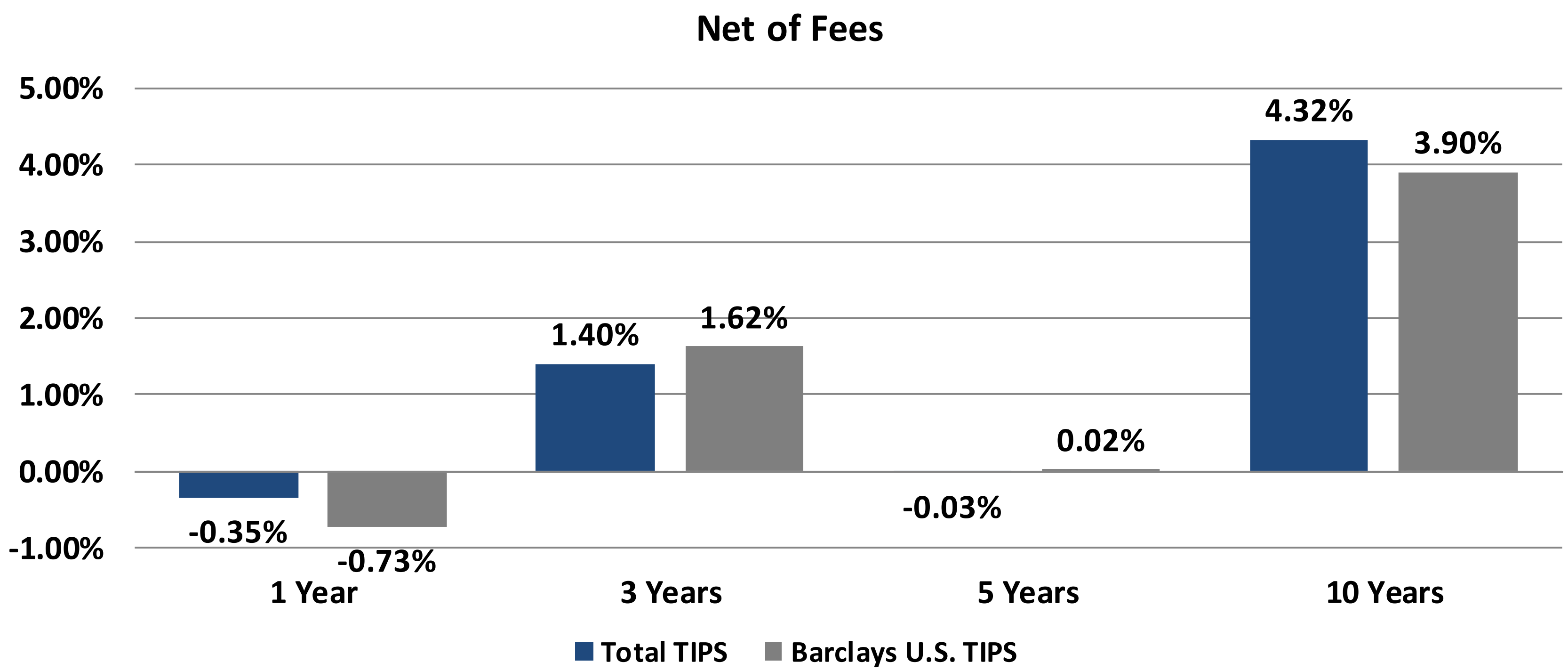


Exhibit 2

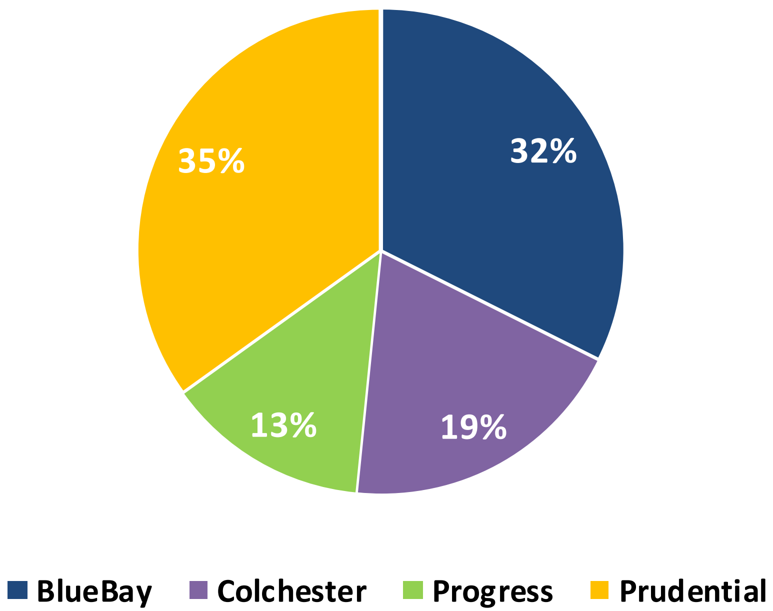
Emerging Market Debt

- **Emerging Market Debt Managers Attempt to Add Value by:**
  - Investing in fixed income securities issued by governments, government-related entities, and corporations located in emerging market countries denominated in both U.S. dollar and local currencies.
  - Assessing a combination of factors including macroeconomic fundamentals, economic policies, political environments, spreads, currencies, and interest rates in order to identify the most attractive sectors and securities within each country.
  - Local currency strategies invest in securities denominated in foreign currencies, hard currency strategies invest in securities denominated in USD, blended strategies invest in a combination of both local currencies and USD, and corporate strategies invest in securities issued by corporations in both local and USD currencies.
- **Benefits include diversification, low correlation, and return enhancement.**

Exhibit 2

Emerging Market Debt

- **SURS Managers:** BlueBay (Blended Strategy), Colchester (Local Strategy), Progress (Corporate Strategies), Prudential (Blended Strategy).



EMD Managers were funded during the first half of 2015.

S·U·R·S
STATE UNIVERSITIES RETIREMENT SYSTEM

J.P. Morgan Emerging Market Bond Indices

- **SURS utilizes three emerging market bond indices:**
  - **J.P. Morgan Emerging Market Bond Index (EMBI Global Diversified) for 50% of BlueBay & Prudential.**

    The EMBI Global Diversified is a uniquely-weighted version of the EMBI Global. It limits the weights of those index countries with larger debt stocks by only including specified portions of these countries' eligible current face amounts of debt outstanding. The countries covered in the EMBI Global Diversified are identical to those covered by the EMBI Global.

  - **J.P. Morgan Government Bond Index – EM (GBI-EM Diversified) for Colchester and 50% of BlueBay & Prudential.**

    The GBI-EM is the first comprehensive, global local Emerging Markets index, and consists of regularly traded liquid fixed-rate, domestic currency government bonds to which international investors can gain exposure. Variations of the index are available to allow investors to select the most appropriate benchmark for their objectives.

  - **J.P. Morgan Corporate Emerging Market Bond Index (CEMBI Broad) for Progress.**

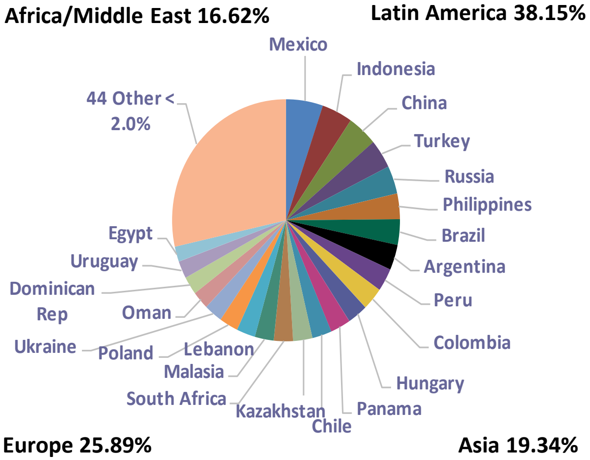
    The CEMBI tracks total returns of US dollar-denominated debt instruments issued by corporate entities in Emerging Market countries. Two variations are available: CEMBI Broad and CEMBI. The CEMBI Broad is the most comprehensive corporate benchmark followed by the CEMBI, which consists of an investable universe of corporate bonds. Both indices are also available in Diversified versions.

Source: J.P. Morgan Emerging Markets Bond Index Monitor (September 2016)

S·U·R·S
STATE UNIVERSITIES RETIREMENT SYSTEM

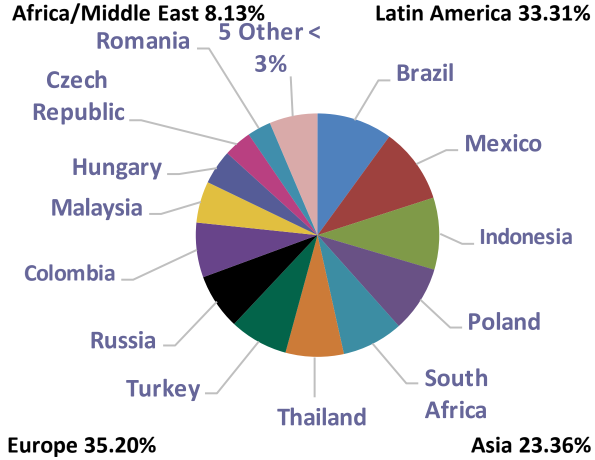
J.P. Morgan Emerging Market Bond Indices

JP Morgan Emerging Market Bond Index—Global Diversified (EMBI)



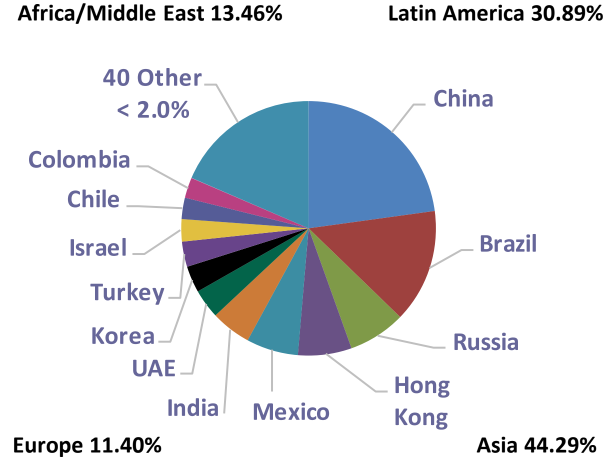
Market Cap	US$899.2bn
Number of Issuers	147
Number of Issues	627
Countries	67

JP Morgan Government Bond Index—EM Global Diversified (GBI-EM)



Market Cap	US$1,218.5bn
Number of Issuers	18
Number of Issues	217
Countries	18

JPM Corporate Emerging Market Index—CEMBI Broad (CEMBI)



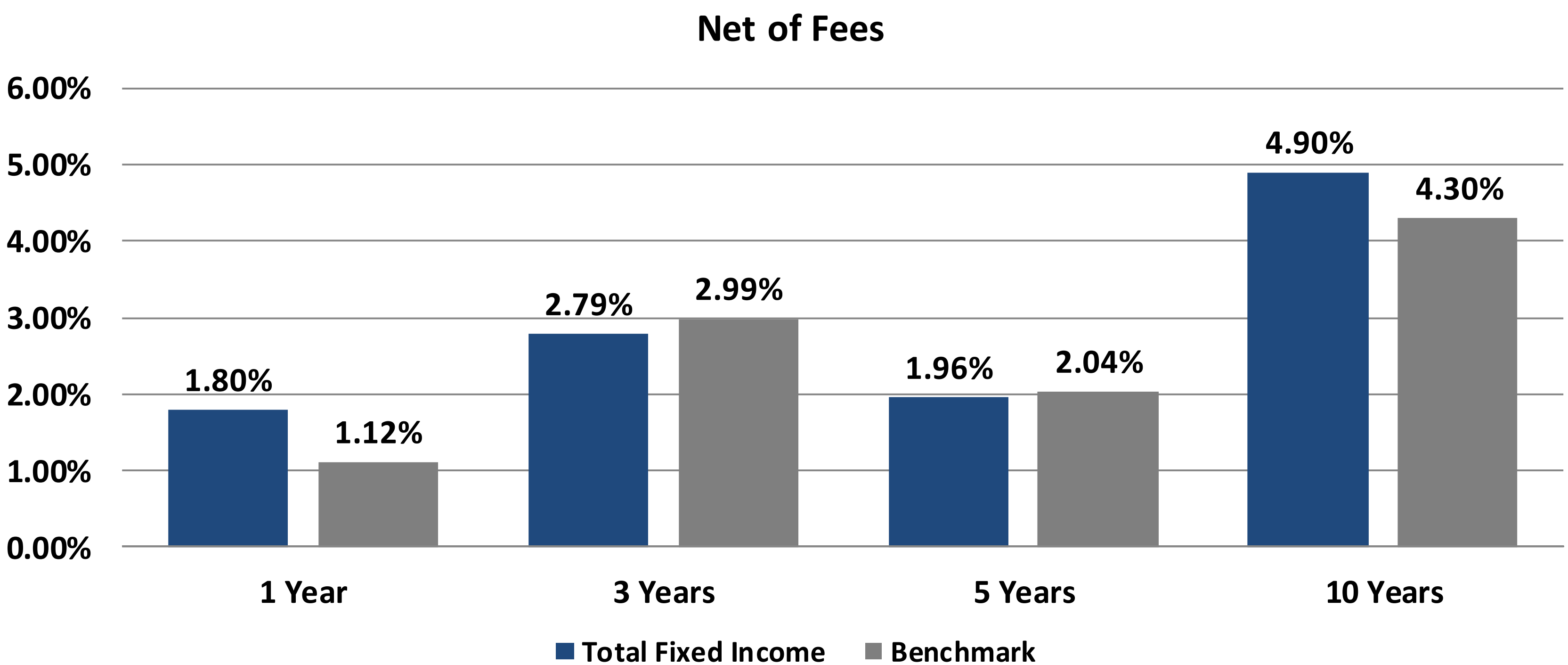
Market Cap	US$941.3bn
Number of Issuers	583
Number of Issues	1283
Countries	52

Source: J.P. Morgan Emerging Markets Bond Index Monitor (September 2017)

S·U·R·S
STATE UNIVERSITIES RETIREMENT SYSTEM

Total Fixed Income Performance

(as of September 30, 2017)



Source: SURS Investment Update September 2017.

STATE UNIVERSITIES RETIREMENT SYSTEM

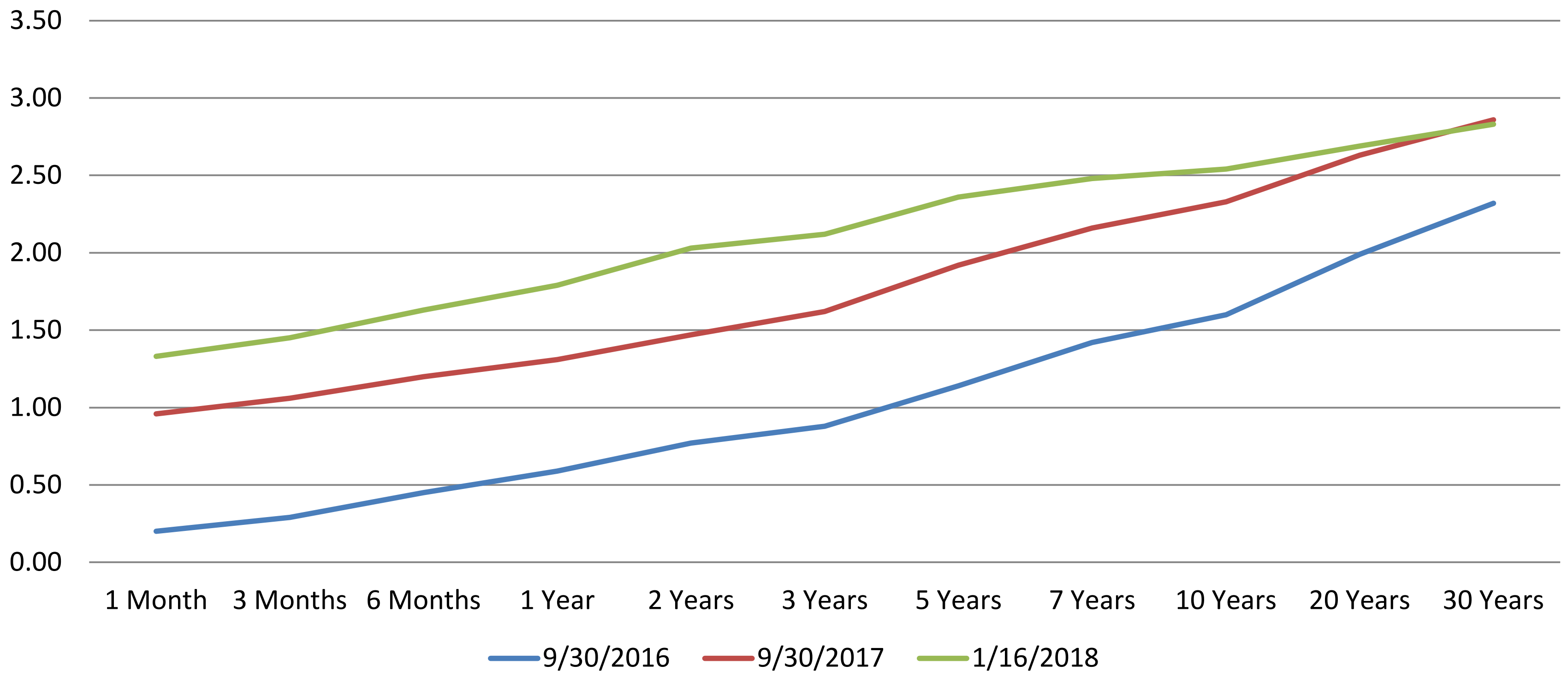
Portfolio Duration

Manager	Duration (Years)
Garcia	4.7
Pugh	5.9
Smith Graham	6.0
LM	5.4
Neuberger	5.4
PIMCO TR	5.1
TCW MetWest	5.6
PIMCO UBF	1.6
BlueBay	5.5
Colchester	5.4
Progress	5.1
Prudential	6.7
Bloomberg Barclays Aggregate Index	5.9
SURS Total Fixed Income	5.4

Duration is an approximate measure of a bond's price sensitivity to changes in interest rates. If a bond has a duration of 6 years, for example, its price will rise about 6% if its yield drops by a percentage point (100 basis points), and its price will fall by about 6% if its yield rises by that amount. Duration = Present value of a bond's cash flows, weighted by length of time to receipt and divided by the bond's current market value.

Exhibit 2

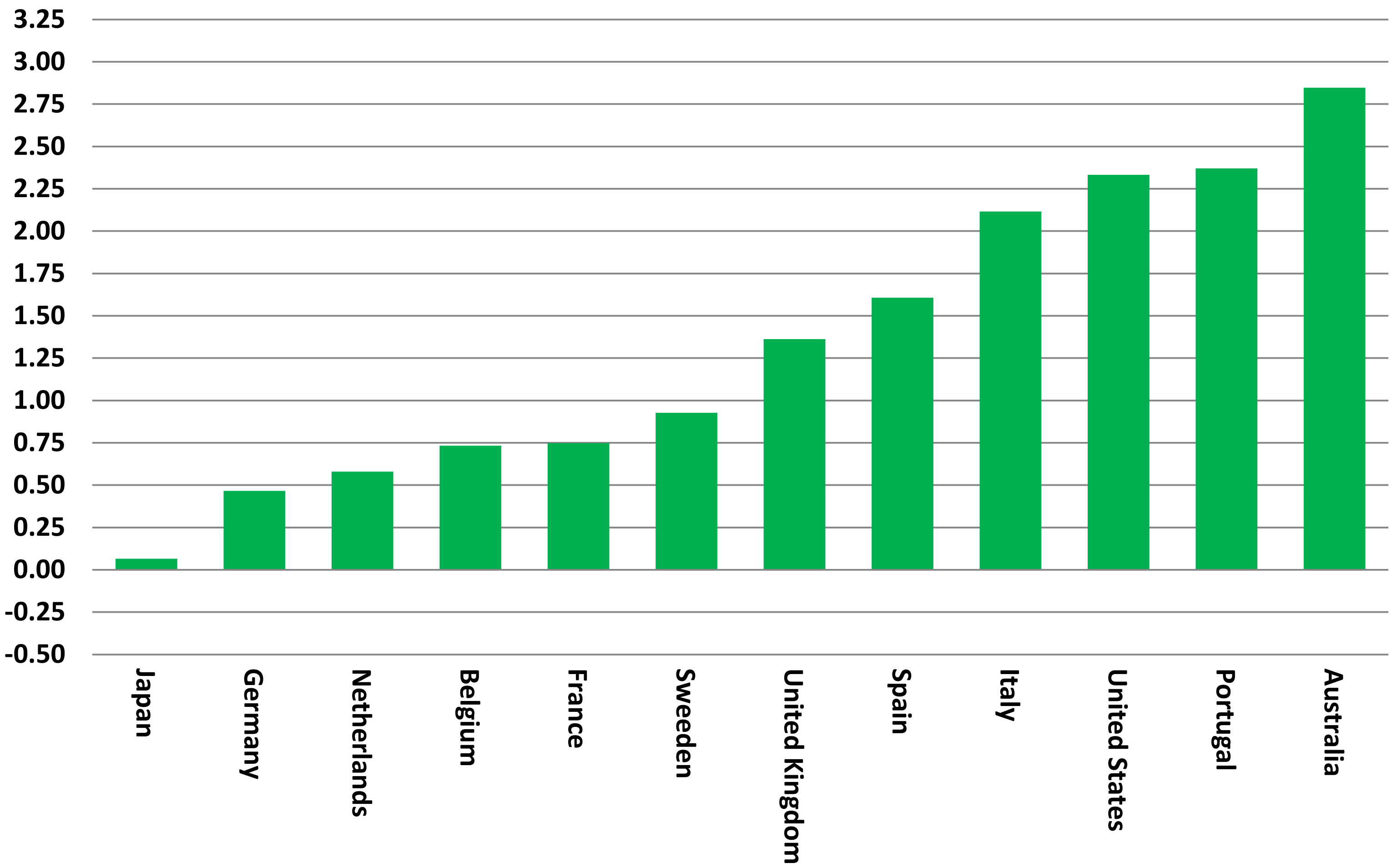
U.S. Treasury Yield Curve



Over the past year, the curve has shifted upward (and more recently flattened).

Exhibit 2

10 Year Global Government Bond Yields



Source: WSJ.com. Data as of September 29, 2017.

Exhibit 2

S·U·R·S
STATE UNIVERSITIES RETIREMENT SYSTEM

Fixed Income Annual Returns

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	YTD 2017
EMD Local 15.2%	EMD Local 18.1%	Treasuries 13.7%	High Yield 58.2%	EMD Local 15.7%	TIPS 13.6%	EMD USD 17.4%	High Yield 7.4%	Muni 8.7%	Muni 3.8%	High Yield 17.1%	EMD Local 14.3%
High Yield 11.8%	TIPS 11.6%	MBS 8.3%	Bank Loans 51.6%	High Yield 15.1%	Muni 12.3%	EMD Local 16.8%	Bank Loans 5.3%	Corp 7.5%	MBS 1.5%	EMD USD 10.2%	EMD USD 9.0%
EMD USD 9.9%	Treasuries 9.0%	Barclays Agg 5.2%	EMD USD 29.8%	Bank Loans 10.1%	Treasuries 9.8%	High Yield 15.8%	MBS -1.4%	EMD USD 7.4%	EMD USD 1.2%	Bank Loans 10.16%	High Yield 7.0%
Bank Loans 6.7%	SURS Total Fixed 8.2%	Muni 1.5%	EMD Local 22.0%	EMD USD 12.2%	Corp 8.1%	Corp 9.8%	Corp -1.5%	MBS 6.1%	Treasuries 0.8%	EMD Local 9.9%	Muni 5.3%
MBS 5.2%	Barclays Agg 7.0%	SURS Total Fixed 0.5%	Corp 18.7%	Corp 9.0%	Barclays Agg 7.8%	Bank Loans 9.7%	Barclays Agg -2.0%	Barclays Agg 6.0%	Barclays Agg 0.5%	Corp 6.1%	Corp 5.2%
SURS Total Fixed 4.7%	MBS 6.9%	TIPS -2.4%	TIPS 11.4%	SURS Total Fixed 8.2%	EMD USD 7.3%	SURS Total Fixed 7.1%	Muni -2.2%	Treasuries 5.1%	Bank Loans -0.7%	TIPS 4.7%	SURS Total Fixed 3.68%
Muni 4.7%	EMD USD 6.2%	Corp -4.9%	Muni 9.9%	Barclays Agg 6.5%	SURS Total Fixed 7.0%	TIPS 7.0%	Treasuries -2.7%	SURS Total Fixed 4.8%	Corp -0.7%	SURS Total Fixed 4.13%	Barclays Agg 3.1%
Barclays Agg 4.3%	Corp 4.6%	EMD Local -5.2%	SURS Total Fixed 7.8%	TIPS 6.3%	MBS 6.2%	Muni 5.7%	SURS Total Fixed -2.8%	TIPS 3.6%	SURS Total Fixed -1.1%	Barclays Agg 2.6%	Bank Loans 2.97%
Corp 4.3%	Muni 4.3%	EMD USD -12.0%	Barclays Agg 5.9%	Treasuries 5.9%	High Yield 5.0%	Barclays Agg 4.2%	EMD USD -5.3%	High Yield 2.5%	TIPS -1.4%	MBS 1.7%	MBS 2.3%
Treasuries 3.1%	High Yield 1.9%	High Yield -26.2%	MBS 5.9%	MBS 5.4%	Bank Loans 1.5%	MBS 2.6%	TIPS -8.6%	Bank Loans 1.6%	High Yield -4.5%	Treasuries 1.0%	Treasuries 2.3%
TIPS 0.4%	Bank Loans 1.9%	Bank Loans -29.1%	Treasuries -3.6%	Muni 4.0%	EMD Local -1.8%	Treasuries 2.0%	EMD Local -9.0%	EMD Local -5.7%	EMD Local -14.9%	Muni -0.1%	TIPS 1.7%

Sources: J.P. Morgan Guide to the Markets, Eaton Vance Monthly Market Monitor (Bank Loans) , and NEPC (SURS).
Data as of September 2017.

Appendix – Active Scorecards

Manager Evaluation Report

Core Fixed Income Managers

Manager	Org Issues?	Manager Status	Recommendation	Comments
Garcia	No	Enhanced Review	Retain	
Pugh	No	Enhanced Review	Retain	
Smith Graham	No	Enhanced Review	Retain	

Core Plus Fixed Income Managers

Manager	Org Issues?	Manager Status	Recommendation	Comments
LM	No	Enhanced Review	Retain	
Neuberger	No	Good Standing	Retain	
PIMCO TR	No	Enhanced Review	Retain	
TCW MetWest	Yes	Enhanced Review	Retain	Ownership Change

Good Standing: Manager's 3yr and 5yr rolling Annualized Alpha (net) each exceed their AMPs for such periods. Managers with less than a 5yr performance history will be considered in Good Standing.

Enhanced Review: Manager's 3yr or 5yr rolling Annualized Alpha (net) are above their benchmark but below their AMP.

Exhibit 2

Manager Evaluation Reports

Unconstrained Managers

Manager	Org Issues?	Manager Status	Recommendation	Comments
PIMCO UBF	No	Good Standing	Retain	Best Performing F.I. Manager for 1yr

Emerging Market Debt Managers

Manager	Org Issues?	Manager Status	Recommendation	Comments
BlueBay	Yes	Reassessment	Terminate	PM Change, Asset Losses, Poor Performance
Colchester	No	Good Standing	Retain +	Local Currency Strategy
Progress	No	Good Standing	Retain +	Corporate Strategy
Prudential	No	Good Standing	Retain +	Blended Strategy

Good Standing: Manager's 3yr and 5yr rolling Annualized Alpha (net) each exceed their AMPs for such periods. Managers with less than a 5yr performance history will be considered in Good Standing.

