

leadership series | FIRST QUARTER 2016

# Quarterly Market Update

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## Market Summary

# Overview: Global Environment Poised to Stabilize in 2016

China's economic slowdown, exacerbated by the Federal Reserve's move to a tightening posture, caused global growth concerns to dominate markets during the second half of 2015. With the U.S. economy holding steady in the mid-cycle phase, we expect the world economy and markets to stabilize in 2016, though volatility may remain elevated.

## 2015 TRENDS

### MACRO

- Weak global economy pressured by heightened divergences
  - Solid U.S. mid-cycle
  - Growth recession in China
  - Disinflation trends continued amid further drop in commodity prices
- Policy direction deviated
  - Federal Reserve hiked rates
  - China boosted stimulus, eased currency
  - Europe eased further

### MARKETS

- Lackluster year for asset markets
- Weak commodities, EMs; strong dollar
- Narrow markets, higher volatility

## OUTLOOK 2016

- Global economy will muddle through, digest Fed hike, and stabilize
  - U.S. mid-cycle economy sturdy amid bright consumer outlook
  - Europe cyclical trajectory solid
  - China the biggest risk, but emphasis on stimulus and stability
  - Global growth and inflation to surpass low expectations
- Late-cycle risks may rise as year progresses
  - Low “base effect” may eventually help lift inflation, EM growth, commodity prices
- Elevated volatility likely to continue
- Favor equities but smaller allocation tilts
- Interest rate spike unlikely, though may have reached secular lows
- Final innings of sharp downward move in EMs, commodities, non-U.S. currencies

# Weak Year for Asset Markets as Volatility Returns

Despite an equity bounce in Q4, many asset categories finished 2015 in negative territory. Mainstream U.S. asset classes such as large-cap stocks and high-quality bonds eked out positive returns and outpaced most riskier categories for the second year in a row. Commodities and emerging-market equities suffered hefty losses amid flagging global growth.

	2015 (%)	Q4 2015 (%)		2015 (%)	Q4 2015 (%)
Non-U.S. Small-Cap Stocks	9.9%	6.8%	U.S. Mid-Cap Stocks	-2.4%	3.6%
Real Estate Stocks	2.8%	7.7%	Long Government & Credit Bonds	-3.3%	-0.9%
U.S. Large-Cap Stocks	1.4%	7.0%	U.S. Small-Cap Stocks	-4.4%	3.6%
Emerging-Market Bonds	1.2%	1.5%	High-Yield Bonds	-4.6%	-2.2%
Investment-Grade Bonds	0.5%	-0.6%	Gold	-12.1%	-4.8%
Non-U.S. Developed-Country Stocks	-0.4%	4.7%	Emerging-Market Stocks	-14.6%	0.7%
U.S. Corporate Bonds	-0.8%	-0.5%	Commodities	-24.7%	-10.5%

## Risk Meter: U.S. Large-Cap Stock minus Intermediate Treasury Bond Returns, 1986–2015

Calendar Year Return Difference (%)



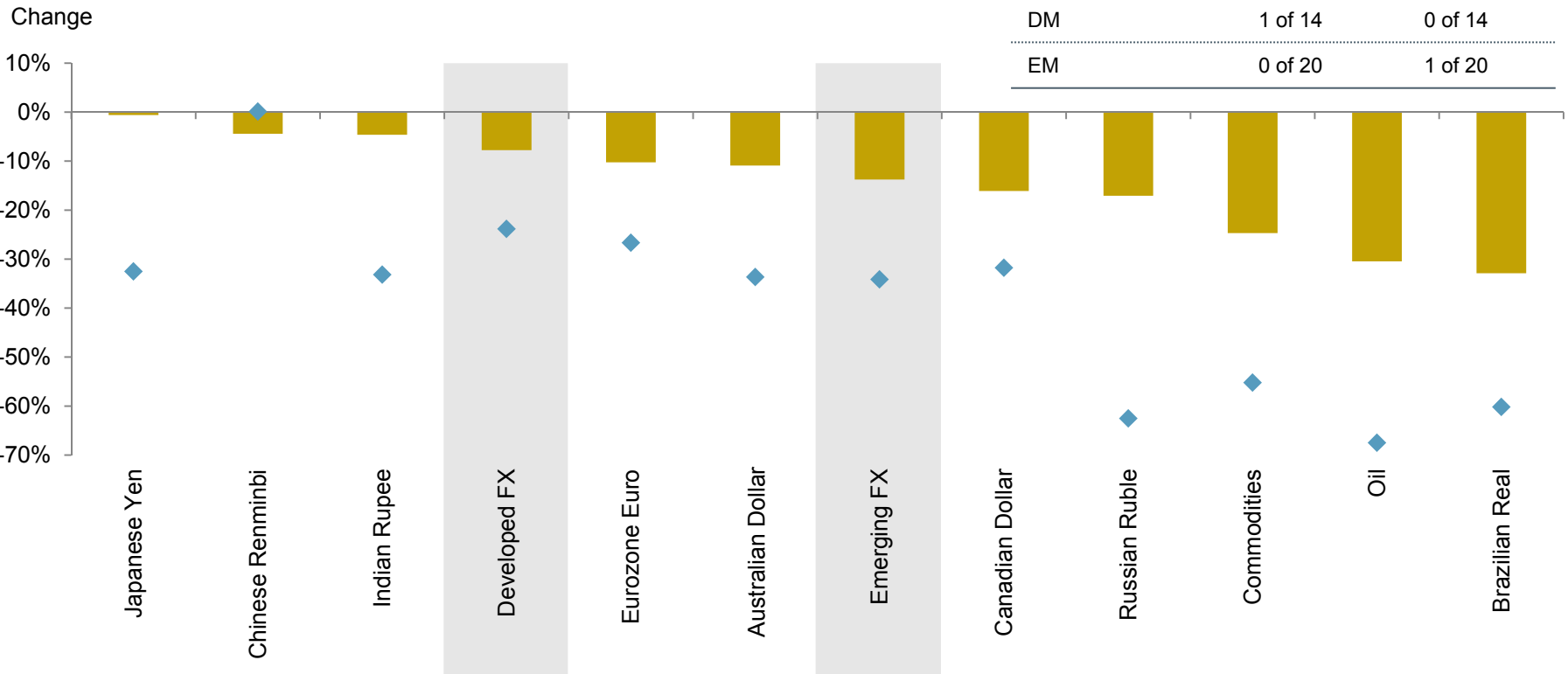
Past performance is no guarantee of future results. It is not possible to invest directly in an index. See appendix for important index information. Assets represented by: Commodities – Bloomberg Commodity Index; Emerging-Market Bonds – JP Morgan EMBI Global Index; Emerging-Market Stocks – MSCI EM Index; Gold – Gold Bullion, LBMA PM Fix; High Yield Bonds – Bank of America Merrill Lynch (BofA ML) High Yield Bond Index; Investment-Grade Bonds – Barclays U.S. Aggregate Bond Index; Non-U.S. Developed-Country Stocks – MSCI EAFE Index; Non-U.S. Small-Cap Stocks – MSCI EAFE Small Cap Index; Real Estate Stocks – FTSE NAREIT Equity Index; U.S. Corporate Bonds – Barclays U.S. Credit Index; U.S. Large-Cap Stocks – S&P 500 Index; U.S. Mid-Cap Stocks – Russell Midcap Index; U.S. Small-Cap Stocks – Russell 2000 Index; Long Government & Credit (Investment-Grade) – Barclays Long Government & Credit Index. Source: FactSet, Morningstar, Fidelity Investments (AART), as of 12/31/15.

# Another Leg Up for the Dollar, Down for Commodities in 2015

Oil and many other commodity prices dropped sharply in 2015, while the U.S. dollar rose against almost all other currencies, with particularly large currency declines among emerging-market commodity producers. After a multi-year plunge, 2016 may experience the final innings of sharp declines in commodity prices and non-U.S. currencies.

## FX and Commodity Performance vs. USD

■ 2015 ◆ Since April 2011 (USD Trough)



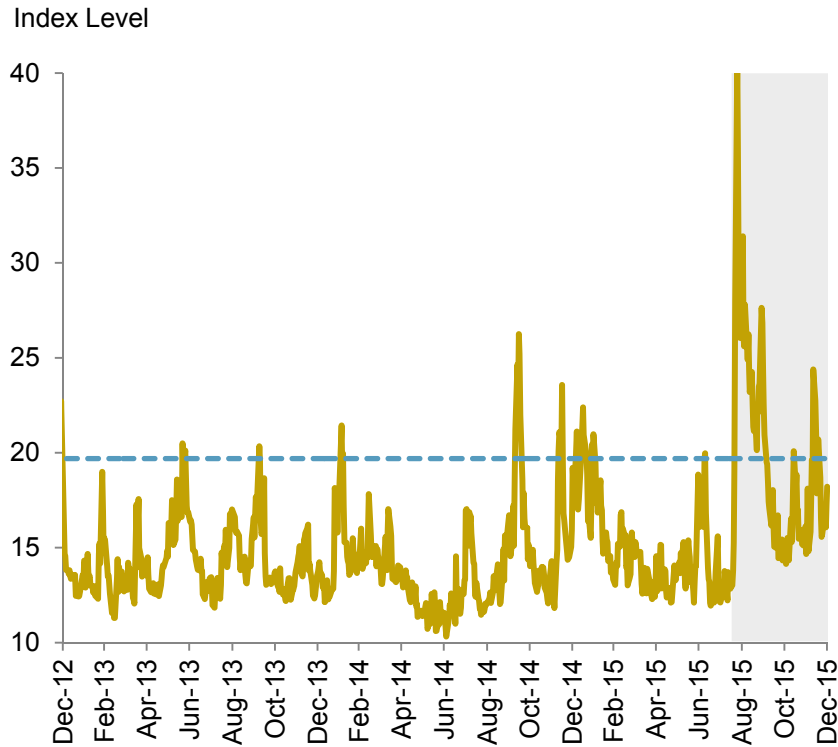
# Currencies Rising vs. USD	2015	Since April 2011
DM	1 of 14	0 of 14
EM	0 of 20	1 of 20

# Higher Equity Volatility, Developed Countries Outperform

After two years of below-average volatility, the slowdown in the global economy and the Fed's move toward policy tightening generated market turbulence during the second half of 2015. Nevertheless, developed markets outperformed emerging-market equities in 2015, continuing a multi-year trend.

## U.S. Equity Volatility (VIX)

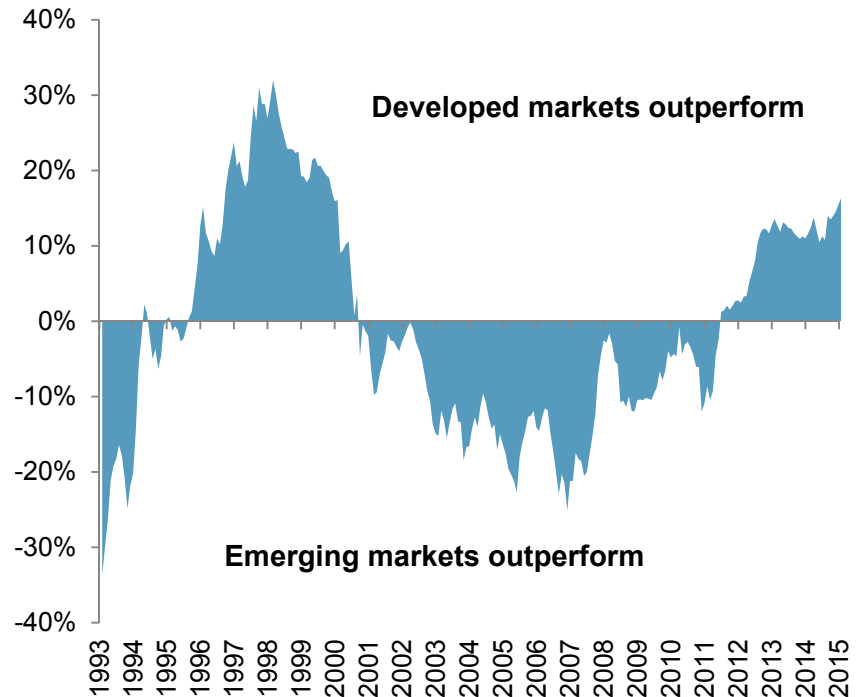
— VIX Index — Long-Term Historical Average



## DM vs. EM Relative Performance

■ DM Minus EM Returns

Rolling 36-month Annualized Relative Returns



## Theme: Digesting the Fed

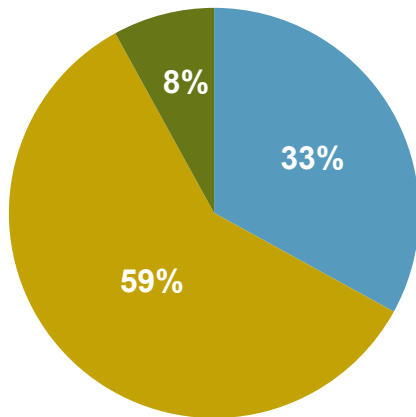


# First Fed Rate Hike Not Typically the Start of a Downturn

Historically, the first interest-rate hike in a Federal Reserve tightening cycle has occurred during the mid-cycle phase, has signaled that the economic expansion is strengthening, and has rarely presaged an abrupt move into the late-cycle phase. Economically sensitive assets such as equities have typically performed well in the period following the initial hike.

## Frequency of First Fed Rate Hike by Business Cycle Phase, 1950–2010

■ Early ■ Mid ■ Late



### Median Performance During Fed Tightening Cycles, 1950-2010

Asset Class	3 Months After	6 Months After	12 Months After	24 Months After
U.S. Equities	0%	9%	10%	22%
DM Equities	3%	7%	14%	38%
EM Equities	1%	8%	16%	23%
Commodities	3%	4%	7%	34%
IG Bonds	1%	1%	3%	14%

DM: developed market. EM: emerging market. IG Bonds: Investment-Grade Bonds (Barclays U.S. Aggregate Bond Index). Past performance is no guarantee of future results. You cannot invest directly in an index. See appendix for important index information. Performance not annualized.

**CHART:** Source: Bloomberg Finance L.P., Federal Reserve, Haver Analytics, Fidelity Investments (AART), as of 12/31/14. **TABLE:** Median asset class performance around the last 12 Fed tightening cycles. Source: Bank of America Merrill Lynch, Barclays, Morningstar, MSCI, Bloomberg Finance L.P., Fidelity Investments (AART), as of 12/31/15.

# Weak Globe, Low Inflation Make Major Rate Spike Unlikely

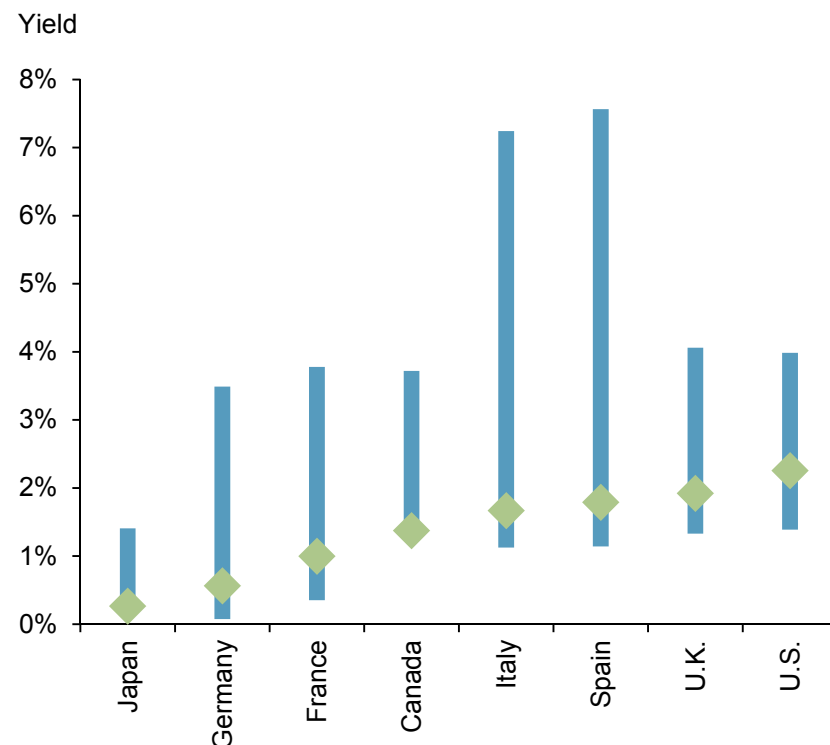
During the past 30 years, the start of a tightening cycle has typically occurred amid rising inflationary pressures and mounting global economic momentum—in stark contrast to the conditions that the Fed faced in December 2015. Along with the low global-bond-yield environment, this suggests that the pace of Fed tightening and bond yield increases may be gradual.

## U.S. Inflation and Global Growth During Initial Fed Rate Hikes

	Share of Global LEIs Rising	Headline CPI
Average of Past 5 Tightening Cycles	80%	2.5%
Prior to December 2015 Hike	45%	0.5%

## 10-Year Government Yields

■ 5-Year Range ◆ Year-End 2015

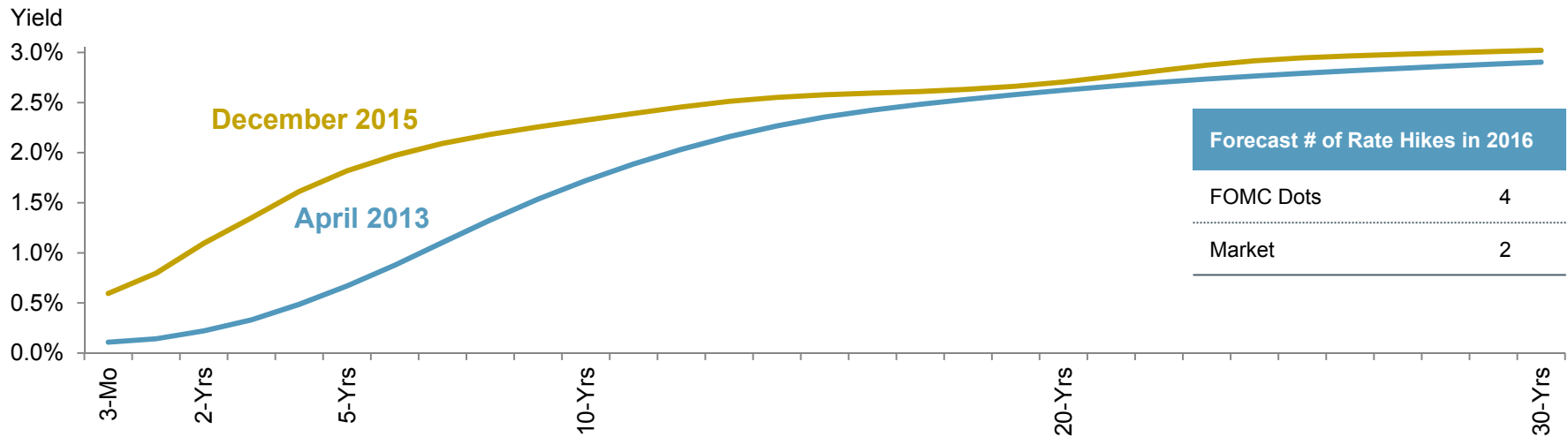


# Yield Curve Shift: Portion of Tightening Already Occurred

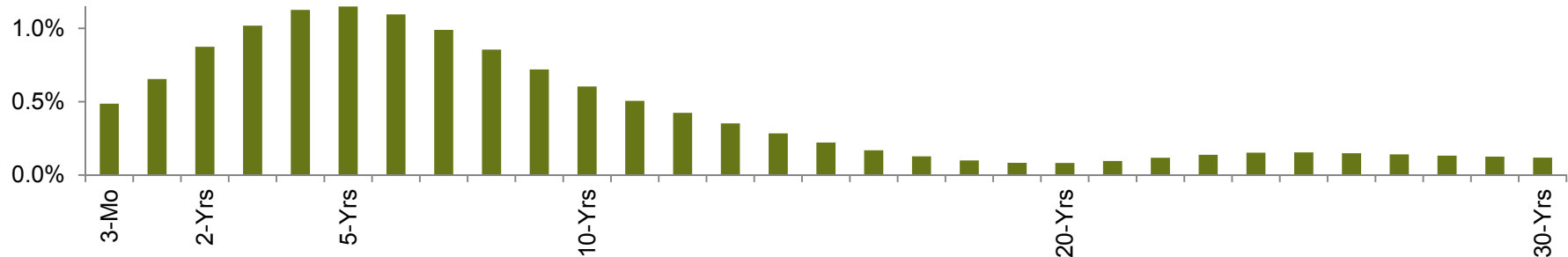
Since the Fed first signaled a potential rate increase in mid-2013, through the initial hike at the end of 2015, the yield curve has shifted up, most sharply in the intermediate range of the curve. Market expectations for the pace of additional tightening in 2016 are even more gradual than the Fed's projections.

## U.S. Treasury Yield Curve

— Pre-Taper Tantrum — Year-End 2015



## Yield Curve Changes



# Global Markets Likely to Withstand Fed Tightening

When investors began to price in a Fed rate hike during mid-2015, it squeezed global dollar liquidity and prompted China into a surprise currency devaluation that roiled global markets. While risks of a destabilizing, large one-time devaluation still exist, developments in late 2015 suggest that a managed RMB depreciation and gradual global stabilization scenario is most likely.

