

# Guide to the Markets<sup>®</sup>

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U.S. | 4Q 2015 | As of September 30, 2015

*J.P. Morgan*

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**Asset class**

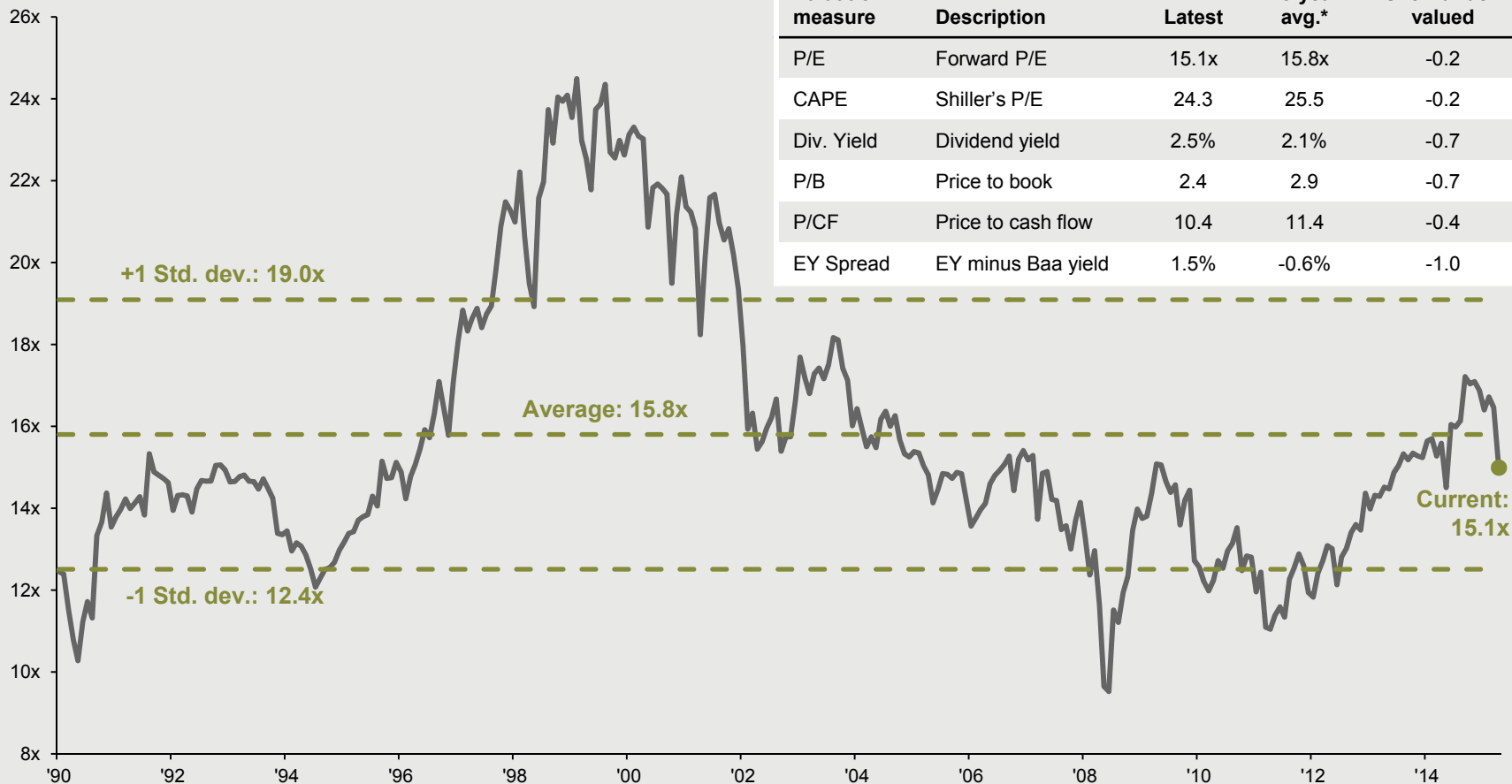
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## S&P 500 Price Index



Source: Compustat, FactSet, Standard & Poor's, J.P. Morgan Asset Management. Dividend yield is calculated as the annualized dividend rate divided by price, as provided by Compustat. Forward Price to Earnings Ratio is a bottom-up calculation based on the most recent S&P 500 Index price, divided by consensus estimates for earnings in the next 12 months (NTM), and is provided by FactSet Market Aggregates. Returns are cumulative and based on S&P 500 Index price movement only, and do not include the reinvestment of dividends. Past performance is not indicative of future returns. Guide to the Markets – U.S. Data are as of September 30, 2015.

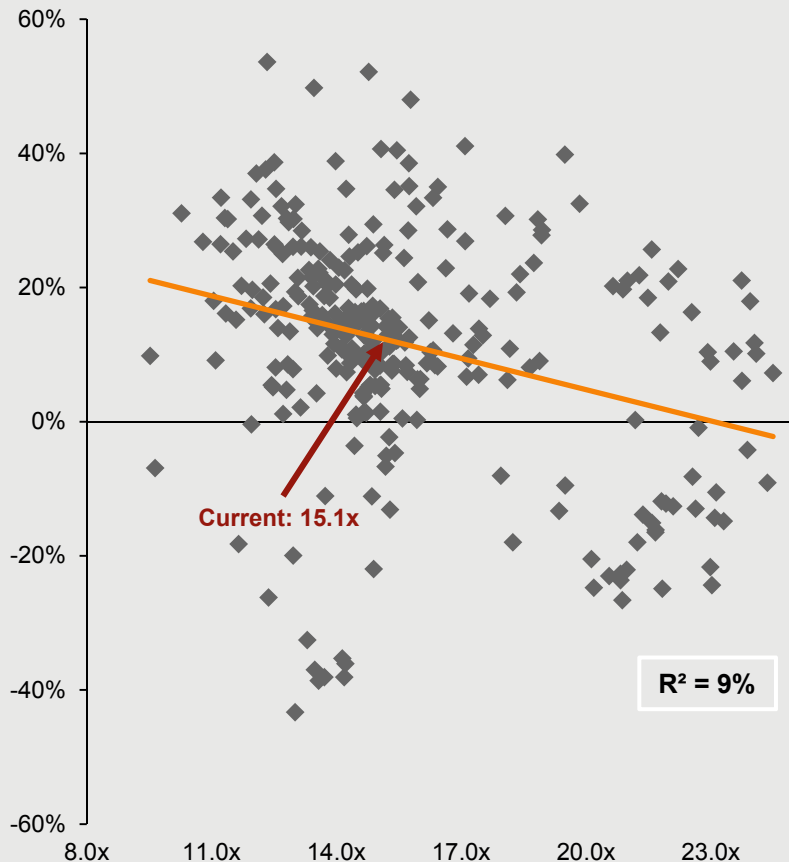
S&P 500 Index: Forward P/E ratio



Source: FactSet, FRB, Robert Shiller, Standard & Poor's, J.P. Morgan Asset Management. Price to Earnings is price divided by consensus analyst estimates of earnings per share for the next 12 months. Shiller's P/E uses trailing 10-years of inflation-adjusted earnings as reported by companies. Dividend Yield is calculated as the trailing 12-month average dividend divided by price. Price to Book Ratio is the price divided by book value per share. Price to Cash Flow is price divided by NTM cash flow. EY Minus Baa Yield is the forward earnings yield (consensus analyst estimates of EPS over the next 12 months divided by price) minus the Moody's Baa seasoned corporate bond yield. Std. dev. Over-/under-valued is calculated using the average and standard deviation over 25 years for each measure. \*P/CF is a 20-year average due to cash flow data availability. Guide to the Markets – U.S. Data are as of September 30, 2015.

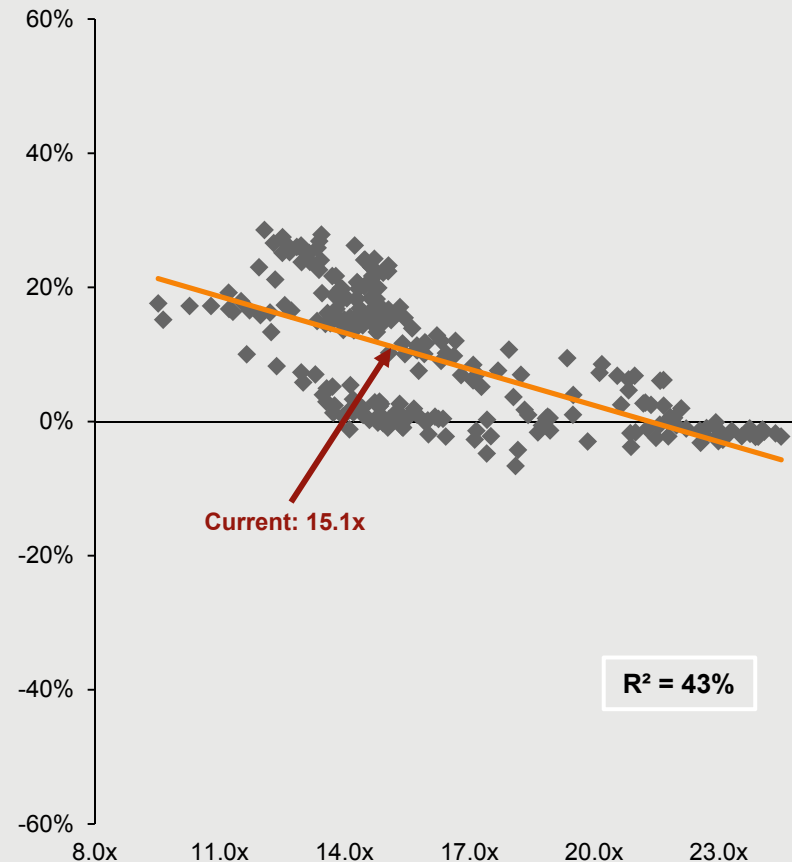
**Forward P/E and subsequent 1-yr returns**

S&P 500 Total Return Index



**Forward P/E and subsequent 5-yr annualized returns**

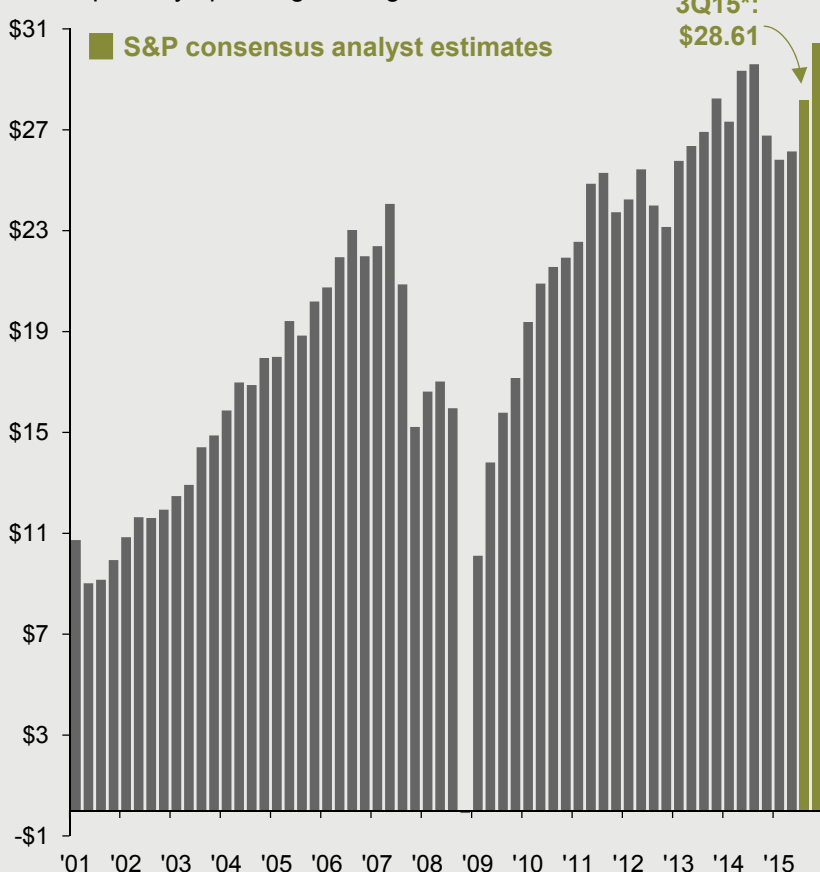
S&P 500 Total Return Index



Source: FactSet, Reuters, Standard & Poor's, J.P. Morgan Asset Management. Returns are 12-month and 60-month annualized total returns, measured monthly, beginning September 30, 1990. R<sup>2</sup> represents the percent of total variation in total returns that can be explained by forward P/E ratios. Guide to the Markets – U.S. Data are as of September 30, 2015.

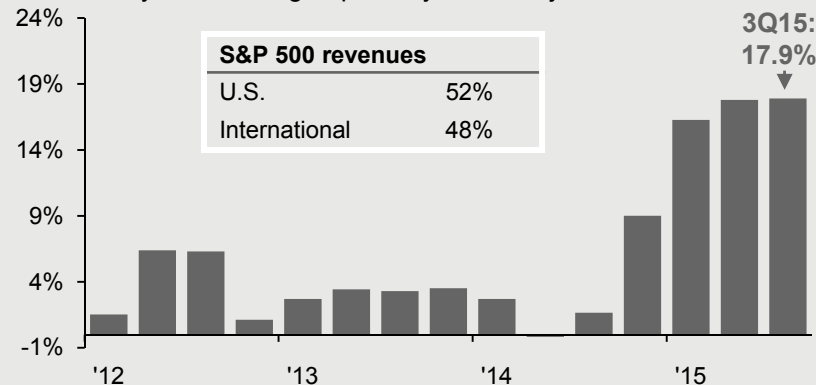
### S&P 500 earnings per share

Index quarterly operating earnings



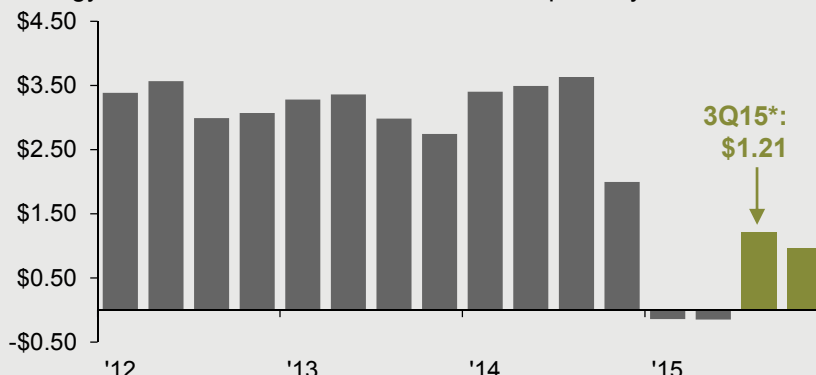
### U.S. dollar

Year-over-year % change, quarterly, USD major currencies index



### Energy sector earnings

Energy sector contribution to S&P 500 EPS, quarterly



Source: Compustat, FactSet, Standard & Poor's, J.P. Morgan Asset Management, (Top right) Federal Reserve, S&P 500 individual company 10k filings, S&P Index Alert.

EPS levels are based on operating earnings per share. \*3Q and 4Q earnings estimates are Standard & Poor's consensus analyst expectations. Past performance is not indicative of future returns. Currencies in the Trade Weighted U.S. Dollar Major Currencies Index are: British pound, Euro, Swedish kroner, Australian dollar, Canadian dollar, Japanese yen and Swiss franc.

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### 3Q 2015

	Value	Blend	Growth
Large	-8.4%	-6.4%	-5.3%
Mid	-8.0%	-8.0%	-8.0%
Small	-10.7%	-11.9%	-13.1%

### YTD

	Value	Blend	Growth
Large	-9.0%	-5.3%	-1.5%
Mid	-7.7%	-5.8%	-4.1%
Small	-10.1%	-7.7%	-5.5%

### Since Market Peak (October 2007)

	Value	Blend	Growth
Large	29.4%	45.9%	67.5%
Mid	55.6%	60.1%	62.5%
Small	33.2%	45.4%	57.6%

### Since Market Low (March 2009)

	Value	Blend	Growth
Large	222.7%	226.0%	241.5%
Mid	297.2%	286.3%	275.7%
Small	229.4%	250.6%	271.8%

### Current P/E vs. 20-year avg. P/E

	Value	Blend	Growth
Large	13.9 / 14.2	15.1 / 17.1	17.2 / 21.1
Mid	15.3 / 14.4	16.7 / 16.7	18.4 / 22.1
Small	14.6 / 14.6	16.1 / 17.4	18.0 / 21.6

### Current P/E as % of 20-year avg. P/E

	Value	Blend	Growth
Large	97.9%	88.1%	81.3%
Mid	105.8%	100.0%	83.3%
Small	100.2%	92.5%	83.3%

Source: FactSet, Russell Investment Group, Standard & Poor's, J.P. Morgan Asset Management.

All calculations are cumulative total return, including dividends reinvested for the stated period. Since Market Peak represents period 10/9/07 – 9/30/15, illustrating market returns since the S&P 500 Index high on 10/9/07. Since Market Low represents period 3/9/09 – 9/30/15, illustrating market returns since the S&P 500 Index low on 3/9/09. Returns are cumulative returns, not annualized. For all time periods, total return is based on Russell-style indexes with the exception of the large blend category, which is based on the S&P 500 Index. Past performance is not indicative of future returns. P/E ratios reflect latest available data. Earnings estimates are as of August for Russell Indexes and as of September for Standard & Poor's.

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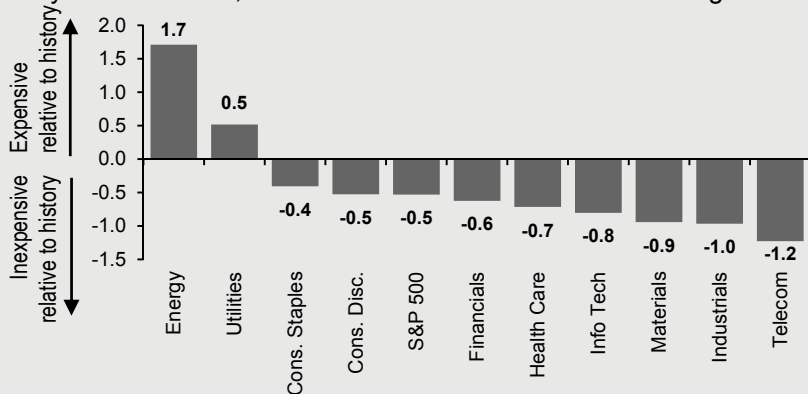


	Financials	Technology	Health Care	Industrials	Energy	Cons. Discr.	Cons. Staples	Telecom	Utilities	Materials	S&P 500 Index	Weight
<b>S&amp;P Weight</b>	16.5%	20.4%	14.7%	10.1%	6.9%	13.1%	9.9%	2.4%	3.1%	2.8%	100.0%	
Russell Growth Weight	5.4%	27.7%	16.8%	11.1%	0.7%	21.5%	11.2%	2.1%	0.0%	3.5%	100.0%	
Russell Value Weight	30.3%	11.3%	11.6%	10.0%	12.9%	5.4%	7.0%	2.5%	6.4%	2.7%	100.0%	
<b>3Q</b>	-6.7	-3.7	-10.7	-6.9	-17.4	-2.6	-0.2	-6.8	5.4	-16.9	-6.4	Return (%)
<b>YTD</b>	-7.1	-3.0	-2.1	-9.8	-21.3	4.1	-1.0	-3.9	-5.9	-16.5	-5.3	
<b>Since Market Peak</b> (October 2007)	-25.3	73.3	114.0	37.5	-8.0	124.6	110.2	17.7	44.9	11.5	45.9	
<b>Since Market Low</b> (March 2009)	307.7	263.1	245.1	278.0	68.6	419.8	194.8	124.8	153.7	165.5	226.0	
<b>Beta to S&amp;P 500</b>	1.44	1.10	0.72	1.19	0.99	1.11	0.59	0.63	0.49	1.26	1.00	β
<b>Correl. to Treas. Yields</b>	0.45	0.30	-0.02	0.29	0.38	0.27	0.02	0.29	-0.55	0.38	0.28	ρ
Forward P/E Ratio	11.8x	14.4x	14.7x	14.0x	23.6x	17.2x	18.3x	11.6x	15.2x	13.1x	15.1x	P/E
<b>15-yr avg.</b>	12.6x	19.7x	16.7x	16.6x	13.9x	18.2x	18.3x	16.2x	14.1x	16.1x	15.7x	
Trailing P/E Ratio	14.4x	17.9x	20.8x	18.0x	14.7x	19.2x	21.8x	23.8x	16.7x	16.6x	17.8x	
<b>20-yr avg.</b>	16.9x	26.0x	24.1x	20.4x	16.7x	19.4x	21.4x	20.3x	15.2x	19.3x	19.6x	
Dividend Yield	1.9%	1.7%	1.8%	2.5%	3.8%	1.6%	2.8%	5.4%	3.9%	2.5%	2.5%	Div
<b>20-yr avg.</b>	2.1%	0.7%	1.3%	1.7%	1.8%	0.9%	2.1%	4.2%	4.2%	2.0%	1.6%	

Source: FactSet, Russell Investment Group, Standard & Poor's, J.P. Morgan Asset Management. All calculations are cumulative total return, not annualized, including dividends for the stated period. Since Market Peak represents period 10/9/07 – 9/30/15. Since Market Low represents period 3/9/09 – 9/30/15. Correlation to Treasury yields are trailing 2-year monthly correlations between S&P 500 sector price returns and 10-year Treasury yield movements. Forward P/E Ratio is a bottom-up calculation based on the most recent S&P 500 Index price, divided by consensus estimates for earnings in the next 12 months (NTM), and is provided by FactSet Market Aggregates. Trailing P/E ratios are bottom-up values defined as month-end price divided by the last 12 months of available reported earnings. Historical data can change as new information becomes available. Note that P/E ratios for the S&P 500 may differ from estimates elsewhere in this book due to the use of a bottom-up calculation of constituent earnings (as described) rather than a top-down calculation. This methodology is used to allow proper comparison of sector level data to broad index level data. Dividend yields are bottom-up values defined as the annualized value of the most recent cash dividend as a percent of month-end price. Beta calculations are based on 10 years of monthly price returns for the S&P 500 and its sub-indices. Betas are calculated on a monthly frequency over the past 10 years. Past performance is not indicative of future returns. Guide to the Markets – U.S. Data are as of September 30, 2015.

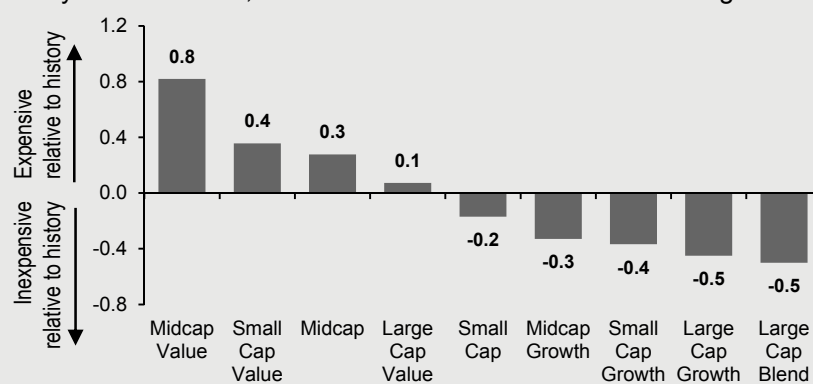
## S&P 500 sector P/Es relative to history

20-year NTMA P/E, standard deviations above/below average



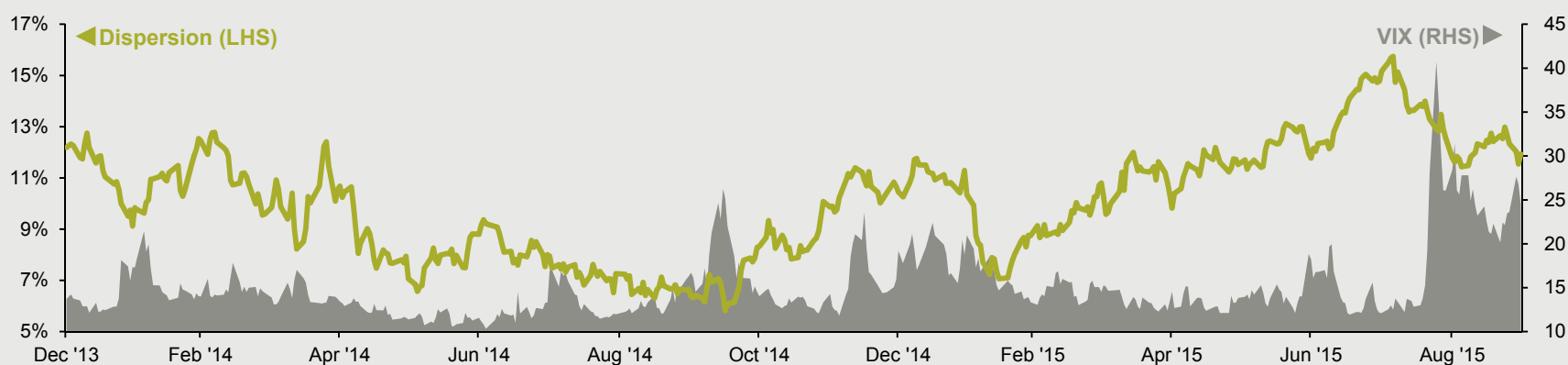
## Style P/Es relative to history

20-year NTMA P/E, standard deviations above/below average



## Sector dispersion

Standard deviation across annual S&P 500 sector returns



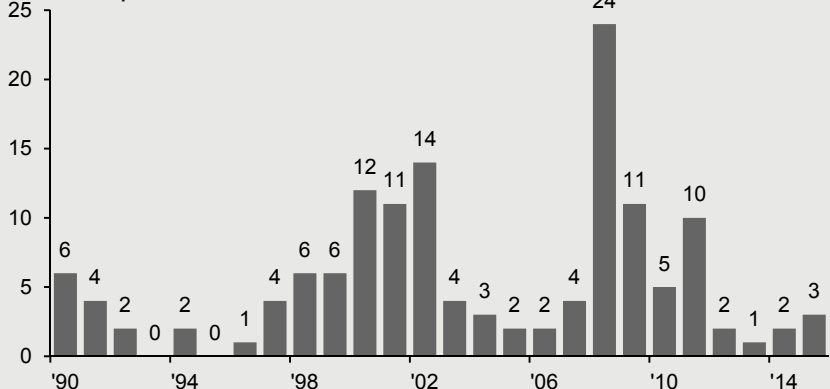
Source: FactSet, J.P. Morgan Asset Management, (Top left) Compustat, Standard & Poor's, (Top right) Russell Investment Group, (Bottom) CBOE, Standard & Poor's.

Forward Price to Earnings Ratio is a bottom-up calculation based on the most recent index price, divided by consensus estimates for earnings in the next 12 months (NTM), and is provided by FactSet Market Aggregates. Standard deviation above/below average is calculated using the average and standard deviation over 20 years for each sector or index.

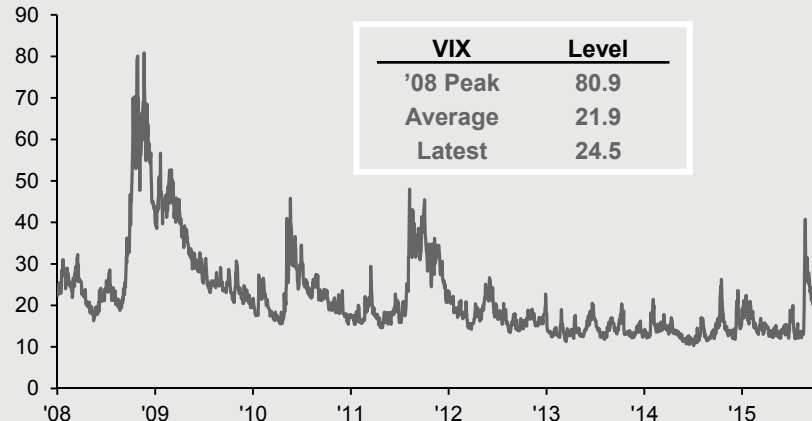
Guide to the Markets – U.S. Data are as of September 30, 2015.

## Number of 5% pullbacks experienced per year

S&P 500 price index



## VIX Index

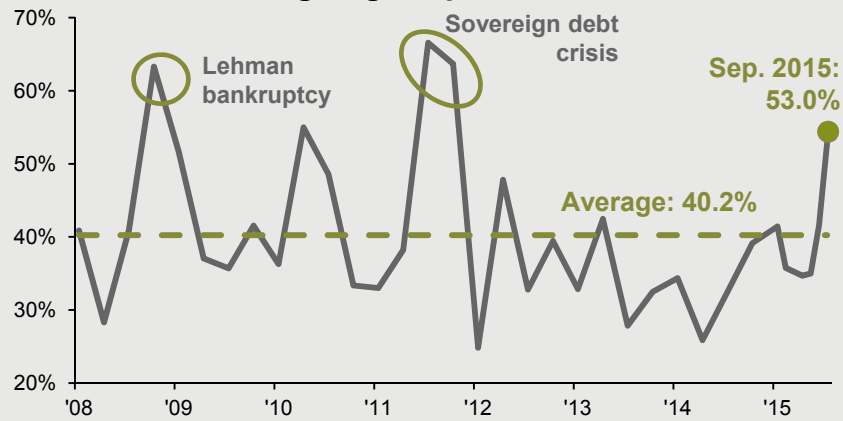


## Major pullbacks during current market cycle

S&P 500 price index



## Correlations among large cap stocks



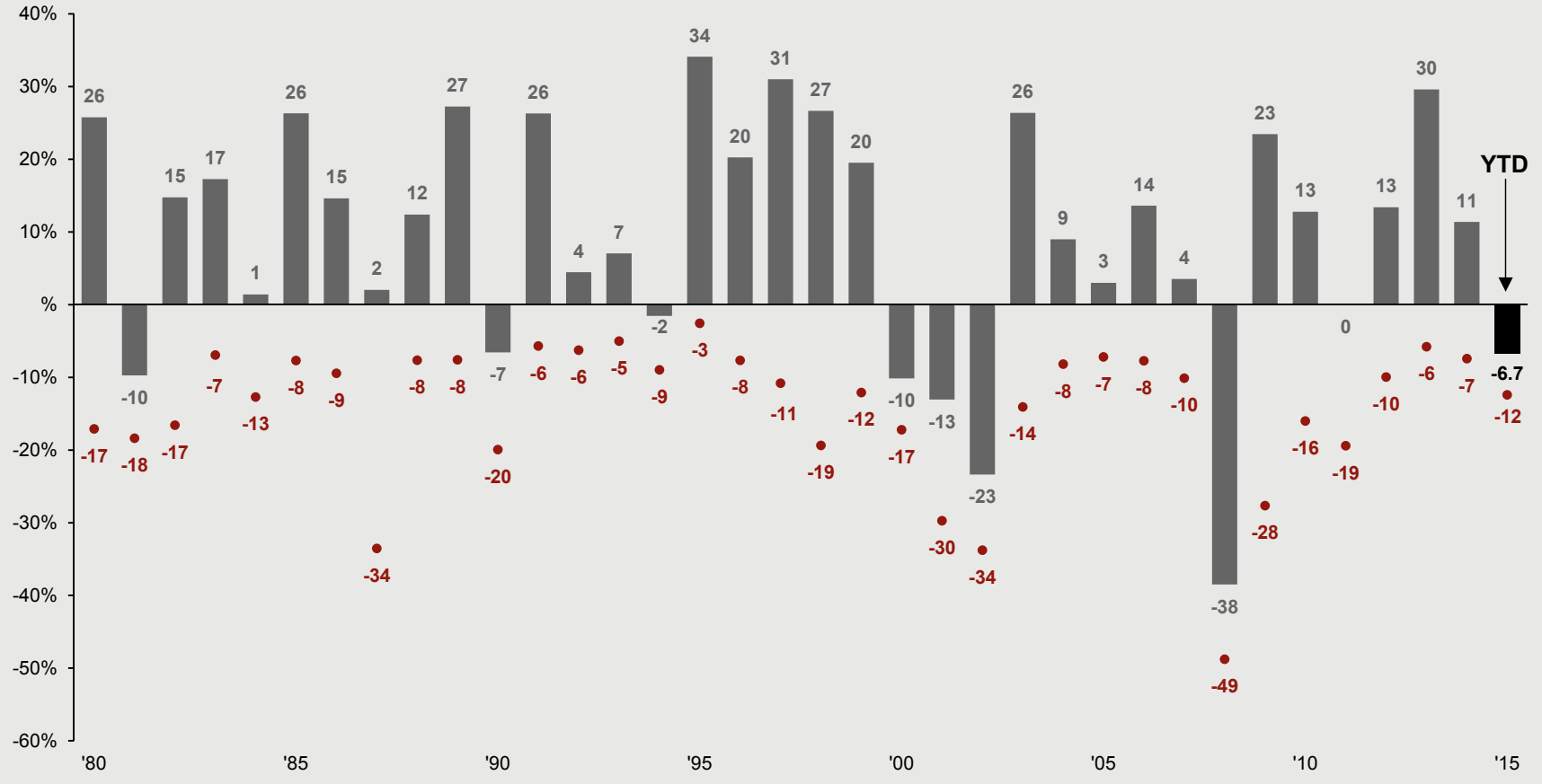
Source: FactSet, Standard & Poor's, J.P. Morgan Asset Management, (Top right) CBOE, (Bottom right) Empirical Research Partners LLC.

\*Capitalization weighted correlation of top 750 stocks by market capitalization, daily returns, Jan. 1, 1990 – Sep. 30, 2015.

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## S&P 500 intra-year declines vs. calendar year returns

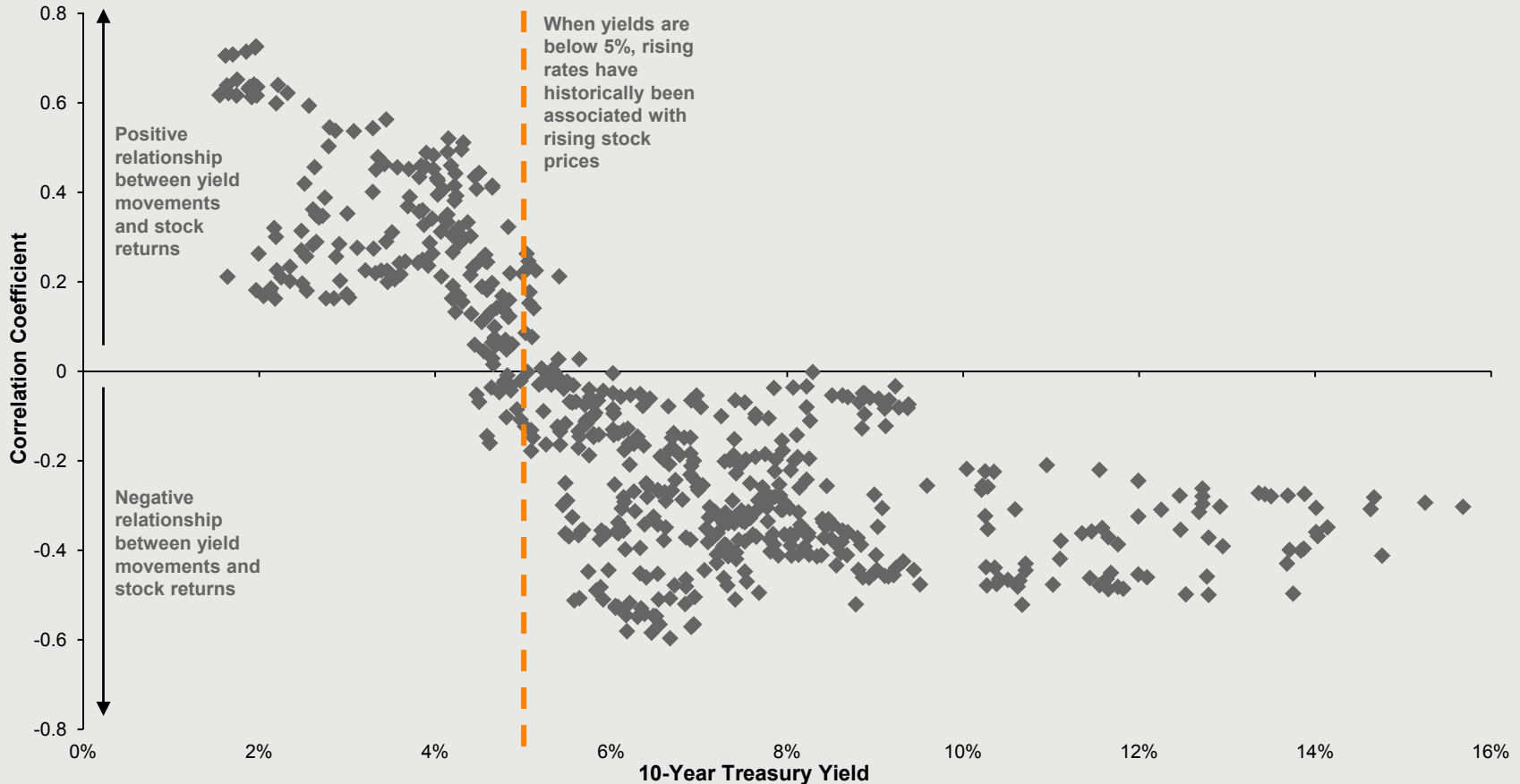
Despite average intra-year drops of 14.2%, annual returns positive in 27 of 35 years\*



Source: FactSet, Standard & Poor's, J.P. Morgan Asset Management. Returns are based on price index only and do not include dividends. Intra-year drops refers to the largest market drops from a peak to a trough during the year. For illustrative purposes only. \*Returns shown are calendar year returns from 1980 to 2014 excluding 2015, which is year-to-date. Guide to the Markets – U.S. Data are as of September 30, 2015.