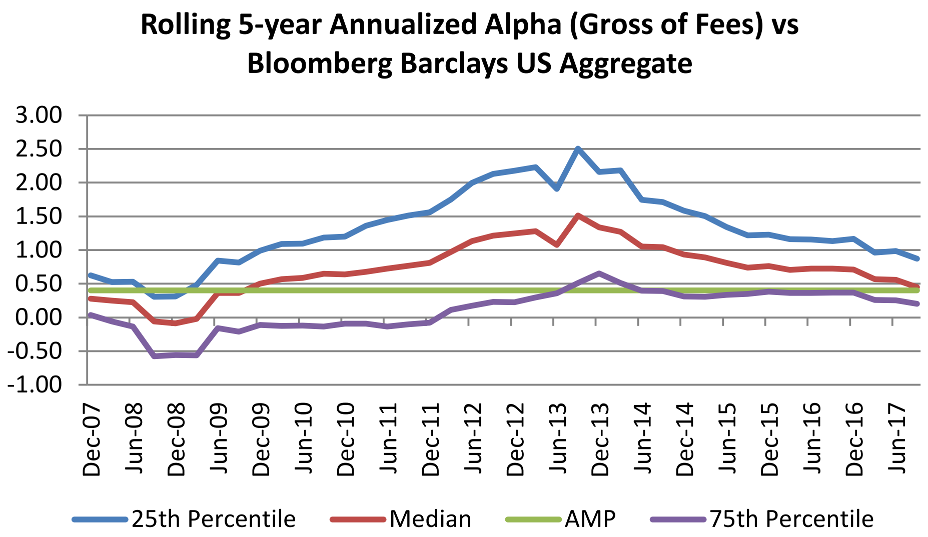
Enhanced Review: Manager's 3yr or 5yr rolling Annualized Alpha (net) are above their benchmark but below their AMP.

Reassessment: Manager's 3yr and 5yr rolling annualized alphas (net) are below benchmarks for the two consecutive quarters, and 3yr and 5yr information ratios are negative for the preceding two consecutive quarters, or other performance metrics reflect a significant negative trend. Reassessment can also include changes in ownership, structure, or key personnel, lack of compliance with MFDB brokerage goals, significant loss of clients or assets, and changes to investment style, philosophy or process.

Exhibit 2

Active Scorecard

Core Fixed Income Managers

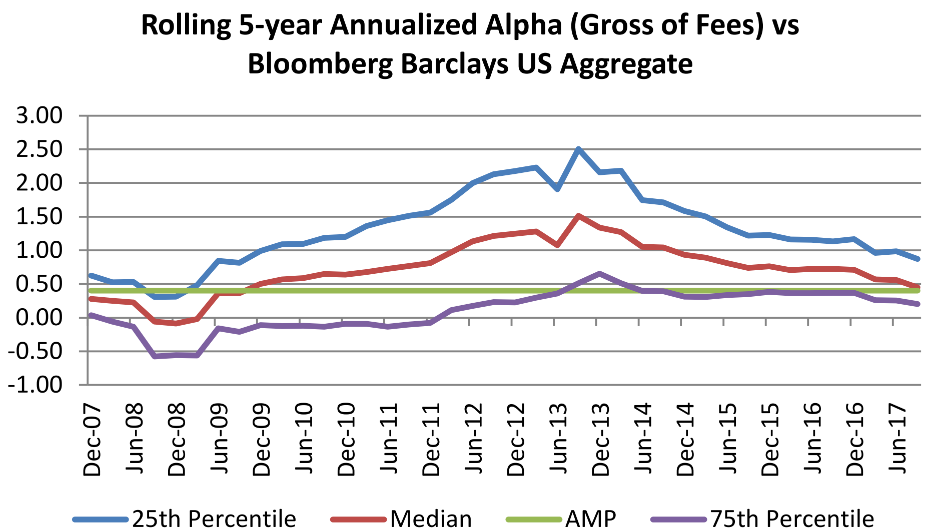


Core Fixed Income	Average
25th Percentile	1.32
Median	0.72

- The chart displays the rolling 5-year annualized alpha of the top quartile and median managers in the selected asset class.
- The benchmark represents the 0.00 line.

Active Scorecard

Core Plus Fixed Income Managers



Core Fixed Income	Average
25th Percentile	1.32
Median	0.72

- The chart displays the rolling 5-year annualized alpha of the top quartile and median managers in the selected asset class.
- The benchmark represents the 0.00 line.

S·U·R·S
STATE UNIVERSITIES RETIREMENT SYSTEM

Glossary of Terms

Accrued Interest - The interest received from a security's last interest payment date up to the current date or date of valuation.

Agency / GSE - Agency bonds are issued by official U.S. government bodies (e.g., Tennessee Valley Authority (TVA); government sponsored entity (GSE) bonds are offered by lenders created by an act of Congress to assist groups of borrowers (e.g., farmers, ranchers, homeowners, mortgage lenders, etc.); the principal and interest of GSE bonds are not guaranteed by the U.S. government.

Basis Point - One one-hundredth (1/100 or 0.01) of one percent.

Callable - A bond or other security that may be redeemed by the issuer before the scheduled maturity.

Convertible -Bonds that contains a provision allowing the holder to exchange the bond for a specified number of shares of a different security (usually common stock) issued by the same company that issued the bond.

Corporate Bond - A debt security issued by a private corporation.

Coupon - The interest rate a bond's issuer promises to pay to the bondholder until maturity, or other redemption event, generally expressed as an annual percentage of the bond's face value.

Credit Quality - A criteria used to evaluate the creditworthiness, or risk of default, of an individual fixed-income security; generally expressed through ratings provided by one of the credit ratings agencies.

Credit Risk - The risk that the issuer of a fixed-income security may not be able to make regularly scheduled interest payments or repay the principal at maturity.

Default - If a bond issuer fails to make either an interest payment or principal repayment on its bonds as they come due, or fails to meet some other provision of the bond indenture, that bond is said to be in default.

Discount - The amount below the stated 'face' or par value when a fixed-income security (e.g. a bond) is bought or sold.

Face Value - The stated value of an investment at maturity; also known as par value or par amount.

Government Bond - Debt obligations of the U.S. government that are issued with maturities of ten or more years; versus government bills issued at one year or less and government notes issued at one to ten years.

Interest - The amount paid by a borrower to a creditor, or bondholder, as compensation for the use of borrowed money.

S·U·R·S
STATE UNIVERSITIES RETIREMENT SYSTEM

Glossary of Terms

Issuer - A government, corporation, municipality, or agency that has issued a security (e.g., a bond) in order to raise capital or to repay other debt.

Maturity - The date on which the principal amount of a fixed-income security is scheduled to become due and payable, typically along with any final coupon payment.

Municipal General Obligation Bond - A type of municipal bond backed by the full faith, credit, and taxing power of the issuer, specifically its ability to collect taxes; only entities that have the right to levy and collect taxes can issue general obligation bonds.

Premium - The amount above the stated 'face' or par value when a fixed-income security (e.g., a bond) is bought or sold.

Principal Repayment - The payment of the face value of a bond; this can be due to the securities reaching maturity date, or because the issuer redeemed the securities prior to maturity due to a call or other form or redemption.

Secondary Market - A market where securities are bought and sold between investors, as opposed to investors purchasing securities directly from the issuers; secondary market activity generally takes place on a major exchange, such as the New York Stock Exchange, or on electronic communications networks (ECNs)

Sector - Refers to the area of the economy from which a corporate bond issuer primarily derives its revenues, such as financial or industrial. Within each Sector are Industry Groups; for example, chemical and petroleum would be Industry Groups under the industrial Sector.

Sovereign Debt - Fixed-income securities issued by a national government in that country's local currency; in addition to the credit risks presented by the issue and the issuing country, may also be subject to currency risk.

Treasuries - Debt obligations of the U.S. government that are issued at various intervals and with various maturities. Treasury securities are backed by the full faith and credit of the U.S. government.

Treasury Inflation Protected Securities (TIPS) - A type of Treasury note that adjusts for inflation by providing inflation compensation in addition to the coupon; the inflation component, affecting principal, is based on the Consumer Price Index (CPI), adjusting it upwards for inflation or downwards for deflation; the adjustment impacts semi-annual interest paid and the principal at maturity; since TIPS' principal adjusts semi-annually, the coupon varies as well; at maturity, a TIPS pays the greater of the adjusted or original principal; this provision protects the investor from the loss of any principal in the event of a sustained period of deflation; investors in TIPS sacrifice some yield as a trade-off for the inflation protection.

S·U·R·S
STATE UNIVERSITIES RETIREMENT SYSTEM

Glossary of Terms

Yield - The percentage of return an investor receives based on the amount invested or on the current market value of holdings; it is expressed as an annual percentage rate.

Yield Curve - The relationship between interest rates and time, determined by plotting the yields of all or as many bonds of similar credit quality (eg: Treasuries), against their maturities; yield curves typically slope upward since longer maturities normally have higher yields, although it can be flat or even inverted.

Yield to Maturity - The rate of return an investor receives if an investment is held to the maturity date.

Yield to Worst - The lowest potential yield that can be received on a bond without the issuer actually defaulting; calculated by making worst-case scenario assumptions on the issue by calculating the returns that would be received if any in-whole mandatory redemptive provisions are exercised by the issuer; the yield to worst metric is used to evaluate the worst-case scenario for yield to help investors manage risks and ensure that specific income requirements will still be met even in the worst scenarios.

FIXED INCOME REVIEW

STATE UNIVERSITIES RETIREMENT SYSTEM OF ILLINOIS

February 2018

Kevin M. Leonard, Partner
Kristin R. Finney-Cooke, CAIA, Sr. Consultant
DeAnna I. Jones, Senior

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

EXECUTIVE SUMMARY

- **The purpose of this presentation is to:**
  - Review the current Fixed Income and Credit Exposure of the IL SURS Portfolio
  - Provide an outlook on the Fixed Income/Credit Markets
  - Recommend guidance for the program to be implemented in 2018 - 2019

- **Consider adding a Opportunistic Credit component to complement the existing Fund structure**
  - They would potentially add additional return given core bonds continue to have a low 5-7 year return outlook
  - Most likely funded from the fixed income portfolio
  - Strategies considered should fill gaps in the portfolio where there are low or no exposures (i.e. bank loans, high yield, distressed, structured credit and private debt)

- **Terminating BlueBay (Emerging Market Debt) and reallocating assets to existing emerging market debt managers**
  - $100M to Prudential
    - Would result in a fee discount and bring the account size to ~$300M
  - $30M to Colchester
  - $50M to Progress – (Emerging Market Debt MoM portfolio)

Exhibit 3

FIXED INCOME STRUCTURE AND PERFORMANCE REVIEW

NEPC, LLC

Exhibit 3

CURRENT PORTFOLIO STRUCTURE

- **SURS has a 26% target to Fixed Income**
  - 19% is targeted to core/core plus strategies
  - 3% is targeted to emerging market debt ("EMD")
  - 4% is targeted to Treasury inflation protected securities ("TIPS")
  - Within the total fixed income portfolio ~29% is invested in passive fixed income and 71% invested in active fixed income

Type	Purpose	Managers
Core – Active *21.5% of Fixed Income Portfolio* *5.3% of Total Fund*	Primarily investment grade holdings, with BC Aggregate benchmark. Alpha and beta expectations are constrained. Core Plus has higher alpha and beta expectations by including more out of benchmark holdings.	Garcia Hamilton PIMCO Total Return Pugh Capital Smith Graham
Core – Passive *13.5% of Fixed Income Portfolio* *3.3% of Total Fund*	Below investment grade bonds are perceived to have greater risk of default. These bonds pay higher yields than investment grade. To add alpha and reduce volatility, managers may use non-benchmark securities such as floating rate bonds, convertibles, IG bonds, preferred equity.	State Street
Core Plus *26.5% of Fixed Income Portfolio* *6.5% of Total Fund*	Flexible investment mandate that permits the manager to move between IG, high yield, bank loans, and securitized debt.	LM Capital Neuberger Berman Progress TCW/MetWest
Global Unconstrained *10.5% of Fixed Income Portfolio* *2.6% of Total Fund*	Investment in debt instruments issued by global sovereign entities. Portfolios typically high quality as the investable universe consists of investment grade-rated countries. To enhance returns managers will purchase out-of-benchmark securities such as emerging markets debt and global currencies.	PIMCO Unconstrained
TIPS – Passive *15.0% of Fixed Income Portfolio* *3.7% of Total Fund*	TIPS managers have flexibility managing duration within the framework of their respective guidelines. TIPS managers will also use some credit and non-US exposure for diversification purposes	Rhumbline
Emerging Market Debt - Blended *13.0% of Fixed Income Portfolio* *3.2% of Total Fund*	EMD mandate helps further diversify the fixed income portfolio EMD exposure is gained through a combination of Hard Currency, Local Currency, and Blended mandates which also provides exposure to EM Corporates	Progress - Blended Colchester – Local Prudential - Blended Bluebay – Blended

As of 9/30/17…24.6% of the total SURS' portfolio is allocated to fixed income.

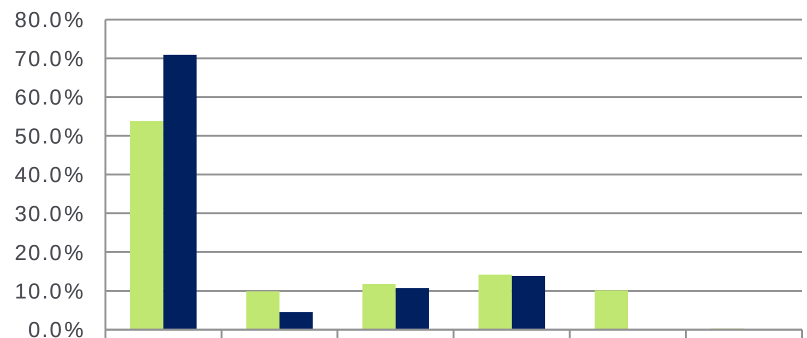
PORTFOLIO CHARACTERISTICS AS OF 9/30/17

Sector Exposure

Security Type	% of Fixed Income Portfolio
US Govt/Treasury (incld TIPS)	45.7%
MBS	24.3%
Investment Grade	19.6%
Emerging Market Debt	11.9%
Net Short Duration	5.0%
High Yield-Corporate Credit	1.6%
Structured Credit	1.5%
Cash	0.9%
ABS	0.8%
Cash	0.2%
Non US Developed	-0.1%
Mutual Funds/Pooled Funds	-1.3%
Swaps and Liquid Rates	-12.3%
Other	2.2%
Total	**100%**

- The core sectors make up the largest allocations in the SURS' portfolio.
- In comparison to the Bloomberg Barclays Aggregate Index, the Fixed Income portfolio has an overweight to lower quality securities (rated A and lower) and an underweight in AAA rated securities.

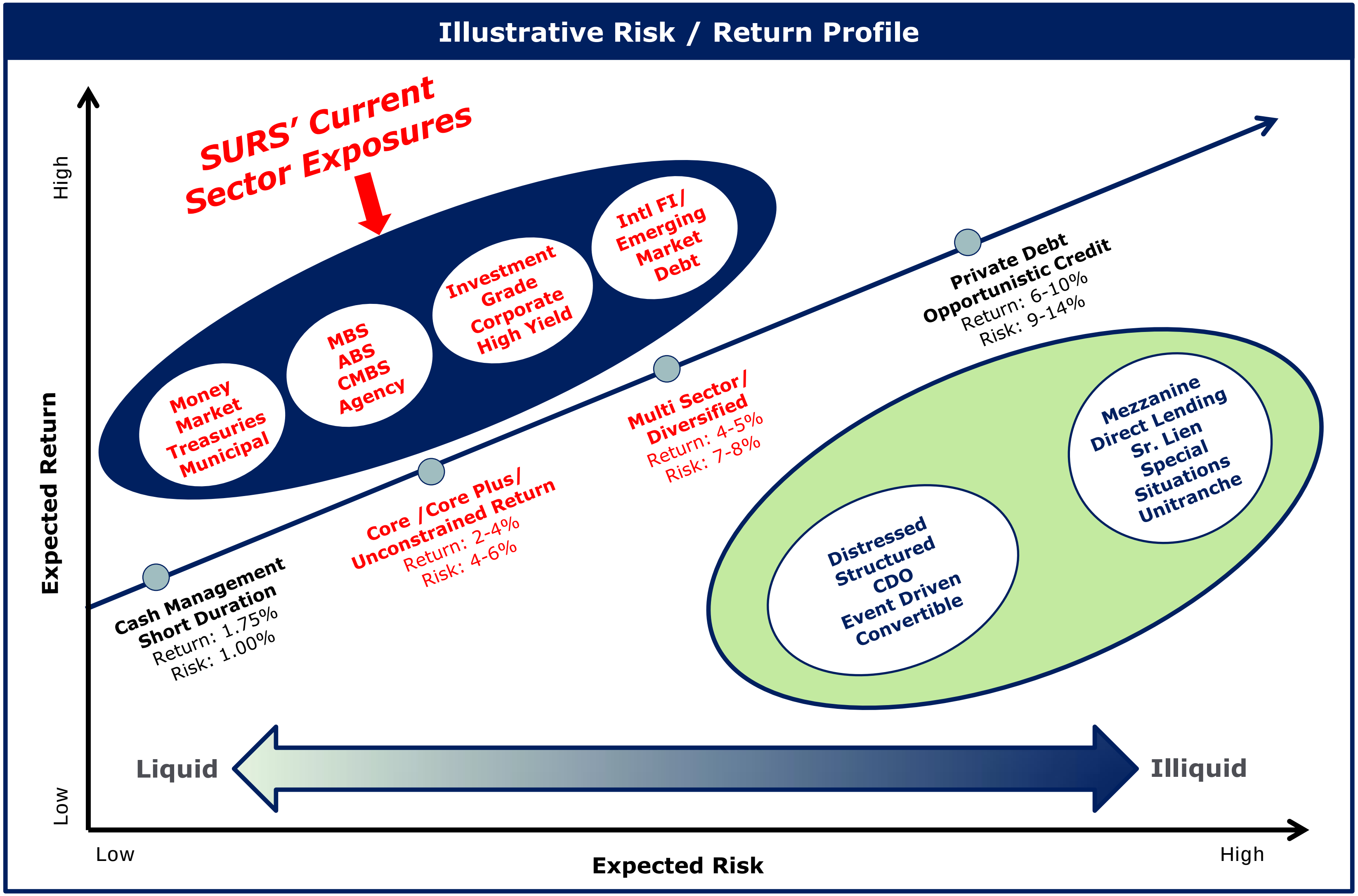
Quality Allocation Portfolio vs BBC Aggregate Index



	AAA	AA	A	BBB	BB or below	Unrated
Fund	53.8%	9.9%	11.8%	14.2%	10.1%	0.3%
Index	70.9%	4.5%	10.7%	13.8%	0.0%	0.0%

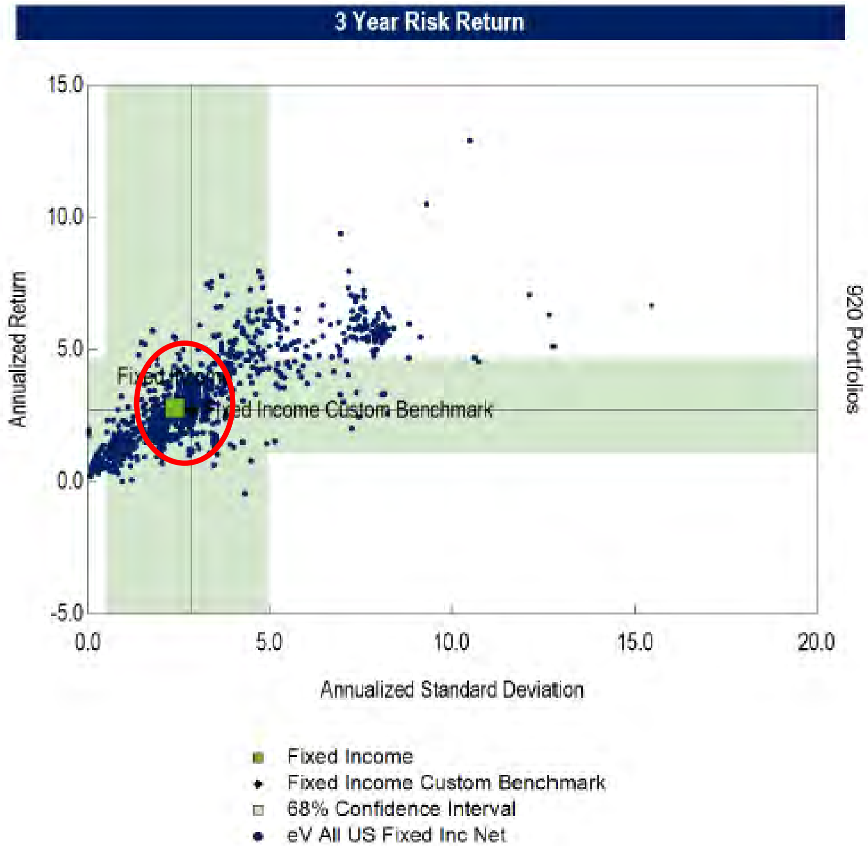
Notes:
Allocation is based on September 30, 2017 market values
Negative percentages represent due to pay-fixed interest rate swaps which are being used to partially offset interest rate exposure from other holdings, including Treasuries, mortgage-backed securities, and corporates.
Emerging Market Debt includes both hard and local currency securities
Other category includes CMBS, BABS, Bank Loans, Convertible Debt, Municipals and Eurobanks, which account for less than 1% of the total portfolio.
Source: Weighted percentage based on data provided by SURS' investment managers and is believed to be accurate.

FIXED INCOME SPECTRUM



Notes:
- Private credit strategies can span the illustrative risk / return spectrum depending on the specific strategy
- Manager-specific risk, operations and leverage can skew expected risk / return profile; risk/return numbers based on NEPC assumptions

PERFORMANCE SUMMARY – CORE/CORE PLUS

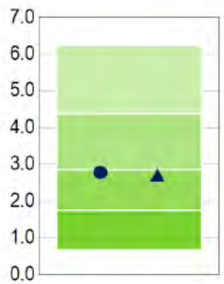


as of 9/30/17

PERFORMANCE SUMMARY – CORE/CORE PLUS

Core/Core Plus Fixed Income 3 Year Risk/Return Statistics

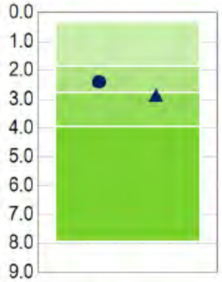
Anlzd Return



● Fixed Income
Value 2.78
Rank 52
▲ Fixed Income Custom Benchma
Value 2.71
Rank 54

Universe
5th %tile 6.24
25th %tile 4.39
Median 2.86
75th %tile 1.77
95th %tile 0.69

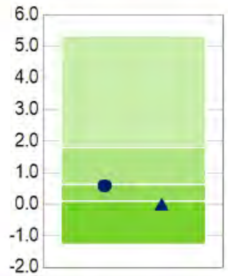
Anlzd Standard Deviation



● Fixed Income
Value 2.40
Rank 39
▲ Fixed Income Custom Benchma
Value 2.85
Rank 57

Universe
5th %tile 0.31
25th %tile 1.83
Median 2.74
75th %tile 3.93
95th %tile 7.89

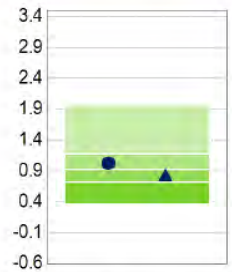
Anlzd Alpha



● Fixed Income
Value 0.58
Rank 53
▲ Fixed Income Custom Benchmarl
Value 0.00
Rank 80

Universe
5th %tile 5.33
25th %tile 1.80
Median 0.64
75th %tile 0.10
95th %tile -1.26

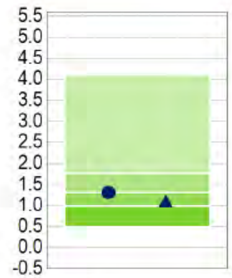
Sharpe Ratio



● Fixed Income
Value 1.03
Rank 39
▲ Fixed Income Custom Benchmarl
Value 0.84
Rank 62

Universe
5th %tile 1.98
25th %tile 1.18
Median 0.93
75th %tile 0.73
95th %tile 0.37

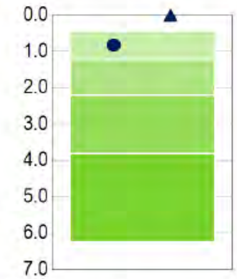
Sortino Ratio RF



● Fixed Income
Value 1.31
Rank 51
▲ Fixed Income Custom Benchma
Value 1.11
Rank 67

Universe
5th %tile 4.11
25th %tile 1.77
Median 1.31
75th %tile 1.00
95th %tile 0.51

Tracking Error



● Fixed Income
Value 0.83
Rank 13
▲ Fixed Income Custom Benchma
Value 0.00
Rank 1

Universe
5th %tile 0.44
25th %tile 1.22
Median 2.20
75th %tile 3.80
95th %tile 6.23

5 Years Ending September 30, 2017

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank	Tracking Error	Rank	Info Ratio	Rank	Down Mkt Cap Ratio	Rank
Fixed Income	17.69%	2.23%	55	2.57%	43	0.78	59	0.71%	11	0.23	54	84.69%	64
Fixed Income Custom Benchmark	--	2.06%	59	2.84%	53	0.65	73	0.00%	1	--	--	100.00%	77

3 Years Ending September 30, 2017

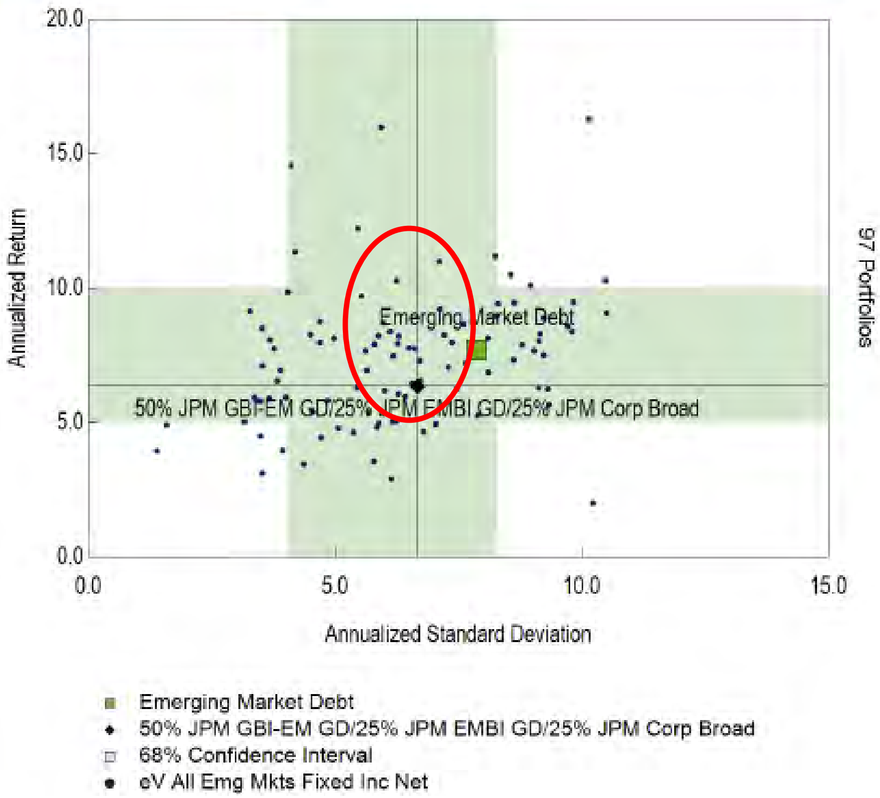
	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank	Tracking Error	Rank	Info Ratio	Rank	Down Mkt Cap Ratio	Rank
Fixed Income	17.69%	2.78%	52	2.40%	39	1.03	56	0.83%	13	0.08	52	73.28%	61
Fixed Income Custom Benchmark	--	2.71%	54	2.85%	57	0.84	70	0.00%	1	--	--	100.00%	79

