



Summit Strategies Group

8182 Maryland Avenue, 6th Floor

St. Louis, Missouri 63105

314.727.7211

Asset Allocation Review

**City of Jacksonville
Police & Fire Pension Fund**

February 12, 2016

EXECUTIVE SUMMARY

- The purpose of today's presentation is to review Summit's current capital market assumptions, review the current Target Allocation, and make revisions as needed.
- Over the past year, the capital market assumptions have risen slightly; however, relative to historical returns, they remain low.
- Achieving the Fund's 7% actuarially-assumed rate-of-return will be difficult absent taking on more volatility (risk) or moving outside traditional asset classes.
- Emerging Market Equity and Debt, MLPs, TIPS, and Commodities appear undervalued at this time while Domestic Equities, Long Treasuries, and Cash appear overvalued. Broad diversification is necessary to dampen volatility.
- The current Target Allocation is expected to achieve the actuarially-assumed rate-of-return, net of fees over the 10-year investment time horizon.
- The current Target Allocation, however, does not set aside cash for benefit and expense payments. Doing so does not materially impact the expected return and risk and would prevent having to rebalance more frequently during down markets.
- The current Target Allocation also has a relatively high allocation to MLPs. This should be reduced by at least 2.0%. Also, unfunded mandates in Emerging Market Debt, Non-Core Real Estate, and Core Plus Fixed Income should be discussed.
- Removing asset classes which underperformed in 2015 would materially reduce expected return below the return target without reducing the expected risk. At the same time, substantially reducing bonds in the portfolio would only increase the expected return by 0.10% while materially increasing expected risk.
- Portfolio E on page fifteen is recommended. The expected return target is met although the expected volatility is slightly increased by the reduction in MLPs.
- Adding Private Investments at the 5% level slightly increases expected return and reduces expected risk. Adding Private Investments at the 10% level has a more material impact. Because of the statutory requirement to examine maturity, cash flow needs, and liquidity, adding Private Investments should be examined when the impact of the Mayor's plan before the Legislature is known.

SUMMARY

- The capital market assumptions section summarizes changes to Summit’s long-term strategic capital market assumptions (Summit’s full assumptions document is updated annually).
- While these assumptions are long-term by definition (one would not expect them to change frequently), there are times when market fundamentals move dramatically, thereby altering the long-term expected performance for certain asset classes.
- The pages that follow provide brief supporting documentation for each of the asset classes in the table.
- All assumptions are shown net of fees and are for a 10-year investment time horizon.

Asset Class Returns and Standard Deviations					
Asset Class	Beginning of 2016		Beginning of 2015		Alpha Assumptions
	Expected Return	Standard Deviation	Expected Return	Standard Deviation	
Inflation (CPI)	1.75%	1.75%	1.75%	1.75%	
GROWTH:					
Large Cap	5.25%	16.75%	5.00%	16.50%	0.25%
Small Cap	5.00%	20.75%	4.75%	20.50%	0.75%
International Large Cap	6.50%	20.00%	6.25%	19.75%	0.75%
International Small Cap	6.25%	22.75%	6.25%	22.75%	0.75%
Emerging Markets	8.50%	24.75%	8.25%	24.50%	0.75%
Master Limited Partnerships (MLP)	9.50%	20.50%	7.75%	18.50%	1.00%
Private Equity	8.00%	21.00%	7.75%	21.00%	1.00%
Growth Hedge Funds	5.50%	9.00%	5.75%	10.00%	0.75%
High Yield Bonds	5.25%	12.25%	5.25%	12.00%	0.25%
Emerging Market Debt	7.25%	11.25%	6.50%	10.50%	0.25%
Convertibles	4.50%	14.00%	4.50%	13.75%	0.25%
Private Debt	7.75%	15.00%	7.75%	15.00%	0.75%
Non-Core Real Estate	7.50%	23.00%	7.75%	23.00%	1.00%
Public Real Estate (REITs)	5.75%	15.00%	5.50%	15.00%	0.25%
Risk Parity	6.75%	10.00%	6.75%	10.00%	0.00%
INCOME:					
Governments	2.50%	4.50%	2.00%	4.50%	0.00%
Corporates	4.25%	6.00%	3.50%	6.00%	0.50%
Mortgages (Agency)	2.75%	3.00%	2.50%	3.00%	0.25%
Intermediate Fixed Income	3.00%	3.25%	2.50%	3.25%	0.25%
Core Fixed Income	3.25%	3.25%	2.50%	3.25%	0.25%
Core Plus Fixed Income	3.75%	3.75%	3.00%	3.75%	0.50%
Long Gov/Credit Fixed Income	4.25%	10.00%	3.25%	9.75%	0.25%
International Fixed Income	3.00%	8.25%	2.50%	8.25%	0.25%
Public Bank Loans	5.50%	11.25%	5.25%	11.00%	0.50%
Private Bank Loans	6.75%	13.00%	6.50%	13.00%	0.75%
Relative Value Hedge Funds	4.75%	5.00%	4.75%	5.00%	0.50%
Core Real Estate	6.25%	12.00%	6.50%	12.00%	0.25%
DIVERSIFICATION:					
Cash	2.25%	1.75%	2.25%	1.75%	
TIPS	2.50%	5.50%	2.25%	5.50%	0.00%
Long Treasuries	2.75%	13.75%	2.50%	13.25%	0.00%
Commodities	6.25%	20.25%	5.00%	20.75%	0.50%
Tactical Trading	5.75%	8.00%	6.25%	10.00%	0.50%
Diversified Hedge Funds	4.75%	5.00%	5.25%	6.00%	0.75%

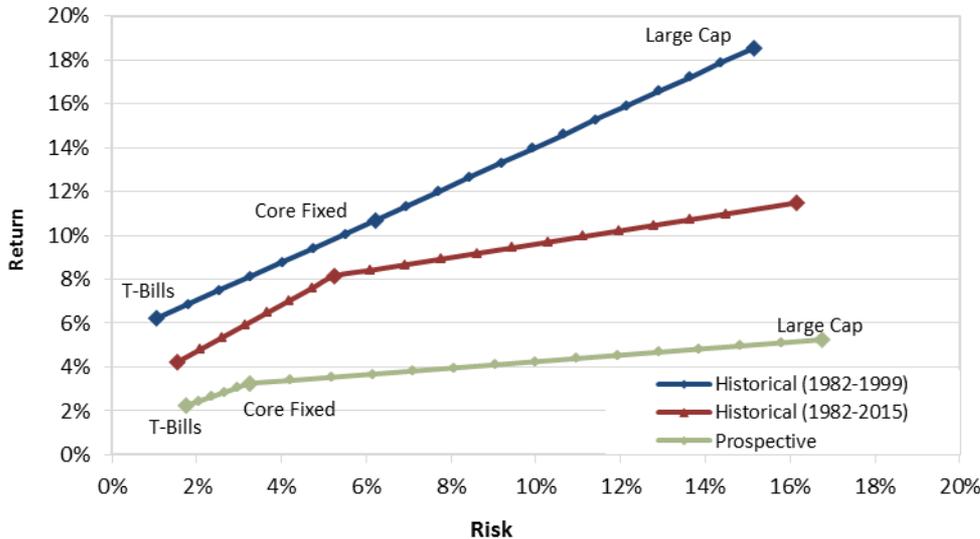
CAPITAL MARKET ASSUMPTION CHANGES

Asset Class	12/31/2014		12/31/2015		Difference	
	Beta Expected Return	Alpha	Beta Expected Return	Alpha	Beta Expected Return	Alpha
Large Cap	5.00%	0.50%	5.25%	0.25%	0.25%	-0.25%
Large Cap (Passive)	5.00%	0.00%	5.25%	0.00%	0.25%	0.00%
Small Cap	4.75%	0.75%	5.00%	0.75%	0.25%	0.00%
International Large Cap	6.25%	0.75%	6.50%	0.75%	0.25%	0.00%
Emerging Markets	8.25%	1.00%	8.50%	0.75%	0.25%	-0.25%
Private Investments	7.75%	0.00%	8.00%	1.00%	0.25%	1.00%
Core Fixed Income	2.50%	0.25%	3.25%	0.25%	0.75%	0.00%
Core Fixed Income (Passive)	2.50%	0.00%	3.25%	0.00%	0.75%	0.00%
Core Plus Fixed Income	3.00%	0.50%	3.75%	0.50%	0.75%	0.00%
Emerging Market Debt	6.50%	0.75%	7.25%	0.25%	0.75%	-0.50%
Senior Bank Notes	5.25%	0.00%	5.50%	0.50%	0.25%	0.50%
TIPS	2.25%	0.00%	2.50%	0.00%	0.25%	0.00%
Core Real Estate	6.50%	0.00%	6.25%	0.25%	-0.25%	0.25%
Non-Core Real Estate	7.75%	0.00%	7.50%	1.00%	-0.25%	1.00%
MLP	7.75%	0.00%	9.50%	1.00%	1.75%	1.00%
Cash	2.25%	0.00%	2.25%	0.00%	0.00%	0.00%

- The table above summarizes the changes to capital market assumptions since the beginning of last year.
- Generally, assumptions are slightly higher than last year due to current valuations.

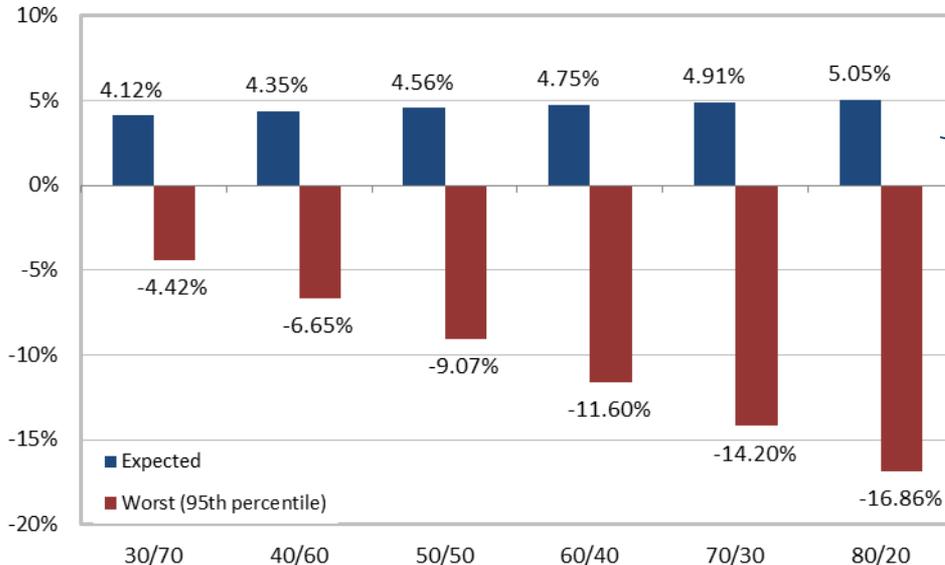
SUMMIT'S VIEW OF THE RISK PREMIUM

Historical Risk/Returns vs. Prospective Risk/Return Estimates



- Based on Summit's current capital market assumptions, expected returns are below historical levels while expected equity volatility has increased.
- In other words, Summit believes investors are no longer rewarded for taking risk to the extent they once were.
- Large cap equity risk-premiums have declined (comparison of 1982-1999 versus current):
 - Versus T-Bills: 12.3% down to 3.0%.
 - Versus Bonds: 7.8% down to 2.0%.
- As a result, the incremental return pick-up generated by increasing the equity allocation has decreased while the incremental risk has not.

Expected & Worst Case 1-Year Returns for Equity/Fixed Asset Mixes

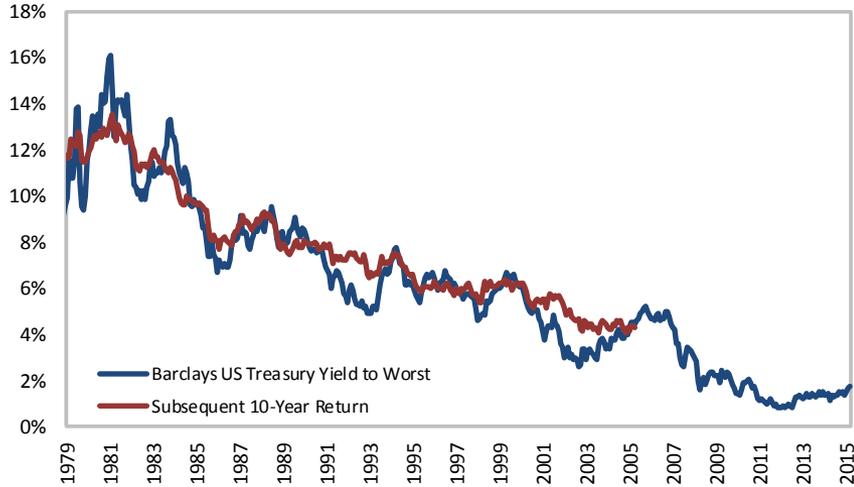


Expected
+15 bps to
+25 bps for
each 10%
increase in
stocks

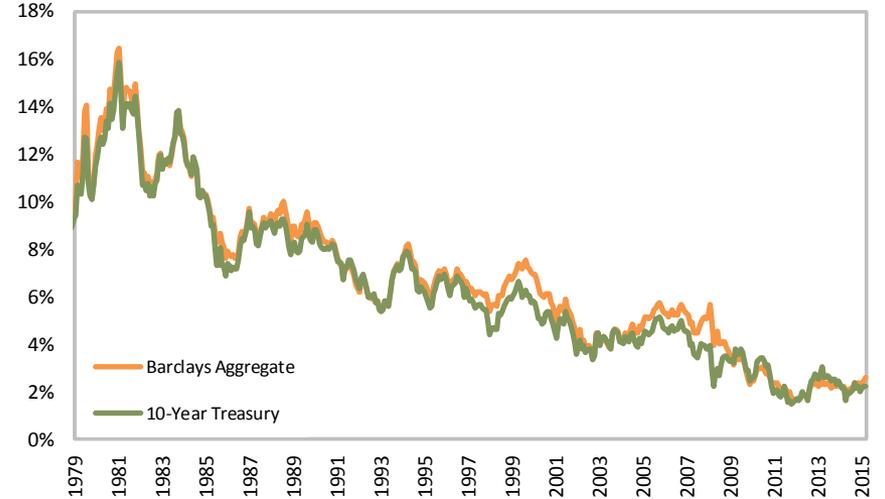
Downside
-220 bps to
-270 bps for
each 10%
increase in
stocks

FIXED INCOME

Yield as an Estimate of Fixed Income Returns



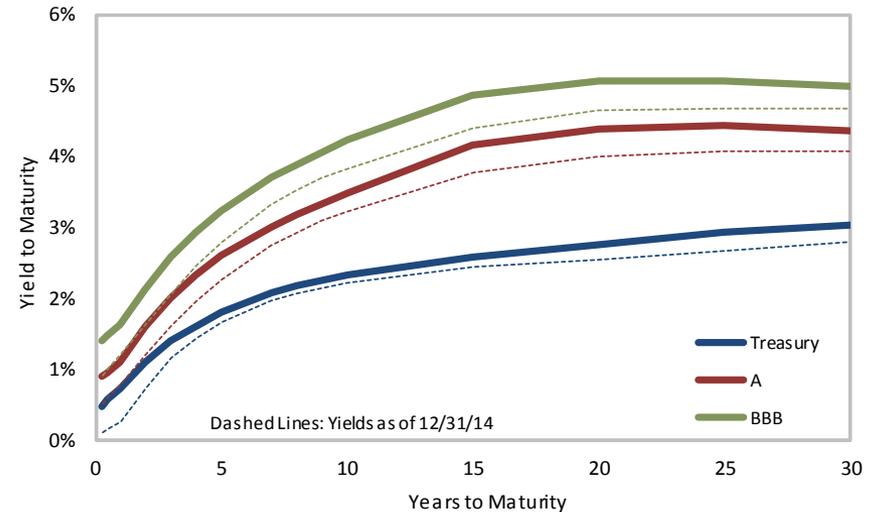
Historical Yields



Expected Return Option-Adjusted Spread

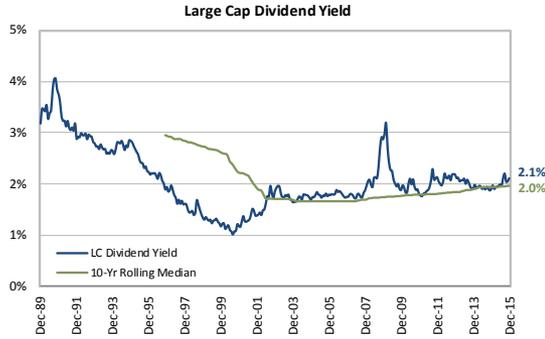
Asset Class	Expected Return		Option-Adjusted Spread	
	Current	Previous	Current	Previous
CPI	1.75%	1.75%	n/a	n/a
High Yield Bonds	5.25%	6.25%	660	630
Emerging Market Debt	7.25%	7.00%	n/a	n/a
Convertibles	4.50%	4.75%	n/a	n/a
Governments	2.50%	2.25%	2	1
Corporates	4.25%	4.00%	165	169
Mortgages (Agency)	2.75%	2.50%	24	31
Intermediate Fixed Income	3.00%	2.75%	49	50
Core Fixed Income	3.25%	3.00%	56	59
Core Plus Fixed Income	3.75%	3.50%	115	119
Long Gov/Credit Fixed Income	4.25%	4.00%	138	143
International Fixed Income	3.00%	2.75%	38	42
Cash	2.25%	2.00%	n/a	n/a
TIPS	2.50%	2.25%	n/a	n/a

