Going for Gold
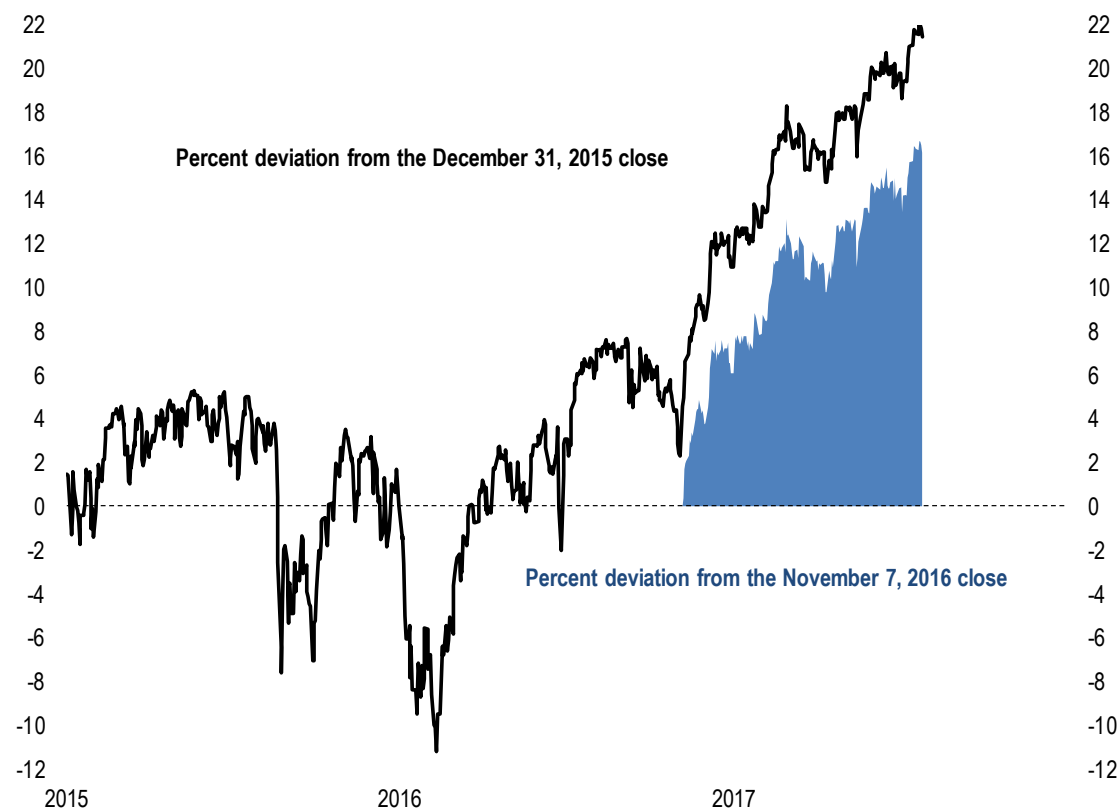
August 24, 2017

Growth in 2017 Has a Shot at 3% …

Wilshire 5000 index, float adjusted (percent change from selected points)
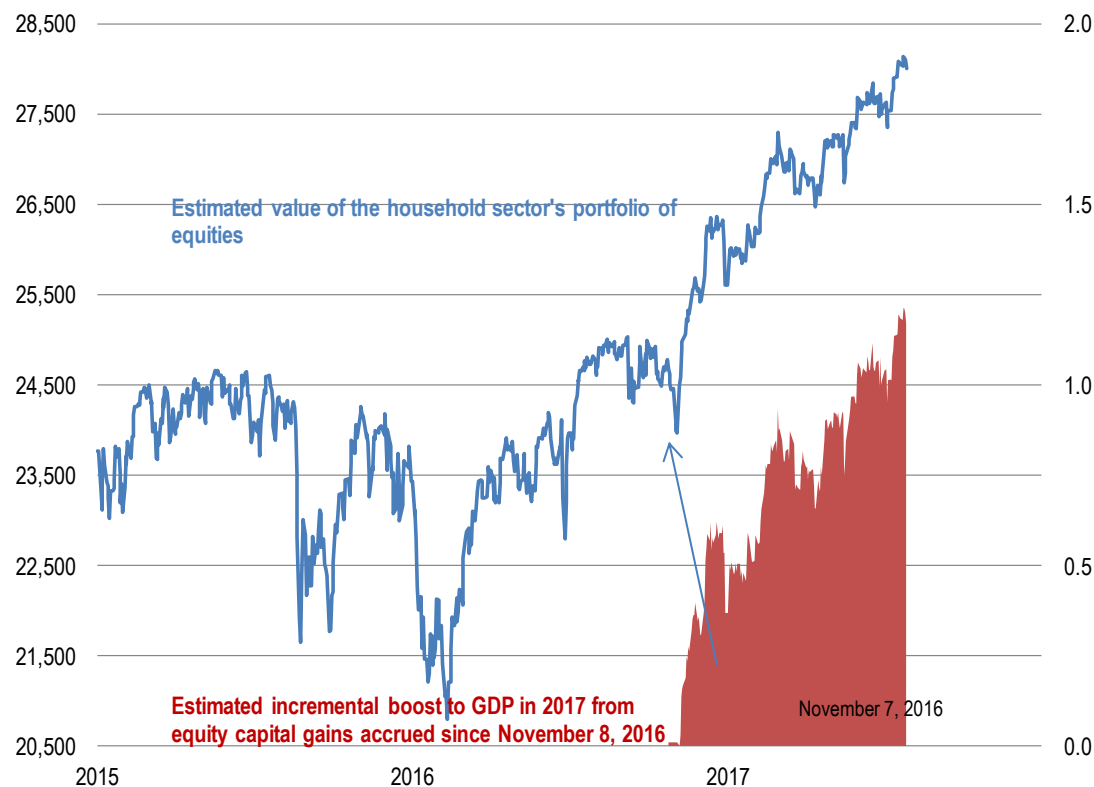

Percent deviation from the December 31, 2015 close

Percent deviation from the November 7, 2016 close

Sources: Haver Analytics; Dow Jones. Updated through July 18, 2017.

... 2% + Less Energy Drag + Stock Boost + Better DM

Household equity portfolios ($ billion)   **Estimated contribution to GDP (pct pts)**

Estimated value of the household sector's portfolio of equities

Estimated incremental boost to GDP in 2017 from equity capital gains accrued since November 8, 2016
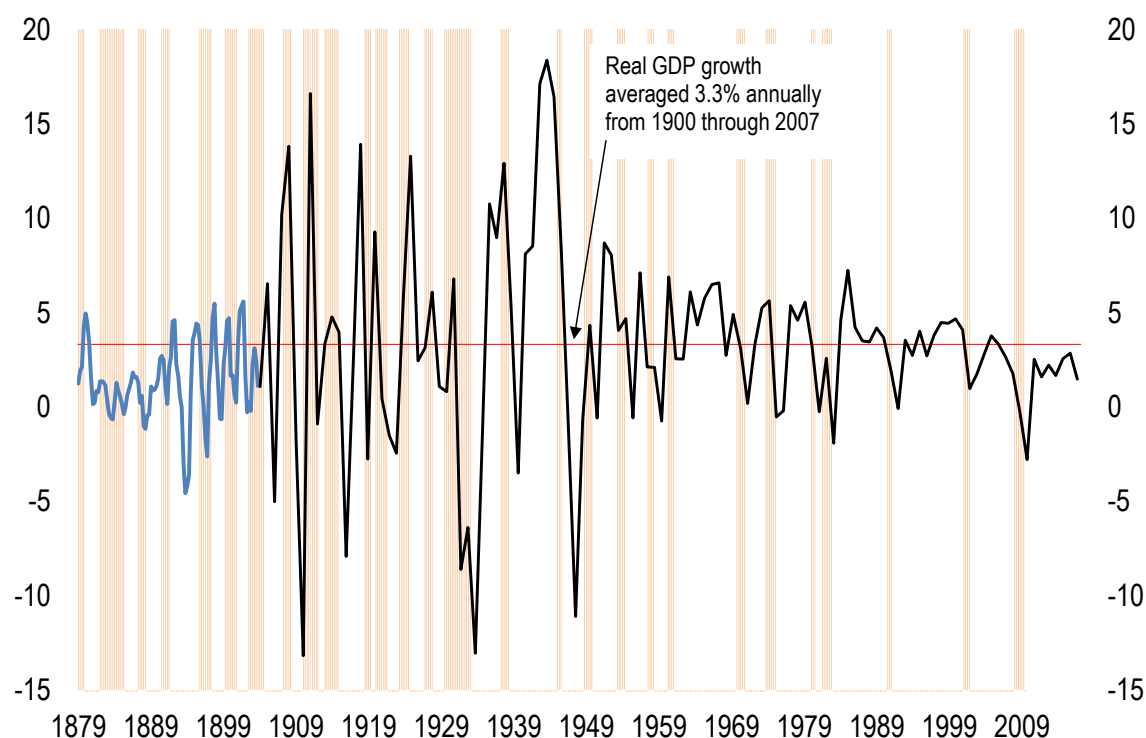
November 7, 2016

Potential to boost GDP by 1.5 pct pts, all else equal

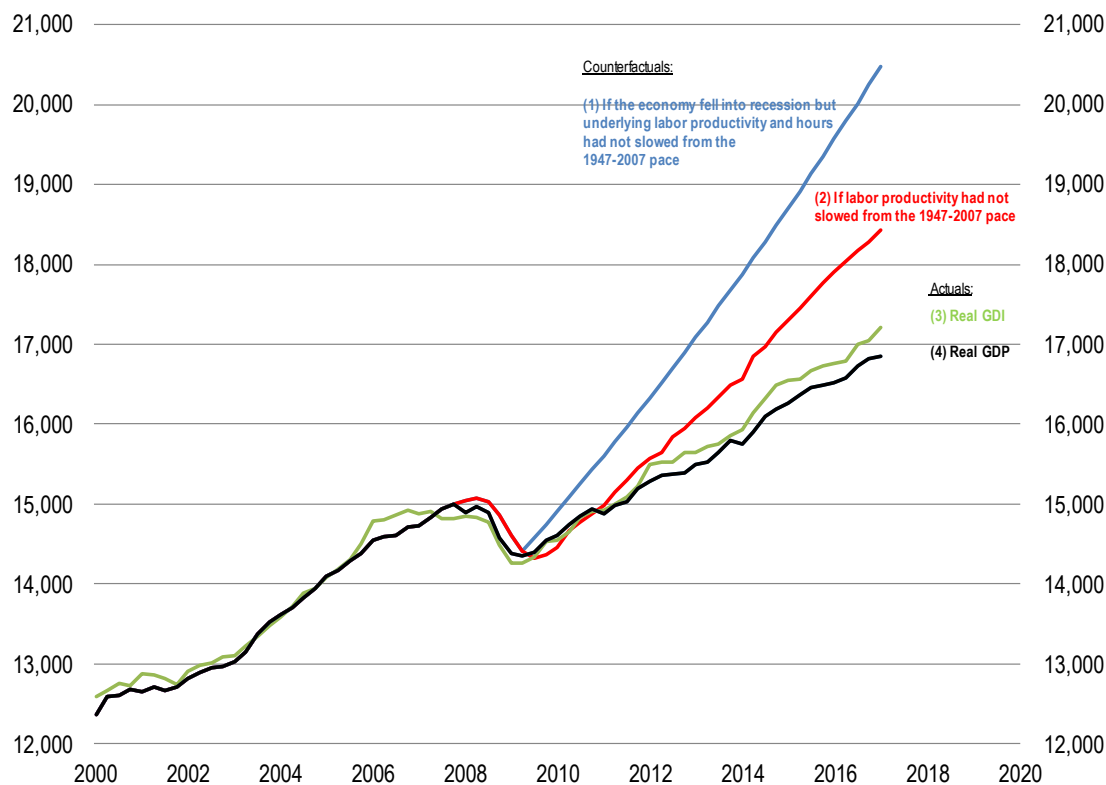*Sources: Haver Analytics; Dow Jones; Federal Reserve Board. Updated through July 28, 2017.*

CHASE   **J.P.Morgan**   **3**

A Decade of Slow Growth ...

Real U.S. GDP growth (percent change from the previous year)

Real GDP growth averaged 3.3% annually from 1900 through 2007

... Mostly About Demographics ...

Counterfactual GDP paths (billions of chained 2009 dollars)

Counterfactuals:

(1) If the economy fell into recession but underlying labor productivity and hours had not slowed from the 1947-2007 pace

(2) If labor productivity had not slowed from the 1947-2007 pace

Actuals:

(3) Real GDI

(4) Real GDP

Sources: Haver Analytics; U.S. Department of Commerce. Updated through 2017 Q1.
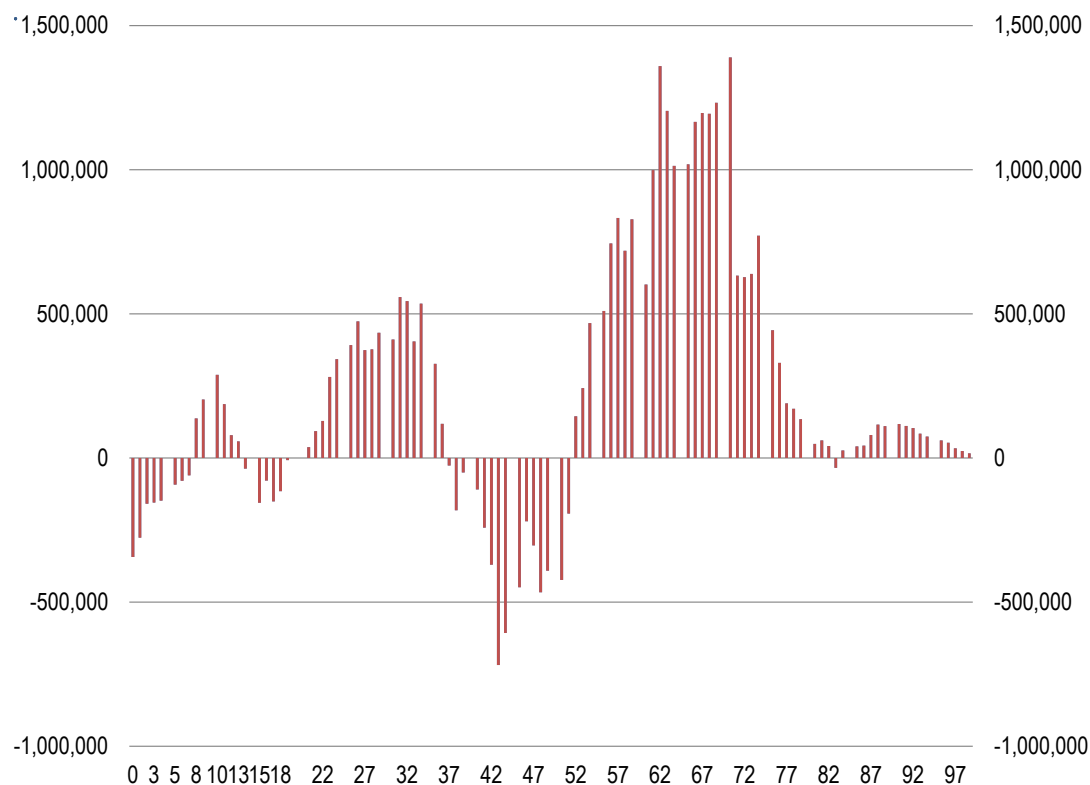
... (Slower Growth of the Working-Age ...

The working-age population, ages 16 to 66 (monthly change in thousands)
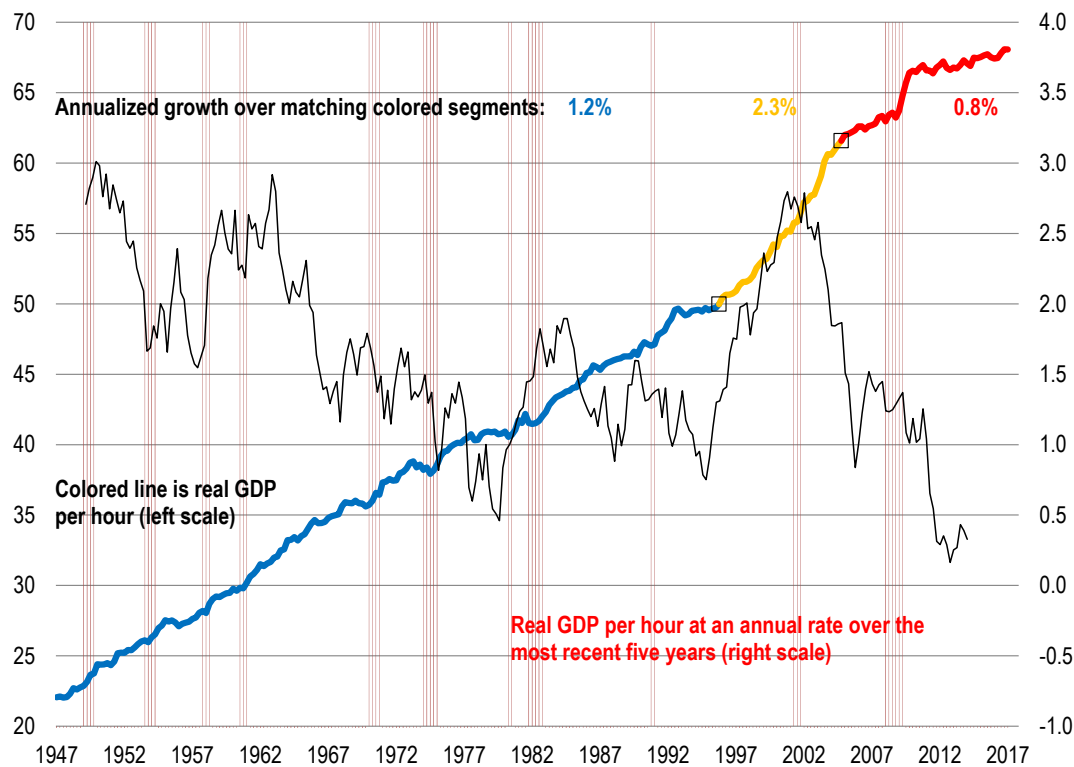
... With Baby Boomers Retiring) ...

Change in the population since 2007, by age (number)

Sources: Haver Analytics; Census. Updated through June 2017.

... and Slow Productivity Too (for Now)

Labor force and the working age population (percent change annually)

Annualized growth over matching colored segments: **1.2%** **2.3%** **0.8%**

Colored line is real GDP per hour (left scale)

Real GDP per hour at an annual rate over the most recent five years (right scale)

Sources: Haver Analytics; Federal Reserve Board; U.S. Treasury. Updated through 2017 Q1.

That's Why, Despite Slow Growth, …
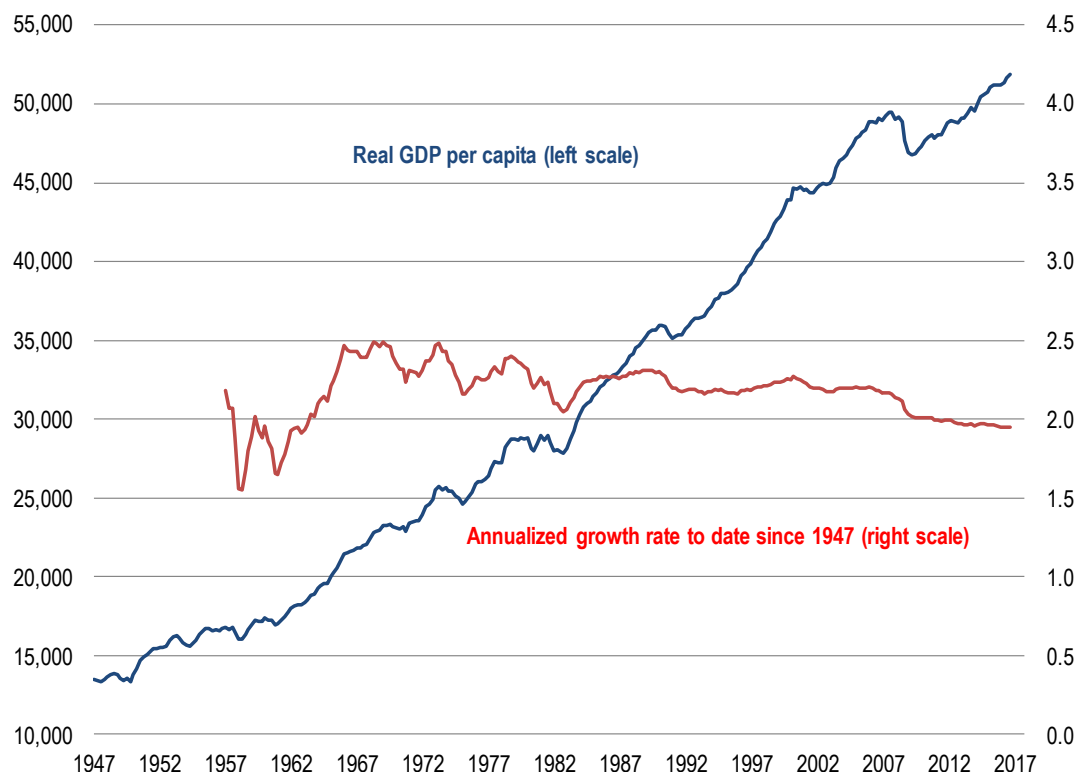
... The Economy Is Back on Its Feet ...

Unemployment (percent of the labor force)
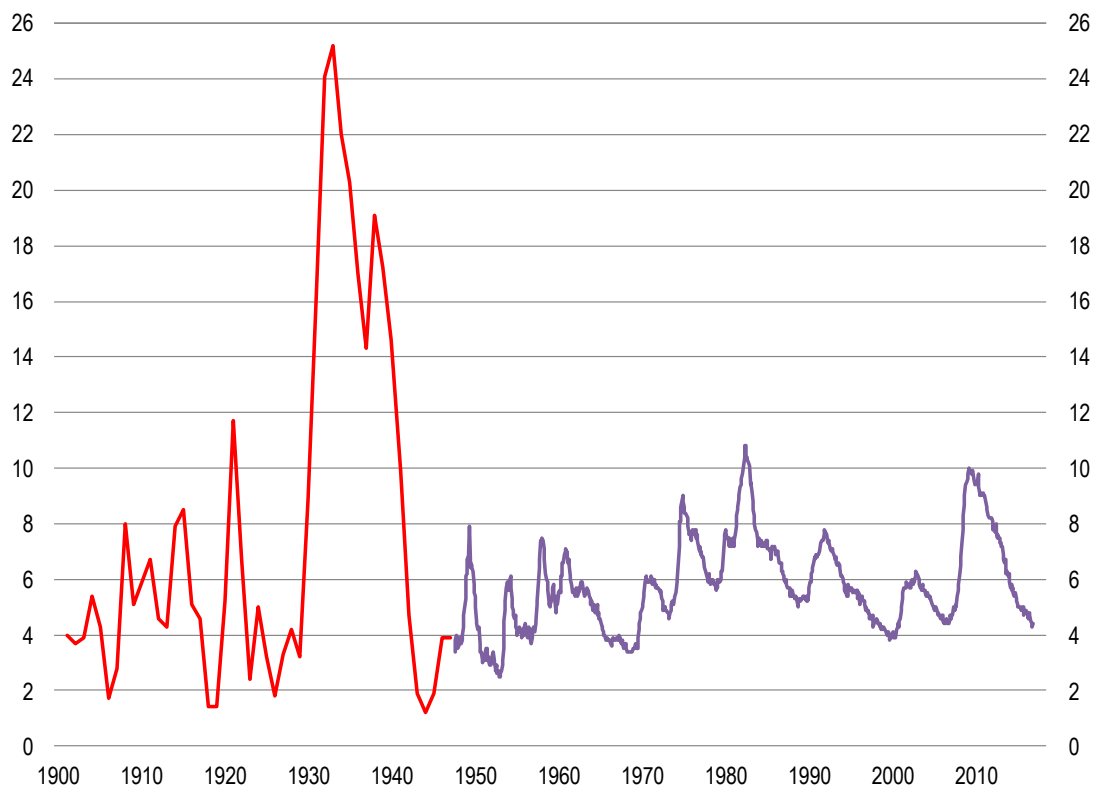
Sources: Haver Analytics; U.S. Department of Labor. Updated through June 2017.
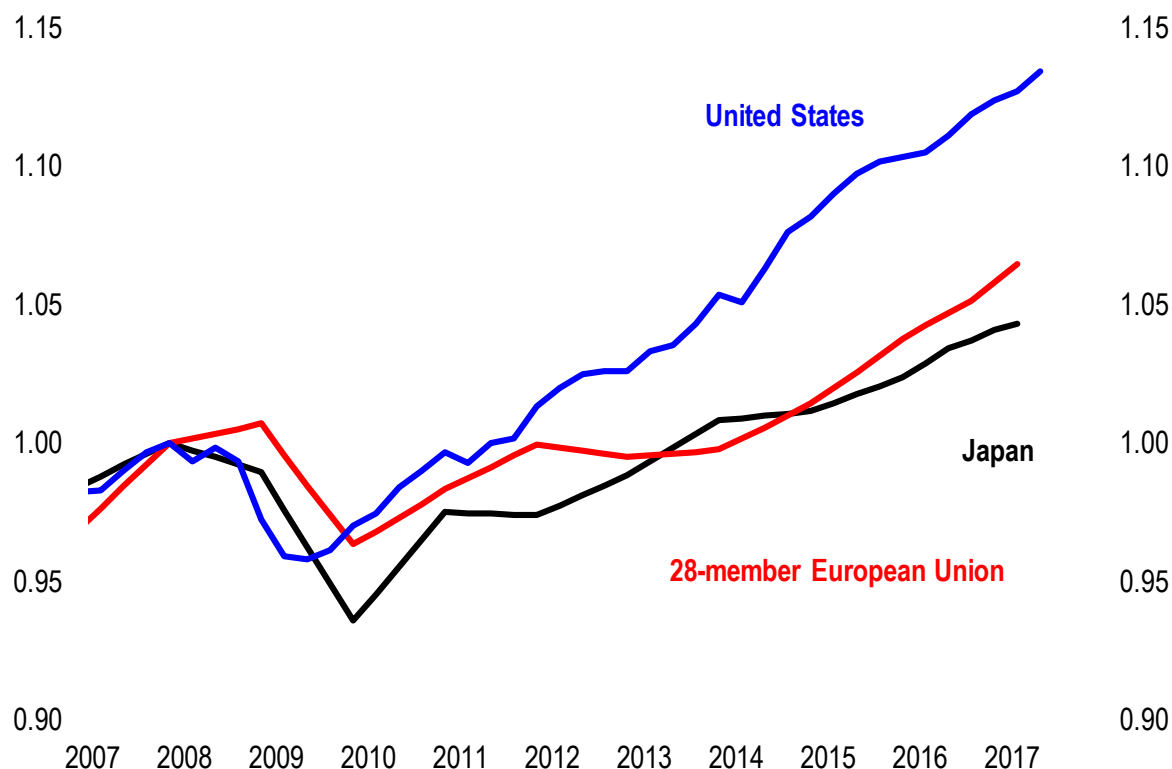
... and the Living Standard Is at a Record

Real GDP per capita ($ 2009) **Real GDP per capita growth (annualized % ch since 1947)**

Sources: Haver Analytics; U.S. Department of Commerce. Updated through 2016 Q4.
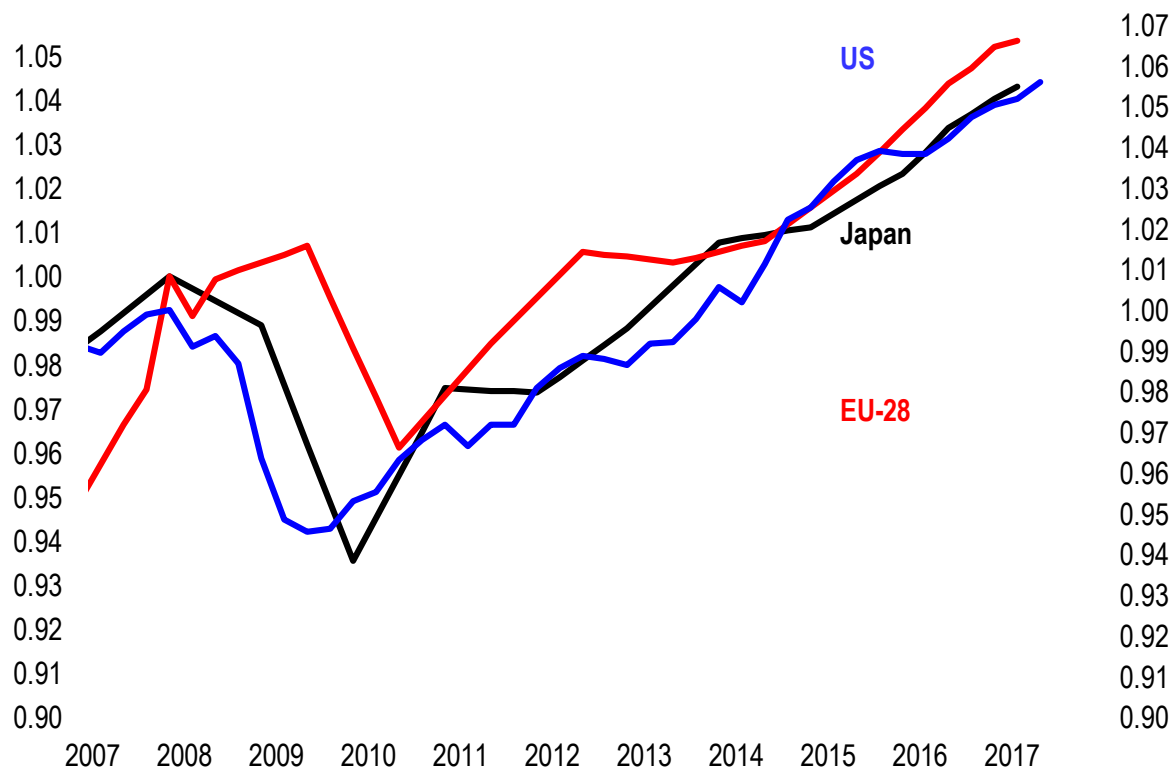
Japan Knows a Lot About this Story …

Real GDP (ratio to 2007 Q4)

Sources: Haver Analytics; U.S. Department of Commerce; selected international agencies. Updated through 2017 Q2.

... How Demographics Matters and Doesn't

Real GDP per capita (ratio to 2007 Q4)

Sources: Haver Analytics; U.S. Department of Commerce; selected international agencies. Updated through 2017 Q2.

Four Questions

1) Given the confusion about the economy, what's the most useful thing to watch for clues to the evolution of the economy?

2) Where are we in the economic cycle?

3) With the economic recovery now in the 9th year (the third longest recovery on record), and expansions lasting no more than 6 to 9 years, is a new recession inevitable?

4) If slow growth didn't prevent the economy from getting back on its feet and if slow growth hasn't kept the living standard from climbing to new all-time record highs, does slow growth matter?

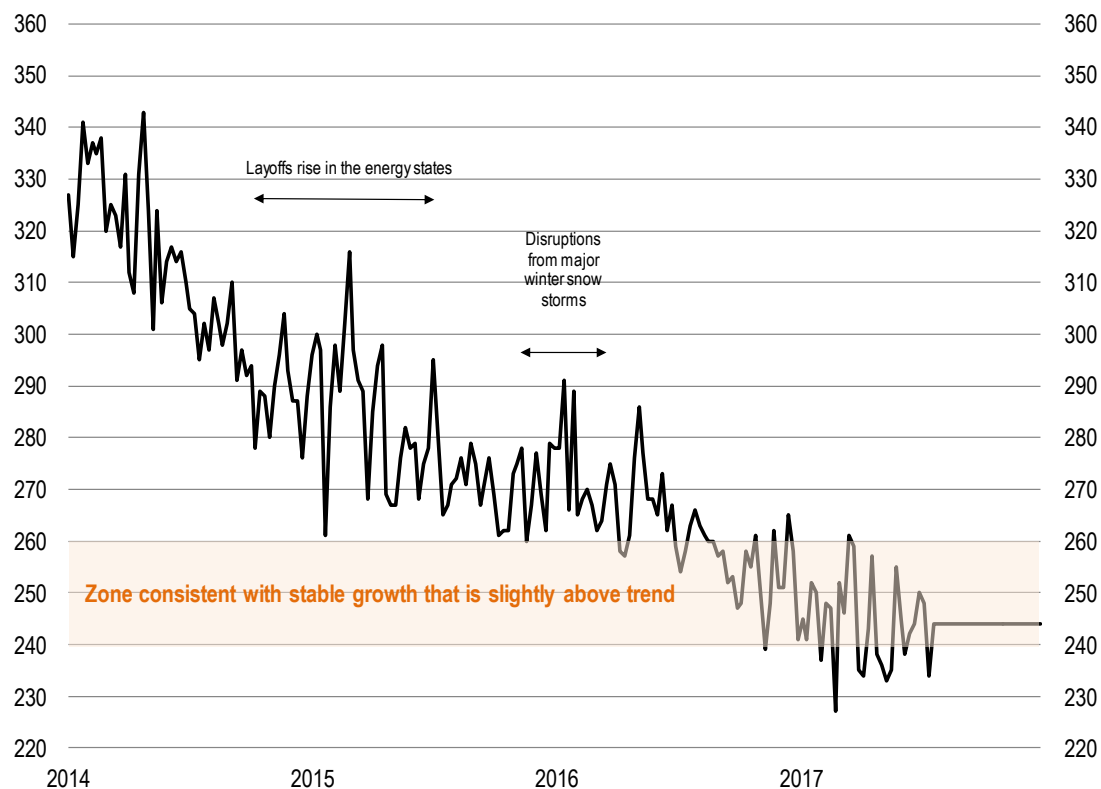# Jobless Claims Know the Economy Best ...

Initial applications for unemployment benefits (thousands, weekly)
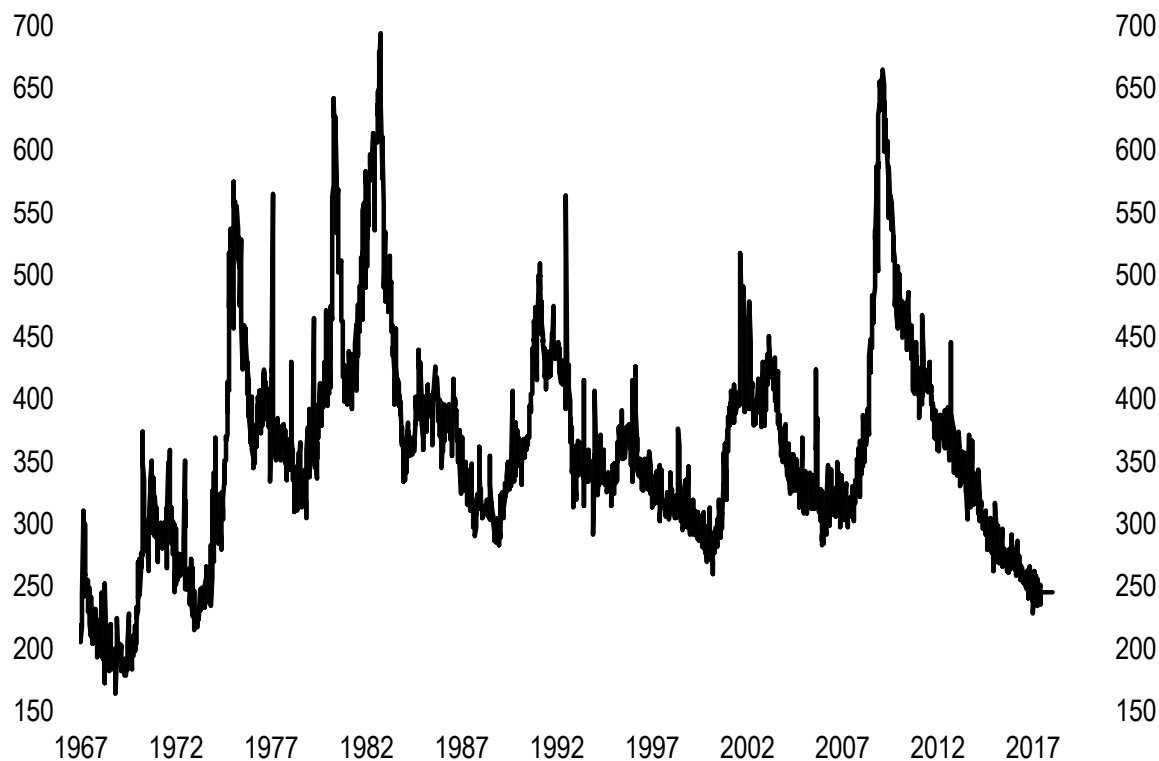
Sources: Haver Analytics; U.S. Department of Labor. Updated through July 22, 2017.

