



# Cruising Altitude

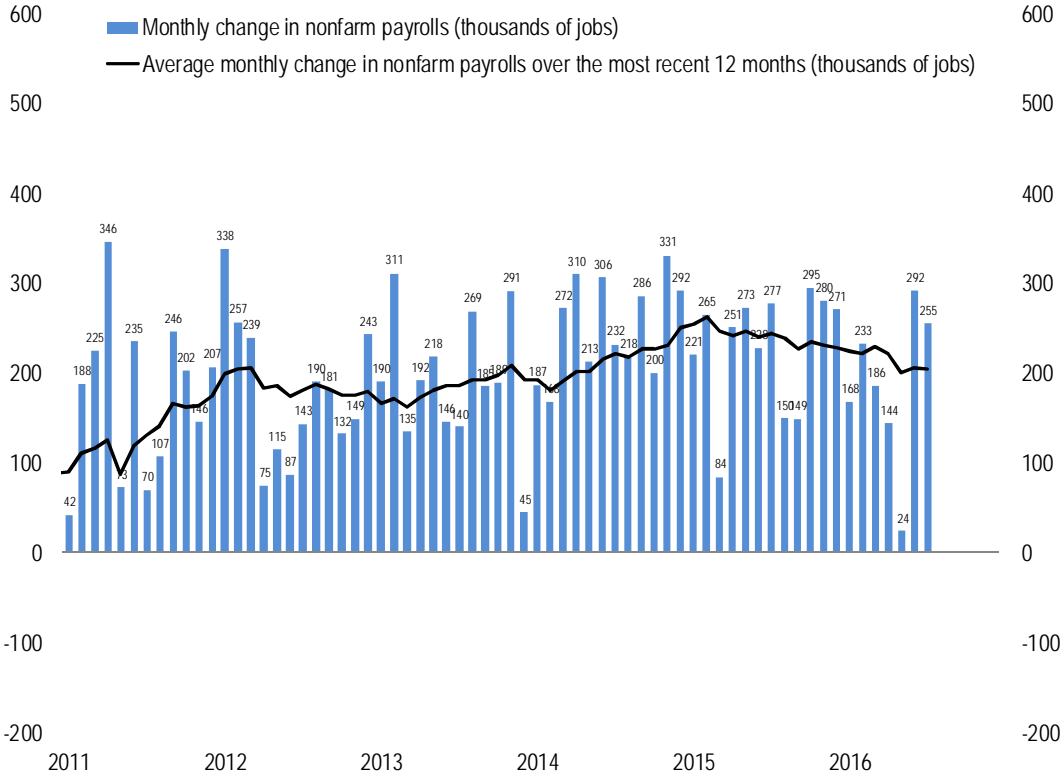
*(From Recovery to Steady State)*

August 12, 2016

# RECOVERIES DON'T SCARE EASILY

# When Data Misbehaves, Cross Examine It ...

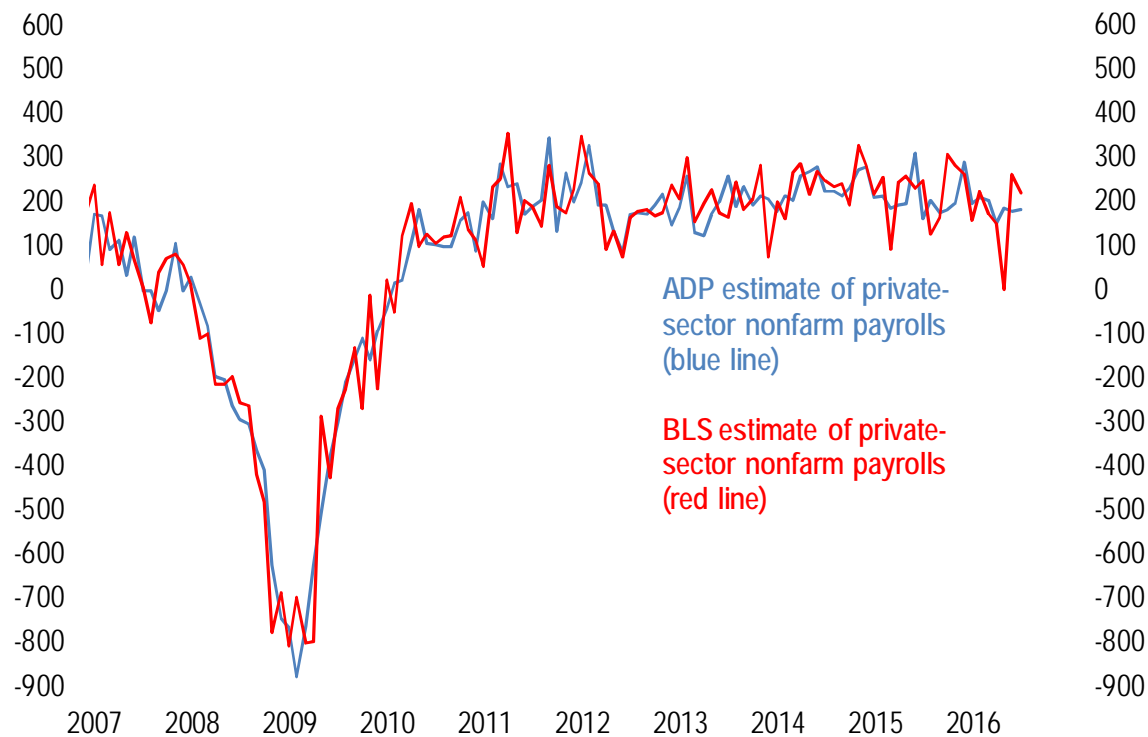
Nonfarm employment (monthly change in thousands)



Sources: Haver Analytics; U.S. Department of Labor. Updated through July 2016.

# ... and Look to Other Reliable Data ...

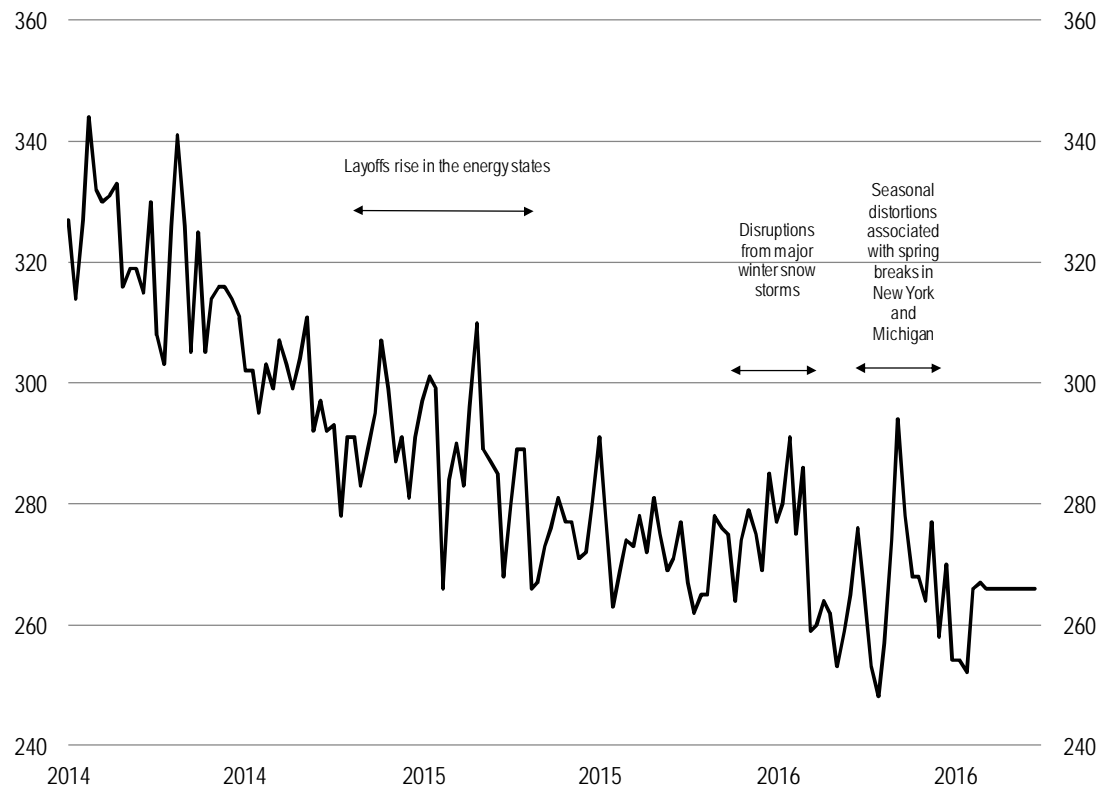
Nonfarm private employment (change in the month in thousands)



Sources: Haver Analytics; ADP; U.S. Department of Labor. Updated through July 2016.

# ... Especially the One That Knows Best

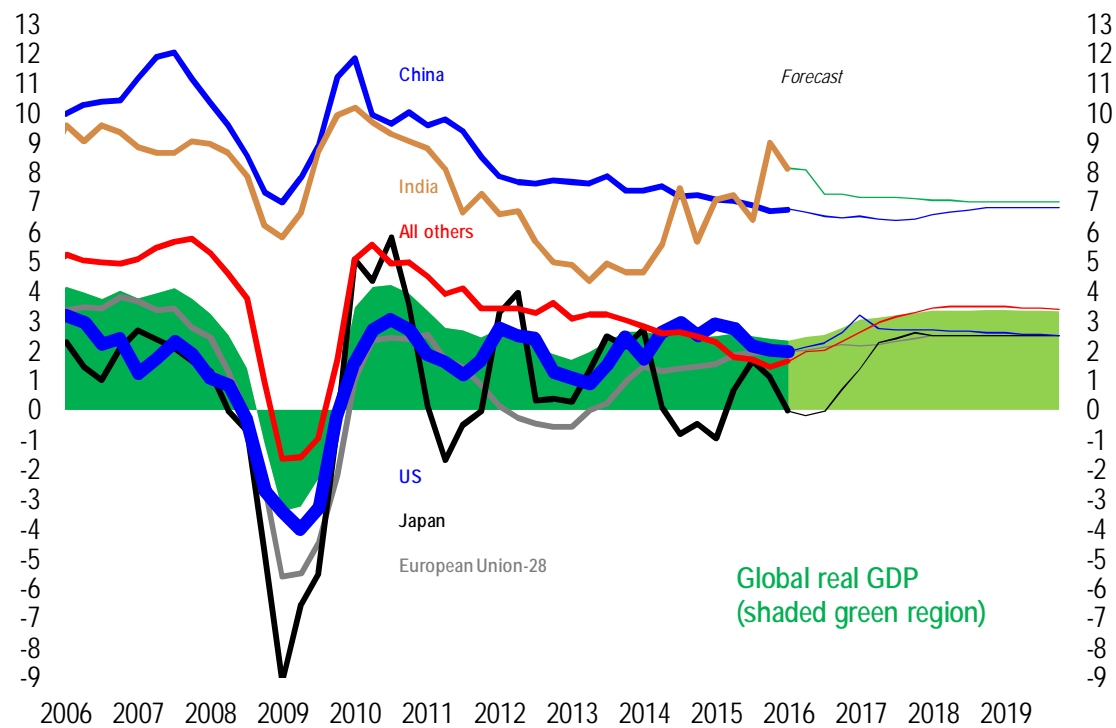
Applications for unemployment benefits (thousands, weekly)



Sources: U.S. Department of Labor. Updated through August 6, 2016.

# Brexit Worries Are a *Ceteris Paribus* Thing

Global real GDP (percent change from four quarters earlier)

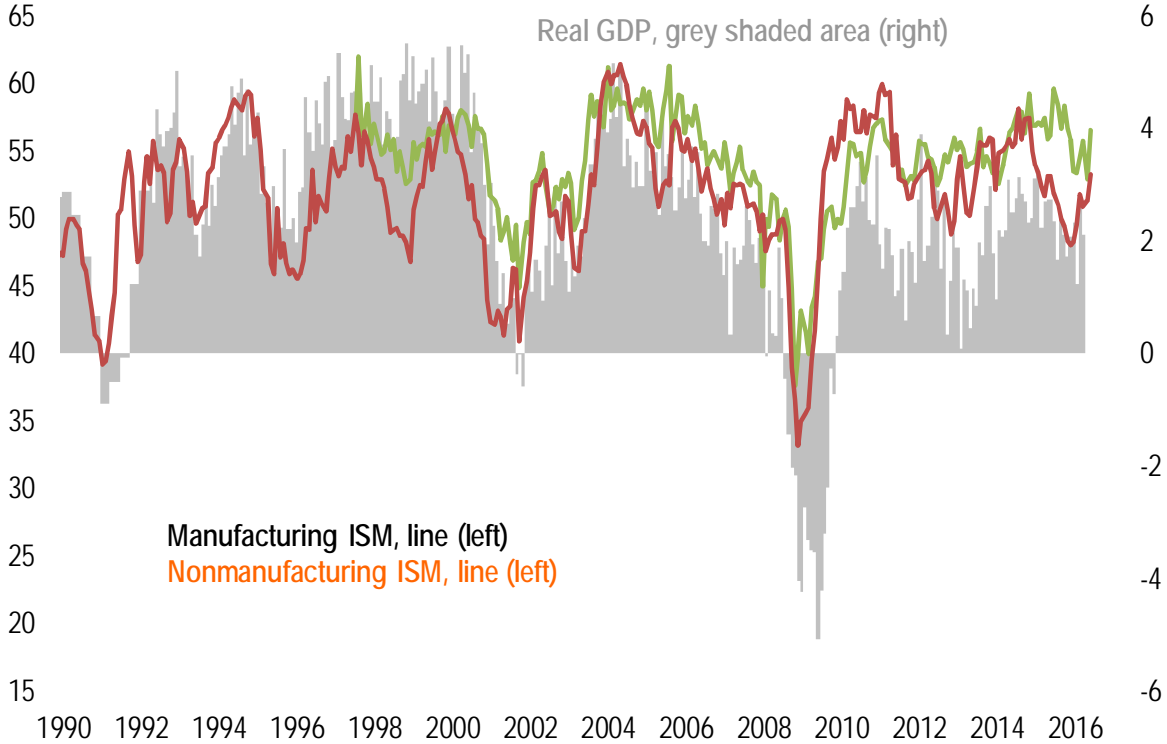


Sources: Haver Analytics; selected international statistical organizations; U.S. Department of Commerce; J.P. Morgan. Updated through 2016 Q1.

# Oil's Collapse Hurt Some ...

ISM indexes (50 = neutral)

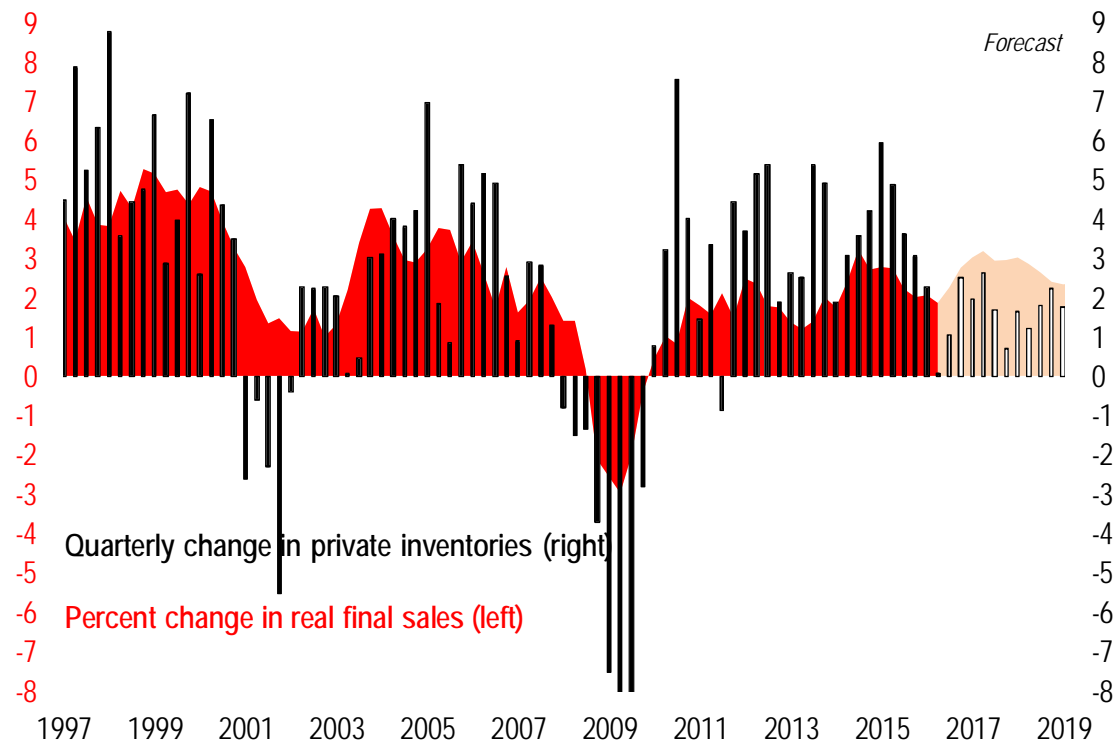
Real GDP (percent change from 12 months earlier)



Sources: Haver Analytics; U.S. Department of Commerce; Institute of Supply Management. Updated through June 2016 (ISM) and April 2016 (GDP).

# ... [and an Inventory Deceleration ...

Real nonfarm inventories (% ch ann rate vs prev qtr) Real final sales (% ch vs 4 qtr earlier)

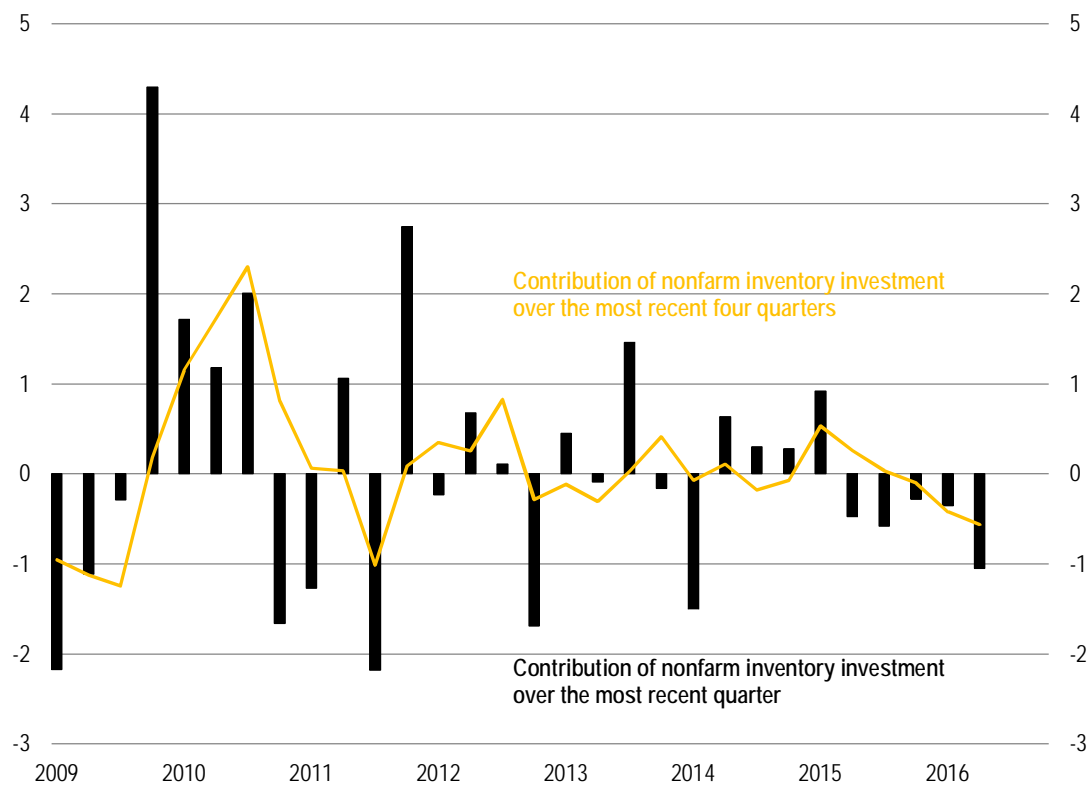


Sources: Haver Analytics; U.S. Department of Commerce. Updated through 2016 Q2.



# ... Amplified Final Demand Drags] ...

Contribution of real nonfarm inventory investment to real GDP (percentage points)

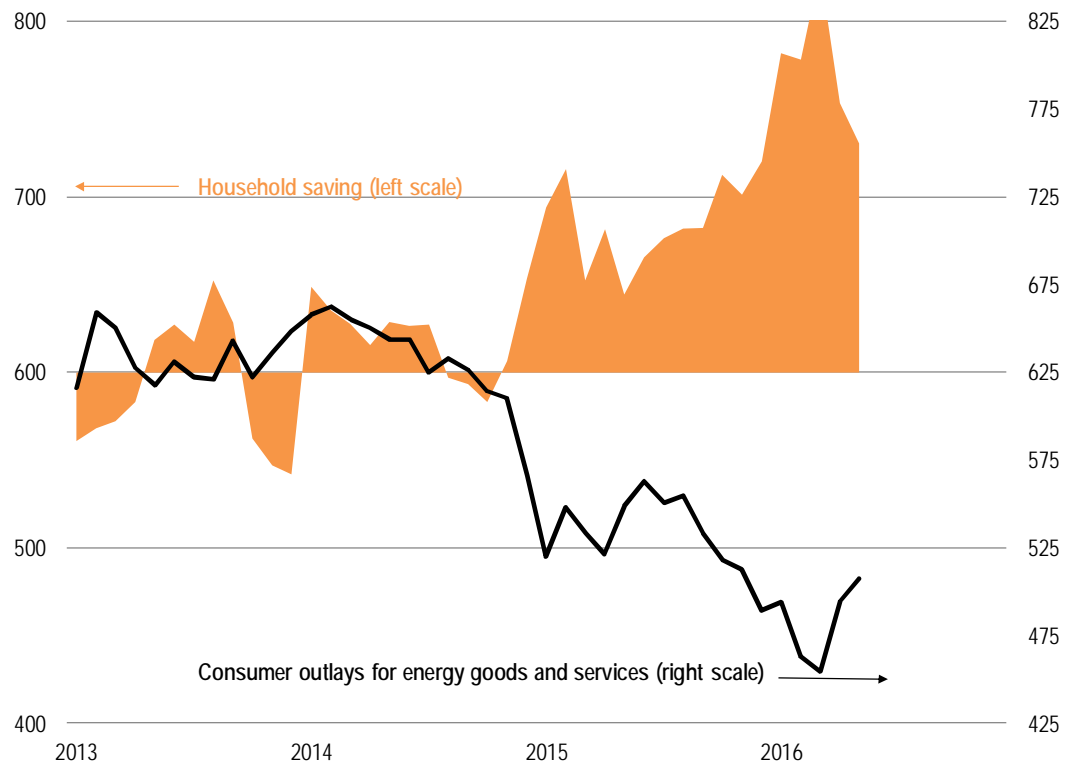


Sources: Haver Analytics; U.S. Department of Commerce. Updated through 2016 Q2.

# ... but Many More Benefit, Because ...

Saving (\$ billions, annualized)

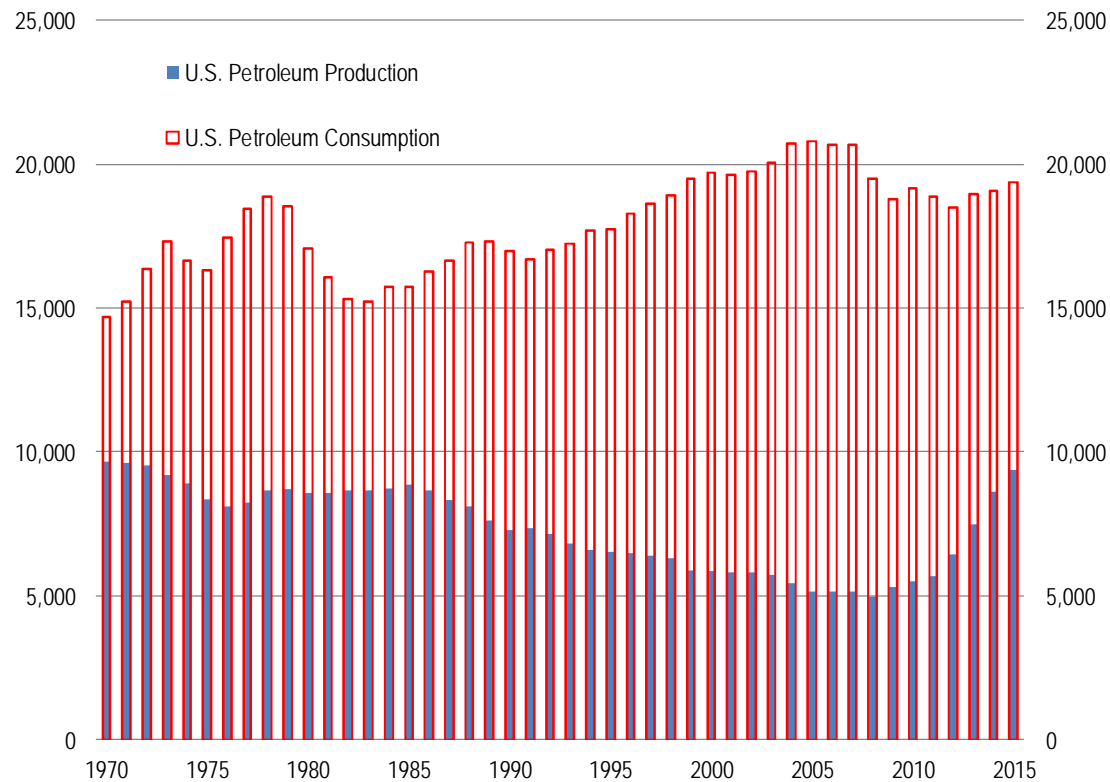
Energy outlays (\$ billions, annualized)



Sources: Haver Analytics; U.S. Department of Commerce. Updated through June 2016.

# ... We Use More Oil than We Produce

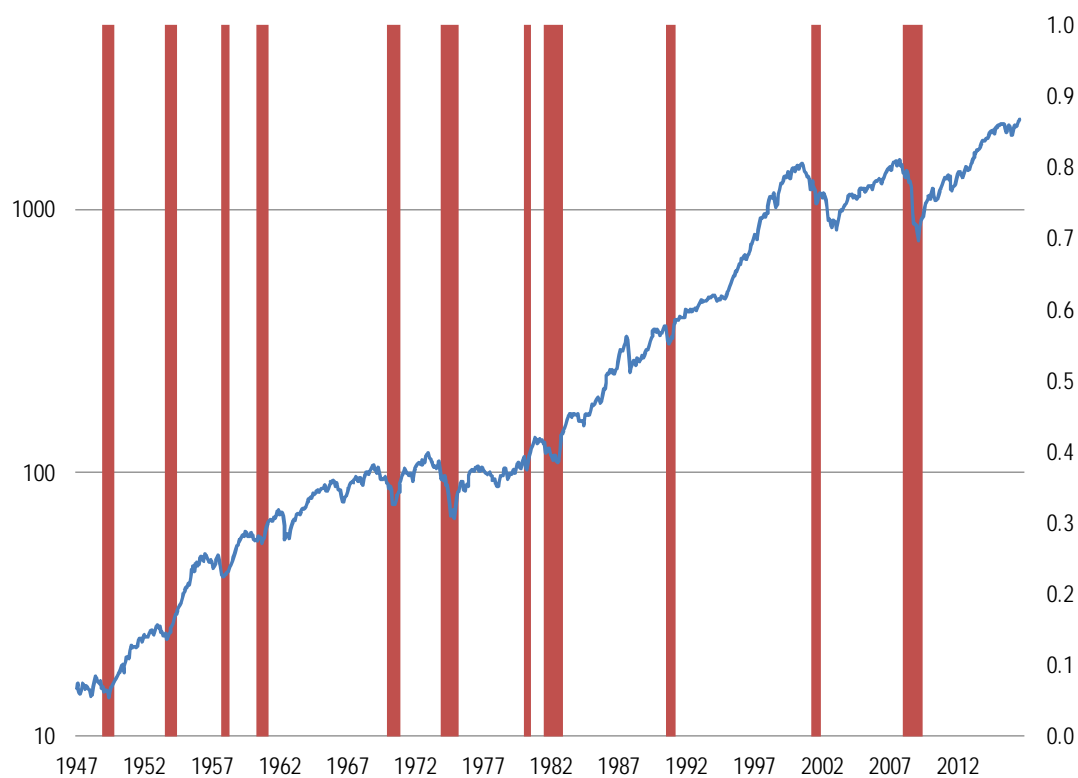
U.S. petroleum demand and supply (thousands of barrels daily)



Sources: Haver Analytics; Oil & Gas Journal. Updated through 2015.

# Not All Stock Hiccups Are About Recession

S&P 500 Index (1941 – 43 = 10, log<sub>10</sub> scale)



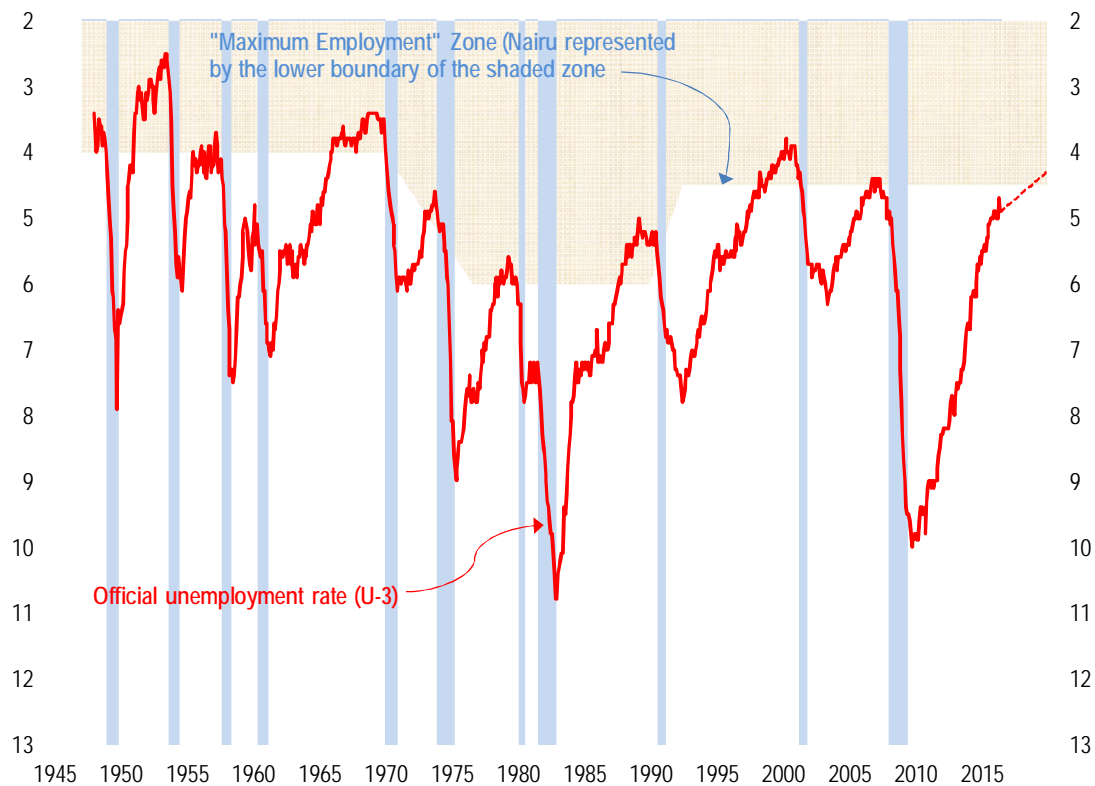
Sources: Haver Analytics; Dow Jones. Updated through August 10, 2016.

