

***The U.S. Economic Outlook***  
***Slower Tightening, Lower Rates Buoy Growth***

October, 2015

Chris Varvares

Senior Managing Director and Co-Founder  
Macroeconomic Advisers, LLC

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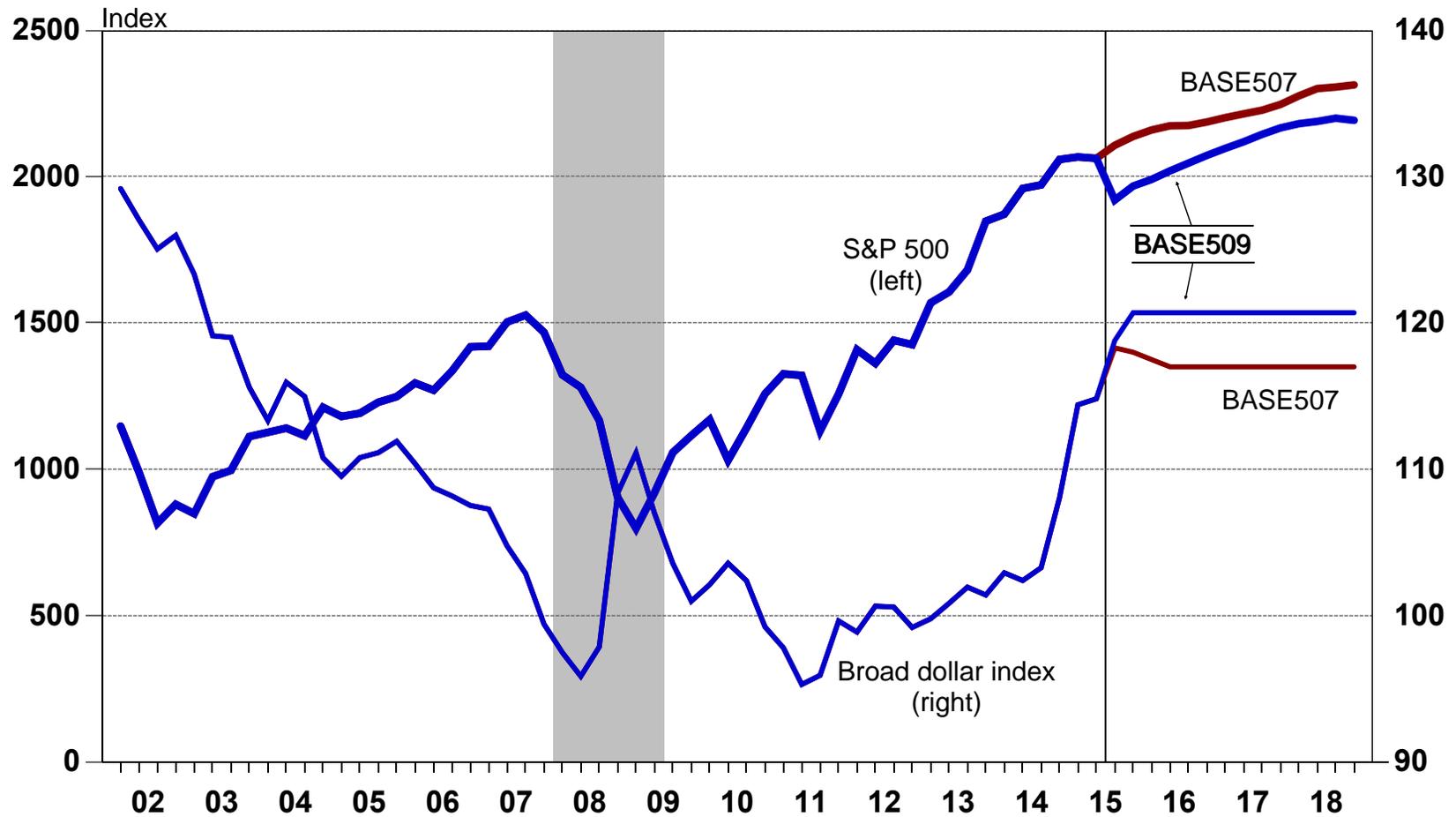
# The MA Forecast from 30,000 Feet

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- **China's devaluation and global financial market turmoil raises new downside risks...but forecast little changed**
    - Growth effects of higher dollar and lower equities about offset by lower oil prices
    - But dollar and oil reinforce on inflation, so core inflation forecast revised down
    - Uncertainty regarding global growth and risky asset prices raises downside risks
  - **Domestic final demand growth is solid; better than prev. reported**
    - No fiscal restraint, rather a little boost; improved confidence; solid income growth
    - Growth of pvt. domestic final sales: 3.6% in '14; 3.3% in '15; 3.6% in '16
    - Declining net exports, inventory building are drags, especially in 2015
  - **Unemployment rate undershoots “full employment”**
    - Solid employment gains push unemployment rate to 5.0% in '15Q4, to 4.7% '16Q4
  - **PCE inflation to move to 2%; delayed by \$ rise, oil price drop**
    - Core PCE: 2014(4/4)=1.4%, 2015=1.4%, 1.7% 2016, 1.9% 2017, 2.0% 2018
  - **Improving labor market vs. low inflation vs. new risks key to Fed**
    - First rate hike in 2015Q4 (December), but it's a close call
    - Long rates rise on expected policy rate increases and rising term premium
  - **Equities challenged by global market turmoil & rising rates**
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# Dollar, Equities and Oil Prices