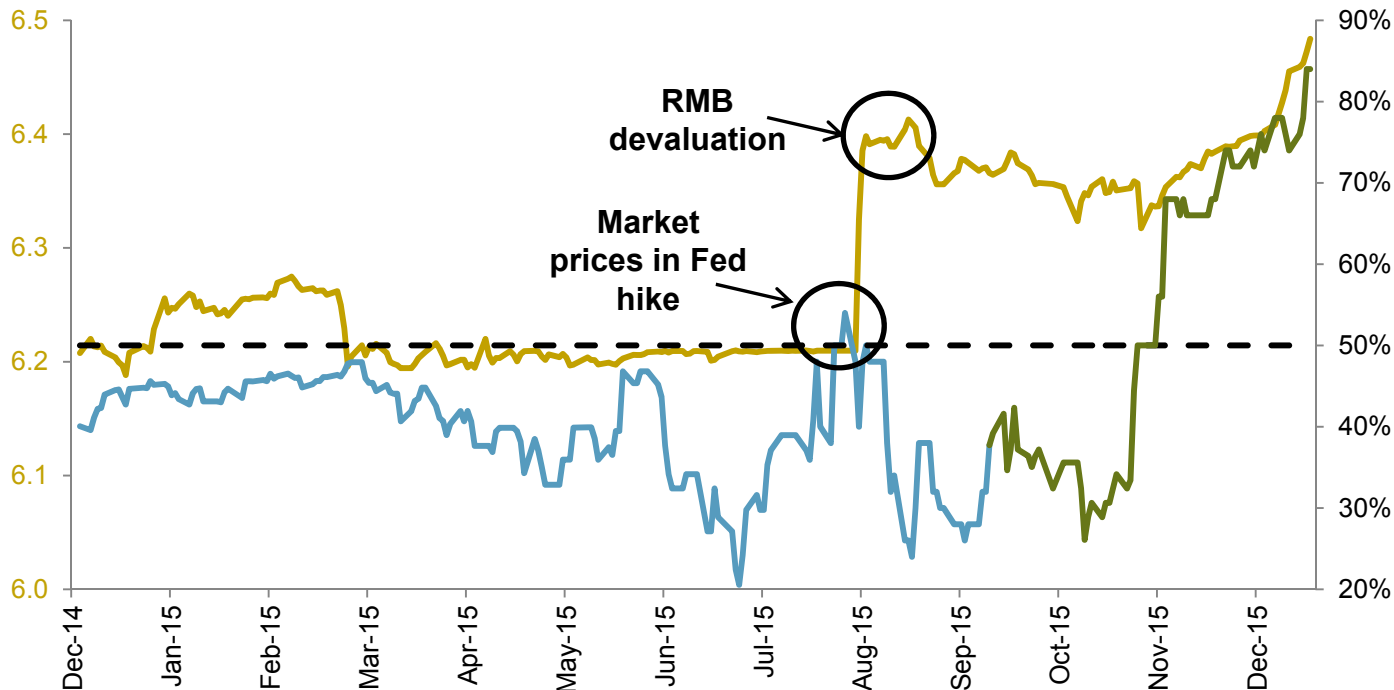
THEME

## Fed Rate Hike Probability vs. China Currency

— China Currency Value — Probability of Sep. Hike — Probability of Dec. Hike

RMB/USD

Fed Funds Futures Implied Probability



Why an RMB shock is less likely

Willingness to defend currency

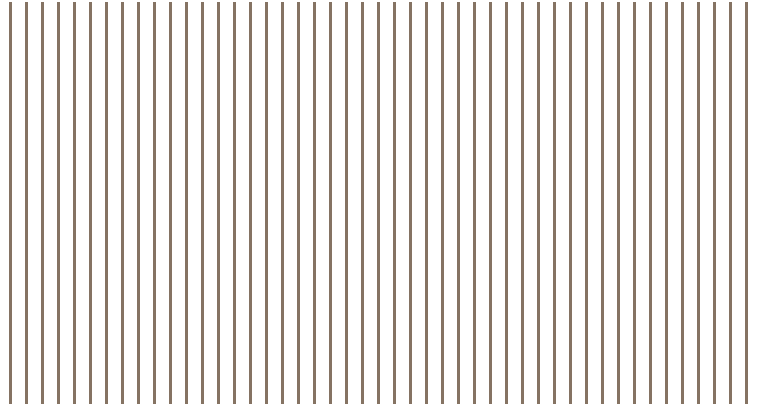
Greater fiscal stimulus

IMF approved RMB for SDR

Capital controls tightened

New currency basket regime

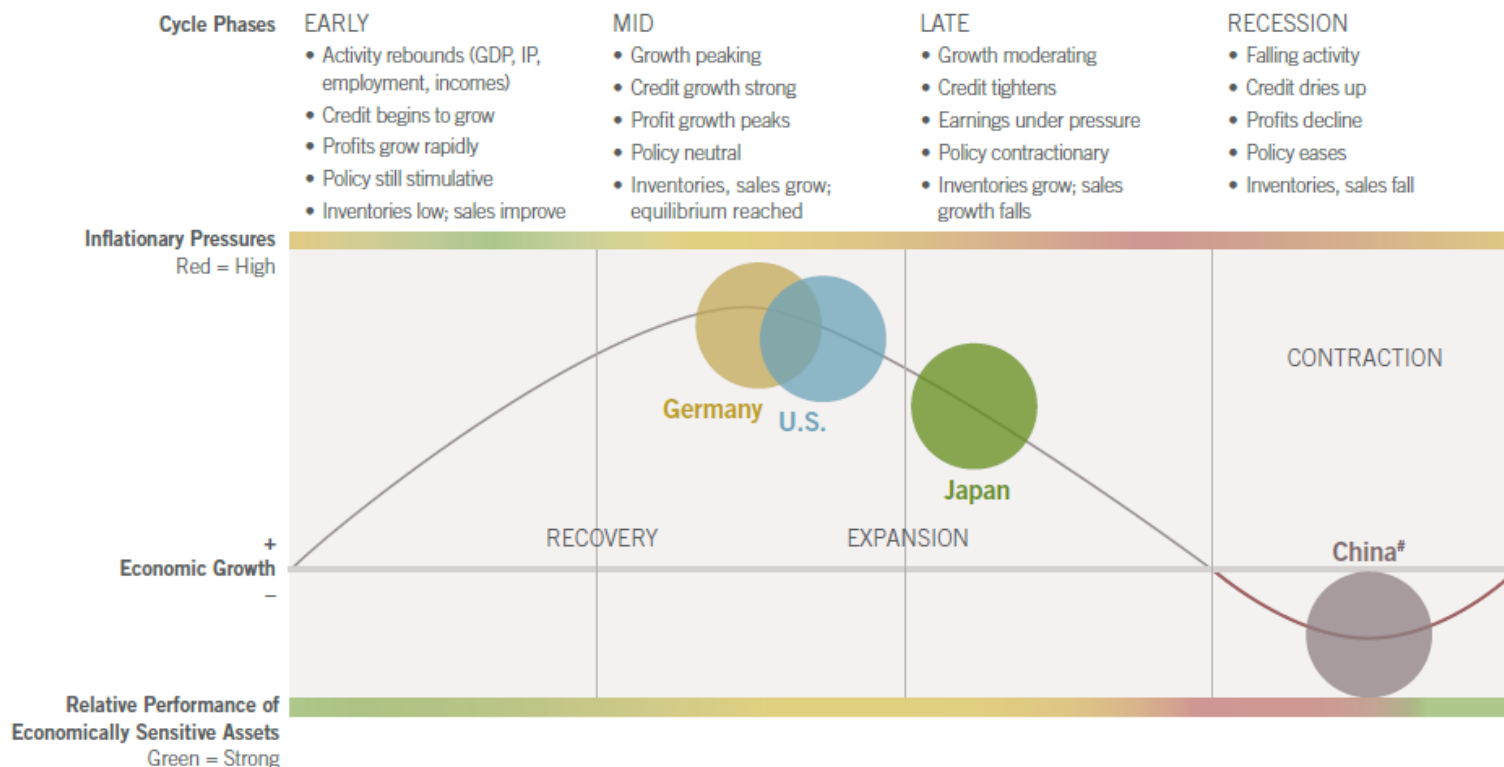
## Economy/Macro Backdrop



# Business Cycle: DMs Lead in Slow, Uneven Environment

Global economic growth remains tepid, as China and many other emerging markets face recessionary pressures. However, most of the developed world continues in mid-cycle expansion, led by steady outlooks for the U.S. and Europe. We expect the global environment to stabilize in 2016, albeit at an overall subdued pace of growth.

## Business Cycle Framework



DM: developed market. Note: The diagram above is a hypothetical illustration of the business cycle. There is not always a chronological, linear progression among the phases of the business cycle, and there have been cycles when the economy has skipped a phase or retraced an earlier one. <sup>#</sup>A growth recession is a significant decline in activity relative to a country's long-term economic potential. We have adopted the "growth cycle" definition for most developing economies, such as China, because they tend to exhibit strong trend performance driven by rapid factor accumulation and increases in productivity, and the deviation from the trend tends to matter the most for asset returns. We use the classic definition of recession, involving an outright contraction in economic activity, for developed economies. Source: Fidelity Investments (AART).

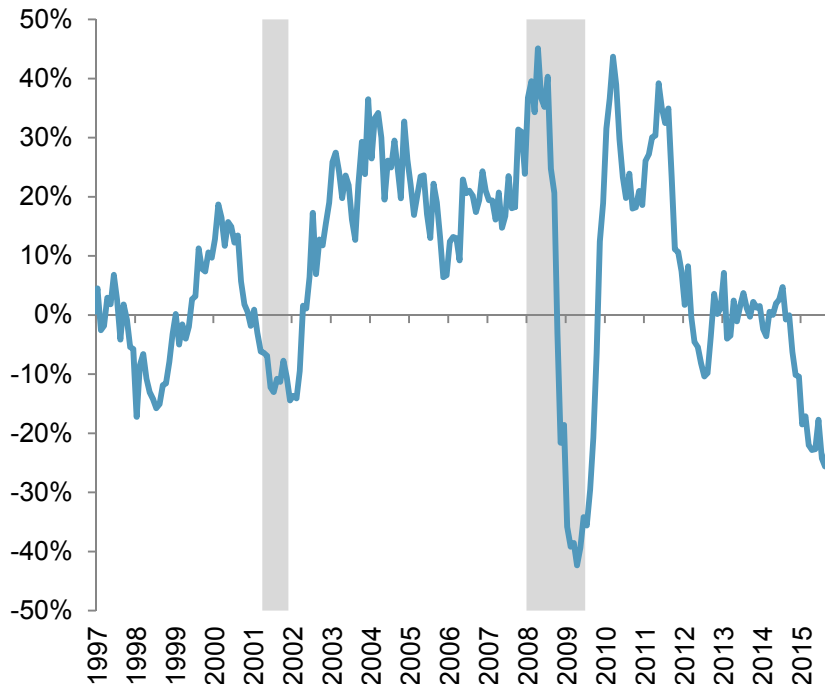
# Global Trade Slumped but Inventory Correction Mostly Over

China's faltering growth and industrial overcapacity weighed heavily on global trade, as export values plunged and manufacturing inventories built up around the world. Weak external conditions and the inventory glut dragged down U.S. growth during 2015, but recent data shows the worst of the inventory correction and global trade recession may be over.

## Global Export Growth

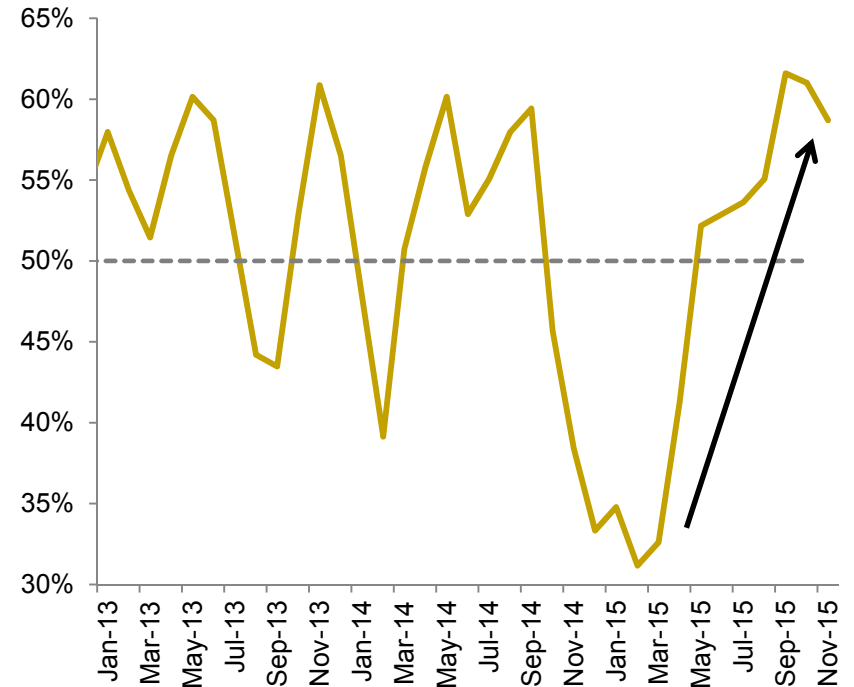
— Value of World Exports (\$)

Change (Year-Over-Year)



## U.S. Durable Goods Inventory-to-Shipments Ratio

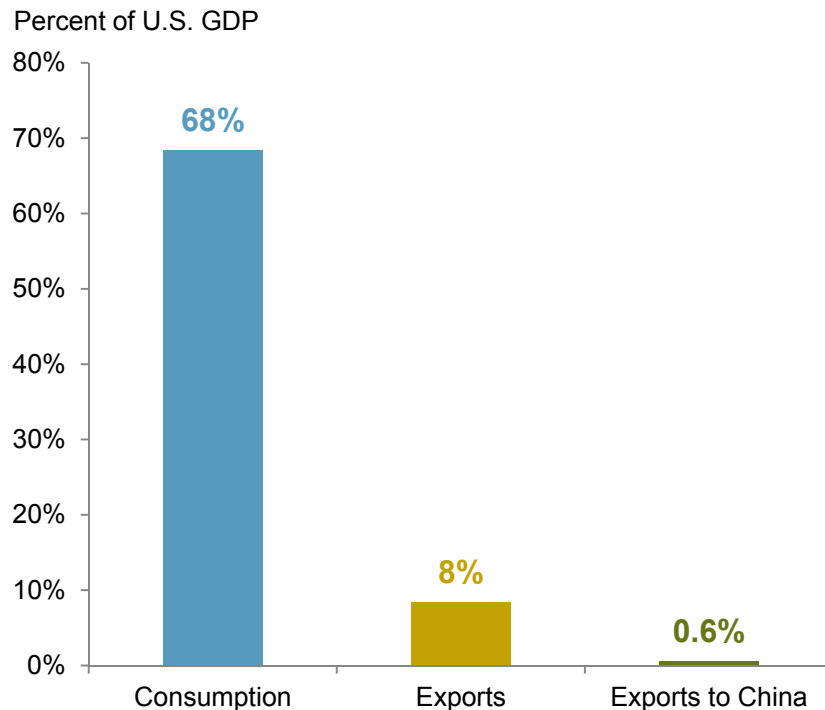
— % of Industries with Improving I/S Ratio (3-Month Average)



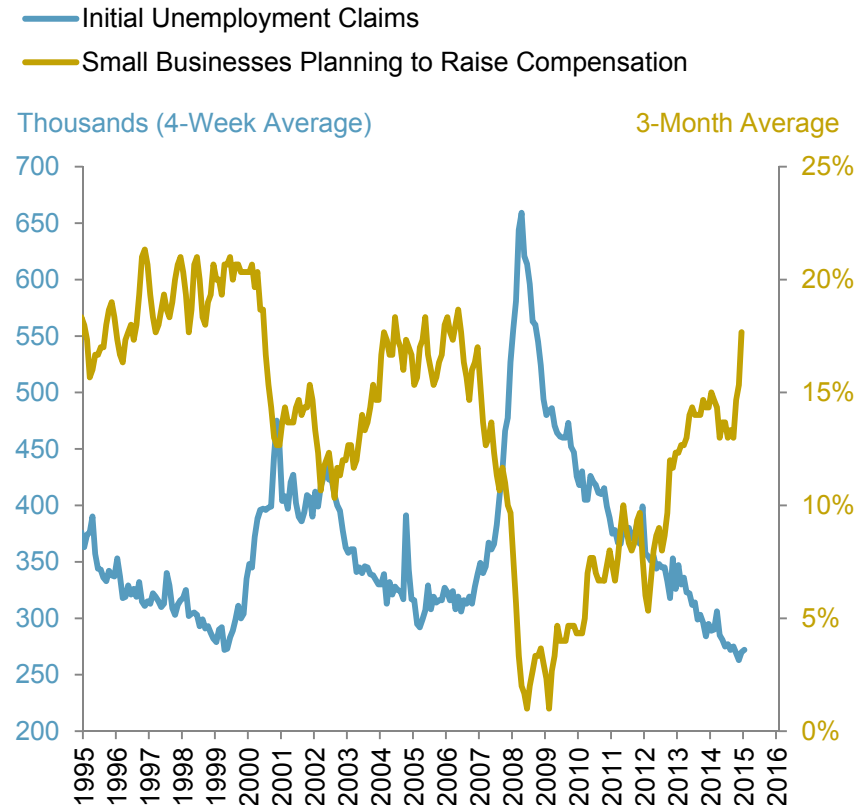
# Consumer Sector Bolsters U.S. amid Global Weakness

Global weakness, the stronger dollar, and low oil prices weighed on external-oriented U.S. sectors, but these areas constitute a relatively small portion of the overall economy. The much larger consumer sector continues to experience a positive dynamic, including the continued tightening of labor markets and an increasingly positive real-income outlook.

## Components of U.S. GDP



## U.S. Labor and Wage Trends

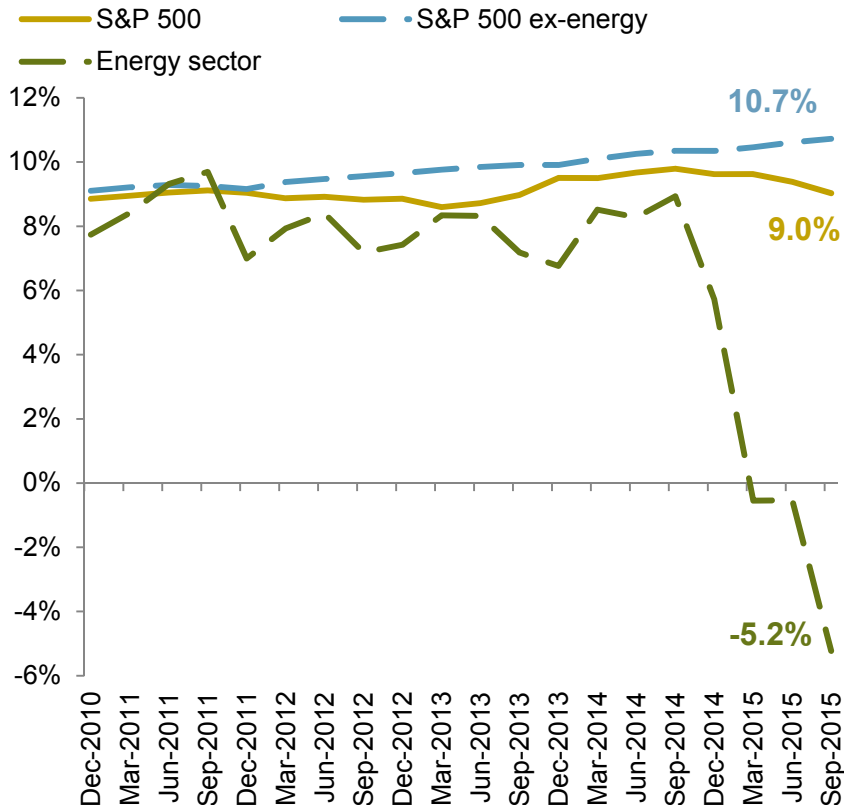




# Late-Cycle Signals Remain Generally Absent in U.S.

Late-cycle pressures typically include declining profit margins and tightening credit. Headline corporate earnings growth and profit margins softened in 2015, but modest profit margin expansion has continued outside of the volatile energy sector. Bank lending standards for businesses have tightened, but overall credit availability remains healthy.

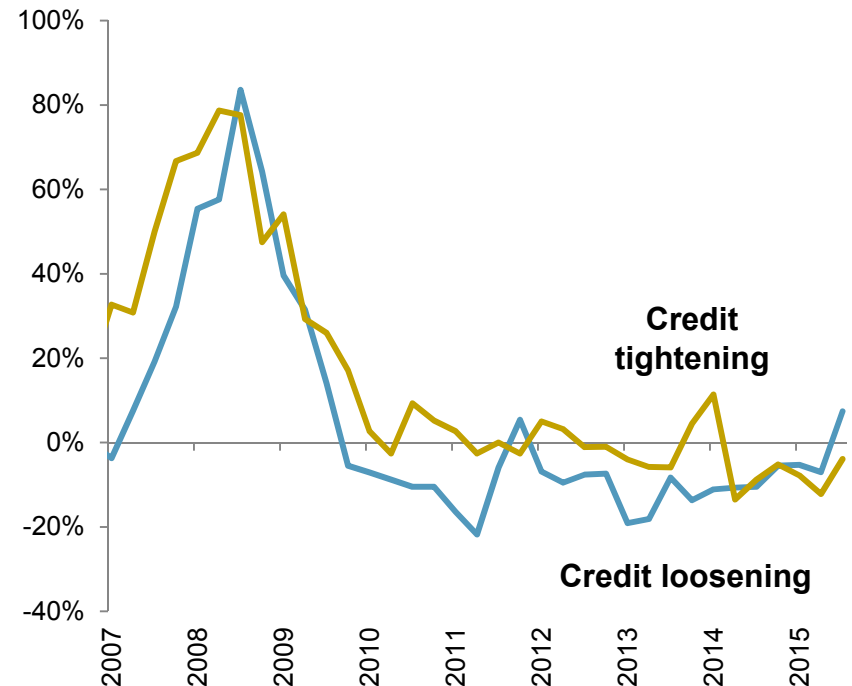
## S&P 500 Profit Margins



## Bank Lending Standards

Business Loans (solid blue line), Mortgage Loans (solid yellow line)

Net % Banks Tightening Standards

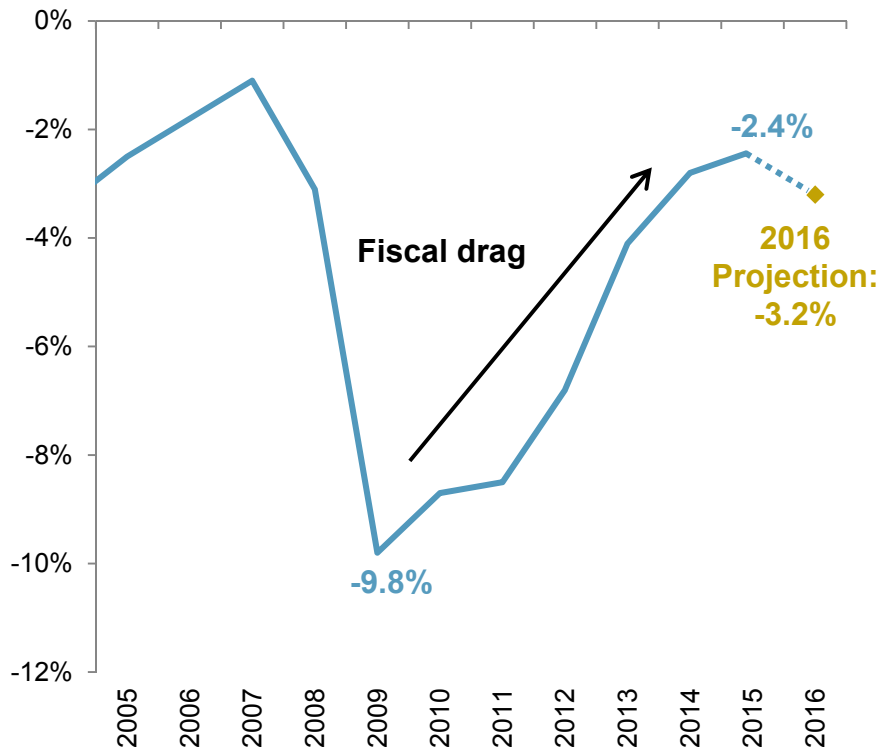


# Fed Hiked, but Global Policy Measures Are Mixed

While the Fed moved to a tightening stance in December, expansionary fiscal policy should serve as an offsetting tailwind for the U.S. economy in 2016, with the budget deficit expected to widen for the first time in years. Globally, monetary policy is mixed, with many major economies, including the eurozone, Japan, and China, still in outright easing mode.

## U.S. Fiscal Deficit

Percent of U.S. GDP



- Tightening
- Neutral
- Easing
- Extraordinary Easing

## Global Monetary Policy



# China Following Japan's Playbook: Stimulus and Stability

China faces massive cyclical headwinds due to its overbuilt and overleveraged industrial and real estate sectors, and policymakers are ramping up stimulus efforts to combat flagging growth. By emphasizing stability over structural reforms, China may be mimicking post-bubble Japan, improving near-term prospects at the expense of medium-term dynamism.