...Timely, Reliable, Informative, Comprehensive

Initial applications for unemployment benefits (thousands, weekly)

Layoffs rise in the energy states

Disruptions from major winter snow storms

Zone consistent with stable growth that is slightly above trend

Sources: Haver Analytics; U.S. Department of Labor. Updated through July 22, 2017.
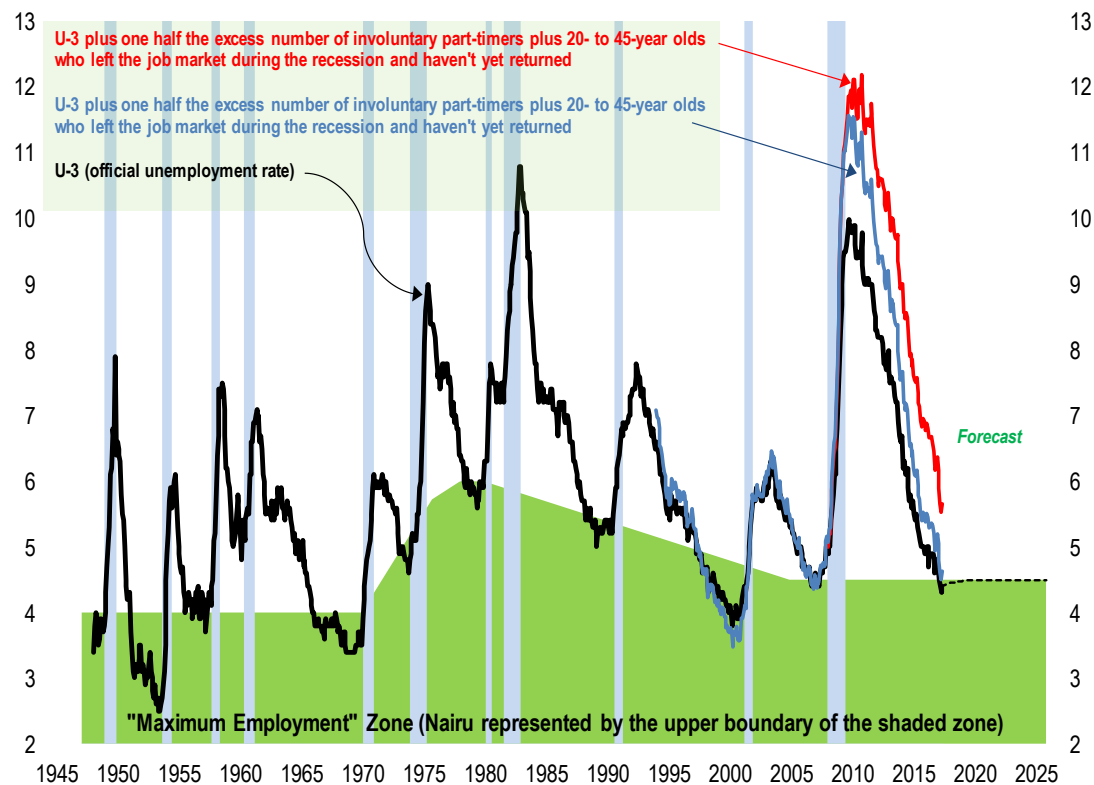
The Fed's GPS Says 'Top of the 9th Inning'

Core PCE inflation (% ch from 12 months earlier)   Unemployment (% of the labor force)
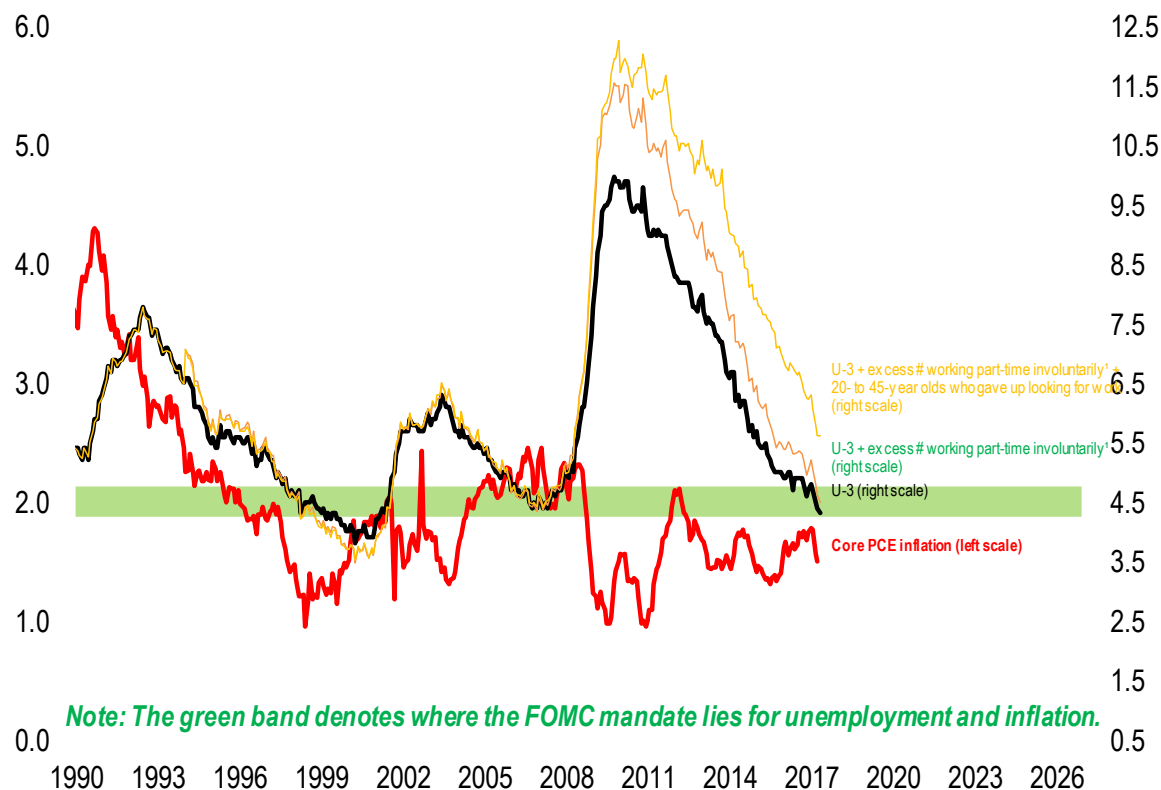
U-3 + excess # working part-time involuntarily + 20- to 45-year olds who gave up looking for work (right scale)

U-3 + excess # working part-time involuntarily (right scale)

U-3 (right scale)

Core PCE inflation (left scale)

Note: The green band denotes where the FOMC mandate lies for unemployment and inflation.

Sources: Haver Analytics; U.S. Department of Commerce; U.S. Department of Labor. Updated through June 2017.

This Time It Should be Different

Unemployment (percent of the labor force)

U-3 plus one half the excess number of involuntary part-timers plus 20- to 45-year olds who left the job market during the recession and haven't yet returned

U-3 plus one half the excess number of involuntary part-timers plus 20- to 45-year olds who left the job market during the recession and haven't yet returned

U-3 (official unemployment rate)

Forecast

"Maximum Employment" Zone (Nairu represented by the upper boundary of the shaded zone)

Sources: Haver Analytics; U.S. Department of Labor. Updated through June 2017.
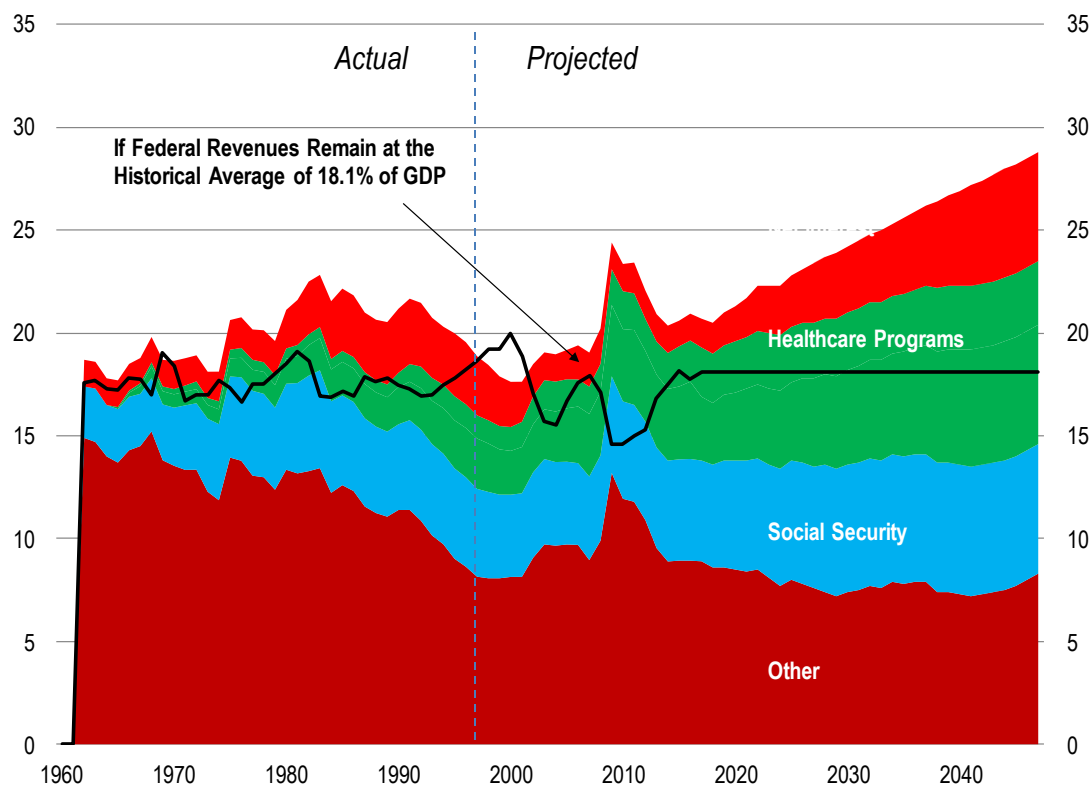
The Trouble With "Slow" ...

Real U.S. GDP growth (percent change from four quarters earlier)
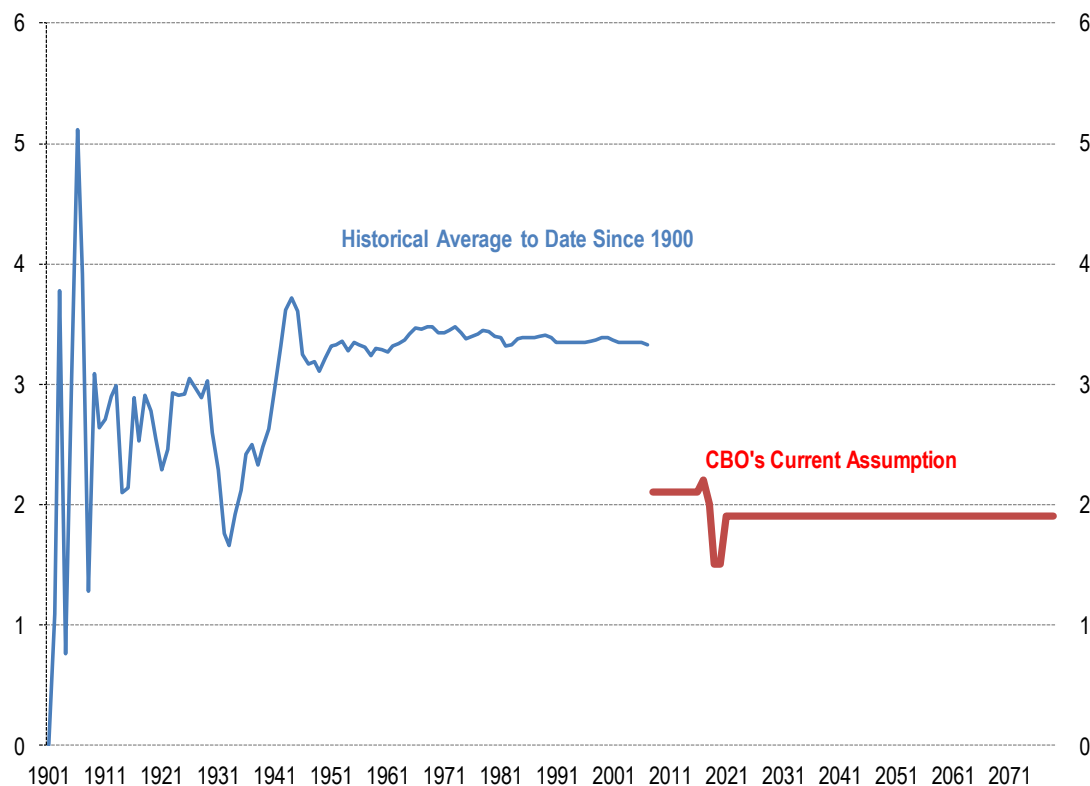
Sources: Haver Analytics; U.S. Department of Commerce; NBER Macroeconomic database. Updated through 2017 Q2.
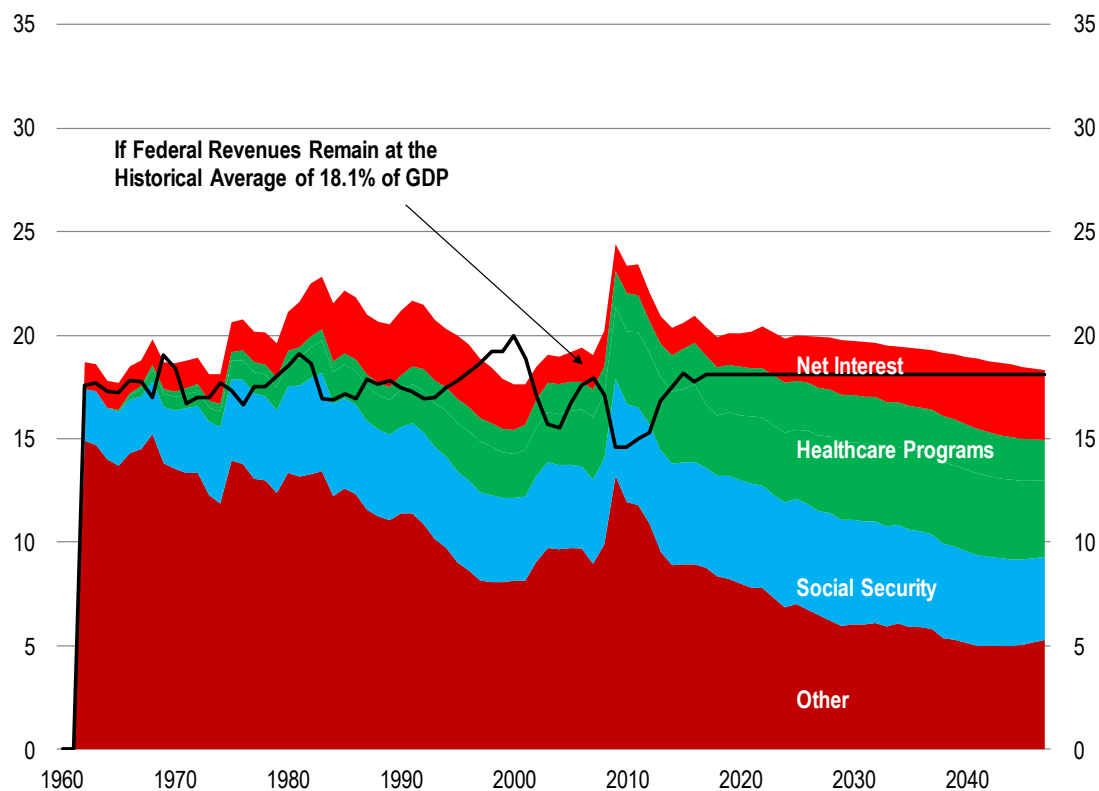
... Promises from a 3.5% Era Are Daunting at 2%

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

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

3.5% Growth Does This

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

If Federal Revenues Remain at the Historical Average of 18.1% of GDP

Net Interest

Healthcare Programs

Social Security

Other

Sources: Haver Analytics; Congressional Budget Office. Updated through 2016.
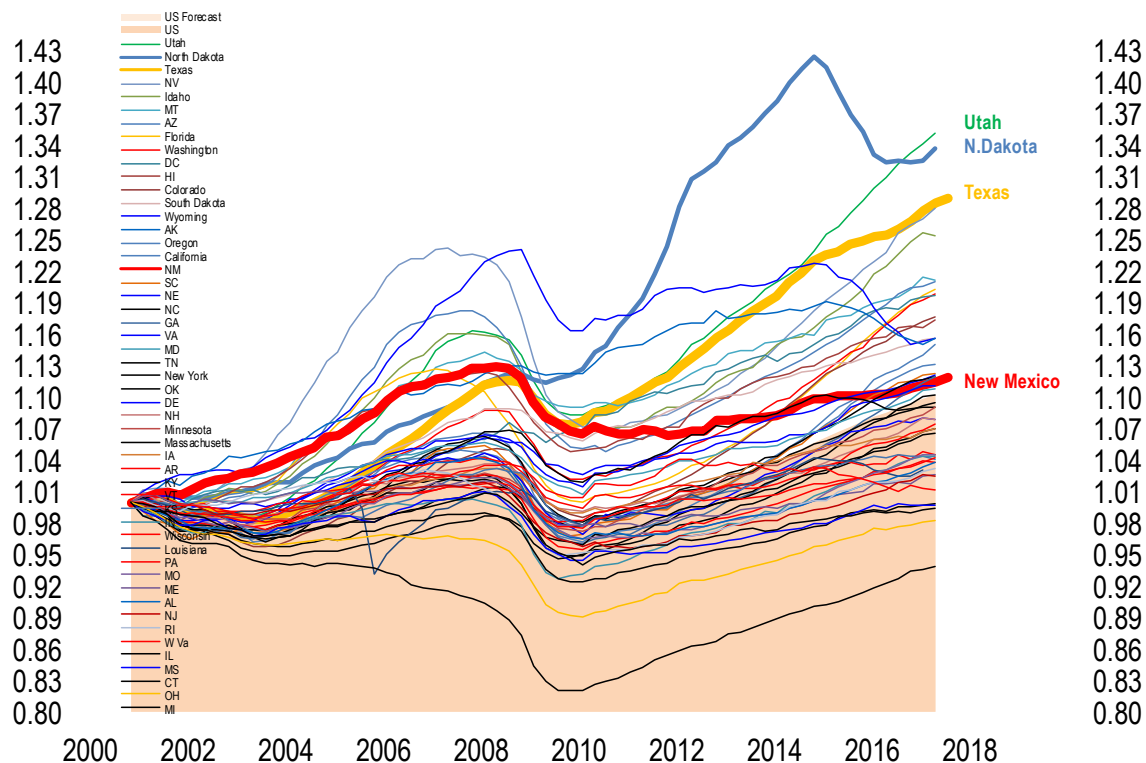
Tougher Going in this Recovery ...

Nonfarm payroll employment across the nation (ratio to 2007 Q4)
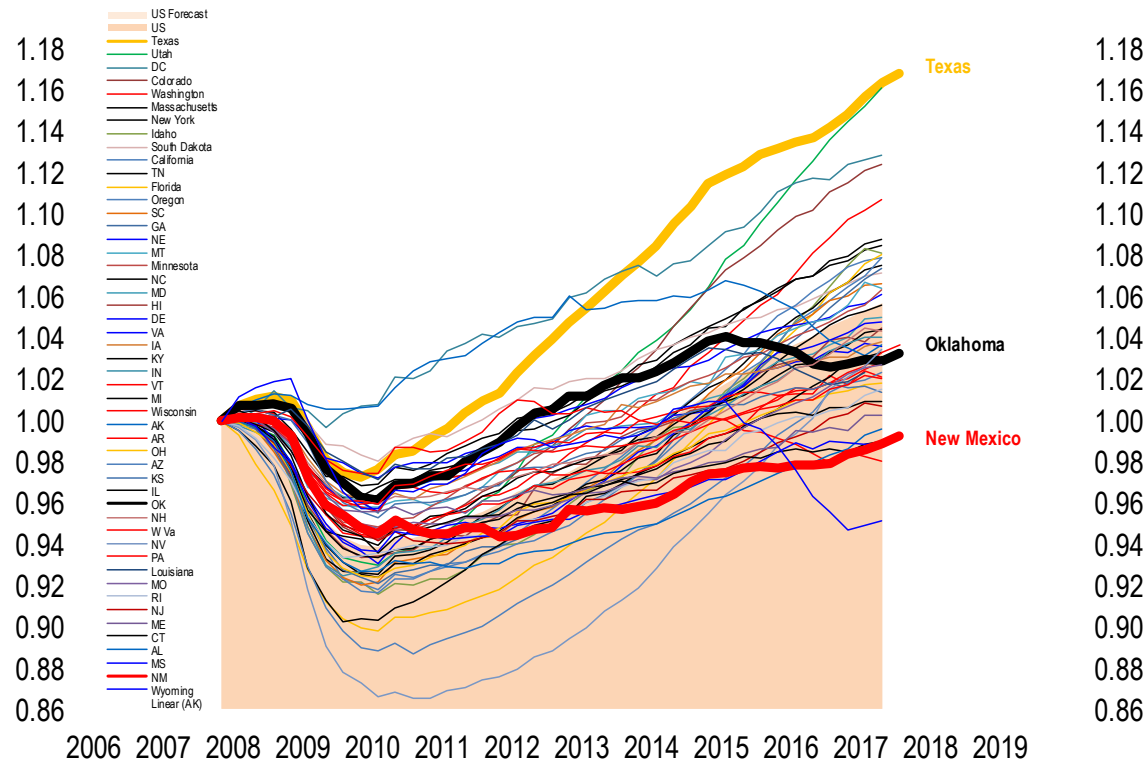
Sources: Haver Analytics; U.S. Department of Labor. Updated through June 2017 (state) and July 2017 (U.S.).
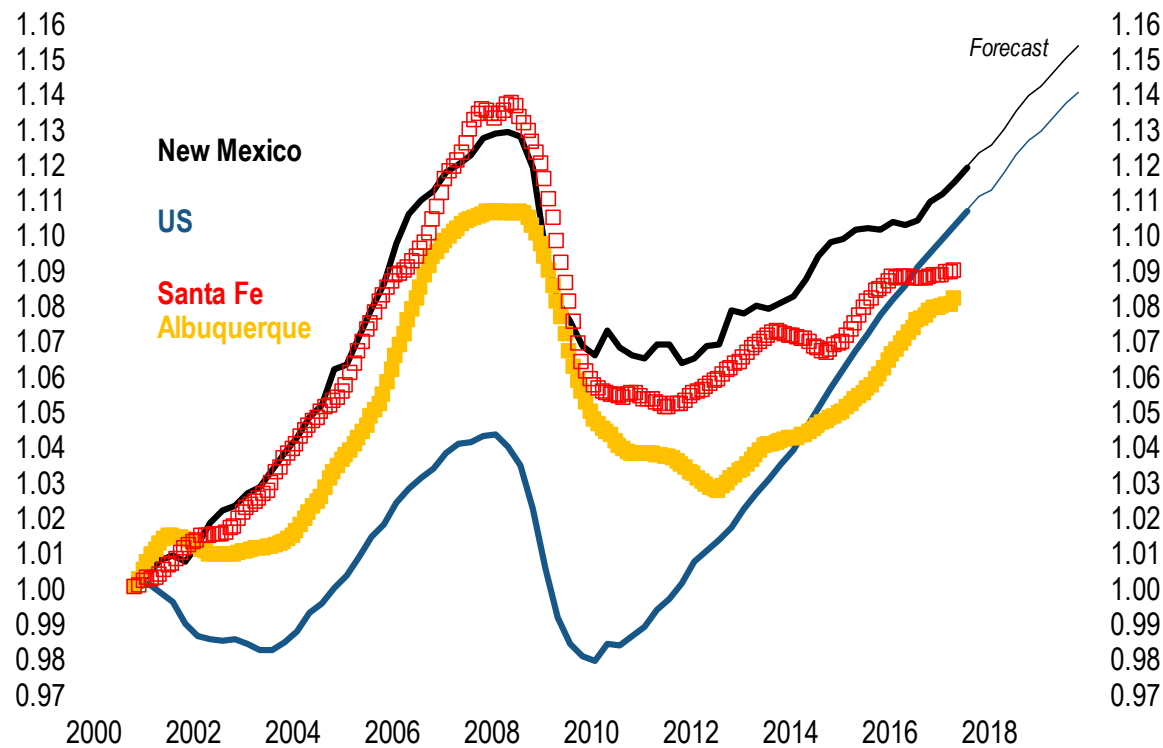
... but Not Bad for the Millennium

Nonfarm payroll employment across the nation (ratio to 2000 Q4)

Sources: Haver Analytics; U.S. Department of Labor. Updated through June 2017 (state) and July 2017 (U.S.).
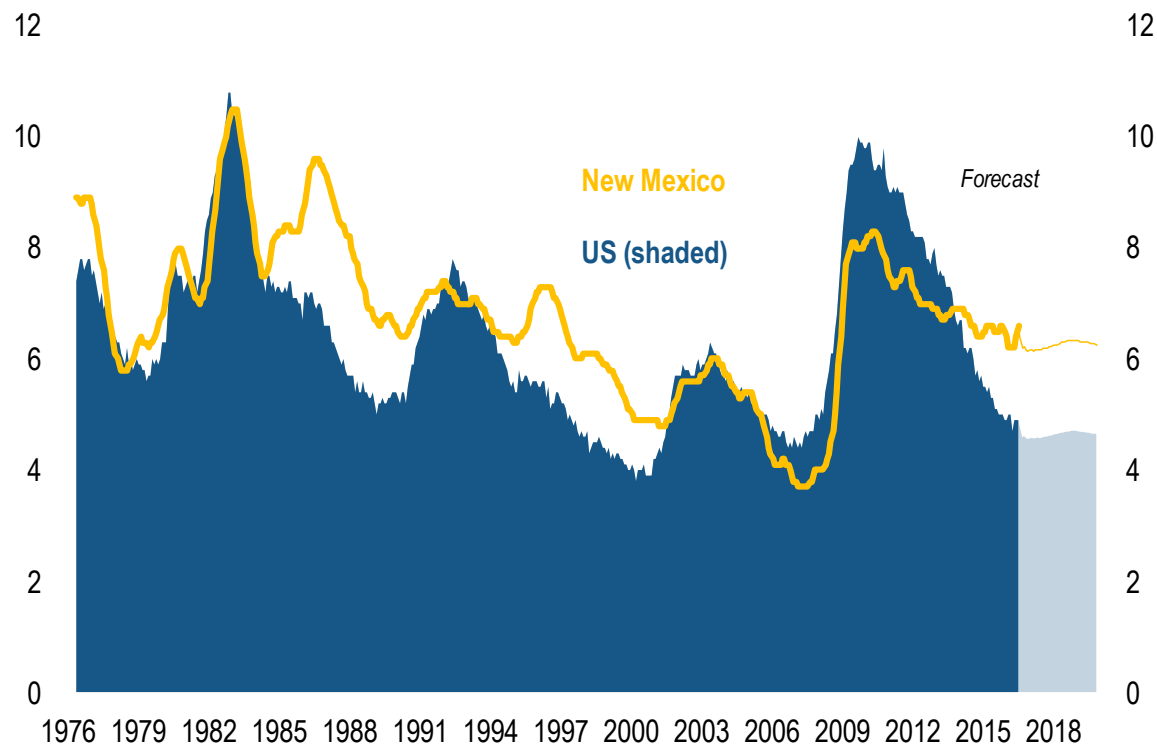
Intrastate Trends

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

Sources: Haver Analytics; U.S. Department of Labor. Updated through June 2017.
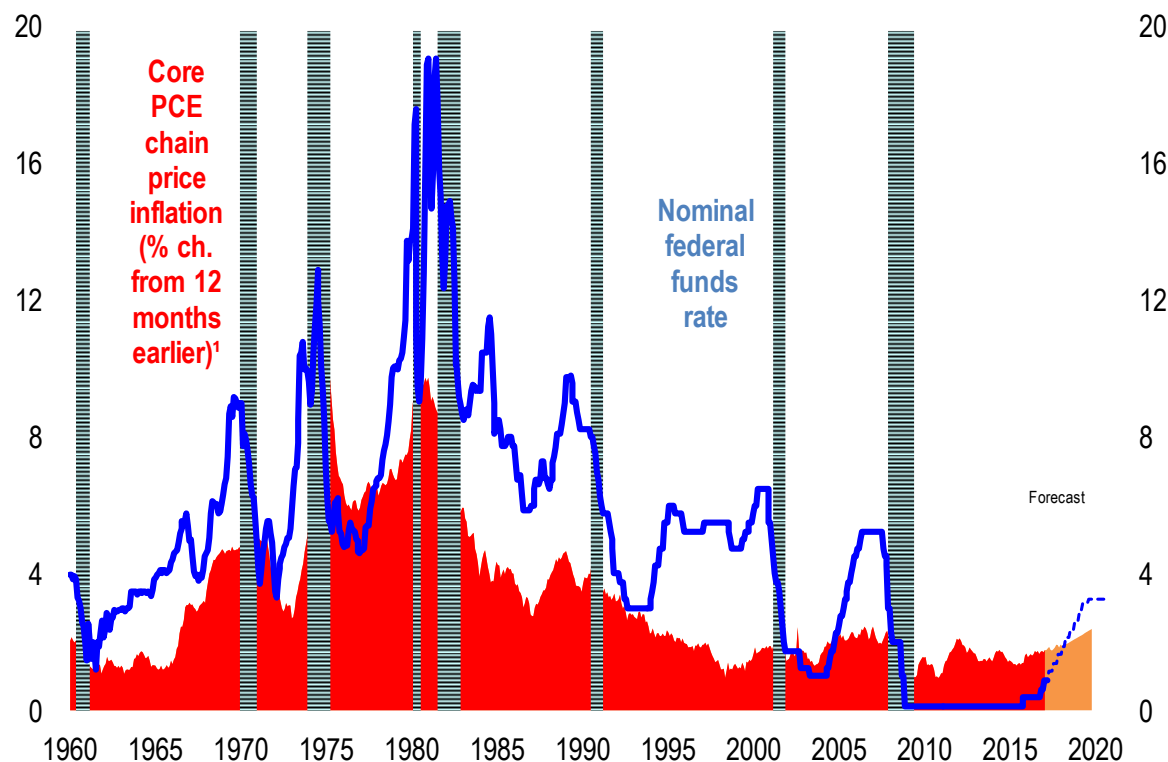
Still, Only Halfway Home

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

Source: U.S. Department of Labor. Updated through June 2017.
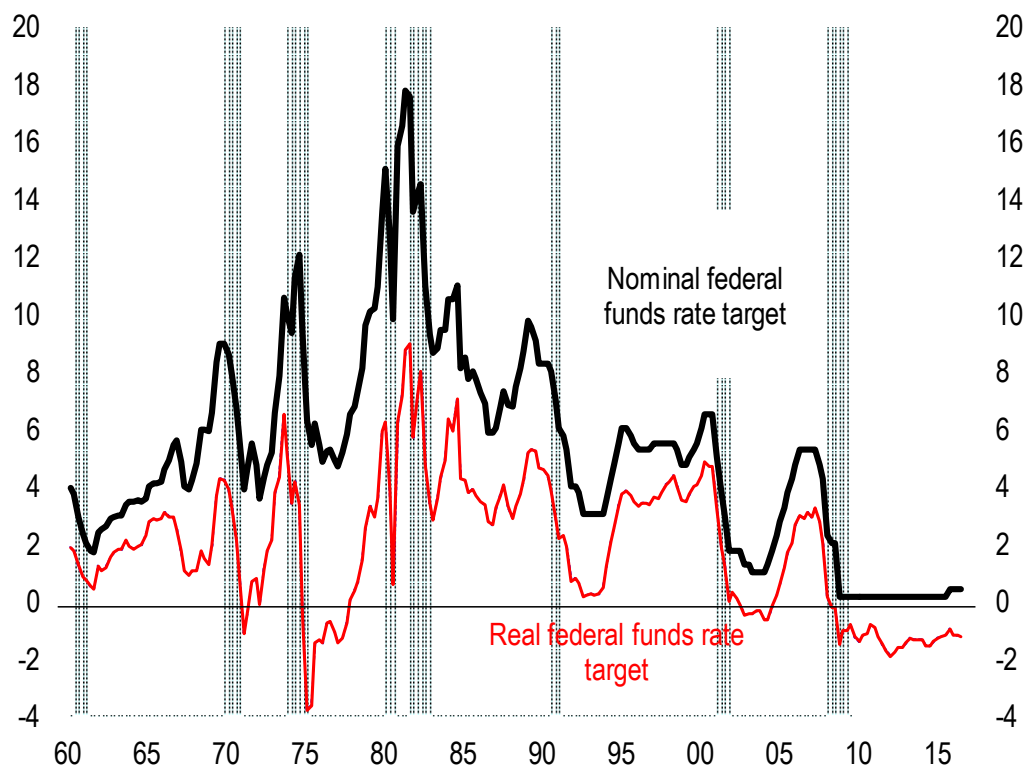
The Fed's Withdrawal Plan ... Fed Funds ...

Nominal federal funds rate and core inflation (percent)

Core PCE chain price inflation (% ch. from 12 months earlier)[1]

Nominal federal funds rate

Forecast

CHASE ⬡

J.P.Morgan **26**
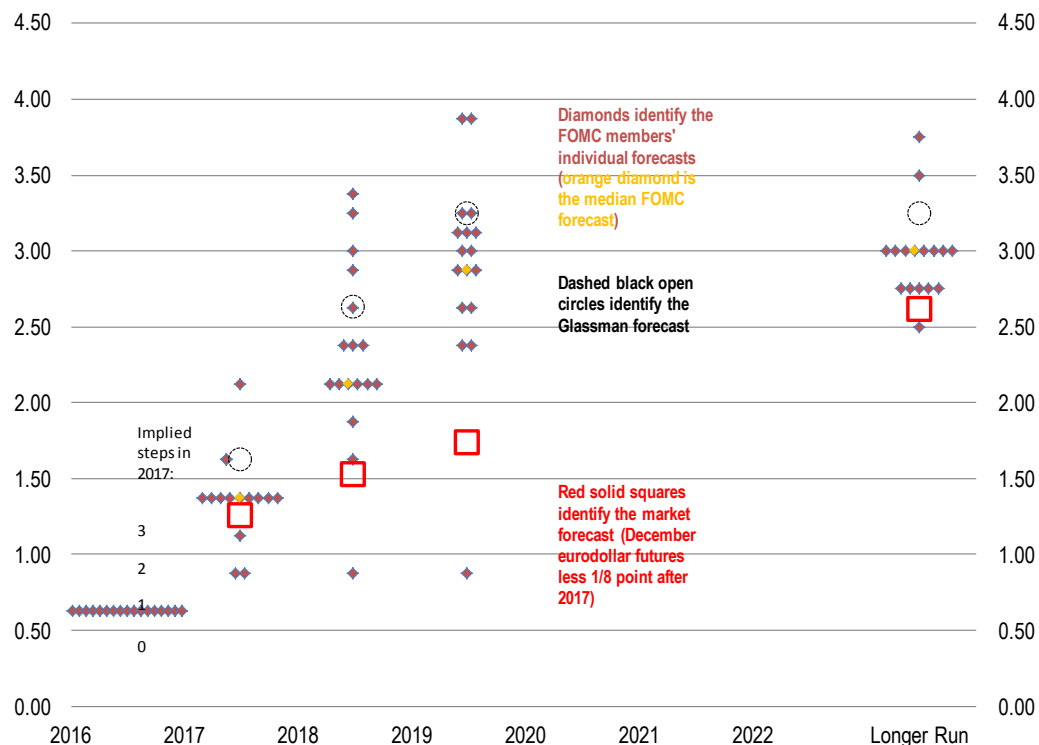
... 1% to 2% Percentage Points Over Inflation

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
February 2017 (inflation) and April 7, 2017 (federal funds rate).
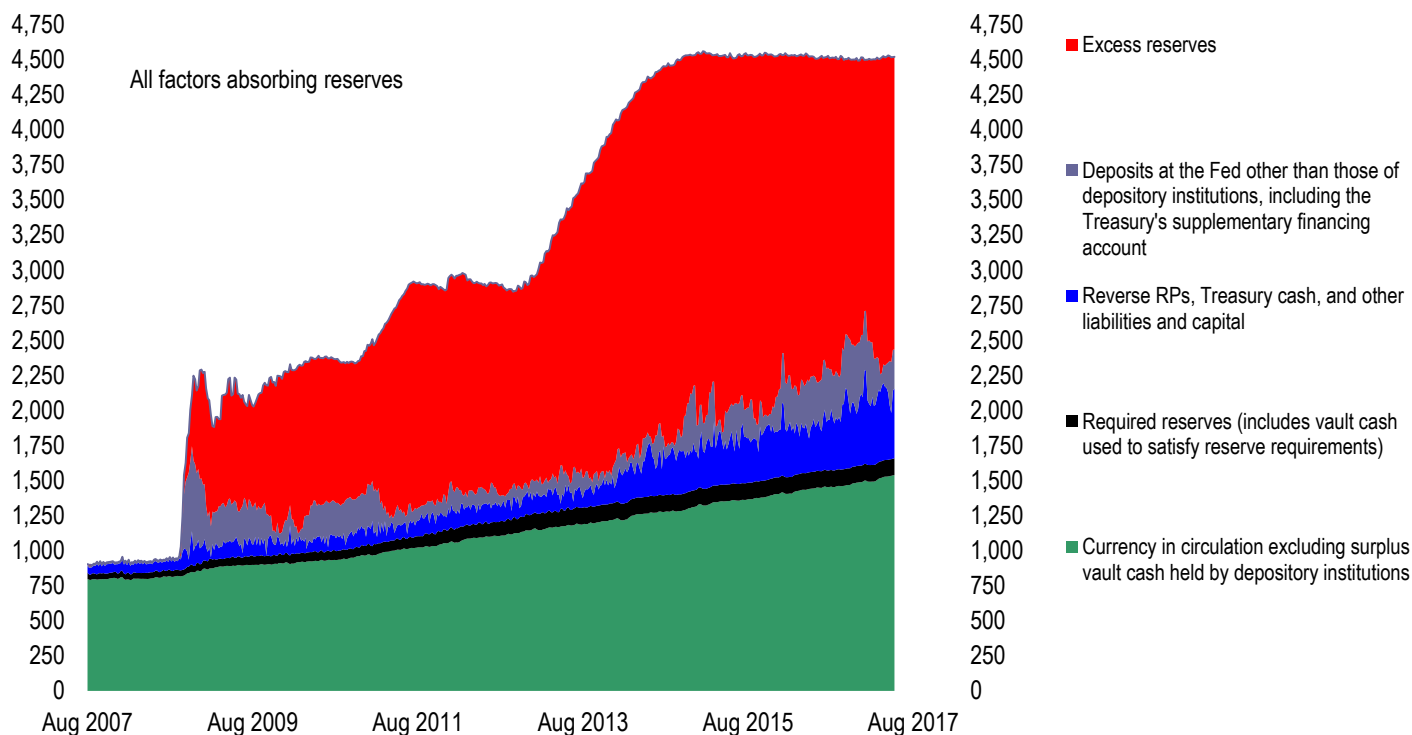
Futures Markets Get That Pretty Much

Forecasts of the federal funds rate (percent)

4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00

Diamonds identify the FOMC members' individual forecasts (orange diamond is the median FOMC forecast)

Dashed black open circles identify the Glassman forecast

Red solid squares identify the market forecast (December eurodollar futures less 1/8 point after 2017)

Implied steps in 2017:

3

2

1

0

2016 2017 2018 2019 2020 2021 2022 Longer Run

Sources: FRB; Bloomberg. Updated through March 15, 2017 (FOMC) and May 26, 2017 (futures).

And Balance Sheet Normalization ...