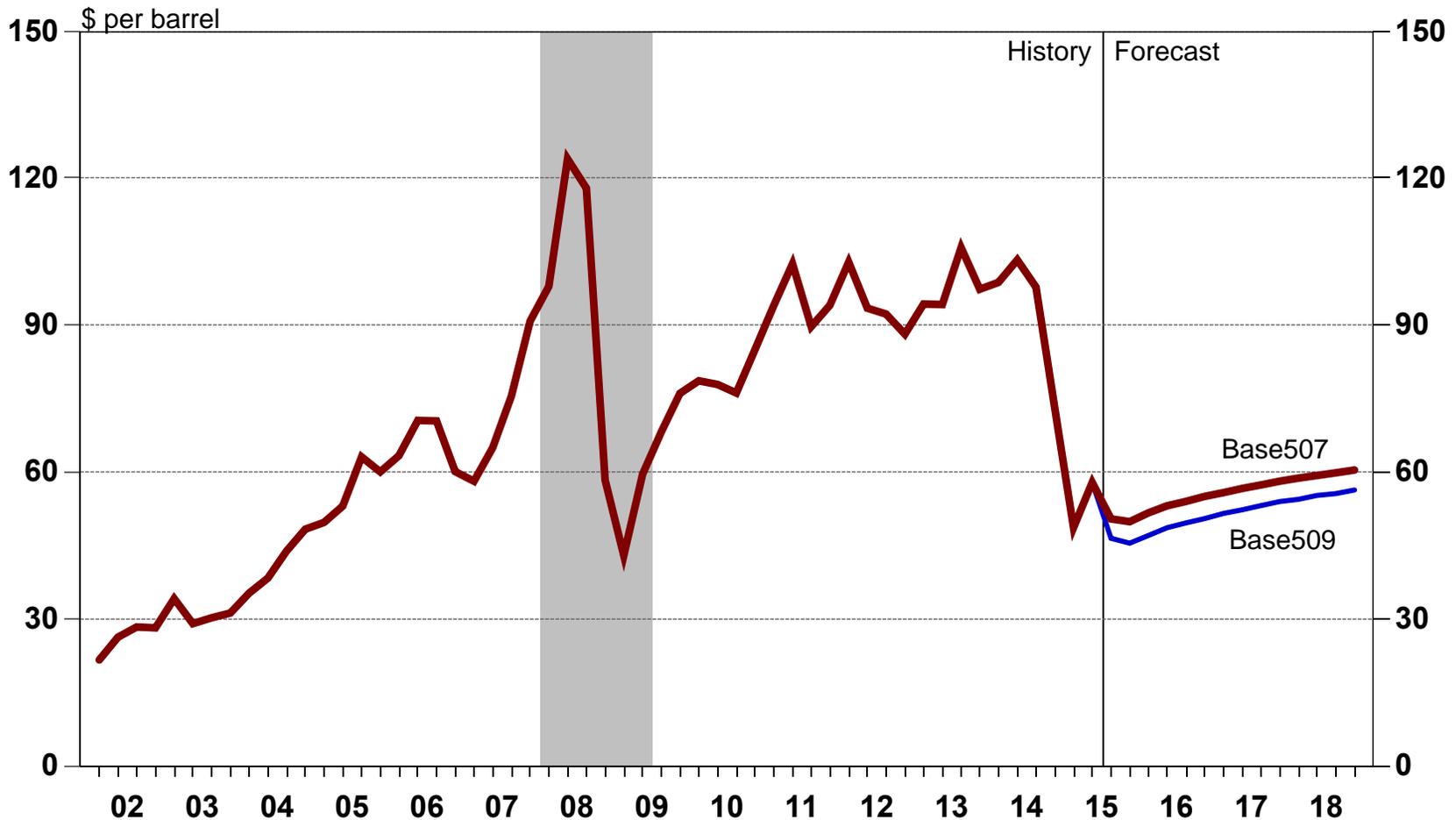
Financial Conditions Worsen: Higher Dollar, Lower Equities  
Base509 vs. Base507



Source: S&P, Federal Reserve Board, Macroeconomic Advisers; Forecast completed on October 8, 2015

