

March 2016

US Economics

## 2016 CIFA Federal Policy Conference US Economic Outlook

MORGAN STANLEY RESEARCH  
North America

MORGAN STANLEY & CO. LLC

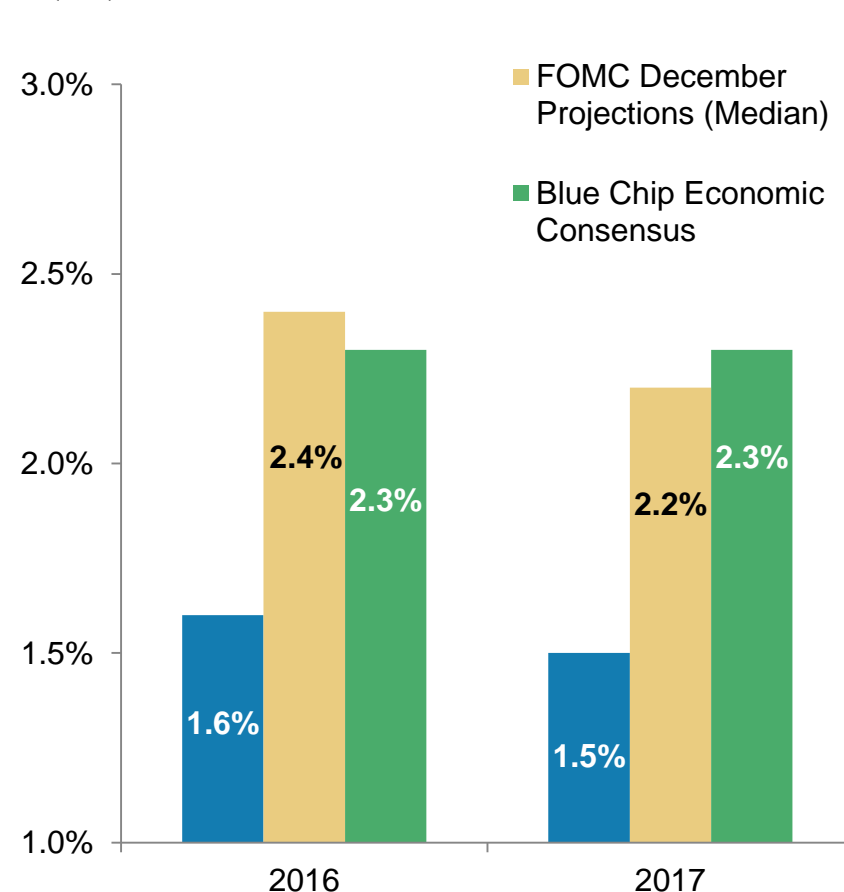
**Robert Rosener**  
Robert.Rosener@morganstanley.com  
+1 212 296-5614

## US Economic Outlook

## Spring US Economic Outlook: In the Shallow End

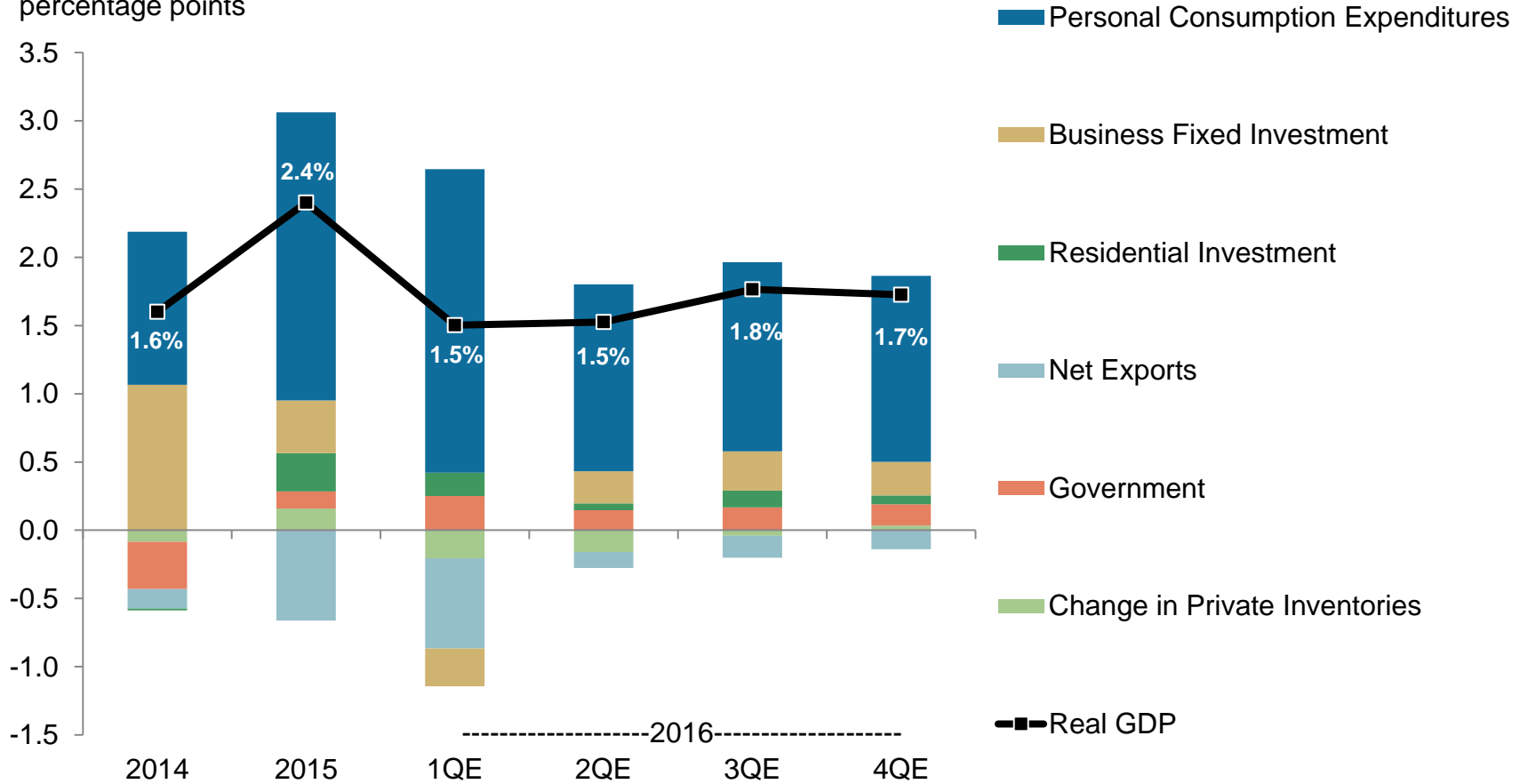
(4Q/4Q % Change)	MS Forecast		
	2015	2016	2017
<b>Real GDP</b>	<b>1.9</b>	<b>1.6</b>	<b>1.5</b>
Final Sales	1.9	1.7	1.5
Final Domestic Demand	2.4	1.9	1.8
PCE	2.6	2.3	1.9
Business Fixed Investment	1.6	0.9	2.1
Residential Fixed Investment	8.9	3.0	3.7
Exports	-0.8	1.1	3.1
Imports	2.9	2.5	5.1
Government	1.1	1.0	0.6
<b>CPI</b>	<b>0.4</b>	<b>1.5</b>	<b>1.9</b>
<b>Core PCEPI</b>	<b>1.4</b>	<b>1.4</b>	<b>1.4</b>
<b>Unemployment Rate*</b>	<b>5.0</b>	<b>4.7</b>	<b>4.7</b>

Change in Real GDP  
4Q/4Q



# Spring US Economic Outlook: In the Shallow End

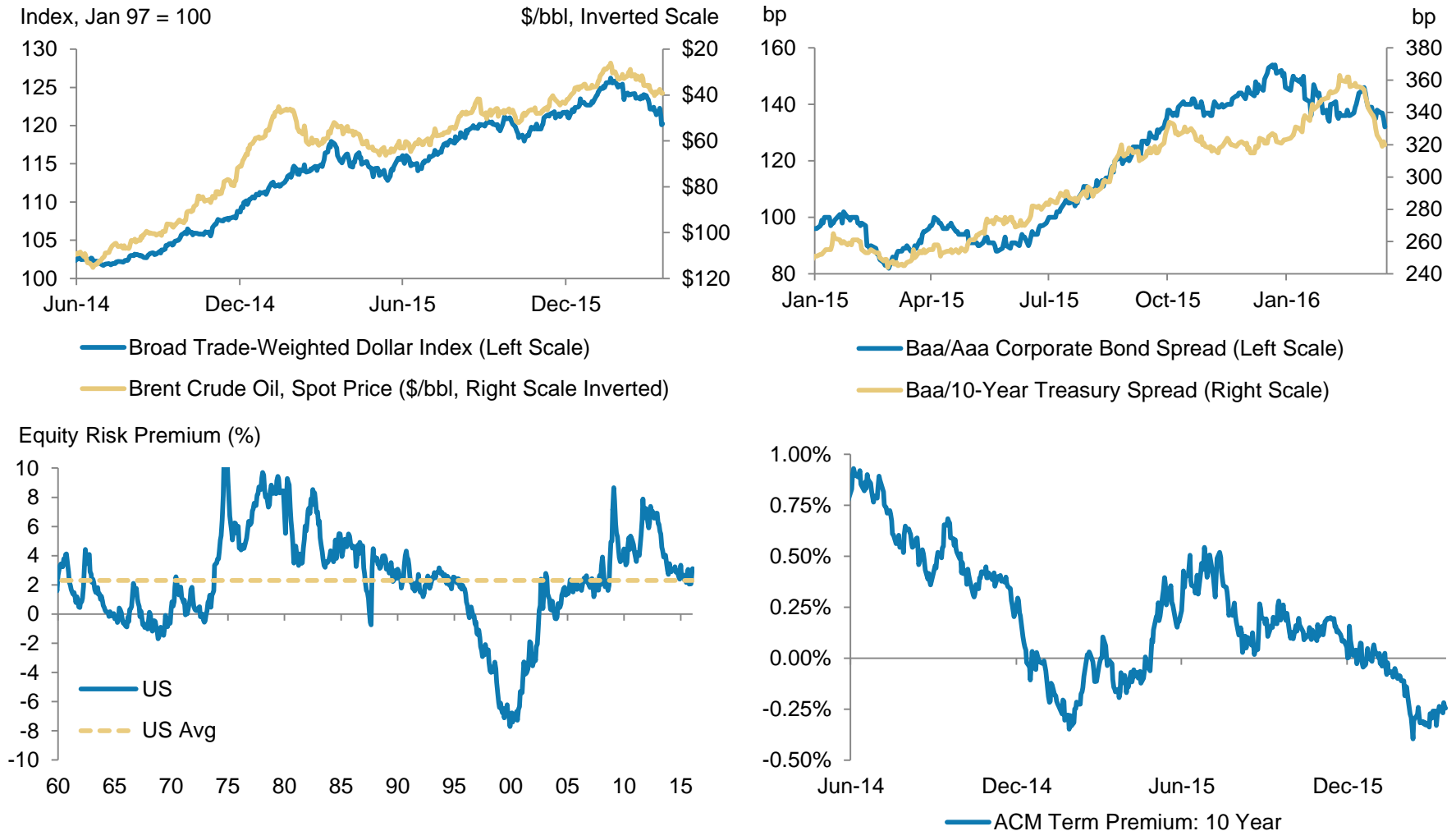
Contributions to % Change in Real GDP  
percentage points



Source: Bureau of Economic Analysis, Morgan Stanley Research  
See [Spring US Economic Outlook: In the Shallow End \(13 Mar 2016\)](#)

## Financial Conditions, Oil, USD, and Recession Risk

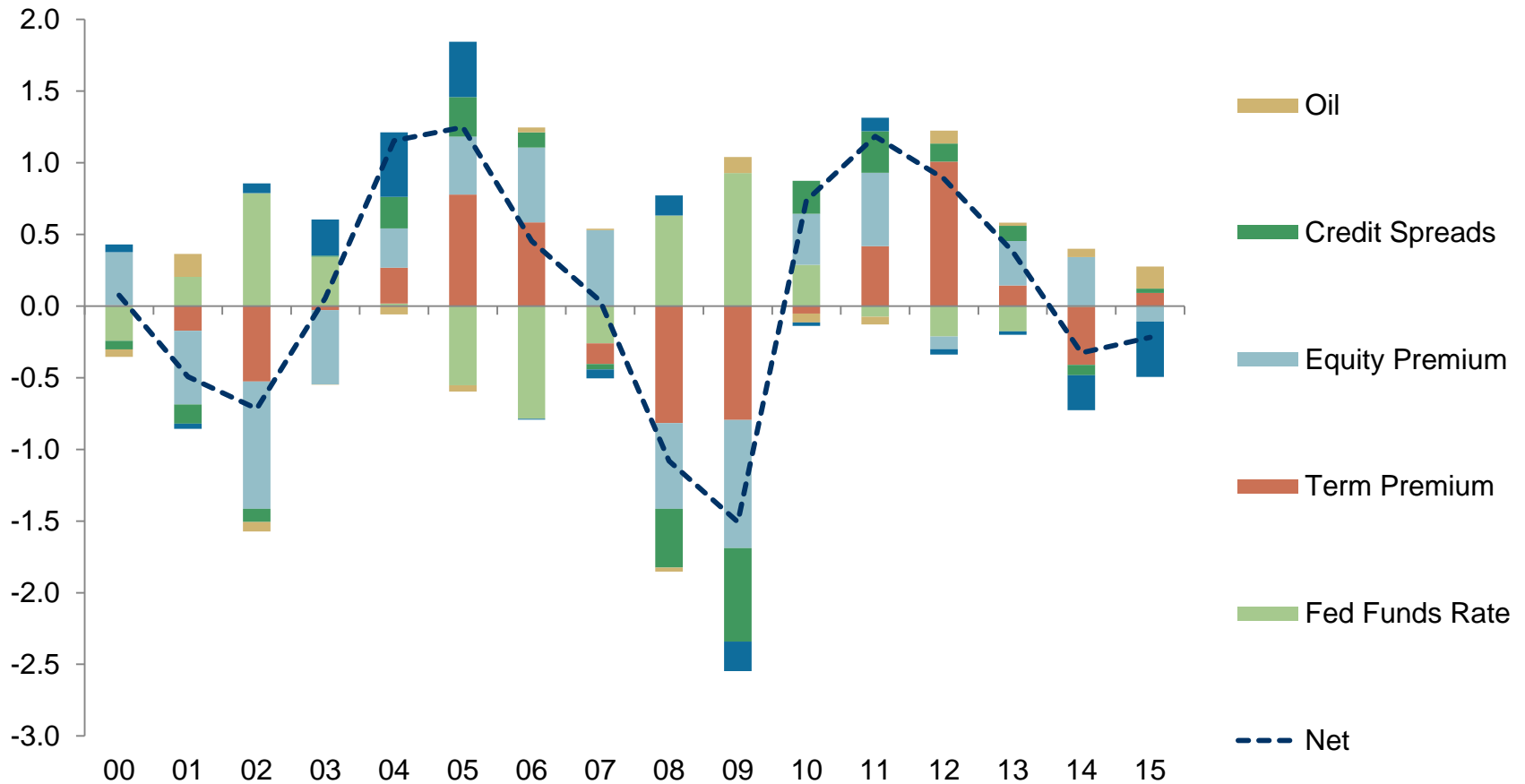
# US Economic & Financial Conditions Can Be Sensitive to Global Spillovers



Source: Federal Reserve Board, Federal Reserve Bank of New York, EIA, Morgan Stanley Research  
 See [US Economics: Fear and Loathing \(22 Jan 2016\)](#); See [Cross-Asset Dispatches: What's the Risk Premium for Equities? \(23 Nov 2015\)](#) for ERP methodology.

# Macro Impacts from Tighter Financial Conditions

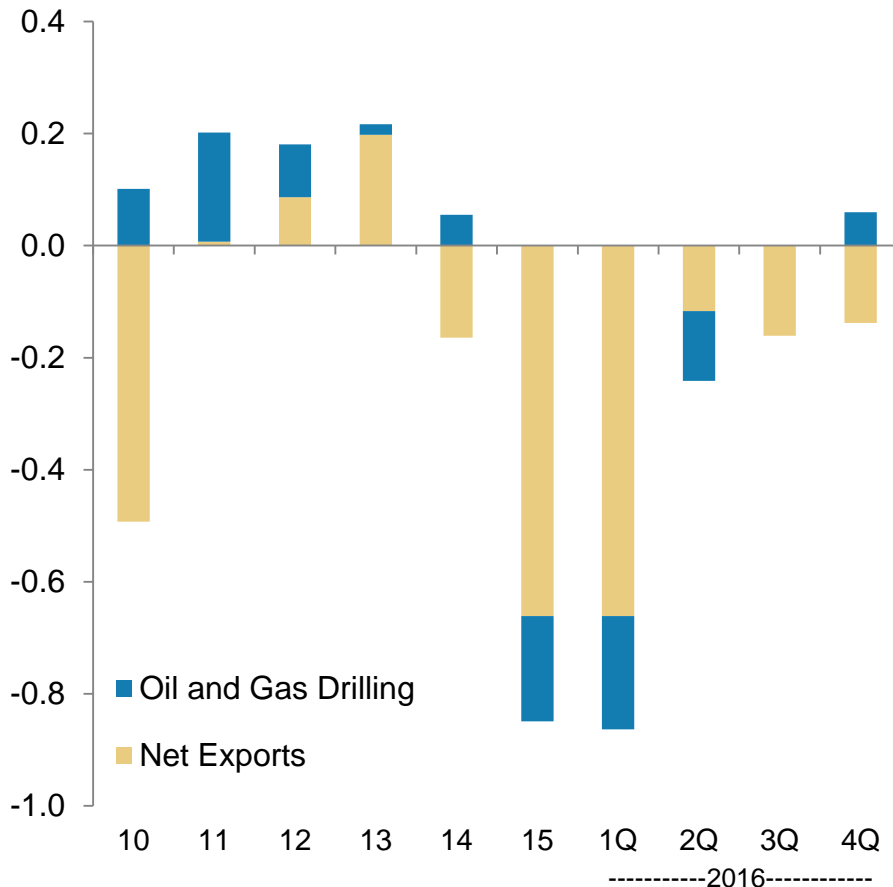
Estimated Impact of Changes in Financial Conditions on US GDP Growth percentage points



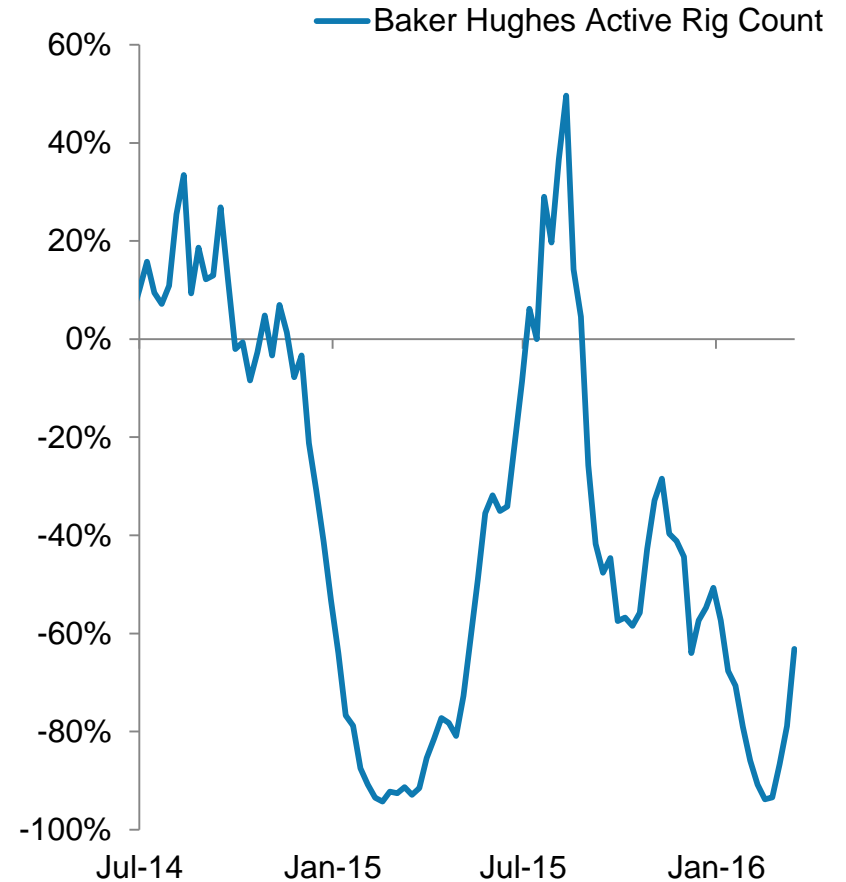
Source: Morgan Stanley Research  
 Simulations based on Federal Reserve's FRB/US model.  
 See [US Economics: Fear and Loathing \(22 Jan 2016\)](#) and [Global Economics Playbook: Rising Risk of a Global Recession? \(19 Jan 2016\)](#)