# Recoveries Aren't About the Clock ...

Business Cycle Bottom		Business Cycle Peak		Duration of Expansion		Duration of the Following Downturn	
(Month)	(Year)	(Month)	(Year)	(Months)	(Years)	(Months)	(Years)
December	1854	June	1857	30	2.5	18	
December	1858	October	1860	22	1.8	8	
June	1861	April	1865	46	3.8	32	
December	1867	June	1869	18	1.5	18	
December	1870	October	1873	34	2.8	65	
March	1879	March	1882	36	3.0	38	
May	1885	March	1887	22	1.8	13	
April	1888	July	1890	27	2.3	10	
May	1891	January	1893	20	1.7	17	
June	1894	December	1895	18	1.5	6	
June	1897	June	1899	24	2.0	18	
December	1900	September	1902	21	1.8	23	
August	1904	May	1907	33	2.8	13	
June	1908	January	1910	19	1.6	24	
January	1912	January	1913	12	1.0	23	
December	1914	August	1918	44	3.7	7	
March	1919	January	1920	10	0.8	18	
July	1921	May	1923	22	1.8	14	
July	1924	October	1926	27	2.3	13	
November	1927	August	1929	21	1.8	43	
March	1933	May	1937	50	4.2	13	
June	1938	February	1945	80	6.7	8	
October	1945	November	1948	37	3.1	11	
October	1949	July	1953	45	3.8	10	
May	1954	August	1957	39	3.3	8	
April	1958	April	1960	24	2.0	10	
February	1961	December	1969	106	8.8	11	
November	1970	November	1973	36	3.0	16	
March	1975	January	1980	58	4.8	6	
July	1980	July	1981	12	1.0	16	
November	1982	July	1990	92	7.7	8	
March	1991	March	2001	120	10.0	8	
November	2001	December	2007	73	6.1	18	
June	2009	August	2016	85	7.1		

# ... They're About Getting to the 9<sup>th</sup> Inning

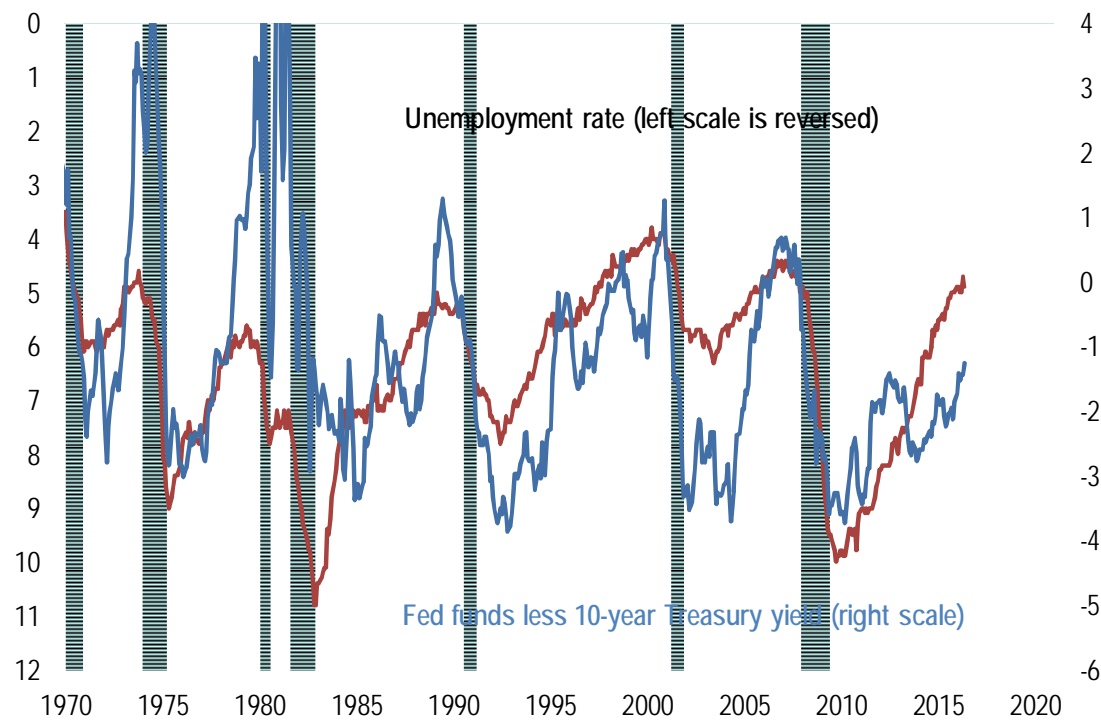
## Unemployment (% of the labor force)



Sources: Haver Analytics; U.S. Department of Commerce; U.S. Department of Labor. Updated through July 2016.

# Fed Policy Is Not a 9<sup>th</sup> Inning Posture

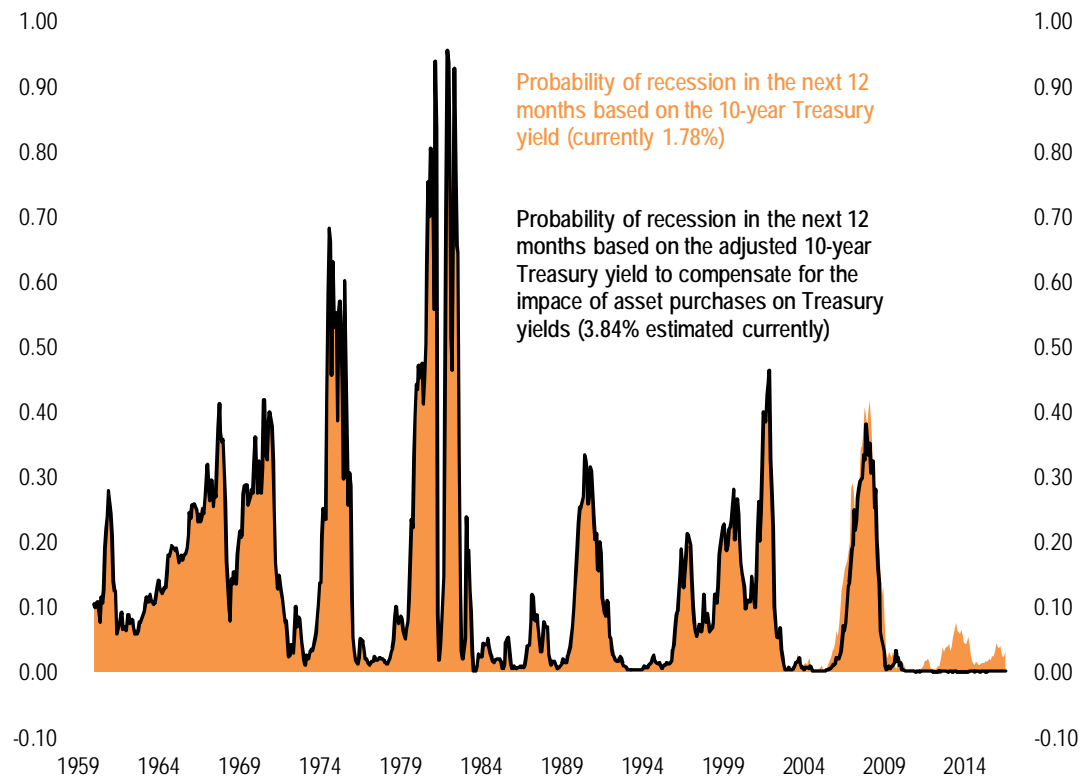
Unemployment rate (% of the labor force) Fed funds rate less 10-year Tr yield (pct pts)



Sources: Haver Analytics; Federal Reserve Board; U.S. Department of Labor. Updated through August 12, 2016 (yield curve) and July 2016 (unemployment).

# 'Just Say No' to the Recession Idea

Probability of recession in the next 12 months based on the yield curve



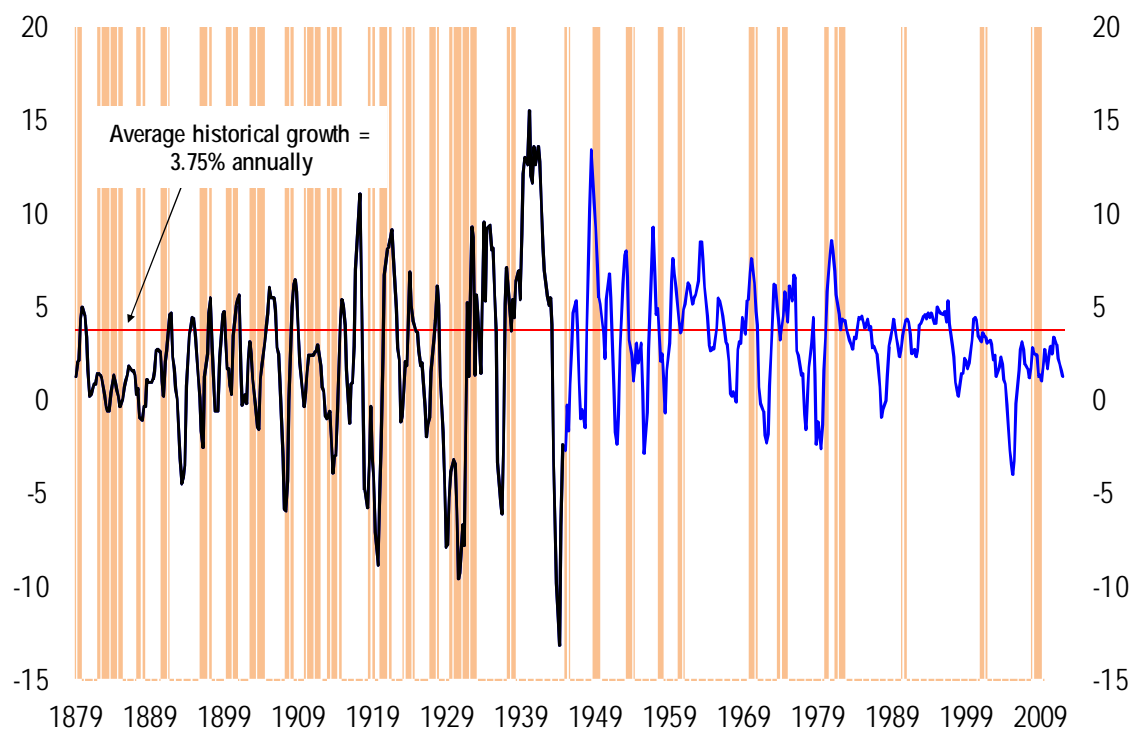
Sources: Haver Analytics; Federal Reserve Board. Updated through August 12, 2016.



A RECOVERY BY ANY OTHER NAME WOULD  
SMELL AS SWEET

# If “GDP” Is Slow ... Nothing Else Is

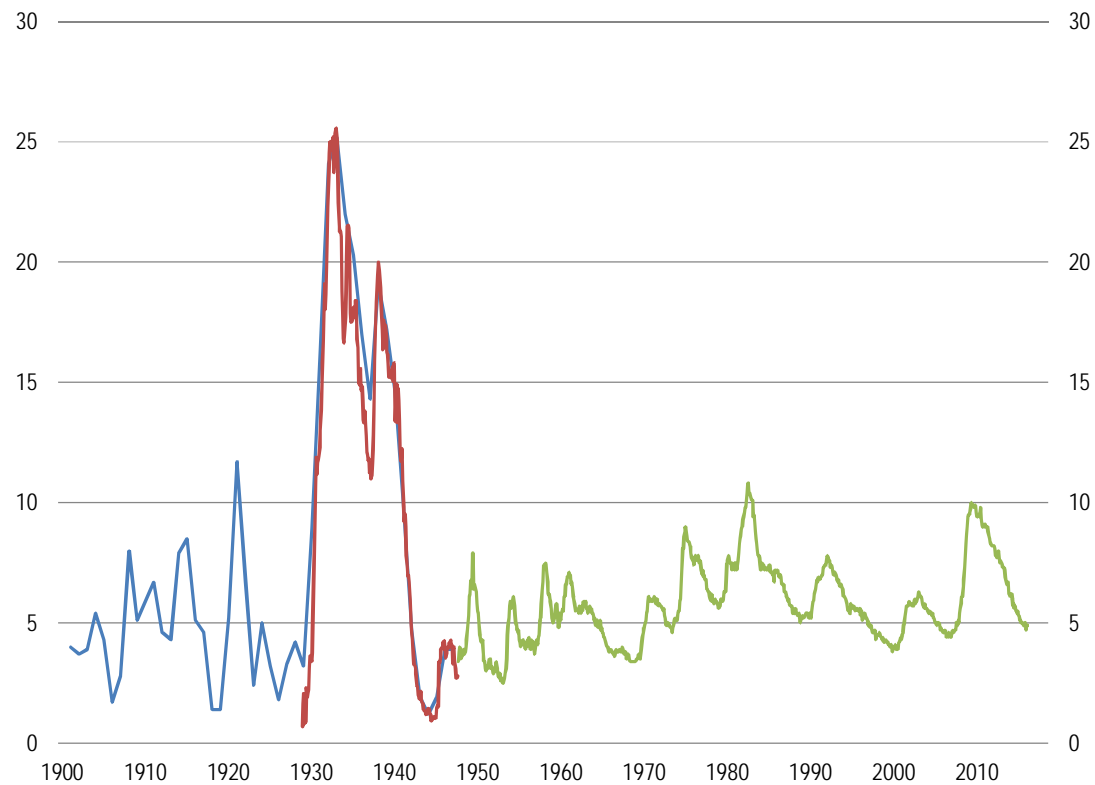
Real U.S. GDP growth (percent change from four quarters earlier)



Sources: Haver Analytics; U.S. Department of Commerce; NBER Macroeconomic database. Updated through 2016 Q2.

# Nothing that Resembles ‘Secular Stagnation’

Unemployment (percent of the labor force)



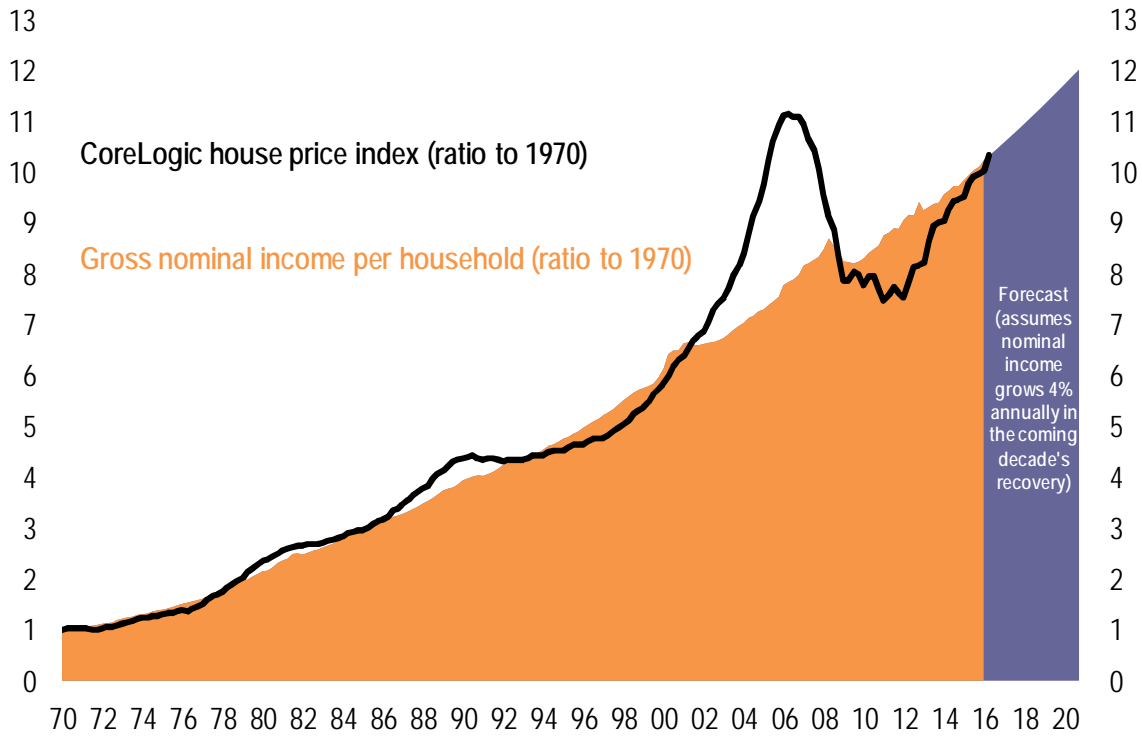
Sources: Haver Analytics; U.S. Department of Labor. Updated through July 2016.

# Reality Check: Recall What “We” Thought

- House prices fell by 1/3 and left \$3 trillion of mortgages underwater.
- “We” thought consumers would be forced to retrench, reversing the decades of a rising consumer spending share of GDP.
- “We” thought recovery would take decades, like it did in Japan after bubbles burst.
- “We” wrote obituaries for securitized finance, an important innovation that has brought the economy many benefits.
- “We” blamed everything and everyone (repeal of Glass-Steagall, Congress, regulators, rating agencies, appraisers, Wall Street, too big to fail, mortgage brokers), everyone but those buying houses or MBS for little spread. We’ve never seen speculation before?
- “We” thought our children were inheriting an economy impaled by deficits and massive debt obligations.

# House Prices Have Recovered ...

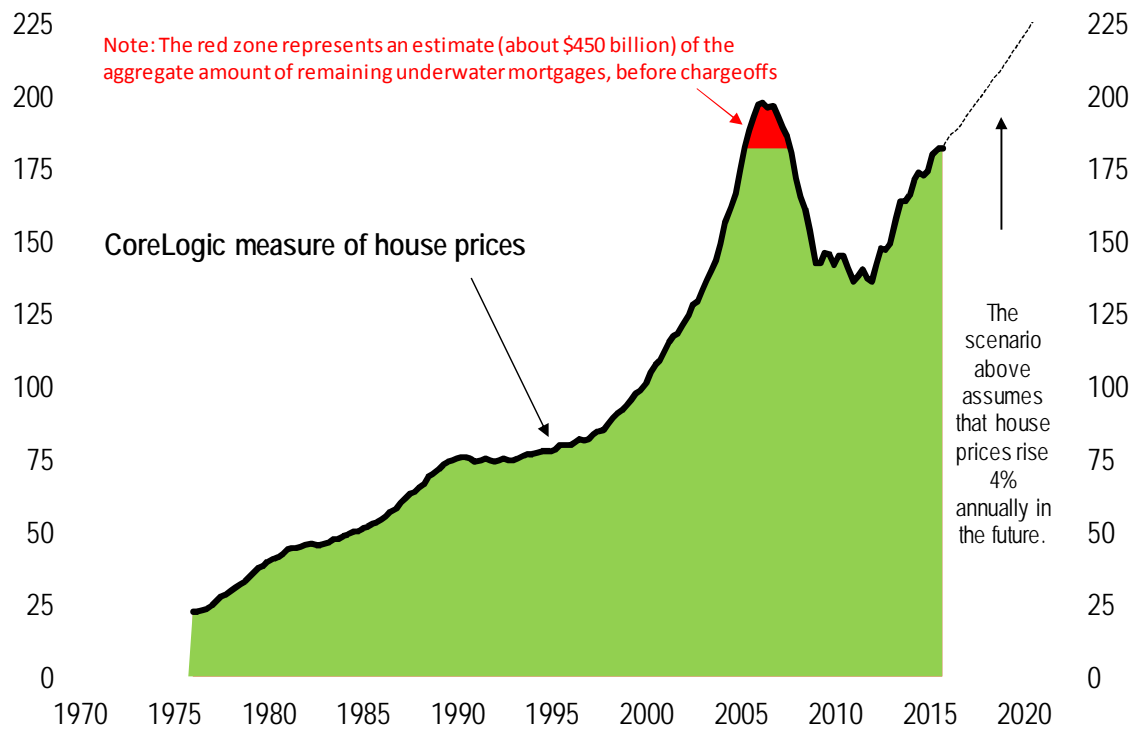
Household income and house prices (ratio to 1970)



Sources: U.S. Dep. of Commerce; CoreLogic. Updated through 2016 Q1.

# ... Erasing the “Underwater” Problem ...

U.S. house prices (January 2000 = 100)

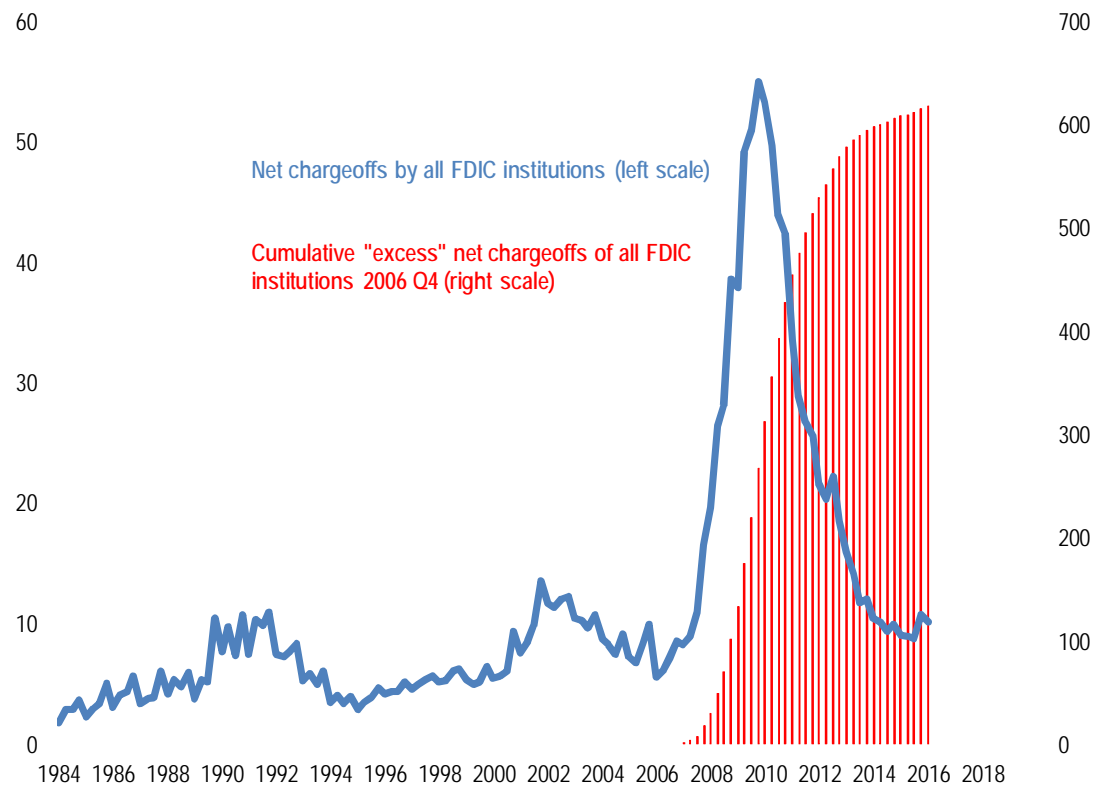


Sources: Haver Analytics; CoreLogic. Updated through 2016 Q1.

# ... With the Help of Write-Offs

Loan charge-offs (\$ billions quarterly)

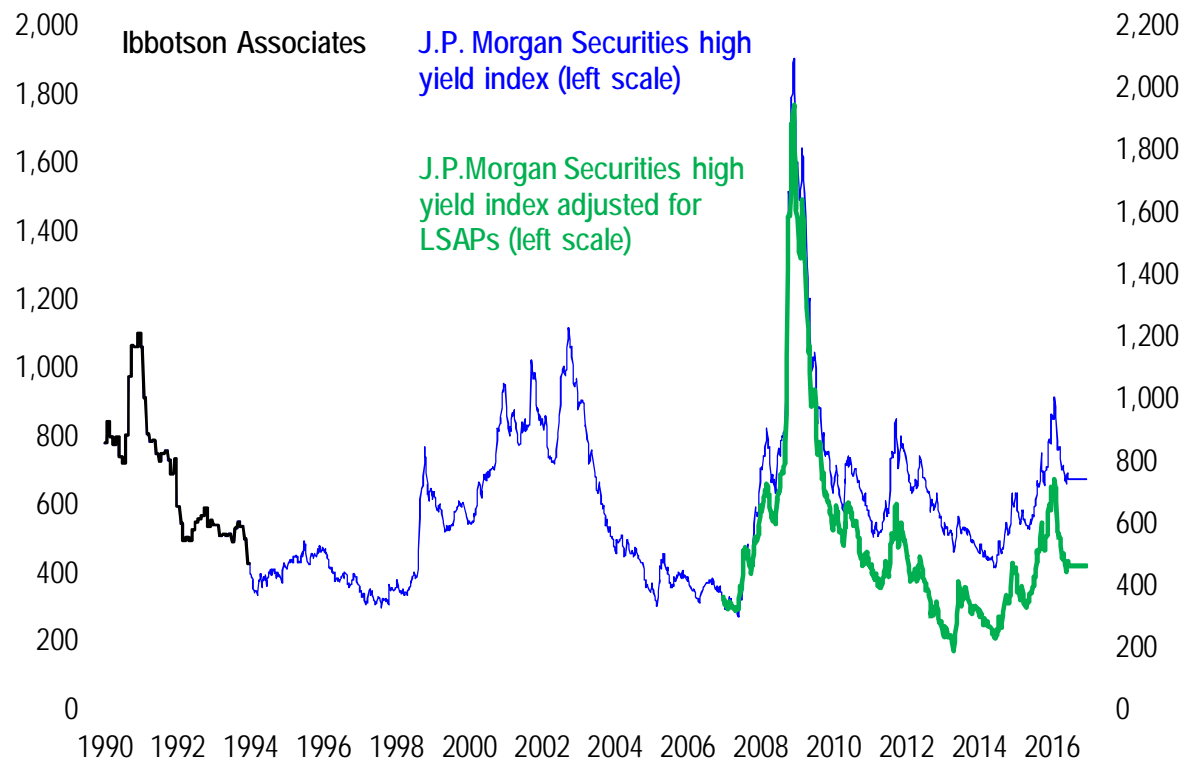
Cumulative charge-offs since 2006 (\$ billions)



Source: Federal Deposit Insurance Corporation. Updated through 2016 Q1.

# The Credit Crunch Was a Momentary Freeze

High yield spread (noninvestment grade debt yield less 10-year Treasury yield)



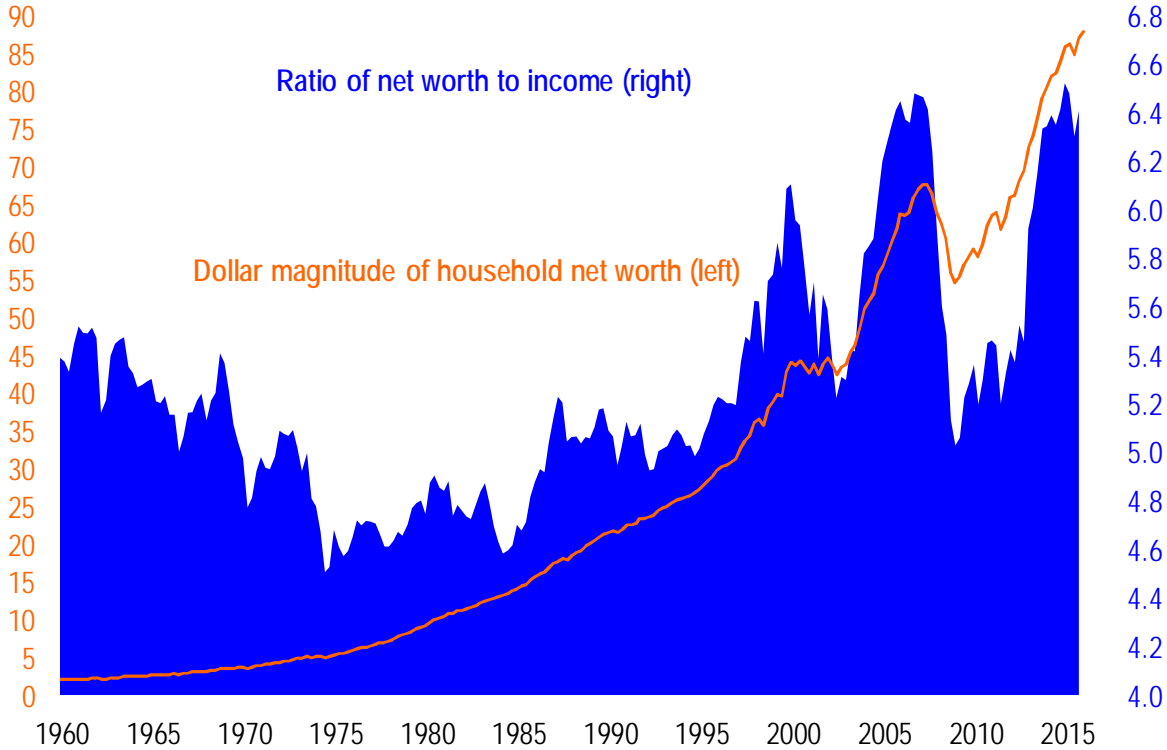
Sources: Haver Analytics; Federal Reserve Board; J.P. Morgan. Updated through December 11, 2015.



# Balance Sheets Are Strong

Household net worth (trillions of dollars)

(ratio to disposable income)

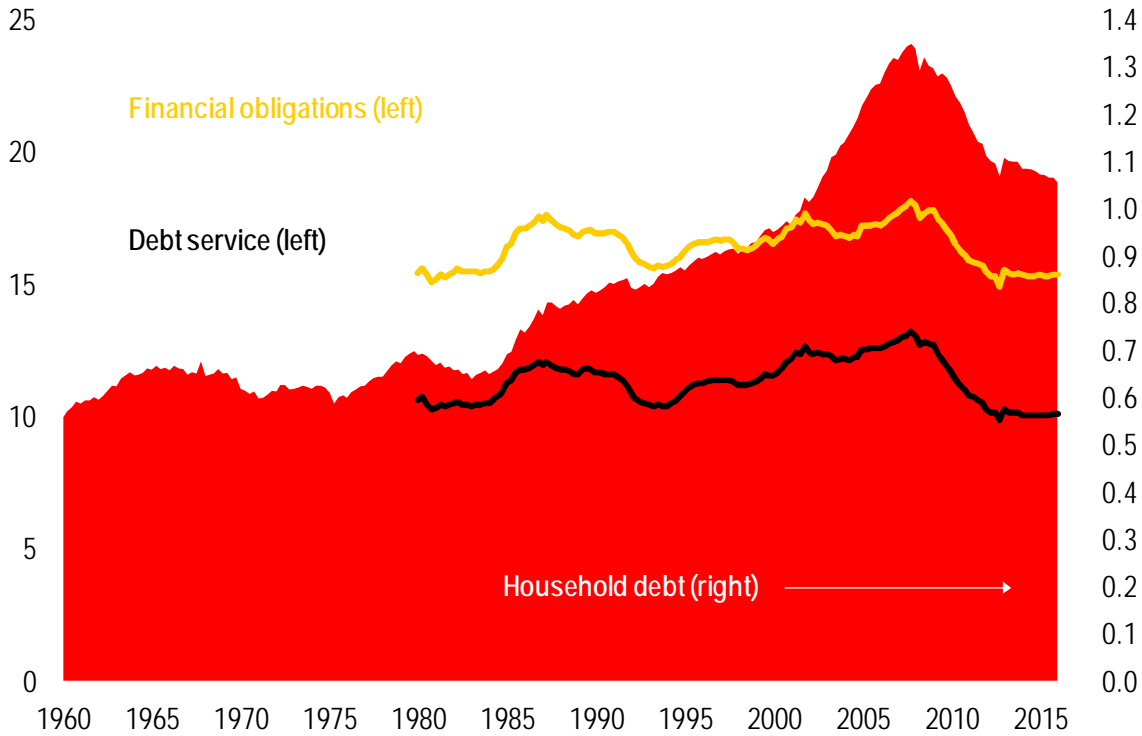


Sources: Haver Analytics; Federal Reserve Board; U.S. Department of Commerce. Updated through 2016 Q1.

# Household Debt Service Is Historically Low

Debt service burden (percent of income)

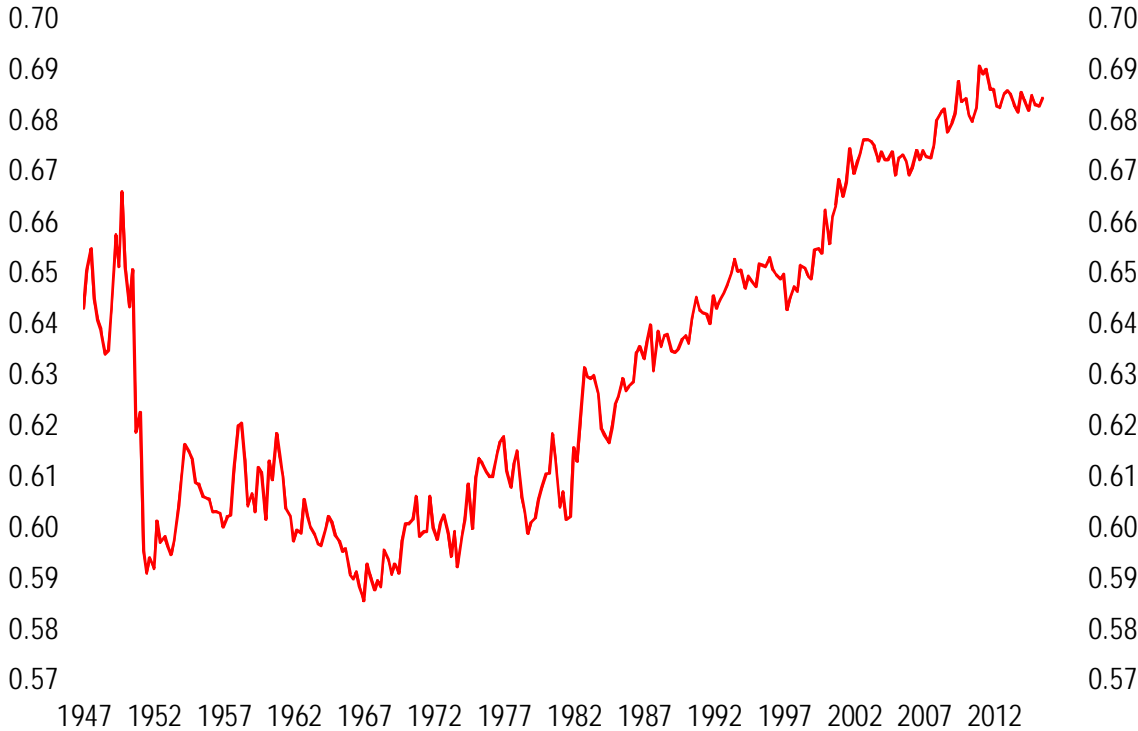
Debt burden (ratio to disposable income)



Sources: Haver Analytics; Federal Reserve Board. Updated through 2016 Q1.