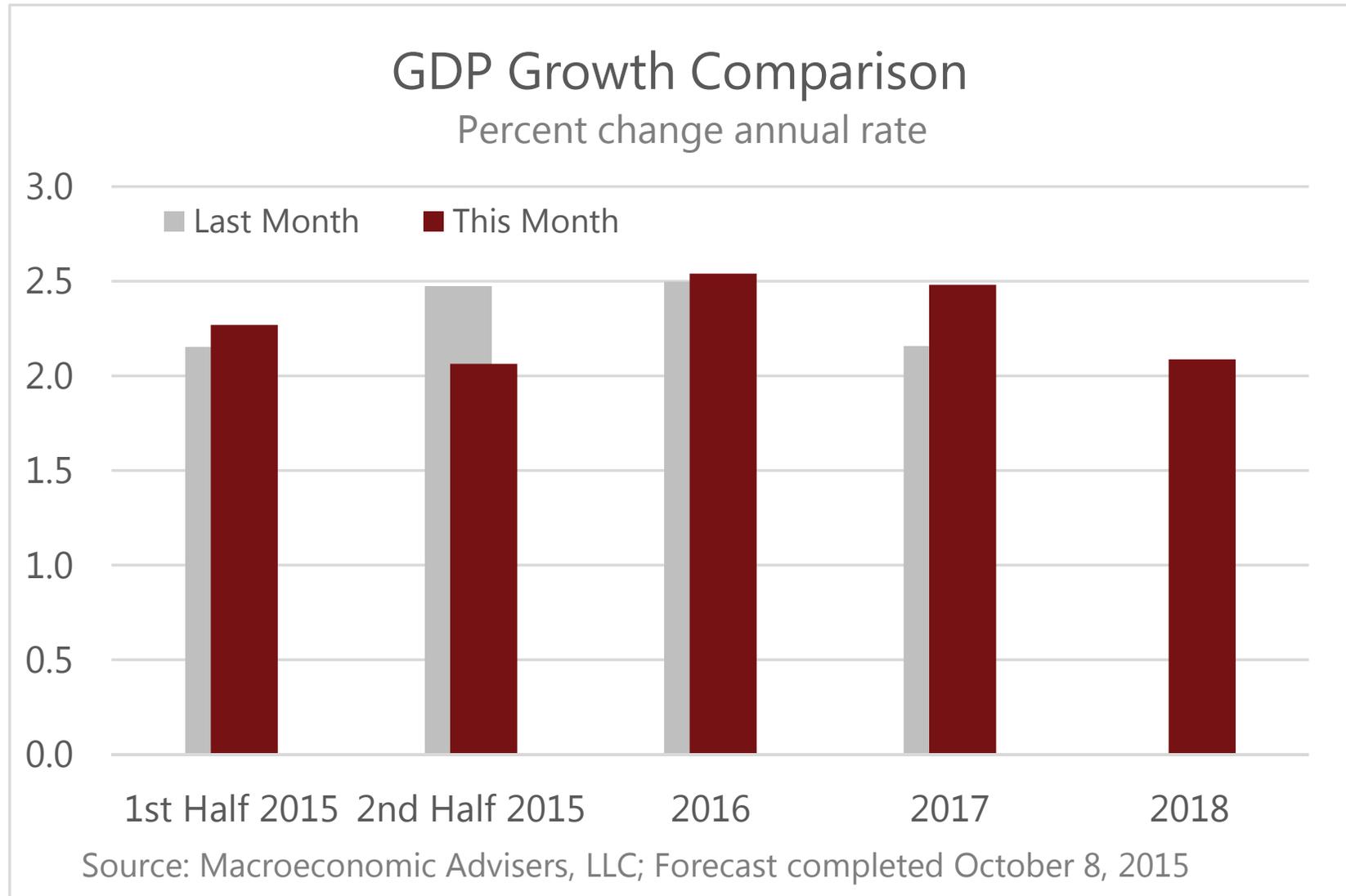
# Dollar, Equities and Oil Prices ... Oh My!

Price of West Texas Intermediate Crude Oil (\$/b)  
Base509 vs. Base507



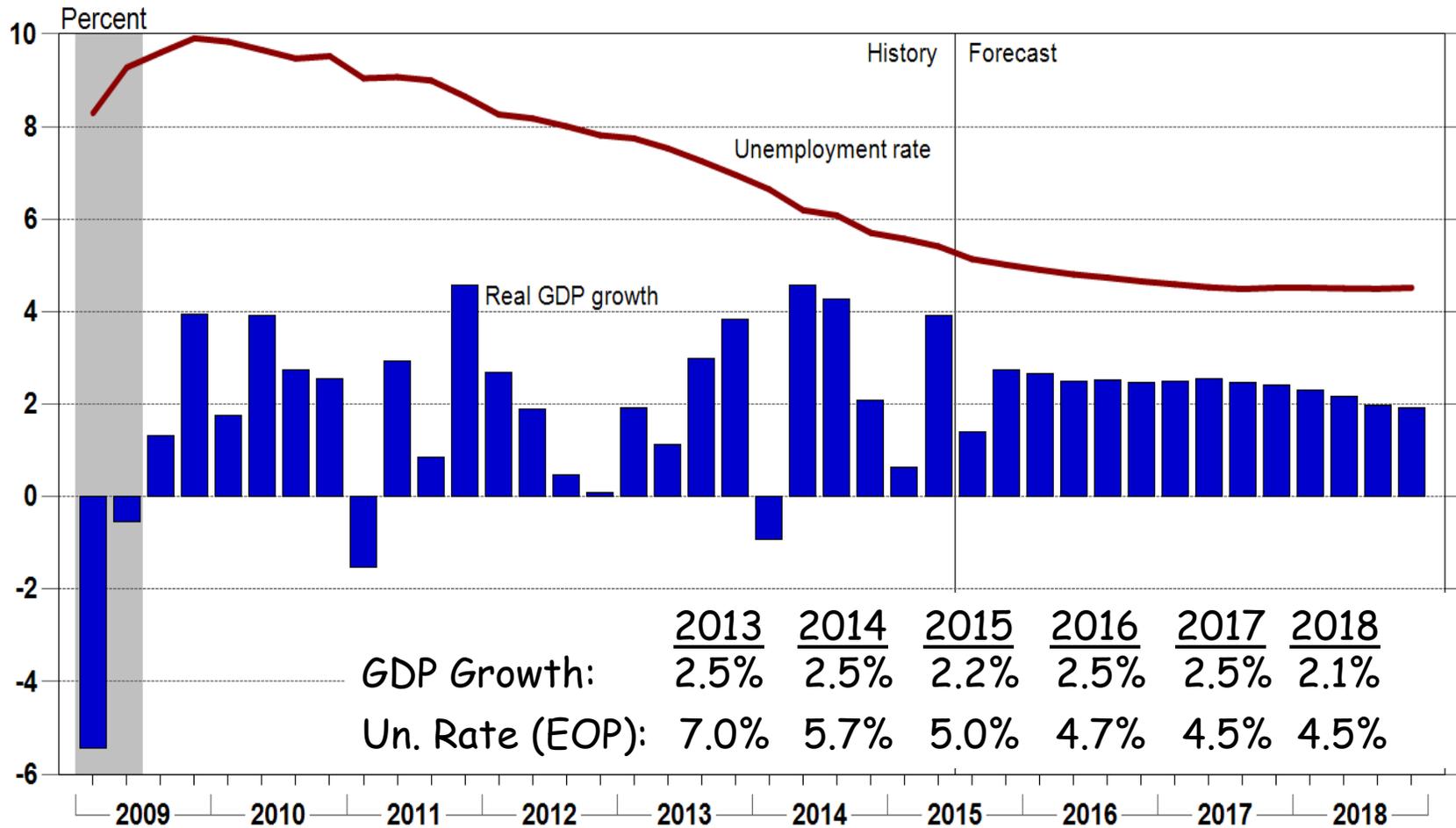
Source: Haver Analytics, Macroeconomic Advisers; Forecast completed on October 8, 2015