Yield Curves



DOMESTIC EQUITY

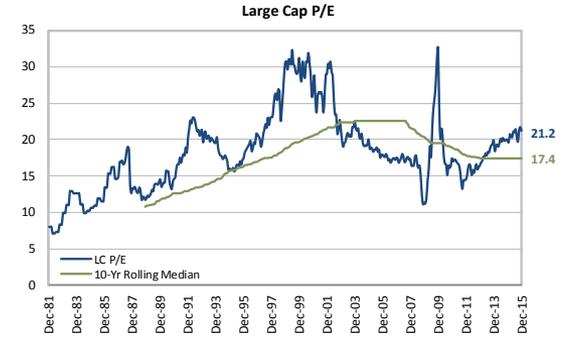
Large Cap Equity



Dividend Yield: 2.00%



EPS Growth: 1.75%

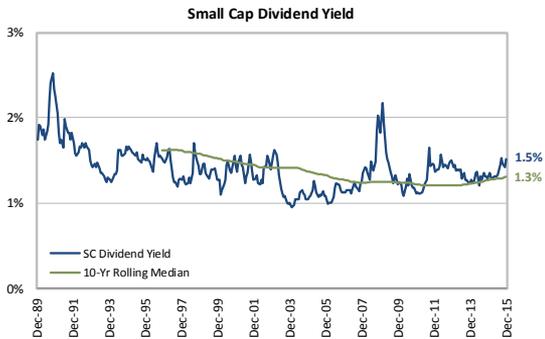


Change in P/E: -0.25%

Inflation

1.75%
5.25%

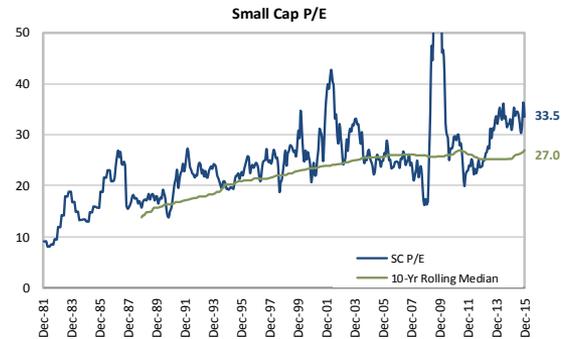
Small Cap Equity



Dividend Yield: 1.25%



EPS Growth: 2.25%



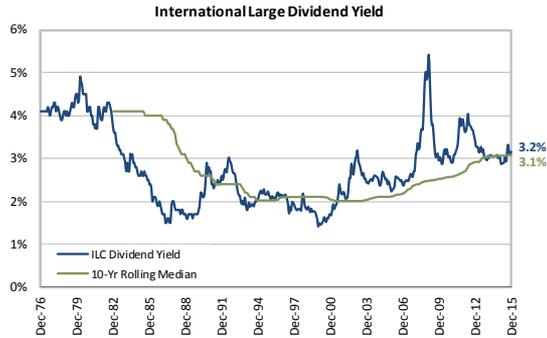
Change in P/E: -0.25%

Inflation

1.75%
5.00%

DEVELOPED INTERNATIONAL EQUITY

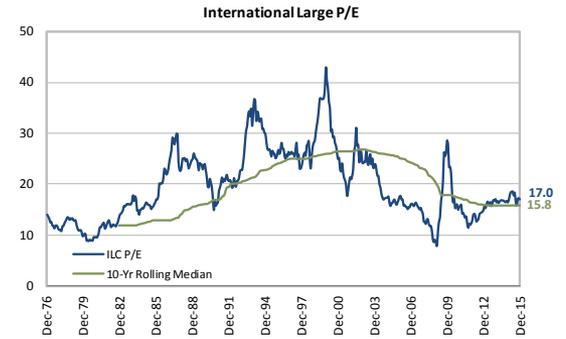
International Large Cap Equity



Dividend Yield: 3.25%



EPS Growth: 1.50%



Change in P/E: 0.00%

Inflation

+

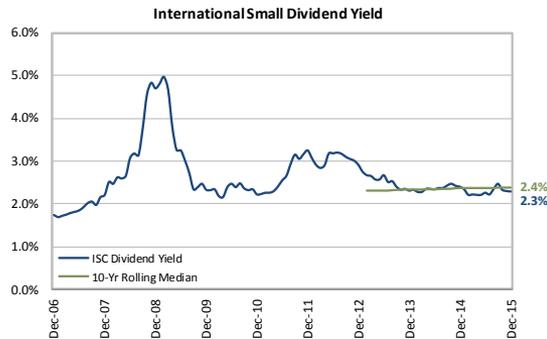
+

+

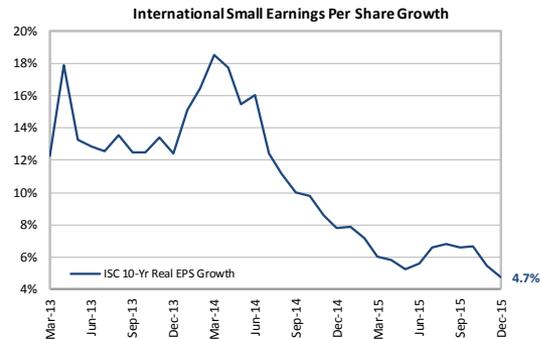
1.75%

6.50%

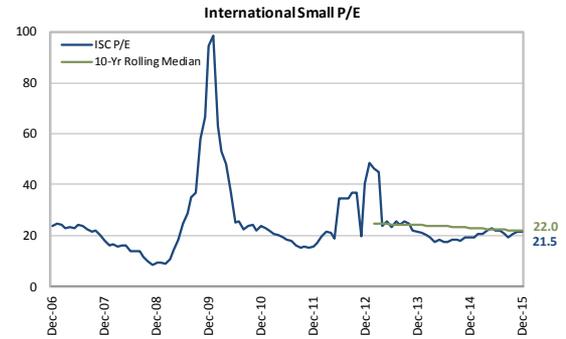
International Small Cap Equity



Dividend Yield: 2.50%



EPS Growth: 2.00%



Change in P/E: 0.00%

Inflation

+

+

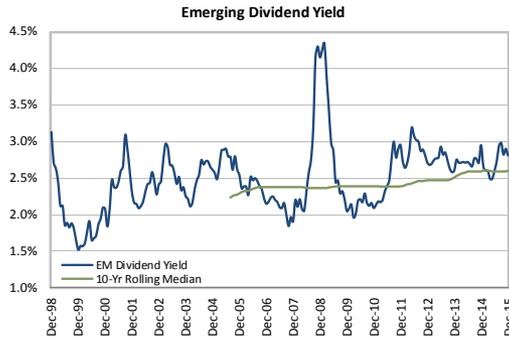
+

1.75%

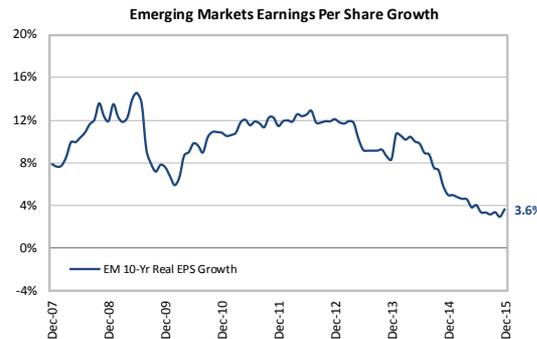
6.25%

INTERNATIONAL EQUITY

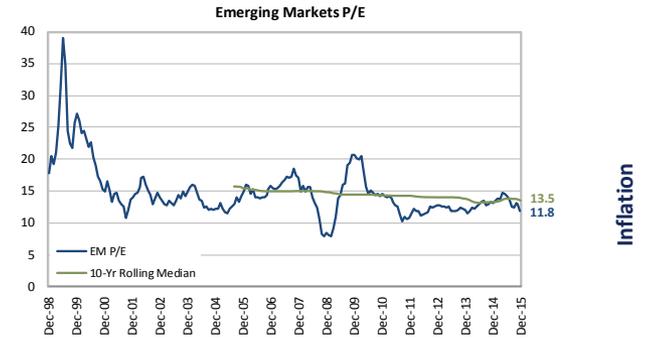
Emerging Market Equity



Dividend Yield: 3.00%



EPS Growth: 3.25%



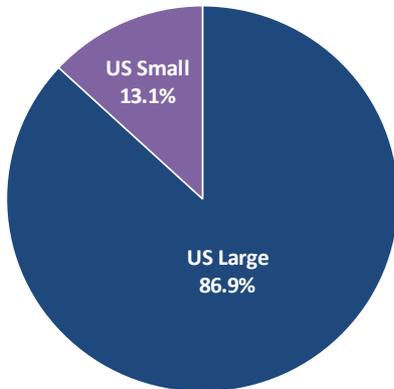
Change in P/E: 0.50%

+ 1.75%
8.50%

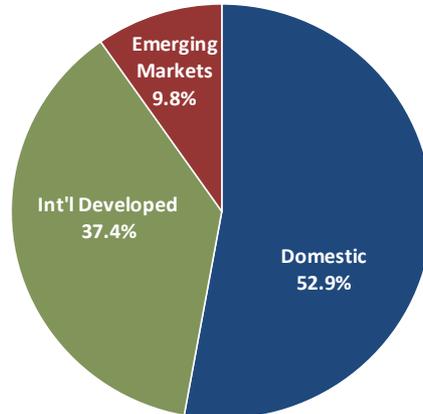
Inflation

Global Market Capitalization

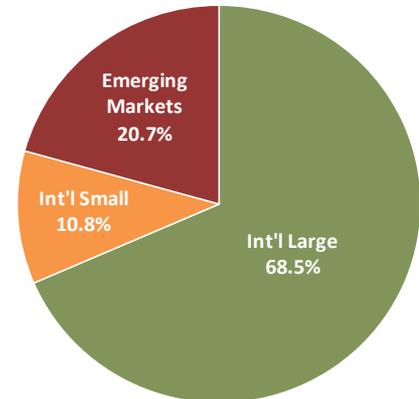
Domestic
\$21.8 Trillion



Global
\$41.3 Trillion



International
\$19.4 Trillion



ALTERNATIVES

GROWTH						
Private Equity					<i>Small Cap</i> 5.00%	+ <i>Return Premium</i> 3.00% = <i>Expected</i> 8.00%
Growth Hedge Funds	<i>Expected Sharpe Ratio</i> 0.35				<i>Cash</i> 2.25%	+ <i>Vol-Adj Excess Returns</i> 3.25% = 5.50%
Private Debt					<i>High Yield</i> 5.25%	+ <i>Return Premium</i> 1.75% = 7.00%
Master Limited Partnerships			<i>Distribution Yield</i> 8.50%		<i>Distribution Growth</i> 1.00%	+ <i>Valuation</i> 0.00% = 9.50%
Non-Core Real Estate	<i>Current Cap Rate</i> 5.25%	+	<i>Growth</i> 1.00%	+	<i>Liquidity Premium</i> 1.25%	+ <i>Leverage Adjustment</i> 0.00% = 7.50%
Public Real Estate (REITs)	<i>Current Yield</i> 4.00%	+	<i>Growth</i> 1.00%	+	<i>Valuation</i> 0.00%	+ <i>Leverage Adjustment</i> 0.75% = 5.75%
Risk Parity	<i>Expected Sharpe Ratio</i> 0.45				<i>Cash</i> 2.25%	+ <i>Risk-Adj Beta Exposure</i> 4.50% = 6.75%
INCOME						
Private Bank Loans					<i>Public Bank Loans</i> 5.50%	+ <i>Return Premium</i> 1.25% = 6.75%
Relative Value Hedge Funds	<i>Expected Sharpe Ratio</i> 0.50				<i>Cash</i> 2.25%	+ <i>Vol-Adj Excess Returns</i> 2.50% = 4.75%
Core Real Estate	<i>Current Cap Rate</i> 5.25%	+	<i>Growth</i> 1.00%	+	<i>Valuation</i> 0.00%	+ <i>Leverage Adjustment</i> 0.00% = 6.25%
DIVERSIFICATION						
Commodities					<i>Cash</i> 2.25%	+ <i>Return Premium</i> 4.00% = 6.25%
Tactical Trading	<i>Expected Sharpe Ratio</i> 0.40				<i>Cash</i> 2.25%	+ <i>Vol-Adj Excess Returns</i> 3.50% = 5.75%
Diversified Hedge Funds	<i>Expected Sharpe Ratio</i> 0.50				<i>Cash</i> 2.25%	+ <i>Vol-Adj Excess Returns</i> 2.50% = 4.75%

INVESTMENT THEMES: LOOKING FORWARD

What We Believe

Growth

- Global growth will remain low as the world faces demographic, deleveraging, and productivity headwinds.
- Low expected return environment but pockets of attractiveness exist.
- Uncertainty and divergence around global central bank policy.
- Wide range of growth rates and potential outcomes across individual economies and sectors globally.

Income

- Muted returns for most fixed income assets.
 - Yields are low and credit spreads remain compressed.

Diversification

- Market is pricing in low inflation for the foreseeable future.

What Investors Should Do

- Conservatively position growth assets by allocating near lower end of public equity range and diversify.
- Capitalize on tactical opportunities when available and overweight markets with discounted valuations.
- Prepare for heightened market volatility.
- Emphasize active management where alpha is available.

- Selectively overweight spread products relative to Treasuries.

- Favor cheap inflation protection (TIPS and commodities) over more costly deflation protection (long Treasuries).

ASSET CLASS VALUATION OVERVIEW

	Growth	Income	Diversification
Undervalued	Master Limited Partnerships Emerging Market Equities Emerging Market Debt	Relative Value Hedge Funds	TIPS Commodities
Fairly Valued	High Yield International Large Cap Equities International Small Cap Equities Growth Hedge Funds Risk Parity Private Assets	Public Bank Loans Core Real Estate Core Plus Fixed Income Investment-Grade Corporates Core Fixed Income International Fixed Income	Tactical Trading
Overvalued	Domestic Large Cap Equities Domestic Small Cap Equities	Private Bank Loans	Long Treasuries Cash

ASSET CLASS RESTRICTIONS

- Florida Statutes outline, especially Chapters 112.661 and 215.47, several restrictions including, but not limited to:
 - No limit on US Treasury obligations and certain types of municipal obligations and money market securities.
 - No more than 25% of the assets may be allocated toward:
 - Mortgage securities and asset-backed securities
 - Real property
 - Investment grade fixed income obligations of foreign governments and agencies, foreign corporations, or foreign commercial entities
 - US dollar denominated obligations issued by foreign governments and agencies, foreign corporations, or foreign commercial entities
 - Corporate obligations and securities of any kind of foreign corporations or a foreign commercial entity having its principal office located in any foreign country – not including US dollar denominated securities listed and traded on a US exchange (See note below)
 - Non-US corporate bonds traded outside the US shall be counted toward the 25% limit.
 - No more than 80% of the assets may be allocated to:
 - domestic equity securities listed on nationally recognized exchanges and
 - domestic corporate bonds.
 - No more than 5% of the assets may be invested as deemed appropriate by the Board, notwithstanding limitations contained in 215.47 if certain requirements are met.
 - ADRs are permissible in domestic equity portfolios but limited to 15% of manager’s portfolio per the investment policy.
- The statutory restrictions are reflected in the investment policy.
- Local ordinances may be passed to provide greater investment flexibility than that which is contained in Chapters 112.661 and 215.47 of Florida Statutes.
- Ordinance Code 121.116 authorizes alternative investments including: private equity, private debt, and private real assets/natural resources/energy. Section 215.47 places a 20% limit on alternatives. The ordinance prohibits hedge funds. The ordinance also permits the same investments the General Employees and Correctional Officers Pension Fund are permitted to make.

TARGET ASSET ALLOCATION

Asset Class	Target Allocation	Actual Allocation	Difference
Growth	72.5%	66.6%	-5.9%
Large Cap	17.3%	22.0%	4.6%
Large Cap (Passive)	8.7%	5.2%	-3.5%
Small Cap	9.0%	12.0%	3.0%
International Developed	14.0%	17.2%	3.2%
Emerging Markets	6.0%	4.8%	-1.2%
Emerging Market Debt	5.0%	0.0%	-5.0%
MLP	7.5%	5.5%	-2.0%
Non-Core Real Estate	5.0%	0.0%	-5.0%
Income	25.0%	33.3%	8.3%
Core Fixed Income	2.5%	9.6%	7.1%
Core Fixed Income (Passive)	2.5%	10.1%	7.6%
Core Plus Fixed Income	7.5%	0.0%	-7.5%
Senior Bank Notes	2.5%	2.4%	-0.1%
Core Real Estate	10.0%	11.2%	1.2%
Diversification	2.5%	0.0%	-2.5%
Cash	0.0%	0.0%	0.0%
TIPS	2.5%	0.0%	-2.5%
Total	100.0%	100.0%	0.0%

10-yr Beta Expected Return	6.6%	6.1%	-0.5%
10-yr Alpha Expected Return	0.5%	0.4%	-0.1%
10-yr Total Expected Return	7.1%	6.5%	-0.5%
Standard Deviation	11.4%	11.6%	0.2%
Return/Risk	0.62	0.56	-0.06

- The table to the right summarizes the Target allocation and Actual allocation at December 31, 2015.
- The actual allocation is overweight Core Fixed Income and Public equity; underweight Emerging Market Debt, Non-Core Real Estate, Core Plus Fixed Income, and TIPS.
- Portfolio statistics are shown net of fees for a 10-year investment time horizon.
- The current Target Allocation is already a well diversified portfolio, and achieves the actuarial expected rate of return of 7%.
- Two-thirds of the time, the return is expected to fall into the range of 7.1% +/- 11.4%.

