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Texas Tech University System

Capital Markets Overview for Board of Regents

August 2016

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

Index Performance Summary as of 5/31/2016

	2009	2010	2011	2012	2013	2014	2015	Q1	APRIL	MAY	YTD
Barclays US STRIPS 20+ Yr	-36.0%	10.9%	58.5%	3.0%	-21.0%	46.4%	-3.7%	11.4%	-0.9%	1.5%	12.0%
Barclays US Long Credit	16.8%	10.7%	17.1%	12.7%	-6.6%	16.4%	-4.6%	6.8%	2.4%	0.0%	9.4%
Alerian MLP	76.4%	35.9%	13.9%	4.8%	27.6%	4.8%	-32.6%	-4.2%	11.0%	2.5%	9.1%
Barclays US Govt/Credit Long	1.9%	10.2%	22.5%	8.8%	-8.8%	19.3%	-3.3%	7.3%	1.2%	0.3%	9.0%
Bloomberg Commodity	18.9%	16.8%	-13.3%	-1.1%	-9.5%	-17.0%	-24.7%	0.4%	8.5%	-0.2%	8.8%
Barclays US Corporate HY	58.2%	15.1%	5.0%	15.8%	7.4%	2.5%	-4.5%	3.4%	3.9%	0.6%	8.1%
JPM GBI-EM Global Diversified	22.0%	15.7%	-1.8%	16.8%	-9.0%	-5.7%	-14.9%	11.0%	2.6%	-5.4%	7.7%
Citi WGBI	2.6%	5.2%	6.4%	1.6%	-4.0%	-0.5%	-3.6%	7.1%	1.3%	-1.5%	6.8%
JPM EMBI Global Diversified	29.8%	12.2%	7.3%	17.4%	-5.3%	7.4%	1.2%	5.0%	1.8%	-0.2%	6.7%
FTSE NAREIT Equity REITs	28.0%	28.0%	8.3%	18.1%	2.5%	30.1%	3.2%	6.0%	-2.4%	2.4%	6.0%
Credit Suisse Leveraged Loan	44.9%	10.0%	1.8%	9.4%	6.2%	2.1%	-0.4%	1.3%	1.9%	0.9%	4.2%
Russell 2500	34.4%	26.7%	-2.5%	17.9%	36.8%	7.1%	-2.9%	0.4%	1.5%	2.1%	4.0%
S&P 500	26.5%	15.1%	2.1%	16.0%	32.4%	13.7%	1.4%	1.3%	0.4%	1.8%	3.6%
Russell 1000	28.4%	16.1%	1.5%	16.4%	33.1%	13.2%	0.9%	1.2%	0.5%	1.8%	3.5%
Barclays US Agg Bond	5.9%	6.5%	7.8%	4.2%	-2.0%	6.0%	0.5%	3.0%	0.4%	0.0%	3.5%
Barclays Municipal	12.9%	2.4%	10.7%	6.8%	-2.6%	9.1%	3.3%	1.7%	0.7%	0.3%	2.7%
Barclays US Agg Interm	6.5%	6.1%	6.0%	3.6%	-1.0%	4.1%	1.2%	2.3%	0.2%	0.0%	2.5%
MSCI EM	78.5%	18.9%	-18.4%	18.2%	-2.6%	-2.2%	-14.9%	5.7%	0.5%	-3.7%	2.3%
Russell 2000	27.2%	26.9%	-4.2%	16.3%	38.8%	4.9%	-4.4%	-1.5%	1.6%	2.3%	2.3%
MSCI ACWI (TTUS Proxy)	*34.6%*	*12.7%*	*-7.3%*	*16.1%*	*22.8%*	*4.2%*	*-2.4%*	*0.2%*	*1.5%*	*0.1%*	*1.8%*
Barclays US Govt/Credit 1-3 Yr	3.8%	2.8%	1.6%	1.3%	0.6%	0.8%	0.7%	1.0%	0.1%	-0.1%	1.0%
Credit Suisse Hedge Fund	18.6%	10.9%	-2.5%	7.7%	9.7%	4.1%	-0.7%	-2.2%	0.3%	N/A	-1.9%
MSCI EAFE	31.8%	7.8%	-12.1%	17.3%	22.8%	-4.9%	-0.8%	-3.0%	2.9%	-0.9%	-1.1%

Source: Morningstar Direct

2016 May 2016 Commentary

May 2016 Commentary

- After a rocky start to the year, almost all major asset classes have continued to respond positively into the second quarter and are positive year-to-date.

- The month began with investors speculating the Federal Open Market Committee might raise rates in June however this expectation was quickly quelled as US job growth numbers fell short of expectations and inflation remained well short of the Fed's 2% target.

- US equity returns were modestly positive in May as investors digested mostly lukewarm economic data.
  - The S&P 500 returned 1.8% and the Russell 2000 gained 2.3% on the month.

- The prospect of rising rates sent a scare through emerging markets as the MSCI EM Index declined 3.7% and was primarily driven by falling equity prices and currency depreciation in Latin American. This decline was also felt in local currency debt as the JP Morgan GBI-EM Global Diversified Index fell 5.4% in May but remained up 7.7% on the year.

- US fixed income returns were mostly neutral as the 10 year Treasury yield increased one basis point to 1.84% on the month and the Barclays US Aggregate Bond Index was flat.

- US high yield issues saw continued marginal spread compression and returned 0.6% as represented by the Barclays US Corporate High Yield Index.

- The Citigroup WGBI Index fell 1.5% as government bond yields in developed countries continued to move slightly higher and the US dollar rallied.

2016 Capital Markets Key Themes

Key Themes

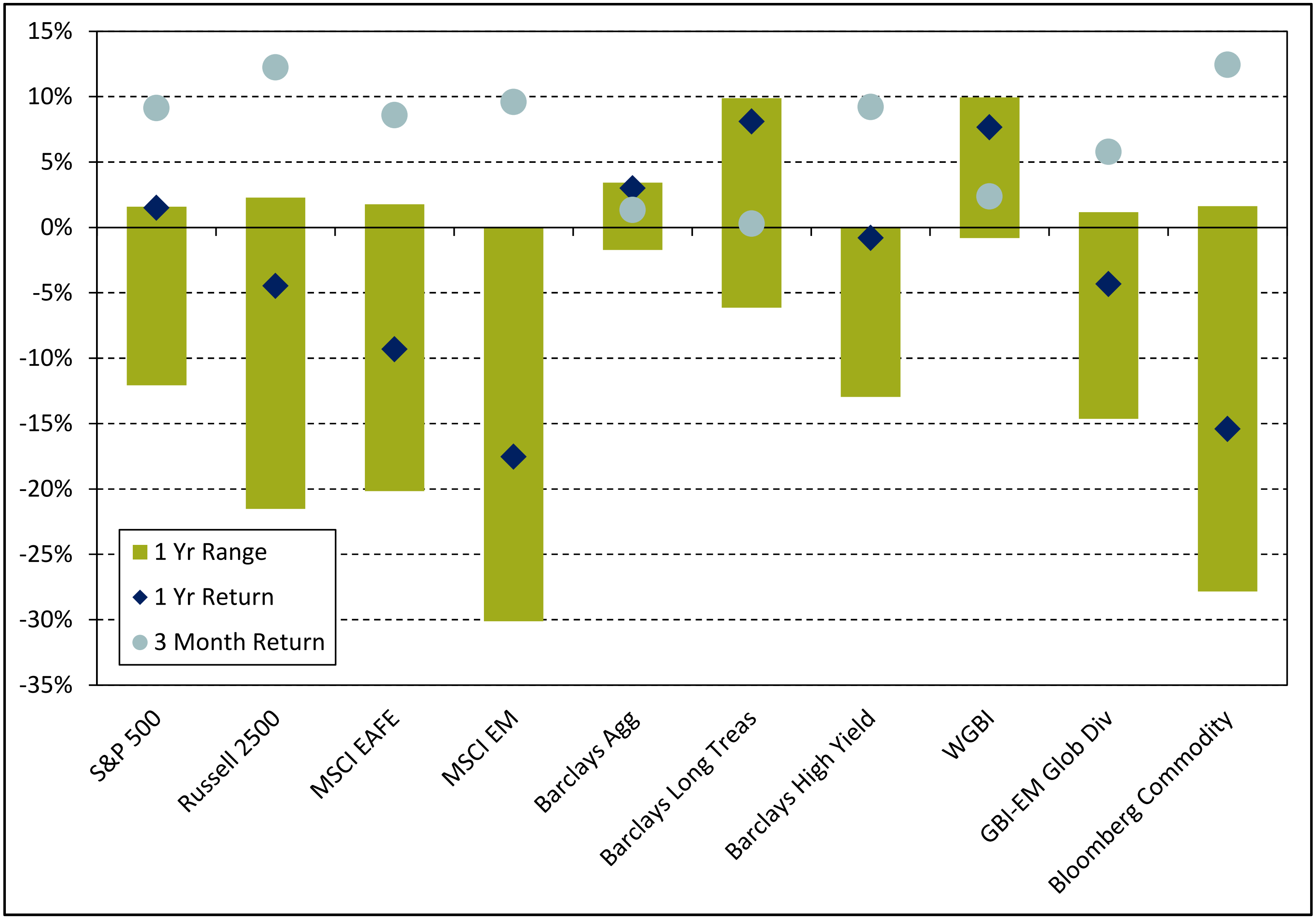
- **US economic cycle and US central bank policy are at the forefront of major cyclical and secular forces informing our Assumptions and Actions**
  - These factors interact to create a supportive environment for risk assets in the near term but ultimately push long term capital market forecasts lower relative to history
- **The US economy is nearly 7 years removed from the previous recession but the health of US consumers can extend the expansion**
  - Prolonged US economic cycle has the potential to push the US dollar higher
- **Persistent US Dollar strength tightens global monetary conditions and materially weakens the US corporate earnings profile**
  - A strong dollar strains international borrowers with dollar based debt
  - Outsized credit growth in Asia, specifically China, at risk from a stronger US dollar
- **Influence of central bank policies in the developed world remain broadly supportive for risk assets but come with long term effects**
  - US policy is slowly diverging from Europe and Japan but gradual expected pace of hikes provides a positive backdrop for US equities and credit in the near term
  - Extraordinary central bank measures from Europe and Japan continue to expand and support a strong bias to equities in these markets

Key Themes

- **US economic expansion continues as Federal Reserve begins policy shift**
  - Economic conditions and health of US consumers remain supportive for growth
  - US Corporate earnings quality has weakened under pressure from profit margin declines
- **Central Banks continue to dictate the global investment outlook**
  - Subdued market expectation of Fed action over next 36 months; a surprise Fed rate increase poses risk to both US equities and interest rates
  - ECB and BoJ likely to maintain and expand accommodative monetary policies
  - Easing in China is broadly stimulative in the near term but currency policy is unpredictable
- **Rise of political populism fuels equity and currency market uncertainty**
  - Populist movements are destabilizing for the established political and economic order posing a risk for the cohesion of the European Union and global trade relationships
  - However, elevated risk offers an opportunity should market sentiment be overly pessimistic
- **Large currency adjustments across most emerging countries have provided a foundation to support improved capital market returns**
  - Continued political and economic reform is needed across EM to stimulate economic growth
  - Chinese Yuan (RMB) depreciation has been incremental relative to other EM FX adjustments and fears of further adjustment remain an over-hanging concern
- **Embrace illiquidity in opportunistic credit and private credit strategies**
  - Stressed credit liquidity magnifies the scale of price movements in traditional credit assets
  - Credit markets ability to absorb an exodus from crowded positions is challenged

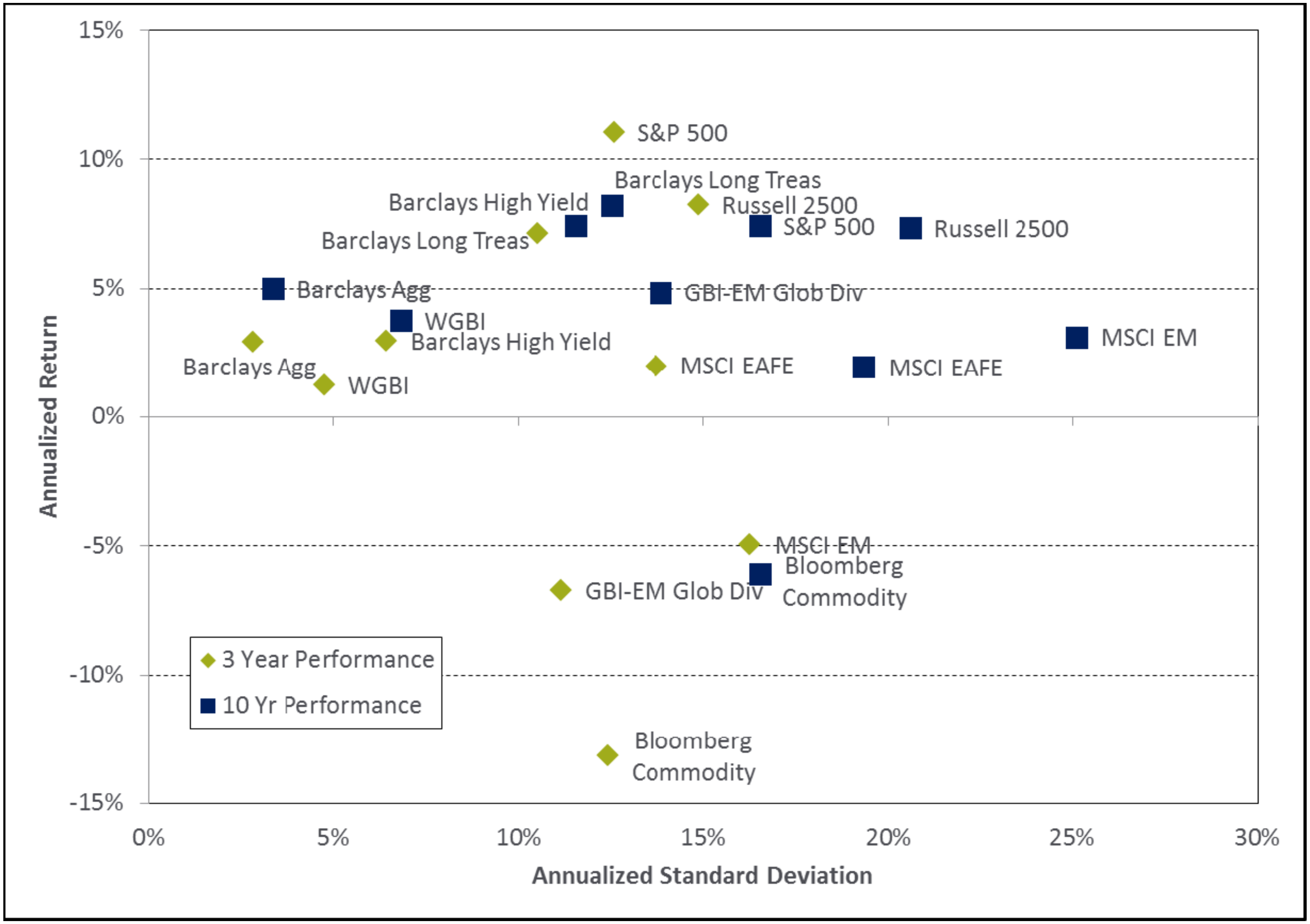
2016 Market Review – Market Slides Through May 2016