NEPC

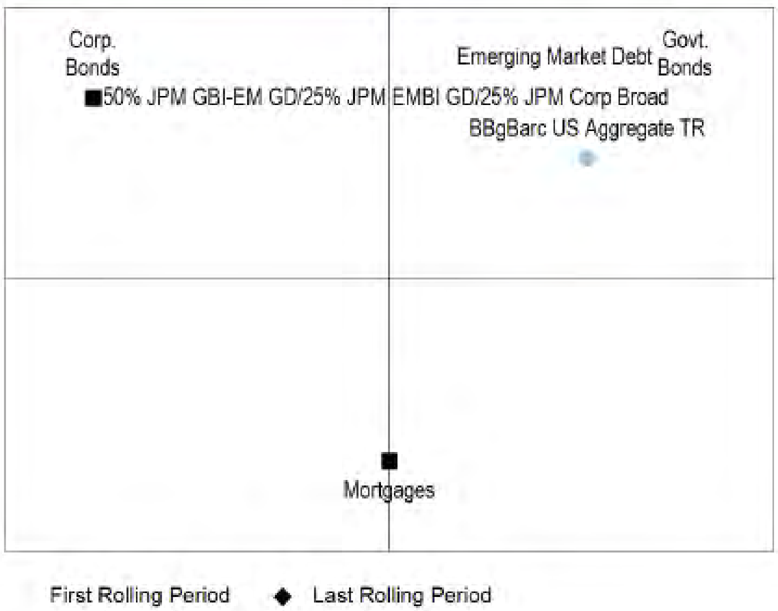
as of 9/30/17

PERFORMANCE SUMMARY – EMD

1 Year Risk Return



1 Year Style Analysis

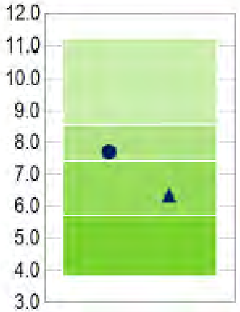


as of 9/30/17

PERFORMANCE SUMMARY – EMD

Emerging Market Debt 1 Year Risk/Return Statistics

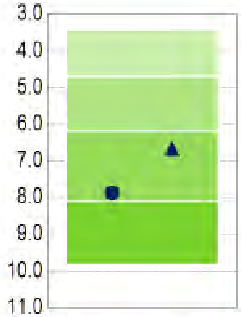
Anlzd Return



● Emerging Market Debt
Value 7.70
Rank 46
▲ 50% JPM GBI-EM GD/25% JPM
Value 6.35
Rank 63

Universe
5th %tile 11.23
25th %tile 8.58
Median 7.44
75th %tile 5.73
95th %tile 3.83

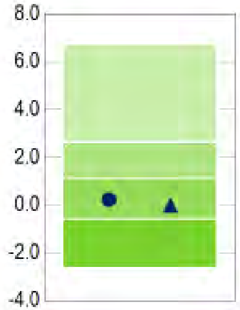
Anlzd Standard Deviation



● Emerging Market Debt
Value 7.88
Rank 74
▲ 50% JPM GBI-EM GD/25% JPM
Value 6.67
Rank 61

Universe
5th %tile 3.42
25th %tile 4.70
Median 6.18
75th %tile 8.10
95th %tile 9.81

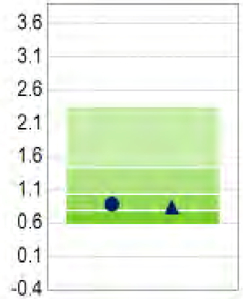
Anlzd Alpha



● Emerging Market Debt
Value 0.23
Rank 59
▲ 50% JPM GBI-EM GD/25% JPM
Value 0.00
Rank 64

Universe
5th %tile 6.72
25th %tile 2.65
Median 1.14
75th %tile -0.57
95th %tile -2.59

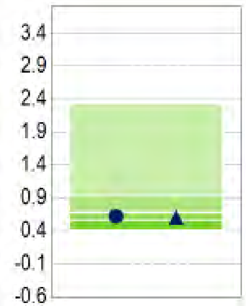
Sharpe Ratio



● Emerging Market Debt
Value 0.89
Rank 62
▲ 50% JPM GBI-EM GD/25% JPM
Value 0.84
Rank 67

Universe
5th %tile 2.36
25th %tile 1.44
Median 1.04
75th %tile 0.80
95th %tile 0.58

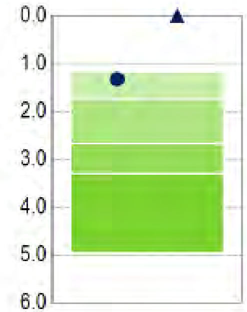
Sortino Ratio RF



● Emerging Market Debt
Value 0.62
Rank 63
▲ 50% JPM GBI-EM GD/25% JPM
Value 0.61
Rank 66

Universe
5th %tile 2.34
25th %tile 0.95
Median 0.69
75th %tile 0.57
95th %tile 0.42

Tracking Error



● Emerging Market Debt
Value 1.33
Rank 11
▲ 50% JPM GBI-EM GD/25% JPM
Value 0.00
Rank 1

Universe
5th %tile 1.17
25th %tile 1.74
Median 2.67
75th %tile 3.29
95th %tile 4.94

1 Year Ending September 30, 2017

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank	Tracking Error	Rank	Info Ratio	Rank	Down Mkt Cap Ratio	Rank
Emerging Market Debt	3.2%	7.7%	46	7.9%	74	0.9	62	1.3%	11	1.0	26	114.6%	74
50% JPM GBI-EM GD/25% JPM EMBI GD/25% JPM Corp Broad	--	6.3%	63	6.7%	61	0.8	67	0.0%	1	--	--	100.0%	64

as of 9/30/17

THOUGHTS AND CONSIDERATIONS FOR 2018

NEPC, LLC

BETA GROUP THOUGHTS AND ACTIONS

Credit Beta Group Thoughts

- Credit is rich relative to fair value; limited fundamental upside
- A complacent credit market with low risk premiums and defaults
- Leverage, duration, secular concerns at post-crisis peak
- Credit selection is imperative, irrespective of return objective
- EM (local) remains an opportunity; while HY segment remains a concern

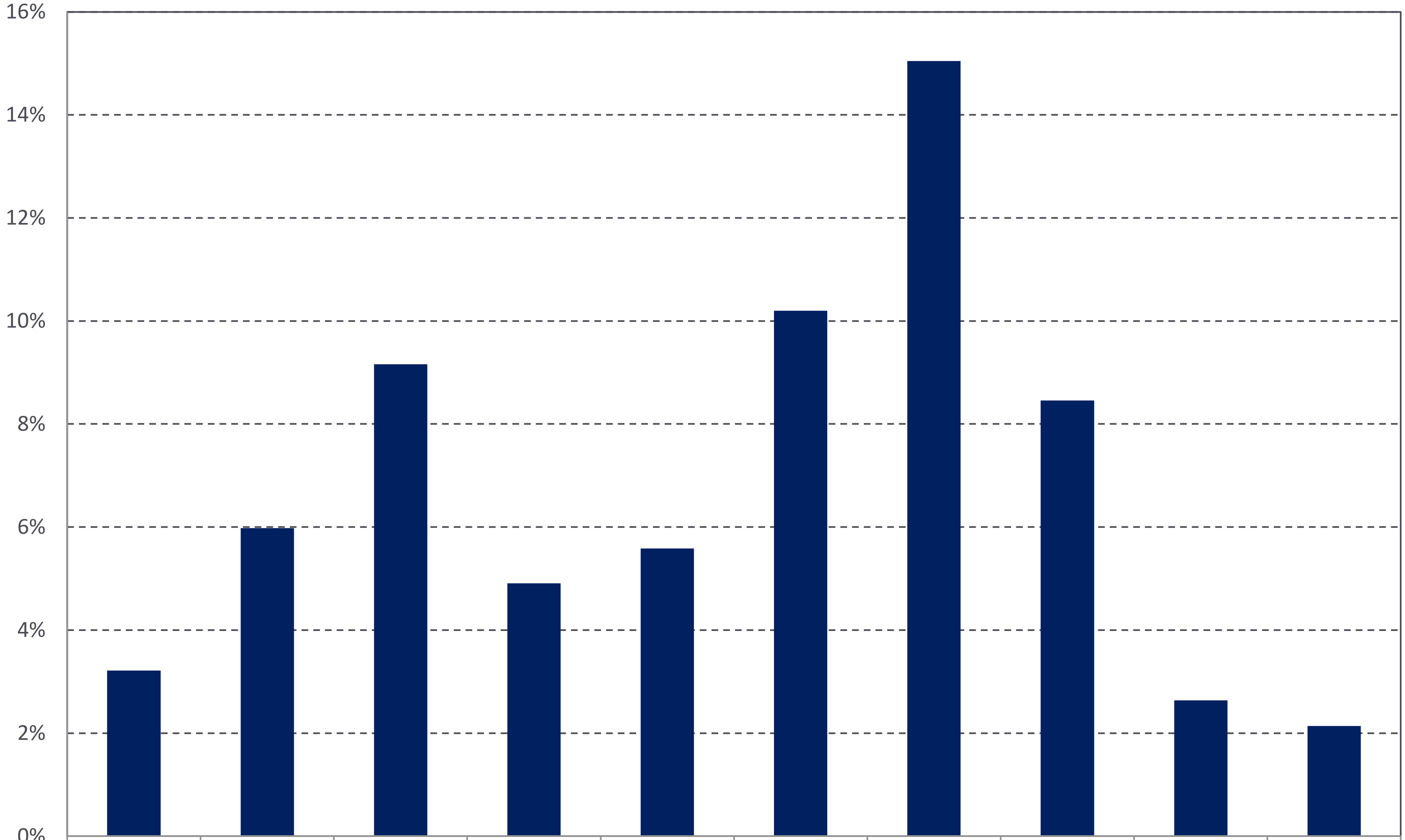
Credit Beta Group Actions

- Reduce long HY exposure; review current exposure to CCC segment
- Consider funding EMD local currency debt
- Consider funding private credit options; liquidity is a trade-off
- Be wary of yield appeal of secularly challenged sectors; avoid passive exposure here

LOOKING BACK: 2017

- **2017 credit markets were "just right"**
- **Credit markets ended in positive territory across the board as risk assets benefitted from low volatility and global accommodative policies**
- **EMD and HY were the best performers as the search for yield continued during the year**
- **But the returns did not reflect the risk**
  – Quality yield absent
  – Spreads below historical medians & near all-time tights
  – Leverage reached post-crisis peaks

2017 CREDIT MARKET PERFORMANCE



	BC Agg	BC US Credit	BC HY	S&P Lev Loan	BC Muni	JPM EMBI	JPM GBI	JPM CEMBI	BC CMBS	BC MBS
1-Year	3.21%	5.98%	9.16%	4.91%	5.58%	10.20%	15.04%	8.46%	2.64%	2.14%

Source: Barclays, S&P, JPM, Bloomberg
Performance as of November 30, 2017

Exhibit 3

SUMMARY: CREDIT BETA GROUP TRENDS

Beta Subset	Q1 2017	Q2 2017	Q3 2017	Q4 2017	Comments: Q4 2017
Corporate Credit					
Investment Grade	Negative	Negative	Neutral	Neutral	Maintain neutral: Fundamental safe haven but susceptible to technical pressures
High Yield	Neutral	Strong Negative	Strong Negative	Strong Negative	Maintain Strong Negative: Spread compression elevates concerns about the future risk-adjusted return; CCC issuers may be negatively impacted by tax reform
Bank Loans	Strong Positive	Positive	Neutral	Neutral	Maintain Neutral: Negative convexity and high percent of covenant-lite loans remain a concern
Private Credit	Positive	Positive	Positive	Positive	Maintain Positive: Europe and Asia remains positive but cautious in US
Emerging Market Credit					
EMD Local	Positive	Positive	Positive	Positive	Maintain Positive: Attractive real rates vs. developed markets, FX volatility remains a risk but dispersed among EM countries
EMD External Sovereign	Neutral	Neutral	Negative	Negative	Maintain Negative: Significant spread compression in dollar-based debt
EMD External Corporate	Neutral	Neutral	Neutral	Negative	Downgrade to Negative: Stable fundamentals balanced by significant spread compression in dollar-based corporate debt
Structured Credit					
CLO	Positive	Positive	Positive	Positive	Maintain Positive: Equity/Mezzanine tranches offers better risk-adjusted spreads
RMBS	Neutral	Neutral	Neutral	Neutral	Maintain Neutral: Spreads narrowed, issuance remains slowed, regulatory overhang
CMBS	Neutral	Neutral	Negative	Negative	Maintain Negative: Credit deterioration, dealer inventory shrinking, and retail sector stress pose risks

RISK CONSIDERATIONS

- **Fed policy, a potential head wind**
  - Tightening via balance sheet reduction and interest rate hikes
  - Technical pressures could prove to be challenging
  - Contagion across sectors may become more pronounced as Fed tightens
- **Liquidity and volatility**
  - Sporadic spikes in volatility may breed risk-off sentiments
  - Increased risk-off sentiments decrease market liquidity and create technical pressures
  - Liquidity events at mutual funds may add to technical pressure on price
- **Short-term repercussions from the tax reform**
  - Interest deduction and foreign cash repatriation will dictate supply
  - Limiting deductions will be onerous for levered high yield issuers
  - Limiting loss carry-forward may add to stress in certain secularly challenged sectors like retail and energy
- **Geopolitical events**
  - May add to market fear and instability in credit markets

Exhibit 3

GO GREEN, NEUTRAL GRAY, DISCUSS REDS

Credit

Beta Type

Developed Markets		Emerging Markets		Structured Credit	
Corporate	**Sovereign**	**Corporate**	**Sovereign**	**Mortgages**	**Loans**
IG	Treasury	EM IG	EM Govt. Debt	Residential	Consumer
Bank Loans	Govt. Debt	EM High Yield		Commercial	Bank Loans
High Yield	TIPs	EM Private Credit			
Private Credit	Municipals				

Implementation

Developed Markets		Emerging Markets	Structured Credit
Core FI	Long Duration	EMD Local (Sovereign)	Agency RMBS
Core Plus FI	Long Govt Duration	EMD Blended (Sovereign & Corporate)	Non-Agency RMBS
Long Bank Loans	TIPs	EMD External Sovereign	CMBS
Global High Yield	Long/Short	EMD External Corporate	ABS
Stable Value	Multi-Sector	EM Private Credit	CLO
Mezzanine	Distressed Control		Multi-Sector
Long High Yield	Distressed Debt		
US Private Credit	US NPLs		
Euro Private Credit	Euro NPLs		

Exhibit 3

CREDIT BETA LIQUIDITY SPECTRUM

	< 3 Month	3 month – 3 Year	3-5 years	5+ years	
Typical Credit Strategies	• Core FI/ long bank loans • High yield • Duration trades • TIPS • Absolute return or multi-sector credit	• Multi-sector • Long-short credit • Structured credit • Stressed/ liquid distressed	• Long-biased semi-illiquid opportunities • CLOs • Distressed credit • NPLs	• Opportunistic credit investments • Distressed credit/ non-performing credit • Private debt	• Long-biased • Distressed-for-control • Special situations
Rationale	• Access credit (market) beta • Mid-cycle, when there is a clear beta • Cheap source of in-cycle/ theme return	• Access credit selection, selective credit betas • Early- or late-cycle; credit selection is key	• Access credit selection • Short-term dislocations or illiquidity premium	• Niche ideas • Uncorrelated to credit cycles • Complexity premium	• Concentrated strategic credit bets • Workout premium • Illiquidity premium
Challenges	• Passive market volatility • Technical price pressure	• Credit risk • Sporadic/ trendless price volatility	• Credit risk • Opportunity cost for locking capital • Extension risk	• Credit risk • Opportunity cost • Extension risk	• Credit risk • Vintage risk • Highest opportunity cost

Tax Reform Impact on Credit Markets

- **Winners will include companies with low debt, high capital expenditures, a domestic focus, and high current corporate tax rates**

- **Losers will include companies with high debt, low existing tax rates, large net operating loss carryforwards, and low capital expenditures**

- **Generally speaking, higher quality high yield companies will be better off, whereas highly levered CCC companies will be impacted adversely**
  - Spreads could widen on lower quality high yield credits

- **Foreign cash repatriation may have a short term influence on IG issuance market**

Source: J.P. Morgan

TAX REFORM SUMMARY

Positive for Credit Markets

- **Reducing the corporate tax rate from 35% to 21%**
  - Estimated average effective tax rate for HY issuers is 28%, indicating some tax relief from an overall reduced rate
  - Better after-tax cost of debt should incentivize debt pay-down and strengthen balance sheets
- **Capital expenditure deductions**
  - Fully deduct capex in the year spent for the next six years
- **Repatriation of foreign cash**
  - The tax reform bill allows for repatriation of overseas cash at a lower tax rate
  - A positive for most issuers, especially for IG market

Negative for Credit Markets

- **Limiting interest deductibility**
  - Limits the deductibility of interest expense at 30% of *EBITDA* (2018-2021) and then at 30% of *EBIT*
  - Companies with high leverage will be adversely impacted, particularly HY CCC
  - Roughly 36% of the high yield (mostly CCC) market currently has interest expenses above 30% of EBITDA
- **Limit offset from Net Operating Loss (NOL)**
  - Limiting the amount of NOL carryforward to 80% (down from 100%)
  - Energy, Retail, & Telecom sectors will likely be most impacted

Source: JP Morgan

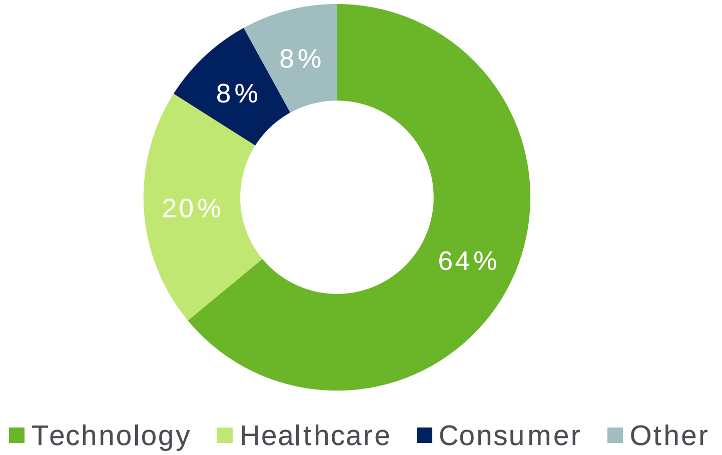
Exhibit 3

TAX REFORM IMPACT ON INVESTMENT GRADE

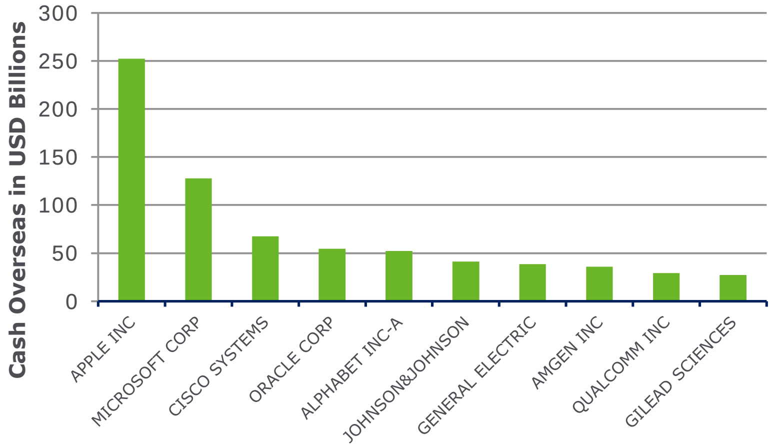
Comments

- **Nearly 85% of foreign cash is generated from Technology and Healthcare sectors and is concentrated in a limited number of companies.**
- **The repatriation of foreign cash could cause a decrease in the overall need to issue IG debt**
  - But issuers are anticipated to still use low-cost debt for capex heavy projects
- **The overall impact could be a modest decrease in supply, creating a slight technical tailwind for investment grade credit**

Sector Concentration of Overseas Cash



Cash Rich Companies with Debt Issuance



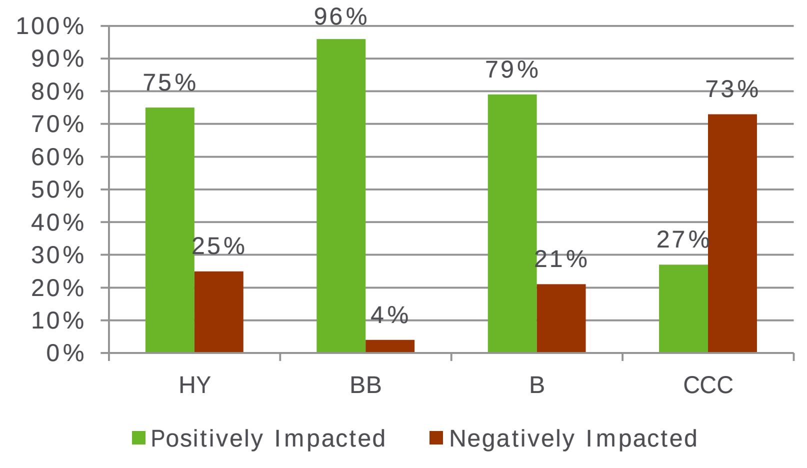
Source: JP Morgan, Credit Suisse, Bloomberg

TAX REFORM IMPACT ON HIGH YIELD

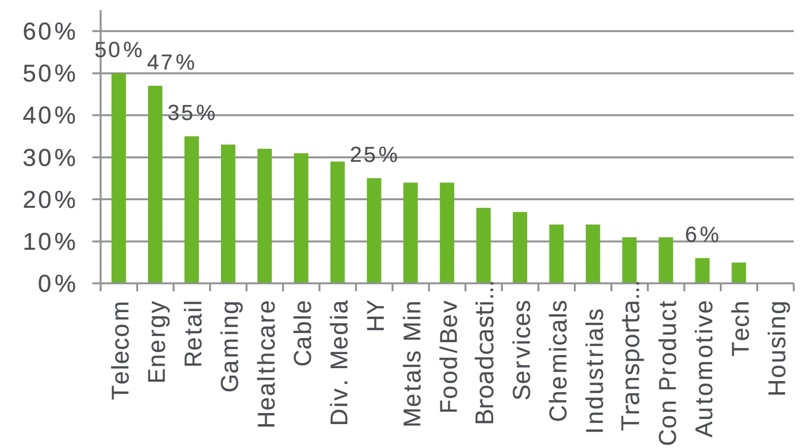
Comments

- **Almost 75% of HY issuers may benefit from tax reform**
  - Lowering of overall corporate tax rate and ability to depreciate more capex will outweigh the inability to deduct full interest expense
- **However, the limitation on interest deductibility will have a big negative impact on CCC/stressed issuers**
  - But only 4% of BB are negatively affected
- **Sectors: Unprofitable sectors with high leverage, significant buyout activity, low existing tax rates, or low capex are worst off**
  - Telecom, Energy, & Retail will lose benefit of NOL carryforward
  - Healthcare will likely be hurt by significant buyout activity

Impact on HY Segment



Sectors Negatively Impacted



Source: JP Morgan

TAX REFORM IMPACT ON MUNICIPAL BONDS

Comments

- **The elimination of tax-exempt advanced refunding and reduction in corporate tax rates may affect demand-supply**
  - Technicals appear supportive heading into 2018
  - The reduction in demand from the lower tax rate will likely be partially offset by demand from investors in high tax states
  - The change in market dynamics could lead to yield compression and price appreciation, at least in the beginning half of the year

Impact on Supply

- **Elimination of tax-exempt advanced refunding should provide a favorable supply/demand dynamics**
  - Advanced refunding allowed issuers to refinance outstanding issues at lower interest rates prior to being callable
  - Historically advanced refunding has accounted for 15% to 20% of issuance
  - The elimination of advanced refundings will materially reduce the amount of tax-exempt debt available

Impact on Demand

- **Corporate tax rate lowered from 35% to 21%will reduce demand**
  - Banks and insurance companies will likely reduce purchases of munis, causing a material reduction in demand
- **Top individual tax bracket reduced from 39.6% to 37.0%**
  - Minimal impact on demand
- **$10,000 limit on state and local tax deductions as well as property tax deductions**
  - This will be supportive for demand in high tax states

Source: JP Morgan

CREDIT: IMPLEMENTATION

Strategy	Viewpoints	FPL Managers
Investment Grade	• Valuations fairly tight with credit quality deteriorating • Headwinds from Fed rate hikes, technical pressure and fund flows remain a concern	• *Blackrock (Long Duration Credit Screened)* • *Legal & General (Long Credit)* • *NISA (Long Credit)*
High Yield	• Leverage at post-crisis peak but spreads at all time tights • Pockets of opportunity as fundamentals and technicals disconnect • Tax reform will benefit overall HY segment, but CCC will stand to lose out from limits on tax deductions	• *Artisen* • *DDJ* • *Hotchkis and Wiley*
Bank Loans	• Seniority in the capital structure beneficial; fed rate hike positive for floating-rate notes; LIBOR floors prevent near-term benefit • Concerns remain: increase covenant-lite loans, high % of loans trading at par	• *Bain* • *Loomis* • *Pacific Asset Management*
Municipal Bonds	• Nominal yields remain fairly unattractive & Fed rate hikes pose a headwind • Supply/demand dynamic should be supportive due to tax legislation, specifically the elimination of advanced refundings • On an after tax basis, HY munis look attractive compared to HY corporates	• *MacKay Shields* • *Sit Investment Associates* • *Fiera Capital*
Global Multi-Sector (Flexible)	• Flexibility allows manager to dynamically allocate risk and take advantage of price dislocations across fixed income markets • Greater exposure to non-core sectors with a more benchmark agnostic approach • More return seeking than traditional FI • Recommended shift from Core Plus or single-sector credit mandates	• *Manulife* • *Franklin Templeton* • *Reams*
Hedge Funds	• Defaults stabilizing, reduced expectation for widespread default cycle in 2018 • Continued divergence across corporate credit sectors & issuers; pockets of opportunity as technicals & fundamentals disconnect; strong security selection is key • Increased price volatility due to market technicals, active exposure management & shorting capabilities beneficial	• *Canyon* • *HG Vora* • *Makuria* • *Symphony* • *Beach Point*
Private Credit	• US and European diversified lending has grown less attractive than it was in recent history but still should play a core part in a broader credit portfolio • Add niche lending strategies as satellite positions to capture enhanced yield & return • Credit solutions providers that can lend up & down the stack & can also take advantage of special situations or distress can be beneficial in a maturing & changing credit environment	• *Monroe (US)* • *Stellus (US)* • *Park Square (Europe)* • *BlueBay (Europe)* • *Sound Harbor (Credit Solutions)* • *Nexus (Distress)* • *Oaktree (Special Sits)*

EMERGING MARKETS DEBT

General Market Thoughts

- **EM local currency debt remains an attractive investment**
  - Favorable valuations, fundamentals, and technicals for rates and FX
- **External sovereign and corporate debt valuations well below long term averages**
  - Fundamentals are stable, but upside is limited
  - Risk/return profile less attractive today relative to local markets
- **Recommend EMD Local for nimble investors with higher risk tolerance**
  - Favor a strategic allocation to Blended EMD for clients with lower risk appetite