## China's Policy Easing

Fiscal Policy	2016 budget deficit may be biggest ever
Monetary Policy	Broad-based easing
FX	Managed depreciation

## Post-Bubble Paths: 2 Choices

### #1 Stabilization: Slow burn

Example: Japan in 1990s      China Today

**Banking forbearance**      NPLs still only 1.6%

**Maintain employment**      Stable unemployment at 4.1%

**Corporate profits weak**      Industrial profits -2.0% YoY

**Construction activity weak**      Starts -15% YoY

### #2 Restructuring: Rapid adjustment

Example: U.S. in 2000s

**Write off bad loans**

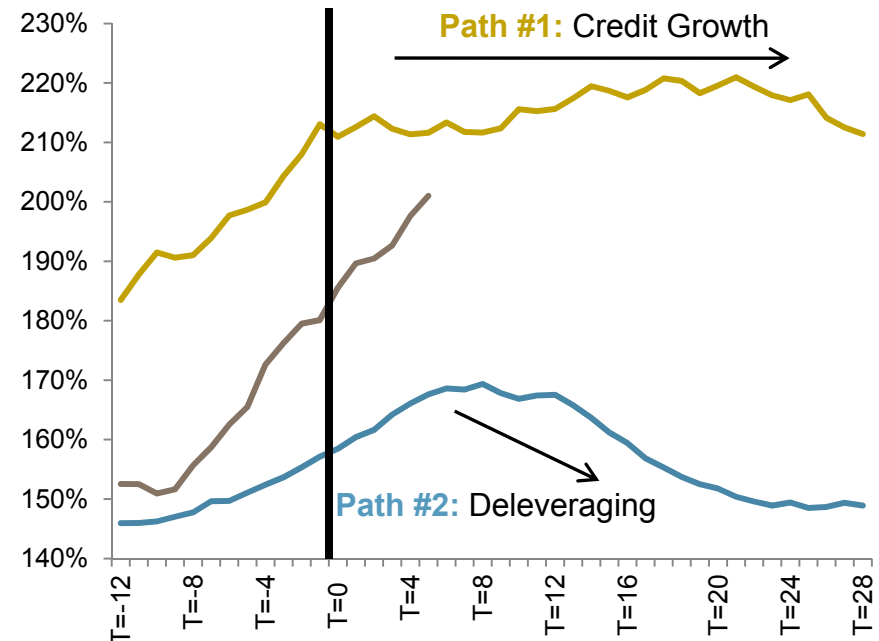
**Unemployment rises**

**Profits sharply drop, then recover**

**Construction plummets, then recovers**

## Private Credit-to-GDP

— Japan (Q2 1990) — China (Q1 2014) — U.S. (Q3 2006)



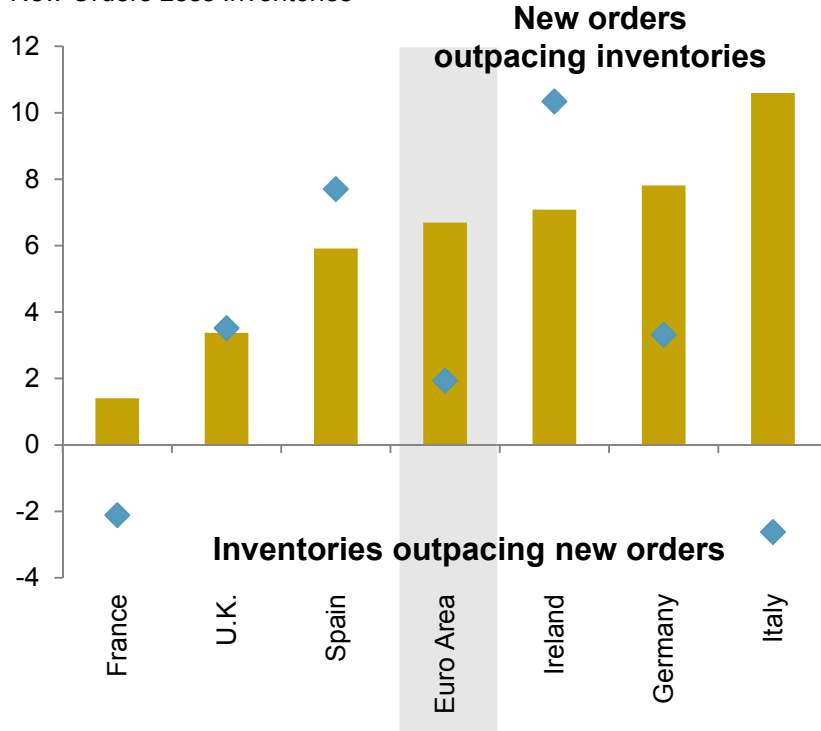
# External Sector Weakness May Be Ebbing in Europe, Japan

Weak global demand weighed on Europe and Japan's manufacturing sectors during 2015, but both economies are showing signs of stabilization. The manufacturing bullwhip, a leading indicator of industrial activity, has improved in most eurozone economies, and Japan's new export orders have held in expansionary territory—positive signs for developed-country growth.

## European Manufacturing Bullwhip

■ Year-End 2015 ◆ Year-End 2014

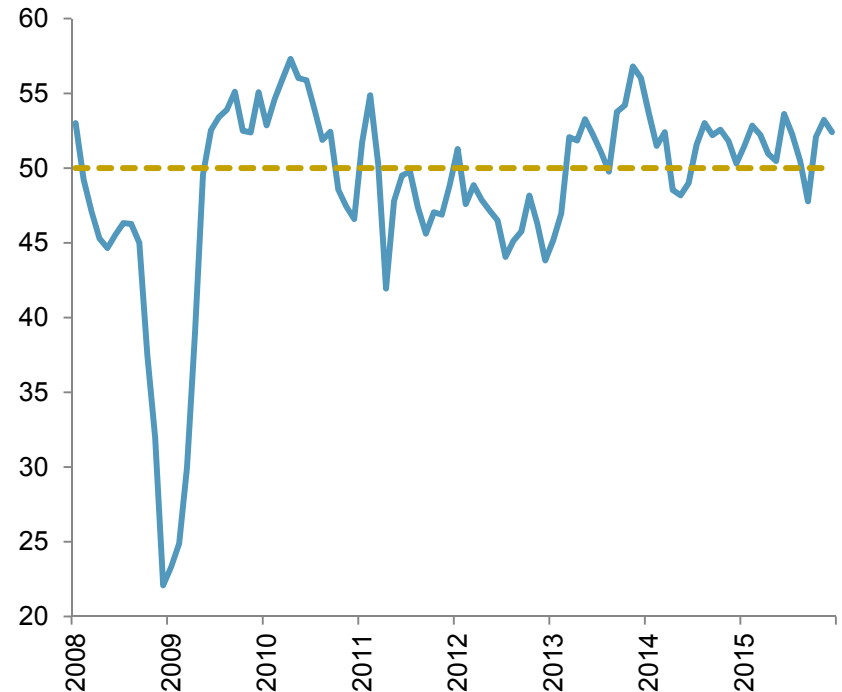
New Orders Less Inventories



## Japan Manufacturing Export Orders

— Purchasing Managers' Index New Export Orders

Index Level

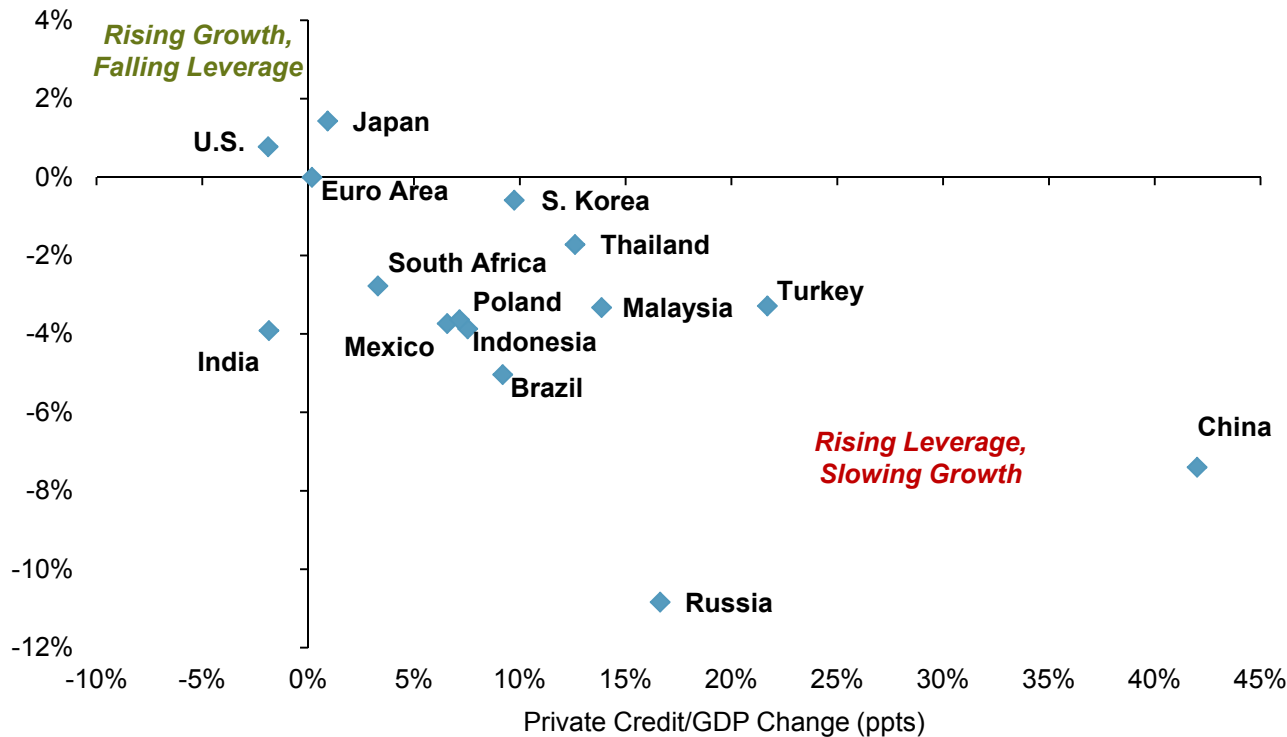


# Negative Credit Cycle Still a Headwind for Many EMs

Many emerging-market countries have experienced booms in private-sector credit growth in recent years but now face higher debt burdens at the same time that nominal GDP growth (the ability to service debt) has decelerated materially. With bank lending conditions deteriorating, the ability to cyclically boost growth through credit expansion is much more constrained.

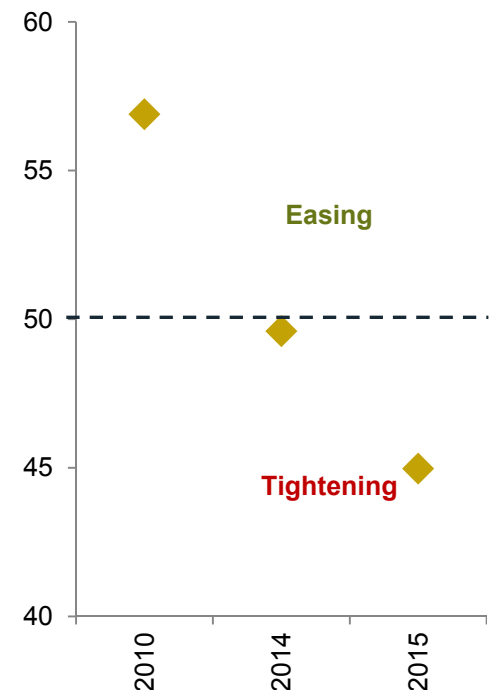
## Change in Nominal GDP and Private Credit Growth (2012 vs. 2015)

Change in Rate of Nominal GDP Growth



## Emerging-Market Bank Lending Conditions

Diffusion Index: 50 = Neutral



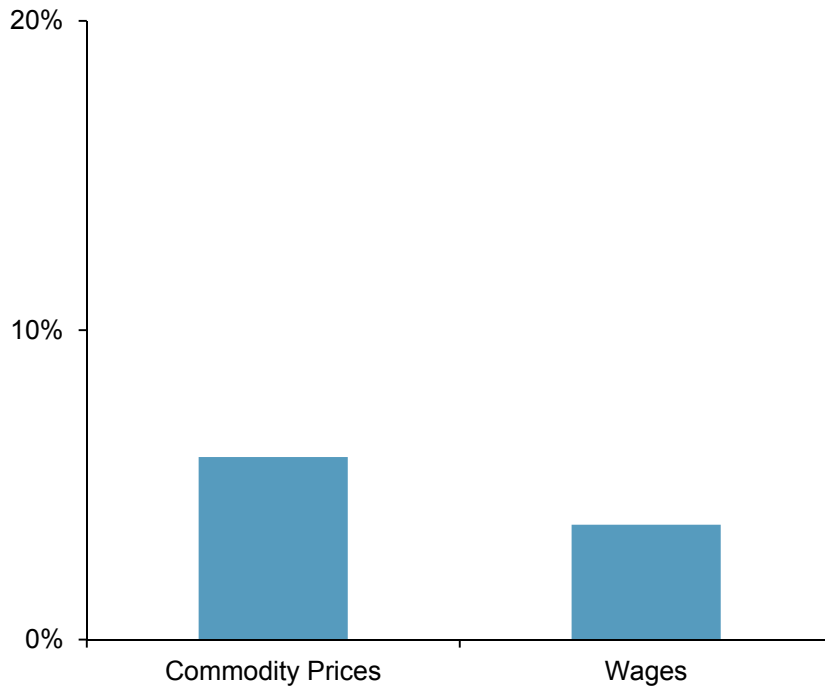
**LEFT:** EM: emerging market. GDP: Gross domestic product—the monetary value of all the finished goods and services produced within a country's borders in a specific time period. Ppts: percentage points. Source: Bank for International Settlements, Official Country Statistics, Haver Analytics, Fidelity Investments (AART), as of 6/30/15. **RIGHT:** Overall lending condition scores as of the third quarter of each calendar year. Source Institute of International Finance, Fidelity Investments (AART), as of 9/30/15.

# Inflation Impulse is Typically Key to Late-Cycle Transition

The transition from a mid-cycle phase to a late-cycle phase typically involves a pickup in inflationary pressures, with commodity prices and wages tending to accelerate. These rising input costs pressure corporate earnings by causing profit margins to decline and also lead to tighter credit conditions and more restrictive monetary policy.

## Mid-Cycle Inflation, 1966–2010

Average Annualized Inflation

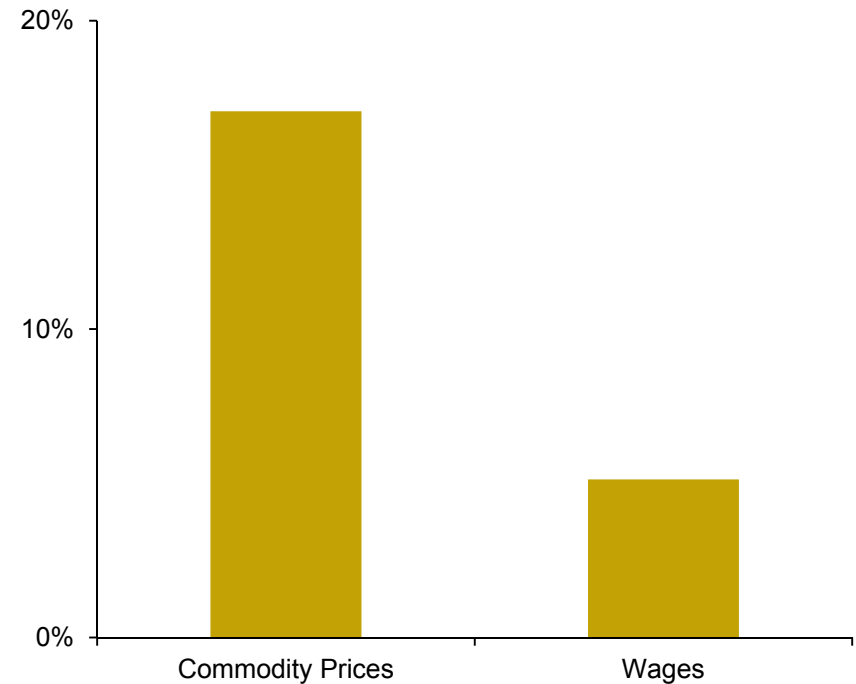


### Improving macro conditions

- Profit growth solid / peaks
- Credit accessible / spreads narrow
- Monetary policy accommodative / neutralized

## Late-Cycle Inflation, 1966–2010

Average Annualized Inflation



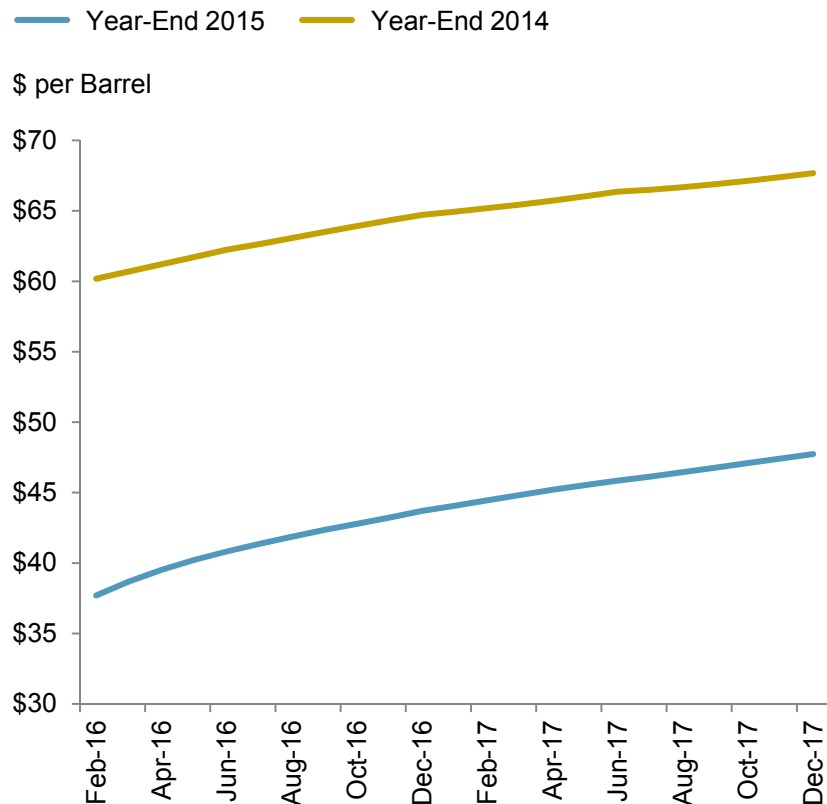
### Deteriorating macro conditions

- Profit margins under pressure
- Credit tightens / spreads widen
- Monetary policy becomes restrictive

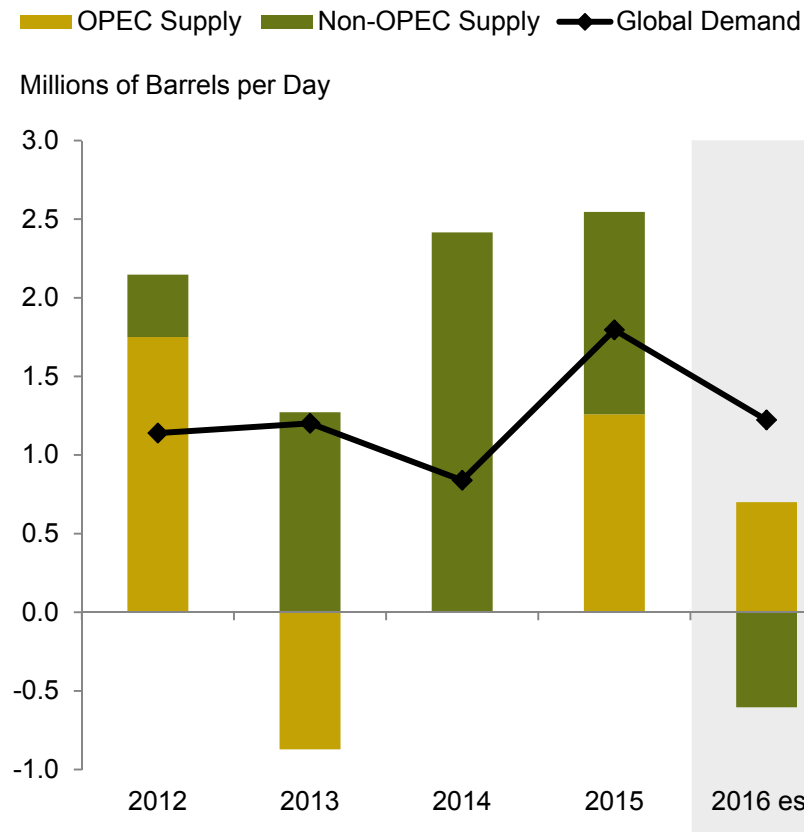
# Low Oil Prices Could Bring Greater Supply-Demand Balance

The overhang of oil supply above demand persisted for a second year in 2015 and pushed the oil futures curve down to a level that could lead to an outright decline in non-OPEC production in 2016. With global demand growth stimulated by low prices, it's possible the oil markets will tighten during 2016 and potentially lead to a bottom in oil prices.

## WTI Crude Oil Futures Curve



## Change in Oil Supply and Demand



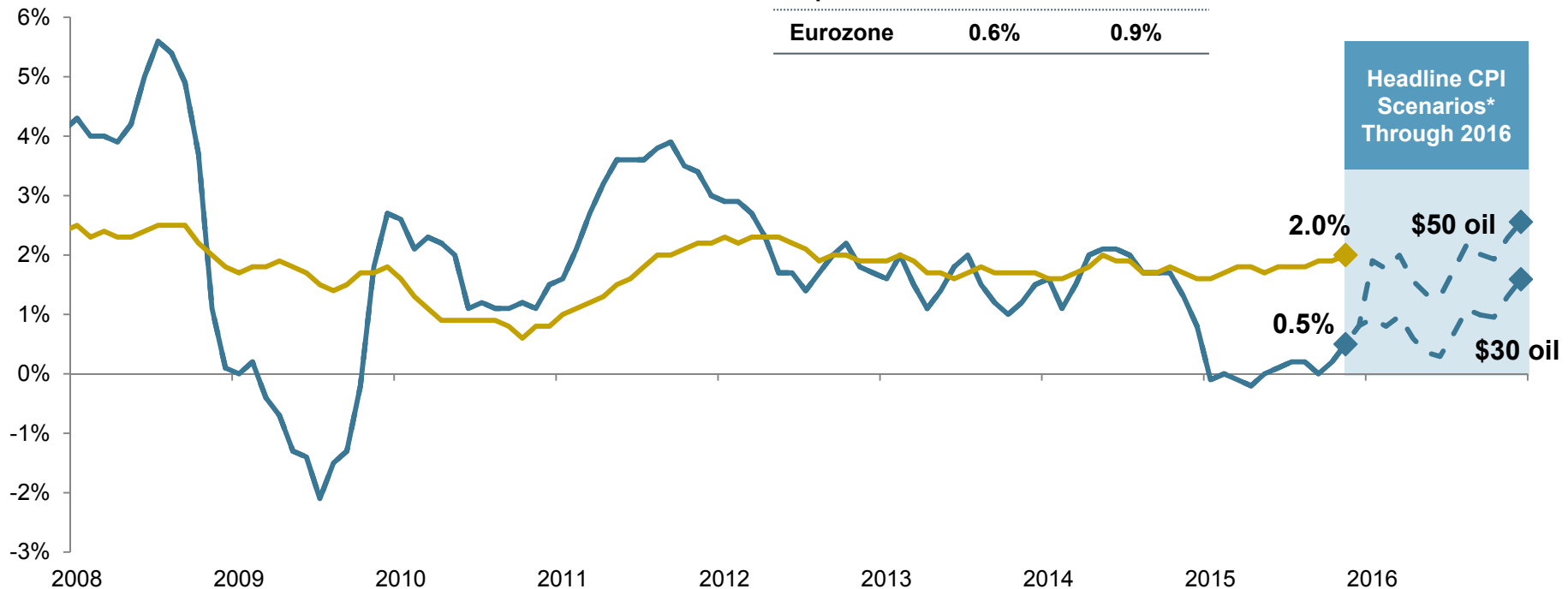
# Global “Base Effect” Likely to Lift Inflation in 2016

After steep plunges in commodity prices and inflation, a lower base has been established. If global activity stabilizes in 2016, the “base effect” could push up global inflation even without a powerful growth or commodity rebound. With core inflation firm in the U.S. (and other DMs), U.S. headline inflation will likely rise over the course of the year even if oil prices remain low.

## U.S. Inflation: The Base Effect

— Headline CPI — Core CPI

Change (Year Over Year)





# Outlook: Market Assessment

Fidelity's Business Cycle Board, composed of portfolio managers responsible for a variety of asset allocation strategies across Fidelity's asset management unit, believes that the global economy is showing signs of stabilization. This stabilization may start to generate more meaningful inflationary pressures in the U.S. as 2016 progresses.