Near Term Broad Market Performance Summary as of 5/31/2016



Source: Bloomberg, Standard and Poors, Russell, MSCI, Barclays, Citigroup, JP Morgan
**1 Yr Range: Represents range of cumulative high/low daily index returns for an investment made one year ago*

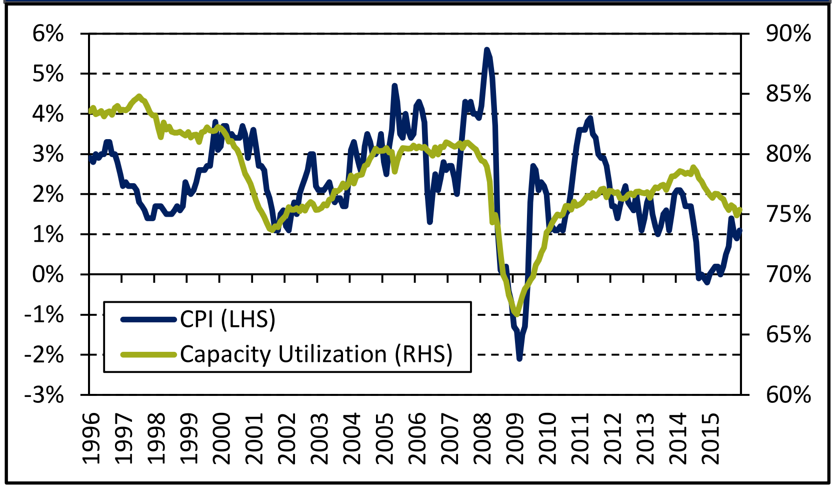
Long Term Broad Market Performance Summary as of 5/31/2016



Source: Bloomberg, Standard and Poors, Russell, MSCI, Barclays, Citigroup, JP Morgan

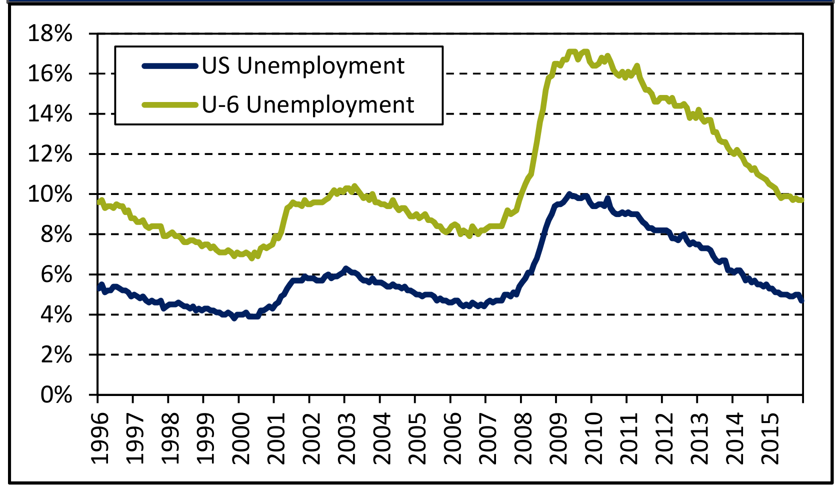
US Economic Indicators

Inflation has increased off lows



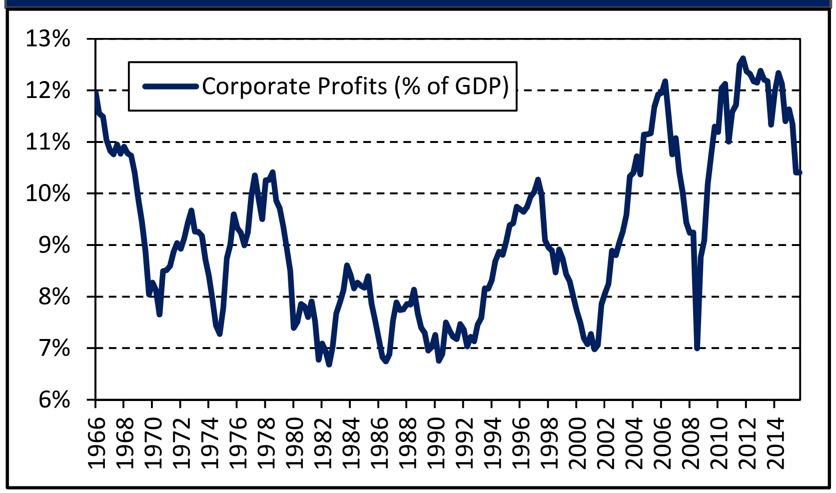
Source: Bloomberg, Federal Reserve, Bureau of Labor Statistics

Unemployment steadily improving



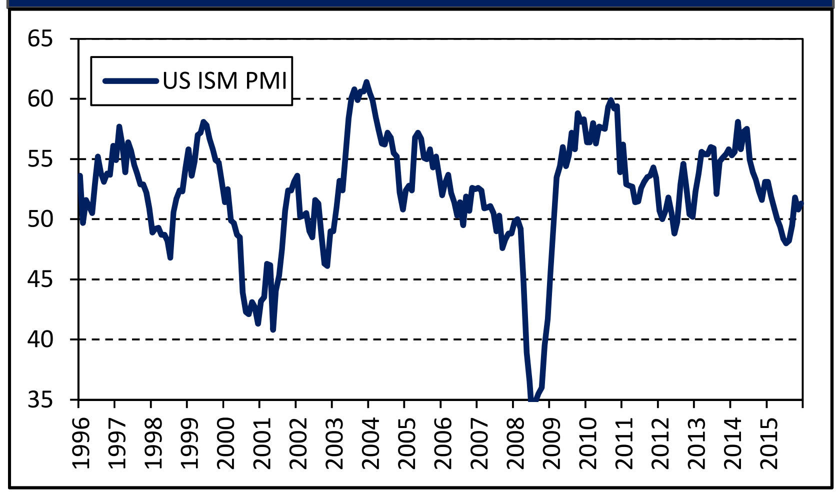
Source: Bloomberg, Bureau of Labor Statistics

Corporate profits lower off cyclical highs



Source: Bloomberg, Bureau of Economic Analysis

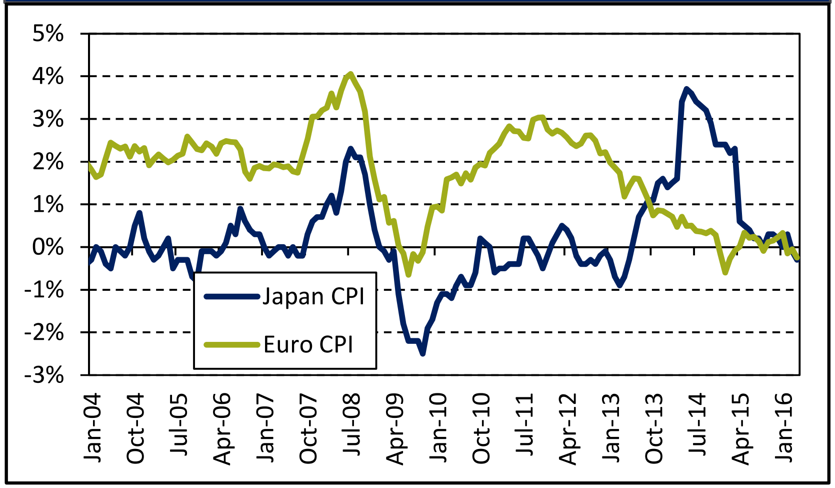
Manufacturing trending higher after dip



Source: Bloomberg, Institute for Supply Management

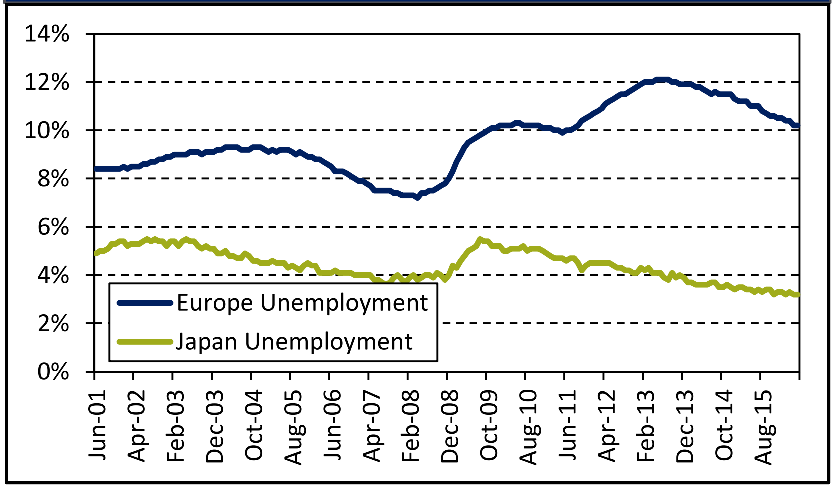
International Economic Indicators

Inflation remains muted



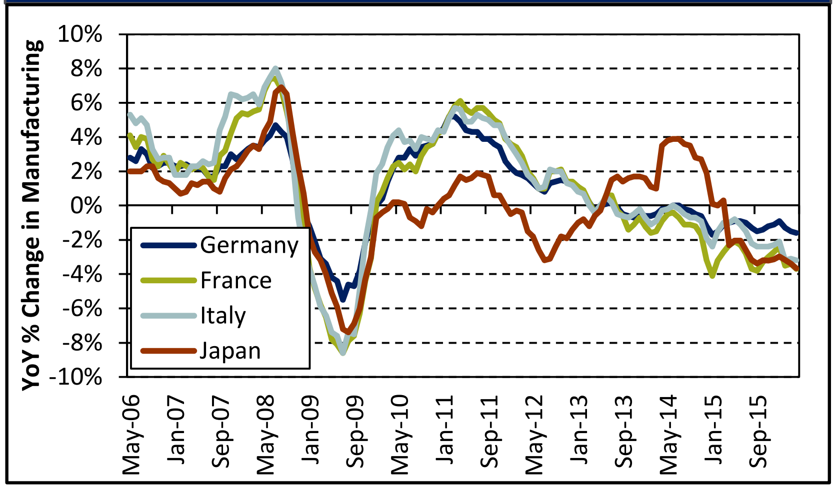
Source: Bloomberg, Japan Ministry of Internal Affairs and Communications, Eurostat

Europe unemployment trending lower



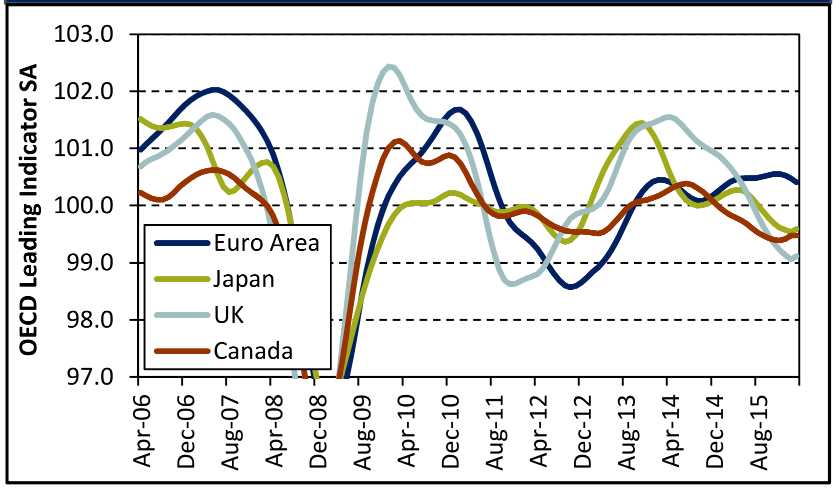
Source: Bloomberg, Japan Ministry of Internal Affairs and Communications, Eurostat