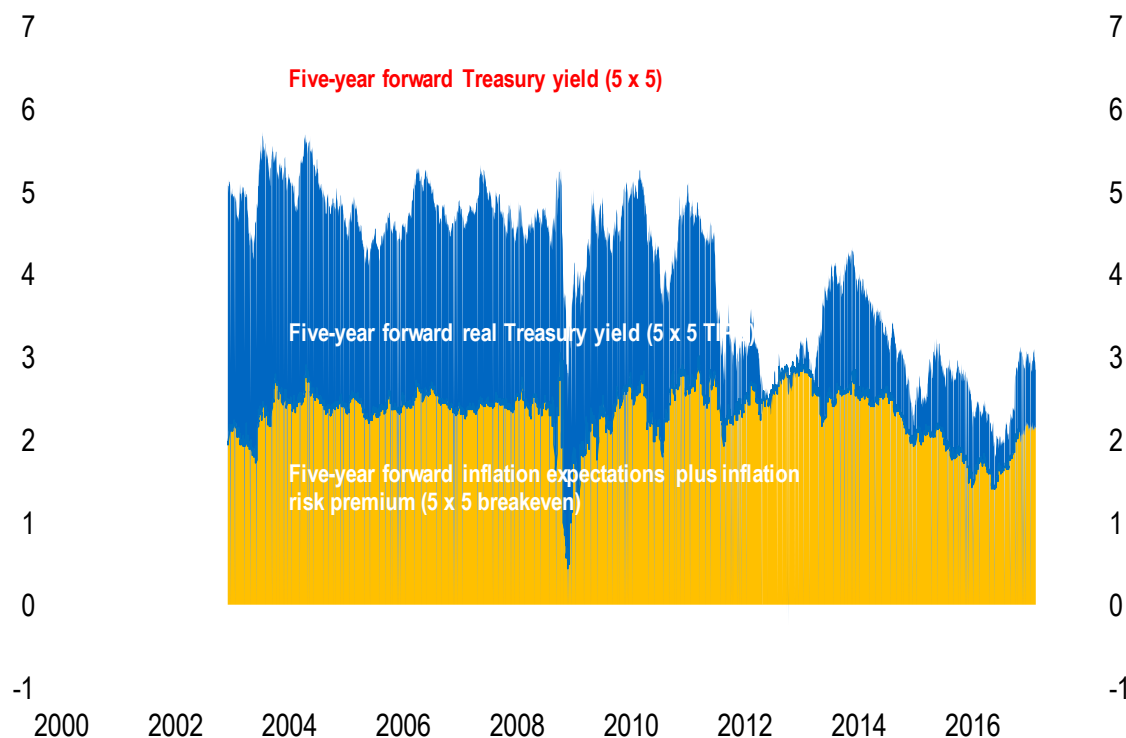Federal Reserve liabilities (billions of dollars)

All factors absorbing reserves

Excess reserves

Deposits at the Fed other than those of depository institutions, including the Treasury's supplementary financing account

Reverse RPs, Treasury cash, and other liabilities and capital

Required reserves (includes vault cash used to satisfy reserve requirements)

Currency in circulation excluding surplus vault cash held by depository institutions

Sources: Haver Analytics; Federal Reserve Board. Updated through May 10, 2017.

That's a Tougher One to Gauge ...

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

Five-year forward Treasury yield (5 x 5)

Five-year forward real Treasury yield (5 x 5 TIPS)

Five-year forward inflation expectations plus inflation risk premium (5 x 5 breakeven)

Sources: Haver Analytics; Federal Reserve Board. Updated through April 7, 2017.
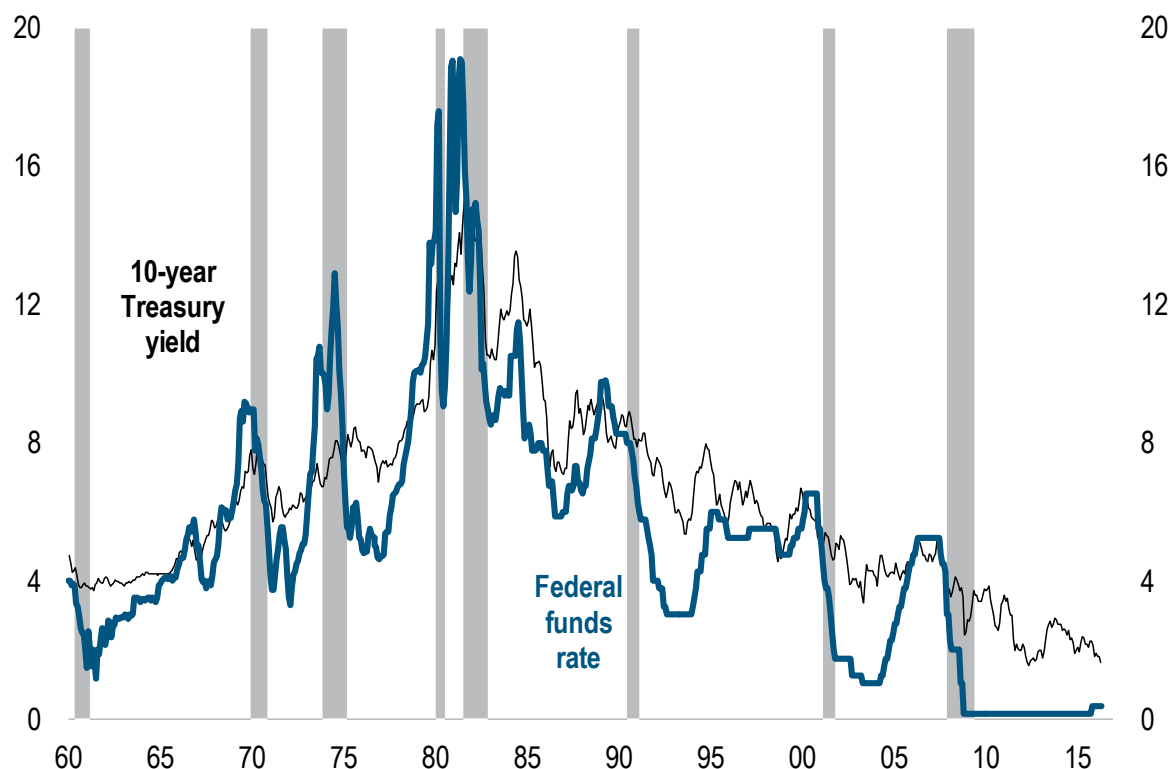
... Take 2

The 10-year Treasury yield, expected policy rates and the term premium (percent)
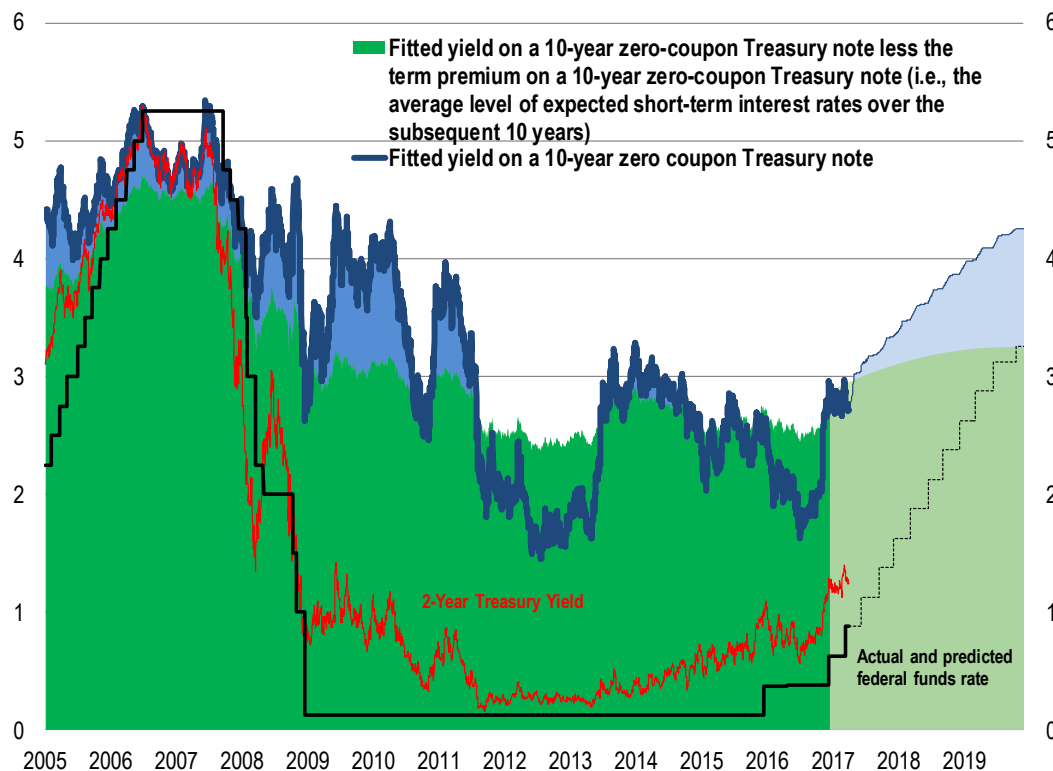
Sources: Haver Analytics; Federal Reserve Board. Updated through December 21, 2016 (term premium) and April 6, 2017 (federal funds rate).
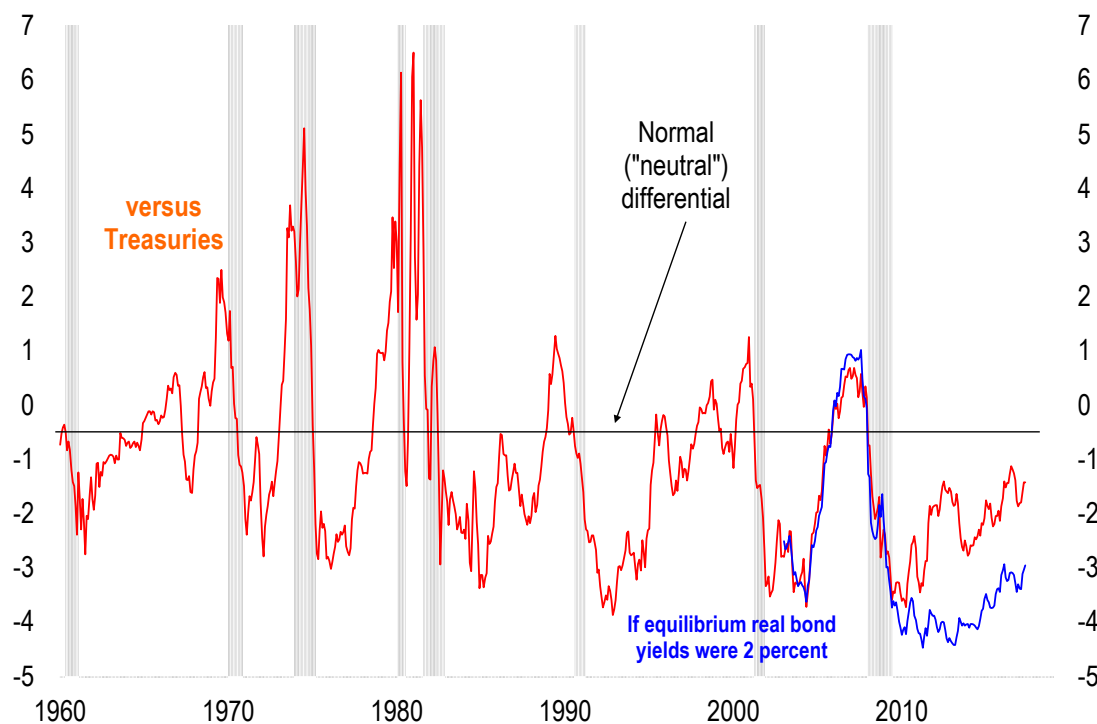
Asset Purchases Distort All Rates ...

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

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

... and the Yield Curve

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

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

Outline

The Global Economy

Why U.S. GDP Is Slow
1) Insufficient aggregate demand … No
2) Demographics … Yes
3) Productivity … Yes
4) Mismeasurement … Possibly

Why "Slow" Doesn't Matter
1) Slow GDP didn't prevent economic recovery
2) The living standard has climbed to record highs

Why "Slow" Matters
1) Slow GDP makes it harder to pay for safety net promises
2) Justification for supply side (not demand side) stimulus
   - Infrastructure investment
   - Tax reform, relief, simplification
   - Regulatory reform
3) Health care reform (P.S. ACA is about coverage more than reform)

Conclusion: Macrofoundations of the Bullish
1) Low inflation and no obvious financial imbalances
2) Innovation, socially disruptive but economically enriching
3) Globalization (we help ourselves when we help others)
4) Polarized political discourse

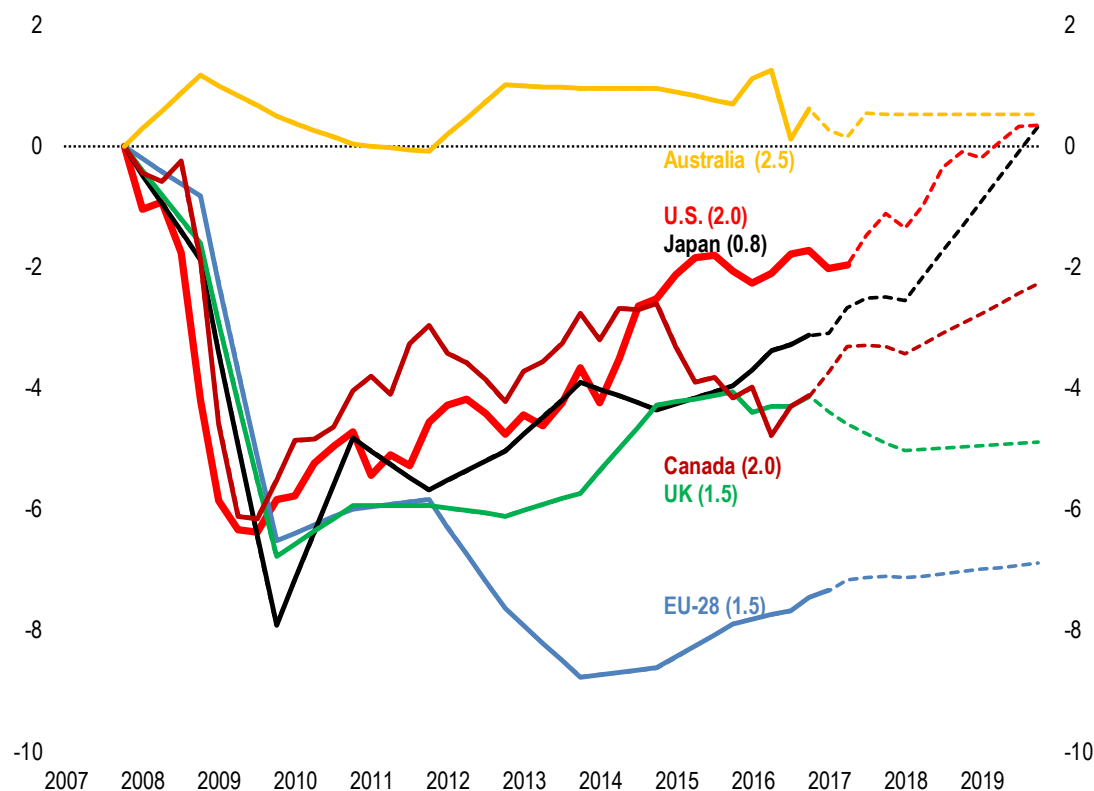# The Global Economy

Synchronized Growth ...

Real GDP in selected regions (percent change from four quarters earlier)
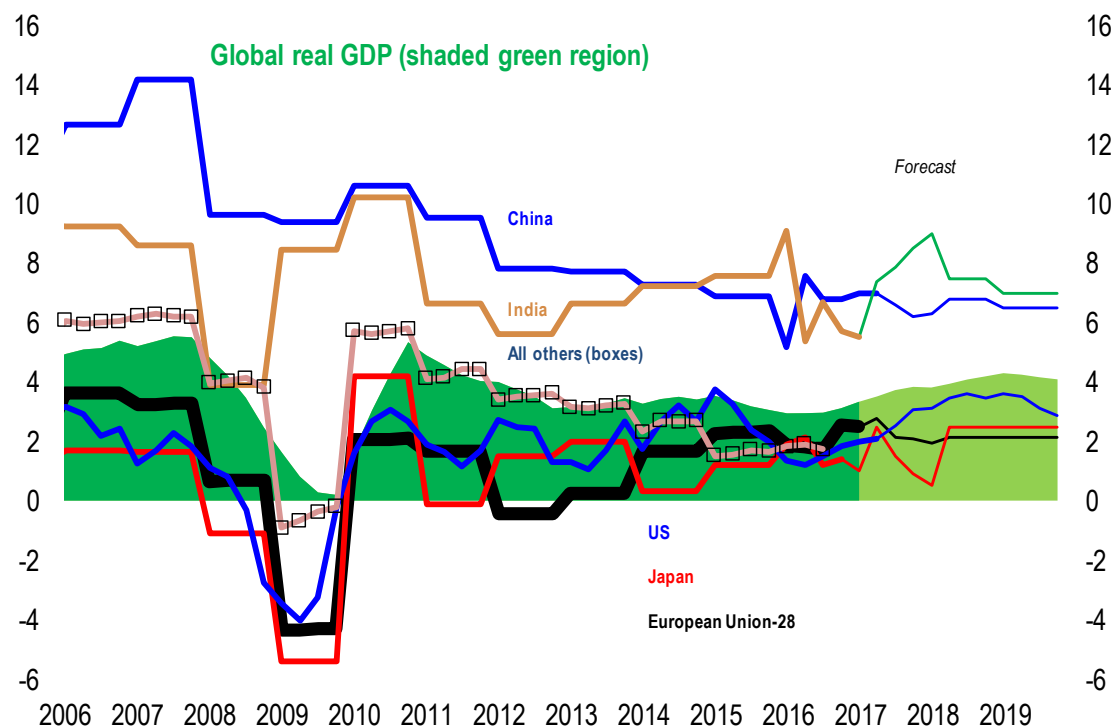
Sources: Haver Analytics; International statistical sources; U.S. Department of Commerce; J.P. Morgan. Updated through 2017 Q1.

... Masks Economic Gaps ...

Output Gap, actual less potential real GDP (percent of potential real GDP)

Australia (2.5)

U.S. (2.0)
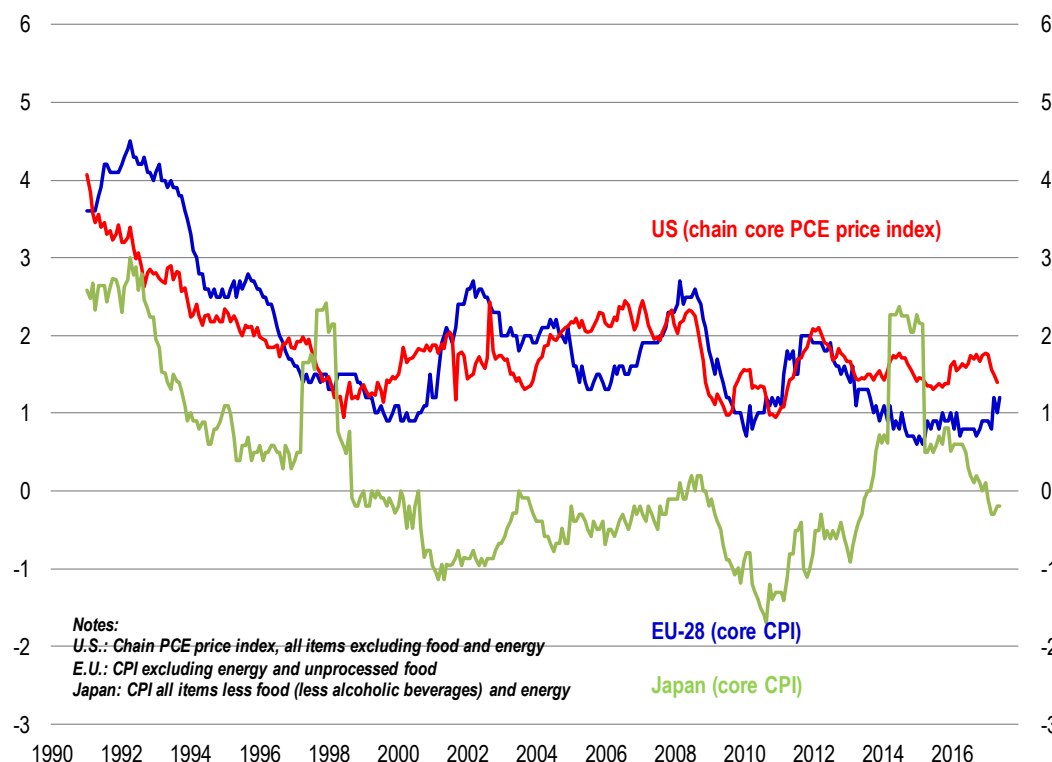Japan (0.8)

Canada (2.0)
UK (1.5)

EU-28 (1.5)

Note: Potential growth assumptions in parentheses.
Sources: Haver Analytics; International statistical sources; U.S. Department of Commerce; J.P. Morgan. Updated through 2017 Q2.

... that Drive Inflation Divergences

Core inflation in selected regions (percent change from 12 months earlier)

US (chain core PCE price index)

EU-28 (core CPI)

Japan (core CPI)

Notes:
U.S.: Chain PCE price index, all items excluding food and energy
E.U.: CPI excluding energy and unprocessed food
Japan: CPI all items less food (less alcoholic beverages) and energy

Note: Japan introduced a consumption tax in 1989, setting it at 3 percent. It raised this to 5 percent in April 1997 and then to 8 percent in April 2014. Plans to raise the tax to 10 percent in October 2015 have been put on hold.

Sources: Haver Analytics; U.S. Department of Commerce; Bank of Japan; Eurostat. Updated through June 2017.

The Roadmap to 21ˢᵗ Century Themes

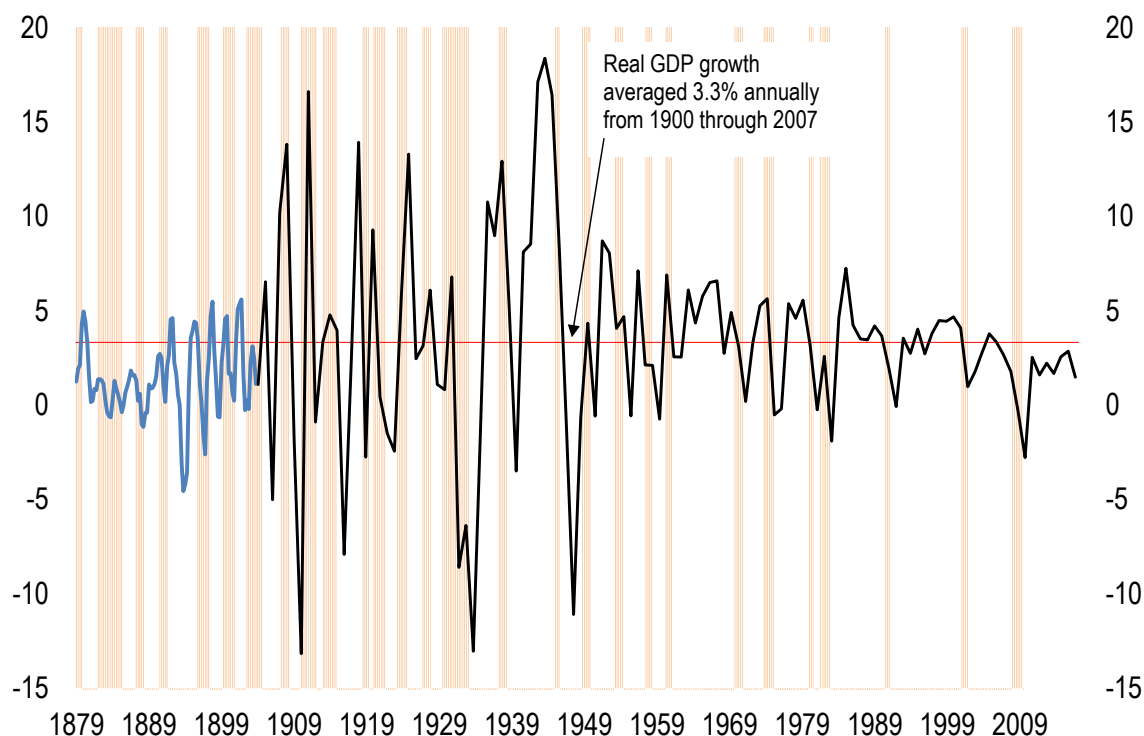Relative real GDP per capita (ratio to U.S. real GDP per capita, 2009 dollars, PPP basis)
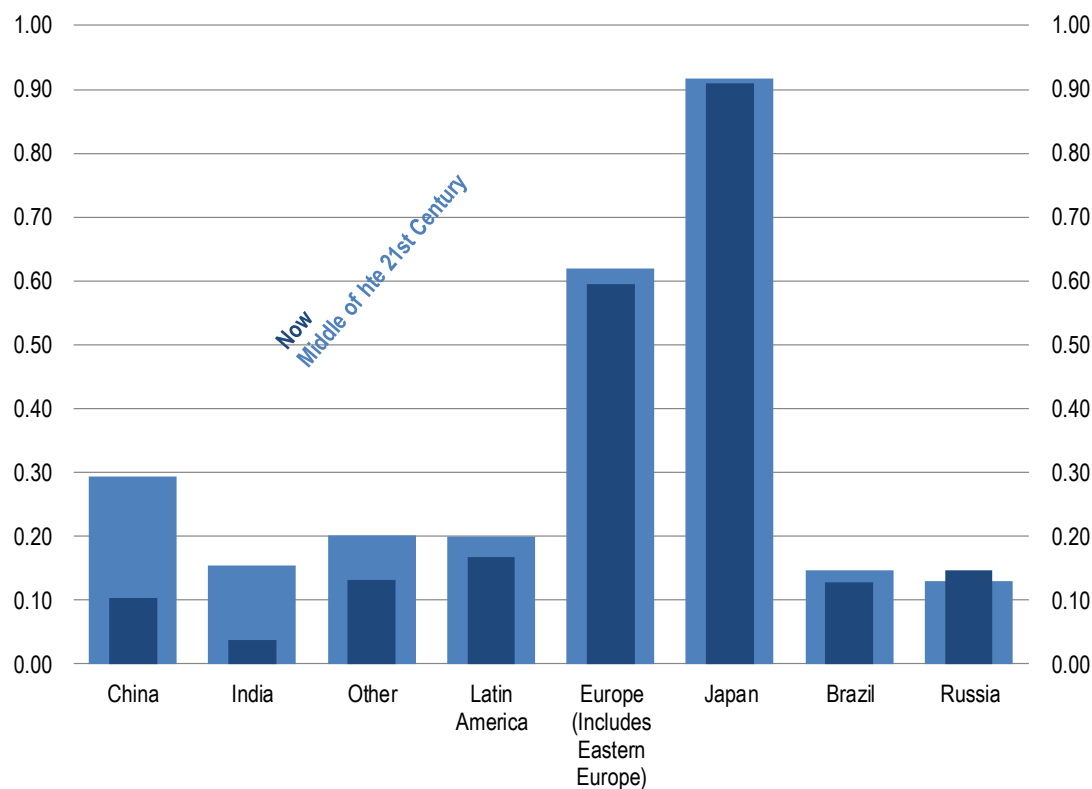
Sources: Haver Analytics; World Bank; JPMorgan Chase & Co. Updated through 2017 Q1.

Why U.S. GDP Is Slow

Slow GDP ... a Break from the Past

Real U.S. GDP growth (percent change from the previous year)

Real GDP growth averaged 3.3% annually from 1900 through 2007

Sources: Haver Analytics; U.S. Department of Commerce; NBER Macroeconomic database; Ray Fair. Updated through 2017 Q2.

# (1) Demographics

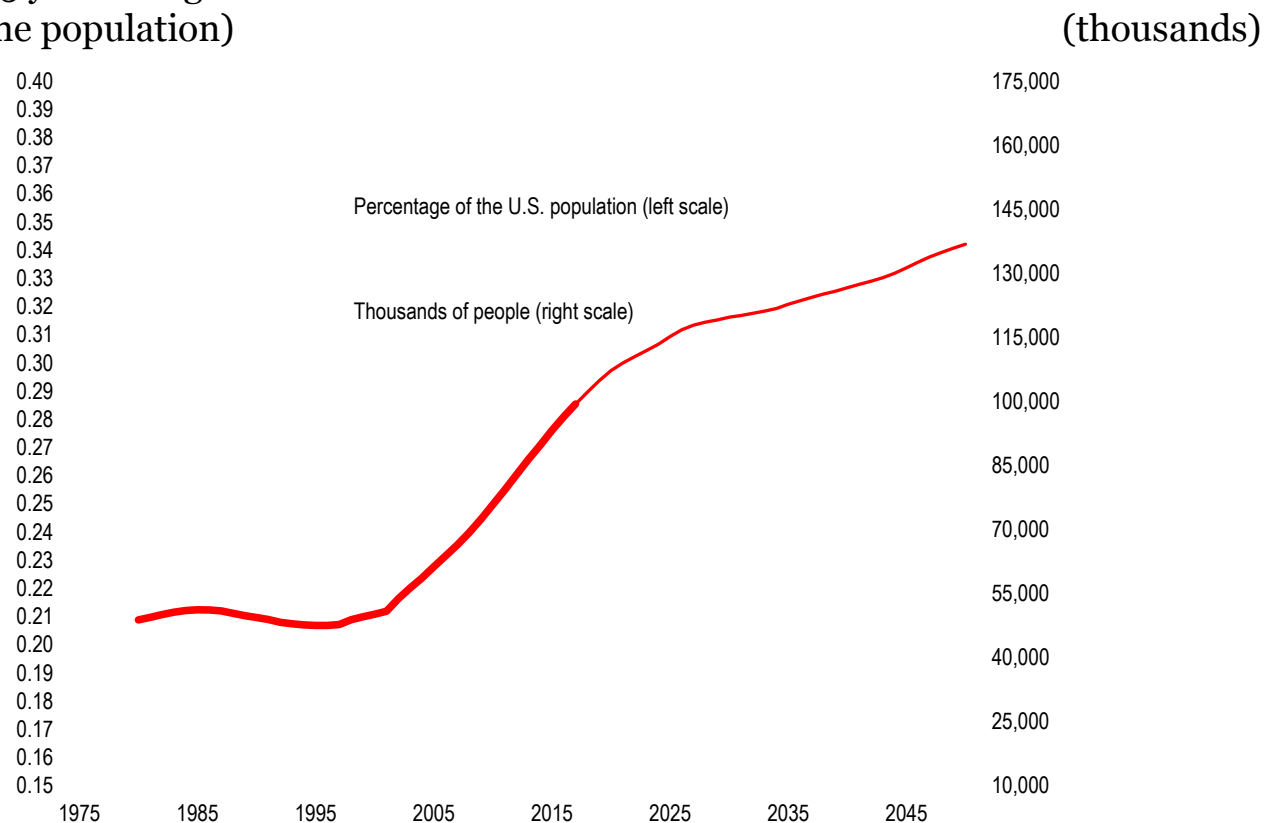|	1947 to 2007	2007 to 2017
Real GDP	3.43	1.27
Real GDP Per Hour	1.75	0.76
Aggregate Hours (Nonfarm Payrolls)	1.65	0.50
Memo:		
If Productivity Had Not Slowed …		
Real GDP Growth Would Be:	3.43	2.25
		$ billions
And Real GDP Would Be This Much Higher ($ billions)		$1,582
Or, Because Real GDI Grew This Much More than GDP		$543
The Missing Real GDP Might Be:		$1,039
Nonfarm Business Output	3.68	1.42
Real Output Per Hour	2.28	1.08
Hours	1.36	0.34

With Baby Boomers Retiring ...

Change in the population since 2007, by age (number)
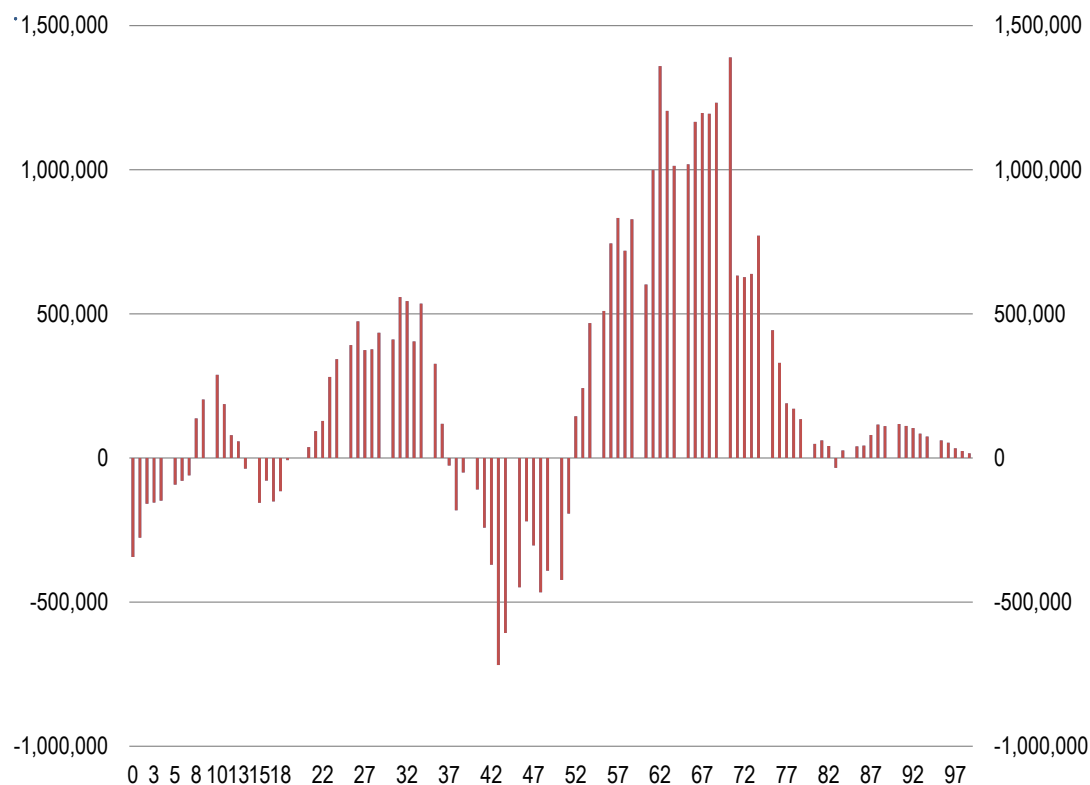
Sources: Haver Analytics; Census. Updated through June 2017.
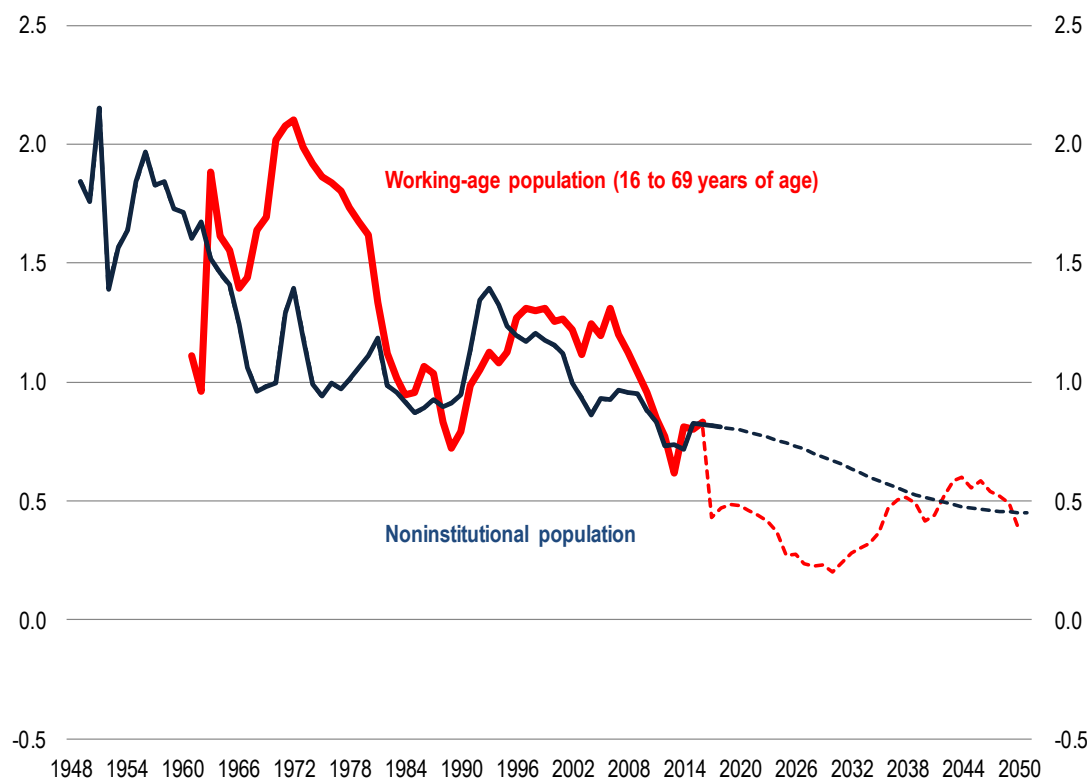
... a Big Shift Is Under Way ...

Population 55 years of age or older
(percent of the population)

(thousands)

Percentage of the U.S. population (left scale)

Thousands of people (right scale)

... Slowing the Working-age Population ...