### Correlations between weekly stock returns and interest rate movements

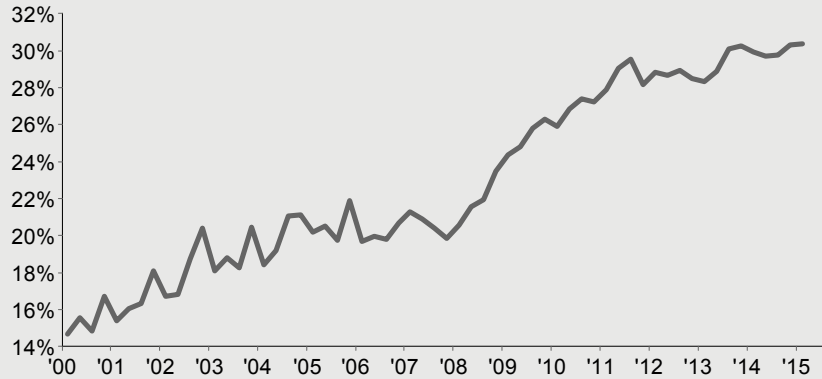
Weekly S&P 500 returns, 10-year Treasury yield, rolling 2-year correlation, May 1963 – September 2015



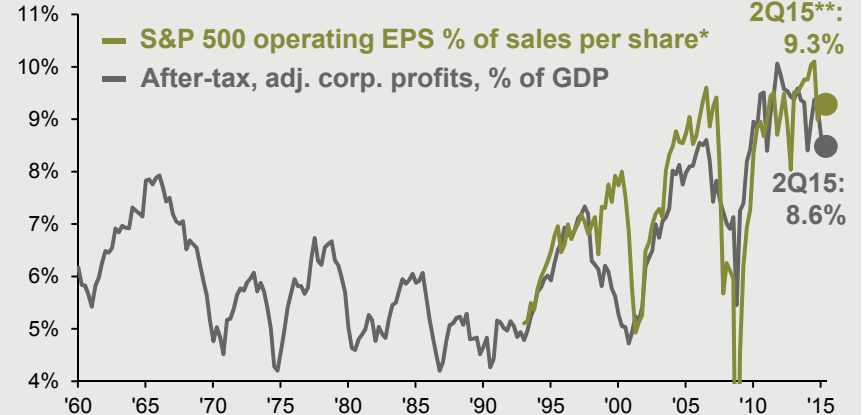
Source: FactSet, Standard & Poor's, FRB, J.P. Morgan Asset Management. Returns are based on price index only and do not include dividends. Markers represent monthly 2-year correlations only. Guide to the Markets – U.S. Data are as of September 30, 2015.

**Corporate cash as a % of current assets**

S&P 500 companies – cash and cash equivalents, quarterly

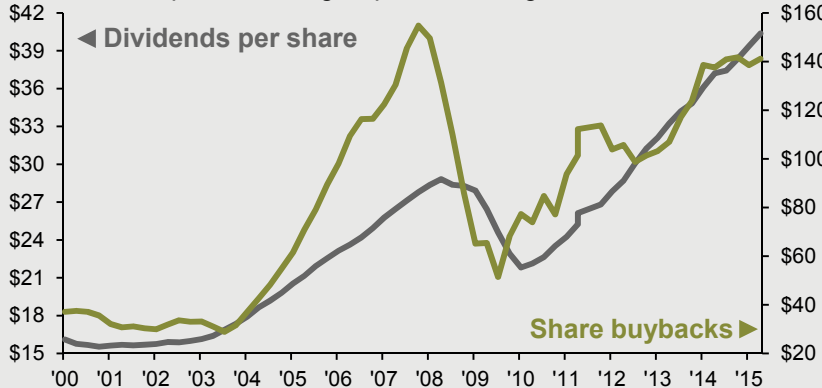


**Profit margins**



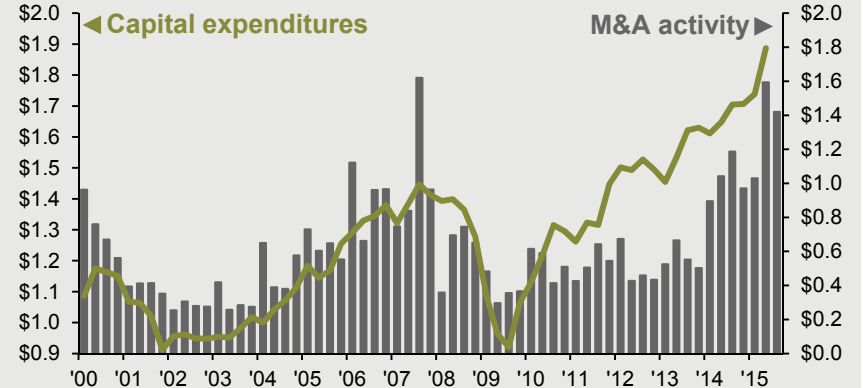
**Cash returned to shareholders**

S&P 500 companies, rolling 4-quarter averages, \$bn



**Corporate growth**

Non-farm non-financial capex, quarterly value of deals announced, \$tn

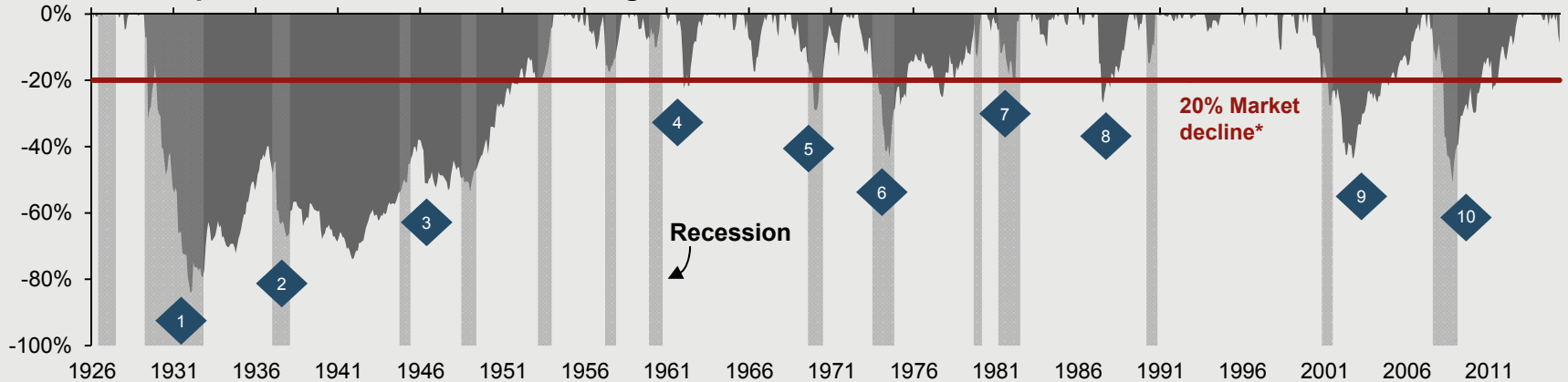


Source: FactSet, Standard & Poor's, J.P. Morgan Asset Management, (Bottom left) J.P. Morgan Securities, (Top right) BEA, Compustat, (Bottom right) Bloomberg, FRB.

M&A activity is the quarterly value of officially announced transactions and capital expenditures are for nonfarm nonfinancial corporate business. \*S&P 500 Operating EPS % of Sales per Share fell to 0% in 4Q2008 and is adjusted on the chart. \*\*Most recently available data is 2Q15 which is a Standard & Poor's estimate based on 99% of companies reporting.

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## S&P 500 composite declines from all-time highs



## Characteristics of bull and bear markets

Market Corrections	Bear Markets			Macro environment				Bull Markets		
	Market Peak	Bear Return*	Duration (months)*	Recession	Commodity Spike	Aggressive Fed	Extreme Valuations	Bull Begin Date	Bull Return	Duration (months)
1 Crash of 1929 - excessive leverage, irrational exuberance	Sep 1929	-86%	33	◆			◆	Jul 1926	152%	38
2 1937 Fed Tightening - premature policy tightening	Mar 1937	-60%	63	◆		◆		Mar 1935	129%	24
3 Post WWII Crash - post-war demobilization, recession fears	May 1946	-30%	37	◆			◆	Apr 1942	158%	50
4 Flash Crash of 1962 - flash crash, Cuban Missile Crisis	Dec 1961	-28%	7				◆	Oct 1960	39%	14
5 Tech Crash of 1970 - Economic overheating, civil unrest	Nov 1968	-36%	18	◆	◆	◆		Oct 1962	103%	74
6 Stagflation - OPEC oil embargo	Jan 1973	-48%	21	◆	◆			May 1970	74%	32
7 Volcker Tightening - Whip Inflation Now	Nov 1980	-27%	21	◆	◆	◆		Mar 1978	62%	33
8 1987 Crash - Program trading, overheating markets	Aug 1987	-34%	3				◆	Aug 1982	229%	61
9 Tech Bubble - Extreme valuations, .com boom/bust	Mar 2000	-49%	31	◆			◆	Oct 1990	417%	115
10 Global Financial Crisis - Leverage/housing, Lehman collapse	Oct 2007	-57%	17	◆	◆	◆		Oct 2002	101%	61
Current Cycle								Mar 2009	184%	80
<b>Averages</b>	-	<b>-45%</b>	<b>25</b>					-	<b>150%</b>	<b>53</b>

Source: FactSet, NBER, Robert Shiller, Standard & Poor's, J.P. Morgan Asset Management.

\*A bear market is defined as a 20% or more decline from the previous market high. The bear return is the peak to trough return over the cycle.

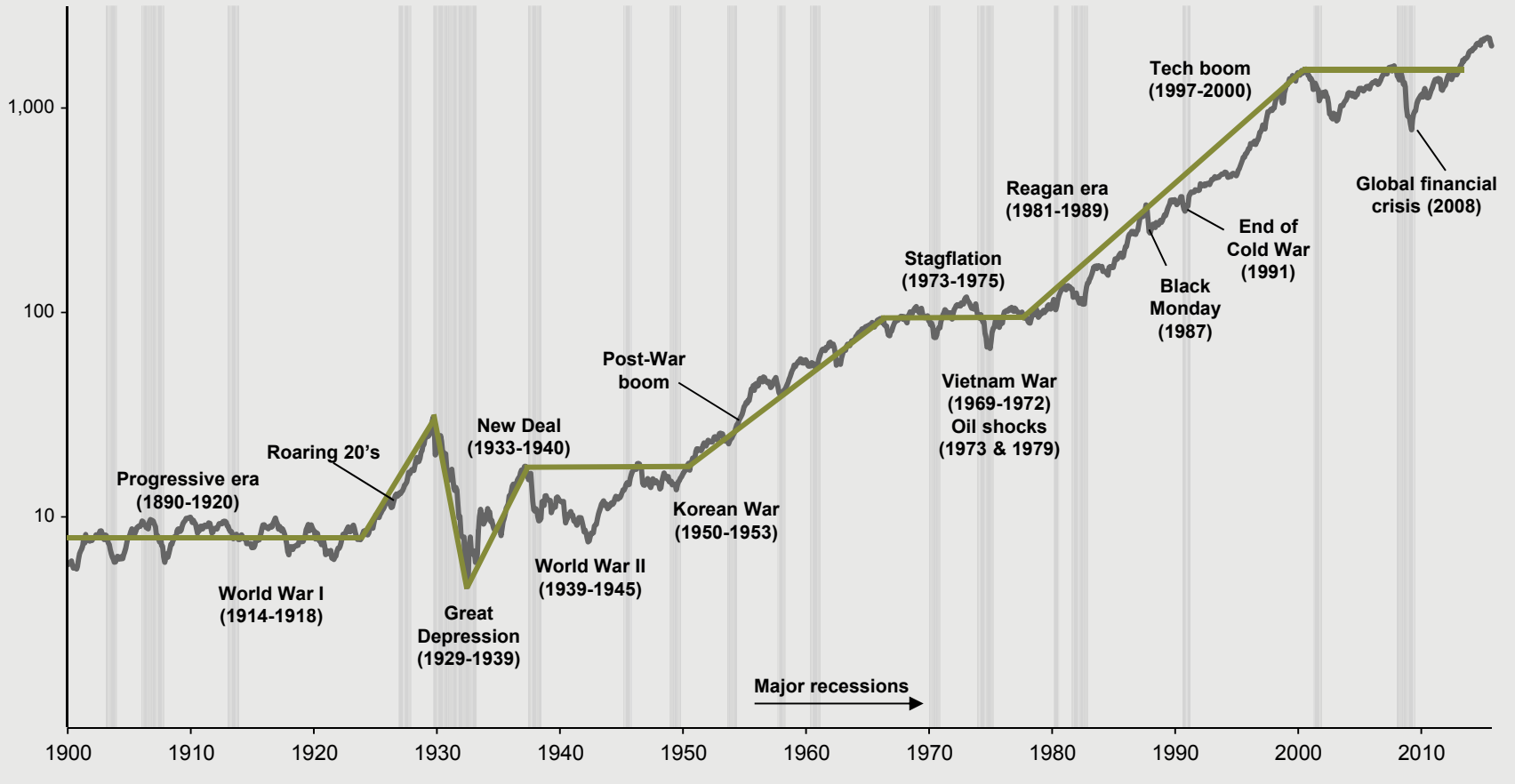
Periods of "Recession" are defined using NBER business cycle dates. "Commodity Spikes" are defined as significant rapid upward moves in oil prices.

Periods of "Extreme Valuations" are those where S&P 500 last twelve months P/E levels were approximately two standard deviations above long-run averages. "Aggressive Fed Tightening" is defined as Federal Reserve monetary tightening that was unexpected and/or significant in magnitude.

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## S&P Composite Index

Log scale, annual

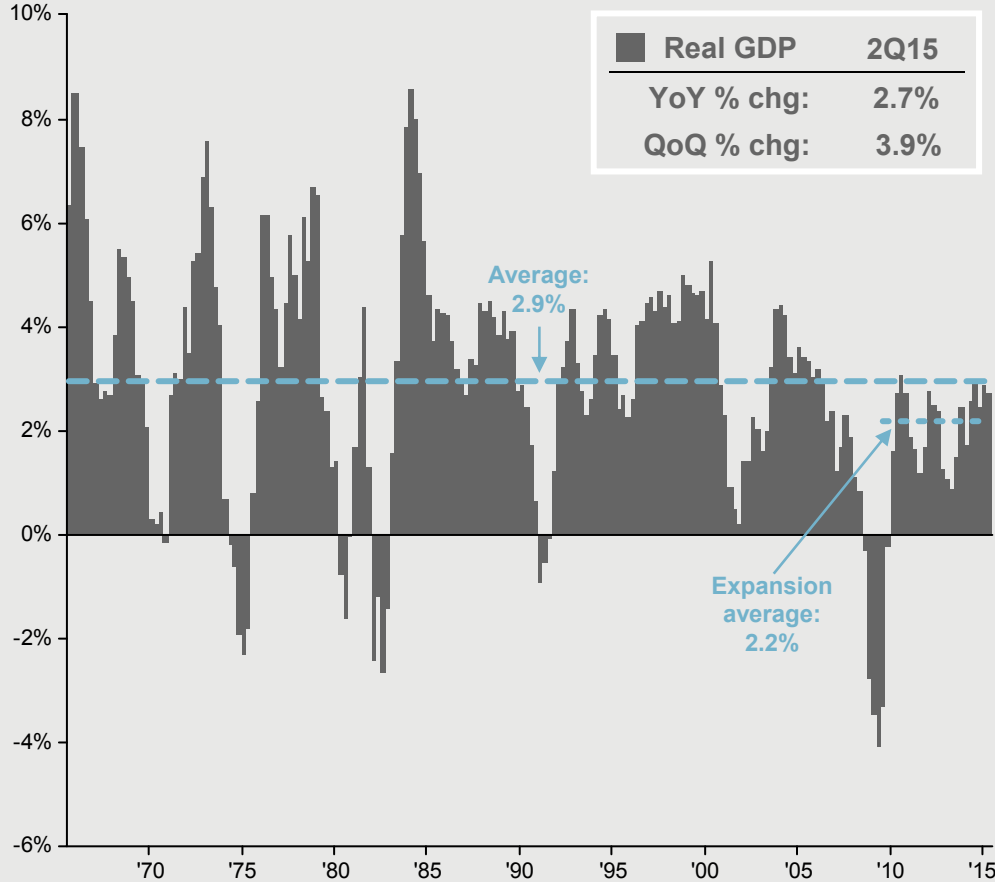


Source: FactSet, NBER, Robert Shiller, J.P. Morgan Asset Management.  
 Data shown in log scale to best illustrate long-term index patterns.  
 Past performance is not indicative of future returns. Chart is for illustrative purposes only.  
 Guide to the Markets – U.S. Data are as of September 30, 2015.



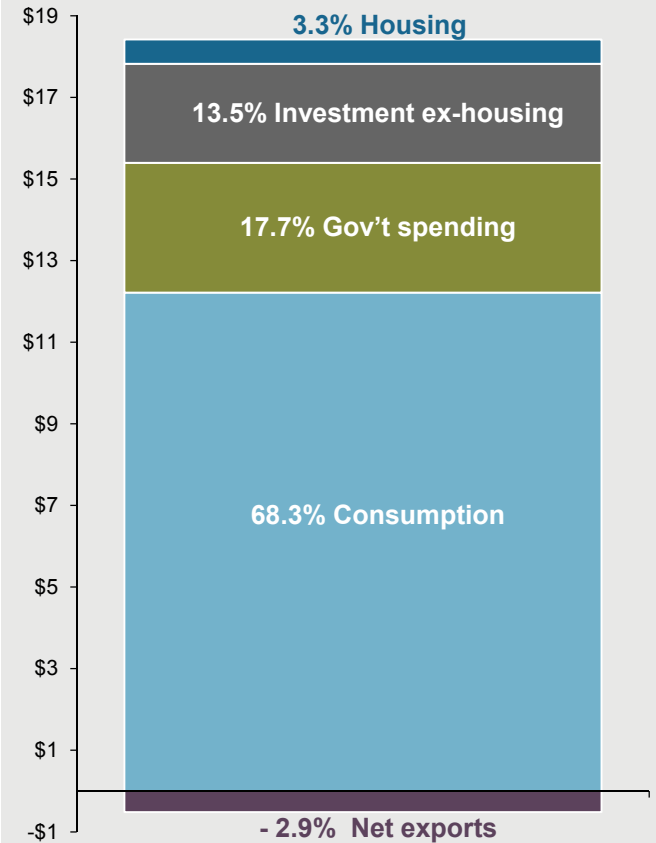
## Real GDP

Year-over-year % change



## Components of GDP

2Q15 nominal GDP, USD trillions



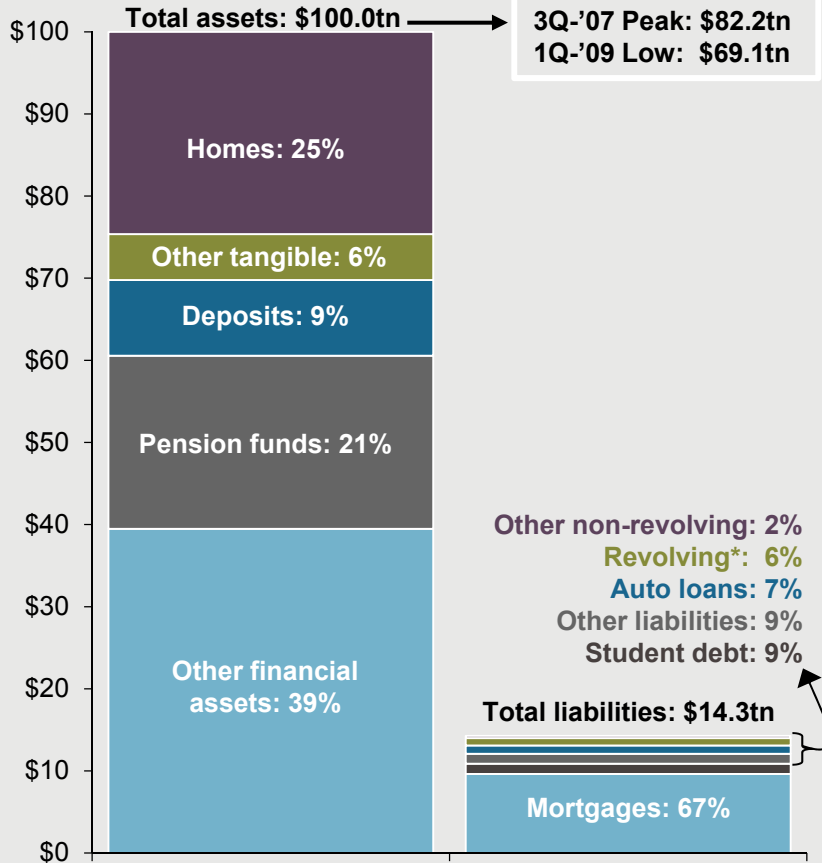
Source: BEA, FactSet, J.P. Morgan Asset Management.

Values may not sum to 100% due to rounding. Quarter-over-quarter percent changes are at an annualized rate. Average represents the annualized growth rate for the full period. Expansion average refers to the period starting in the second quarter of 2009.

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**Consumer balance sheet**

2Q15, trillions of dollars outstanding, not seasonally adjusted



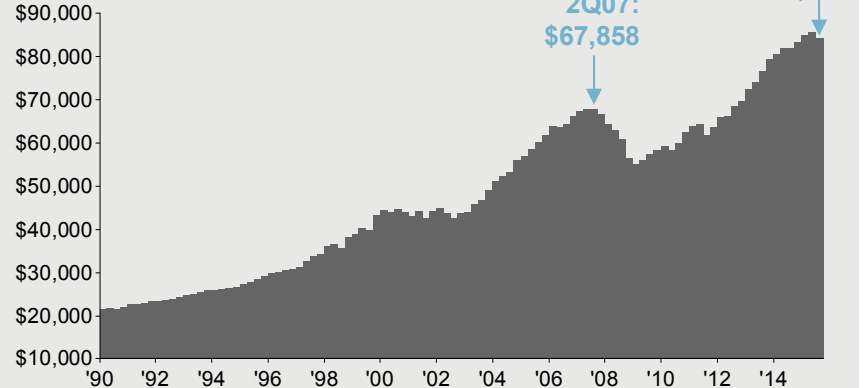
**Household debt service ratio**

Debt payments as % of disposable personal income, SA



**Household net worth**

Not seasonally adjusted, USD billions



Source: FactSet, FRB, J.P. Morgan Asset Management, (Top and bottom right) BEA.

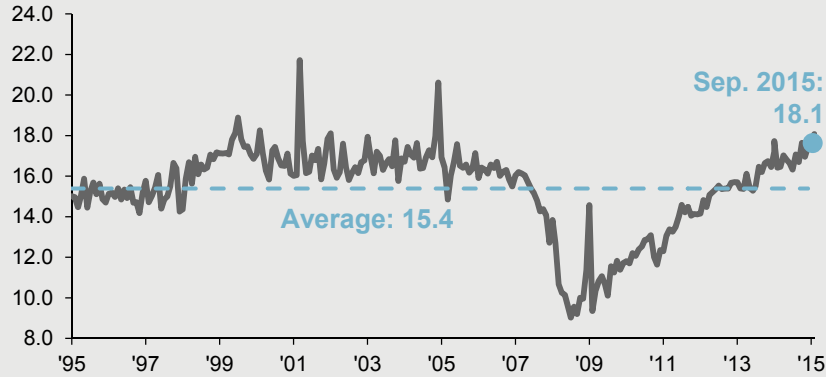
Data include households and nonprofit organizations. SA – seasonally adjusted.

\*Revolving includes credit cards. \*\*2Q15 and 3Q15 household debt service ratio and 3Q15 household net worth are J.P. Morgan Asset Management estimates. Values may not sum to 100% due to rounding.

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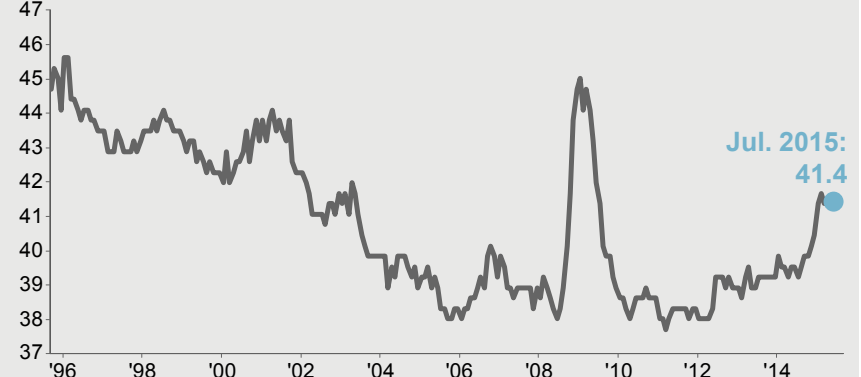
## Light vehicle sales

Millions, seasonally adjusted annual rate



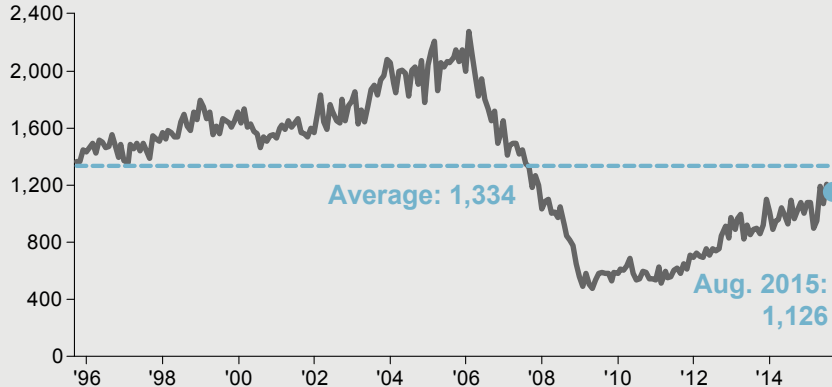
## Manufacturing and trade inventories

Days of sales, SA



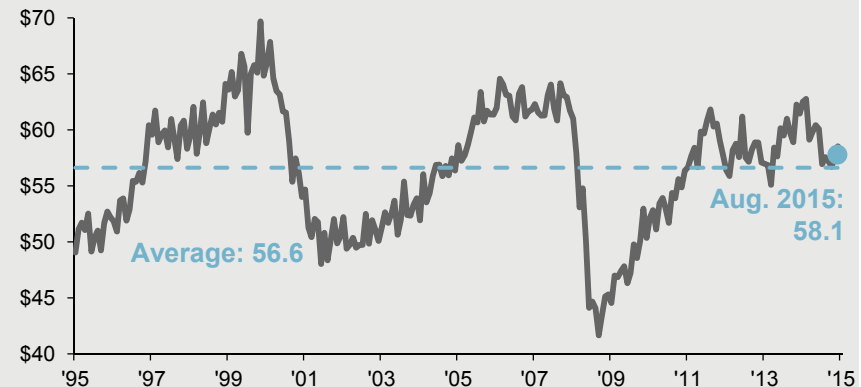
## Housing starts

Thousands, seasonally adjusted annual rate



## Real capital goods orders

Non-defense capital goods orders ex-aircraft, USD billions, SA



Source: J.P. Morgan Asset Management, (Top left) BEA, (Top and bottom right, bottom left) Census Bureau, FactSet.

Capital goods orders deflated using the producer price index for capital goods with a base year of 2004.

SA – seasonally adjusted.

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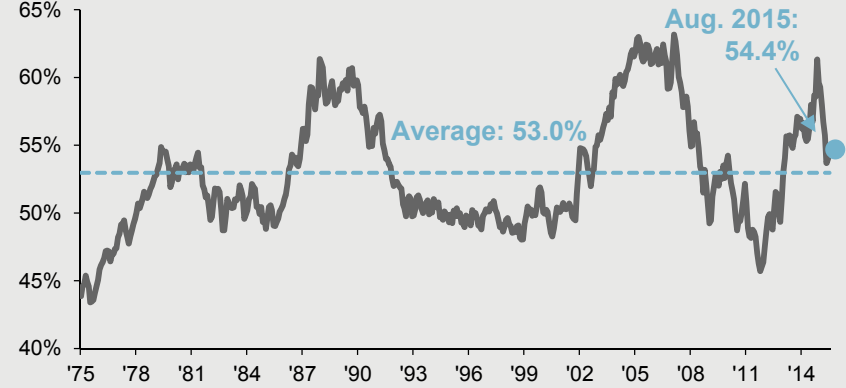
### Housing Affordability Index

Average mortgage payment as a % of household income



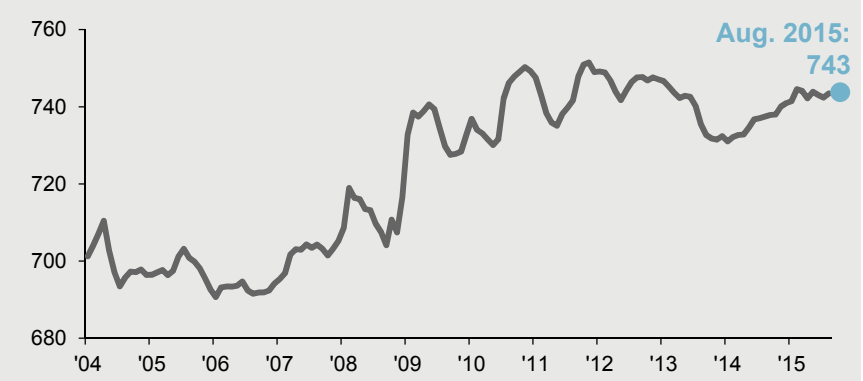
### Down payment as a percent of household income

Assuming down payment is a constant 20% of home price



### Lending standards for approved mortgage loans

Average FICO score based on origination date



Sources: J.P. Morgan Asset Management, (Left and top right) Census Bureau, Federal Reserve, (Bottom right) McDash, J.P. Morgan Securitized Product Research.

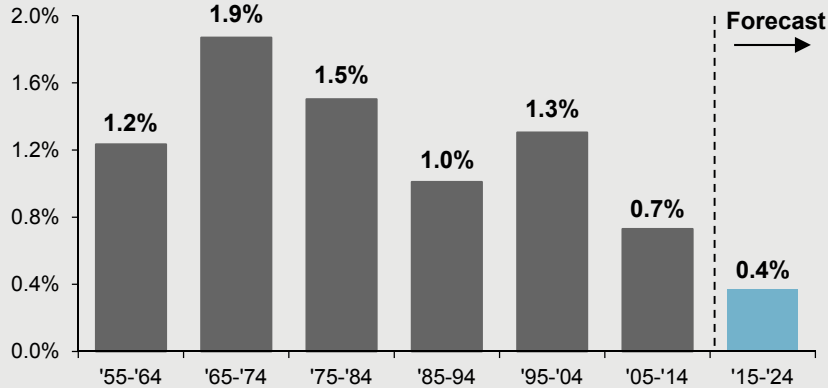
Monthly mortgage payment assumes the prevailing 30-year fixed-rate mortgage rates and average new home prices excluding a 20% down payment.

Down payment assumes 20% of home purchase price paid upfront.

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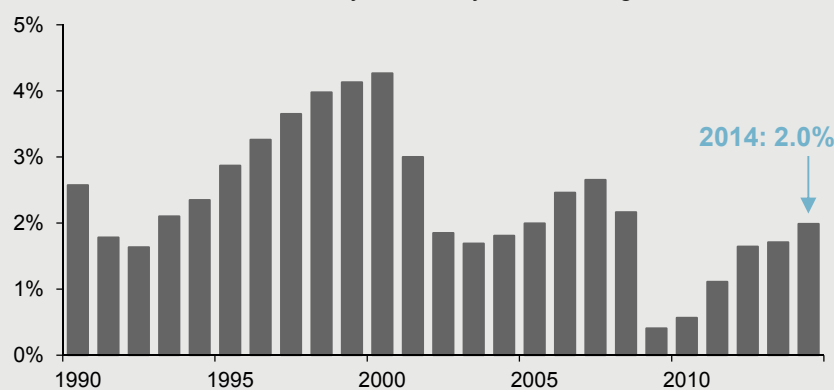
## Growth in working age population

Percent increase in civilian non-institutional population ages 16-64



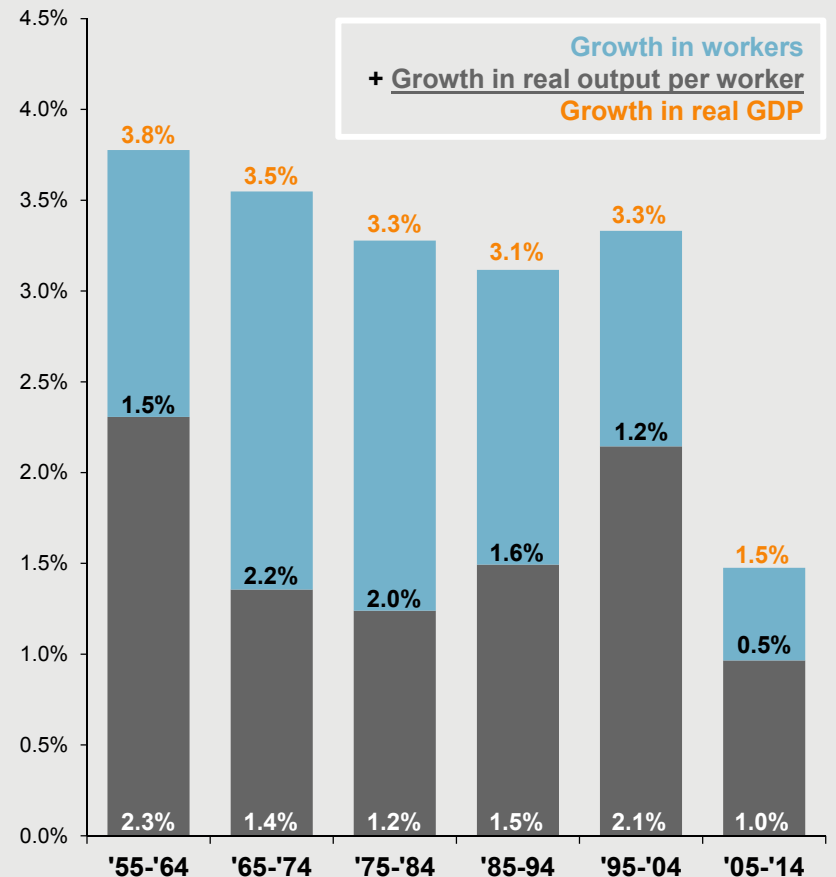
## Growth in investment in structures and equipment

Non-residential fixed assets, year-over-year % change



## Drivers of GDP growth

Average year-over-year percent change

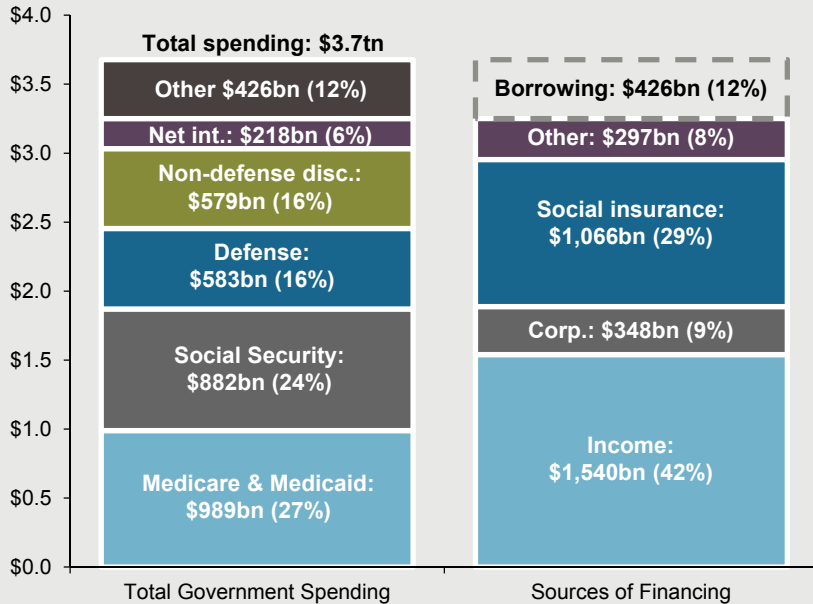


Source: J.P. Morgan Asset Management, (Top left) Census Bureau, DOD, DOJ, (Top left and right) BLS, (Right and bottom left) BEA. GDP drivers are calculated as the average annualized growth between Q4 of the first and last year. Future working age population is calculated as the total estimated number of Americans from the Census Bureau, controlled for military enrollment, growth in institutionalized population and demographic trends.