Manufacturing continues to lag



Source: Bloomberg, OECD, Eurostat

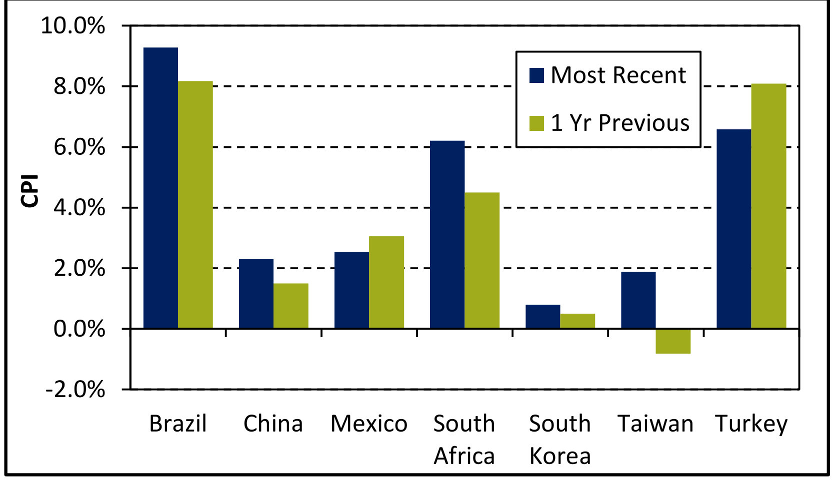
Leading indicators mostly neutral



Source: Bloomberg, OECD

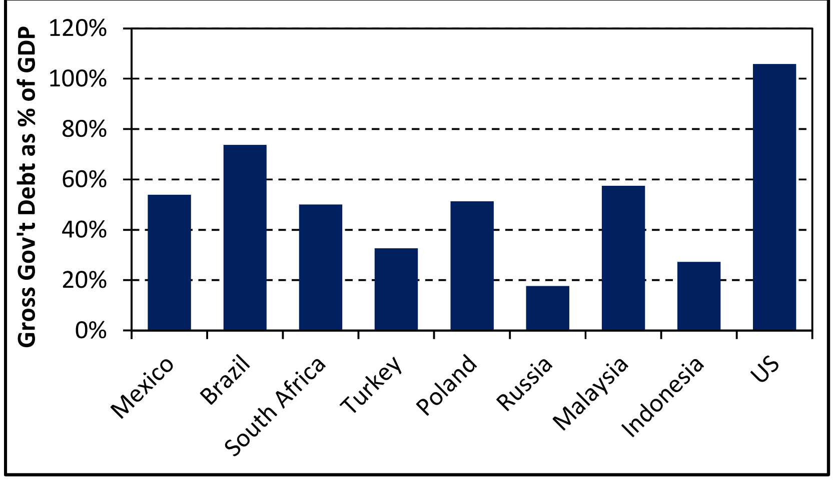
Emerging Market Economic Indicators

EM inflation is varied by country



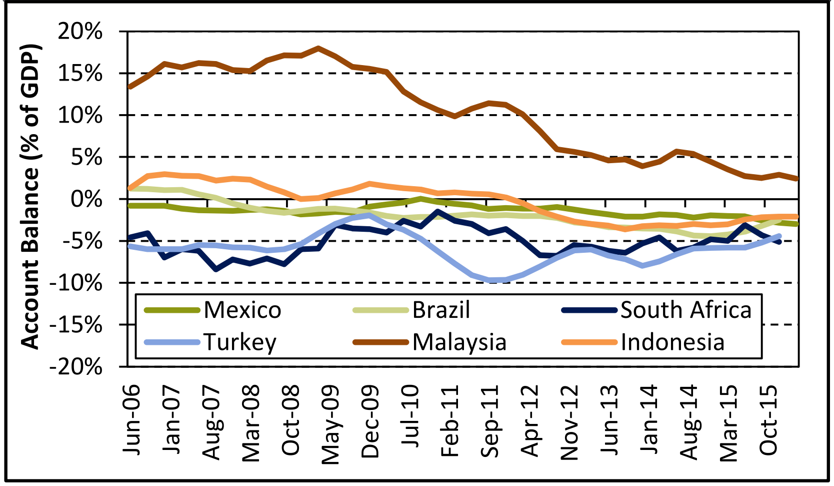
Source: Bloomberg

Relatively healthy Debt/GDP ratios



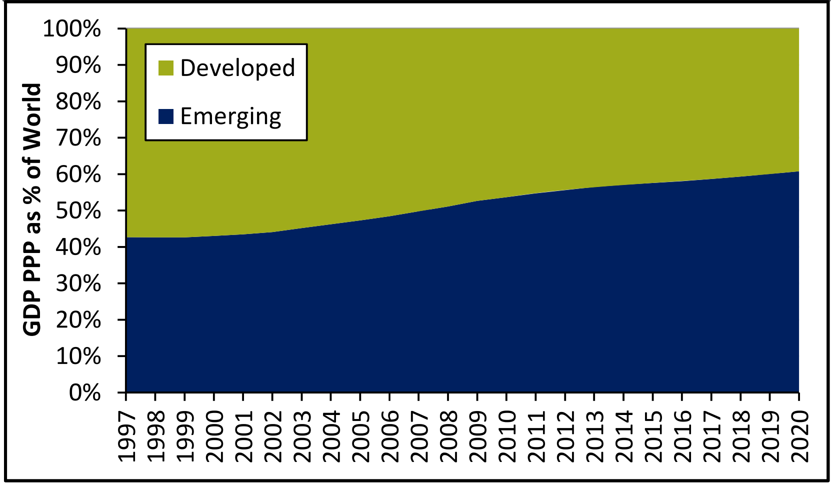
Source: Bloomberg, IMF

Marginal improvement in account balances



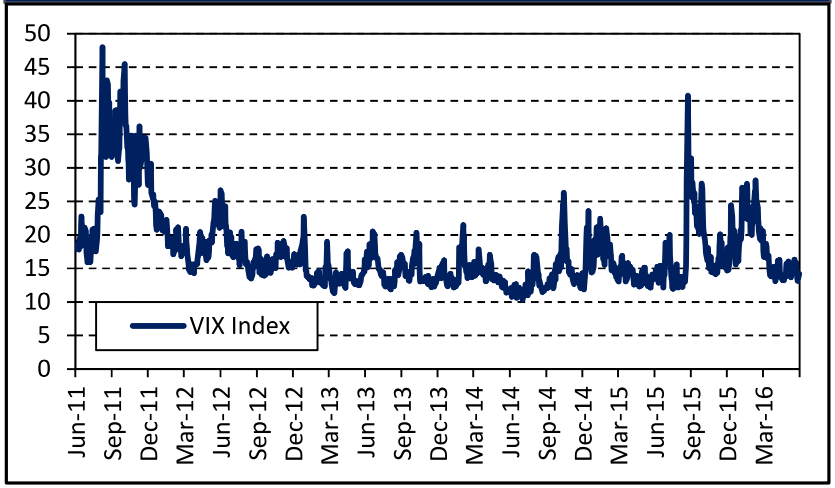
Source: Bloomberg

EM is greater than 50% of global output



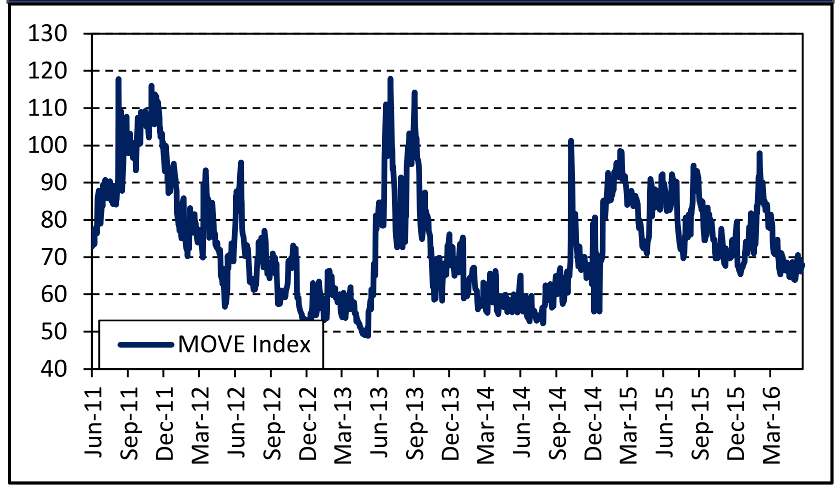
Source: Bloomberg, IMF

Equity volatility decreasing off recent highs



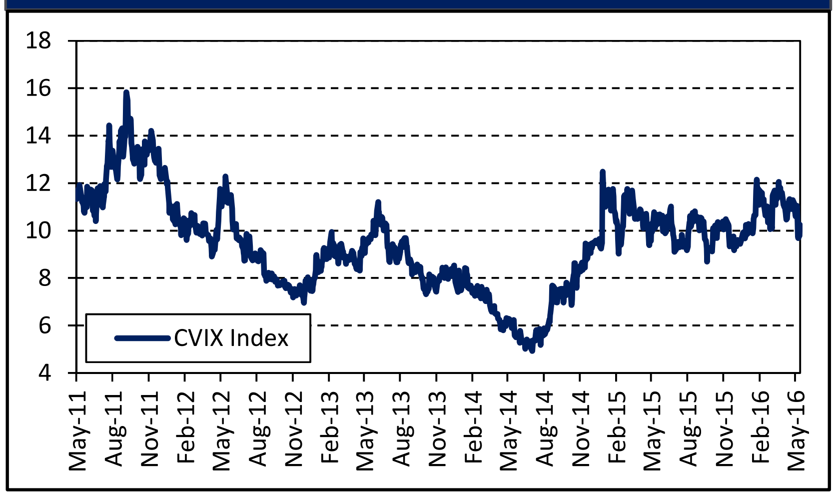
Source: Bloomberg, CBOE

Treasury volatility has declined recently



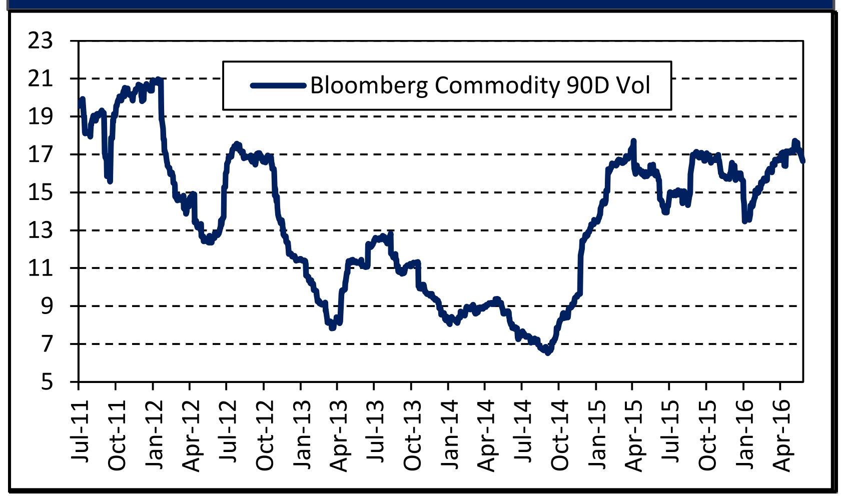
Source: Bloomberg, Merrill Lynch

Currency volatility remains elevated



Source: Bloomberg, Deutsche Bank

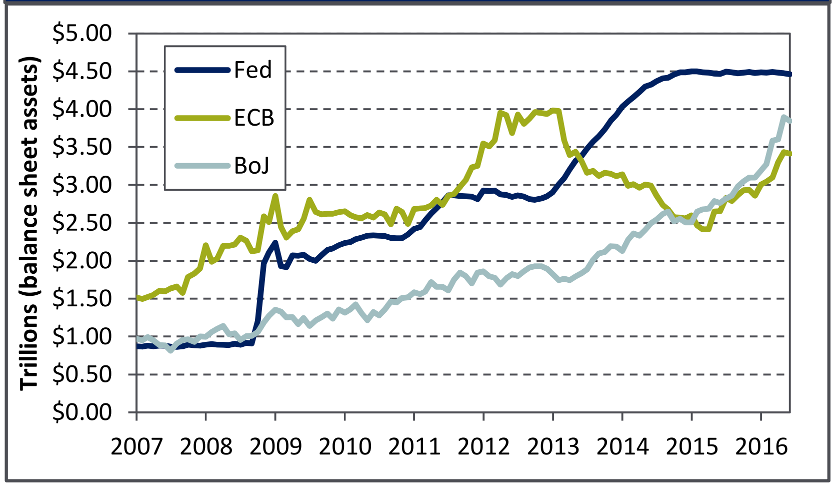
Commodity volatility has increased



Source: Bloomberg, Merrill Lynch

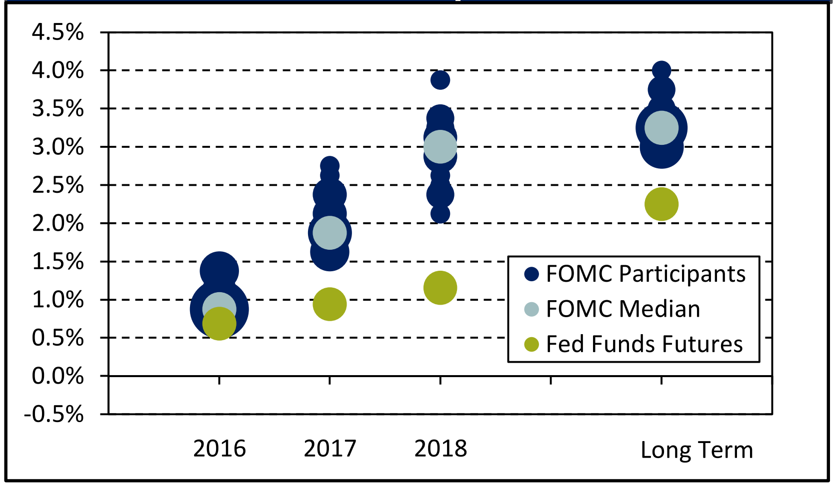
Central Banks

Major central bank policy divergence



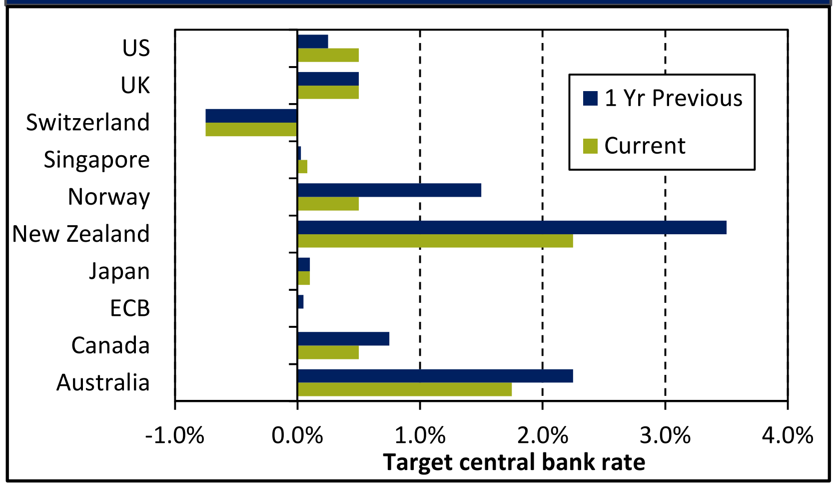
Source: Bloomberg, Federal Reserve, Bank of Japan, ECB, NEPC

Fed's projected policy rate firming above market expectations



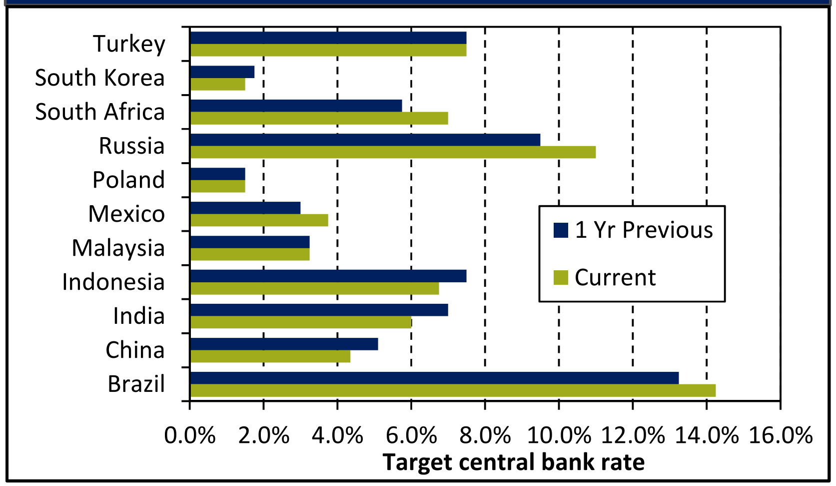
Source: Bloomberg, Federal Reserve, NEPC

Many developed central banks have maintained low interest rates



Source: Bloomberg

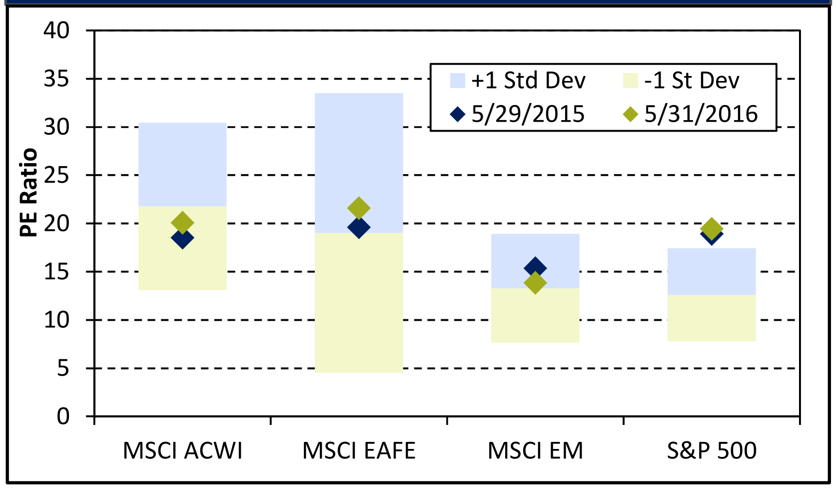
EM central bank policies vary by country economic conditions