Implementation Views

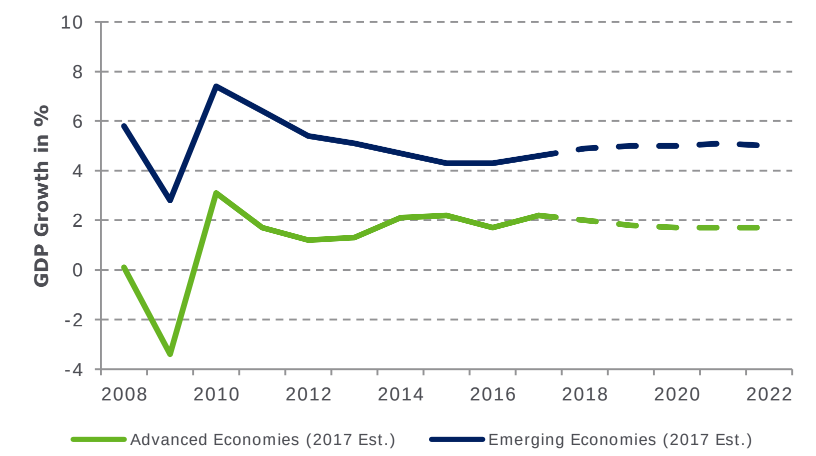
Strategy	Outlook	Commentary
EMD Local	Positive	High real rates and diverging cycles relative to DM, EM FX remain attractive though volatility to persist
EMD External Sovereign	Negative	Valuations are tight, upside is limited; idiosyncratic risks and opportunities remain
EMD External Corporate	Negative	Default risk relative low, but risk return profile much less attractive today; favor active exposure to corporates through blended mandate

EM COUNTRY FUNDAMENTALS

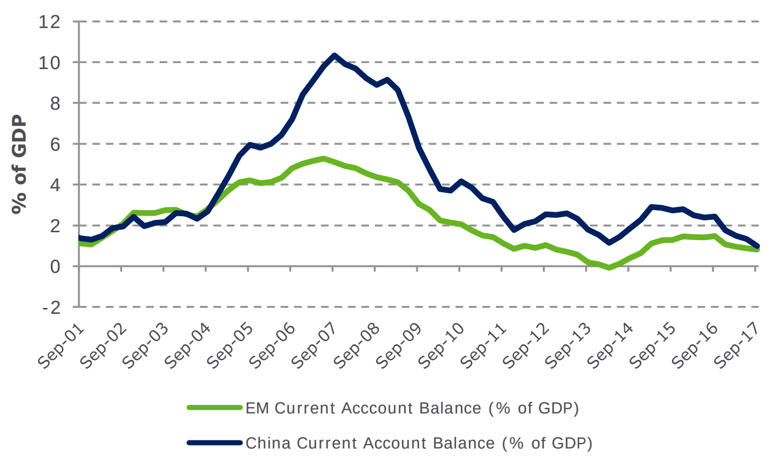
Comments

- **Growth forecasts show widening gap between EM and DM**
- **EM current accounts have recovered and continue to stabilize**
- **Foreign reserves are at healthy levels, mitigating concerns of FX crisis**

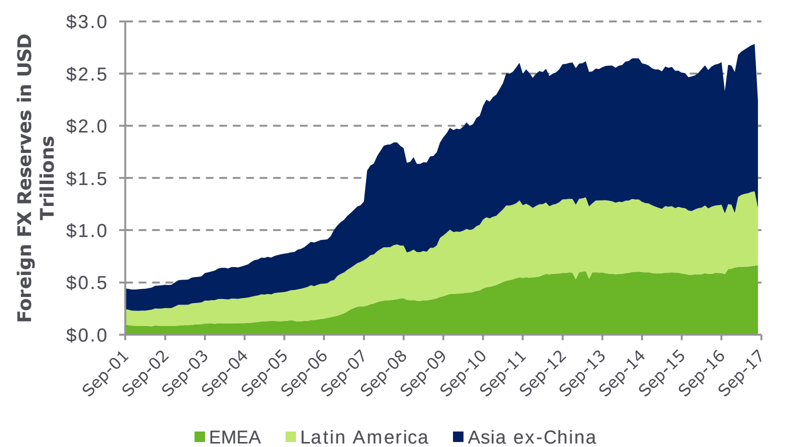
EM growth forecasts showing slight pick up



EM current accounts recovered materially



Foreign FX Reserves (ex-China)



Source: IMF, J.P. Morgan

Exhibit 3

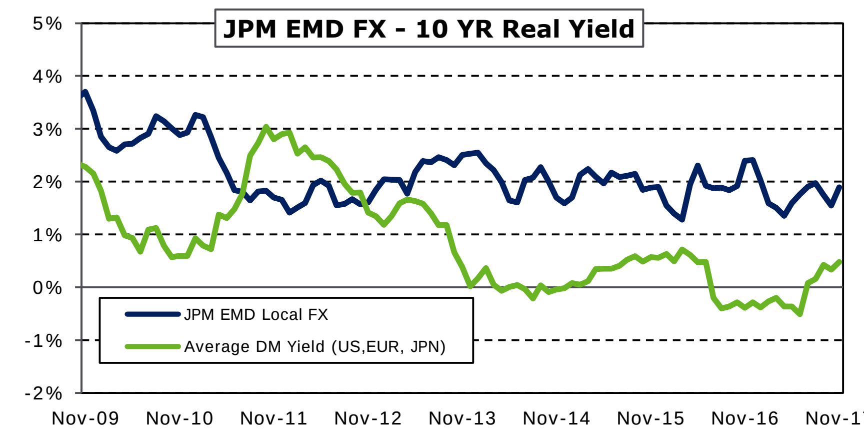
LOCAL RATES & CURRENCIES BOTH ATTRACTIVE

Comments

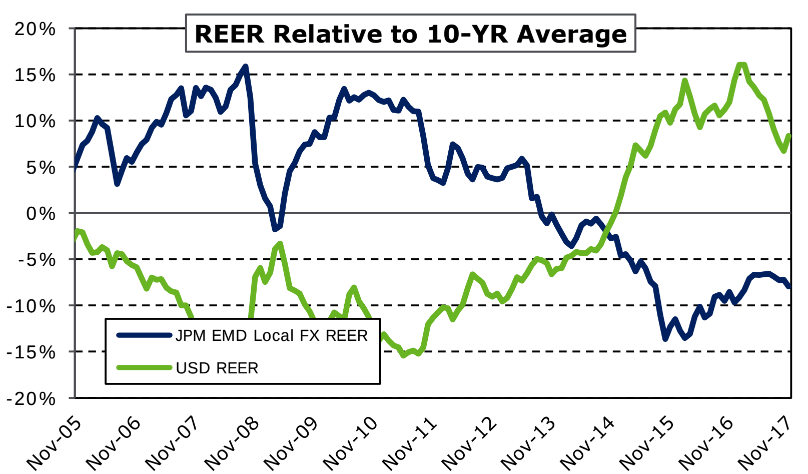
- **Emerging markets real rates and FX remain attractive relative to DM**
  - Though the gap has narrowed due to rate hikes in the US and Dollar weakness in 2017

- **Local currency flows lagged external debt in 2017**
  - Setting up for favorable technicals in the near term

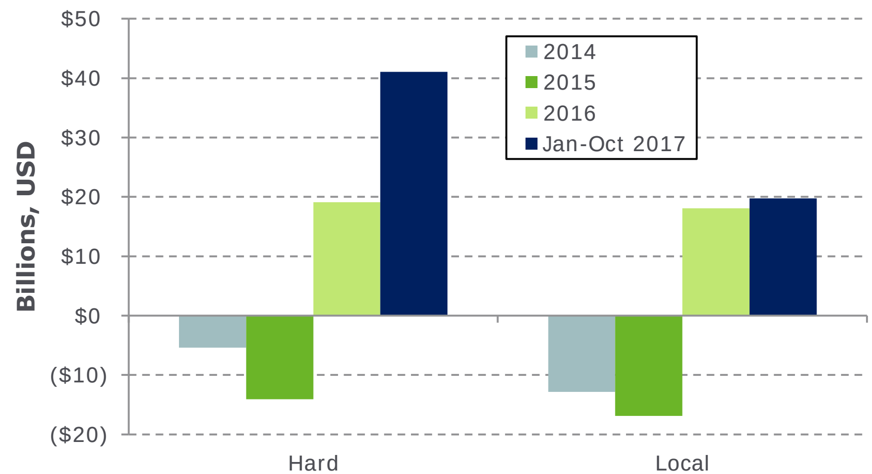
Real Yield Differential EM vs. DM



Currencies Still Attractive on REER basis



Emerging Market Mutual Fund Flows



Source: Barclays, J.P. Morgan, EPFR, NEPC

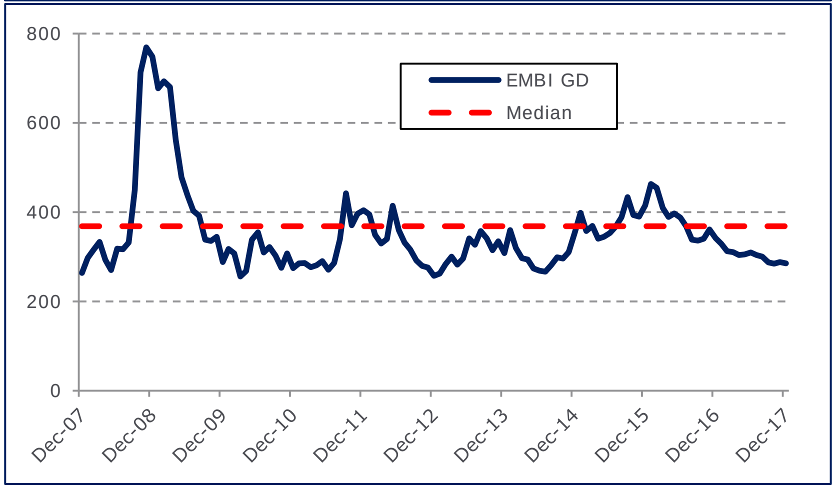
Exhibit 3

EXTERNAL EM SOVEREIGN DEBT

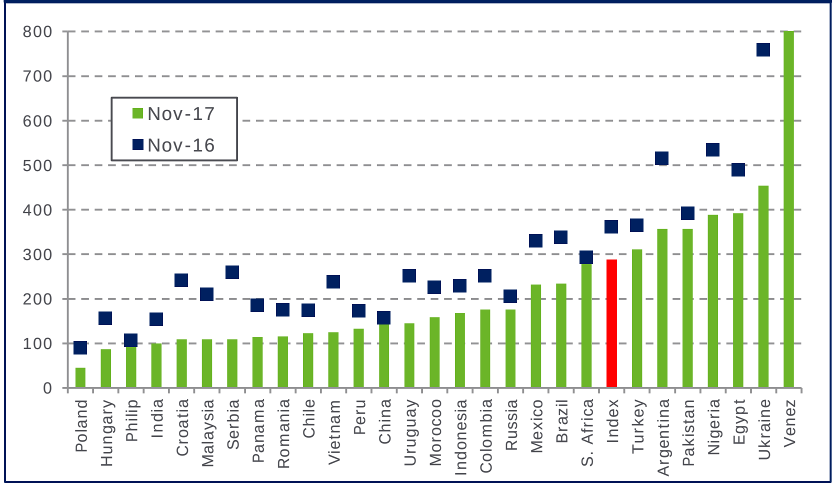
Comments

- **Improvement in EM fundamentals largely priced into EM sovereign and corporate valuations**
  - Spreads well below long-term median
- **Debt levels expected to increase modestly in emerging countries**
- **Spreads compressed in mostly all countries in 2017**
  - Venezuela was the notable exception

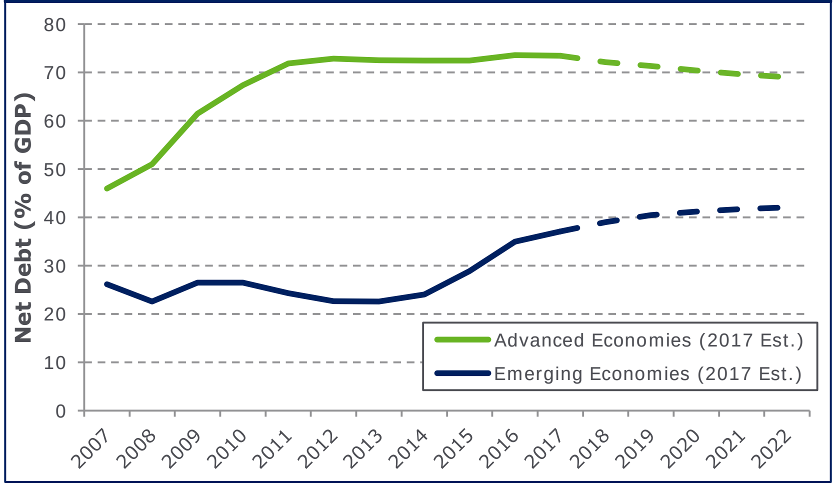
Sovereign Debt Spreads



Sovereign Spreads Narrowed



Debt Levels Rising Slightly



Source: J.P. Morgan, International Monetary Fund

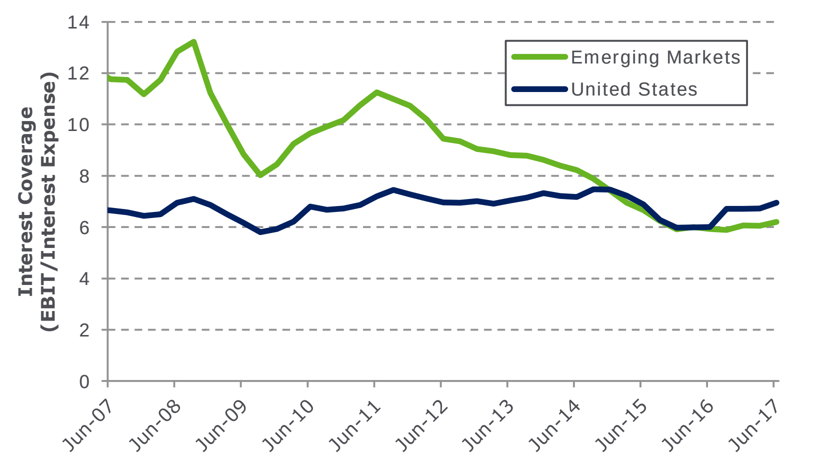
Exhibit 3

EMERGING MARKET CORPORATES

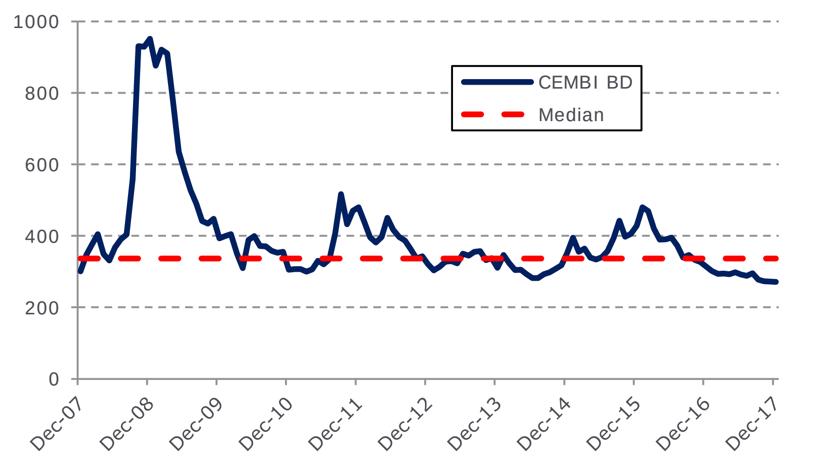
Comments

- **Interest coverage has declined in recent years, but stabilized in 2016 and 2017**
  - Higher rates in the US may impact dollar funding for external market issuers
- **Spread per turn of leverage in EM decreased, narrowing the gap relative to developed markets**
- **Default risk is relatively low, but additional spread compression is limited**
  - Exogenous risks could disrupt market

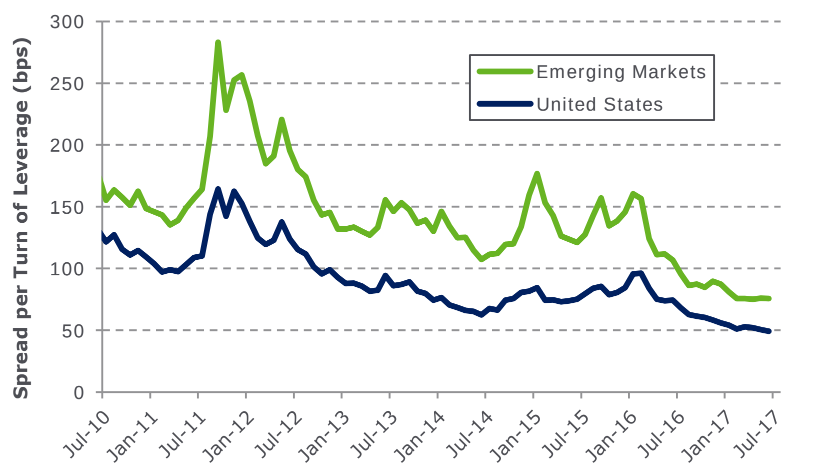
Interest Coverage EM vs. US



Corporate Debt Spreads



Relative Compensation For EM risk

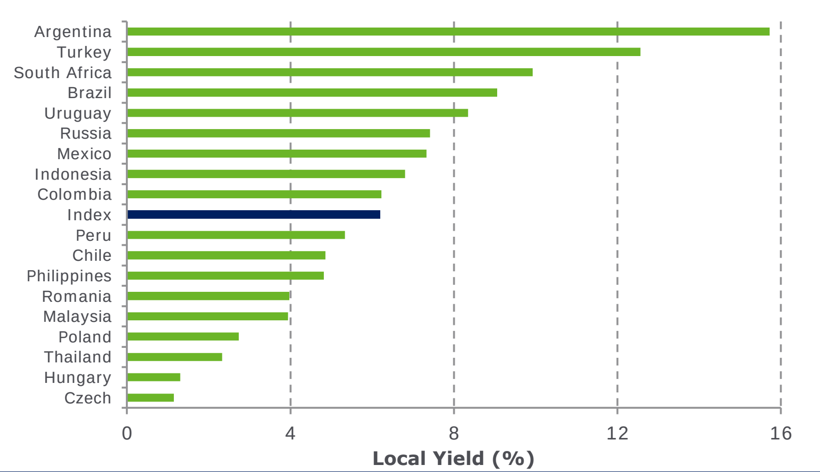


Source: Bank of International Settlements, International Monetary Fund, Wellington Management Company LLP

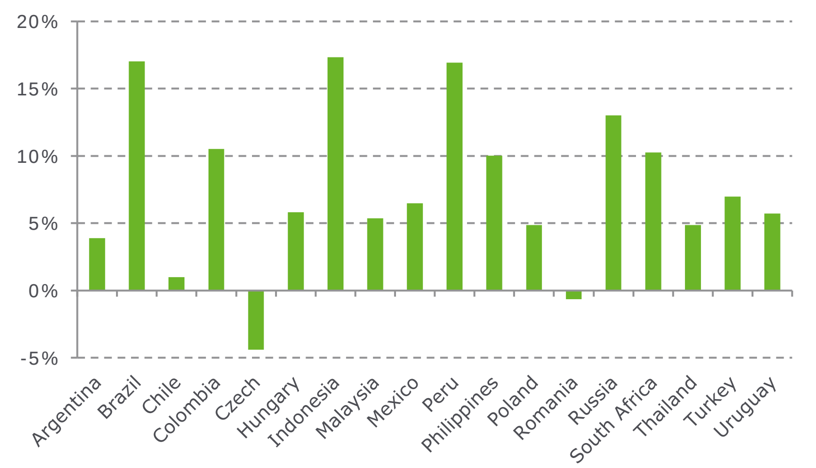
WHY EMD BLENDED: MARKET DISPERSION

Blended Approach Provides Flexibility to Rotate Sectors					
Year	**Hard Currency EMD**	**Local Currency EMD**	**EMD Corporates**	**Best Performing**	**Best-Worst (bps)**
2017	10.26%	15.21%	7.97%	Local Currency EMD	724
2016	10.15%	9.94%	9.65%	Hard Currency EMD	50
2015	1.18%	-14.92%	1.30%	EMD Corporates	1621
2014	7.43%	-5.72%	4.96%	Hard Currency EMD	1314
2013	-5.25%	-8.98%	-0.60%	EMD Corporates	838
2012	17.44%	16.76%	15.02%	Hard Currency EMD	242
2011	7.34%	-1.75%	2.31%	Hard Currency EMD	910
2010	12.24%	15.68%	13.08%	Local Currency EMD	344
2009	29.82%	21.98%	34.88%	EMD Corporates	1289
2008	-12.03%	-5.22%	-15.86%	Local Currency EMD	1063
2007	6.16%	18.11%	3.91%	Local Currency EMD	1420

Wide Range of Local Yields



Local Currency EMD Performance by Country 2017



Source: eVestment, J.P. Morgan

APPENDIX

PRIMARY RISKS ASSOCIATED WITH FIXED INCOME INVESTING

- **Interest-Rate Risk:**
  - Primary market risk assumed by fixed income investor
  - Risk that the price of a bond will fluctuate due to change in market interest rates
    - Bond prices move in the opposite direction of interest rate
  - Interest rate risk is typically expressed as duration

- **Default/Credit Risk:**
  - Defined as the risk of an entity being unable to make the required payments on their debt obligations
  - To help mitigate the impact of default/credit risk, lenders often charge rates of return that correspond with the borrowers level of default risk
    - i.e. The higher the perceived default/credit risk, the higher the rate of interest that investors will demand for lending their capital with a high Default risk should be a concern for below investment grade bonds
  - Default risk evaluated based on stability of cash flows, level of asset protection

- **Liquidity Risk:**
  - Defined as the risk of being unable to buy or sell an investment quickly enough to prevent or minimize a loss
    - Liquidity risk is minimal for govt. debt however
    - Liquidity risk is a concern for lower rated bonds, securities that were part of a small issue, or bonds that have recently had their credit rating downgraded

- **Other risks include reinvestment & currency risk**

TYPES OF BONDS – DIFFERENT ISSUERS AND STRUCTURES

- **Government or Sovereign debt**
  - Debt issued by a national government and denominated in a local or foreign currency
  - US Treasury Bonds
    - Guaranteed by the full faith and credit of the US government
      - Treasury Bills – mature in one year or less
      - Treasury Notes – mature in 1-7 years
      - Treasury Bonds – mature in over 7 years
      - Treasury Inflation Protected Securities (TIPS)
- **Quasi-Sovereign (Agency) debt**
  - Debt with explicit or implicit government guarantees (ex: Ginnie Mae)
- **Corporate Bonds (US, Foreign, Emerging)**
  - Can be secured or unsecured
  - Issued by companies of varying size & credit-quality
- **Mortgage debt**
  - A bond secured by a mortgage on a property, typically residential or commercial real estate.
  - Issued by government agencies like Fannie Mae & Freddie Mac, as well as banks and mortgage companies
- **Asset-backed Securities (ABS)**
  - Bonds that are secured by secured and unsecured claims on property or cash flows
    - Auto loans, credit cards
- **Structured debt**
  - Broader term that reflects fixed income securities structured multiple layers

REFRESHER ON KEY FIXED INCOME MARKET TERMINOLOGY

- **Definitions**
  - Coupon: the interest rate state on a bond when it's issued and paid on a regular basis
  - Principal: the original sum of money invested or lent, face value of bond
  - Yield: the income return on investment which refers to the interest paid relative to the current price of the security
  - Maturity: refers to a finite time period at the end of which the financial instrument will cease to exist and the principal is repaid with interest
  - Duration: the weighted average term-to-maturity of a bonds cash flows. Also used as a measure of the sensitivity of the price of fixed income investment to a change in interest rates. Duration is typically expressed as a number of years.
  - Rating: Method of evaluating the possibility of default by a bond issuer. Standard & Poor, Moody's and Fitch are rating agencies that analyze the financial strength of each bond issuer and assign ratings that range from - AAA (highly unlikely to default) to D (in default)
    - Investment Grade – bonds rated AAA, AA, A and BBB
    - High Yield – bonds rated BB, B, CCC, CC, C and D

INFORMATION DISCLAIMER

Past performance is no guarantee of future results.

The goal of this report is to provide a basis for substantiating asset allocation recommendations. The opinions presented herein represent the good faith views of NEPC as of the date of this report and are subject to change at any time.

Information on market indices was provided by sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.

All investments carry some level of risk. Diversification and other asset allocation techniques do not ensure profit or protect against losses.

This report is provided as a management aid for the client's internal use only. This report may contain confidential or proprietary information and may not be copied or redistributed to any party not legally entitled to receive it.