U.S. remains mid-cycle,  
supported by positive  
consumer outlook

Global macro environment  
stabilizing

Pace of Fed tightening will  
likely be gradual

## Asset Allocation Considerations

- Global macro stabilization should benefit developed-market risk assets
- Potential for upside inflation surprises not priced into asset markets
- Lower international equity valuations and wider credit spreads may provide more attractive opportunities

## Potential Risks

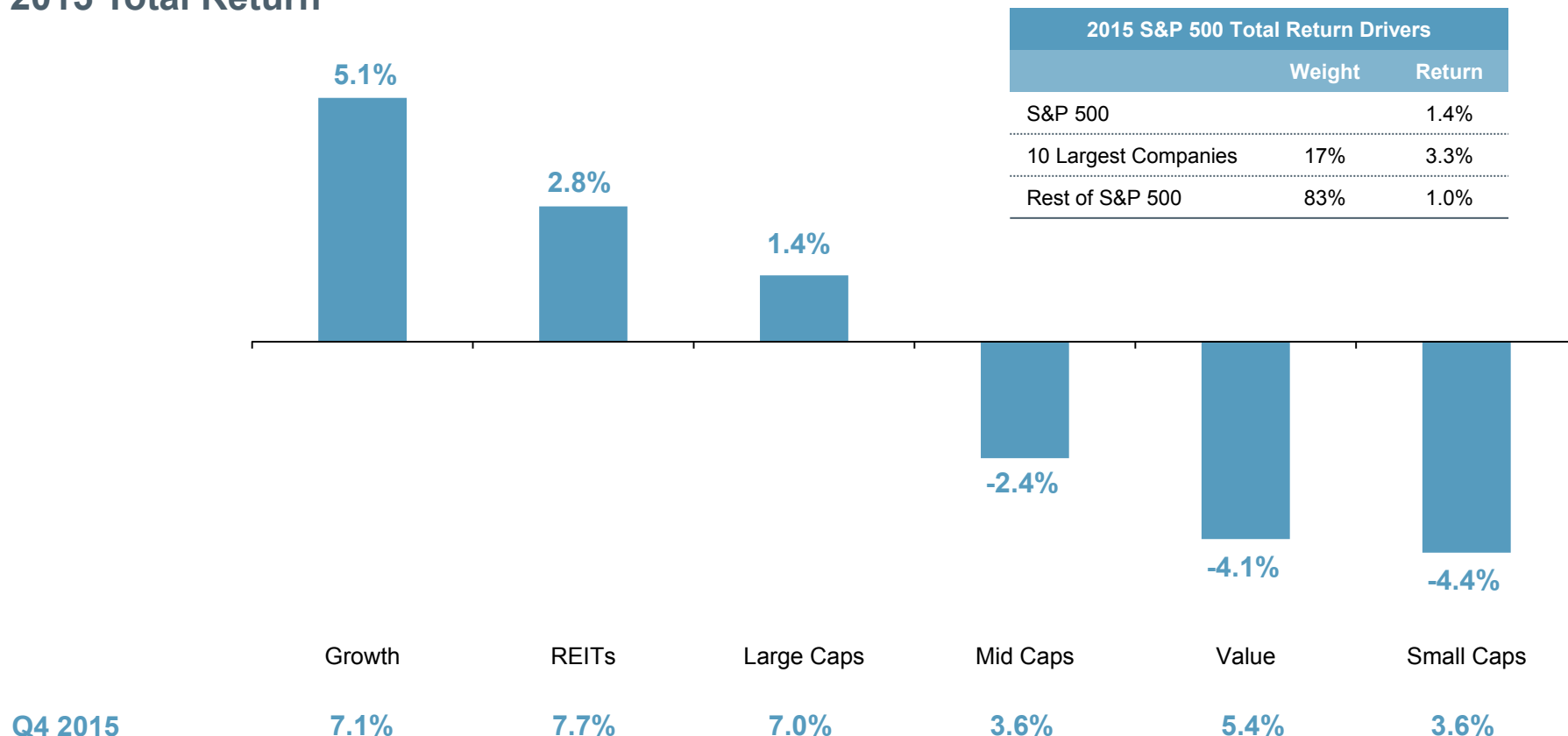
- Diverging global monetary policy backdrop has potential for generating policy mistakes
- Higher volatility warrants smaller asset allocation bets and prudent risk management

## U.S. Equity Markets

# Large-Cap Growth Stocks Led Mixed 2015 Performance

Following several years of solid gains, U.S. equities posted mixed performance in 2015, with a relatively narrow group of large-cap growth stocks driving returns. Performance for small- and mid-cap categories was negative, but REITs outpaced the S&P 500 Index for the second year in a row, despite a rise in interest rates during the course of the year.

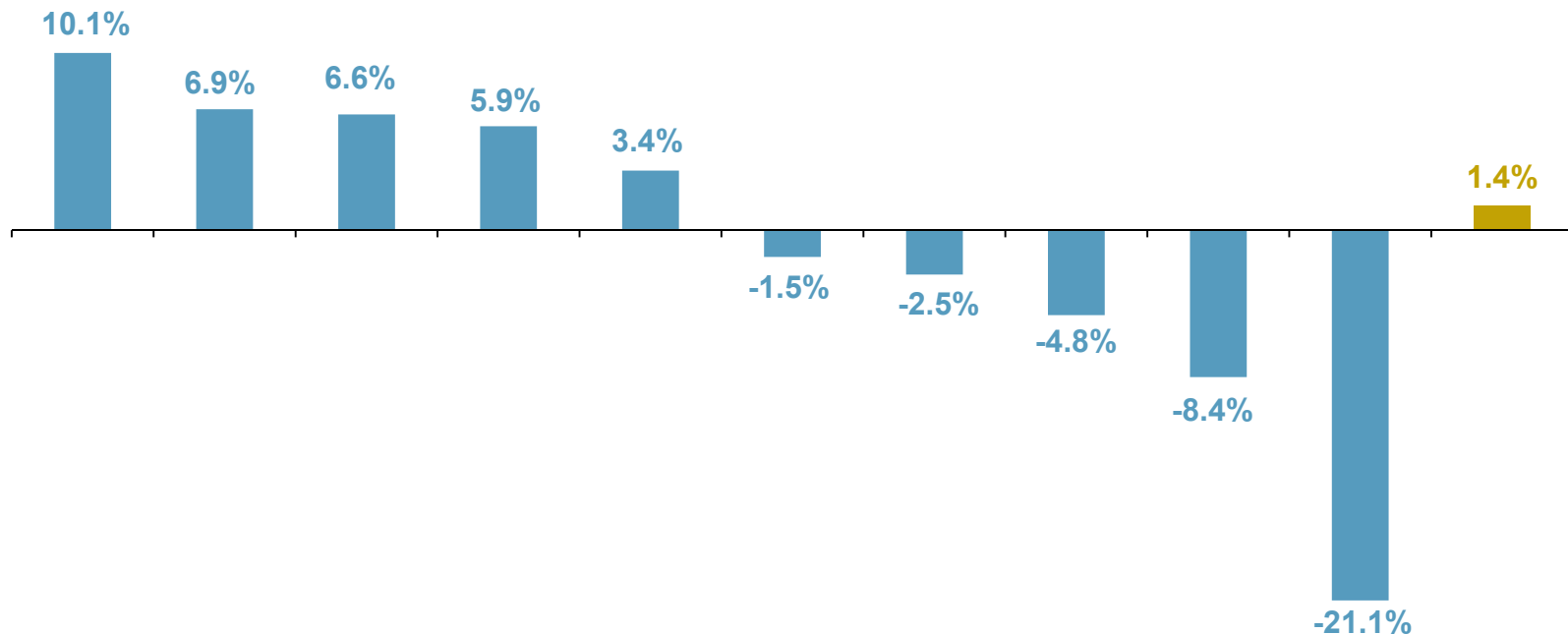
## 2015 Total Return



# Consumer Discretionary Outperformed, Energy Lagged Again

Healthy consumer spending boosted consumer discretionary performance, while growth-oriented health care and technology stocks posted solid results for the second year in a row. Disappointing global growth and slumping commodity prices pushed materials and industrials into negative territory, with energy posting the worst performance for the second consecutive year.

## 2015 Total Return



	Consumer Discretionary	Health Care	Consumer Staples	Info Tech	Telecom Services	Financials	Industrials	Utilities	Materials	Energy	S&P 500
Q4 2015	5.8%	9.2%	7.6%	9.2%	7.6%	6.0%	8.0%	1.1%	9.7%	0.2%	7.0%

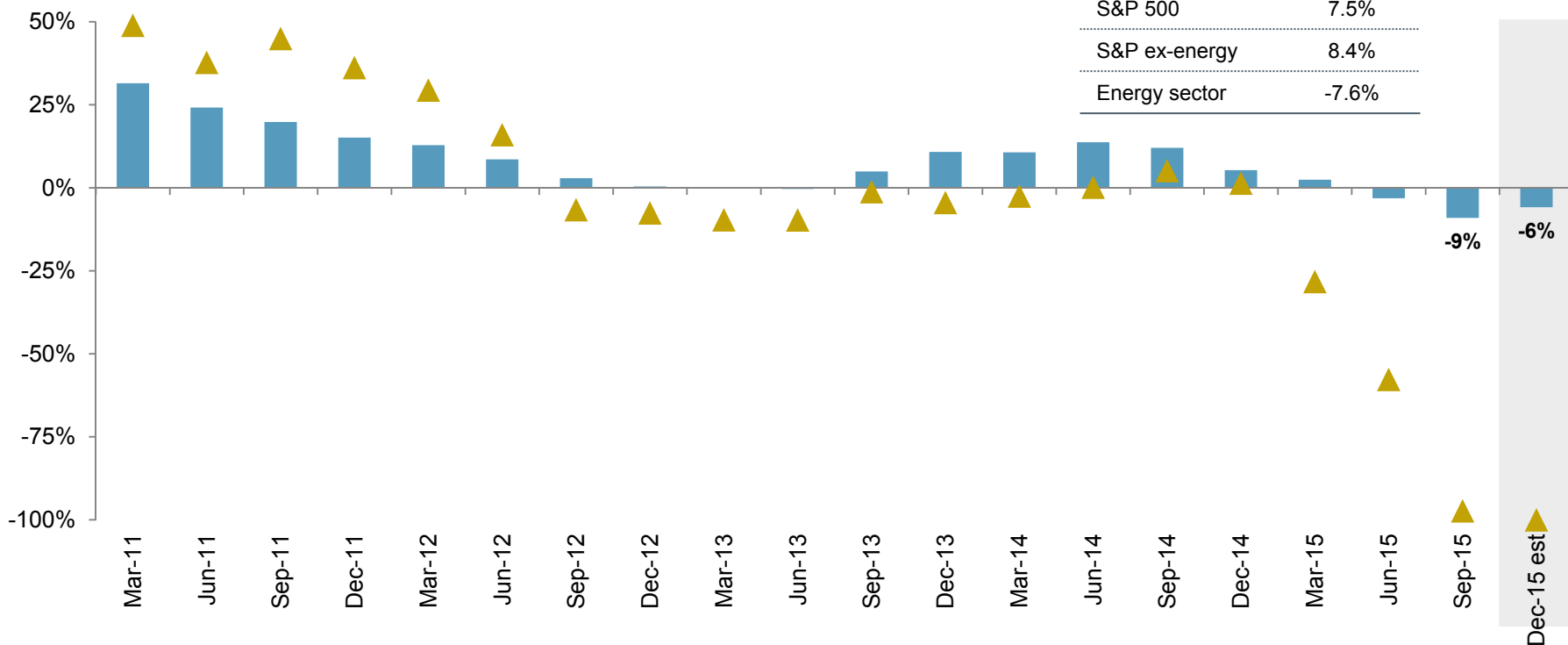
# Profits Held Up ex-Energy, May Be Less of a Drag in 2016

Persistent weakness in the profits of U.S. exporters and multinationals—particularly energy companies—will likely result in a year-over-year decline in corporate earnings in 2015. However, most other sectors posted profit gains, and any stabilization in oil prices and the global macro backdrop could result in mid-single-digit earnings growth in 2016.

## Large-Cap Earnings per Share Growth

■ S&P 500 Index ▲ Energy Sector

Growth (4-Quarter Trailing Basis)

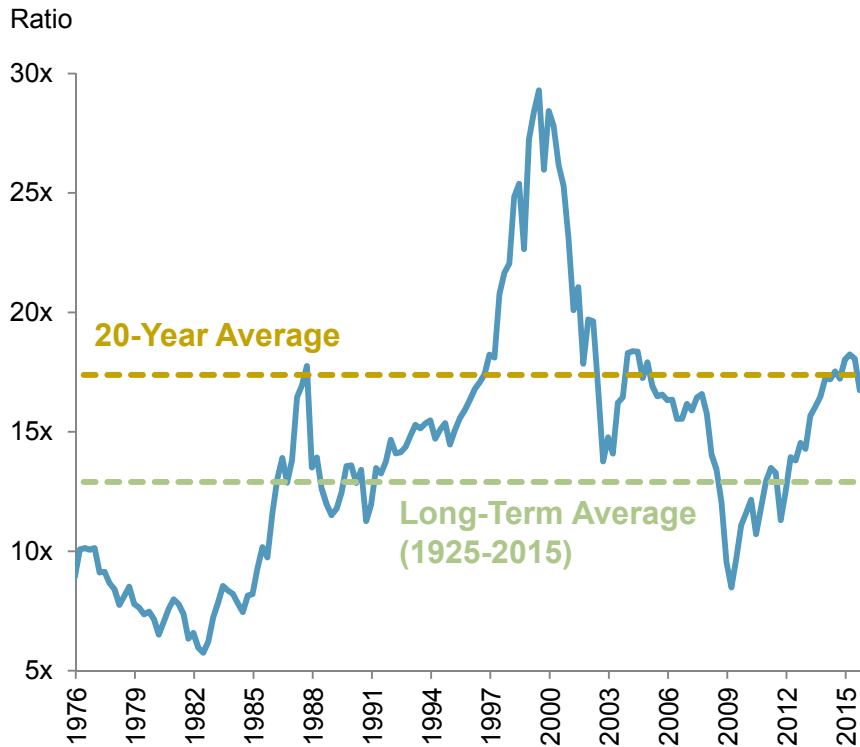


# Valuations Above Long-Term Average but May Be Sustainable

U.S. P/E ratios are slightly above their historical averages, but our long-term view is that stocks can sustain the current valuation level on average over the next 20 years. This is due in part to our expectation for lower inflation relative to history, as well as the high exposure of the U.S. equity market to sectors that have consistently earned higher P/E multiples.

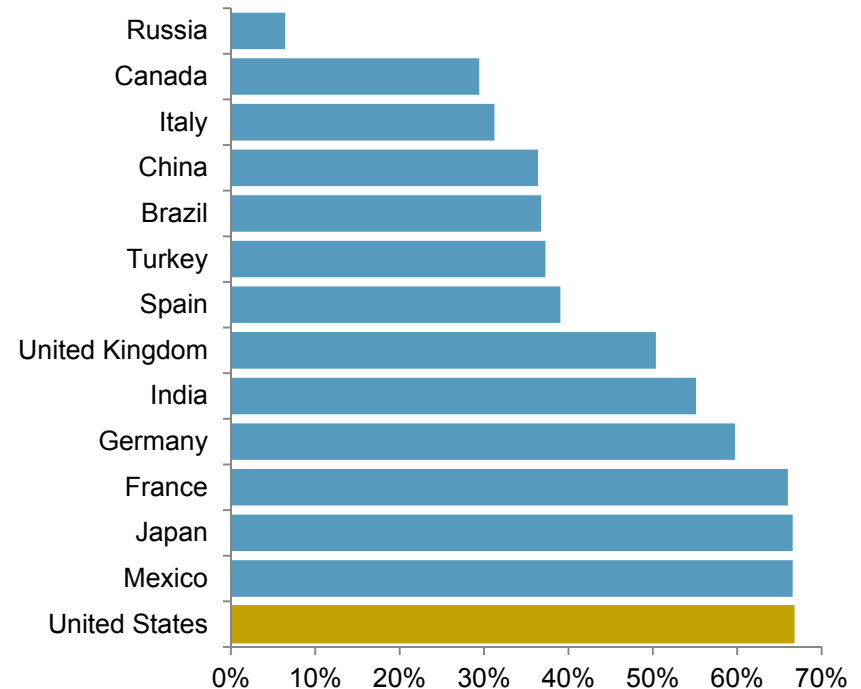
## S&P 500 Valuations

— Price/5-Year Peak Real Earnings Ratio



## Weight of High P/E Sectors in Equity Markets

High P/E Sector Share of Total Equity Market (%)



# Sector Considerations: Intermediate-Term Cycle View

A disciplined business-cycle approach to sector allocation can produce active returns by favoring industries that may benefit from cyclical trends. By choosing a blended portfolio of sectors that have historically performed well in the current and potentially upcoming cycle phases—for example, tech, energy, and staples—it may be possible to generate excess returns.

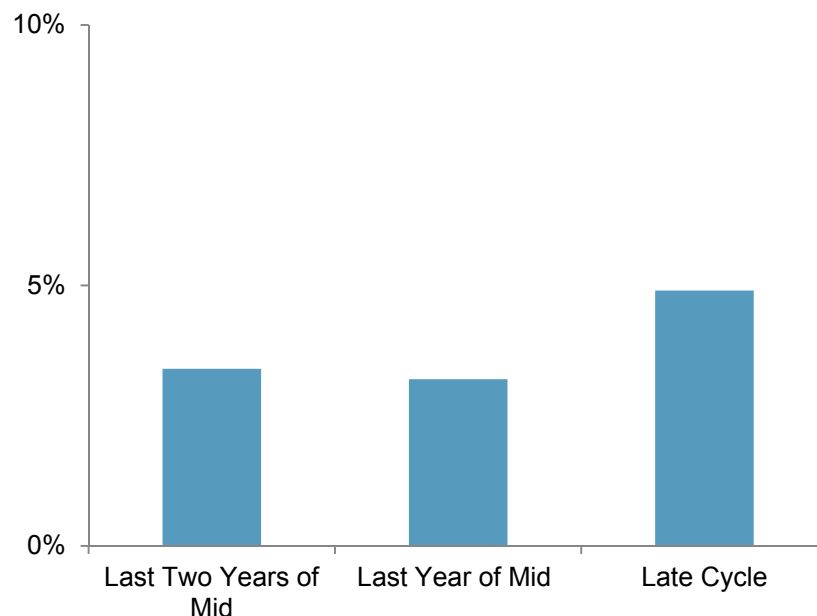
## Business Cycle Approach to Sectors

Sector	Early	Mid	Late	Recession
Financials	+			-
Consumer Discretionary	++		--	
Technology	+	+	--	--
Industrials	++	+		--
Materials		--	++	-
Consumer Staples	-		+	++
Health Care	-		++	++
Energy	--		++	
Telecom	--			++
Utilities	--	-	+	++

## Illustrative Tech/Staples/Energy Portfolio Relative Performance: 1962-2010

■ Equal-Weighted Tech/Staples/Energy Portfolio

Annualized Excess Return



Past performance is no guarantee of future results. Sectors as defined by GICS. **LEFT:** Unshaded (white) portions above suggest no clear pattern of over- or underperformance vs. broader market. Double +/- signs indicate that the sector is showing a consistent signal across all three metrics: full-phase average performance, median monthly difference, and cycle hit rate. A single +/- indicates a mixed or less consistent signal. Source: *The Business Cycle Approach to Sector Investing*, Fidelity Investments (AART), September 2014. **RIGHT:** This chart is an illustrative example of the potential impact of choosing sectors that historically perform well in the current and potentially upcoming two phases of the business cycle (mid/late/recession). Analysis selects one sector from each of the three phases (mid, late, recession) that demonstrated outperformance in one of those phases. Sectors shown are equal-weighted (33.3%). Analysis excludes early cycle because an early cycle is unlikely to occur in the next several years. Sector returns represented by S&P 500 sectors. Source: Haver Analytics, Fidelity Investments (AART), as of 12/31/15.

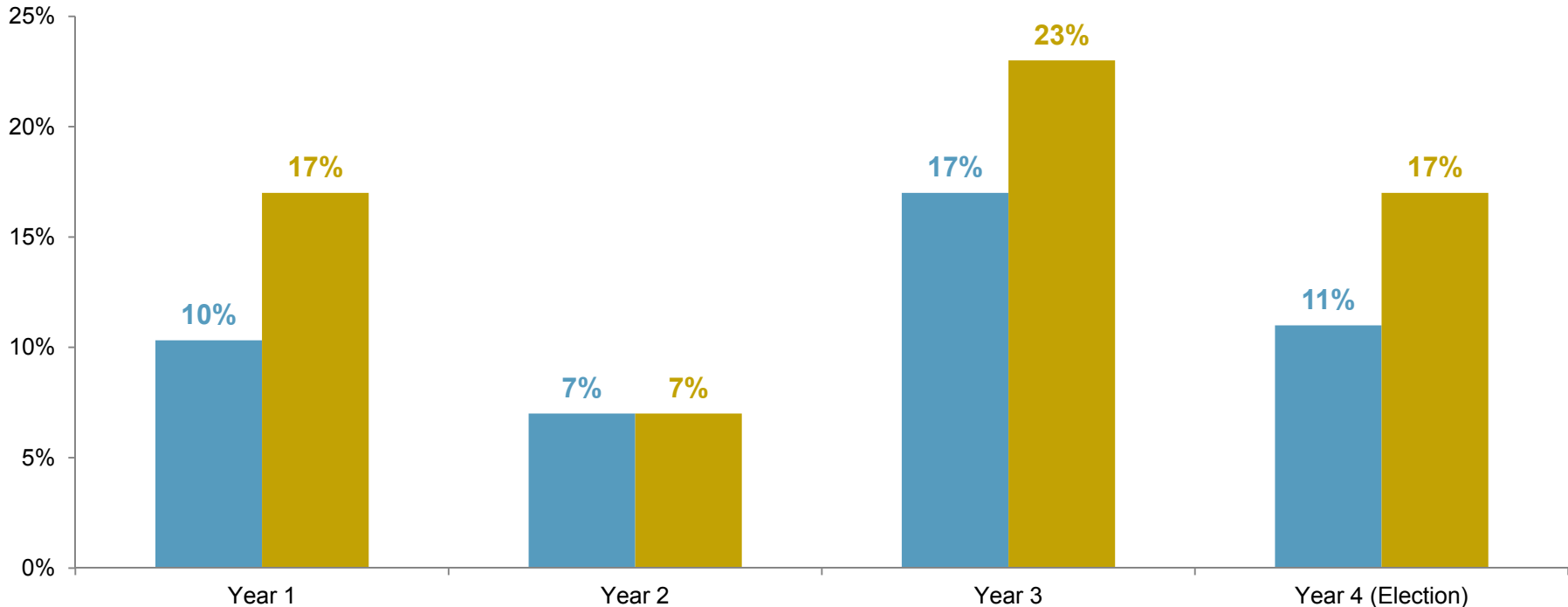
# For What It's Worth, Election Years Often Good for Equities

Historically, U.S. equity returns have been slightly above average during presidential election years. However, other economic and corporate developments are likely more important drivers of market performance in any given year, and it is important to note that equity returns were weak in 2015—the third year in the cycle, when performance tends to be strongest.