Source: Bloomberg

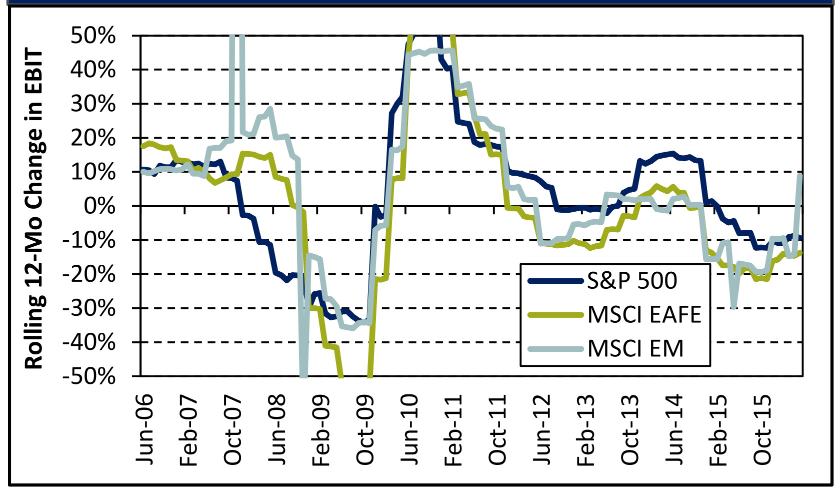
Global Equity

Global valuations are mixed



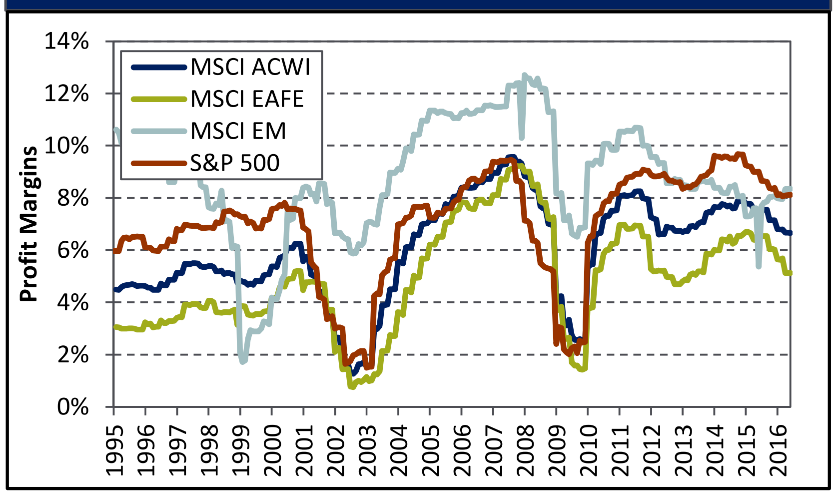
*Source: Bloomberg, Standard and Poors, MSCI *MSCI EAFE is ex UK Telecom*

Earnings growth has trended lower



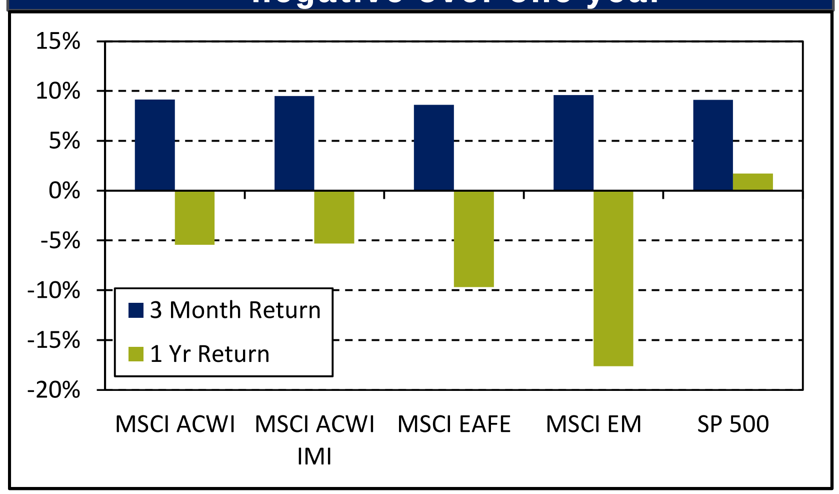
Source: Bloomberg, Standard and Poors, MSCI

Margins declining outside of EM



Source: Bloomberg, MSCI

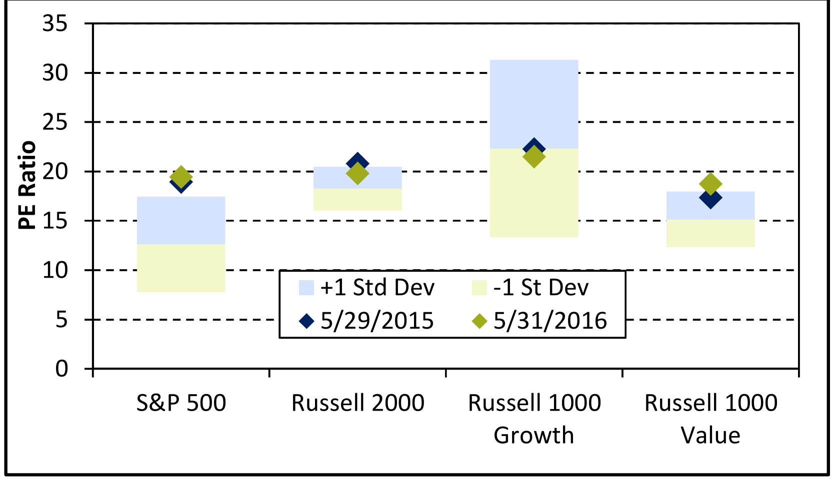
Global equity returns have been mostly negative over one year



Source: Bloomberg, MSCI

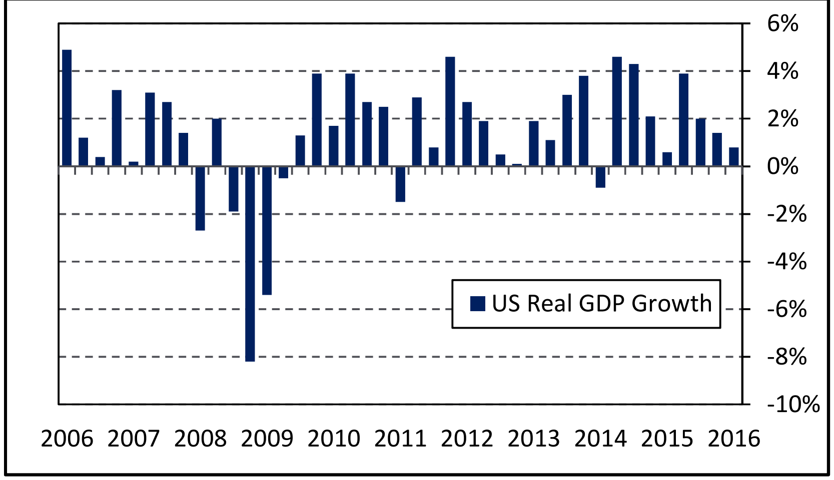
US Equity

Valuations near or above historical norms



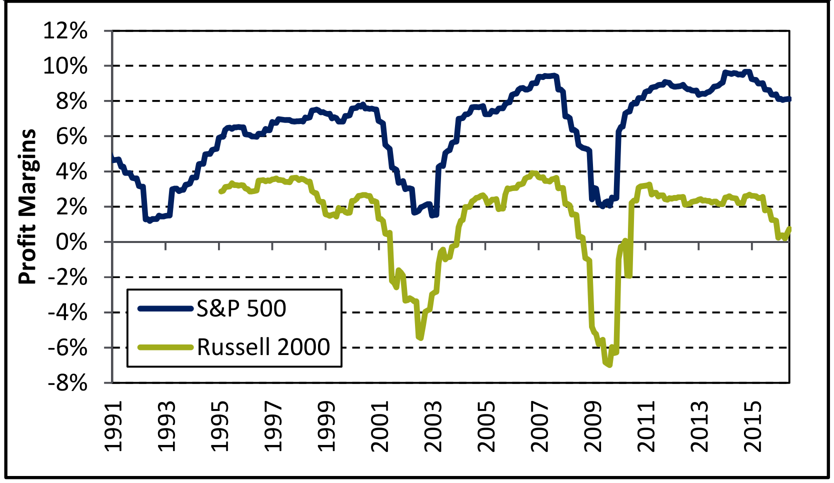
*Source: Bloomberg, Standard and Poors, Russell *Russell 2000 PE is index adjusted positive*

Growth recovery marked by inconsistency



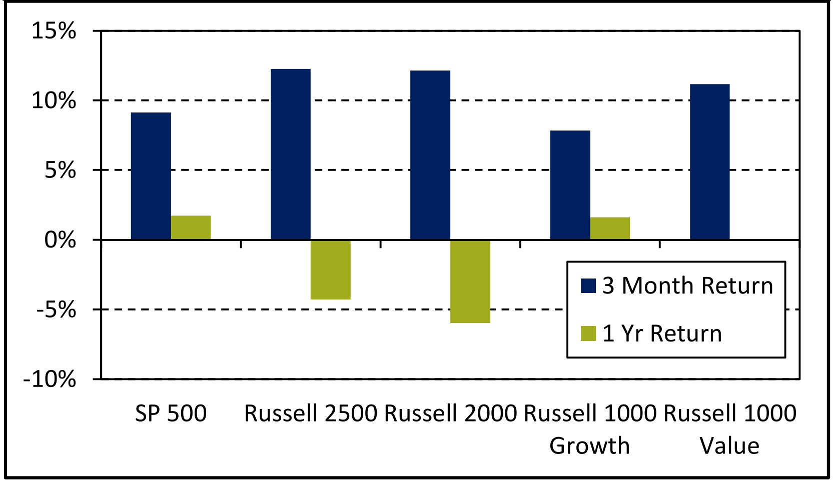
Source: Bloomberg, Bureau of Economic Analysis

Profit margins lower off highs



Source: Bloomberg, Standard and Poors, Russell

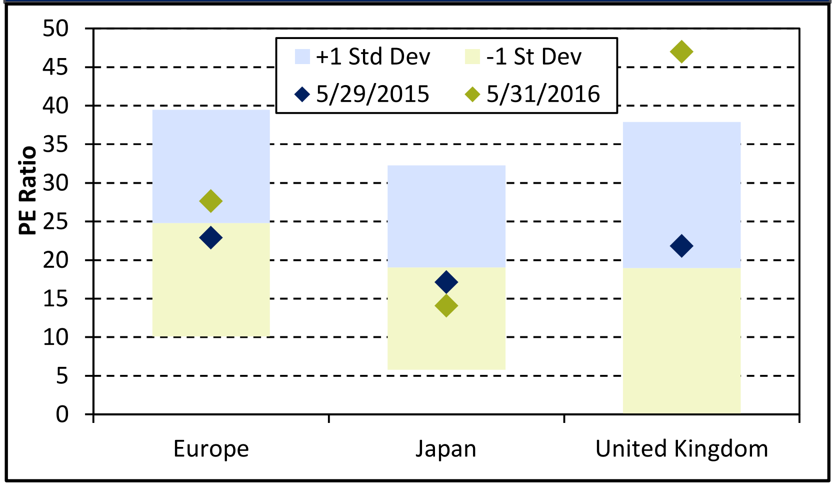
Trailing performance has been mixed



Source: Bloomberg, Standard and Poors, Russell

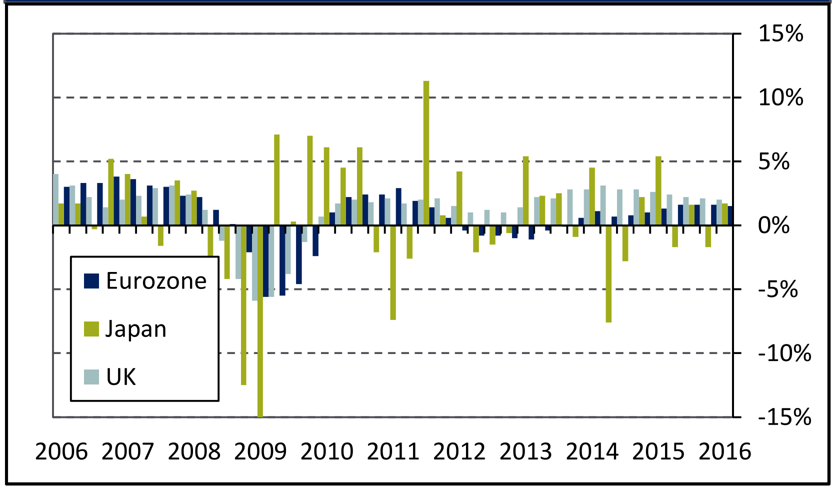
International Equity

PE levels varied by region/country



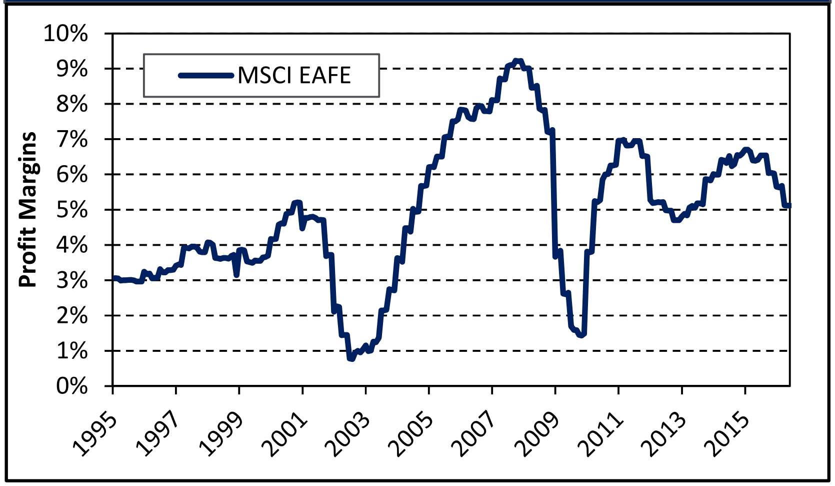
*Source: Bloomberg, MSCI, FTSE *UK represented by FTSE 100 Index*