Guide to the Markets – U.S. Data are as of September 30, 2015.

## The 2015 federal budget

CBO Baseline forecast, USD trillions

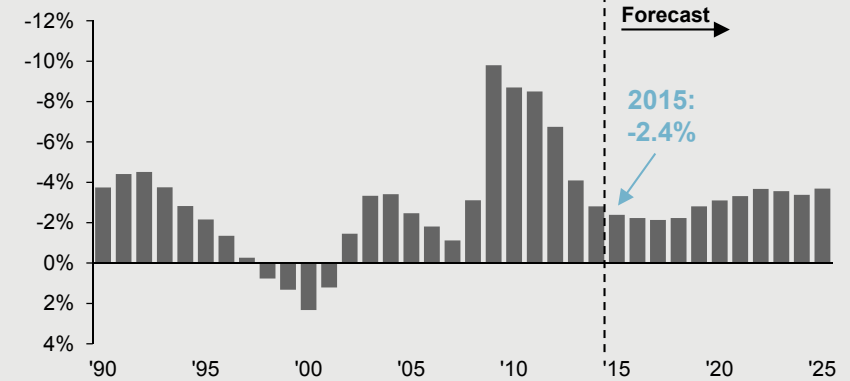


### CBO's baseline assumptions

	'15	'16-'17	'18-'19	'20-'25
Real GDP growth	2.4%	2.9%	2.3%	2.2%
10-year Treasury	2.2%	3.2%	4.1%	4.3%
Headline inflation	0.3%	2.0%	2.3%	2.4%
Unemployment	5.5%	5.1%	5.0%	5.2%

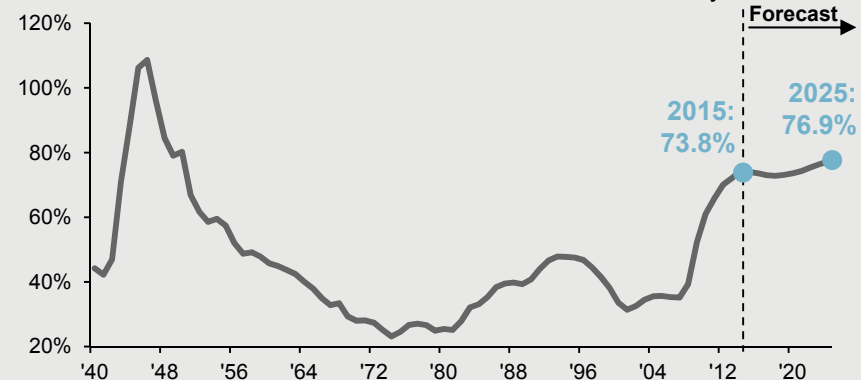
## Federal budget surplus/deficit

% of GDP, 1990 – 2025, 2015 CBO Baseline



## Federal net debt (accumulated deficits)

% of GDP, 1940 – 2025, 2015 CBO Baseline, end of fiscal year



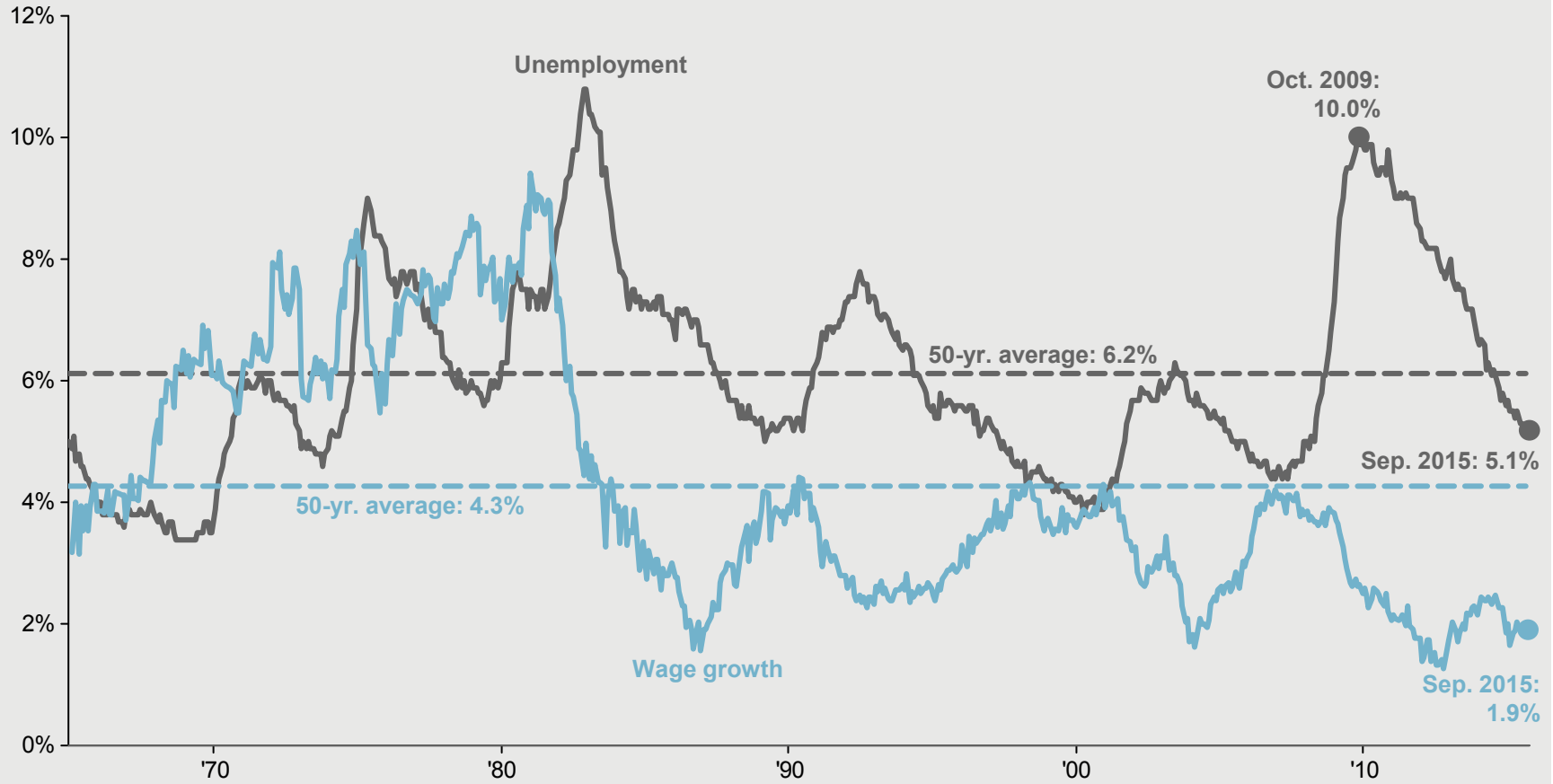
Source: CBO, J.P. Morgan Asset Management, (Top and bottom right) BEA.

2015 Federal Budget is based on the Congressional Budget Office (CBO) August 2015 Baseline Budget Forecast. Other spending includes, but is not limited to, health insurance subsidies, income security and federal civilian and military retirement.

Note: Years shown are fiscal years (Oct. 1 through Sep. 30). 2015 numbers are CBO estimates as of August 2015.

Guide to the Markets – U.S. Data are as of September 30, 2015.

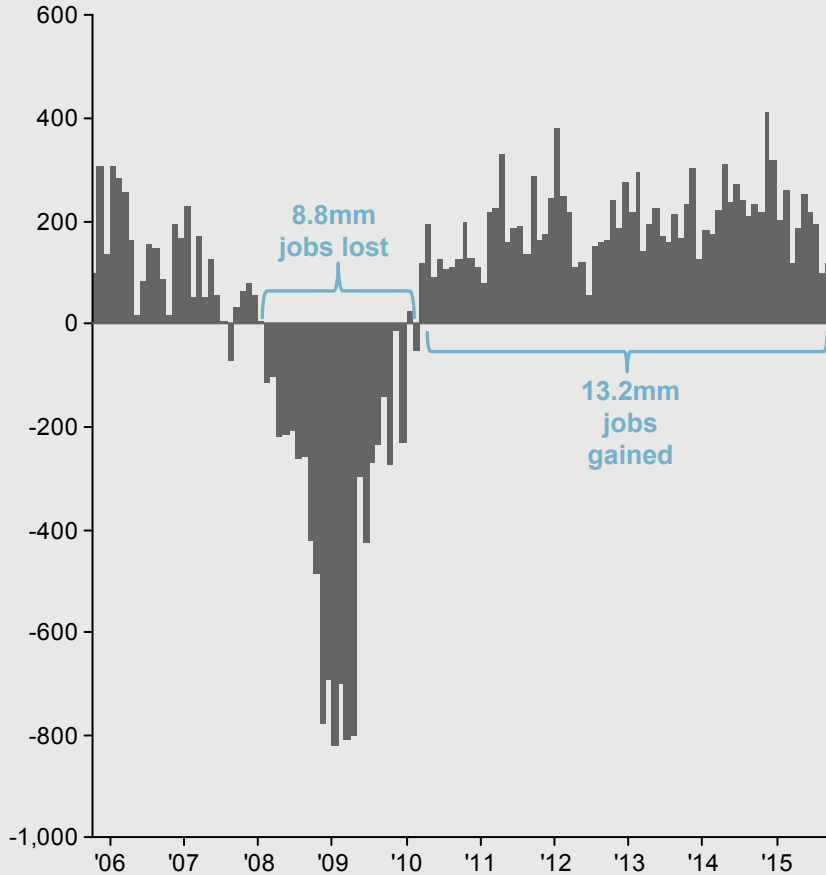
**Civilian unemployment rate and year-over-year growth in wages of production and non-supervisory workers**  
Seasonally adjusted, percent



Source: BLS, FactSet, J.P. Morgan Asset Management.  
Guide to the Markets – U.S. Data are as of September 30, 2015.

### Employment – Total private payroll

Total job gain/loss, thousands



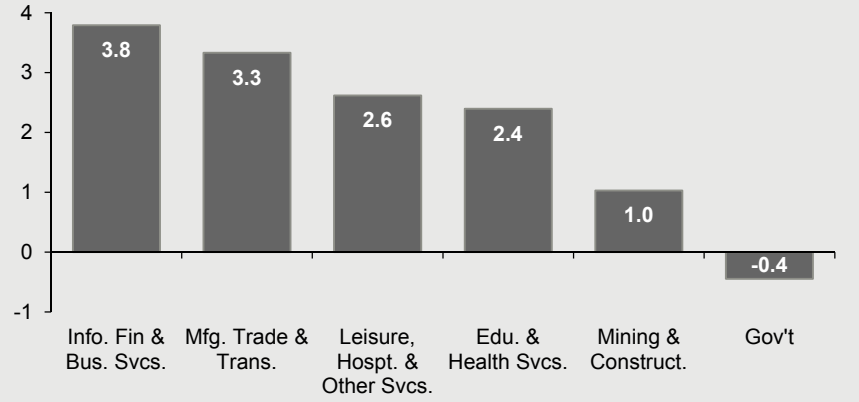
### Labor force participation rate

Population employed or looking for work as a % of total, ages 16+



### Net job creation since Feb. 2010

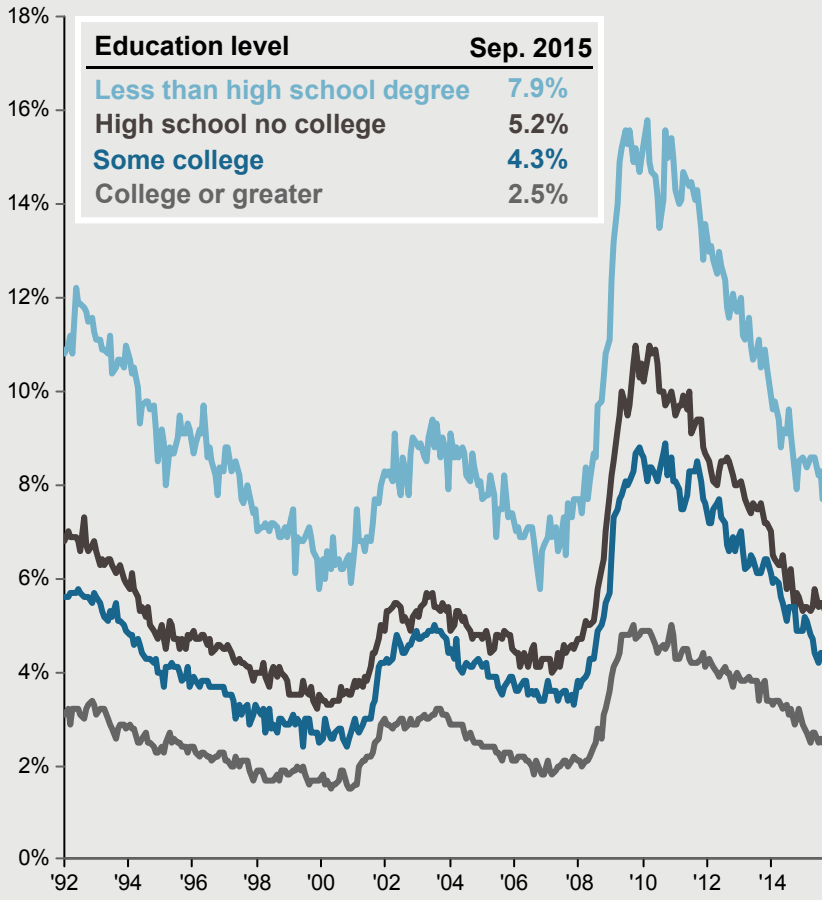
Millions of jobs



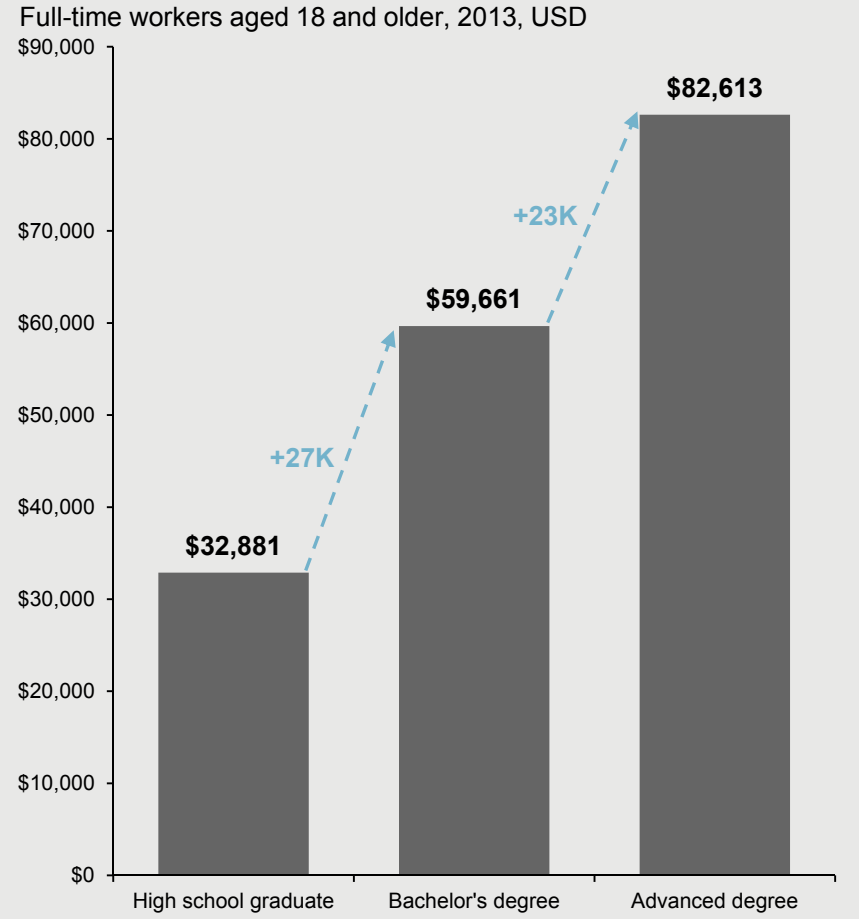
Source: BLS, FactSet, J.P. Morgan Asset Management.  
Guide to the Markets – U.S. Data are as of September 30, 2015.



## Unemployment rate by education level



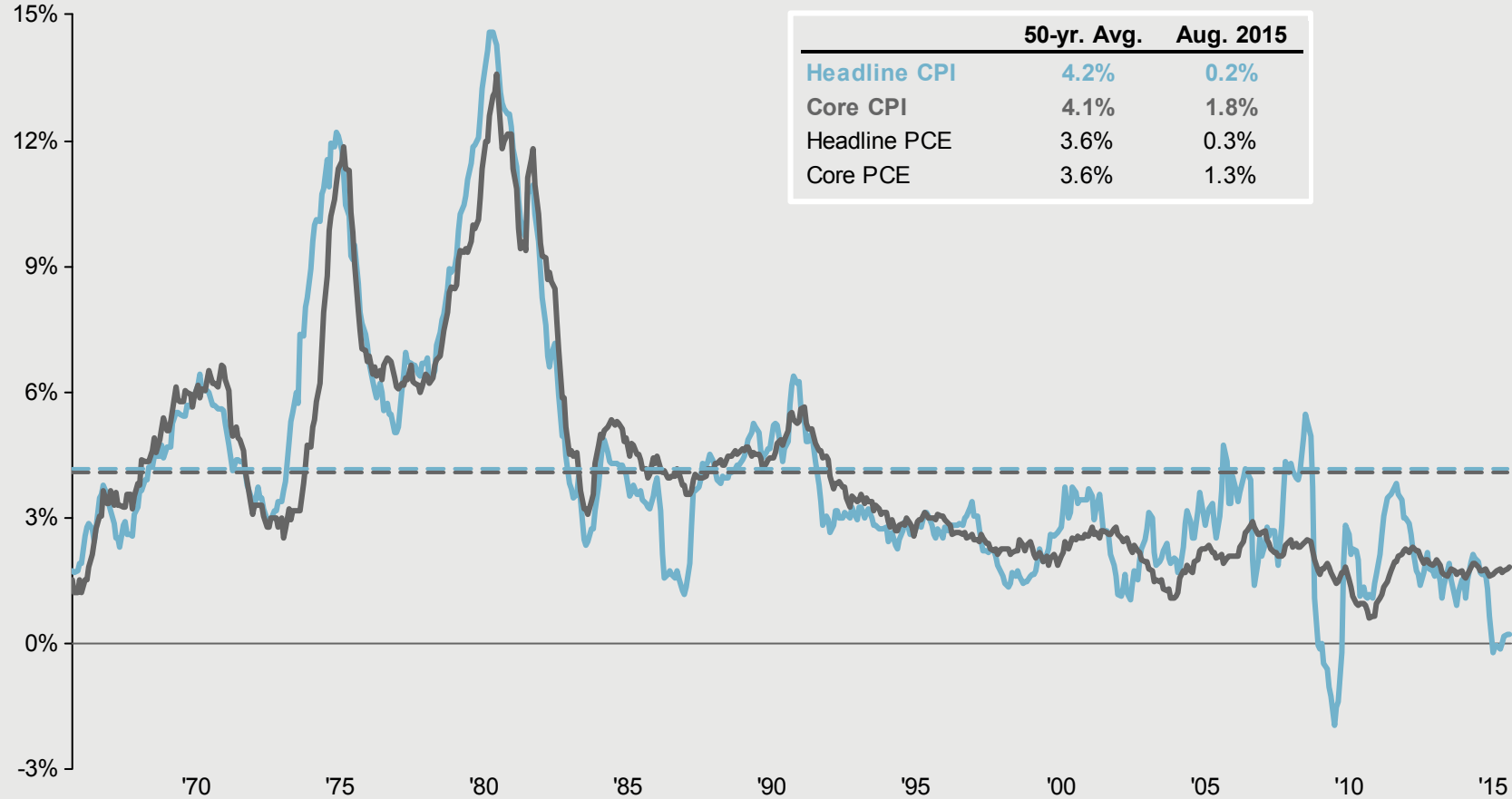
## Average annual earnings by highest degree earned



Source: J.P. Morgan Asset Management, (Left) BLS, FactSet, (Right) Census Bureau. Unemployment rates shown are for civilians aged 25 and older. Guide to the Markets – U.S. Data are as of September 30, 2015.

## CPI and core CPI

% change vs. prior year, seasonally adjusted



Source: BLS, FactSet, J.P. Morgan Asset Management.

CPI used is CPI-U and values shown are % change vs. one year ago and reflect August 2015 CPI data. Core CPI is defined as CPI excluding food and energy prices. The Personal Consumption Expenditure (PCE) deflator employs an evolving chain-weighted basket of consumer expenditures instead of the fixed-weight basket used in CPI calculations.

Guide to the Markets – U.S. Data are as of September 30, 2015.

**Trade balance**

Current account balance, % of GDP



**U.S. Dollar Index**

Monthly average of major currencies nominal trade-weighted index



Source: J.P. Morgan Asset Management, (Left) BEA, (Right) Federal Reserve, FactSet.  
 Currencies in the Trade Weighted U.S. Dollar Major Currencies Index are: British pound, Euro, Swedish kroner, Australian dollar, Canadian dollar, Japanese yen and Swiss franc.  
 Guide to the Markets – U.S. Data are as of September 30, 2015.

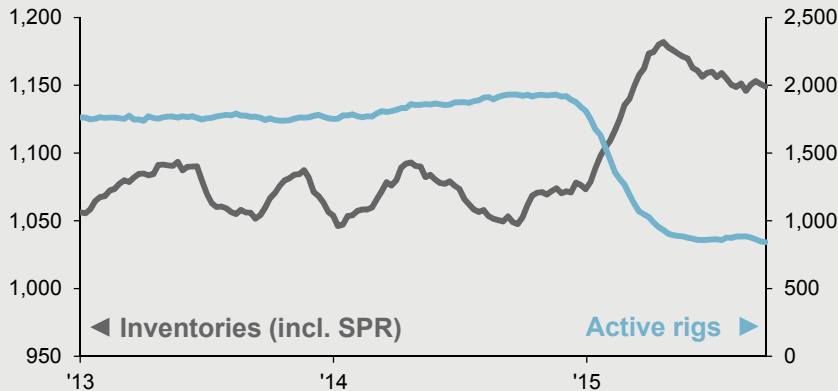
## Change in production and consumption of oil

Production, consumption and inventories, millions of barrels per day

	2013	2014	2015*	2016*	Growth since 2013
<b>Production</b>					
U.S.	12.4	14.1	14.8	14.7	19.3%
OPEC	36.4	36.4	37.3	37.6	3.3%
<b>Global</b>	<b>91.1</b>	<b>93.4</b>	<b>95.7</b>	<b>96.0</b>	<b>5.5%</b>
<b>Consumption</b>					
U.S.	19.0	19.1	19.4	19.6	3.2%
China	10.5	10.9	11.1	11.4	8.9%
<b>Global</b>	<b>91.3</b>	<b>92.5</b>	<b>93.6</b>	<b>94.9</b>	<b>4.0%</b>
<b>Inventory Change</b>	<b>-0.2</b>	<b>0.9</b>	<b>2.1</b>	<b>1.1</b>	

## U.S. crude oil inventories and rig count

Million barrels, number of active rigs



## Price of oil

Brent crude, nominal prices, USD/barrel



Source: J.P. Morgan Asset Management, (Top and bottom left) EIA, (Right) FactSet, (Bottom left) Baker Hughes.

U.S. crude oil inventories include the Strategic Petroleum Reserve. Brent crude prices are monthly averages in USD using global spot ICE prices.

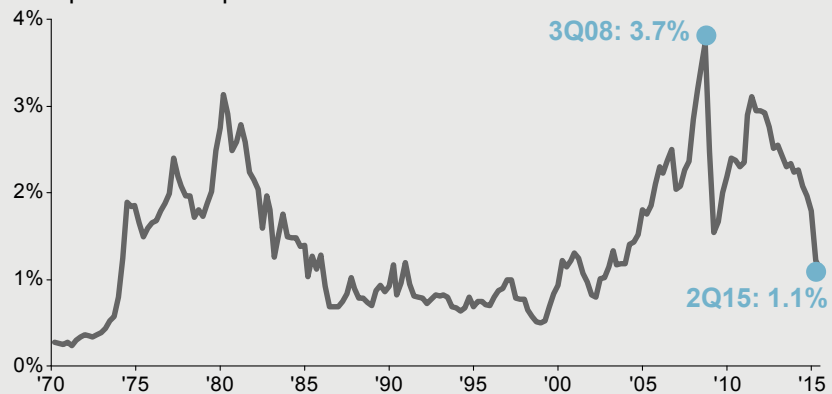
Active rig count includes both natural gas and oil rigs.

\*Forecasts are from the September 2015 EIA Short-Term Energy Outlook and start in 2015.

Guide to the Markets – U.S. Data are as of September 30, 2015.

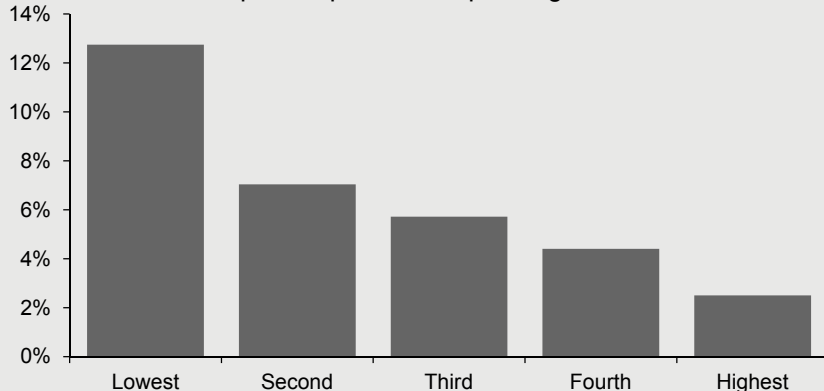
## Economic drag from oil prices

U.S. petroleum imports as a % of GDP



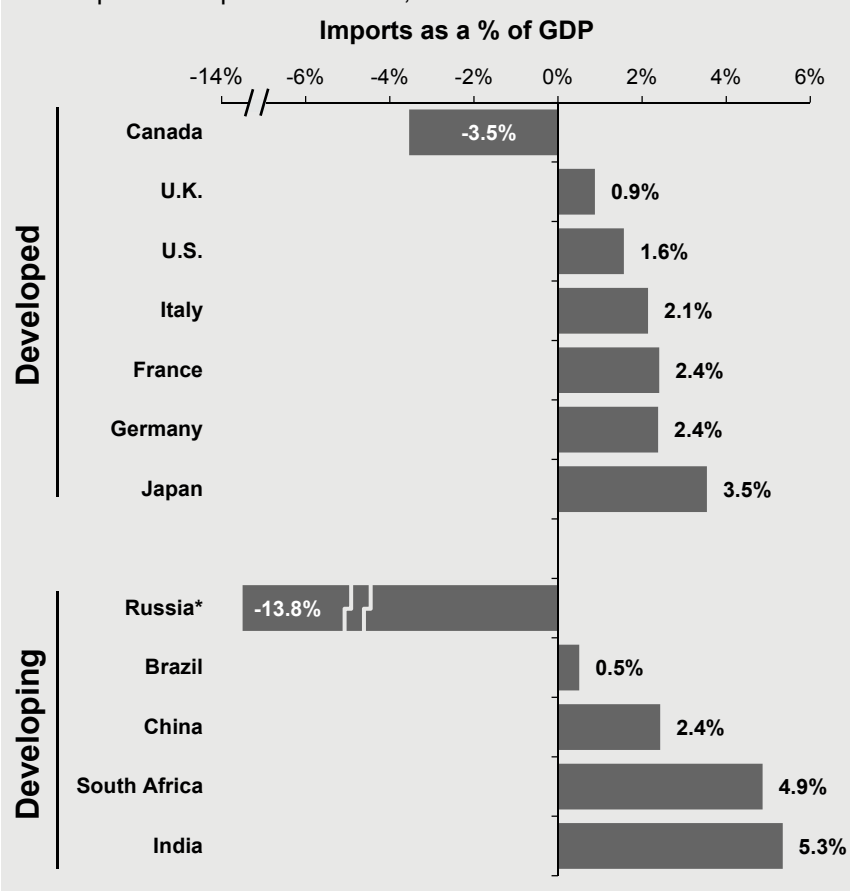
## Percent of income spent on gasoline and motor oil

Before-tax income quintile, percent of spending, 2013



## Oil importers and exporters

Net imports as a percent of GDP, 2013

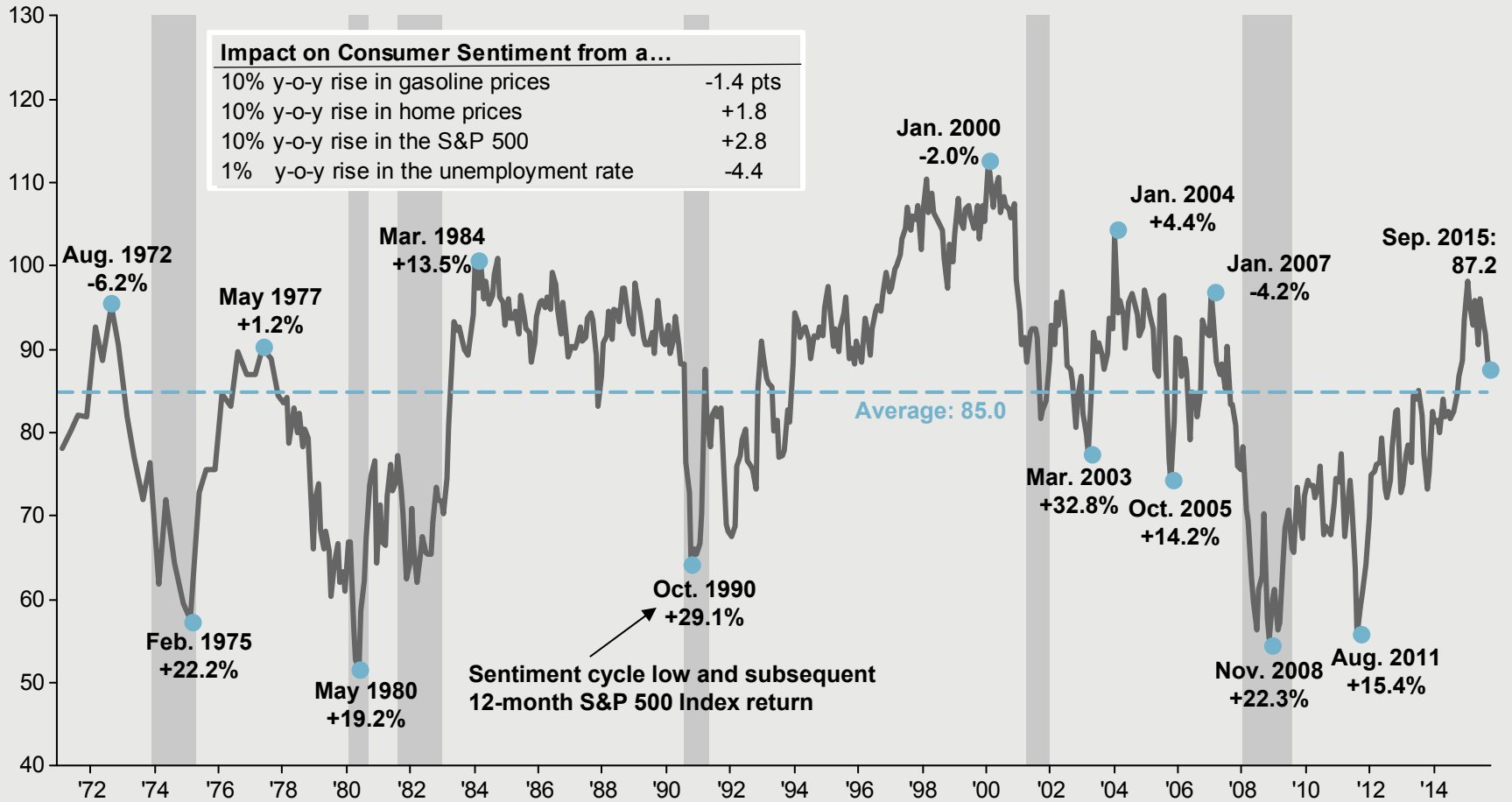


Source: J.P. Morgan Asset Management, (Top left) FactSet, (Top and bottom left) BEA, (Right) EIA, IMF.

\*Russia imports as a percent of GDP was -13.8% in 2013 and is adjusted on the chart.

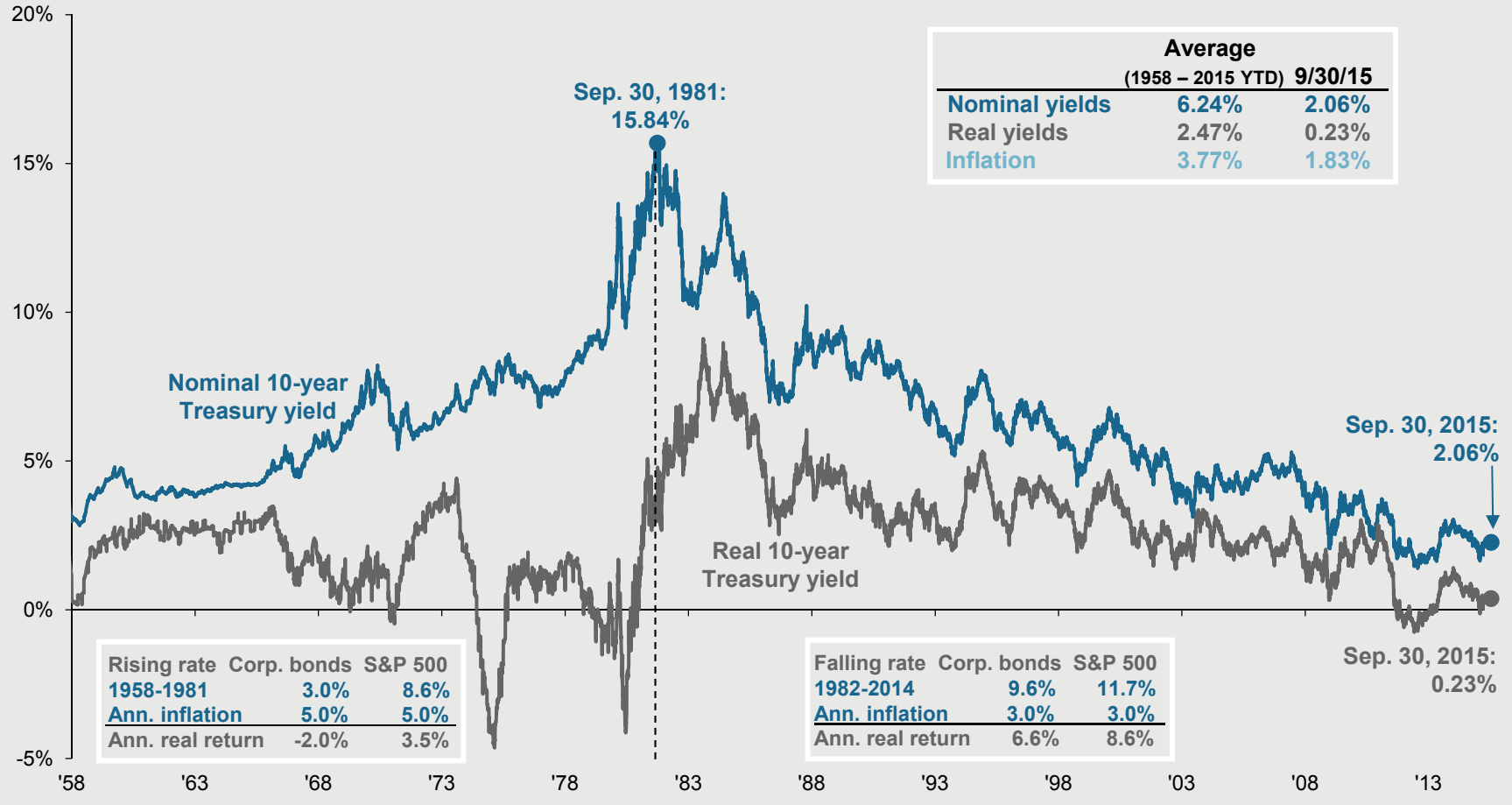
Guide to the Markets – U.S. Data are as of September 30, 2015.