# Consumers Have Held High Ground

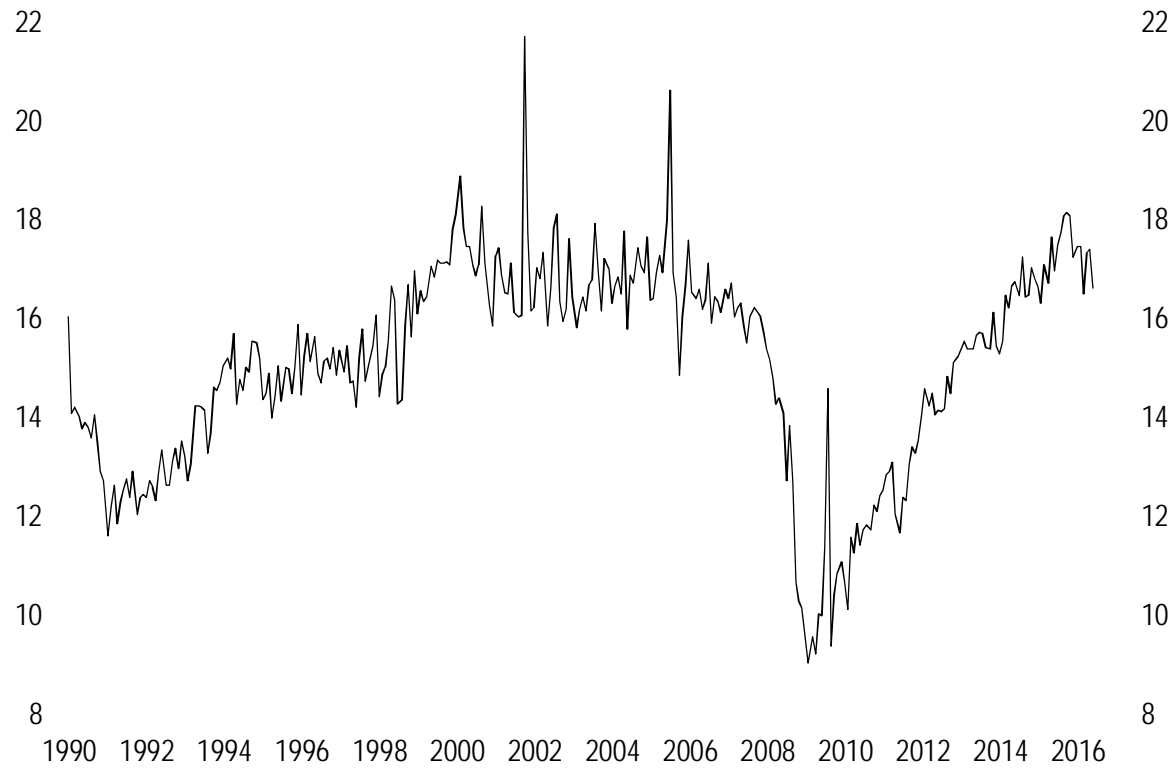
U.S. nominal consumer spending (ratio to nominal GDP)



Sources: Haver Analytics; U.S. Department of Commerce. Updated through 2016 Q1.

# The Car Industry Has Never Seen Better

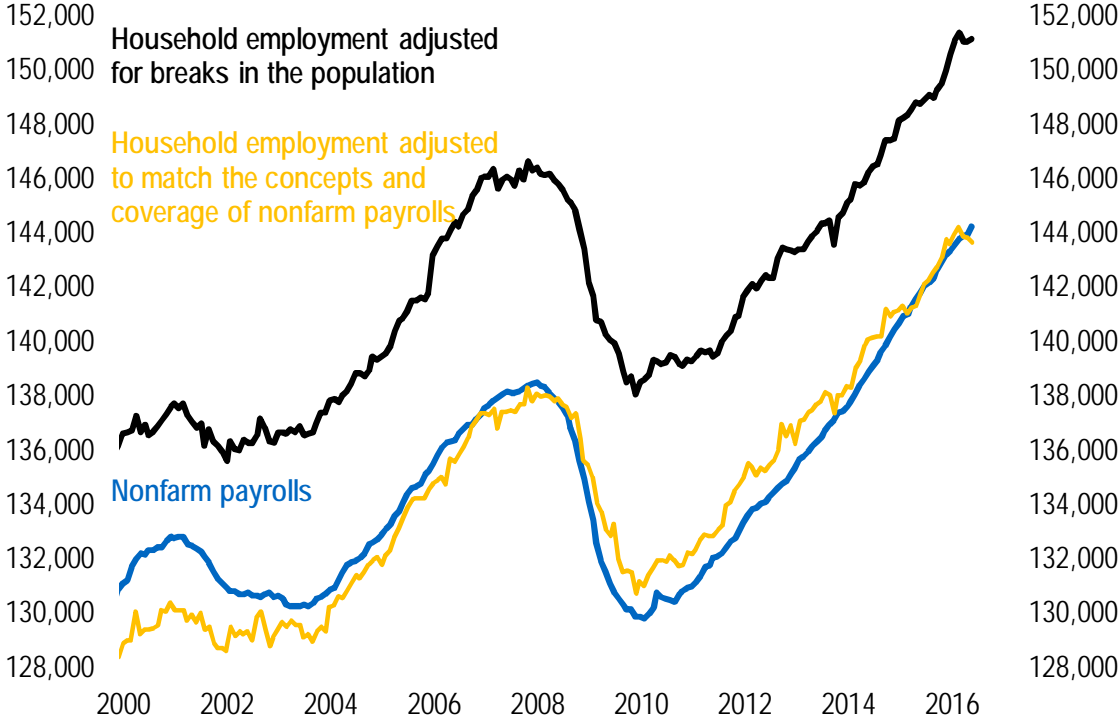
Light vehicle sales (millions at an annual rate)



Sources: Haver Analytics; U.S. Department of Commerce. Updated through June 2016.

# Employment Is Back ...

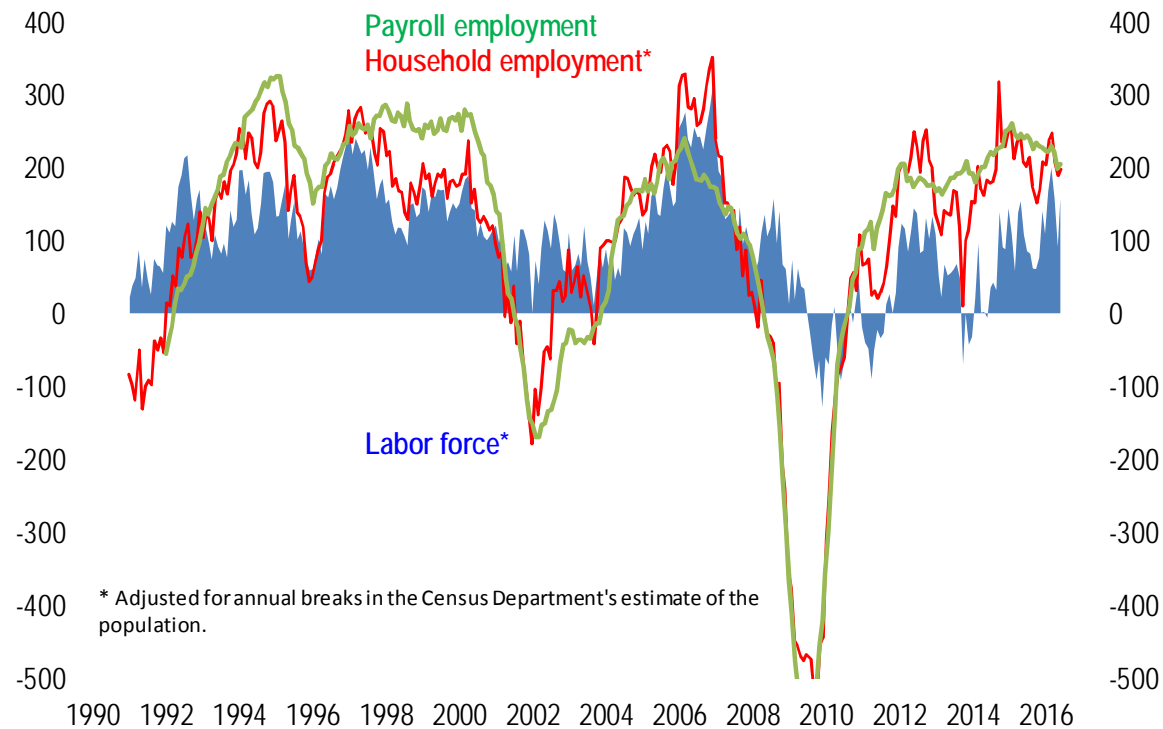
Selected employment measures (thousands)



Sources: Haver Analytics; U.S. Department of Labor. Updated through June 2016.

# ... Big Time Relative to Labor Supply ...

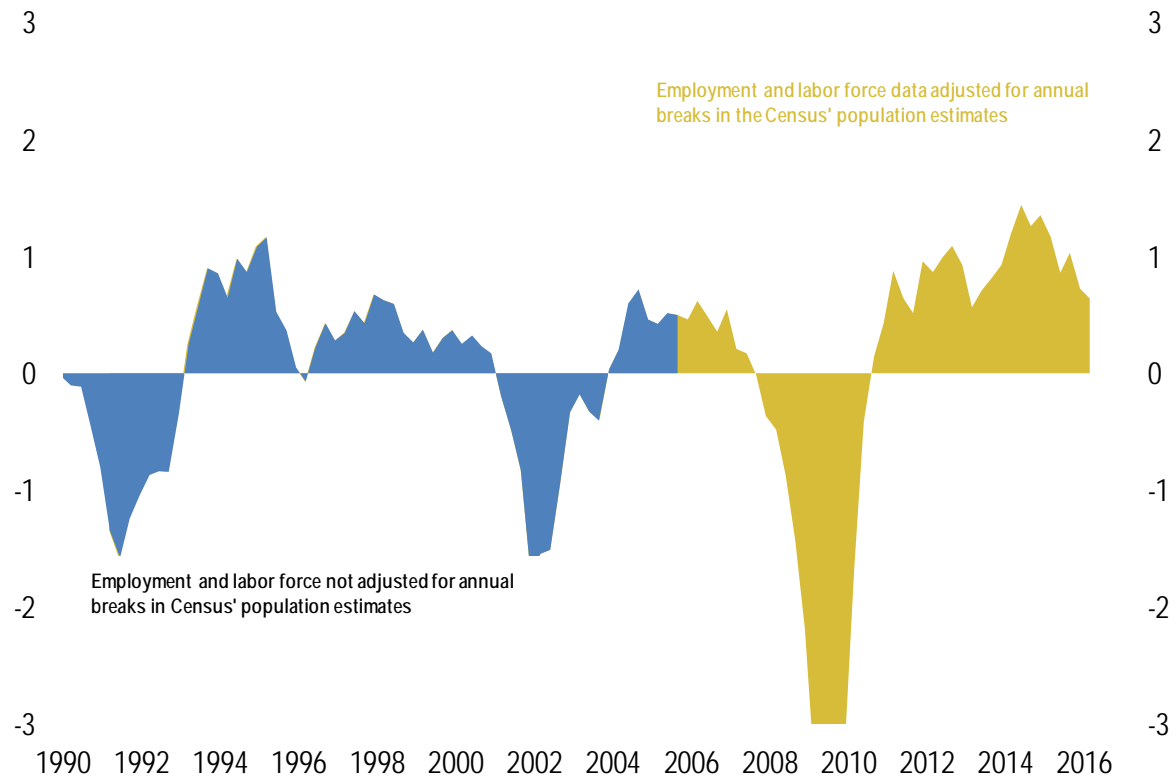
Employment and the labor force (percent change from 12 months earlier)



Sources: Haver Analytics; U.S. Department of Labor. Updated through June 2016.

# ... and Stronger than Most Recoveries

Employment growth less labor force growth<sup>1</sup> (percentage points)



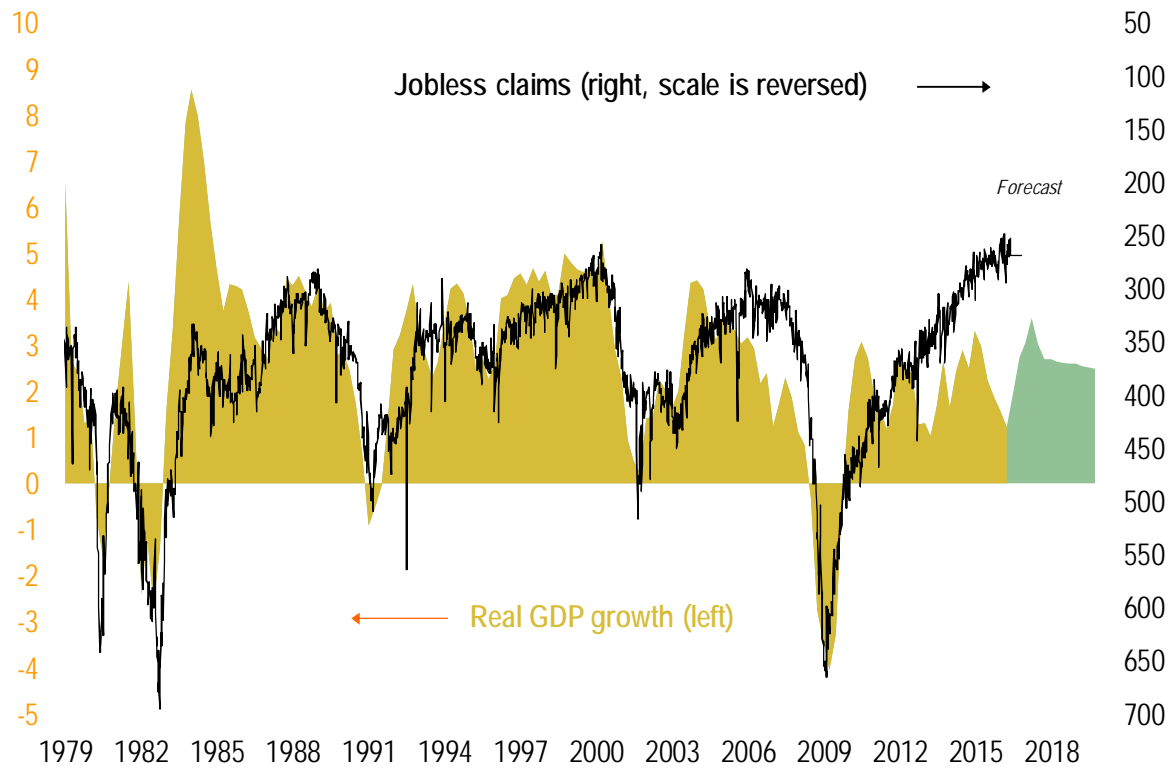
<sup>1</sup> Percent change from four quarters earlier.

Sources: Haver Analytics; U.S. Department of Labor. Updated through June 2016.

# The Indicator that Knows Best ...

Real GDP (% change from four quarters earlier)

Jobless claims (thousands weekly)



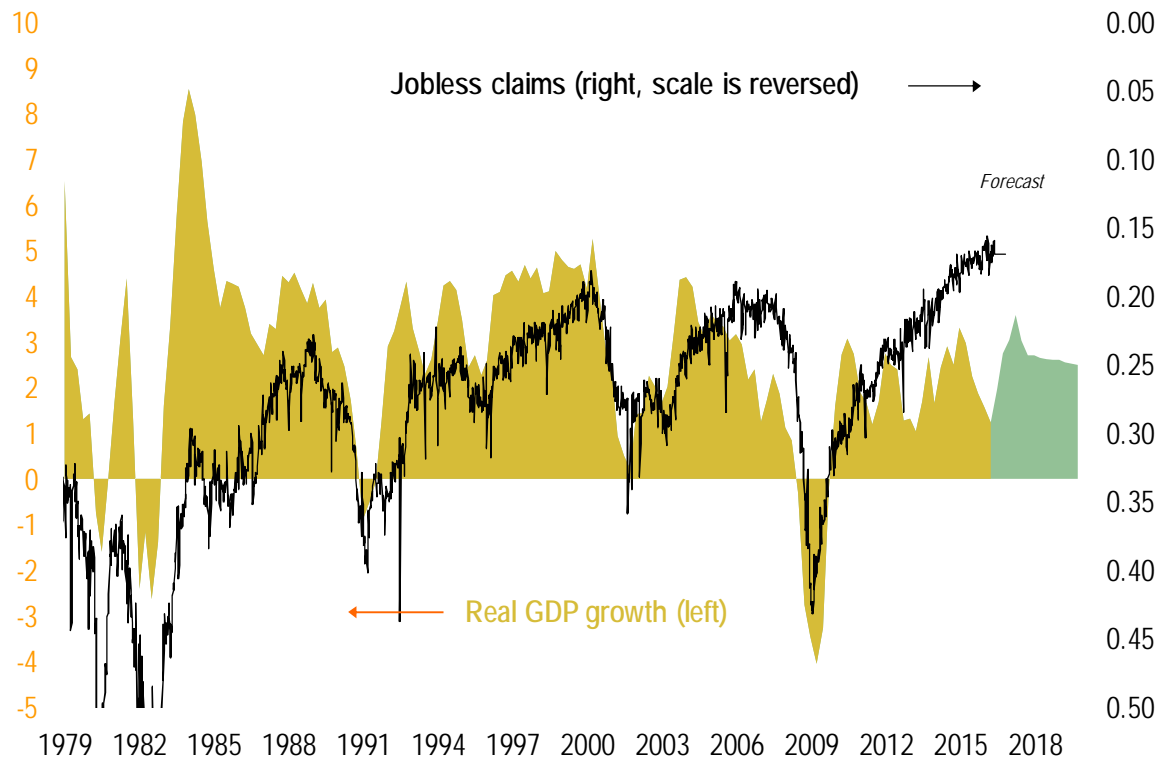
Sources: U.S. Deps. of Labor and Com. Updated through 2016 Q2 (GDP) and August 6, 2016 (jobless claims).



# ... Is At All-time Lows ...

Real GDP (% change from four quarters earlier)

Jobless claims (% of the labor force)

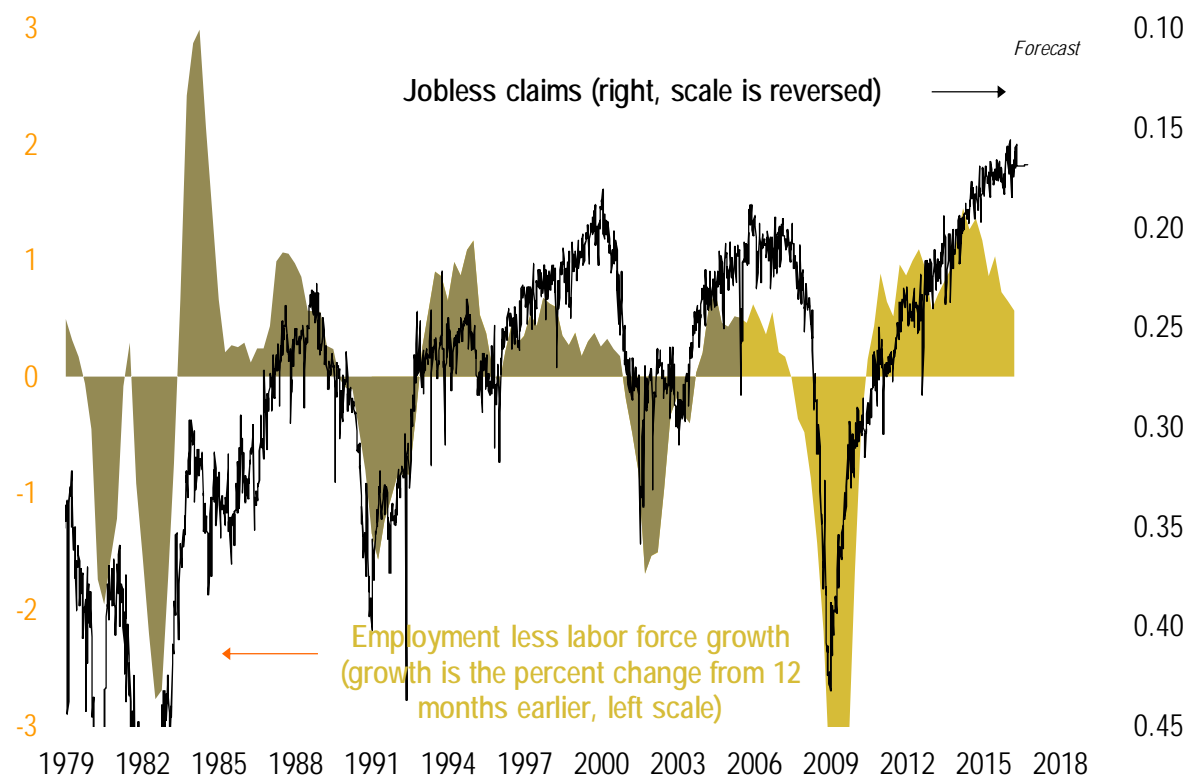


Sources: U.S. Deps. of Labor and Com. Updated through 2016 Q2 (GDP) and August 6, 2016 (jobless claims).

# ... Signaling Strong “Relative” Growth

Employment less labor force growth (pct pts)

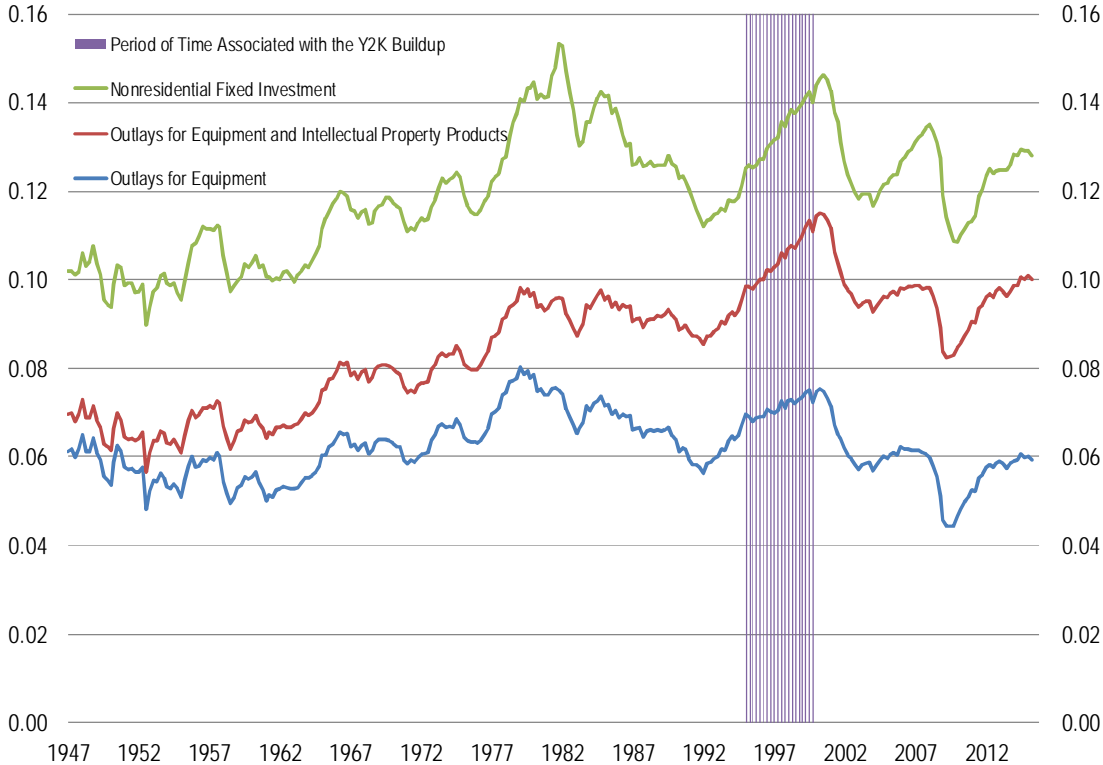
Jobless claims (% of the labor force)



Sources: U.S. Department of Labor. Updated through July 2016 Q2 (employment) and August 6, 2016 (jobless claims).

# Cap Ex Is Slow Only in Absolute Terms

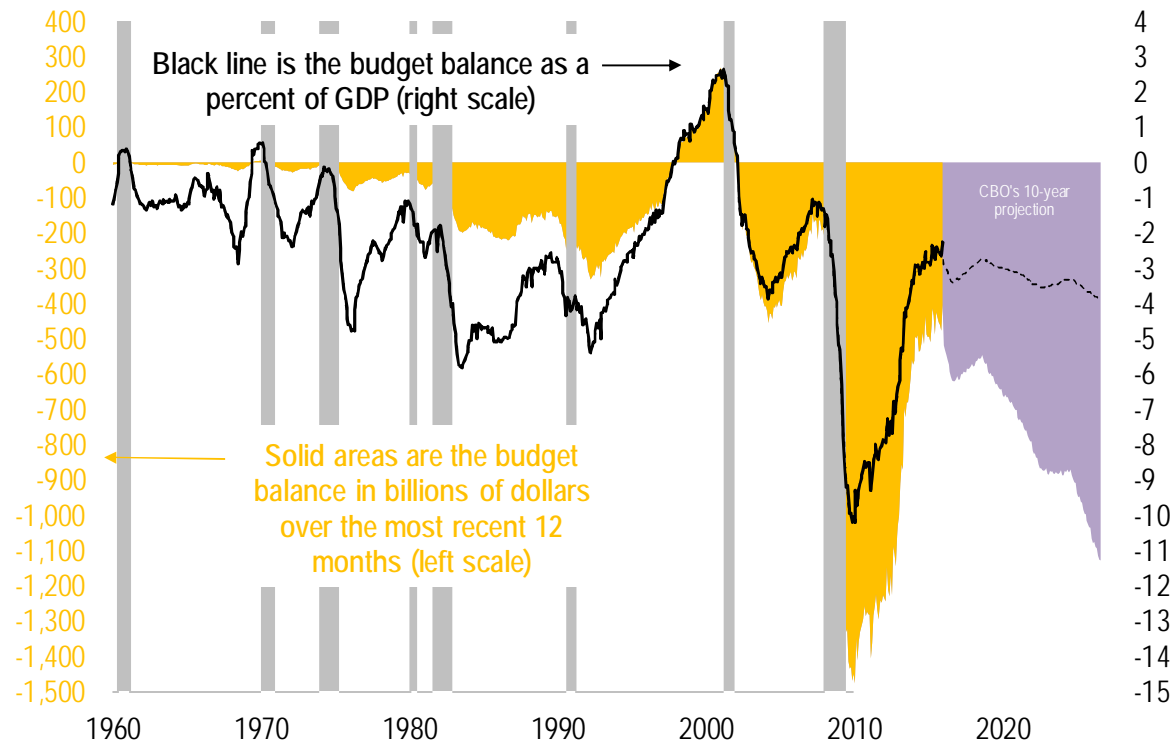
Business investment ratios (percentage of nominal GDP)



Sources: Haver Analytics; NBER-designated recession bars; U.S. Department of Commerce. Updated through 2015 Q2.

# The Deficit is Back to “Sustainable” for Now

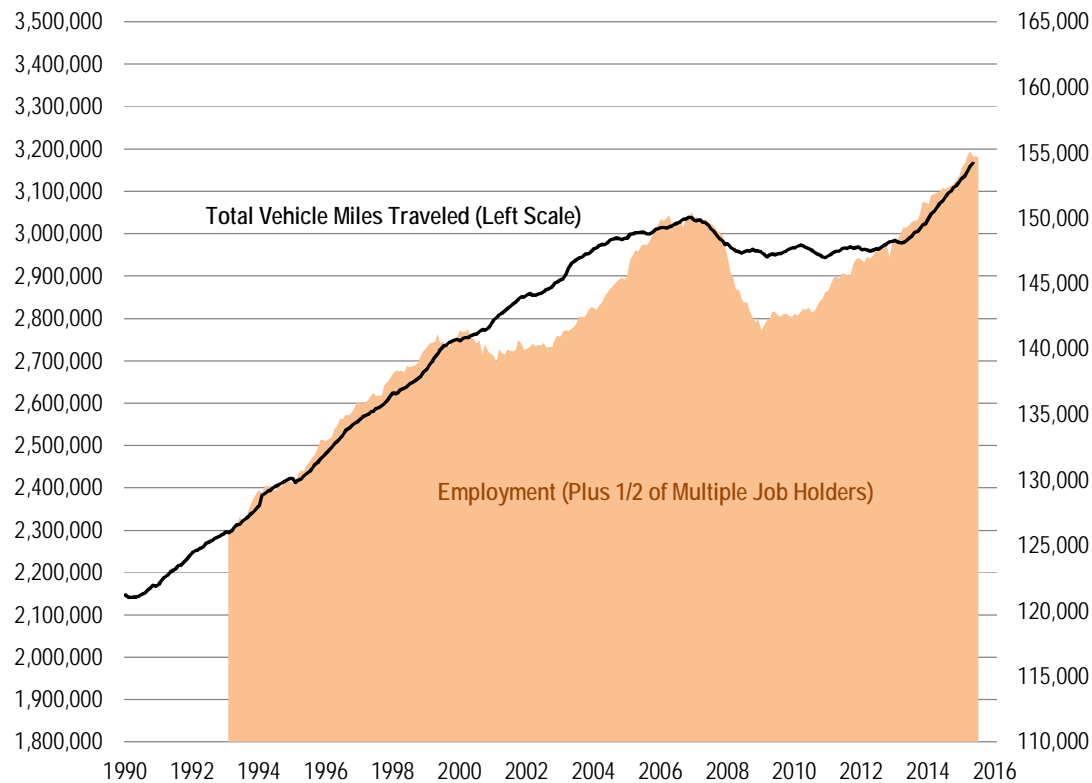
The federal deficit (billions of dollars over the most recent 12 months) (percent of nominal GDP)



Sources: Haver Analytics; U.S. Department of Commerce; CBO. Updated through January 2016.

# The Roads Are Jammed

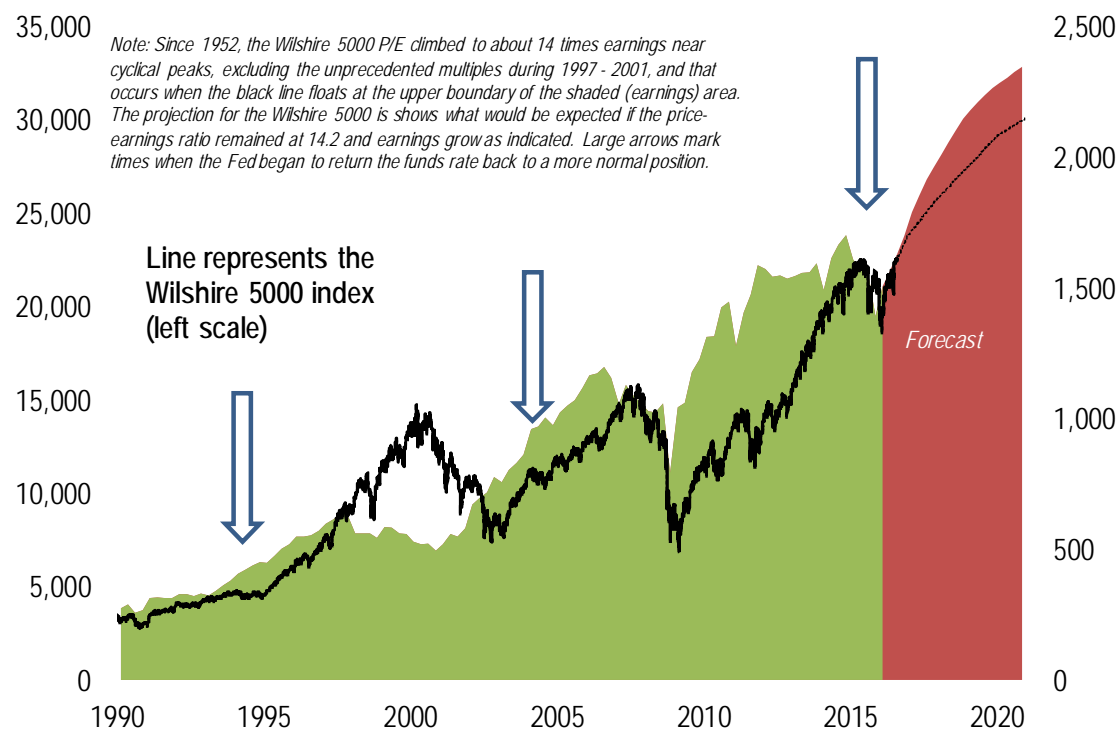
Total miles traveled in urban areas (millions of miles)



Source: Haver Analytics; Federal Highway Administration. Updated through April 2016 (miles traveled) and June 2016 (employment).