# Dollar, Equities and Oil Prices



# Return to Modestly Above-Trend Growth

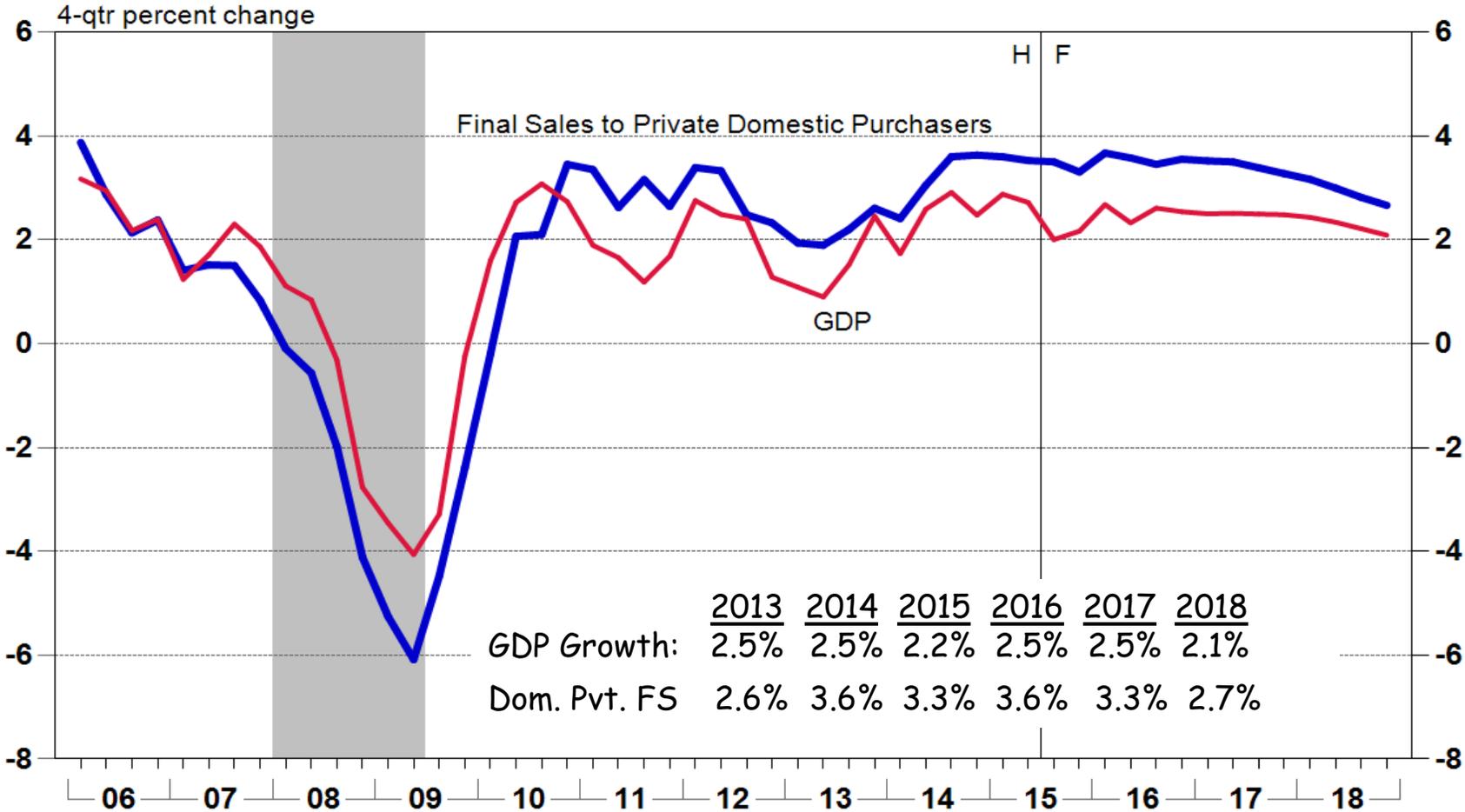
## Modestly Above-Trend Growth Through 2018