## Consumer Sentiment Index – University of Michigan



Source: Standard & Poor's, University of Michigan, FactSet, J.P. Morgan Asset Management. Peak is defined as the highest index value before a series of lower lows, while a trough is defined as the lowest index value before a series of higher highs. Subsequent 12-month S&P 500 returns are price returns only, which excludes dividends. Impact on consumer sentiment is based on a multivariate monthly regression between 1/31/2000 – 8/31/2015. Guide to the Markets – U.S. Data are as of September 30, 2015.

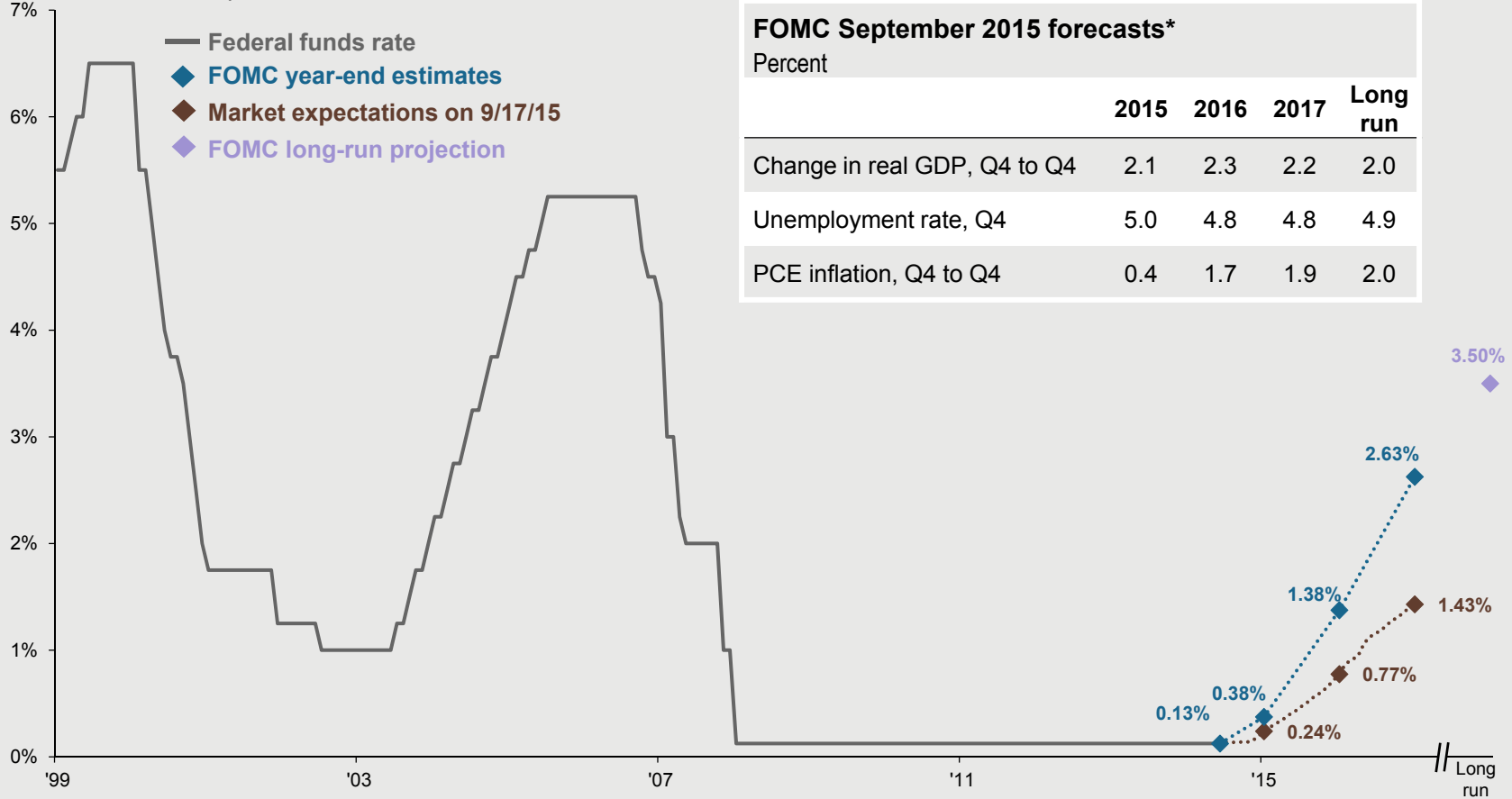
Nominal and real 10-year Treasury yields



Source: BLS, Federal Reserve, J.P. Morgan Asset Management.  
 Real 10-year Treasury yields are calculated as the daily Treasury yield less year-over-year core CPI inflation for that month except for September 2015, where real yields are calculated by subtracting out August 2015 year-over-year core inflation. All returns above reflect annualized total returns, which include reinvestment of dividends. Corporate bond returns are based on a composite index of investment-grade bond performance.  
 Guide to the Markets – U.S. Data are as of September 30, 2015.

**Federal funds rate expectations**

FOMC and market expectations for the fed funds rate



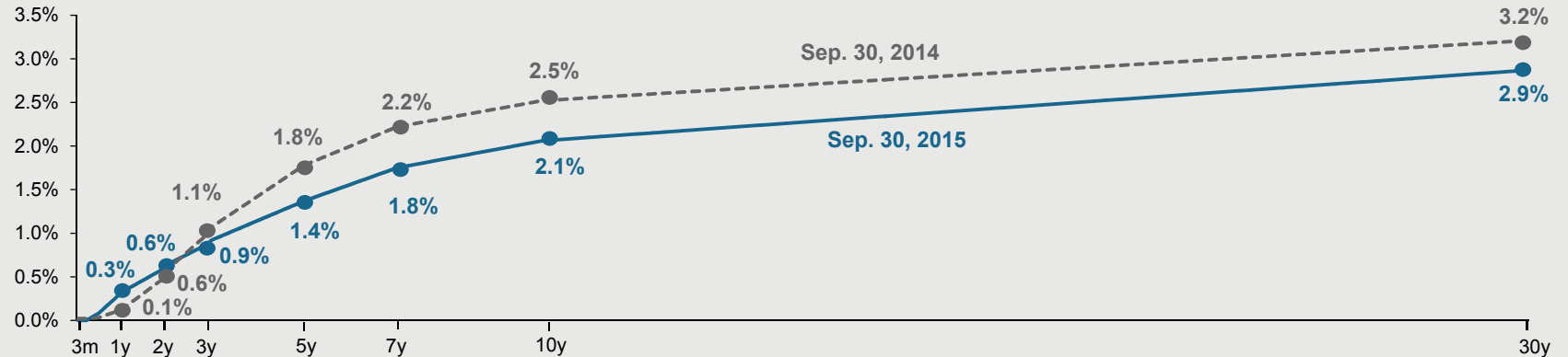
Source: FactSet, Federal Reserve, J.P. Morgan Asset Management.

Market expectations are the federal funds rates priced into the fed futures market as of the date of the September 2015 FOMC meeting. \*Forecasts of 17 Federal Open Market Committee (FOMC) participants, midpoints of central tendency except for federal funds rate, which is a median estimate. Guide to the Markets – U.S. Data are as of September 30, 2015.



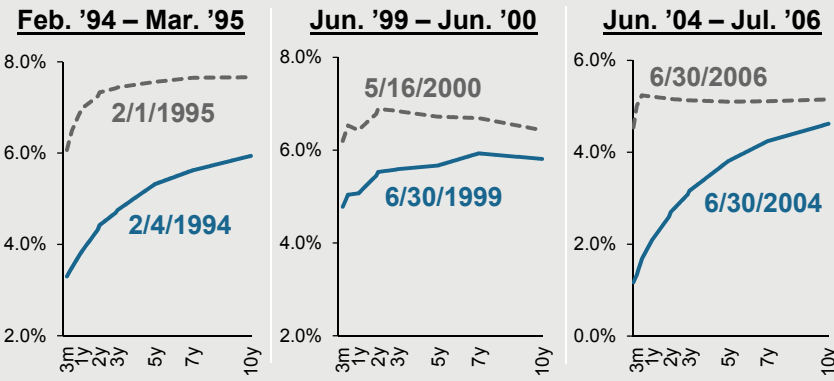
## Yield curve

U.S. Treasury yield curve



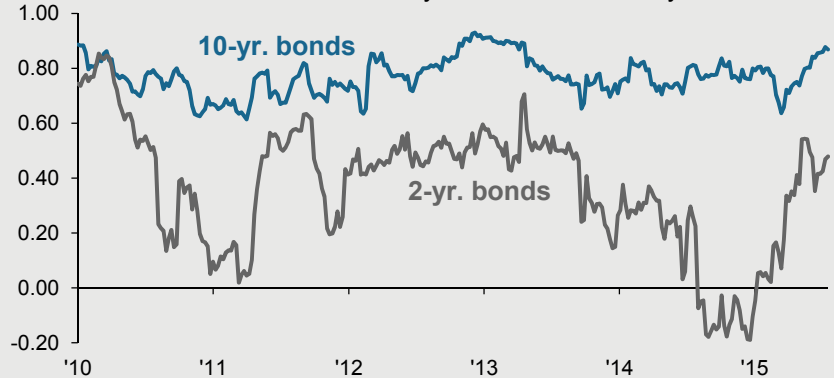
## Yield curve at the start and end of a rate hiking cycle

3-mo to 10-yr Treasury at the first and last rate increases of a cycle



## Correlation of government bonds

Correlation\* between U.S. Treasury and German Bund yields



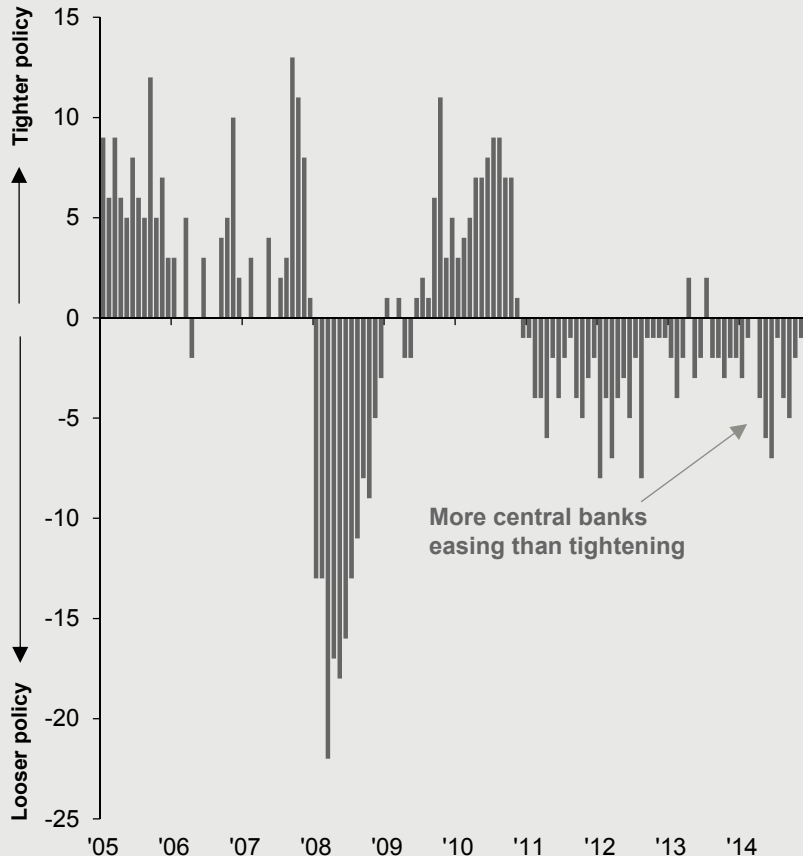
Source: Bloomberg, FactSet, J.P. Morgan Asset Management.

\*Rolling six-month correlation of weekly change in yield.

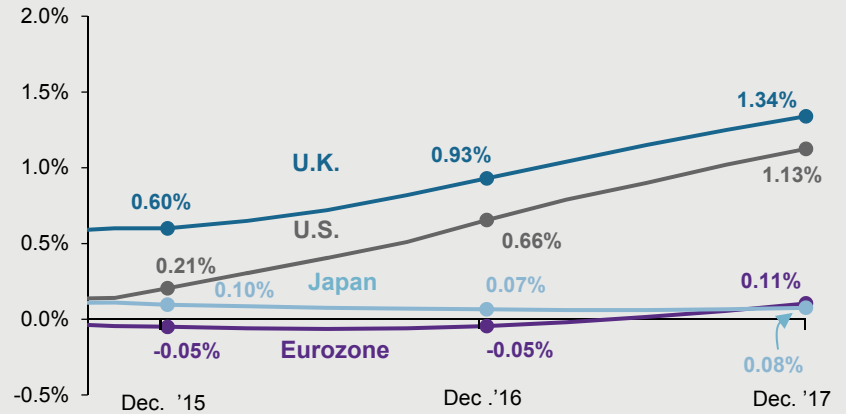
Guide to the Markets – U.S. Data are as of September 30, 2015.

## Global central banks' interest rate decisions\*

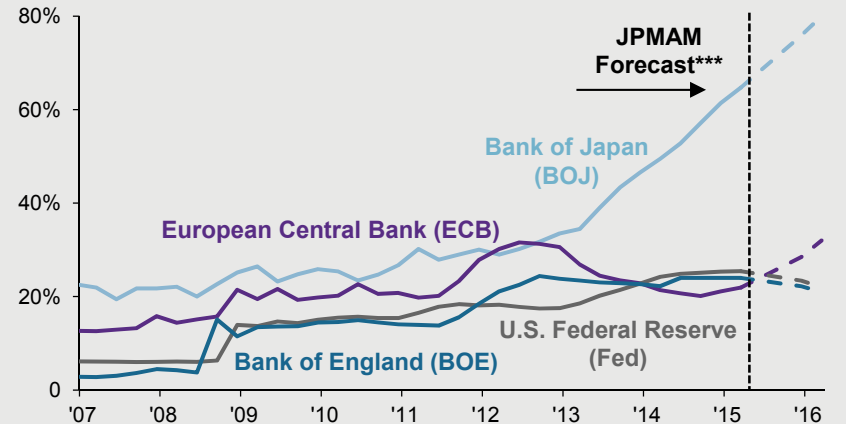
Central banks lowering rates (-1), raising rates (+1), and maintaining rates (0)



## Market expectations for target policy rate\*\*



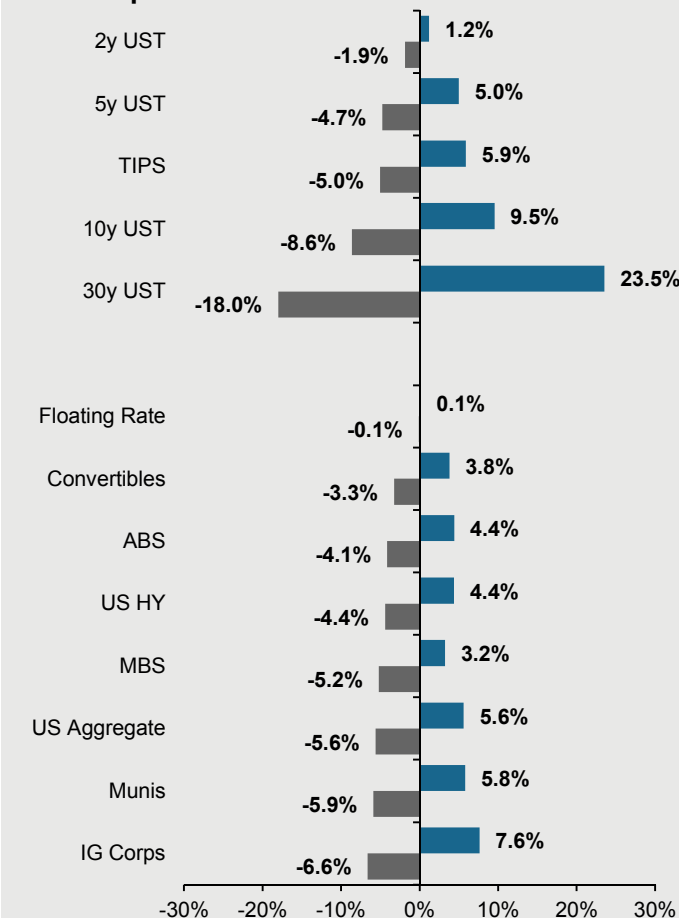
## Central bank assets – Percent of nominal GDP



Source: Bloomberg, FactSet, various national statistics agencies, J.P. Morgan Global Economics Research, J.P. Morgan Asset Management.  
 \*The 30 banks included in the central bank analysis determine policy for: United States, Canada, Brazil, Chile, Colombia, Peru, Eurozone, United Kingdom, Norway, Sweden, Israel, Czech Republic, Hungary, Poland, Romania, South Africa, Australia, New Zealand, Hong Kong, China, South Korea, Indonesia, India, Malaysia, Philippines, Thailand, Taiwan, Japan, Mexico as of Feb. '08 and Turkey as of Jun. '06. \*\*Target policy rates for Japan are estimated using EuroYen 3m futures contracts less a risk premium of 6bps. \*\*\*Central bank assets as percent of nominal GDP is forecasted from 3Q15 to 1Q16 using J.P. Morgan Global Economics Research nominal GDP forecasts and assumptions for central bank balance sheet size based on statements released by each respective central bank and its governors.  
 Guide to the Markets – U.S. Data are as of September 30, 2015.

U.S. Treasuries	# of issues	Correlation to 10-year	Avg. Maturity	Yield		Return	
				9/30/2015	6/30/2015	3Q15	2015
<b>2-Year</b>	93	0.61	2 years	0.64%	0.64%	0.29%	0.89%
<b>5-Year</b>	98	0.91	5	1.37%	1.63%	1.74%	2.73%
<b>10-Year</b>	18	1.00	10	2.06%	2.35%	2.92%	2.39%
<b>30-Year</b>	20	0.92	30	2.87%	3.11%	5.10%	-1.12%
<b>TIPS</b>	36	0.58	10	0.65%	0.48%	-1.15%	-0.80%
<b>Sector</b>							
<b>Broad Market</b>	9,611	0.85	7.9 years	2.31%	2.39%	1.23%	1.13%
<b>MBS</b>	370	0.79	6.7	2.61%	2.78%	1.30%	1.61%
<b>Municipals</b>	9,084	0.45	10.0	2.14%	2.32%	2.01%	2.12%
<b>Corporates</b>	5,577	0.46	10.6	3.42%	3.36%	0.83%	-0.10%
<b>High Yield</b>	2,188	-0.24	6.3	8.04%	6.57%	-4.86%	-2.45%
<b>Floating Rate</b>	59	-0.20	2.2	1.52%	1.43%	-2.28%	-1.37%
<b>Convertibles</b>	511	-0.29	--	0.89%	1.08%	-8.09%	-4.41%
<b>ABS</b>	1,948	-0.03	4.8	2.22%	2.25%	1.35%	2.15%

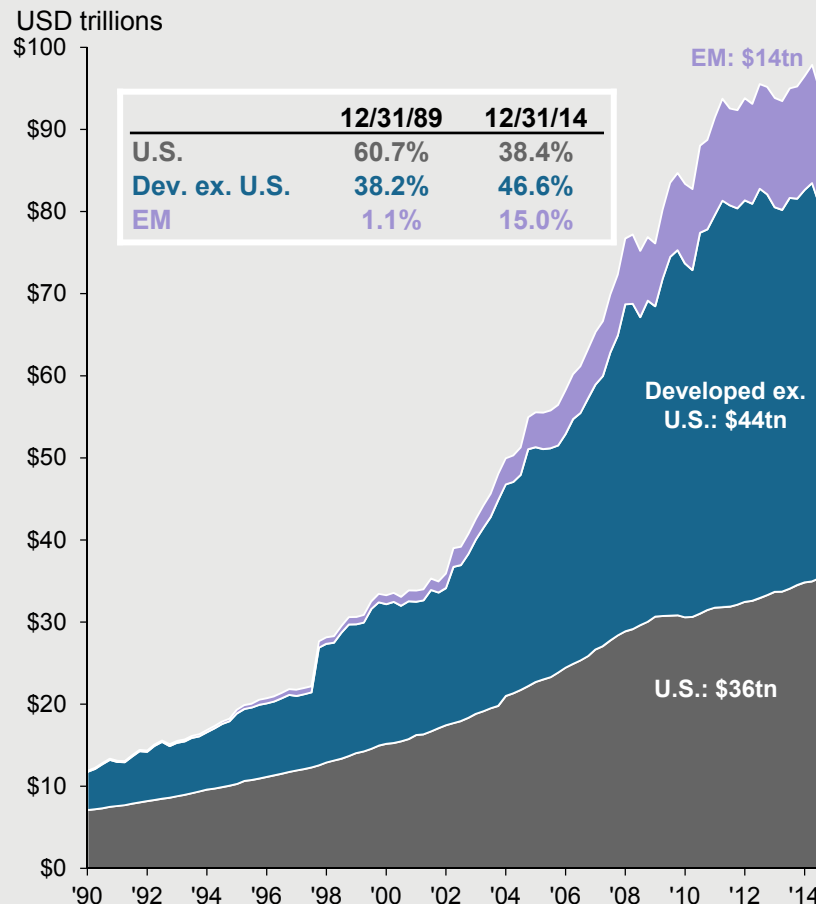
Price impact of a 1% rise/fall in interest rates\*



Source: Barclays Capital, U.S. Treasury, FactSet, J.P. Morgan Asset Management. Sectors shown above are provided by Barclays Capital and are represented by – Broad Market: U.S. Aggregate; MBS: U.S. Aggregate Securitized - MBS; Corporate: U.S. Corporates; Municipals: Muni Bond 10-year; High Yield: Corporate High Yield; TIPS: Treasury Inflation Protection Securities (TIPS). Floating Rate: FRN (BBB); Convertibles: U.S. Convertibles Composite; ABS: ABS + CMBS. Treasury securities data for # of issues based on U.S. Treasury benchmarks from Barclays Capital. Yield and return information based on bellwethers for Treasury securities. Sector yields reflect yield to worst, while Treasury yields are yield to maturity. Correlations are based on 10-years of monthly returns for all sectors. Change in bond price is calculated using both duration and convexity according to the following formula:  $New\ Price = (Price + (Price * -Duration * Change\ in\ Interest\ Rates)) + (0.5 * Price * Convexity * (Change\ in\ Interest\ Rates)^2)$ . \*Calculation assumes 2-year Treasury interest rate falls 0.64% to 0.00%, as interest rates can only fall to 0.00%. Chart is for illustrative purposes only. Past performance is not indicative of future results. Guide to the Markets – U.S. Data are as of September 30, 2015.

Aggregates	Correl to 10-year	Duration	Yield		YTD return	
			9/30/2015	6/30/2015	Local	USD
U.S.	0.85	5.6 Yrs	2.31%	2.39%	1.13%	1.13%
Gbl. ex. U.S.	0.32	7.2	1.29%	1.41%		-4.21%
Japan	0.46	8.5	0.42%	0.47%	0.09%	0.20%
Germany	0.19	6.1	0.69%	0.76%	1.03%	-6.80%
U.K.	0.18	9.5	2.03%	2.16%	1.04%	-1.85%
Italy	0.02	6.7	1.32%	1.68%	2.98%	-5.00%
Spain	0.04	6.0	1.26%	1.50%	0.50%	-7.29%
<b>Sector</b>						
Euro Corp.	0.14	4.9	1.59%	1.45%	-1.84%	-9.45%
Euro HY.	-0.36	4.0	5.46%	4.79%	1.36%	-6.50%
EMD (\$)	0.21	6.5	6.32%	5.79%		-0.07%
EMD (LCL)	0.09	4.9	7.09%	6.79%	1.70%	-14.91%
EM Corp.	-0.26	5.3	6.25%	5.53%		0.85%

Global bond market

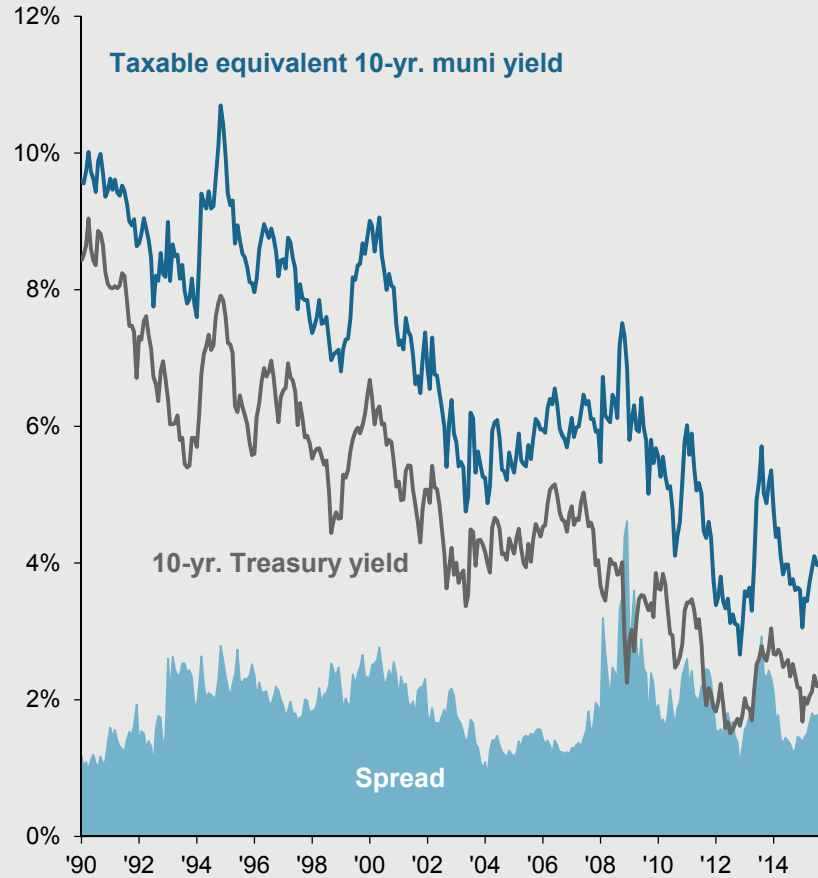


Source: J.P. Morgan Asset Management, (Left) FactSet, Barclays Capital, (Right) BIS. Fixed income sectors shown above are provided by Barclays Capital and are represented by the global aggregate for each country except where noted. EMD sectors are represented by the J.P. Morgan EMBIG Diversified Index (USD), the J.P. Morgan GBI EM Global Diversified Index (LCL), and the J.P. Morgan CEMBI Broad Diversified Index (Corp). European Corporates are represented by the Barclays Euro Aggregate Corporate Index and the Barclays Pan-European High Yield index. Sector yields reflect yield to worst. Duration is modified duration. Correlations are based on 7 years of monthly returns for all sectors. Past performance is not indicative of future results. Global bond market regional breakdown may not sum to 100% due to rounding.

Guide to the Markets – U.S. Data are as of September 30, 2015.

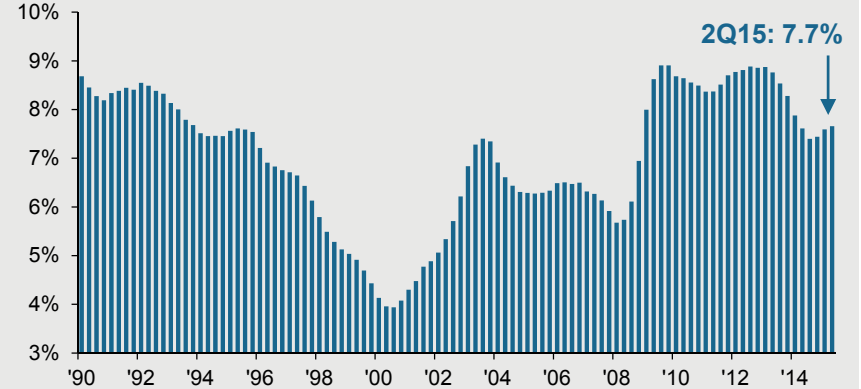
## 10-year muni taxable equivalent yield

Taxable equivalent muni and Treasury yields



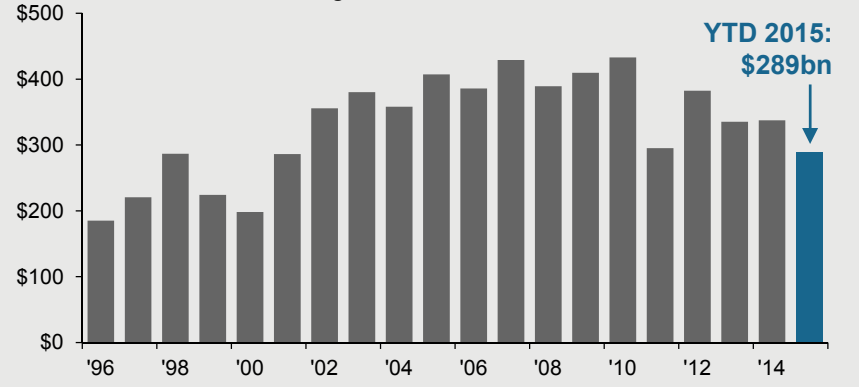
## State & local government debt service

% of current expenditures



## Municipal bond issuance\*

Revenue and General Obligation issues, USD billions



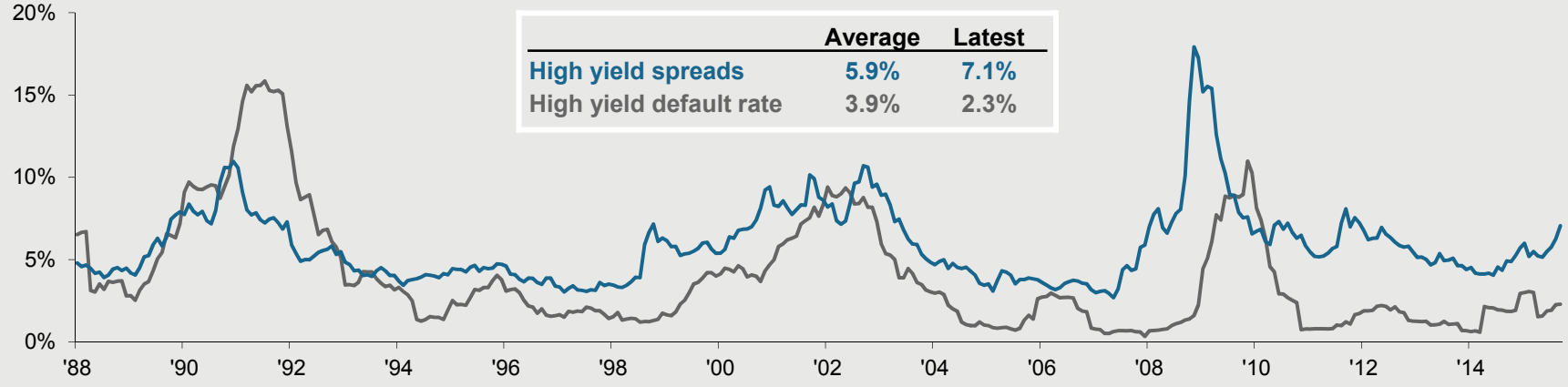
Source: J.P. Morgan Asset Management, (Left) FactSet, Barclays Capital, FRB, (Top right) BEA, (Bottom right) SIFMA.

Taxable equivalent yields are calculated for the highest federal marginal tax bracket. 2015 tax rate includes the net investment income tax of 3.8%.

\*Excludes maturities of 13 months or less and private placements. State & local government interest payments include interest accrued on defined benefit liabilities. Municipal bond issuance is YTD through August 2015.

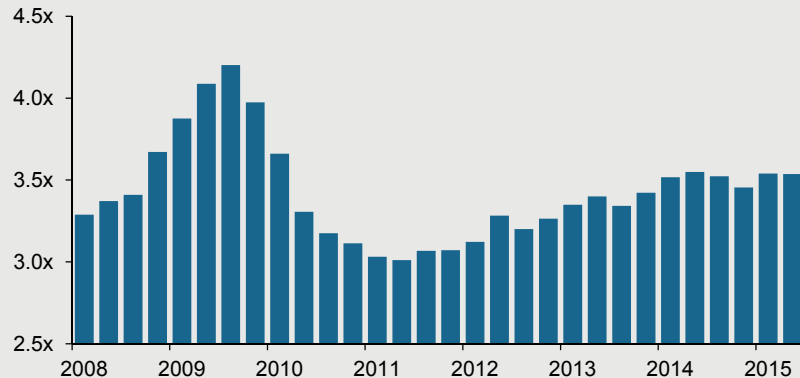
Guide to the Markets – U.S. Data are as of September 30, 2015.

## High yield spreads and defaults



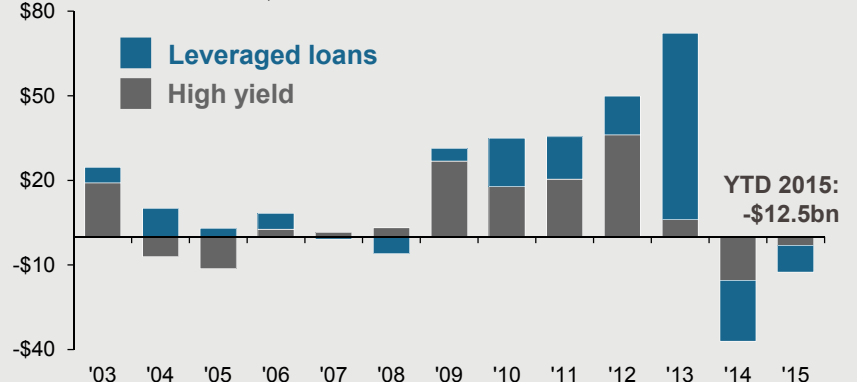
## U.S. high yield net leverage

Net debt/EBITDA



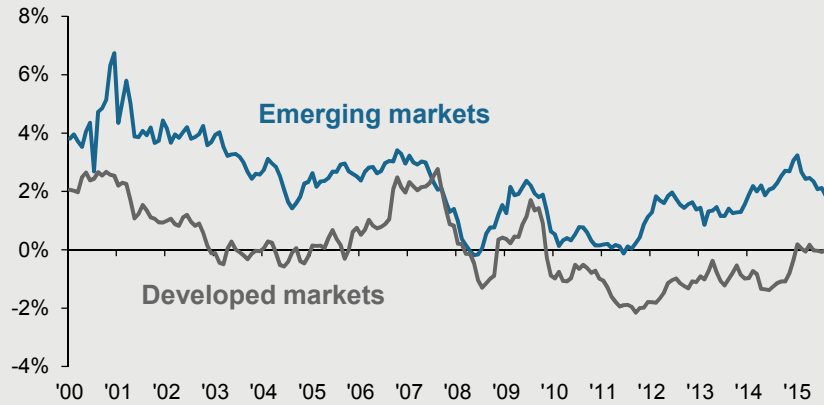
## Annual flows into high yield and leveraged loan funds

Mutual funds & ETFs, USD billions



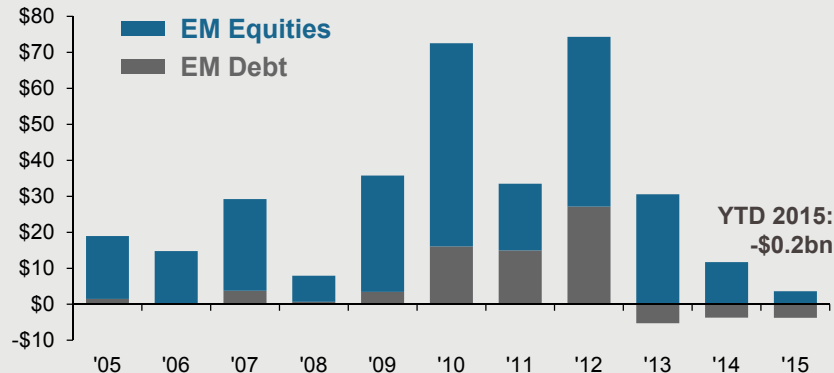
Source: J.P. Morgan Asset Management, (Top and bottom left) J.P. Morgan Global Economic Research, FRB, (Bottom right) Strategic Insight. Default rates are defined as the par value percentage of the total market trading at or below 50% of par value and include any Chapter 11 filing, prepackaged filing or missed interest payments. Spreads indicated are benchmark yield to worst less comparable maturity Treasury yields. Yield to worst is defined as the lowest potential yield that can be received on a bond without the issuer actually defaulting and reflects the possibility of the bond being called at an unfavorable time for the holder. High yield is represented by the J.P. Morgan Domestic HY Index. Guide to the Markets – U.S. Data are as of September 30, 2015.