## Presidential Cycle Average U.S. Equity Returns, 1928–2014

■ Large Cap ■ Small Cap

Total Return



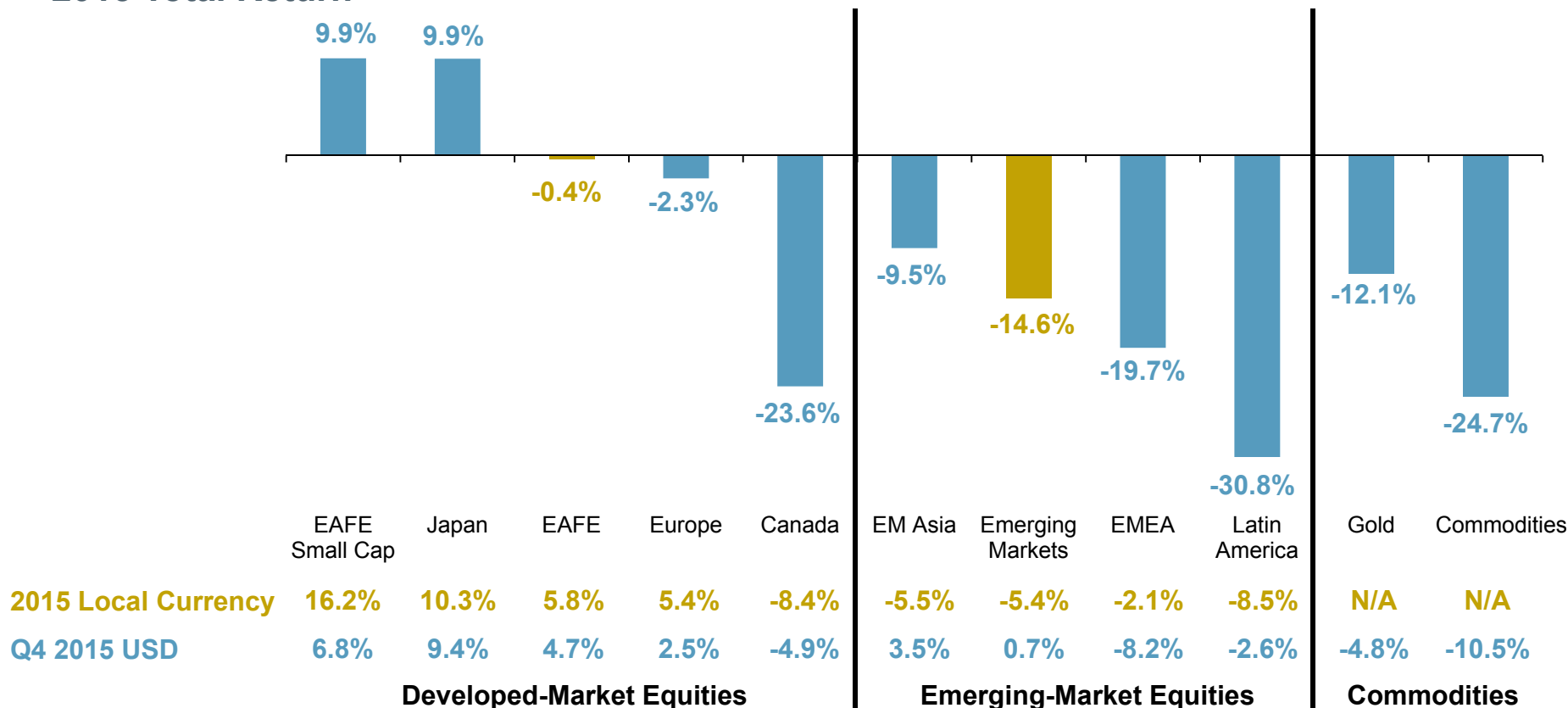


## International Equity Markets & Global Assets

# Commodities and Currencies Spur Global Asset Decline

Most global assets ended 2015 in negative territory. Global assets linked to commodities and emerging markets suffered the steepest declines, whereas Japan and small-cap equities were the best performers. Some developed markets registered positive returns in local-currency terms, but U.S. dollar strength was a detractor for a large majority of countries and regions.

## 2015 Total Return



EM: emerging market. All returns are gross in U.S. dollars unless otherwise noted. Past performance is no guarantee of future results. You cannot invest directly in an index. All indices are unmanaged. Please see appendix for important index information. Index returns represented by: Canada – MSCI Canada Index; Commodities – Bloomberg Commodity Index; EAFE – MSCI Europe, Australasia, Far East Index; EAFE Small Cap – MSCI EAFE Small Cap Index; EM Asia – MSCI Emerging Markets Asia Index; EMEA (Europe, Middle East, and Africa) – MSCI EM EMEA Index; Emerging Markets (EM) – MSCI EM Index; Europe – MSCI Europe Index; Gold – Gold Bullion Price, LBMA PM Fix; Japan – MSCI Japan Index; Latin America – MSCI EM Latin America Index. Source: FactSet, Fidelity Investments (AART), as of 12/31/15.

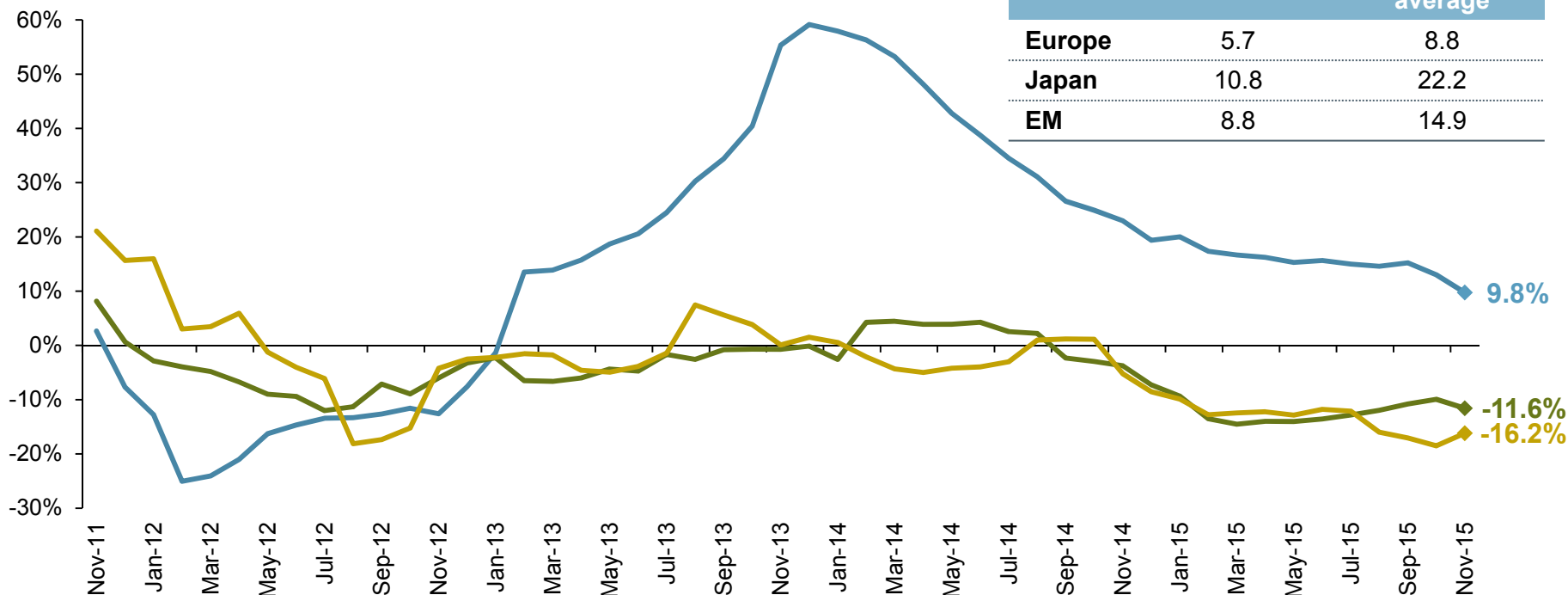
# Weak Global Earnings Lead to Lower Expectations

Over the past year, non-U.S. corporate earnings have been relatively weak, with double-digit declines in emerging markets and Europe. In Japan, however, new corporate governance standards helped companies remain profitable. A silver lining to a weaker corporate profit outlook is that lower market expectations could provide a lower hurdle for positive earnings surprises.

## Global Earnings per Share Growth

— Japan — Europe — Emerging Markets

Year-Over-Year Trailing EPS Growth Rate



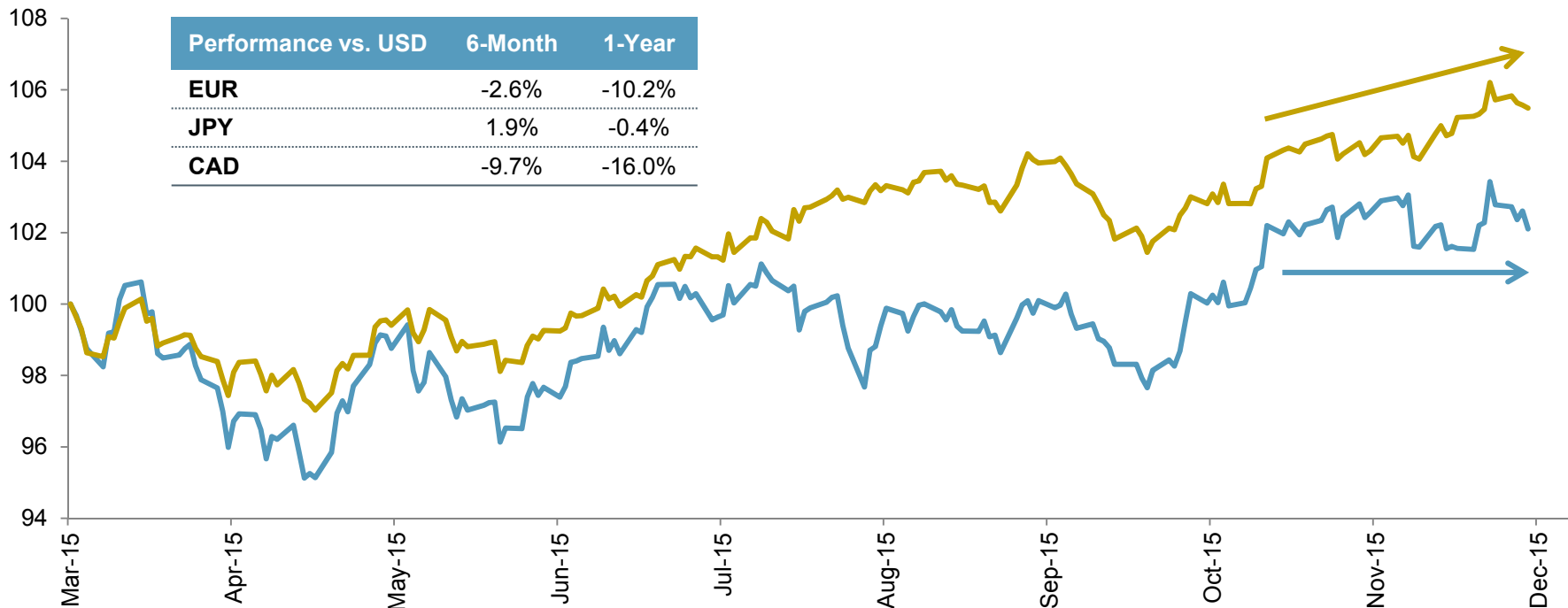
# Dollar Performance Mixed, Hedging Not a One-Way Bet

Higher relative growth and the potential for higher interest rates continued to boost the U.S. dollar against most currencies in Q4, particularly those of emerging markets (included in the broad index). The dollar's ascent was less pronounced during the second half of 2015 versus major currencies, highlighting the challenge in hedging short-term currency movements.

## U.S. Dollar Performance

— Trade-Weighted \$ (Major) — Trade-Weighted \$ (Broad)

Index Level (3/31/15 = 100)



EUR: euro. JPY: yen. CAD: Canadian dollar. Trade-weighted \$ (Broad) Index: The broad index is a weighted average of the foreign exchange values of the U.S. dollar against the currencies of a large group of major U.S. trading partners. The index weights, which change over time, are derived from U.S. export shares and from U.S. and foreign import shares. Trade-weighted \$ (Major) Index: The major currencies index is a weighted average of the foreign exchange values of the U.S. dollar against a subset of currencies in the broad index that circulate widely outside the country of issue. The weights are derived by rescaling the currencies' respective weights in the broad index so that they sum to 1 in each sub-index. See Appendix for countries listed in each index. Source: Federal Reserve, Bloomberg Finance L.P., Fidelity Investments (AART), as of 12/24/15. Past performance is no guarantee of future results.

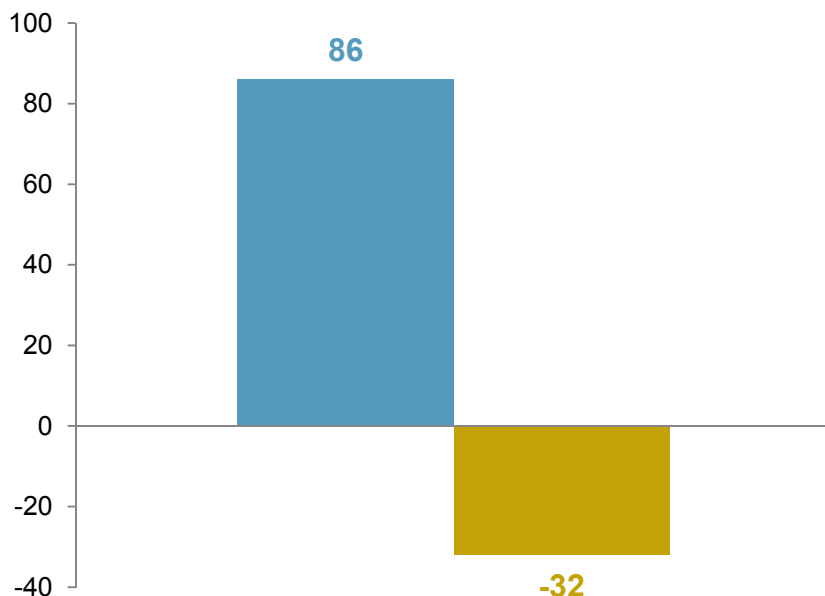
# Ample Active Opportunities in the International Space

Over the long term, active international equity managers have exceeded benchmark performance by 86 basis points (on average) by taking advantage of less efficient non-U.S. markets. Quantitative analysis of past equity returns shows that company exposure (security selection) is the most significant factor for explaining differences in performance among stocks.

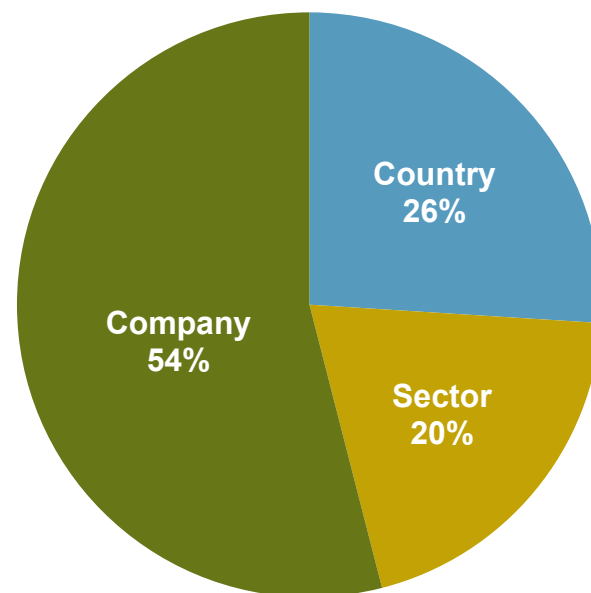
## International Large-Cap Excess Returns (Avg. 1-Year Rolling) 1992–2014

■ Active ■ Passive

Basis Points



## Average Source of Return for Global Stocks 1990–2015



**LEFT:** Excess returns represent industry average returns for each set of funds (active or passive, including closed or merged funds). International funds labeled as “foreign large growth/value/blend” by Morningstar. Average excess returns: the average of all monthly one-year rolling excess returns for all funds in the set under analysis, using overlapping one-year periods and data from Jan. 1, 1992, to Dec. 31, 2014. Excess returns are returns relative to the primary prospectus benchmark of each fund, net of fees. Basis point: 1/100th of a percentage point. Past performance is no guarantee of future results. This chart does not represent actual or future performance of any individual investment option. See Appendix for additional information. Industry aggregate returns are equal-weighted for all funds in each set. Periods determined by availability of sufficient passive index fund data. Source: Fidelity *Leadership Series* paper “Finding Superior Active Equity Managers: A Simple Approach for Investors” (May 2015), Morningstar, Fidelity Investments, as of 12/31/14. **RIGHT:** Anova: analysis of variation. Source: MSCI All Country World Index, Fidelity Investments, as of 8/31/15.

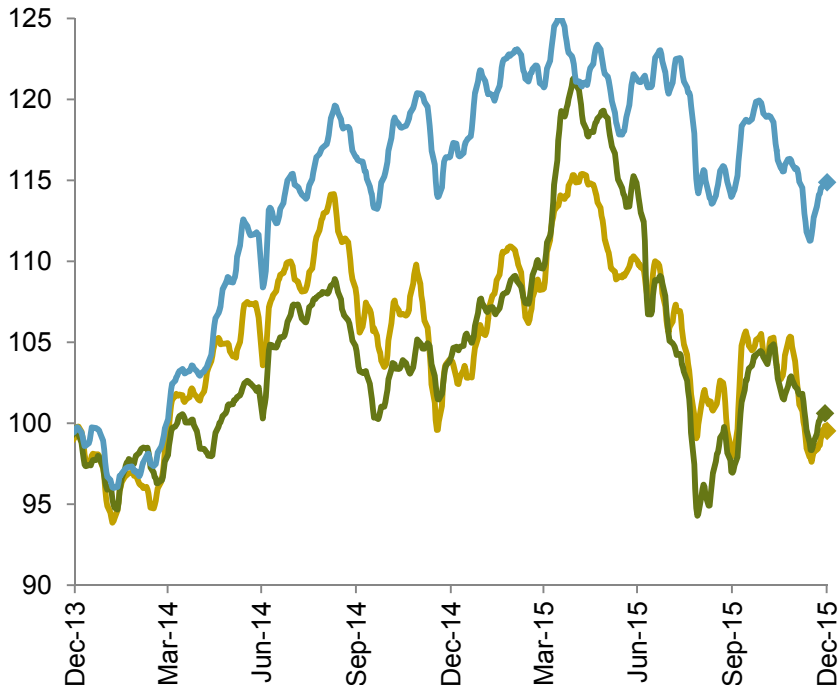
# Selective Opportunities in Emerging Markets

Weak EM equity performance over the past two years has largely stemmed from countries with strong trade linkages to China or heavy exposure to commodity prices, highlighting differences among EM assets. We expect emerging economies to generate higher growth rates than advanced ones over the long term, providing a favorable secular backdrop for EMs.

## Emerging Market Equities

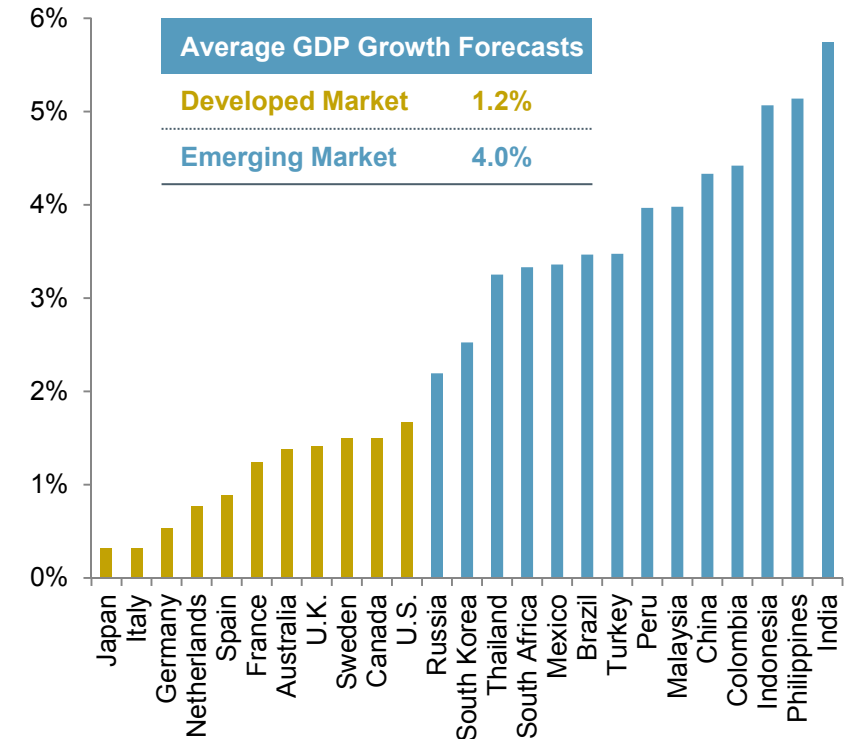
Commodity Exporters China-Related Other EM

Total Return Index Level (12/31/13 = 100)



## Real GDP Growth Forecasts, 2015-2034

Annualized Rate



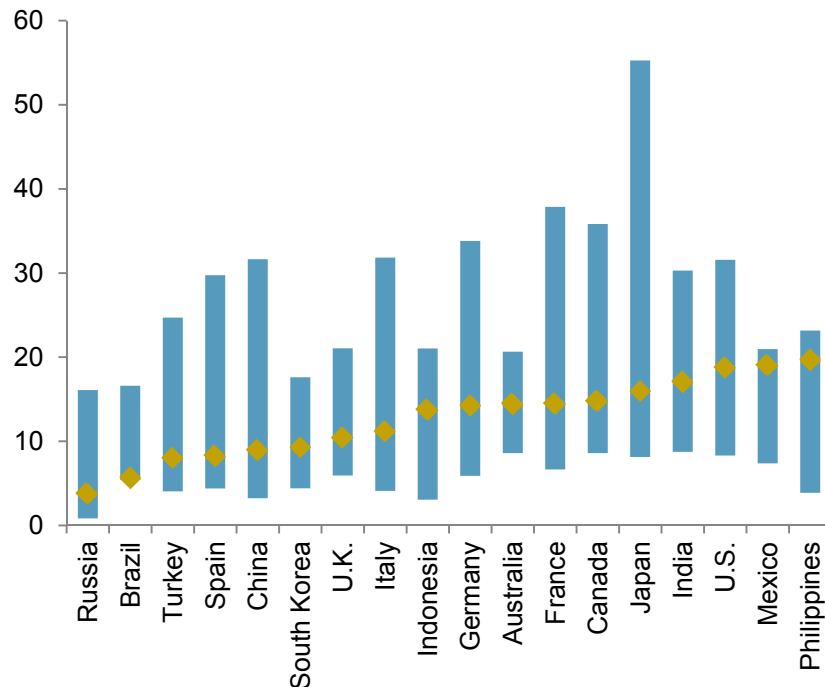
# Non-U.S. Equity Valuations Attractive vs. U.S. and History

Weak international equity performance has caused price-earnings multiples in most countries' equity markets to fall to the lower end of their 20-year range. Valuations of developed and emerging markets remain below both U.S. multiples and their long-term averages.

## Cyclical P/Es

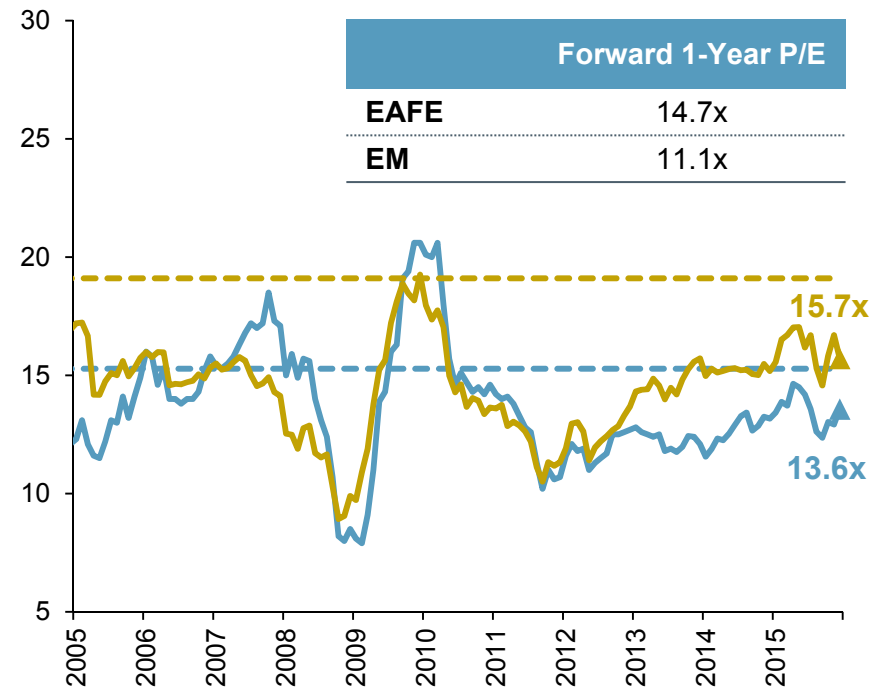
◆ Year-End 2015 ■ 20-Year Range

Price/5-Year Peak Real Earnings



## Trailing 12-Month P/E Ratios

— EM — EM Long-Term Average  
— EAFE — EAFE Long-Term Average



Past performance is no guarantee of future results. It is not possible to invest directly in an index. All indices are unmanaged. Please see appendix for important index information. EAFE: Europe, Australasia, Far East. EM: emerging market. Price-to-earnings (P/E) ratio (or multiple): stock price divided by earnings per share, which indicates how much investors are paying for a company's earnings power. EM – MSCI Emerging Markets Index; EAFE ex-U.S. – MSCI EAFE ex-U.S. Index; U.S. – MSCI USA Index. **LEFT:** Five-year peak earnings are adjusted for inflation. Source: FactSet, countries' statistical organizations, Haver Analytics, Fidelity Investments (AART), as of 12/31/15. **RIGHT:** Forward P/E valuations are price divided by next-twelve-months earnings estimates. Source: FactSet, Fidelity Investments (AART), as of 12/31/15.