CONSIDERATIONS FOR IMPROVEMENT TO ASSET ALLOCATION

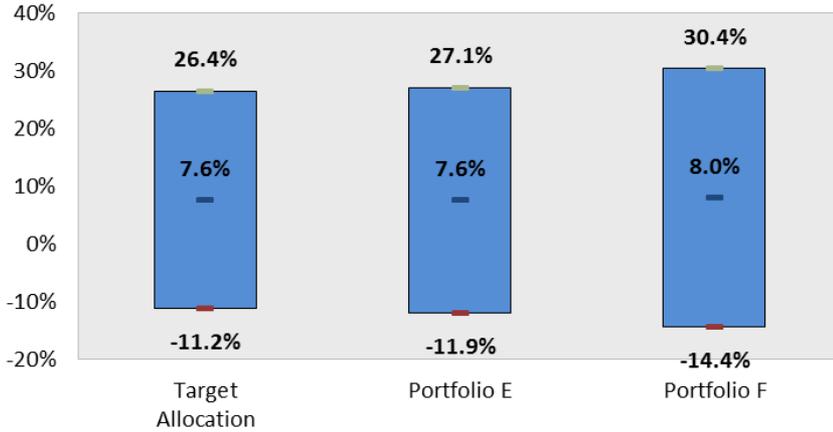
- Potential changes to the Target Allocation are reviewed on the following slide to examine opportunities to reduce risk, increase return, or both.
- Changes made to the Target allocation are as follows:
 - **Portfolio A:** Remove 2.5% allocation from TIPS; add 1.0% allocation to Cash and Increase Core Plus Fixed Income by 1.5%.
 - **Portfolio B:** Reduce Domestic Small Cap by 2.0% and increase Domestic Large Cap by 2.0%.
 - **Portfolio C:** Reduce MLP by 2.5% and increase Domestic Equity by 2.5%.
 - **Portfolio D:** Reduce Core Fixed Income by 1.0%, reduce Core Plus Fixed Income by 1.0%, and increase Domestic Equity by 2.0%.
 - **Portfolio E:** Combination of Portfolio A, B, and D, with MLP reduced by 2.0% and Domestic Equity increased by 2.0%.
 - **Portfolio F:** Remove 2.5% allocation to TIPS, remove 7.5% allocation to Core Plus Fixed Income, reduce Core Fixed Income by 3.0%, and increase Domestic Equity by 13.0%.
 - **Portfolio G:** Remove 6.0% allocation to Emerging Markets and add to International Developed, remove 7.5% allocation to MLP and add to Domestic Equity, remove 2.5% allocation to TIPS and add to Core Fixed Income; remove 5.0% allocation to Emerging Market Debt and 2.5% allocation to Senior Bank Notes, add to Core Plus Fixed Income.

ASSET ALLOCATION DETAIL

Asset Class	Target Allocation	Portfolio A	Portfolio B	Portfolio C	Portfolio D	Portfolio E	Portfolio F	Portfolio G
Growth	72.5%	72.5%	72.5%	72.5%	74.5%	74.5%	85.5%	67.5%
Large Cap	17.0%	17.0%	19.0%	19.1%	18.7%	22.4%	28.1%	23.4%
Large Cap (Passive)	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%
Small Cap	9.0%	9.0%	7.0%	9.4%	9.3%	7.6%	11.0%	10.1%
International Developed	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	20.0%
Emerging Markets	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	0.0%
Emerging Market Debt	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	0.0%
High Yield	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MLP	7.5%	7.5%	7.5%	5.0%	7.5%	5.5%	7.5%	0.0%
Non-Core Real Estate	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Private Investments	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Income	25.0%	27.5%	25.0%	25.0%	23.0%	25.5%	14.5%	32.5%
Cash	0.0%	1.0%	0.0%	0.0%	0.0%	1.0%	0.0%	0.0%
Core Fixed Income	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	1.0%	5.0%
Core Fixed Income (Passive)	2.5%	2.5%	2.5%	2.5%	1.5%	1.5%	1.0%	2.5%
Core Plus Fixed Income	7.5%	9.0%	7.5%	7.5%	6.5%	8.0%	0.0%	15.0%
Senior Bank Notes	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	0.0%
Core Real Estate	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
Diversification	2.5%	0.0%	2.5%	2.5%	2.5%	0.0%	0.0%	0.0%
TIPS	2.5%	0.0%	2.5%	2.5%	2.5%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
10-yr Beta Expected Return	6.6%	6.6%	6.6%	6.5%	6.6%	6.5%	6.8%	5.8%
10-yr Alpha Expected Return	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.4%
10-yr Total Expected Return	7.1%	7.1%	7.1%	6.9%	7.1%	7.0%	7.2%	6.3%
Standard Deviation	11.4%	11.5%	11.4%	11.6%	11.8%	11.9%	13.6%	11.4%
Return/Risk	0.62	0.62	0.62	0.60	0.60	0.59	0.53	0.55

RANGE OF RETURNS

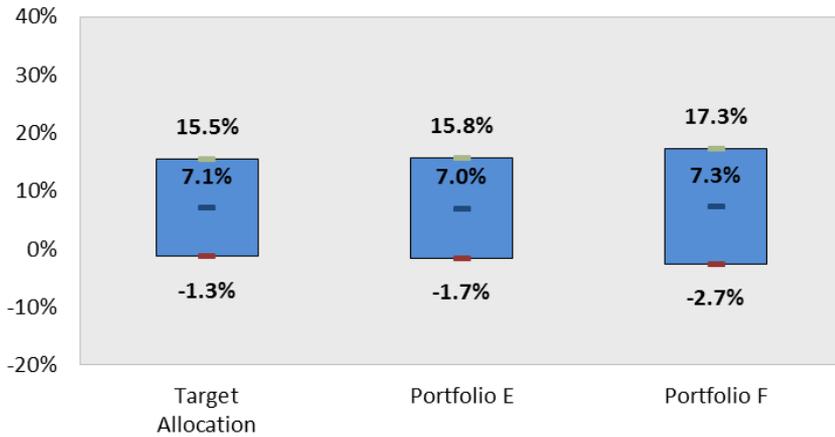
1-Year Horizon



3-Year Horizon



5-Year Horizon



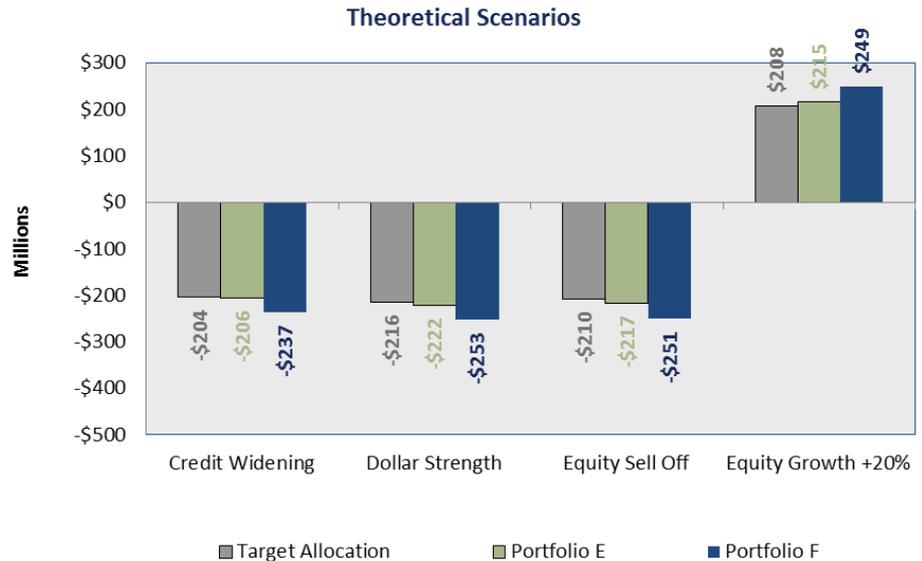
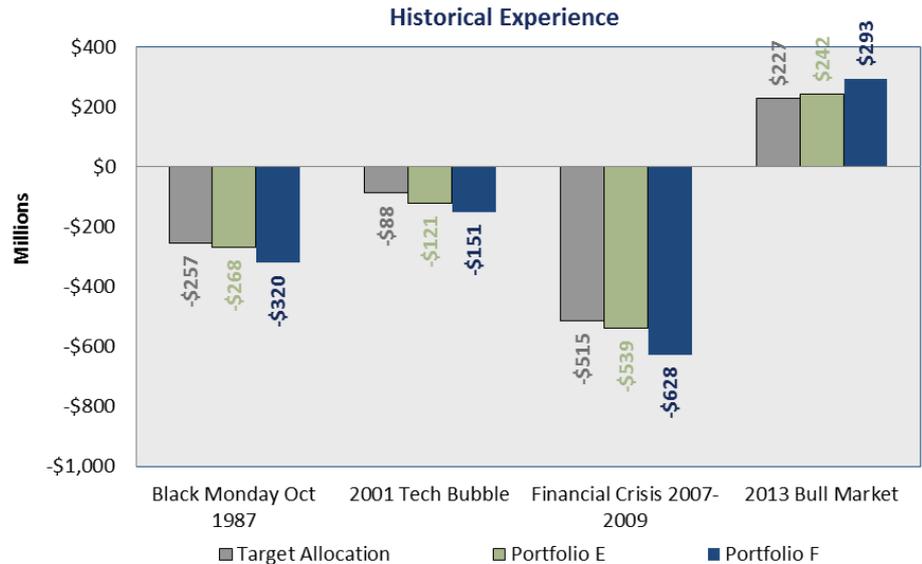
10-Year Horizon



— 95th — 50th — 5th

HISTORICAL AND THEORETICAL SCENARIO ANALYSIS

- The charts to the right show how the Target Allocation, Portfolio E, and Portfolio F would perform under four historical scenarios and four theoretical scenarios.
- The recommended portfolio (Portfolio E) and the current Target Allocation perform similarly while Portfolio F underperforms in negative scenarios and outperforms in positive scenarios, reflecting greater volatility.



ALTERNATIVE ALLOCATIONS WITH PRIVATE INVESTMENTS

- Below the Target Allocation, Portfolio E, and Portfolio F are reviewed with a 5% allocation to Private Investments.
- The allocation to Private Investments is funded from Domestic Equity (Option 1) and, separately, funded evenly from Domestic Equity and Emerging Market Debt (Option 2).

Asset Class	Target Allocation	Option 1	Option 2	Portfolio E	Option 1	Option 2	Portfolio F	Option 1	Option 2
Growth	72.5%	72.5%	72.5%	74.5%	74.5%	74.5%	85.5%	85.5%	85.5%
Large Cap	17.0%	12.8%	14.9%	22.4%	18.2%	20.3%	28.1%	23.8%	25.9%
Large Cap (Passive)	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%
Small Cap	9.0%	8.3%	8.6%	7.6%	6.9%	7.2%	11.0%	10.2%	10.6%
International Developed	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%
Emerging Markets	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
Emerging Market Debt	5.0%	5.0%	2.5%	5.0%	5.0%	2.5%	5.0%	5.0%	2.5%
High Yield	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MLP	7.5%	7.5%	7.5%	5.5%	5.5%	5.5%	7.5%	7.5%	7.5%
Non-Core Real Estate	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Private Investments	0.0%	5.0%	5.0%	0.0%	5.0%	5.0%	0.0%	5.0%	5.0%
Income	25.0%	25.0%	25.0%	25.5%	25.5%	25.5%	14.5%	14.5%	14.5%
Cash	0.0%	0.0%	0.0%	1.0%	1.0%	1.0%	0.0%	0.0%	0.0%
Core Fixed Income	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	1.0%	1.0%	1.0%
Core Fixed Income (Passive)	2.5%	2.5%	2.5%	1.5%	1.5%	1.5%	1.0%	1.0%	1.0%
Core Plus Fixed Income	7.5%	7.5%	7.5%	8.0%	8.0%	8.0%	0.0%	0.0%	0.0%
Senior Bank Notes	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Core Real Estate	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
Diversification	2.5%	2.5%	2.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
TIPS	2.5%	2.5%	2.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
10-yr Beta Expected Return	6.6%	6.8%	6.7%	6.5%	6.7%	6.6%	6.8%	6.9%	6.9%
10-yr Alpha Expected Return	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
10-yr Total Expected Return	7.1%	7.3%	7.2%	7.0%	7.2%	7.1%	7.2%	7.4%	7.4%
Standard Deviation	11.4%	11.4%	11.6%	11.9%	11.8%	12.0%	13.6%	13.5%	13.7%
Return/Risk	0.62	0.64	0.62	0.59	0.61	0.59	0.53	0.55	0.54

BIG PICTURE: THE ACTIVE VS. PASSIVE DECISION

- A rational investor will pay an active management fee only if the perceived alpha potential is well in excess of the management fee.
 - Typical target is gross alpha of 2x-4x the fee.
 - Otherwise, the investor:
 - Experiences benchmark (or less) returns, and
 - Experiences high volatility / tracking error.
 - Meanwhile, the manager:
 - Gets wealthy.
- Some asset classes require an investor to pursue active management.
 - Private assets:
 - Private Equity, Private Debt, Private Real Assets (Real Estate, Infrastructure, Natural Resources)
 - Hedge Funds (Passive ETFs are available, but the concern is not selecting “alpha” managers and being left with “expensive beta”)
 - Risk Parity
- All other (more traditional) asset classes can be garnered passively or actively.
 - Includes asset classes such as Public Equities, Public Fixed Income, Cash.
 - Default position should be passive management, and an investor must be compelled to move away from this position.
 - Reliant upon the skill of the active manager and the staff/consultant skill to select high quality managers.
 - Must be sensitive to not over-diversify, ultimately producing an expensive index with active management fees.
 - Caveat: All asset classes are subject to issues regarding the appropriateness of a benchmark comparison.
 - Active and Passive Management both go through periods of under/out performance.
 - Some asset classes are more suited for active management.

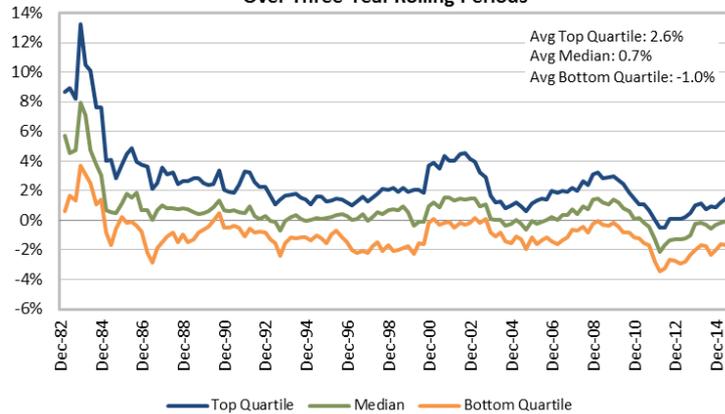
INDUSTRY EXCESS RETURN CHARACTERISTICS: DOMESTIC EQUITY (AS OF SEPTEMBER 30, 2015)

Domestic Equity

Large Capitalization

Small Capitalization

Level of Over/Under Performance vs. Russell 1000 Over Three-Year Rolling Periods



Level of Over/Under Performance vs. Russell 2000 Over Three-Year Rolling Periods



	Median	Top Quartile
Average Alpha	70 bps	260 bps
Average Fee	52 bps	
Multiple of Fee	1.3x	5.0x
Index Fee	2 bps	

	Median	Top Quartile
Average Alpha	230 bps	510 bps
Average Fee	88 bps	
Multiple of Fee	2.6x	5.8x
Index Fee	7 bps	

- Historically, a very challenging asset class to garner excess return with active management, net of fees. And, index management is very inexpensive.

- While an expensive asset class, greater excess returns can be realized with active management. Index management is fairly inexpensive.

INDUSTRY EXCESS RETURN CHARACTERISTICS: INTERNATIONAL EQUITY (AS OF SEPTEMBER 30, 2015)

International Equity

Developed International

Level of Over/Under Performance vs. MSCI EAFE Over Three-Year Rolling Periods

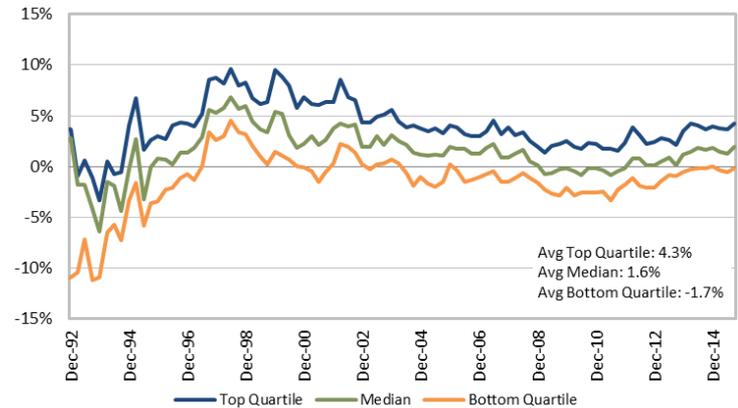


	Median	Top Quartile
Average Alpha	170 bps	470 bps
Average Fee	68 bps	
Multiple of Fee	2.5x	6.9x
Index Fee	7 bps	

- The most substantial upside relative to the size of the active management fee.

Emerging Markets

Level of Over/Under Performance vs. MSCI Emerging Markets Over Three-Year Rolling Periods



	Median	Top Quartile
Average Alpha	160 bps	430 bps
Average Fee	90 bps	
Multiple of Fee	1.8x	4.8x
Index Fee	20 bps	

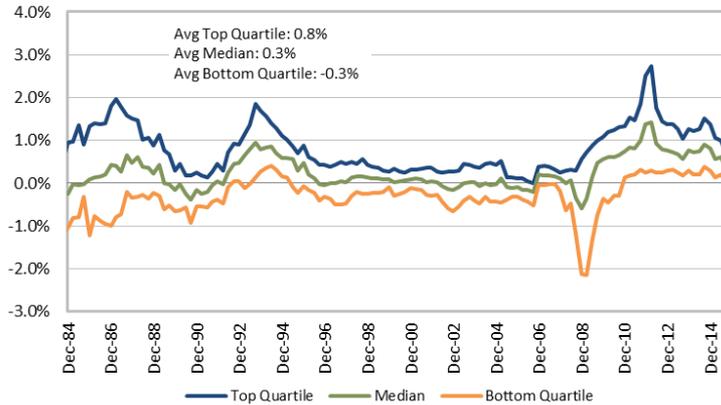
- Substantial return difference between 1st quartile and median, asset class can be garnered inexpensively.