Global growth remains subdued



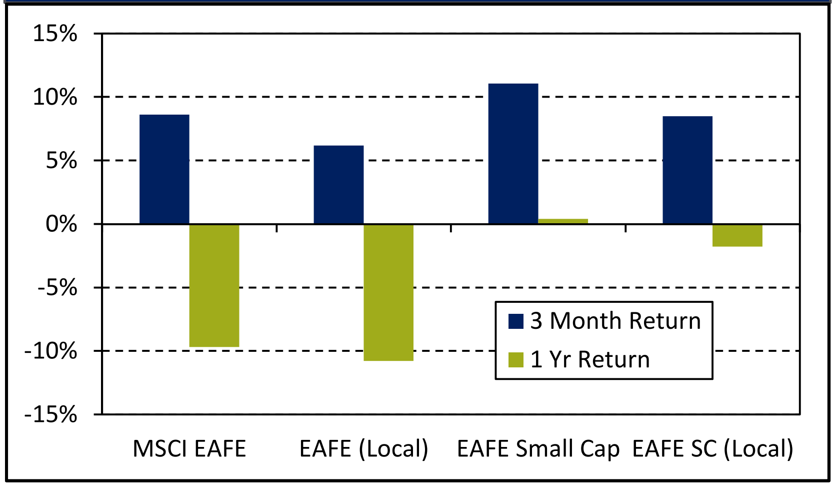
Source: Bloomberg

Margins elevated but not at extremes



Source: Bloomberg, MSCI

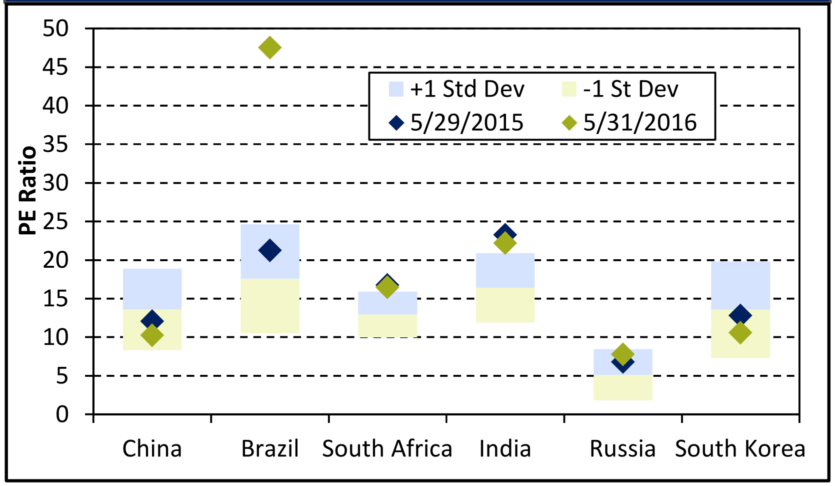
Returns positive in short term



Source: Bloomberg, MSCI

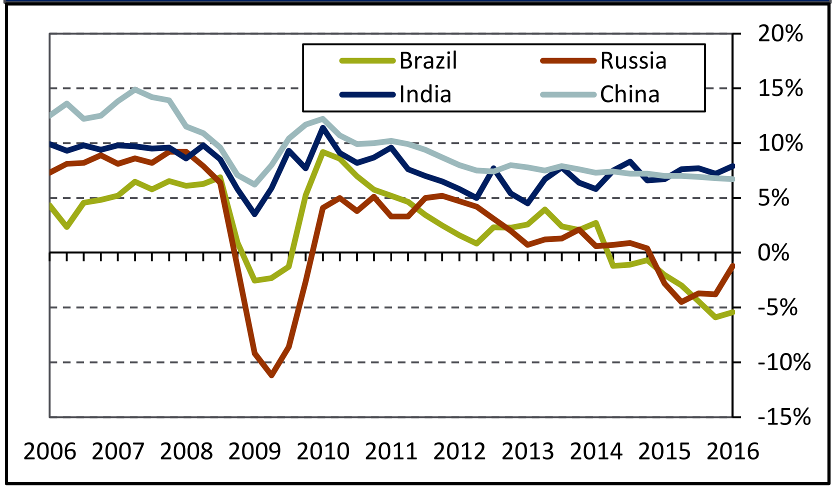
Emerging Markets Equity

Regional valuations show divergence



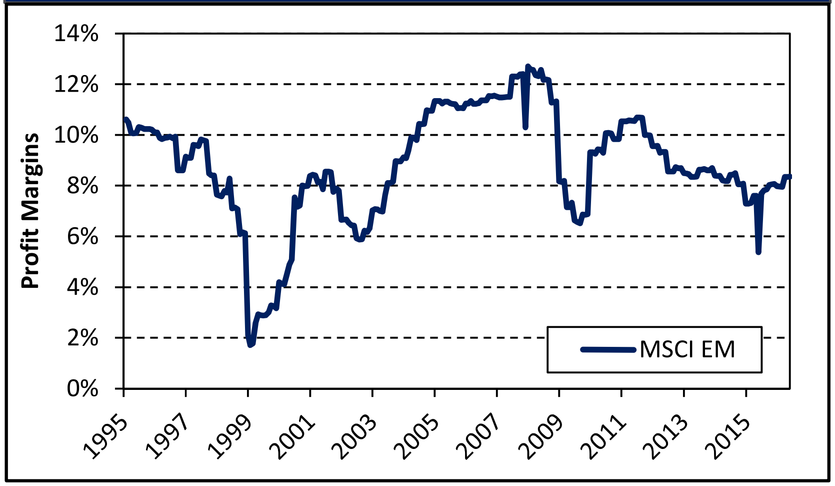
Source: Bloomberg, MSCI

Slowing growth in major economies



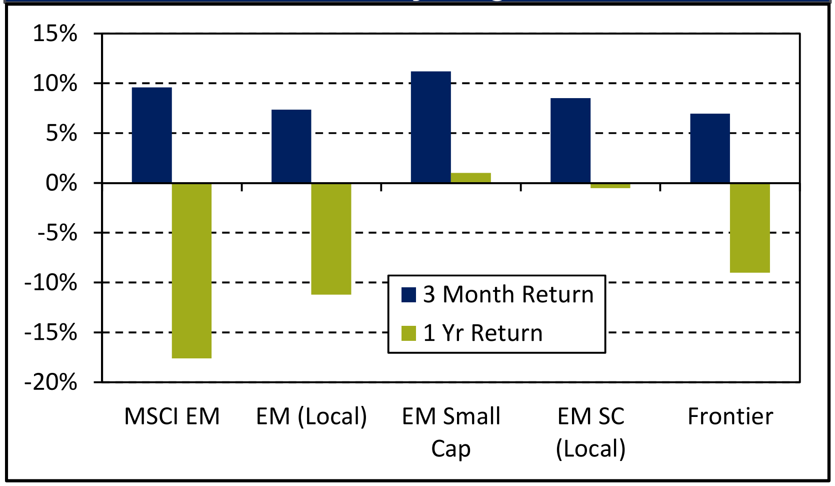
Source: Bloomberg

Profit margins in line with history



Source: Bloomberg, MSCI

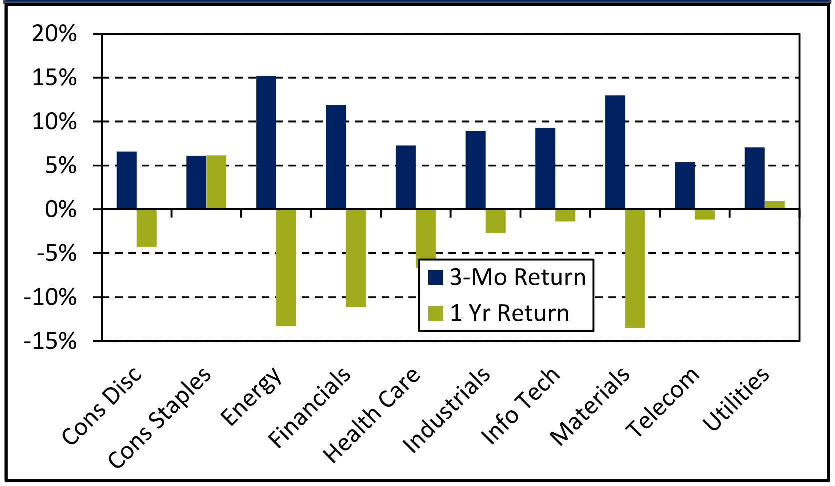
Recent rally in EM but one year returns mostly negative