## Real policy rates – monthly



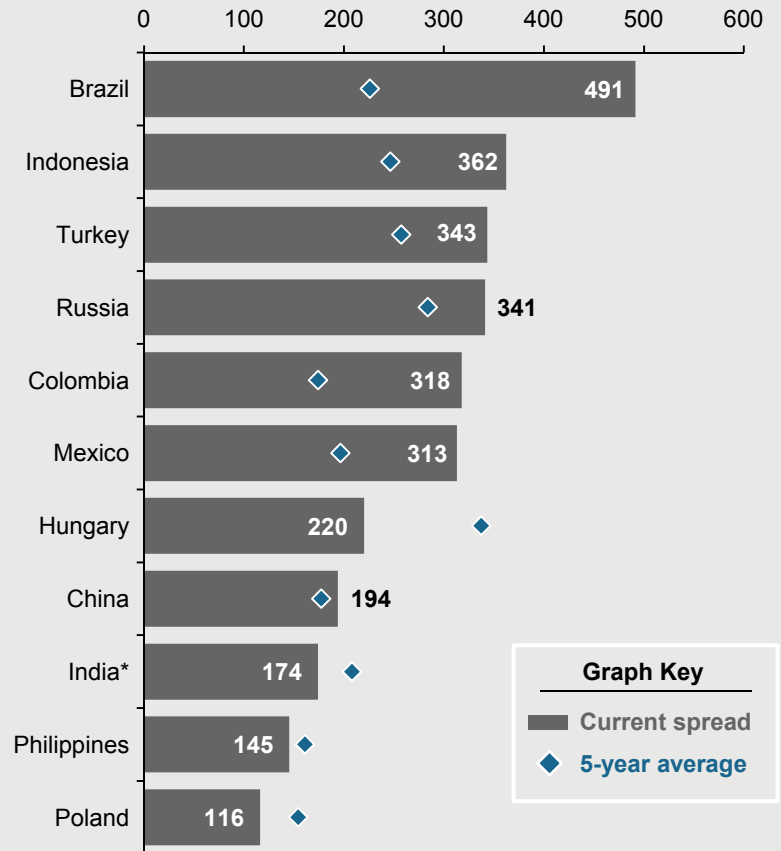
## Net flows into EM

Mutual funds & ETFs, USD billions



## EMD sovereign spreads by country

USD-denominated sovereign debt spread, basis points



Source: J.P. Morgan Asset Management, (Top left and right) J.P. Morgan Global Economic Research, (Bottom left) Strategic Insight. Real policy rates are short-term target interest rates set by central banks minus year-over-year inflation. Sovereign spread is the composite stripped spread for the country sub-indices of the EMBIG, calculated using cash flows of individual bonds rather than a single maturity. The stripped spread is the spread over treasury after adjusting for collateralized cash flows. \*India average since 10/31/12. Guide to the Markets – U.S. Data are as of September 30, 2015.

# Fixed income sector returns

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	YTD	10-yrs. '05 - '14 Cum.	Ann.
EMD USD	10.2%	EMD LCL.	EMD LCL.	Treas.	High Yield	EMD LCL.	TIPS	EMD USD	High Yield	Muni	Muni	EMD USD	EMD USD
	10.2%	15.2%	18.1%	13.7%	58.2%	15.7%	13.6%	17.4%	7.4%	8.7%	2.1%	111.5%	7.8%
EMD LCL.	6.3%	High Yield	TIPS	MBS	EMD USD	High Yield	Muni	EMD LCL.	MBS	Corp.	Treas.	High Yield	High Yield
	6.3%	11.8%	11.6%	8.3%	29.8%	15.1%	12.3%	16.8%	-1.4%	7.5%	1.8%	110.7%	7.7%
Asset Alloc.	3.1%	EMD USD	Treas.	Barclays Agg	EMD LCL.	EMD USD	Treas.	High Yield	Corp.	EMD USD	MBS	EMD LCL.	EMD LCL.
	3.1%	9.9%	9.0%	5.2%	22.0%	12.2%	9.8%	15.8%	-1.5%	7.4%	1.6%	90.4%	6.7%
TIPS	2.8%	Asset Alloc.	Barclays Agg	Muni	Corp.	Corp.	Corp.	Corp.	Asset Alloc.	MBS	Barclays Agg	Corp.	Corp.
	2.8%	5.7%	7.0%	1.5%	18.7%	9.0%	8.1%	9.8%	-1.9%	6.1%	1.1%	71.4%	5.5%
Treas.	2.8%	MBS	MBS	Asset Alloc.	Asset Alloc.	Asset Alloc.	Asset Alloc.	Asset Alloc.	Barclays Agg	Barclays Agg	Asset Alloc.	Asset Alloc.	Asset Alloc.
	2.8%	5.2%	6.9%	0.1%	14.7%	7.9%	8.1%	7.4%	-2.0%	6.0%	-0.1%	70.3%	5.5%
Muni	2.7%	Muni	Asset Alloc.	TIPS	TIPS	Barclays Agg	Barclays Agg	TIPS	Muni	Asset Alloc.	EMD USD	Muni	Muni
	2.7%	4.7%	6.7%	-2.4%	11.4%	6.5%	7.8%	7.0%	-2.2%	5.5%	-0.1%	64.4%	5.1%
High Yield	2.7%	Barclays Agg	EMD USD	Corp.	Muni	TIPS	EMD USD	Muni	Treas.	Treas.	Corp.	MBS	MBS
	2.7%	4.3%	6.2%	-4.9%	9.9%	6.3%	7.3%	5.7%	-2.7%	5.1%	-0.1%	59.0%	4.7%
MBS	2.6%	Corp.	Corp.	EMD LCL.	Barclays Agg	Treas.	MBS	Barclays Agg	EMD USD	TIPS	TIPS	Barclays Agg	Barclays Agg
	2.6%	4.3%	4.6%	-5.2%	5.9%	5.9%	6.2%	4.2%	-5.3%	3.6%	-0.8%	58.4%	4.7%
Barclays Agg	2.4%	Treas.	Muni	EMD USD	MBS	MBS	High Yield	MBS	TIPS	High Yield	High Yield	Treas.	Treas.
	2.4%	3.1%	4.3%	-12.0%	5.9%	5.4%	5.0%	2.6%	-8.6%	2.5%	-2.5%	53.5%	4.4%
Corp.	1.7%	TIPS	High Yield	High Yield	Treas.	Muni	EMD LCL.	Treas.	EMD LCL.	EMD LCL.	EMD LCL.	TIPS	TIPS
	1.7%	0.4%	1.9%	-26.2%	-3.6%	4.0%	-1.8%	2.0%	-9.0%	-5.7%	-14.9%	53.4%	4.4%

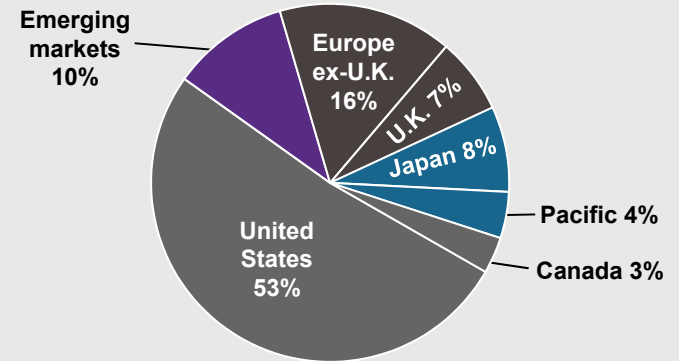
Source: Barclays Capital, FactSet, J.P. Morgan Global Economic Research, J.P. Morgan Asset Management. Past performance is not indicative of future returns. Fixed income sectors shown above are provided by Barclays Capital unless otherwise noted and are represented by Broad Market: Barclays Capital U.S. Aggregate Index; MBS: Fixed Rate MBS Index; Corporate: U.S. Corporates; Municipals: Muni Bond 10-Year Index; High Yield: U.S. Corporate High Yield Index; Treasuries: Global U.S. Treasury; TIPS: Global Inflation-Linked - U.S. TIPS; Emerging Debt USD: J.P. Morgan EMBIG Diversified Index; Emerging Debt LCL: J.P. Morgan EM Global Index. The "Asset Allocation" portfolio assumes the following weights: 20% in MBS, 20% in Corporate, 15% in Municipals, 5% in Emerging Debt USD, 5% in Emerging Debt LCL, 10% in High Yield, 20% in Treasuries, 5% in TIPS. Asset allocation portfolio assumes annual rebalancing. Guide to the Markets - U.S. Data are as of September 30, 2015.



Country / Region	YTD		2014	
	Local	USD	Local	USD
<b>Regions / Broad Indexes</b>				
All Country World	-3.8	-6.6	9.9	4.7
U.S. (S&P 500)	-	-5.3	-	13.7
EAFE	-0.6	-4.9	6.4	-4.5
Europe ex-U.K.	2.9	-3.1	7.4	-5.8
Pacific ex-Japan	-6.4	-15.4	5.8	-0.3
Emerging Markets	-6.9	-15.2	5.6	-1.8
<b>MSCI: Selected Countries</b>				
United Kingdom	-5.5	-8.2	0.5	-5.4
France	7.3	-1.0	3.6	-9.0
Germany	-0.6	-8.3	2.8	-9.8
Japan	0.4	0.5	9.8	-3.7
China	-11.3	-11.2	8.3	8.3
India	-1.5	-5.3	26.4	23.9
Brazil	-9.0	-39.3	-2.8	-13.7
Russia	17.3	9.4	-12.1	-45.9

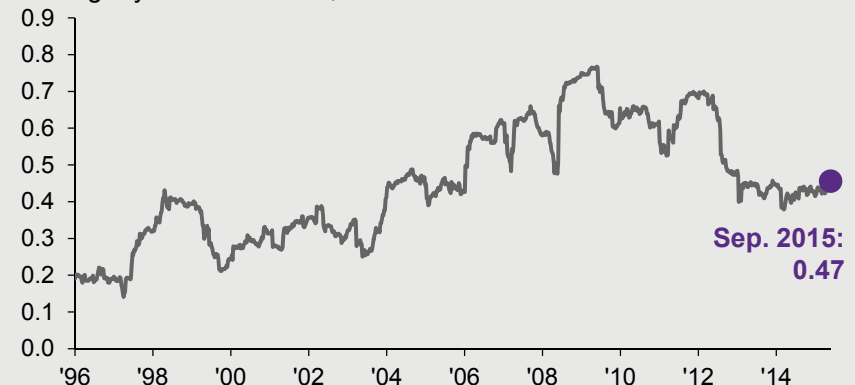
## Weights in MSCI All Country World Index

% global market capitalization, float adjusted



## Global equity market correlations

Rolling 1-year correlations, 30 countries



Source: FactSet, MSCI, Standard & Poor's, J.P. Morgan Asset Management.

All return values are MSCI Gross Index (official) data. Chart is for illustrative purposes only. Past performance is not indicative of future results. Please see disclosure page for index definitions. Countries included in global correlations include Argentina, South Africa, Japan, UK, Canada, France, Germany, Italy, Australia, Austria, Brazil, China, Colombia, Denmark, Finland, Hong Kong, India, Malaysia, Mexico, Netherlands, New Zealand, Peru, Philippines, Portugal, Korea, Spain, Taiwan, Thailand, Turkey, United States. Guide to the Markets – U.S. Data are as of September 30, 2015.

## MSCI EAFE Price Index

Characteristic	Mar. 2000	Oct. 2007	Sep. 2015
Index level	1,136	→ 1,212	→ 956
P/E ratio (fwd.)	27.7x	→ 14.8x	→ 13.7x
Dividend yield	1.4%	→ 2.7%	→ 3.3%
10-yr. German Bunds	5.3%	→ 4.6%	→ 0.6%

MSCI EAFE weights	Sep. 2015
Europe	45.7%
Japan	22.5%
United Kingdom	20.3%
Other	11.5%



Source: FactSet, MSCI, J.P. Morgan Asset Management.

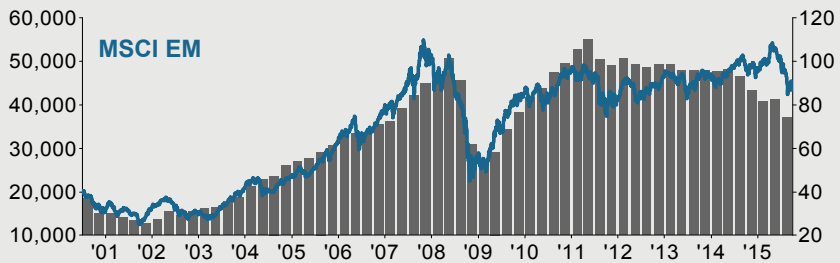
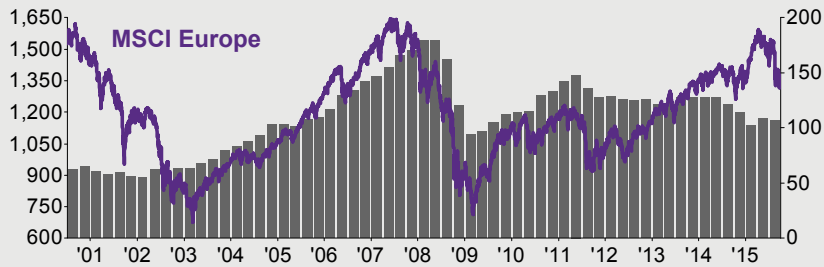
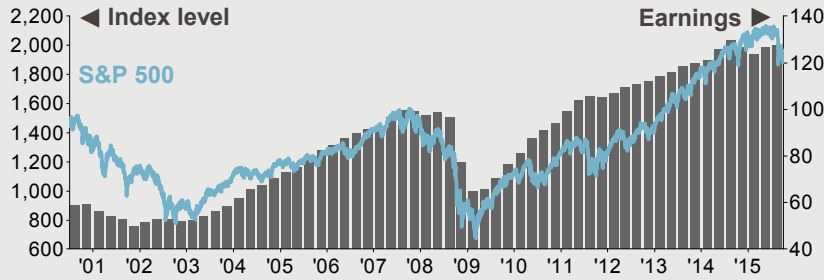
Index levels are in local currency. Dividend yield is calculated as the annualized dividend rate divided by price, as provided by MSCI. Forward price to earnings ratio is a bottom-up calculation based on the most recent MSCI EAFE Index price, divided by consensus estimates for earnings in the next 12 months (NTM), and is provided by FactSet Market Aggregates. Returns are cumulative and based on MSCI EAFE Index price movement only, and do not include the reinvestment of dividends.

Past performance is not indicative of future returns.

Guide to the Markets – U.S. Data are as of September 30, 2015.

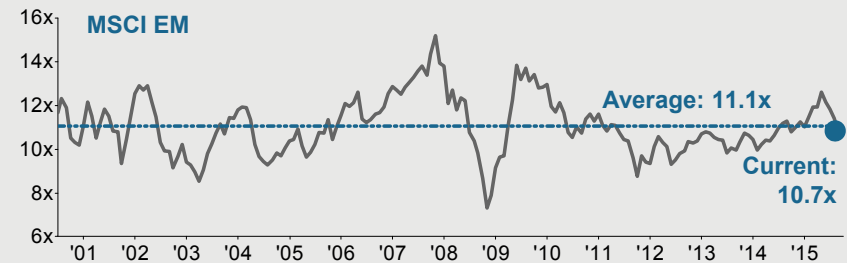
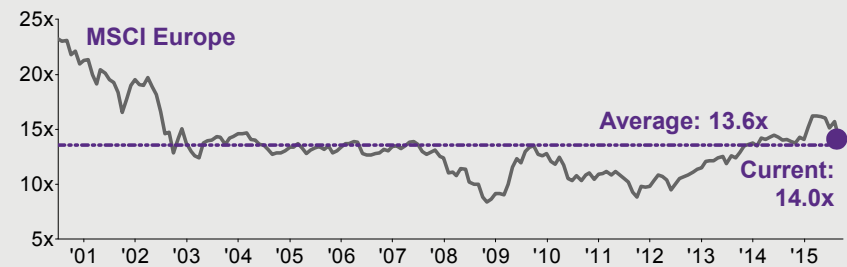
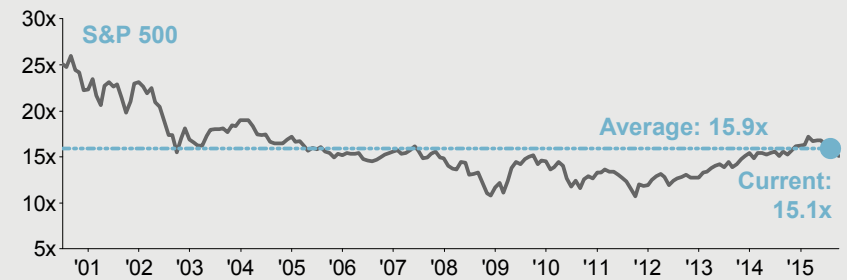
## Earnings and price index

NTM earnings estimates, quarterly, local currency, price index, daily



## Price to earnings

Price divided by NTM earnings estimates, monthly



Sources: Compustat, FactSet, MSCI, Standard & Poor's, J.P. Morgan Asset Management.  
 NTM – Next twelve months. Past performance is not indicative of future returns.  
 Guide to the Markets – U.S. Data are as of September 30, 2015.

## Global Purchasing Managers' Index for manufacturing

	Oct'13	Nov'13	Dec'13	Jan'14	Feb'14	Mar'14	Apr'14	May'14	Jun'14	Jul'14	Aug'14	Sep'14	Oct'14	Nov'14	Dec'14	Jan'15	Feb'15	Mar'15	Apr'15	May'15	Jun'15	Jul'15	Aug'15	Sep'15
Global	51.9	52.8	52.9	52.9	53.1	52.4	51.9	52.1	52.6	52.4	52.5	52.2	52.2	51.8	51.5	51.7	51.9	51.7	51.0	51.3	51.0	51.0	50.7	50.6
Developed Markets	52.7	54.2	54.4	54.6	55.5	54.3	53.2	53.5	54.1	53.2	54.1	53.6	53.5	52.8	52.4	52.3	52.6	52.8	52.0	52.3	51.9	52.3	52.1	52.0
Emerging Markets	50.9	51.1	50.9	50.6	50.0	49.6	49.5	50.1	50.4	51.2	50.5	50.4	50.5	50.6	50.4	50.7	50.9	49.8	49.2	49.4	49.2	48.7	48.2	48.4
U.S.	51.8	54.7	55.0	53.7	57.1	55.5	55.4	56.4	57.3	55.8	57.9	57.5	55.9	54.8	53.9	53.9	55.1	55.7	54.1	54.0	53.6	53.8	53.0	53.1
Canada	55.6	55.3	53.5	51.7	52.9	53.3	52.9	52.2	53.5	54.3	54.8	53.5	55.3	55.3	53.9	51.0	48.7	48.9	49.0	49.8	51.3	50.8	49.4	48.6
U.K.	56.4	57.8	57.3	56.6	55.9	55.2	57.2	56.6	56.8	54.8	53.0	51.5	53.4	53.4	52.8	52.9	53.9	54.1	51.7	51.9	51.4	51.9	51.6	51.5
Euro Area	51.3	51.6	52.7	54.0	53.2	53.0	53.4	52.2	51.8	51.8	50.7	50.3	50.6	50.1	50.6	51.0	51.0	52.2	52.0	52.2	52.5	52.4	52.3	52.0
Germany	51.7	52.7	54.3	56.5	54.8	53.7	54.1	52.3	52.0	52.4	51.4	49.9	51.4	49.5	51.2	50.9	51.1	52.8	52.1	51.1	51.9	51.8	53.3	52.3
France	49.1	48.4	47.0	49.3	49.7	52.1	51.2	49.6	48.2	47.8	46.9	48.8	48.5	48.4	47.5	49.2	47.6	48.8	48.0	49.4	50.7	49.6	48.3	50.6
Italy	50.7	51.4	53.3	53.1	52.3	52.4	54.0	53.2	52.6	51.9	49.8	50.7	49.0	49.0	48.4	49.9	51.9	53.3	53.8	54.8	54.1	55.3	53.8	52.7
Spain	50.9	48.6	50.8	52.2	52.5	52.8	52.7	52.9	54.6	53.9	52.8	52.6	52.6	54.7	53.8	54.7	54.2	54.3	54.2	55.8	54.5	53.6	53.2	51.7
Greece	47.3	49.2	49.6	51.2	51.3	49.7	51.1	51.0	49.4	48.7	50.1	48.4	48.8	49.1	49.4	48.3	48.4	48.9	46.5	48.0	46.9	30.2	39.1	43.3
Ireland	54.9	52.4	53.5	52.8	52.9	55.5	56.1	55.0	55.3	55.4	57.3	55.7	56.6	56.2	56.9	55.1	57.5	56.8	55.8	57.1	54.6	56.7	53.6	53.8
Australia	53.2	47.7	47.6	46.7	48.6	47.9	44.8	49.2	48.9	50.7	47.3	46.5	49.4	50.1	46.9	49.0	45.4	46.3	48.0	52.3	44.2	50.4	51.7	52.1
Japan	54.2	55.1	55.2	56.6	55.5	53.9	49.4	49.9	51.5	50.5	52.2	51.7	52.4	52.0	52.0	52.2	51.6	50.3	49.9	50.9	50.1	51.2	51.7	50.0
China	50.9	50.8	50.5	49.5	48.5	48.0	48.1	49.4	50.7	51.7	50.2	50.2	50.4	50.0	49.6	49.7	50.7	49.6	48.9	49.2	49.4	47.8	47.3	47.2
Indonesia	50.9	50.3	50.9	51.0	50.5	50.1	51.1	52.4	52.7	52.7	49.5	50.7	49.2	48.0	47.6	48.5	47.5	46.4	46.7	47.1	47.8	47.3	48.4	47.4
Korea	50.2	50.4	50.8	50.9	49.8	50.4	50.2	49.5	48.4	49.3	50.3	48.8	48.7	49.0	49.9	51.1	51.1	49.2	48.8	47.8	46.1	47.6	47.9	49.2
Taiwan	53.0	53.4	55.2	55.5	54.7	52.7	52.3	52.4	54.0	55.8	56.1	53.3	52.0	51.4	50.0	51.7	52.1	51.0	49.2	49.3	46.3	47.1	46.1	46.9
India	49.6	51.3	50.7	51.4	52.5	51.3	51.3	51.4	51.5	53.0	52.4	51.0	51.6	53.3	54.5	52.9	51.2	52.1	51.3	52.6	51.3	52.7	52.3	51.2
Brazil	50.2	49.7	50.5	50.8	50.4	50.6	49.3	48.8	48.7	49.1	50.2	49.3	49.1	48.7	50.2	50.7	49.6	46.2	46.0	45.9	46.5	47.2	45.8	47.0
Mexico	50.2	51.9	52.6	54.0	52.0	51.7	51.8	51.9	51.8	51.5	52.1	52.6	53.3	54.3	55.3	56.6	54.4	53.8	53.8	53.3	52.0	52.9	52.4	52.1
Russia	51.8	49.4	48.8	48.0	48.5	48.3	48.5	48.9	49.1	51.0	51.0	50.4	50.3	51.7	48.9	47.6	49.7	48.1	48.9	47.6	48.7	48.3	47.9	49.1

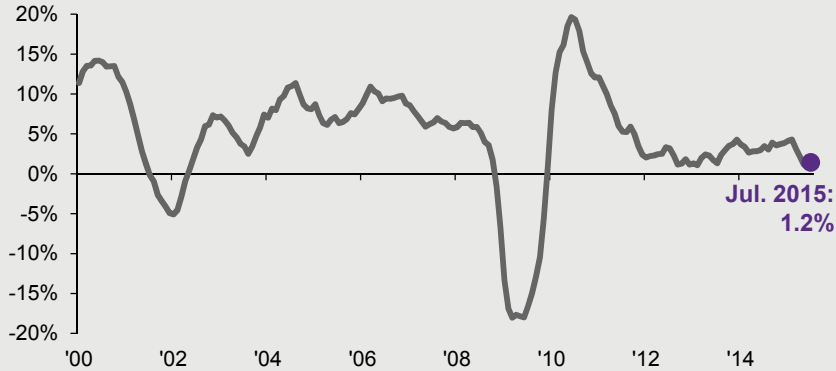
Source: Markit, J.P. Morgan Asset Management.

Heatmap colors are based on PMI relative to the 50 level, which indicates acceleration or deceleration of the sector, for the time period shown.

Guide to the Markets – U.S. Data are as of September 30, 2015.

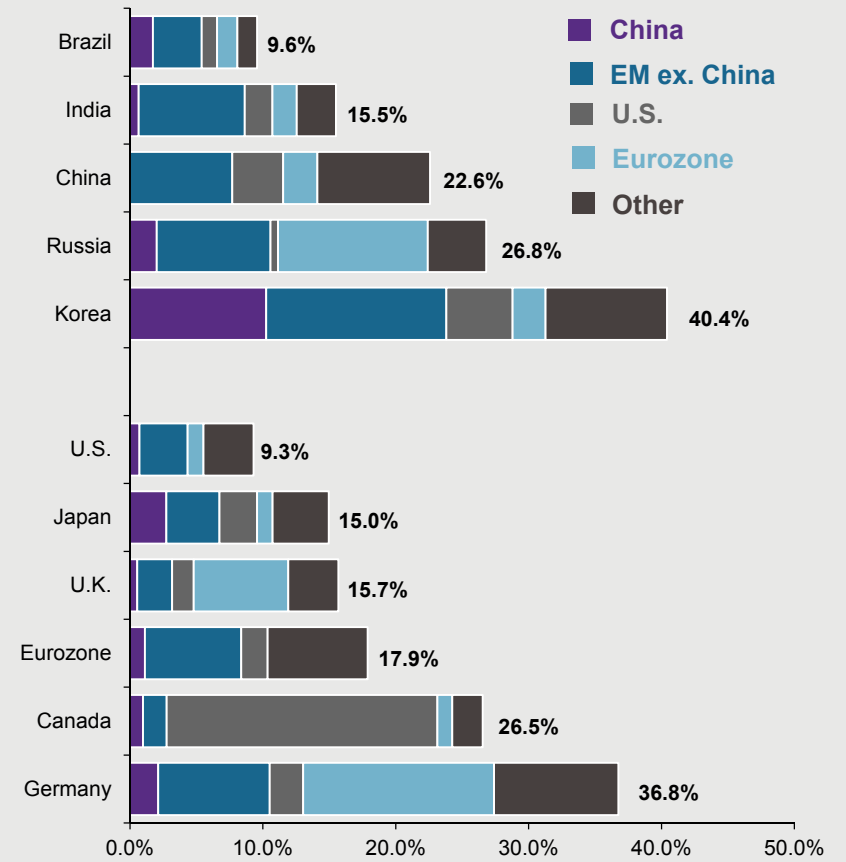
**World export volume**

Goods exported, y/y % change, 3-month moving average



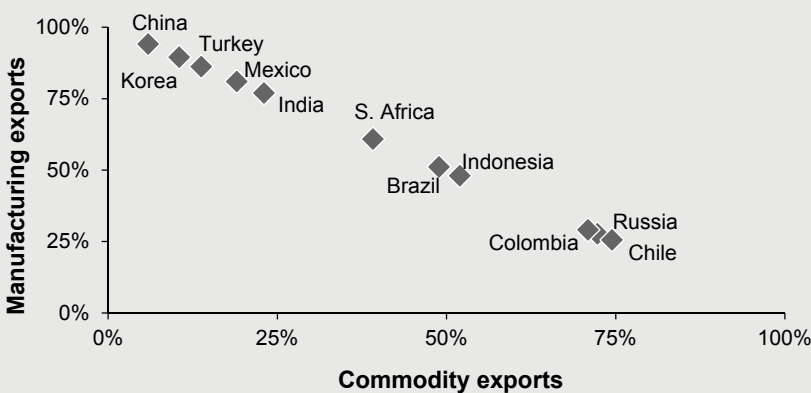
**Exports as a % of GDP**

Goods exported, 2014



**EM exports**

% of total exports, 2014\*



Source: J.P. Morgan Asset Management, (Top left) Netherlands Bureau for Economic Policy Analysis World Trade Monitor, (Right) FactSet, IMF

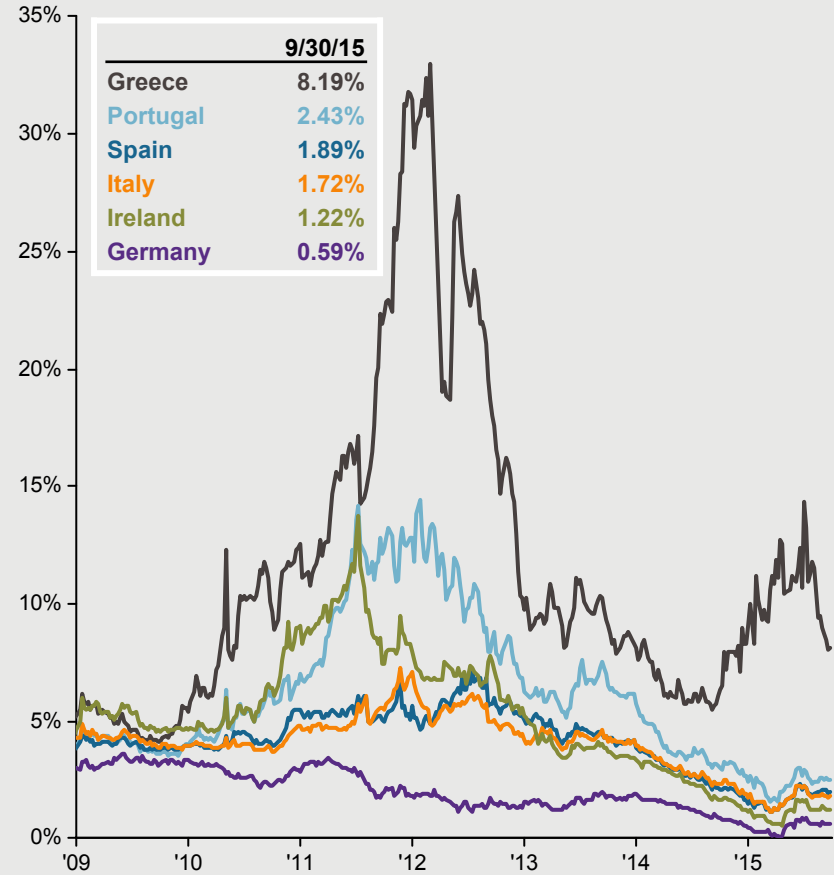
Direction of Trade Statistics, (Bottom left) World Bank.

\*Russia's total commodity and manufacturing exports are as of 2013 due to data availability.

Guide to the Markets – U.S. Data are September 30, 2015.

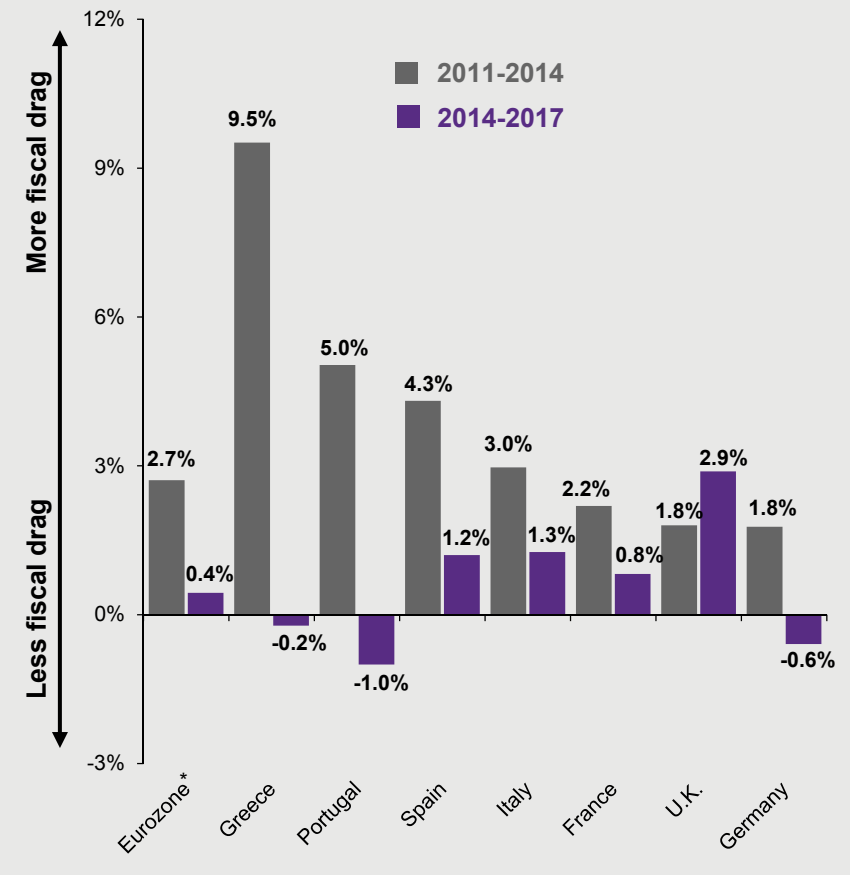
## European sovereign funding costs

10-year benchmark bond yield



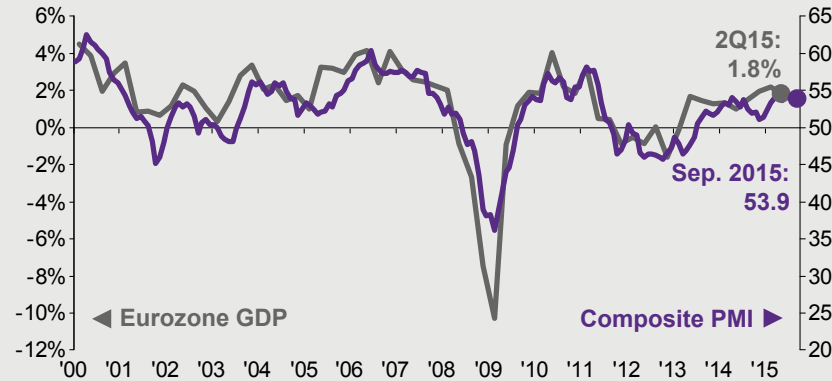
## Government fiscal drag

% of potential GDP, reduction in structural deficits

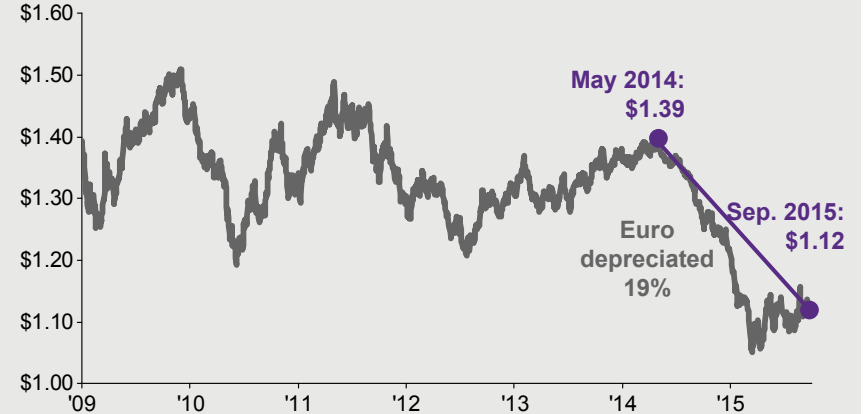


Source: J.P. Morgan Asset Management, (Left) FactSet, Tullett Prebon, (Right) IMF, J.P. Morgan Asset Management. Data are based on the July update to the April 2015 World Economic Outlook. Government deficits are calculated by the IMF as the general government structural balance. The structural balance excludes the normal impact of the business cycle, providing a clearer measure of the independent impact of changes in government spending and taxation on demand in the economy. \*Eurozone includes a J.P. Morgan Asset Management estimate for the 2017 structural deficit as a % of GDP. Guide to the Markets – U.S. Data are as of September 30, 2015.