INDUSTRY EXCESS RETURN CHARACTERISTICS: FIXED INCOME (AS OF SEPTEMBER 30, 2015)

Fixed Income

Core Fixed Income

Level of Over/Under Performance vs. Barclays Aggregate Over Three-Year Rolling Periods

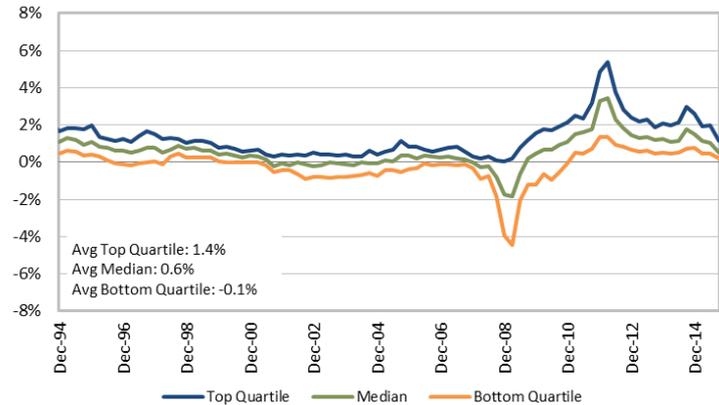


	Median	Top Quartile
Average Alpha	30 bps	80 bps
Average Fee	26 bps	
Multiple of Fee	1.2x	3.1x
Index Fee	~9 bps*	

- Challenging to garner material excess returns from active management, net of fees.

Core Plus Fixed Income

Level of Over/Under Performance vs. Barclays Universal Over Three-Year Rolling Periods



	Median	Top Quartile
Average Alpha	60 bps	140 bps
Average Fee	31 bps	
Multiple of Fee	1.9x	4.5x
Index Fee	~13 bps*	

- For a slightly higher fee, there is the potential to obtain more alpha, especially on a multiple of fee basis (compared to Core Fixed Income).

Average fee estimates are for a \$100 million mandate.

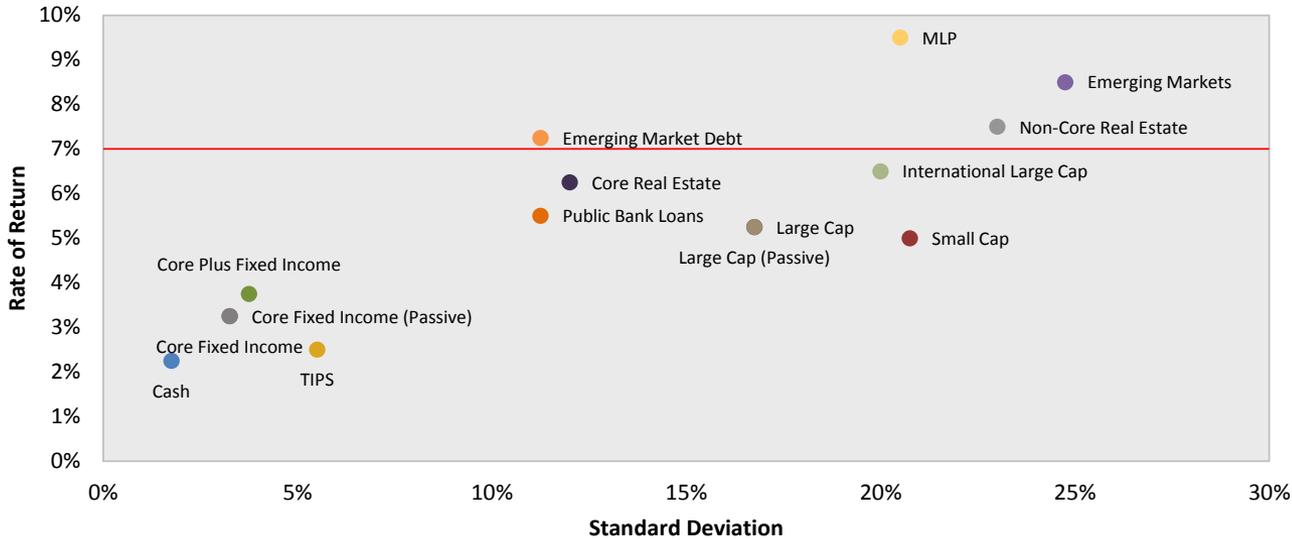
IMPLEMENTATION

Asset Class	Current Target	Recommended	Difference
Large Cap Core Passive	9.0%	11.0%	2.0%
Large Cap Value Active	8.5%	10.2%	1.7%
Large Cap Growth Active	8.5%	10.2%	1.7%
Non-Large Value Active	4.5%	3.8%	-0.7%
Non-Large Growth Active	4.5%	3.8%	-0.7%
International Developed Passive	5.0%	5.0%	0.0%
International Developed Growth Active	5.0%	5.0%	0.0%
International Developed Value Active	4.0%	4.0%	0.0%
Emerging Markets Active	6.0%	6.0%	0.0%
Cash	0.0%	1.0%	1.0%
Core Fixed Income Passive	2.5%	1.5%	-1.0%
Core Fixed Income Active	2.5%	2.5%	0.0%
Core Plus Fixed Income Active	7.5%	8.0%	0.5%
Senior Bank Notes Active	2.5%	2.5%	0.0%
TIPS	2.5%	0.0%	-2.5%
Emerging Market Debt Active	5.0%	5.0%	0.0%
Core Real Estate	10.0%	10.0%	0.0%
Non-Core Real Estate	5.0%	5.0%	0.0%
MLP	7.5%	5.5%	-2.0%
Total	100.0%	100.0%	0.0%

APPENDIX A: CAPITAL MARKET ASSUMPTIONS

CAPITAL MARKET ASSUMPTIONS (DECEMBER 31, 2015)

Total Return vs. Risk

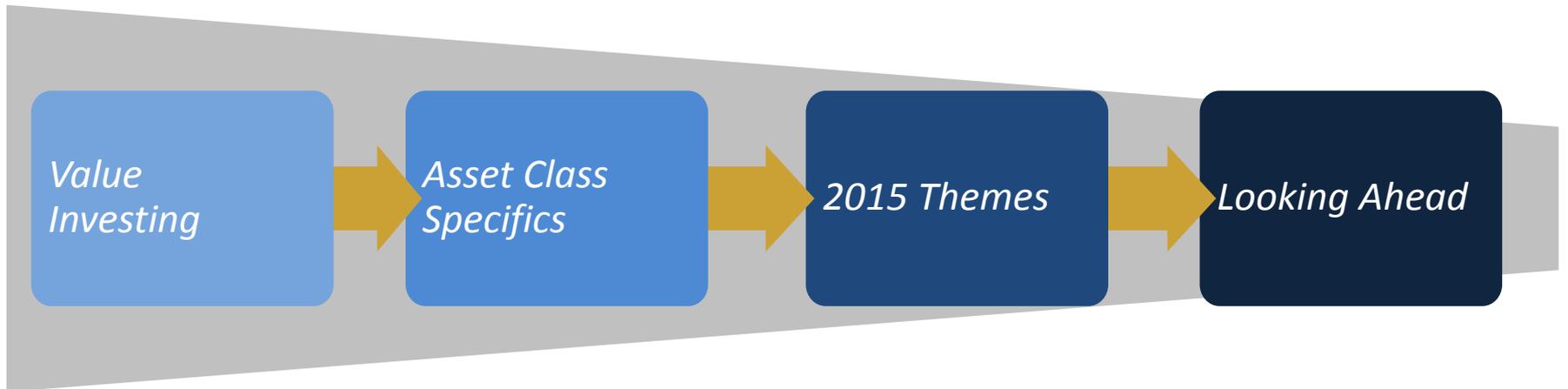


- All assumptions are shown net of fees and are for a 10-year investment time horizon.

Asset Class	Expected Return	Expected Alpha	Standard Deviation	Comments Regarding Return Assumptions
Large Cap	5.3%	0.3%	16.8%	Long-term Expected, Fundamental Components
Large Cap (Passive)	5.3%	n/a	16.8%	Long-term Expected, Fundamental Components
Small Cap	5.0%	0.8%	20.8%	Long-term Expected, Fundamental Components
International Large Cap	6.5%	0.8%	20.0%	Long-term Expected, Fundamental Components
Emerging Markets	8.5%	0.8%	24.8%	Long-term Expected, Fundamental Components
Emerging Market Debt	7.3%	0.3%	11.3%	Current Yield Curve + Sovereign Default Discount
Non-Core Real Estate	7.5%	1.0%	23.0%	Current Cap Rate + NOI Growth + Liquidity Premium + Leverage Adj
MLP	9.5%	1.0%	20.5%	Distribution Yield + NOI Growth
Cash	2.3%	n/a	1.8%	Current Yield Curve
Core Fixed Income	3.3%	0.3%	3.3%	Current Yield Curve
Core Fixed Income (Passive)	3.3%	n/a	3.3%	Current Yield Curve
Core Plus Fixed Income	3.8%	0.5%	3.8%	Current Yield Curve
Core Real Estate	6.3%	0.3%	12.0%	Current Cap Rate + NOI Growth + Leverage Adj
Public Bank Loans	5.5%	0.5%	11.3%	Base Return (High Yield)
TIPS	2.5%	n/a	5.5%	Real Yield + Inflation Expectation

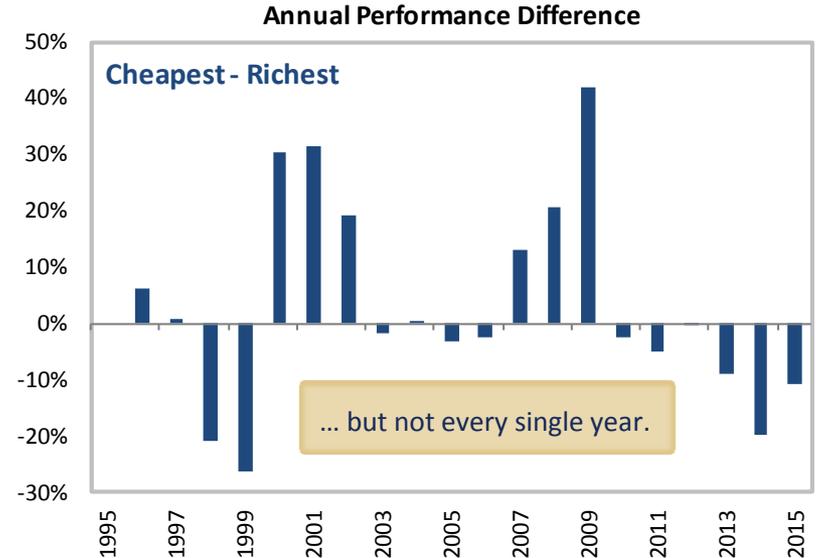
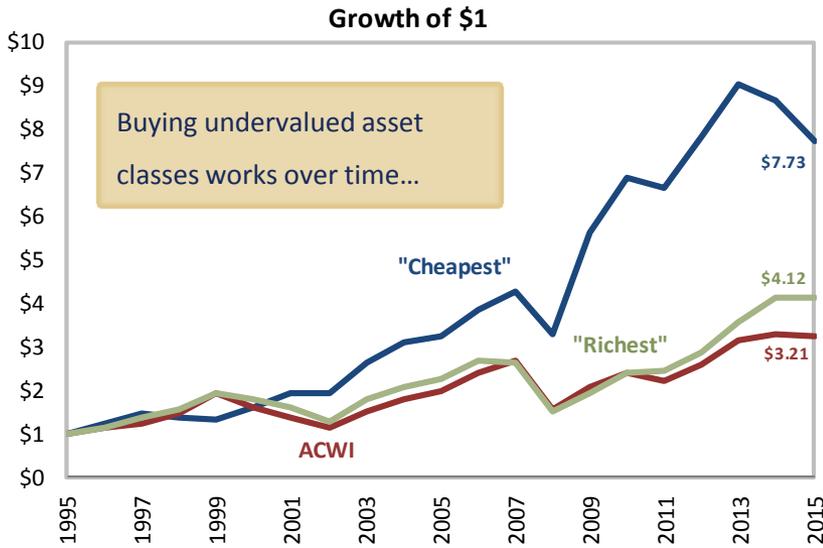
APPENDIX B: PLAYBOOK THEMES

OVERVIEW



VALUE ASSET ALLOCATION: A CASE STUDY

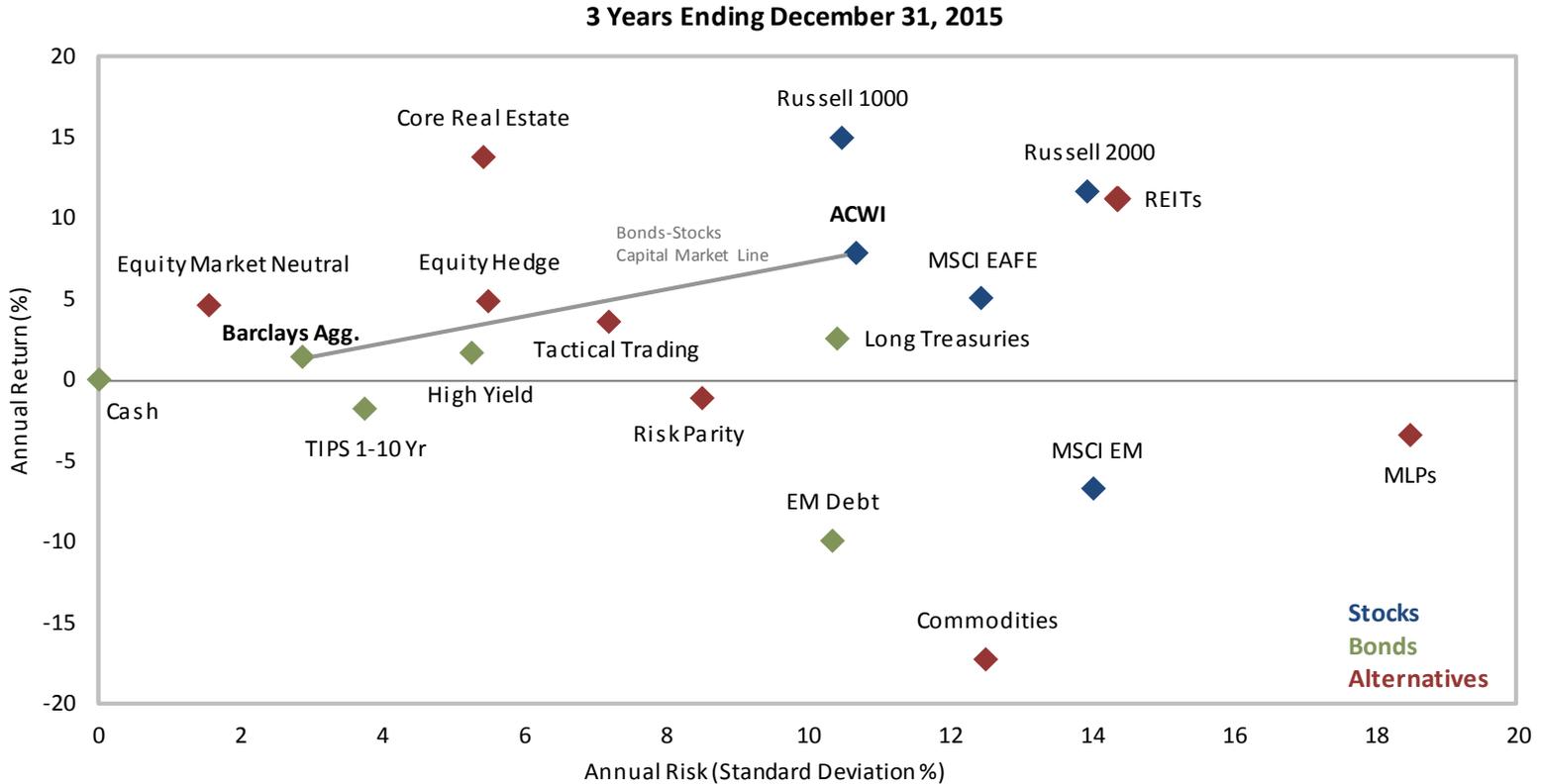
- Across eight asset classes (US Large Cap, US Small Cap, International Developed Equity, EM Equity, MLPs, EM Debt, High Yield, and REITs), buy the “cheapest” and “richest” three based on valuations at the beginning of each year starting on 12/31/1995.