# “Secular Stagnation” Is For Politics ...

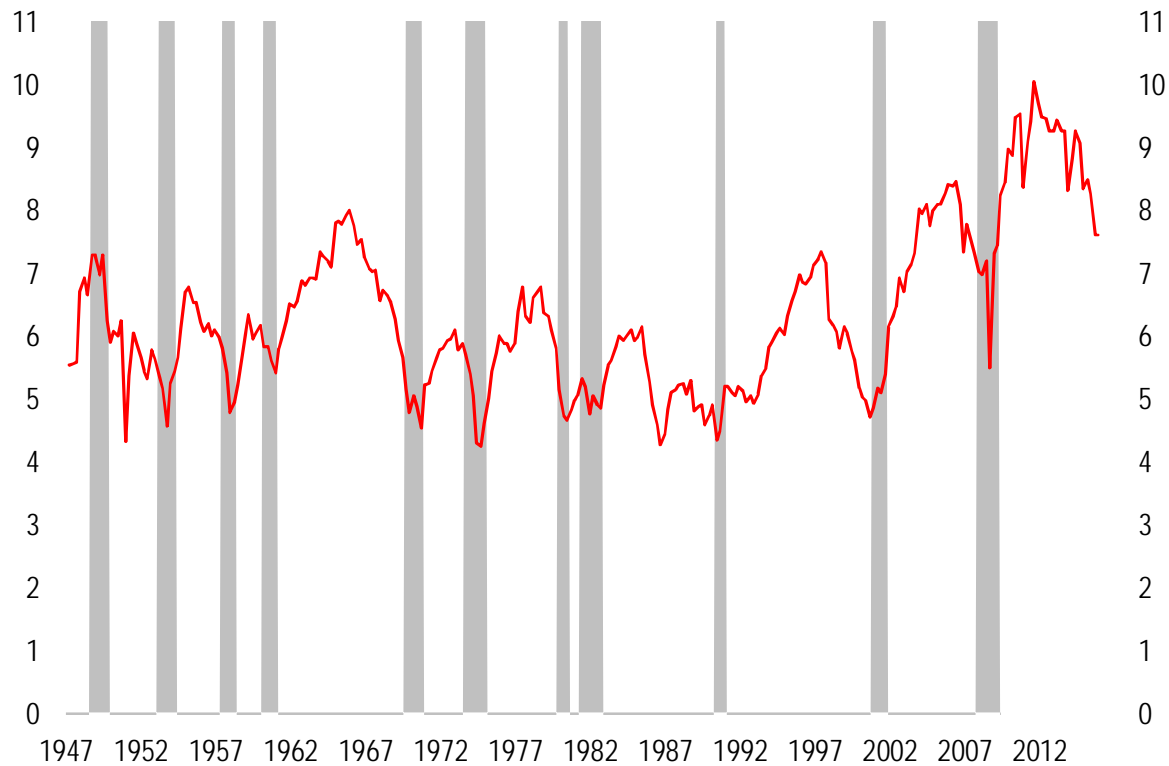
Wilshire 5000 (December 31, 1970 = 830.27)      After-tax GDP profits (billions of dollars)



Sources: Haver Analytics; US Department of Commerce; Dow Jones. Updated through 2016 Q1 (profits) and August 12, 2016 (stocks).

# ... Not the Market's Focus ...

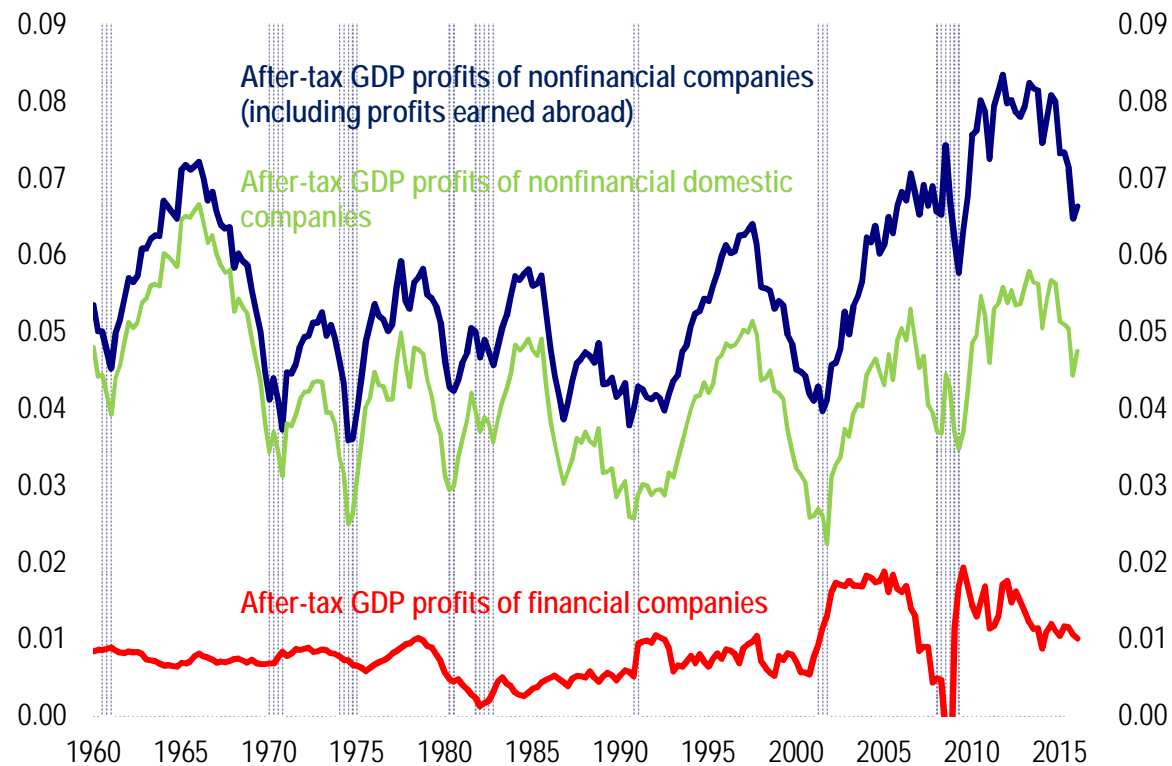
After-tax GDP profits of all U.S. businesses (percent of nominal Gross Domestic Income)



Sources: NBER-designated recession bars; U.S. Department of Commerce. Updated through 2016 Q1.

# ... Which Looks to Profits ...

After-tax GDP profits of all U.S. businesses (percent of nominal Gross Domestic Income)

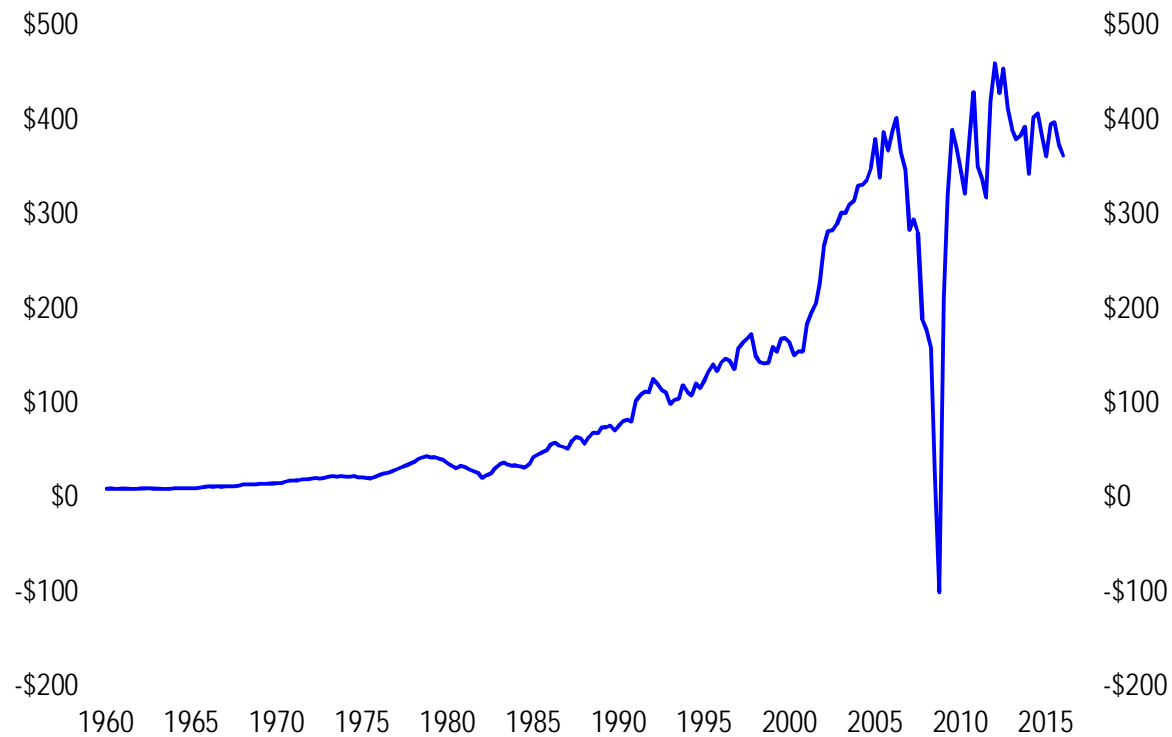


Sources: NBER-designated recession bars; U.S. Department of Commerce. Updated through 2016 Q1.



# ... Solid, Even in the Financial Sector ...

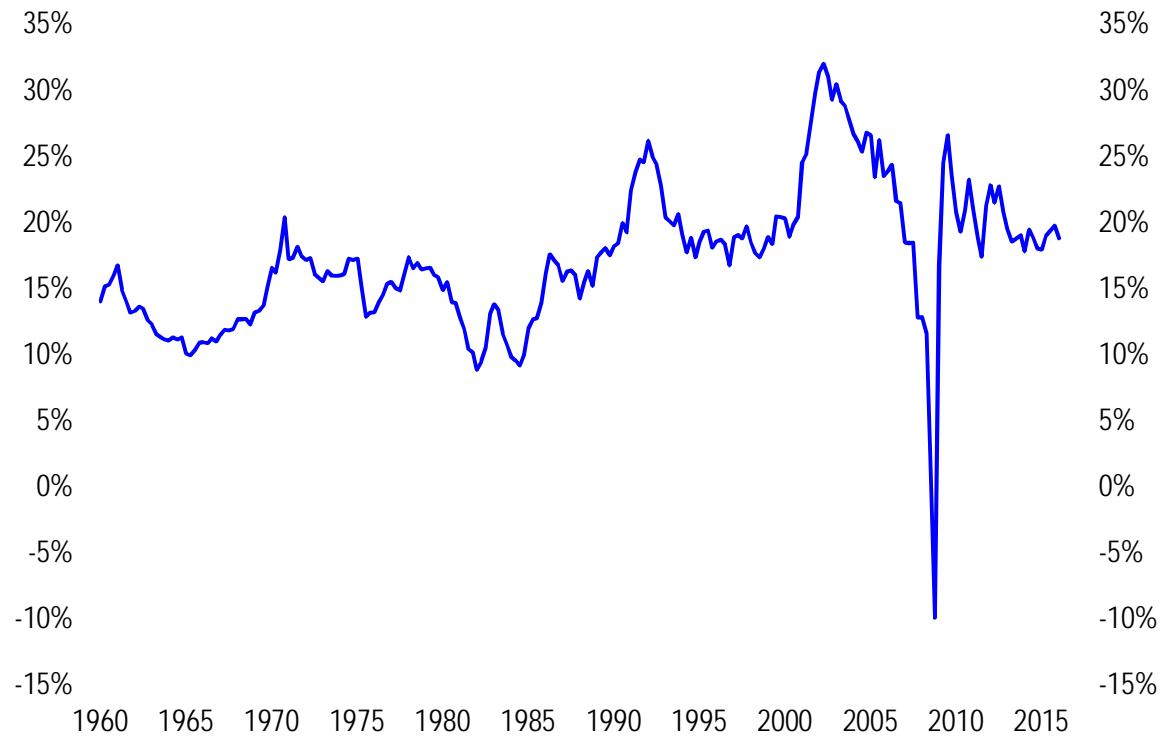
After-tax GDP profits of the financial sector (billions of dollars)



Sources: Haver Analytics; U.S. Dep. of Commerce. Updated through 2016 Q1.

# ... Relative to Others ...

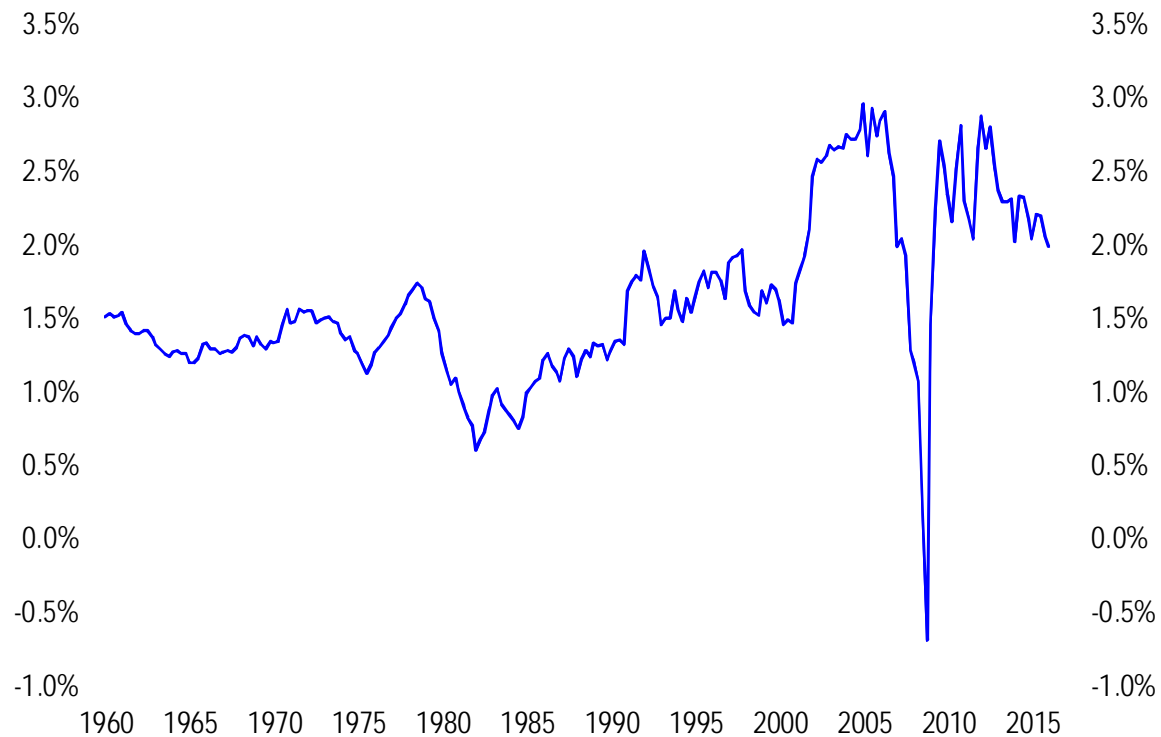
After-tax GDP profits of the financial sector (percent of all profits)



Sources: Haver Analytics; U.S. Dep. of Commerce. Updated through 2016 Q1.

# ... and Relative to the Economy

After-tax GDP profits of the financial sector (percent of nominal GDP)

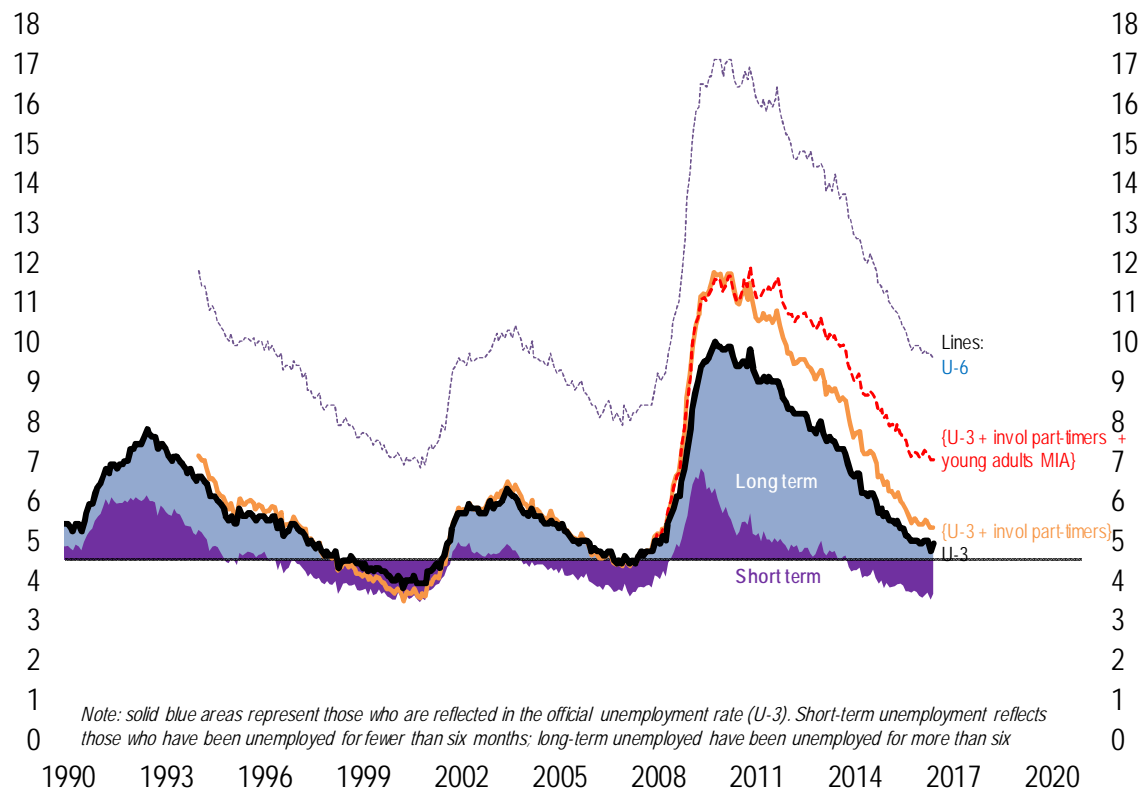


Sources: Haver Analytics; U.S. Dep. of Commerce. Updated through 2016 Q1.

# APPROACHING DUAL FED MANDATES LEAD TO MORE NORMAL RATES

# Some Unemployment Is Hidden ...

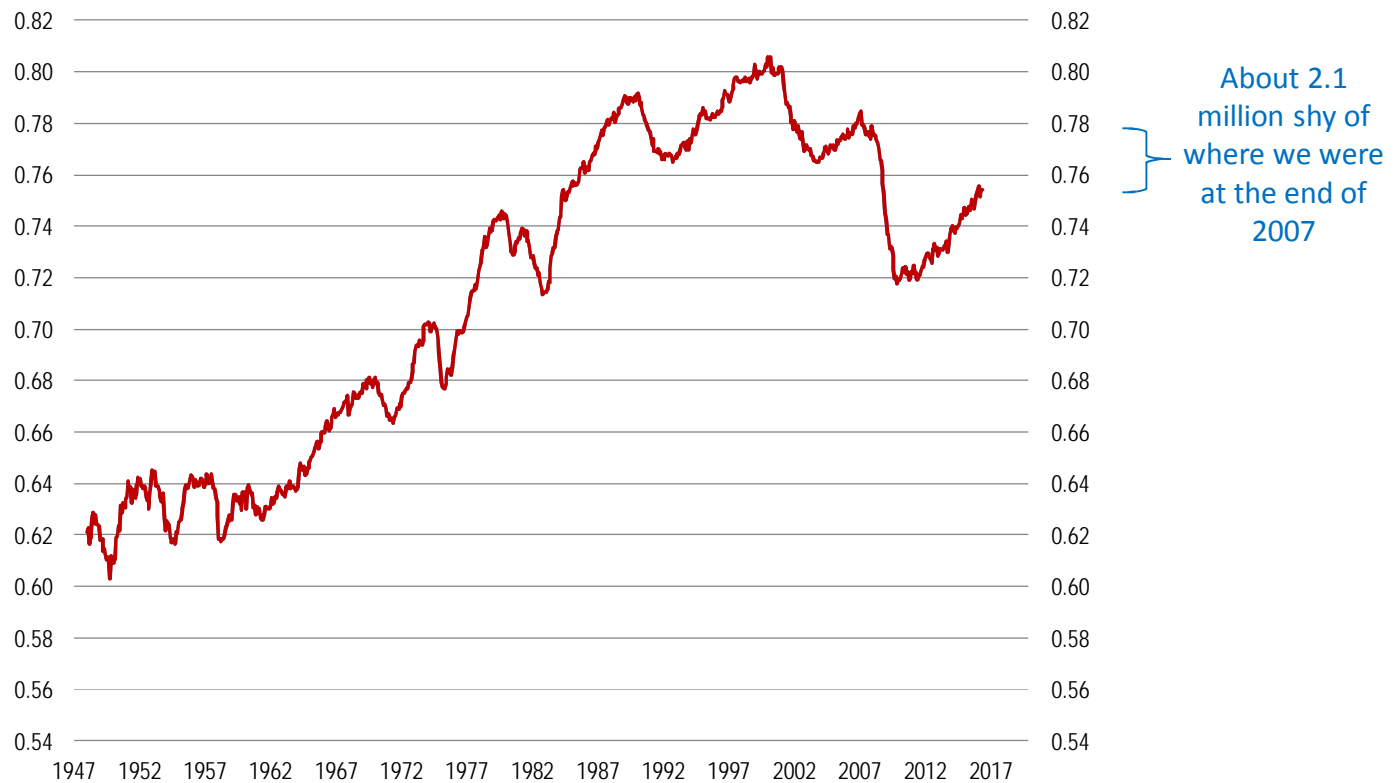
Unemployment metrics (% of the labor force)



Sources: Haver Analytics; U.S. Department of Commerce; U.S. Department of Labor. Updated through June 2016.

# ... But This Sees All and Says 7<sup>th</sup> Inning

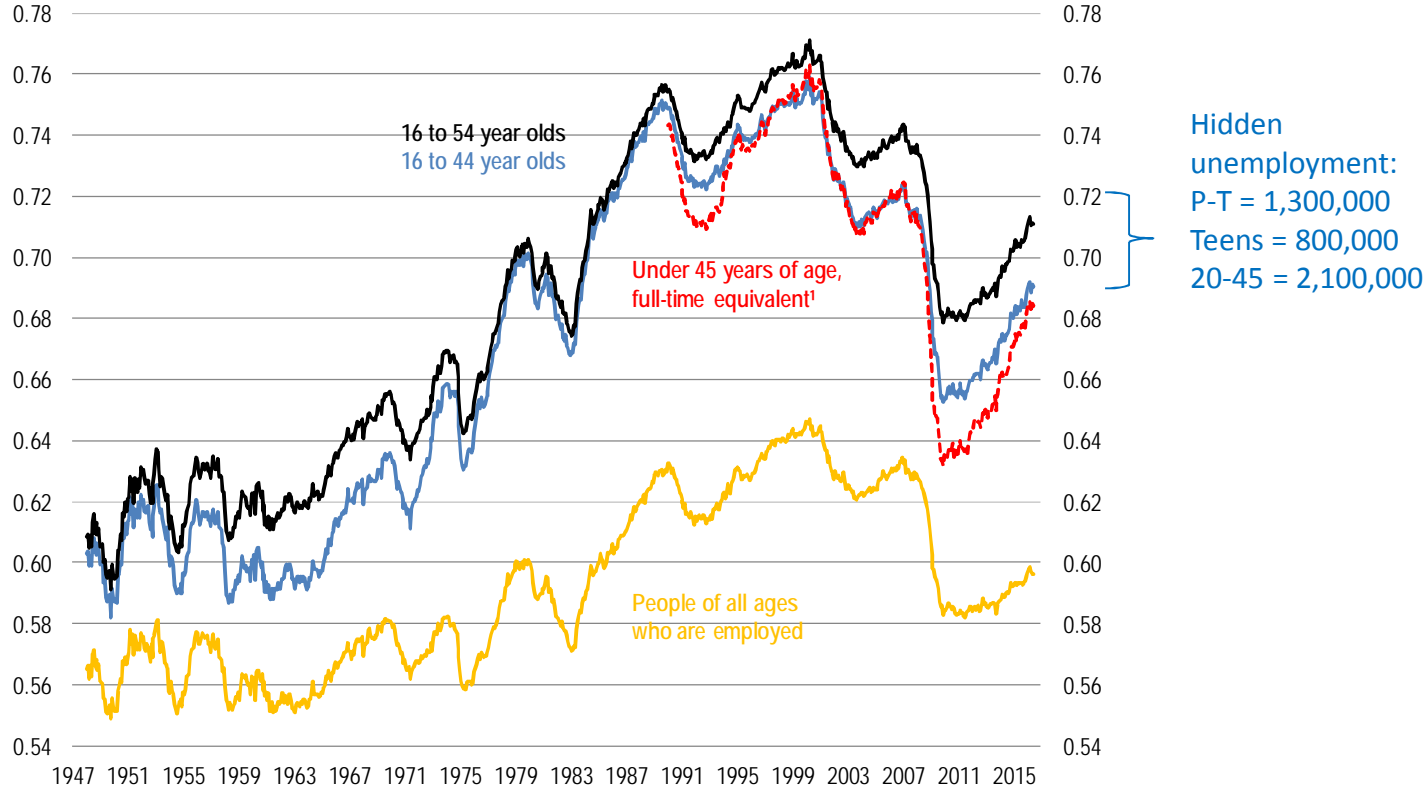
Employment-population ratio for 20- to 45-year olds (% of the respective population)



Sources: Haver Analytics; U.S. Department of Labor. Updated through June 2016..

# Demographics Masks Cyclical Gains

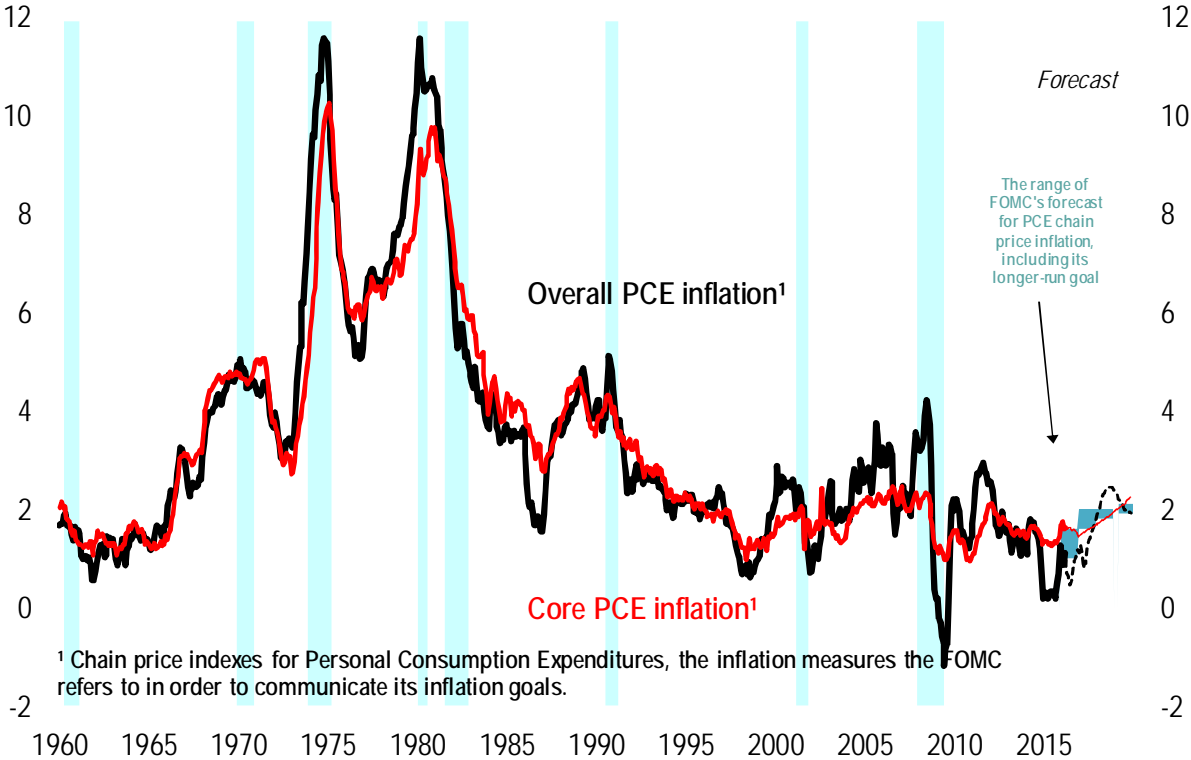
Employment-population ratio for those 20 to 45 years of age (percent)



Sources: Haver Analytics; U.S. Department of Labor. Updated through June 2016.

# Inflation Has the Final Say

Inflation, PCE chain price indexes (percent change from 12 months earlier)

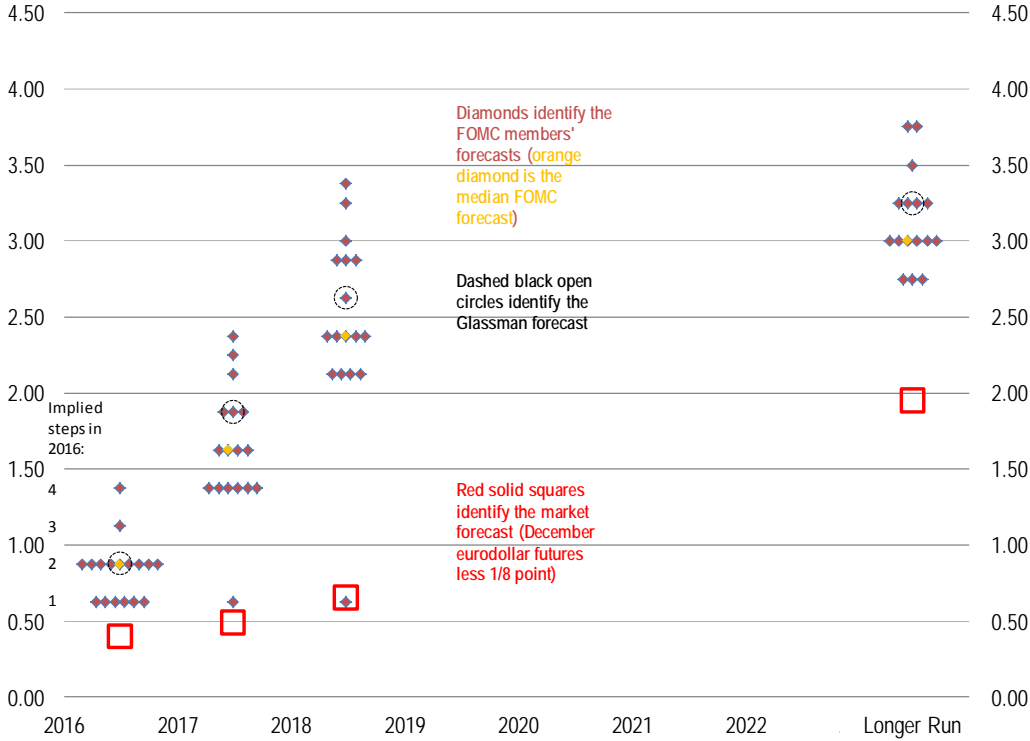


Sources: Vertical bars denote recessions and are designated by the NBER; U.S. Department of Commerce. Updated through May 2016 (inflation) and March 16, 2016 (FOMC forecasts).



# It Takes Time to “Normalize” ...

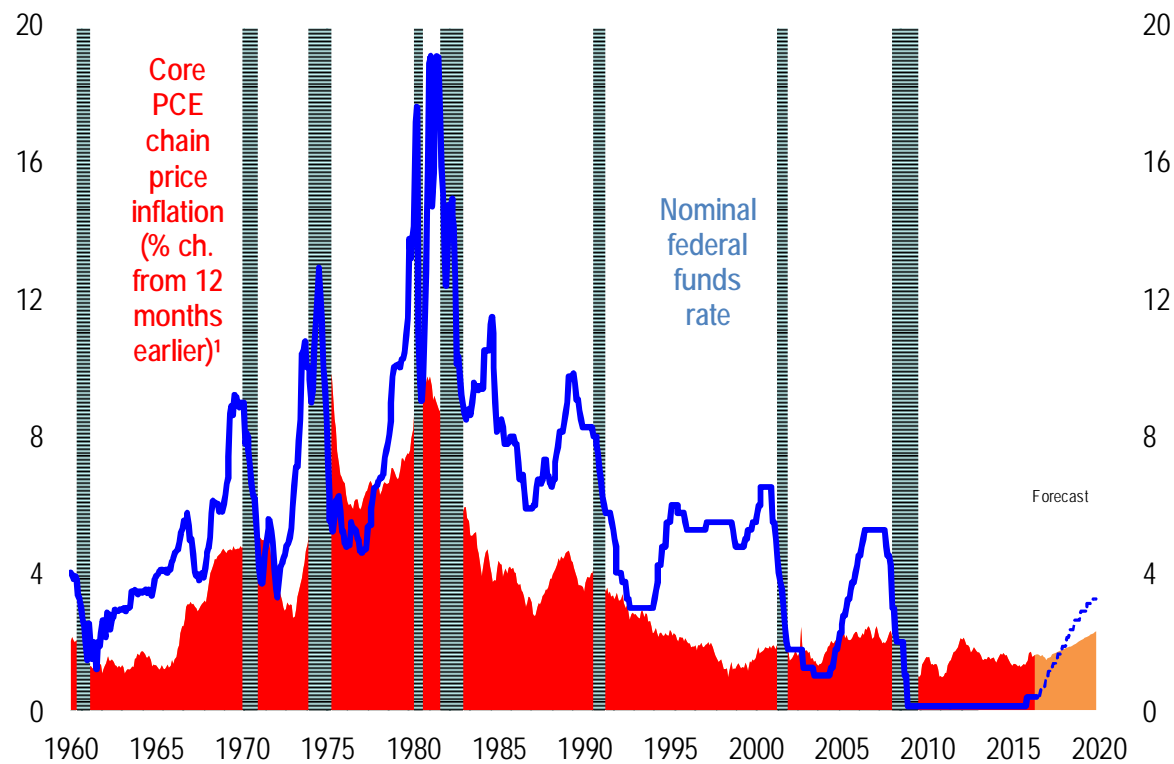
Forecasts of the federal funds rate (percent)



Sources: FRB; Bloomberg. Updated through June 17, 2016 (FOMC) and July 1, 2016 (futures).