Source: Bloomberg, MSCI

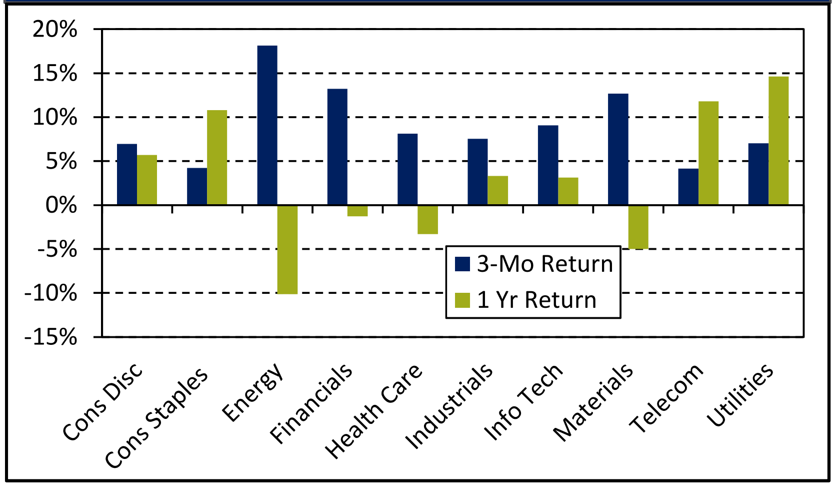
Global Equity by Sector

MSCI ACWI returns led by Energy and Materials in short term



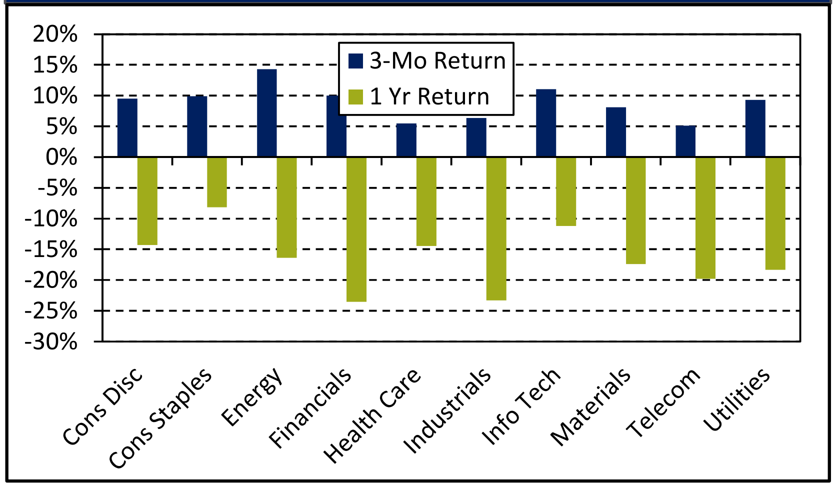
Source: Bloomberg, MSCI

S&P 500 broadly positive in short term



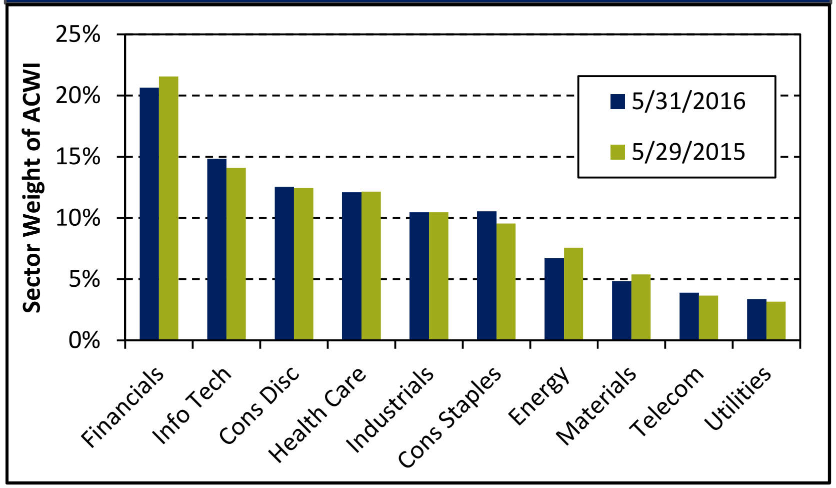
Source: Bloomberg, Standard and Poors

Returns positive across EM in short term



Source: Bloomberg, MSCI

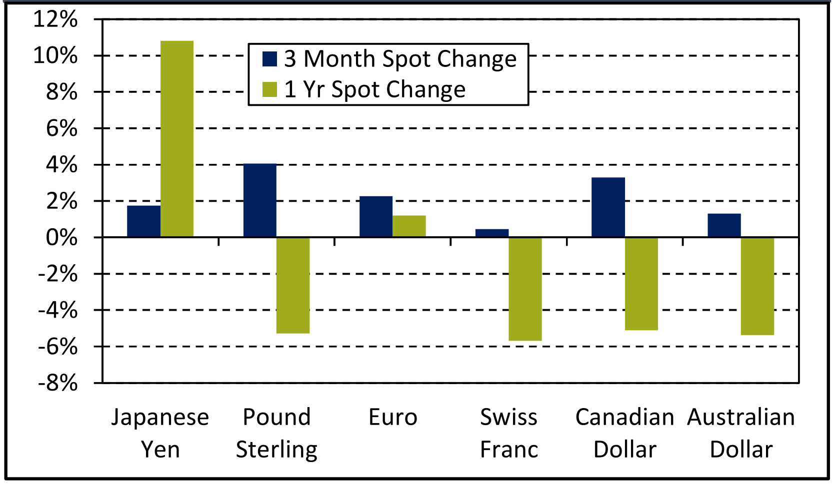
Global energy sector weight has fallen



Source: Bloomberg, MSCI

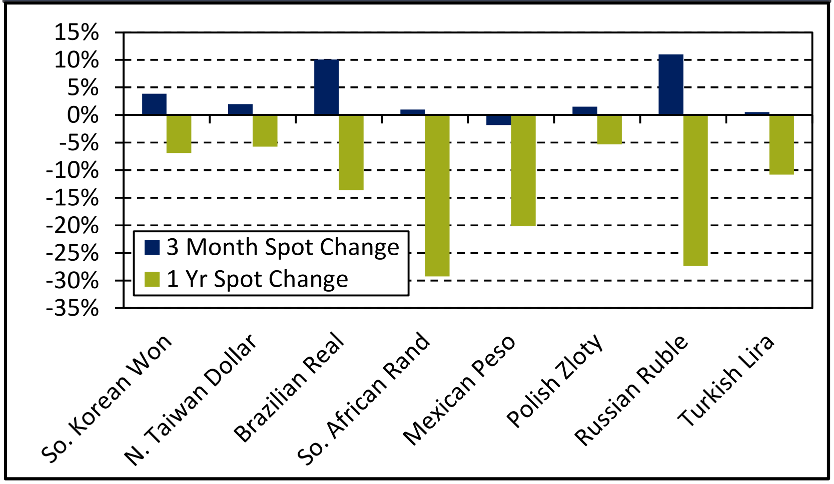
Currencies

Developed currencies mostly positive versus the dollar recently



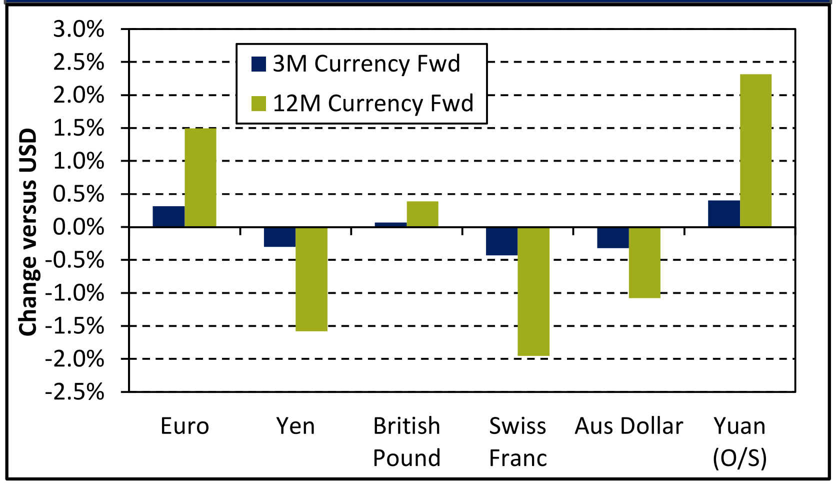
Source: Bloomberg

EM currencies suffered in unique fashions over the past year



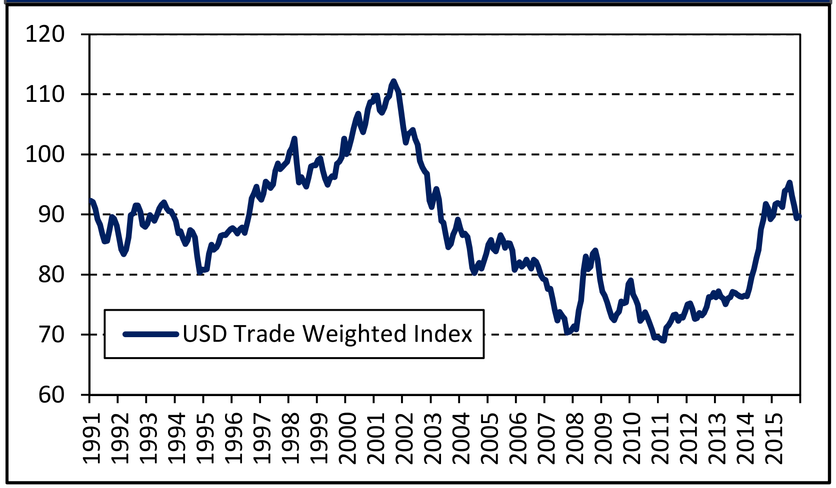
Source: Bloomberg

Yen expected to decline versus USD



Source: Bloomberg

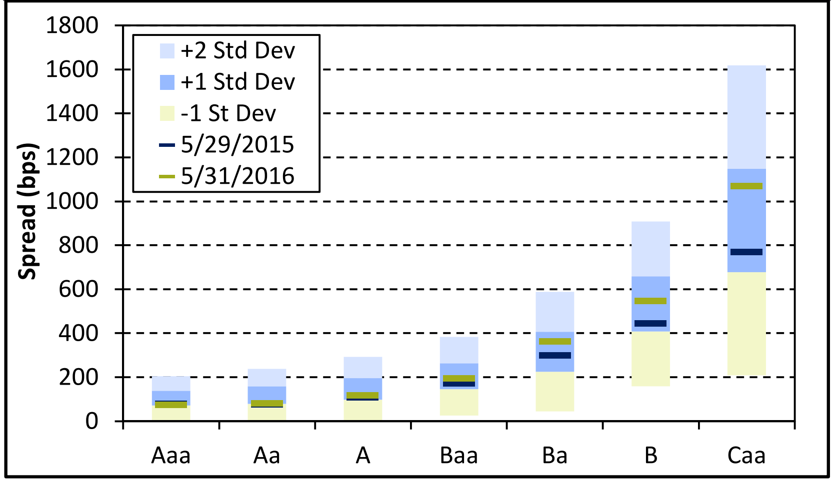
Dollar strength has retreated slightly year



Source: Bloomberg, Federal Reserve

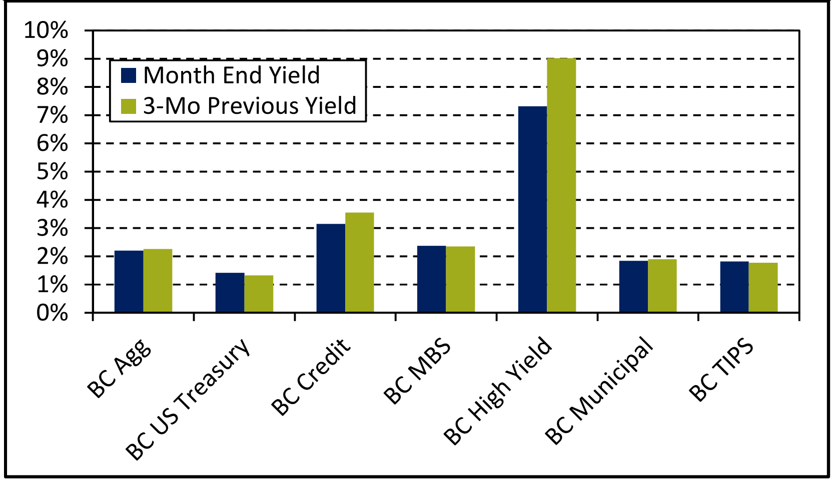
US Fixed Income

Spread levels above historical medians



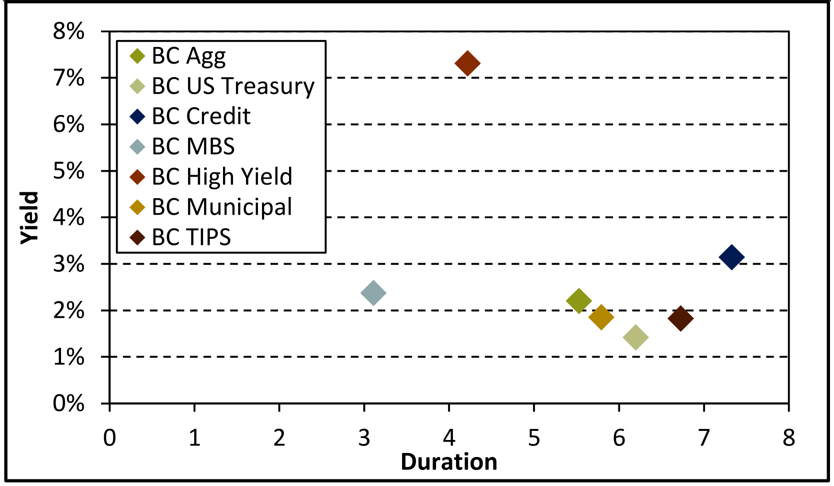
Source: Bloomberg, Barclays

Yields have mostly declined



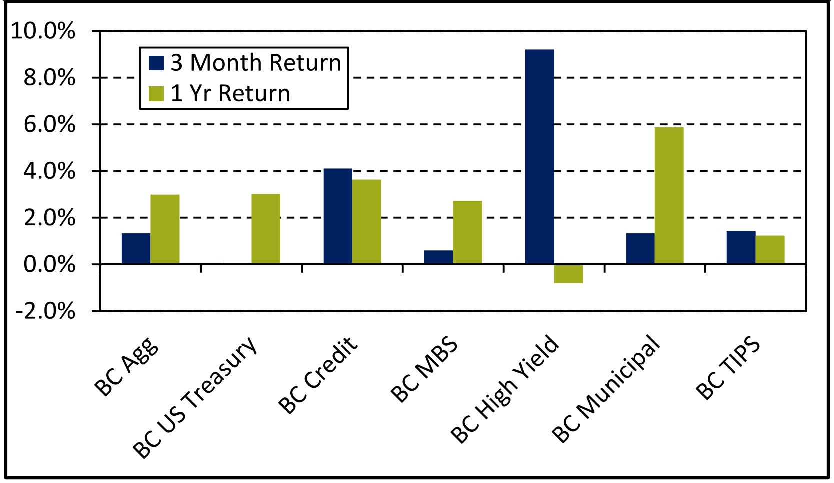
Source: Bloomberg, Barclays

Similar yield / duration tradeoff among major US indices



Source: Bloomberg, Barclays

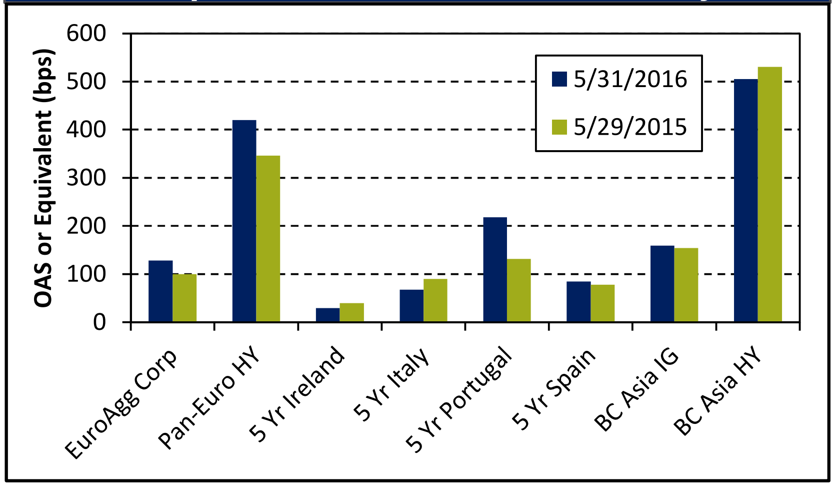
Returns marked by recent credit and high yield rally



Source: Bloomberg, Barclays

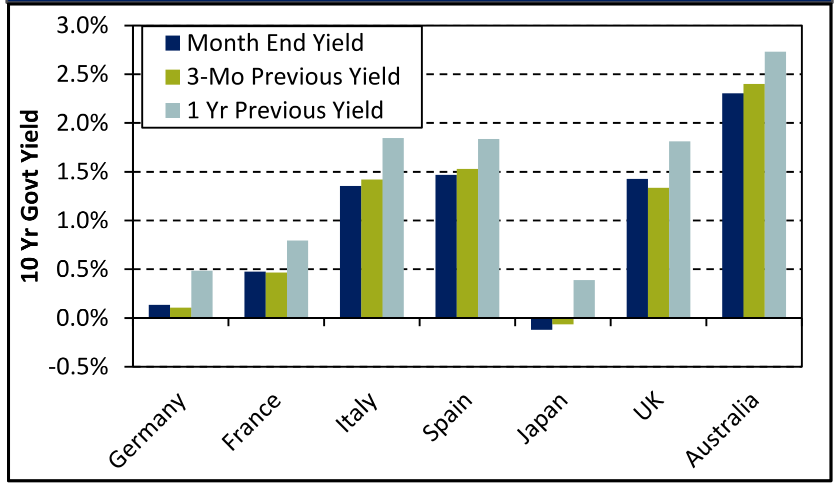
International Developed Fixed Income

European periphery yields at small premium relative to Germany



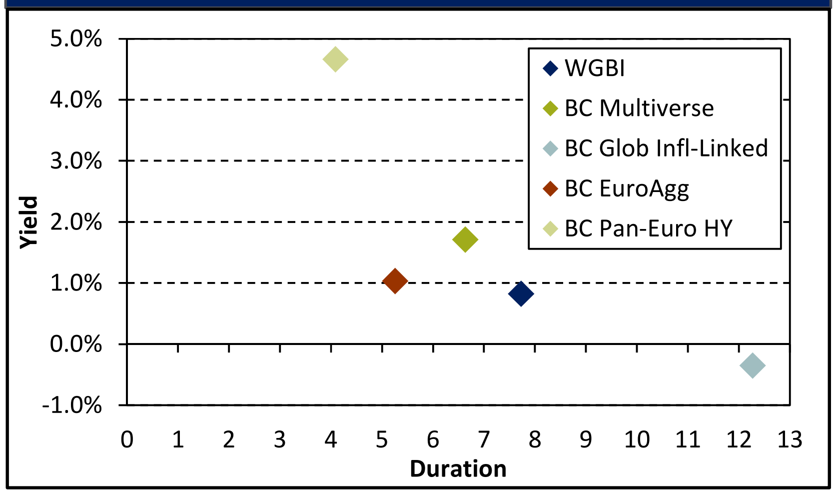
Source: Barclays, Bloomberg, *European periphery spreads are over equivalent German Bund