Observations

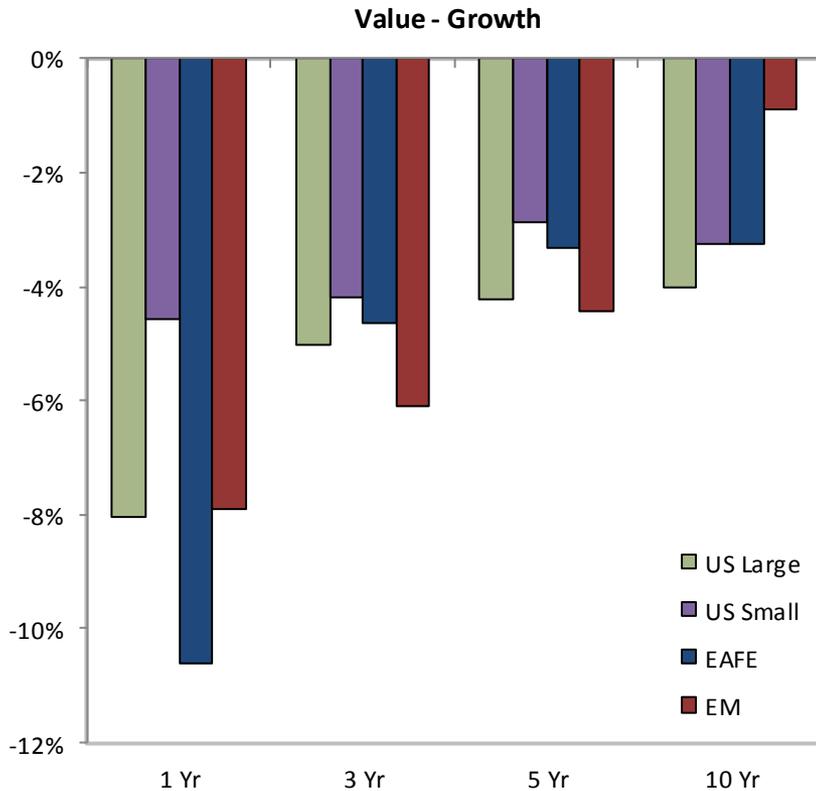
- Investing in relatively undervalued asset classes outperformed overvalued asset classes and ACWI over the total period.
- Value outperformed in fewer periods, but its outperformance tended to be more dramatic.
- For five out of the past six years, buying what was the most overvalued was a better strategy.

OVERVIEW OF RECENT MARKET PERFORMANCE



Source: PARis. Cash is represented by Citigroup 3-Month T-bill, Equity Mkt Neutral by HFRI Equity Market Neutral, Equity Hedge by HFRI Equity Hedge, Risk Parity by a composite of managers, Tactical Trading by 50% CS/T Global Macro and 50% CS/T Managed Futures, ACWI by MSCI ACWI IMI, EM Debt by JPM GBI-EM Global Diversified, HY and Long Treasuries by Barclays indices, REITs by FTSE NAREIT.

EQUITY: VALUE VS. GROWTH



Source: MSCI.

- Value has trailed growth across all regions for the trailing 10 years.
- Performance between value and growth has historically been cyclical, with value outperforming on average in each region.



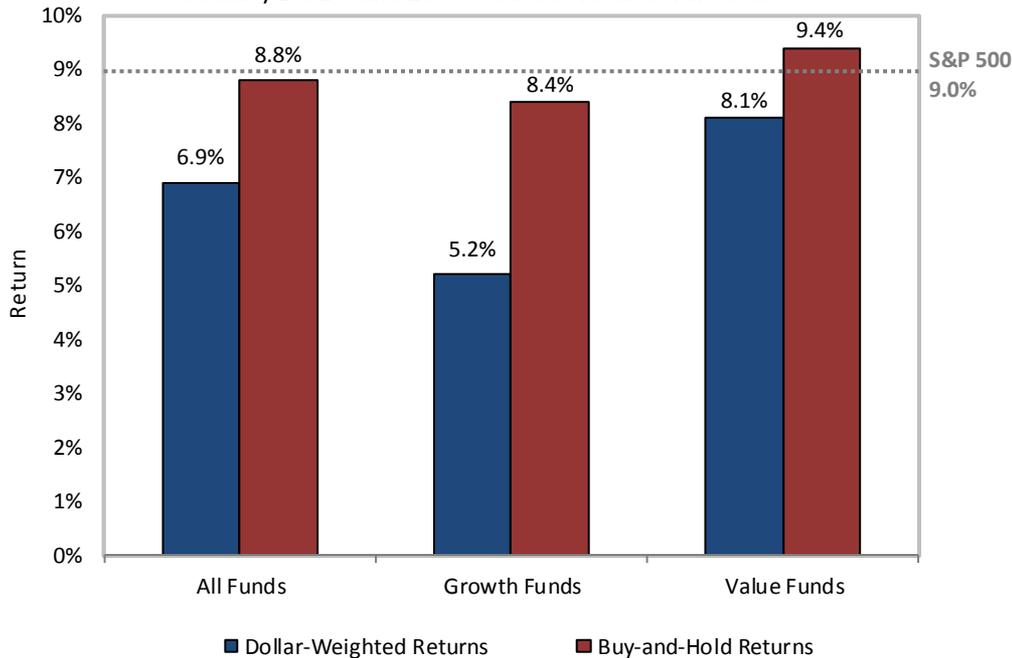
*MSCI World returns from 1975-1994; ACWI IMI from 1994 to current

VALUE INVESTING

- A value approach has historically generated higher returns than a core approach in asset allocation and security selection.
- However, timing/behavioral decisions have decreased the returns investors actually realized.

Investor Return Gap is Large For All Fund Categories

January 1991 - June 2003 - Source: Research Affiliates



Strategy	Return	Difference
Value Buy-and-Hold	9.4%	--
Value Dollar-Weighted	8.1%	-1.3%
Growth Buy-and-Hold	8.4%	-1.0%

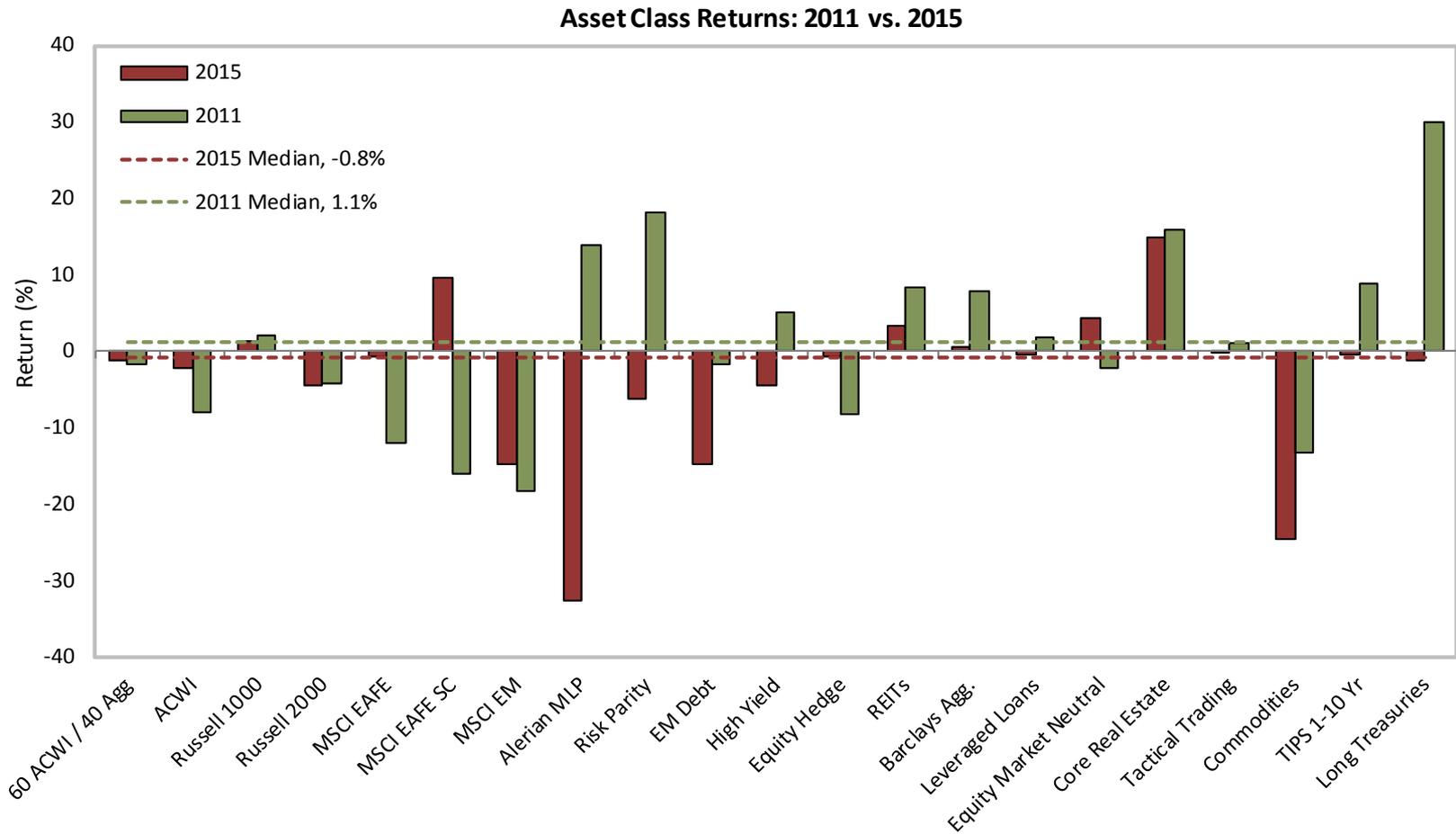
Key Takeaway:

- Committing to a value strategy is just as important as being value-oriented in the first place.

INSTITUTIONAL INVESTORS HAVE FACED HEADWINDS OVER THE PAST FEW YEARS

- Valuations were high and have increased further for stocks and bonds, with P/E ratios elevated and interest rates near all-time lows.
 - Diversifying away from traditional stocks and bonds (particularly US) generally detracted from performance.
- Investing in less risky assets also didn't help as equity risk was the most rewarded (i.e., versus credit, inflation, etc.).
- Currency headwinds from US dollar appreciation persisted.
- Commodity/energy weakness flowed through to other asset classes.
- Uncertainty around central bank policy increased market volatility.
- Narrow equity market breadth meant that a small number of stocks (mainly US large cap growth) performed well.

2015 THEMES: MUTED RETURNS ACROSS ASSET CLASSES



60/40 stocks/bonds returns were similar in 2011 and 2015. The main difference: there were very few winners across the board in 2015, while diversification was beneficial in 2011.

A FEW US STOCKS DROVE GLOBAL EQUITY RETURNS IN 2015

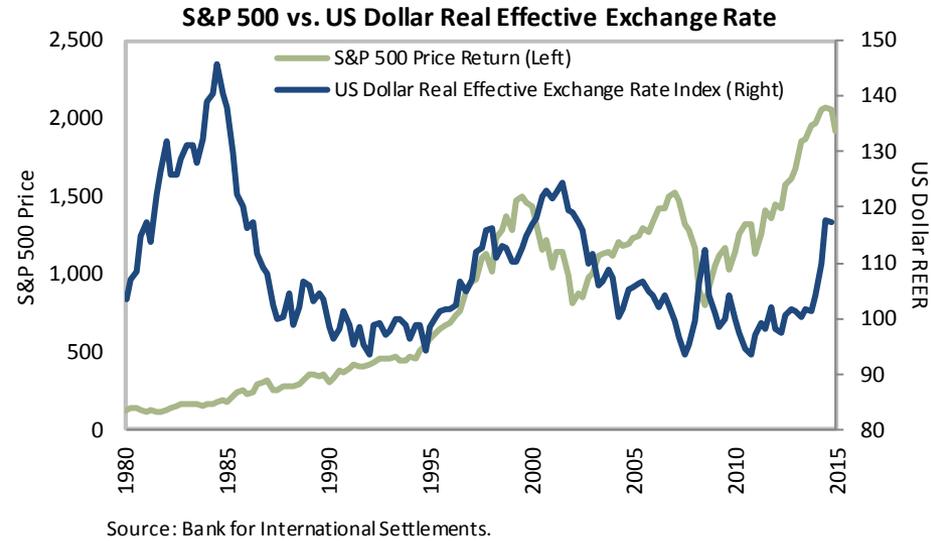
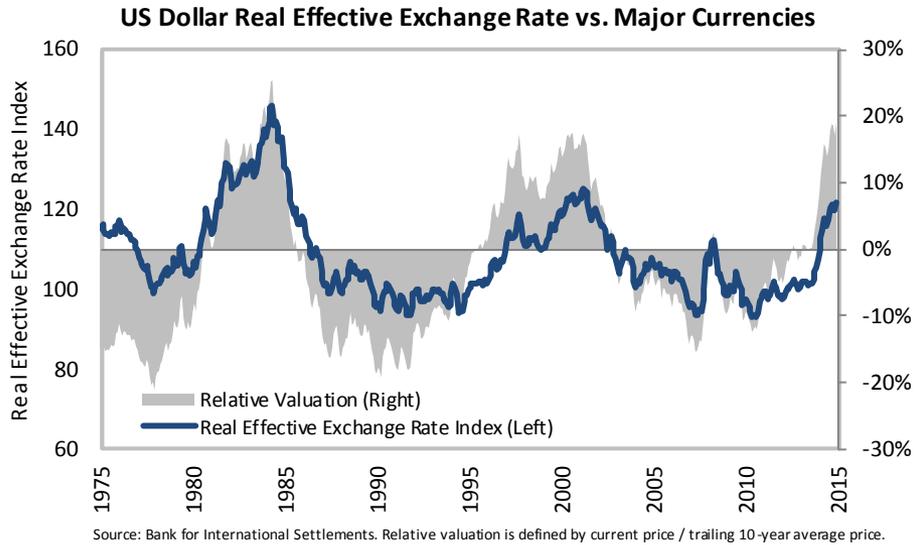
MSCI ACWI IMI: -2.2% in 2015

Rank	Company	Country	Total Return	% of ACWI Return
1	Amazon.com	US	118%	15%
2	Alphabet (Google)	US	46%	15%
3	Microsoft	US	23%	9%
4	General Electric	US	28%	7%
5	Facebook	US	34%	6%
6	Home Depot	US	29%	4%
7	Novo Nordisk	DNK	40%	4%
8	Starbucks	US	48%	3%
9	McDonald's	US	30%	3%
10	Netflix	US	134%	3%
11	Tencent	CHN	36%	3%
12	Visa	US	19%	3%
13	Altria	US	23%	2%
14	Nike	US	32%	2%
15	Disney	US	13%	2%
16	Allergan	IRE	21%	2%
17	Bristol-Meyers Squibb	US	19%	2%
18	Eli Lilly & Co.	US	25%	2%
19	JPMorgan Chase	US	8%	2%
20	Kraft Foods	US	42%	2%
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The index is composed of over 9,500 stocks. Five of them, all US large caps, accounted for 52% of ACWI's return.

17 of the top 20 contributors were US companies.

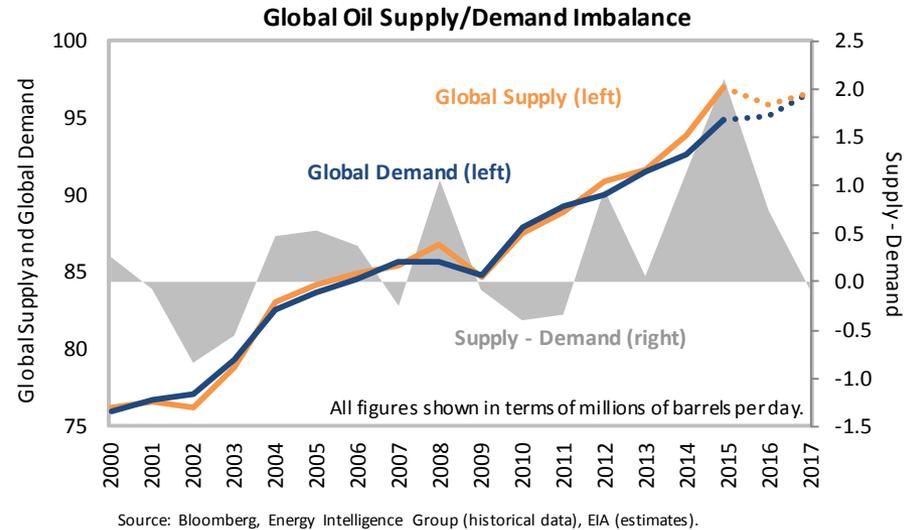
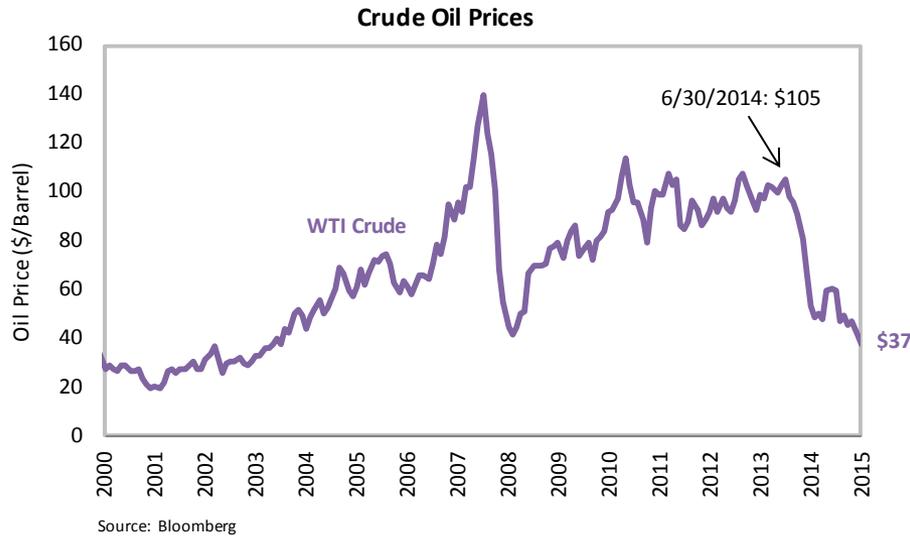
2015 THEMES: CONTINUED DOLLAR STRENGTH



- Expectations for higher US interest rates and accelerating economic growth relative to other countries has driven a 25% appreciation in the US Dollar since 2010.
 - The dollar has moved from undervalued to overvalued over this period.
- At current levels, the dollar is more expensive than 73% of historical monthly observations. Despite this, it is 16% below the 1980s peak.
 - The dollar run may not be over, but it is likely that most of strengthening has already occurred.