# ... to Move the Funds Rate Above Inflation ...

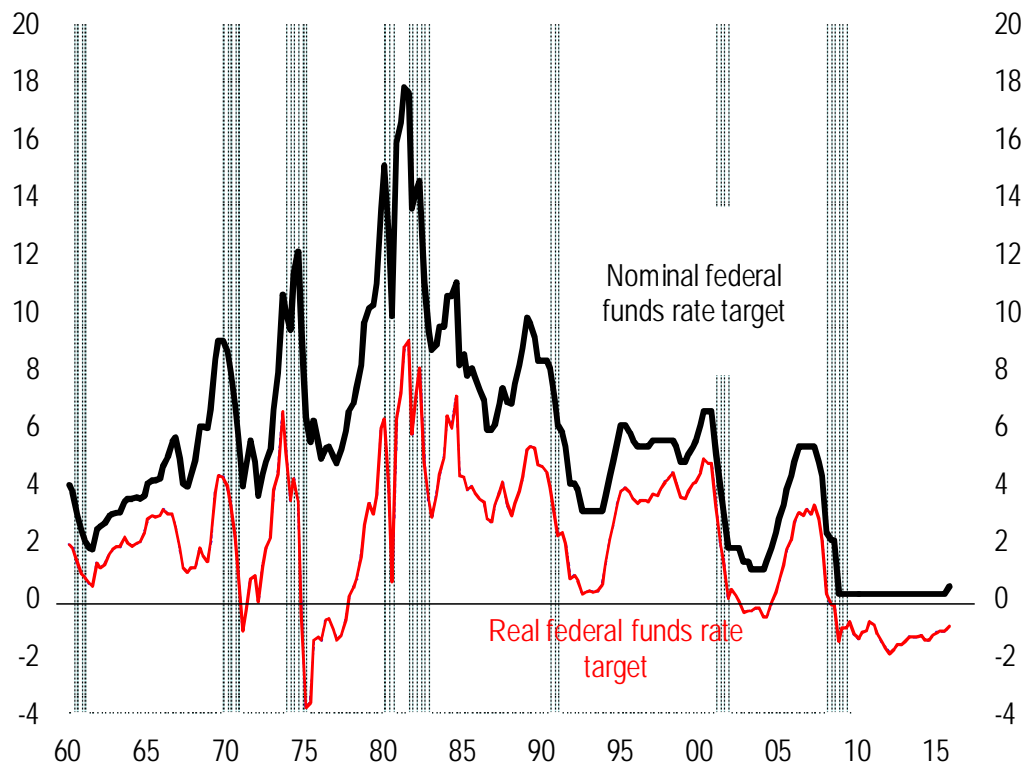
Nominal federal funds rate and core inflation (percent)



Sources: Haver Analytics; U.S. Department of Commerce; Federal Reserve Board. Updated through May 2016 (inflation) and July 8, 2016 (federal funds rate).

# ... to Push the Real Funds Rate Up

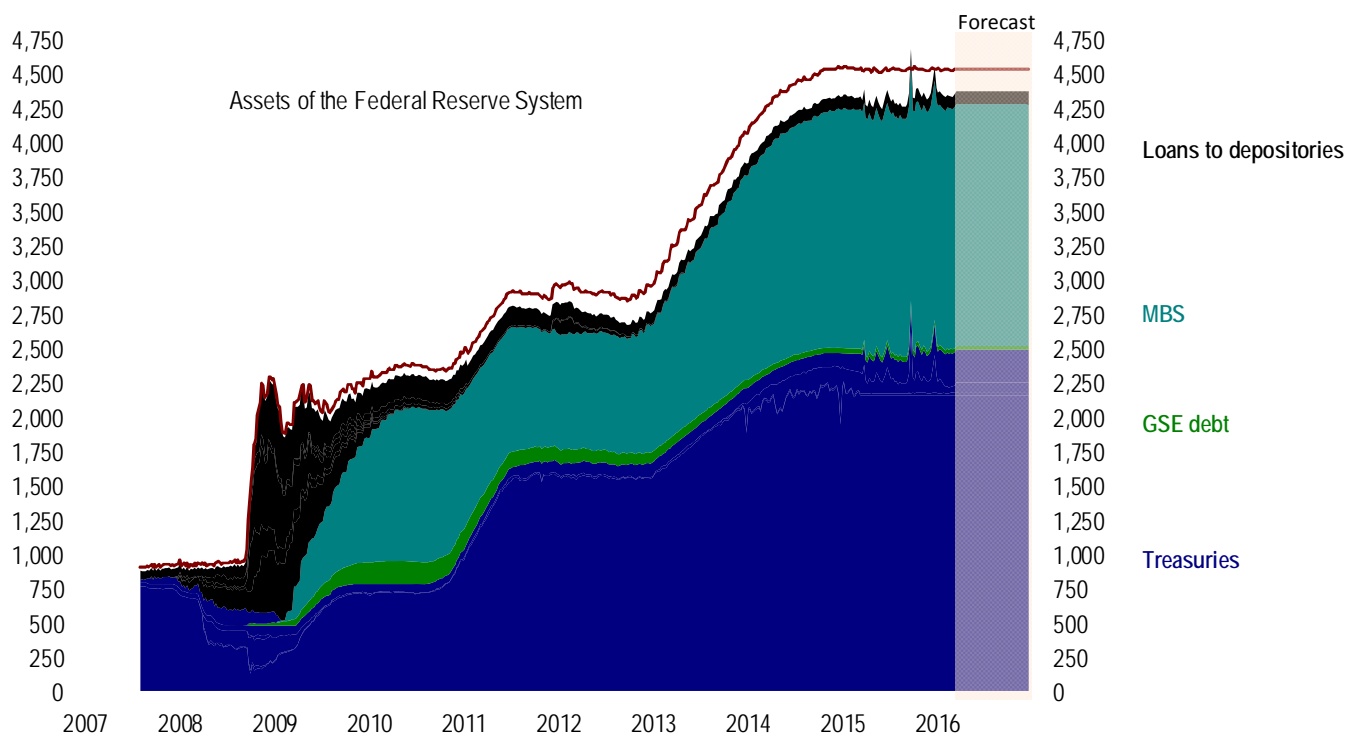
Nominal federal funds rate and real federal funds rate (percent)



Sources: Haver Analytics; U.S. Department of Commerce; U.S. Department of Commerce; Federal Reserve Board. Updated through January 2016 (inflation) and March 18, 2016 (federal funds rate).

# But That's Only Half the Story ...

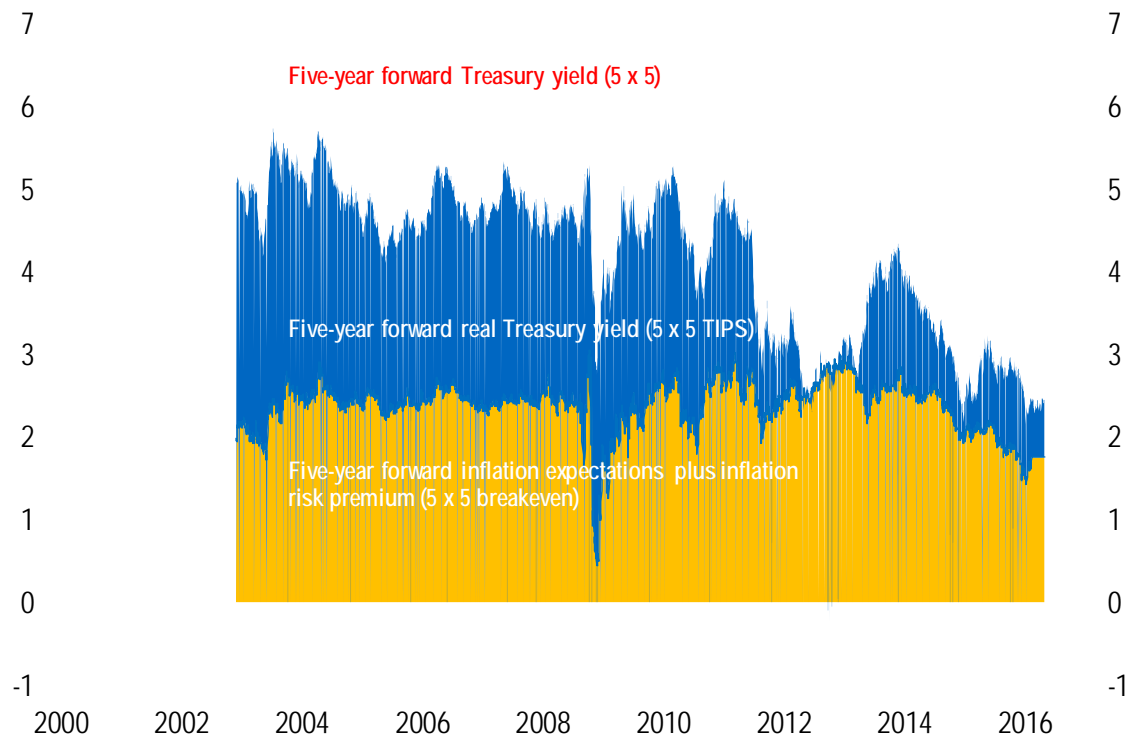
Assets held by the Federal Reserve (billions of dollars)



Sources: Haver Analytics; Federal Reserve Board. Updated through March 23, 2016.

# ... and the Easiest One at That

Components of the 5 x 5 nominal Treasury yield (percent)



Sources: Haver Analytics; Federal Reserve Board. Updated through June 10, 2016.

# The Fed's Recent Caution

Is the Fed's caution a coincidence, reflecting the timing of surprises this year?

Or, is it due to a reassessment of tactics, sooner/slower versus later/faster?

- 1) False alarms remind the Fed of its limited options;
- 2) Lower equilibrium real rates lower the steady-state bar;
- 3) The re-inflation strategy (the inverse of opportunistic disinflation) calls to aggressively fight weakness knowing that a recovery eventually will pull inflation up.

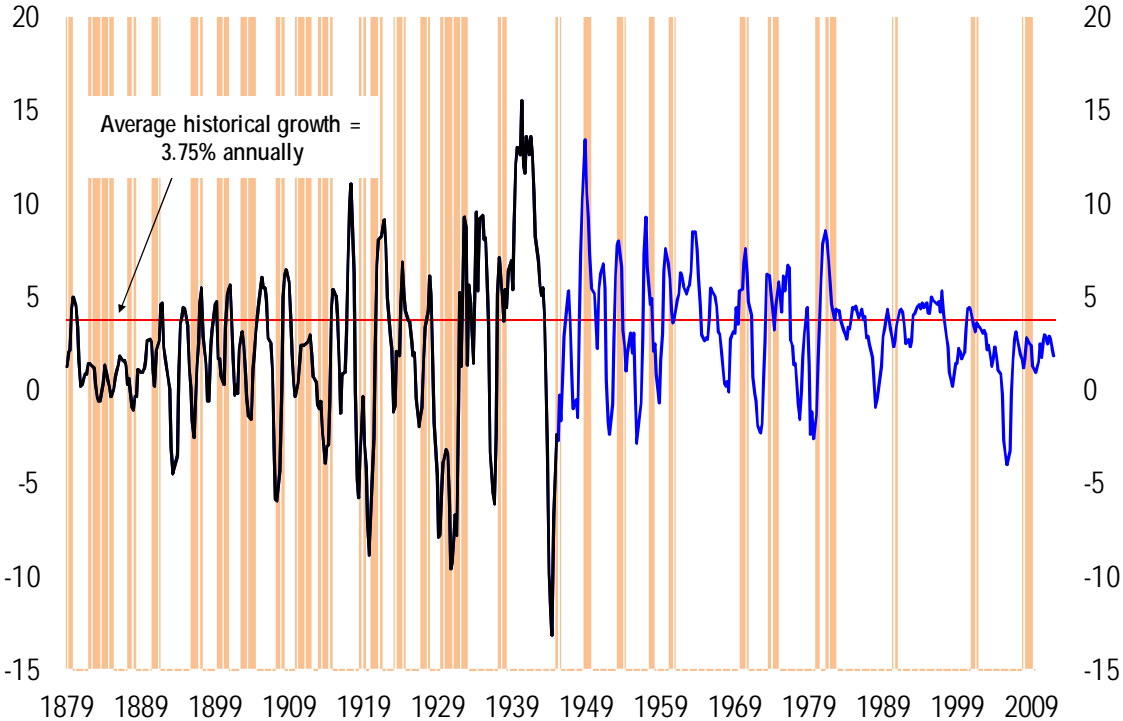
# BEYOND RECOVERY

# Productivity Puzzles



# GDP Is Slow ...

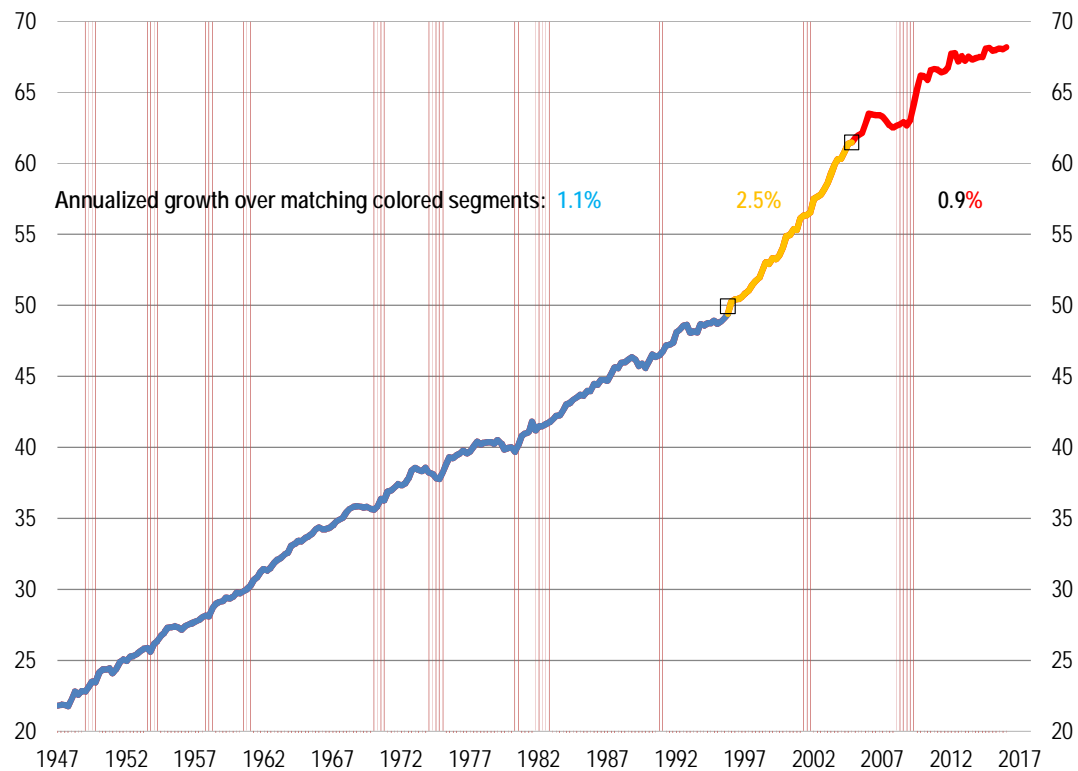
Real U.S. GDP growth (percent change from four quarters earlier)



Sources: Haver Analytics; U.S. Department of Commerce; NBER Macroeconomic database. Updated through 2016 Q1.

# ... That Translates Into Slow Productivity ...

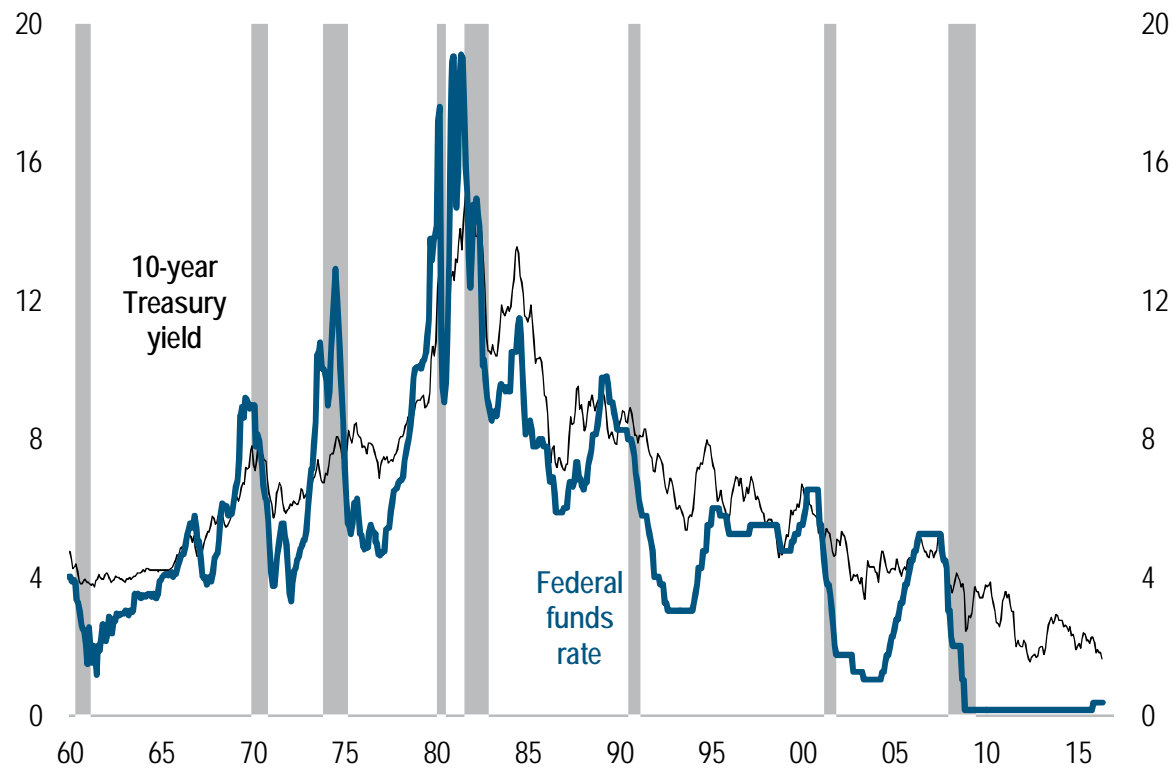
Labor productivity, real GDI per hour (2009 dollars per hour)



Sources: Haver Analytics; U.S. Department of Commerce. Updated through 2016 Q1.

# ... And Low Bond Yields Seem Confirming

Federal funds rate and the 10-year Treasury yield (percent)



Sources: Haver Analytics; Federal Reserve Board. Updated through July 8, 2016.

# But Slow Is Partly Fiction, Partly Structural

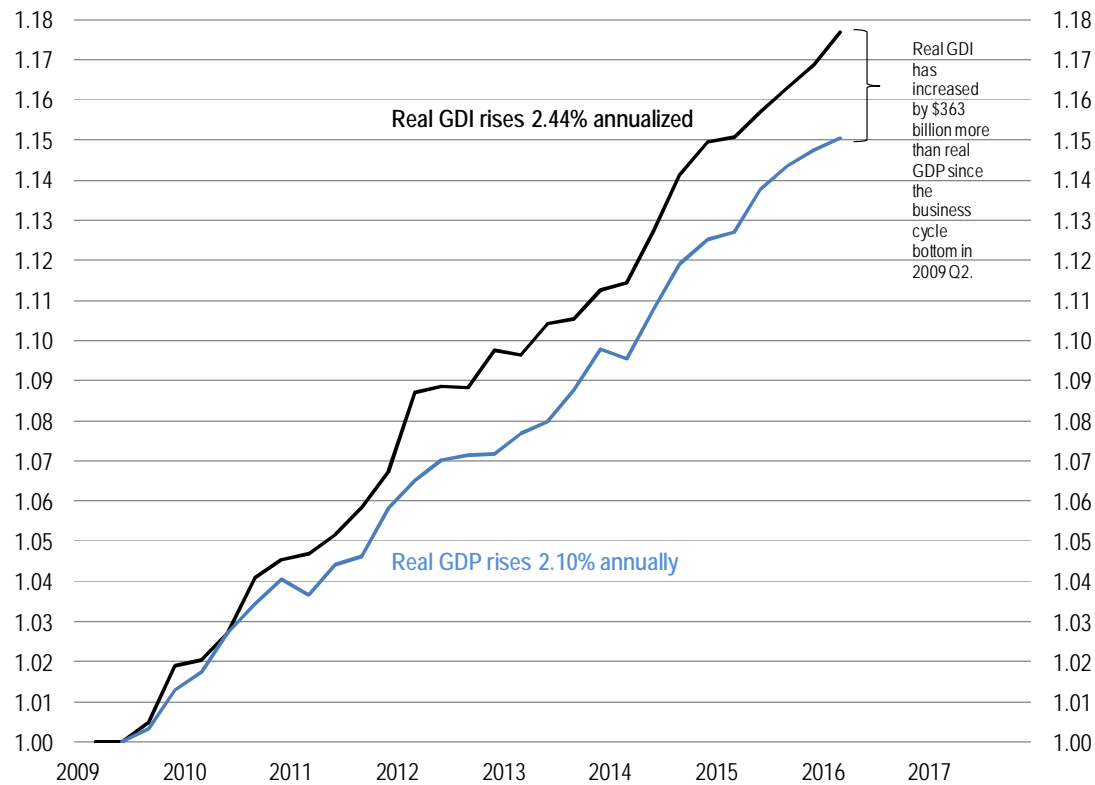
## 1) Measurement Issues:

- Exponential growth of energy product purchases at big-box retailers, not fully accounted for when translating retail sales into estimates of real consumer spending and GDP, masks the true (inflation-adjusted) level of consumer spending when energy prices rise or fall.
- Exponential growth of e-commerce, encouraged by promotions like free shipping as the industry develops this new retail frontier, temporarily reduces the market value of consumer activity. Shareholders implicitly subsidize these promotions, because equity investors are assigning high values to companies like Amazon even though they have generated few profits so far. Imputations don't factor in this subsidy.
- Exponential growth of free or inexpensive content on mobile platforms that are financed through advertising channels, isn't fully captured in the monthly fees for mobile services.
- Outlays for services provided by the GIG ('sharing') economy may be more difficult to track than employment and that may account for some of the widening gap between aggregate income and aggregate spending.
- Advances in microprocessor performance may not be fully reflected in the hedonic price indexes that are used to track quality improvements in I-T products, because the advances in performance continue in reality, if not in the price index readings.
- The push for better health outcomes at lower prices—away from the standard fee-for-service model—adds to the complexity of controlling for quality changes in health care metrics.

- 2) The economic puzzle comes into focus slowly because the pieces arrive slowly. Jobless claims that are reported each Thursday morning offer the best insight into economic trends, because they are timely, accurate, comprehensive, and highly correlated with economic activity.
- 3) Seasonal distortions ... the rise of trade with Asian partners introduces for a while new seasonal distortions tied to the ever-shifting Chinese New Year (based on the lunar calendar) may be contributing to volatile seasonality in quarterly GDP estimates.
- 4) Uneven labor productivity shifts ... slower labor productivity growth will alter the connection between GDP growth and employment growth.
- 5) Demographics ... slower growth of the working-age population, owing to demographics, alters the relationship between employment growth and unemployment.
- 6) Supply shocks ... oil price swings generate large crosscurrents that hurt some and help many others.

# This Family Quarrel Is a Red Flag

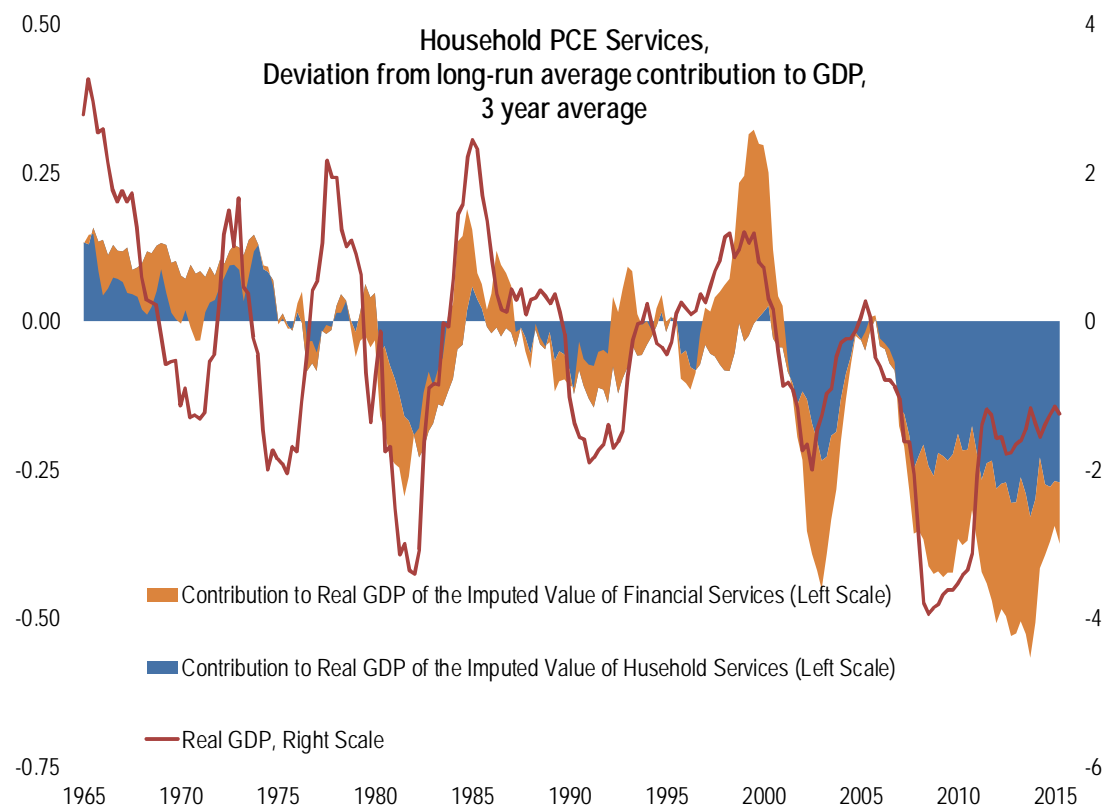
Real GDP versus real GDI (ratio to 2009 Q2)



Sources: Haver Analytics; U.S. Department of Commerce. Updated through 2016 Q1.

# And Some of the “Slow” Is Imputed

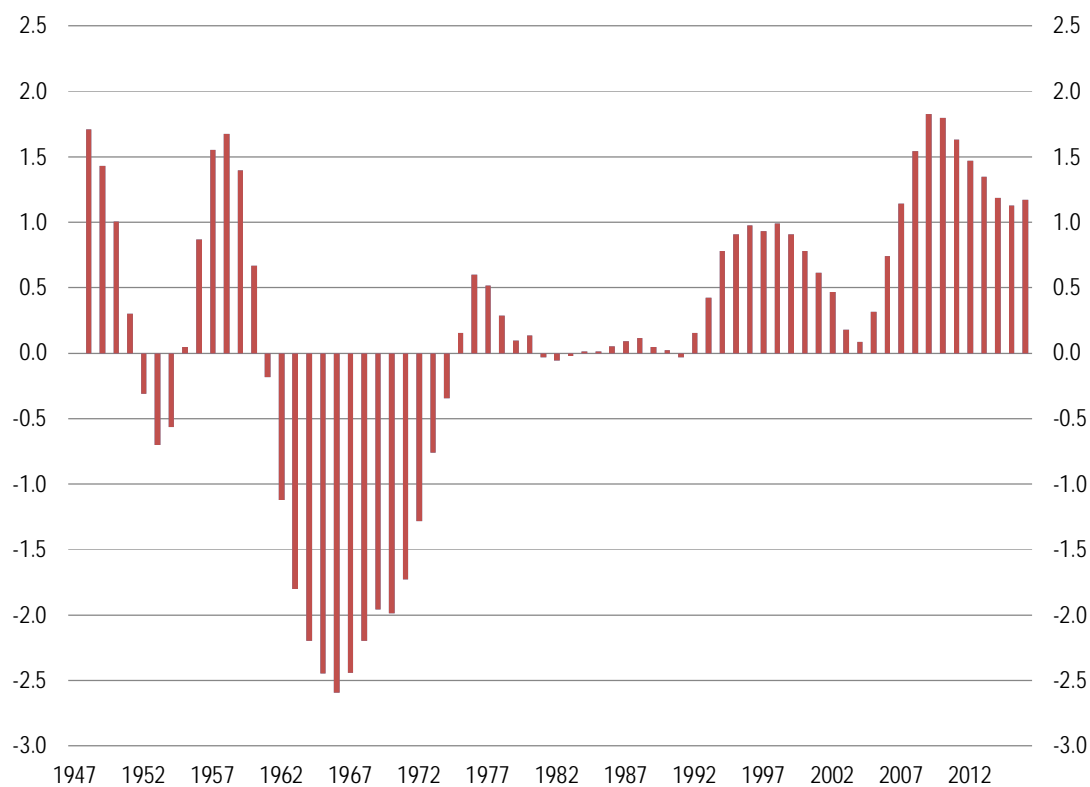
Contribution to real GDP (pct pts, dev from pre-2005 level) Real GDP (% vs previous qtr)



Sources: Haver Analytics; U.S. Department of Commerce. Updated through 2016 Q1.

# Meanwhile, GDP Has a Seasonal Problem ...

Seasonally adjusted real GDP less official real GDP (pct pts, ann % ch vs previous quarter)

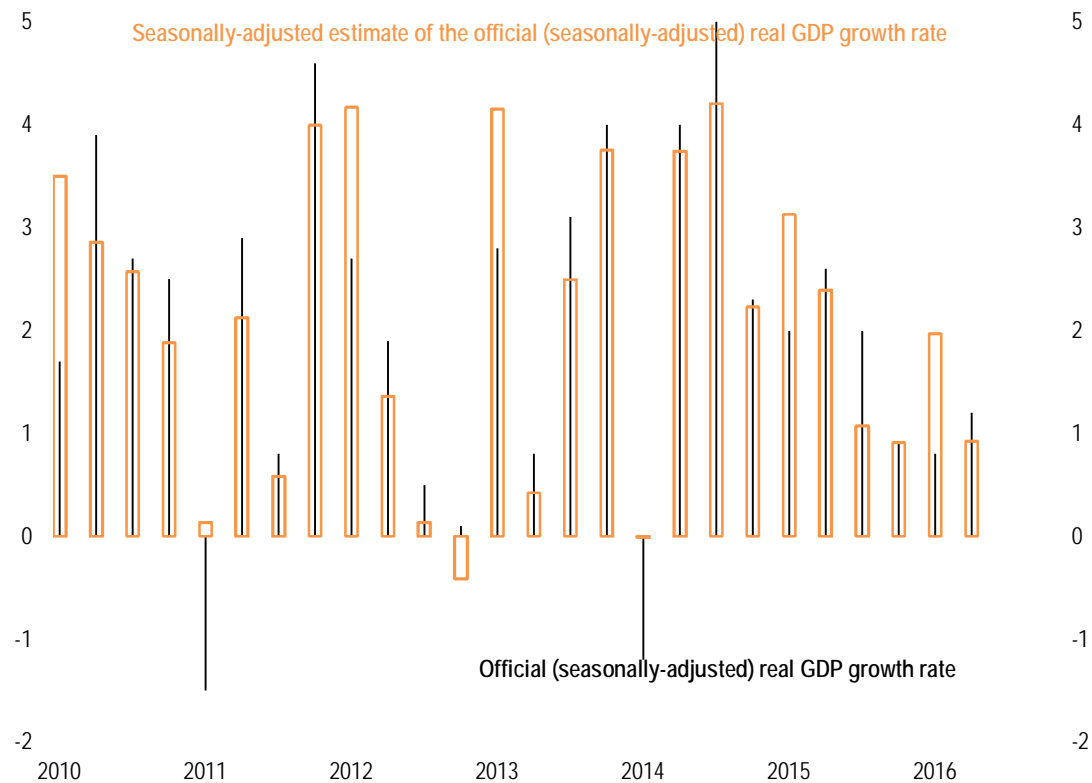


Sources: Haver Analytics; U.S. Department of Commerce. Updated through 2016 Q2.



# ... Creating a “Slowdown” Fiction ...

Real GDP and seasonally adjusted real GDP (annualized % ch from the previous quarter)



Sources: Haver Analytics; U.S. Department of Commerce. Updated through 2016 Q2.