## Initial Drag from the Stronger Dollar and Lower Energy Prices

Contribution to % Change in Real GDP percentage points



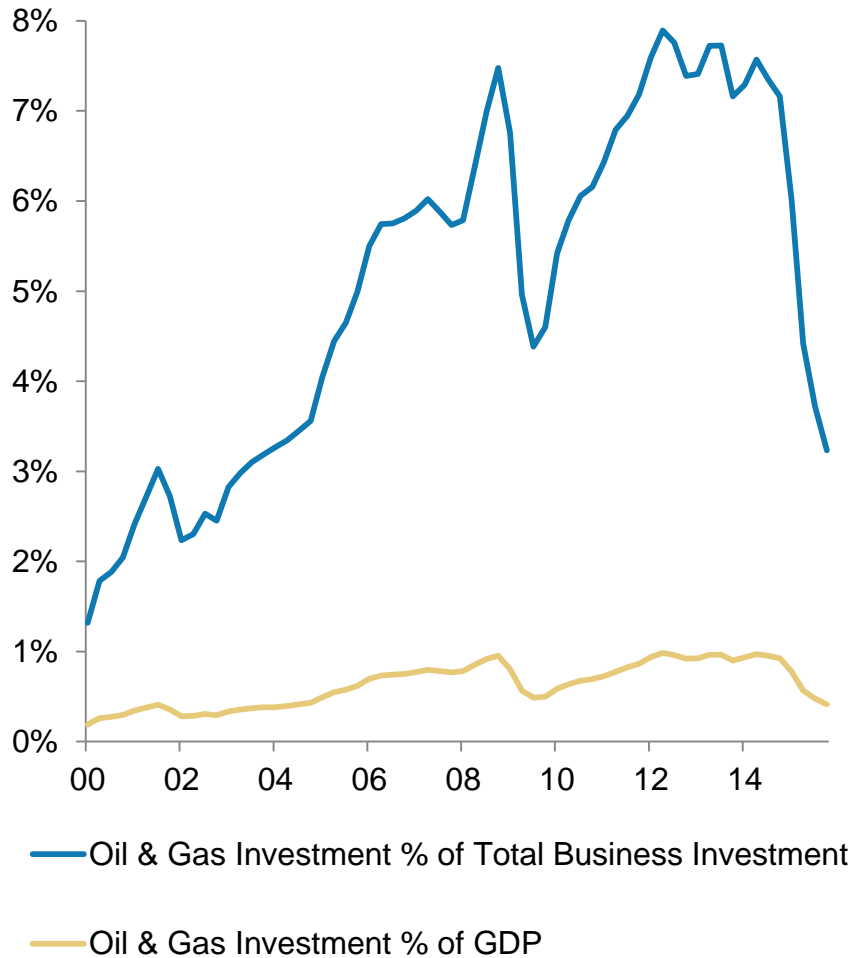
4-Week Annualized Change



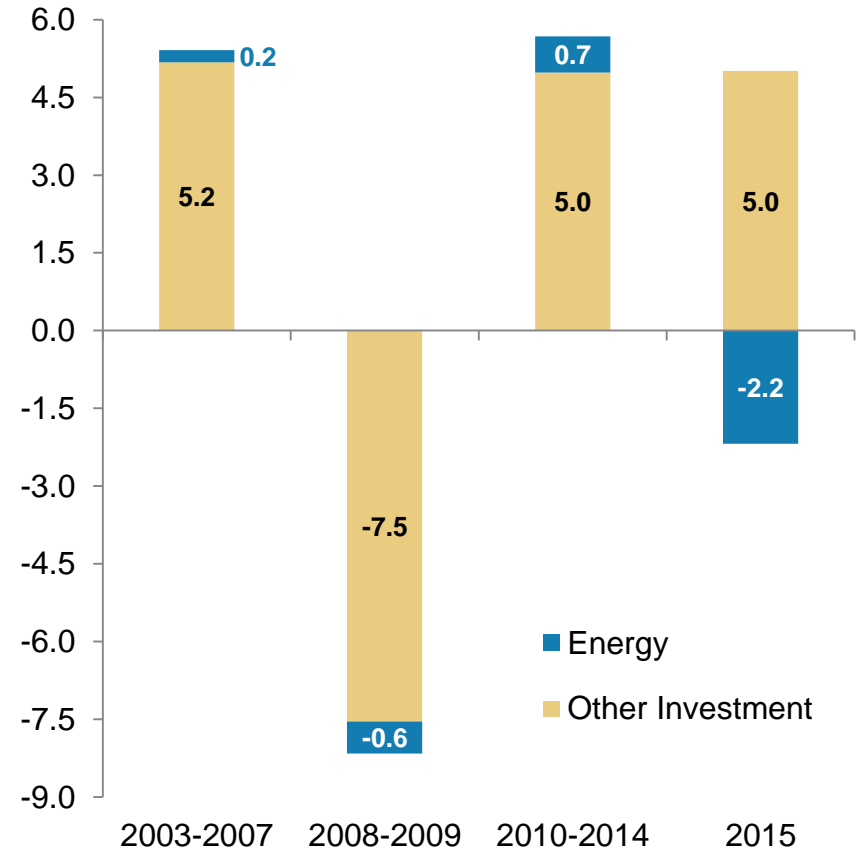
Source: Bureau of Economic Analysis, Baker Hughes, Morgan Stanley Research



## Domestic Energy Industry Gained Share in Post-Crisis Recovery



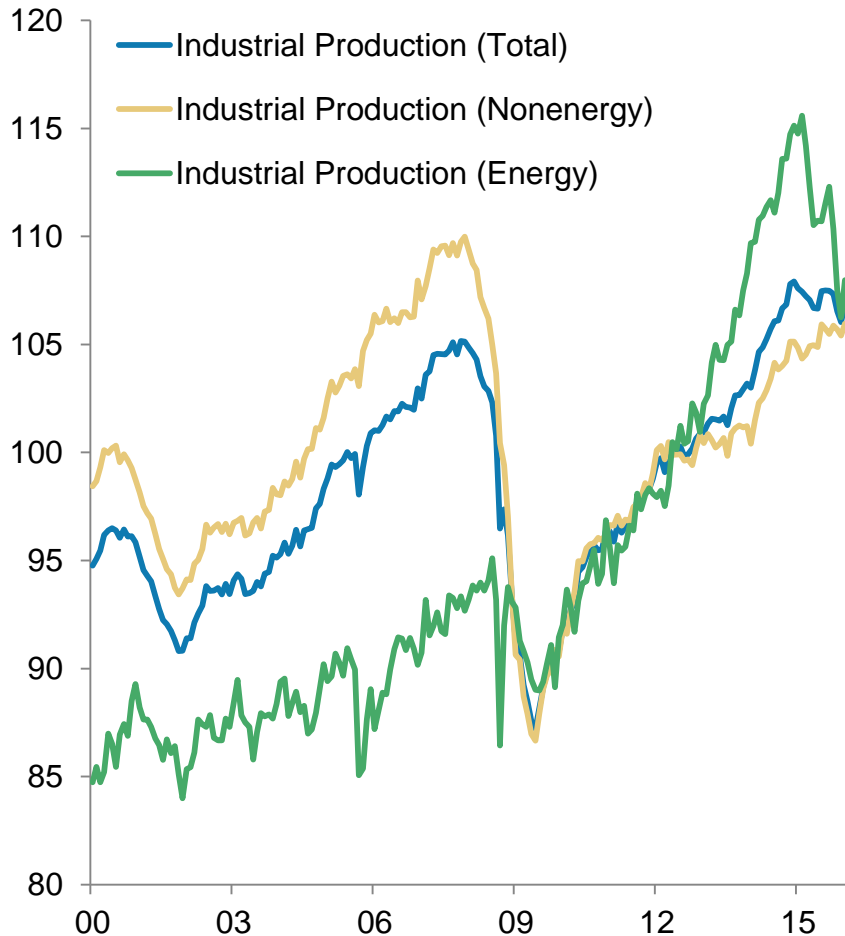
Average Annual Contribution to Change in Private Nonresidential Fixed Investment percentage points



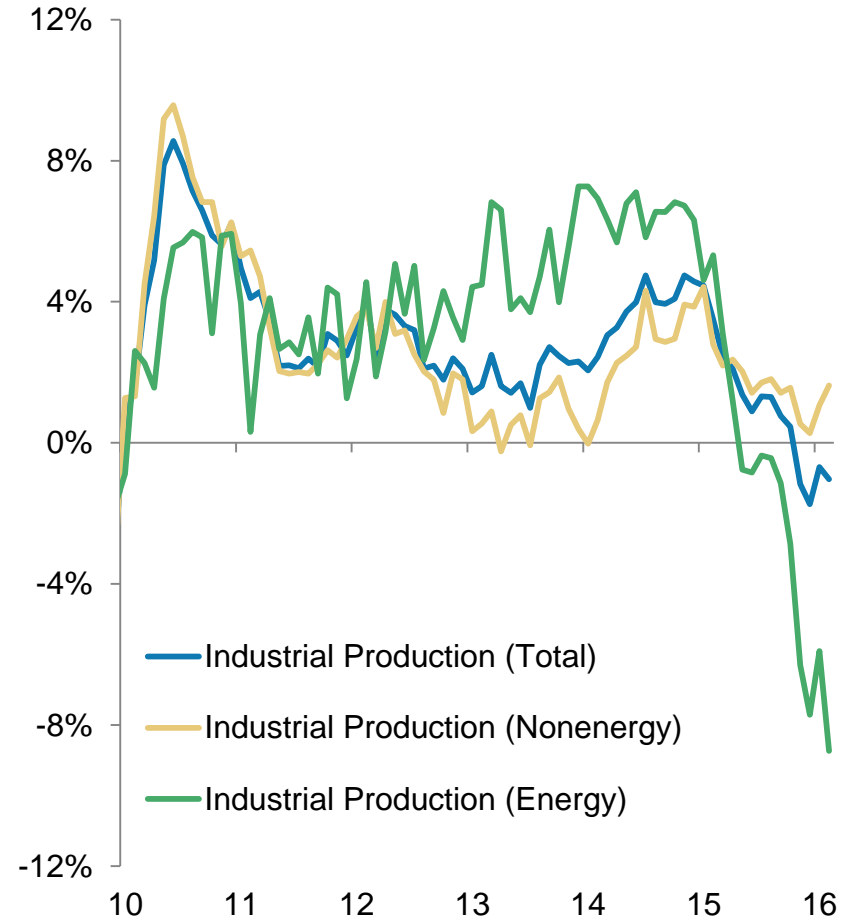
Source: Bureau of Economic Analysis, Morgan Stanley Research

## Decline in Industrial Production is an Energy Story

Index, 2012=100



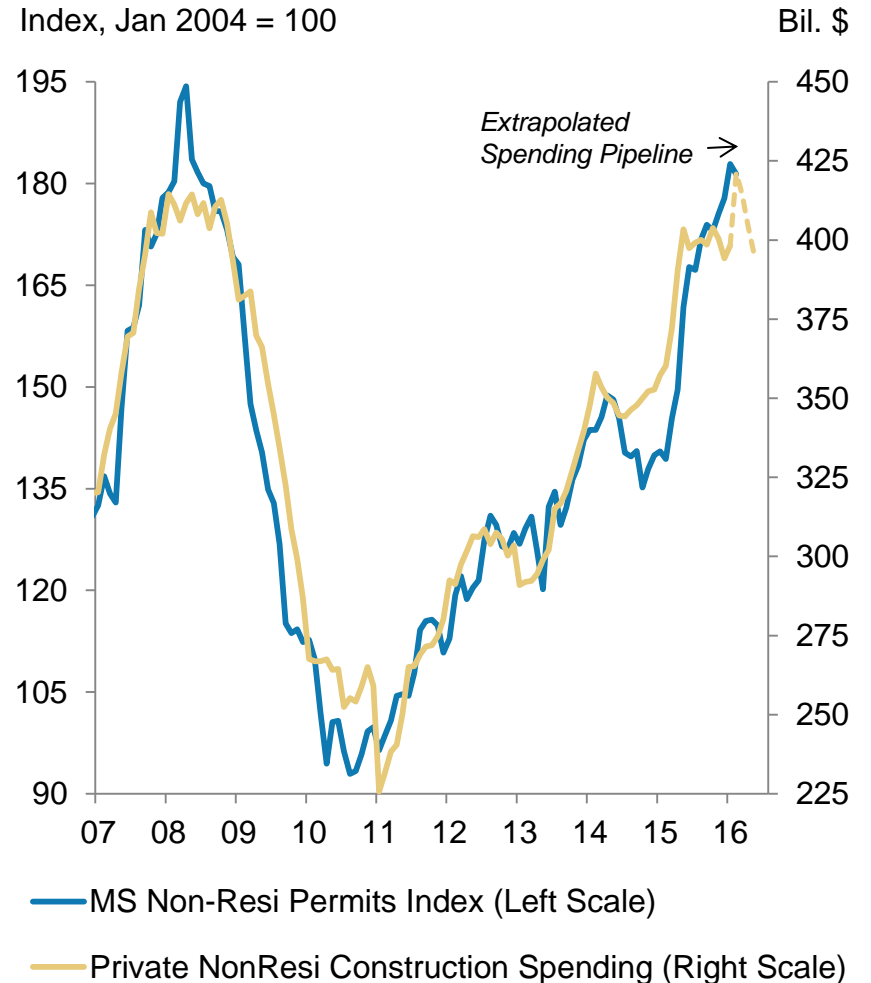
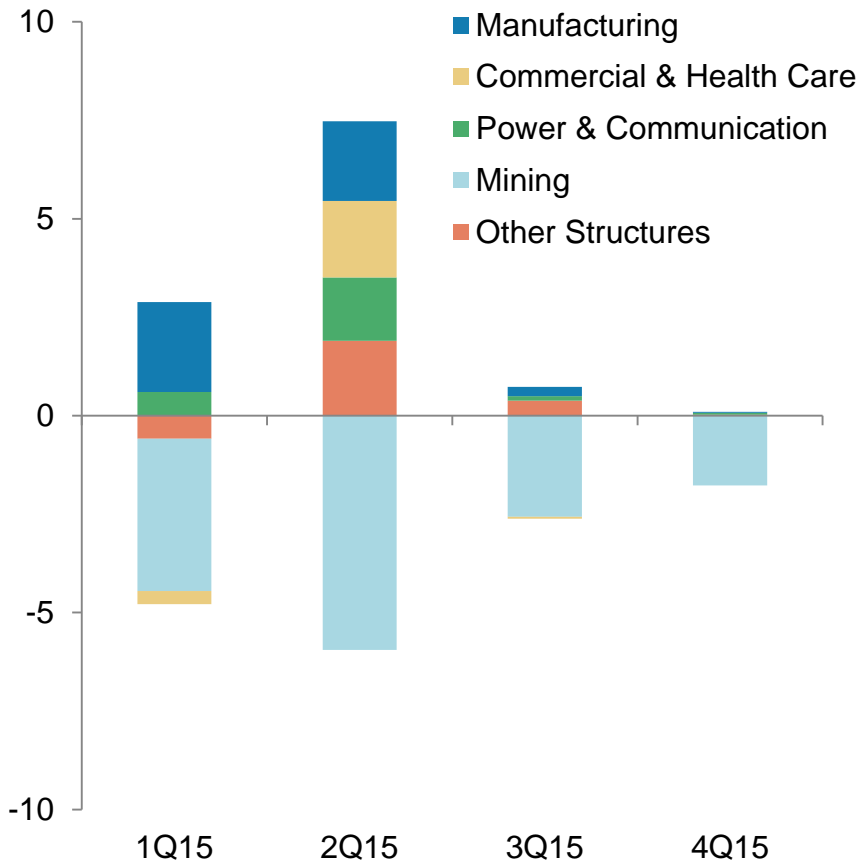
Change - Year-over-Year



Source: Federal Reserve, Morgan Stanley Research

## Signs of Slowing in Non-Energy Areas of Business Investment

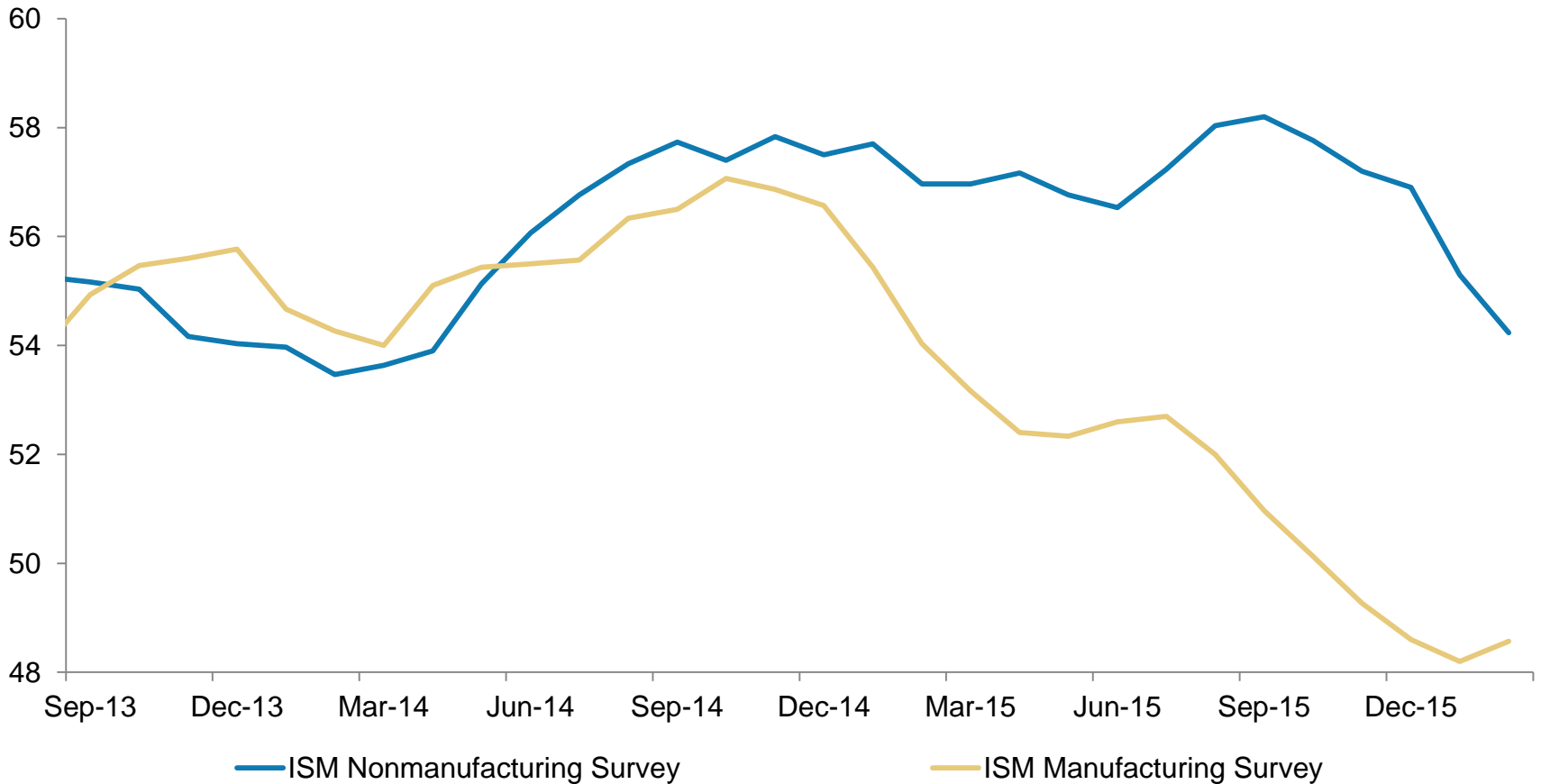
Contributions to %Q Change in Private Nonresidential Structures Investment percentage points