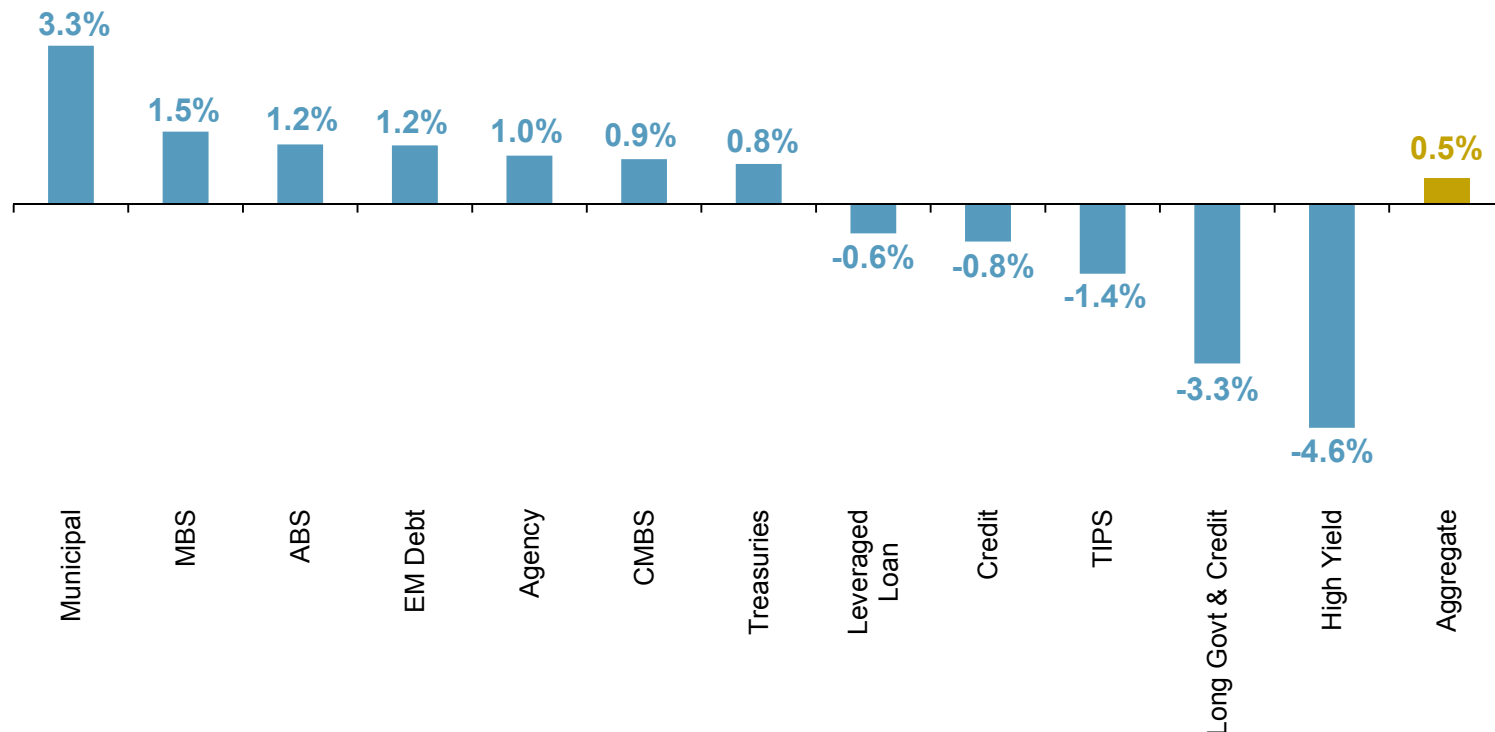
## Fixed-Income Markets



# Modest Returns in 2015, as Rates Rose in Q4

In a reversal from 2014, interest rates rose across the curve in 2015, suppressing fixed-income returns and driving longer-duration bonds into negative territory. Corporate-bond-yield spreads widened, with losses most pronounced in high-yield markets. Benefiting from favorable supply-demand dynamics, muni bonds were the strongest performing category.

## 2015 Total Return



### Q4 2015

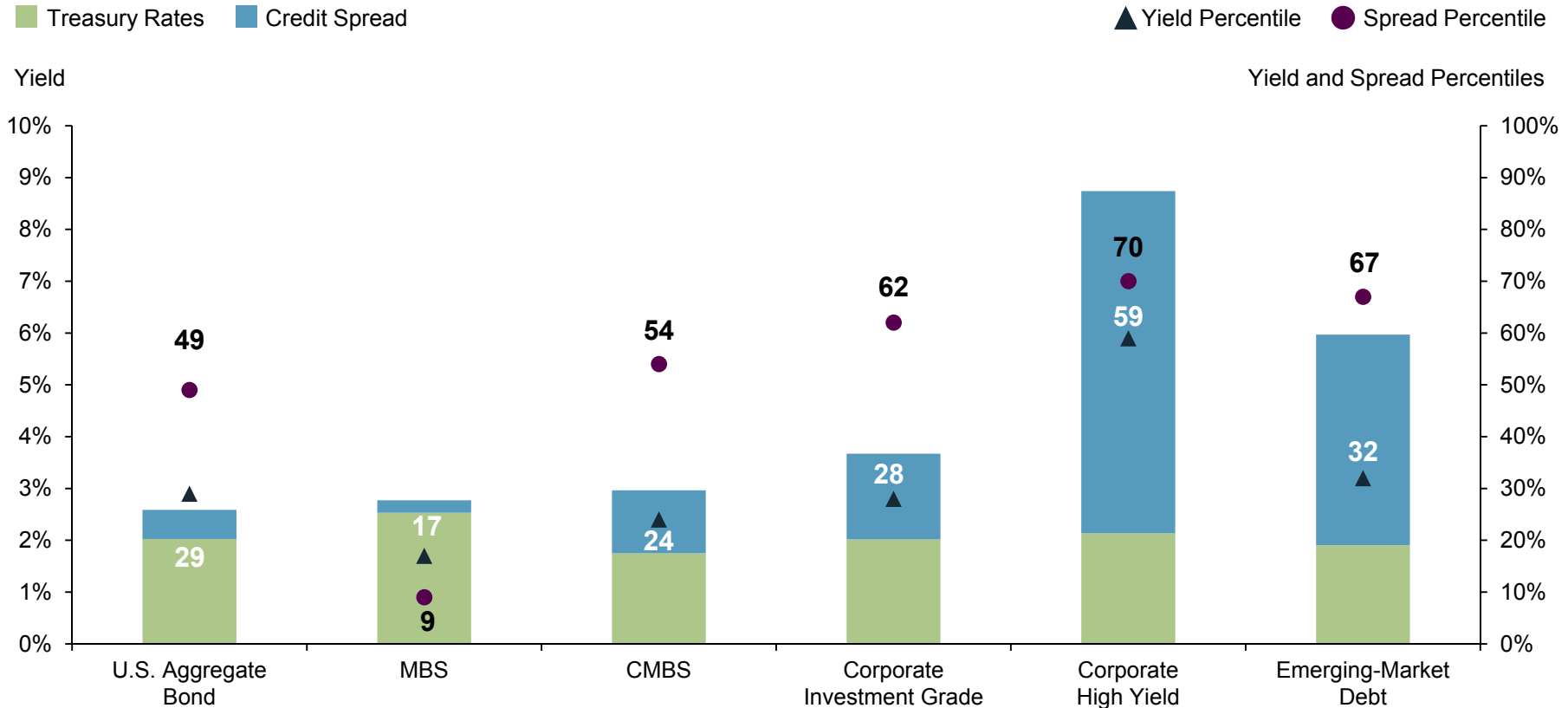
1.5% -0.1% -0.6% 1.5% -0.6% -1.3% -0.9% -2.2% -0.5% -0.6% -0.9% -2.2% -0.6%

Past performance is no guarantee of future results. You cannot invest directly in an index. Please see appendix for important index information. All indices are unmanaged. Index returns represented by: ABS (Asset-Backed Securities) – Barclays ABS Index; Agency – Barclays U.S. Agency Index; Aggregate – Barclays U.S. Aggregate Bond Index; CMBS (Commercial Mortgage-Backed Securities) – Barclays Investment-Grade CMBS Index; Credit – Barclays U.S. Credit Bond Index; EM Debt (Emerging-Market Debt) – JP Morgan EMBI Global Index; High Yield – BofA ML U.S. High Yield Index; Leveraged Loan – S&P/LSTA Leveraged Loan Index; Long Government & Credit (Investment-Grade) – Barclays Long Government & Credit Index; MBS (Mortgage-Backed Securities) – Barclays MBS Index; Municipal – Barclays Municipal Bond Index; TIPS (Treasury Inflation-Protected Securities) – Barclays U.S. TIPS Index; Treasuries – Barclays U.S. Treasury Index. Source: FactSet, Fidelity Investments (AART), as of 12/31/15.

# Yields Still Low, but Spreads Near Historical Averages

Expectations of a Fed rate hike pushed up yields across fixed-income categories during Q4, but yields generally remain well below historical averages. Corporate bond spreads rose in 2015, but outside of high yield, credit spreads generally remained at or near historical averages for most categories.

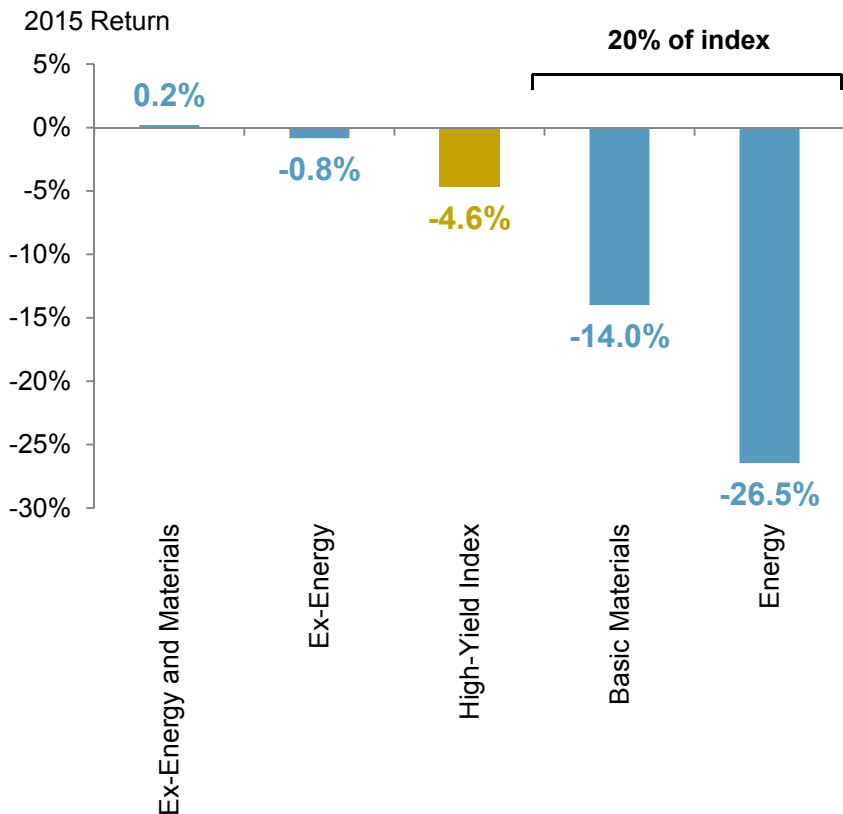
## Fixed-Income Yields and Spreads



# High Yield More Attractive after Sell-Off, but Risks Remain

A steep drop in the energy and materials sectors, compounded by market liquidity concerns, drove a sell-off in the high-yield market during the second half of 2015. However, fundamentals remain considerably more favorable relative to overheated high-yield episodes during the 2000s, and wider credit spreads may offer opportunities for active management.

## High-Yield Returns by Sector



## High-Yield Fundamentals

### Positives

**Broadly stable fundamentals:** challenged sectors only 20% of index (vs. 45% TMT in early 2000s)

**Valuations more attractive:** implied default rate (6.3%) elevated relative to actual default rate (3.4%)

**Delayed maturity schedule:** <10% of index matures in 2016 and 2017 versus ~60% 2020-2023

**Reasonable underwriting standards:** leveraged buyouts only ~15-20% of issuance proceeds versus 50% in 2007

### Negatives

**Regulatory changes:** heightened liquidity risk

**Business cycle:** historical underperformance in late cycle

**Uncertain energy outlook:** low oil prices increase risk

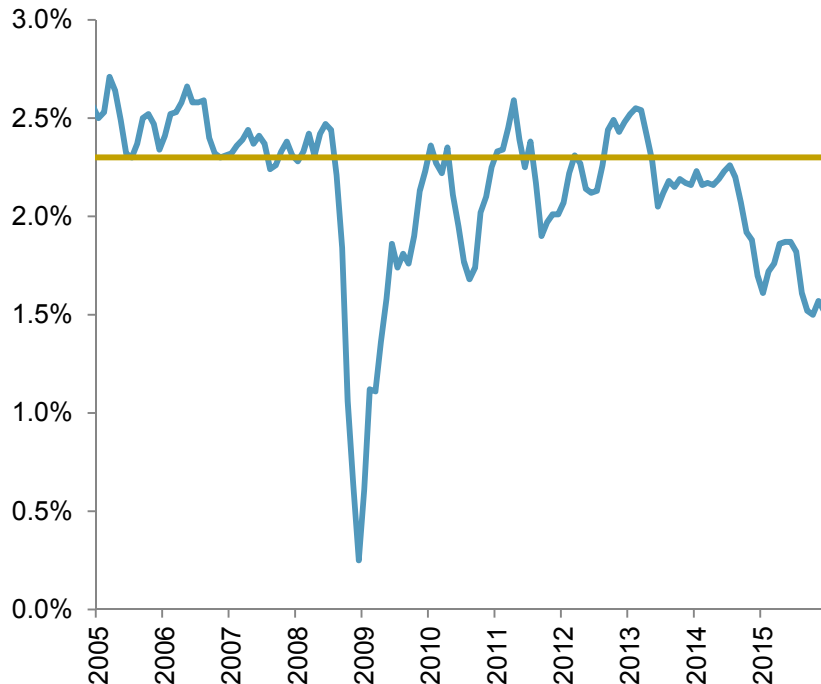
# Inflation Resistance May Become an Important Attribute

With inflation expectations dropping to multi-year lows, implied inflation in the Treasury markets fell far below the Fed's target, making TIPS an attractively priced hedge against higher inflation. Meanwhile, the U.S. is closer to the start of the late-cycle than to the start of the mid-cycle phase, suggesting that it may not be too early to add exposure to short-duration categories.

## TIPS Implied Inflation Rate

— TIPS 10-Year Breakeven Inflation Rate  
— FOMC Implied CPI Target

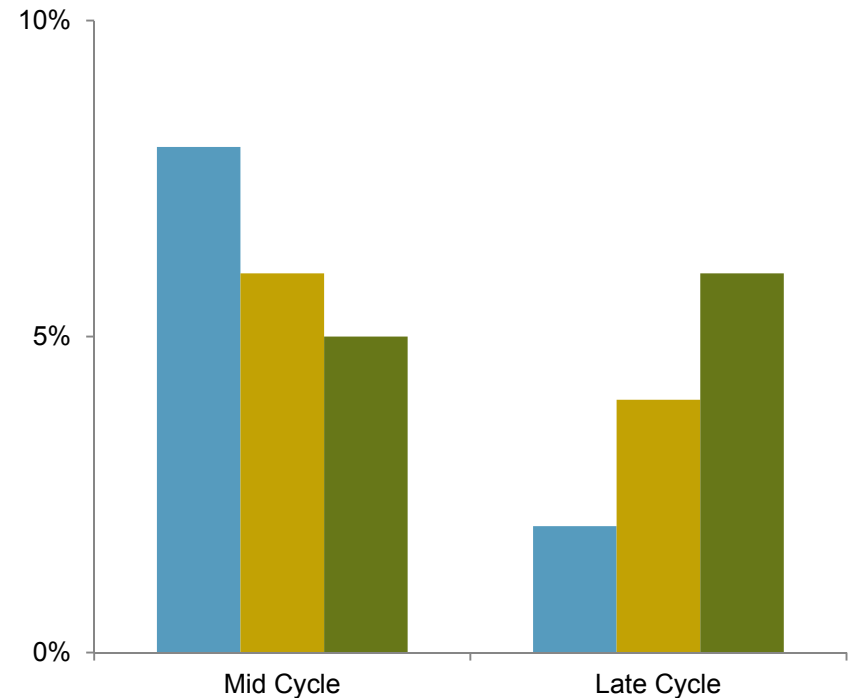
Rate



## Asset Class Performance by Cycle

■ High Yield ■ Bonds ■ Cash

Average Annual Return



The FOMC currently targets a long-term 2% rate for the personal consumption expenditure (PCE) deflator, but TIPS are priced off the consumer price index (CPI). CPI has been roughly 30 basis points higher than PCE since the recession, therefore the FOMC's implied CPI target is 2.3%. FOMC: Federal Open Market Committee. TIPS: Treasury Inflation-Protected Securities. TIPS breakeven inflation rate calculated as difference between real and nominal 10-year Treasury yields. **LEFT:** Source: Federal Reserve, Haver Analytics, Fidelity Investments (AART), as of 12/31/15. **RIGHT:** Fidelity Investments proprietary analysis of historical asset class performance, using data from indices from Bank of America Merrill Lynch, Barclays, Fidelity Investments, Morningstar. Source: Fidelity Investments (AART), as of 12/31/15.

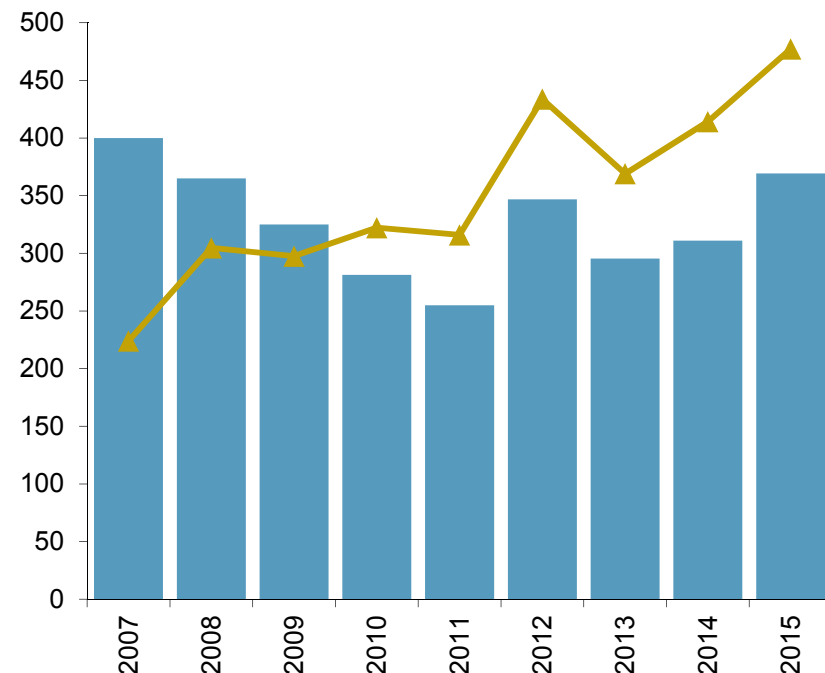
# Technical Factors Favorable for Municipal Bonds

Market technical factors exhibit continued strength, as the supply of new issuance in 2015 once again fell below the steady demand from the reinvestment of coupons and other proceeds. Historically, highly rated muni bonds tend to offer better tax-equivalent returns than comparable Treasuries around Federal Reserve tightening cycles.

## Muni Bond Supply vs. Demand

— New Issuance — Total Reinvestment Demand

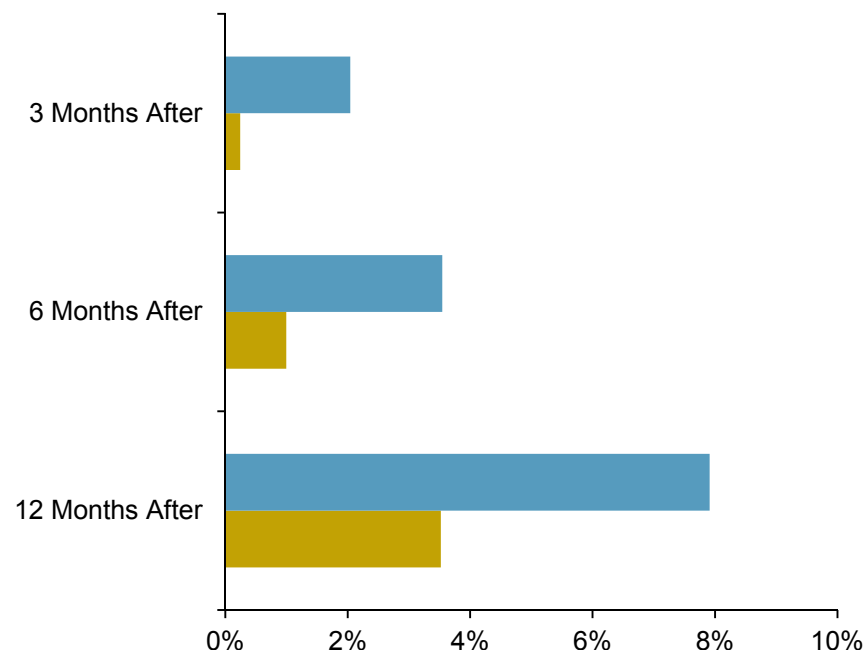
Billions (\$)



## Muni Performance around Fed Tightening Cycles, 1983–2010

■ Tax-Equivalent Munis ■ Treasuries

Average Return (%)



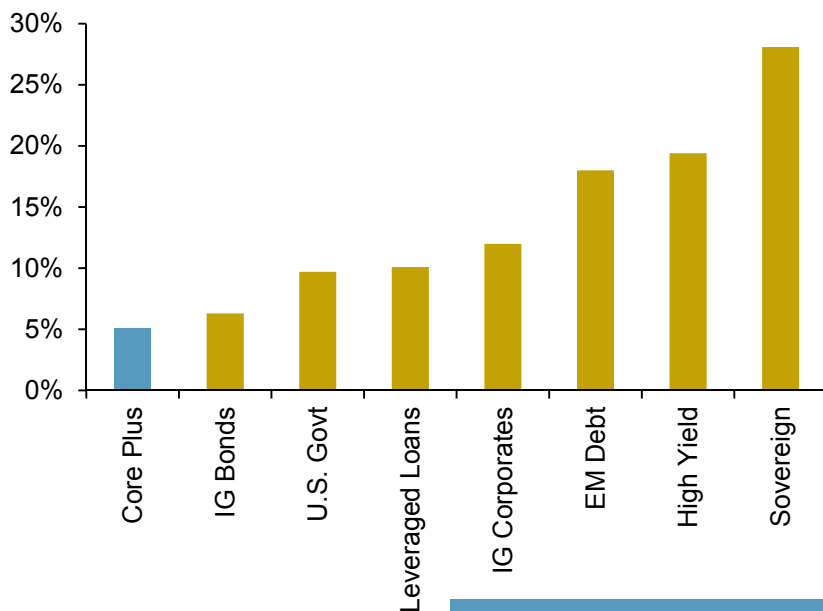
**LEFT:** Reinvestment Demand forecasted by JPMorgan Research. Refinancing includes issues that are in part used to refinance debt as well as new projects. Total Reinvestment Demand includes proceeds from existing municipal investments, including coupons, maturities, and refundings; demand data courtesy of JPMorgan Research, copyright 2015. Source: Thomson Reuters, JPMorgan Research, Fidelity Investments (AART), as of 12/31/15. **RIGHT:** Fed: Federal Reserve. Tax-equivalent yields assume the highest tax bracket calculated using top federal income tax rate prior to 2013 and Medicare contribution tax plus top federal income tax rate from 2013 onwards. Fidelity Investments proprietary analysis of historical asset class total returns, using data from indices from: Barclays, Fidelity Investments. Source: Fidelity Investments (AART), as of 12/31/15.