- Historically, moves in value of the US Dollar have not been correlated to moves in the S&P 500.

2015 THEMES: OIL CONTINUED ITS DECLINE



What happened?

- Oil declined 30% in 2015, bringing its decline since June 30, 2014 to -61%.
- The 12/31/2015 price of \$37/per barrel was the lowest for WTI Crude since 2004.

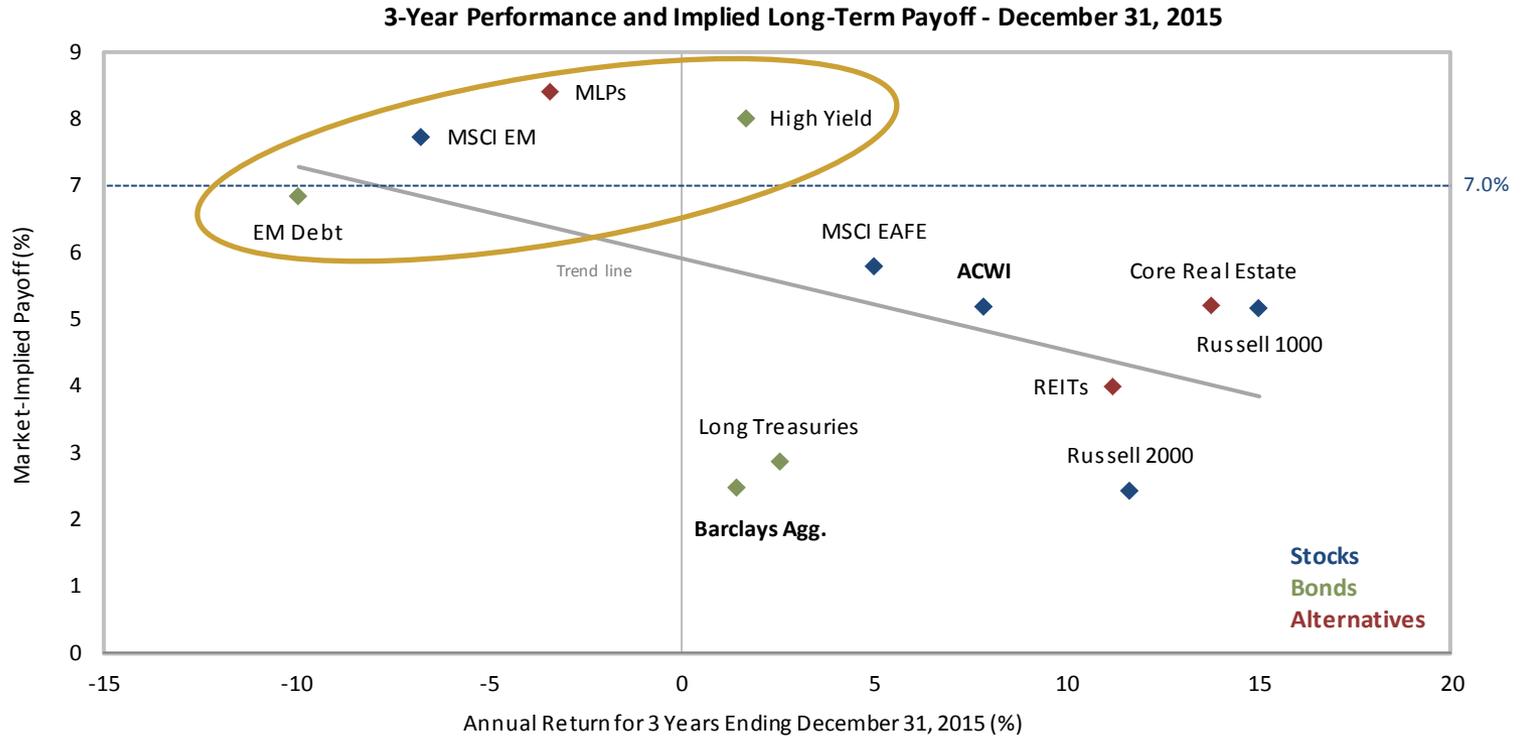
Why did it happen?

- The fall in oil prices has primarily been a supply/demand story, as illustrated by the chart on the top right.
 - Supply/demand imbalance is large but expected to normalize by the end of 2017.
- Saudi Arabia/OPEC is intentionally flooding the market to drive out higher cost production and take market share.

What are the implications?

- Consumers win: the US average for a gallon of unleaded gasoline was \$2.00 on December 31, down 46% from \$3.67 on June 30, 2014.
- Energy-related investments have declined, regardless of their direct exposure to oil prices.
- *Supply-side response*: \$380m of capital expenditures have been deferred, the equivalent of taking 2.1 million bpd offline over the next 10 years.
 - This will help cure the supply-demand imbalance.

WHERE ARE THE OPPORTUNITIES?

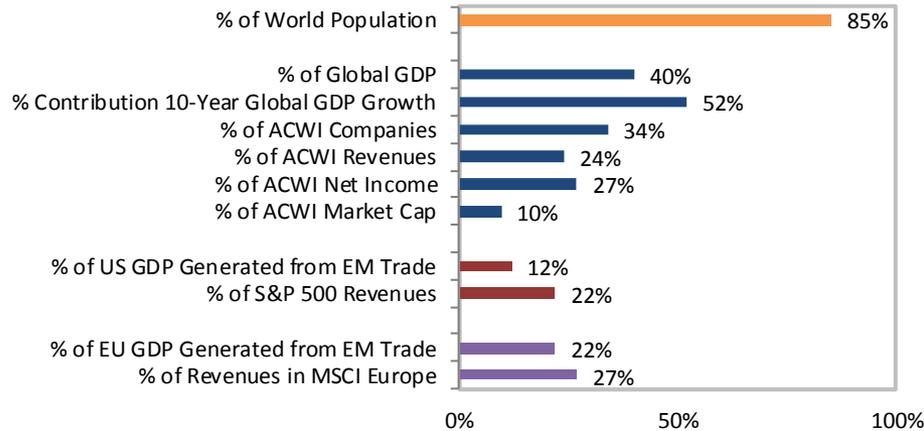


Source: PARis, Bloomberg, JPMorgan. Payoff is defined by trailing 12-month earnings yields for equity benchmarks, yield-to-worst for fixed income indices, trailing 12-month distribution yield for Alerian MLP and REITs, and cap rate for core real estate. ACWI is represented by MSCI ACWI IMI, EM Debt by JPM GBI-EM Global Diversified, Core Real Estate by NCREIF ODCE, High Yield and Long Treasuries by Barclays indices, and REITs by FTSE NAREIT.

Looking across asset classes, prospective returns are generally low and the trend line shows that recent underperformers appear to offer the most attractive opportunities.

EMERGING MARKETS ARE NOT GOING AWAY

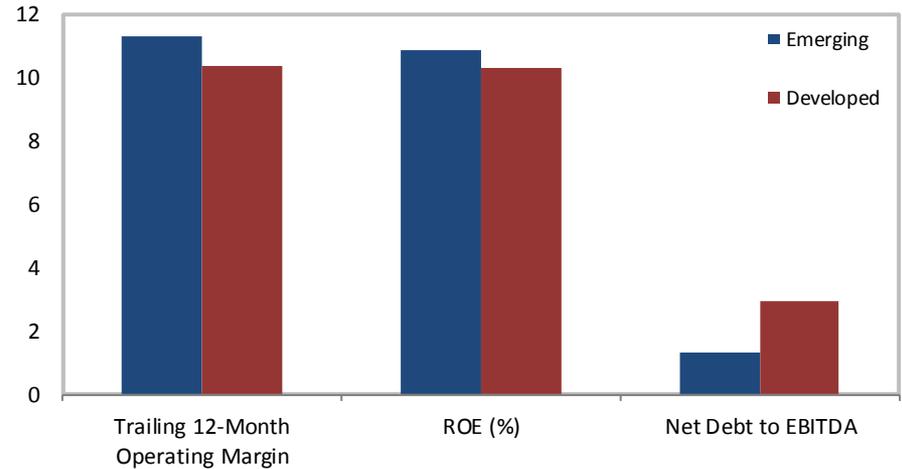
Global Dependence on Emerging Markets



Source: MSCI Research, OECD, US Census, European Commission Directorate-General for Trade, Goldman Sachs, & European Central Bank

- Emerging markets have become an increasingly large part of the global economy and capital markets.
- The importance of emerging markets is not just limited to local emerging markets economies. These markets account for a significant portion of economic production in developed economies.
- Simply put, the world can't afford to let emerging market economies fail.

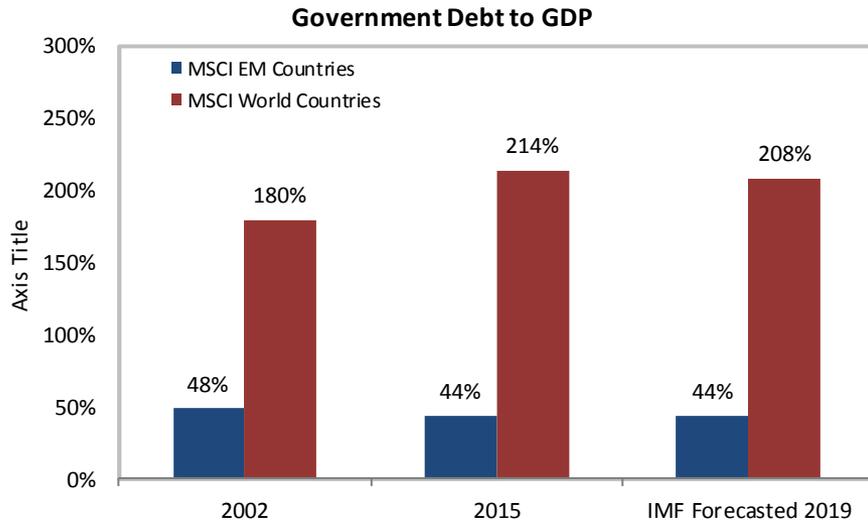
Emerging vs. Developed Markets Fundamentals



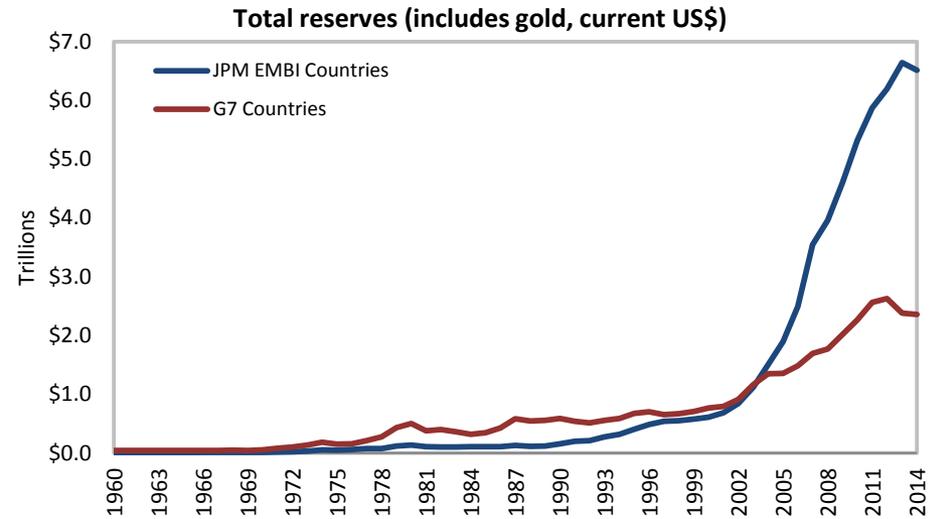
Source: Bloomberg

- Despite the recent business cycle deceleration in emerging market economies, companies have continued to deliver attractive fundamentals.
- Western media has seemed to only focus on a handful of troubled EM segments (ghost cities of China).

EMERGING MARKETS: SOVEREIGN DEBT CRISIS IS NOT LIKELY



Source: IMF



Source: World Bank

- Emerging economies have significantly less debt than developed countries.
- EMs have less debt now than they did in 2002, while the developed world has increased its debt burden.

- Emerging markets countries currently have \$6.5 trillion in reserves held by monetary authorities.
- These reserves are important to developing economies because many of their obligations (debt, commodity imports, etc.) are denominated in the US Dollar and Euro.
- Given current reserve levels, emerging markets economies are in aggregate well positioned to avoid a debt crisis similar to the Asian Financial Crisis of the 1990s.

Emerging economies do not have a great deal of debt and have increased reserves dramatically to help prevent future crises.

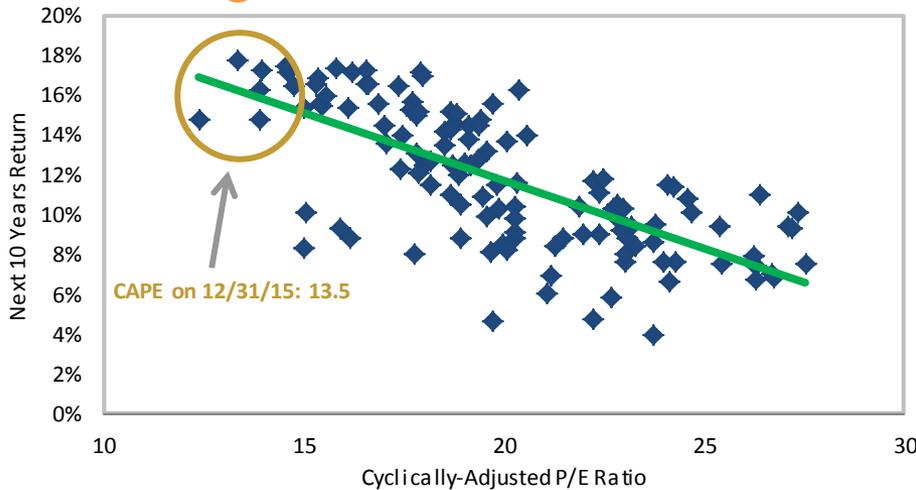
EMERGING MARKET EQUITY

1 *Valuation:* The price to book ratio is at levels last seen in 2001 and the 1998 Asian financial crisis.

2 *Valuation:* The cyclically-adjusted P/E ratio has been highly correlated to future returns. The level today has historically resulted in attractive returns looking forward.

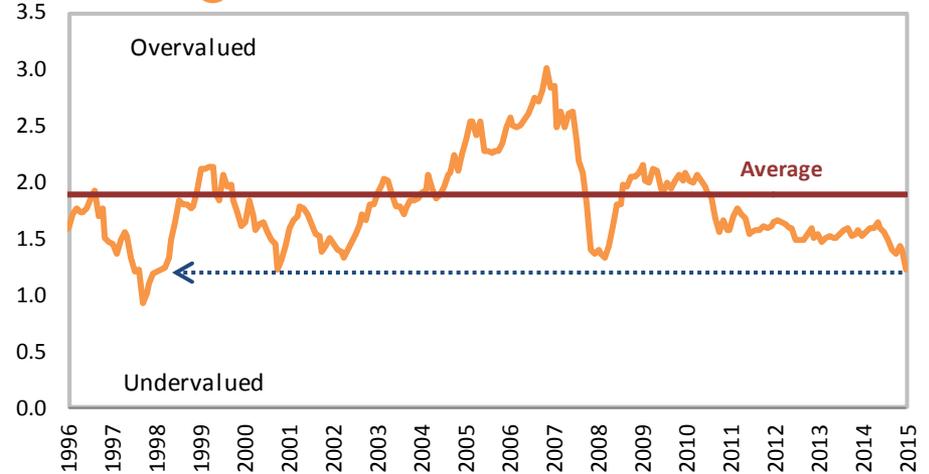
3 *Alpha opportunity:* The asset class broadly looks cheap, but not all emerging markets are created equal. High dispersion among individual countries and sectors has resulted in favorable performance for active management in EM.

2 MSCI EM - Cyclically-Adjusted P/E



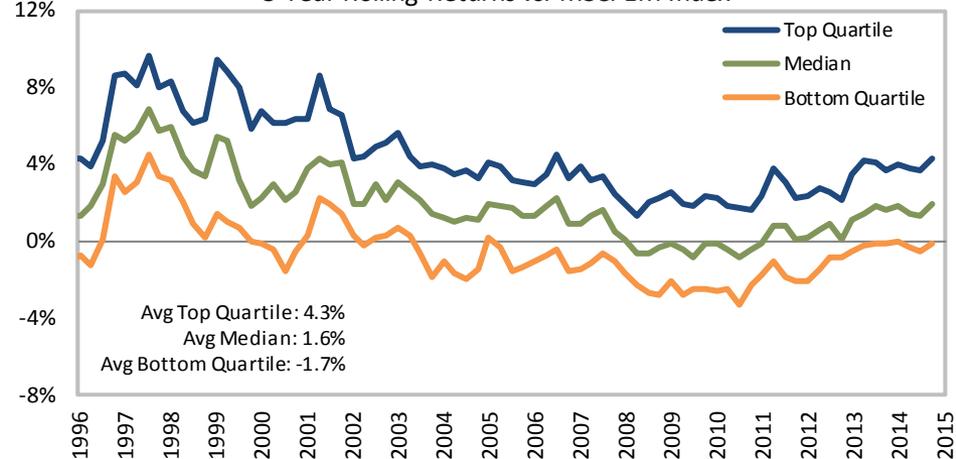
Source: AQR.