Source: Macroeconomic Advisers; Forecast completed on October 8, 2015

# PCE, Housing and BFI Drive Dom. Demand Growth

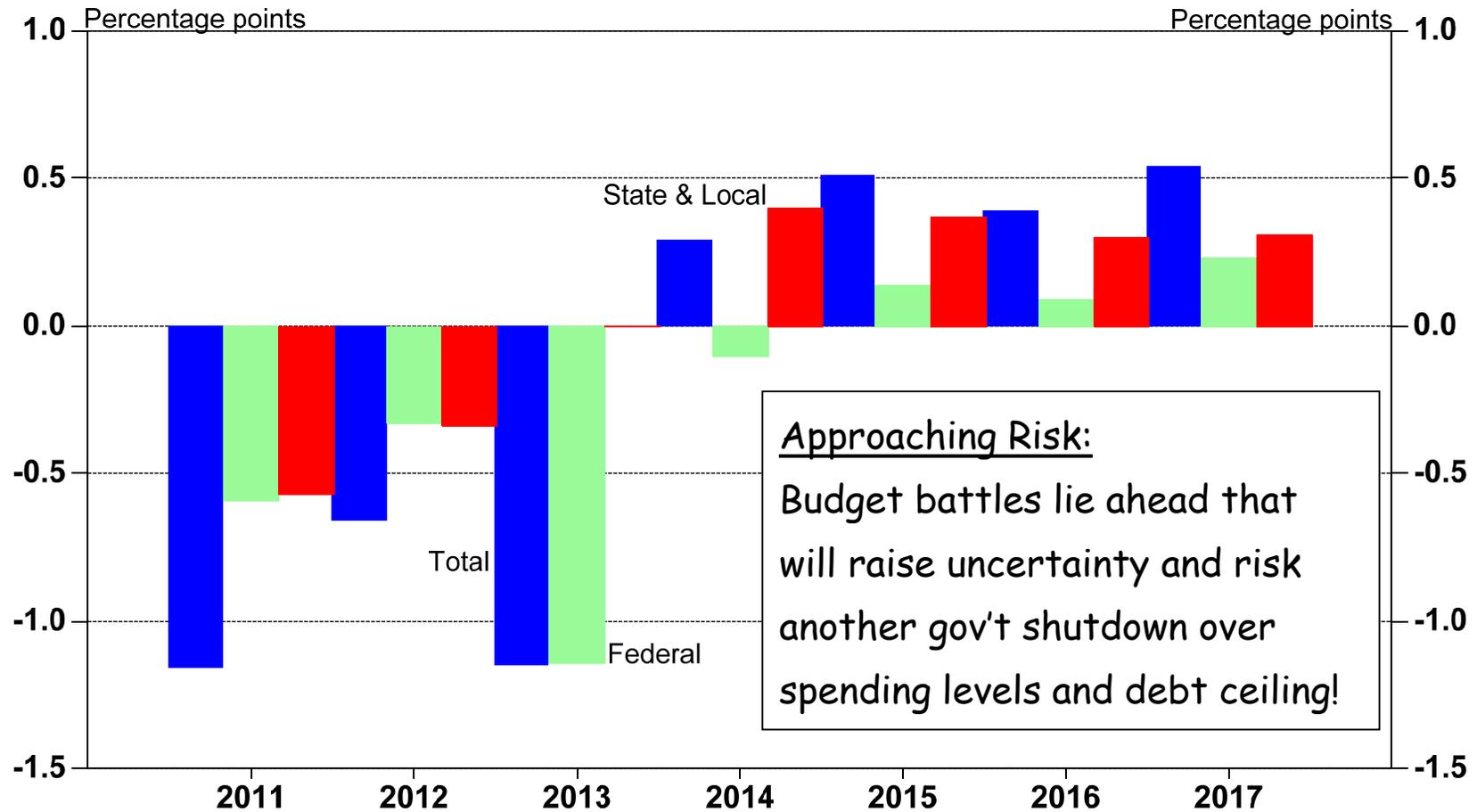
Growth in Private Domestic Demand Set to Firm