# Benefits of High-Quality Core in a Multi-Sector Bond Portfolio

A multi-sector fixed-income strategy with a foundation of high-quality bonds and the addition of higher-yielding “plus” sectors has exhibited consistent downside protection. A “core plus” portfolio has generated fewer periods of negative returns than any individual bond sector, while providing a significantly lower magnitude of losses than lower-quality sectors.

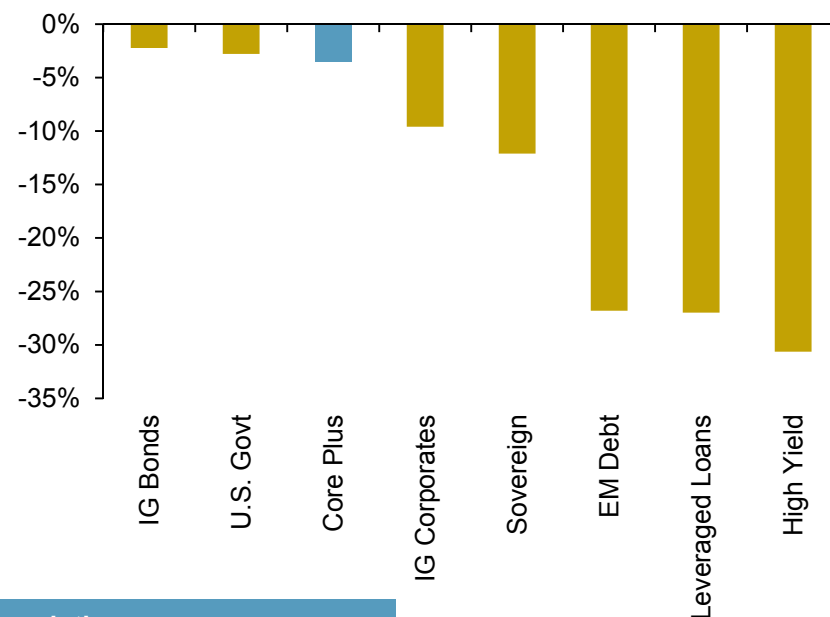
## 1-Year Negative Return Periods, 1998–2015

% of Rolling Periods



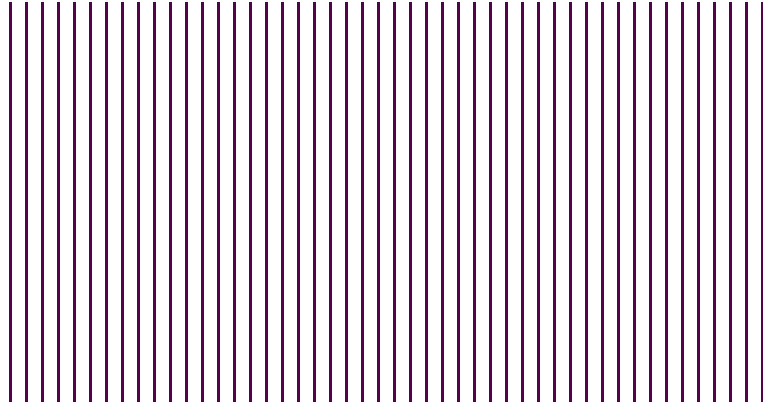
## Worst 1-Year Returns, 1998–2015

Total Return



Portfolio	Description	
Core Plus	80% U.S. Investment Grade 5% Leveraged Loans	10% U.S. High Yield 5% Emerging Market

## Asset Allocation Themes



# Multi-Time-Horizon Asset Allocation Framework

Fidelity's Asset Allocation Research Team (AART) believes that asset price fluctuations are driven by a confluence of various factors that evolve over different time horizons. As a result, we employ a framework that analyzes trends among three temporal segments: tactical (short term), business cycle (medium term), and secular (long term).

## DYNAMIC ASSET ALLOCATION TIMELINE

HORIZONS

**Secular**

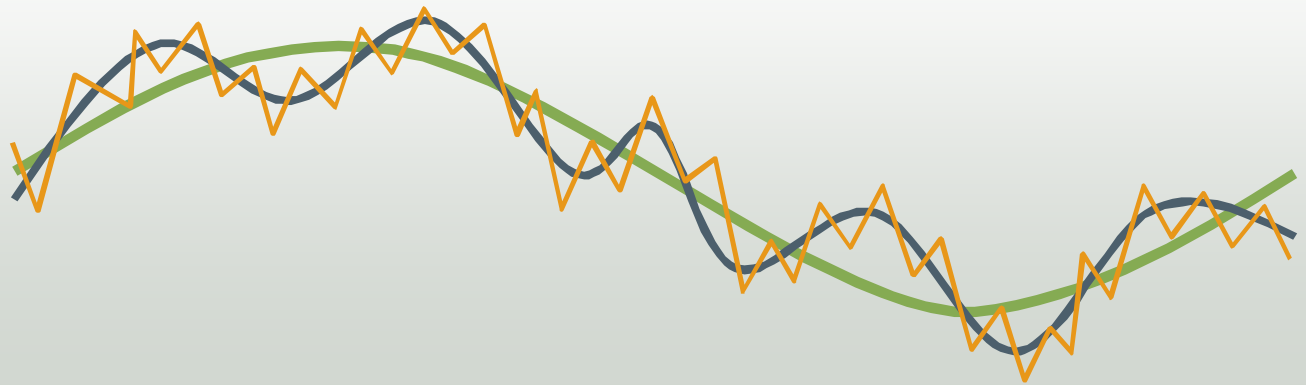
(10–30 years)

**Business Cycle**

(1–10 years)

**Tactical**

(1–12 months)



### Portfolio Construction

Asset Class | Country/Region | Sectors | Correlations

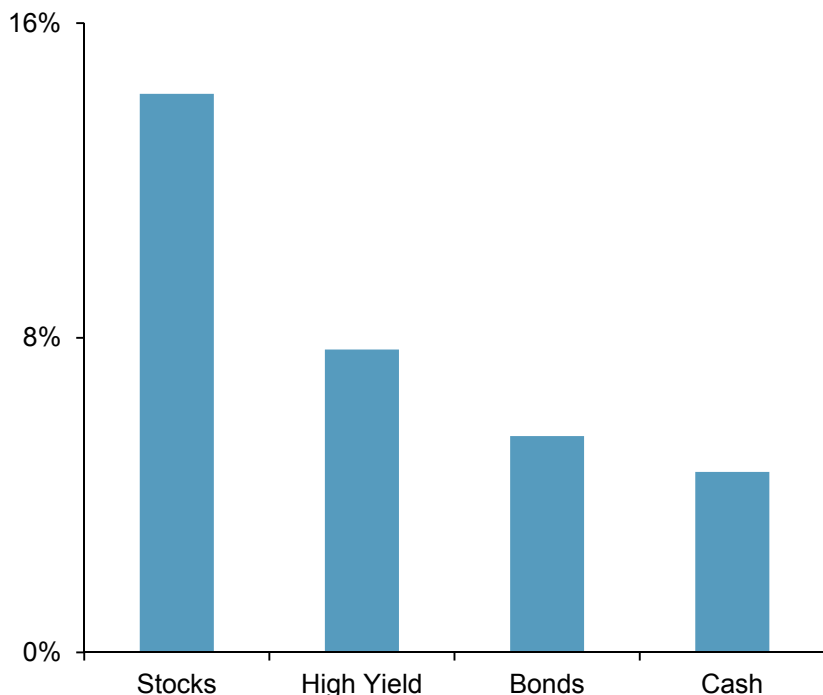


# Late Cycle Often Causes a Key Shift in Asset Performance

The late-cycle phase has the most mixed performance of any business cycle phase, with more limited overall upside. There is less confidence in equity performance, though stocks have typically outperformed bonds. Inflation-resistant assets such as short-duration bonds, cash, TIPS, and commodities have typically performed relatively well.

## Mid-Cycle Asset Class Performance, 1950–2010

Average Annual Return

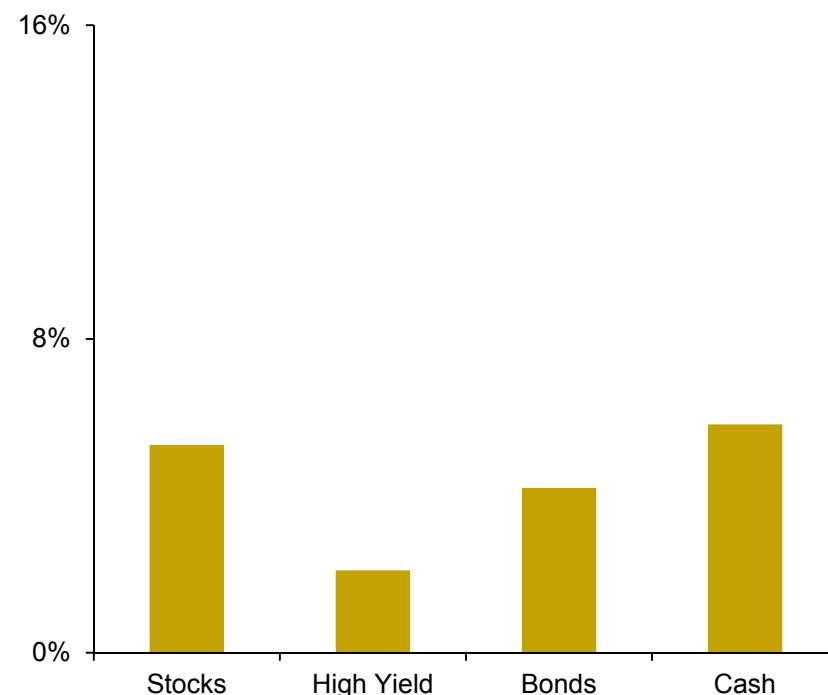


### Strong asset class performance

- Favor economically sensitive assets
- Broad-based gains

## Late-Cycle Asset Class Performance, 1950–2010

Average Annual Return



### Mixed asset class performance

- Favor inflation-resistant assets
- Gains more muted



Past performance is no guarantee of future results. Fidelity Investments proprietary analysis of historical asset class performance, using data from indices from Bank of America Merrill Lynch, Barclays, Fidelity Investments, Morningstar. Source: Fidelity Investments (AART), as of 12/31/15.

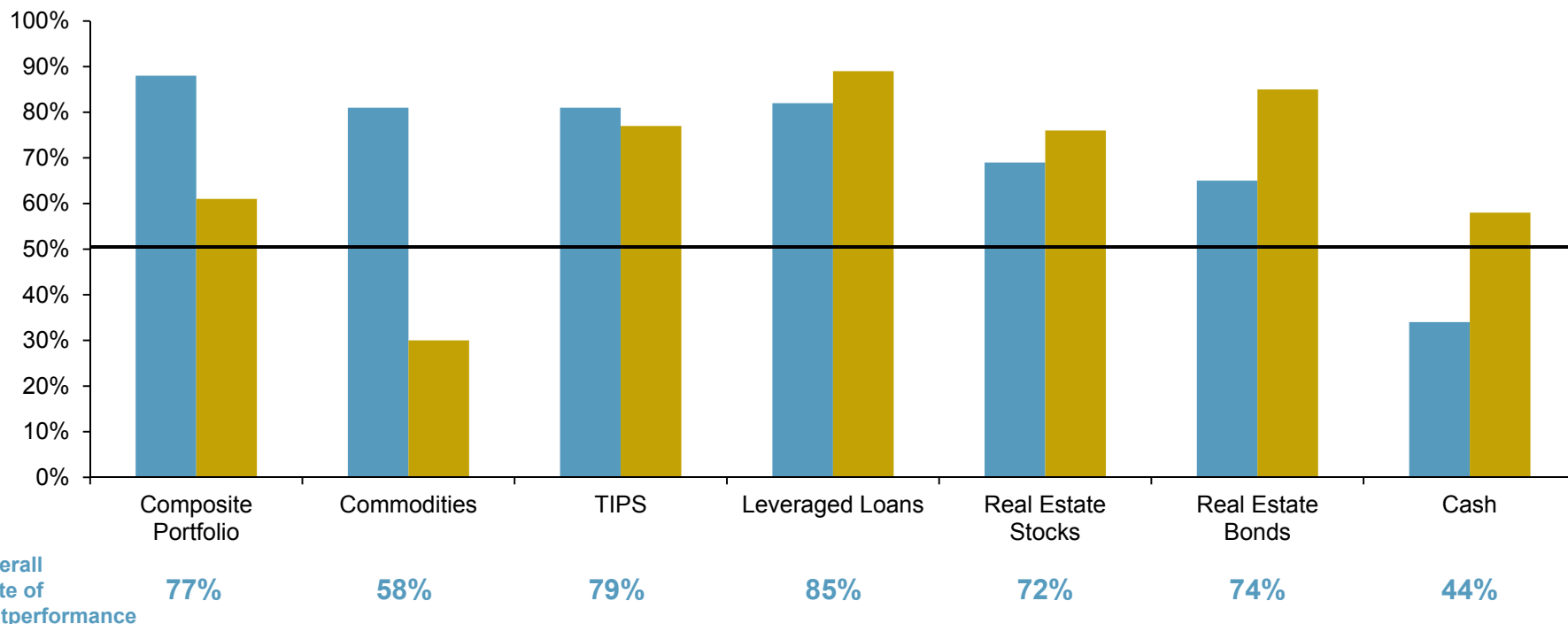
# Real Return: Managing Inflation Risk Still Matters

Investments with hard-asset or income-adjusting characteristics have historically offered inflation resistance, particularly when investors needed it most—as inflation increased. Combining assets into a diversified real-return composite has increased the frequency of outpacing inflation as it rises, a difficult task for cash in today's low-rate environment.

## Frequency of Outperforming Inflation, 1998–2014

■ Outperformed during Rising Inflation ■ Outperformed during Falling Inflation

% of Periods Outperforming Inflation Rate



Past performance is no guarantee of future results. Diversification does not ensure a profit or guarantee against loss. It is not possible to invest directly in an index. Please see appendix for important index information. Inflation rate: year-over-year change in the consumer price index. Asset classes represented by: Cash – IA SBBI U.S. 30 Day Treasury Bill Index; Commodities – Bloomberg Commodity Index; Composite portfolio – 30% TIPS, 25% leveraged loans, 25% commodities, 10% real estate equity, 10% real estate income; Leveraged Loans – S&P/LSTA Leveraged Performing Loan Index; Real Estate Bonds – BofA ML U.S. Corporate Real Estate Index; Real Estate Stocks – Dow Jones U.S. Select Real Estate Securities Index; TIPS (Treasury Inflation Protected Securities) – Barclays U.S. TIPS Index. Source: Morningstar, Fidelity Investments (AART), as of 11/30/14.

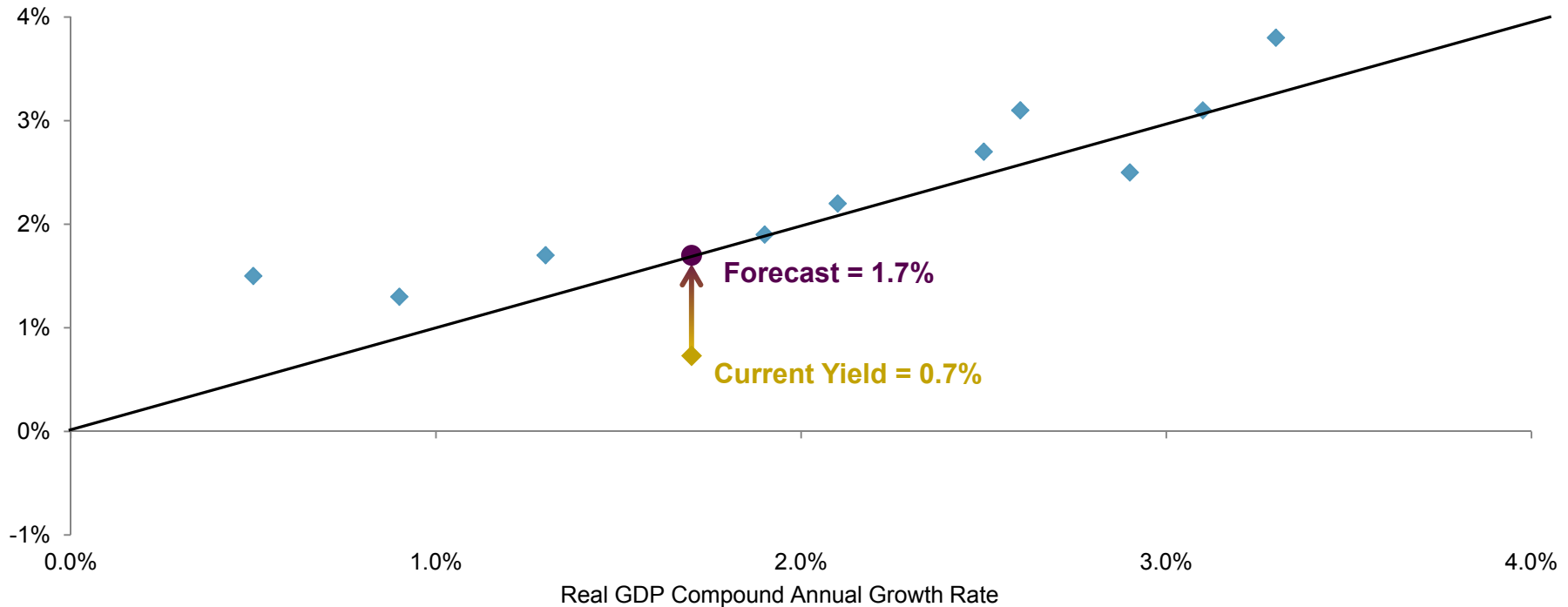
# Secular Yield Trend: Higher than Current, Lower than History

Over the long term, yields tend to gravitate toward the pace of GDP growth, so we expect real yields to rise over time to average closer to our 1.7% GDP forecast over the next 20 years. While the upward move in yields may provide a headwind for bond prices, this yield level would be significantly lower than the long-term historical average.

## Secular Rate Outlook

◆ Historical Observations of Various Countries    ● 20-Year Forecast

Average Real 10-Year Yield



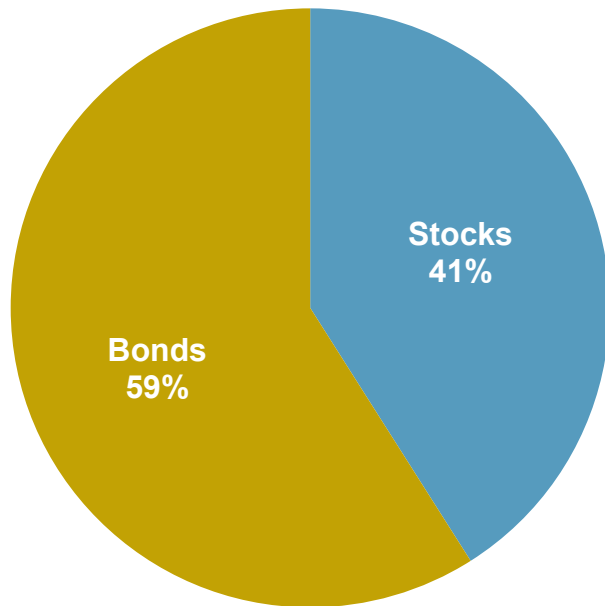
Real: inflation-adjusted. The average real 10-year yield and real GDP compound annual growth rates are calculated since the inception dates of the inflation-adjusted government securities for the following countries: United Kingdom (Jan. 1985), Australia (Jun. 1985), Canada (Nov. 1991), United States (Apr. 1998), and Japan (Apr. 2004). Source: Countries' statistical organizations, Haver Analytics, Fidelity Investments (AART), as of 12/31/15.

# Myopic Loss Aversion Prompts Risk-Averse Behavior

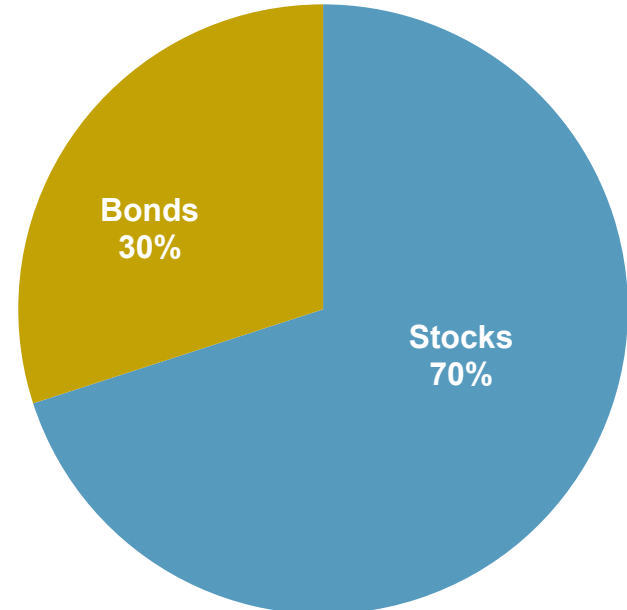
*Myopic loss aversion* describes a common bias in which greater sensitivity to losses than to gains is compounded by the frequent evaluation of outcomes. Investors who review their portfolios more frequently have tended to shift toward more conservative exposures, as increased monitoring raises the likelihood of seeing (and reacting to) a loss.

## Impact of Feedback Frequency on Investment Decisions

Monthly



Yearly



# Performance Rotations Underscore Need for Diversification

The performance of different assets has fluctuated widely from year to year, and the magnitude of returns can vary significantly among asset classes in any given year—even among asset classes that are moving in the same direction. A simple portfolio allocation with 60% in U.S. equities and 40% in U.S. bonds illustrates the potential benefits of diversification.

## Periodic Table of Returns

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Legend
18%	75%	17%	38%	35%	35%	35%	66%	32%	14%	26%	56%	32%	35%	35%	40%	5%	79%	28%	8%	20%	39%	28%	5%	Growth Stocks
17%	33%	8%	37%	23%	33%	29%	34%	26%	8%	10%	47%	26%	21%	33%	16%	-20%	58%	27%	8%	19%	34%	14%	3%	Real Estate Stocks
15%	20%	3%	37%	23%	29%	21%	27%	12%	5%	4%	39%	21%	14%	27%	12%	-26%	37%	19%	4%	18%	33%	13%	1%	Large Cap Stocks
15%	19%	2%	30%	22%	24%	20%	24%	8%	2%	-2%	37%	18%	12%	22%	11%	-34%	32%	18%	4%	18%	32%	12%	1%	60% Large Cap 40% IG Bonds
11%	19%	1%	28%	22%	22%	14%	21%	-1%	-2%	-6%	31%	17%	7%	18%	7%	-36%	28%	17%	2%	16%	23%	11%	1%	Investment-Grade Bonds
8%	17%	0%	20%	16%	20%	9%	21%	-3%	-4%	-9%	31%	11%	5%	16%	6%	-36%	27%	16%	2%	16%	19%	6%	0%	Foreign-Developed Country Stocks
8%	10%	-1%	18%	15%	13%	3%	12%	-5%	-4%	-15%	29%	11%	5%	12%	5%	-37%	26%	15%	0%	16%	7%	5%	-4%	Value Stocks
7%	10%	-2%	15%	11%	10%	-3%	7%	-9%	-12%	-16%	28%	9%	5%	11%	2%	-38%	20%	15%	-4%	15%	3%	3%	-4%	Small Cap Stocks
5%	10%	-2%	15%	6%	2%	-18%	3%	-14%	-20%	-20%	24%	8%	4%	9%	-1%	-38%	19%	12%	-12%	11%	-2%	-2%	-5%	High-Yield Bonds
4%	4%	-3%	12%	6%	-3%	-25%	-1%	-22%	-20%	-22%	19%	7%	3%	4%	-2%	-43%	18%	8%	-13%	4%	-2%	-4%	-15%	Emerging-Market Stocks
-12%	-1%	-7%	-5%	4%	-12%	-27%	-5%	-31%	-21%	-28%	4%	4%	2%	2%	-16%	-53%	6%	7%	-18%	-1%	-10%	-17%	-25%	Commodities

Past performance is no guarantee of future results. Diversification/asset allocation does not ensure a profit or guarantee against loss. It is not possible to invest directly in an index. All indices are unmanaged. Please see appendix for important index information. Asset classes represented by: Commodities – Bloomberg Commodity Index; Emerging-Market – MSCI Emerging Markets Index; Foreign-Developed Country – MSCI EAFE Index; Growth – Russell 3000 Growth Index; High Yield – Bank of America Merrill Lynch U.S. High Yield Index; Investment-Grade – Barclays U.S. Aggregate Bond Index; Large Cap – S&P 500 Index; Real Estate – FTSE NAREIT Equity Index; Small Cap – Russell 2000 Index; Value – Russell 3000 Value Index. Source: Morningstar, Standard & Poor's, Haver Analytics, Fidelity Investments (AART), as of 12/31/15.