1 MSCI EM - Price to Book Value Ratio



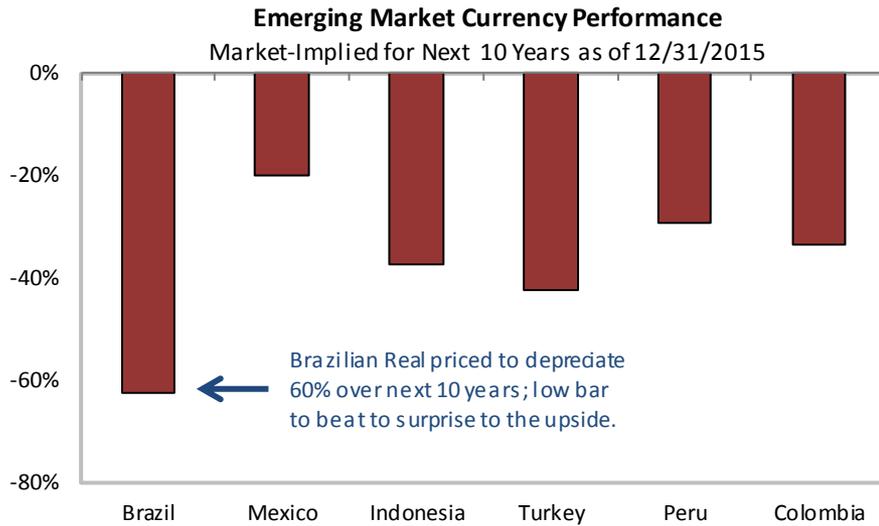
Source: MSCI, Bloomberg

3 EM Equity Manager Universe
3-Year Rolling Returns vs. MSCI EM Index



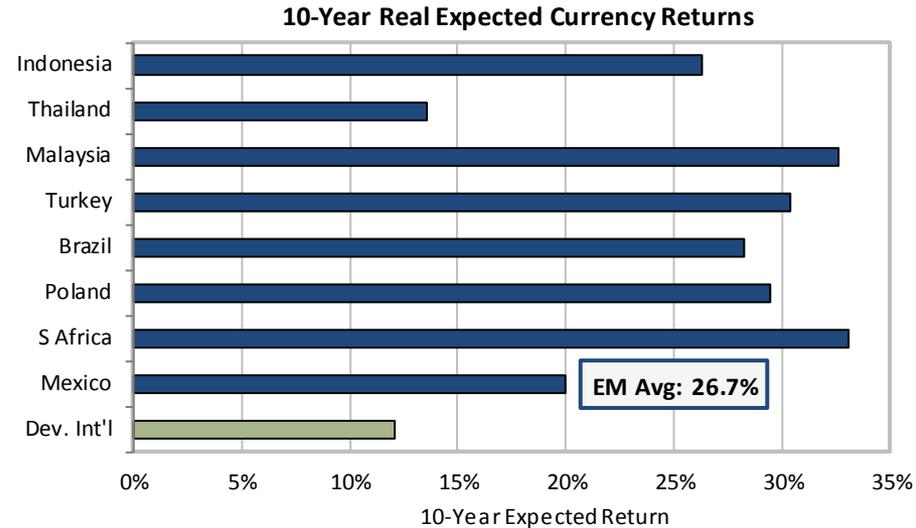
Source: eVestment Alliance.

EMERGING MARKET DEBT (EMD)



Source: Bloomberg

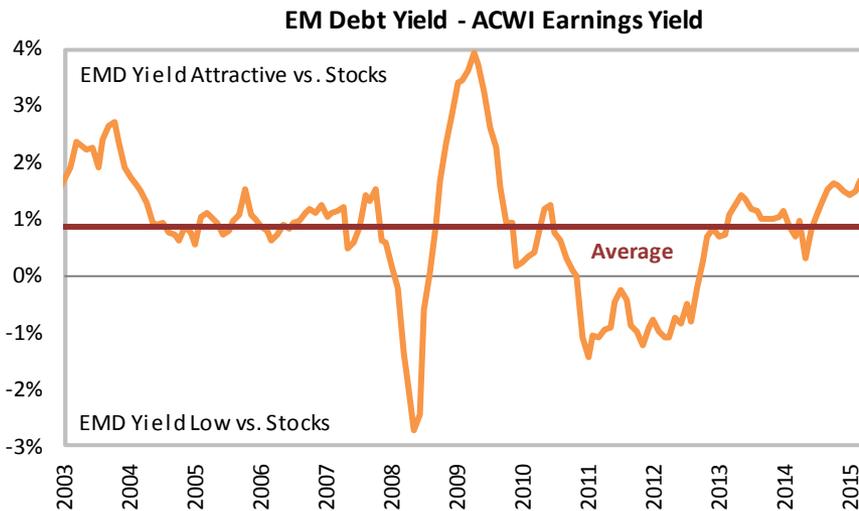
The market is pricing in extremely weak EM currencies over the next 10 years...



Source: Research Affiliates as of 12/31/2015.

... while valuation based-models suggest the dollar is rich vs. developed and emerging currencies, with a significant amount of upside for EM currencies in coming years.

From a relative value perspective, yields are high for EMD compared to compressed equity yields, presenting an opportunity going forward.



Source: JP Morgan

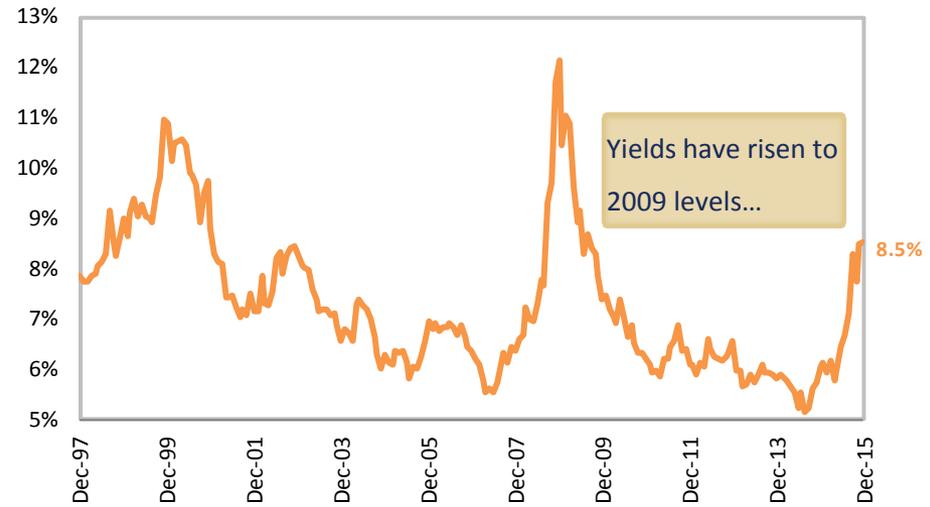
MASTER LIMITED PARTNERSHIPS (MLPS)

2015	Change in Earnings (EBITDA)*	Return
Alerian MLP	-13.4%	-32.6%
S&P US E&P	-176.7%	-36.1%
S&P 500	-6.5%	1.4%

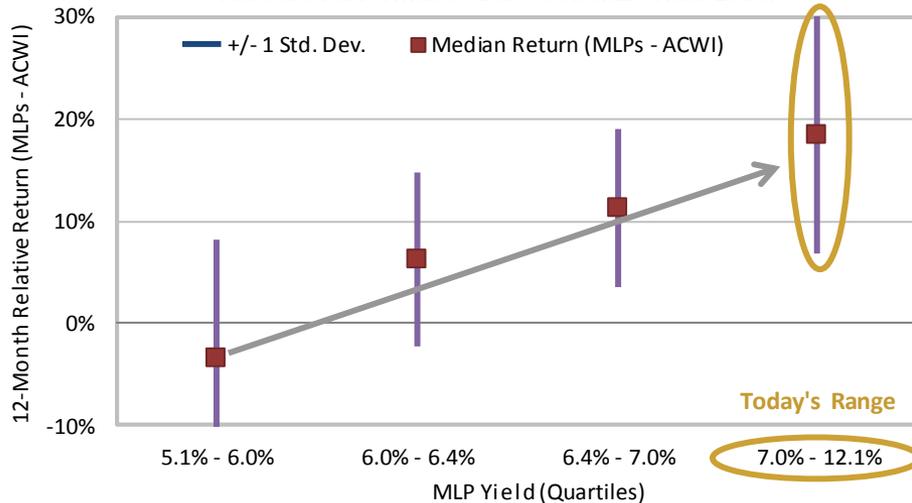
*As of 9/30/2015

MLP performance vs. earnings indicates a disconnect from fundamentals.

Alerian MLP Yield



Relative Performance Based on MLP Yield Level



Source: Bloomberg, Alerian. Based on 10-year data as of 9/30/2015.

... and with yields this high, MLPs have historically outperformed ACWI.

Potential Scenarios for MLPs Going Forward

Next 5 Years	Bear	Moderate	Upside
Distribution Yield	8.5%	8.5%	8.5%
Distribution Growth	-5.0%	2.0%	5.0%
Ending Yield	12.0%	8.5%	5.5%
Annual Return	-1.9%	9.2%	18.8%

Note: Based on Summit calculations.

MASTER LIMITED PARTNERSHIPS (MLPS)

Where will the distribution growth come from?

- Estimated \$70 billion of announced organic growth projects.
 - Crude oil transport to storage and refining centers.
 - Natural gas transport out of the Northeast region.
 - Growing exports of refined products, natural gas liquids, and natural gas.
- Parent companies hold an estimated \$150 billion of midstream infrastructure assets that can be dropped down to MLPs.
- Rate escalators tied to inflation for liquids pipelines, established by the Federal Energy Regulatory Commission.

Other important considerations:

- Main challenge is balancing how these growth opportunities are financed with sustaining current distribution payments.
- Performance tends to be more momentum-oriented than other asset classes because of its predominately retail investor base.
- Active management has added considerable value.

	Calendar Year Return									
	YTD 2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
Summit Top Tier Avg	-28.8%	17.0%	35.3%	9.8%	18.1%	39.0%	86.5%	-43.4%	21.0%	31.1%
<i>Alerian MLP Index</i>	-30.7%	4.8%	27.6%	4.8%	13.9%	35.9%	76.4%	-36.9%	12.7%	26.1%
Average Excess Return	1.9%	12.2%	7.7%	5.0%	4.2%	3.1%	10.1%	-6.5%	8.3%	5.1%

Note: Summit Top Tier is based on historical performance of current top tier managers, gross of fees and equally-weighted as of 9/30/2015. The manager lineup includes Advisory Research, Inc., Harvest Fund Advisors, Salient Partners, and Tortoise Advisors.

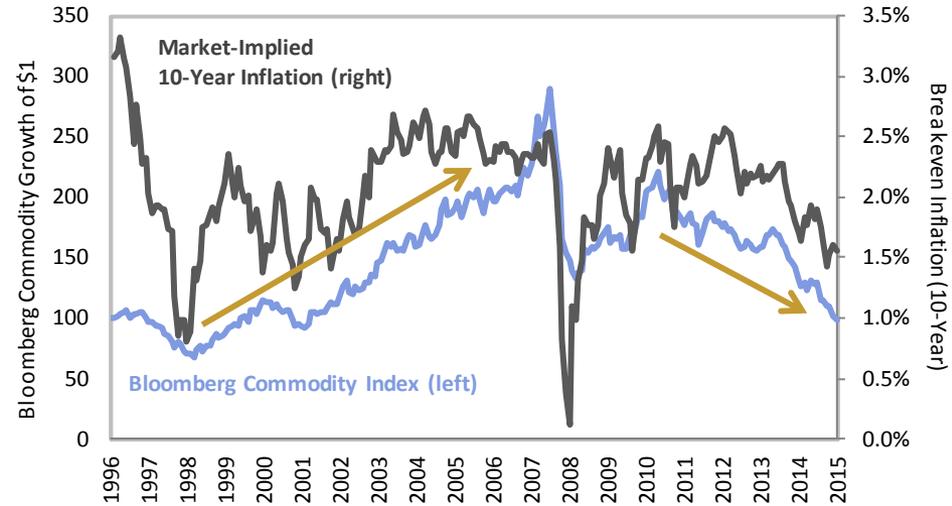
COMMODITIES

Commodities are an inflation hedge

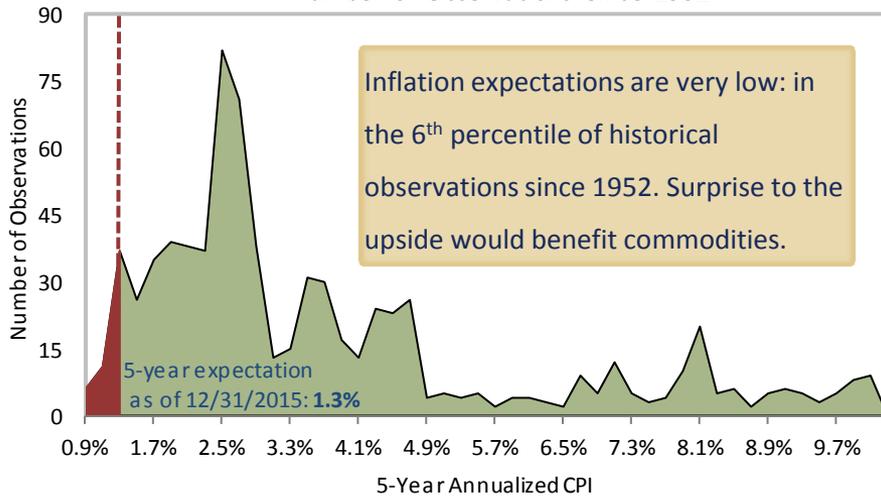
In the 20 months where breakeven inflation expectations have risen the most since TIPS were created in 1997:

Index	Annualized Return
Barclays US Treasury	-12.2%
Barclays Aggregate	-6.3%
Bloomberg Commodity	41.6%
S&P GSCI	62.0%

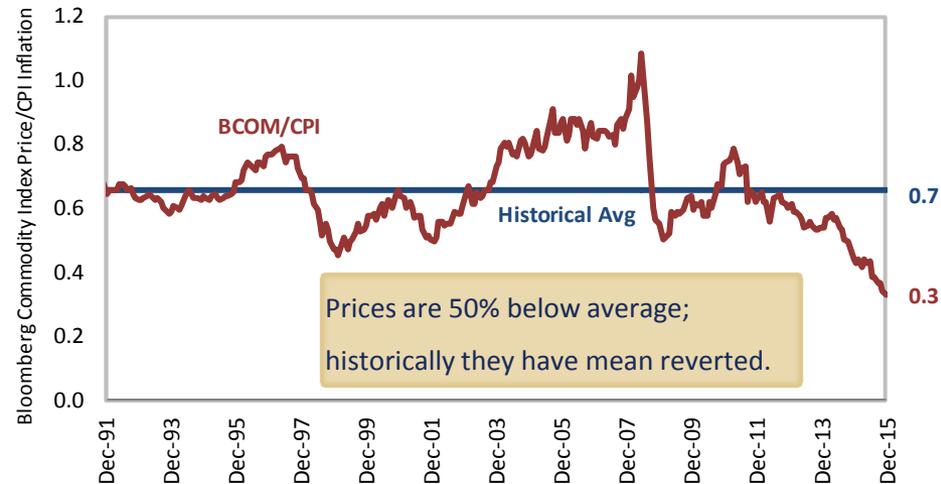
Commodity Prices Generally Move With Inflation Expectations



Realized 5-Year Inflation
Number of Observations Since 1952



Inflation-Adjusted Commodity Prices



PULLING IT ALL TOGETHER

Fundamental-Based Investing

- Investing in asset classes and securities that are undervalued has generated excess returns historically, although not in every calendar year.
- Just as important as having a value-based approach is committing to a strategy, as studies show that investor behavior and decision making have detracted from performance.
- While asset classes such as MLPs, commodities, and emerging market equities and debt have been recent underperformers, they remain compelling from a long run valuation perspective and present opportunities in what is likely to be a muted return environment in coming years.

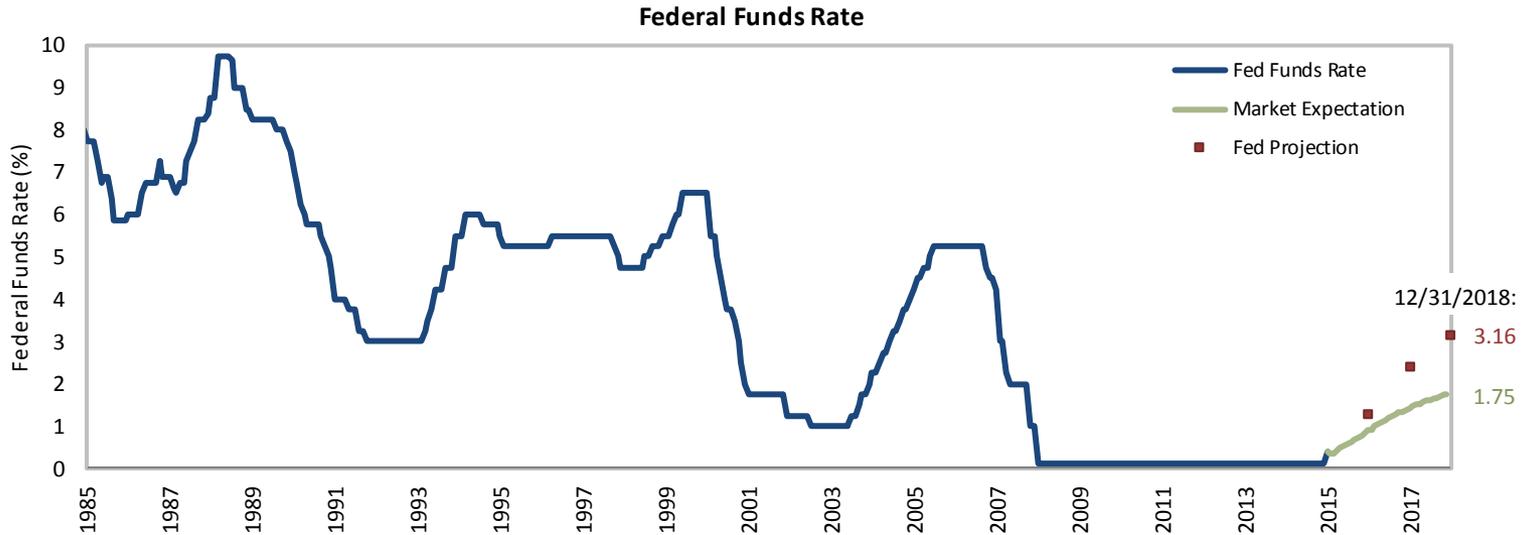
Recent Market Performance

- Strong performance from risk assets following the financial crisis has tapered over the past few years with the exception of US stocks, which have been led by a small number of large cap growth stocks.