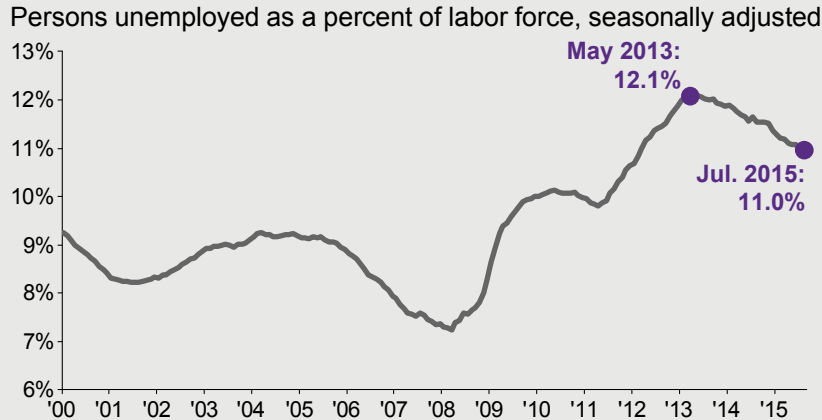
**Markit PMI and GDP growth in the eurozone**  
 Market Composite PMI index and eurozone GDP q/q SAAR



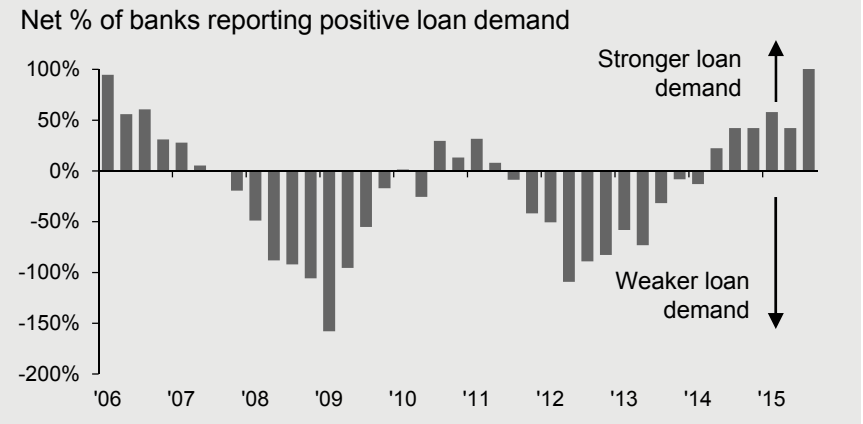
**U.S. dollar per euro**



**Eurozone unemployment**



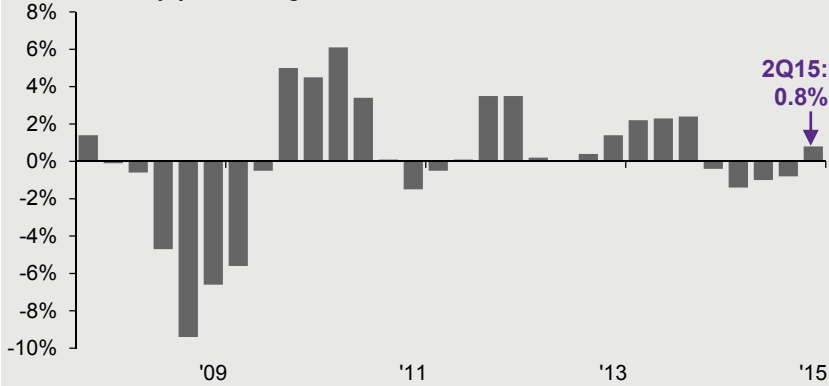
**Eurozone credit demand**



Source: FactSet, J.P. Morgan Asset Management, (Top left) Markit, (Top and bottom left) Eurostat, (Bottom right) ECB.  
 Guide to the Markets – U.S. Data are as of September 30, 2015.

**Japanese economic growth**

Real GDP, y/y % change



**Japanese yen and the stock market**



**Japanese labor market**

Unemployment, y/y % change in wages 3-month moving average



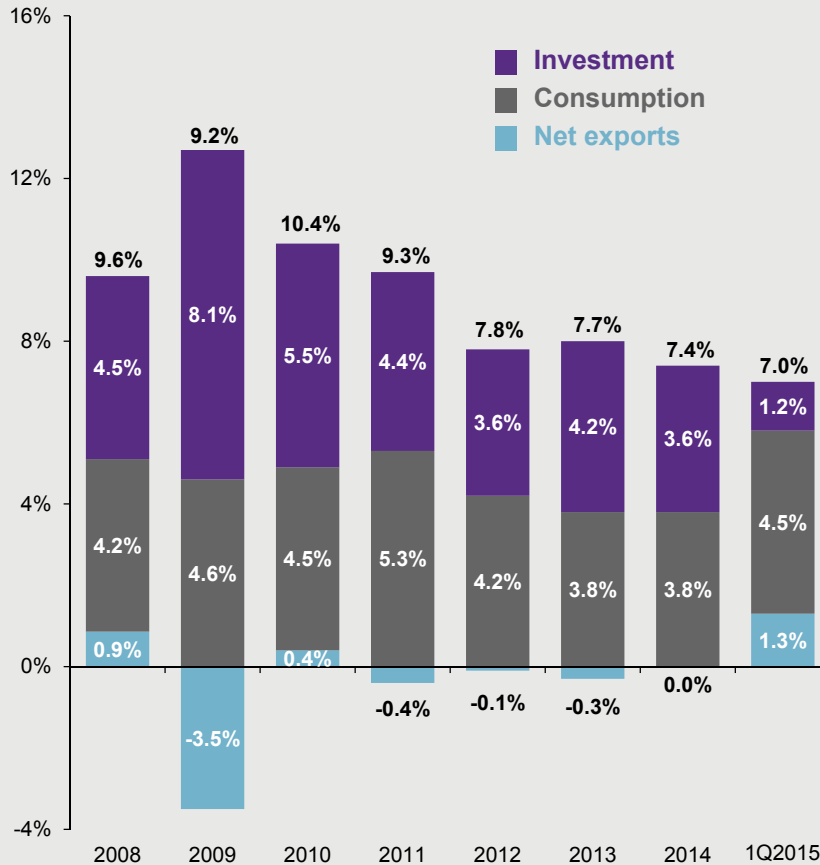
Source: FactSet, J.P. Morgan Asset Management, (Top and bottom left) Japanese Cabinet Office, (Right) Nikkei. Guide to the Markets – U.S. Data are as of September 30, 2015.

International



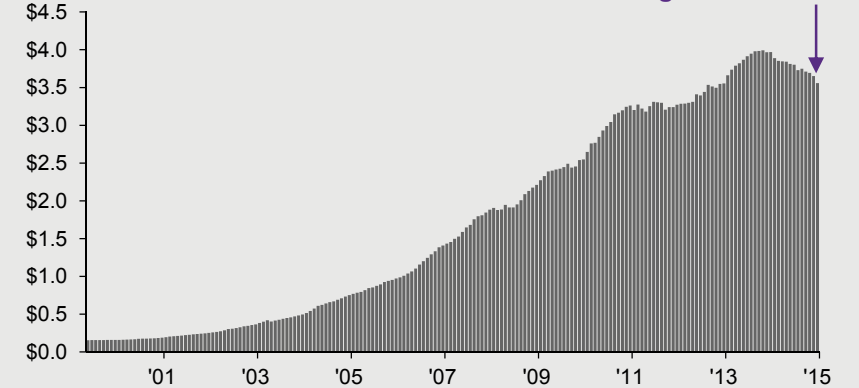
## China real GDP contribution

Year-over-year % change



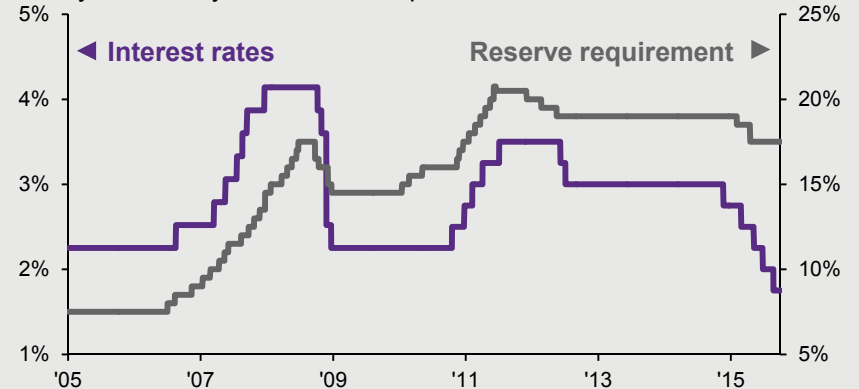
## China foreign exchange reserves

Trillions USD



## Monetary policy tools

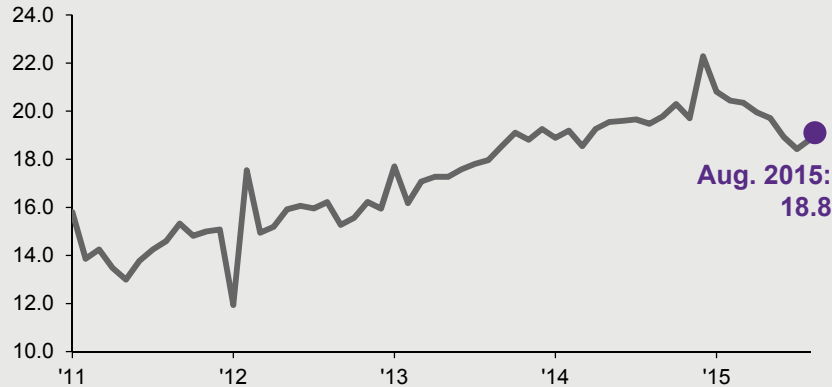
Policy rate on 1-year renminbi deposits



Source: FactSet, J.P. Morgan Asset Management, (Left) CEIC, (Top and bottom right) People's Bank of China. Guide to the Markets – U.S. Data are as of September 30, 2015.

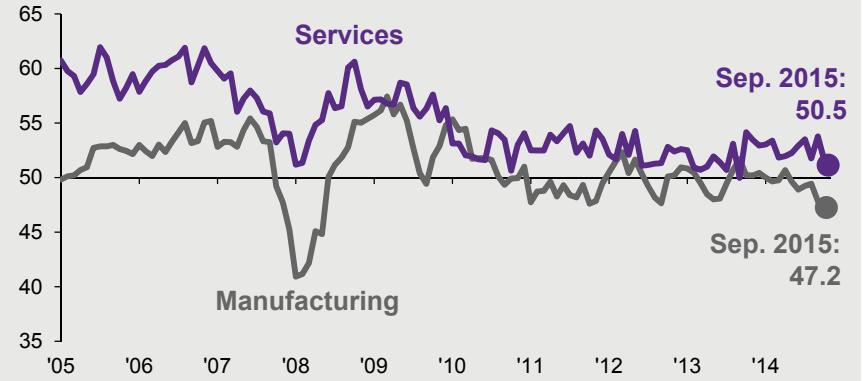
## Domestic car sales

Unit sales, millions, seasonally adjusted annual rate



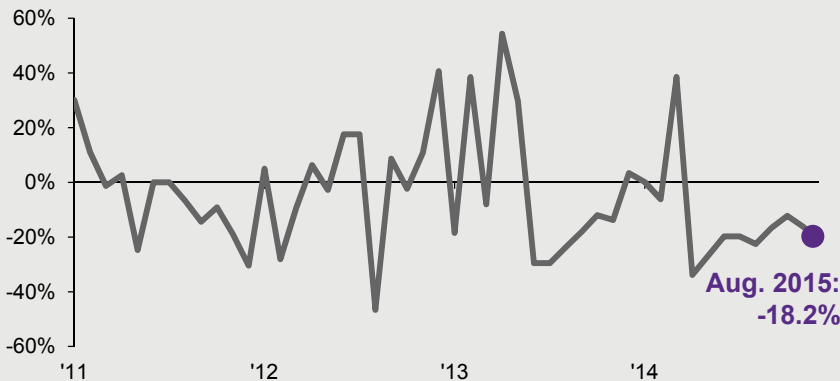
## Manufacturing and services PMI

Caixin/Markit manufacturing and services indices



## Construction of private residential floor space

Year-over-year % change



## Exports and imports

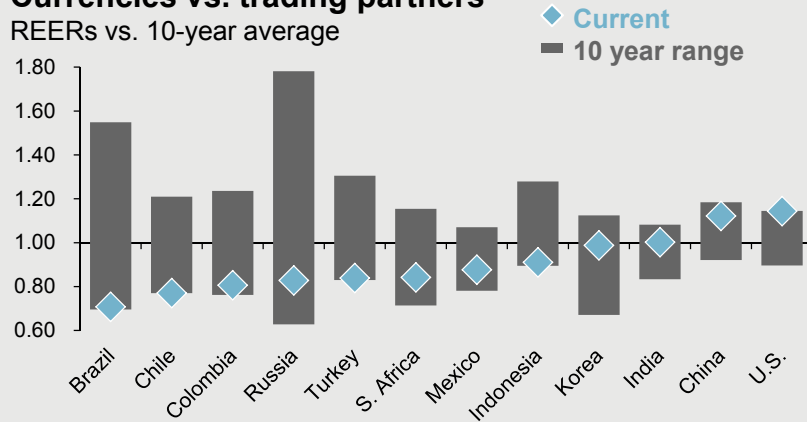
Year-over-year % change



Source: J.P. Morgan Asset Management, (Top and bottom left and bottom right) National Bureau of Statistics, (Top right) Markit Economics. Chinese domestic car sales are all passenger vehicles, including cars, vans, crossovers and SUVs. Guide to the Markets – U.S. Data are as of September 30, 2015.

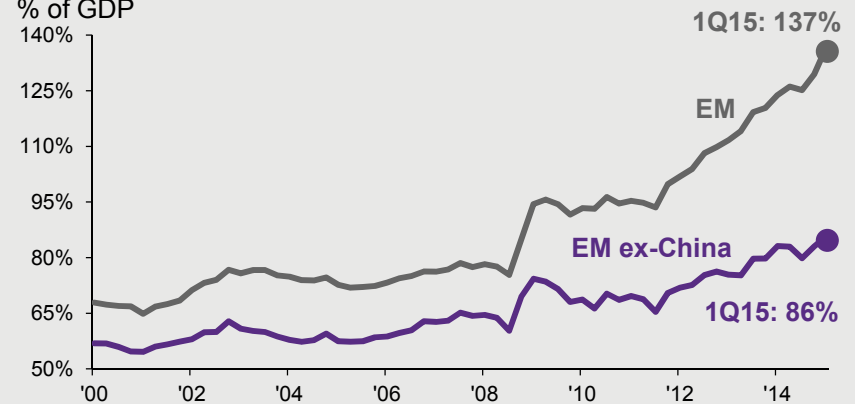
## Currencies vs. trading partners

REERs vs. 10-year average



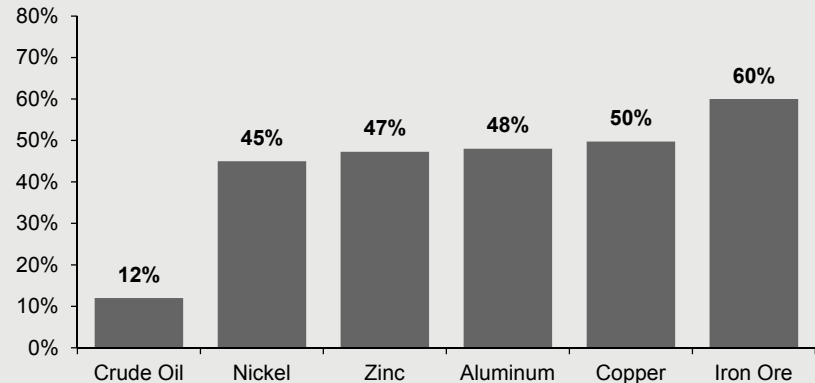
## Private credit\*

% of GDP



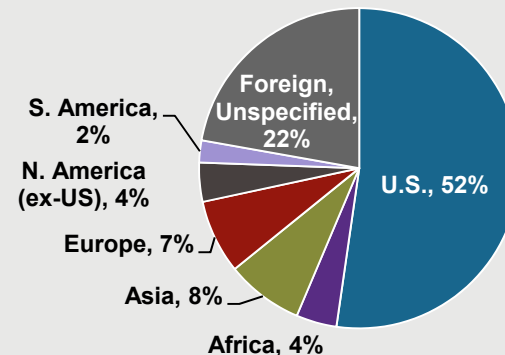
## China's consumption of commodities

% of world total, 2014 average



## S&P 500 international revenues

% of total revenues\*\*, 2014



Source: J.P. Morgan Asset Management, (Top left) J.P. Morgan Global Economic Research, (Top right) BIS, various National Statistics Offices, (Bottom left) Bloomberg, IEA, (Bottom right) S&P 500 individual company 10K filings, S&P Index Alert, Standard & Poor's.

\*Private credit includes non-financial corporates and households, and bank lending, corporate bonds, and shadow banking. Aggregated from BIS underlying data. \*\*International revenue numbers are subject to individual company management interpretation and reporting. S&P analysis was done on a company by company basis through 10K filings and is subject to variability based on accounting principles. Data is from a Standard & Poor's report *S&P 500 Foreign Sales 2014* by Howard Silverblatt.

Guide to the Markets - U.S. Data are as of September 30, 2015

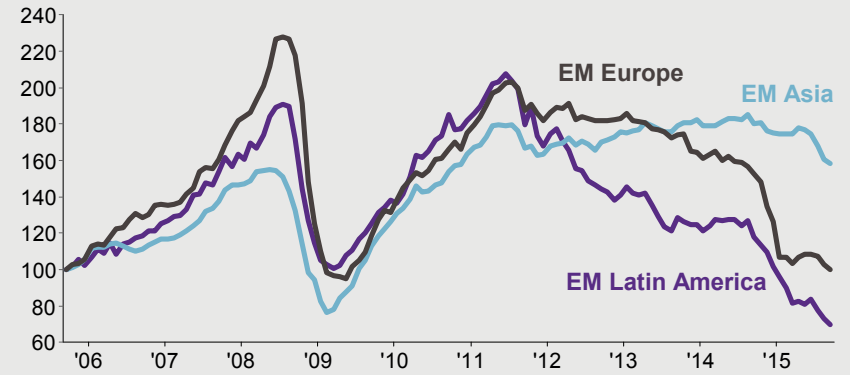
## EM vs. DM growth and equity performance

Monthly, consensus expectations for GDP growth in 12 months



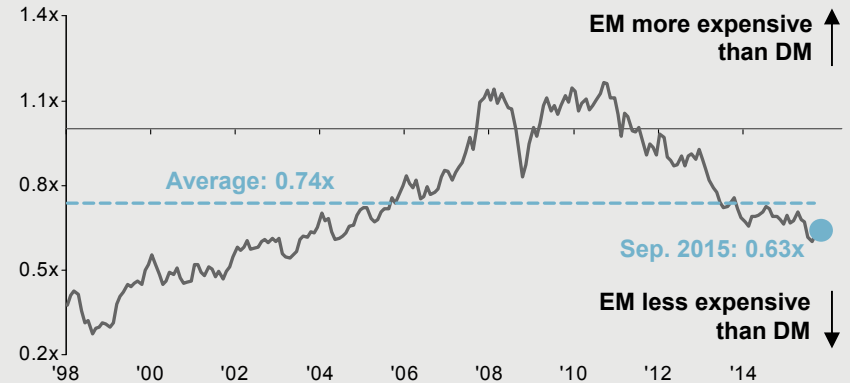
## EM earnings by region

EPS for next 12-month consensus, local currency, rebased to 100



## EM vs. DM relative valuation

Price-to-book ratio, EM/DM, last twelve months

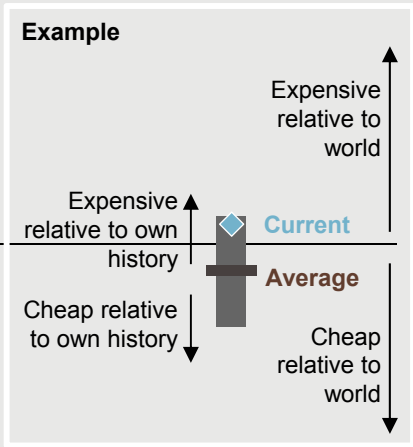
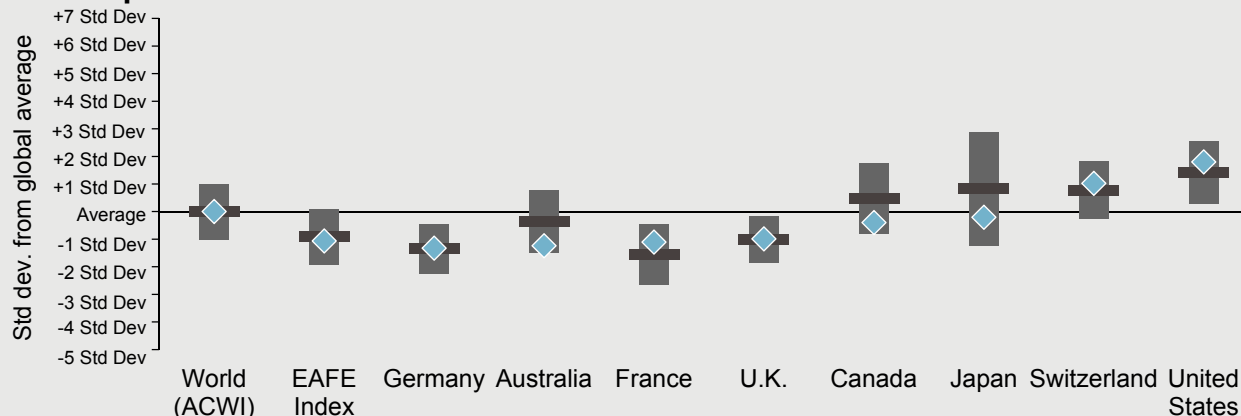


Source: FactSet, MSCI, J.P. Morgan Asset Management, (Left) Consensus Economics.

"EM - DM GDP Growth" is consensus estimates for EM growth in the next twelve months minus consensus estimates for DM growth in the next twelve months, provided by Consensus Economics. "MSCI EM / MSCI DM" is the USD MSCI Emerging Markets Index price level over the USD MSCI The World Index price level, rebased to 1995=100.

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## Developed market countries



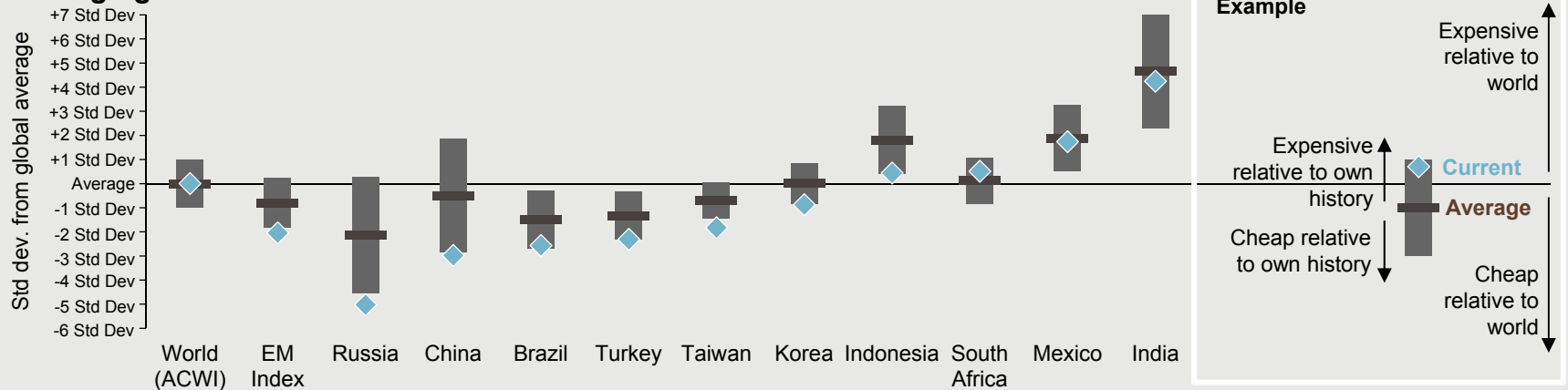
	Current Composite Index	Current				10-year avg.			
		Fwd. P/E	P/B	P/CF	Div. Yld.	Fwd. P/E	P/B	P/CF	Div. Yld.
<b>World (ACWI)</b>	<b>0.00</b>	14.2	1.9	7.7	2.8%	13.2	2.0	7.5	2.6%
<b>EAFE Index</b>	<b>-1.07</b>	13.7	1.5	6.5	3.5%	12.8	1.7	6.7	3.2%
<b>Germany</b>	<b>-1.33</b>	11.9	1.5	6.2	3.2%	11.7	1.6	5.9	3.1%
<b>Australia</b>	<b>-1.24</b>	14.2	1.7	6.9	5.3%	13.6	2.2	8.8	4.4%
<b>France</b>	<b>-1.11</b>	13.8	1.4	6.6	3.6%	11.7	1.5	6.0	3.5%
<b>U.K.</b>	<b>-0.99</b>	14.2	1.7	7.2	4.4%	11.6	1.9	7.3	3.7%
<b>Canada</b>	<b>-0.40</b>	14.5	1.7	7.7	3.2%	13.9	2.1	8.3	2.4%
<b>Japan</b>	<b>-0.21</b>	13.0	1.2	7.1	2.0%	16.0	1.4	6.5	1.7%
<b>Switzerland</b>	<b>1.02</b>	15.9	2.4	10.9	3.3%	13.8	2.4	10.0	2.9%
<b>United States</b>	<b>1.80</b>	15.4	2.6	10.2	2.2%	14.0	2.4	8.8	2.0%

Source: FactSet, MSCI, J.P. Morgan Asset Management.

Note: Each valuation index shows an equally weighted composite of four metrics: price to forward earnings (Fwd. P/E), price to current book (P/B), price to last 12 months' cash flow (P/CF) and price to last 12 months' dividends (Div. Yld.). Results are then normalized using means and average variability over the last 10 years. The grey bars represent one standard deviation in variability relative to that of the MSCI All Country World Index (ACWI). See disclosures page at the end for metric definitions.

Guide to the Markets – U.S. Data are as of September 30, 2015.

## Emerging market countries



	Current Composite Index	Current				10-year avg.			
		Fwd. P/E	P/B	P/CF	Div. Yld.	Fwd. P/E	P/B	P/CF	Div. Yld.
<b>World (ACWI)</b>	<b>0.00</b>	14.2	1.9	7.7	2.8%	13.2	2.0	7.5	2.6%
<b>EM</b>	<b>-2.04</b>	10.7	1.3	4.6	3.1%	11.2	1.9	6.4	2.7%
<b>Russia</b>	<b>-5.03</b>	4.9	0.5	2.2	5.6%	7.3	1.3	4.3	2.3%
<b>China</b>	<b>-2.98</b>	8.7	1.2	3.0	3.4%	11.7	2.1	6.6	2.7%
<b>Brazil</b>	<b>-2.57</b>	10.6	1.0	5.6	4.4%	10.4	1.8	5.8	3.2%
<b>Turkey</b>	<b>-2.32</b>	8.6	1.2	4.4	2.8%	9.7	1.7	6.1	2.7%
<b>Taiwan</b>	<b>-1.83</b>	11.5	1.5	5.6	4.0%	14.2	1.8	6.7	3.5%
<b>Korea</b>	<b>-0.88</b>	9.8	1.0	5.0	1.7%	9.8	1.4	5.1	1.4%
<b>Indonesia</b>	<b>0.44</b>	12.5	2.4	9.9	2.9%	13.2	3.5	10.6	2.6%
<b>South Africa</b>	<b>0.51</b>	15.1	2.3	8.8	3.2%	12.1	2.5	9.0	3.2%
<b>Mexico</b>	<b>1.74</b>	18.0	2.5	6.7	2.0%	15.2	2.8	7.4	1.8%
<b>India</b>	<b>4.25</b>	17.5	3.0	13.3	1.5%	16.0	3.2	12.9	1.3%

Source: FactSet, MSCI, J.P. Morgan Asset Management.

Note: Each valuation index shows an equally weighted composite of four metrics: price to forward earnings (Fwd. P/E), price to current book (P/B), price to last 12 months' cash flow (P/CF) and price to last 12 months' dividends (Div. Yld.). Results are then normalized using means and average variability over the last 10 years. The grey bars represent one standard deviation in variability relative to that of the MSCI All Country World Index (ACWI). See disclosures page at the end for metric definitions.

Guide to the Markets – U.S. Data are as of September 30, 2015.

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	YTD	15-yrs '00 - '14	
																Ann.	Vol.
Comdty. 31.8%	REITs 13.9%	Comdty. 25.9%	EM Equity 56.3%	REITs 31.6%	EM Equity 34.5%	REITs 35.1%	EM Equity 39.8%	Fixed Income 5.2%	EM Equity 79.0%	REITs 27.9%	REITs 8.3%	REITs 19.7%	Small Cap 38.8%	REITs 28.0%	Fixed Income 1.1%	REITs 12.7%	REITs 22.3%
REITs 26.4%	Fixed Income 8.4%	Fixed Income 10.3%	Small Cap 47.3%	EM Equity 26.0%	Comdty. 21.4%	EM Equity 32.6%	Comdty. 16.2%	Cash 1.8%	High Yield 59.4%	Small Cap 26.9%	Fixed Income 7.8%	High Yield 19.6%	Large Cap 32.4%	Large Cap 13.7%	Cash 0.0%	High Yield 8.7%	Small Cap 21.8%
Fixed Income 11.6%	Cash 4.1%	High Yield 4.1%	DM Equity 39.2%	DM Equity 20.7%	DM Equity 14.0%	DM Equity 26.9%	DM Equity 11.6%	Asset Alloc. -25.4%	DM Equity 32.5%	EM Equity 19.2%	High Yield 3.1%	EM Equity 18.6%	DM Equity 23.3%	Fixed Income 6.0%	High Yield -1.9%	Small Cap 7.4%	EM Equity 21.5%
Cash 6.1%	Small Cap 2.5%	REITs 3.8%	REITs 37.1%	Small Cap 18.3%	REITs 12.2%	Small Cap 18.4%	Asset Alloc. 7.1%	High Yield -26.9%	REITs 28.0%	Comdty. 16.8%	Large Cap 2.1%	DM Equity 17.9%	Asset Alloc. 14.9%	Asset Alloc. 5.2%	Asset Alloc. -4.4%	EM Equity 7.4%	Comdty. 18.4%
High Yield 1.0%	High Yield 2.3%	Cash 1.7%	High Yield 32.4%	High Yield 13.2%	Asset Alloc. 8.1%	Large Cap 15.8%	Fixed Income 7.0%	Small Cap -33.8%	Small Cap 27.2%	Large Cap 15.1%	Cash 0.1%	Small Cap 16.3%	High Yield 7.3%	Small Cap 4.9%	REITs -4.5%	Fixed Income 5.7%	DM Equity 17.6%
Asset Alloc. 0.0%	EM Equity -2.4%	Asset Alloc. -5.9%	Large Cap 28.7%	Asset Alloc. 12.8%	Large Cap 4.9%	Asset Alloc. 15.3%	Large Cap 5.5%	Comdty. -35.6%	Large Cap 26.5%	High Yield 14.8%	Asset Alloc. -0.7%	Large Cap 16.0%	REITs 2.9%	Cash 0.0%	DM Equity -4.9%	Asset Alloc. 5.3%	Large Cap 17.2%
Small Cap -3.0%	Asset Alloc. -3.9%	EM Equity -6.0%	Asset Alloc. 26.3%	Large Cap 10.9%	Small Cap 4.6%	High Yield 13.7%	Cash 4.8%	Large Cap -37.0%	Asset Alloc. 25.0%	Asset Alloc. 13.3%	Small Cap -4.2%	Asset Alloc. 12.2%	Cash 0.0%	High Yield 0.0%	Large Cap -5.3%	Large Cap 4.2%	Asset Alloc. 13.7%
Large Cap -9.1%	Large Cap -11.9%	DM Equity -15.7%	Comdty. 23.9%	Comdty. 9.1%	High Yield 3.6%	Cash 4.8%	High Yield 3.2%	REITs -37.7%	Comdty. 18.9%	DM Equity 8.2%	DM Equity -11.7%	Fixed Income 4.2%	Fixed Income -2.0%	EM Equity -1.8%	Small Cap -7.7%	DM Equity 3.0%	High Yield 11.7%
DM Equity -14.0%	Comdty. -19.5%	Small Cap -20.5%	Fixed Income 4.1%	Fixed Income 4.3%	Cash 3.0%	Fixed Income 4.3%	Small Cap -1.6%	DM Equity -43.1%	Fixed Income 5.9%	Fixed Income 6.5%	Comdty. -13.3%	Cash 0.1%	EM Equity -2.3%	DM Equity -4.5%	EM Equity -15.2%	Comdty. 2.7%	Fixed Income 3.4%
EM Equity -30.6%	DM Equity -21.2%	Large Cap -22.1%	Cash 1.0%	Cash 1.2%	Fixed Income 2.4%	Comdty. 2.1%	REITs -15.7%	EM Equity -53.2%	Cash 0.1%	Cash 0.1%	EM Equity -18.2%	Comdty. -1.1%	Comdty. -9.5%	Comdty. -17.0%	Comdty. -15.8%	Cash 1.9%	Cash 1.0%

Asset Class

Source: Barclays Capital, Bloomberg, FactSet, MSCI, NAREIT, Russell, Standard & Poor's, J.P. Morgan Asset Management.

Large cap: S&P 500, Small cap: Russell 2000, EM Equity: MSCI EME, DM Equity: MSCI EAFE, Comdty: Bloomberg Commodity Index, High Yield: Barclays Global HY Index, Fixed Income: Barclays Capital Aggregate, REITs: NAREIT Equity REIT Index. The "Asset Allocation" portfolio assumes the following weights: 25% in the S&P 500, 10% in the Russell 2000, 15% in the MSCI EAFE, 5% in the MSCI EME, 25% in the Barclays Capital Aggregate, 5% in the Barclays 1-3m Treasury, 5% in the Barclays Global High Yield Index, 5% in the Bloomberg Commodity Index and 5% in the NAREIT Equity REIT Index. Balanced portfolio assumes annual rebalancing. All data represents total return for stated period. Past performance is not indicative of future returns. Data are as of 9/30/15. Annualized (Ann.) 15-yrs returns represent period of 12/31/99 - 12/31/14. Please see disclosure page at end for index definitions.

Guide to the Markets - U.S. Data are as of September 30, 2015.