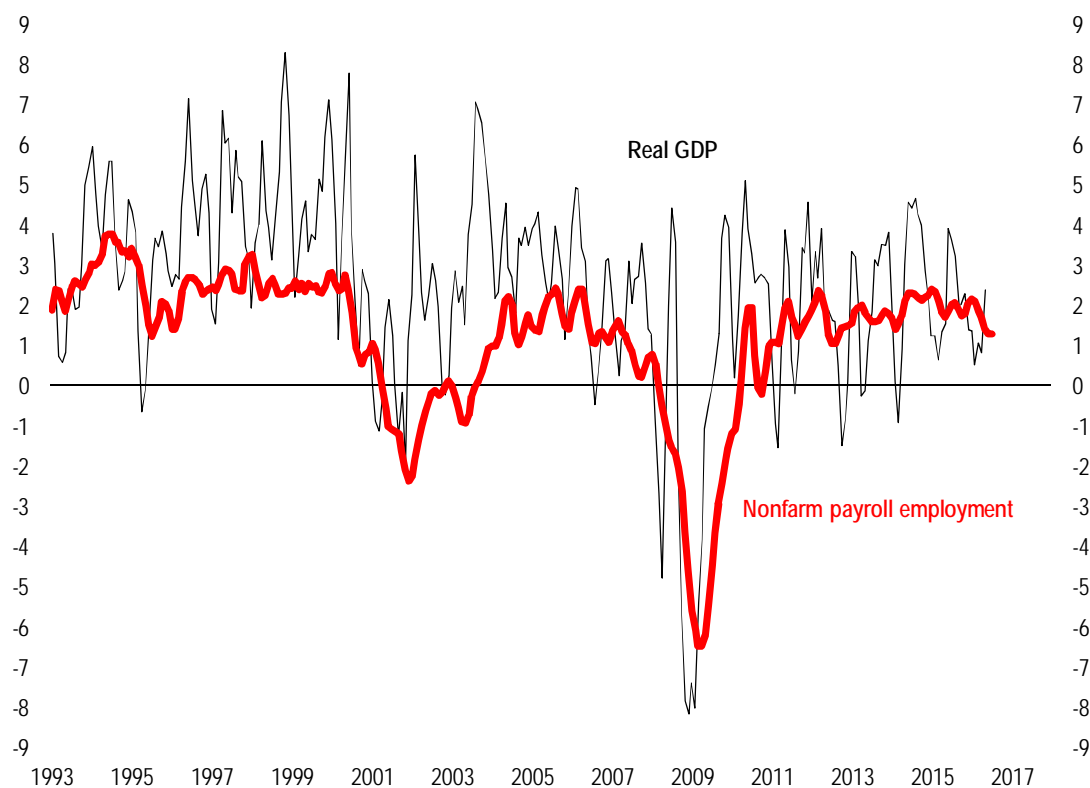
## ... that the BEA Is Working On

*This paper presents the results of a component-by-component review of seasonally adjusted estimates of gross domestic product (GDP) and gross domestic income (GDI), two widely followed economic measures published by the Bureau of Economic Analysis (BEA). The goal of the review was to test specific components for “residual seasonality” and, if present, to identify the main causes. The review found that the two most important causes of residual seasonality were (1) inconsistencies arising from the manner in which monthly source data are utilized in the compilation of quarterly GDP estimates and (2) issues arising from revision policies and practices that prevented the most recent seasonal adjustments from being applied to historical time series. This paper also discusses BEA’s on-going three-phase strategy to improve its seasonal adjustment methods. The strategy, which was announced in the June 2015 Survey of Current Business, includes this review as well as a plan to release GDP and GDI estimates that are not seasonally adjusted. Such estimates will provide a valuable reference point when assessing the seasonally adjusted estimates. The three-phase strategy is scheduled to conclude in July 2018.*

“Residual Seasonality in GDP and GDI: Findings and Next Steps,”  
Bureau of Economic Analysis  
June 1, 2016

# When Data Obscure ... Look to Those ...

Real GDP and nonfarm payroll employment (ann. % ch from the previous qtr, smoothed)

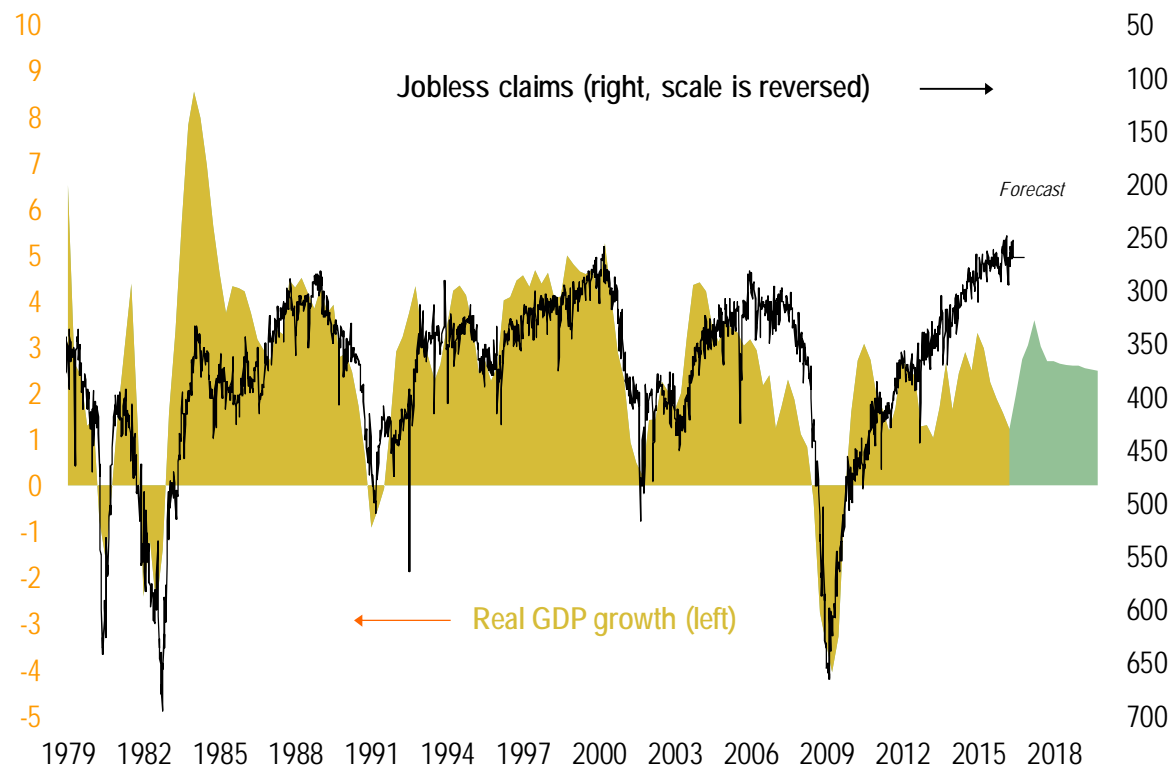


Sources: Haver Analytics; U.S. Department of Commerce; U.S. Department of Labor. Updated through May 2016 (GDP) and July 2016 (employment).

# ... That Know Best ... Timely, ...

Real GDP (% change from four quarters earlier)

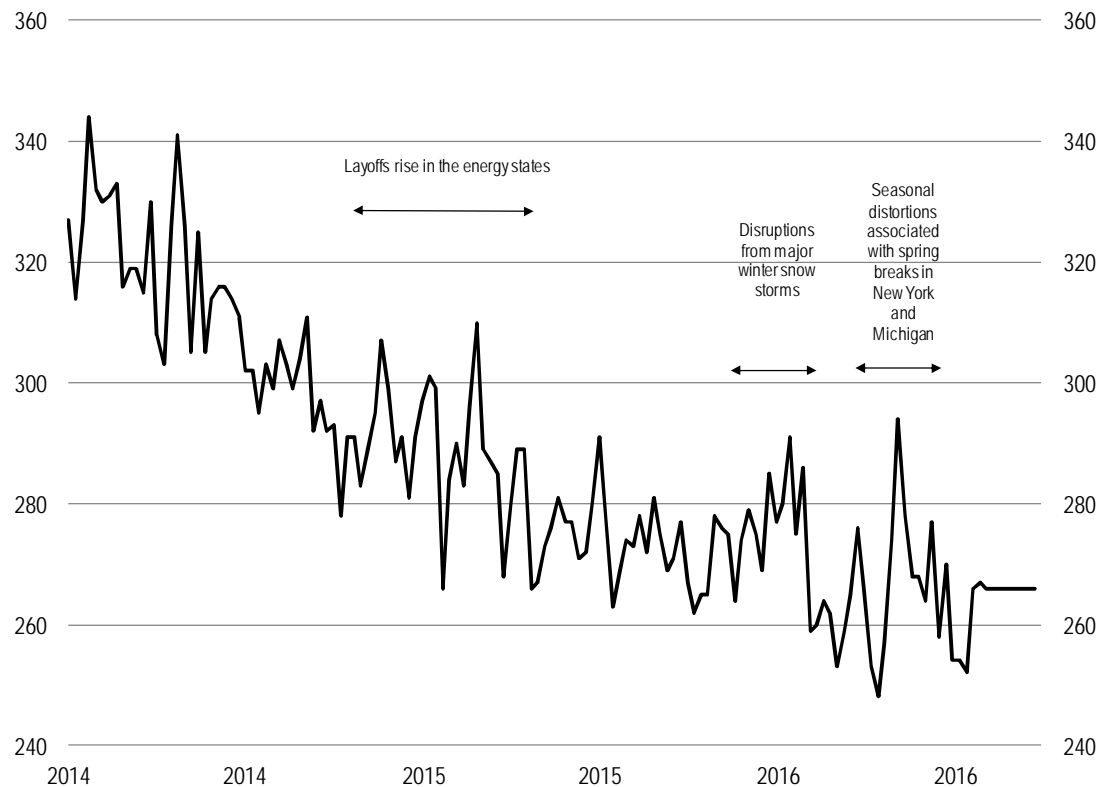
Jobless claims (thousands weekly)



Sources: U.S. Deps. of Labor and Com. Updated through 2016 Q2 (GDP) and August 6, 2016 (jobless claims).

# ... Frequent, Comprehensive, Accurate, ...

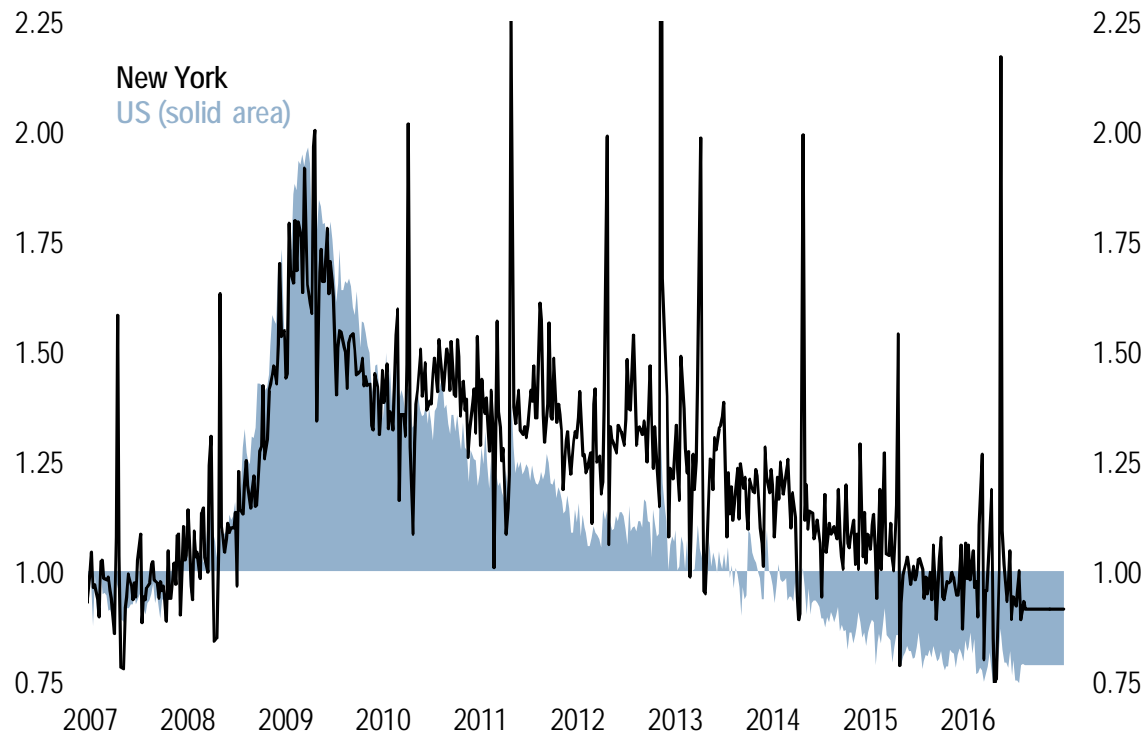
Applications for unemployment benefits (thousands, weekly)



Sources: U.S. Department of Labor. Updated through August 6, 2016.

# ... and Informative

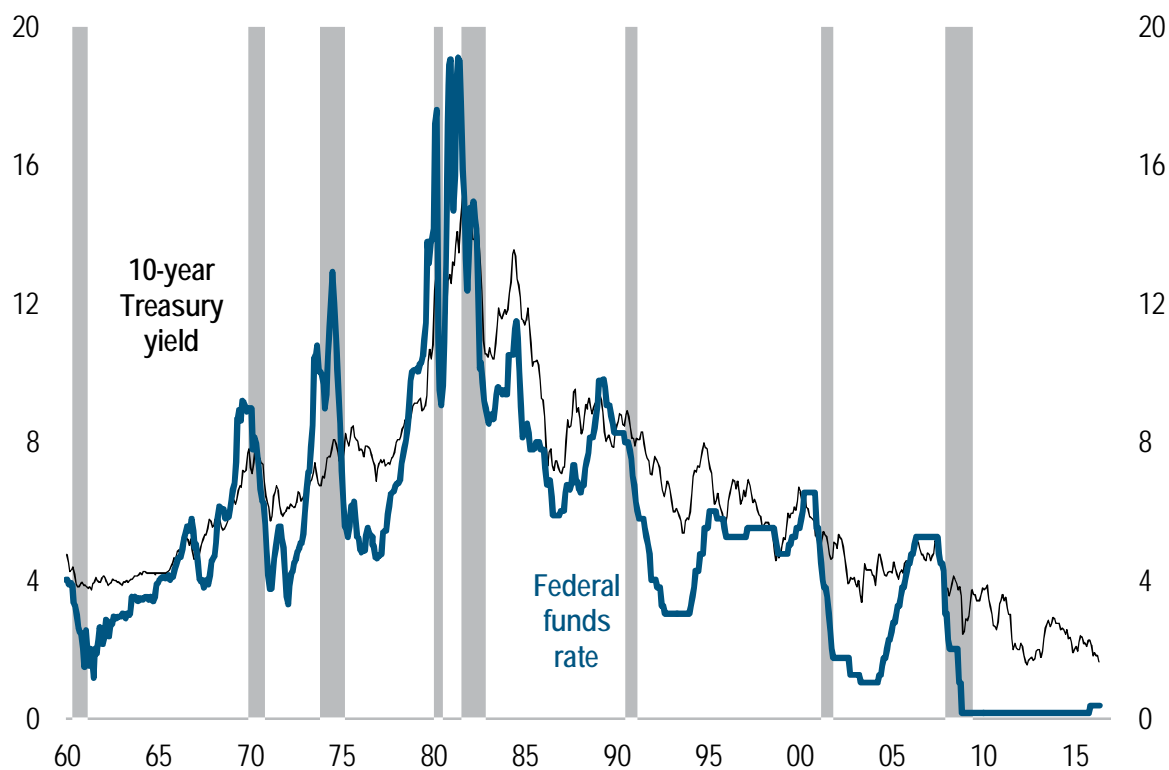
Applications for unemployment benefits in New York versus the U.S. (thousands, weekly)



Sources: U.S. Department of Labor. Updated through August 6, 2016.

# The Usual Response (Pegging Short Rates) ...

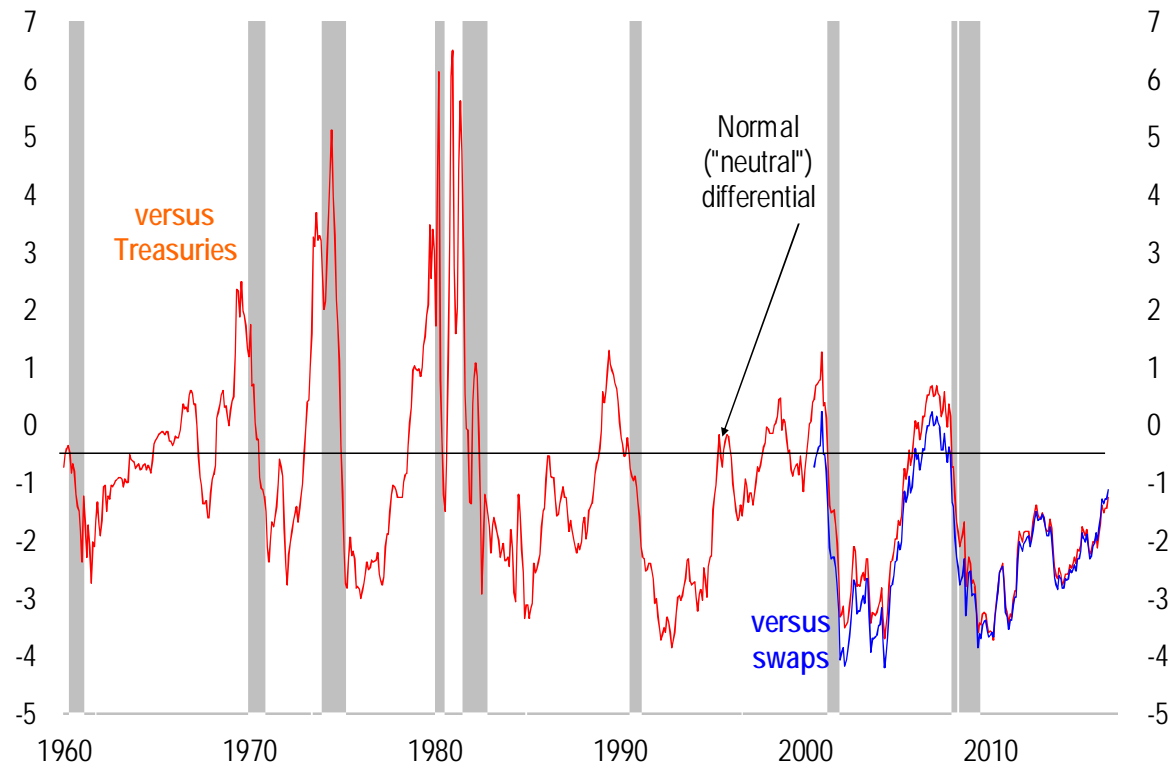
Federal funds rate and the 10-year Treasury yield (percent)



Sources: Haver Analytics; Federal Reserve Board. Updated through July 8, 2016.

# ... Leaves Markets to Set Bond Yields

Federal funds rate less the 10-year Treasury and 10-year swap yields (percentage points)

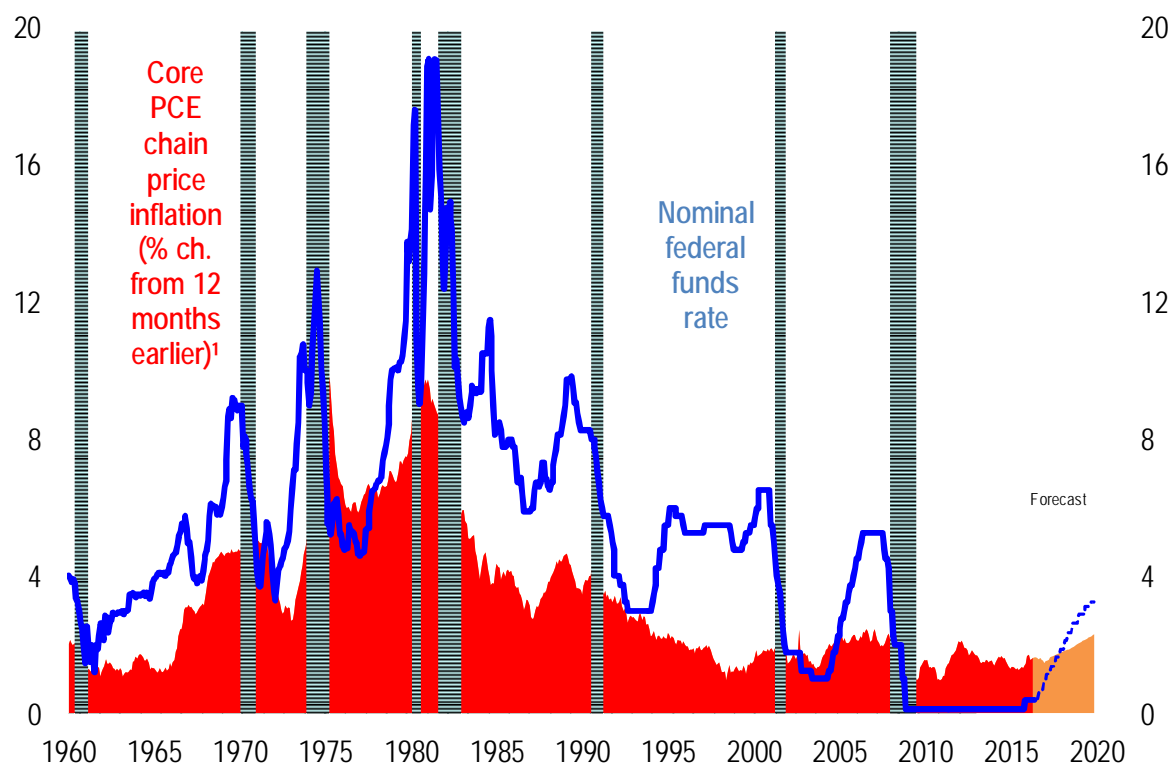


Sources: Haver Analytics; Federal Reserve Board. Updated through July 8, 2016.



# But the ZLB Opened the Door To LSAPs ...

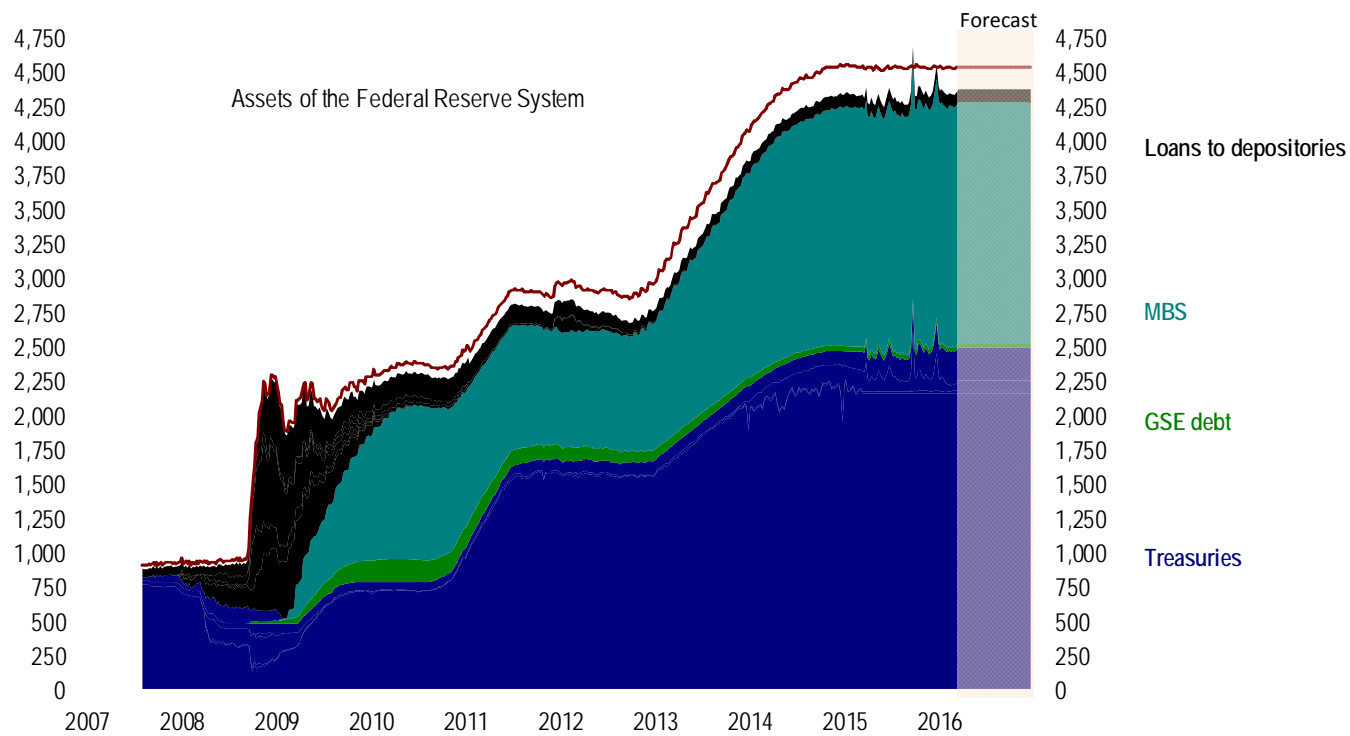
Nominal federal funds rate and core inflation (percent)



Sources: Haver Analytics; U.S. Department of Commerce; Federal Reserve Board. Updated through May 2016 (inflation) and July 8, 2016 (federal funds rate).

# ... (Unconventional Policies or QE)

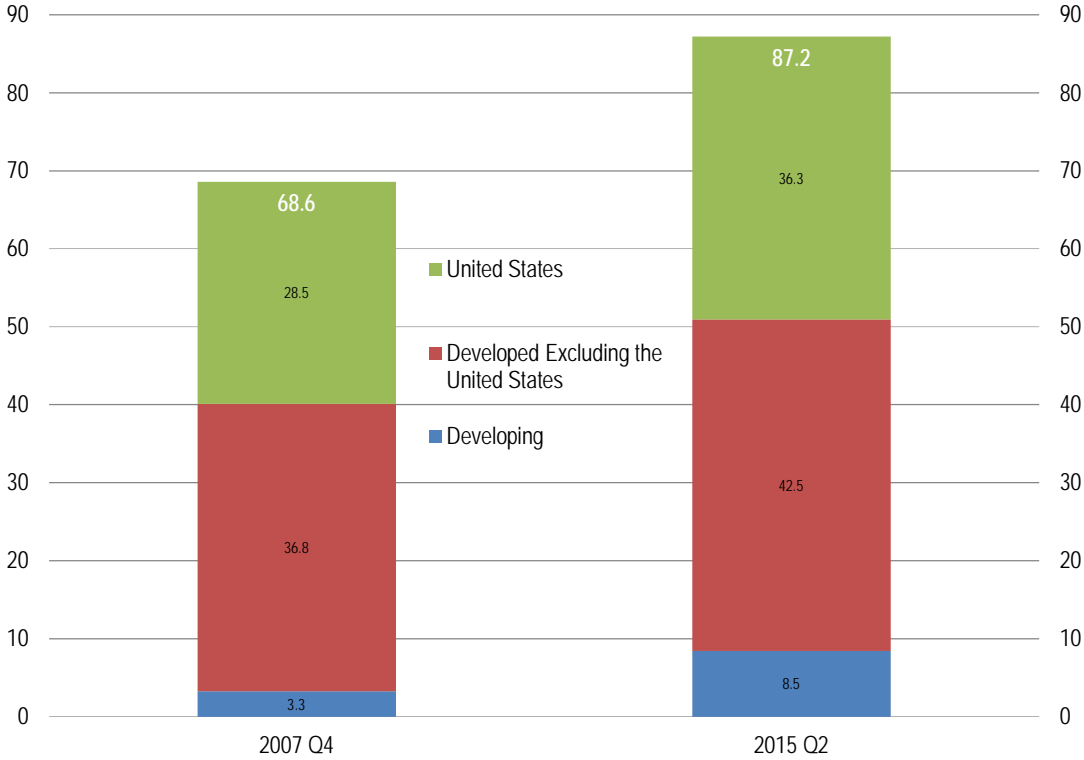
Assets held by the Federal Reserve (billions of dollars)



Sources: Haver Analytics; Federal Reserve Board. Updated through March 23, 2016.

# Global Debt Supply Squeezed by ...

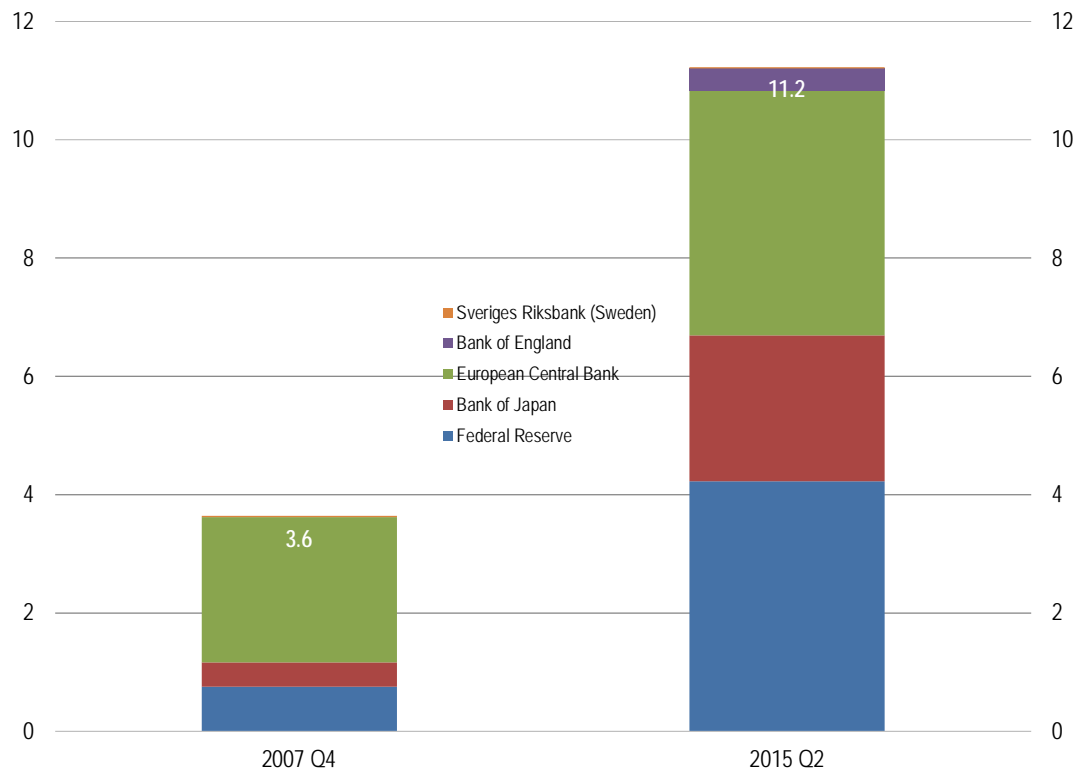
Global debt outstanding (trillions of dollars)



Sources: Haver Analytics; Bank for International Settlements. Updated through 2015 Q4.

# ... CB Asset Purchases ...

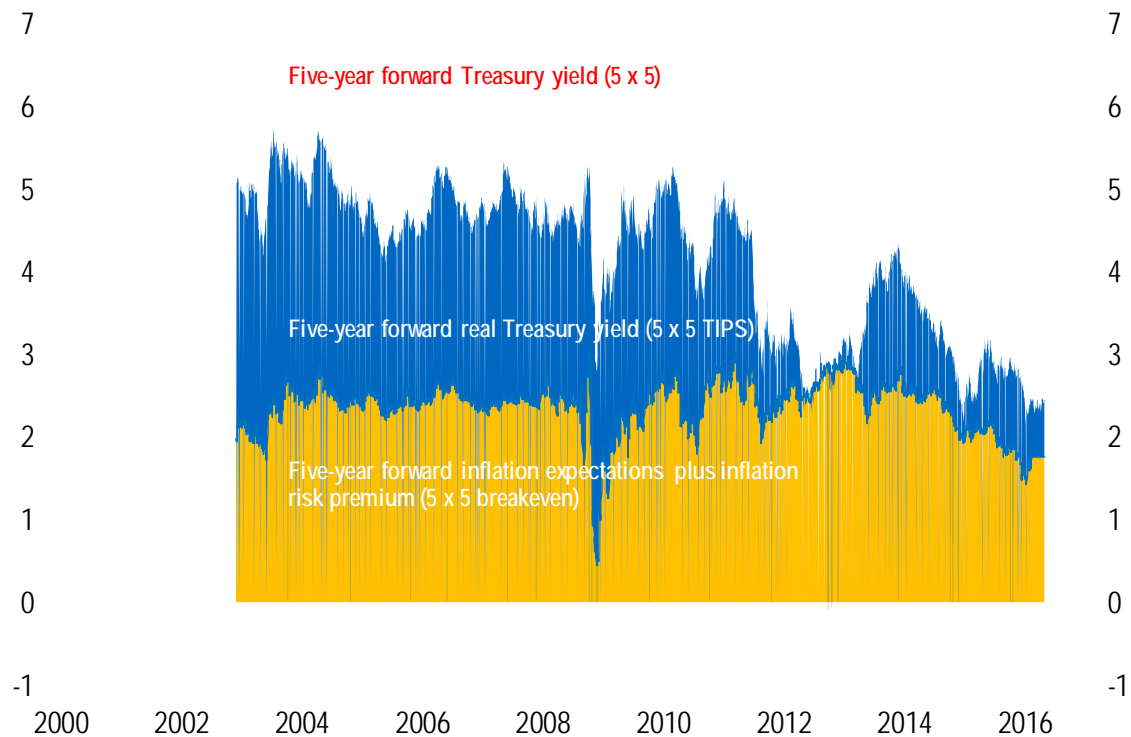
Assets held by key central banks (trillions of dollars)



Sources: Haver Analytics; Federal Reserve Board; ECB; Bank of Japan; Sveriges Riksbank. Updated through June 10, 2016.