Source: Bureau of Economic Analysis, Census Bureau, Morgan Stanley Research

# Business Conditions: Weaker External Demand Offsets More Resilient Domestic Service Sector

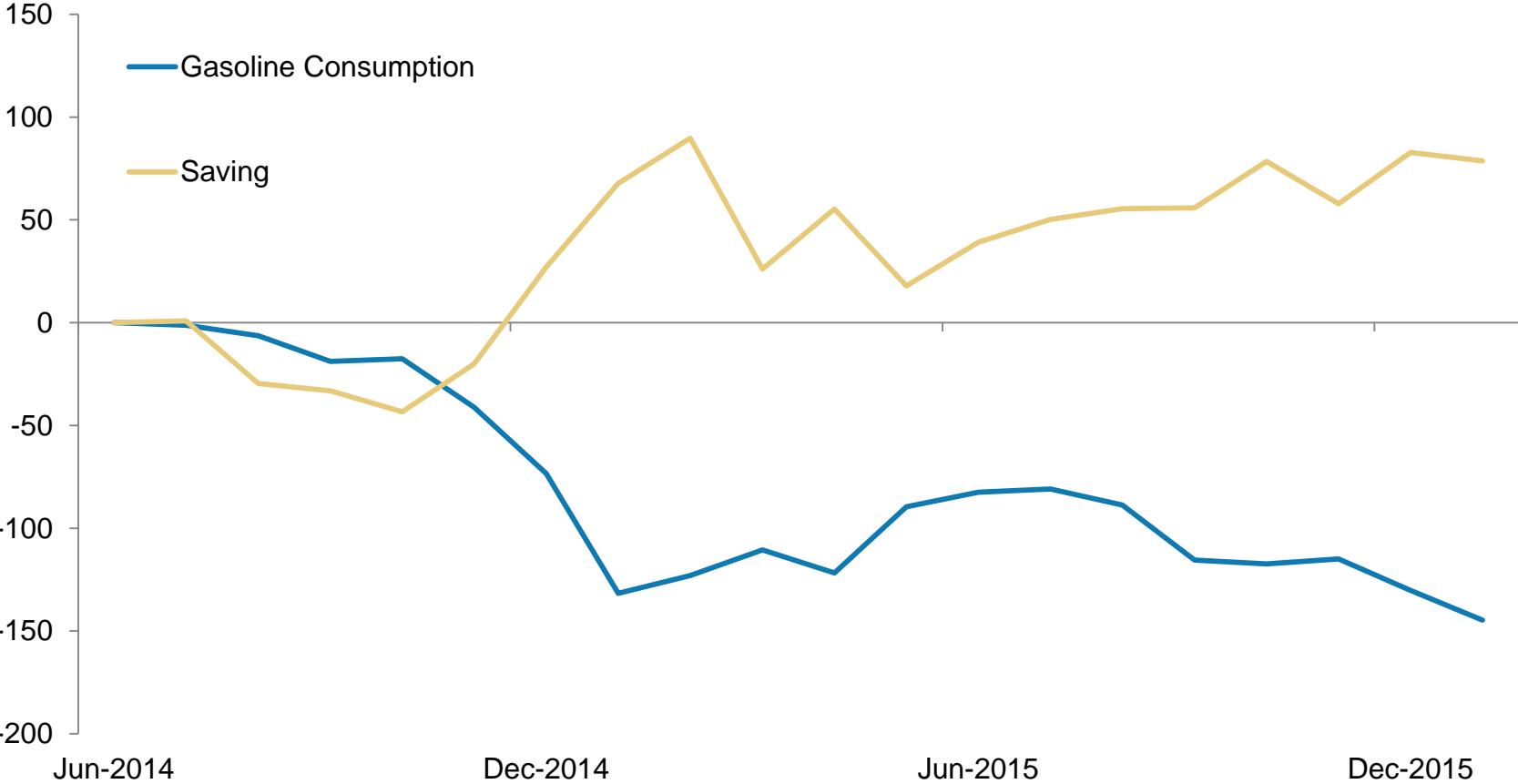
Index,  
3-Month Moving Average



Source: ISM, Morgan Stanley Research

# Consumer Spending and Lower Energy Prices

Change in Spending vs Saving Since 2014  
Bil. \$



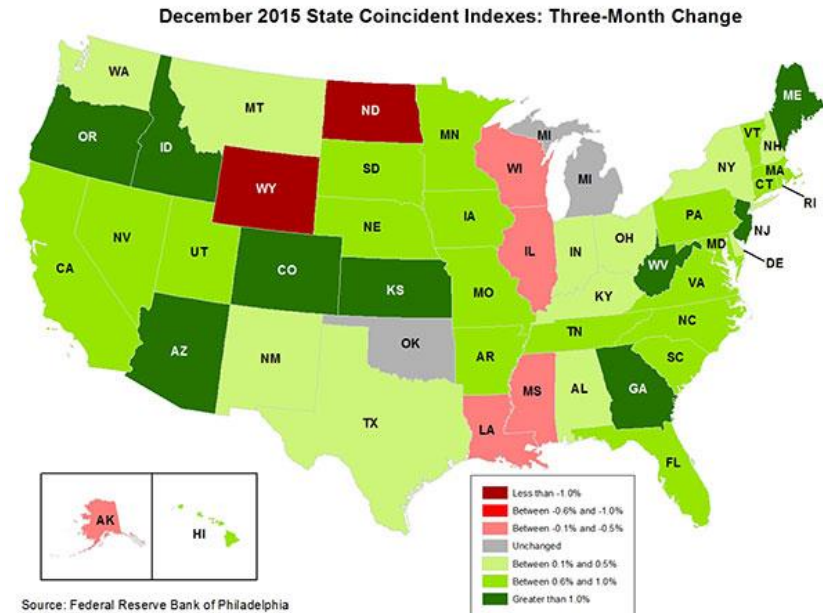
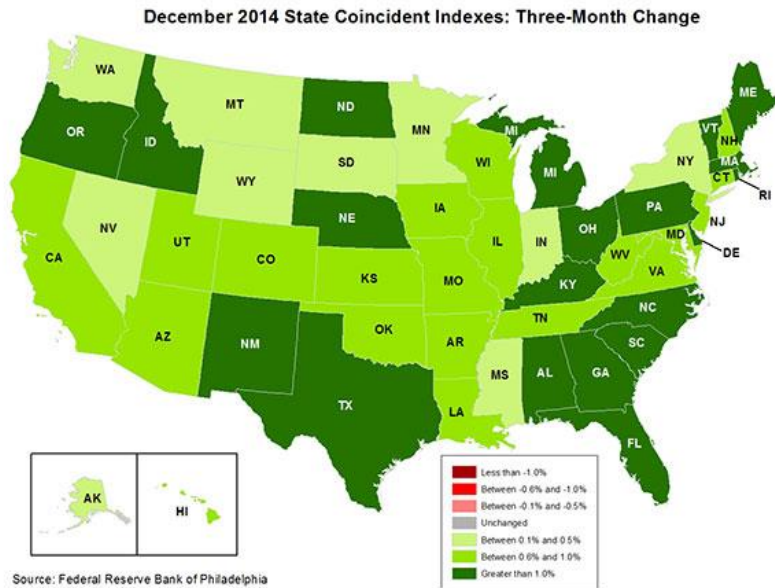
Source: Bureau of Economic Analysis, Morgan Stanley Research

## Diffusion – Only a Handful of States are Weaker

And the weakness is concentrated in energy and industrial heavy states

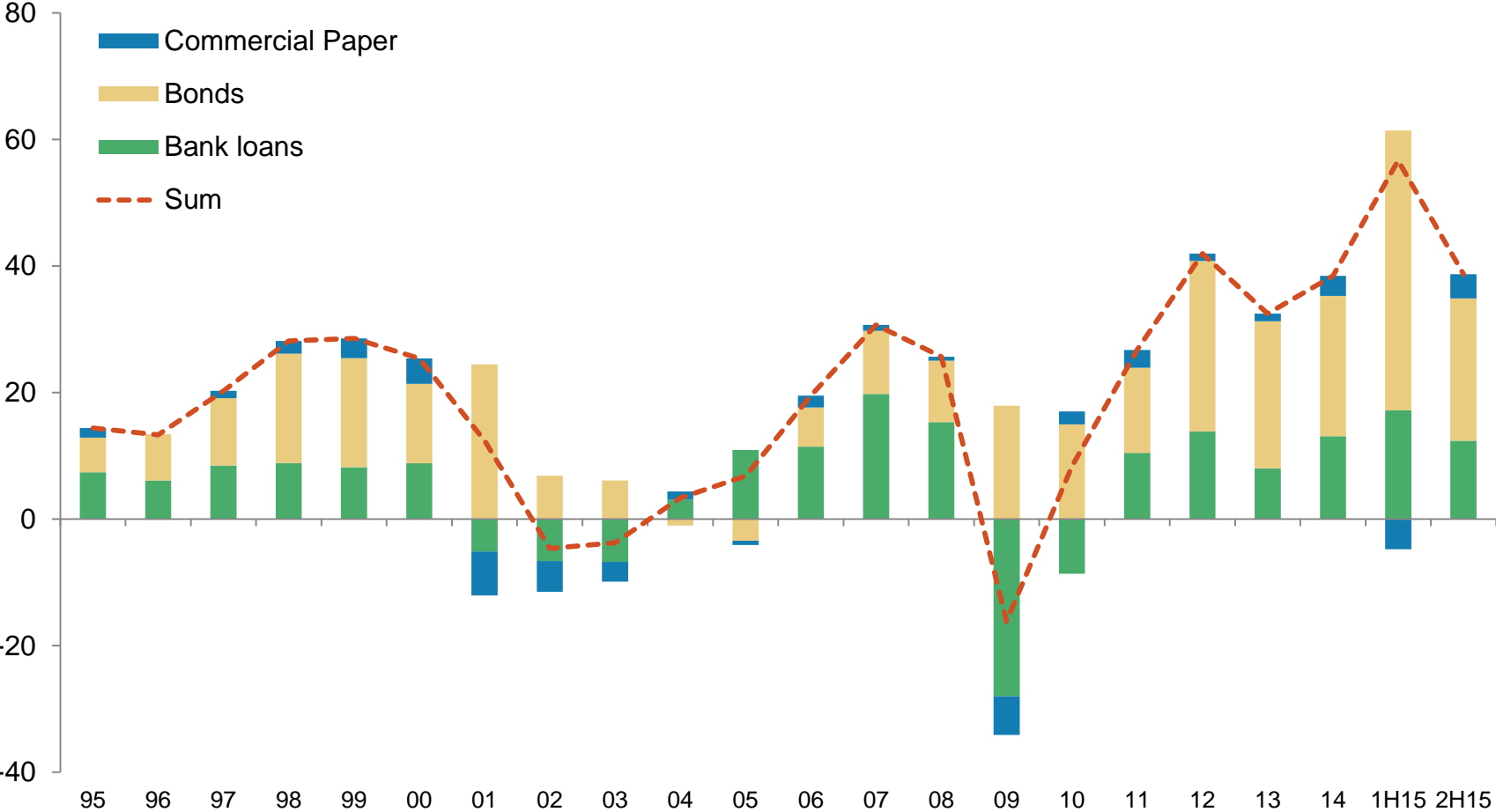
### Snapshot: December 2014

### Snapshot: December 2015



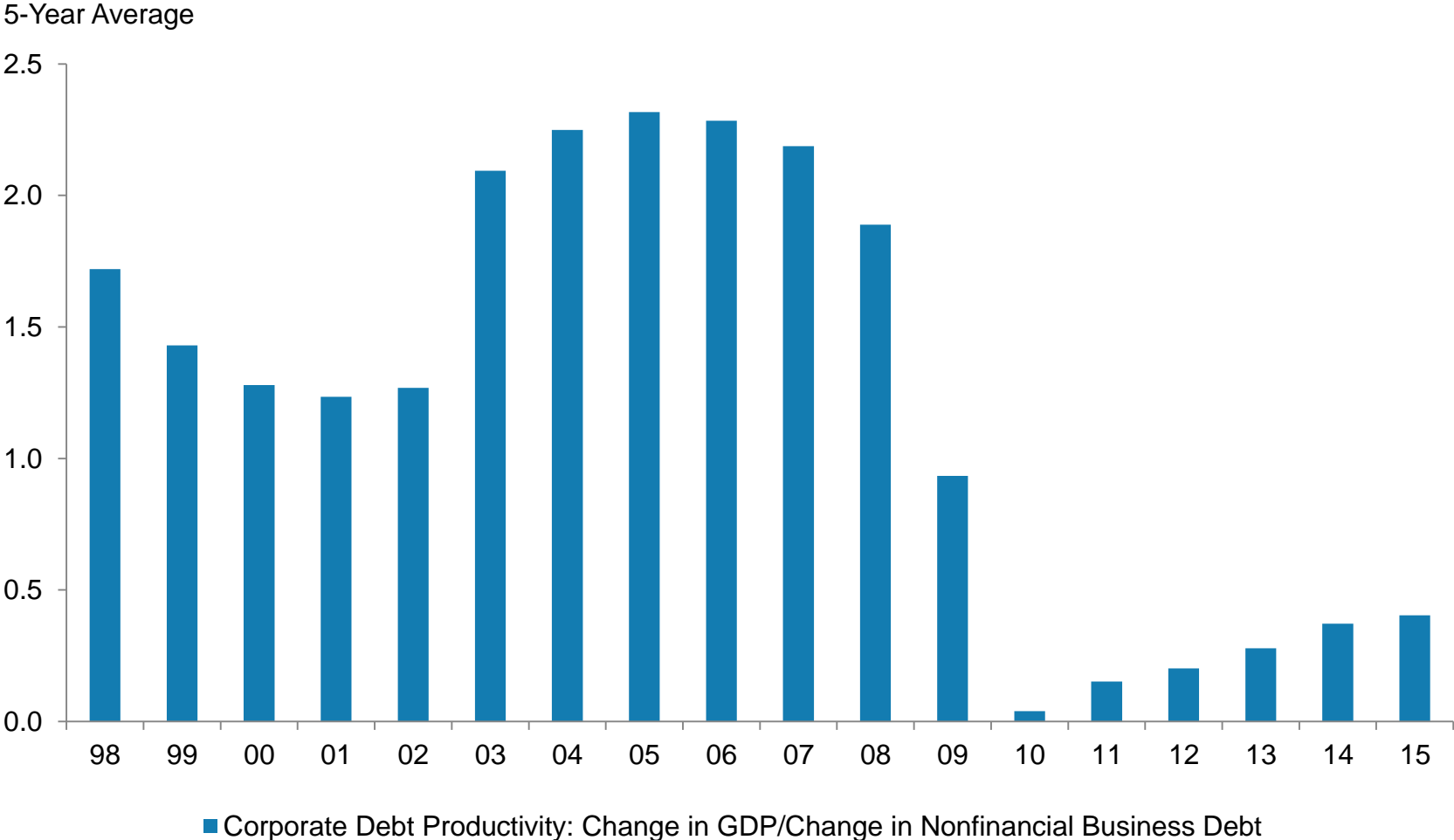
# Selected Components of Net Financing for Nonfinancial Businesses

Bil. \$, Monthly Rate



Source: Federal Reserve, Morgan Stanley Research

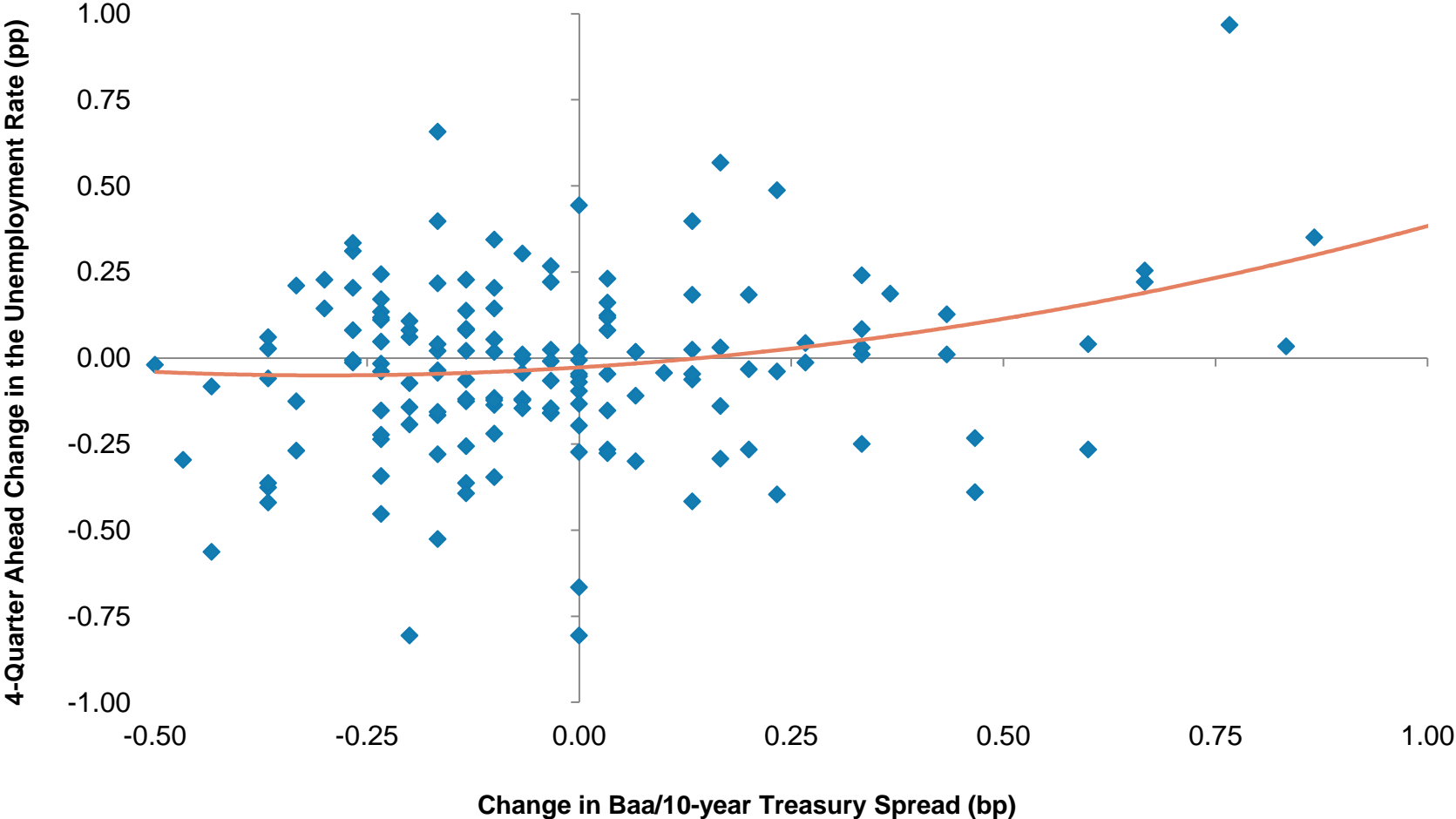
# Marginal Productivity of Corporate Debt Has Fallen to Very Low Levels



Source: Morgan Stanley Research



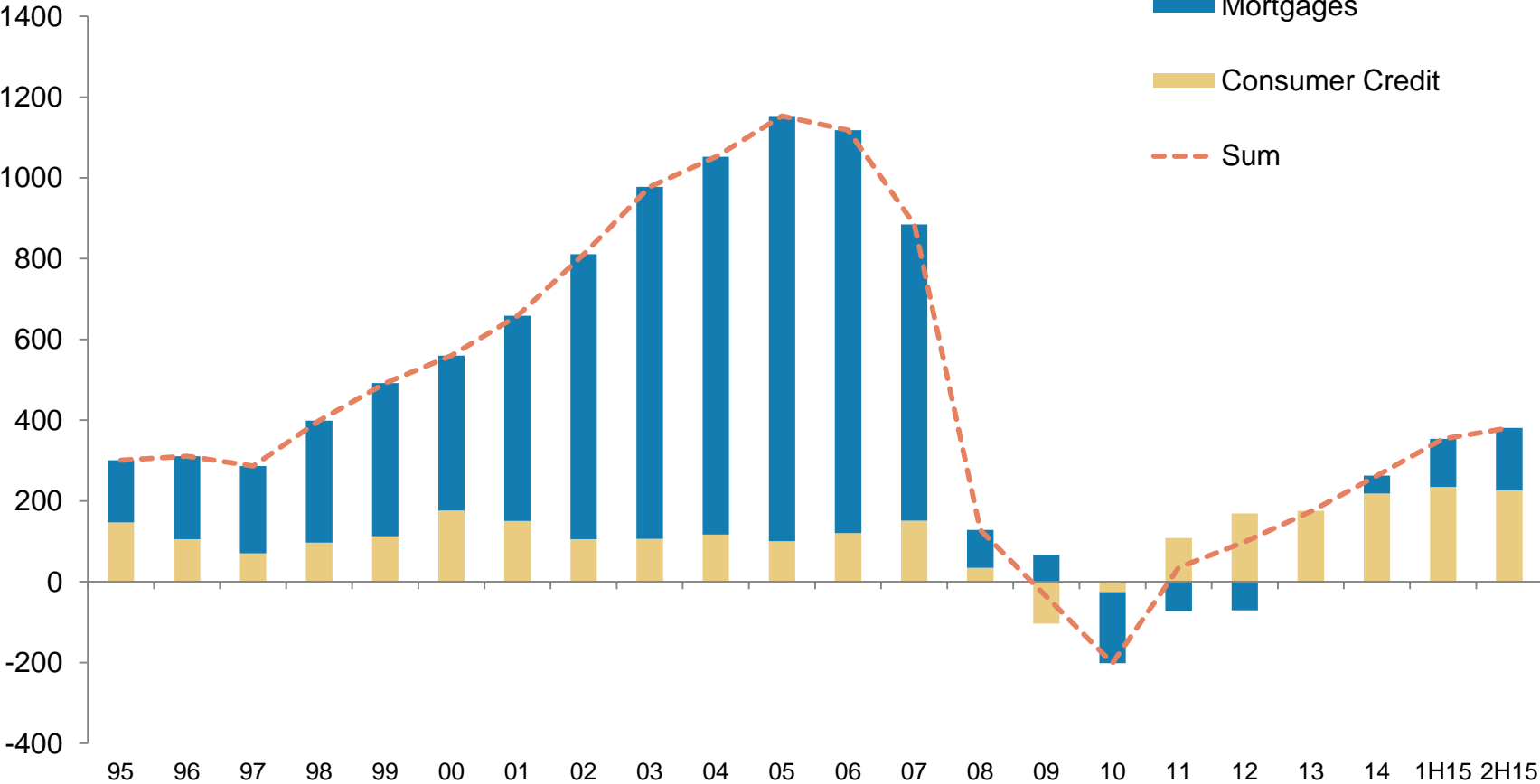
# Credit Spreads and Unemployment: An Asymmetric Relationship