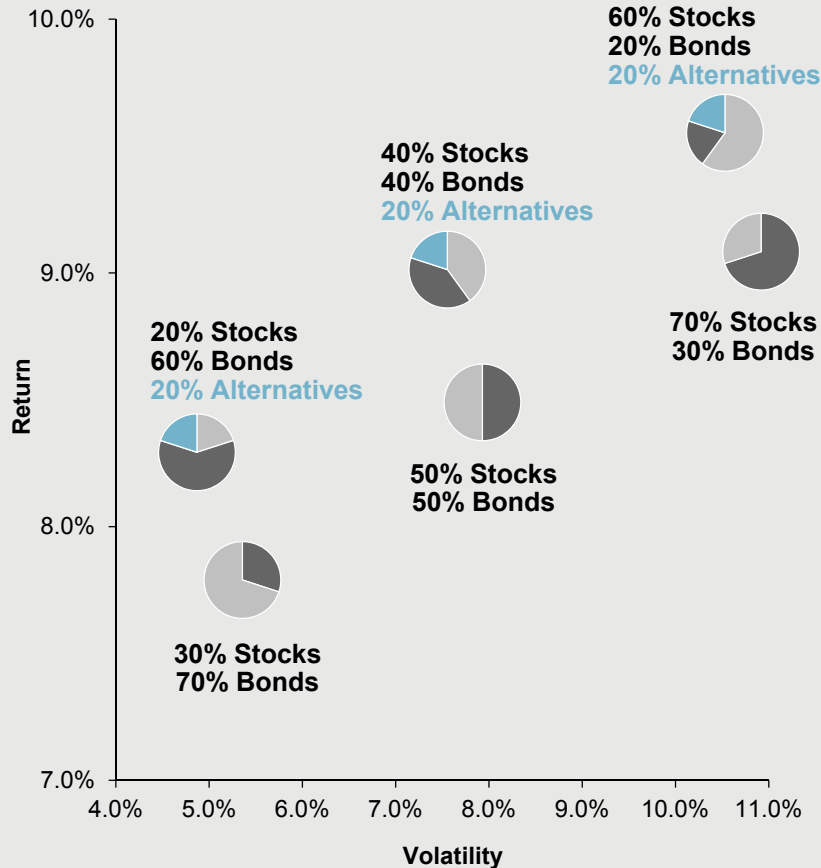
Asset class	U.S. Large Cap	EAFE	EME	Bonds	Corp. HY	Munis	Currency.	EMD	Comdty.	REITs	Hedge Funds	Eq Market Neutral*	Ann. Volatility
U.S. Large Cap	1.00	0.89	0.80	-0.26	0.77	-0.10	-0.47	0.63	0.55	0.78	0.82	0.62	16%
EAFE		1.00	0.91	-0.13	0.81	-0.01	-0.66	0.72	0.64	0.69	0.87	0.53	20%
EME			1.00	-0.08	0.85	0.06	-0.64	0.81	0.68	0.58	0.88	0.52	25%
Bonds				1.00	-0.07	0.81	-0.05	0.25	-0.17	-0.01	-0.22	-0.37	3%
Corp. HY					1.00	0.14	-0.50	0.88	0.64	0.69	0.80	0.61	12%
Munis						1.00	-0.07	0.46	-0.12	0.05	-0.04	-0.14	4%
Currencies							1.00	-0.52	-0.70	-0.38	-0.52	-0.39	8%
EMD								1.00	0.55	0.60	0.68	0.50	8%
Commodities									1.00	0.39	0.72	0.57	20%
REITs										1.00	0.56	0.61	26%
Hedge Funds											1.00	0.64	7%
Eq Market Neutral*												1.00	14%

Source: Barclays Capital Inc., Bloomberg, Credit Suisse/Tremont, FRB, MSCI Inc., NCREIF, Standard & Poor's, J.P. Morgan Asset Management. Indexes used – Large Cap: S&P 500 Index; Currencies: Federal Reserve Trade Weighted Dollar; EAFE: MSCI EAFE; EME: MSCI Emerging Markets; Bonds: Barclays Capital Aggregate; Corp HY: Barclays Capital Corporate High Yield; EMD: Barclays Capital Emerging Market; Comdty.: Bloomberg Commodity Index; Real Estate: NAREIT Equity REIT Index; Hedge Funds: CS/Tremont Multi-Strategy Index; Equity Market Neutral: CS/Tremont Equity Market Neutral Index. \*Market Neutral returns include estimates found in disclosures. All correlation coefficients and annualized volatility calculated based on quarterly total return data for period 9/30/05 to 9/30/15. This chart is for illustrative purposes only. Guide to the Markets – U.S. Data are as of September 30, 2015.



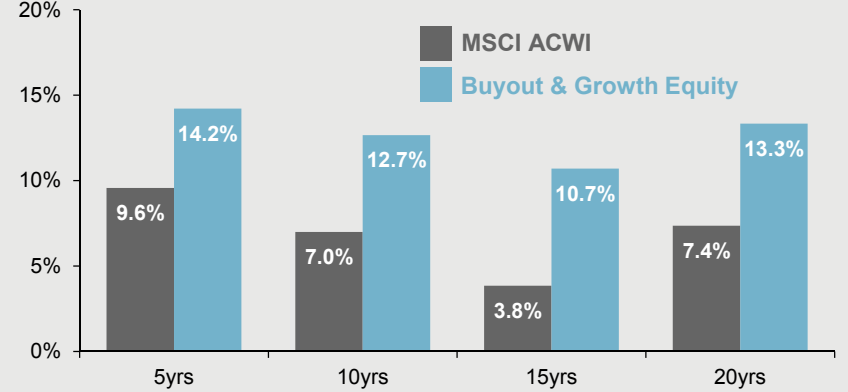
## Alternatives and portfolio risk/return

Annualized volatility and returns, 1Q 1990 – 4Q 2014



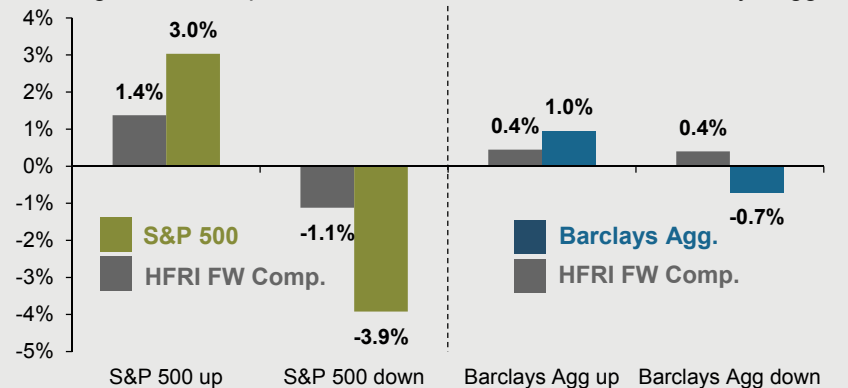
## Public vs. private equity returns

MSCI AC World total return vs. Global Buyout & Growth Equity Index\*



## Hedge fund returns in different market environments

Average return in up and down months for S&P 500 & Barclays Agg.



Sources: J.P. Morgan Asset Management, (Left): Barclays Capital, Cambridge Associates, FactSet, HFRI, NCREIF, Standard & Poor's, (Top right), MSCI, Cambridge Associates, (Bottom right) Barclays Capital, HFRI, Standard & Poor's.

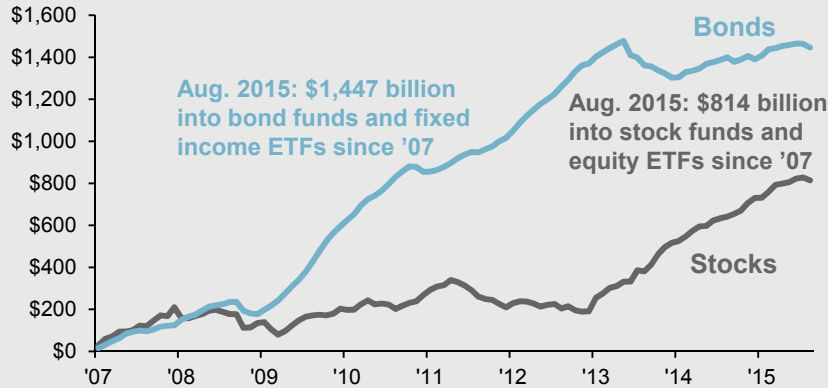
\*Data as of 2Q 2015. The Global Buyout & Growth Equity Index is based on data compiled from 1,768 global (U.S. & ex – U.S.) buyout and growth equity funds, including fully liquidated partnerships, formed between 1986 and 2013. Internal rates of return are net of fees, expenses and carried interest. Hedge fund returns are based on data over the past 15 years. The HFRI FW Comp. represents the HFRI Fund Weighted Composite. The portfolios that do not contain alternatives are a mix of the S&P 500 and the Barclays U.S. Aggregate. The 20% allocation to alternatives shown on the left reflects the following: 10% in hedge funds (HFR FW Comp.), 5% in private equity, and 5% in private real estate. The volatility and returns are based on data from 1Q90 to 4Q14.

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USD billions	AUM	Mutual fund flows																
		YTD 2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
<b>Domestic equity</b>	6,015	(100)	(60)	18	(159)	(133)	(81)	(28)	(149)	(68)	(3)	17	100	120	(25)	57	258	176
<b>World equity</b>	2,115	98	85	141	7	4	57	26	(80)	142	151	107	72	24	(4)	(23)	58	11
<b>Taxable bond</b>	2,903	18	16	(13)	256	129	221	301	22	100	44	21	0	40	125	76	(36)	7
<b>Tax-exempt bond</b>	573	5	28	(58)	50	(12)	12	70	8	11	15	5	(15)	(7)	17	12	(14)	(12)
<b>Hybrid</b>	1,348	3	27	71	45	40	35	20	(26)	40	20	43	53	39	8	7	(37)	(13)
<b>Money market</b>	2,673	(56)	6	32	4	(85)	(455)	(444)	624	570	220	41	(175)	(273)	(62)	354	133	183

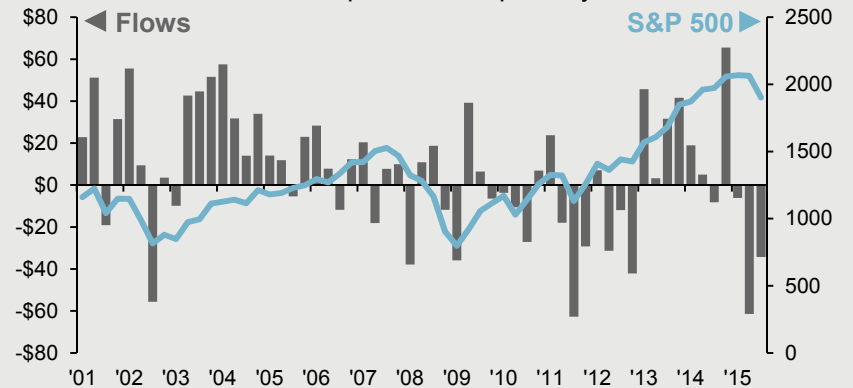
**Cumulative flows into global stock & bond funds**

Mutual fund and ETF flows, USD billions



**Flows into U.S. equity funds & S&P 500 performance**

Mutual fund and ETF flows, price index, quarterly, USD billions

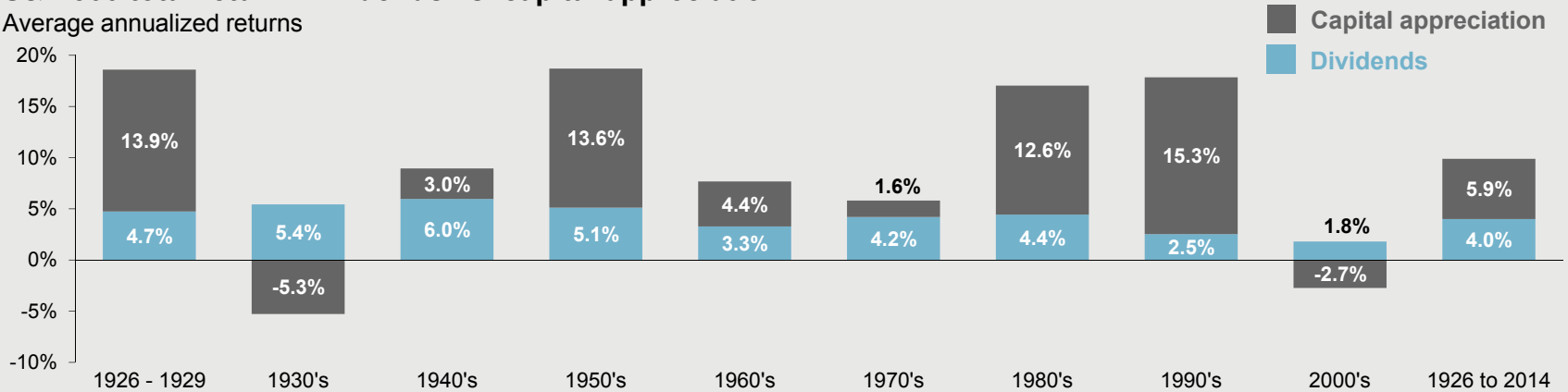


Source: Investment Company Institute, J.P. Morgan Asset Management.

Top: Data includes flows through August 2015 and excludes ETFs. Bottom left and right: Data includes flows through August 2015 and includes ETFs. ICI data are subject to periodic revisions. World equity flows are inclusive of emerging market, global equity and regional equity flows. Hybrid flows include asset allocation, balanced fund, flexible portfolio and mixed income flows. Guide to the Markets – U.S. Data are as of September 30, 2015.

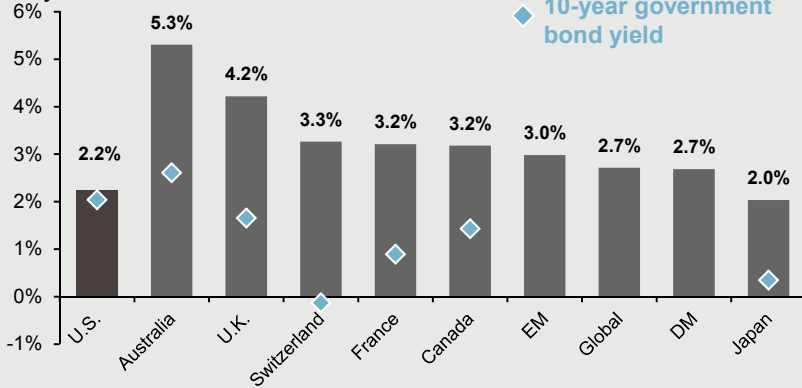
## S&P 500 total return: Dividends vs. capital appreciation

Average annualized returns



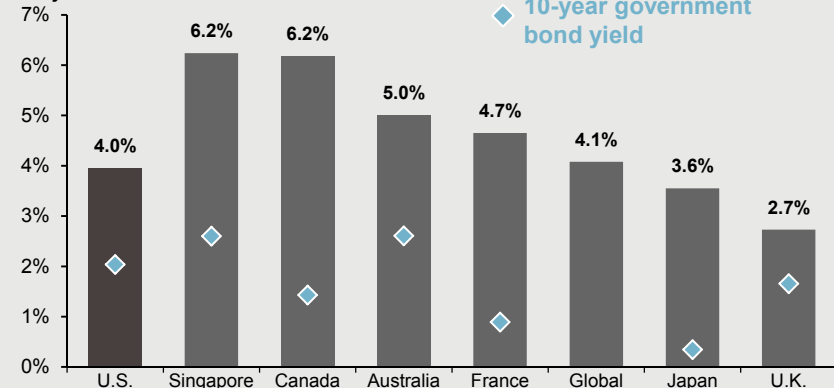
## Equity dividend yields

Major world markets, annualized



## REIT yields

Major world markets, annualized

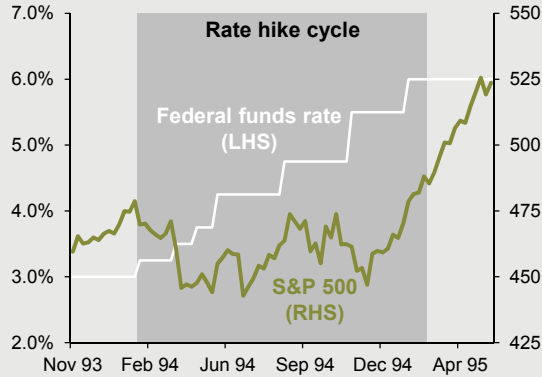


Source: FactSet, J.P. Morgan Asset Management, (Top) Ibbotson, Standard & Poor's, (Bottom left) MSCI, (Bottom right) NAREIT, Standard & Poor's. Dividend vs. capital appreciation returns are through 12/31/14. Bottom left: EM = MSCI Emerging Markets Index, DM = MSCI World Index, Global = MSCI ACWI Index. Yields shown are that of the appropriate FTSE NAREIT REIT index, which excludes property development companies. Yields shown are that of the appropriate MSCI index. Guide to the Markets – U.S. Data are as of September 30, 2015.

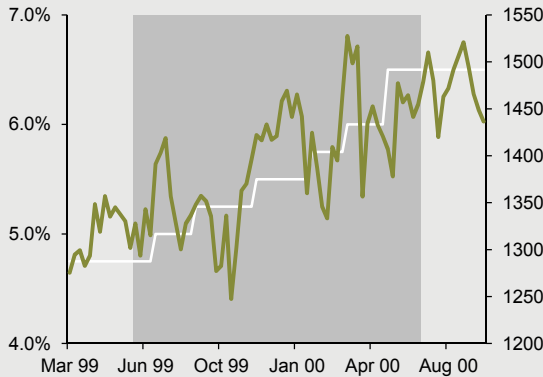
## Returns and yield changes during rate hiking cycles

S&P 500 price index and 10-year U.S. Treasury yield over the last three rate hiking cycles

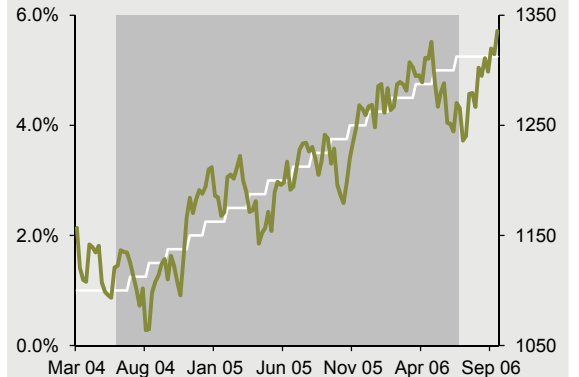
**February 1994 – March 1995**



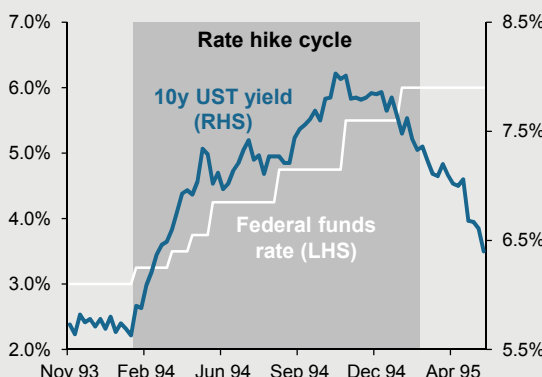
**June 1999 – June 2000**



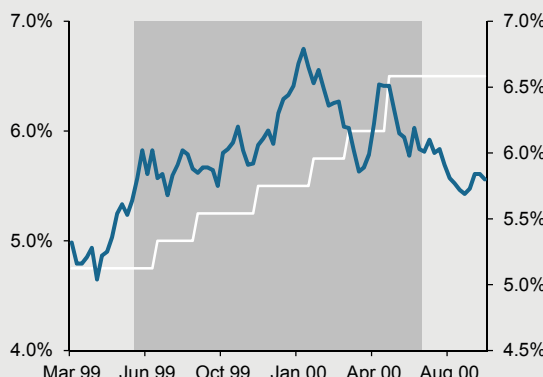
**June 2004 – July 2006**



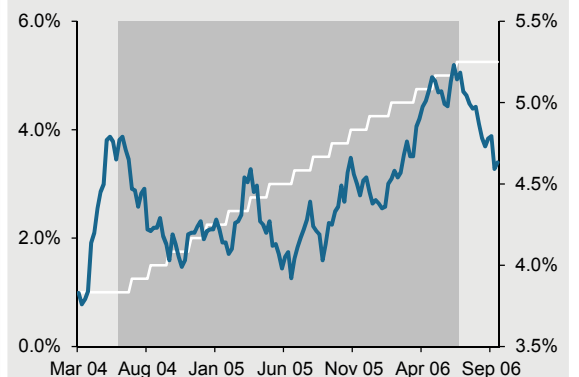
**February 1994 – March 1995**



**June 1999 – June 2000**



**June 2004 – July 2006**

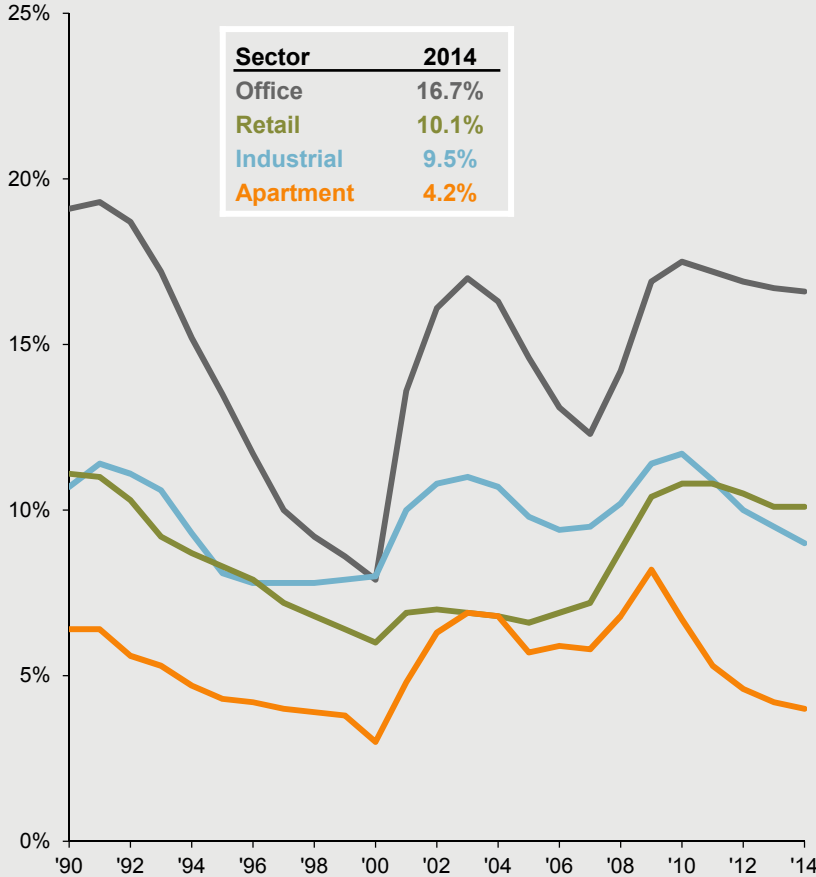


Source: FactSet, Standard & Poor's, J.P. Morgan Asset Management.  
Guide to the Markets – U.S. Data are as of September 30, 2015.

Asset class

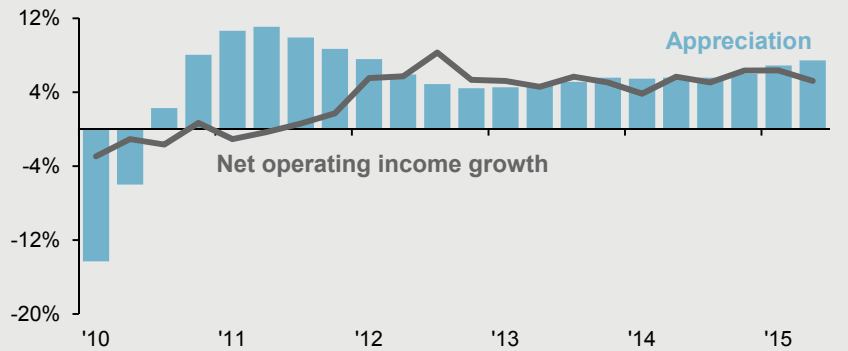
**Commercial vacancy rates by sector**

Percent at year end



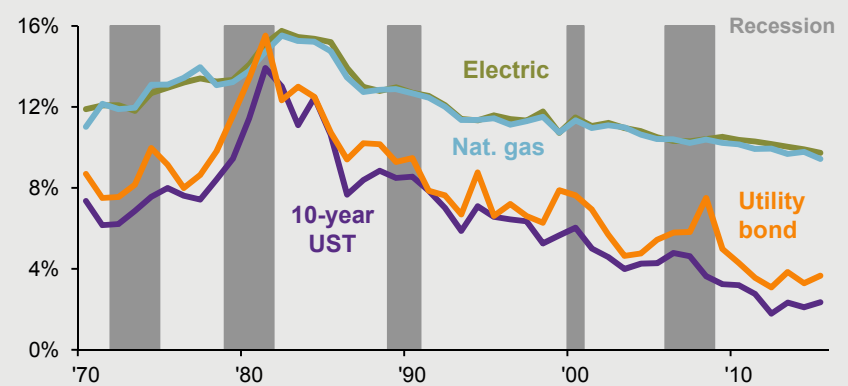
**Property appreciation and operating income growth**

YoY NCREIF ODCE Index\* unlevered property appreciation and NOI growth



**Allowed return on equity over the cost of debt**

OECD infrastructure

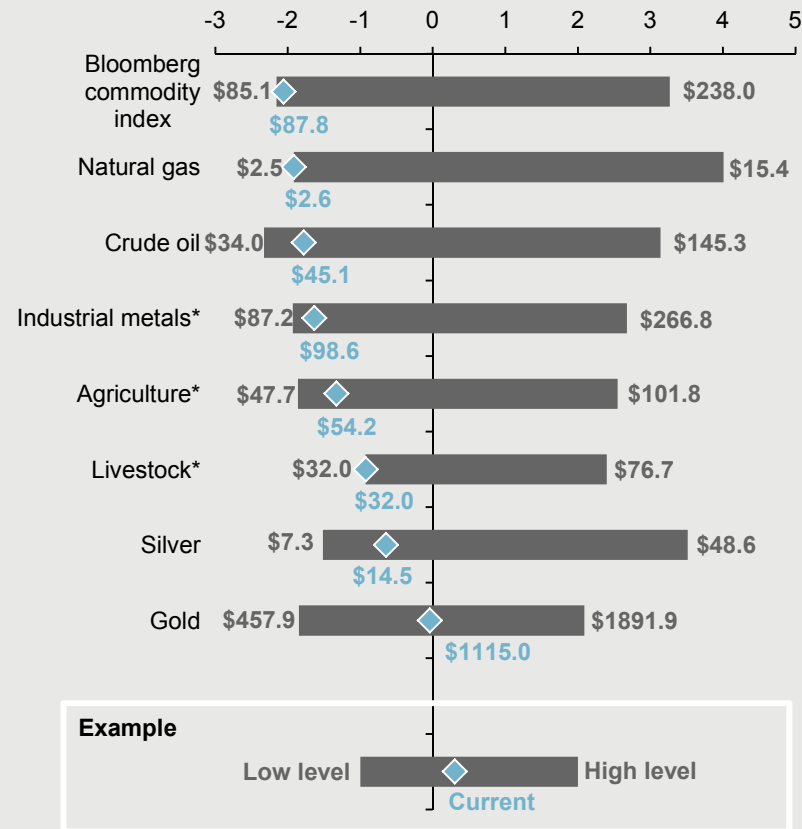


Source: J.P. Morgan Asset Management, (Left) Reis, Inc., (Top right) NCREIF, JPMAM-GRA, (Bottom right) Barclays Capital, Regulatory Research Associates, JPMAM-GRA. Vacancy rate data provided by Reis, Inc. \*Please see disclosure pages for NCREIF Open End Diversified Core Equity Index definition. Guide to the Markets – U.S. Data are as of September 30, 2015.

Asset class

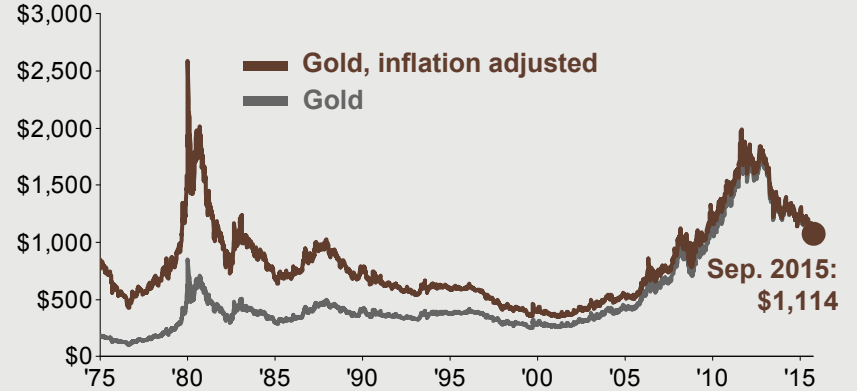
**Commodity prices**

Commodity price z-scores



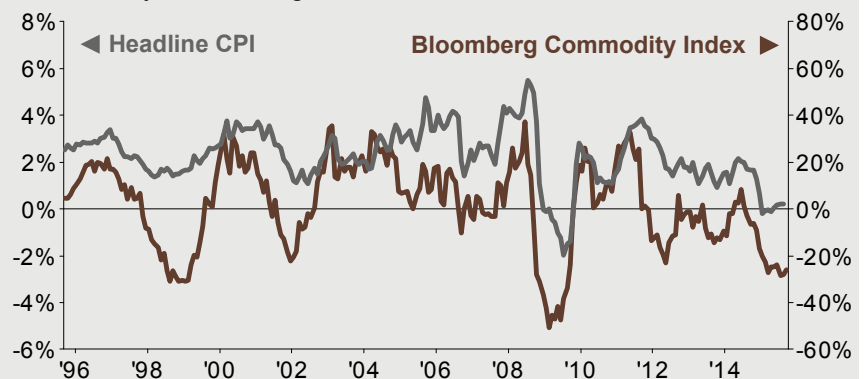
**Gold prices**

USD per ounce



**Commodity prices and inflation**

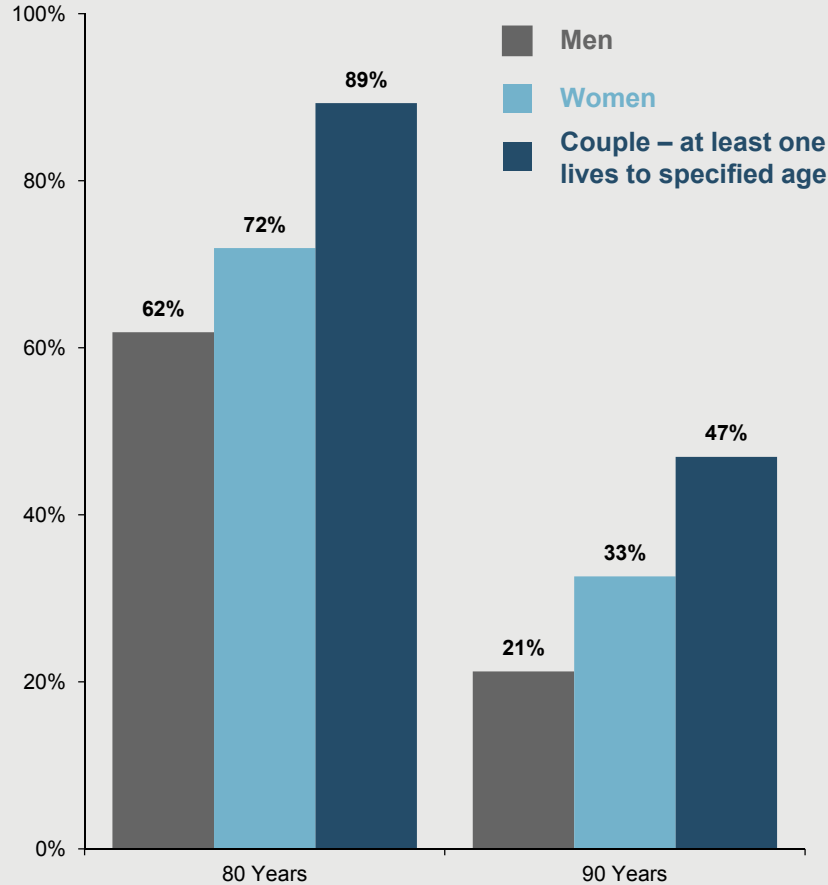
Year-over-year % change



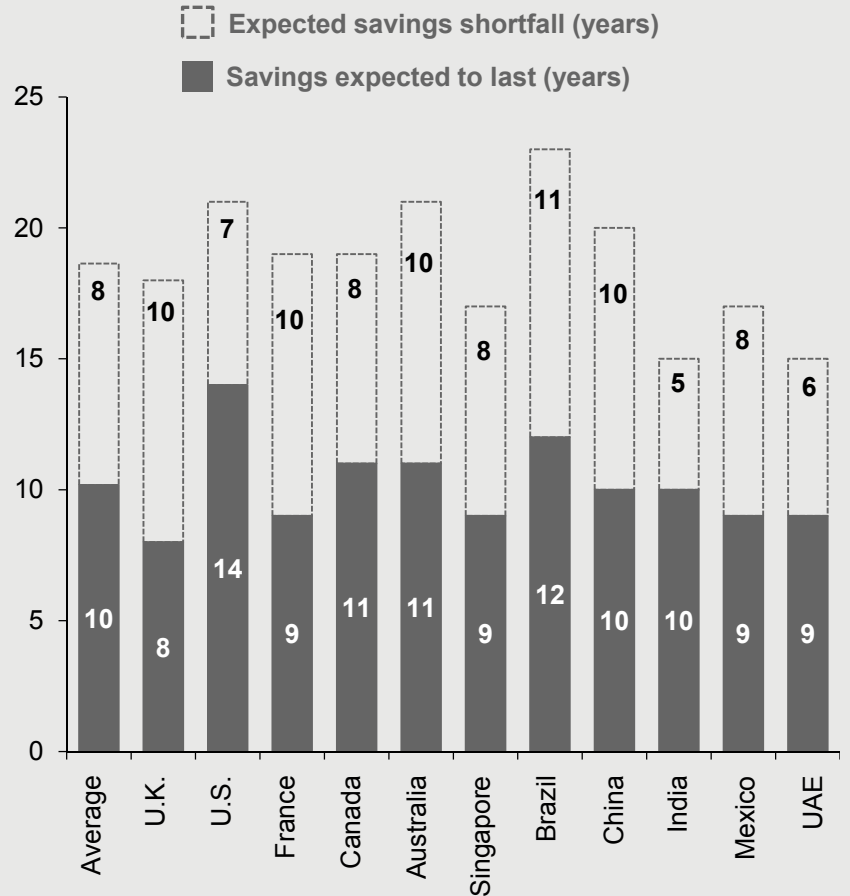
Source: FactSet, J.P. Morgan Asset Management, (Left) Bloomberg, CME, (Top right) CME, BLS, (Bottom right) Bloomberg, BLS.  
 \*Commodity prices are represented by the appropriate Bloomberg Commodity sub-index. Other commodity prices are represented by futures contracts. Z-scores are calculated using daily prices over the past 10 years.  
 Guide to the Markets – U.S. Data are as of September 30, 2015.