Source: BEA, Macroeconomic Advisers; Forecast completed on October 8, 2015

# Fiscal Drag Turns to Boost

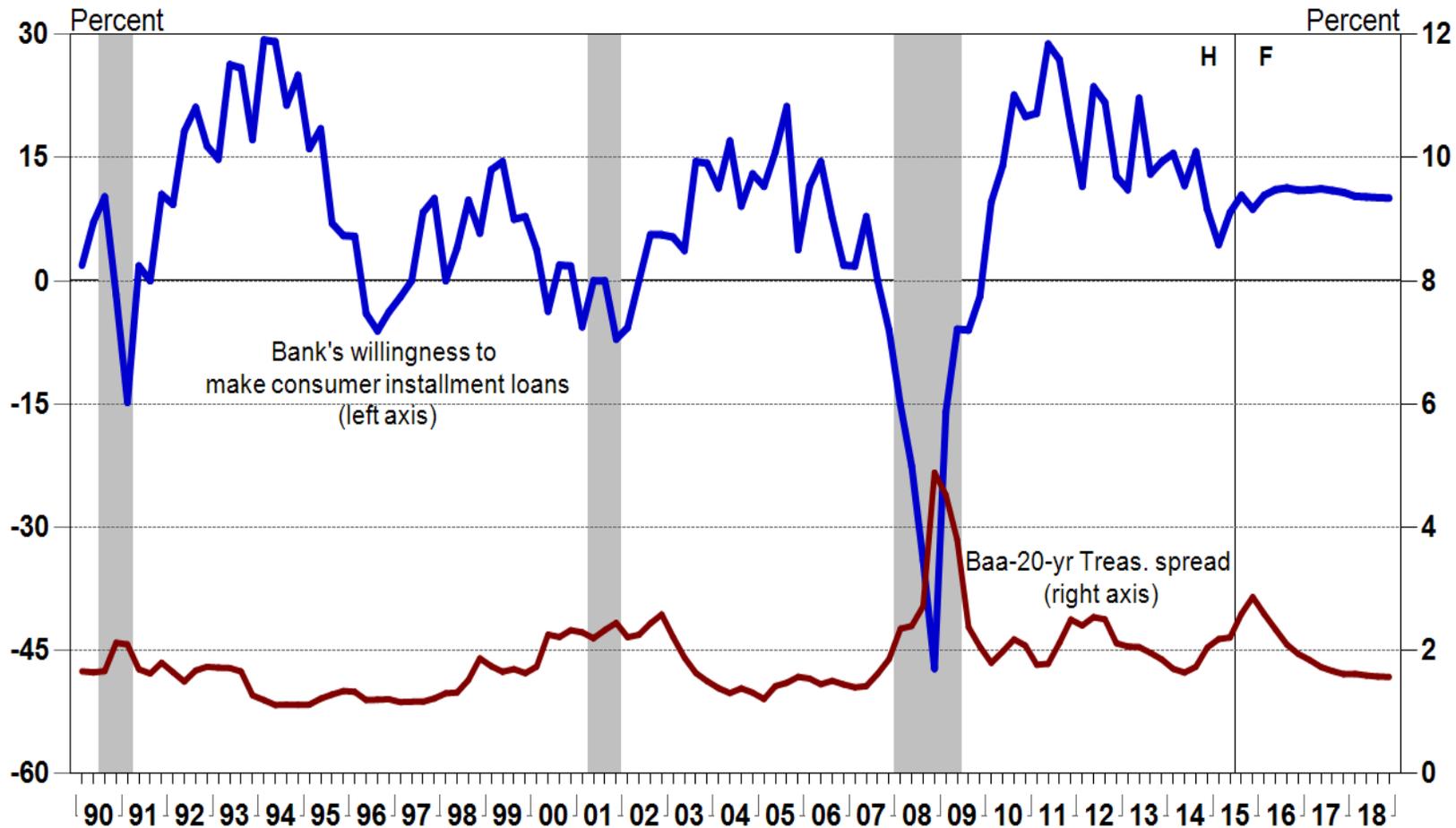
## Fiscal Stimulus(+) or Drag(-)