# Appendix: Important Information

Views expressed are as of the date indicated, based on the information available at that time, and may change based on market and other conditions. Unless otherwise noted, the opinions provided are those of the authors and not necessarily those of Fidelity Investments or its affiliates. Fidelity does not assume any duty to update any of the information.

Investment decisions should be based on an individual's own goals, time horizon, and tolerance for risk.

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Fidelity does not provide legal or tax advice and the information provided herein is general in nature and should not be considered legal or tax advice. Consult with an attorney or a tax professional regarding your specific legal or tax situation.

**Past performance and dividend rates are historical and do not guarantee future results.**

Investing involves risk, including risk of loss.

Diversification does not ensure a profit or guarantee against loss.

All indices are unmanaged, and performance of the indices includes reinvestment of dividends and interest income and, unless otherwise noted, is not illustrative of any particular investment. An investment cannot be made in any index.

Although bonds generally present less short-term risk and volatility than stocks, bonds do contain interest rate risk (as interest rates rise, bond prices usually fall, and vice versa) and the risk of default, or the risk that an issuer will be unable to make income or principal payments. Additionally, bonds and short-term investments entail greater inflation risk—or the risk that the return of an investment will not keep up with increases in the prices of goods and services—than stocks. Increases in real interest rates can cause the price of inflation-protected debt securities to decrease.

Stock markets, especially non-U.S. markets, are volatile and can decline significantly in response to adverse issuer, political, regulatory, market, or economic developments. Foreign securities are subject to interest rate, currency exchange rate, economic, and political risks, all of which are magnified in emerging markets.

The securities of smaller, less well-known companies can be more volatile than those of larger companies.

Growth stocks can perform differently from the market as a whole and from other types of stocks, and can be more volatile than other types of stocks. Value stocks can perform differently from other types of stocks and can continue to be undervalued by the market for long periods of time.

Lower-quality debt securities generally offer higher yields but also involve greater risk of default or price changes due to potential changes in the credit quality of the issuer. Any

fixed-income security sold or redeemed prior to maturity may be subject to loss.

Floating-rate loans generally are subject to restrictions on resale, and sometimes trade infrequently in the secondary market; as a result, they may be more difficult to value, buy, or sell. A floating-rate loan may not be fully collateralized and therefore may decline significantly in value.

The municipal market can be affected by adverse tax, legislative, or political changes, and by the financial condition of the issuers of municipal securities. Interest income generated by municipal bonds is generally expected to be exempt from federal income taxes and, if the bonds are held by an investor resident in the state of issuance, from state and local income taxes. Such interest income may be subject to federal and/or state alternative minimum taxes. Investing in municipal bonds for the purpose of generating tax-exempt income may not be appropriate for investors in all tax brackets. Generally, tax-exempt municipal securities are not appropriate holdings for tax-advantaged accounts such as IRAs and 401(k)s.

The commodities industry can be significantly affected by commodity prices, world events, import controls, worldwide competition, government regulations, and economic conditions.

The gold industry can be significantly affected by international monetary and political developments, such as currency devaluations or revaluations, central bank movements, economic and social conditions within a country, trade imbalances, or trade or currency restrictions between countries.

Changes in real estate values or economic downturns can have a significant negative effect on issuers in the real estate industry.

Leverage can magnify the impact that adverse issuer, political, regulatory, market, or economic developments have on a company. In the event of bankruptcy, a company's creditors take precedence over the company's stockholders.

## Market Indices

**BofA ML Corporate Real Estate Index**, a subset of BofA ML U.S. Corporate Index, is a market capitalization-weighted index of U.S. dollar-denominated investment-grade corporate debt publicly issued in the U.S. domestic market by real estate issuers. Qualifying securities must have an investment-grade rating (based on an average of Moody's, S&P, and Fitch). In addition, qualifying securities must have at least one year remaining to final maturity, a fixed coupon schedule, and a minimum amount outstanding of \$250 million. **BofA ML U.S. Real Estate Index** is a subset of the BofA ML Real Estate Corporate Index; qualifying securities must have an investment grade rating and an investment grade-rated country of risk. **BofA ML U.S. High Yield Bond Index** is a market capitalization-weighted index of U.S. dollar denominated below investment grade corporate debt publicly issued in the U.S. domestic market. **The Merrill Lynch High-Yield Bond Master II Index** is an unmanaged index that tracks the performance of below-investment-grade, U.S.-dollar-denominated corporate bonds publicly issued in the U.S. domestic market.

# Appendix: Important Information

## Market Indices (continued)

**Barclays U.S. 1-3 (1-5) Year Government Credit Index** includes all publicly issued U.S. government and corporate securities that have a remaining maturity between one and three (five) years and are rated investment grade. **Barclays U.S. 1-5 Year Credit Index** is designed to cover publicly issued U.S. corporate and specified non-U.S. debentures and secured notes with a maturity between one and five years and meet the specified liquidity and quality requirements; bonds must be SEC-registered to qualify. **Barclays U.S. 1-5 Year Municipal Index** covers the one- to five-year maturity, U.S. dollar-denominated, tax-exempt bond market with four main sectors: state and local general obligation bonds, revenue bonds, insured bonds, and pre-refunded bonds.

**Barclays ABS Index** is a market value-weighted index that covers fixed-rate asset-backed securities with average lives greater than or equal to one year and that are part of a public deal; the index covers the following collateral types: credit cards, autos, home equity loans, stranded-cost utility (rate-reduction bonds), and manufactured housing. **Barclays CMBS Index** is designed to mirror commercial mortgage-backed securities of investment-grade quality (Baa3/BBB-/BBB- or above) using Moody's, S&P, and Fitch, respectively, with maturities of at least one year. **Barclays Emerging Market Bond Index** is an unmanaged index that tracks total returns for external-currency-denominated debt instruments of the emerging markets. **Barclays Euro Aggregate Bond Index** is a broad-based flagship benchmark that measures the investment grade, euro-denominated, fixed rate bond market, including treasuries, government-related, corporate and securitized issues. **Barclays Long U.S. Government Credit Index** includes all publicly issued U.S. government and corporate securities that have a remaining maturity of 10 or more years, are rated investment grade, and have \$250 million or more of outstanding face value. **Barclays Municipal Bond Index** is a market value-weighted index of investment-grade municipal bonds with maturities of one year or more. **Barclays U.S. Agency Bond Index** is a market value-weighted index of U.S. Agency government and investment-grade corporate fixed-rate debt issues. **Barclays U.S. Aggregate Bond** is a broad-based, market-value-weighted benchmark that measures the performance of the investment-grade, U.S. dollar-denominated, fixed-rate taxable bond market. **Barclays U.S. Corporate High Yield Bond Index** is a market value-weighted index that covers the universe of dollar-denominated, fixed-rate, non-investment grade debt. **Barclays U.S. Credit Bond Index** is a market value-weighted index of investment-grade corporate fixed-rate debt issues with maturities of one year or more. **Barclays U.S. Government Index** is a market value-weighted index of U.S. Government fixed-rate debt issues with maturities of one year or more. **Barclays U.S. MBS Index** is a market value-weighted index of fixed-rate securities that represent interests in pools of mortgage loans, including balloon mortgages, with original terms of 15 and 30 years that are issued by the Government National Mortgage Association (GNMA), the Federal National Mortgage Association (FNMA), and the Federal Home Loan Mortgage Corp. (FHLMC). **Barclays U.S. Treasury Inflation-Protected Securities (TIPS) Index (Series-L)** is a market value-weighted index that measures the performance of inflation-protected securities issued by the U.S. Treasury. **Barclays U.S. Treasury Bond Index** is a market value-weighted index of public obligations of the U.S. Treasury with maturities of one year or more.

**Bloomberg Commodity Index** measures the performance of the commodities market. It consists of exchange-traded futures contracts on physical commodities that are weighted to account for the economic significance and market liquidity of each commodity.

**The Citigroup Non-USD Group-of-seven (G7) Equal Weighted Index** is designed to measure the unhedged performance of the government bond markets of Japan, Germany, France, Britain, Italy, and Canada. The index is equal-weighted by country. Issues included in the index have fixed-rate coupons and maturities of one year or more.

**The CBOE Volatility Index® (VIX® Index)** is a barometer of equity market volatility. The VIX Index is based on real-time prices of options on the S&P 500® Index (SPX) and is designed to reflect investors' consensus view of future (30-day) expected stock market volatility.

**The Conference Board Leading Economic Index® (LEI) for the U.S.** is a series of composite economic indexes that are the key elements in an analytic system designed to signal peaks and troughs in the business cycle. The leading, coincident, and lagging economic indexes are essentially composite averages of several individual leading, coincident, or lagging indicators. They are constructed to summarize and reveal common turning point patterns in economic data in a clearer and more convincing manner than any individual component – primarily because they smooth out some of the volatility of individual components.

**Dow Jones U.S. Select Real Estate Securities Index** is a float-adjusted, market capitalization-weighted index of publicly traded real estate securities, such as real estate investment trusts (REITs) and real estate operating companies (REOCs).

**FTSE 100 Index** is a market capitalization-weighted index of the 100 most highly capitalized blue chip companies listed on the London Stock Exchange. **FTSE National Association of Real Estate Investment Trusts (NAREIT) All REITs Index** is a market capitalization-weighted index that is designed to measure the performance of all tax-qualified REITs listed on the NYSE, the American Stock Exchange, or the NASDAQ National Market List. **FTSE NAREIT Equity REIT Index** is an unmanaged market value-weighted index based on the last closing price of the month for tax-qualified REITs listed on the New York Stock Exchange (NYSE).

**The Global Financial Data (GFD) World x/USA Return Index** is a multi-country composite index with constituents weighted by relative GDP and stock market capitalizations; it is designed to approximate continuous and comparable world ex-U.S. equity returns from 1919 to 1969. **GFD Emerging Markets Index** is a composite of various regional EM indices in use before 1987 using a qualitatively selected weighting of constituent countries; it is designed to approximate continuous and comparable EM equity returns from 1920 to 1987.



# Appendix: Important Information

## Market Indices (continued)

The **IA SBBI U.S. Small Cap Stock Index** is a custom index designed to measure the performance of small capitalization U.S. stocks. **IA SBBI U.S. Intermediate-Term Government Bond Index** is an unweighted index that measures the performance of five-year maturity U.S. Treasury bonds. Each year, a one-bond portfolio containing the shortest non-callable bond having a maturity of not less than five years is constructed. **IA SBBI U.S. Long-Term Corporate Bond Index** is a custom index designed to measure the performance of long-term U.S. corporate bonds. **IA SBBI U.S. 30-Day Treasury Bill Index** is an unweighted index that measures the performance of 30-day maturity U.S. Treasury bills.

**JPM® EMBI Global Index**, and its country sub-indices, total returns for the U.S. dollar-denominated debt instruments issued by Emerging Market sovereign and quasi-sovereign entities, such as Brady bonds, loans, and Eurobonds. **JPM® EMBI Global Investment Grade Index**, and its country sub-indices, tracks total returns for traded external debt instruments issued by emerging-market sovereign and quasi-sovereign entities rated investment grade.

**MSCI® All Country (AC) Europe Index** is a market capitalization-weighted index that is designed to measure the equity market performance of Europe; it consists of the following developed and emerging-market country indices: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Russia, Spain, Sweden, Switzerland, Turkey, and United Kingdom. **MSCI All Country World Index (ACWI)** is a market capitalization-weighted index that is designed to measure the investable equity market performance for global investors of developed and emerging markets. **MSCI Europe Index** is a market capitalization-weighted index that is designed to measure the investable equity market performance for global investors of the developed markets in Europe. **MSCI North America Index** is a market capitalization-weighted index designed to measure the performance of large and mid cap segments of the U.S. and Canada markets. **MSCI Pacific ex Japan Index** is a market capitalization-weighted index that is designed to measure the equity market performance of four of the five developed market countries in the Pacific region including Australia, Hong Kong, New Zealand and Singapore. **MSCI World Index** is a market capitalization-weighted index that is designed to measure the investable equity market performance for global investors of developed markets. **MSCI World ex USA Index** is a market capitalization-weighted index designed to measure the equity market performance of developed markets excluding the U.S.

**MSCI Emerging Markets (EM) Index** is a market capitalization-weighted index that is designed to measure the investable equity market performance for global investors in emerging markets. **MSCI EM Asia Index** is a market capitalization-weighted index designed to measure equity market performance in Asia. **MSCI EM Europe, Middle East, and Africa (EMEA) Index** is a market capitalization-weighted index that is designed to measure the investable equity market performance for global investors in the emerging market countries of Europe, the Middle East & Africa. **MSCI EM Latin America Index** is a market capitalization-weighted index that is designed to measure the investable equity market performance for global investors in the emerging market countries of Latin America. **MSCI EM Large Cap Index** is composed of those securities in the MSCI EM Index that are defined as large-capitalization stocks.

**MSCI Europe, Australasia, Far East Index (EAFE)** is a market capitalization-weighted index that is designed to measure the investable equity market performance for global investors in developed markets, excluding the U.S. & Canada. **MSCI EAFE Small Cap Index** is a market capitalization-weighted index that is designed to measure the investable equity market performance of small cap stocks for global investors in developed markets, excluding the U.S. and Canada.

**MSCI Canada Index** is a market capitalization-weighted index designed to measure equity market performance in Canada. **MSCI China Index** is a market capitalization-weighted index designed to measure equity market performance in China. **MSCI Japan Index** is a market capitalization-weighted index designed to measure equity market performance in Japan. **MSCI USA Index** is a market capitalization-weighted index designed to measure the equity market performance of the U.S.

**MSCI REIT Preferred Index** is a preferred stock market capitalization-weighted total return index of certain exchange-traded perpetual preferred securities issued by U.S. Equity and U.S. Hybrid REITs.

**Russell 2000® Index** is a market capitalization-weighted index designed to measure the performance of the small-cap segment of the U.S. equity market. It includes approximately 2,000 of the smallest securities in the Russell 3000 Index. **Russell 3000® Index** is a market capitalization-weighted index designed to measure the performance of the 3,000 largest companies in the U.S. equity market. **Russell 3000 Growth Index** is a market capitalization-weighted index designed to measure the performance of the broad growth segment of the U.S. equity market. It includes those Russell 3000 Index companies with higher price-to-book ratios and higher forecasted growth rates. **Russell 3000 Value Index** Russell 2500 Value Index is a market capitalization-weighted index designed to measure the performance of the small to mid-cap value segment of the U.S. equity market. It includes those Russell 2500 Index companies with lower price-to-book ratios and lower forecasted growth rates. **Russell Midcap® Index** is a market capitalization-weighted index designed to measure the performance of the mid-cap segment of the U.S. equity market. It contains approximately 800 of the smallest securities in the Russell 1000 Index.

The **S&P 500® Index** is a market capitalization-weighted index of 500 common stocks chosen for market size, liquidity, and industry group representation to represent U.S. equity performance. S&P 500 is a registered service mark of The McGraw-Hill Companies, Inc., and has been licensed for use by Fidelity Distributors Corporation and its affiliates. The **S&P 500 Total Return Index** represents the price changes and reinvested dividends of the S&P 500® Index. **The S&P SmallCap 600** is a market capitalization-weighted index of 600 small-capitalization stocks. **The S&P GSCI® Commodities Index** provides investors with a reliable and publicly available benchmark for investment performance in the commodity markets.



# Appendix: Important Information

## Market Indices (continued)

The **Sectors and industries** defined by Global Industry Classification Standards (GICS®), except where noted otherwise. **S&P 500 sectors** are defined as follows: Consumer Discretionary – companies that tend to be the most sensitive to economic cycles. Consumer Staples – companies whose businesses are less sensitive to economic cycles. Energy – companies whose businesses are dominated by either of the following activities: the construction or provision of oil rigs, drilling equipment, and other energy-related services and equipment, including seismic data collection; or the exploration, production, marketing, refining, and/or transportation of oil and gas products, coal, and consumable fuels. Financials – companies involved in activities such as banking, consumer finance, investment banking and brokerage, asset management, insurance and investments, and real estate, including REITs. Health Care – companies in two main industry groups: health care equipment suppliers, manufacturers, and providers of health care services; and companies involved in research, development, production, and marketing of pharmaceuticals and biotechnology products. Industrials – companies whose businesses manufacture and distribute capital goods, provide commercial services and supplies, or provide transportation services. Information Technology – companies in technology software & services and technology hardware & equipment. Materials – companies that are engaged in a wide range of commodity-related manufacturing. Telecommunication Services – companies that provide communications services primarily through fixed-line, cellular, wireless, high bandwidth, and/or fiber-optic cable networks. Utilities – companies considered electric, gas, or water utilities, or companies that operate as independent producers and/or distributors of power.

### Standard & Poor's/Loan Syndications and Trading Association (S&P/LSTA)

**Leveraged Performing Loan Index** is a market value-weighted index designed to represent the performance of U.S. dollar-denominated institutional leveraged performing loan portfolios (excluding loans in payment default) using current market weightings, spreads and interest payments.

## Other Indices

**The China Home Price Diffusion Index—70 Cities** is a price index for existing residential buildings in 70 cities in China.

**The Consumer Price Index (CPI)** is a monthly inflationary indicator that measures the change in the cost of a fixed basket of products and services, including housing, electricity, food, and transportation.

**The Producer Price Index (PPI)** measures the average change over time in the selling prices received by domestic producers for their output. The prices included in the PPI are from the first commercial transaction for many products and some services.

**The London Bullion Market Association (LBMA)** publishes the international benchmark price of gold in USD, twice daily. The **LBMA Gold price** auction takes place by ICE Benchmark Administration (IBA) at 10:30 and 15:00 with the price set in US dollars per fine troy ounce.

**A Purchasing Managers' Index (PMI)** is a survey of purchasing managers in a certain economic sector. A PMI over 50 represents expansion of the sector compared to the previous month, while a reading under 50 represents a contraction, and a reading of 50 indicates no change. The Institute for Supply Management® reports the U.S. manufacturing PMI®. Markit compiles non-U.S. PMIs.

**Trade-Weighted \$ (Broad) Index:** The broad index is a weighted average of the foreign exchange values of the U.S. dollar against the currencies of a large group of major U.S. trading partners. The index weights, which change over time, are derived from U.S. export shares and from U.S. and foreign import shares. Countries whose currencies are included in the Broad index are the Euro Area, Canada, Japan, Mexico, China, United Kingdom, Taiwan, Korea, Singapore, Hong Kong, Malaysia, Brazil, Switzerland, Thailand, Philippines, Australia, Indonesia, India, Israel, Saudi Arabia, Russia, Sweden, Argentina, Venezuela, Chile and Colombia. The Euro Area includes Germany, France, Italy, Netherlands, Belgium/Luxembourg, Ireland, Spain, Austria, Finland, Portugal, and Greece.

**Trade-Weighted \$ (Major) Index:** The major currencies index is a weighted average of the foreign exchange values of the U.S. dollar against a subset of currencies in the broad index that circulate widely outside the country of issue. The weights are derived by rescaling the currencies' respective weights in the broad index so that they sum to 1 in each sub-index. Countries whose currencies are included in the Major index are the Euro Area, Canada, Japan, United Kingdom, Switzerland, Australia, and Sweden. The Euro Area includes Germany, France, Italy, Netherlands, Belgium/Luxembourg, Ireland, Spain, Austria, Finland, Portugal and Greece.

## Definitions

**Correlation coefficient** measures the interdependencies of two random variables that range in value from -1 to +1, indicating perfect negative correlation at -1, absence of correlation at 0, and perfect positive correlation at +1.

**The Price-to-Earnings (P/E) ratio** is the ratio of a company's current share price to its current earnings, typically trailing 12-months earnings per share. A Forward P/E calculation will typically use an average of analysts' published estimates of earnings for the next 12 months in the denominator.

**Sharpe ratio** compares portfolio returns above the risk-free rate relative to overall portfolio volatility. A higher Sharpe ratio implies better risk-adjusted returns.

**Standard deviation** shows how much variation there is from the average (mean or expected value). A low standard deviation indicates that the data points tend to be very close to the mean, whereas a high standard deviation indicates that the data points are spread out over a large range of values. A higher standard deviation represents greater relative risk.

**Excess return:** the amount by which a portfolio's performance exceeds its benchmark, net (in the case of the analysis in this article) or gross of operating expenses, in percentage points.

# Appendix: Important Information

## Definitions (continued)

**\* Methodology for excess returns** (P. 37): Our analysis focused on all U.S. large-cap, foreign (international) large-cap growth/value/blend equity mutual funds tracked by Morningstar between Jan. 1, 1992 and Dec. 31, 2014, including all core, value, and growth funds within each category and including actively managed funds and passive index funds. We included funds that did not exist for the entire period (closed or merged funds) to reduce survivorship bias. For passive index funds, we eliminated funds that were labeled as “enhanced index,” and funds with tracking error greater than 1% (which are unlikely to be actual passive index strategies despite their identification in the database). For international large-cap funds, we eliminated funds benchmarked to a price index, for greater comparability. We selected the oldest share class for each fund as representative; where more than one share class was oldest, we chose the class labeled as “retail.” Total fund counts for international large-cap equity funds: active 397, passive 25; average fund counts for performance calculation: active 213, passive 9. Averaging excess returns: We used Morningstar data on returns from Jan. 1, 1992 through Dec. 31, 2014. We calculated each fund’s excess returns on a one-year rolling basis, relative to each fund’s primary prospectus benchmark and net of reported expense ratio, for each month, using monthly excess return data from Morningstar. We used an equal-weighted average to calculate overall industry one-year returns for each month. (We chose to equal weight the averages in order to represent the average performance of the range of individual funds available to investors, rather than asset weighting, which may introduce bias into the analysis.) Funds in the study included active and passive funds tracked by Morningstar and benchmarked to the following indices: Foreign (international) large-cap equity (all in USD): MSCI ACWI Ex USA; MSCI ACWI Ex USA Growth; MSCI ACWI Ex USA Value; MSCI EAFE; MSCI EAFE Growth; MSCI EAFE Value; MSCI World Ex USA; MSCI World Ex USA Growth; MSCI World Ex USA Value. Index definitions: MSCI ACWI (All Country World Index) ex USA Index is a market capitalization-weighted index designed to measure the investable equity market performance for global investors of large and mid-cap stocks in developed and emerging markets, excluding the United States. MSCI ACWI (All Country World Index) ex USA Growth (Value) Index is a market capitalization-weighted index designed to measure the investable equity market performance of growth (value) stocks for global investors of large- and mid-cap stocks in developed and emerging markets, excluding the United States. MSCI EAFE Index is a market capitalization-weighted index that is designed

to measure the investable equity market performance for global investors in developed markets, excluding the U.S. & Canada. MSCI EAFE Growth (Value) Index is a market capitalization-weighted index that is designed to measure the investable equity market performance of growth (value) stocks for global investors in developed markets, excluding the U.S. & Canada. MSCI World ex USA Index is a market capitalization weighted index that is designed to measure the investable equity market performance for global investors of developed markets, excluding the United States. MSCI World ex USA Growth (Value) Index is a market capitalization weighted index that is designed to measure the investable equity market performance of growth (value) stocks for global investors of developed markets, excluding the United States.

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