Actual and working-age population (percent change annually)

Working-age population (16 to 69 years of age)

Noninstitutional population

Sources: Haver Analytics; Census. Updated through January 2017.
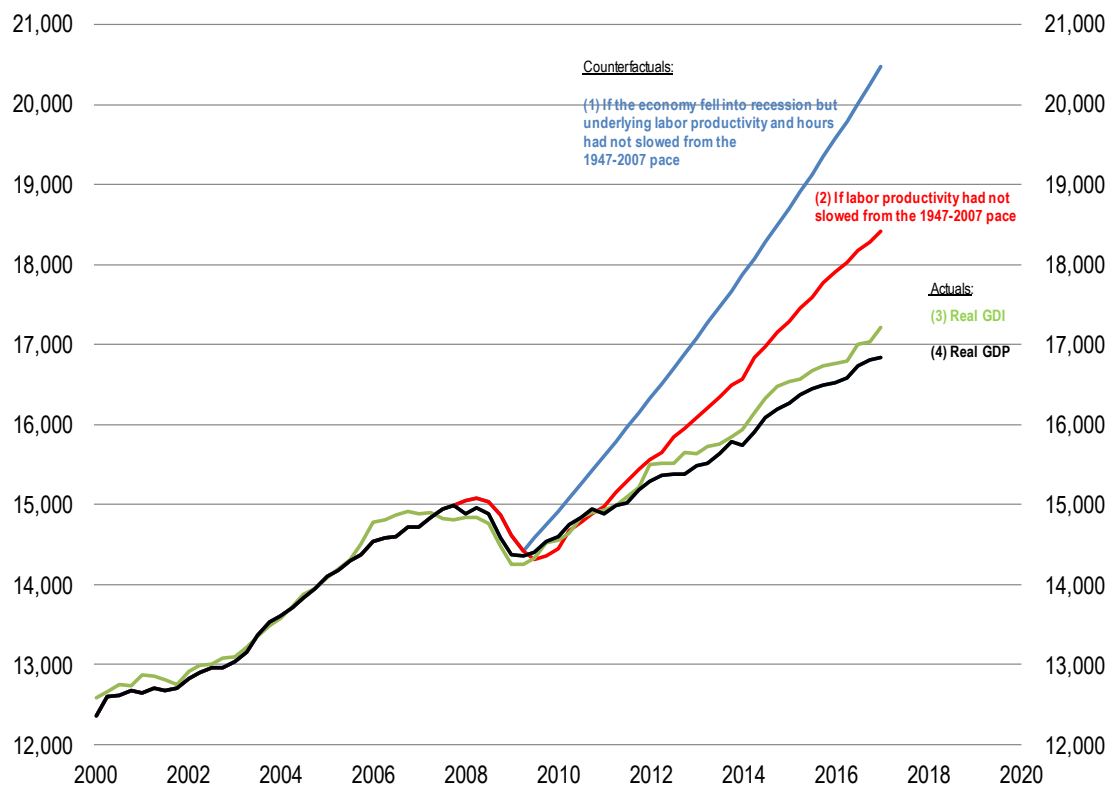
… and So Labor Force Growth

Labor force and the working age population (percent change annually)
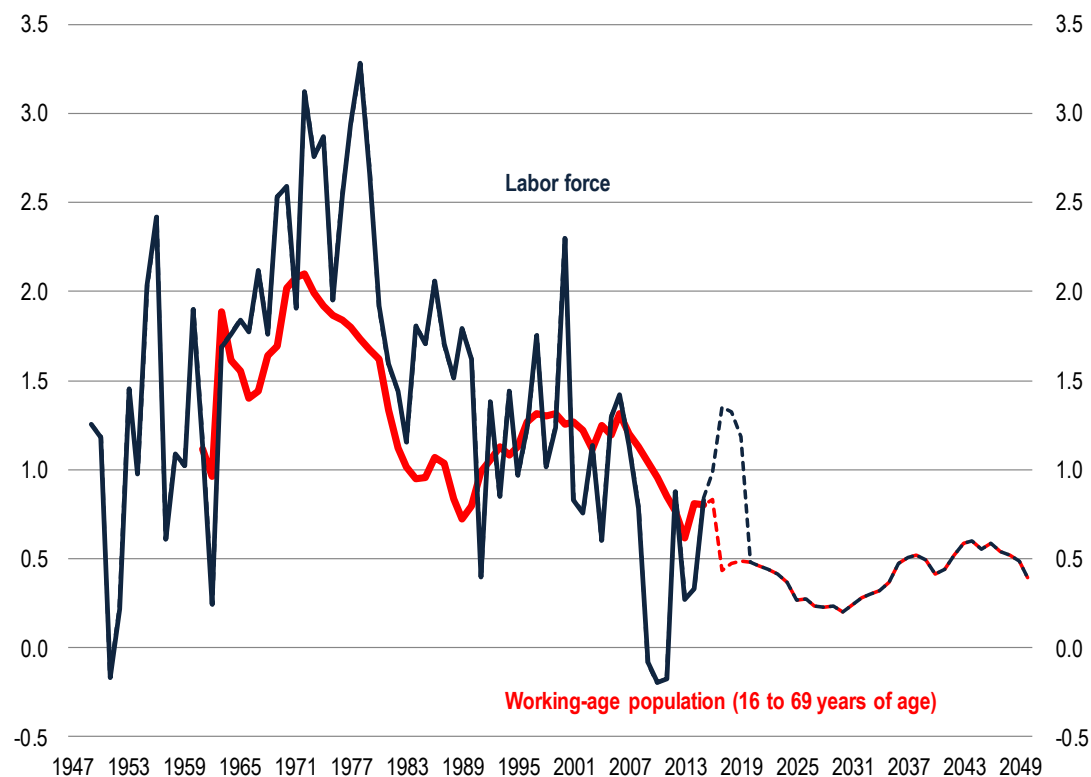
Sources: Haver Analytics; Federal Reserve Board; U.S. Treasury. Updated through September 2015.

(2) "Measured" Productivity

Counterfactual GDP paths (billions of chained 2009 dollars)

Counterfactuals:

(1) If the economy fell into recession but underlying labor productivity and hours had not slowed from the 1947-2007 pace

(2) If labor productivity had not slowed from the 1947-2007 pace

Actuals:

(3) Real GDI

(4) Real GDP

Sources: Haver Analytics; U.S. Department of Commerce. Updated through 2017 Q1.

(3) Metrology

- Exponential growth of purchases of energy products 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. (Solution: more frequent Census surveys).

- 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. (Solution: introduce a new imputation)

- Exponential growth of free or inexpensive content on mobile platforms that is financed with advertising dollars (intermediate product). (Solution: use an imputation to represent this value)

- 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. (Solution: expand consumer surveys)

- 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.

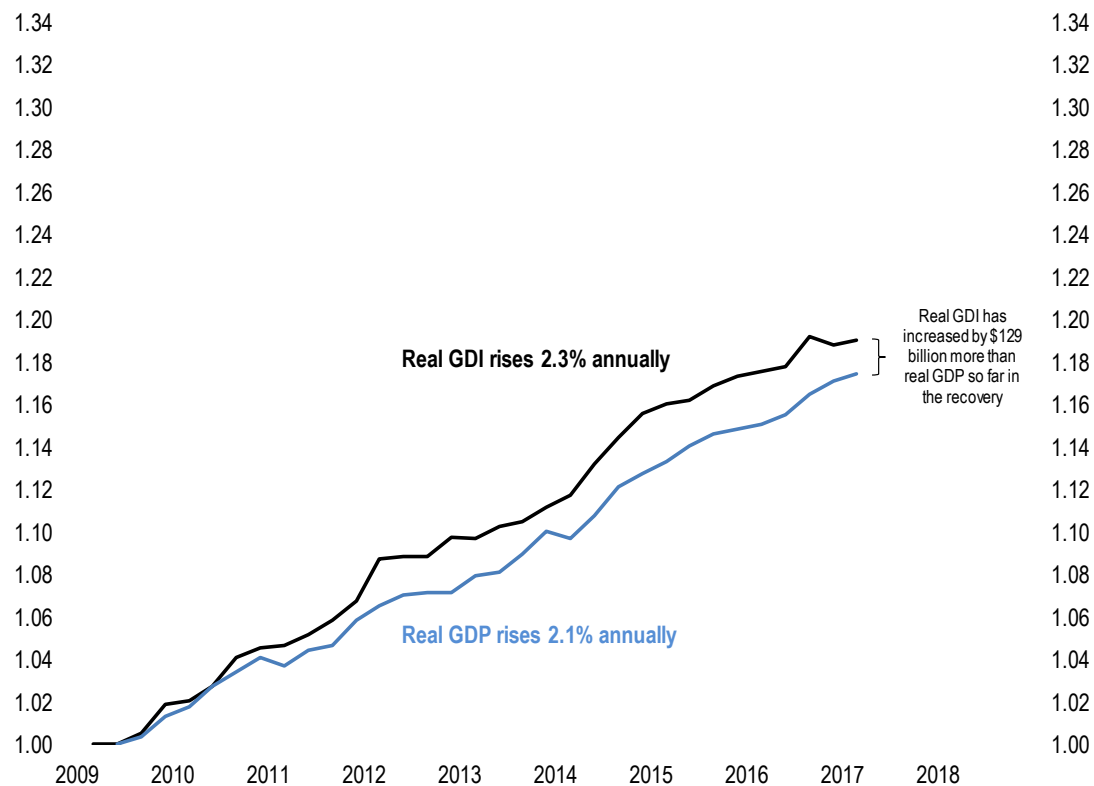# One Red Flag, a Telling Family Quarrel ...

Nominal GDP versus nominal GDI (ratio to 2009 Q2)

Nominal GDI rises 3.9% annualized

Missing $144 billion of nominal GDP

Nominal GDP rises 3.7% annually
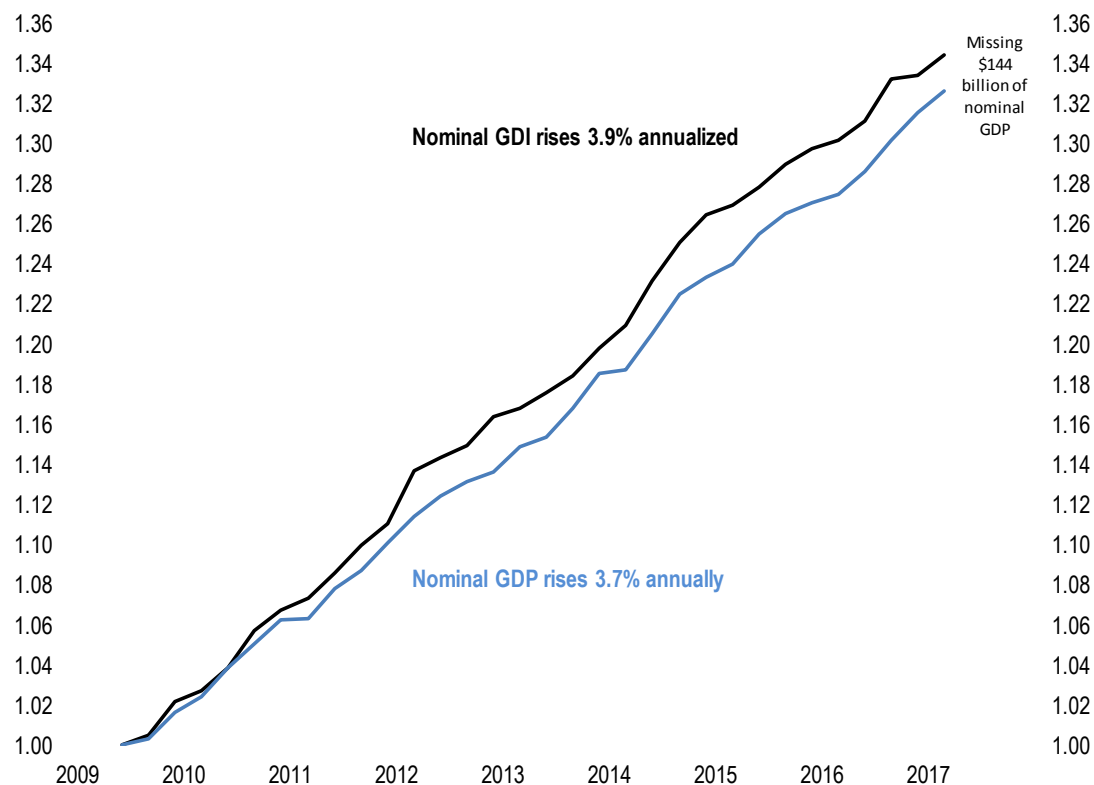
Sources: Haver Analytics; U.S. Department of Commerce. Updated through 2017 Q1.

... Take 2

Real GDP versus real GDI (ratio to 2009 Q2)

Real GDI rises 2.3% annually

Real GDP rises 2.1% annually

Real GDI has increased by $129 billion more than real GDP so far in the recovery

Sources: Haver Analytics; U.S. Department of Commerce. Updated through 2017 Q1.

Worry When Imputations Are One Reason

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


**Household PCE Services,
Deviation from long-run average contribution to GDP,
3 year average**

Contribution to Real GDP of the Imputed Value of Financial Services (Left Scale)

Contribution to Real GDP of the Imputed Value of Husehold Services (Left Scale)

Real GDP, Right Scale
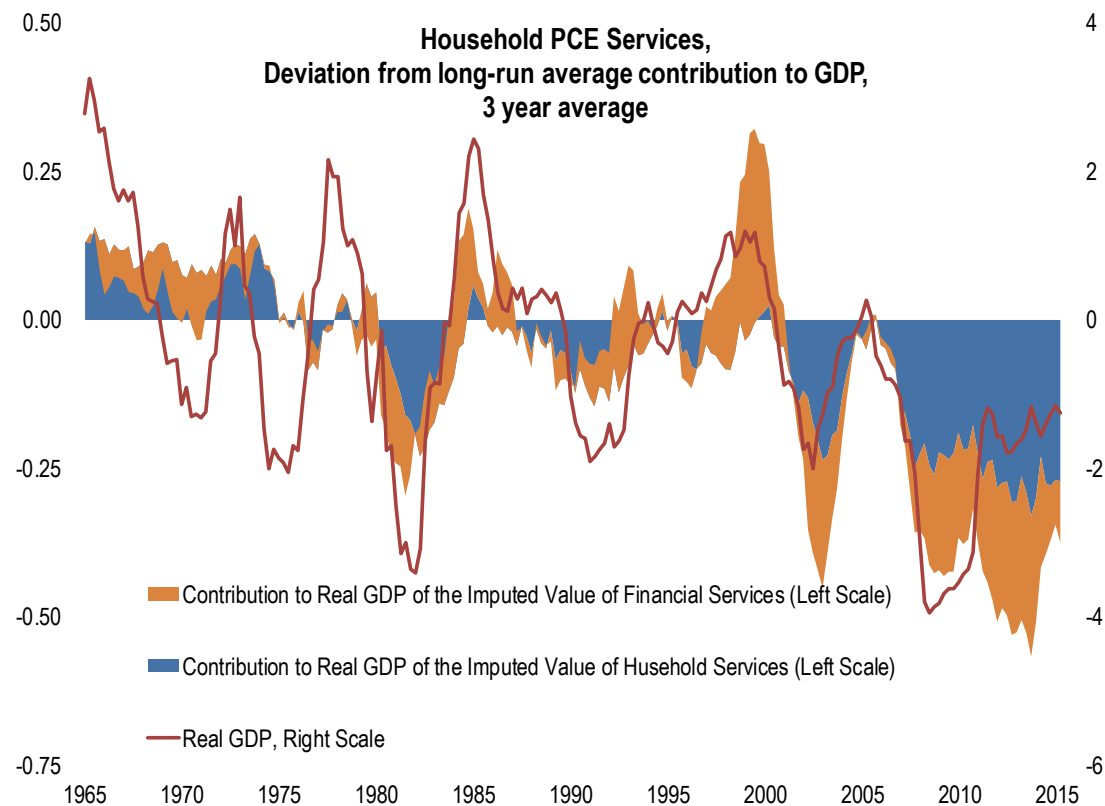
Sources: Haver Analytics; U.S. Department of Commerce. Updated through 2016 Q1.

Why "Slow" Doesn't Matter

It Didn't Stop Economic Recovery
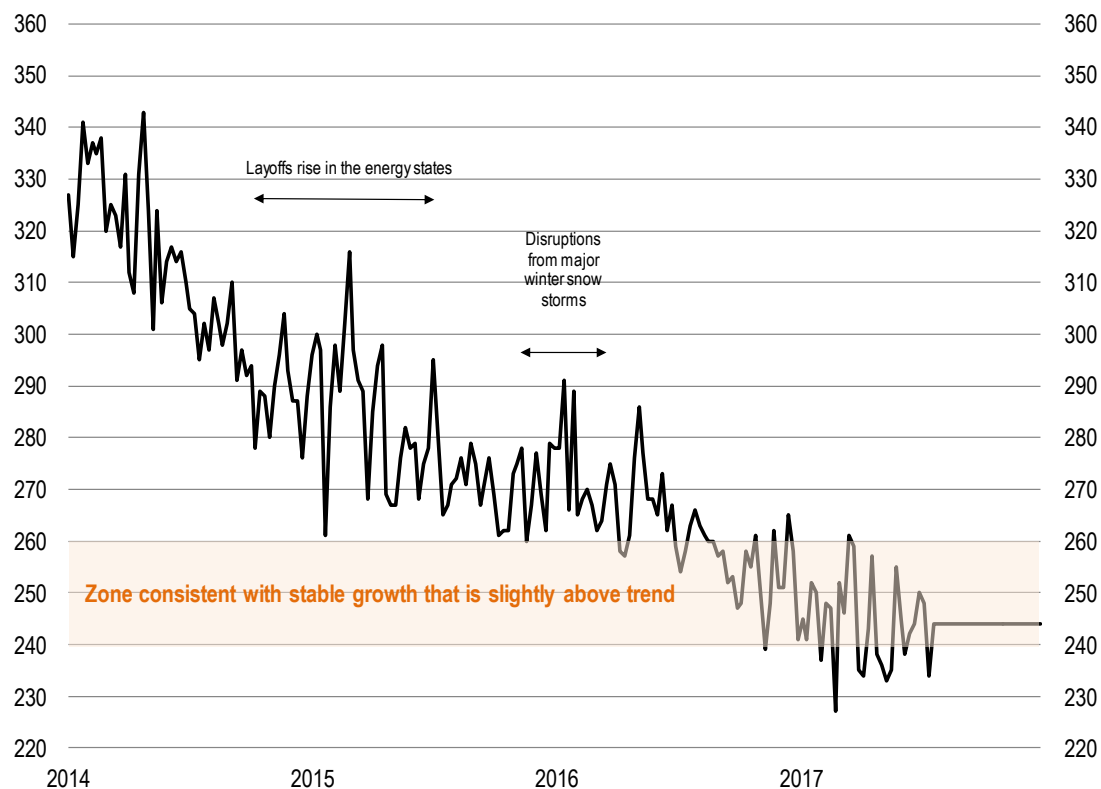
Jobless "Claims" Know the Story Best ...

Initial applications for unemployment benefits (thousands, weekly)
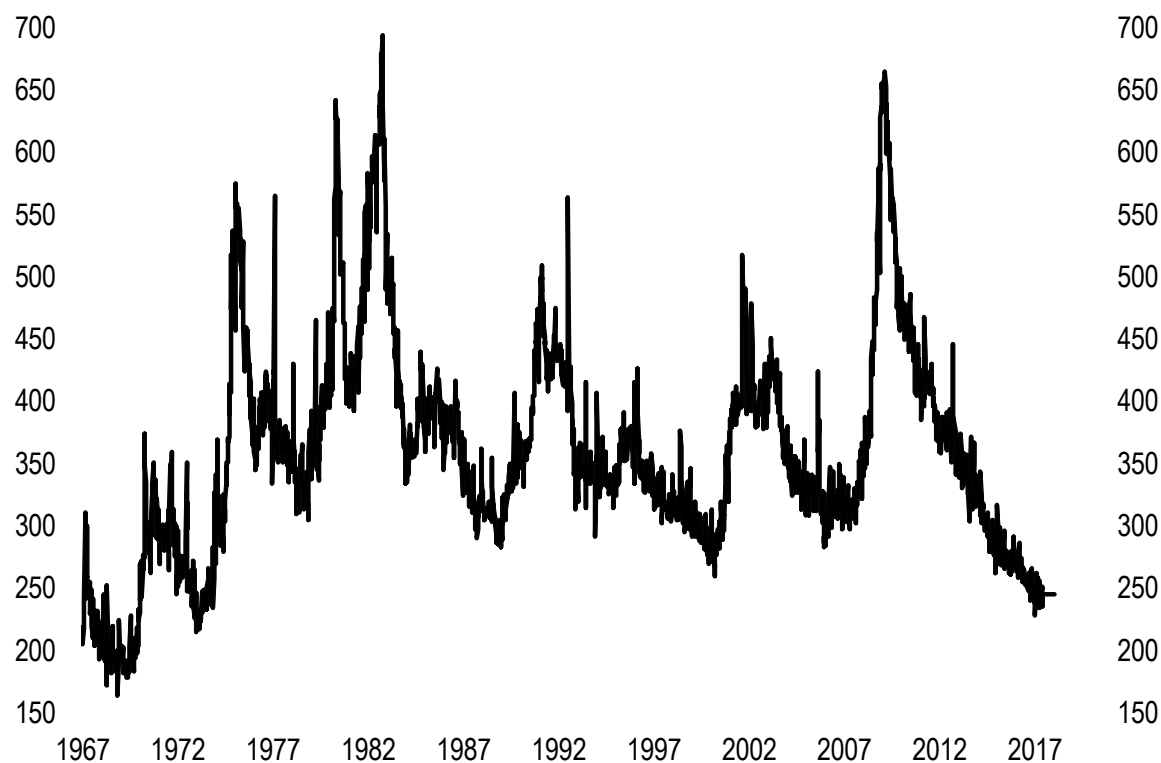
...Timely, Comprehensive, Precise, Informative

Initial applications for unemployment benefits (thousands, weekly)

Layoffs rise in the energy states

Disruptions from major winter snow storms

Zone consistent with stable growth that is slightly above trend

Sources: Haver Analytics; U.S. Department of Labor. Updated through July 22, 2017.

... Correlated With Unemployment ...

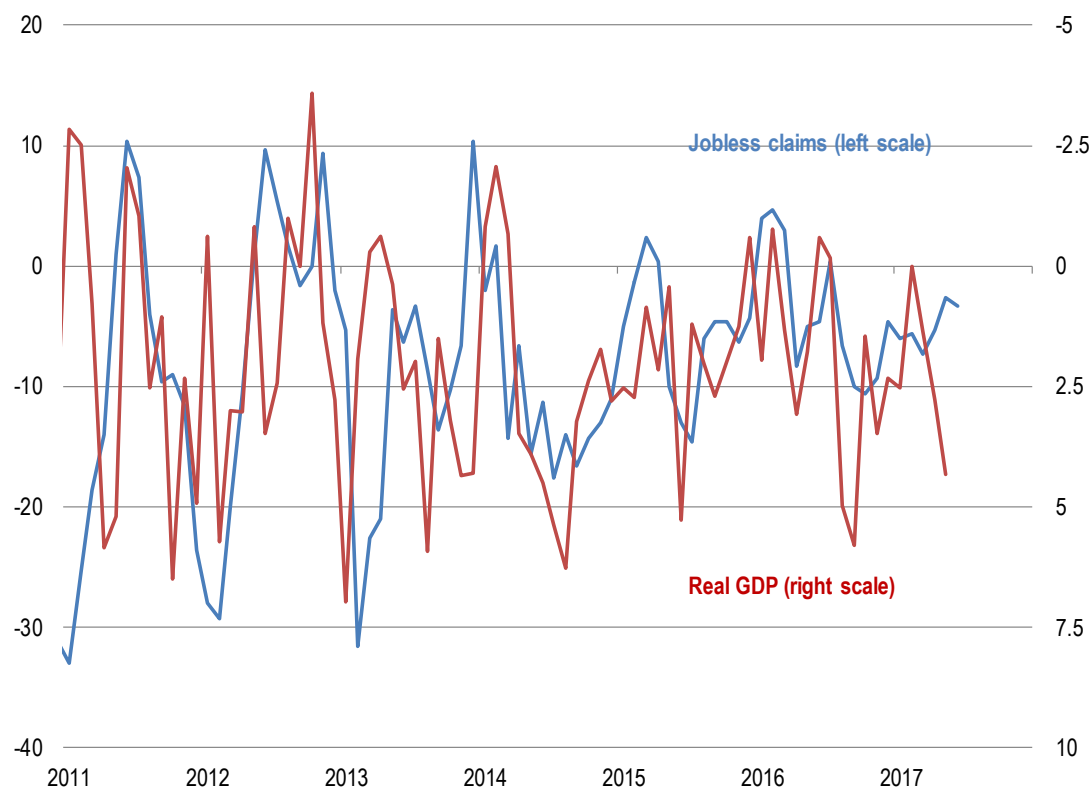Unemployment (% of the labor force)   Jobless claims (thousands, weekly)
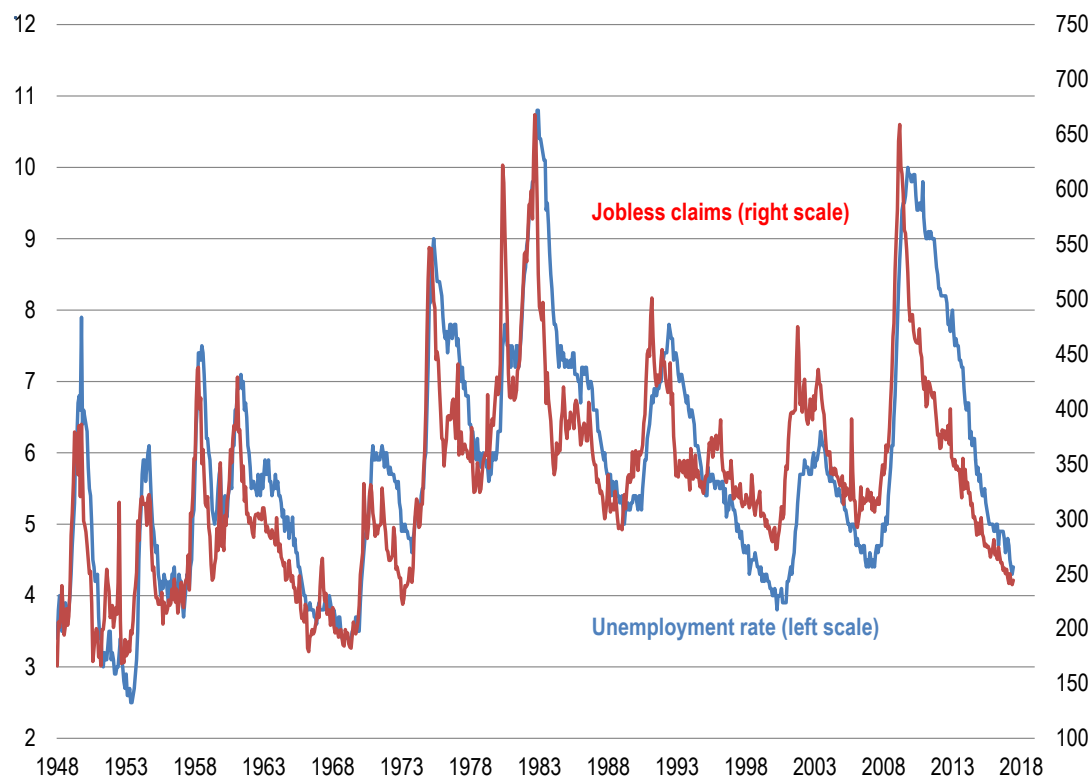
Sources: Haver Analytics; U.S. Department of Labor. Updated through June 2017 (unemployment) and July 8, 2017 (jobless claims).

... GDP ...

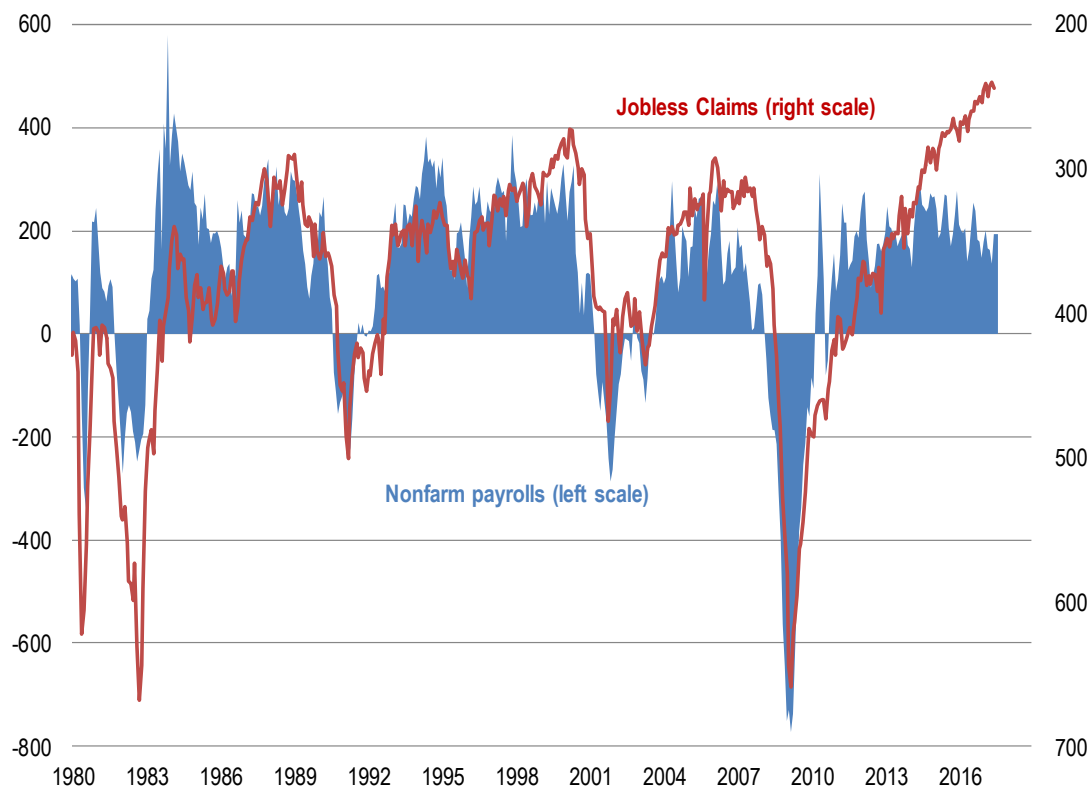Jobless claims (ch in ave weekly apps vs prev qtr, '000)   Real GDP (%ch vs 3 mn)

Sources: Haver Analytics; U.S. Department of Labor; U.S. Department of Commerce. Updated through May 2017 (GDP) and July 8, 2017 (jobless claims).

... and Payrolls

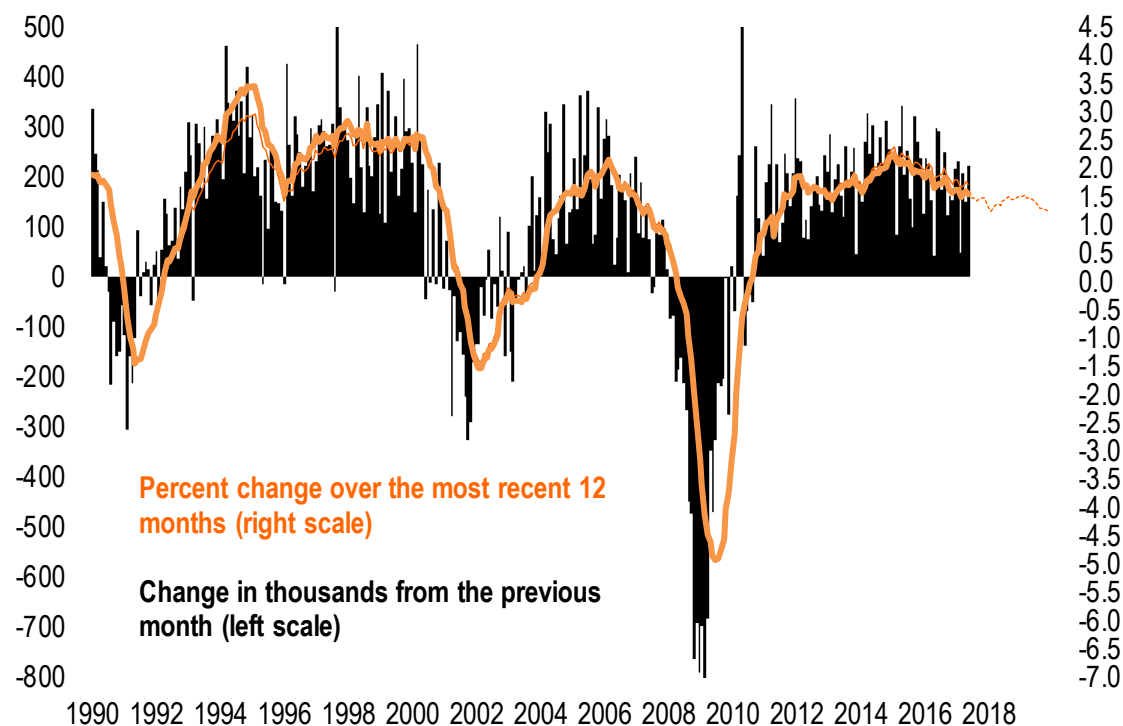Nonfarm payrolls (ch in 'ooo in latest 3 mnths)   Jobless claims (wkly ave in the mnth, 'ooo)

Sources: Haver Analytics; U.S. Department of Labor. Updated through June 2017 (employment) and July 8, 2017 (claims).

A Pretty Normal Job Market Recovery

Nonfarm payrolls
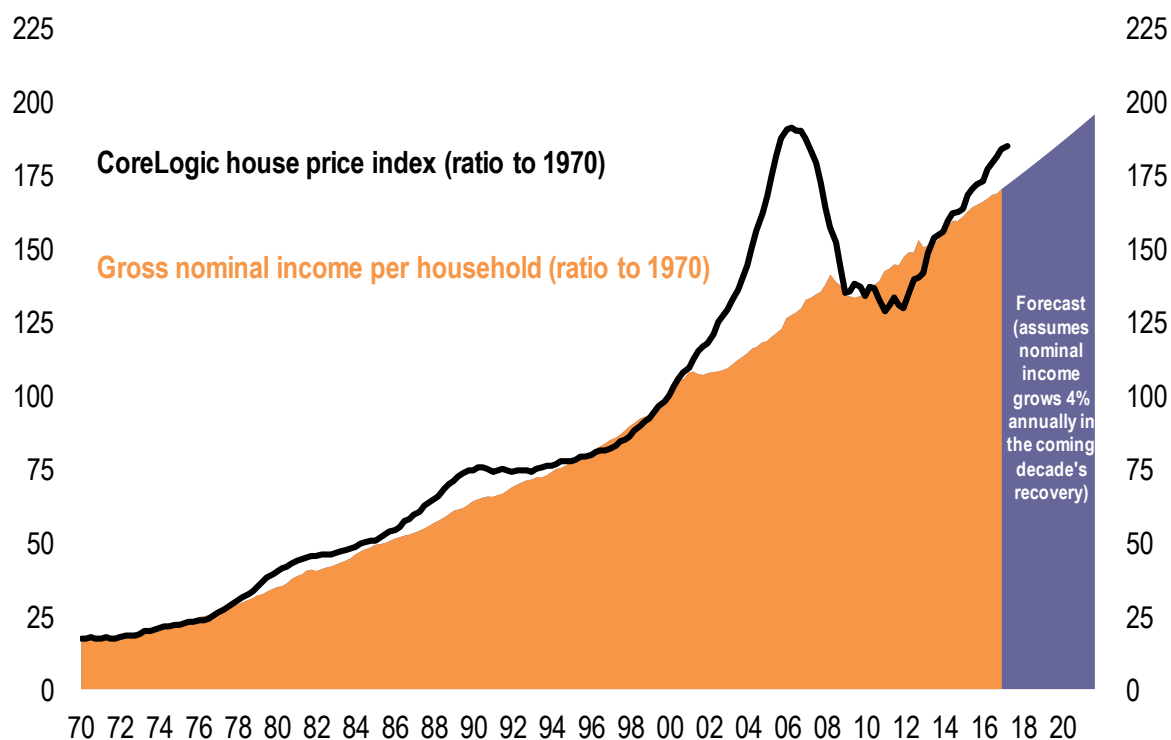(monthly change in thousands)   (percent change from 12 months earlier)

Percent change over the most recent 12 months (right scale)

Change in thousands from the previous month (left scale)

Sources: Haver Analytics; U.S. Department of Labor. Updated through June 2017.
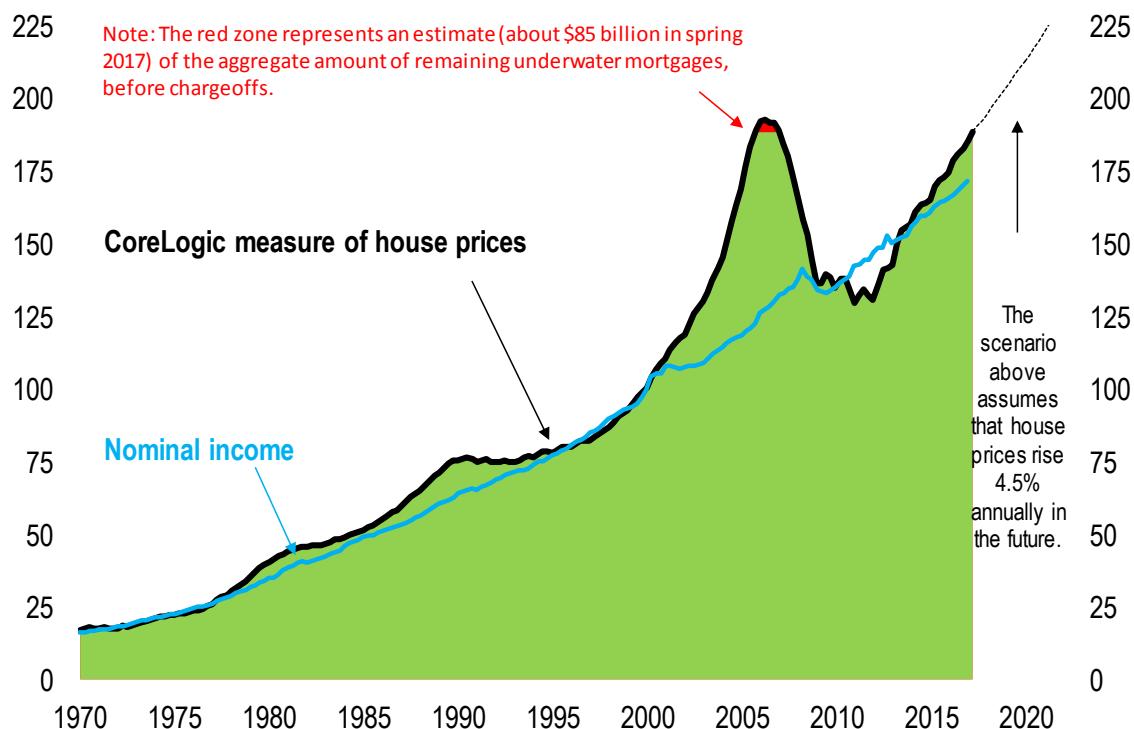
"Underwater" Is a Distant Memory …

Household income and house prices (January 2000 = 100)

CoreLogic house price index (ratio to 1970)

Gross nominal income per household (ratio to 1970)

Forecast (assumes nominal income grows 4% annually in the coming decade's recovery)

Sources: U.S. Dep. of Commerce; CoreLogic; U.S. Department of Commerce. Updated through 2017 Q1.

... What Was Once a $3.0 Trillion Trap

U.S. house prices and nominal income (January 2000 = 100)

Note: The red zone represents an estimate (about $85 billion in spring 2017) of the aggregate amount of remaining underwater mortgages, before chargeoffs.

CoreLogic measure of house prices

Nominal income

The scenario above assumes that house prices rise 4.5% annually in the future.

Sources: Haver Analytics; CoreLogic; U.S. Department of Commerce. Updated through 2017 Q1.