Exhibit 3

SURS - Total Core Fixed Income
September 30, 2017

Performance Analysis (Net of Fees)

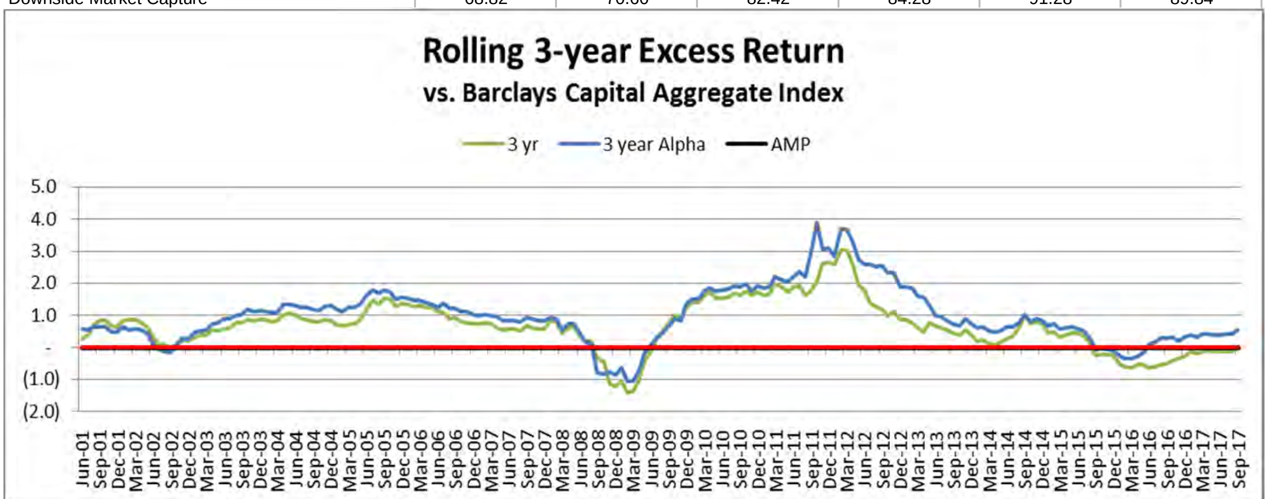
Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (06/86)
SURS Total Core Fixed Income (Net)	1.28	2.69	2.14	3.11	4.86	7.06
Bloomberg Barclays Agg	0.07	2.71	2.06	2.95	4.27	6.44
Excess Returns	1.21	-0.02	0.08	0.16	0.59	0.62
Annualized Alpha (Risk Adjusted Excess Return)	1.22	0.55	0.37	0.61	0.95	0.86
Active Manager Premium	0.00	0.00	0.00	0.00	0.00	0.00
Excess Risk Adjusted Returns	1.22	0.55	0.37	0.61	0.95	0.86

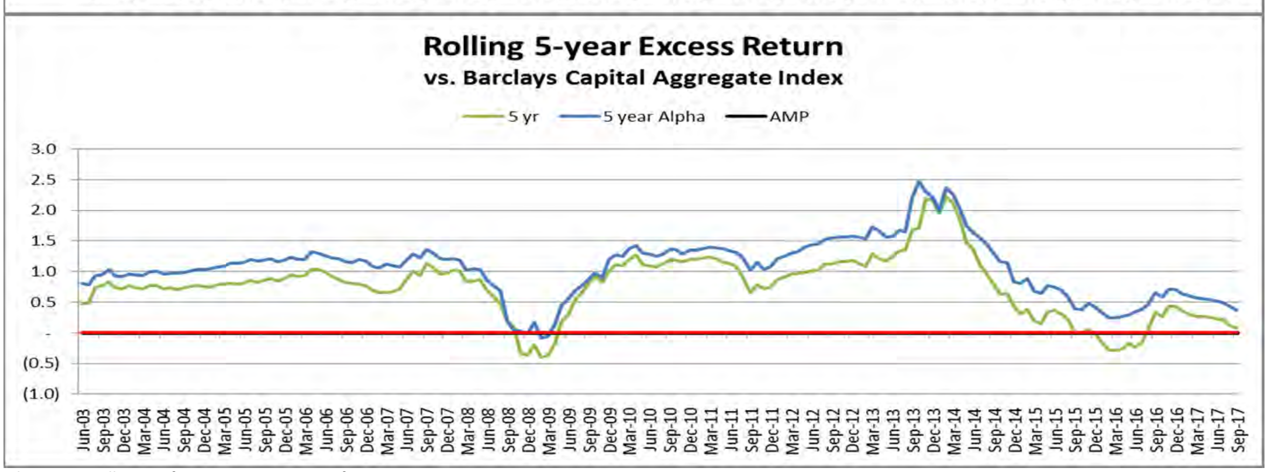
Risk And Regression

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (06/86)
Standard Deviation	2.63	2.32	2.51	2.50	3.38	3.82
Standard Deviation - Benchmark	3.15	2.86	2.84	2.77	3.27	3.39
Beta	0.83	0.78	0.86	0.84	0.91	0.96
R-Squared	0.99	0.93	0.94	0.87	0.78	0.92

Efficiency Measures

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (06/86)
Sharpe Ratio	0.24	1.03	0.78	1.18	1.32	0.98
Treynor Ratio	0.77	3.06	2.28	3.50	4.88	3.91
Sortino Ratio	0.31	1.73	1.18	1.99	2.40	1.66
Tracking Error	0.60	0.87	0.75	0.99	1.62	1.06
Information Ratio	2.02	-0.03	0.10	0.16	0.36	0.58
Upside Market Capture	99.58	84.65	90.72	95.46	105.43	103.54
Downside Market Capture	68.82	70.60	82.42	84.28	91.28	89.84





Three Year Rolling Performance Statistics as of:

	Jun-16	Sep-16	Dec-16	Mar-17	Jun-17	Sep-17
Alpha	0.11	0.29	0.32	0.41	0.38	0.55
Tracking Error	0.81	0.83	0.87	0.85	0.85	0.87

eVestment US Core Fixed Income Universe Information as of September 30, 2017

Sharpe Ratio - using Citigroup 3-Month T-Bill

Percentiles	1 Year	3 Years	5 Years	7 Years
25th Percentile	0.15	1.11	0.95	1.32
Median	-0.01	0.98	0.81	1.20
75th Percentile	-0.13	0.90	0.71	1.09
Observations	249	243	240	234

Treynor Ratio - using Bloomberg Barclays US Aggregate and Citigroup 3-Month T-Bill

Percentiles	1 Year	3 Years	5 Years	7 Years
25th Percentile	0.48	3.24	2.79	3.92
Median	-0.03	2.86	2.34	3.47
75th Percentile	-0.42	2.62	2.07	3.10
Observations	249	243	240	234

Sortino Ratio - using Citigroup 3-Month T-Bill

Percentiles	1 Year	3 Years	5 Years	7 Years
25th Percentile	0.20	1.88	1.54	2.36
Median	-0.01	1.65	1.29	2.11
75th Percentile	-0.16	1.50	1.12	1.88
Observations	249	243	240	234

Tracking Error - using Bloomberg Barclays US Aggregate

Percentiles	1 Year	3 Years	5 Years	7 Years
25th Percentile	0.51	0.85	0.87	1.00
Median	0.37	0.59	0.59	0.72
75th Percentile	0.26	0.39	0.40	0.50
Observations	249	243	240	234

Information Ratio - using Bloomberg Barclays US Aggregate

Percentiles	1 Year	3 Years	5 Years	7 Years
25th Percentile	2.70	1.11	1.28	1.16
Median	1.52	0.60	0.77	0.78
75th Percentile	0.51	0.15	0.31	0.39
Observations	249	243	240	234

Upside Market Capture - using Bloomberg Barclays US Aggregate

Percentiles	1 Year	3 Years	5 Years	7 Years
25th Percentile	114.24	108.30	110.49	111.48
Median	105.66	102.07	104.80	106.17
75th Percentile	99.26	97.38	99.45	101.76
Observations	249	243	240	234

Downside Market Capture - using Bloomberg Barclays US Aggregate

Percentiles	1 Year	3 Years	5 Years	7 Years
25th Percentile	98.51	98.65	99.44	98.79
Median	91.43	90.98	92.56	90.78
75th Percentile	83.31	82.37	83.35	81.76
Observations	249	243	240	234

Excess Return - using Bloomberg Barclays US Aggregate

Percentiles	1 Year	3 Years	5 Years	7 Years
25th Percentile	1.02	0.64	0.78	0.89
Median	0.54	0.34	0.42	0.52
75th Percentile	0.18	0.10	0.16	0.26
Observations	249	243	240	234

Annualized Alpha - using Bloomberg Barclays US Aggregate

Percentiles	1 Year	3 Years	5 Years	7 Years
25th Percentile	1.02	0.77	0.87	1.02
Median	0.54	0.41	0.46	0.64
75th Percentile	0.18	0.18	0.20	0.30
Observations	249	243	240	234

eVestment US Core Plus Fixed Income Universe Information as of September 30, 2017

Sharpe Ratio - using Citigroup 3-Month T-Bill

Percentiles	1 Year	3 Years	5 Years	7 Years
25th Percentile	0.66	1.25	1.14	1.53
Median	0.44	1.15	1.00	1.40
75th Percentile	0.19	1.00	0.89	1.27
Observations	142	137	133	126

Treynor Ratio - using Bloomberg Barclays US Aggregate and Citigroup 3-Month T-Bi

Percentiles	1 Year	3 Years	5 Years	7 Years
25th Percentile	2.10	4.04	3.72	5.23
Median	1.40	3.61	3.10	4.48
75th Percentile	0.62	3.15	2.75	3.98
Observations	142	137	133	126

Sortino Ratio - using Citigroup 3-Month T-Bill

Percentiles	1 Year	3 Years	5 Years	7 Years
25th Percentile	0.89	2.26	1.92	2.85
Median	0.58	1.96	1.62	2.51
75th Percentile	0.25	1.71	1.40	2.19
Observations	142	137	133	126

Tracking Error - using Bloomberg Barclays US Aggregate

Percentiles	1 Year	3 Years	5 Years	7 Years
25th Percentile	0.78	1.63	1.51	1.94
Median	0.55	1.18	1.15	1.41
75th Percentile	0.41	0.84	0.82	1.06
Observations	142	137	133	126

Information Ratio - using Bloomberg Barclays US Aggregate

Percentiles	1 Year	3 Years	5 Years	7 Years
25th Percentile	4.51	1.13	1.39	1.19
Median	3.17	0.62	0.98	0.98
75th Percentile	2.25	0.38	0.71	0.71
Observations	142	137	133	126

Upside Market Capture - using Bloomberg Barclays US Aggregate

Percentiles	1 Year	3 Years	5 Years	7 Years
25th Percentile	135.53	109.80	119.67	122.61
Median	124.27	105.07	112.38	114.87
75th Percentile	113.79	97.06	107.37	110.01
Observations	142	137	133	126

Downside Market Capture - using Bloomberg Barclays US Aggregate

Percentiles	1 Year	3 Years	5 Years	7 Years
25th Percentile	85.54	89.39	93.63	92.13
Median	78.95	82.14	84.24	81.74
75th Percentile	68.00	70.80	75.00	71.50
Observations	142	137	133	126

Excess Return - using Bloomberg Barclays US Aggregate

Percentiles	1 Year	3 Years	5 Years	7 Years
25th Percentile	2.53	1.09	1.50	1.88
Median	1.91	0.80	1.04	1.28
75th Percentile	1.18	0.43	0.76	0.92
Observations	142	137	133	126

Annualized Alpha - using Bloomberg Barclays US Aggregate

Percentiles	1 Year	3 Years	5 Years	7 Years
25th Percentile	2.53	1.46	1.70	2.09
Median	1.91	1.06	1.15	1.52
75th Percentile	1.18	0.68	0.84	1.13
Observations	142	137	133	126

Exhibit 3

Garcia Hamilton/Core Fixed Income
September 30, 2017

Performance Analysis (Net of Fees)

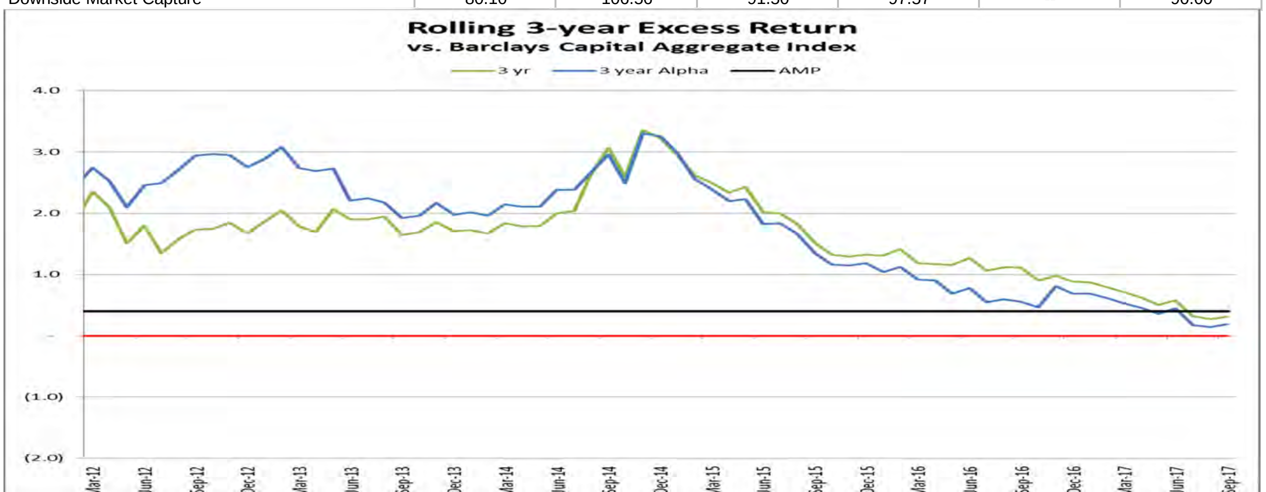
Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (03/09)
Product Return (Gross)	0.32	3.25	3.25	4.32	--	5.92
Product Return (Net)	0.00	3.03	3.05	4.12	--	5.73
Annualized Fees	0.32	0.22	0.20	0.20	--	0.19
BC Agg	0.07	2.71	2.06	2.95	--	4.17
Excess Returns	-0.07	0.32	0.99	1.17	--	1.56
Annualized Alpha (Risk Adjusted Excess Return)	-0.06	0.19	0.96	1.22	--	1.63
Active Manager Premium	0.40	0.40	0.40	0.40	--	0.40
Excess Risk Adjusted Returns	-0.46	-0.21	0.56	0.82	--	1.23

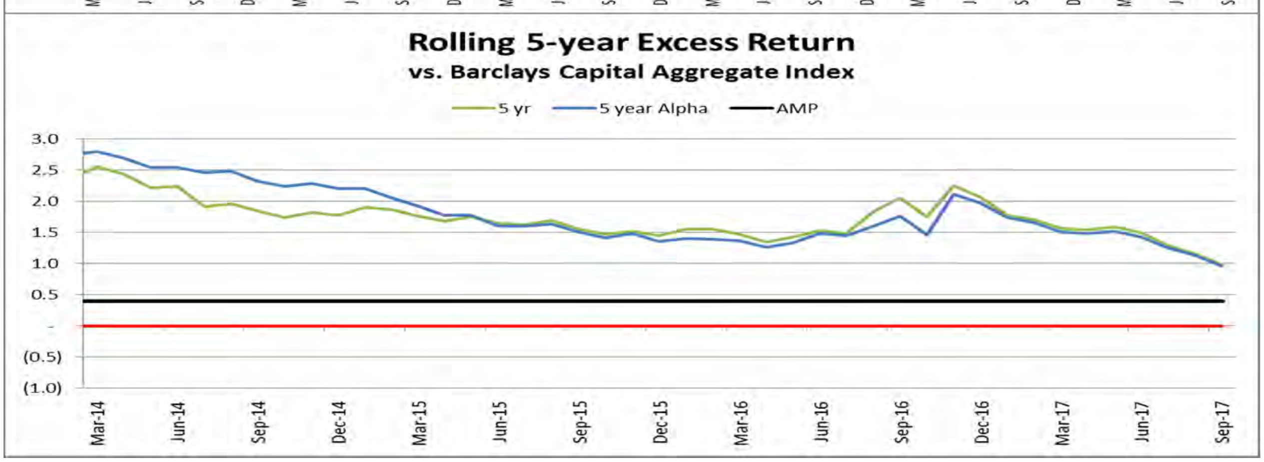
Risk And Regression

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (03/09)
Standard Deviation	2.64	3.19	3.06	3.24	--	3.32
Standard Deviation - Benchmark	3.15	2.86	2.84	2.77	--	2.82
Beta	0.81	1.05	1.01	0.98	--	0.97
R-Squared	0.93	0.87	0.88	0.70	--	0.68

Efficiency Measures

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (03/09)
Sharpe Ratio	-0.24	0.86	0.93	1.22	--	1.68
Treynor Ratio	-0.80	2.62	2.83	4.06	--	5.72
Sortino Ratio	-0.30	1.52	1.58	2.23	--	3.42
Tracking Error	0.93	1.14	1.07	1.79	--	1.87
Information Ratio	-0.08	0.28	0.92	0.65	--	0.84
Upside Market Capture	77.30	109.63	115.40	121.12	--	121.41
Downside Market Capture	80.10	106.56	91.50	97.57	--	90.00





Status Evaluation:

	3yr Alpha	5yr Alpha	AMP	3yr Alpha vs. AMP	5yr Alpha vs. AMP	Manager Status
Current Quarter	0.19	0.96	0.40	-0.21	0.56	Enhanced Review
Prior Quarter	0.45	1.42	0.40	0.05	1.02	

Exhibit 3

Pugh Capital Management/Core Fixed Income
September 30, 2017

Performance Analysis (Net of Fees)

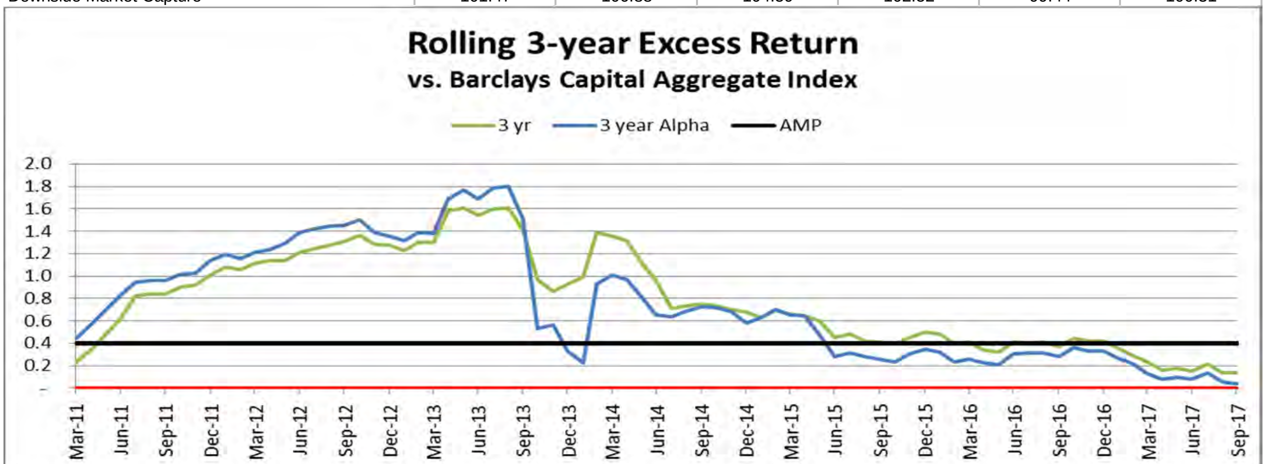
Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (04/06)
Product Return (Gross)	0.31	2.93	2.36	3.40	5.03	5.15
Product Return (Net)	0.16	2.78	2.20	3.23	4.85	4.97
Annualized Fees	0.15	0.15	0.16	0.17	0.18	0.18
BC Agg	0.07	2.71	2.06	2.95	4.27	4.49
Excess Returns	0.09	0.07	0.14	0.28	0.58	0.48
Annualized Alpha (Risk Adjusted Excess Return)	0.08	-0.04	0.04	0.17	0.51	0.42
Active Manager Premium	0.40	0.40	0.40	0.40	0.40	0.40
Excess Risk Adjusted Returns	-0.32	-0.44	-0.36	-0.23	0.11	0.02

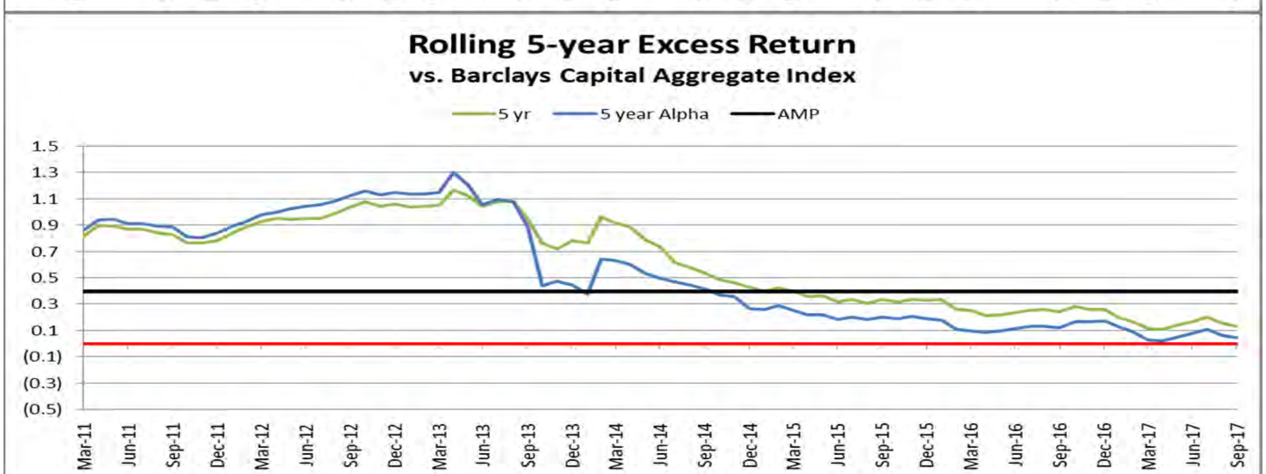
Risk And Regression

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (04/06)
Standard Deviation	3.23	2.97	2.98	2.89	3.37	3.27
Standard Deviation - Benchmark	3.15	2.86	2.84	2.77	3.27	3.18
Beta	1.02	1.04	1.04	1.04	1.01	1.01
R-Squared	1.00	0.99	0.99	0.98	0.96	0.96

Efficiency Measures

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (04/06)
Sharpe Ratio	-0.15	0.84	0.67	1.06	1.31	1.21
Treynor Ratio	-0.47	2.40	1.92	2.96	4.39	3.93
Sortino Ratio	-0.18	1.37	1.03	1.78	2.57	2.31
Tracking Error	0.21	0.26	0.31	0.37	0.67	0.63
Information Ratio	0.41	0.24	0.43	0.74	0.86	0.76
Upside Market Capture	103.82	104.77	105.67	106.49	108.50	107.35
Downside Market Capture	101.47	106.88	104.59	102.52	99.44	100.31





Status Evaluation:

	3yr Alpha	5yr Alpha	AMP	3yr Alpha vs. AMP	5yr Alpha vs. AMP	Manager Status
Current Quarter	-0.04	0.04	0.40	-0.44	-0.36	Enhanced Review
Prior Quarter	-0.09	0.08	0.40	-0.49	-0.32	

Smith Graham/Core Fixed Income
September 30, 2017

Performance Analysis (Net of Fees)

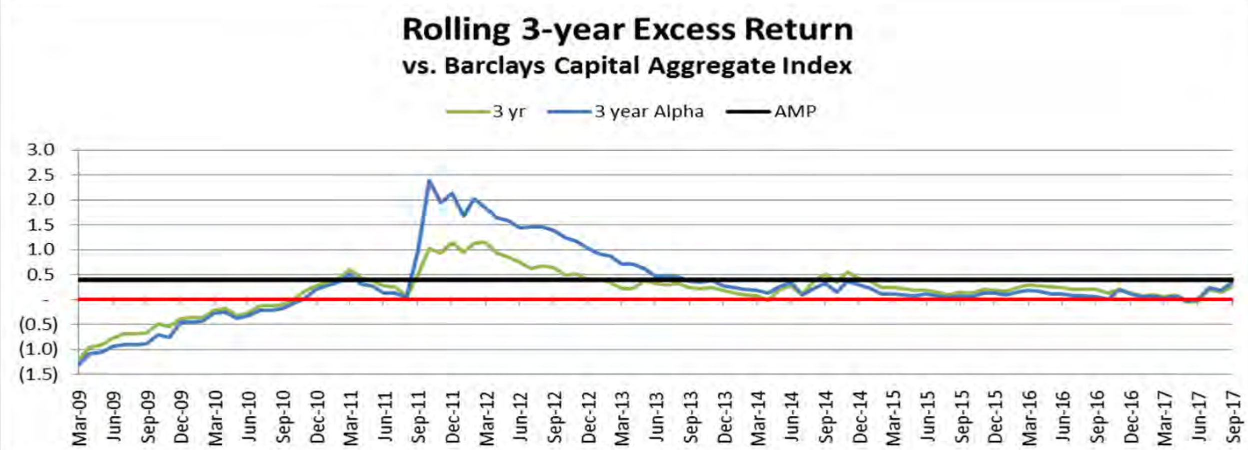
Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (04/06)
Product Return (Gross)	0.53	3.15	2.44	3.37	4.59	4.77
Product Return (Net)	0.36	2.98	2.27	3.19	4.41	4.58
Annualized Fees	0.17	0.17	0.17	0.18	0.18	0.19
BC Agg	0.07	2.71	2.06	2.95	4.27	4.49
Excess Returns	0.29	0.27	0.21	0.24	0.14	0.09
Annualized Alpha (Risk Adjusted Excess Return)	0.29	0.35	0.20	0.30	0.17	0.12
Active Manager Premium	0.40	0.40	0.40	0.40	0.40	0.40
Excess Risk Adjusted Returns	-0.11	-0.05	-0.20	-0.10	-0.23	-0.28

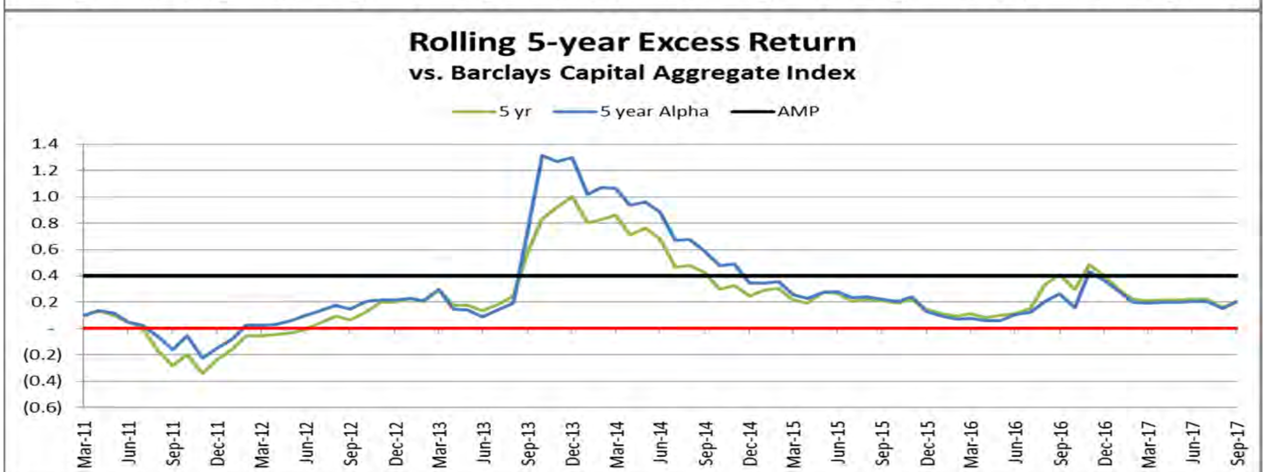
Risk And Regression

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (04/06)
Standard Deviation	2.85	2.78	2.89	2.80	3.42	3.31
Standard Deviation - Benchmark	3.15	2.86	2.84	2.77	3.27	3.18
Beta	0.90	0.97	1.00	0.97	0.99	0.99
R-Squared	0.99	0.98	0.97	0.93	0.90	0.91

Efficiency Measures

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (04/06)
Sharpe Ratio	-0.10	0.97	0.72	1.08	1.17	1.08
Treynor Ratio	-0.31	2.79	2.08	3.11	4.03	3.61
Sortino Ratio	-0.12	1.70	1.16	1.89	1.95	1.78
Tracking Error	0.47	0.39	0.51	0.74	1.07	1.00
Information Ratio	0.62	0.69	0.40	0.31	0.13	0.09
Upside Market Capture	94.68	101.53	103.59	104.18	102.49	102.14
Downside Market Capture	87.61	92.64	98.92	99.39	101.10	102.11





Status Evaluation:

	3yr Alpha	5yr Alpha	AMP	3yr Alpha vs. AMP	5yr Alpha vs. AMP	Manager Status
Current Quarter	0.35	0.20	0.40	-0.05	-0.20	Enhanced Review
Prior Quarter	-0.01	0.20	0.40	-0.41	-0.20	

LM/Core Plus Fixed Income
September 30, 2017

Performance Analysis (Net of Fees)

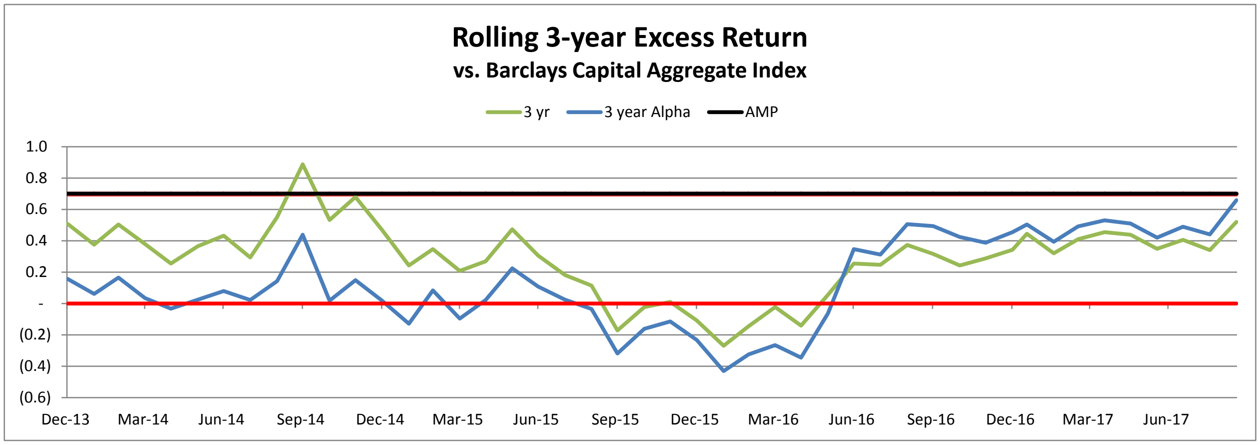
Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (01/11)
Product Return (Gross)	0.92	3.41	2.51	--	--	3.90
Product Return (Net)	0.75	3.23	2.34	--	--	3.71
Annualized Fee	0.17	0.18	0.17	--	--	0.19
BC Agg	0.07	2.71	2.06	--	--	3.26
Excess Returns	0.68	0.52	0.28	--	--	0.45
Annualized Alpha (Risk Adjusted Excess Return)	0.68	0.66	0.17	--	--	0.38
Active Manager Premium	0.70	0.70	0.70	--	--	0.70
Excess Risk Adjusted Returns	-0.02	-0.04	-0.53	--	--	-0.32