Source: Bureau of Labor Statistics, Federal Reserve, Morgan Stanley Research

# Net Changes in Household Leverage More Muted

Bil. \$,  
Annual Rate

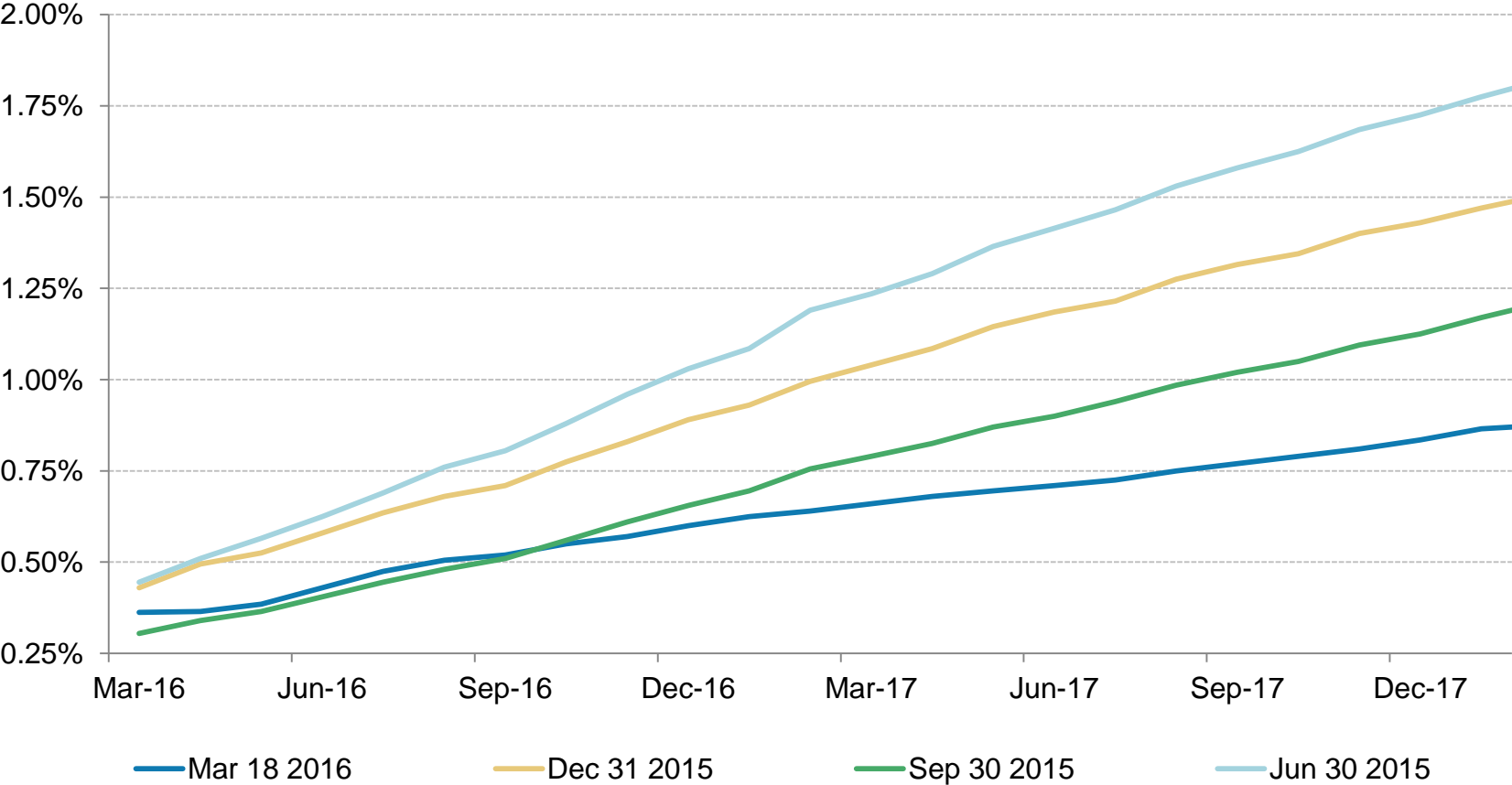


Source: Federal Reserve, Morgan Stanley Research

## Fed Policy

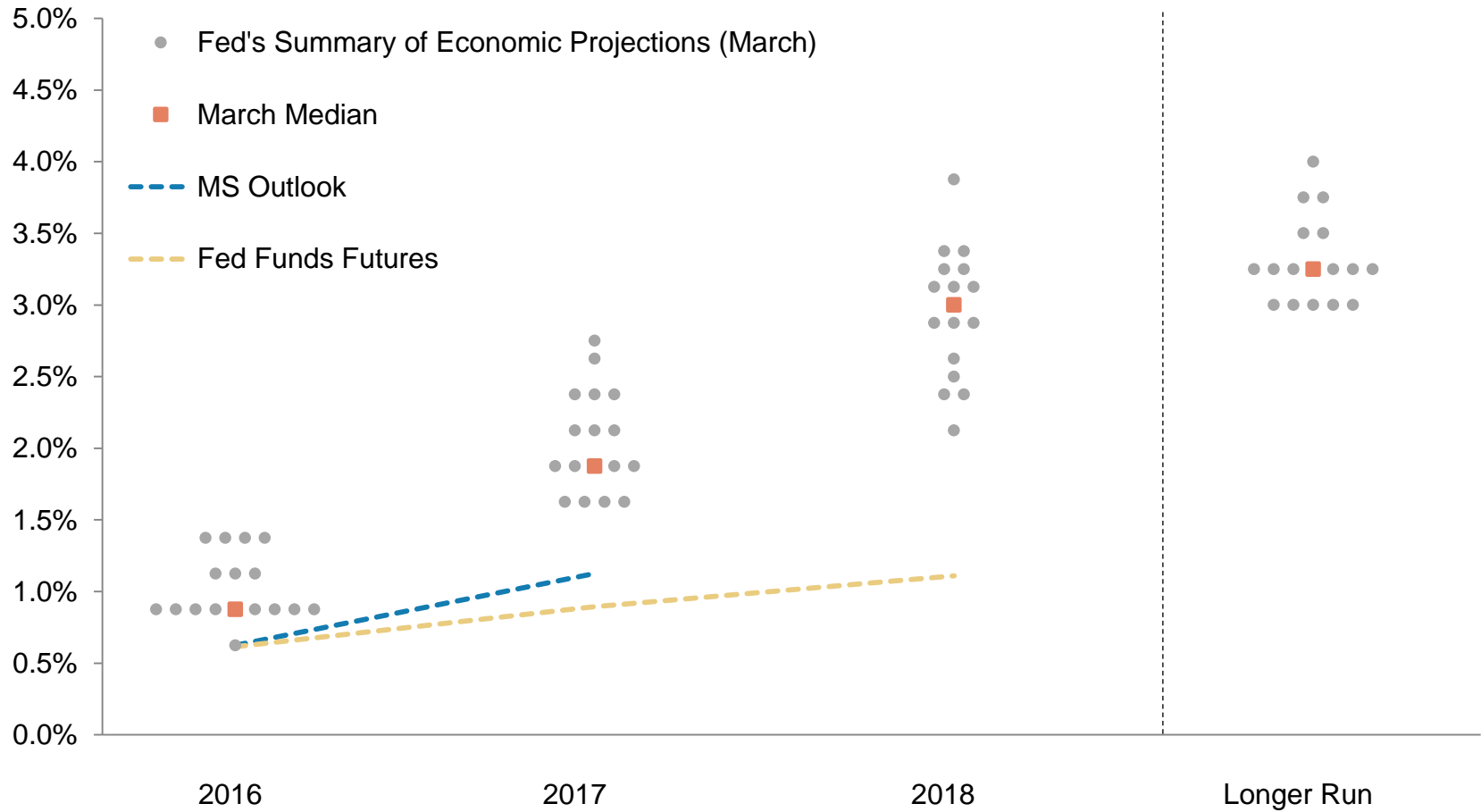
# Outlook for Fed Policy—A Very Flat Fed Rate Path Priced for Coming Years

Fed Funds Futures:  
Evolution of Fed Expectations Since June 2015



Source: Chicago Mercantile Exchange, Morgan Stanley Research

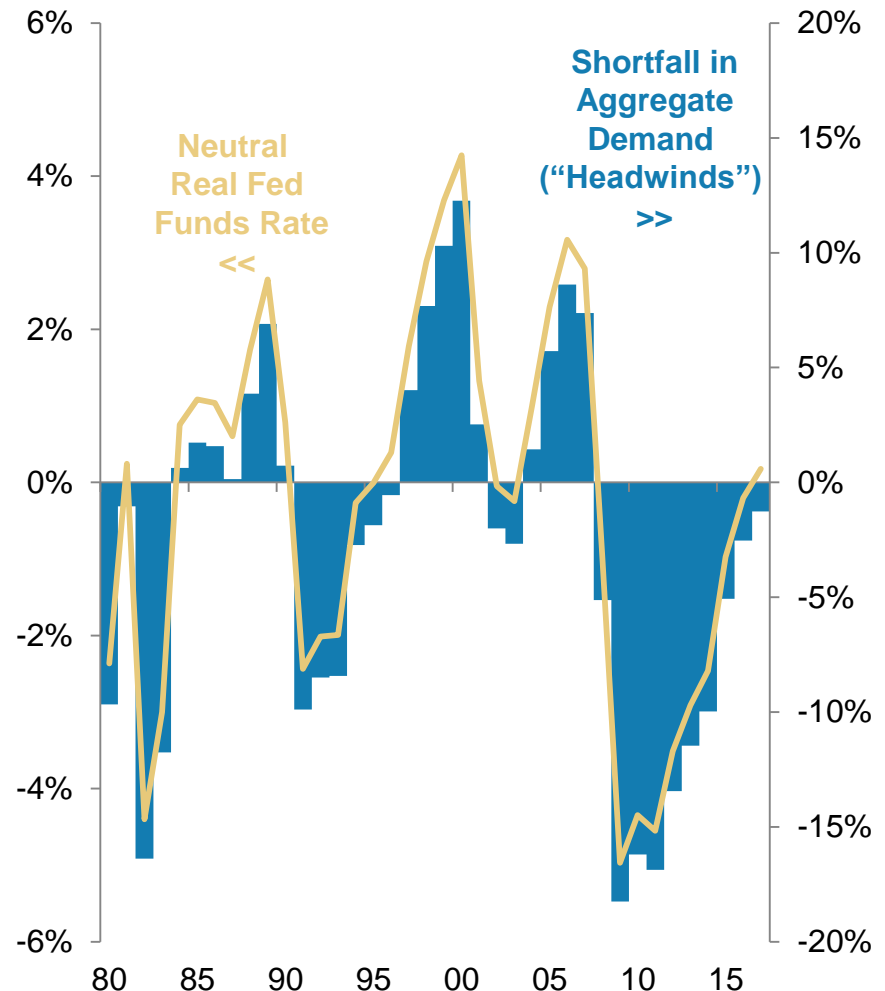
# Outlook for Fed Policy—Bridging the Gap Between the FOMC and the Market



Source: Federal Reserve, Chicago Mercantile Exchange, Morgan Stanley Research

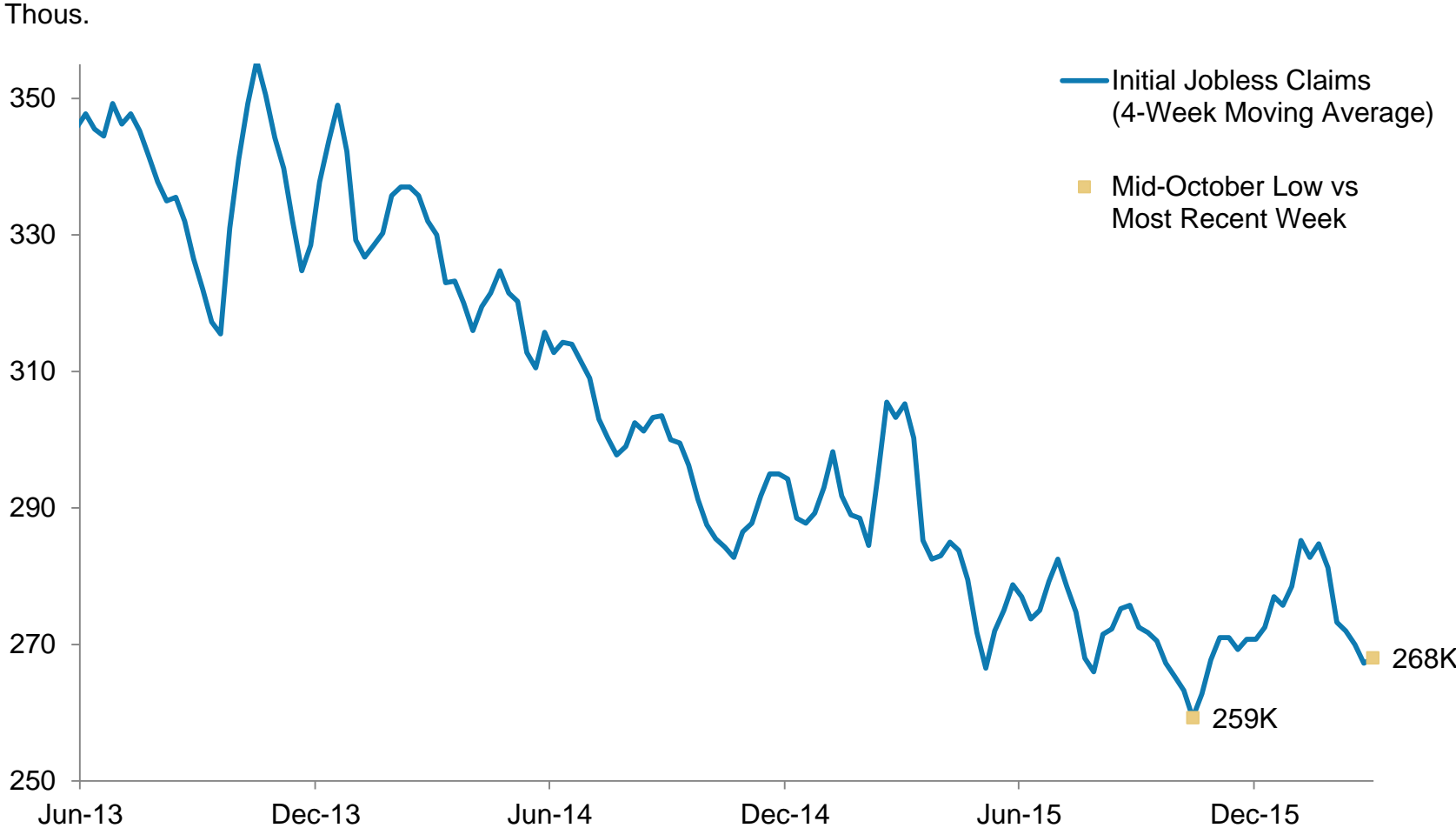
## Persistent Economic Headwinds Keep Neutral Fed Funds Rate Low

- “The neutral nominal federal funds rate—defined as the value of the federal funds rate that would be neither expansionary nor contractionary if the economy was operating near potential—is currently low by historical standards and is likely to rise only gradually over time...
- The low level of the neutral federal funds rate may be partially attributable to a range of persistent economic headwinds that have weighed on aggregate demand—such as:
  - Limited access to credit for some borrowers;
  - Weak growth abroad;
  - A significant appreciation of the dollar”\*
- The Fed’s assessment for the nominal federal funds rate to rise gradually is predicated on a gradual rise in the neutral real rate.
  - “Economic theory indicates that the equilibrium level of short-term real interest rates would likely remain low relative to estimates of its level before the financial crisis if trend growth of total factor productivity does not pick up and if demographic projections for slow growth in working-age populations are borne out.” – [Oct ‘15 FOMC minutes](#)



## Labor Market, Wages, and Inflation

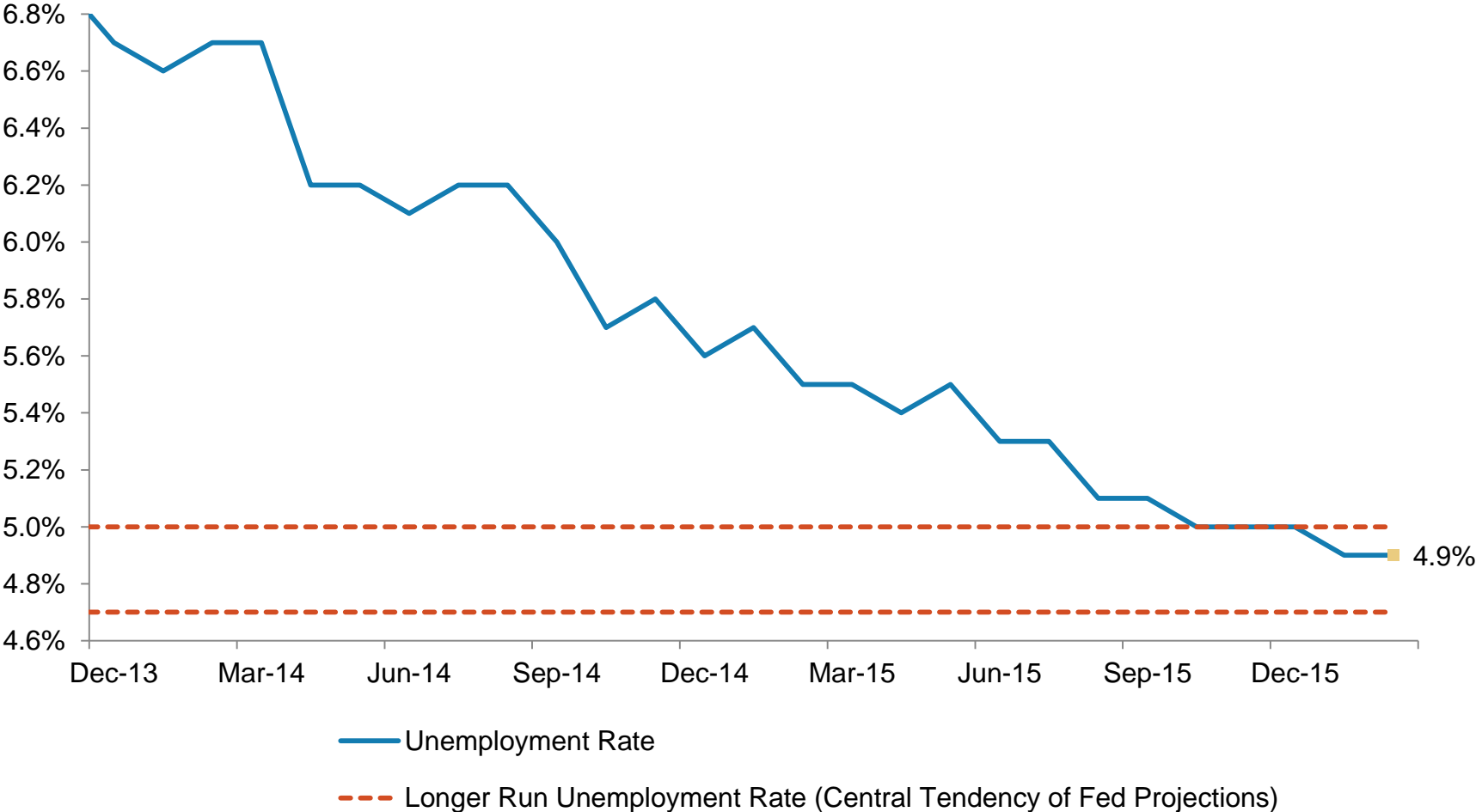
# New Jobless Claims Point to Stable Pace of Firings



Source: Department of Labor, Morgan Stanley Research



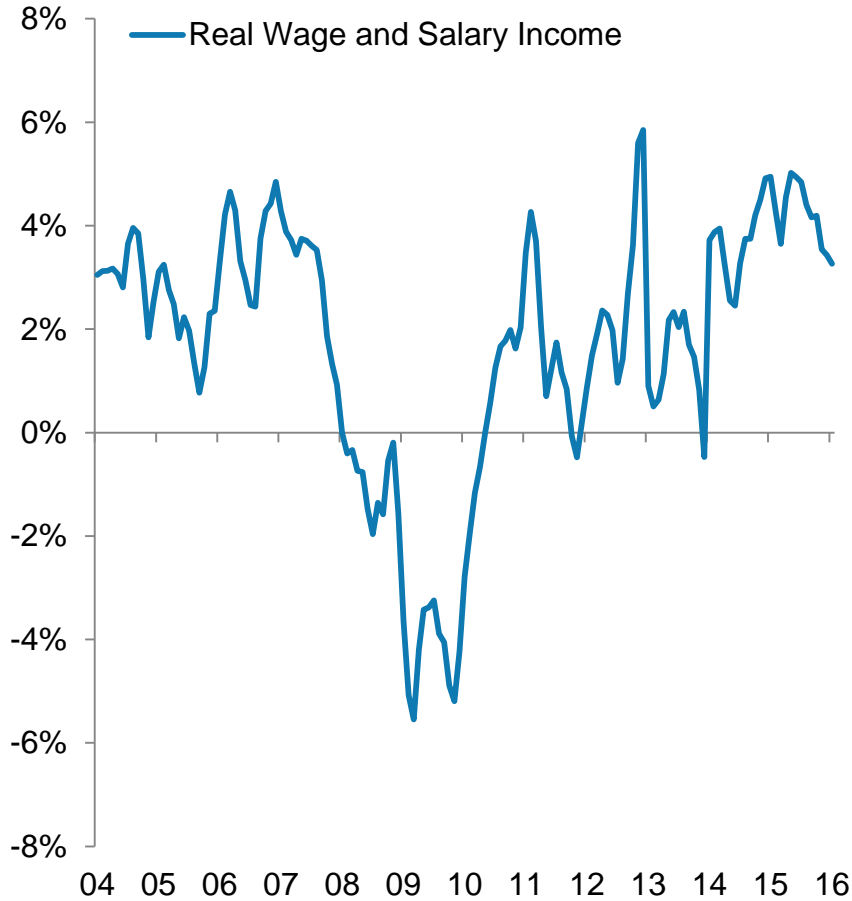
# Good Progress on the Employment Side of the Fed's Mandate



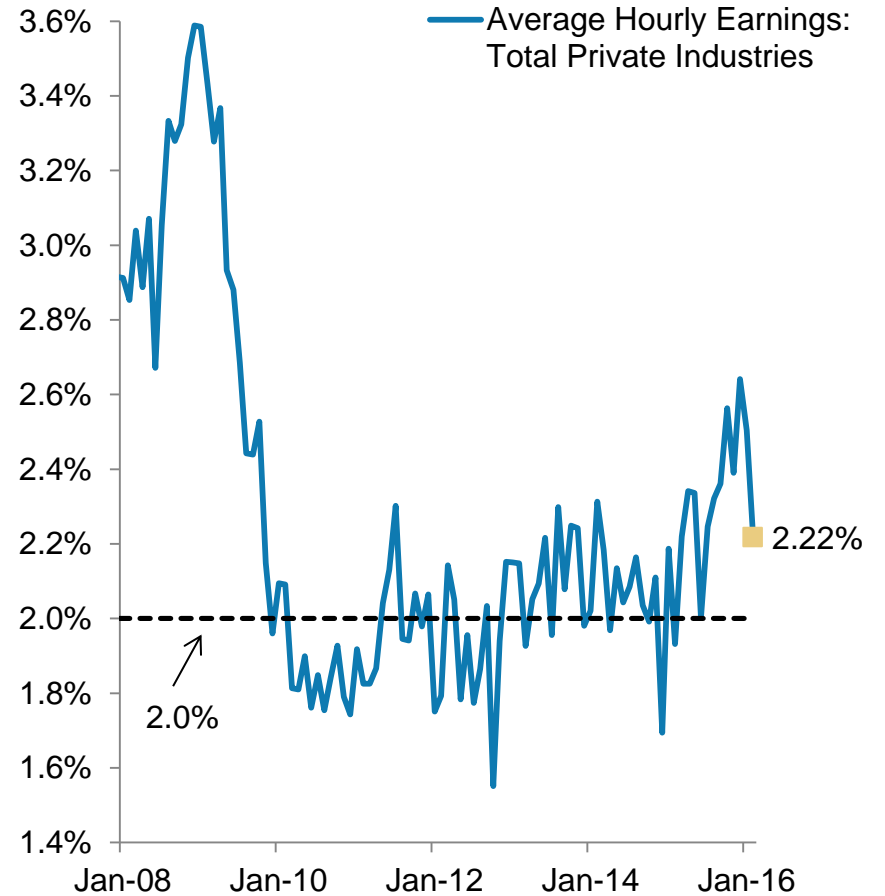
Source: Bureau of Labor Statistics, Federal Reserve, Morgan Stanley Research