Cured Outside the Household Sector ...
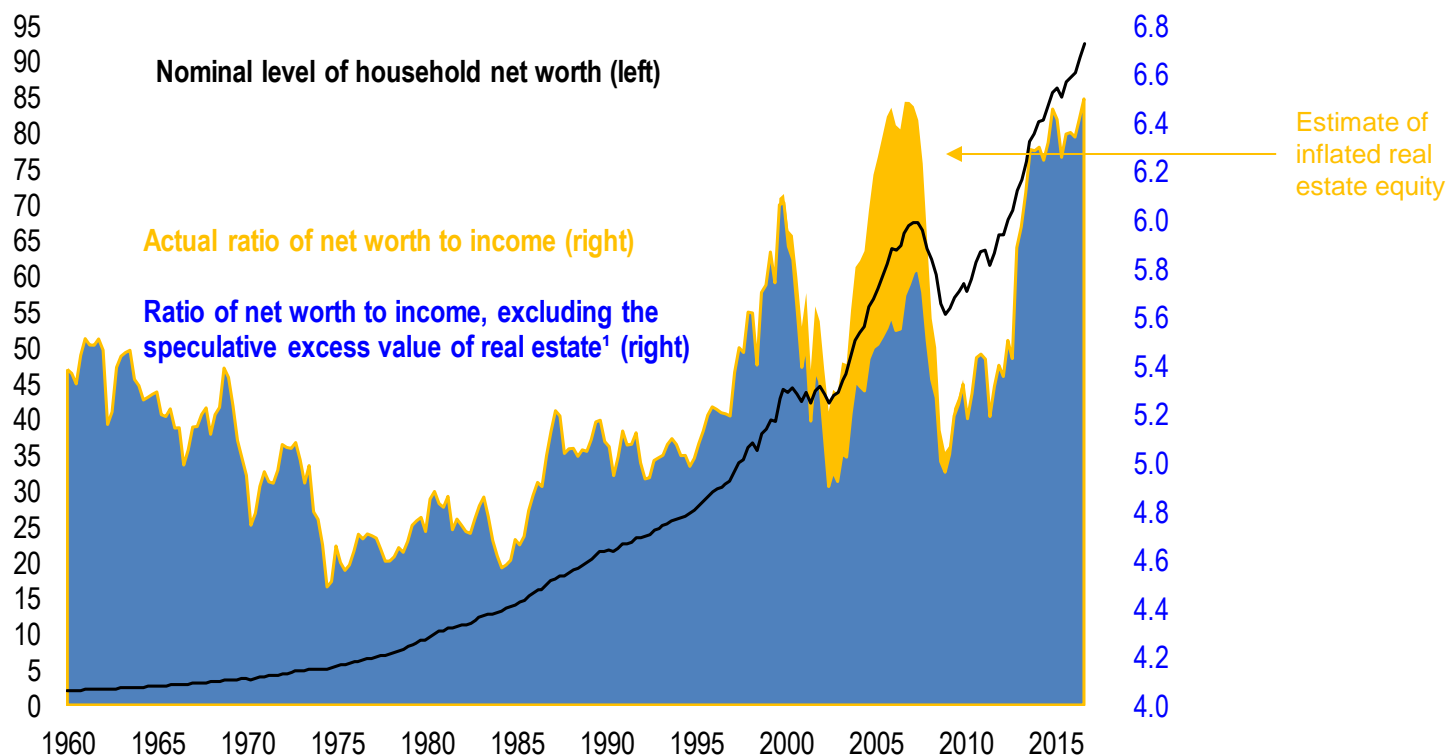
U.S. nominal consumer spending share (ratio to nominal GDP)
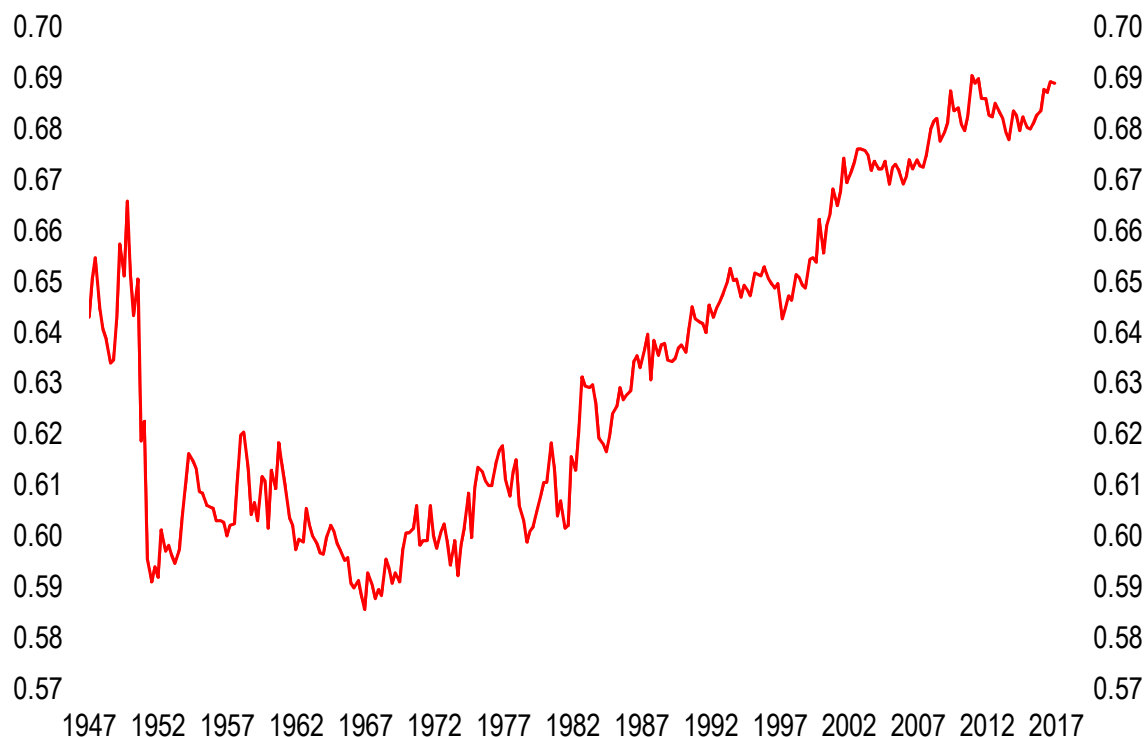
Sources: Haver Analytics; U.S. Department of Commerce. Updated through 2017 Q1.

… Which Enjoys Strong Balance Sheets

Household net worth (trillions of dollars)   (ratio to disposable income)


Nominal level of household net worth (left)

Actual ratio of net worth to income (right)

Ratio of net worth to income, excluding the speculative excess value of real estate[1] (right)

Estimate of inflated real estate equity

[1] Excludes the value of real estate in excess of the what would have been a normal alignment to household income.
Sources: Haver Analytics; Federal Reserve Board; U.S. Department of Commerce. Updated through 2016 Q4.
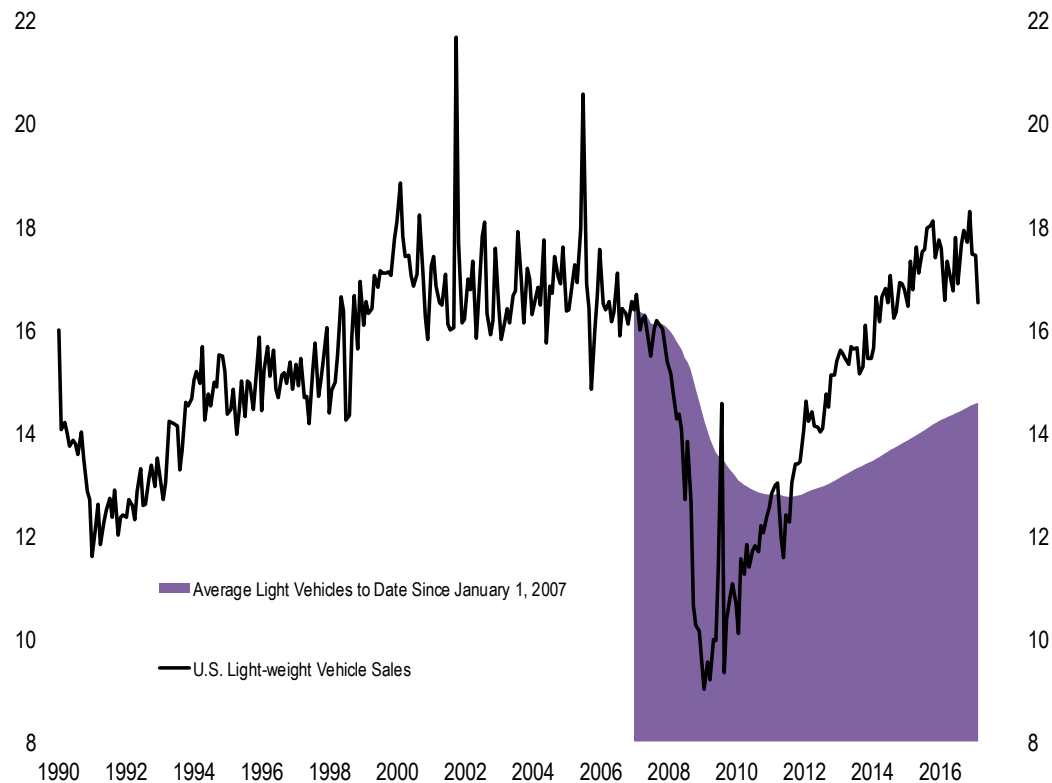
The Auto Industry Benefited First

U.S. light vehicle sales (millions at an annual rate)
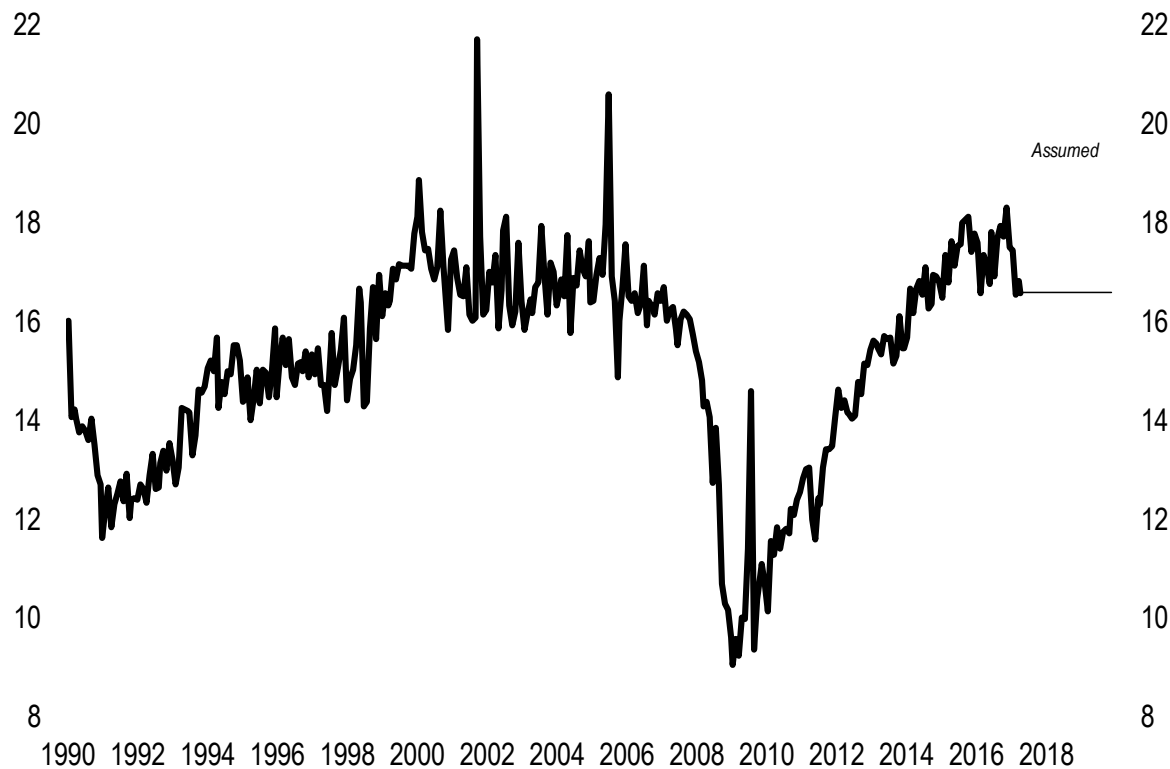
Sources: Haver Analytics; U.S. Department of Commerce. Updated through May 2017.

P.S. It Still Enjoys Pent-up Demand ...

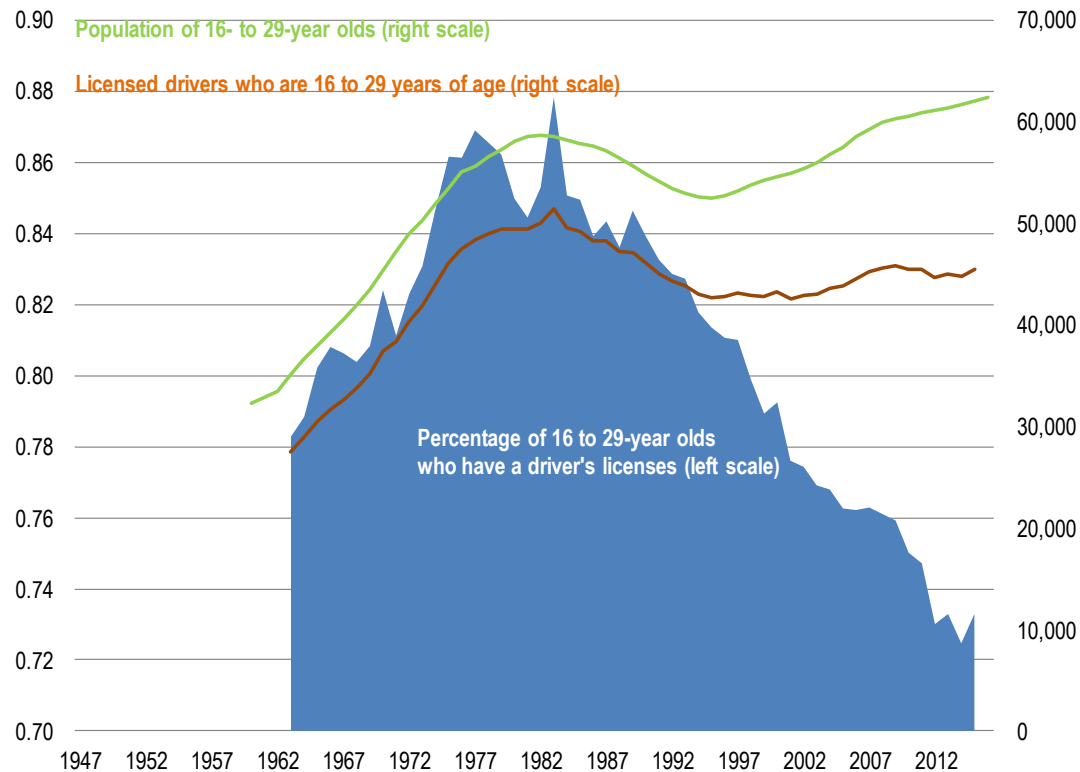U.S. light vehicle sales (millions at an annual rate)

Average Light Vehicles to Date Since January 1, 2007

U.S. Light-weight Vehicle Sales

Sources: Haver Analytics; U.S. Department of Commerce. Updated through May 2017.

... and a Delayed Millennial Transition

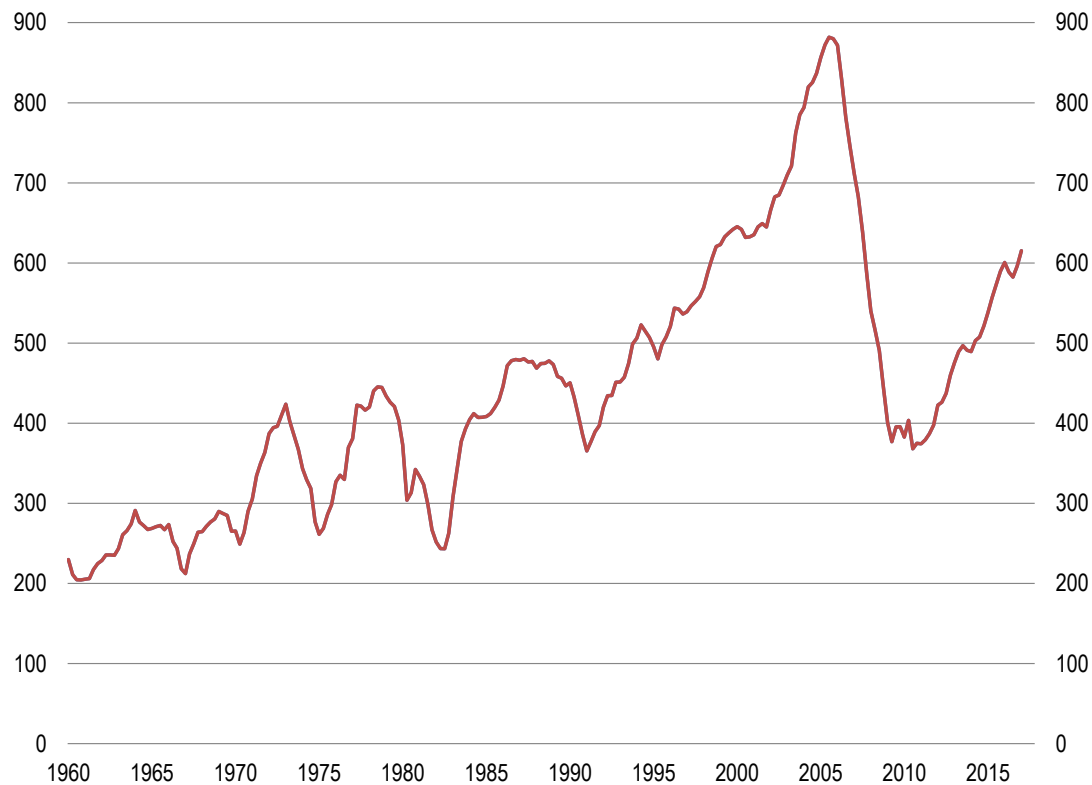Licensed 20-year olds (percent of the population)   Drivers (thousands)

Sources: Haver Analytics; Federal Highway Administration. Updated through 2015.
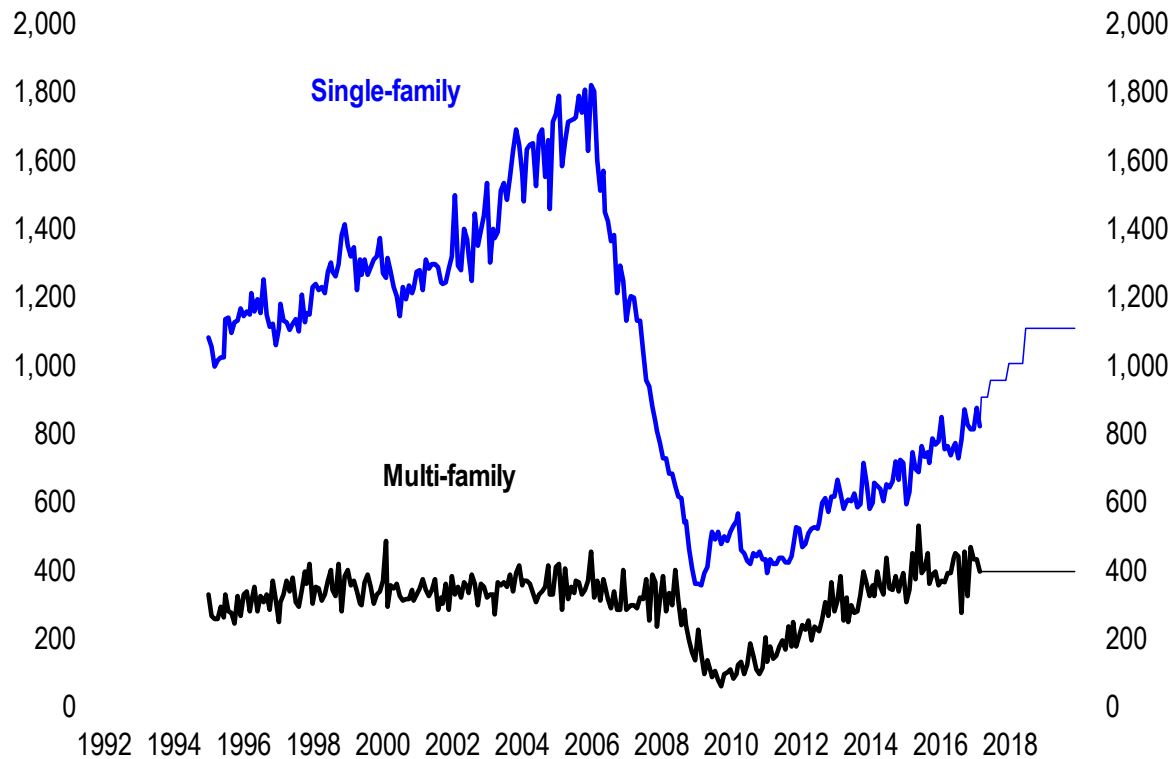
The Slow Home Building Recovery …

Real residential investment (billions of chained 2009 dollars)

Source: U.S. Department of Commerce. Updated through 2017 Q1.
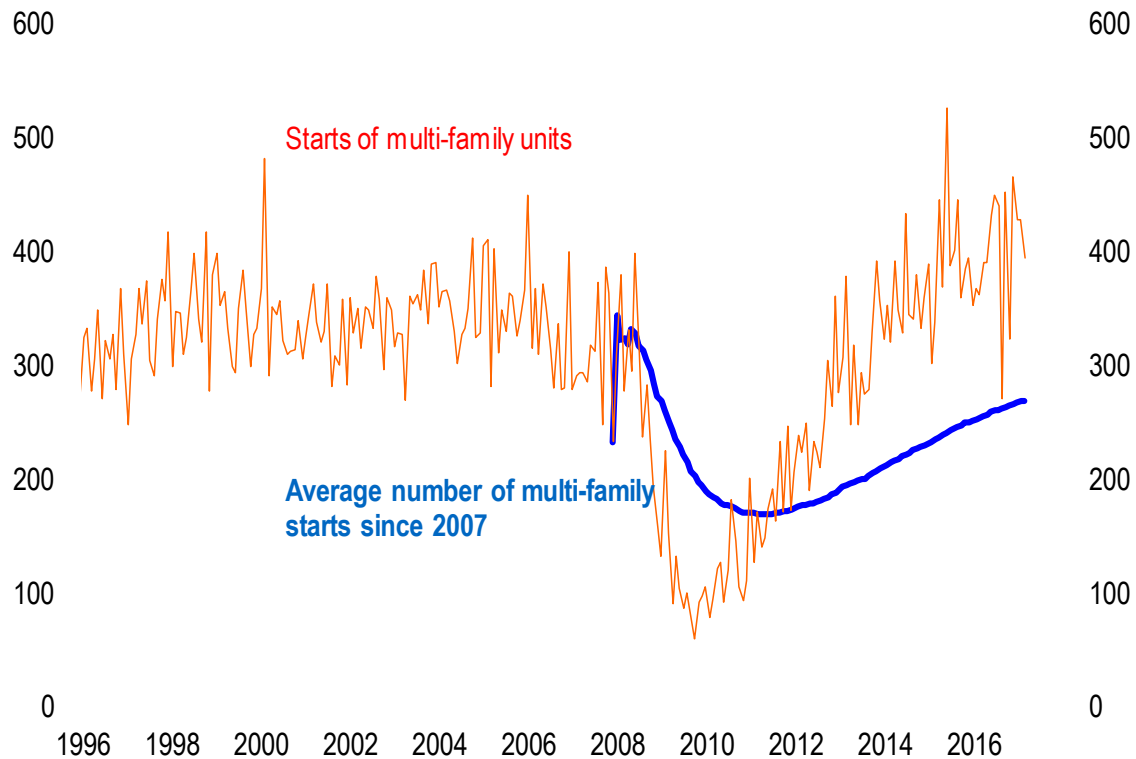
... Mostly in the Single-Family Sector ...

Housing starts (thousands of units at a seasonally adjusted annual rate)

Source: U.S. Department of Commerce. Updated through March 2017.

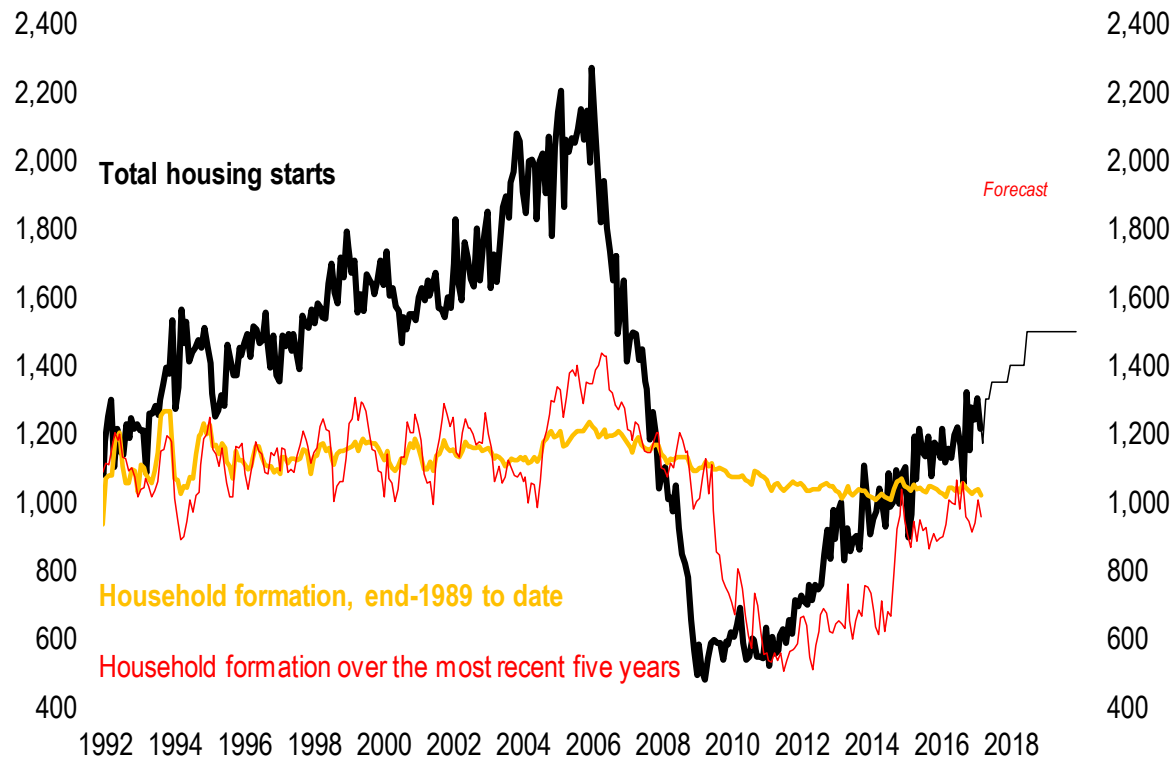# ... With Multis Helped by Pent-up Demand ...

Housing starts (thousands of units at a seasonally adjusted annual rate)

Source: U.S. Department of Commerce. Updated through March 2017.

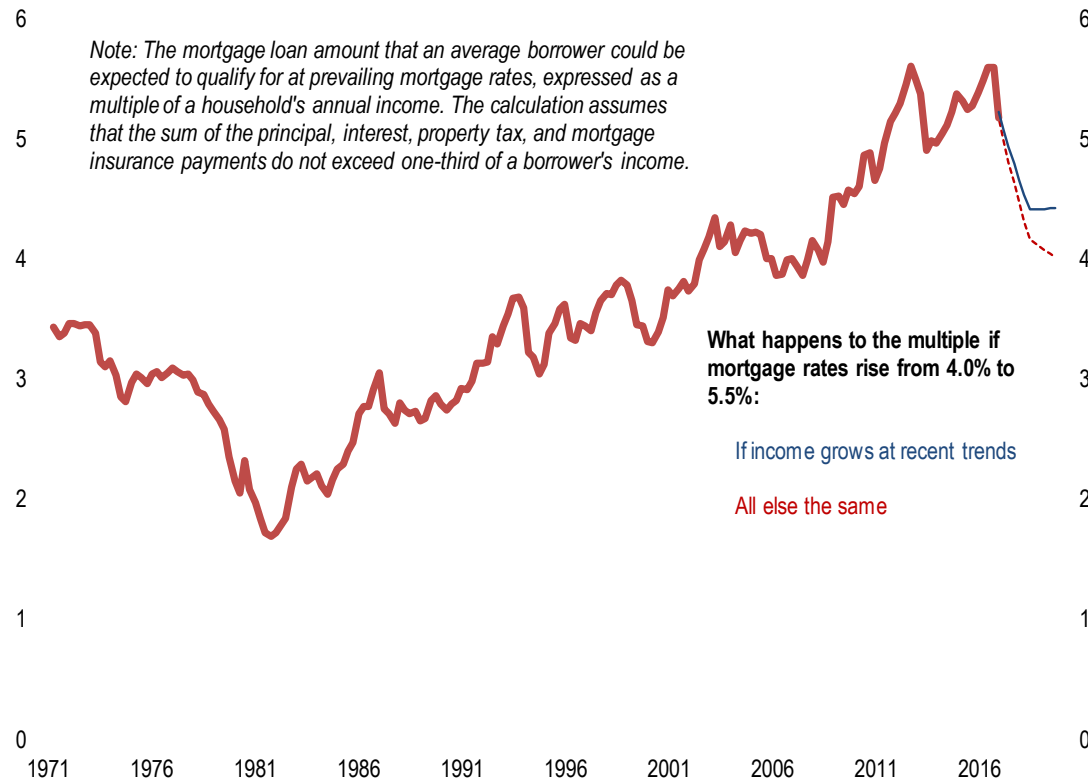# ... Is Mostly About the Young Adult Issue ...

Housing starts and household formation (thousands of units, seasonally adjusted ar)

... and Not Financial Conditions

Mortgage qualifying terms and mortgage rates (ratio of qualifying loan to income)

Note: The mortgage loan amount that an average borrower could be expected to qualify for at prevailing mortgage rates, expressed as a multiple of a household's annual income. The calculation assumes that the sum of the principal, interest, property tax, and mortgage insurance payments do not exceed one-third of a borrower's income.

What happens to the multiple if mortgage rates rise from 4.0% to 5.5%:

If income grows at recent trends

All else the same

Sources: Haver Analytics, Census Department. Updated through 2017 Q1.

P.S. Housing's Contribution ...

Contribution of residential investment to GDP (percentage points over the most recent 4 quarters)
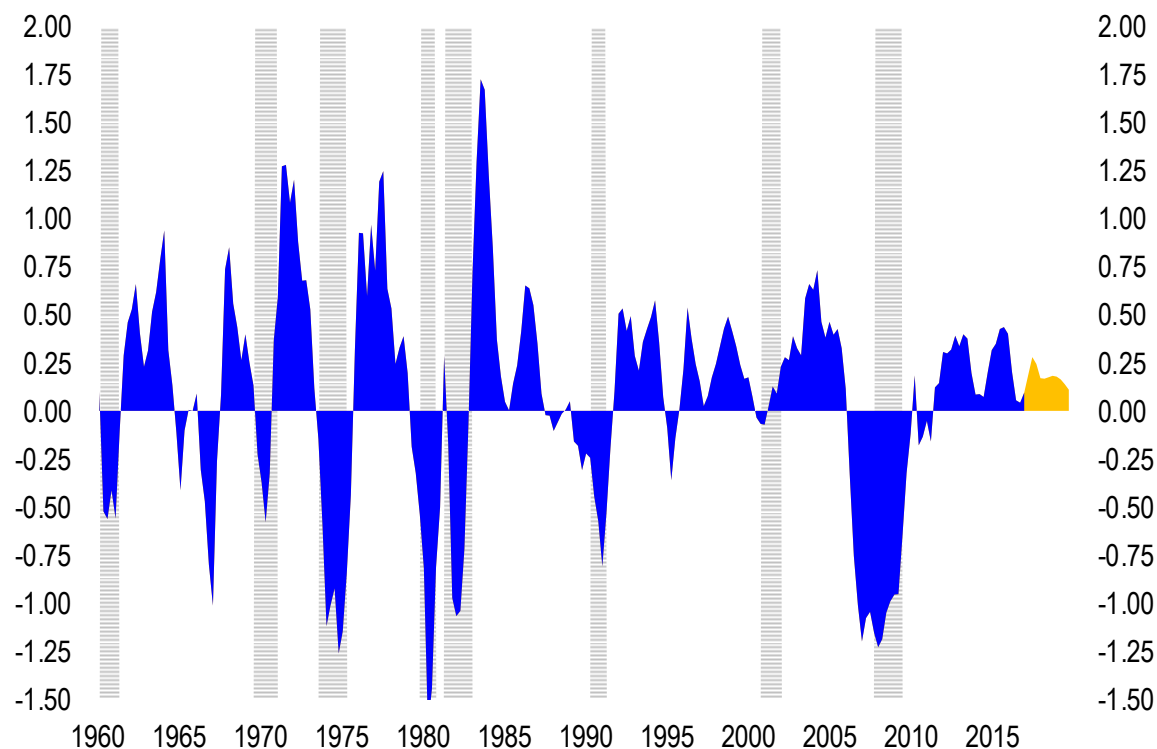
... Is Not Just About Housing Starts ...

Selected components of residential investment (billions of nominal dollars)

Mobile homes (plus all other categorires of residential investment

Brokers commissions (plus improvements and permanent site construction)

Improvements (plus permanent site construction)

Permanent site construction
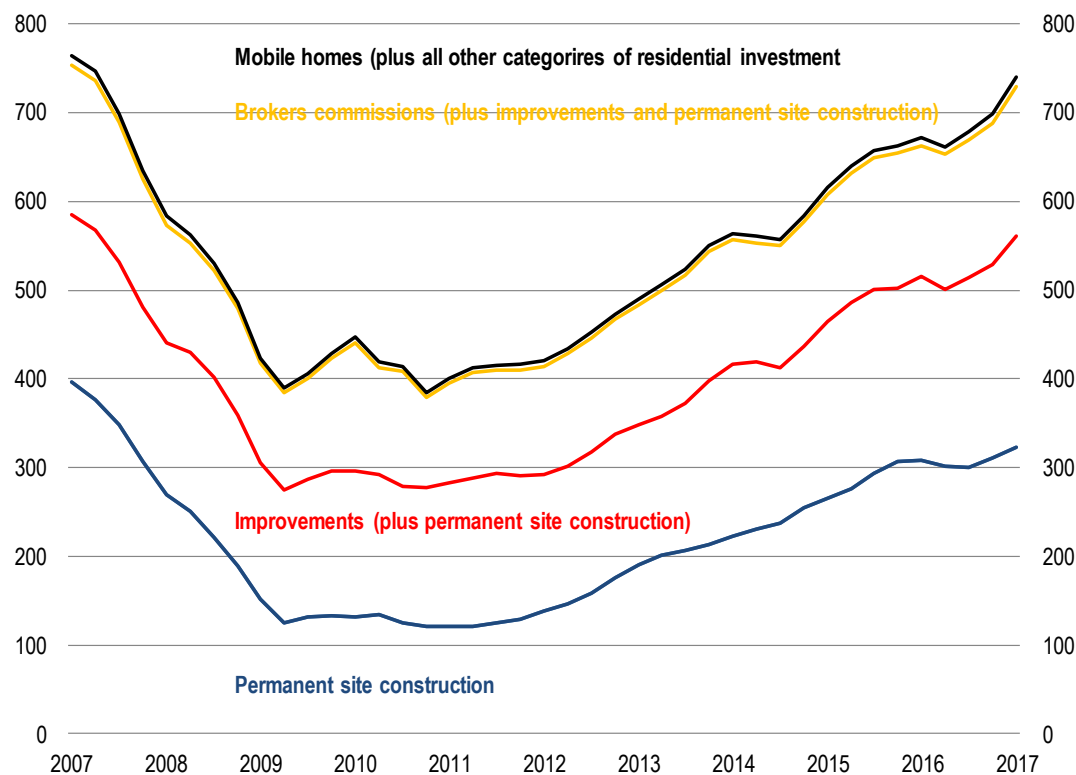
Sources: Haver Analytics; U.S. Department of Commerce. Updated through 2017 Q1.

... and Home Improvement Is on the Rise

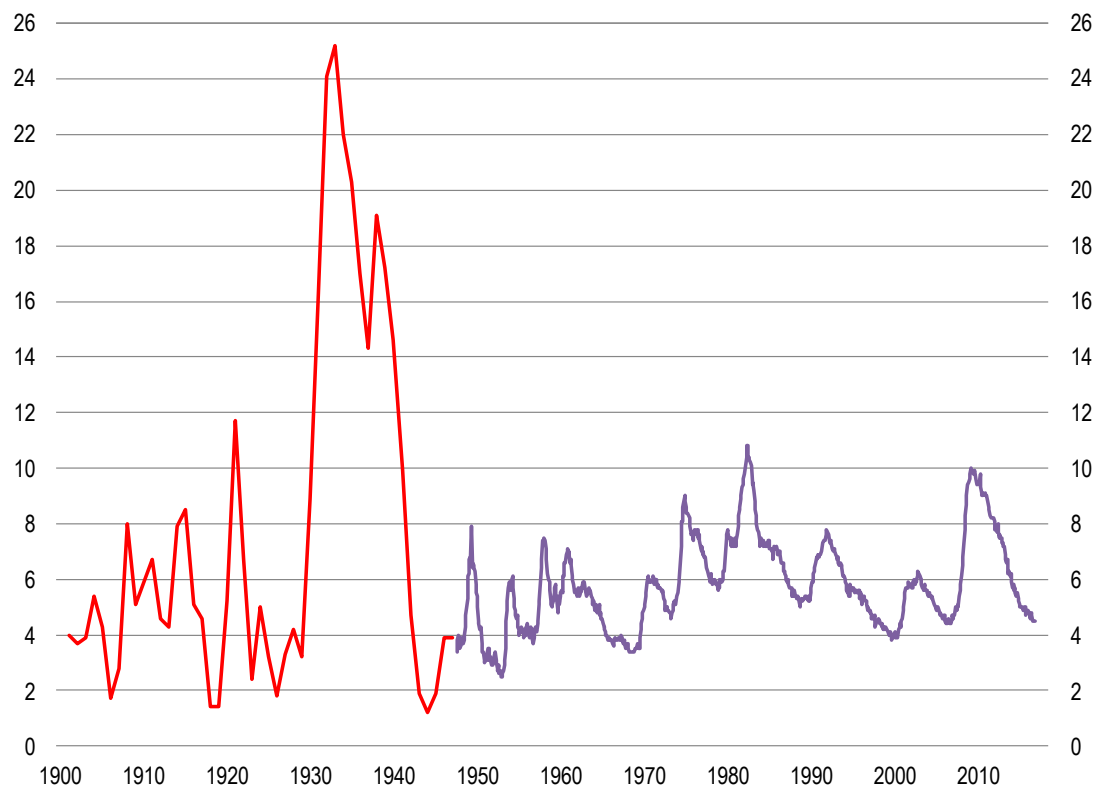Home improvement outlays (percent of total nominal residential investment)
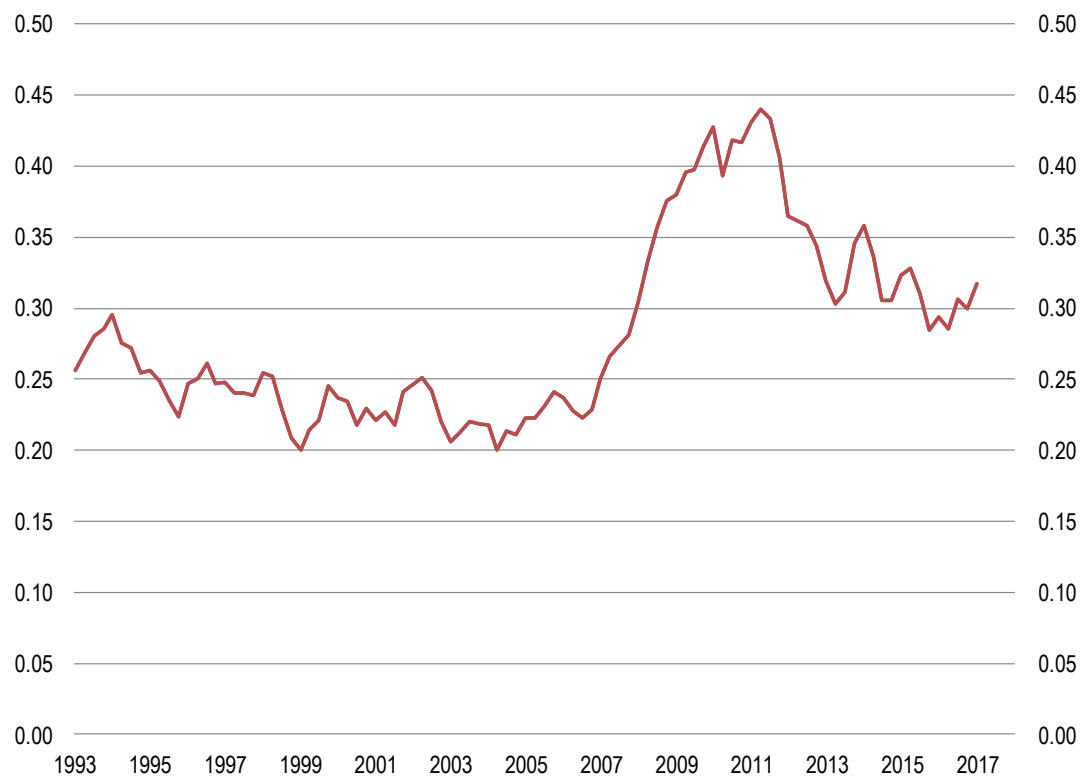
All That Brought Us Back Home ...