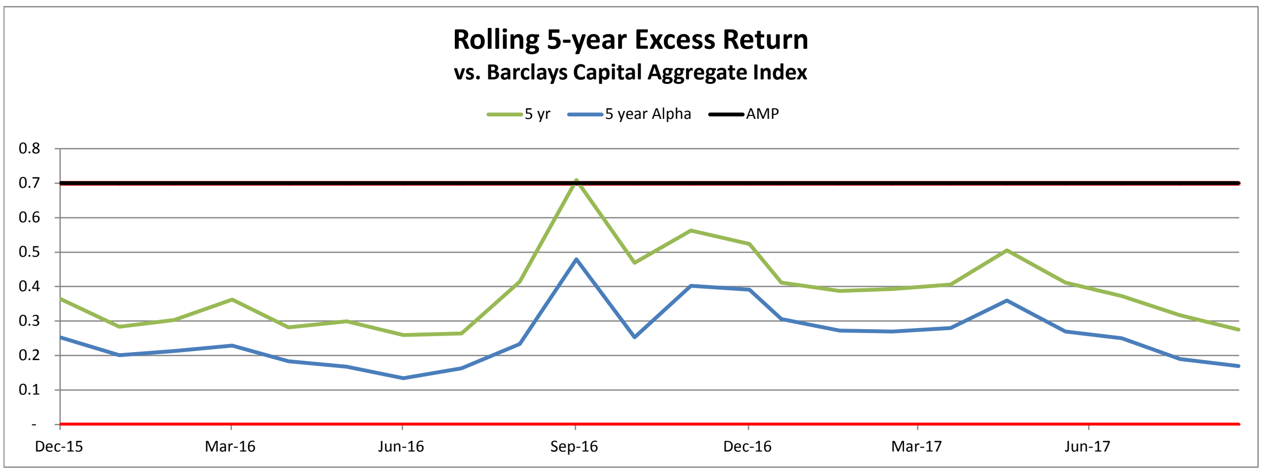
Risk And Regression

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (01/11)
Standard Deviation	3.15	2.80	3.13	--	--	3.06
Standard Deviation - Benchmark	3.15	2.85	2.84	--	--	2.75
Beta	0.99	0.94	1.05	--	--	1.02
R-Squared	0.98	0.92	0.91	--	--	0.84

Efficiency Measures

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (01/11)
Sharpe Ratio	0.03	1.05	0.68	--	--	1.16
Treynor Ratio	0.11	3.12	2.04	--	--	3.48
Sortino Ratio	0.04	1.76	1.01	--	--	1.90
Tracking Error	0.41	0.79	0.93	--	--	1.21
Information Ratio	1.64	0.65	0.30	--	--	0.37
Upside Market Capture	105.25	101.11	108.26	--	--	110.34
Downside Market Capture	87.94	82.09	103.95	--	--	104.45





Status Evaluation:

	3yr Alpha	5yr Alpha	AMP	3yr Alpha vs AMP	5yr Alpha vs AMP	Status
Current Quarter	0.66	0.17	0.70	-0.04	-0.53	Enhanced Review
Prior Quarter	0.42	0.27	0.70	-0.28	-0.43	

PIMCO Total Return/Core Plus Fixed Income
September 30, 2017

Performance Analysis (Net of Fees)

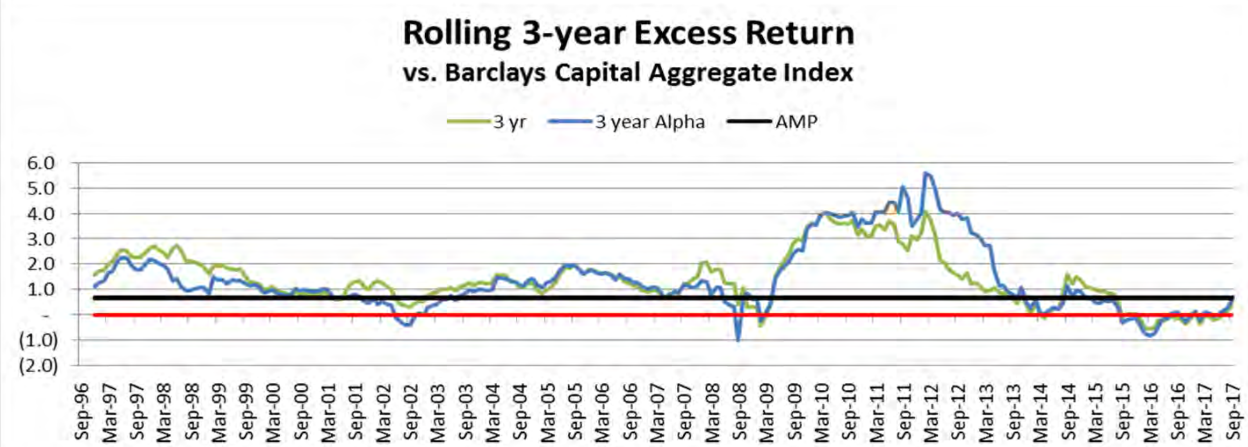
Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (06/85)
Product Return (Gross)	1.60	3.33	2.62	3.58	5.82	9.64
Product Return (Net)	1.37	3.10	2.37	3.35	5.59	8.22
Annualized Fees	0.23	0.23	0.25	0.23	0.23	1.42
BC Agg	0.07	2.71	2.06	2.95	4.27	6.78
Excess Returns	1.30	0.39	0.31	0.40	1.32	1.44
Annualized Alpha (Risk Adjusted Excess Return)	1.30	0.57	0.24	0.56	1.45	1.07
Active Manager Premium	0.70	0.70	0.70	0.70	0.70	0.70
Excess Risk Adjusted Returns	0.60	-0.13	-0.46	-0.14	0.75	0.37

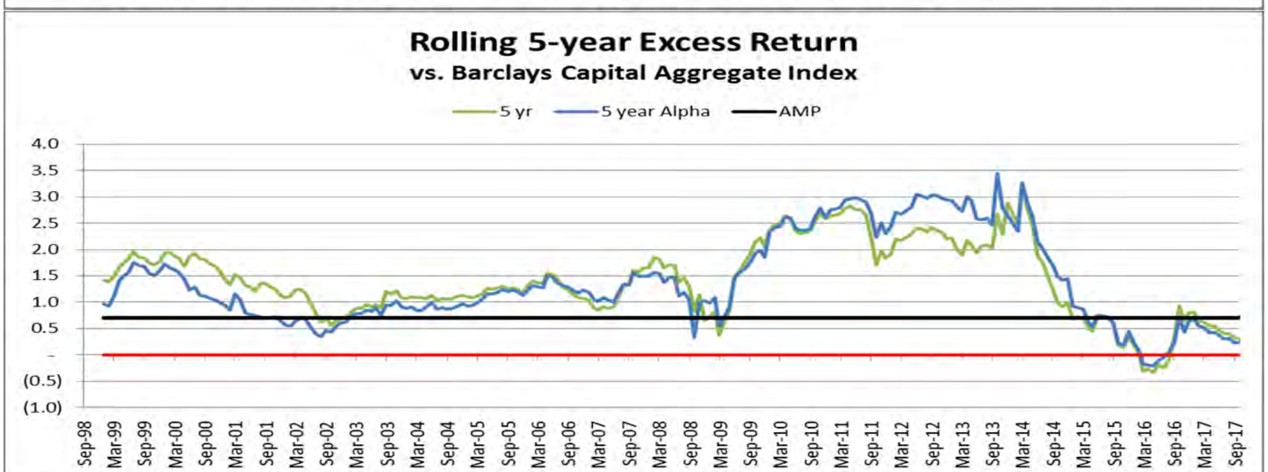
Risk And Regression

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (06/85)
Standard Deviation	3.25	3.02	3.33	3.33	4.17	4.49
Standard Deviation - Benchmark	3.15	2.86	2.84	2.77	3.27	3.57
Beta	0.99	0.93	1.04	0.95	0.96	1.05
R-Squared	0.92	0.77	0.78	0.62	0.57	0.84

Efficiency Measures

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (06/85)
Sharpe Ratio	0.22	0.93	0.65	0.96	1.24	1.07
Treynor Ratio	0.74	3.02	2.10	3.36	5.37	4.57
Sortino Ratio	0.28	1.52	0.99	1.54	2.25	1.90
Tracking Error	0.94	1.46	1.55	2.05	2.73	1.81
Information Ratio	1.38	0.26	0.20	0.20	0.48	0.79
Upside Market Capture	115.40	98.32	109.80	110.35	121.40	114.56
Downside Market Capture	81.79	81.83	105.22	105.47	103.41	97.02





Status Evaluation:

	3yr Alpha	5yr Alpha	AMP	3yr Alpha vs. AMP	5yr Alpha vs. AMP	Manager Status
Current Quarter	0.57	0.24	0.70	-0.13	-0.46	Enhanced Review
Prior Quarter	-0.02	0.31	0.70	-0.72	-0.39	

TCW/Core Plus Fixed Income
September 30, 2017

Performance Analysis (Net of Fees)

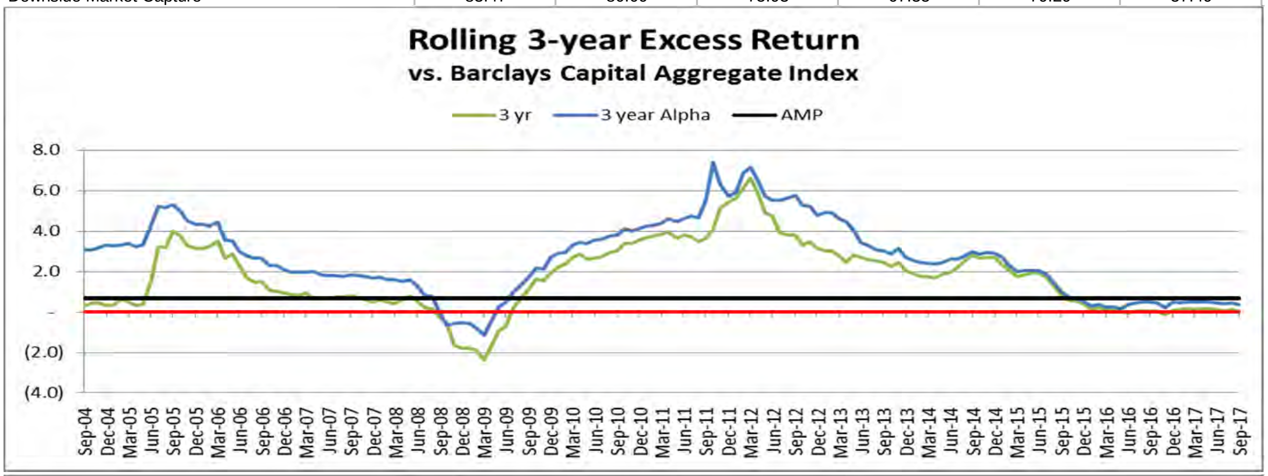
Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (11/01)
Product Return (Gross)	0.85	2.91	2.85	4.33	6.18	5.91
Product Return (Net)	0.69	2.75	2.65	4.10	5.96	5.69
Annualized Fees	0.16	0.16	0.20	0.23	0.22	0.22
BC Agg	0.07	2.71	2.06	2.95	4.27	4.38
Excess Returns	0.62	0.04	0.59	1.15	1.69	1.31
Annualized Alpha (Risk Adjusted Excess Return)	0.62	0.36	0.79	1.61	2.19	2.39
Active Manager Premium	0.70	0.70	0.70	0.70	0.70	0.70
Excess Risk Adjusted Returns	-0.08	-0.34	0.09	0.91	1.49	1.69

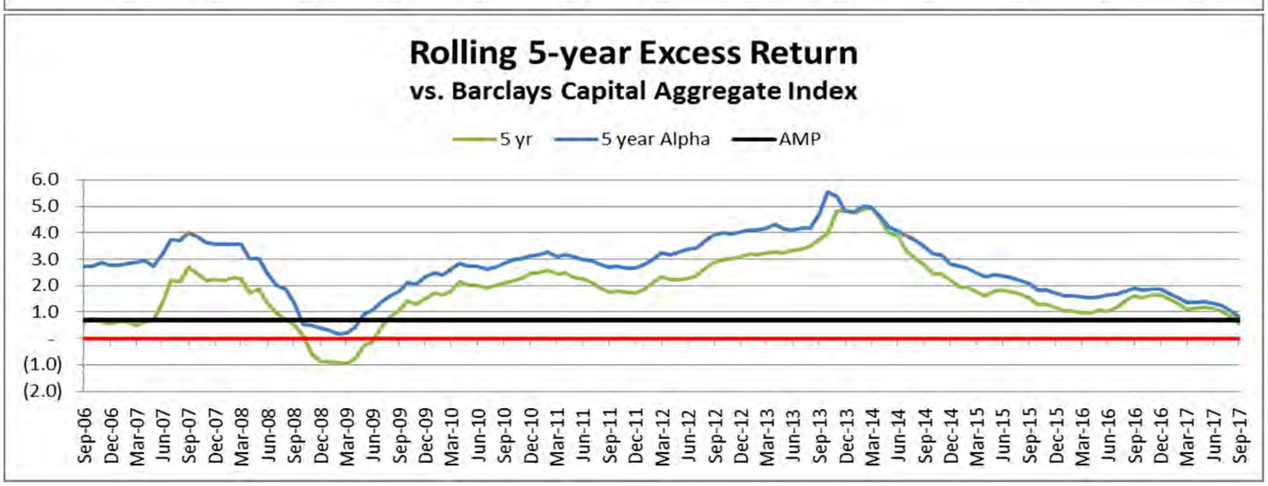
Risk And Regression

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (11/01)
Standard Deviation	2.78	2.53	2.64	2.61	3.65	3.57
Standard Deviation - Benchmark	3.15	2.86	2.84	2.77	3.27	3.45
Beta	0.88	0.88	0.89	0.84	0.87	0.74
R-Squared	0.99	0.97	0.92	0.79	0.61	0.51

Efficiency Measures

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (11/01)
Sharpe Ratio	0.02	0.97	0.93	1.51	1.52	1.25
Treynor Ratio	0.05	2.81	2.75	4.72	6.36	5.96
Sortino Ratio	0.02	1.66	1.48	2.73	3.03	2.24
Tracking Error	0.43	0.54	0.80	1.29	2.32	2.63
Information Ratio	1.44	0.06	0.73	0.89	0.73	0.50
Upside Market Capture	98.97	90.51	97.23	106.20	117.33	100.63
Downside Market Capture	83.47	80.09	75.93	67.35	79.29	57.49





Status Evaluation:

	3yr Alpha	5yr Alpha	AMP	3yr Alpha vs. AMP	5yr Alpha vs. AMP	Manager Status
Current Quarter	0.36	0.79	0.70	-0.34	0.09	Enhanced Review
Prior Quarter	0.46	1.33	0.70	-0.24	0.63	

Progress/Core Fixed Income
September 30, 2017

Performance Analysis (Net of fees since Inception Date of May-08)

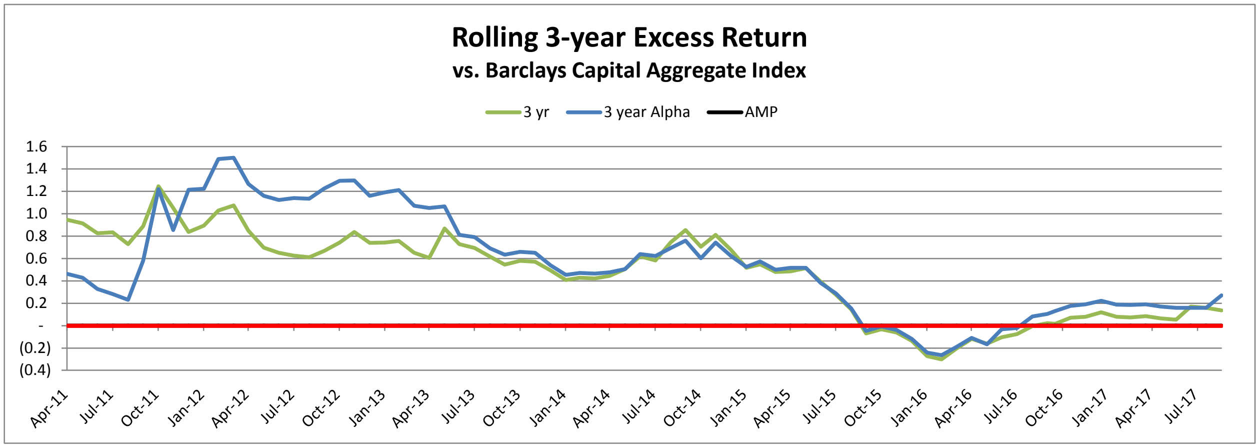
Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (05/08)
Product Return (Gross)	1.46	3.33	2.80	3.81	--	4.95
Product Return (Net)	0.99	2.85	2.32	3.33	--	4.48
Annualized Fee	0.47	0.48	0.48	0.48	--	0.47
BC Agg	0.07	2.71	2.06	2.95	--	4.00
Excess Returns	0.92	0.14	0.26	0.38	--	0.48
Annualized Alpha (Risk Adjusted Excess Return)	0.92	0.27	0.30	0.48	--	0.36
Active Manager Premium	0.00	0.00	0.00	0.00	-	0.00
Excess Risk Adjusted Returns	0.92	0.27	0.30	0.48	-	0.36

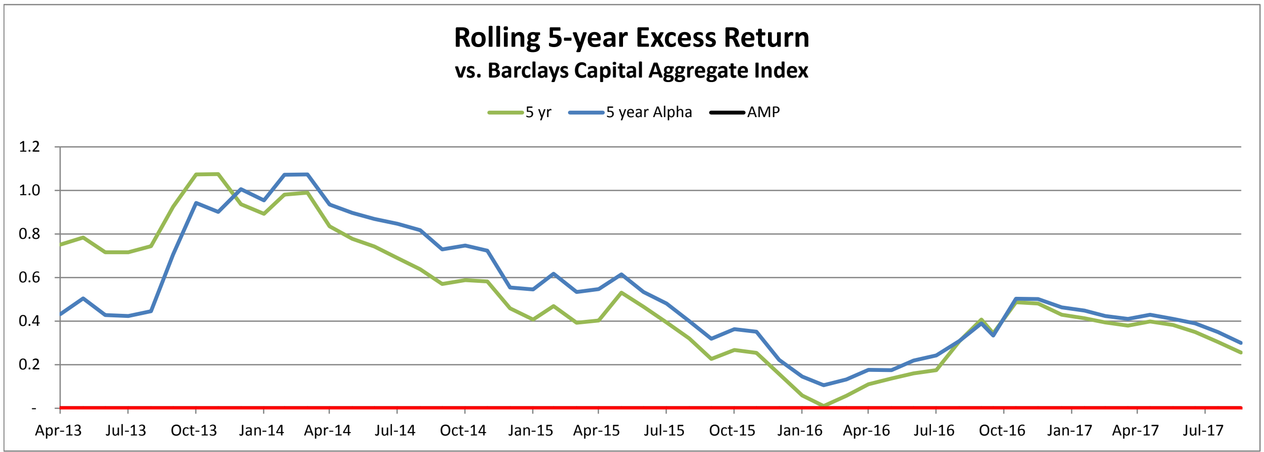
Risk And Regression

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (05/08)
Standard Deviation	2.96	2.77	2.82	2.74	--	3.49
Standard Deviation - Benchmark	3.15	2.85	2.84	2.77	-	3.30
Beta	0.94	0.95	0.97	0.96	--	1.03
R-Squared	0.99	0.96	0.97	0.94	--	0.94

Efficiency Measures

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (05/08)
Sharpe Ratio	0.12	0.93	0.76	1.16	--	1.21
Treynor Ratio	0.37	2.70	2.18	3.30	--	4.12
Sortino Ratio	0.15	1.54	1.18	1.98	--	2.19
Tracking Error	0.32	0.57	0.50	0.66	--	0.84
Information Ratio	2.88	0.24	0.52	0.57	--	0.57
Upside Market Capture	106.46	99.26	102.77	105.70	--	107.46
Downside Market Capture	82.95	93.24	95.81	96.87	--	99.95





Watchlist Evaluation:

	3yr Alpha	5yr Alpha	AMP	3yr Excess vs AMP	5yr Excess vs AMP	Status
Current Quarter	0.27	0.30	0.00	0.27	0.30	Good Standing
Prior Quarter	0.16	0.41	0.00	0.18	0.42	

Neuberger Berman / Core Plus Fixed Income
September 30, 2017

Performance Analysis (Net of Fees)

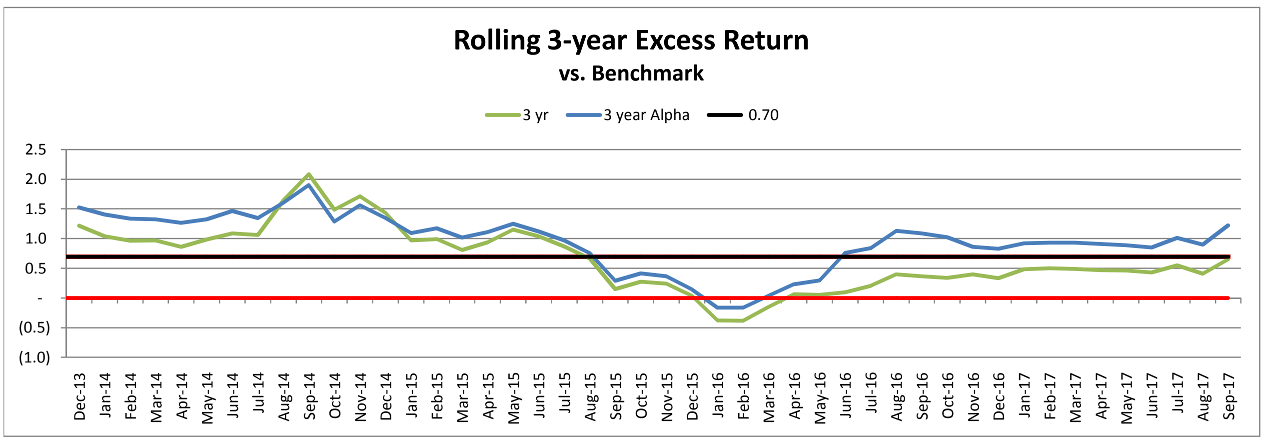
Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (Jan 11)
Product Return (Gross)	1.79	3.53	2.96	--	--	4.26
Product Return (Net)	1.61	3.37	2.78	--	--	4.08
Annualized Fees	0.18	0.16	0.18	--	--	0.18
Bloomberg Barclays US Agg	0.07	2.71	2.06	--	--	3.26
Excess Returns	1.54	0.66	0.72	--	--	0.82
Annualized Alpha (Risk Adjusted Excess Return)	1.54	1.22	0.93	--	--	1.27
Active Manager Premium	0.70	0.70	0.70	--	--	0.70
Excess Risk Adjusted Returns	0.84	0.52	0.23	--	--	0.57

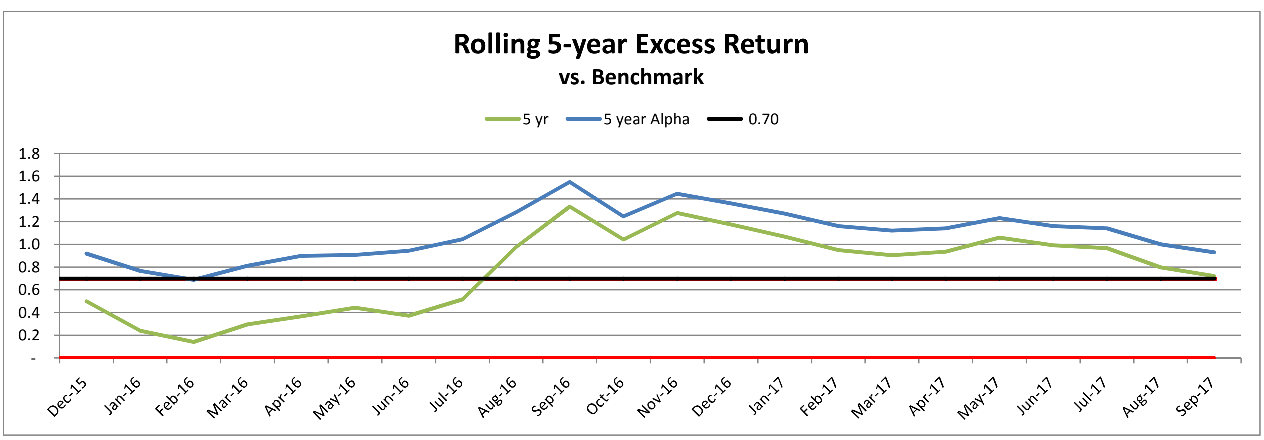
Risk And Regression

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (Jan 11)
Standard Deviation	2.86	2.57	2.79	--	--	2.90
Standard Deviation - Benchmark	3.15	2.86	2.84	--	--	2.75
Beta	0.88	0.78	0.89	--	--	0.86
R-Squared	0.94	0.76	0.83	--	--	0.66

Efficiency Measures

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (Jan 11)
Sharpe Ratio	0.34	1.20	0.93	--	--	1.35
Treynor Ratio	1.10	3.93	2.90	--	--	4.58
Sortino Ratio	0.43	2.07	1.46	--	--	2.42
Tracking Error	0.80	1.40	1.18	--	--	1.73
Information Ratio	1.92	0.47	0.61	--	--	0.47
Upside Market Capture	110.07	96.57	104.13	--	--	107.93
Downside Market Capture	70.73	67.91	82.40	--	--	83.55





Status Evaluation:

	3 yr Alpha	5 yr Alpha	AMP	3yr Alpha vs. AMP	5yr Alpha vs. AMP	Manager Status
Current Quarter	1.22	0.93	0.70	0.52	0.23	Good Standing
Prior Quarter	0.85	1.16	0.70	0.15	0.46	

PIMCO Unconstrained/Absolute Return Fixed Income
September 30, 2017

Performance Analysis (Composite Data)

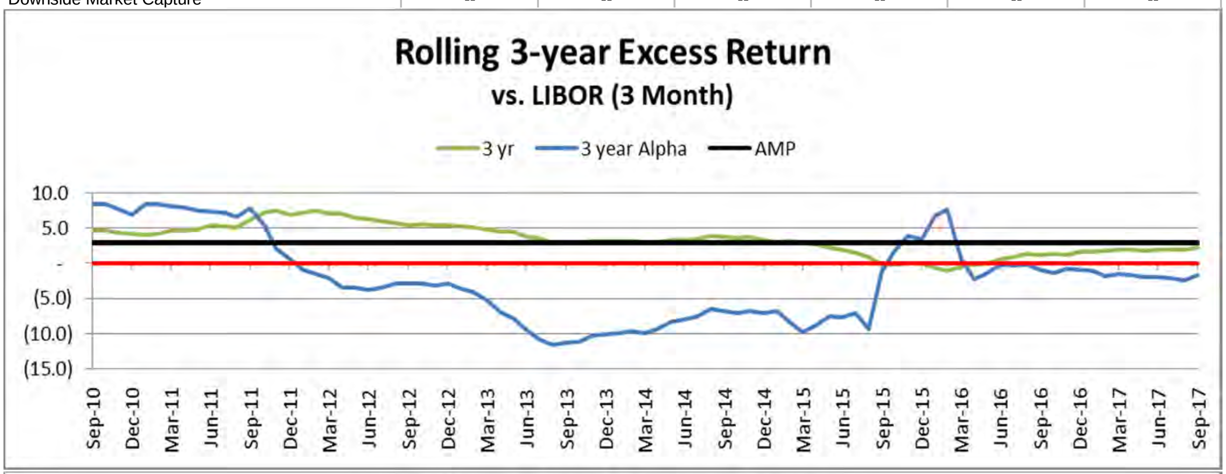
Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (10/07)
Product Return (Gross)	7.39	3.52	2.67	3.20	4.22	4.22
Product Return (Net)	6.60	2.79	1.88	2.37	3.44	3.44
Annualized Fees	0.79	0.73	0.79	0.83	0.78	0.78
LIBOR (3 Month)	1.02	0.59	0.47	0.44	0.95	0.95
Excess Returns	5.58	2.20	1.41	1.93	2.49	2.49
Annualized Alpha (Risk Adjusted Excess Return)	4.75	-2.04	-1.85	-1.91	2.93	2.93
Active Manager Premium	3.00	3.00	3.00	3.00	3.00	3.00
Excess Risk Adjusted Returns	1.75	-5.04	-4.85	-4.91	-0.07	-0.07