## Robust Aggregate Income Growth & Tentative Signs of Accelerating Wage Growth

Change - Year-over-Year

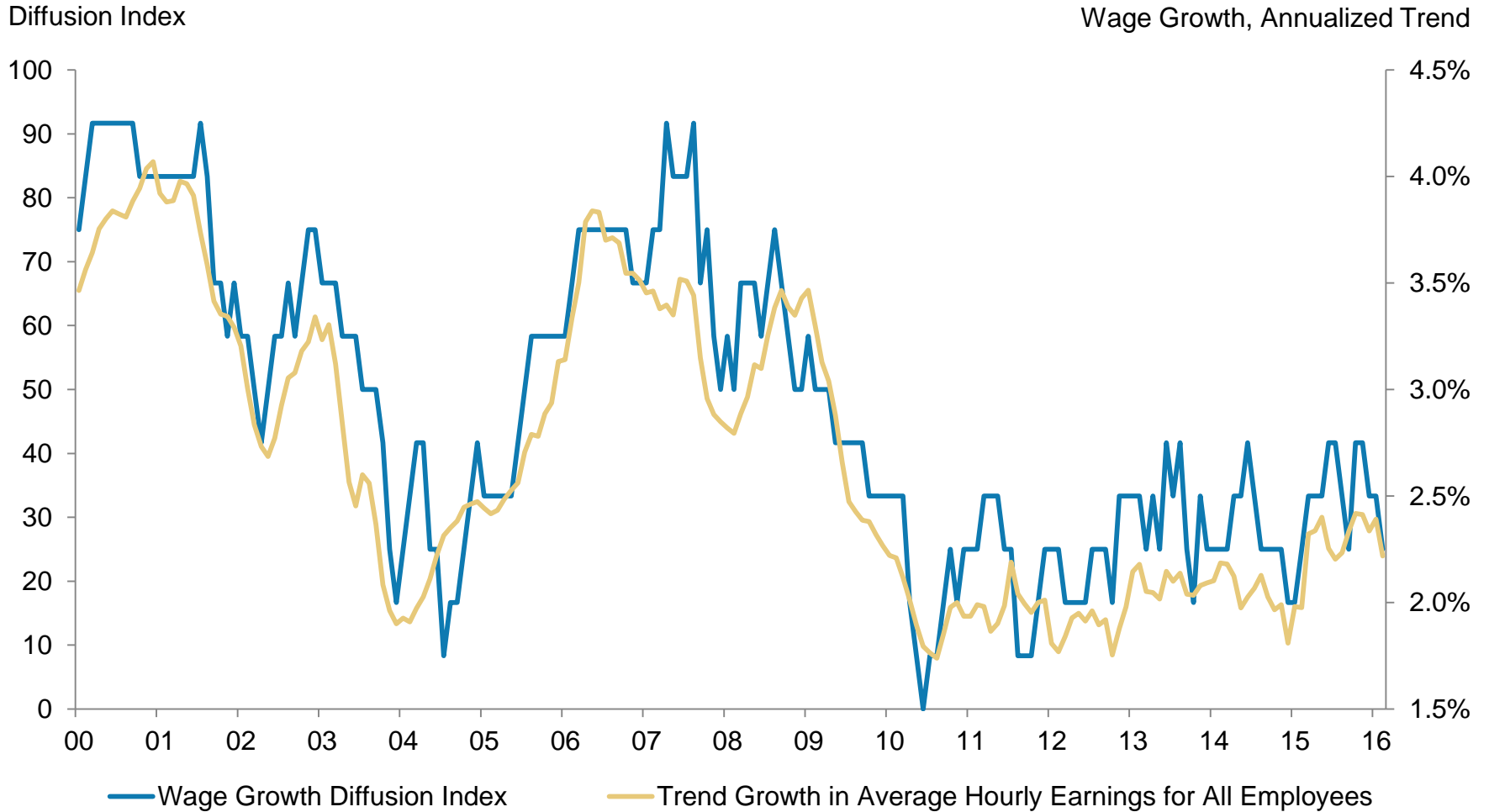


Change - Year-over-Year



Source: Bureau of Economic Analysis, Bureau of Labor Statistics, Morgan Stanley Research

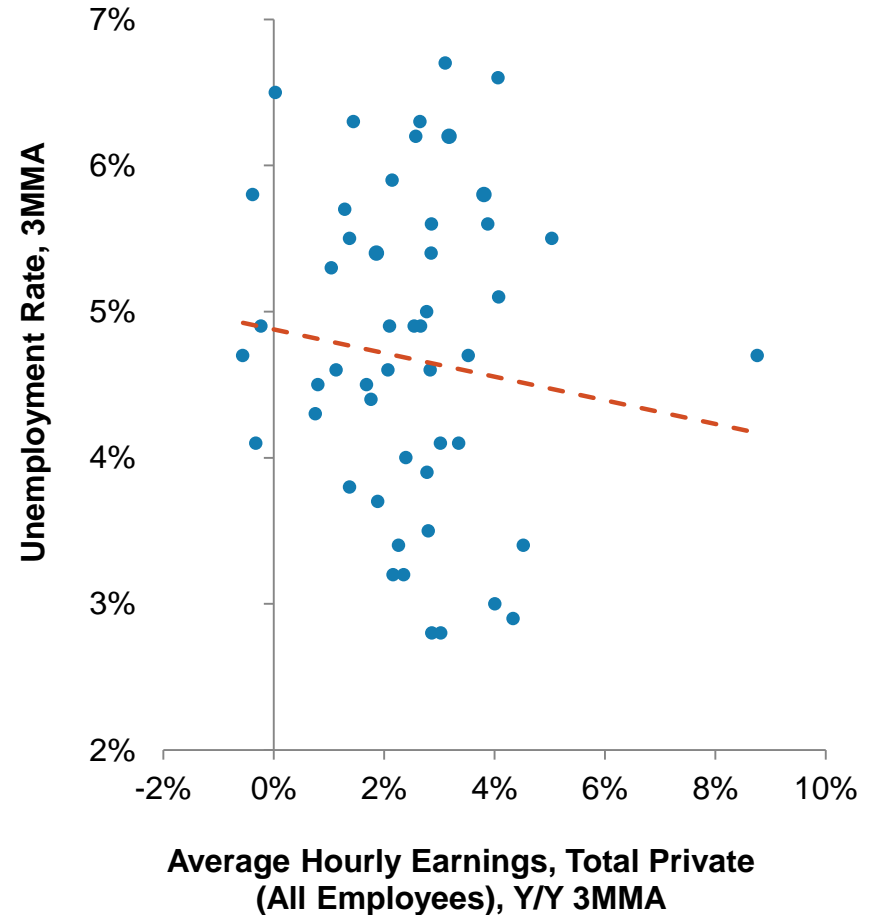
# Wage Growth is Slowly Strengthening and Diffusion is Broadening



Source: Bureau of Labor Statistics, Morgan Stanley Research  
 See [US Economics: Wage Growth Is Slow, Until It's Not \(13 Nov 2015\)](#)

## State-Level Data on Labor Market Slack and Wage Growth

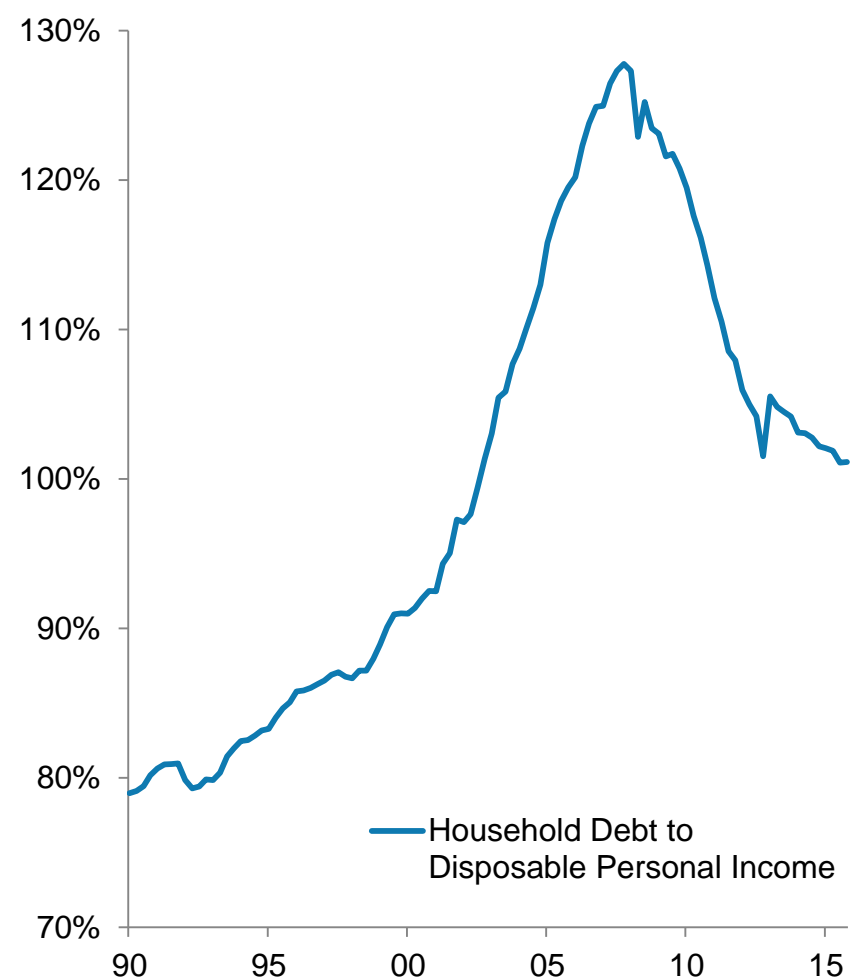
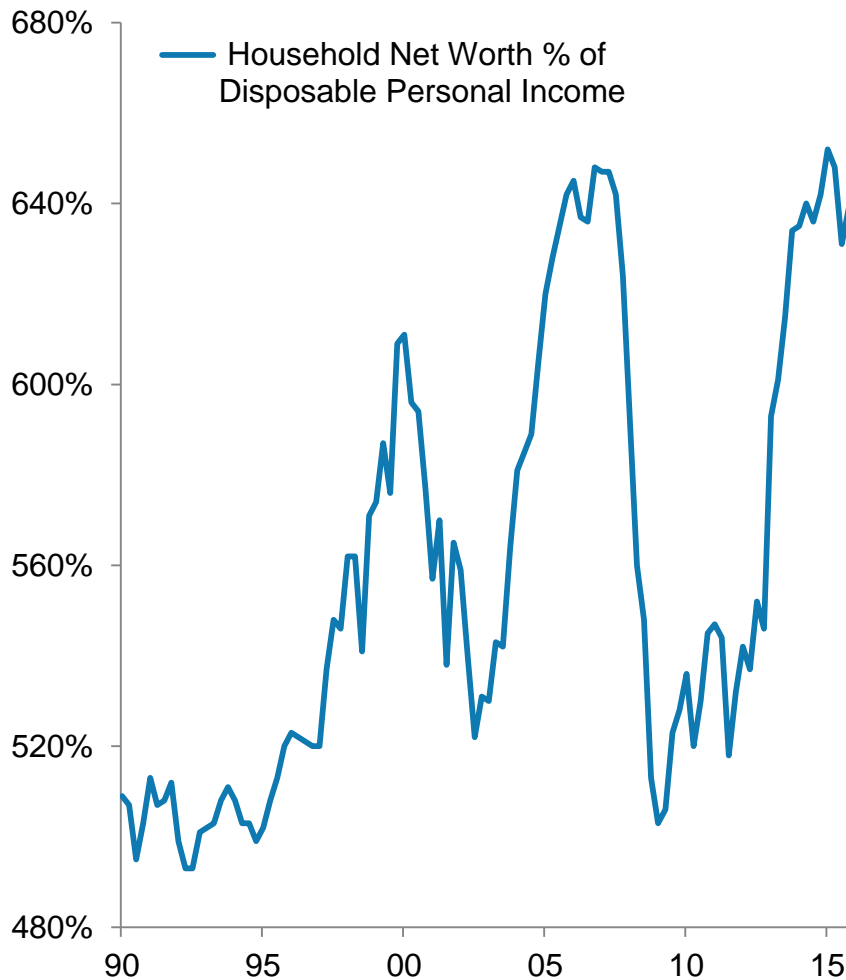
	Unemployment Rate	Avg Hourly Earnings (Year/Year, %)
North Dakota	2.8%	2.9%
South Dakota	2.8%	3.0%
New Hampshire	2.9%	4.3%
Nebraska	3.0%	4.0%
Colorado	3.2%	2.4%
Hawaii	3.2%	2.2%
Utah	3.4%	2.3%
Vermont	3.4%	4.5%
Iowa	3.5%	2.8%
Minnesota	3.7%	1.9%
Maine	3.8%	1.4%
Idaho	3.9%	2.8%
Kansas	4.0%	2.4%
Montana	4.1%	3.0%
Oklahoma	4.1%	-0.3%
Virginia	4.1%	3.4%
Missouri	4.3%	0.8%
Arkansas	4.4%	1.8%
New Jersey	4.5%	1.7%
Texas	4.5%	0.8%



Source: Bureau of Labor Statistics, Morgan Stanley Research

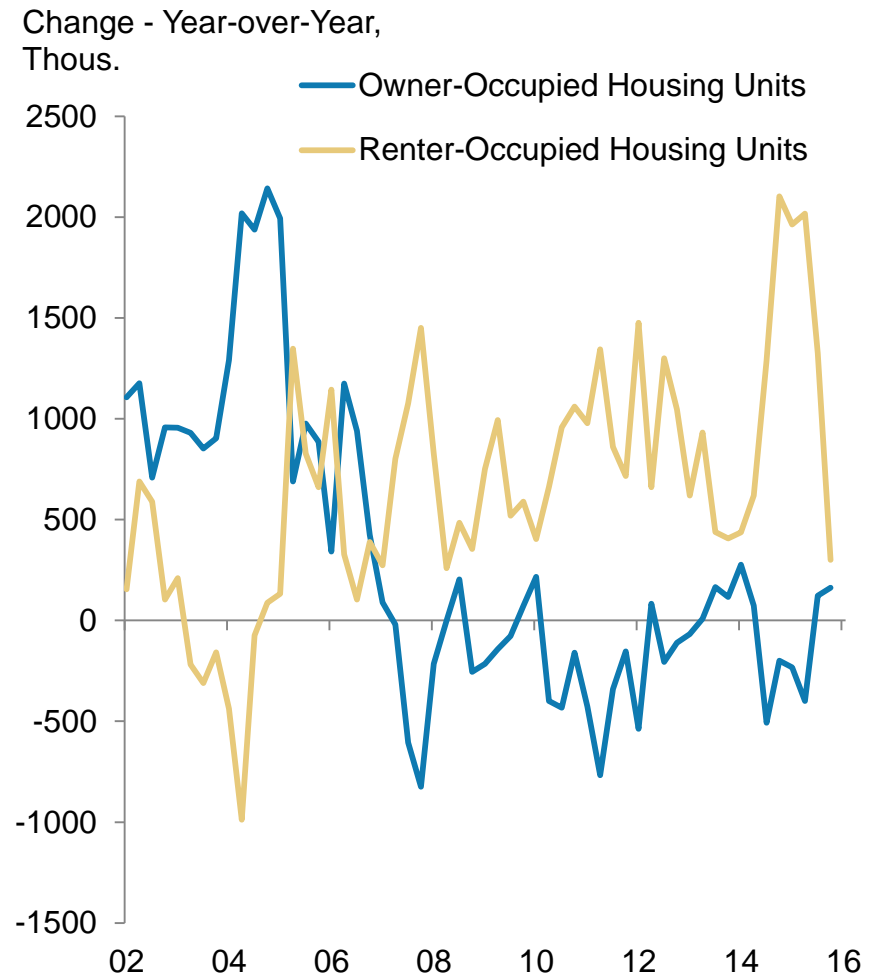
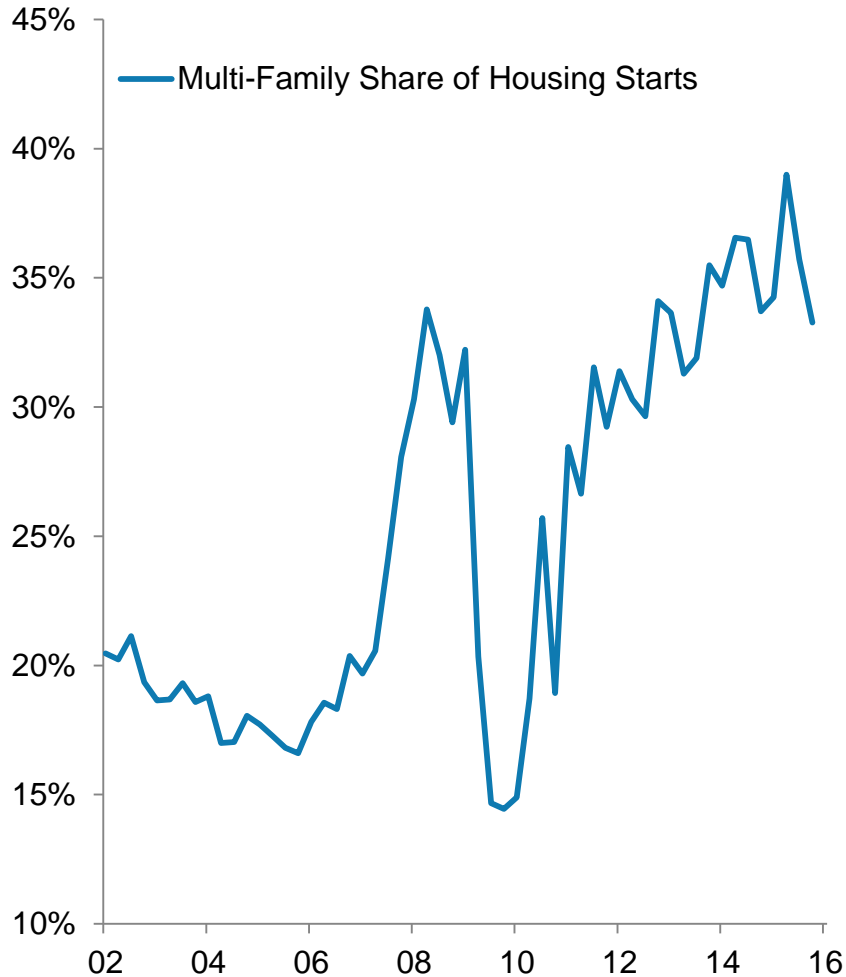
Note: Data are latest 3-month moving averages as of January 2016. Fitted regression line excludes GA, NV, and WA.