Unemployment (percent of the labor force)
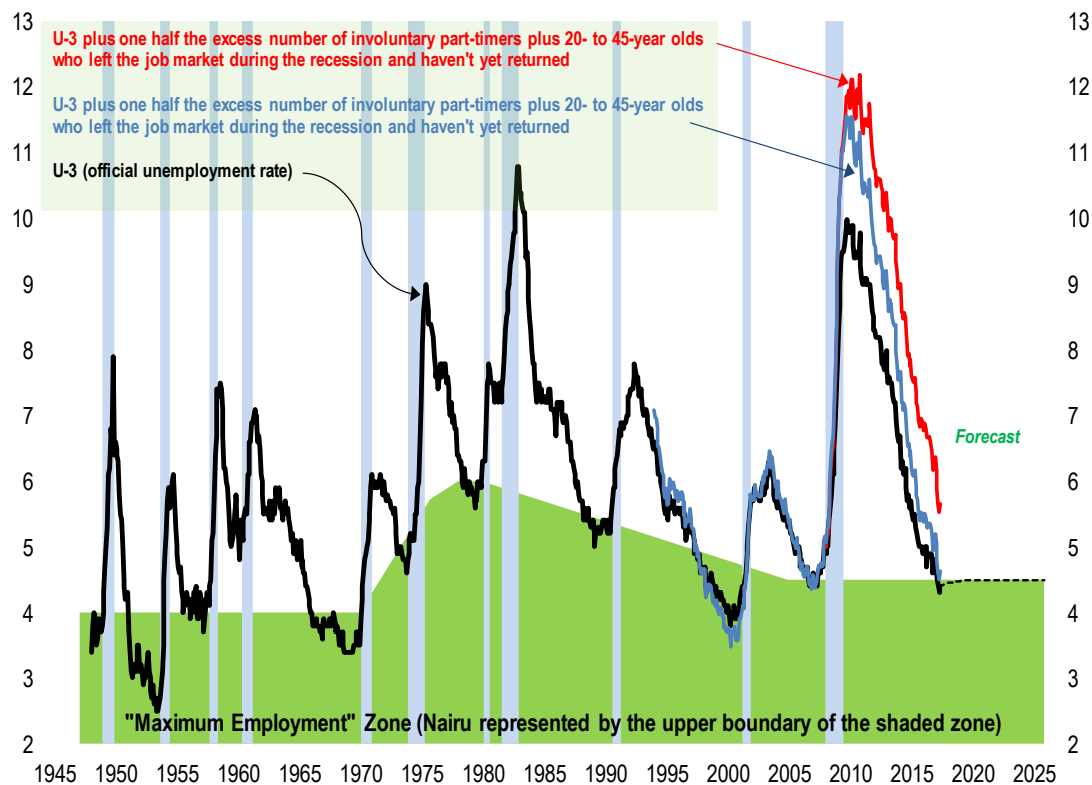
CHASE ◆

J.P.Morgan **76**
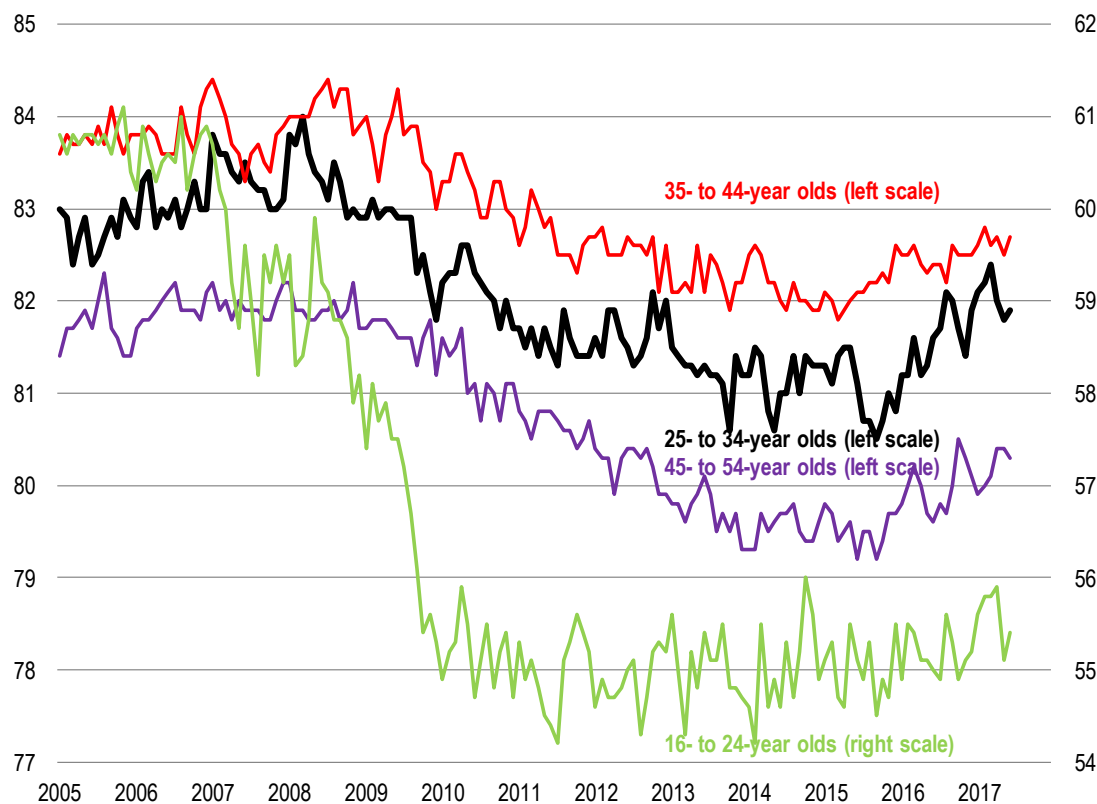
... Within Sight of Full Employment

Unemployment (percent of the labor force)

Sources: Haver Analytics; U.S. Department of Labor. Updated through June 2017.

We're Home When All Discouraged Return

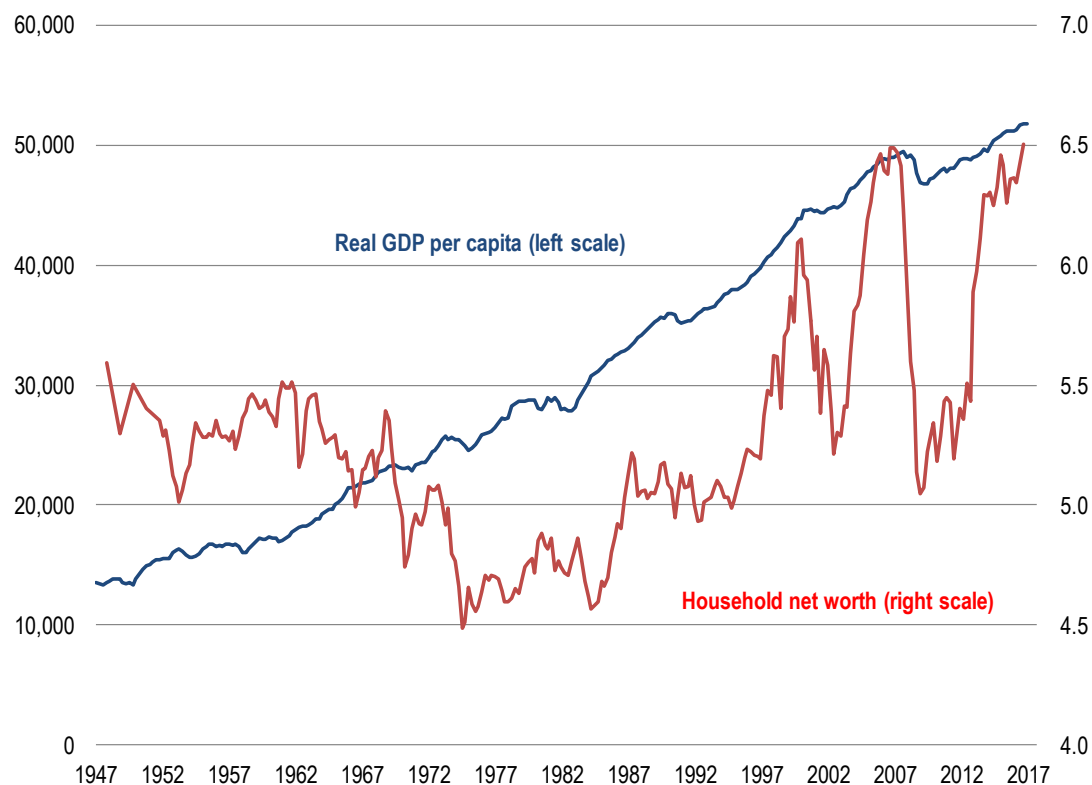Participation rate by selected age groups (% of the respective population)

Sources: Haver Analytics; U.S. Department of Commerce; U.S. Department of Labor. Updated through June 2017.
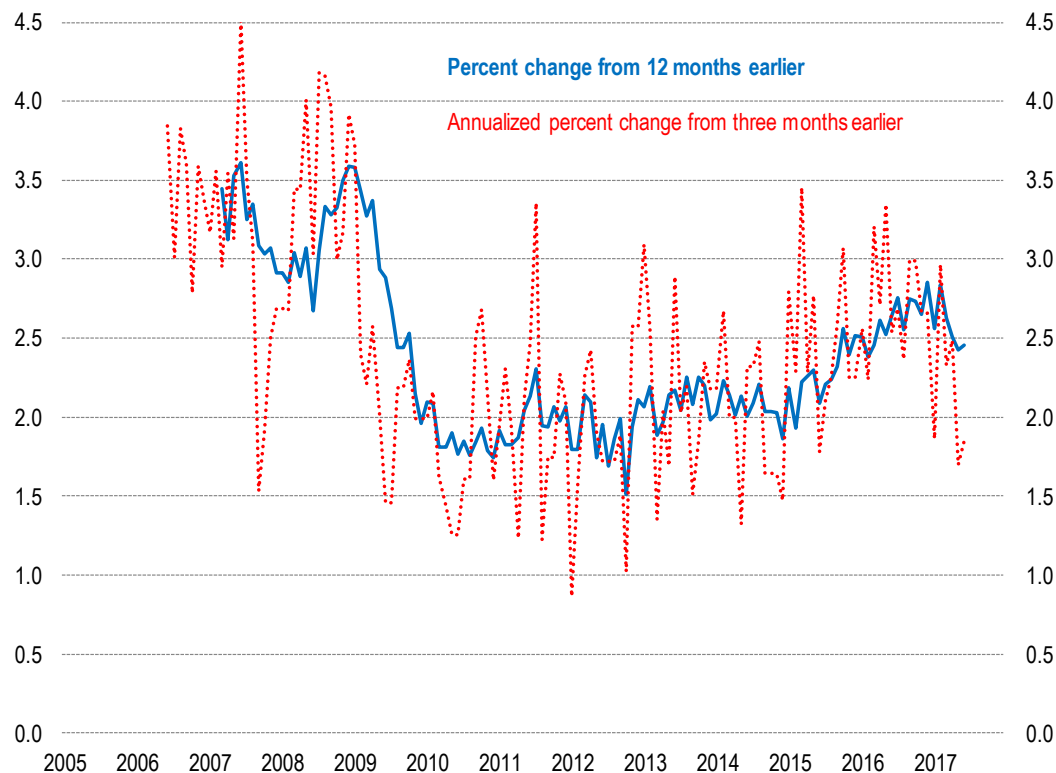
P.S. MIA Economics

Real GDP (2009 dollars)

Household net worth (ratio to disposable income)

Sources: Haver Analytics; U.S. Department of Commerce; Federal Reserve Board. Updated through 2017 Q1 (GDP per capita) and 2016 Q4 (net worth).

Wage Trends Sort Of Agree …

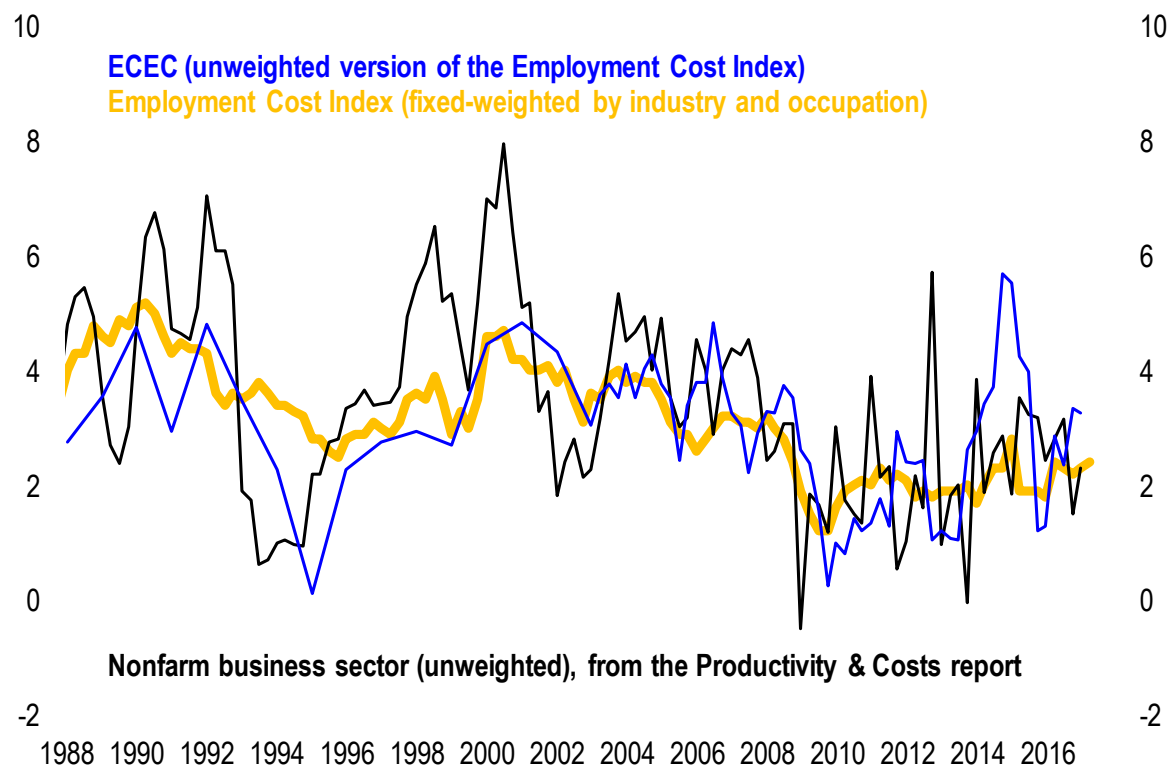Average hourly earnings (annualized percent change over the period shown)

Percent change from 12 months earlier

Annualized percent change from three months earlier

Sources: Haver Analytics; U.S. Department of Labor. Updated through June 2017.

Comp Trends Agree

Private sector hourly compensation (percent change from four quarters earlier)

ECEC (unweighted version of the Employment Cost Index)
Employment Cost Index (fixed-weighted by industry and occupation)

Nonfarm business sector (unweighted), from the Productivity & Costs report

Sources: Haver Analytics; U.S. Department of Labor. Updated through 2017 Q2.

Stock Market Valuations Agree

P-E ratio of the Wilshire 5000
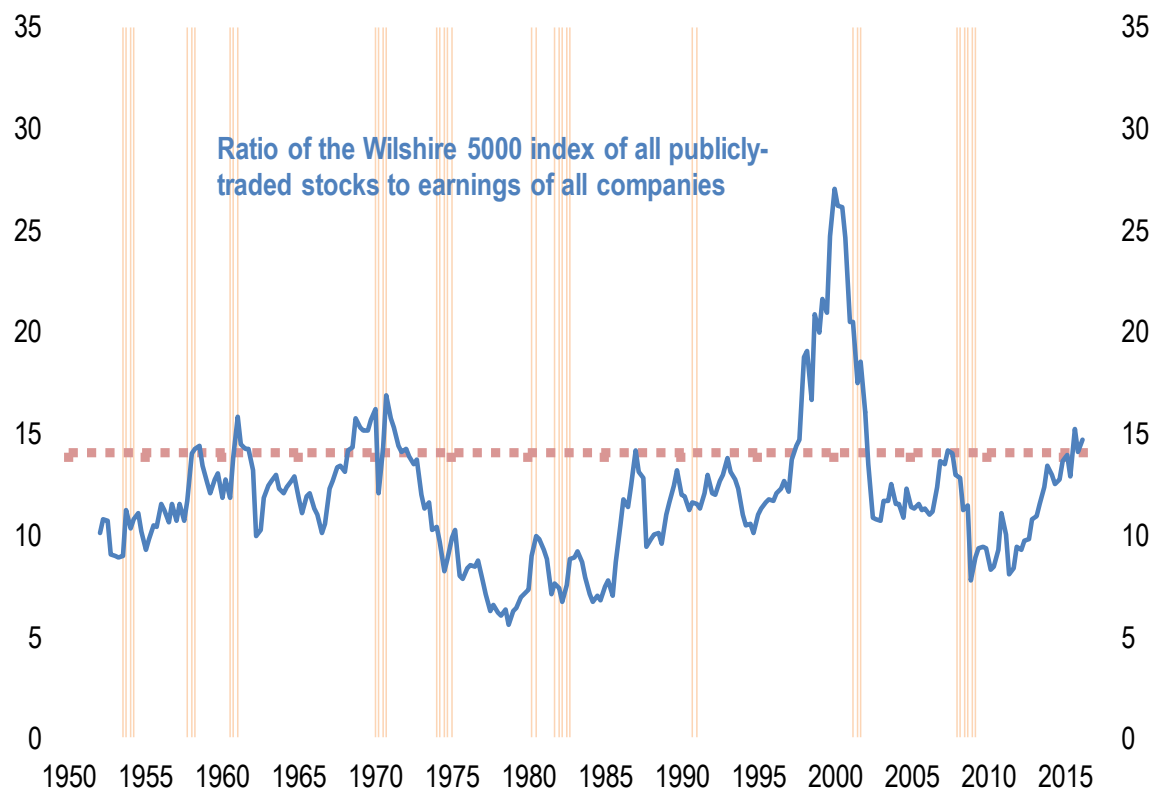
Ratio of the Wilshire 5000 index of all publicly-traded stocks to earnings of all companies
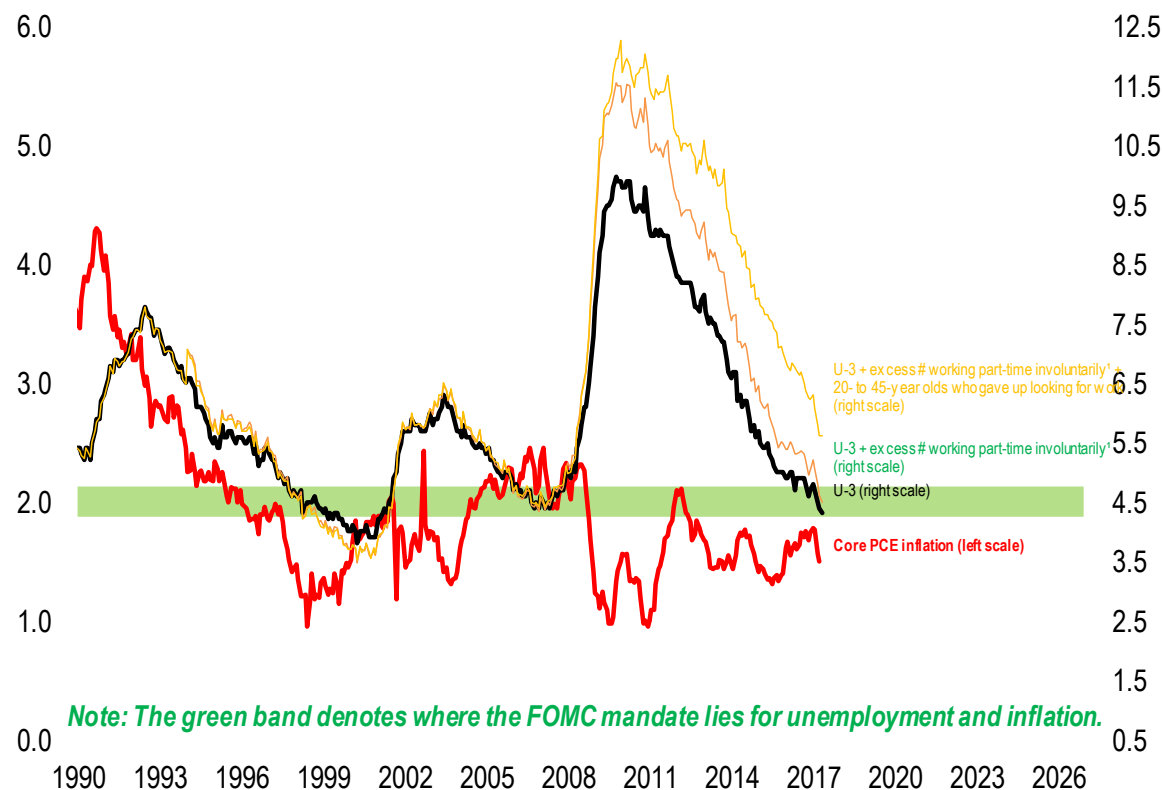
Credit Spreads Agree

Noninvestment grade debt yield less 10-year Treasury yield (basis points)
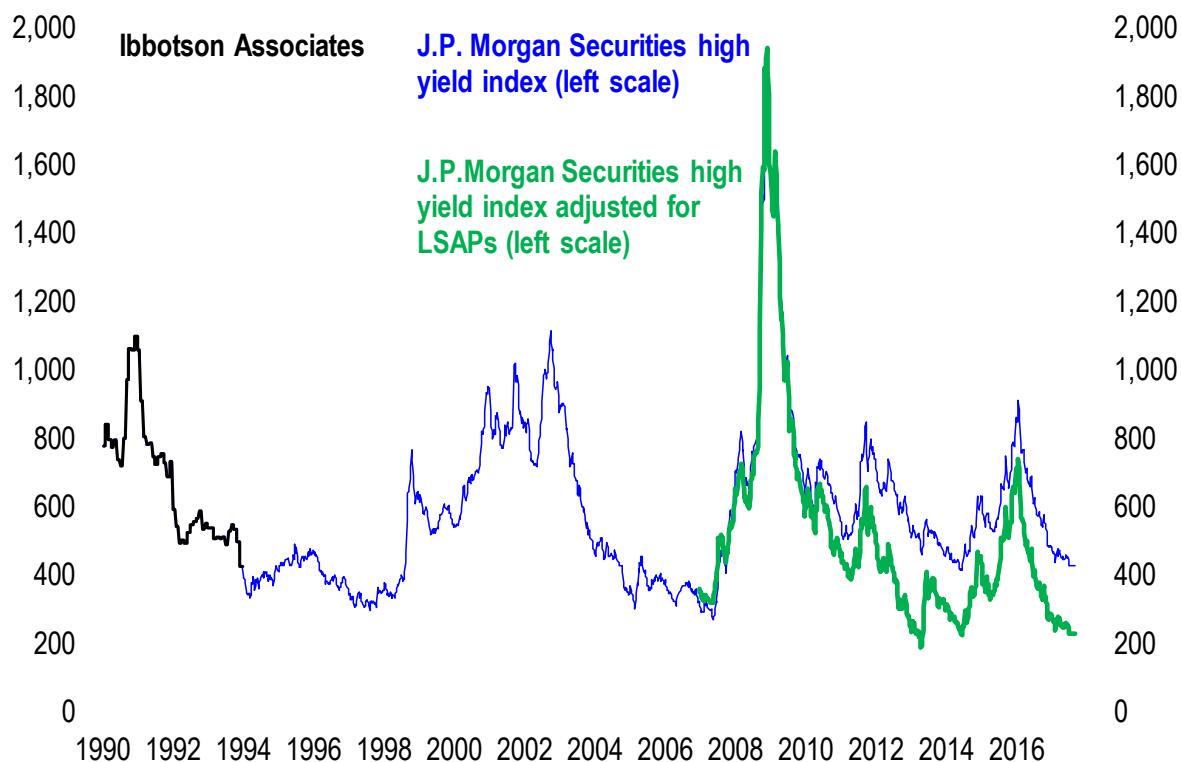
Sources: Haver Analytics; Federal Reserve Board; J.P. Morgan. Updated through July 28, 2017.

And the Fed's Pivot Confirms All

Core PCE inflation (% ch from 12 months earlier)   Unemployment (% of the labor force)

U-3 + excess # working part-time involuntarily +
20- to 45-year olds who gave up looking for work
(right scale)

U-3 + excess # working part-time involuntarily +
(right scale)

U-3 (right scale)

Core PCE inflation (left scale)

Note: The green band denotes where the FOMC mandate lies for unemployment and inflation.

Only a Few (1.7 Million) Are MIA

Participation rate of 20- to 45-year olds (% of the respective population)
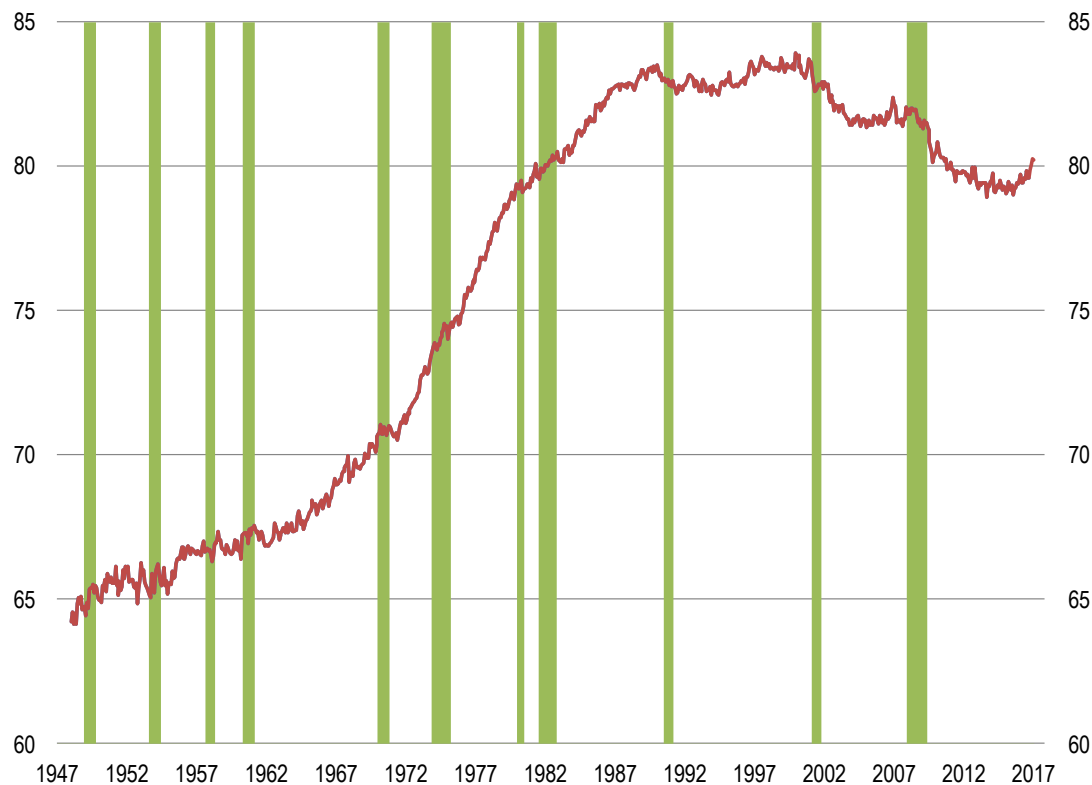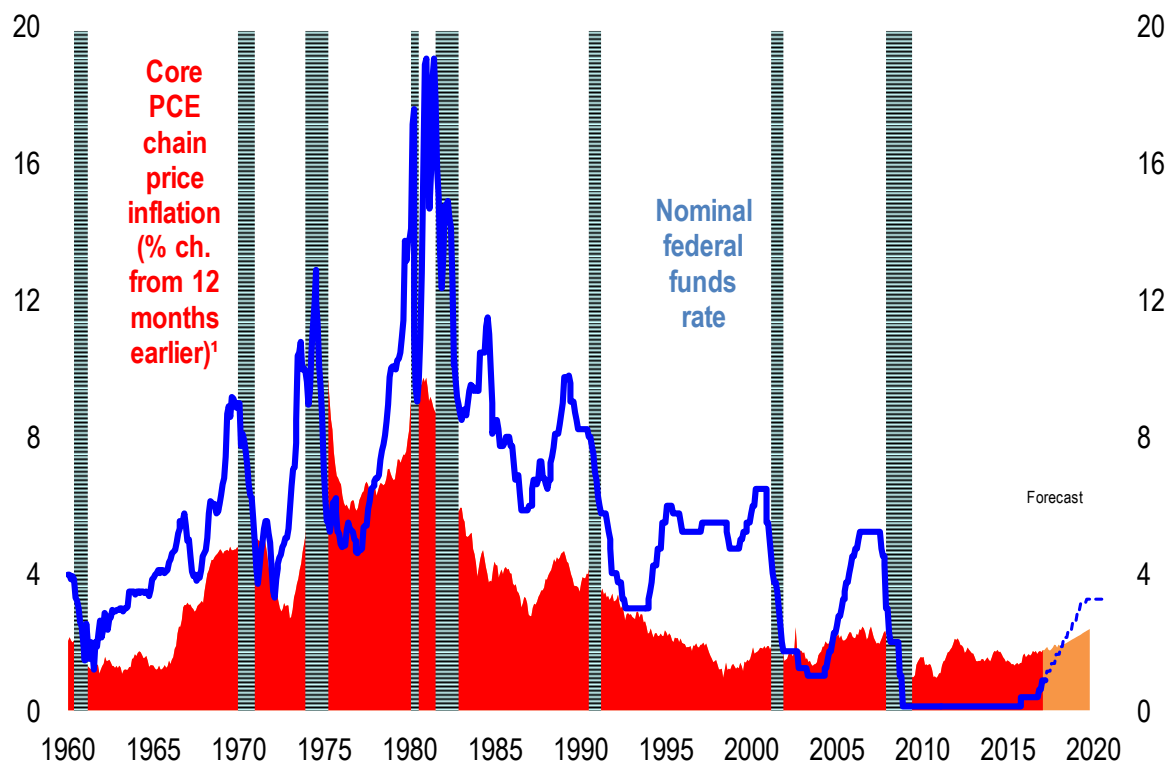

Sources: Haver Analytics; NBER-designated business cycles; U.S. Department of Labor. Updated through June 2017.

"Normal" for the Fed Means ...

Nominal federal funds rate and core inflation (percent)

... 1% to 2% Percentage Points Over Inflation

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

Nominal federal funds rate target

Real federal funds rate target
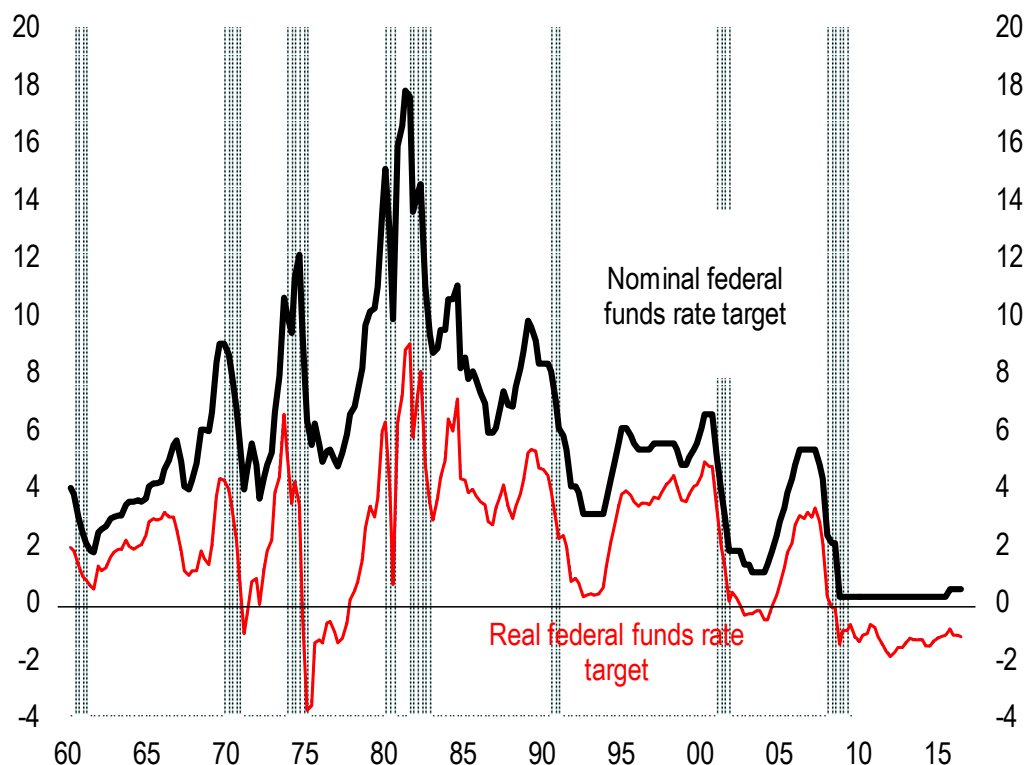
Sources: Haver Analytics; U.S. Department of Commerce; U.S. Department of Commerce; Federal Reserve Board. Updated through February 2017 (inflation) and April 7, 2017 (federal funds rate).
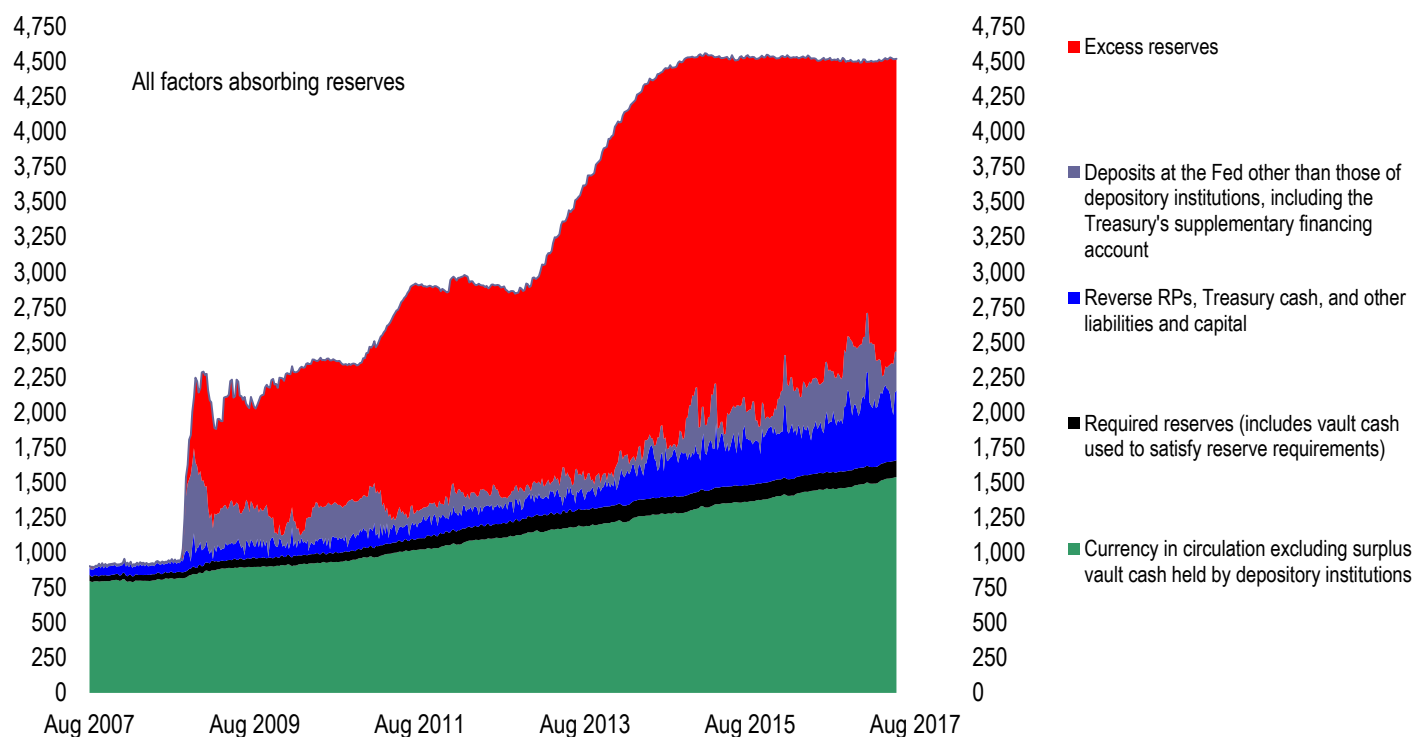
The Futures Markets Has the Rough Idea

Forecasts of the federal funds rate (percent)
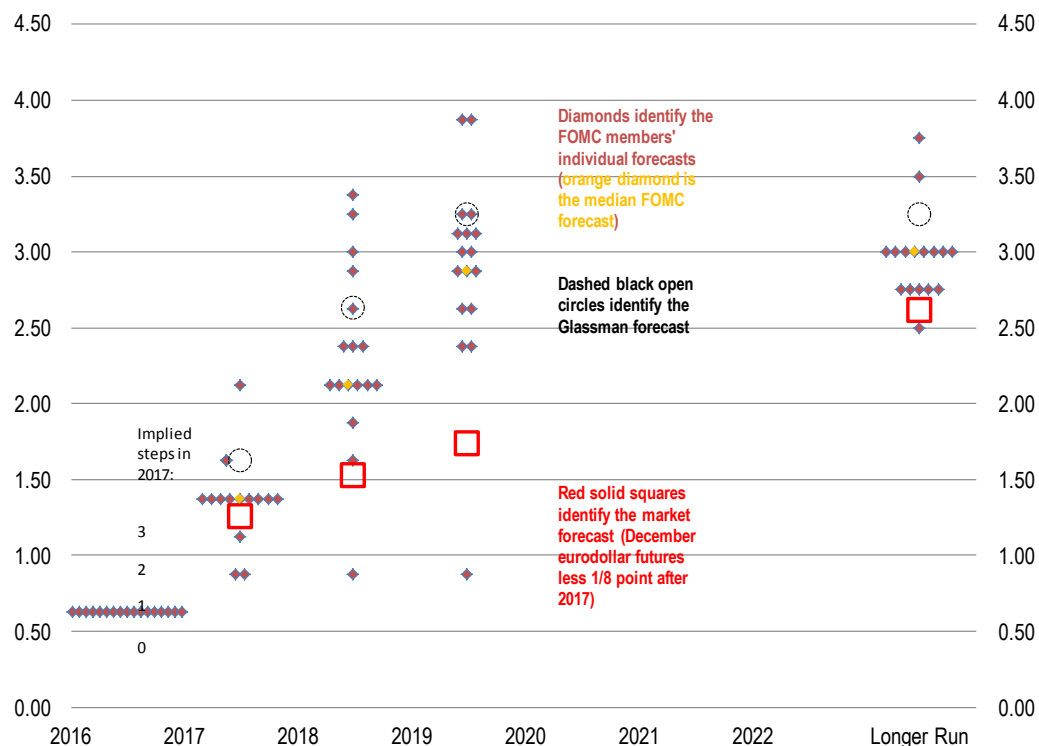
Sources: FRB; Bloomberg. Updated through March 15, 2017 (FOMC) and May 26, 2017 (futures).