2015 Themes

- Low returns across most asset classes.
- Oil prices declined to 2004 lows, bringing down most energy-related asset classes with them.
 - Supply-demand imbalance is expected to normalize by the end of 2017.
- The dollar continued to strengthen and moved into overvalued territory; historically there has not been a strong relationship between equity returns and movements in the dollar.
- The US Federal Reserve raised interest rates for the first time since 2006. The main focus for investors going forward should be the pace of actual hikes versus what the market is expecting.

Q4 2015: FED RATE HIKE



Source: Bloomberg, Federal Reserve. Market Expectation is based on fed funds futures contracts, Fed Projection is based on published estimates by the FOMC as of 12/31/2015.

What happened?

- In December, the Fed raised its key interest rate for the first time since 2006.
- Rates have been near zero since 2008, when the Fed eased monetary policy to stimulate the economy.
- The increase in December was +0.25%, keeping rates very close to all-time low levels.

Why did it happen?

- The Fed sees the economy as improving enough to no longer warrant rates at zero.
 - Unemployment is now at 5.0%, down from 10.0% in 2008.
 - Economic growth has been moderate but consistent.
- Gradually increasing the key interest rate should help prevent the economy from overheating, which is a risk when rates have been at zero for so long.

What are the implications?

- US savers benefit, as they collect marginally more interest on their bank deposits.
- US bond investors could be hurt if rates rise faster than the market’s expectation (green line), which is lower than the Fed’s outlook (red dots).
- All else equal, if the market is right about the path of rates, risk asset valuations are more likely to remain elevated.

GROWTH: DOMESTIC LARGE CAP EQUITY

FACTOR SIGNALS

- 1 Trading at a premium to broad global equities due to US multiple expansion since the 2009 market bottom. Particularly expensive from a price-to-book perspective versus broad global equities.
- 2 US has outperformed international markets in recent years, fueled by accommodative monetary policy and a recovering US economy.
- 3 At current earnings yield levels, more muted returns are expected for US large cap in coming years.

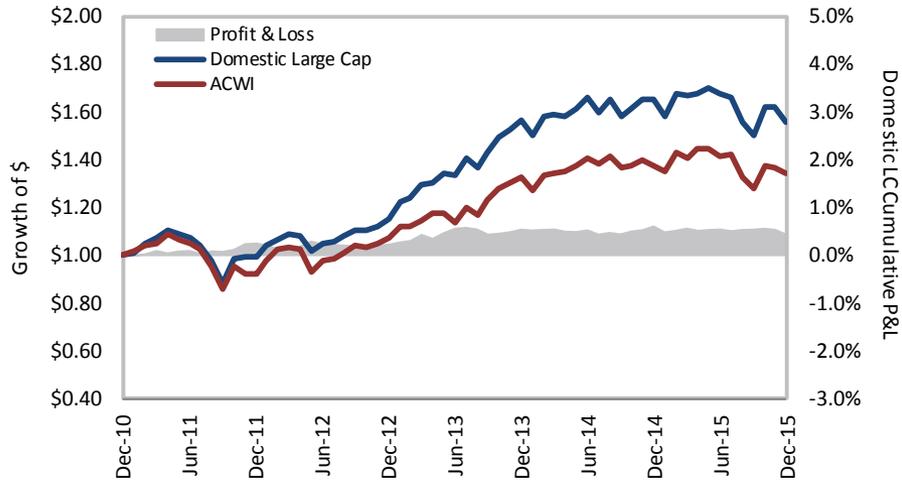
COMMENTS/RISKS

Valuations are still high and expected returns are muted versus those achieved historically.

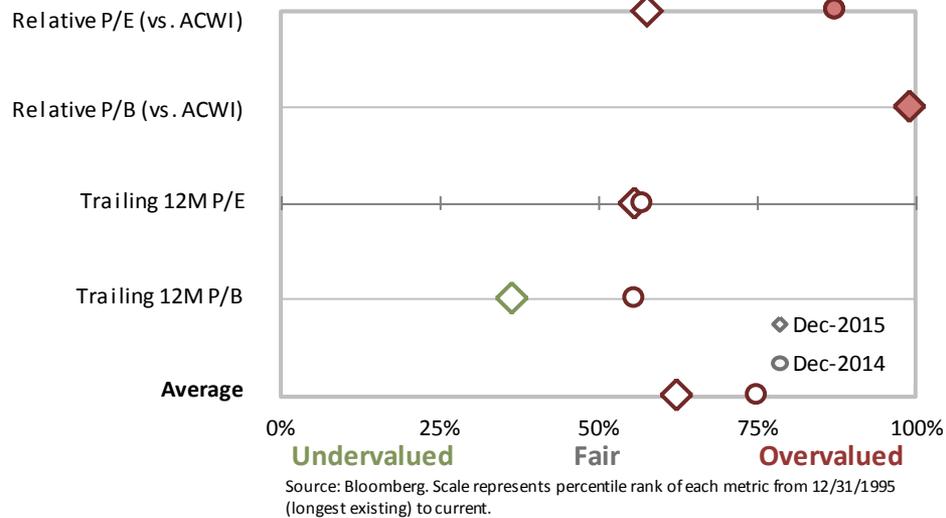
POSITION

Continue to hold a strategic allocation to US large cap; underweight relative to its position in the global equity market.

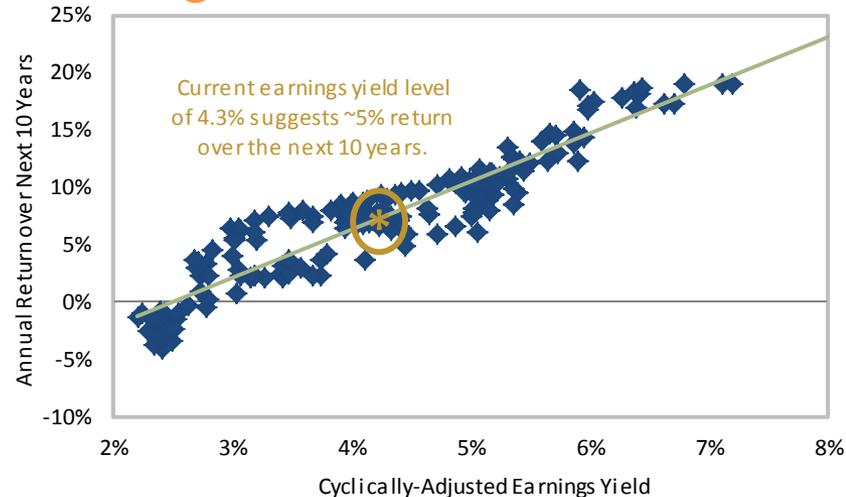
2 Domestic Large Cap vs ACWI



1 Valuation Metrics



3 Cyclically-Adjusted Earnings Yield: MSCI US



GROWTH: DOMESTIC SMALL CAP EQUITY

FACTOR SIGNALS

- 1 US small cap valuations are rich compared to ACWI, particularly from a price-to-book value perspective.
- 2 In recent quarters, US small caps have benefited from their insulation from exposure to currency fluctuations and the rising USD.
- 3 Shiller's Cyclically Adjusted P/E measure, which adjusts for earnings over the previous 10 years, suggests small cap remains rich.

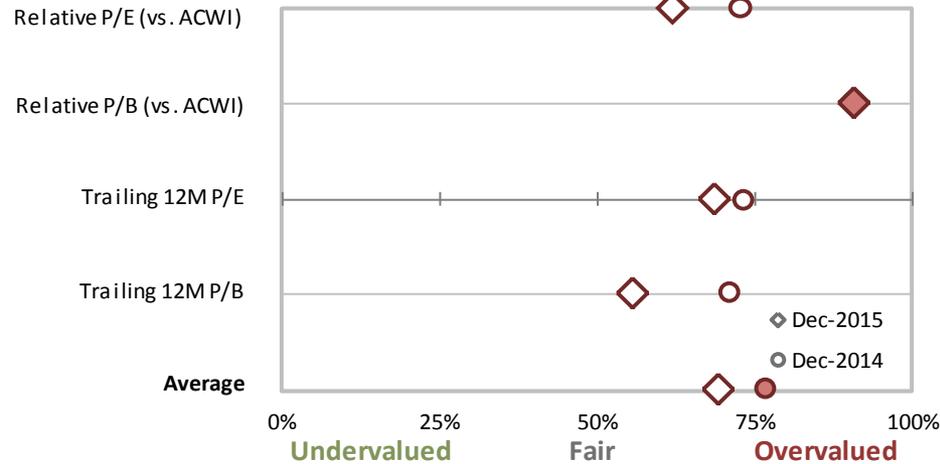
COMMENTS/RISKS

Valuation measures suggest small cap remains expensive relative to ACWI and relative to its own long-term earnings.

POSITION

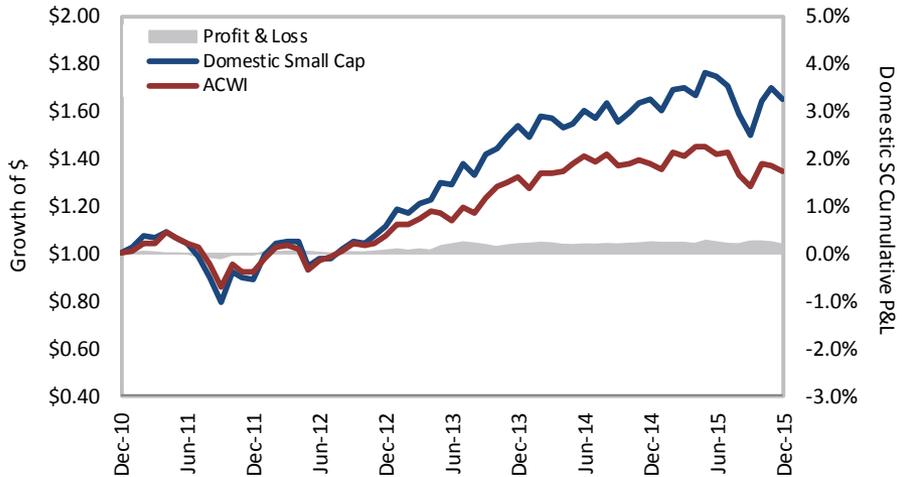
Hold a reduced allocation to small cap relative to its weight within the global equity market.

1 Valuation Metrics

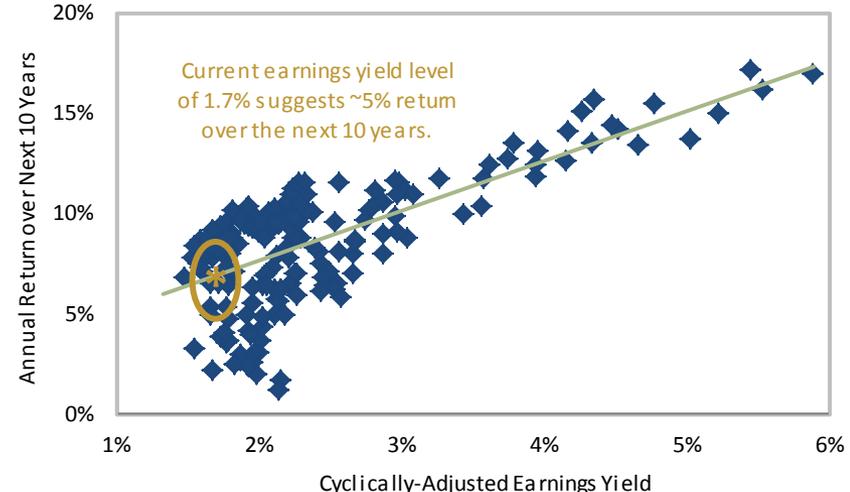


Source: Bloomberg. Scale represents percentile rank of each metric from 12/31/1995 (longest existing) to current.

2 Domestic Small Cap vs ACWI



3 Cyclically-Adjusted Earnings Yield: Russell 2000



Source: MSCI, AQR.

GROWTH: INTERNATIONAL LARGE CAP EQUITY

FACTOR SIGNALS

- 1 International large cap equities are undervalued to fair relative to the global equity market.
- 2 Overall performance has been in line with that of global equities since December 2010. International large cap makes up 33% of ACWI.
- 3 Based on historical performance and the current level of Shiller's earnings yield, returns are likely to be in the 5-10% range going forward.

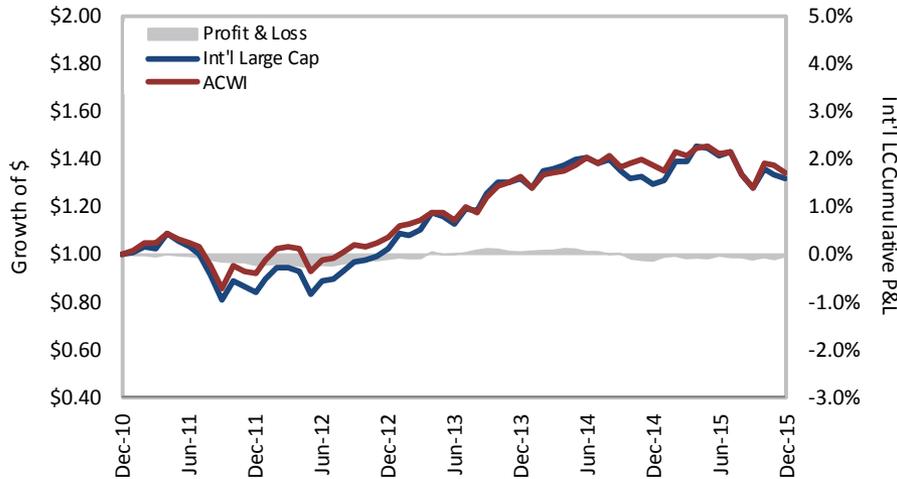
COMMENTS/RISKS

Ongoing stimulus measures in Europe and Japan have been supportive of local currency returns, though dollar strength has weighed on performance in US dollar terms.

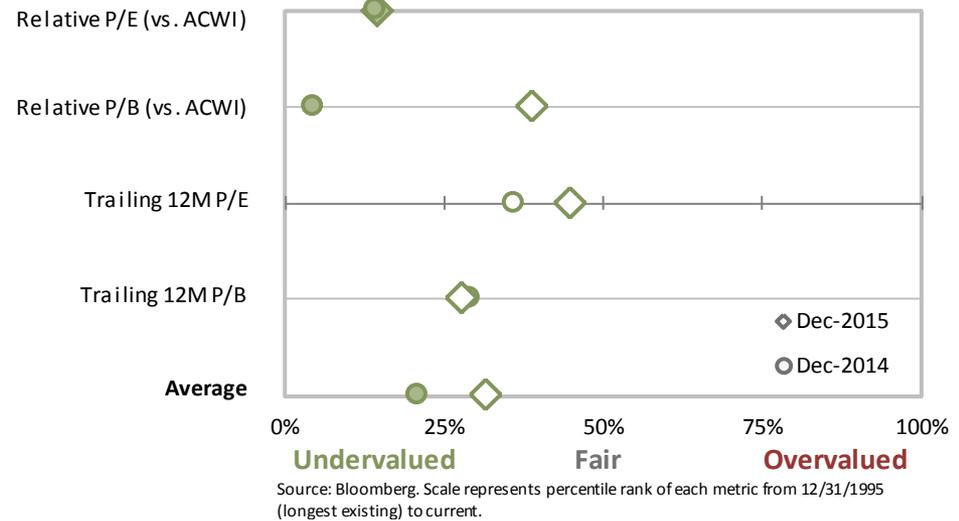
POSITION

Within public equity allocations, underweighted developed markets and overweight emerging markets on valuation.

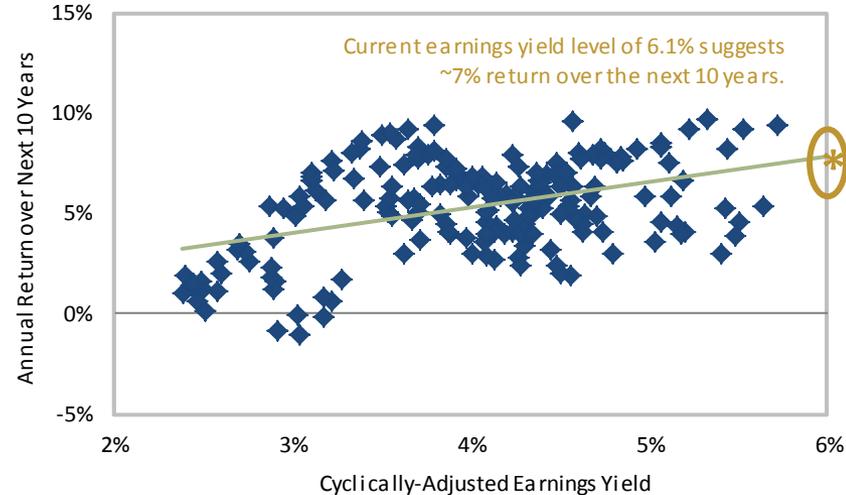
2 International Large Cap vs ACWI



1 Valuation Metrics



3 Cyclically-Adjusted Earnings Yield: MSCI EAFE



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