## Gains in Income and Wealth are Supporting Consumer Spending



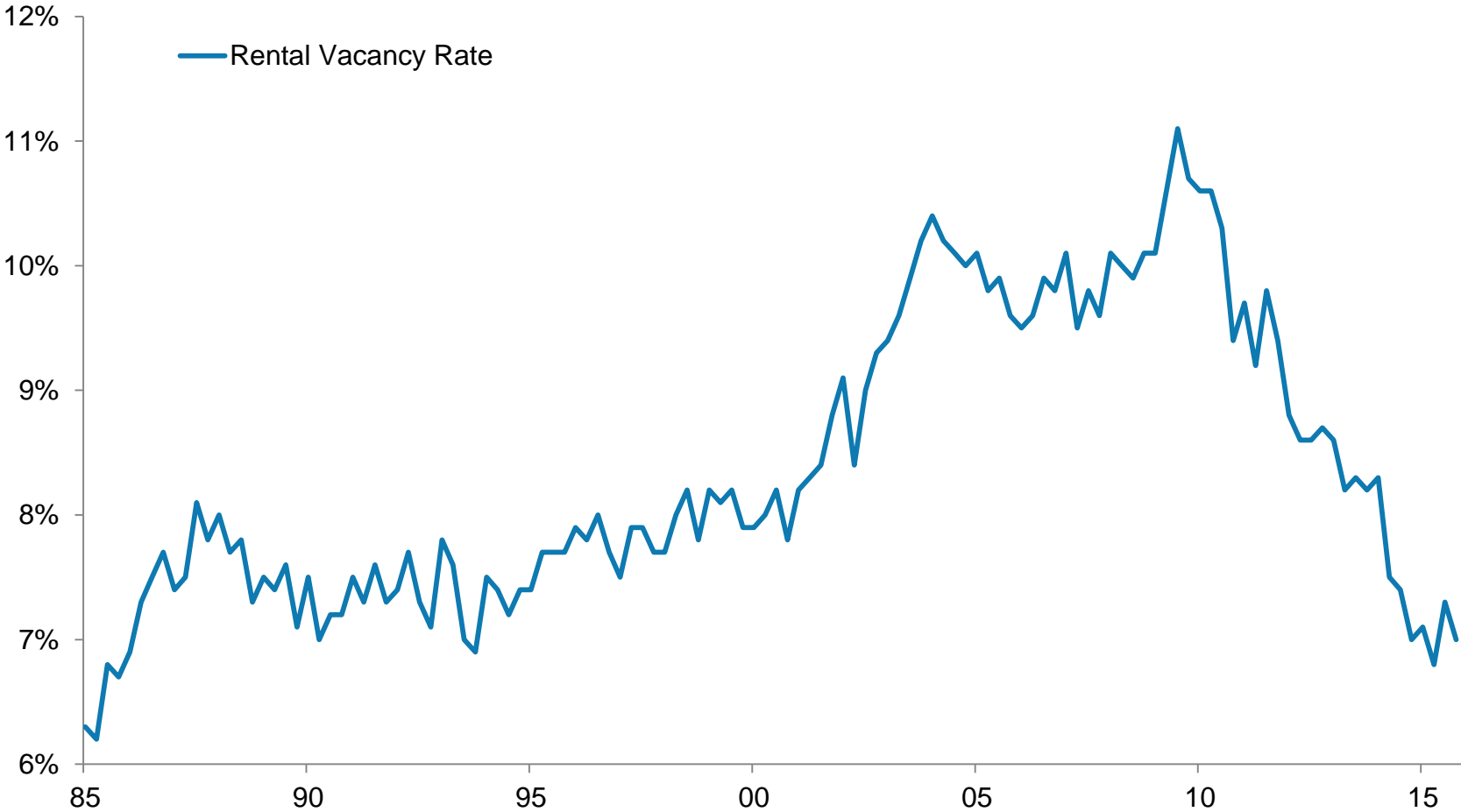
Source: Federal Reserve, Morgan Stanley Research

## Tight Mortgage Credit Causing a High Share of Multi-Family/Rental Starts



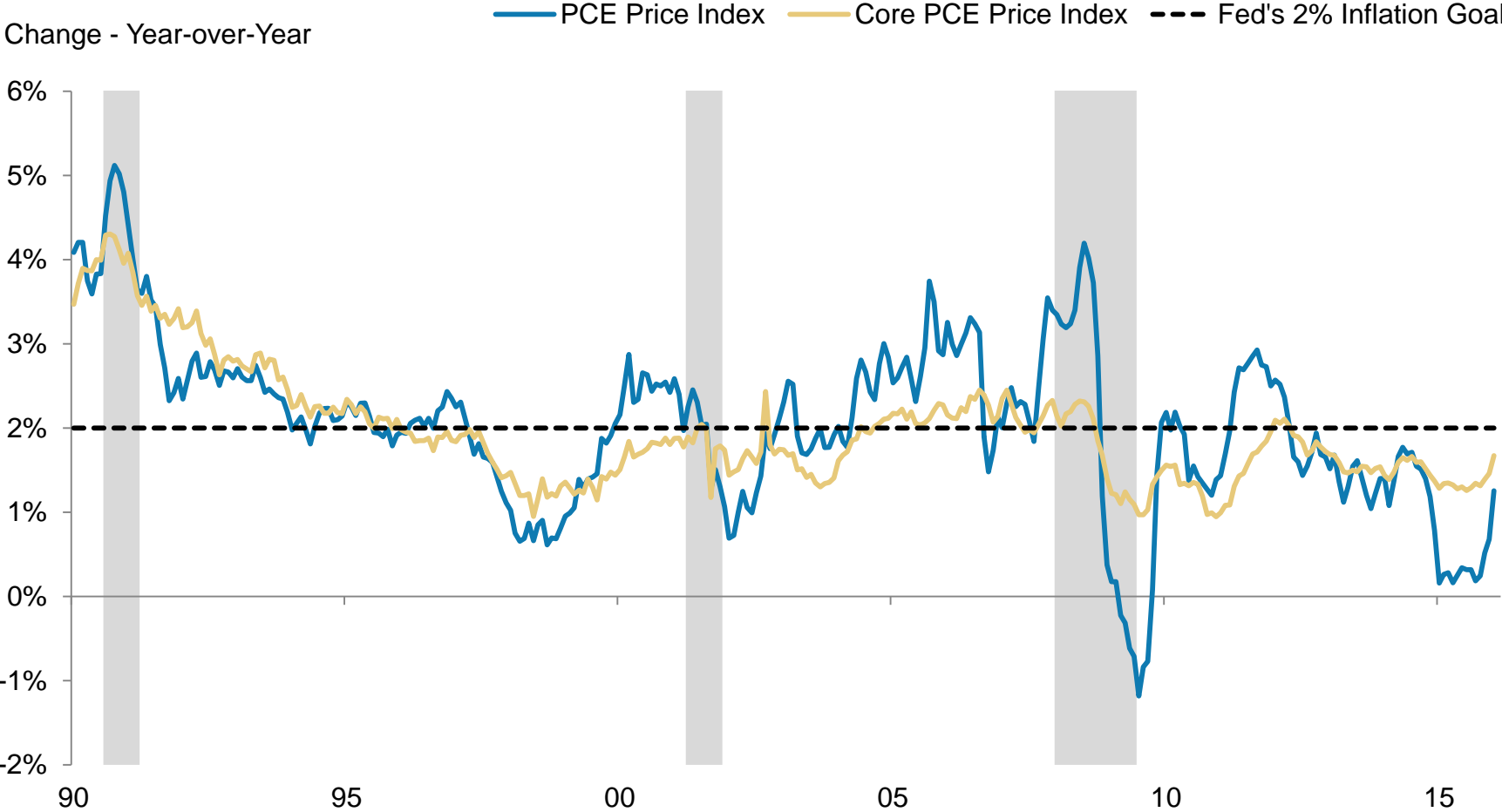
Source: Census Bureau, Morgan Stanley Research

# National Rental Vacancy Rate Near a Thirty-Year Low



Source: Census Bureau, Morgan Stanley Research

# Inflation: Complexities Beyond the Headline

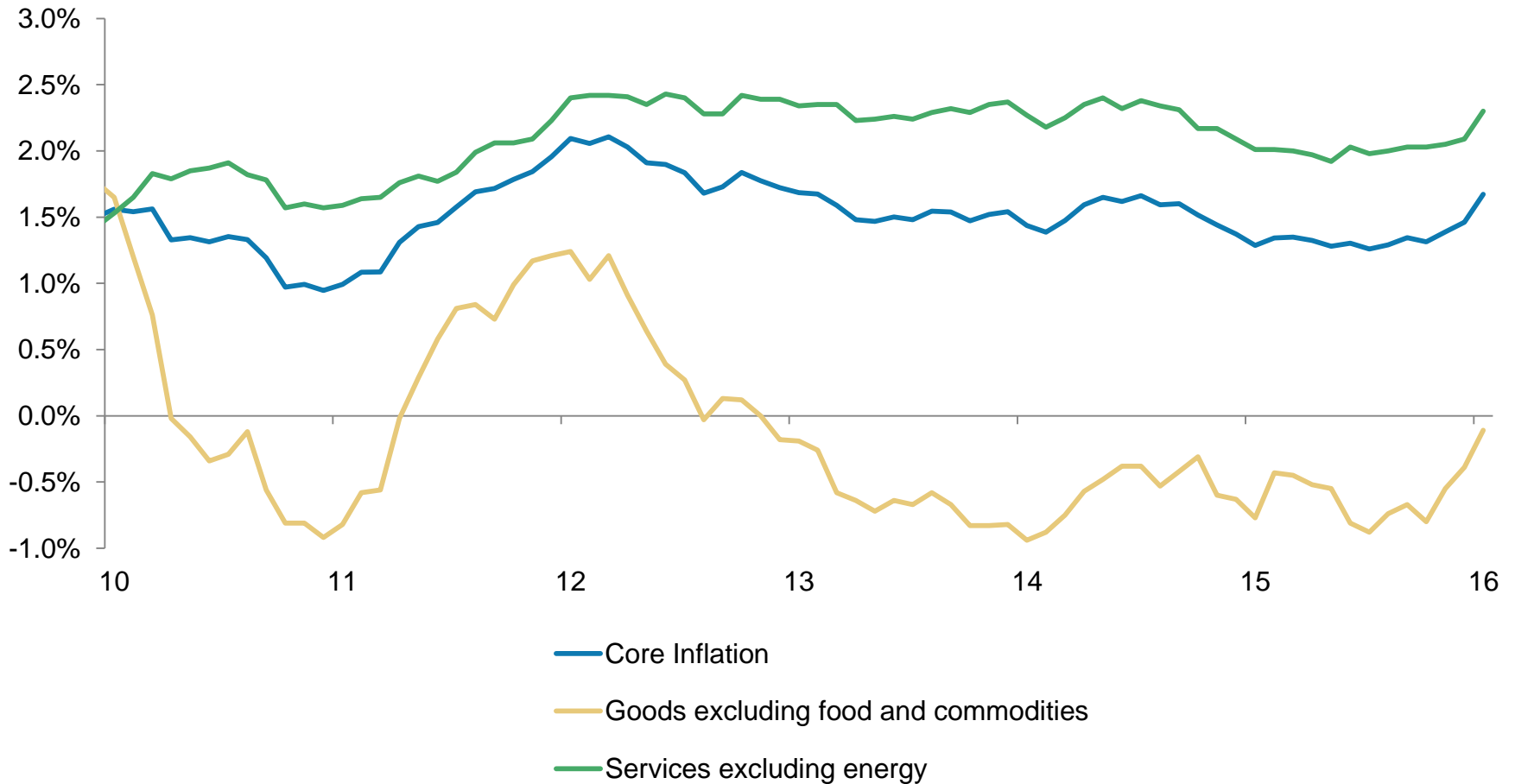


Source: Bureau of Economic Analysis, Morgan Stanley Research;



## Inflation Outlook: How Much Low-flation is Transitory?

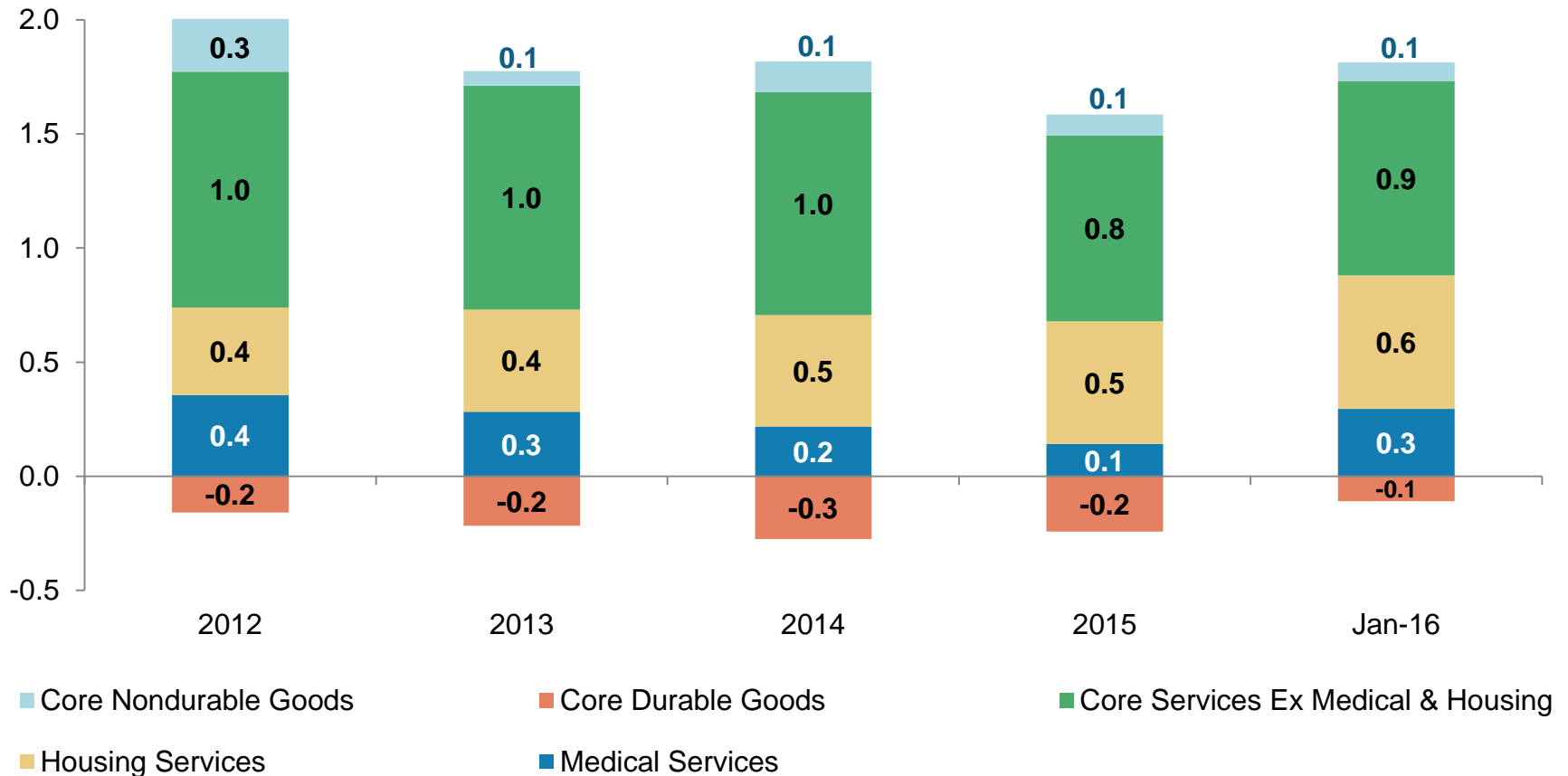
Change - Year-over-Year



Source: Bureau of Economic Analysis, Morgan Stanley Research  
 See [US Economics & Strategy Insights: How Much Low-flation Is Transitory? \(07 Oct 2015\)](#)

## Inflation Outlook: How Much Low-flation is Transitory?

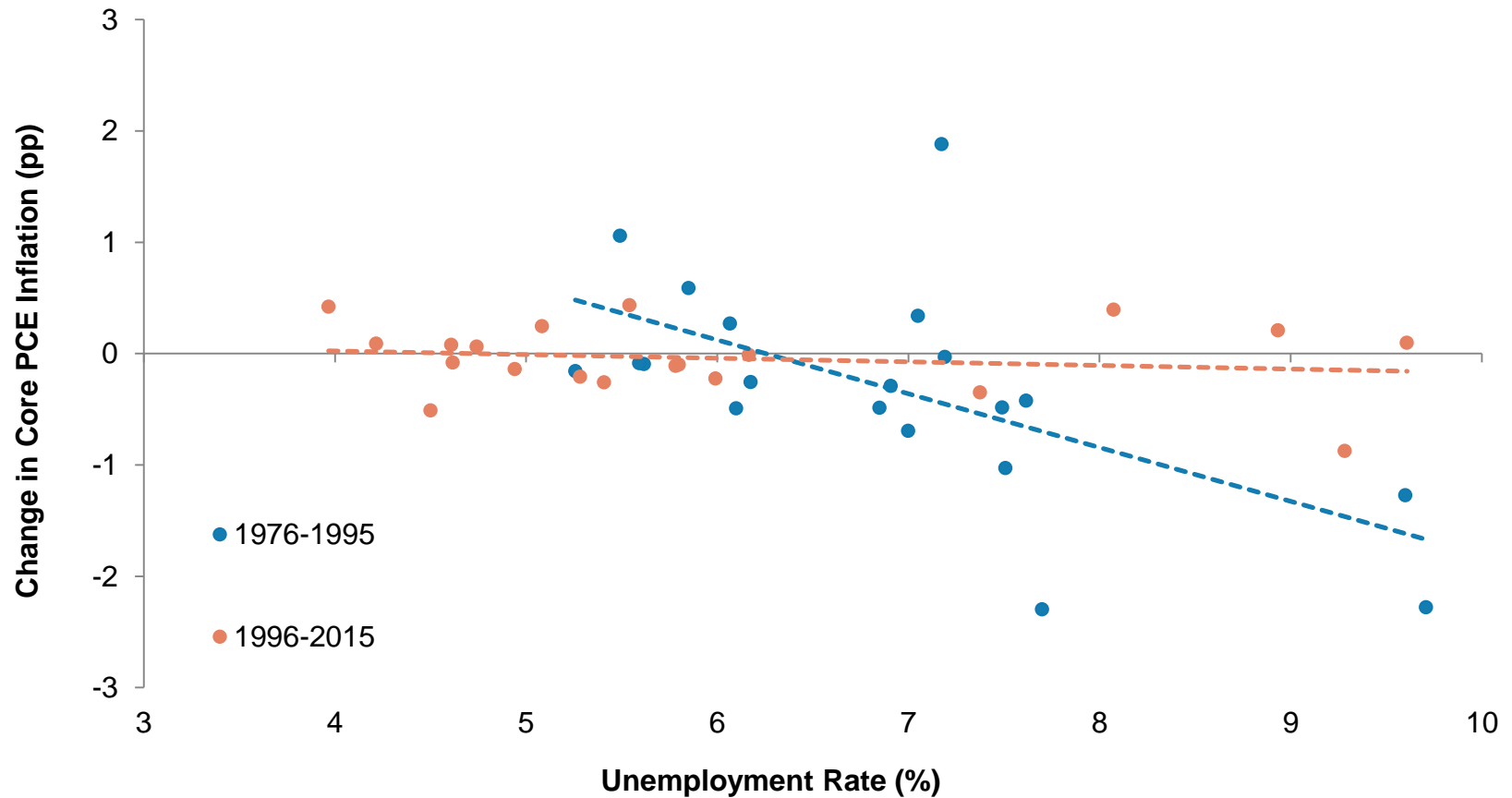
Contributions to Year/Year % Change in Core PCE Inflation percentage points



Source: Bureau of Economic Analysis, Morgan Stanley Research  
 See [US Economics & Strategy Insights: How Much Low-flation Is Transitory? \(07 Oct 2015\)](#)

## We Remain in a World of Very Flat Phillips Curves

Yellen's Estimated Inflation Model\*:  $\pi_t^c = .41\pi_t^e + .36\pi_{t-1}^c + .23\pi_{t-2}^c - .08SLACK_t + .57RPIM_t + \epsilon_t$

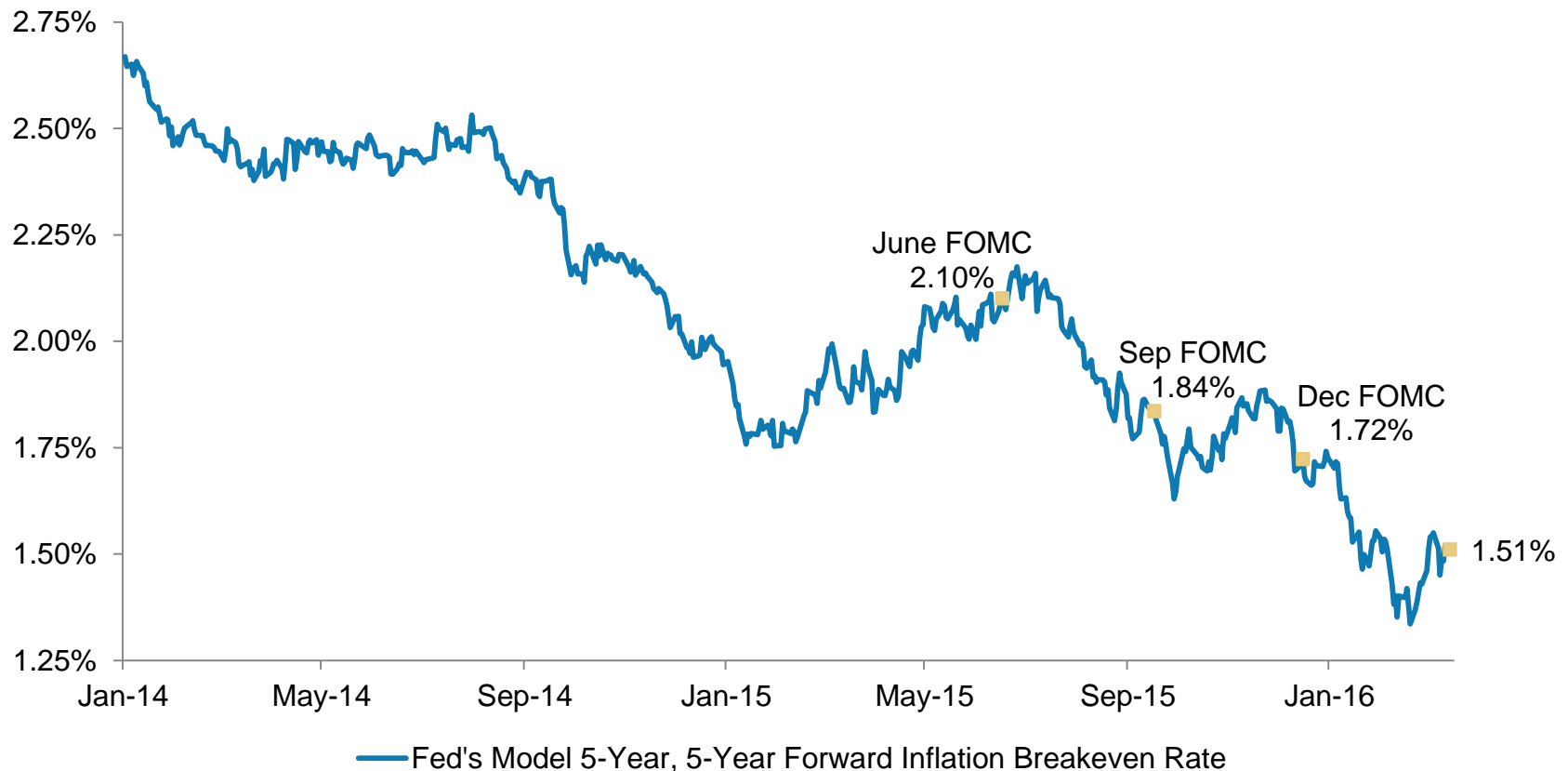


$\pi_t^e$  is expected long-run inflation; SLACK the level of resource utilization; RPIM controls for the effect of changes in the relative price of core imported goods; and  $\epsilon_t$  is a white-noise error term.