Global yields are at or near historic lows



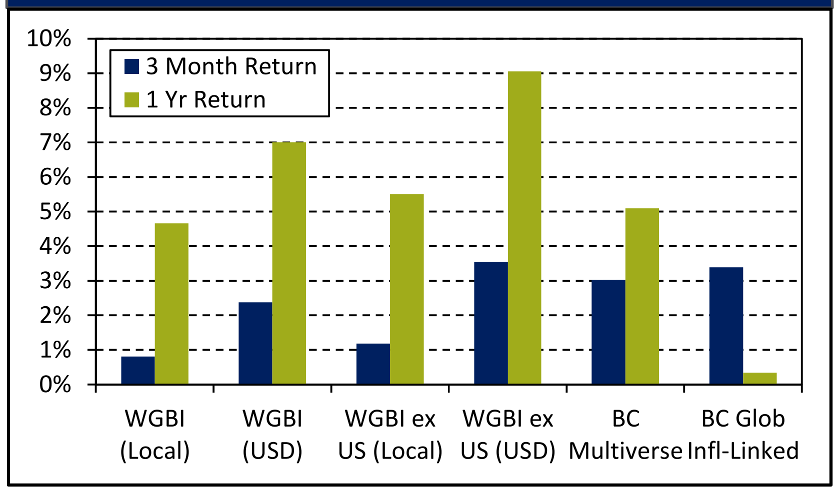
Source: Bloomberg

Low global yields relative to duration



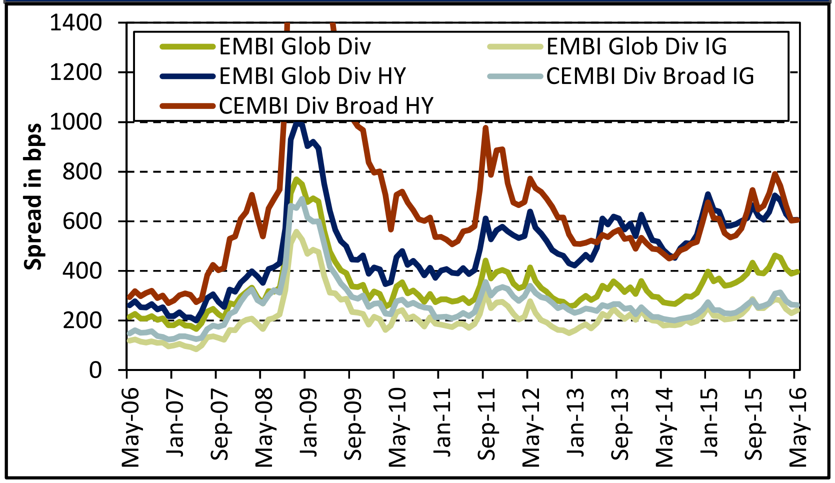
Source: Bloomberg, Citigroup, Barclays

Global bonds positive in USD terms



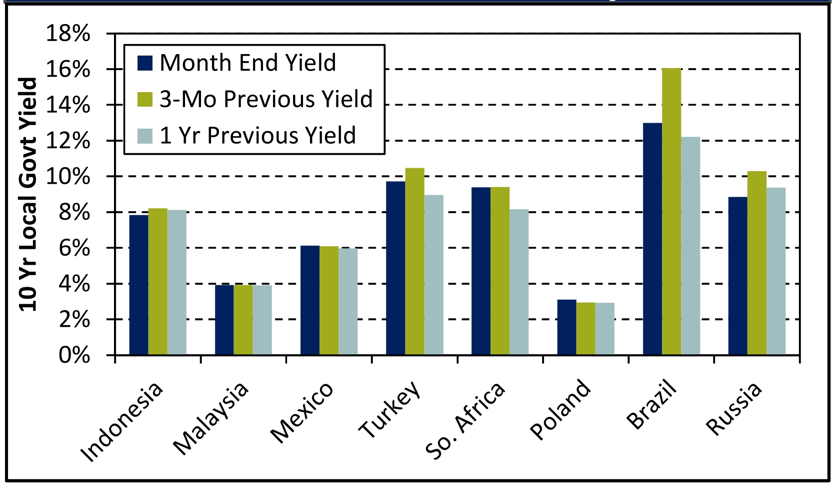
Source: Bloomberg, Citigroup, Barclays

Spreads have widened recently



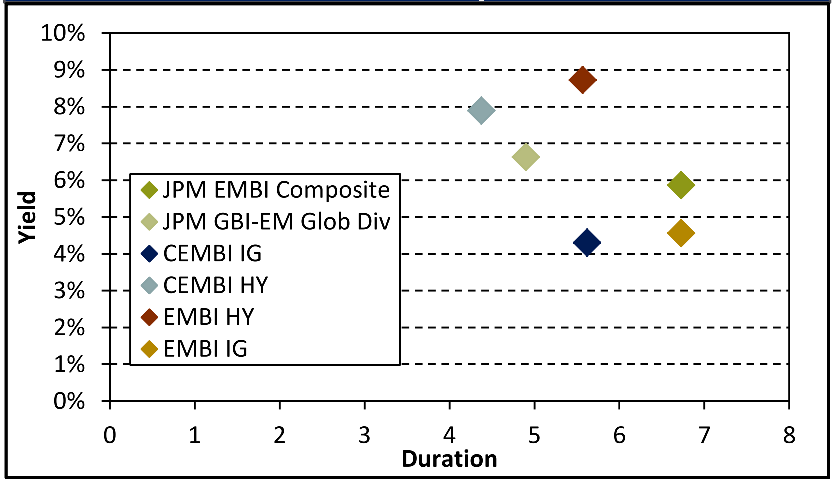
Source: Bloomberg, JP Morgan

Emerging market bond yield changes have varied directionally



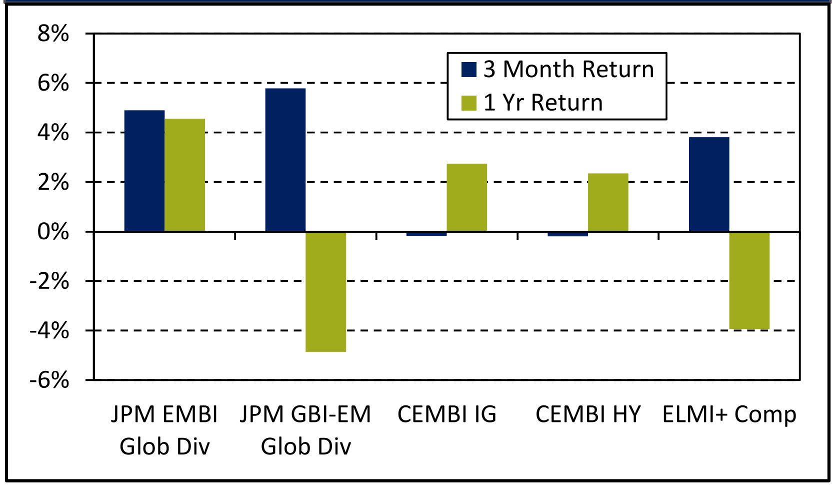
Source: Bloomberg

EM yields higher versus global counterparts



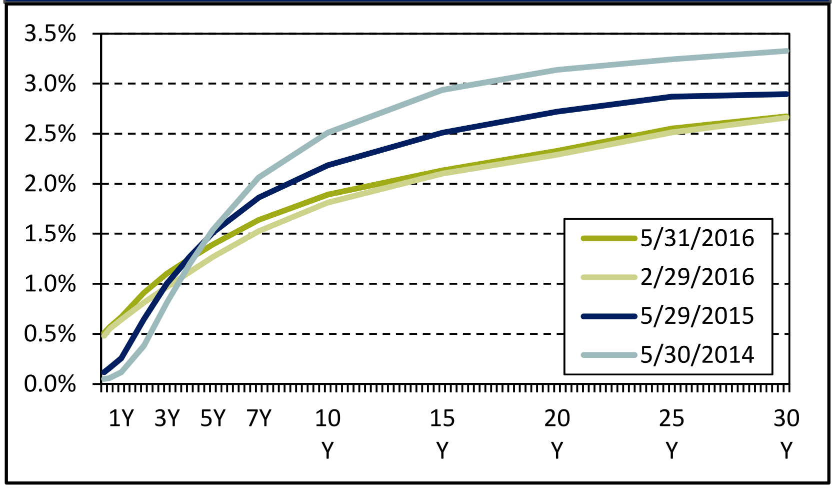
Source: Bloomberg, JP Morgan

Currency effect pronounced in EMD returns



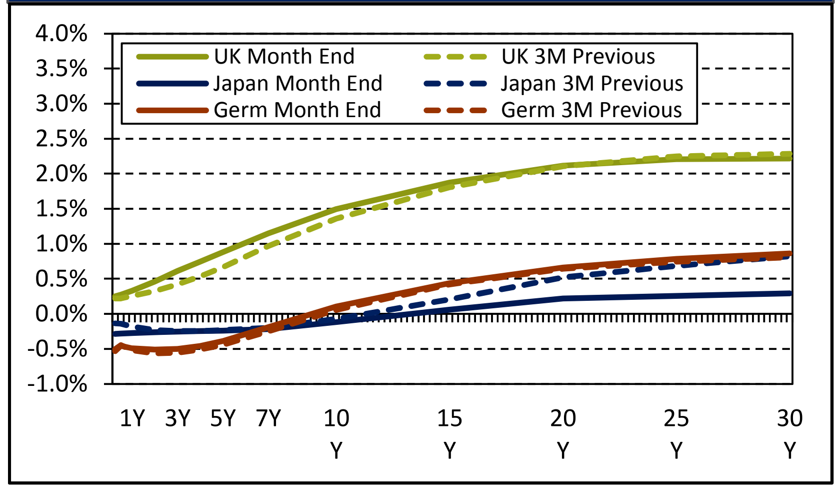
Source: Bloomberg, JP Morgan

Treasury yield curve relatively stable



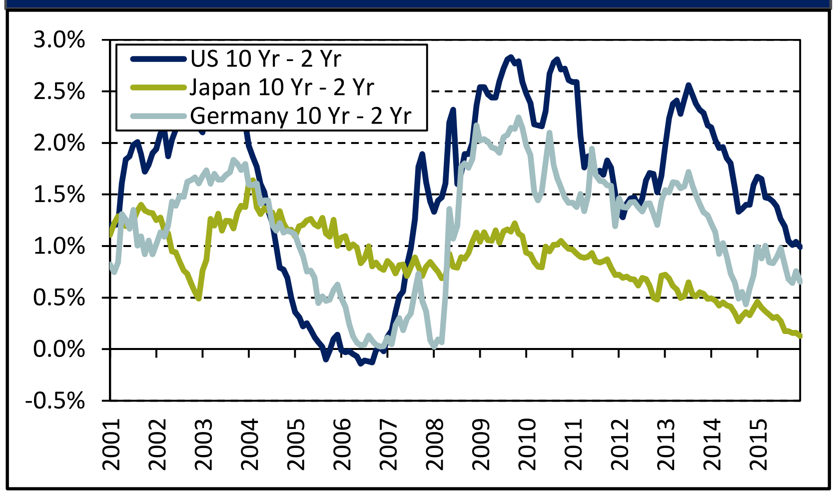
Source: Bloomberg

Japan yield curve has shifted downwards



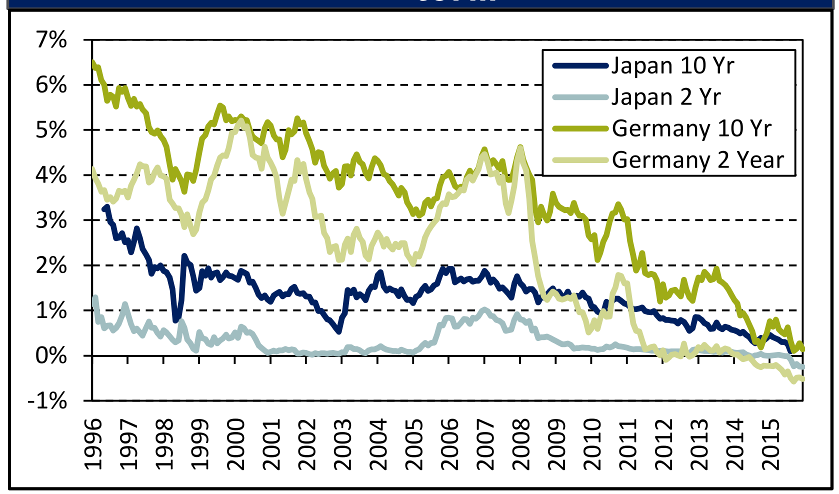
Source: Bloomberg

Global yield curves trending lower



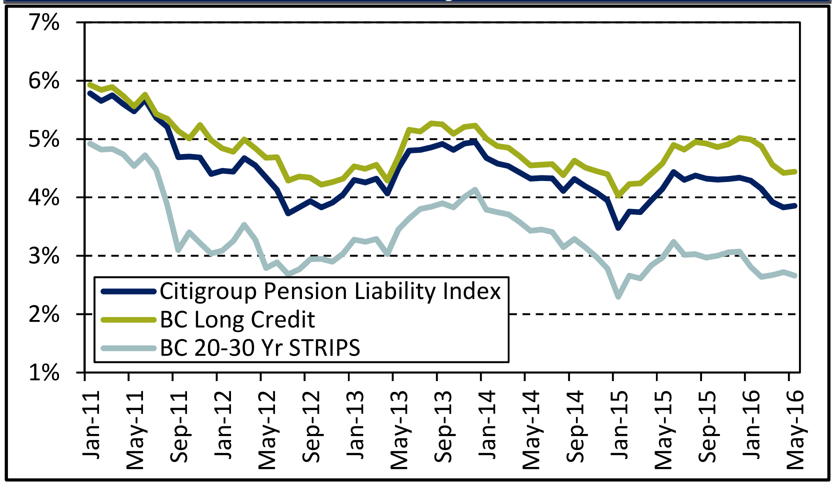
Source: Bloomberg

Global yields have trended lower over long term



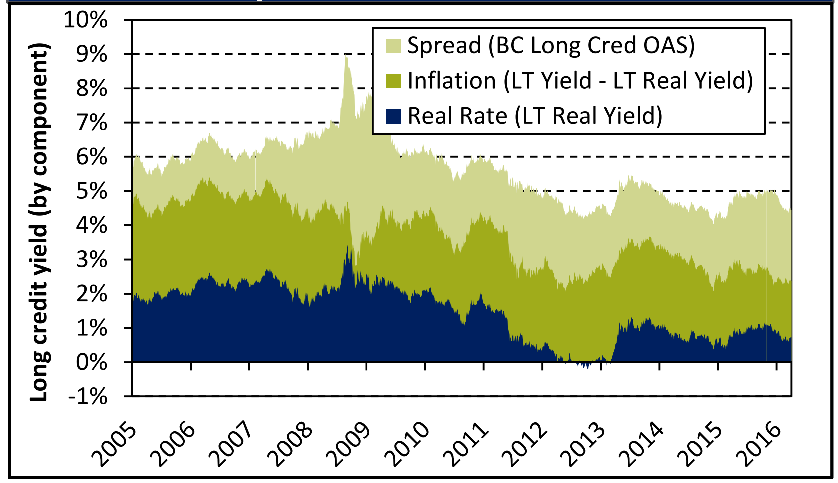
Source: Bloomberg

Long duration yields have fallen over last few years



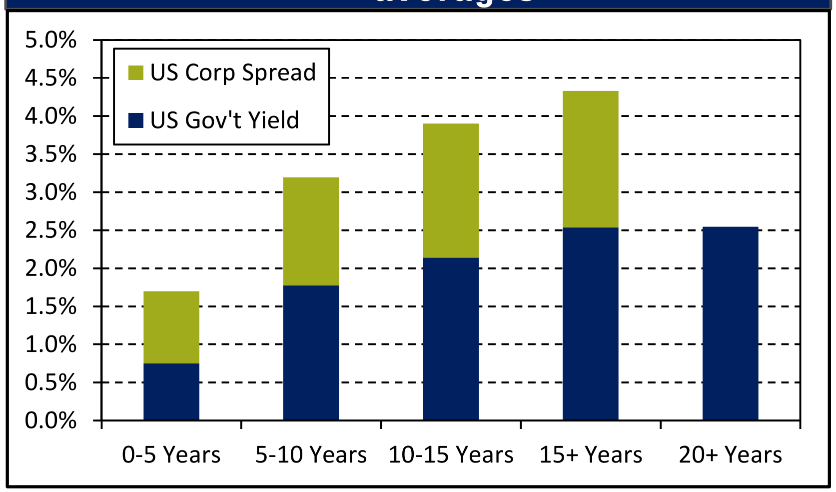
Source: Bloomberg, Citigroup, Barclays

Lower yields driven by low inflation expectations and real rates



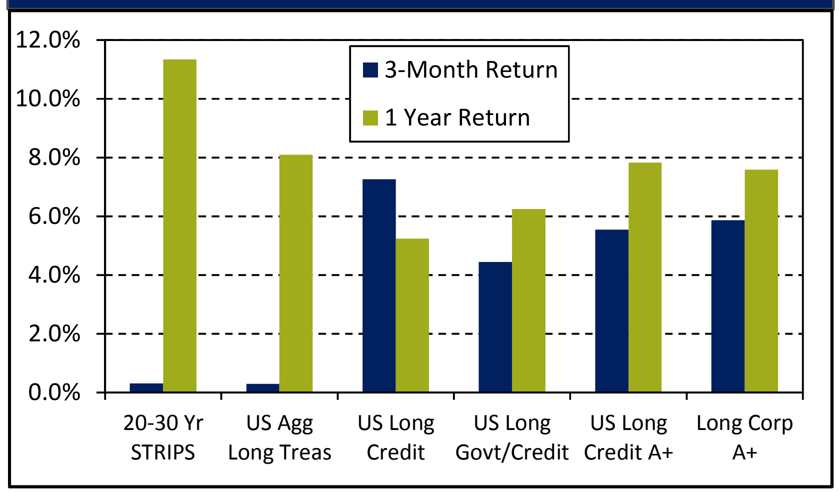
Source: Bloomberg, US Treasury, Barclays, NEPC

Yields are low but spreads above historic averages



*Source: Bloomberg, BofA Merrill Lynch, Barclays *No index for 20+ year corporate*