Source: Macroeconomic Advisers; Forecast completed on October 8, 2015

# Uneven Improvement in Financial Conditions

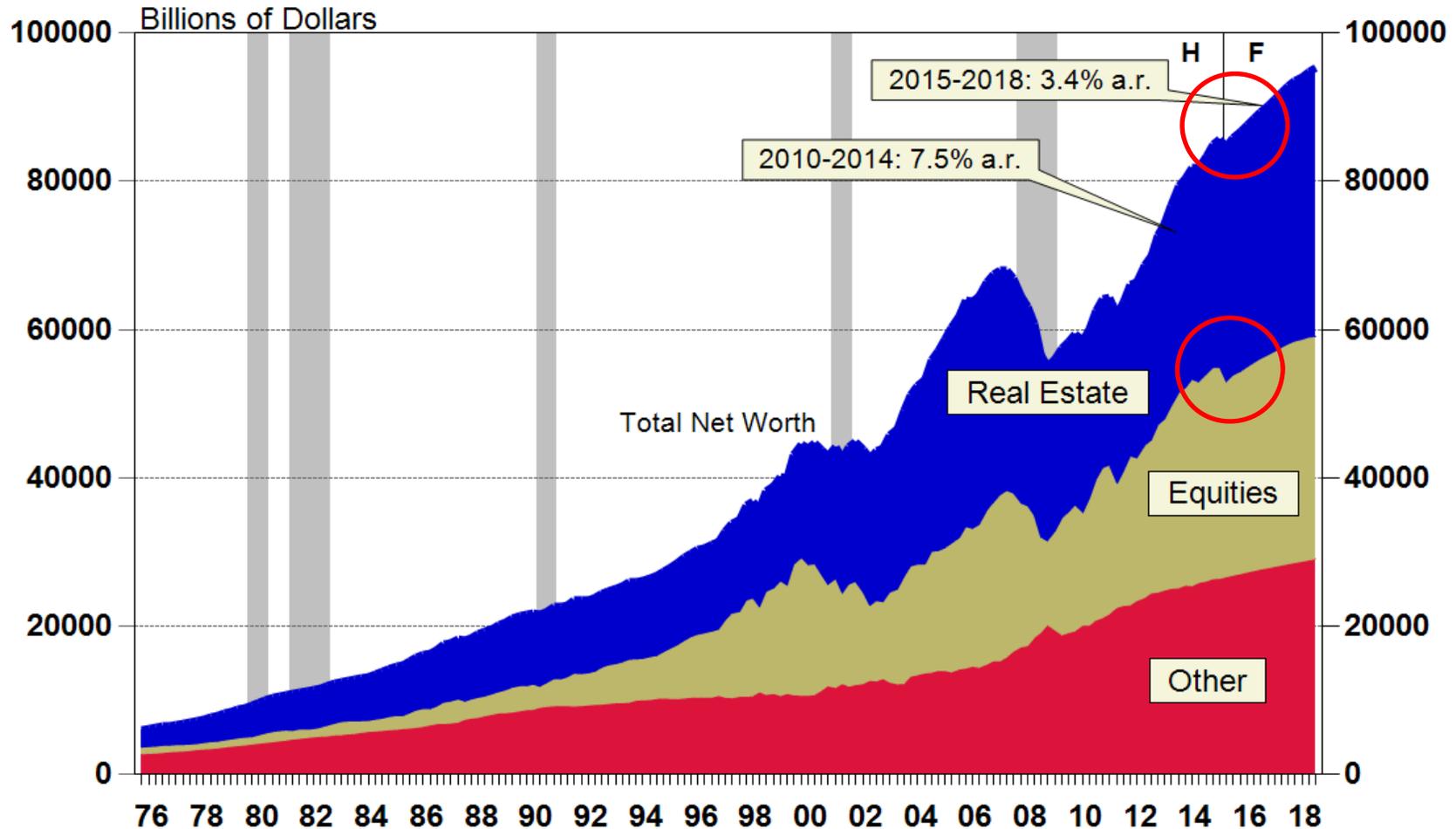
Credit Availability Still Improving, but Corp. Risk Spreads Widened