\*See ["Inflation Dynamics and Monetary Policy,"](#) Janet L. Yellen, September 24, 2015

## Inflation Expectations: Near Historically Low Inflation Breakevens

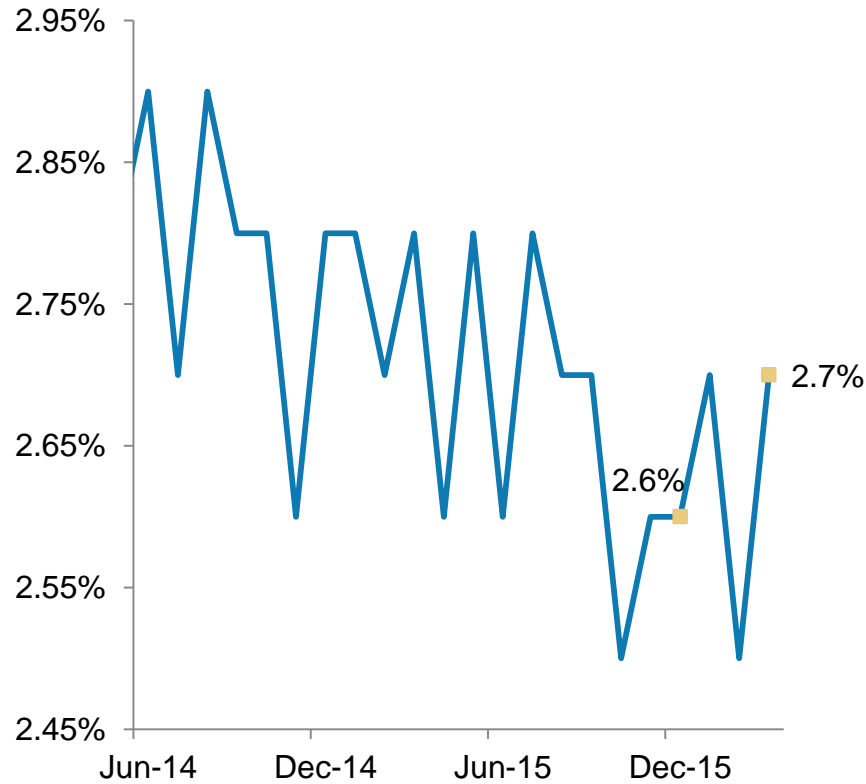
**“An important feature of [the Phillips Curve] model of inflation dynamics is that the overall effect that variations in resource utilization, import prices, and other factors will have on inflation depends crucially on whether these influences also affect long-run inflation expectations.” – Fed Chair Janet Yellen, September 24, 2015\***



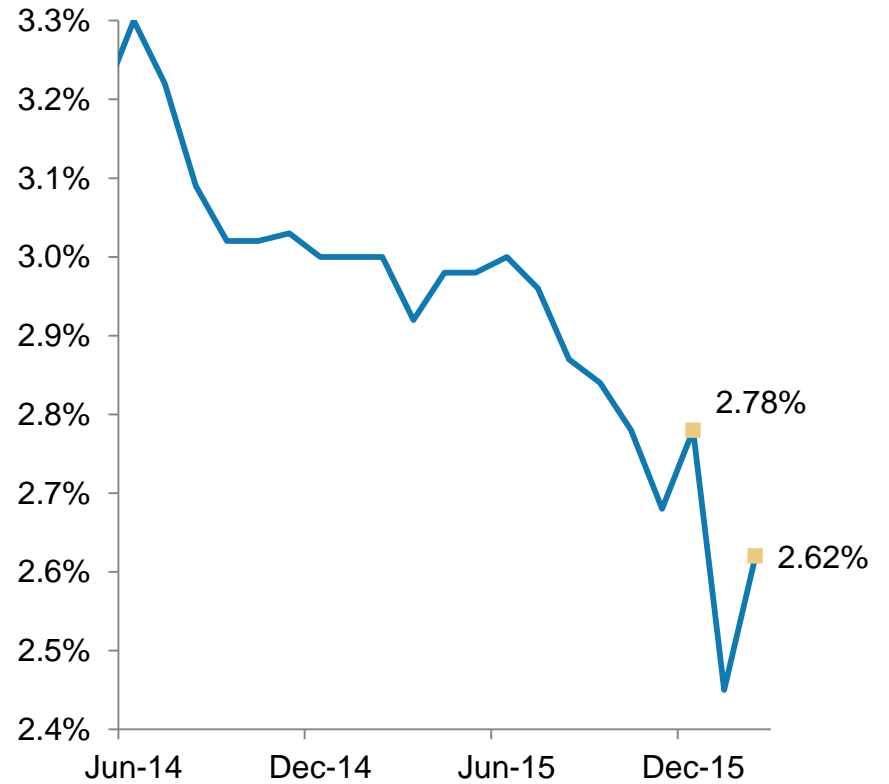
Source: Federal Reserve, Morgan Stanley Research

\*See [“Inflation Dynamics and Monetary Policy.”](#) Janet L. Yellen, September 24, 2015

## Survey-Based Measures of Inflation Expectations Have Fallen As Well



— University of Michigan Survey of Consumers: 5-10 Year Ahead Inflation Expectations  
 ■ December 2015 vs March 2016



— NY Fed Survey of Consumer Expectations: Median 3-Year Ahead Exp. Inflation Rate  
 ■ December 2015 vs February 2016

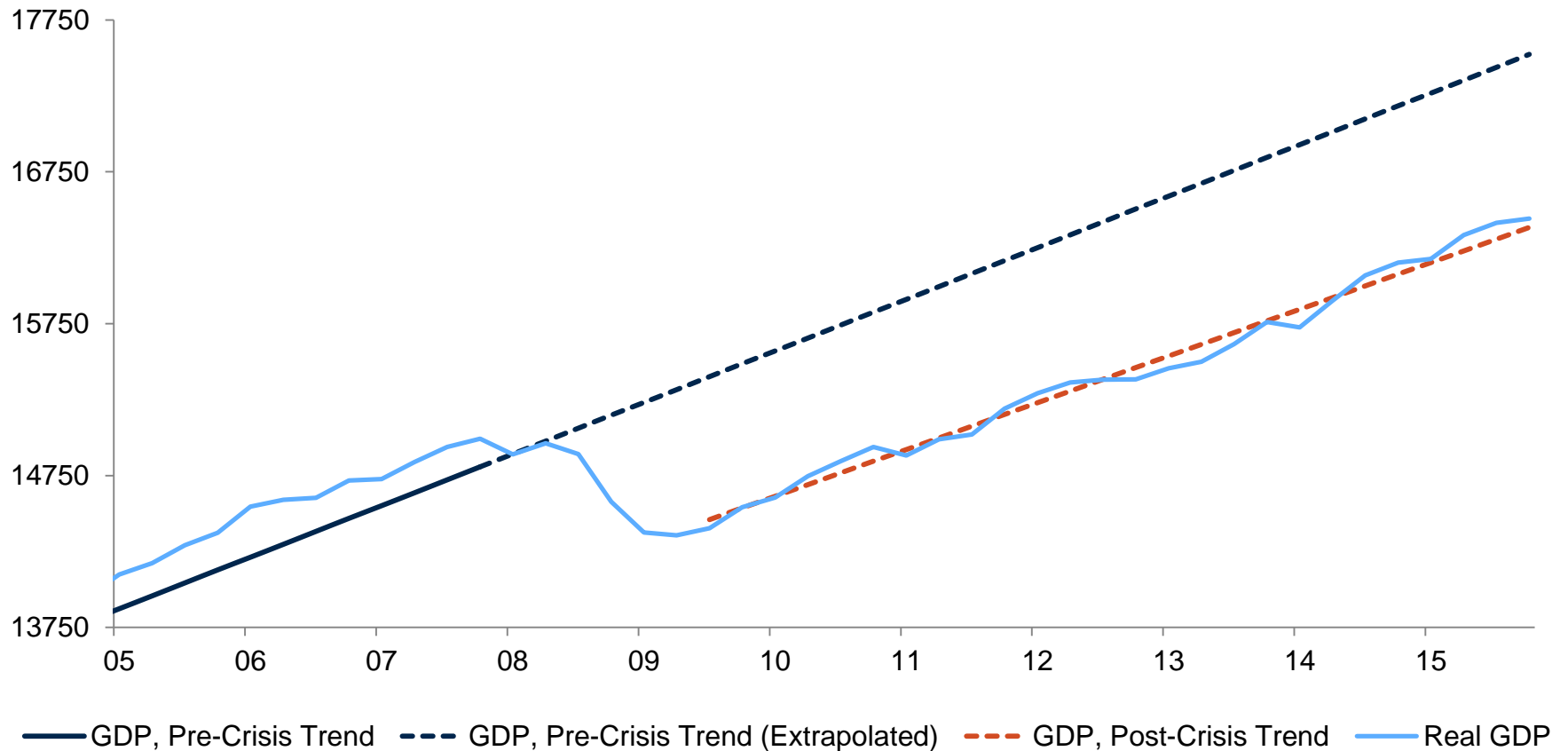
Source: University of Michigan Survey of Consumers, Federal Reserve Bank of New York, Morgan Stanley Research

## Potential Growth & Medium Term Dynamics

## Real GDP Relative to Trend: Pre- and Post-Financial Crisis

The level of output is nowhere near returning to pre-crisis trend

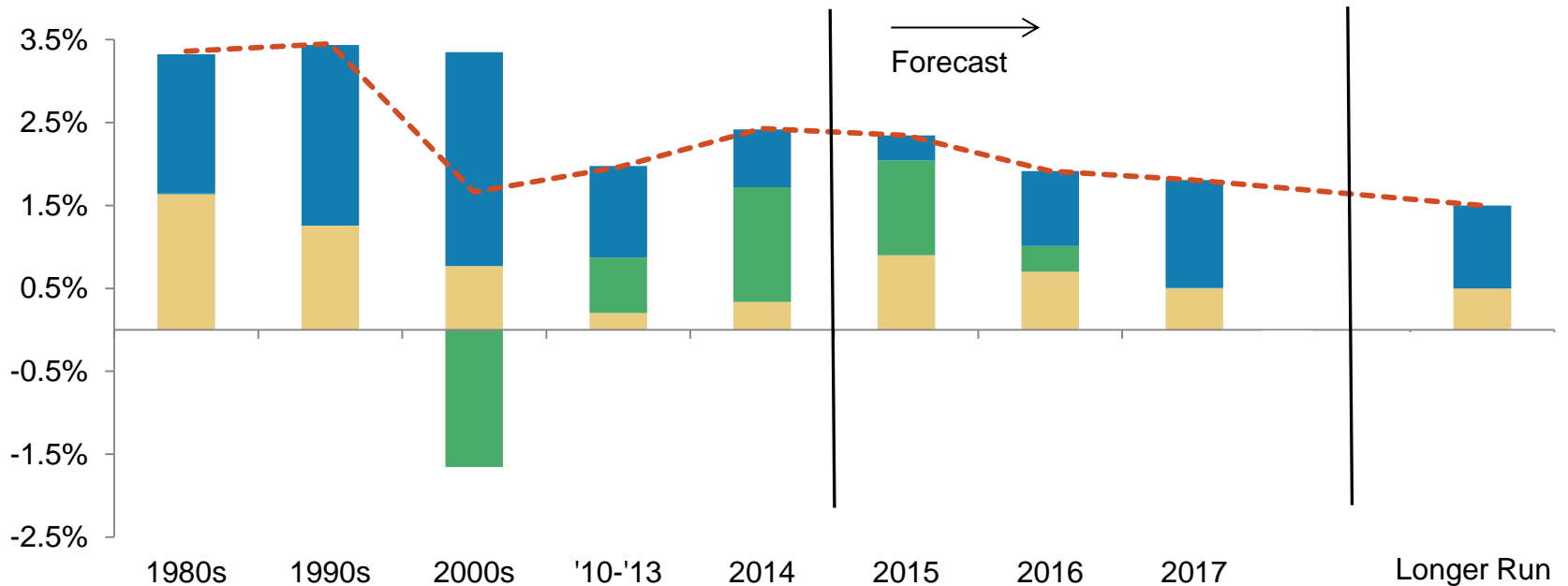
SAAR, Bil.Chn.2009\$



Source: Bureau of Economic Analysis, Morgan Stanley Research  
 See [US Economics: Potential GDP \(04 Feb 2016\)](#)

## We Peg US Potential Growth at 1.5%Y

**Rule of Thumb: Growth in Labor Productivity + Growth in the Labor Force = Potential GDP Growth**

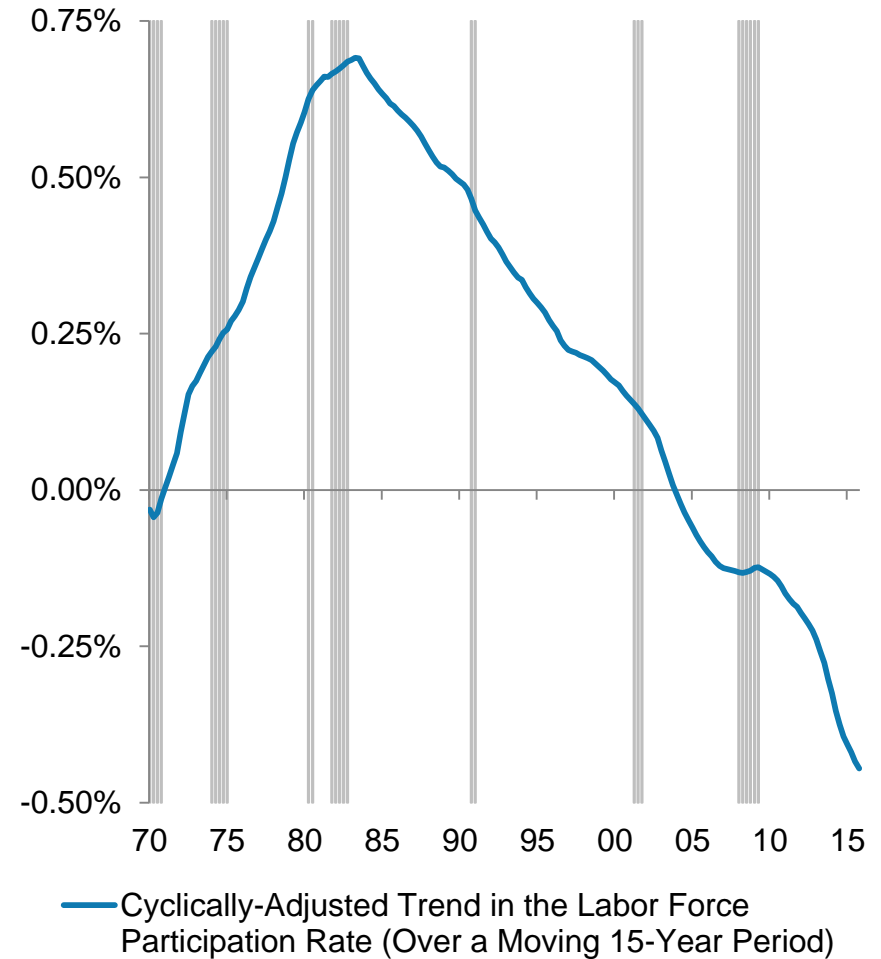
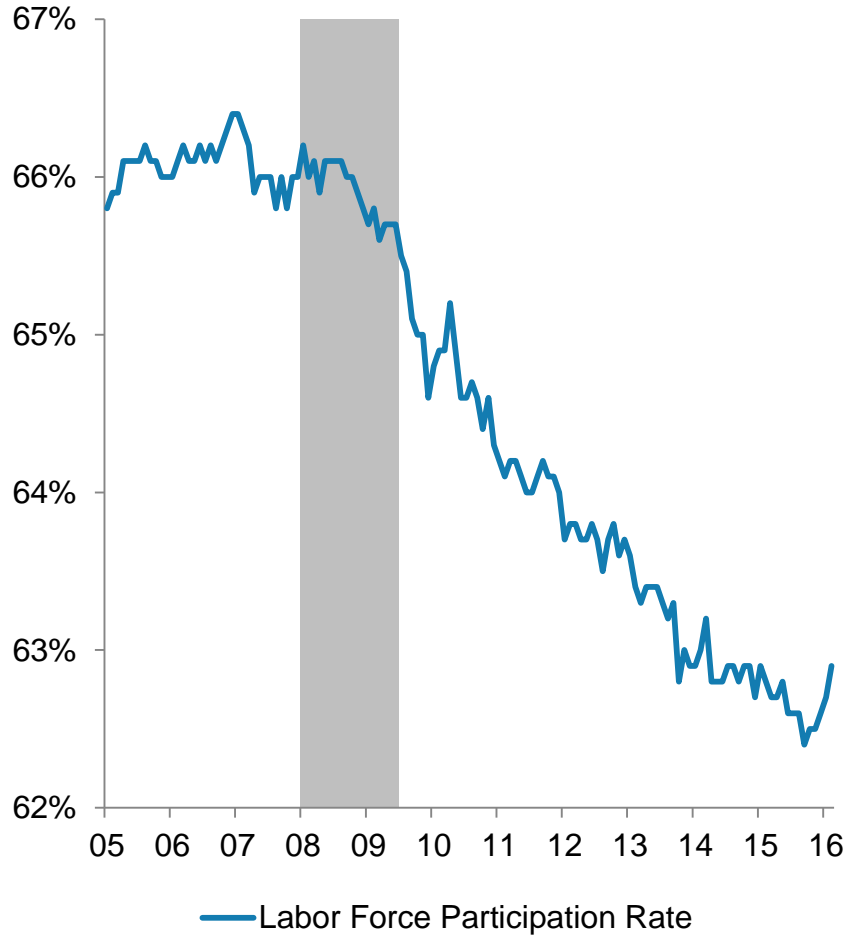


- Labor Productivity Growth
- Changes in Unemployment Rate + Average Hours per Worker + Mix Effect
- Growth in Working Age Population + Change in Labor Force Participation
- - - Real GDP Growth

Source: Bureau of Labor Statistics, Bureau of Economic Analysis, Morgan Stanley Research  
 See [US Economics: Potential GDP \(04 Feb 2016\)](#)



## Labor Force Participation is on a Secular Downtrend



Source: Bureau of Labor Statistics, Morgan Stanley Research  
 See [US Economics: Potential GDP \(04 Feb 2016\)](#)

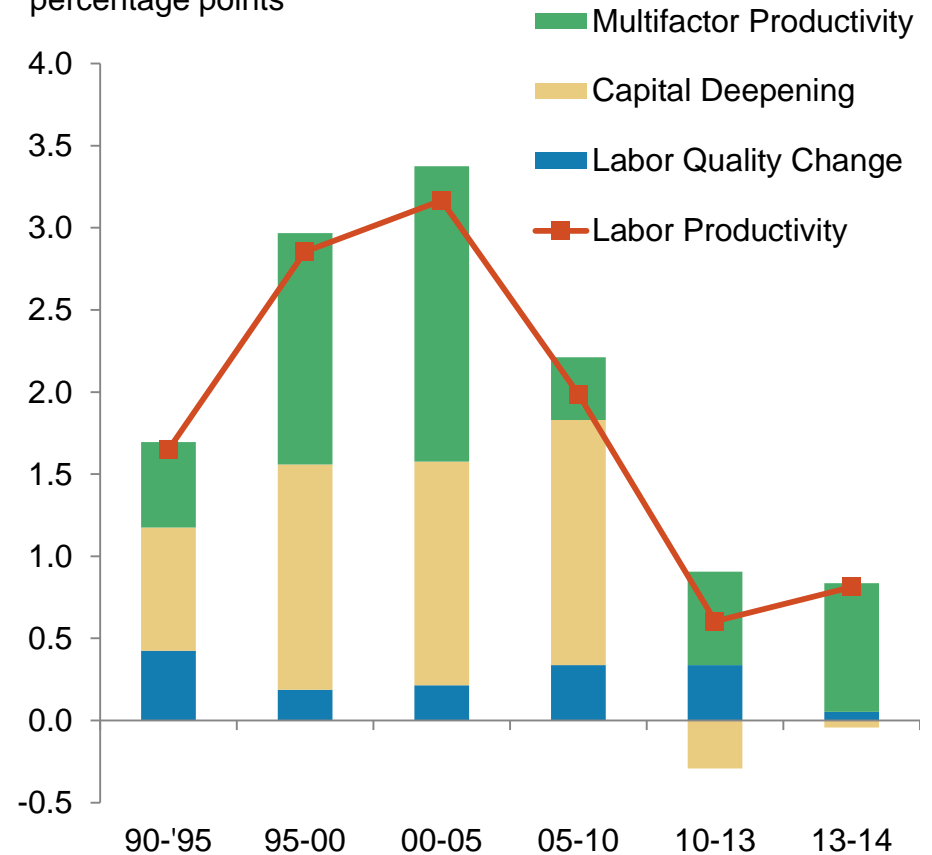
## Why is Productivity Growth So Low?

The deterioration in labor productivity in recent years has importantly owed to a shallowing out of the capital stock. Multifactor productivity (MFP), has also slowed substantially.