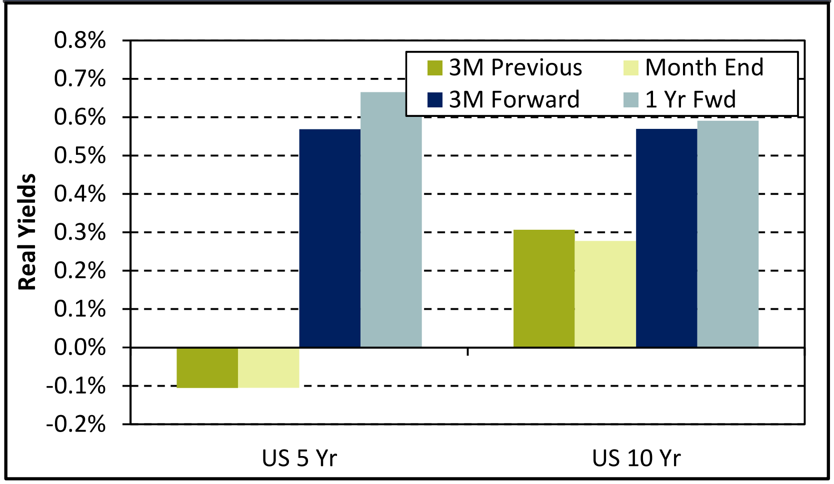
Returns recently positive



Source: Bloomberg, Barclays

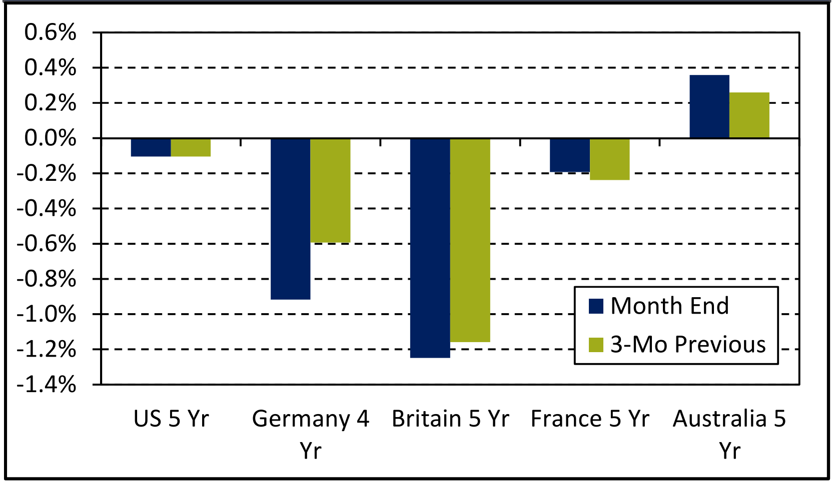
Inflation and Real Rates

US real yields have decreased slightly



Source: Bloomberg

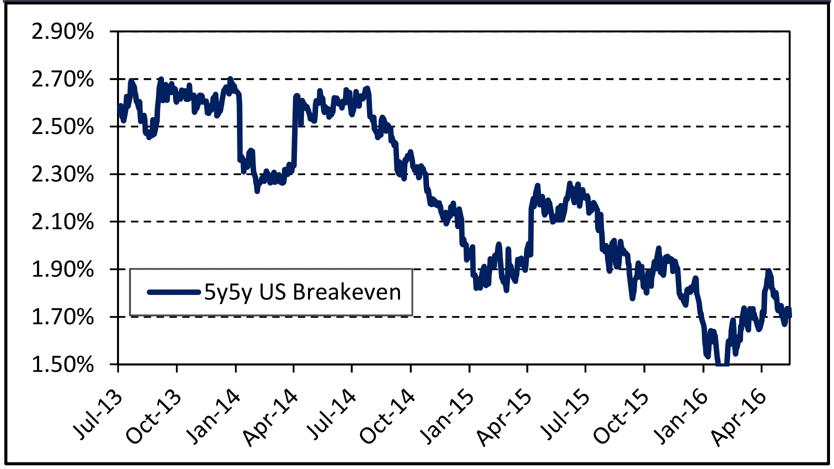
Global real yields mostly negative



*3-Mo data not available for Germany 4 year rate

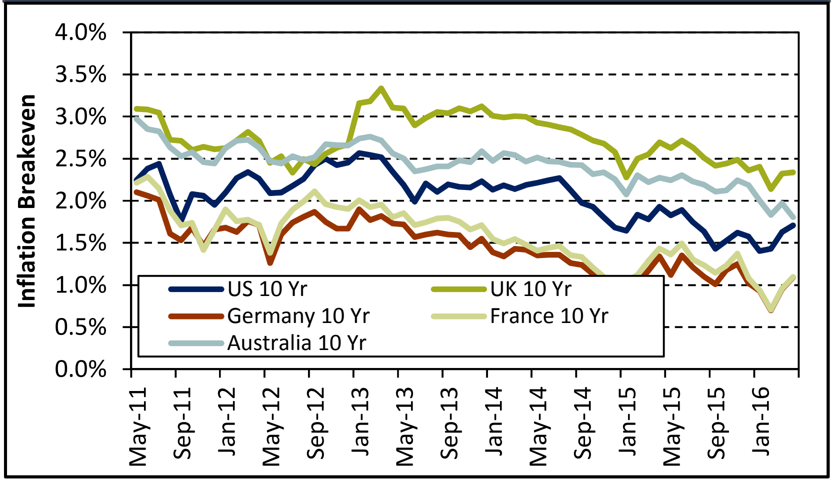
Source: Bloomberg

US inflation expectations remain low



Source: Bloomberg

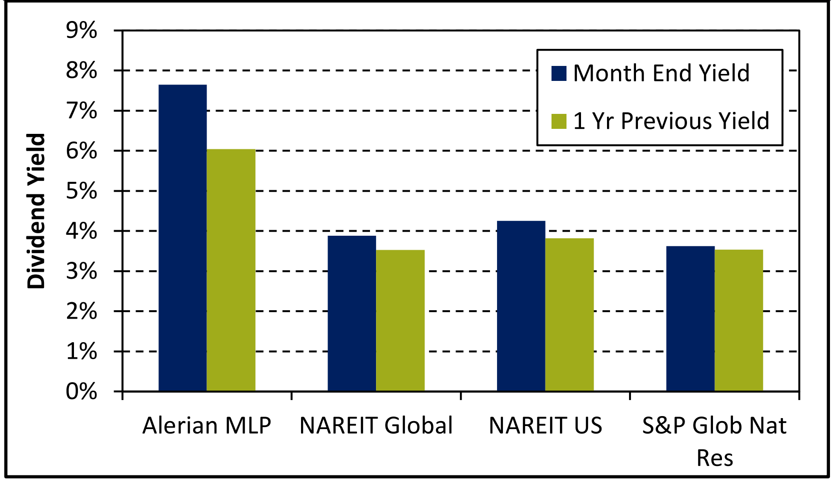
Global inflation expectations have seen small recent uptick



Source: Bloomberg

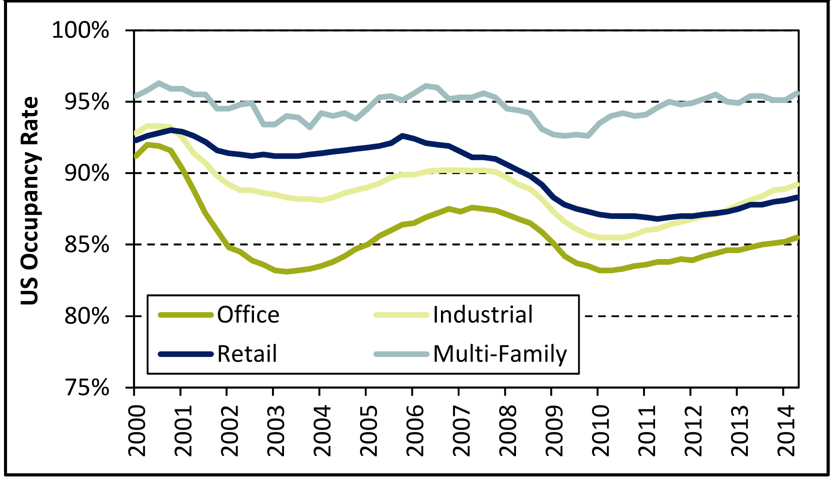
Inflation Sensitive Growth Assets

Yields higher relative to last year



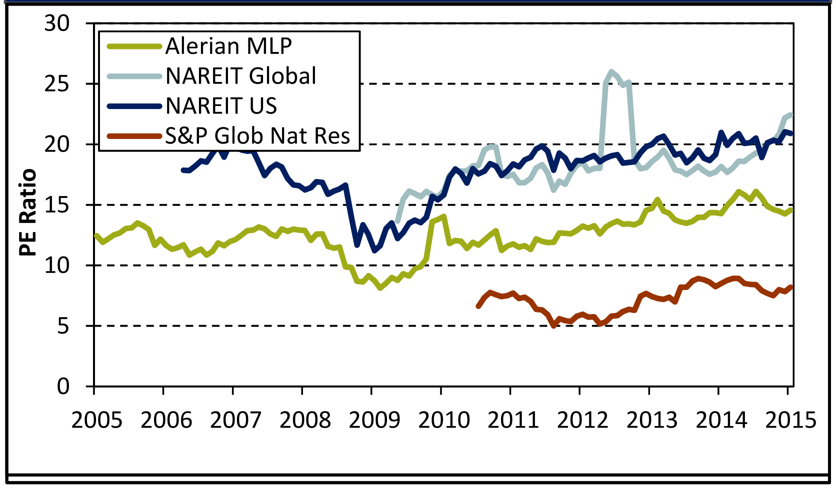
Source: Bloomberg, Alerian, Nareit, Standard and Poors

Gradual recovery in occupancy rates



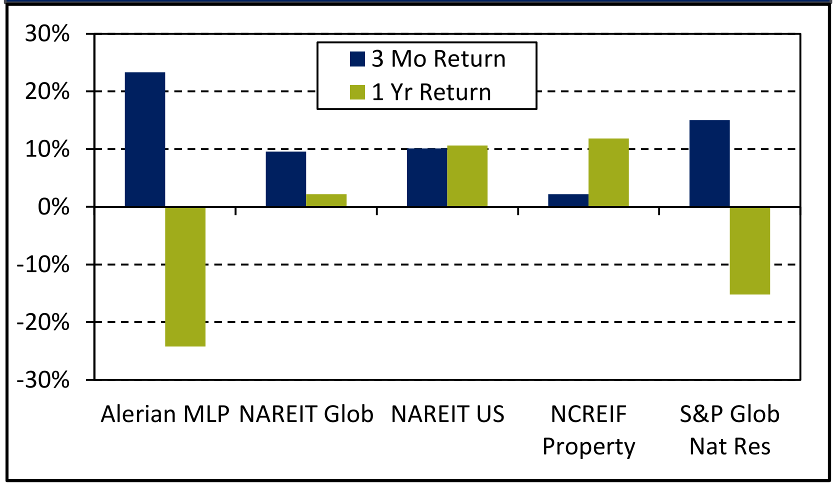
Source: Bloomberg, CB Richard Ellis

PE Ratios near or above averages



Source: Bloomberg, US Census Bureau

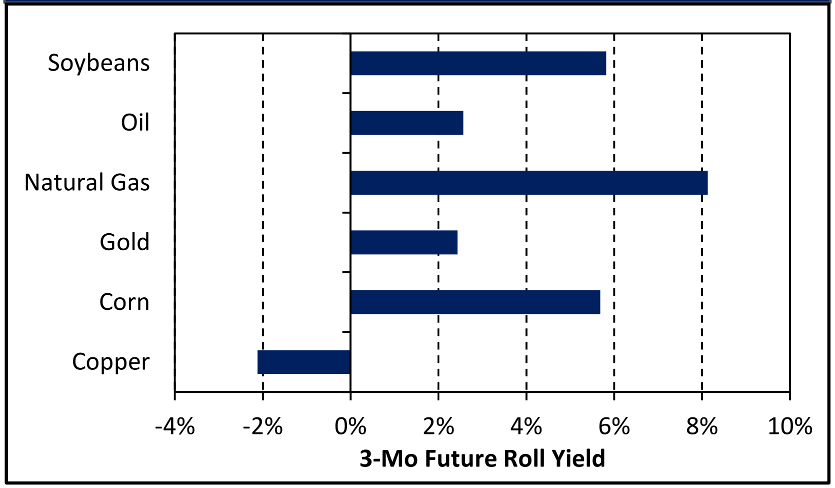
MLPs have rebounded after selloff



Source: Bloomberg, Alerian, Nareit, Standard and Poors

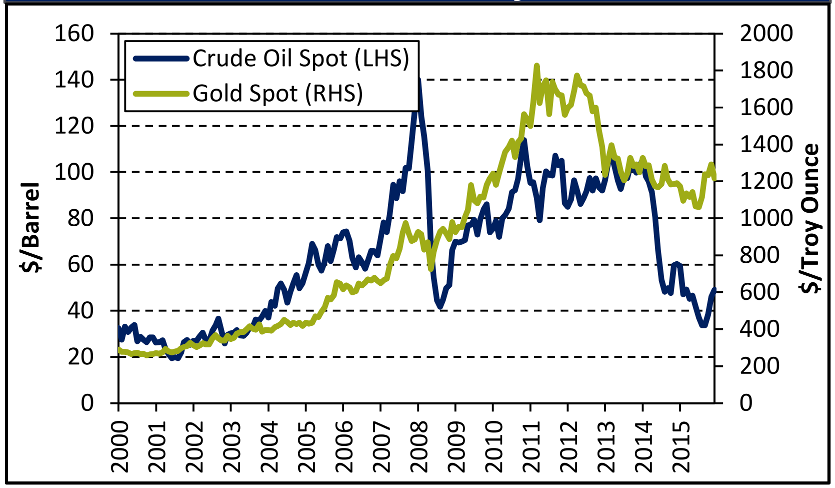
Commodities

Backwardation in major commodity futures



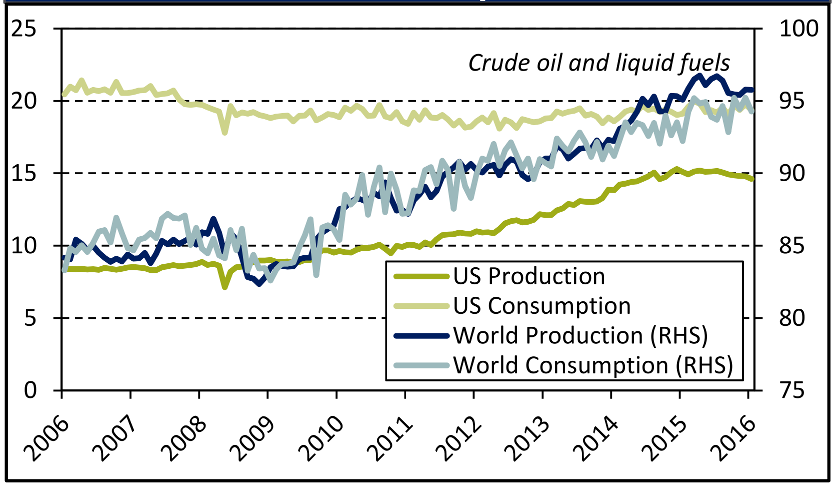
Source: Bloomberg

Precipitous fall in oil prices with slight recovery



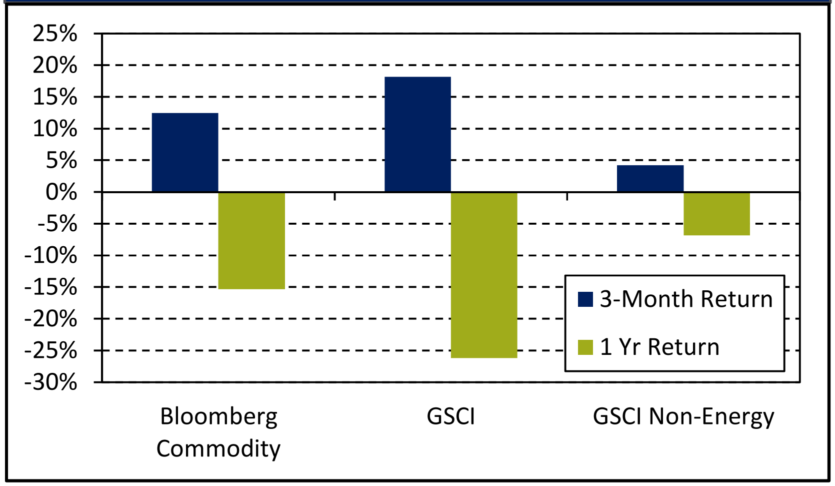
Source: Bloomberg

US fuel production closing gap with consumption



Source: Bloomberg, US Department of Energy *Crude oil and liquid fuels

Commodity indices negative over one year after oil-induced decline



Source: Bloomberg, Standard and Poors

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- Past performance is no guarantee of future results.
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