Balance Sheet Normalization Still to Play ...

Federal Reserve liabilities (billions of dollars)

All factors absorbing reserves

Legend:
- Excess reserves
- Deposits at the Fed other than those of depository institutions, including the Treasury's supplementary financing account
- Reverse RPs, Treasury cash, and other liabilities and capital
- Required reserves (includes vault cash used to satisfy reserve requirements)
- Currency in circulation excluding surplus vault cash held by depository institutions

Sources: Haver Analytics; Federal Reserve Board. Updated through May 10, 2017.
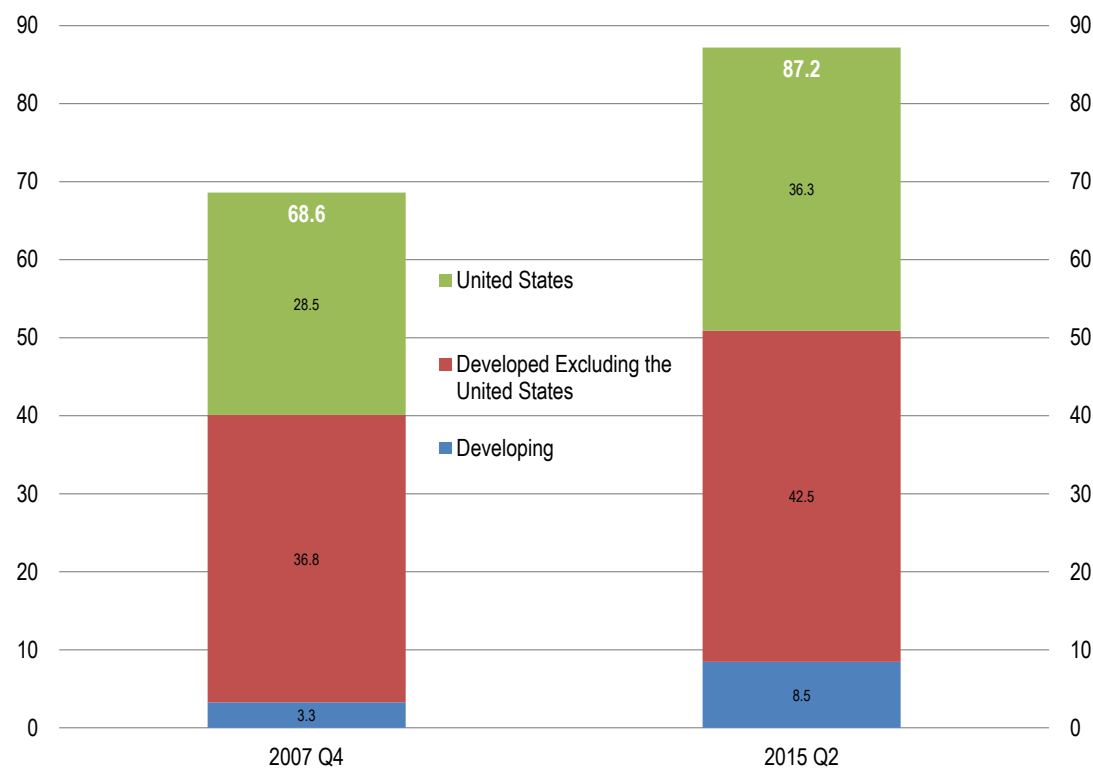
... the Fed's and Others

Assets held by key central banks (trillions of dollars)
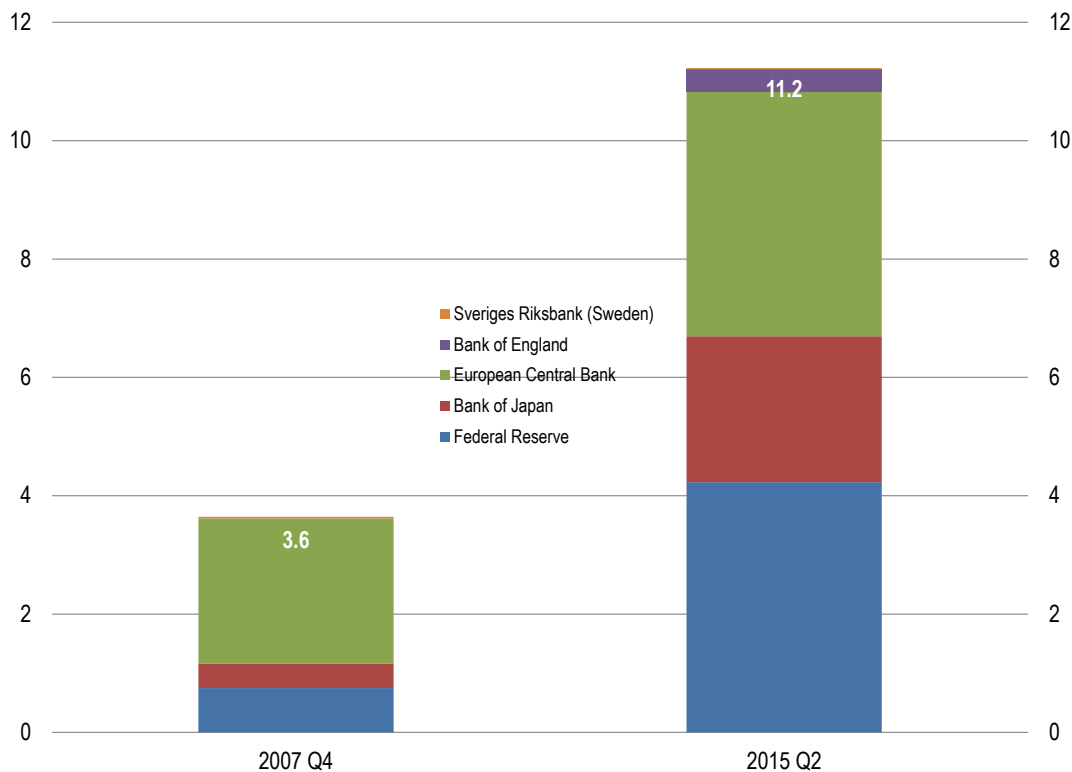
Sources: Haver Analytics; Federal Reserve Board; ECB; Bank of Japan; Sveriges Riksbank. Updated through June 10, 2016.

CBs Absorbed Most New Debt

Global debt outstanding (trillions of dollars)

It Didn't Stymie the Nation's Living Standard

Climbing to New All-time Highs

Real GDP per capita ($ 2009)   Real GDP per capita growth (annualized % ch since 1947)

Real GDP per capita (left scale)

Annualized growth rate to date since 1947 (right scale)
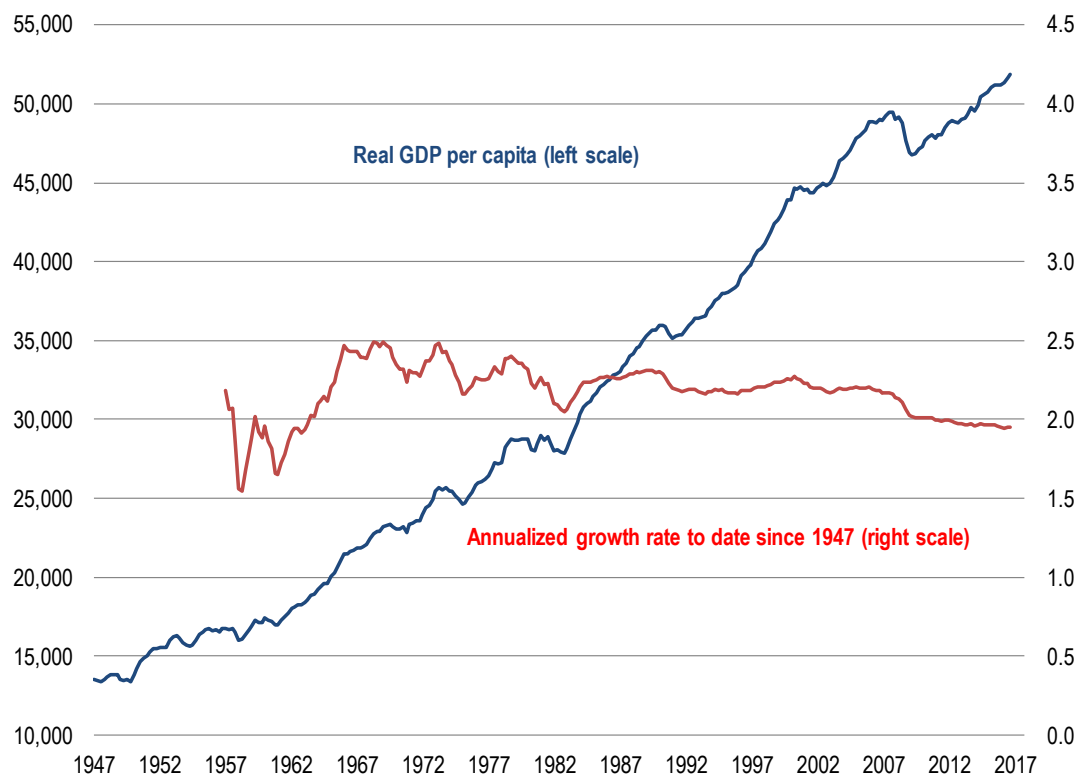
Sources: Haver Analytics; U.S. Department of Commerce. Updated through 2016 Q4.

Insights from Japan's Story ...

Real GDP (ratio to 2007 Q4)
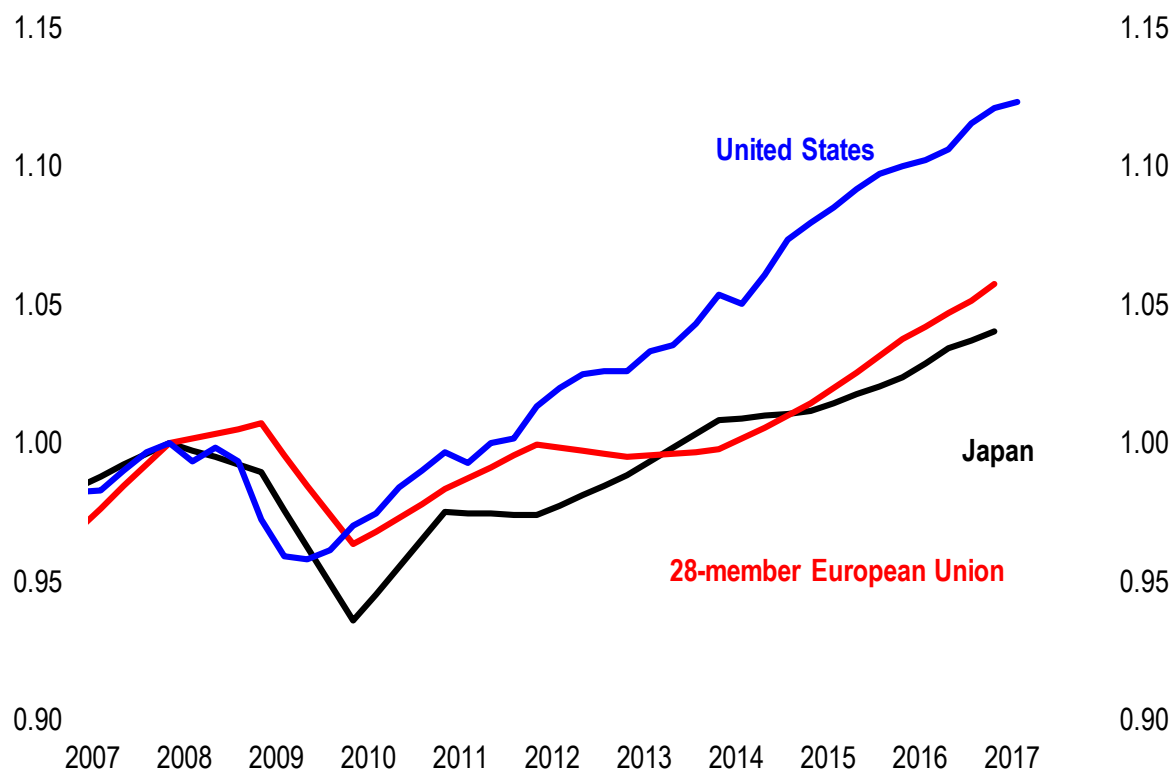
United States

28-member European Union

Japan

Sources: Haver Analytics; U.S. Department of Commerce; selected international agencies. Updated through 2017 Q1.

... About Growth and Living Standards

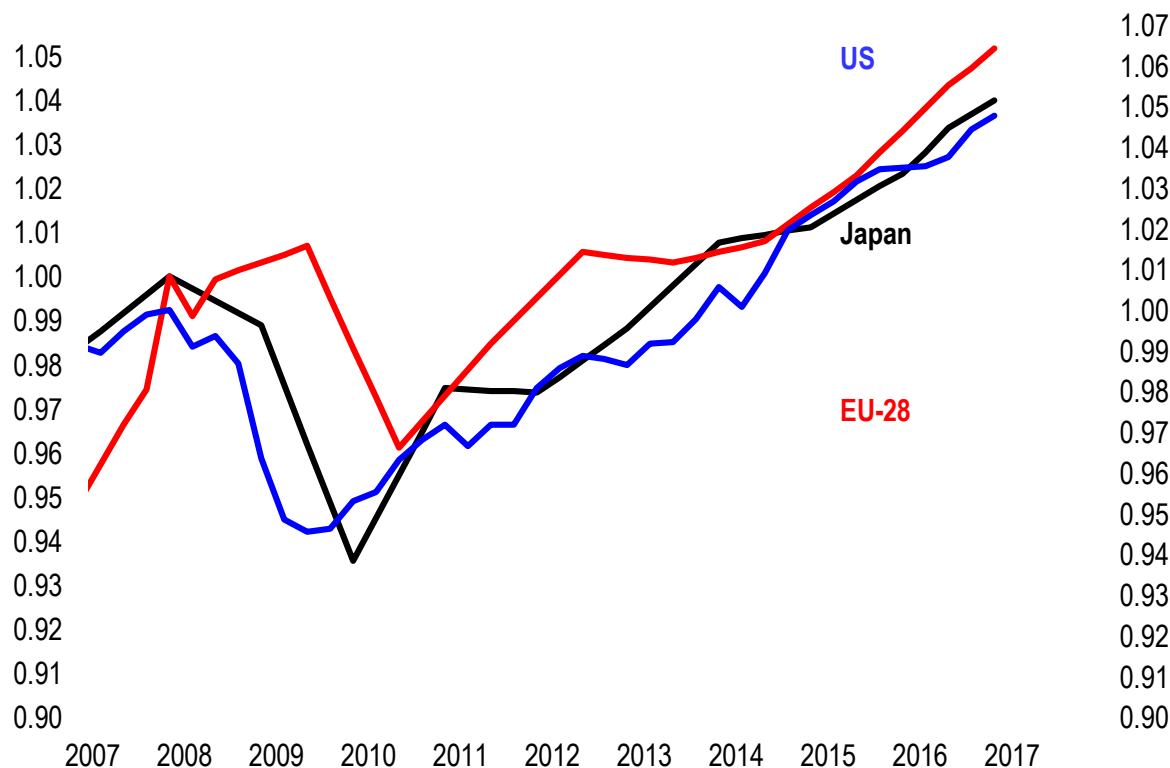Real GDP per capita (ratio to 2007 Q4)

Sources: Haver Analytics; U.S. Department of Commerce; selected international agencies. Updated through 2017 Q1.

Why "Slow" Matters

2% Growth Does This

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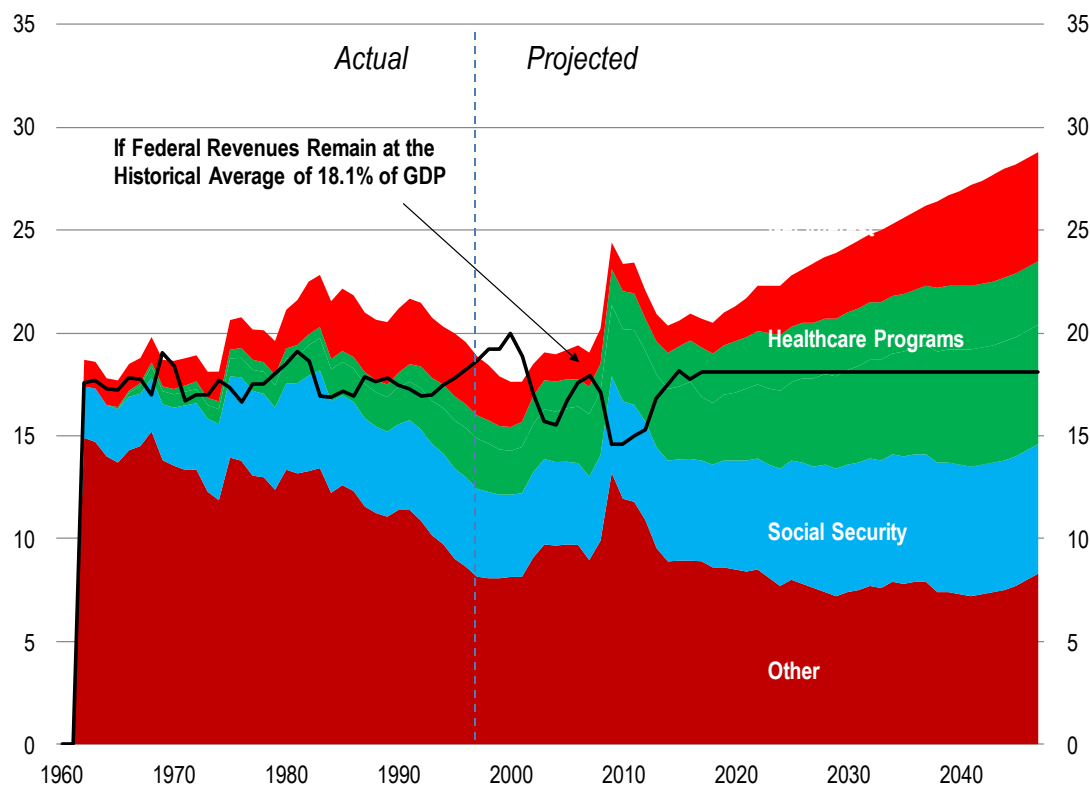
Actual *Projected*

If Federal Revenues Remain at the Historical Average of 18.1% of GDP

Healthcare Programs

Social Security

Other

3.5% Growth Does This

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

If Federal Revenues Remain at the Historical Average of 18.1% of GDP

Net Interest

Healthcare Programs

Social Security

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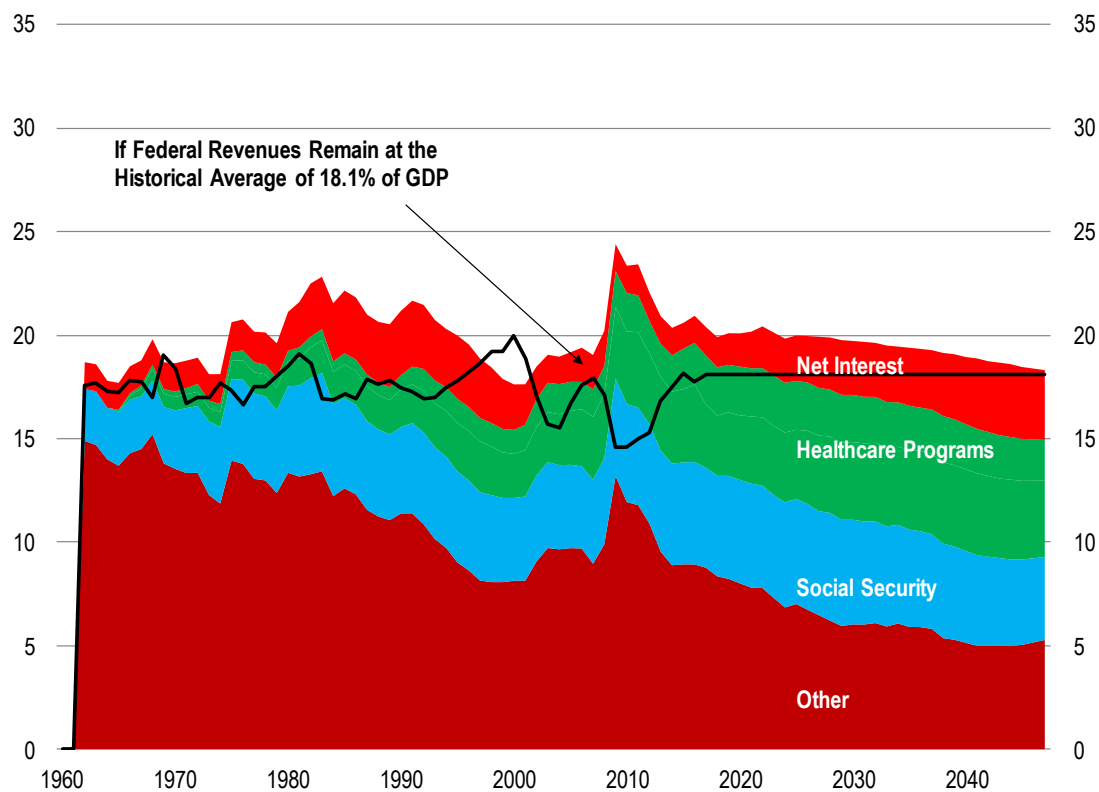
Sources: Haver Analytics; Congressional Budget Office. Updated through 2016.

And Exposes a Flawed Health Care System

Healthcare spending by selected sectors (percentage of GDP)
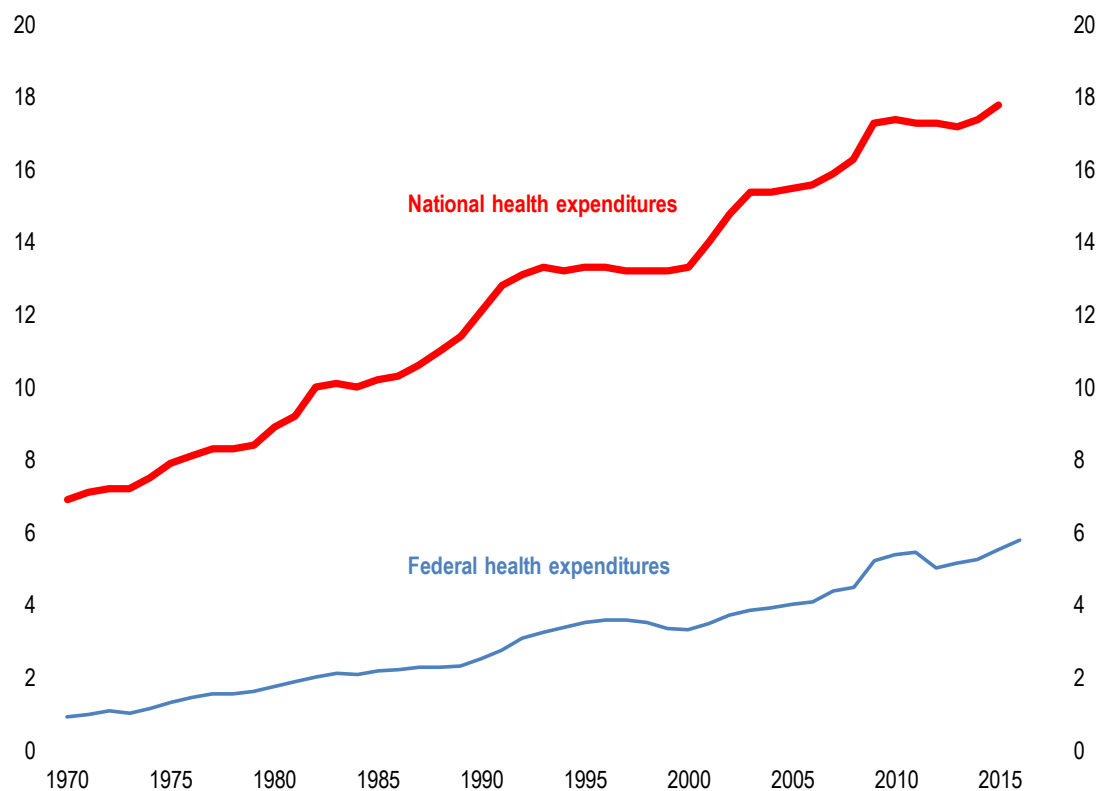
Sources: Haver Analytics; Congressional Budget Office; Centers for Medicare and Medicaid Services. Updated through 2015 (national health expenditures) and 2016 (federal health expenditures).

All Leading to a Structural Imbalance and ...

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

Black line is the budget balance as a percent of GDP (right scale)

Solid areas are the budget balance in billions of dollars over the most recent 12 months (left scale)

CBO's 10-year projection
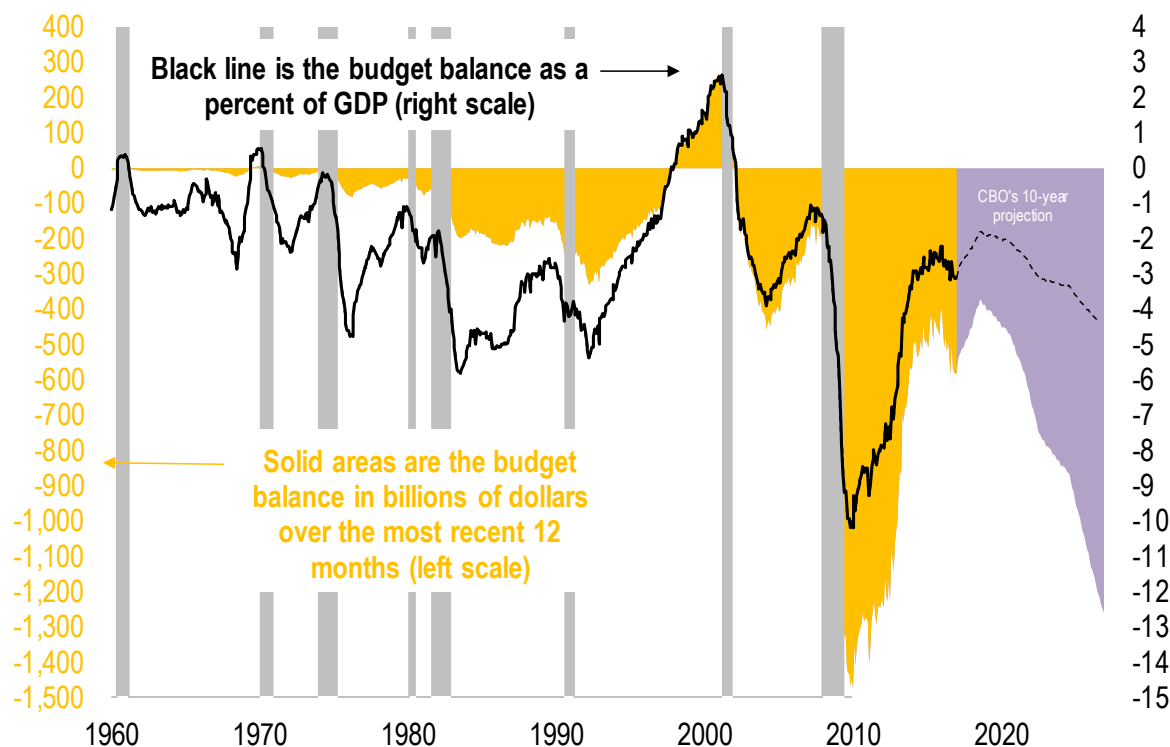
Sources: Haver Analytics; NBER recession; U.S. Treasury; CBO. Updated through February 2017.

CHASE ⬡

J.P.Morgan 100

... Debt Ratios that Would Be Hard to Ignore

Federal debt (ratio to GDP)
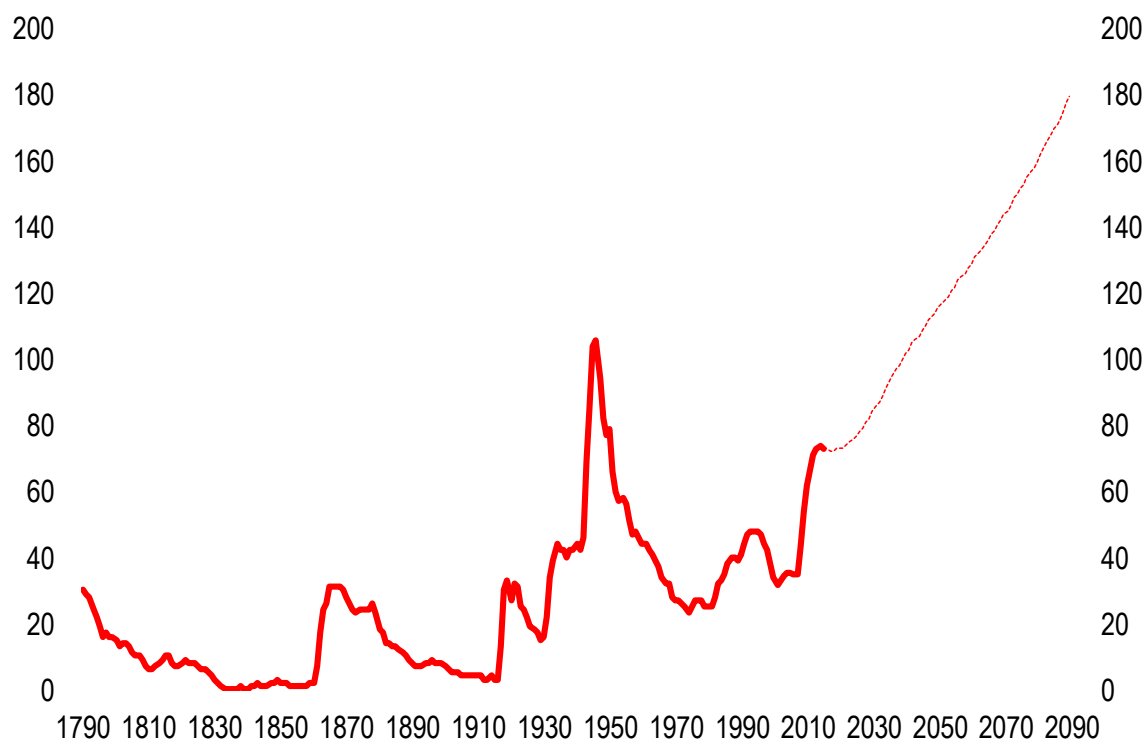
CHASE ○

J.P.Morgan **101**

Coverage Is Reform

Promoting competition in the provider and insurance industries.

Back away from the employer-provided health insurance model:

Promote greater personal responsibility by health care users

Evolve towards full lifespan insurance coverage, not just birth to retirement

Tax benefits for health insurance coverage

Health savings accounts combined with high-deductible plans

Lifetime insurance coverage

Tort reform

Government-provided minimum safety net, like Social Security

CONCLUSION … SWEET SPOT

Going for Gold

| Cycle Bottom		Cycle Peak		Duration	
				Months	Years
Mar	1919	Jan	1920	10	0.83
Jan	1912	Jan	1913	12	1.00
Jul	1980	Jul	1981	12	1.00
Dec	1867	Jun	1869	18	1.50
Jun	1894	Dec	1895	18	1.50
Jun	1908	Jan	1910	19	1.58
May	1891	Jan	1893	20	1.67
Dec	1900	Sep	1902	21	1.75
Nov	1927	Aug	1929	21	1.75
Dec	1858	Oct	1860	22	1.83
May	1885	Mar	1887	22	1.83
Jul	1921	May	1923	22	1.83
Jun	1897	Jun	1899	24	2.00
Apr	1958	April	1960	24	2.00
Apr	1888	Jul	1890	27	2.25
Jul	1924	Oct	1926	27	2.25
Dec	1854	Jun	1857	30	2.50
Aug	1904	May	1907	33	2.75
Dec	1870	Oct	1873	34	2.83
Mar	1879	Mar	1882	36	3.00
Nov	1970	Nov	1973	36	3.00
Oct	1945	Nov	1948	37	3.08
May	1954	Aug	1957	39	3.25
Dec	1914	Aug	1918	44	3.67
Oct	1949	Jul	1953	45	3.75
Jun	1861	Apr	1865	46	3.83
Mar	1933	May	1937	50	4.17
Mar	1975	Jan	1980	58	4.83
Nov	2001	Dec	2007	73	6.08
Jun	1938	Feb	1945	80	6.67
Nov	1982	Jul	1990	92	7.67
Aug	**2009**	**Jun**	**2017**	**98**	**8.17**
Feb	1961	Dec	1969	106	8.83
Mar	1991	Mar	2001	120	10.00

We Are Here →

Shortest Cycle

↓

Longest Cycle

Sources: Haver Analytics; National Bureau of Economic Research.

The Promise of Trade ...

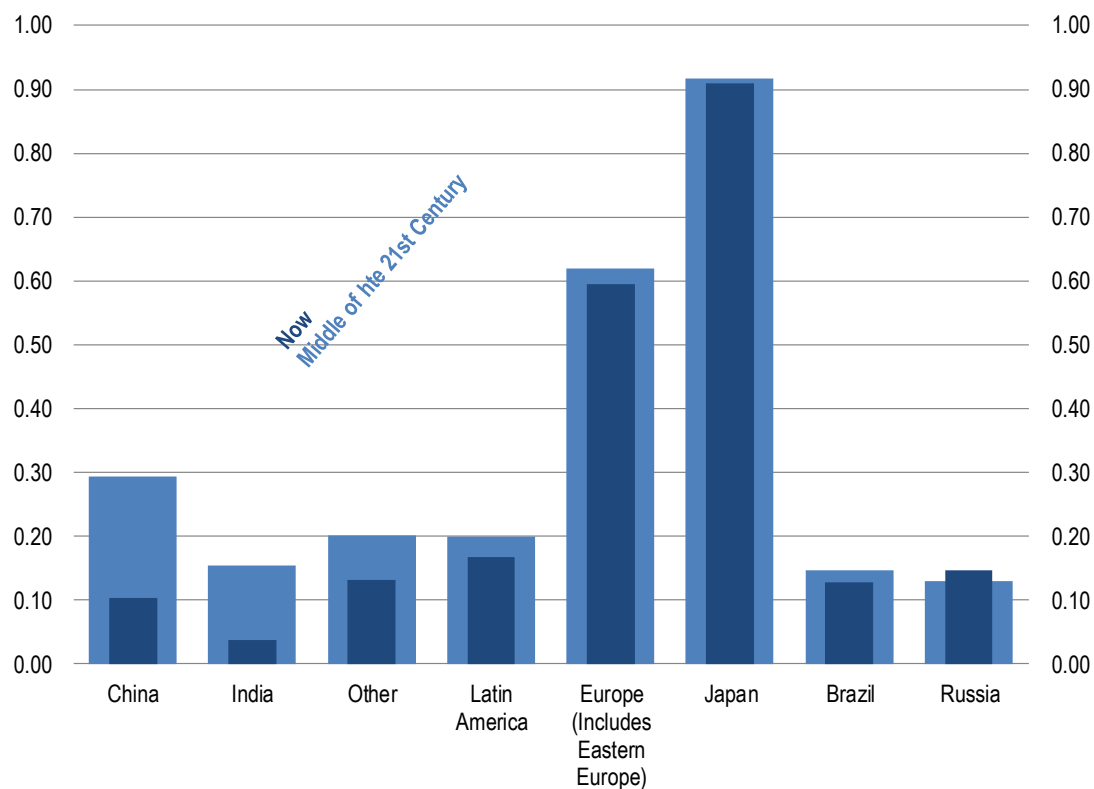Nominal goods and services imports and exports (billions of dollars)
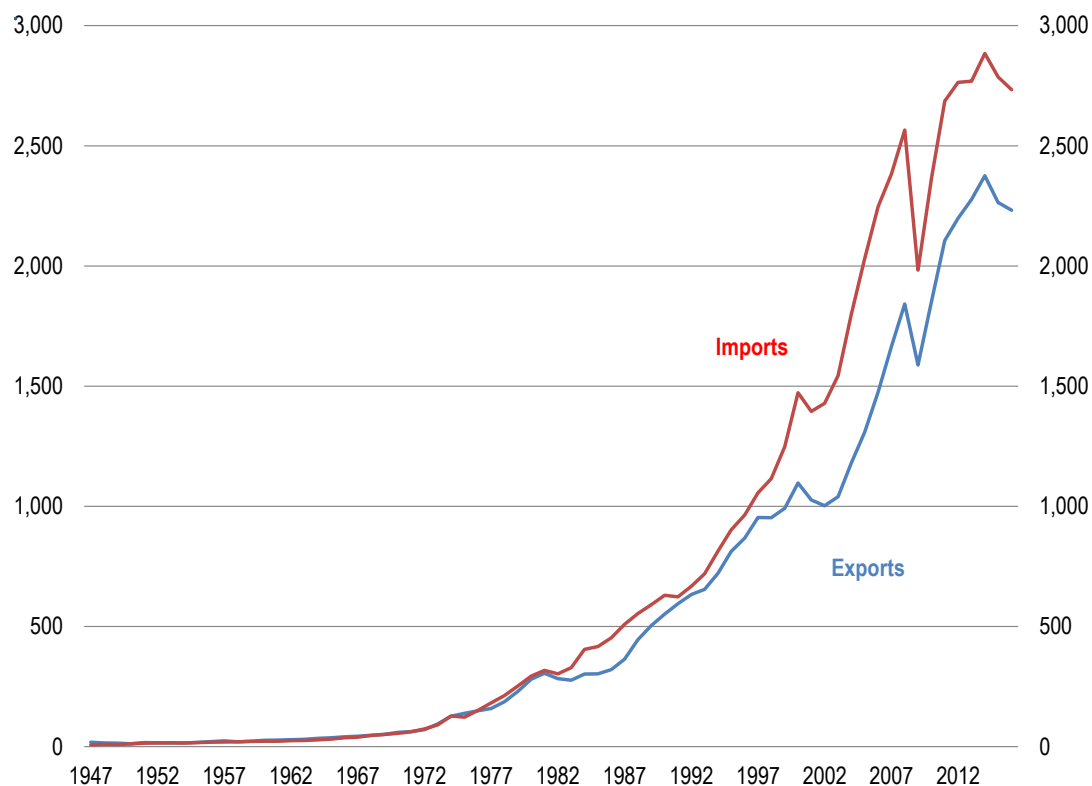
... We Gain When We Help Others ...