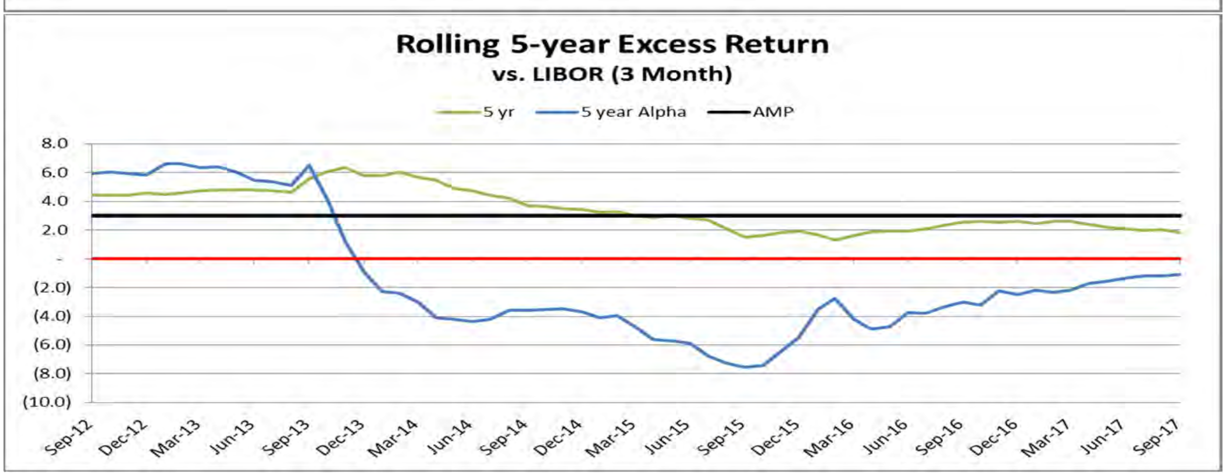
Risk And Regression

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (10/07)
Standard Deviation	1.49	3.04	2.71	2.56	3.21	3.21
Standard Deviation - Benchmark	0.06	0.11	0.09	0.08	0.39	0.39
Beta	1.74	8.25	8.11	9.79	0.58	0.58
R-Squared	0.00	0.08	0.08	0.10	0.01	0.01

Efficiency Measures

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (10/07)
Sharpe Ratio	4.01	0.82	0.62	0.87	0.94	0.94
Treynor Ratio	3.43	0.30	0.21	0.23	5.26	5.26
Sortino Ratio	10.35	1.27	0.92	1.34	1.51	1.51
Tracking Error	1.48	3.01	2.69	2.53	3.20	3.20
Information Ratio	3.76	0.73	0.53	0.76	0.78	0.78
Upside Market Capture	--	--	--	--	--	--
Downside Market Capture	--	--	--	--	--	--





Status Evaluation:

	3yr Alpha	5yr Alpha	AMP	3yr Alpha vs. AMP	5yr Alpha vs. AMP	Manager Status
Current Quarter			3.00			Good Standing
Prior Quarter			3.00			

SURS Inception Date = May 2013

BlueBay EM Debt Select - Composite Data, Gross of Fees
September 30, 2017

Performance Analysis (Composite Data Gross of Fees)

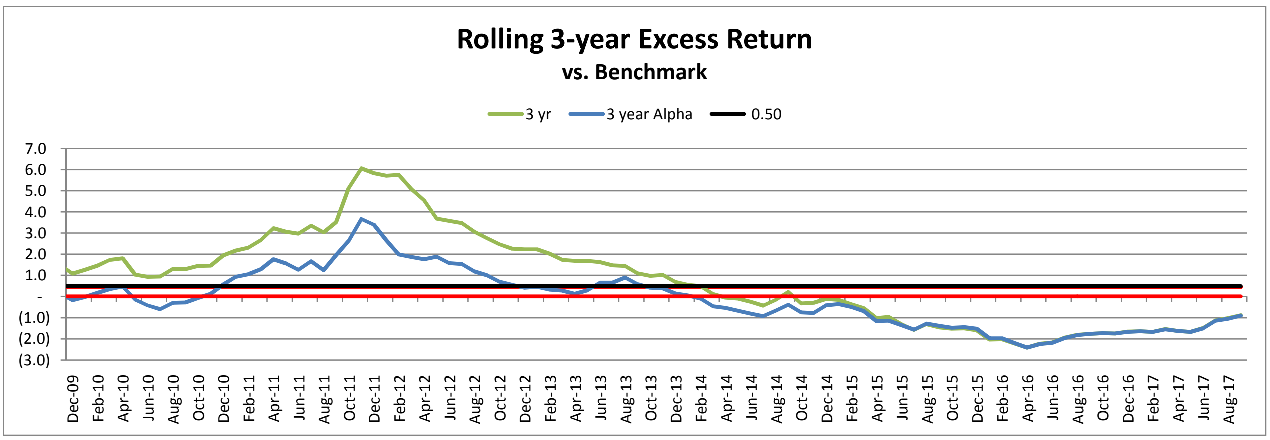
Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (Dec 06)
Product Return	7.04	3.04	1.51	3.74	6.02	6.64
Custom EMD Benchmark	6.00	4.07	2.66	3.94	5.80	6.19
Excess Returns	1.04	-1.03	-1.15	-0.20	0.22	0.45
Annualized Alpha (Risk Adjusted Excess Return)	0.59	-1.04	-1.21	-0.50	-0.39	-0.25
Active Manager Premium	0.50	0.50	0.50	0.50	0.50	0.50
Excess Risk Adjusted Returns	0.09	-1.54	-1.71	-1.00	-0.89	-0.75

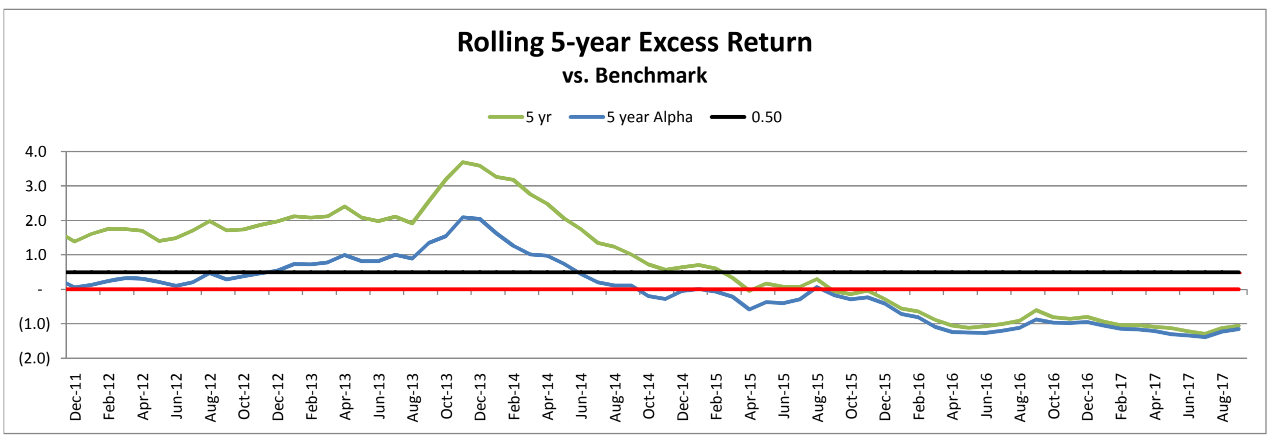
Risk And Regression

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (Dec 06)
Standard Deviation	7.95	8.20	8.37	9.14	11.05	10.77
Standard Deviation - Benchmark	7.35	8.01	7.98	8.32	9.69	9.40
Beta	1.07	1.02	1.04	1.09	1.12	1.13
R-Squared	0.98	0.97	0.98	0.98	0.97	0.96

Efficiency Measures

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (Dec 06)
Sharpe Ratio	0.80	0.34	0.16	0.39	0.51	0.55
Treynor Ratio	5.97	2.71	1.26	3.28	4.99	5.22
Sortino Ratio	1.05	0.51	0.22	0.57	0.72	0.78
Tracking Error	1.19	1.45	1.30	1.55	2.37	2.41
Information Ratio	0.87	-0.71	-0.89	-0.13	0.09	0.18
Upside Market Capture	111.12	97.73	99.28	107.09	109.87	111.87
Downside Market Capture	103.93	107.27	109.65	109.56	109.81	110.95





Status Evaluation:

	3 yr Alpha	5 yr Alpha	AMP	3yr Alpha vs. AMP	5yr Alpha vs. AMP	Manager Status
Current Quarter	--	--	0.50	--	--	Good Standing
Prior Quarter	--	--	0.50	--	--	

Exhibit 3

Colchester Local Markets Debt Fund - Composite Data, Gross of Fees
September 30, 2017

Performance Analysis (Composite Data Gross of Fees)

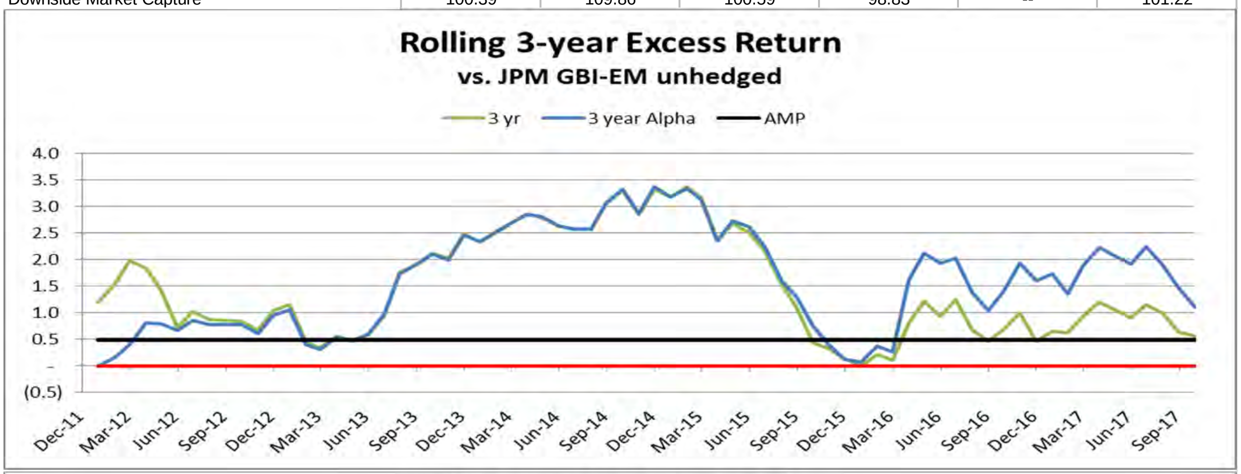
Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (01/09)
Product Return (Gross)	9.92	1.19	0.57	2.29	--	6.22
Product Return (Net Composite Not Availiable)	--	--	--	--	--	--
Annualized Fees	--	--	--	--	--	--
JPM GBI-EM Global Div Unhedged	7.32	0.26	-0.91	0.67	3.80	5.69
Excess Returns	2.60	0.93	1.48	1.62	--	0.53
Annualized Alpha (Risk Adjusted Excess Return)	2.00	1.03	1.67	1.64	--	0.57
Active Manager Premium	0.50	0.50	0.50	0.50	--	0.50
Excess Risk Adjusted Returns	1.50	0.53	1.17	1.14	--	0.07

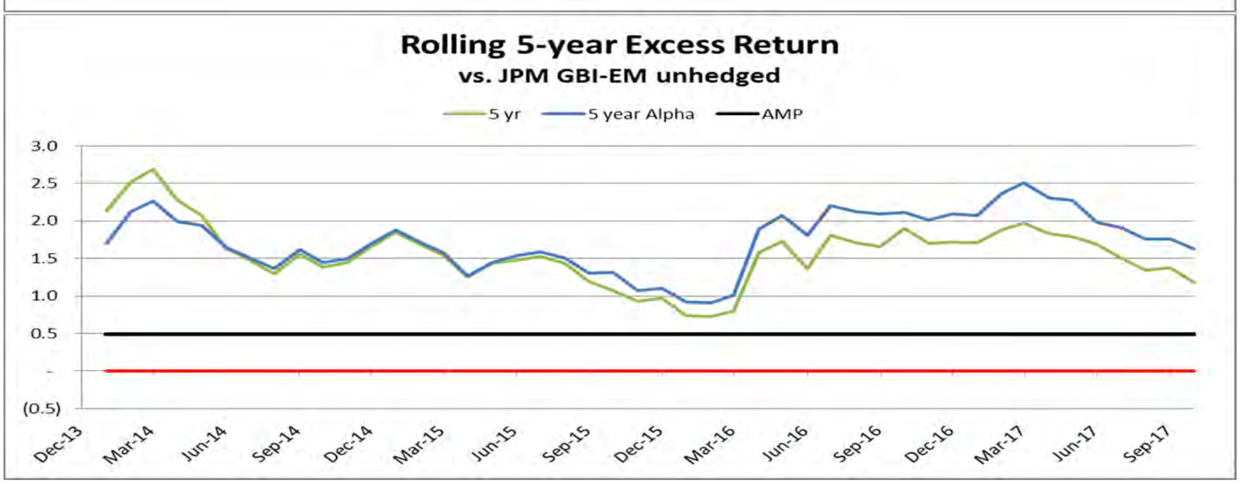
Risk And Regression

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (01/09)
Standard Deviation	9.75	13.69	12.28	12.85	--	13.39
Standard Deviation - Benchmark	9.09	11.43	10.98	11.84	--	12.22
Beta	1.07	1.18	1.09	1.06	--	1.01
R-Squared	0.99	0.97	0.95	0.96	--	0.89

Efficiency Measures

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (01/09)
Sharpe Ratio	0.95	0.07	0.03	0.17	--	0.45
Treynor Ratio	8.71	0.76	0.35	2.01	--	6.03
Sortino Ratio	1.25	0.10	0.04	0.24	--	0.70
Tracking Error	1.28	3.15	2.81	2.65	--	4.43
Information Ratio	2.04	0.29	0.53	0.61	--	0.12
Upside Market Capture	117.66	120.86	112.65	109.78	--	104.22
Downside Market Capture	100.39	109.86	100.59	98.83	--	101.22





Status Evaluation:

	3yr Alpha	5yr Alpha	AMP	3yr Alpha vs. AMP	5yr Alpha vs. AMP	Manager Status
Current Quarter	-	-	0.50	-	-	Good Standing
Prior Quarter	-	-	0.50	-	-	

SURS Inception Date = April 2015

Progress Investment Management - EM Debt - Net of Fees
September 30, 2017

Performance Analysis (Net of Fees)

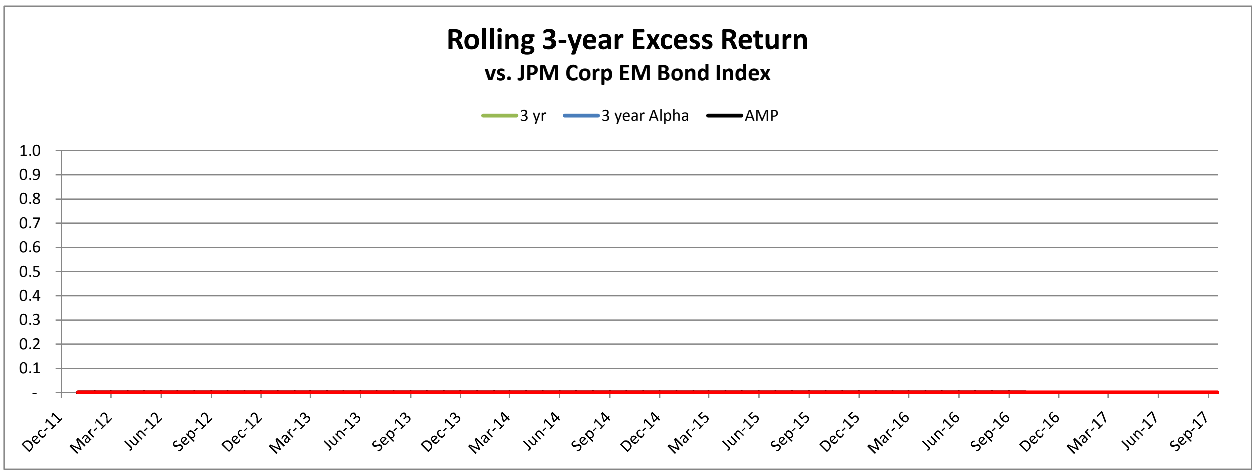
Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (04/15)
Product Return (Gross of Fees)	8.79	--	--	--	--	6.67
Product Return (Net of Fees)	8.29	--	--	--	--	6.22
JPM Corp EM Bond Index - Broad	6.00	--	--	--	--	5.97
Excess Returns	2.29	--	--	--	--	0.25
Annualized Alpha (Risk Adjusted Excess Return)	0.73	--	--	--	--	-0.83
Active Manager Premium	0.00	--	--	--	--	0.00
Excess Risk Adjusted Returns	0.73	--	--	--	--	-0.83

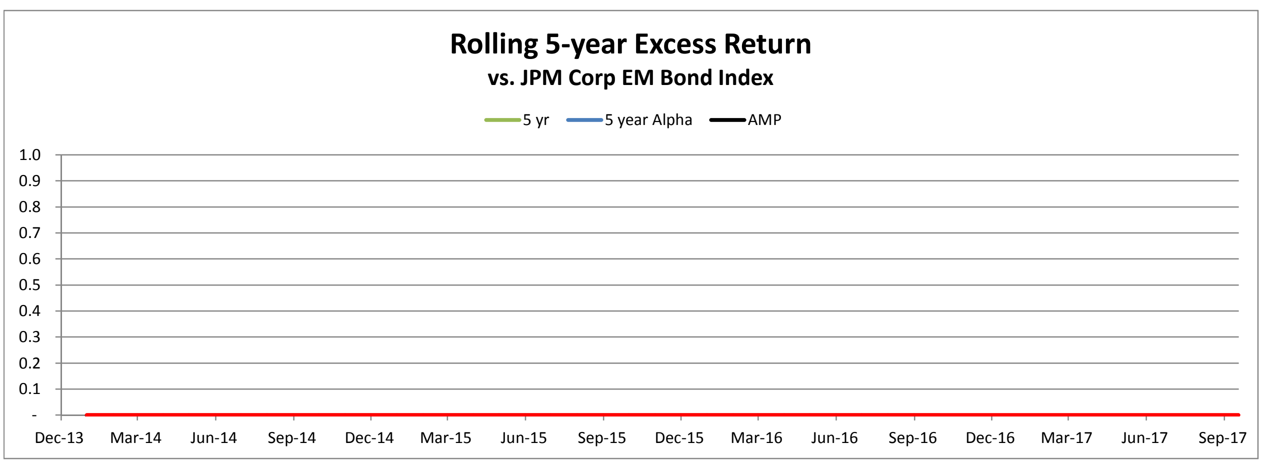
Risk And Regression

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (04/15)
Standard Deviation	3.96	--	--	--	--	5.53
Standard Deviation - Benchmark	3.11	--	--	--	--	4.56
Beta	1.25	--	--	--	--	1.20
R-Squared	0.95	--	--	--	--	0.97

Efficiency Measures

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (04/15)
Sharpe Ratio	1.93	--	--	--	--	1.06
Treynor Ratio	6.14	--	--	--	--	4.88
Sortino Ratio	2.82	--	--	--	--	1.83
Tracking Error	1.15	--	--	--	--	1.32
Information Ratio	2.00	--	--	--	--	0.19
Upside Market Capture	139.05	--	--	--	--	117.83
Downside Market Capture	131.71	--	--	--	--	133.20





Status Evaluation:

	3yr Alpha	5yr Alpha	AMP	3yr Excess vs AMP	5yr Excess vs AMP	Status
Current Quarter	--	--	0.00	--	--	Good Standing
Prior Quarter	-	-	0.00	-	-	

Prudential EM Debt Blend - Composite Data, Gross of Fees
September 30, 2017

Performance Analysis (Composite Data Gross of Fees)

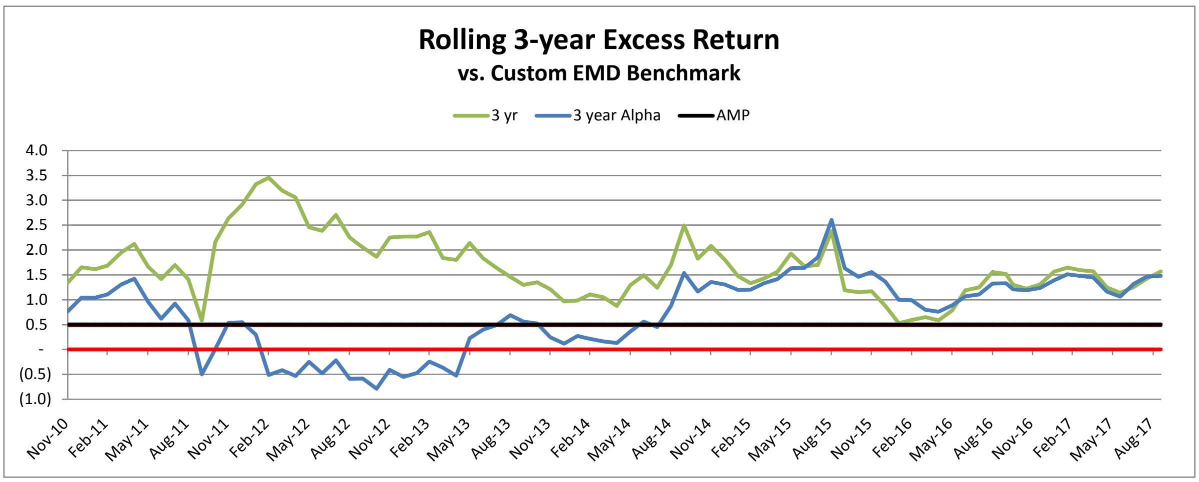
Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (07/15)
Product Return	8.73	5.21	3.54	5.12	--	7.04
50% JPM EMBI / 50% JPM GBI-EM	5.98	3.41	2.02	3.51	--	5.52
Excess Returns	2.75	1.80	1.52	1.61	--	1.52
Annualized Alpha (Risk Adjusted Excess Return)	1.79	1.48	1.31	1.07	--	0.92
Active Manager Premium	0.50	0.50	0.50	0.50	--	0.50
Excess Risk Adjusted Returns	1.29	0.98	0.81	0.57	--	0.42

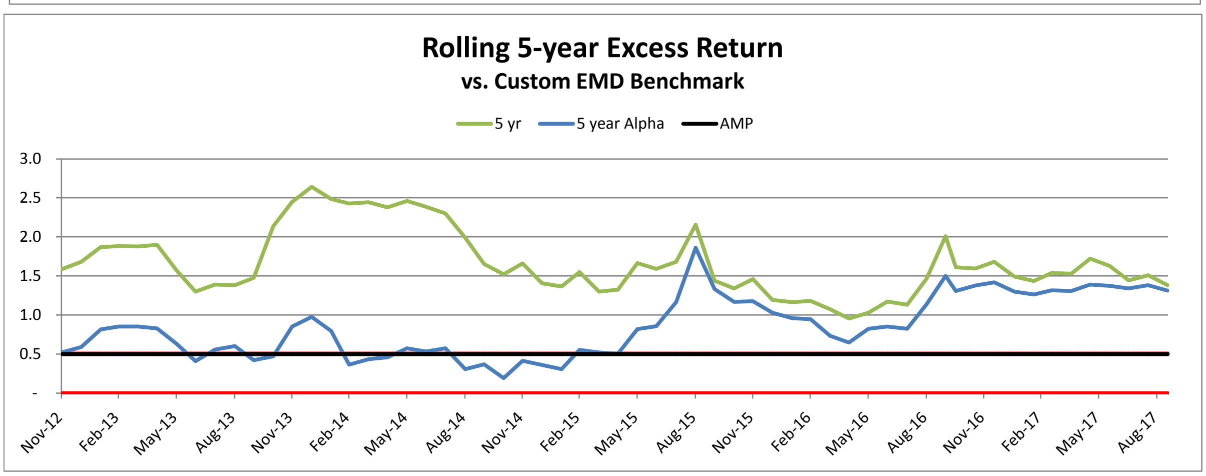
Risk And Regression

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (12/07)
Standard Deviation	8.46	8.91	9.24	10.32	--	11.89
Standard Deviation - Benchmark	7.35	8.13	8.26	8.79	--	10.56
Beta	1.15	1.09	1.11	1.16	--	1.11
R-Squared	0.99	0.99	0.99	0.98	--	0.98

Efficiency Measures

Description	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr	SI (12/07)
Sharpe Ratio	0.96	0.55	0.36	0.48	--	0.56
Treynor Ratio	7.05	4.52	3.01	4.26	--	6.01
Sortino Ratio	1.28	0.87	0.53	0.70	--	0.79
Tracking Error	1.30	1.16	1.29	1.95	--	2.18
Information Ratio	2.12	1.55	1.18	0.82	--	0.70
Upside Market Capture	125.84	116.82	118.78	121.42	--	117.17
Downside Market Capture	104.96	101.68	104.87	108.72	--	107.70





Status Evaluation:

	3 yr Alpha	5 yr Alpha	AMP	3yr Alpha vs. AMP	5yr Alpha vs. AMP	Status
Current Quarter	--	--	0.50	--	--	Good Standing
Prior Quarter	--	--	0.50	--	--	

Alternative Investment Fees

February 1, 2018

Doug Wesley, CFA
Steve Hayward, CPA

Agenda

- **Question asked**
- **Brief review of current oversight processes**
- **Other Plan Sponsor's recent initiatives**
  - Audit examples – 2 plan sponsors
  - External Provider Fee verification

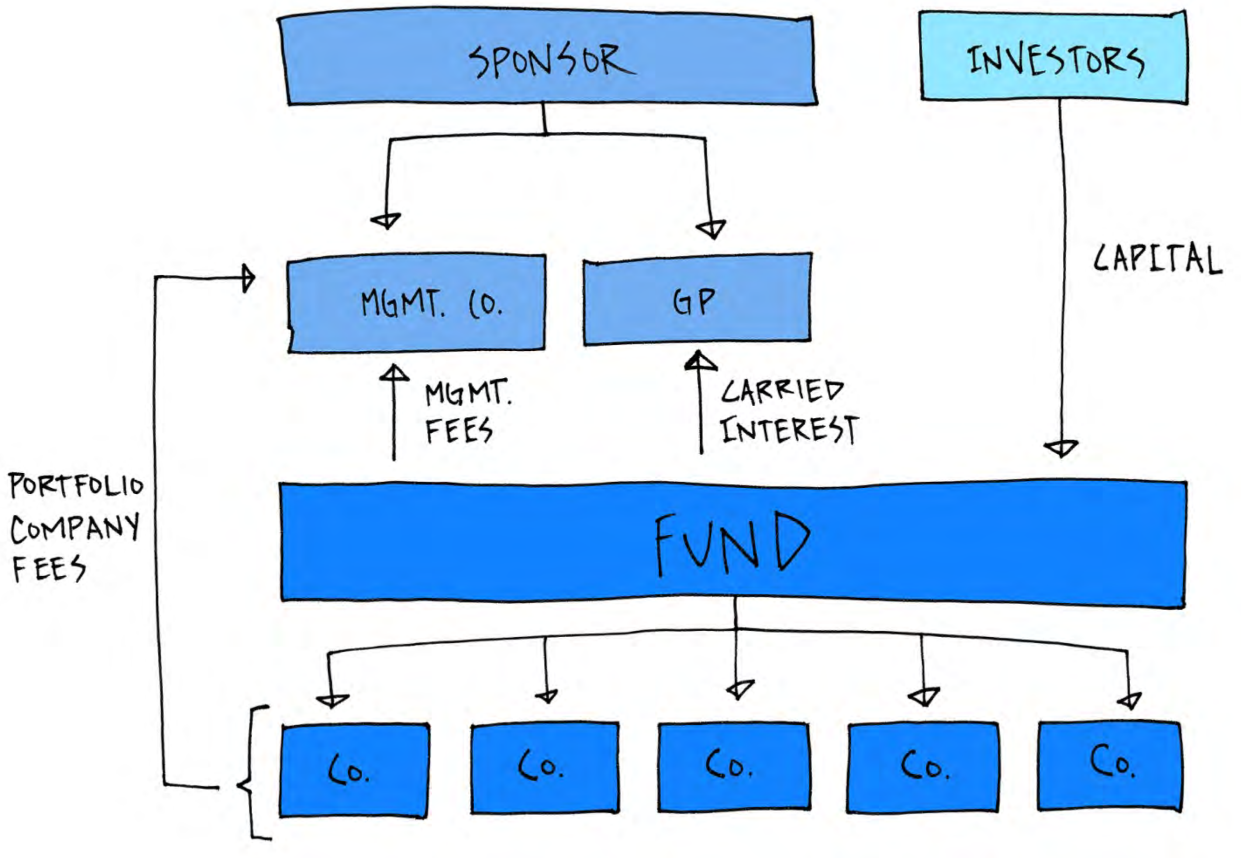
S·U·R·S
STATE UNIVERSITIES RETIREMENT SYSTEM

Issue Raised by Trustee Regarding Private Equity Fee Audits

- As part of the investment fee audits, Internal Audit recalculates management fees over sample of private accounts. However, concern was expressed if other fees, expenses and sharing of carried interest is properly allocated to SURS.
- There are a few examples of other Public Employee Retirement Systems conducting reviews of these fees and a deeper understanding of these reviews was needed.