# ... Which Distort Real Bond Yields ...

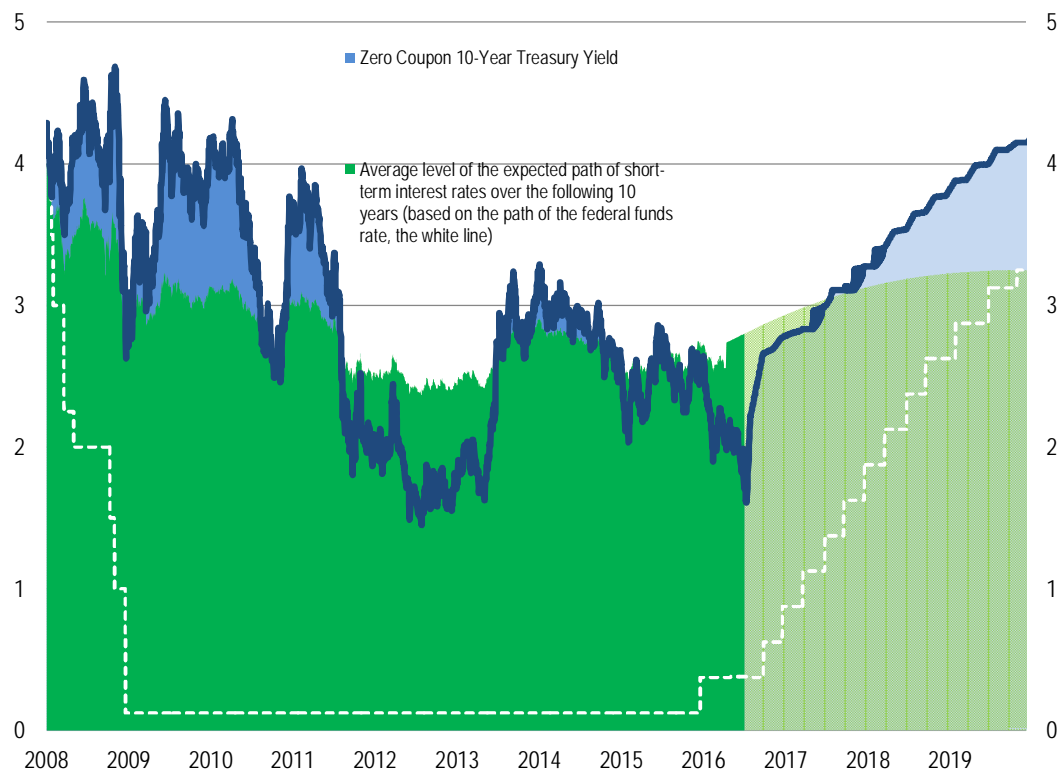
Components of the 5 x 5 nominal Treasury yield (percent)



Sources: Haver Analytics; Federal Reserve Board. Updated through June 10, 2016.

# ... Shrink the Term Premium ...

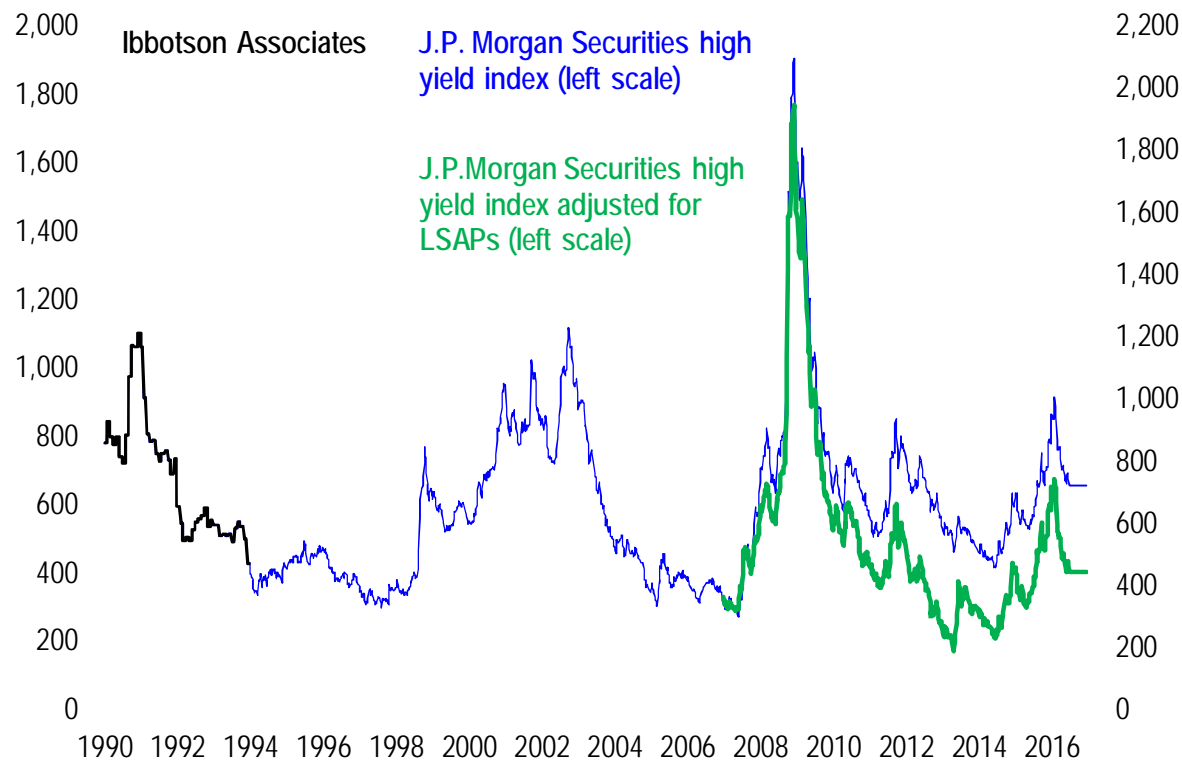
Components of the 5 x 5 nominal Treasury yield (percent)



Sources: Haver Analytics; Federal Reserve Board. Updated through June 10, 2016.

# ... and Narrow Credit Spreads

Noninvestment grade debt yield less 10-year Treasury yield (basis points)

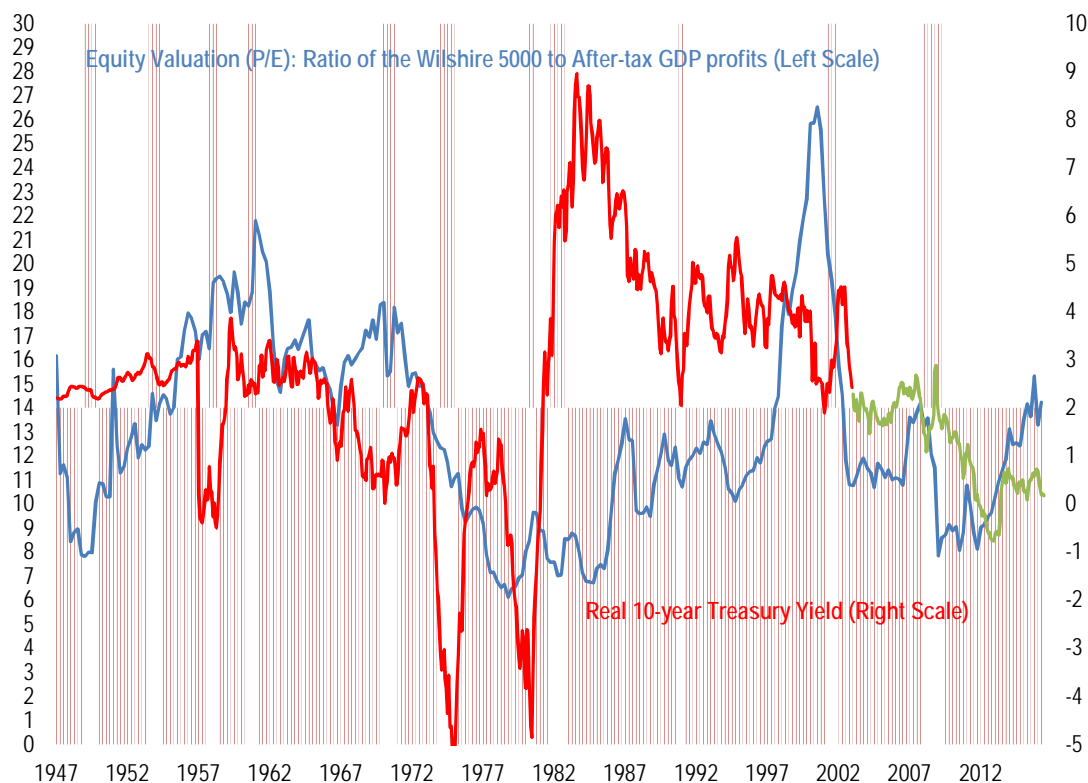


Sources: Haver Analytics; Federal Reserve Board; J.P. Morgan. Updated through July 8, 2016.

# High Stock Prices, Low Bond Yields?

Stock market price-earnings ratio

Real 10-year Treasury yield (percent)



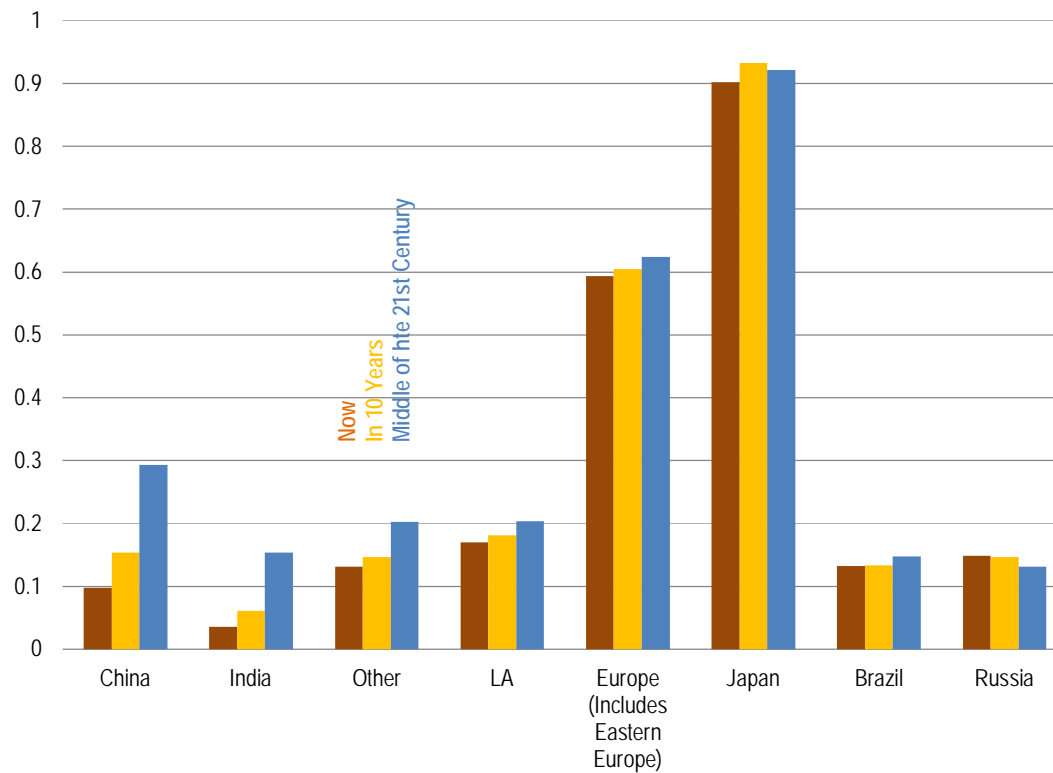
Sources: Haver Analytics; NBER recession bars; U.S. Department of Commerce; U.S. Department of Labor; Federal Reserve Board; Dow Jones; NBER Macroeconomic database. Updated through August 12, 2016.



# What About “The End of Growth”?

# THE Story of the Ages

Relative real GDP per capita (ratio to U.S. real GDP per capita, 2009 dollars, PPP basis)



Sources: Haver Analytics; ADP; U.S. Department of Commerce; various international statistical organizations. Updated through 2016 Q1.

# Extra Innings

# CONCLUSION

*(Pessimism Is to Optimism What Past Is to Future)*

# Jekyll-Hyde Visions

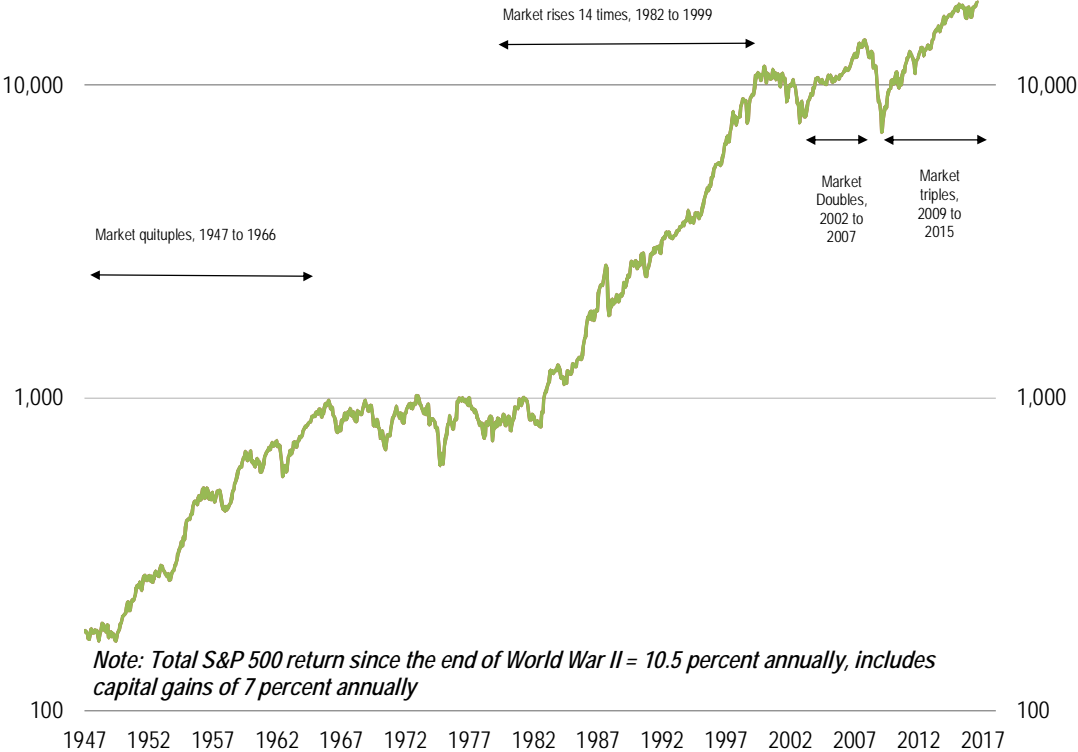
Variations of the pessimistic vision: “The Age of Turbulence: Adventures in a New World” (Greenspan), “The Age of Secular Stagnation” (Larry Summers), “Growth in a Time of Debt” (Reinhart and Rogoff), “The Rise and Fall of American Growth: The U.S. Standard of Living since the Civil War” (Robert J. Gordon)?

Themes in the optimistic view:

- 1) We’ve dug our way out of a pretty deep hole that many thought would take decades to recover from ... and all that with 2 percent GDP growth;
- 2) Low inflation implies that we and others have not yet achieved our potential which, with the help of the invention of central banks and democratic forces, is where we are headed;
- 3) Innovation, socially disruptive for sure, is lifting our nation’s living standard, extending a trend that has been in place since the mid-18<sup>th</sup> century;
- 4) The Asian Continent, where half the world’s population lives and works, now aspires to achieve the living standards that we in the west enjoy and they are edging towards free enterprise systems to accomplish that.
- 5) The global market place is becoming more competitive than it ever was. No one cheers competition, but competition brings the best out of everyone.

# Where To?

Dow Jones Industrial Average (May 25, 1896 = 40.94, log<sub>10</sub> scale)



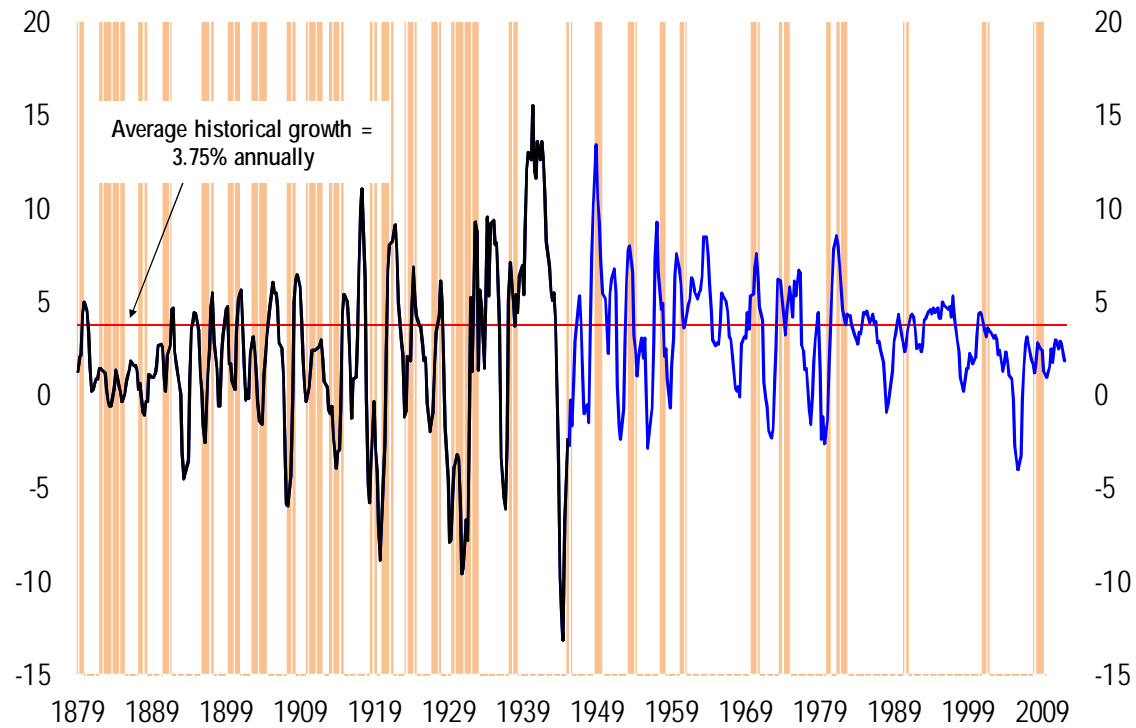
Sources: Haver Analytics; US Department of Commerce; Dow Jones. Updated through 2016 Q1 (profits) and August 12, 2016 (stocks).

# APPENDIX I. “ENTITLEMENT” ISSUES

*(About Politics, Not Economics)*

# Slow ...

Real U.S. GDP growth (percent change from four quarters earlier)

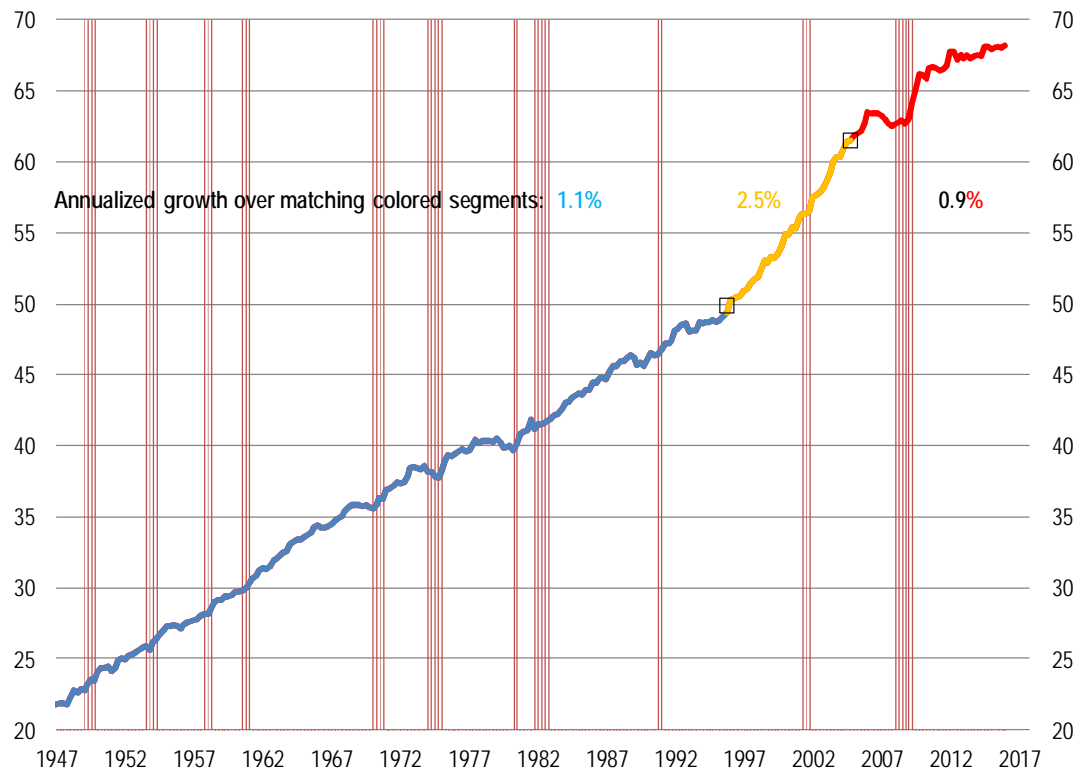


Sources: Haver Analytics; U.S. Department of Commerce; NBER Macroeconomic database. Updated through 2015 Q4.



# ... For Whatever Reason, Productivity, ...

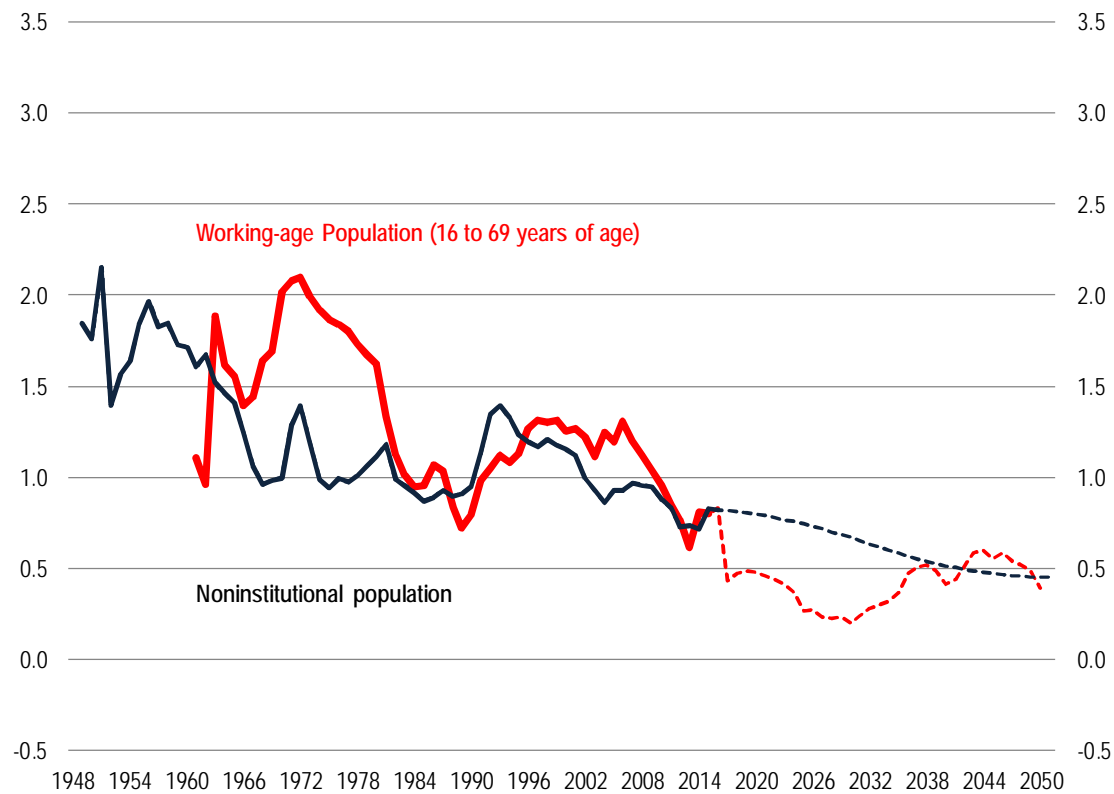
Labor productivity, real GDI per hour (2009 dollars per hour)



Sources: Haver Analytics; U.S. Department of Commerce. Updated through 2016 Q1.

# ... Demographics, ...

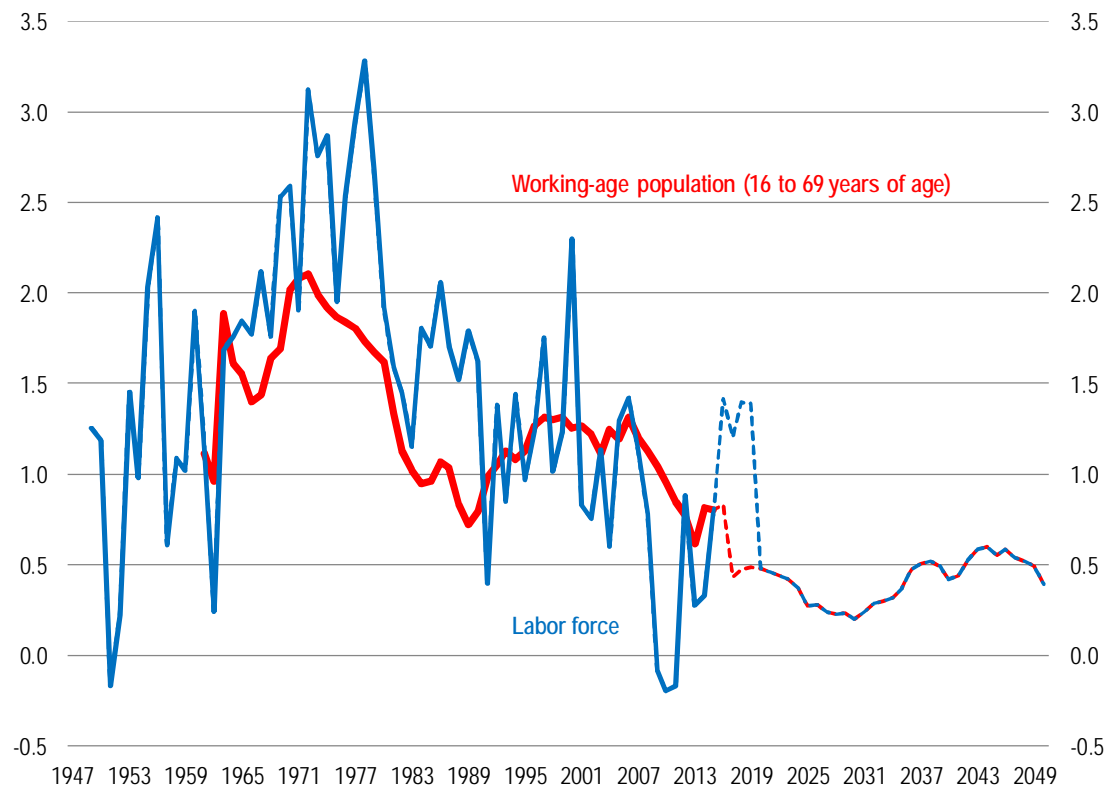
Noninstitutional population and the working age population (percent change annually)



Sources: Haver Analytics; U.S. Census; U.S. Department of Labor. Updated through 2015.

# ... or Cyclical Casualties

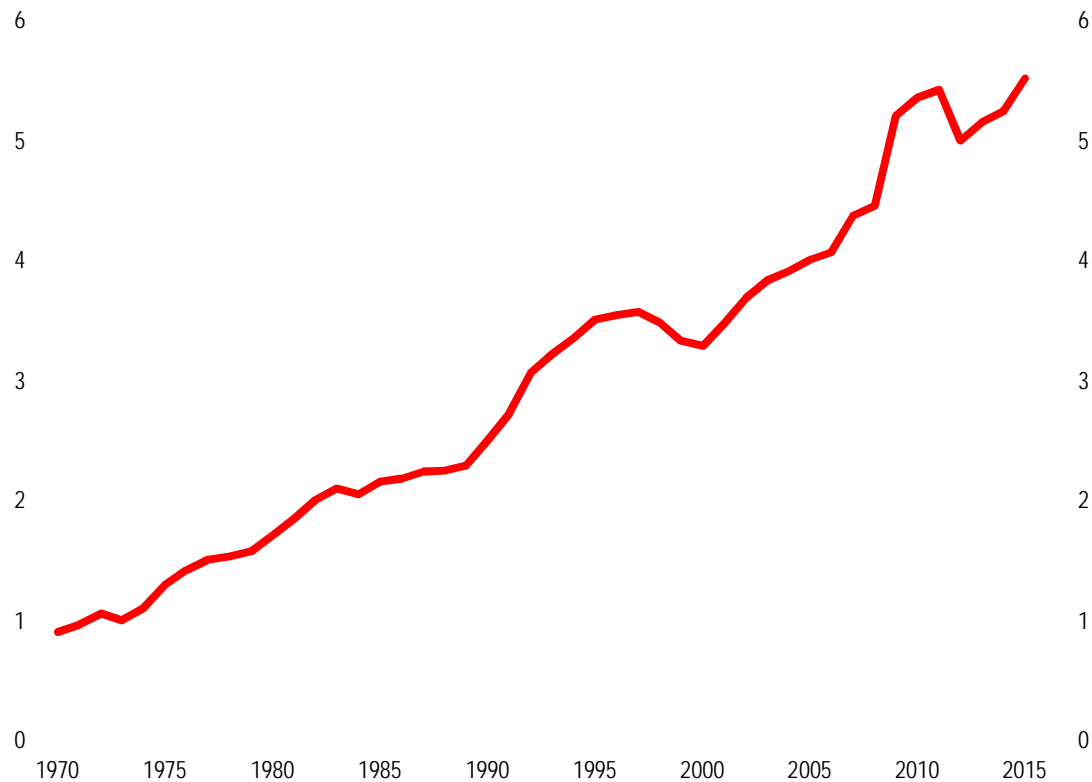
Working age population and the labor force (percent change annually)



Sources: Haver Analytics; U.S. Census; U.S. Department of Labor. Updated through 2015.

# ... Makes It Hard to Pay for Promises

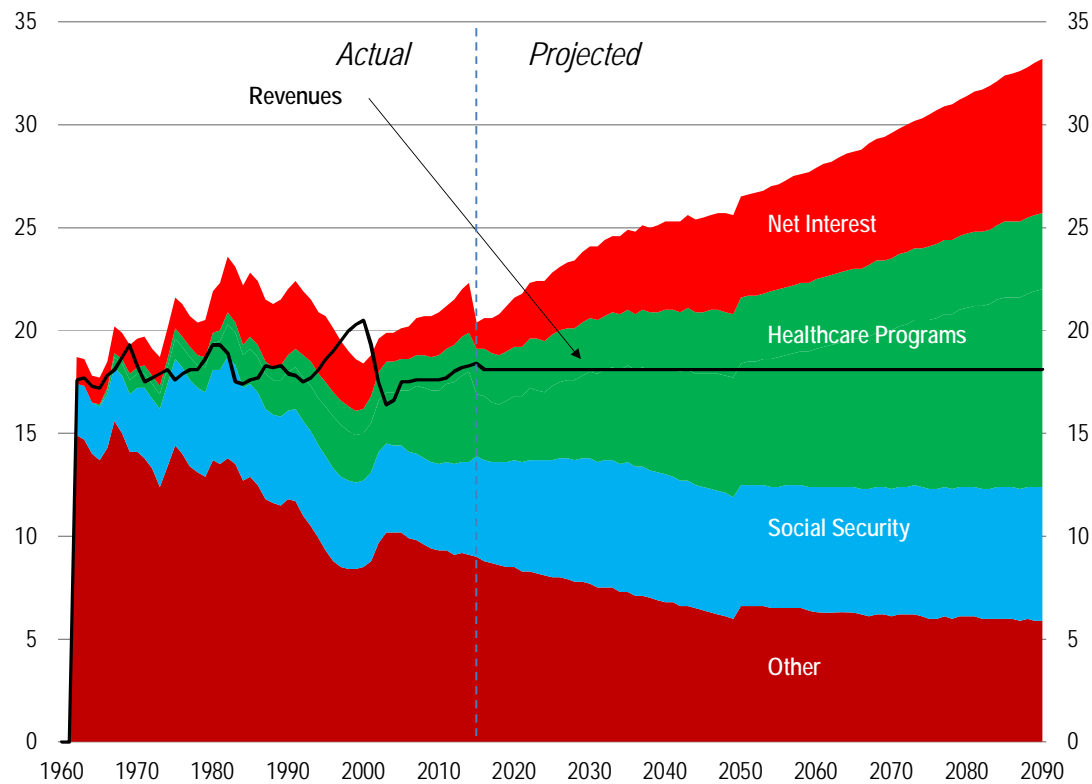
Federal healthcare spending (percentage of GDP)



Sources: Haver Analytics; Congressional Budget Office. Updated through 2015.