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

... By Anyone's Estimates

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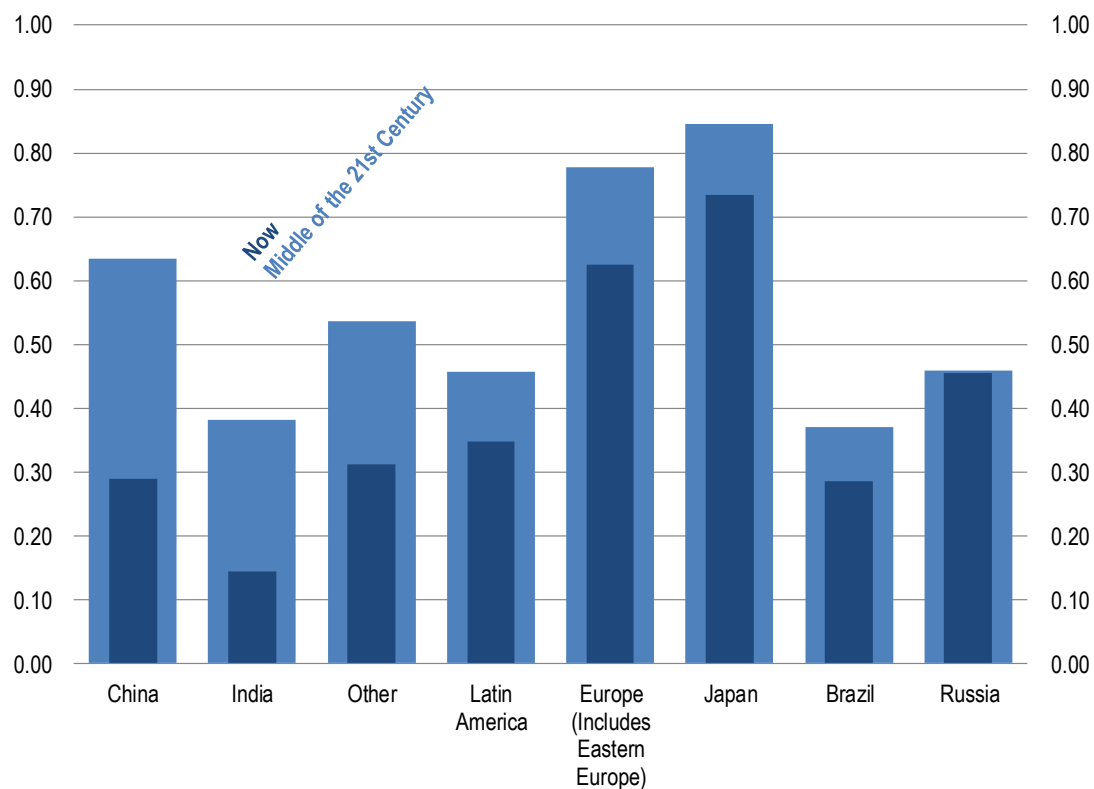
CHASE

J.P.Morgan **107**

Innovation Is Disruptive but ...

Manufacturing employment (millions)   **Employment and value added share (percent)**
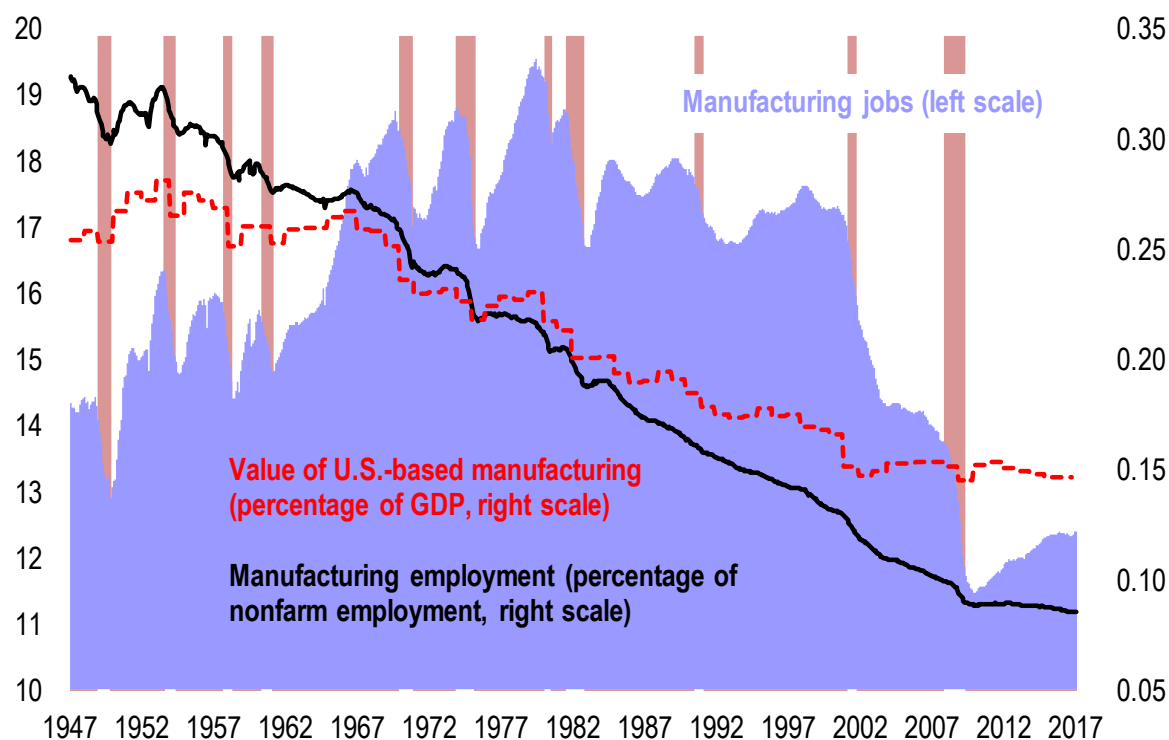
Manufacturing jobs (left scale)

Value of U.S.-based manufacturing
(percentage of GDP, right scale)

Manufacturing employment (percentage of
nonfarm employment, right scale)

... It Creates New Opportunities

Manufacturing employment (millions)
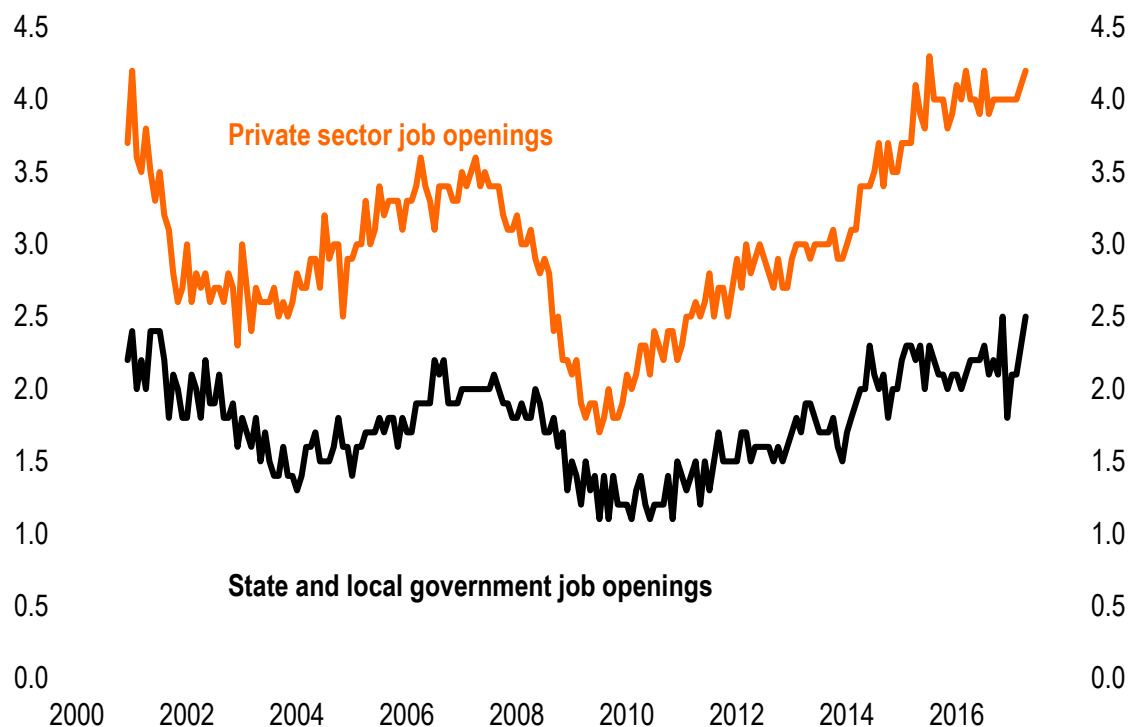
Sources: Haver Analytics; US Department of Commerce; U.S. Department of Labor. Updated through April 2017.

A Long Cycle Makes Us Price to Tomorrow

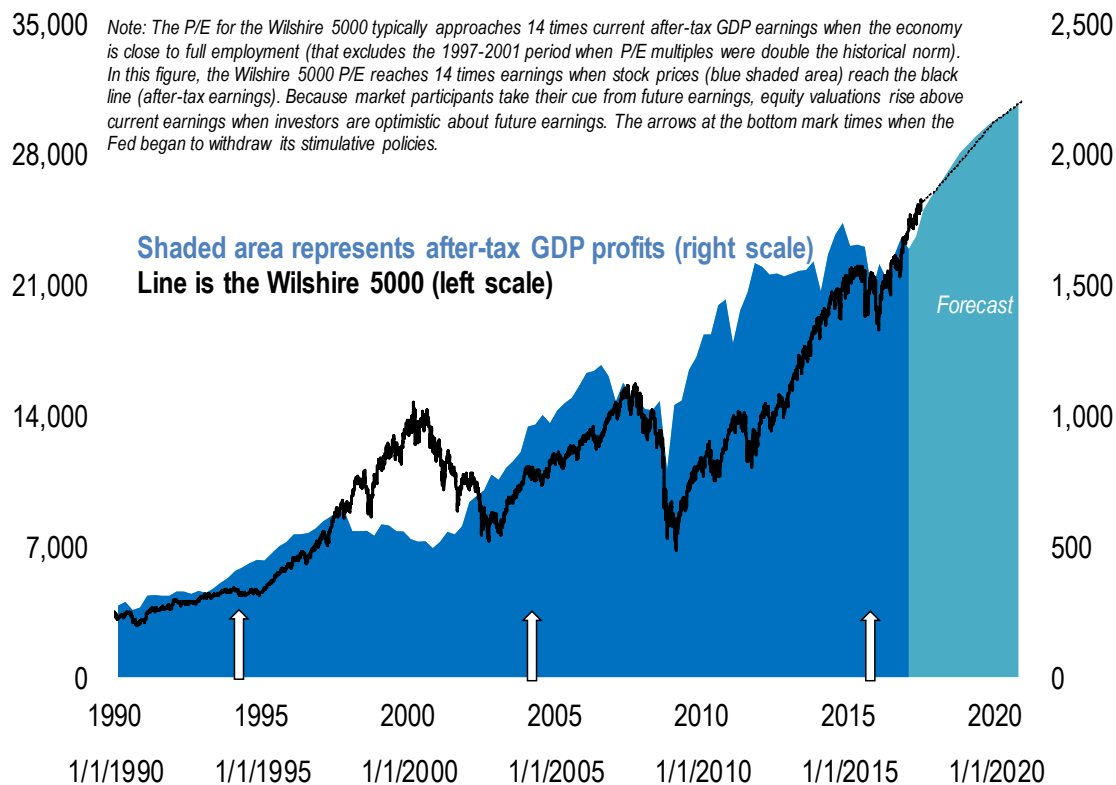Wilshire 5000 (December 31, 1970 = 830.27)   After-tax GDP profits (billions of dollars)

Note: The P/E for the Wilshire 5000 typically approaches 14 times current after-tax GDP earnings when the economy is close to full employment (that excludes the 1997-2001 period when P/E multiples were double the historical norm). In this figure, the Wilshire 5000 P/E reaches 14 times earnings when stock prices (blue shaded area) reach the black line (after-tax earnings). Because market participants take their cue from future earnings, equity valuations rise above current earnings when investors are optimistic about future earnings. The arrows at the bottom mark times when the Fed began to withdraw its stimulative policies.

Shaded area represents after-tax GDP profits (right scale)
Line is the Wilshire 5000 (left scale)

Forecast

Sources: Haver Analytics; US Department of Commerce; Dow Jones. Updated through 2017 Q1 (profits) and July 28, 2017 (stocks).

Equities Get a New (Global) Sponsor ...

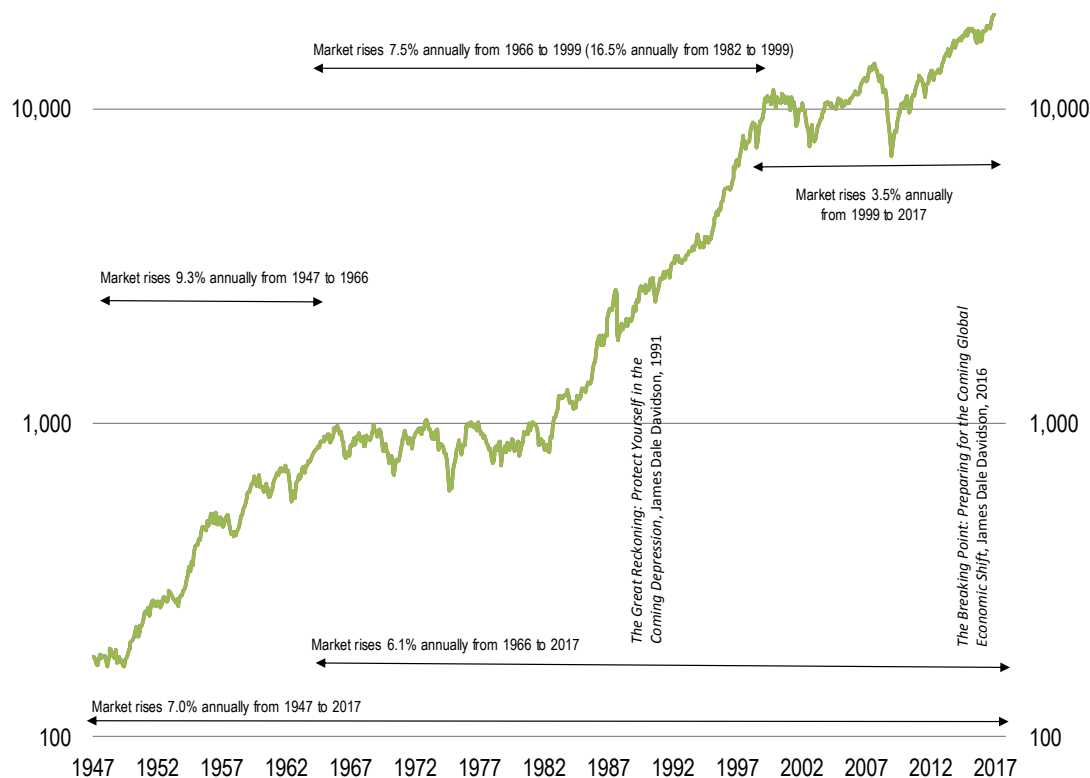Nominal and real equity market returns (annualized percent change over period shown)
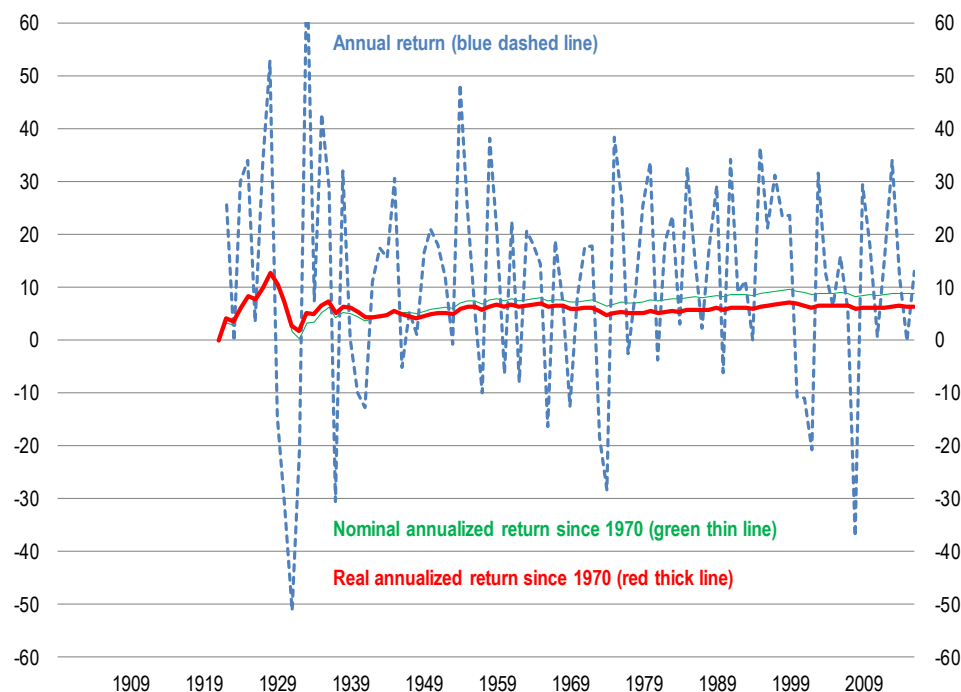
Note: Prior to 1945, the Wilshire 5000 index is extrapolated using the DJIA. From 1945 to 1970 the Wilshire 5000 index is extrapolated using the S&P 500. Prior to 1970, the Wilshire 5000 total return index is derived from the change in the Wilshire index (capital gains) plus 3 percent annually, the average increment owing to reinvested dividends from 1970 through 2016.
Sources: Haver Analytics; Dow Jones. Updated through December 2016.

… Bringing a Sequel to This Story

Dow Jones Industrial Average (May 25, 1896 = 40.94, $\log_{10}$ scale)

Market rises 7.5% annually from 1966 to 1999 (16.5% annually from 1982 to 1999)

10,000

10,000

Market rises 3.5% annually from 1999 to 2017

Market rises 9.3% annually from 1947 to 1966

1,000

1,000

The Great Reckoning: Protect Yourself in the Coming Depression, James Dale Davidson, 1991

The Breaking Point: Preparing for the Coming Global Economic Shift, James Dale Davidson, 2016

Market rises 6.1% annually from 1966 to 2017

Market rises 7.0% annually from 1947 to 2017

100

100

1947 1952 1957 1962 1967 1972 1977 1982 1987 1992 1997 2002 2007 2012 2017

Sources: Haver Analytics; Dow Jones. Updated through February 16, 2017.

Appendix I. The 2% Inflation Target

The Commitment

Statement on Longer-Run Goals and Monetary Policy Strategy, Adopted effective January 24, 2012; as amended effective January 31, 2017

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The inflation rate over the longer run is primarily determined by monetary policy, and hence the Committee has the ability to specify a longer-run goal for inflation . The Committee reaffirms its judgment that inflation at the rate of 2 percent, as measured by the annual change in the price index for personal consumption expenditures, is most consistent over the longer run with the Federal Reserve's statutory mandate. The Committee would be concerned if inflation were running persistently above or below this objective. Communicating this symmetric inflation goal clearly to the public helps keep longer-term inflation expectations firmly anchored, thereby fostering price stability and moderate long-term interest rates and enhancing the Committee's ability to promote maximum employment in the face of significant economic disturbances. The maximum level of employment is largely determined by nonmonetary factors that affect the structure and dynamics of the labor market. These factors may change over time and may not be directly measureable. Consequently, it would not be appropriate to specify a fixed goal for employment; rather, the Committee's policy decisions must be informed by assessments of the maximum level of employment, recognizing that such assessments are necessarily uncertain and subject to revision.
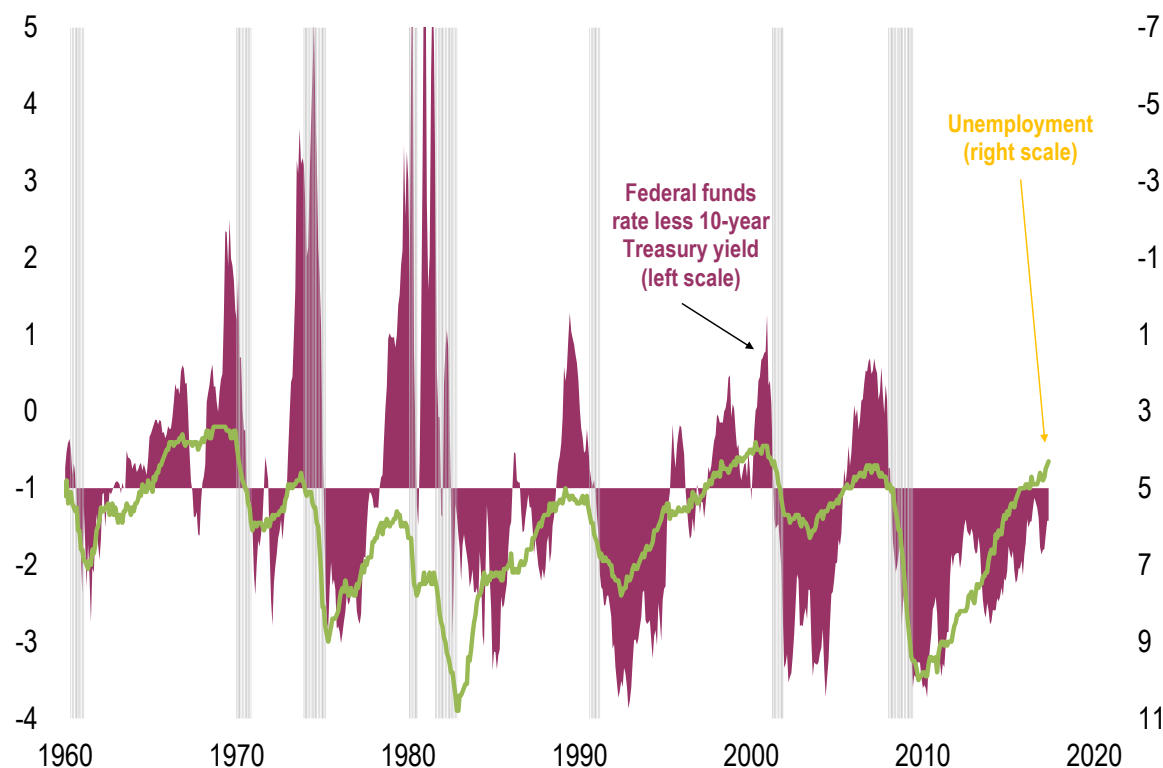
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Response to Unemployment Deviations

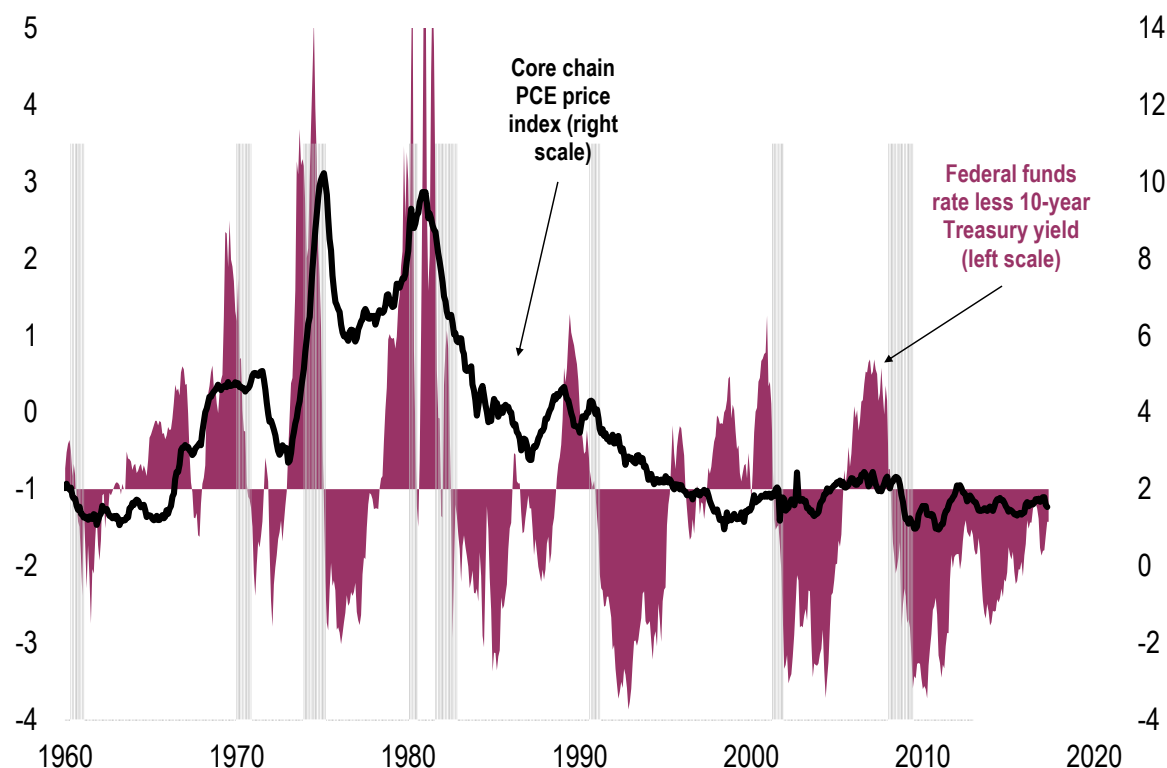Fed funds target rate less 10-year Tr yield (pct. pts.)   Unemployment (%, scale reversed)

Sources: Haver Analytics; NBER-designated recession bars; Federal Reserve Board; U.S. Department of Commerce. Updated through April 2017 (inflation) and June 16, 2017 (yield curve).
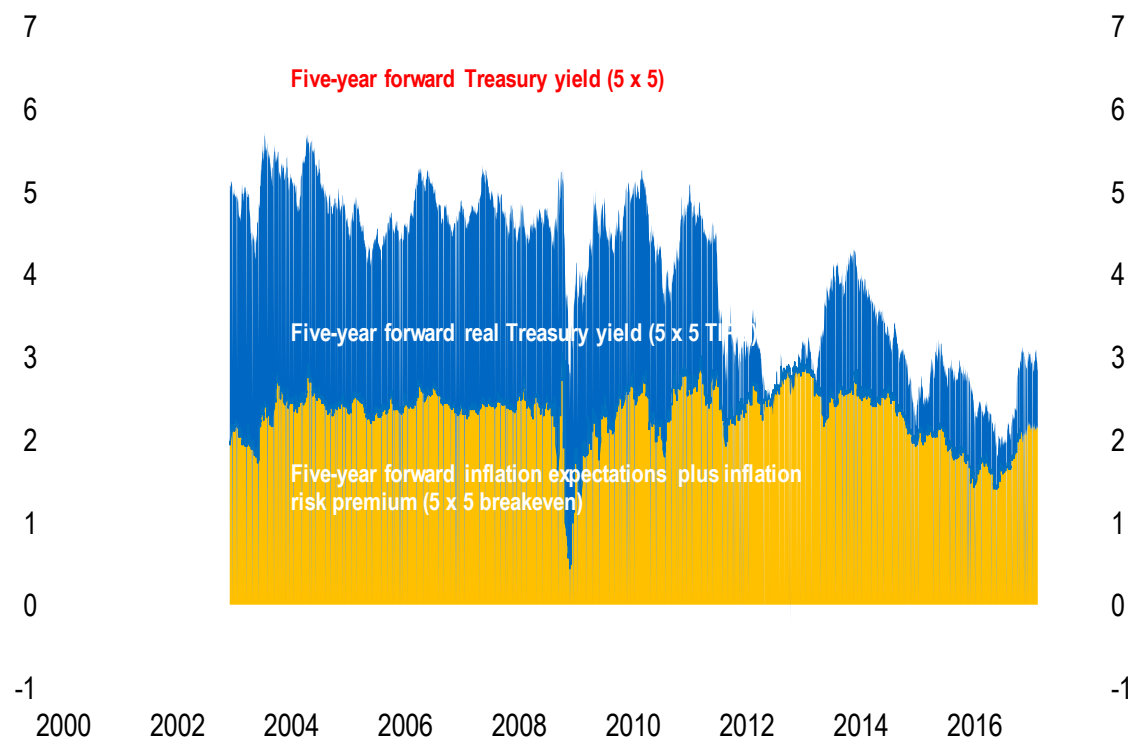
Response to Inflation Deviations

Fed funds target rate less 10-year Tr yield (pct. pts.)   Inflation (% ch from 12 months earlier)

Core chain PCE price index (right scale)

Federal funds rate less 10-year Treasury yield (left scale)

Sources: Haver Analytics; NBER-designated recession bars; Federal Reserve Board; U.S. Department of Commerce. Updated through April 2017 (inflation) and June 16, 2017 (yield curve).

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The Zero Bound ...

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

10-year
Treasury
yield
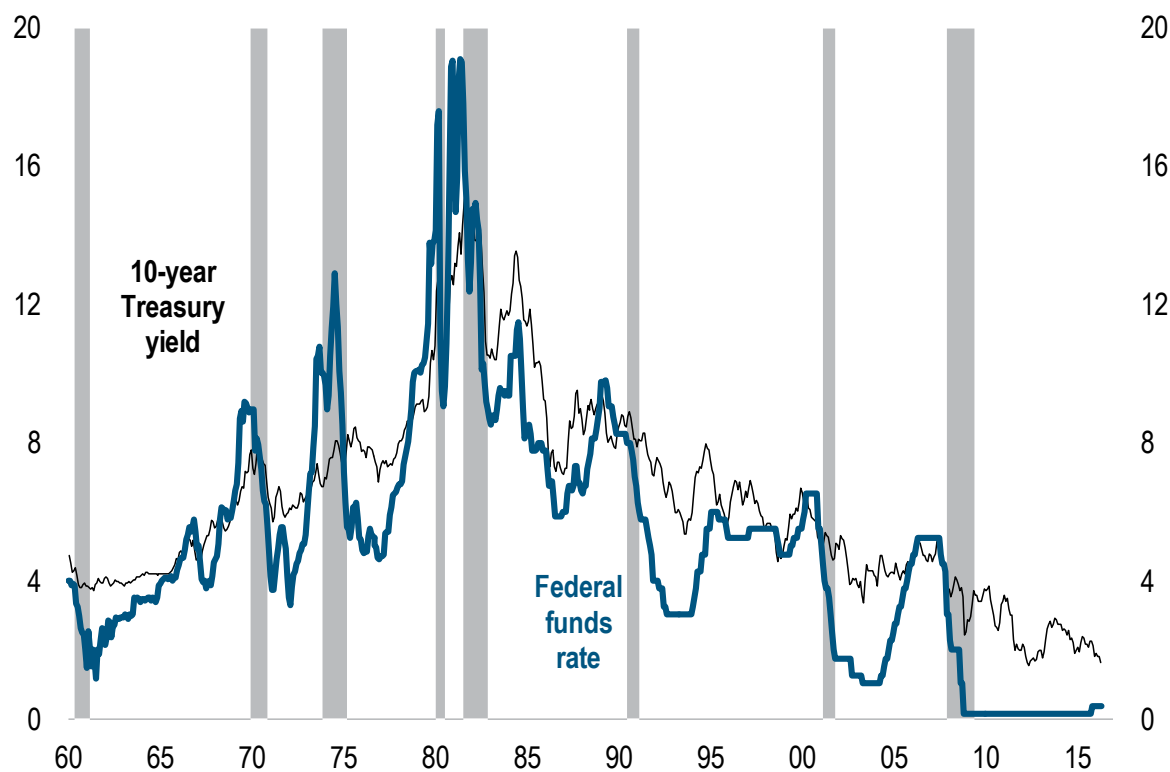
Federal
funds
rate

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

... and Lower Equilibrium Real Rates ...

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

Five-year forward Treasury yield (5 x 5)

Five-year forward real Treasury yield (5 x 5 TIP)

Five-year forward inflation expectations plus inflation risk premium (5 x 5 breakeven)

Sources: Haver Analytics; Federal Reserve Board. Updated through April 7, 2017.

… Ties The Fed's Hands
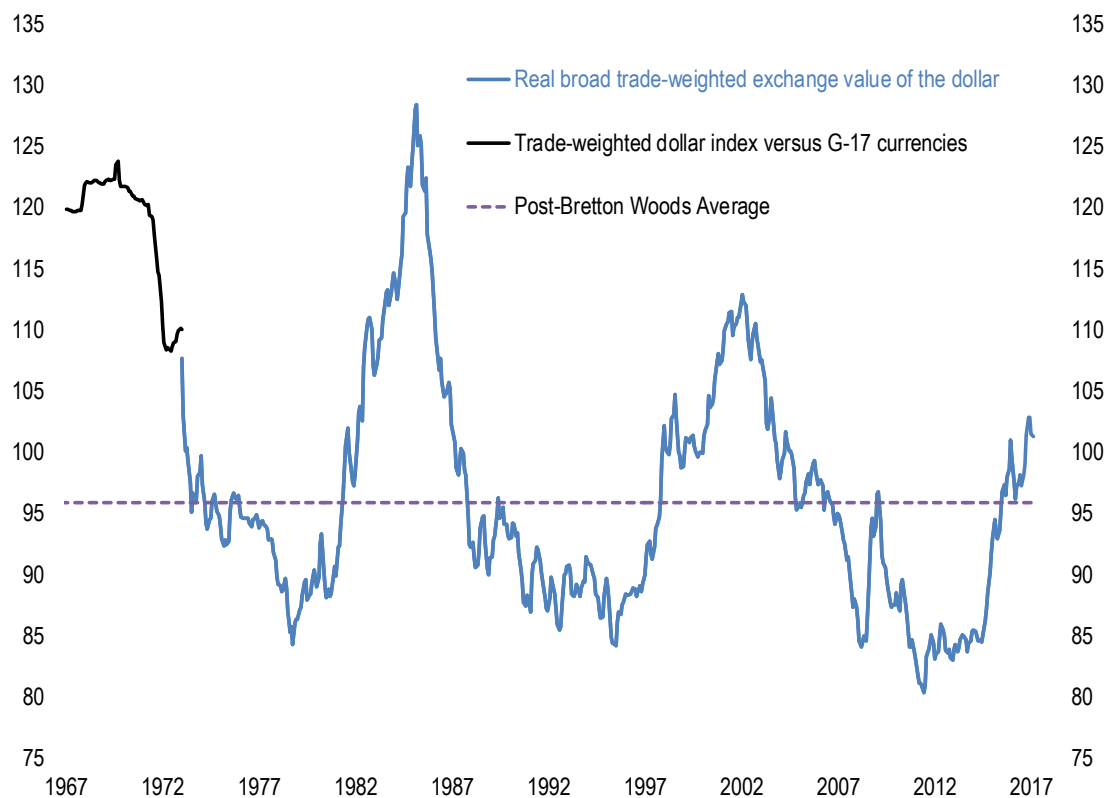
Federal funds rate and the 10-year Treasury yield (percent)

versus Treasuries

Normal ("neutral") differential

If equilibrium real bond yields were 2 percent
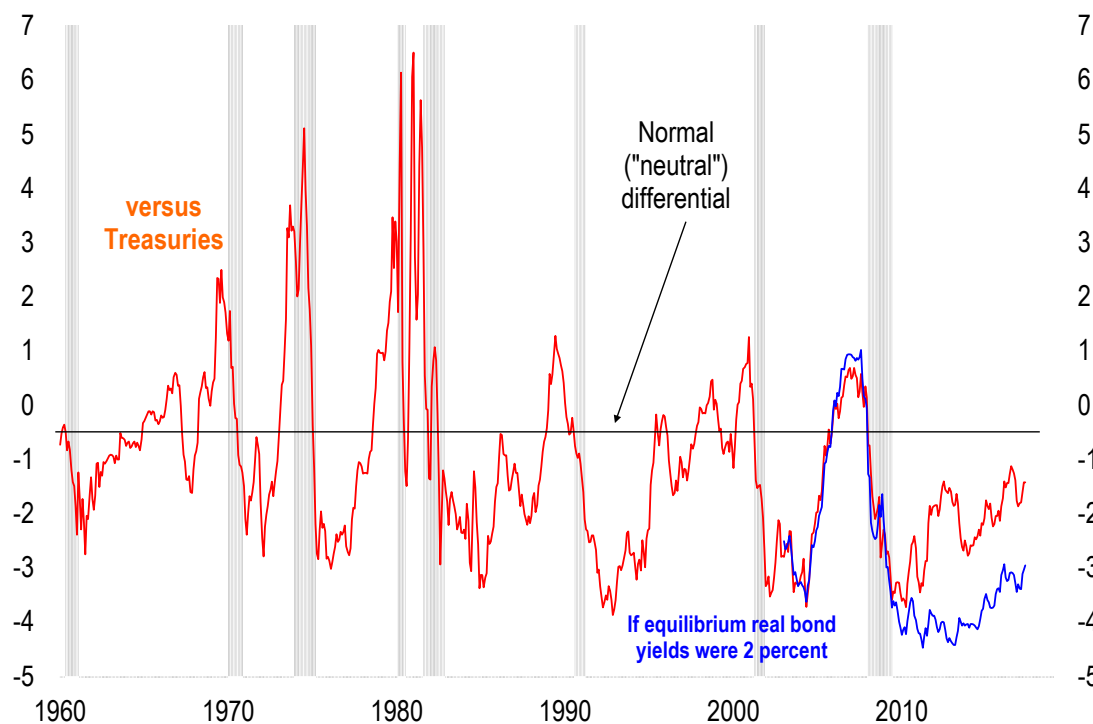
Sources: Haver Analytics; Federal Reserve Board. Updated through July 8, 2016.

Appendix II. The Dollar In a Synchronized World

Most Recent Swings About Central Banks

Real broad trade-weighted U.S. dollar index (March 1973 = 100)

Real broad trade-weighted exchange value of the dollar

Trade-weighted dollar index versus G-17 currencies

Post-Bretton Woods Average

Sources: Haver Analytics; Federal Reserve Board. Updated through March 2017.

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