5-Year Annualized Change



percentage points

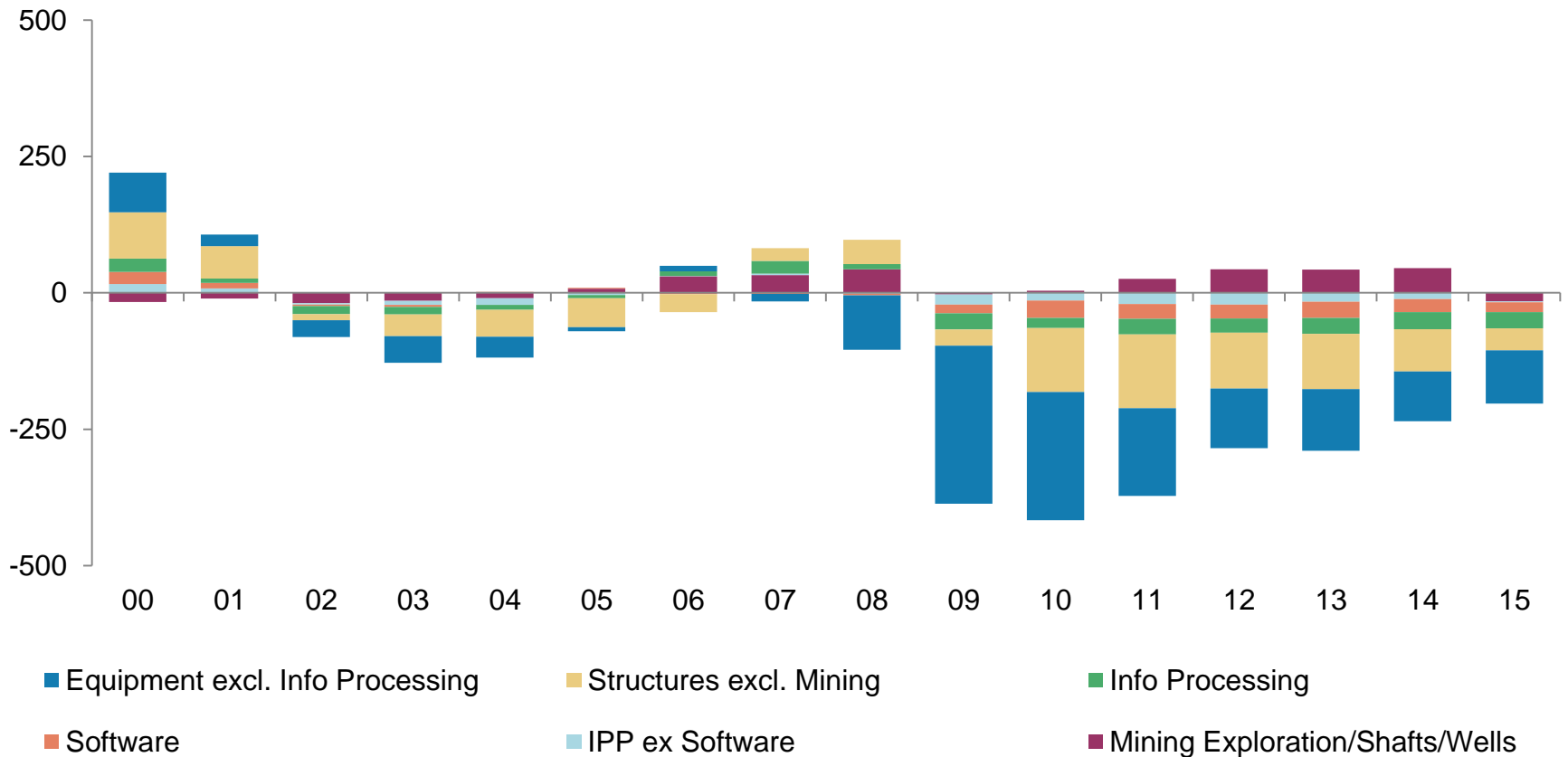


Source: Bureau of Labor Statistics, Morgan Stanley Research  
 See [US Economics: Potential GDP \(04 Feb 2016\)](#)

# Overall Investment Levels Are Running Below Trend

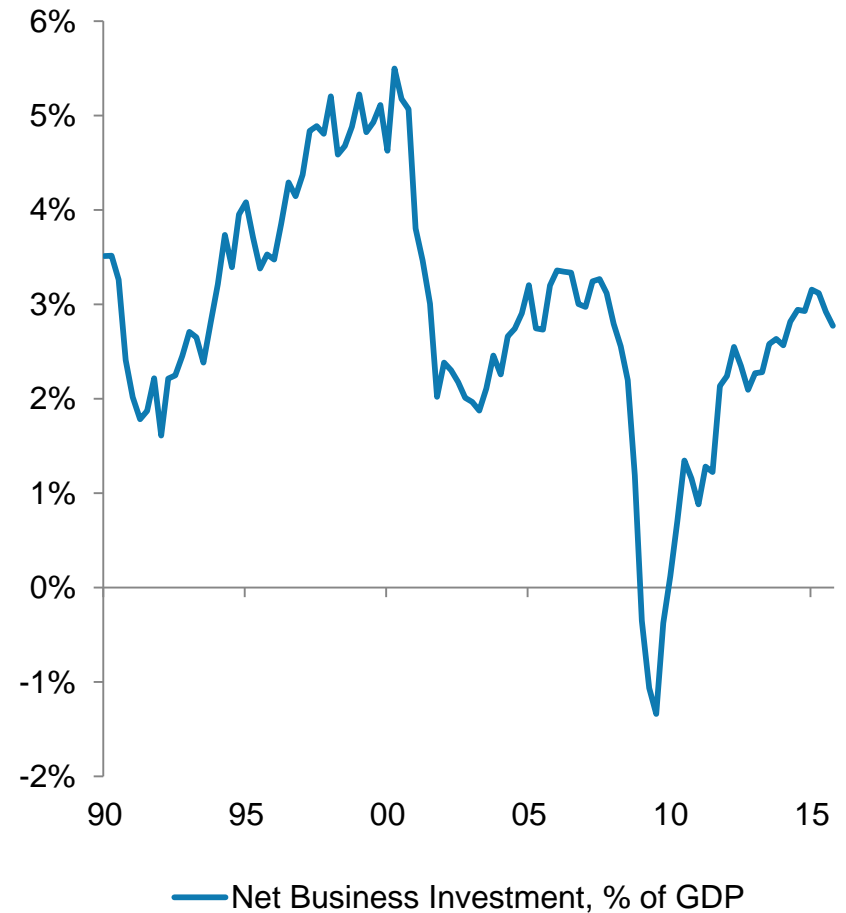
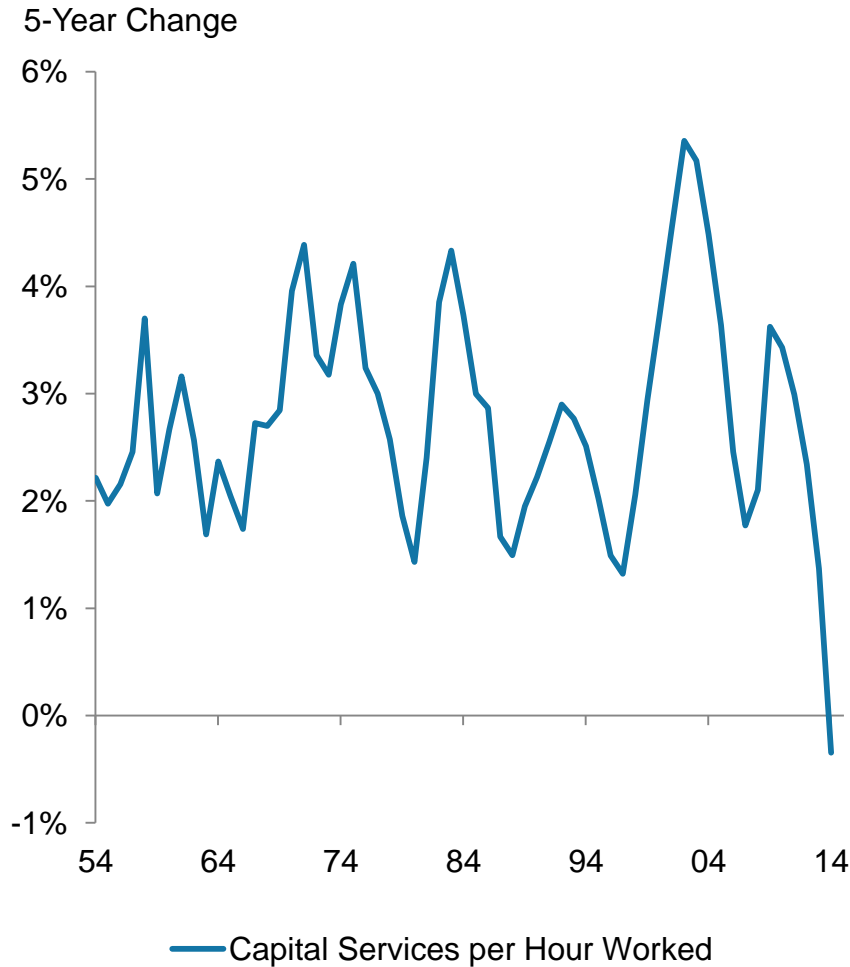
## Contributions to the Deviation from Trend in Private Business Investment

Deviation from Trend,  
SAAR Bil.Chn.2009\$



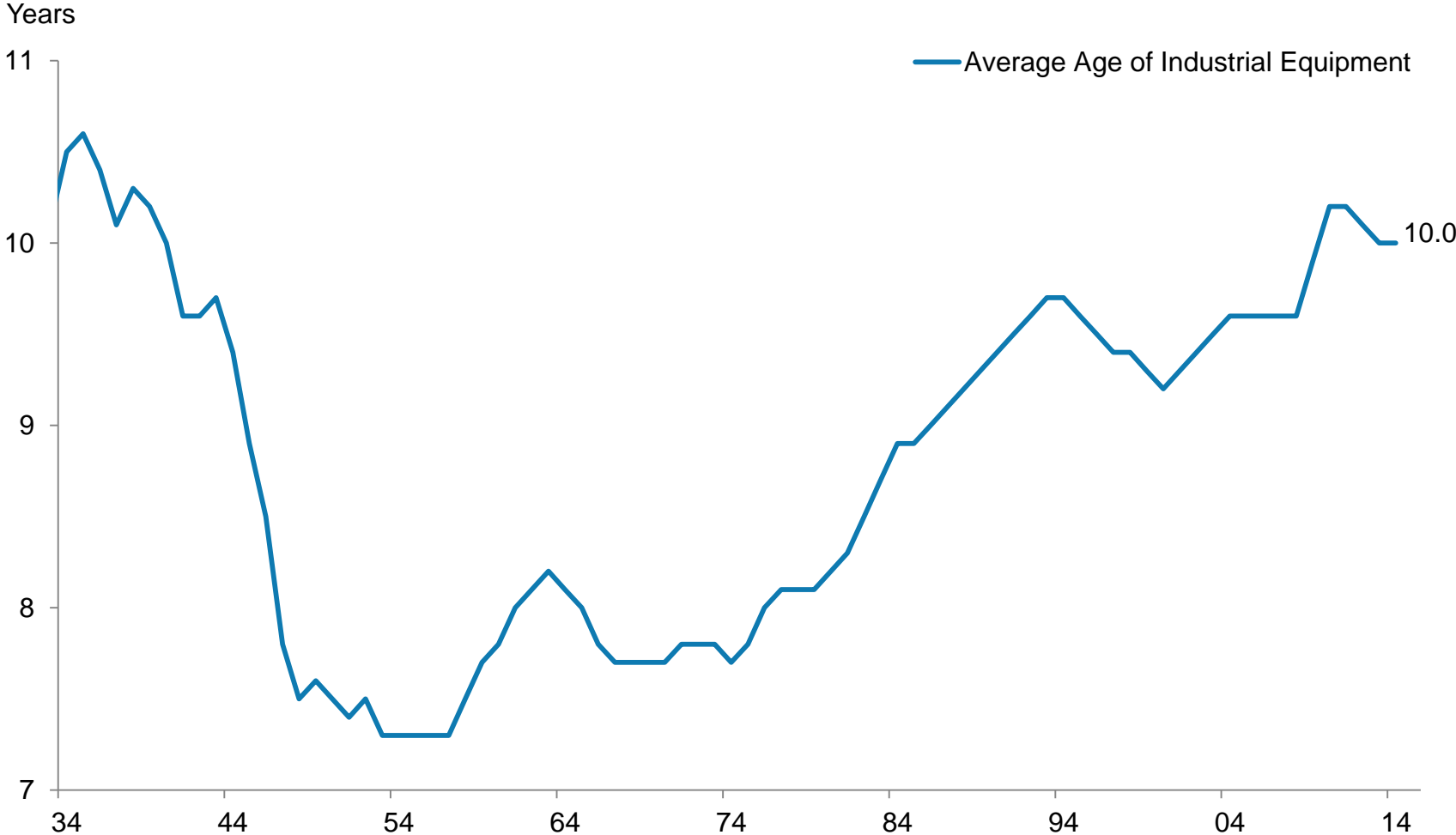
Source: Bureau of Economic Analysis, Morgan Stanley Research  
See [US Economics: Potential GDP \(04 Feb 2016\)](#)

## Lack of Capital Deepening Contributes to Weak Productivity Growth



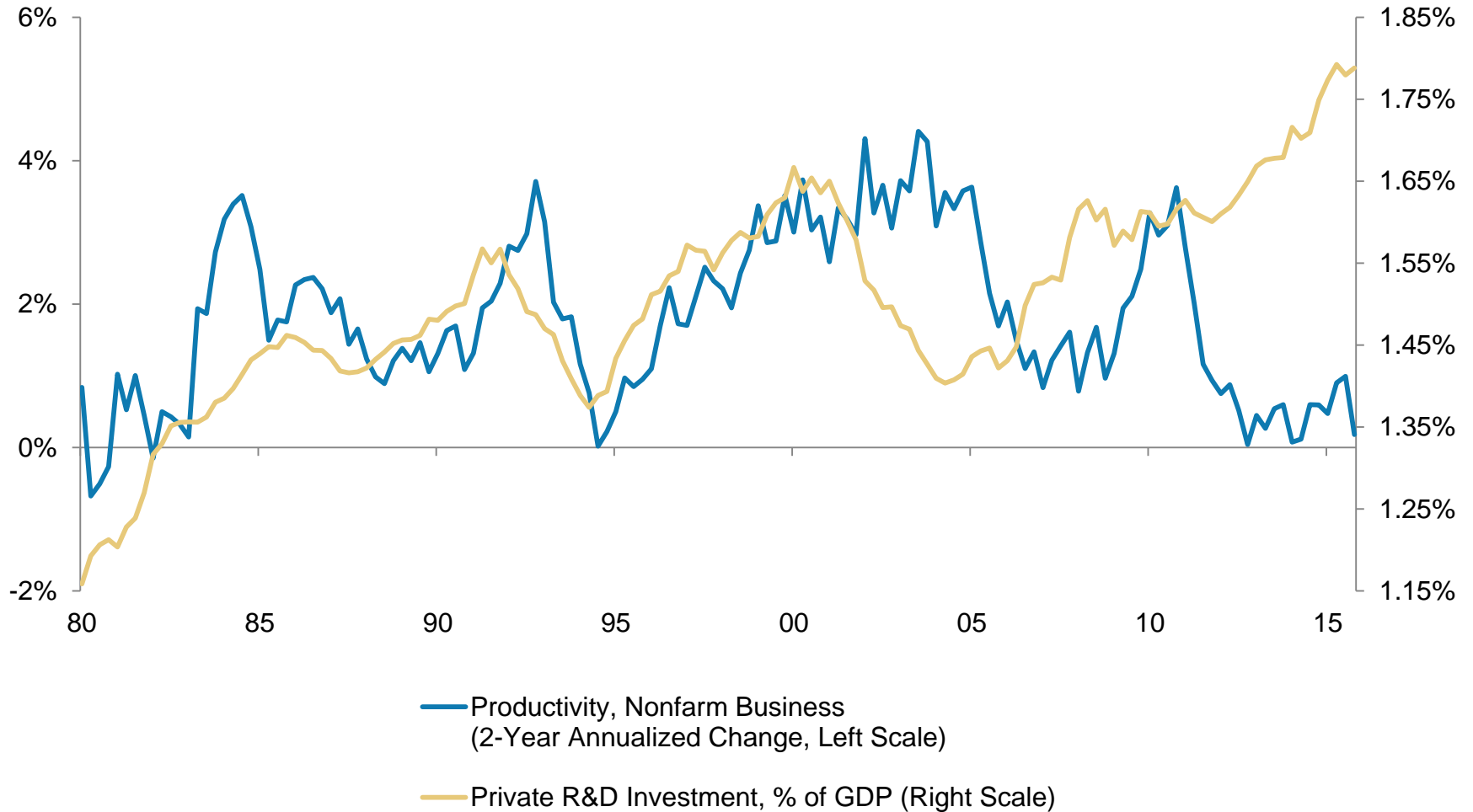
Source: Bureau of Labor Statistics, Bureau of Economic Analysis, Morgan Stanley Research  
 See [US Economics: Potential GDP \(04 Feb 2016\)](#)

# Capex: Persistent Low Spending Has Resulted in Rising Replacement Needs



Source: Bureau of Economic Analysis, Morgan Stanley Research  
See [US Economics: Potential GDP \(04 Feb 2016\)](#)

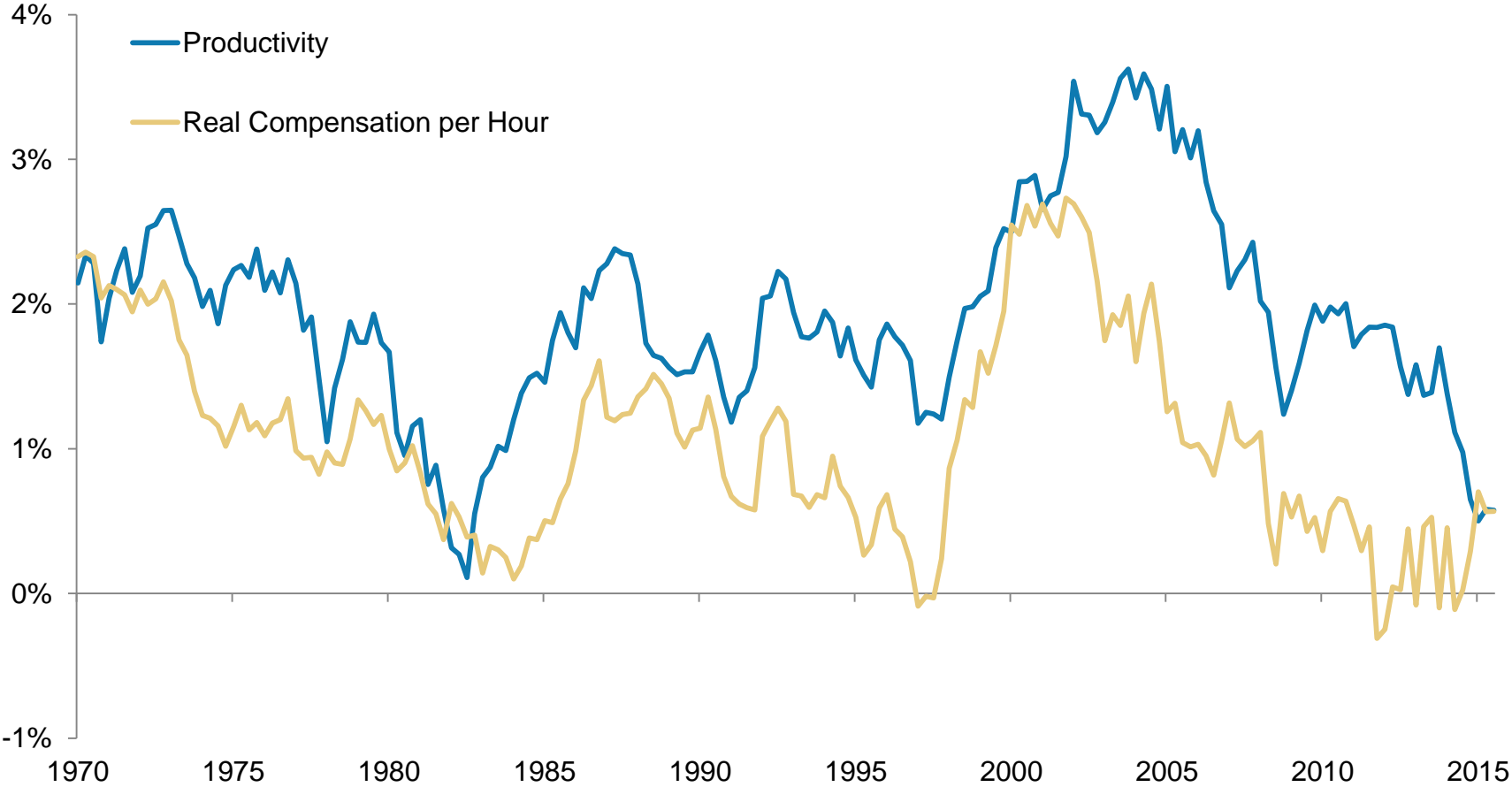
## Strong R&D Cycle May Help Improve Multifactor Productivity



Source: Bureau of Labor Statistics, Bureau of Economic Analysis, Morgan Stanley Research  
 See [US Economics: Potential GDP \(04 Feb 2016\)](#)

# Real Wage Growth Moves With Productivity

5-Year Annualized Change



Source: Bureau of Labor Statistics, Morgan Stanley Research  
See [US Economics: Potential GDP \(04 Feb 2016\)](#)

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**The Americas**

1585 Broadway  
New York, NY 10036-8293

**United States**

Tel: +1 (1) 212 761 4000

**Europe**

20 Bank Street, Canary Wharf  
London E14 4AD

**United Kingdom**

Tel: +44 (0) 20 7 425 8000

**Japan**

1-9-7 Otemachi, Chiyoda-ku  
Tokyo 100-8104

**Japan**

Tel: +81 (0) 3 6836 5000

**Asia/Pacific**

1 Austin Road West  
Kowloon

**Hong Kong**

Tel: +852 2848 5200