S·U·R·S
STATE UNIVERSITIES RETIREMENT SYSTEM

Private Account Structure & Fees



STATE UNIVERSITIES RETIREMENT SYSTEM

Private Equity Fee & Distribution Definitions

- Management Fees – typically based on commitments or market values, and are charged by the general partners to the limited partners per LPA's.
- Management Fee Expense Offsets – Fees charged to portfolio companies by private equity managers that may include advisory fees, monitoring fees, consulting fees and board participation fees. These are often offset against management fees charged to investors.
- Partnership Expenses – Expenses incurred in operating the fund (eg audit, tax preparation, legal, etc.) are typically allocated to limited partners.
- Carried Interest – Relates to allocation of profits between GP and LP's, often based on waterfall structure in LPA.
- Distribution waterfall – Agreement in which PE fund makes distributions (capital & performance fees) to sponsors, GP and LP's.
  - First Tier – return of capital and all fees and expenses paid (investors)
  - Second Tier – preferred return or hurdle rate (100% to investors)
  - Third Tier – catch-up tranche -typically split proceeds (for example 60% to GP/40% to LPs) until certain profit %
  - Fourth Tier – carried interest (allocation of profits between LP's & GP)

S·U·R·S
STATE UNIVERSITIES RETIREMENT SYSTEM

SURS Private Equity

- SURS Private Equity Portfolio, consisting of 26 investments, is outsourced to external providers
  - Fund of Funds (SURS assets commingled with other investors)
    - Managed by Adams Street, Mesirow, Muller and Monroe, Pantheon
  - Separate accounts or Fund of Ones (SURS specific account)
    - Managed by Adams Street, Fairview, Mesirow, Muller and Monroe, Pantheon

Since Inception Through June 30, 2017

	Commitment Amount	Paid in Capital	Capital to be Funded	Cumulative Distributions	Valuation	Total Value	Net Benefit (Value Added)	% Capital Called
SURS Private Equity Portfolio	**$3,163,980,397**	**$2,528,164,590**	**$635,815,807**	**$3,219,405,073**	**$965,228,251**	**$4,184,633,324**	**$1,656,468,734**	**79.9%**

S·U·R·S STATE UNIVERSITIES RETIREMENT SYSTEM

Current Private Equity Oversight

- **There is general reliance on the annual audits and ongoing regulatory reviews of General Partners.**
  - Audits generally conducted by major audit firms. Audits include testing of the asset valuation, management fees, fee offsets, performance fees and expense allocations. Any issues would be reported to investors as a qualification in the audit report.
  - Regulatory scrutiny (e.g. SEC, UK FCA) has increased over past decade, paying particular attention to fees and expenses.
- **In addition, our private equity managers have dedicated accounting staff that perform quarterly and annual reviews of every fund.**
  - Quarterly reviews of Financial Statements and Capital Account statements, including management fee recalculations, fund expense reviews, and carried interest recalculations.
  - Quarterly and annual monitoring for proper accounting and administration of allocations, distributions and clawbacks.

S·U·R·S
STATE UNIVERSITIES RETIREMENT SYSTEM

Current Private Equity Oversight (continued)

- **Formalized operational due diligence (ODD) is conducted across all investments, including the following areas pertaining to fees and expenses, prior to making an investment decision**
  - Firm & governance – discuss any potential conflicts and policies in place, including those pertaining to transaction fees and allocation of fund expenses
  - Compliance – obtain and review compliance policies and manuals related to outside business activities and gifts/entertainment
  - Investment & cash controls – Ensure segregation of duties and multiple levels of manager oversight around expense allocation

- **GPs are incented to keep expenses low**
  - Carried interest is typically net of all expenses

S·U·R·S
STATE UNIVERSITIES RETIREMENT SYSTEM

Private Equity Fee Review Approaches

1. Historical retrospective audits of previously paid management fees, expenses and carried interest. This approach typically performs a full recalculation of all fees and expenses since inception. All fees and expenses are remodeled, including re-calculation of waterfalls in order to reconcile carried interest provisions.
   - Substantial amount of work and time associated with this process
   - A sample set of funds is usually selected in lieu of entire portfolio
   - Requires all financial, cash flow statements and transactional investment data (usually from inception) from GP for review
2. On-going fee monitoring services of management fees, expenses and carried interest for reasonableness. This analytical based approach is typically part of an ongoing service with third party provider.
   - Fees analyzed and scored using model that incorporates limited partnership agreement and benchmarking with peer groups . Identifies fees or expenses outside of industry norms that may require further analysis.
   - Less work than full fee recalculations and less intrusive of GP's
   - Typically analyzes 100% of portfolio
   - Seems to be reliant on common reporting standards and templates

S·U·R·S STATE UNIVERSITIES RETIREMENT SYSTEM

Staff Discussions With Peers And Service Providers

Peers:

- Los Angeles County Employees Retirement Association
- Teacher Retirement System of Texas

Service Provider:

- Fee Tracking and Validation Service Provider - Colmore

Los Angeles County Employees Retirement Association

- Private Account stats: PE portfolio $4.7B, 230 funds, 108 general partners, few fund of funds
- Completed a retrospective fee audit using external auditors
  - Scope: Review 1 fund from each of top 40 GP's; recalculate fees from inception date for: management fees, mgmt fee offsets, carried interest and other fees and return of capital in waterfall , partnership expenses
  - Summary of Findings (over the life of the respective funds):
    - Mgmt fees – 3 funds over charged $16k, 12 funds under charged $113k;
    - Mgmt fee offsets 1 fund overpaid $900; no exceptions 37 funds;
    - Carried interest – 15 funds overcharged avg $4.9k, 13 funds under avg $7.5k;
    - Partnership expenses – 2 funds undercharged total $50k
- Subscribes to ongoing verification service for PE management fees, expenses and carried interest for private equity & private credit
  - Findings: No significant findings so far

S·U·R·S
STATE UNIVERSITIES RETIREMENT SYSTEM

Teacher Retirement System of Texas

- Private Account Stats: PE portfolio $43.1B, 490 funds, 175 managers
- Hired external audit firm to assist with pilot project on PE fees
  - Objectives: To examine PE fee calculation practices & develop standard audit program to test PE fees going forward
  - Conducted on site visit for process inquiries & walkthroughs
  - Selected one manager and two funds to learn about fee calculation process, recalculated sample of fees in LPA
  - Selected 1 fund from early vintage year to cover entire fund cycle and selected 1 fund from recent vintage year to focus on recent policies & procedures
  - Review areas included: Mgmt fee calculations; mgmt fee waivers, credits & offsets; carried interest calculations; capital calls; capital distributions; common fund expenses; valuation practices; back office and accounting functions; LPA compliance function
  - Considering pilot project on private real estate

S·U·R·S STATE UNIVERSITIES RETIREMENT SYSTEM

Private Equity Fee Validation Services
Survey of Other Public Funds

- Some Systems have hired or have Issued an RFP for Private Equity Fee Data Collection and Validation Services
  - ➢ Multiple Firms now offering private equity fee data collection and validation services which collect, model and analyze fees
    - ➢ Staff has had introductory call with Colmore
      - – Colmore models expected vs. actual management fees, expenses and carried interest on a quarterly basis
  - ➢ Some Systems verify all funds each quarter while other Systems sample for compliance testing
  - ➢ Several (likely less than 10) providers in the space but appears to be a relatively new service offering
    - ➢ Perhaps slightly different offerings between providers

S·U·R·S STATE UNIVERSITIES RETIREMENT SYSTEM

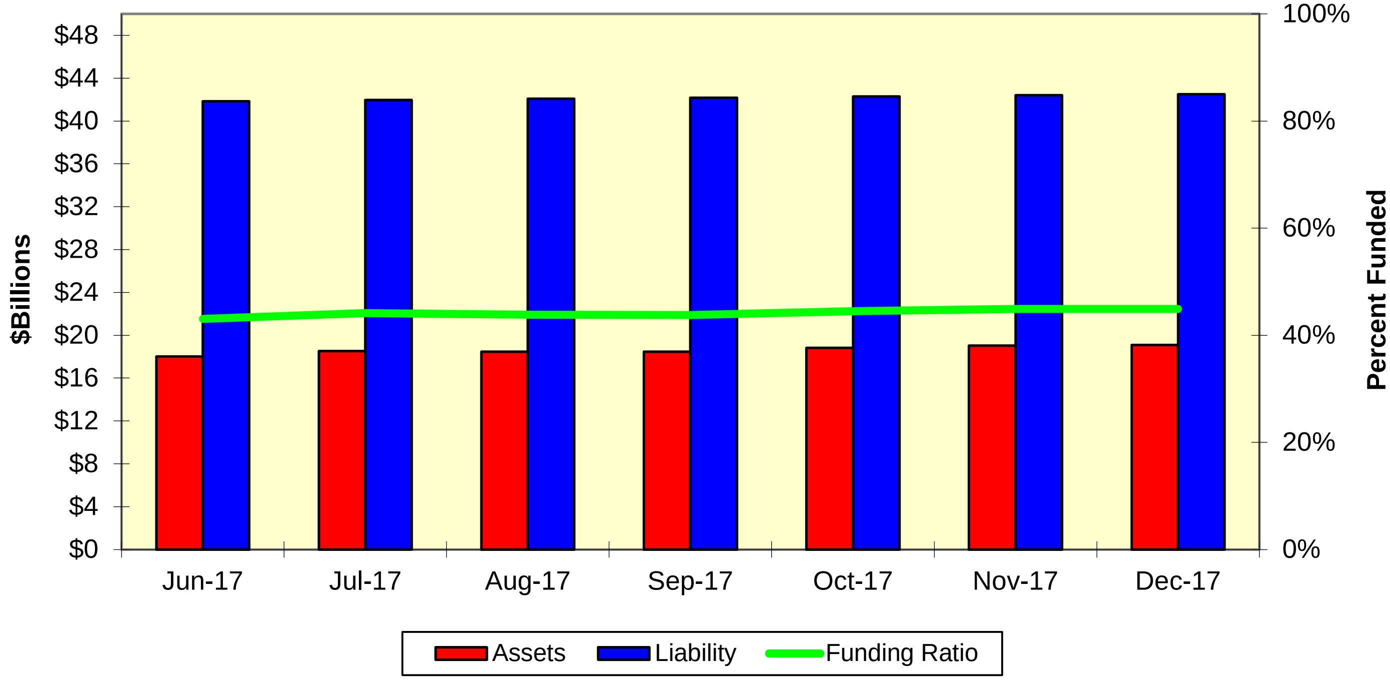
Possible Next Steps

- Staff believes current monitoring process conducted by existing managers is robust and serves as an effective check to accuracy and reasonableness of fees, carry and expenses charged by GPs
  - As part of the asset class review in 2016 and 2017, staff provided information on total fees and carry earned by PE managers
- If Board wishes to pursue further, Staff recommends one or both of the following to further evaluate next steps:
  - Educational presentation from current manager(s)
  - Educational presentation from Fee Validation provider

S·U·R·S STATE UNIVERSITIES RETIREMENT SYSTEM

STATE UNIVERSITIES RETIREMENT SYSTEM

SURS Projected Funding Status
2018 Fiscal Year-to-Date Results



	Assets	Estimated Liabilities	Unfunded Liabilities	Market Value Funding Ratio	Rate of Return Month	Rate of Return FYTD
Jun-17	$ 18.01	$ 41.85	$ 23.84	43.0%		
Jul-17	18.53	41.96	23.43	44.2%	1.74%	1.7%
Aug-17	18.45	42.07	23.62	43.9%	0.61%	2.4%
Sep-17	18.46	42.18	23.72	43.8%	1.19%	3.6%
Oct-17	18.81	42.29	23.47	44.5%	1.27%	4.9%
Nov-17	19.04	42.39	23.36	44.9%	1.30%	6.3%
Dec-17	19.10	42.50	23.41	44.9%	1.30%	7.6%

Note: Assets and liabilities are estimated and unaudited through June 30, 2017.
The fund has an actuarial value funding ratio of 44.4% at the end of Fiscal Year 2017, utilizing a 7.25% assumed rate of return.

S·U·R·S
STATE UNIVERSITIES RETIREMENT SYSTEM

1901 Fox Drive, Champaign, IL 61820-7333
800-275-7877 • 217-378-8800 • (Fax) 217-378-9800
www.surs.org

Investment Department

To: Investment Committee
From: Investment Staff
Date: January 18, 2018
Re: Defined Contribution Consultant Search Update

Search Update

At the October 2017 Investment Committee meeting the Board approved the recommendation to conduct a search for defined contribution consulting services.

The Request for Proposal (RFP) was developed by SURS Staff and advertised on the website of *Pensions & Investments* and in its October 30, 2017 print edition, along with being noticed as required in the State newspaper, and posted to the SURS website beginning October 27, 2017.

Timeline

The anticipated timeline for the search process is as follows:

Proposed Timeline for the Search	
Date	*Item*
October 19, 2017	Quiet Period Begins
October 27, 2017	Dissemination of RFP
November 17, 2017	Bidder's Conference
November 24, 2017	Deadline for questions to SURS
December 1, 2017	Responses to questions submitted to SURS
December 22, 2017	RFP responses due by 4:30 pm CT
January 2018	Identify firms for further consideration
February 5-6, 2018	Interviews with selected firms
March 8, 2018	Finalist presentations to SURS Board of Trustees

Update

Staff received 6 responses from consulting firms by the December 22, 2017 deadline. Staff is currently in the process of reviewing the responses. The respondents are as follows:

Consultant Name	Headquarters
Advanced Capital Group	Minneapolis, MN
Aon Hewitt Investment Consulting	Chicago, IL
Cammack Retirement Group	New York, NY
Meketa Investment Group	Boston, MA
NEPC	Boston, MA
Segal Marco Advisors	New York, NY

Staff will be interviewing four semi-finalist firms. Interviews with the firms are scheduled for February 5-6, 2018 in Chicago. Trustees are invited to attend; if interested, please contact staff for additional details.

Quiet Period

Please note that the Quiet Period will remain in effect until a selection has been made by the Board and accepted by the service provider. A copy of the Quiet Period Policy Guidelines follows.

Quiet Period Policy Guidelines

The Quiet Period Policy is intended to establish guidelines by which Board Members and Staff will communicate with prospective service providers during the search process. The objectives of the policy are to ensure that prospective service providers competing to become employed by SURS have equal access to information regarding the search parameters; communications related to the selection are consistent and accurate; and the process of selecting service providers is efficient, diligent, and fair.

The following guidelines will be instituted during a search process for a service provider:

- A quiet period will commence upon Committee action (or Board action if the selection is not initiated through a Committee) to authorize a search for a service provider and end once a selection has been made by the Board and accepted by the service provider;
- Initiation, continuation and conclusion of the quiet period shall be publicly communicated to prevent inadvertent violations;
- All Board members, and Staff not directly involved in the search process, shall refrain from communicating with service provider candidates regarding any product or service related to the search offered by the candidate throughout the quiet period and shall refrain from accepting meals, travel, hotel, or other value from the candidates;
- Throughout the quiet period, if any Board member is contacted by a candidate, the Board member shall refer the candidate to SURS Consultant or Staff directly involved in the search process;
- All authority related to the search process shall be exercised solely by the relevant Committee or Board as a whole, and not by individual Board Members;
- All information related to the search process shall be communicated by the SURS Consultant and Staff to the relevant Committee or Board as a whole, and not to individual Board Members;
- The quiet period does not prevent Board approved due diligence, client conference attendance or communications with an existing service provider that happens to be a candidate in the ordinary course of services provided by such service provider; however, discussions related to the pending selection shall be avoided during those activities;
- The provisions of this policy will apply to service provider candidates throughout the quiet period and shall be communicated to candidates in conjunction with any competitive proposal process; and
- A service provider may be disqualified from a search process for a knowing violation of this policy.

S·U·R·S
STATE UNIVERSITIES RETIREMENT SYSTEM

1901 Fox Drive, Champaign, IL 61820-7333
800-275-7877 • 217-378-8800 • (Fax) 217-378-9800
www.surs.org

Investment Department

To: Investment Committee
From: Investment Staff
Date: January 22, 2018
Re: Core-Plus Real Estate Search Update

Search Update

At the December 2017 Investment Committee meeting the Board approved the recommendation to conduct a search for open-end core-plus real estate investment management services.

The Request for Proposal (RFP) was developed by SURS Staff and advertised on the website of *Pensions & Investments* and in its late December print edition, along with being noticed as required in the State newspaper, and posted to the SURS website beginning December 14.

Timeline

The anticipated timeline for the search process is as follows:

Proposed Timeline for the Search	
Date	*Item*
December 7, 2017	Quiet Period Begins
December 14, 2017	Dissemination of RFP
December 29, 2017	Deadline for questions to SURS
January 3, 2018	Responses to questions submitted to SURS
January 19, 2018	RFP responses due by 4:30 pm CT
January/February 2018	Identify firms for further consideration
February 2018	Candidate interviews
March 9, 2018	Finalist presentations to SURS Board of Trustees

Update

Staff received ten responses from investment managers by the January 19, 2018 deadline. Staff is currently in the process of reviewing the responses. The respondents are as follows:

Manager Name	Headquarters	MFDB (Y/N)
Cabrera Capital Partners	Chicago, IL	Yes
Intercontinental Real Estate Corporation	Boston, MA	No
J.P. Morgan Asset Management	New York, NY	No
Manulife Asset Management	Boston, MA	No
PGM Real Estate	Madison, NJ	No
Principal Real Estate Investors	Des Moines, IA	No
QIC US Investment Services	Brisbane, Australia	No
The Blackstone Group	New York, NY	No
The Carlyle Group	Washington, DC	No
UBS Realty Investors	Hartford, CT	No

Interviews with the semi-finalist firms will be held in February. Trustees are invited to attend and if interested, please contact staff for additional details.

Quiet Period

Please note that the Quiet Period will remain in effect until a selection has been made by the Board and accepted by the service provider. A copy of the Quiet Period Policy Guidelines follows.

Quiet Period Policy Guidelines

The Quiet Period Policy is intended to establish guidelines by which Board Members and Staff will communicate with prospective service providers during the search process. The objectives of the policy are to ensure that prospective service providers competing to become employed by SURS have equal access to information regarding the search parameters; communications related to the selection are consistent and accurate; and the process of selecting service providers is efficient, diligent, and fair.

The following guidelines will be instituted during a search process for a service provider:

- A quiet period will commence upon Committee action (or Board action if the selection is not initiated through a Committee) to authorize a search for a service provider and end once a selection has been made by the Board and accepted by the service provider;
- Initiation, continuation and conclusion of the quiet period shall be publicly communicated to prevent inadvertent violations;
- All Board members, and Staff not directly involved in the search process, shall refrain from communicating with service provider candidates regarding any product or service related to the search offered by the candidate throughout the quiet period and shall refrain from accepting meals, travel, hotel, or other value from the candidates;
- Throughout the quiet period, if any Board member is contacted by a candidate, the Board member shall refer the candidate to SURS Consultant or Staff directly involved in the search process;
- All authority related to the search process shall be exercised solely by the relevant Committee or Board as a whole, and not by individual Board Members;
- All information related to the search process shall be communicated by the SURS Consultant and Staff to the relevant Committee or Board as a whole, and not to individual Board Members;
- The quiet period does not prevent Board approved due diligence, client conference attendance or communications with an existing service provider that happens to be a candidate in the ordinary course of services provided by such service provider; however, discussions related to the pending selection shall be avoided during those activities;
- The provisions of this policy will apply to service provider candidates throughout the quiet period and shall be communicated to candidates in conjunction with any competitive proposal process; and
- A service provider may be disqualified from a search process for a knowing violation of this policy.

S·U·R·S
STATE UNIVERSITIES RETIREMENT SYSTEM

1901 Fox Drive, Champaign, IL 61820-7333
800-275-7877 • 217-378-8800 • (Fax) 217-378-9800
www.surs.org

Investment Department

Fiscal Year 2018-19 Summary Work Plan
Investment Committee Schedule
State Universities Retirement System

▪ Denotes recurring items
- Denotes non-recurring items

FISCAL YEAR 2018

February 1-2, 2018

▪ Annual Fixed Income & Emerging Market Debt Asset Class Reviews
- Update on DC Consultant Search
- Update on Core Plus Real Estate Search
- Finalist Interviews for Options-Based Strategies Provider(s) Search
- Finalist Interviews for General Investment Consultant Search

March 8, 2018

▪ Annual Hedged Strategies Asset Class Review
▪ Annual Commodities Asset Class Review
- Finalist Interviews for DC Consultant
- Finalist Interviews for Core Plus Real Estate Search
- Initiate Specialty Real Estate Consultant RFP
- **Educational Topic** (TBD)

April 19, 2018

▪ Annual U.S. Equity Asset Class Review
▪ Annual Investment Review of Self-Managed Plan (SMP)
- **Educational Topic** (TBD)

June 7, 2018

- SURS FY ’19 Budget
- Annual Private Equity Asset Class Review
- Annual Opportunity Fund Asset Class Review
- **Educational Topic** (TBD)

FISCAL YEAR 2019

September 13, 2018

- Annual Review of SURS Portfolio
- Consideration of SURS Fiscal Year 2018 Investment Plan
- Annual Investment Policies Review
- Review of Goals for Utilization of Minority- and Female-Owned Investment Managers & Broker/Dealers
- **Educational Topic** (TBD)

October 18, 2018

- Annual Broker/Dealer Review
- Annual Global/International Equity Asset Class Reviews
- **Educational Topic** (TBD)

December 6, 2018

- Receipt of Annual Report to the Governor and General Assembly on Utilization of Emerging Investment Managers
- Annual Index Fund Investments Review
- Annual Real Estate Asset Class Review
- **Educational Topic** (TBD)

January 31, 2019

- Annual Fixed Income & Emerging Market Debt Asset Class Reviews
- **Educational Topics – Trustee Educational Forum** (TBD)

March 7, 2019

- Annual Hedged Strategies Asset Class Review
- Annual Commodities Asset Class Review
- **Educational Topic** (TBD)

April 18, 2019

- Annual U.S. Equity Asset Class Review
- Annual Investment Review of Self-Managed Plan (SMP)
- **Educational Topic** (TBD)

June 6, 2019

- SURS FY ’20 Budget
- Annual Private Equity Asset Class Review
- Annual Opportunity Fund Asset Class Review
- **Educational Topic** (TBD)

S·U·R·S
STATE UNIVERSITIES RETIREMENT SYSTEM

1901 Fox Drive, Champaign, IL 61820-7333
800-275-7877 • 217-378-8800 • (Fax) 217-378-9800
www.surs.org

Schedule of 2018-2019 Meetings Dates

Thursday, February 1, 2018 Friday, February 2, 2018 Chicago	9:00 a.m. – 5:00 p.m. 9:00 a.m. – 1:00 p.m.	Investment Committee Investment Committee Board Meeting
Thursday, March 8, 2018 Friday, March 9, 2018 Champaign	9:00 a.m. – 5:00 p.m. 9:00 a.m. – 12:00 p.m.	Committee Meetings Committee Meetings Board Meeting
Thursday, April 19, 2018 Chicago	9:00 a.m. - 5:00 p.m.	Investment Committee
Thursday, June 7, 2018 Friday, June 8, 2018 Chicago	9:00 a.m. - 5:00 p.m. 9:00 a.m. - 12:00 p.m.	Committee Meetings Committee Meetings Board Meeting
Thursday, September 13, 2018 Friday, September 14, 2018 Champaign	9:00 a.m. - 5:00 p.m. 9:00 a.m. - 12:00 p.m.	Committee Meetings Committee Meetings Board Meeting
Thursday, October 18, 2018 Chicago	9:00 a.m. - 5:00 p.m.	Investment Committee
Thursday, December 6, 2018 Friday, December 7, 2018 Chicago	9:00 a.m. - 5:00 p.m. 9:00 a.m. - 12:00 p.m.	Committee Meetings Committee Meetings Board Meeting
Thursday, January 31, 2019 Friday, February 1, 2019 Chicago	9:00 a.m. – 5:00 p.m. 9:00 a.m. – 1:00 p.m.	Investment Committee Investment Forum

Thursday, March 7, 2019	9:00 a.m. – 5:00 p.m.	Committee Meetings
Friday, March 8, 2019	9:00 a.m. – 12:00 p.m.	Committee Meetings
Champaign		Board Meeting
Thursday, April 18, 2019	9:00 a.m. - 5:00 p.m.	Investment Committee
Chicago		
Thursday, June 6, 2019	9:00 a.m. - 5:00 p.m.	Committee Meetings
Friday, June 7, 2019	9:00 a.m. - 12:00 p.m.	Committee Meetings
Chicago		Board Meeting
Thursday, September 12, 2019	9:00 a.m. - 5:00 p.m.	Committee Meetings
Friday, September 13, 2019	9:00 a.m. - 12:00 p.m.	Committee Meetings
Champaign		Board Meeting
Thursday, October 17, 2019	9:00 a.m. - 5:00 p.m.	Investment Committee
Chicago		
Thursday, December 5, 2019	9:00 a.m. - 5:00 p.m.	Committee Meetings
Friday, December 6, 2019	9:00 a.m. - 12:00 p.m.	Committee Meetings
Chicago		Board Meeting