# That's the CBO's Pessimistic Story ...

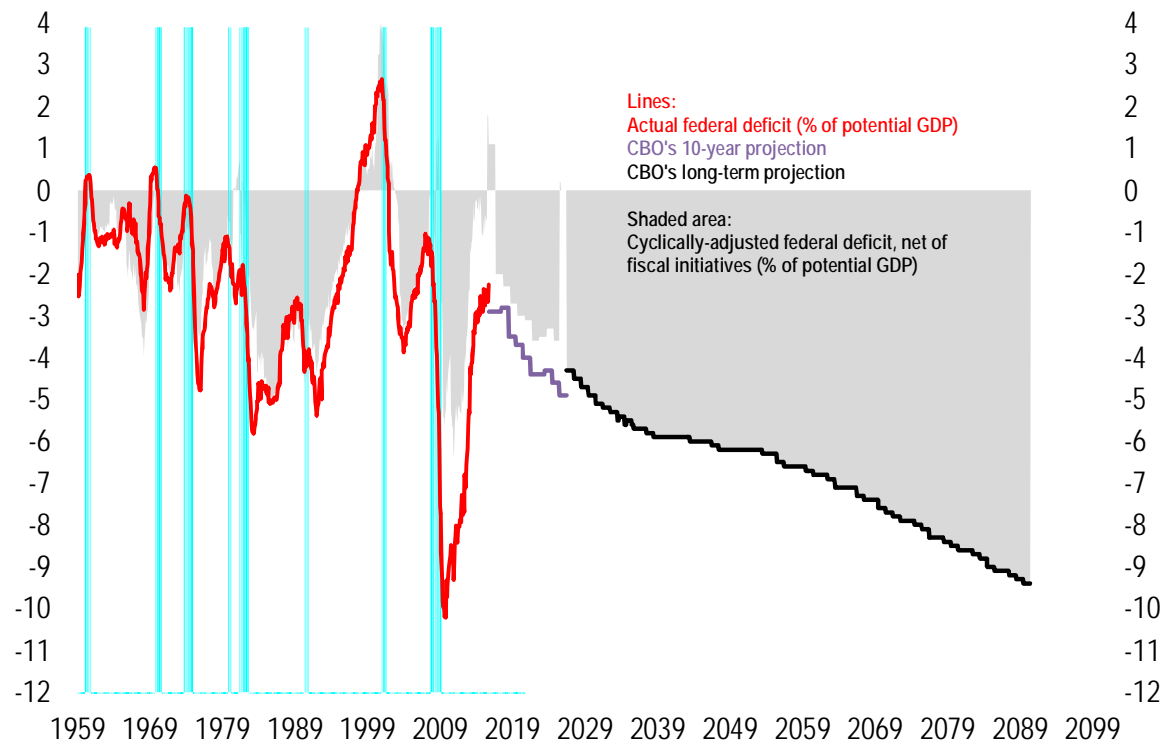
Long-term revenue and spending projections (percent of GDP)



Sources: Haver Analytics; Congressional Budget Office. Updated through 2015.

# ... of a Growing Structural Deficit ...

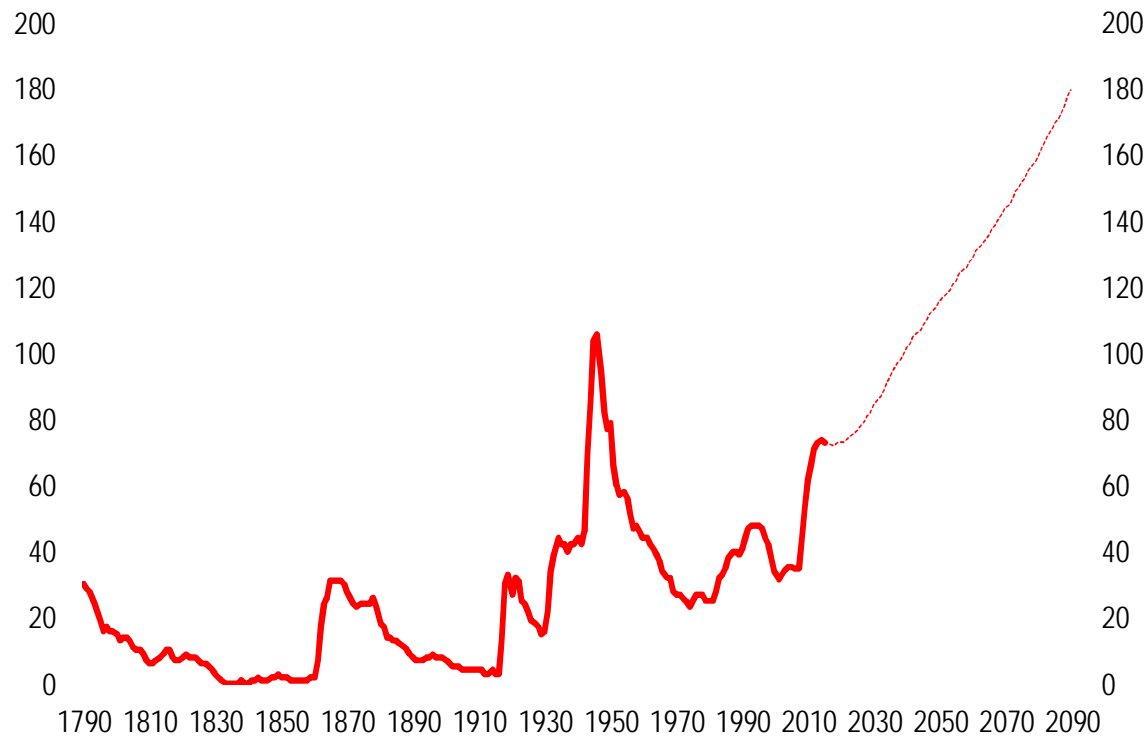
Actual and structural federal budget balance (percent of nominal GDP)



Sources: Haver Analytics; Congressional Budget Office. Updated through January 2016.

# ... that Would Be Hard to Ignore

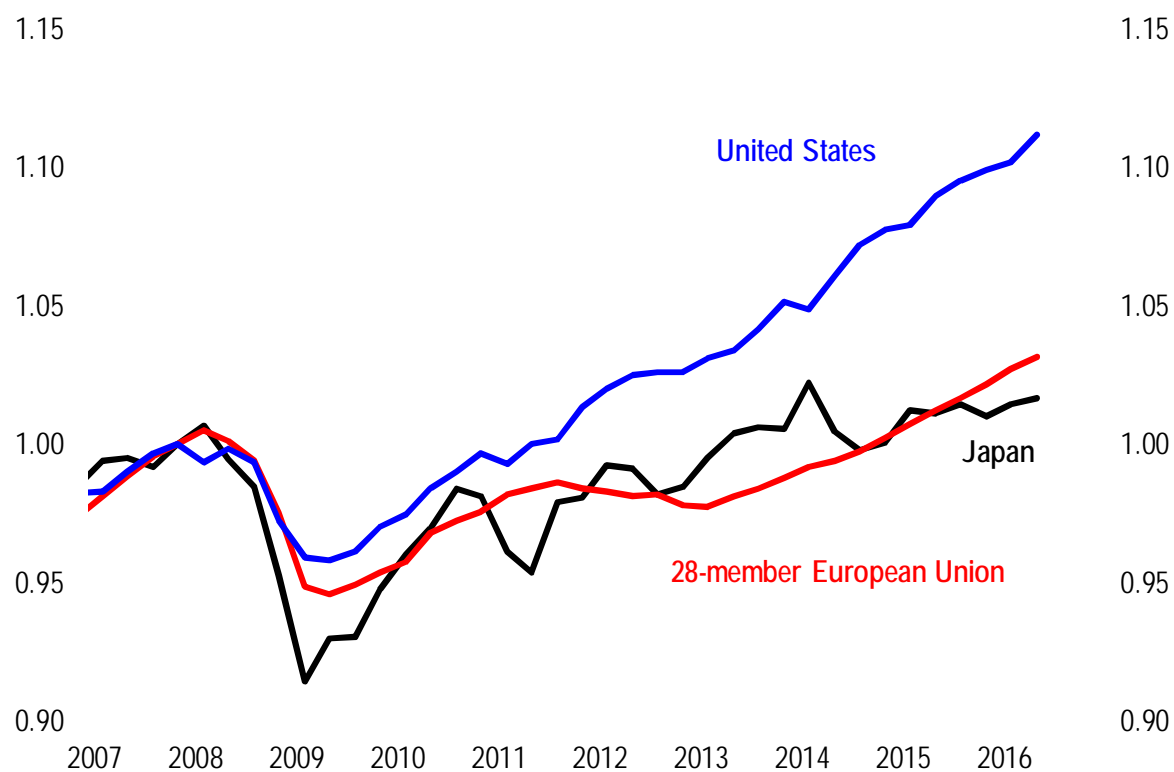
Federal debt (ratio to GDP)



Sources: Haver Analytics; Federal Reserve Board; U.S. Treasury. Updated through September 2015.

# Japan Knows About this Story ...

Real GDP (ratio to 2007 Q4)

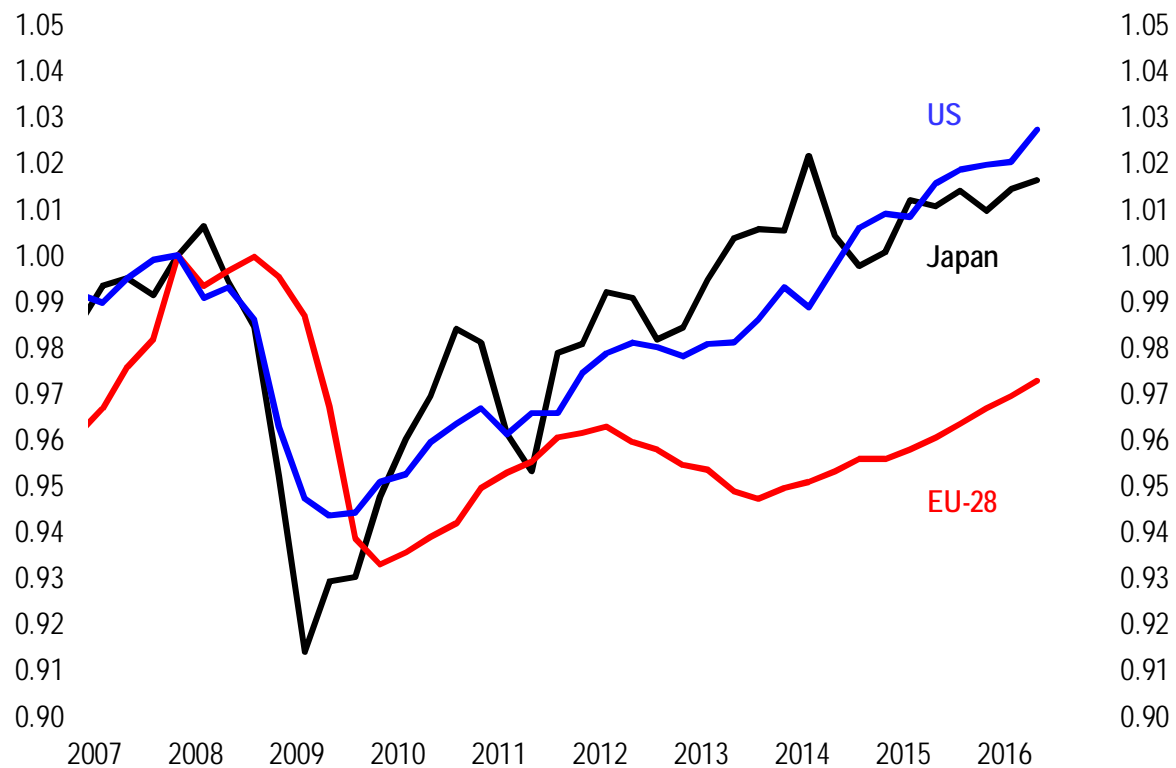


Sources: Haver Analytics; U.S. Department of Commerce; selected international agencies. Updated through 2016 Q1.



# ... Good Performance In Many Ways

Real GDP per capita (ratio to 2007 Q4)

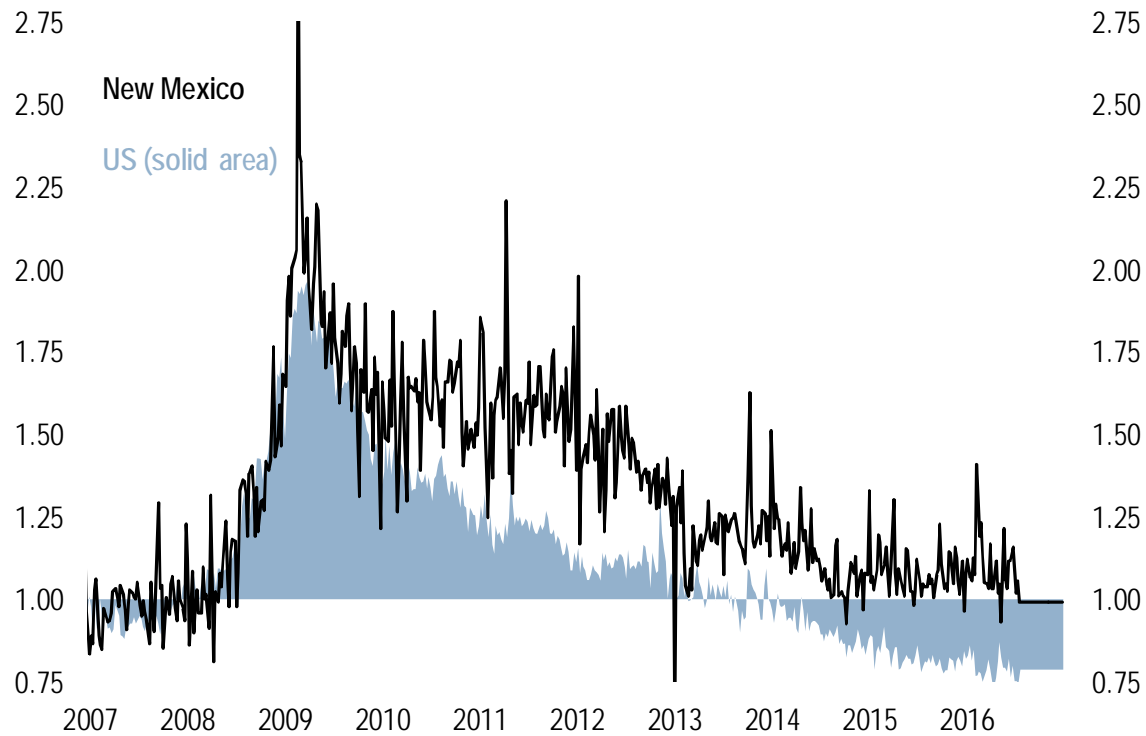


Sources: Haver Analytics; U.S. Department of Commerce; selected international agencies. Updated through 2016 Q1.

## APPENDIX II. NEW MEXICO

# The Layoffs Are Back to Normal

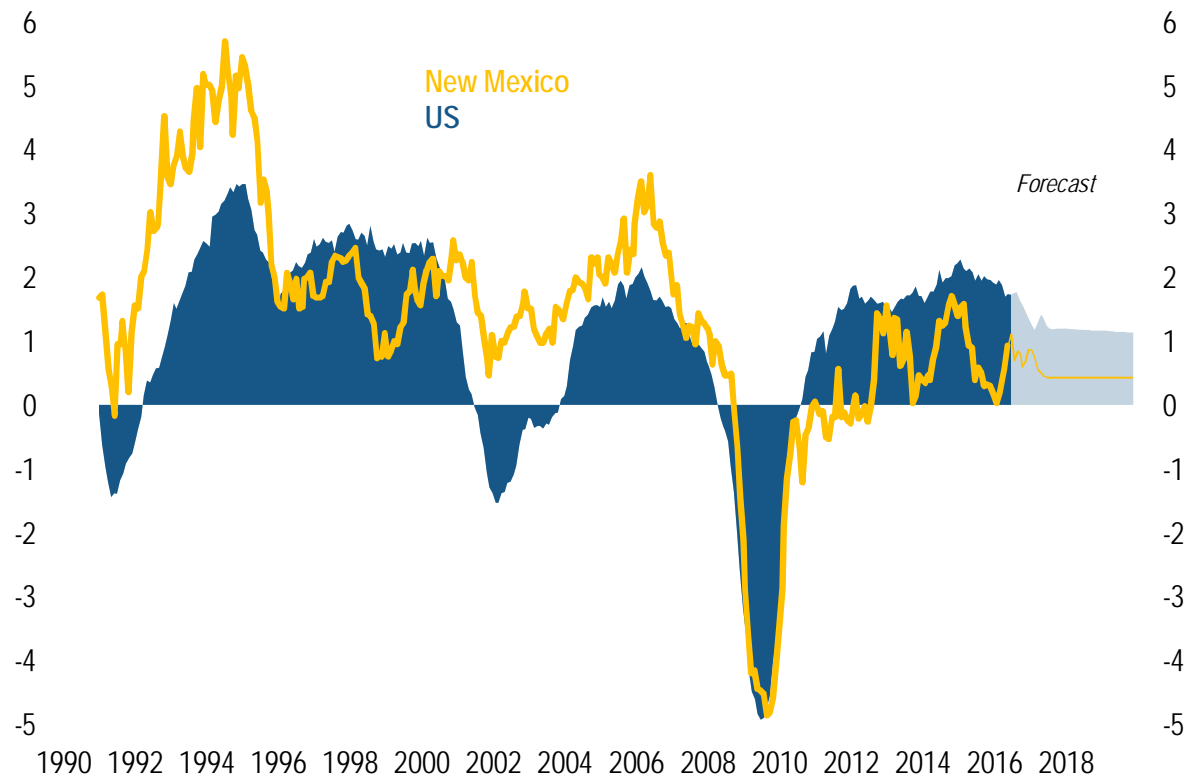
Jobless claims in New Mexico vs the nation (ratio to 2007 Q4 level)



Source: U.S. Department of Labor. Updated through July 30, 2016.

# Job Growth is Moderate ...

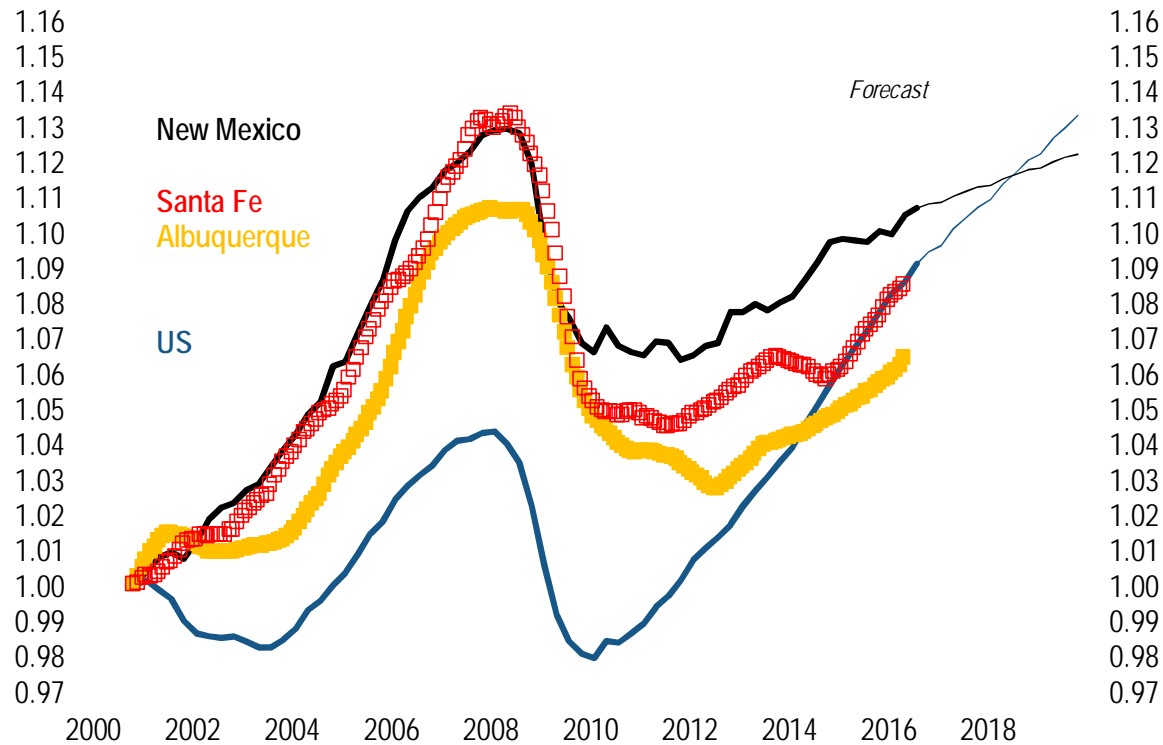
Nonfarm employment in New Mexico and the U.S. (% change from 12 months earlier)



Source: U.S. Department of Labor. Updated through June 2016 (New Mexico) and July 2016 (U.S.).

# ... Not Everywhere Though

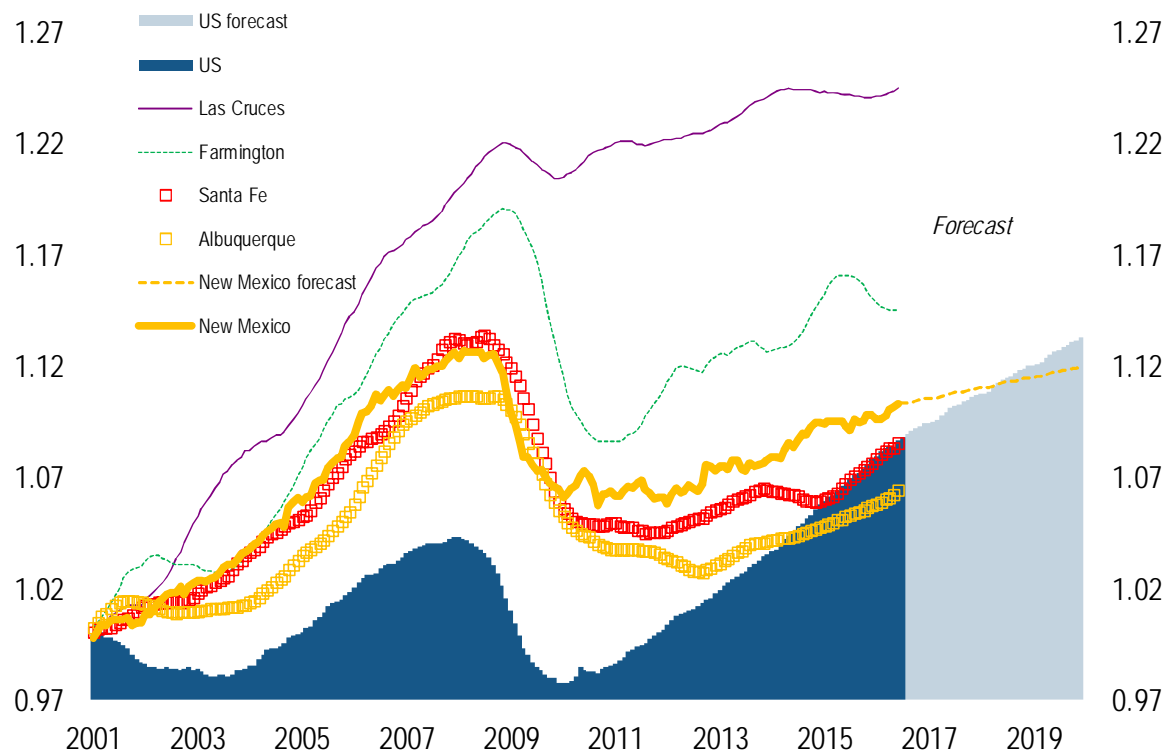
Nonfarm employment in selected areas (ratio to 2000 Q4 level)



Source: U.S. Department of Labor. Updated through June 2016 (New Mexico) and July 2016 (U.S.).

# ... Not Everywhere Though

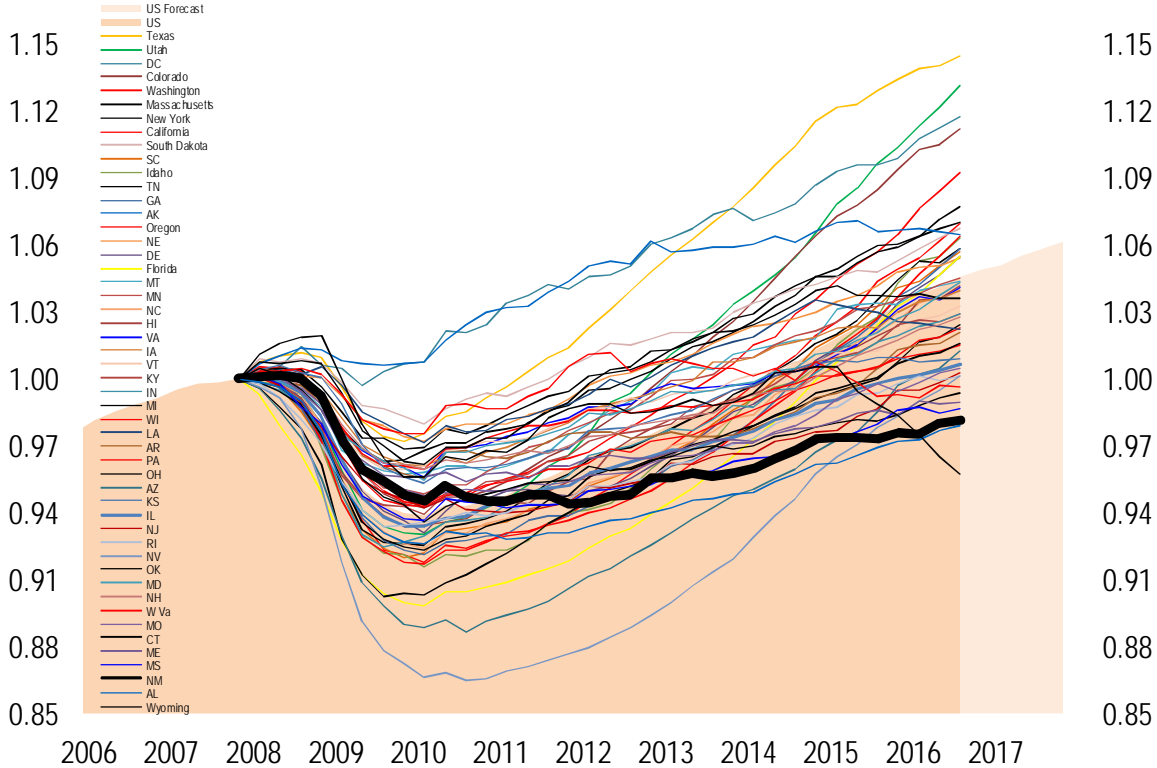
Nonfarm employment in selected areas (ratio to 2000 Q4 level)



Source: U.S. Department of Labor. Updated through June 2016 (New Mexico) and July 2016 (U.S.).

# Only North Dakota Beats This

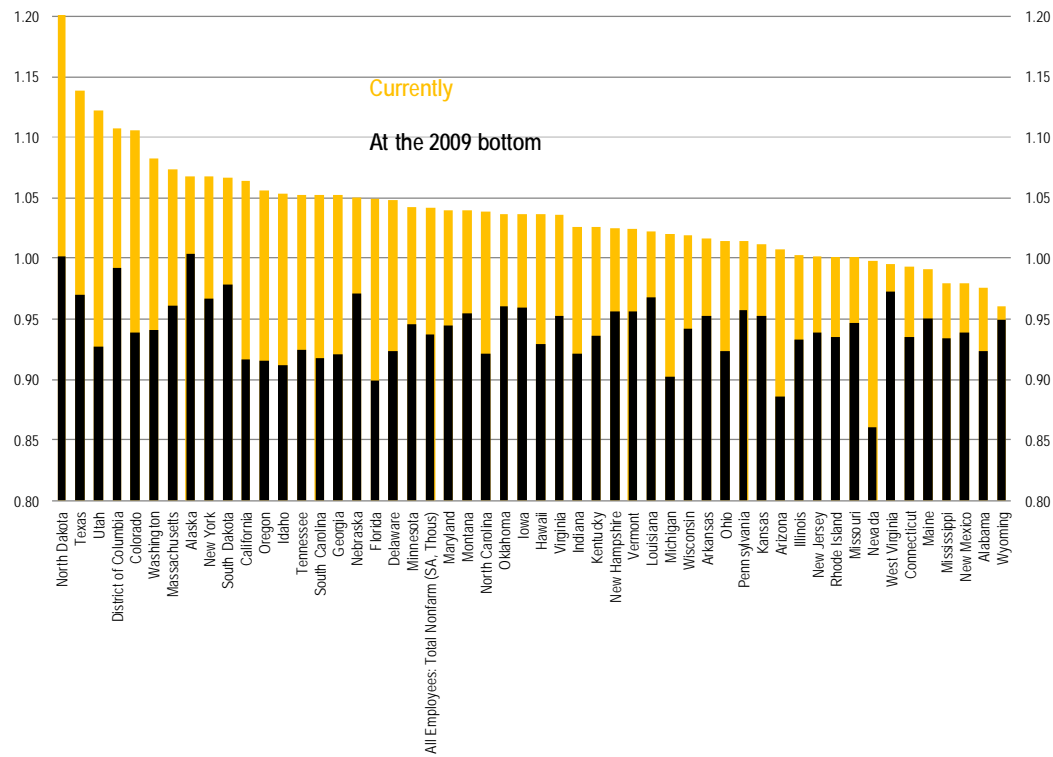
Nonfarm payroll employment across the nation (ratio to 2007 Q4)



Source: U.S. Department of Labor. Updated through June 2016 (states) and July 2016 (U.S.).

# The View Across the Country

Nonfarm employment at the cycle bottom and now (ratio to December 2007 level)

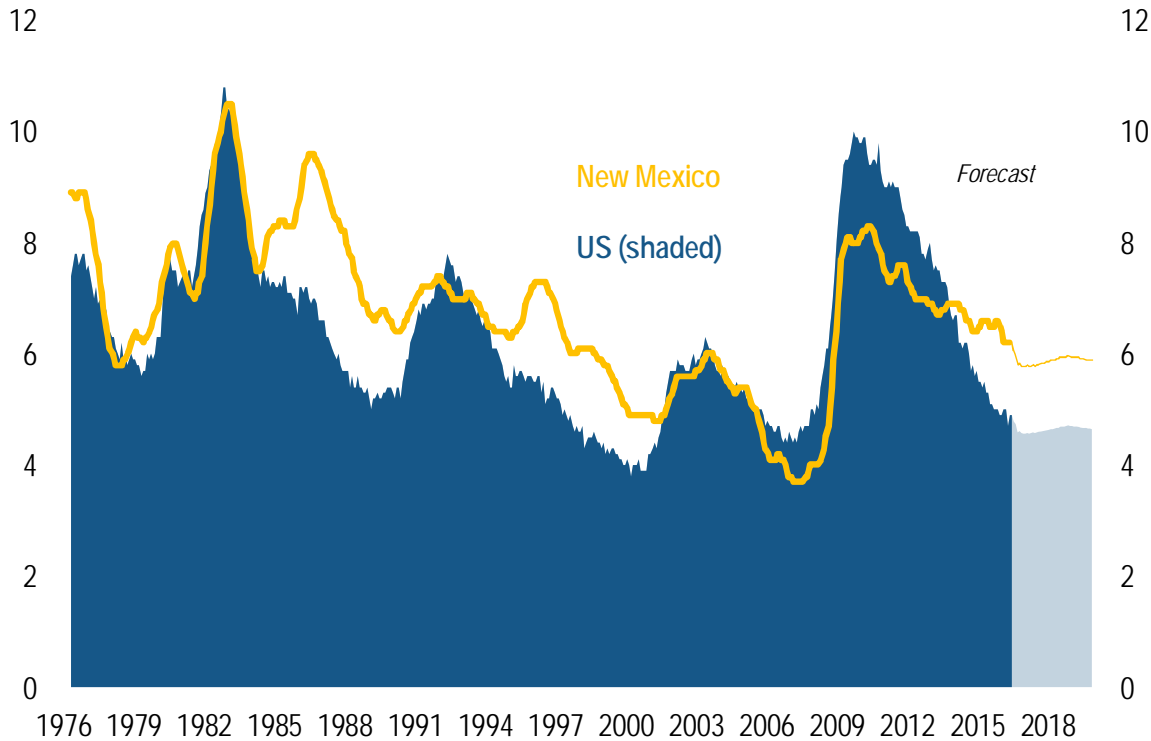


Source: U.S. Department of Labor. Updated through June 2016 (states) and July 2016 (U.S.).



# Back to the Cycle Low in Unemployment

Unemployment rate in Texas and the U.S. (percent of the labor force)



Source: U.S. Department of Labor. Updated through June 2016 (New Mexico) and July 2016 (U.S.).

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jglassman@jpmorgan.com

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