## Probability of reaching ages 80 and 90

Persons aged 65, by gender, and combined couple



## Perceived retirement shortfall by country

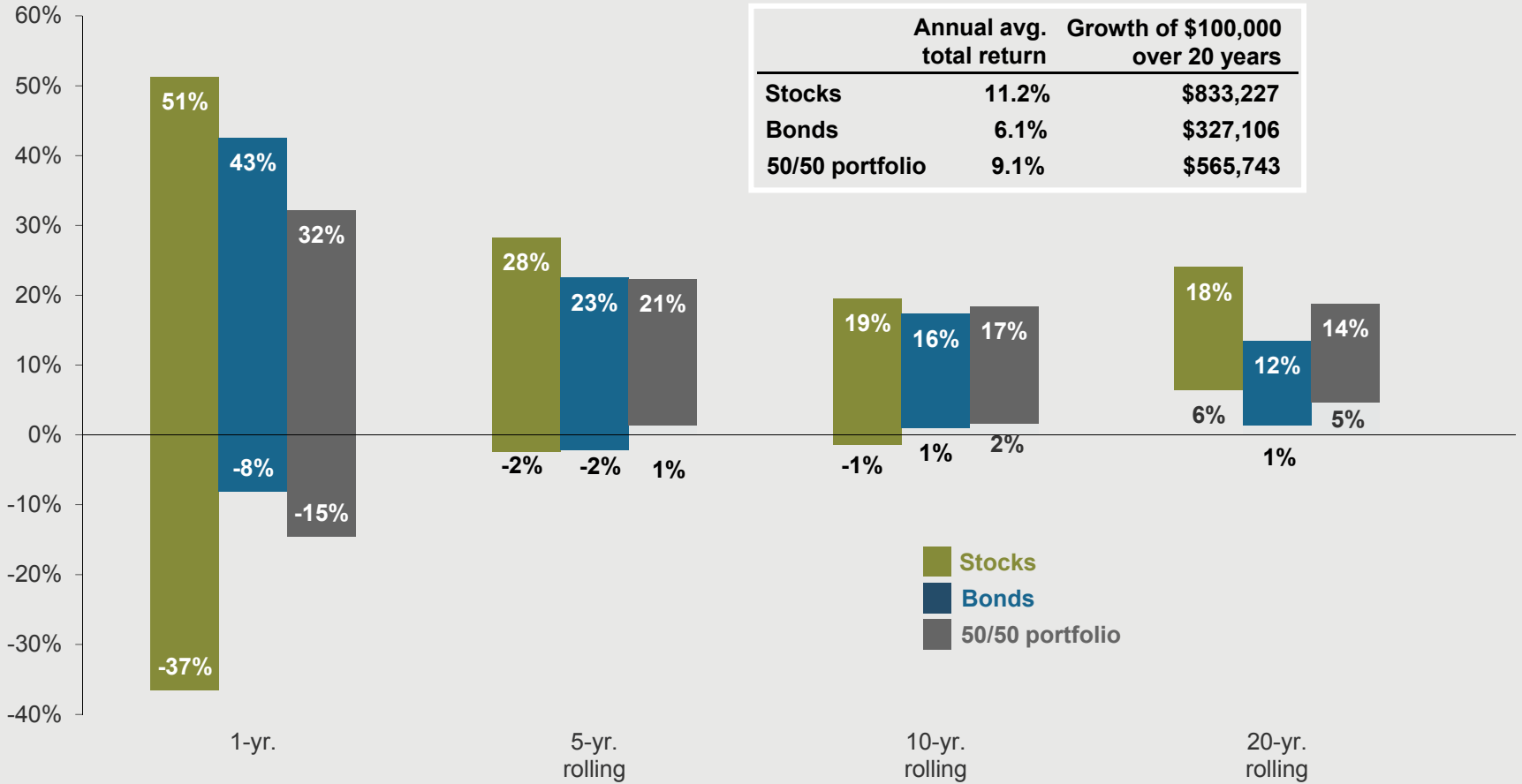


Source: J.P. Morgan Asset Management, (Left) SSA 2010 Life Tables, (Right) "The Future of Retirement: A new reality" study by HSBC. Figures represent the expected portion of retirement that will not be covered by retirement savings based on survey data. Guide to the Markets – U.S. Data are as of September 30, 2015.

Asset class

## Range of stock, bond and blended total returns

Annual total returns, 1950 – 2014



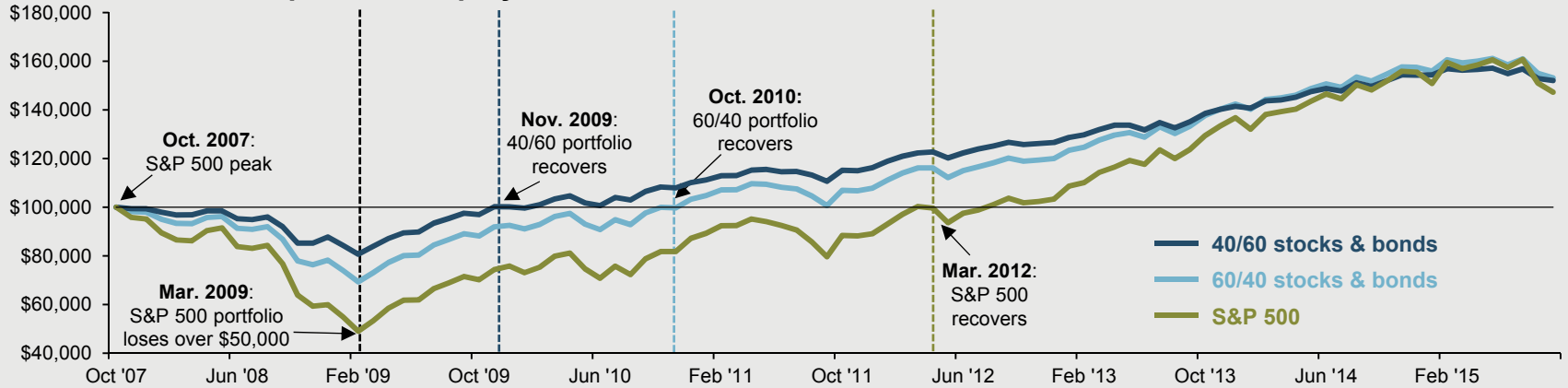
	Annual avg. total return	Growth of \$100,000 over 20 years
<b>Stocks</b>	11.2%	\$833,227
<b>Bonds</b>	6.1%	\$327,106
<b>50/50 portfolio</b>	9.1%	\$565,743

Asset class

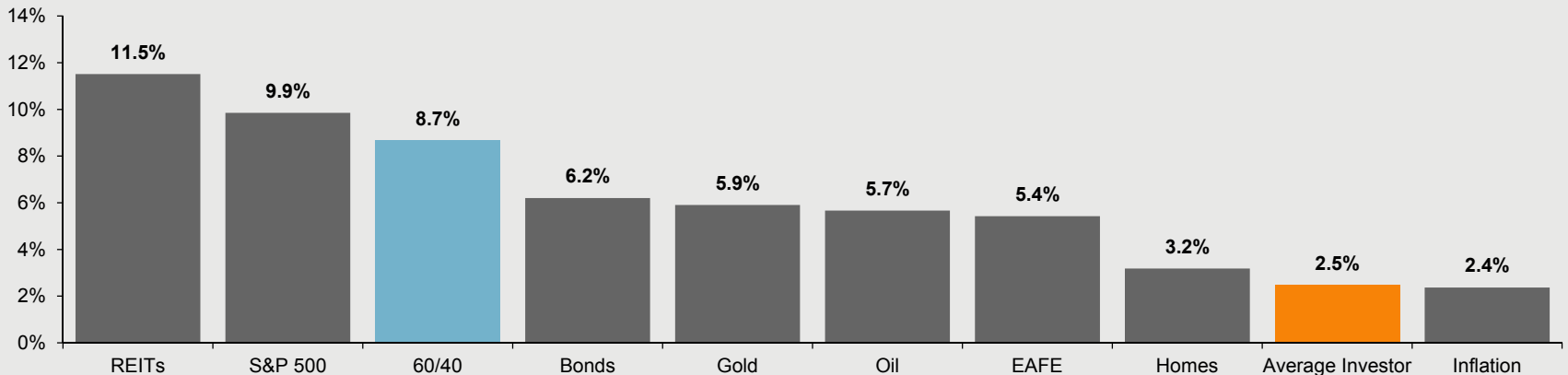
Sources: Barclays Capital, FactSet, Federal Reserve, Robert Shiller, Strategas/Ibbotson, J.P. Morgan Asset Management. Returns shown are based on calendar year returns from 1950 to 2014. Stocks represent the S&P 500 and Bonds represent Strategas/Ibbotson for periods from 1950-1980 and Barclays Aggregate after index inception in 1980. Growth of \$100,000 is based on annual average total returns from 1950-2014. Guide to the Markets – U.S. Data are as of September 30, 2015.



## Portfolio returns: Equities vs. equity and fixed income blend

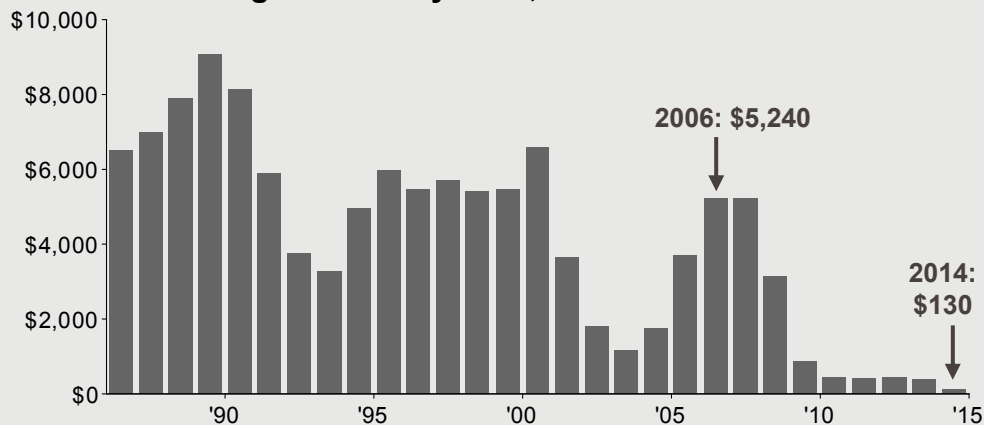


## 20-year annualized returns by asset class (1995 – 2014)

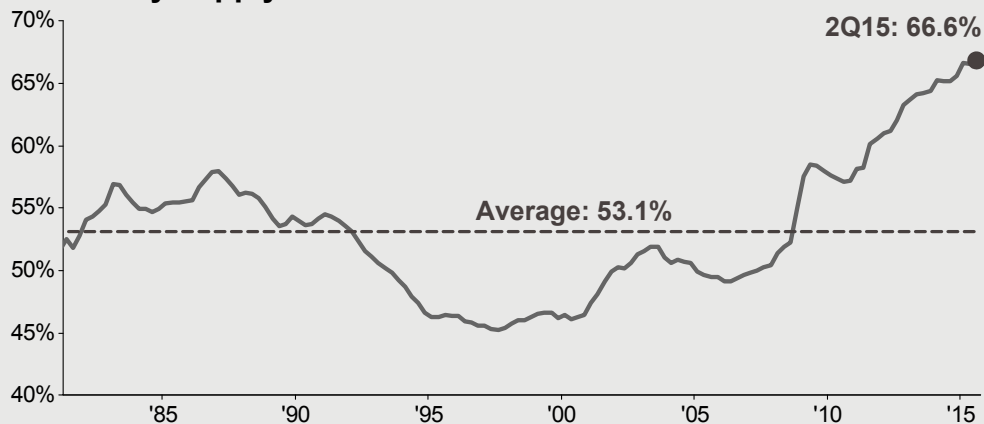


Source: J.P. Morgan Asset Management, (Top) Barclays, FactSet, Standard & Poor's, (Bottom) Dalbar Inc. Indexes used are as follows: REITs: NAREIT Equity REIT Index, EAFE: MSCI EAFE, Oil: WTI Index, Bonds: Barclays Capital U.S. Aggregate Index, Homes: median sale price of existing single-family homes, Gold: USD/troy oz, Inflation: CPI. 60/40: A balanced portfolio with 60% invested in S&P 500 Index and 40% invested high quality U.S. fixed income, represented by the Barclays U.S. Aggregate Index. The portfolio is rebalanced annually. Average asset allocation investor return is based on an analysis by Dalbar Inc., which utilizes the net of aggregate mutual fund sales, redemptions and exchanges each month as a measure of investor behavior. Returns are annualized (and total return where applicable) and represent the 20-year period ending 12/31/14 to match Dalbar's most recent analysis. Guide to the Markets – U.S. Data are as of September 30, 2015.

Annual income generated by \$100,000 investment in a 6-mo. CD



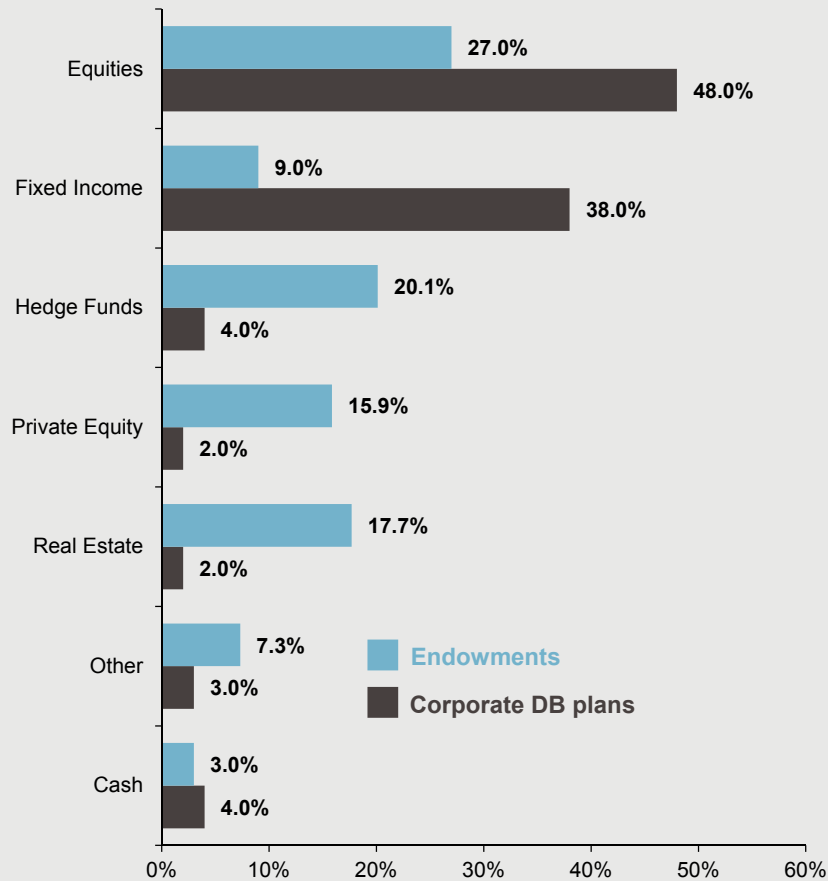
M2 money supply as a % of nominal GDP



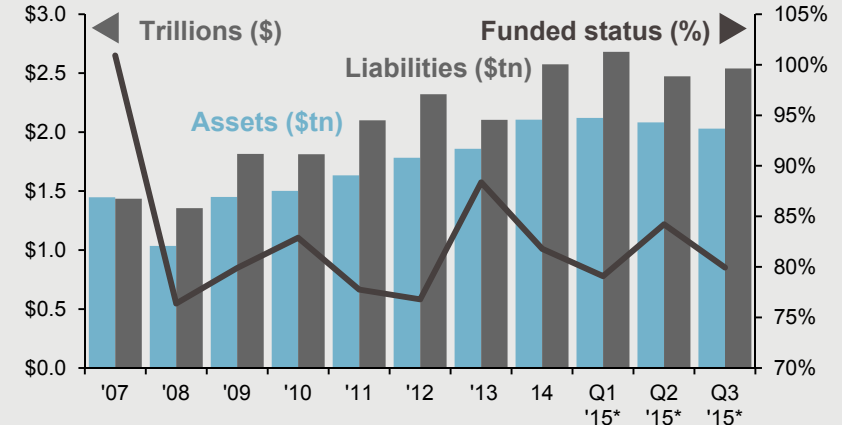
Money supply component	USD billions	Weight in money supply
<b>M2-M1</b>	<b>\$9,089</b>	<b>78.3%</b>
Retail MMMFs	\$621	5.4%
Savings deposits	\$8,007	69.0%
Small time deposits	\$461	4.0%
<b>Institutional MMMFs</b>	<b>\$1,874</b>	<b>16.2%</b>
<b>Cash in IRA &amp; Keogh accounts</b>	<b>\$640</b>	<b>5.5%</b>
<b>Total</b>	<b>\$11,603</b>	<b>100.0%</b>

Source: FactSet, J.P. Morgan Asset Management, (Top left) Bankrate.com, (Bottom left and right) BEA, Federal Reserve, St. Louis Fed. All cash measures obtained from the Federal Reserve are seasonally adjusted monthly numbers. All numbers are in billions of U.S. dollars. Small-denomination time deposits are those issued in amounts of less than \$100,000. All IRA and Keogh account balances at commercial banks and thrift institutions are subtracted from small time deposits. Annual income is for illustrative purposes and is calculated based on the 6-month CD yield on average during each year and \$100,000 invested. IRA and Keogh account balances at money market mutual funds are subtracted from retail money funds. Past performance is not indicative of comparable future results. Guide to the Markets – U.S. Data are as of September 30, 2015.

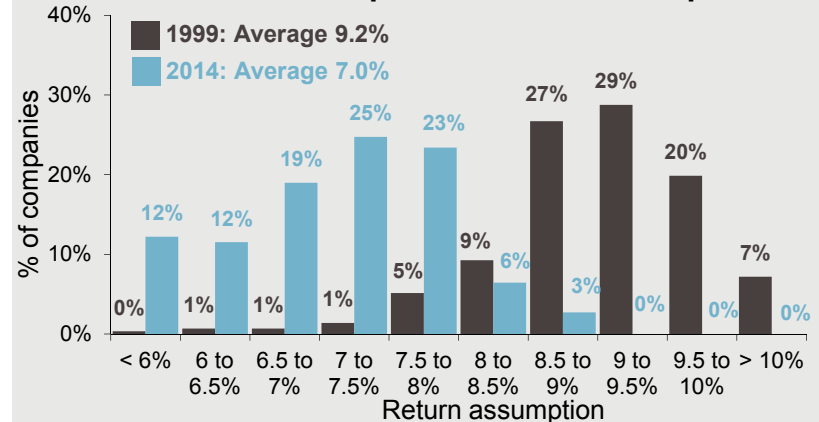
## Asset allocation: Corporate DB plans vs. endowments



## Defined benefit plans: Russell 3000 companies



## Pension return assumptions: S&P 500 companies



Source: J.P. Morgan Asset Management, (Left): NACUBO (National Association of College and University Business Officers), Towers Watson, (Top right): Bloomberg, Russell 3000 corporate 10-Ks, (Bottom right) Compustat/FactSet, Russell 3000 corporate 10-Ks.

Asset allocation as of 2012. \*Funded status for 1Q15, 2Q15 and 3Q15 are estimates based on market moves only and do not include contributions, benefit payments and service costs. Endowments represents dollar-weighted average data of 842 colleges and universities. Pension Return Assumptions based on all available and reported data from S&P 500 Index companies. Pension Assets, Liabilities and Funded Status based on Russell 3000 companies reporting pension data. Return assumption bands are inclusive of upper range. All information is shown for illustrative purposes only.

Guide to the Markets – U.S. Data are as of September 30, 2015.

**All indexes are unmanaged and an individual cannot invest directly in an index. Index returns do not include fees or expenses.**

The **S&P 500 Index** is widely regarded as the best single gauge of the U.S. equities market. This world-renowned index includes a representative sample of 500 leading companies in leading industries of the U.S. economy. Although the S&P 500 Index focuses on the large-cap segment of the market, with approximately 75% coverage of U.S. equities, it is also an ideal proxy for the total market. An investor cannot invest directly in an index.

The **S&P 400 Mid Cap Index** is representative of 400 stocks in the mid-range sector of the domestic stock market, representing all major industries.

The **Russell 3000 Index**® measures the performance of the 3,000 largest U.S. companies based on total market capitalization.

The **Russell 1000 Index**® measures the performance of the 1,000 largest companies in the Russell 3000.

The **Russell 1000 Growth Index**® measures the performance of those Russell 1000 companies with higher price-to-book ratios and higher forecasted growth values.

The **Russell 1000 Value Index**® measures the performance of those Russell 1000 companies with lower price-to-book ratios and lower forecasted growth values.

The **Russell Midcap Index**® measures the performance of the 800 smallest companies in the Russell 1000 Index.

The **Russell Midcap Growth Index**® measures the performance of those Russell Midcap companies with higher price-to-book ratios and higher forecasted growth values. The stocks are also members of the Russell 1000 Growth index.

The **Russell Midcap Value Index**® measures the performance of those Russell Midcap companies with lower price-to-book ratios and lower forecasted growth values. The stocks are also members of the Russell 1000 Value index.

The **Russell 2000 Index**® measures the performance of the 2,000 smallest companies in the Russell 3000 Index.

The **Russell 2000 Growth Index**® measures the performance of those Russell 2000 companies with higher price-to-book ratios and higher forecasted growth values.

The **Russell 2000 Value Index**® measures the performance of those Russell 2000 companies with lower price-to-book ratios and lower forecasted growth values.

The **Russell Top 200 Index**® measures the performance of the largest cap segment of the U.S. equity universe. It includes approximately 200 of the largest securities based on a combination of their market cap and current index membership and represents approximately 68% of the U.S. market.

The **MSCI® EAFE** (Europe, Australia, Far East) Net Index is recognized as the pre-eminent benchmark in the United States to measure international equity performance. It comprises 21 MSCI country indexes, representing the developed markets outside of North America.

The **MSCI Emerging Markets Index**™ is a free float-adjusted market capitalization index that is designed to measure equity market performance in the global emerging markets. As of June 2007, the MSCI Emerging Markets Index consisted of the following 25 emerging market country indices: Argentina, Brazil, Chile, China, Colombia, Czech Republic, Egypt, Hungary, India, Indonesia, Israel, Jordan, Korea, Malaysia, Mexico, Morocco, Pakistan, Peru, Philippines, Poland, Russia, South Africa, Taiwan, Thailand, and Turkey.

The **MSCI ACWI (All Country World Index) Index** is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets. As of June 2009 the **MSCI ACWI** consisted of 45 country indices comprising 23 developed and 22 emerging market country indices.

The **MSCI Small Cap Indices**™ target 40% of the eligible Small Cap universe within each industry group, within each country. MSCI defines the Small Cap universe as all listed securities that have a market capitalization in the range of USD200-1,500 million.

The **MSCI Value and Growth Indices**™ cover the full range of developed, emerging and All Country MSCI Equity indexes. As of the close of May 30, 2003, MSCI implemented an enhanced methodology for the MSCI Global Value and Growth Indices, adopting a two dimensional framework for style segmentation in which value and growth securities are categorized using different attributes - three for value and five for growth including forward-looking variables. The objective of the index design is to divide constituents of an underlying MSCI Standard Country Index into a value index and a growth index, each targeting 50% of the free-float adjusted market capitalization of the underlying country index. Country Value/Growth indices are then aggregated into regional Value/Growth indices. Prior to May 30, 2003, the indices used Price/Book Value (P/BV) ratios to divide the standard MSCI country indices into value and growth indices. All securities were classified as either "value" securities (low P/BV securities) or "growth" securities (high P/BV securities), relative to each MSCI country index.

The following **MSCI Total Return Indices**™ are calculated with gross dividends:

This series approximates the maximum possible dividend reinvestment. The amount reinvested is the dividend distributed to individuals resident in the country of the company, but does not include tax credits.

The **MSCI Europe Index**™ is a free float-adjusted market capitalization index that is designed to measure developed market equity performance in Europe. As of June 2007, the MSCI Europe Index consisted of the following 16 developed market country indices: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

The **MSCI Pacific Index**™ is a free float-adjusted market capitalization index that is designed to measure equity market performance in the Pacific region. As of June 2007, the MSCI Pacific Index consisted of the following 5 Developed Market countries: Australia, Hong Kong, Japan, New Zealand, and Singapore.

**Credit Suisse/Tremont Hedge Fund Index** is compiled by Credit Suisse Tremont Index, LLC. It is an asset-weighted hedge fund index and includes only funds, as opposed to separate accounts. The Index uses the Credit Suisse/Tremont database, which tracks over 4500 funds, and consists only of funds with a minimum of US\$50 million under management, a 12-month track record, and audited financial statements. It is calculated and rebalanced on a monthly basis, and shown net of all performance fees and expenses. It is the exclusive property of Credit Suisse Tremont Index, LLC.

The **NFI-ODCE**, short for NCREIF Fund Index - Open End Diversified Core Equity, is an index of investment returns reporting on both a historical and current basis the results of 33 open-end commingled funds pursuing a core investment strategy, some of which have performance histories dating back to the 1970s. The NFI-ODCE Index is capitalization-weighted and is reported gross of fees. Measurement is time-weighted.

The **NAREIT EQUITY REIT Index** is designed to provide the most comprehensive assessment of overall industry performance, and includes all tax-qualified real estate investment trusts (REITs) that are listed on the NYSE, the American Stock Exchange or the NASDAQ National Market List.

The **Dow Jones Industrial Average** measures the stock performance of 30 leading blue-chip U.S. companies.

The **Bloomberg Commodity Index** is composed of futures contracts on physical commodities and represents twenty two separate commodities traded on U.S. exchanges, with the exception of aluminum, nickel, and zinc

**All indexes are unmanaged and an individual cannot invest directly in an index. Index returns do not include fees or expenses.**

The **S&P GSCI Index** is a composite index of commodity sector returns representing an unleveraged, long-only investment in commodity futures that is broadly diversified across the spectrum of commodities. The returns are calculated on a fully collateralized basis with full reinvestment. Individual components qualify for inclusion in the index on the basis of liquidity and are weighted by their respective world production quantities.

The **Barclays Capital U.S. Aggregate Index** represents securities that are SEC-registered, taxable, and dollar denominated. The index covers the U.S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities. These major sectors are subdivided into more specific indexes that are calculated and reported on a regular basis.

This **U.S. Treasury Index** is a component of the U.S. Government index.

**West Texas Intermediate (WTI)** is the underlying commodity for the New York Mercantile Exchange's oil futures contracts.

The **Barclays Capital High Yield Index** covers the universe of fixed rate, non-investment grade debt. Pay-kind (PIK) bonds, Eurobonds, and debt issues from countries designated as emerging markets (e.g., Argentina, Brazil, Venezuela, etc.) are excluded, but Canadian and global bonds (SEC registered) of issuers in non-EMG countries are included. Original issue zeroes, step-up coupon structures, and 144-As are also included.

The **Barclays Capital 1-3 Month U.S. Treasury Bill Index** includes all publicly issued zero-coupon U.S. Treasury Bills that have a remaining maturity of less than 3 months and more than 1 month, are rated investment grade, and have \$250 million or more of outstanding face value. In addition, the securities must be denominated in U.S. dollars and must be fixed rate and non convertible.

The **Barclays Capital General Obligation Bond Index** is a component of the **Barclays Capital Municipal Bond Index**. To be included in the index, bonds must be general obligation bonds rated investment-grade (Baa3/BBB- or higher) by at least two of the following ratings agencies: Moody's, S&P, Fitch. If only two of the three agencies rate the security, the lower rating is used to determine index eligibility. If only one of the three agencies rates a security, the rating must be investment-grade. They must have an outstanding par value of at least \$7 million and be issued as part of a transaction of at least \$75 million. The bonds must be fixed rate, have a dated-date after December 31, 1990, and must be at least one year from their maturity date. Remarketed issues, taxable municipal bonds, bonds with floating rates, and derivatives, are excluded from the benchmark.

The **Barclays Capital Revenue Bond Index** is a component of the **Barclays Capital Municipal Bond Index**. To be included in the index, bonds must be revenue bonds rated investment-grade (Baa3/BBB- or higher) by at least two of the following ratings agencies: Moody's, S&P, Fitch. If only two of the three agencies rate the security, the lower rating is used to determine index eligibility. If only one of the three agencies rates a security, the rating must be investment-grade. They must have an outstanding par value of at least \$7 million and be issued as part of a transaction of at least \$75 million. The bonds must be fixed rate, have a dated-date after December 31, 1990, and must be at least one year from their maturity date. Remarketed issues, taxable municipal bonds, bonds with floating rates, and derivatives, are excluded from the benchmark.

The **Barclays High Yield Municipal Index** includes bonds rated Ba1 or lower or non-rated bonds using the middle rating of Moody's, S&P and Fitch.

The **Barclays Capital Taxable Municipal Bond Index** is a rules-based, market-value weighted index engineered for the long-term taxable bond market. To be included in the index, bonds must be rated investment-grade (Baa3/BBB- or higher) by at least two of the following ratings agencies if all three rate the bond: Moody's, S&P, Fitch. If only two of the three agencies rate the security, the lower rating is used to determine index eligibility. If only one of the three agencies rates a security, the rating must be investment-grade. They must have an outstanding par value of at least \$7 million and be issued as part of a transaction of at least \$75 million. The bonds must be fixed rate and must be at least one year from their maturity date. Remarketed issues (unless converted to fixed rate), bonds with floating rates, and derivatives, are excluded from the benchmark.

**Municipal Bond Index:** To be included in the index, bonds must be rated investment-grade (Baa3/BBB- or higher) by at least two of the following ratings agencies: Moody's, S&P, Fitch. If only two of the three agencies rate the security, the lower rating is used to determine index eligibility. If only one of the three agencies rates a security, the rating must be investment-grade. They must have an outstanding par value of at least \$7 million and be issued as part of a transaction of at least \$75 million. The bonds must be fixed rate, have a dated-date after December 31, 1990, and must be at least one year from their maturity date. Remarketed issues, taxable municipal bonds, bonds with floating rates, and derivatives are excluded from the benchmark.

The **Barclays Capital Emerging Markets Index** includes USD-denominated debt from emerging markets in the following regions: Americas, Europe, Middle East, Africa, and Asia. As with other fixed income benchmarks provided by Barclays Capital, the index is rules-based, which allows for an unbiased view of the marketplace and easy replicability.

The **Barclays Capital MBS Index** covers the mortgage-backed pass-through securities of Ginnie Mae, Fannie Mae, and Freddie Mac. Aggregate components must have a weighted average maturity of at least one year, must have \$250 million par amount outstanding, and must be fixed rate mortgages.

The **Barclays Capital Corporate Bond Index** is the Corporate component of the U.S. Credit index.

The **Barclays Capital TIPS Index** consists of Inflation-Protection securities issued by the U.S. Treasury.

The **J.P. Morgan EMBI Global Index** includes U.S. dollar denominated Brady bonds, Eurobonds, traded loans and local market debt instruments issued by sovereign and quasi-sovereign entities.

The **J.P. Morgan Domestic High Yield Index** is designed to mirror the investable universe of the U.S. dollar domestic high yield corporate debt market.

The **CS/Tremont Equity Market Neutral Index** takes both long and short positions in stocks with the aim of minimizing exposure to the systematic risk of the market (i.e., a beta of zero).\*

The **CS/Tremont Multi-Strategy Index** consists of funds that allocate capital based on perceived opportunities among several hedge fund strategies. Strategies adopted in a multi-strategy fund may include, but are not limited to, convertible bond arbitrage, equity long/short, statistical arbitrage and merger arbitrage.

The **Barclays U.S. Dollar Floating Rate Note (FRN) Index** provides a measure of the U.S. dollar denominated floating rate note market.

\*Market Neutral returns for November 2008 are estimates by J.P. Morgan Funds Market Strategy, and are based on a December 8, 2008 published estimate for November returns by CS/Tremont in which the Market Neutral returns were estimated to be +0.85% (with 69% of all CS/Tremont constituents having reported return data). Presumed to be excluded from the November return are three funds, which were later marked to \$0 by CS/Tremont in connection with the Bernard Madoff scandal. J.P. Morgan Funds believes this distortion is not an accurate representation of returns in the category. CS/Tremont later published a finalized November return of -40.56% for the month, reflecting this mark-down. CS/Tremont assumes no responsibility for these estimates.

**Bonds** are subject to interest rate risks. Bond prices generally fall when interest rates rise.

The price of **equity** securities may rise, or fall because of changes in the broad market or changes in a company's financial condition, sometimes rapidly or unpredictably. These price movements may result from factors affecting individual companies, sectors or industries, or the securities market as a whole, such as changes in economic or political conditions. Equity securities are subject to "stock market risk" meaning that stock prices in general may decline over short or extended periods of time.

**Small-capitalization** investing typically carries more risk than investing in well-established "blue-chip" companies since smaller companies generally have a higher risk of failure. Historically, smaller companies' stock has experienced a greater degree of market volatility than the average stock.

**Mid-capitalization** investing typically carries more risk than investing in well-established "blue-chip" companies. Historically, mid-cap companies' stock has experienced a greater degree of market volatility than the average stock.

**Real estate** investments may be subject to a higher degree of market risk because of concentration in a specific industry, sector or geographical sector. Real estate investments may be subject to risks including, but not limited to, declines in the value of real estate, risks related to general and economic conditions, changes in the value of the underlying property owned by the trust and defaults by borrower.

**International** investing involves a greater degree of risk and increased volatility. Changes in currency exchange rates and differences in accounting and taxation policies outside the U.S. can raise or lower returns. Also, some overseas markets may not be as politically and economically stable as the United States and other nations.

Investments in **emerging markets** can be more volatile. As mentioned above, the normal risks of investing in foreign countries are heightened when investing in emerging markets. In addition, the small size of securities markets and the low trading volume may lead to a lack of liquidity, which leads to increased volatility. Also, emerging markets may not provide adequate legal protection for private or foreign investment or private property.

Investments in **commodities** may have greater volatility than investments in traditional securities, particularly if the instruments involve leverage. The value of commodity-linked derivative instruments may be affected by changes in overall market movements, commodity index volatility, changes in interest rates, or factors affecting a particular industry or commodity, such as drought, floods, weather, livestock disease, embargoes, tariffs and international economic, political and regulatory developments. Use of leveraged commodity-linked derivatives creates an opportunity for increased return but, at the same time, creates the possibility for greater loss.

Investing in **alternative assets** involves higher risks than traditional investments and is suitable only for sophisticated investors. Alternative investments involve greater risks than traditional investments and should not be deemed a complete investment program. They are not tax efficient and an investor should consult with his/her tax advisor prior to investing. Alternative investments have higher fees than traditional investments and they may also be highly leveraged and engage in speculative investment techniques, which can magnify the potential for investment loss or gain. The value of the investment may fall as well as rise and investors may get back less than they invested.

**Derivatives** may be riskier than other types of investments because they may be more sensitive to changes in economic or market conditions than other types of investments and could result in losses that significantly exceed the original investment. The use of derivatives may not be successful, resulting in investment losses, and the cost of such strategies may reduce investment returns.

**Price to forward earnings** is a measure of the price-to-earnings ratio (P/E) using forecasted earnings. **Price to book value** compares a stock's market value to its book value. **Price to cash flow** is a measure of the market's expectations of a firm's future financial health. **Price to dividends** is the ratio of the price of a share on a stock exchange to the dividends per share paid in the previous year, used as a measure of a company's potential as an investment.

There is no guarantee that the use of **long and short positions** will succeed in limiting an investor's exposure to domestic stock market movements, capitalization, sector swings or other risk factors. Using long and short selling strategies may have higher portfolio turnover rates. Short selling involves certain risks, including additional costs associated with covering short positions and a possibility of unlimited loss on certain short sale positions.

The **HFRI Monthly Indices (HFRI)** are equally weighted performance indexes, utilized by numerous hedge fund managers as a benchmark for their own hedge funds. The HFRI are broken down into 4 main strategies, each with multiple substrategies. All single-manager HFRI Index constituents are included in the HFRI Fund Weighted Composite, which accounts for over 2200 funds listed on the internal HFR Database.

**Equity Market Neutral Strategies** employ sophisticated quantitative techniques of analyzing price data to ascertain information about future price movement and relationships between securities, select securities for purchase and sale. Equity Market Neutral Strategies typically maintain characteristic net equity market exposure no greater than 10% long or short.

**Distressed Restructuring Strategies** employ an investment process focused on corporate fixed income instruments, primarily on corporate credit instruments of companies trading at significant discounts to their value at issuance or obliged (par value) at maturity as a result of either formal bankruptcy proceeding or financial market perception of near term proceedings.

**Merger Arbitrage Strategies** which employ an investment process primarily focused on opportunities in equity and equity related instruments of companies which are currently engaged in a corporate transaction.

**Global Macro Strategies** trade a broad range of strategies in which the investment process is predicated on movements in underlying economic variables and the impact these have on equity, fixed income, hard currency and commodity markets.

**Relative Value Strategies** maintain positions in which the investment thesis is predicated on realization of a valuation discrepancy in the relationship between multiple securities.

The **Cambridge Associates LLC U.S. Private Equity Index®** is an end-to-end calculation based on data compiled from 1,052 U.S. private equity funds (buyout, growth equity, private equity energy and mezzanine funds), including fully liquidated partnerships, formed between 1986 and 2013.

The **Alerian MLP Index** is a composite of the 50 most prominent energy Master Limited Partnerships (MLPs) that provides investors with an unbiased, comprehensive benchmark for the asset class.

**The Market Insights program provides comprehensive data and commentary on global markets without reference to products. Designed as a tool to help clients understand the markets and support investment decision-making, the program explores the implications of current economic data and changing market conditions.**

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Unless otherwise stated, all data are as of September 30, 2015 or most recently available.

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