Source: Macroeconomic Advisers, LLC. Forecast completed on October 8, 2015

# HH Net Worth Trends Higher – What Correction?

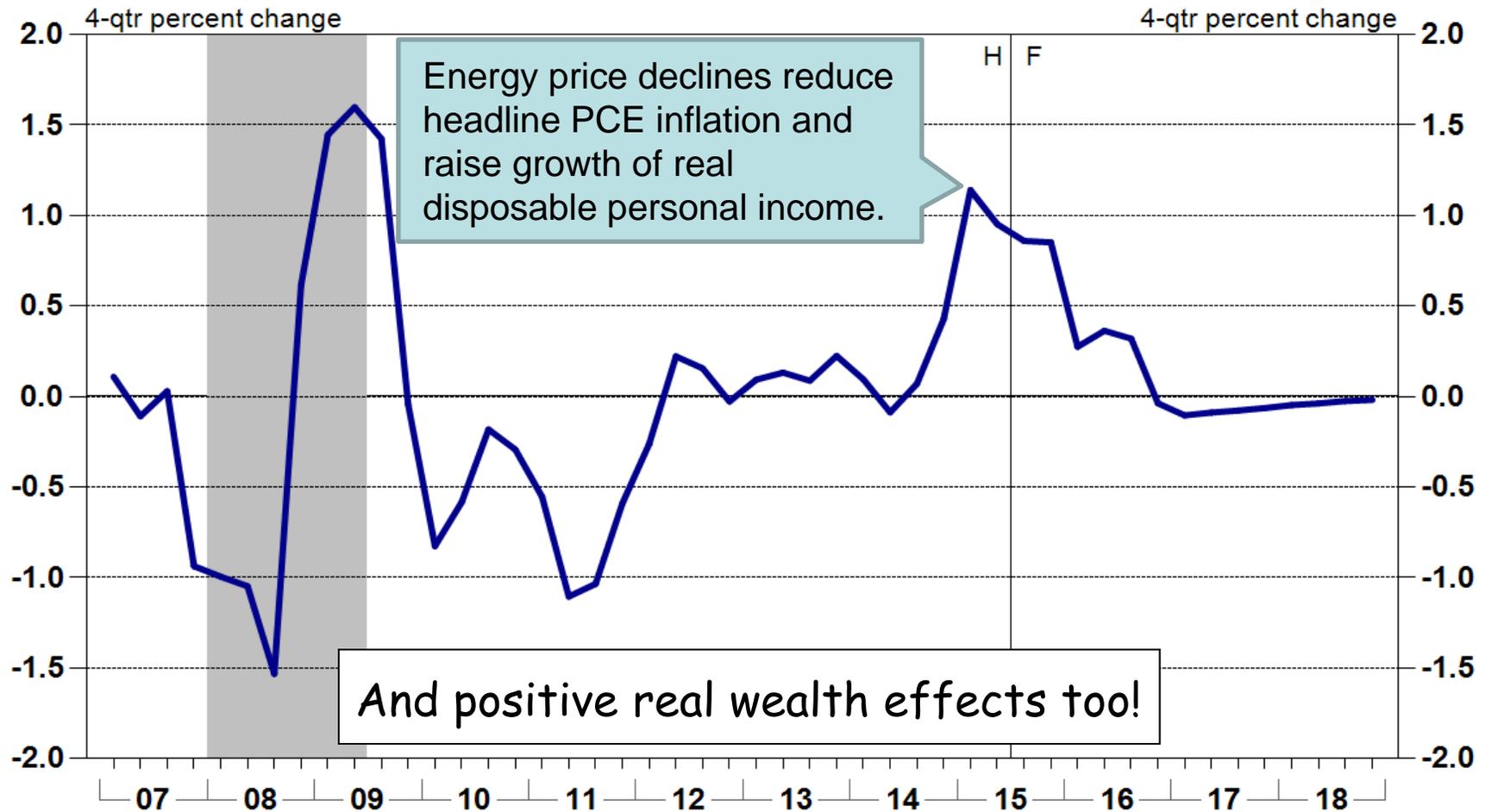
## Household Sector Net Worth



Source: Federal Reserve, Macroeconomic Advisers; Forecast completed on October 8, 2015

# Sharply Lower Oil Prices Boost Growth

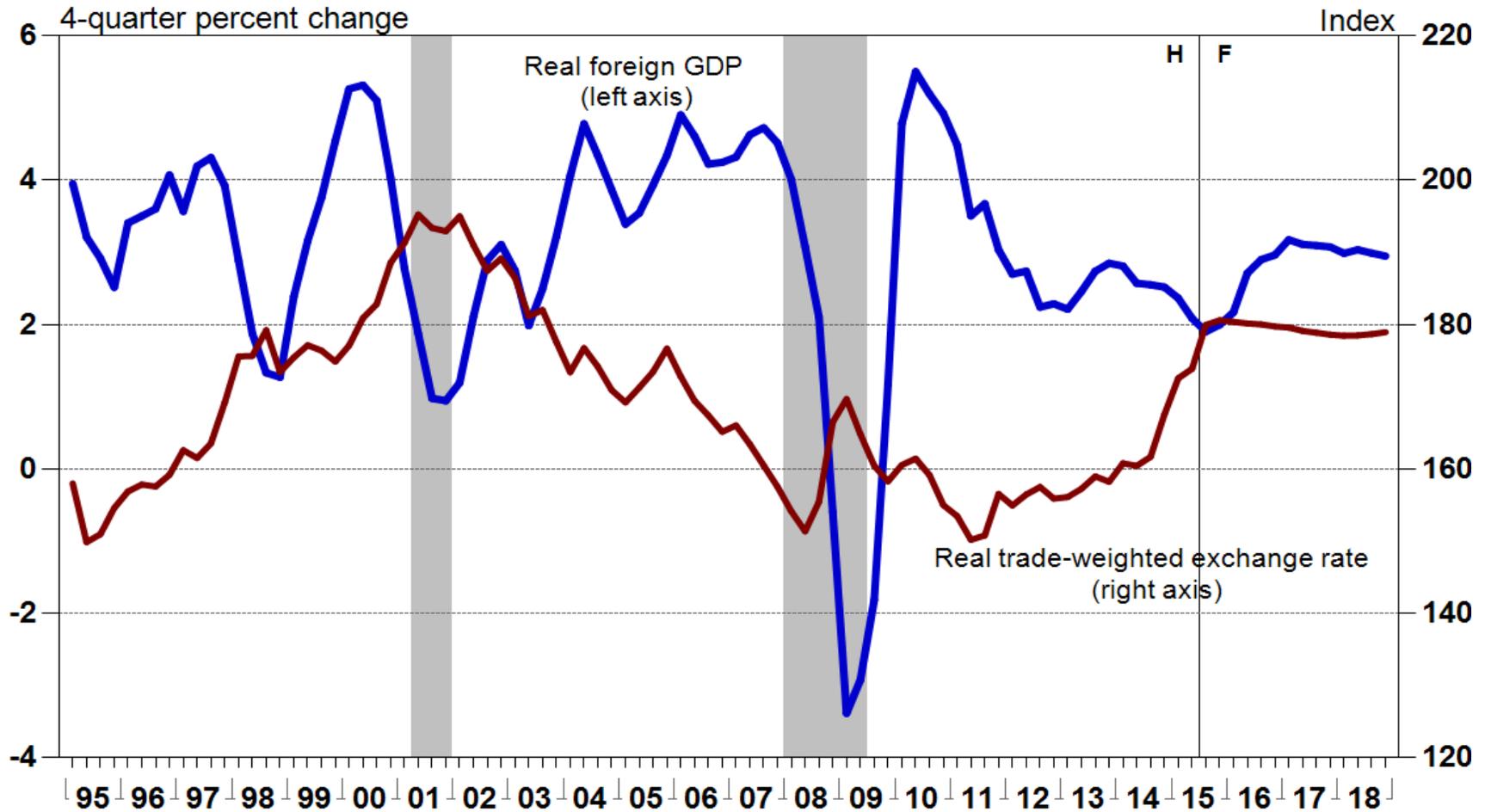
## Boost/Drag to Real DPI Growth from Relative Energy Price Changes



Source: Federal Reserve Board, Macroeconomic Advisers, LLC; Forecast completed on October 8, 2015

# Dollar and Foreign Growth Key to Net Exports

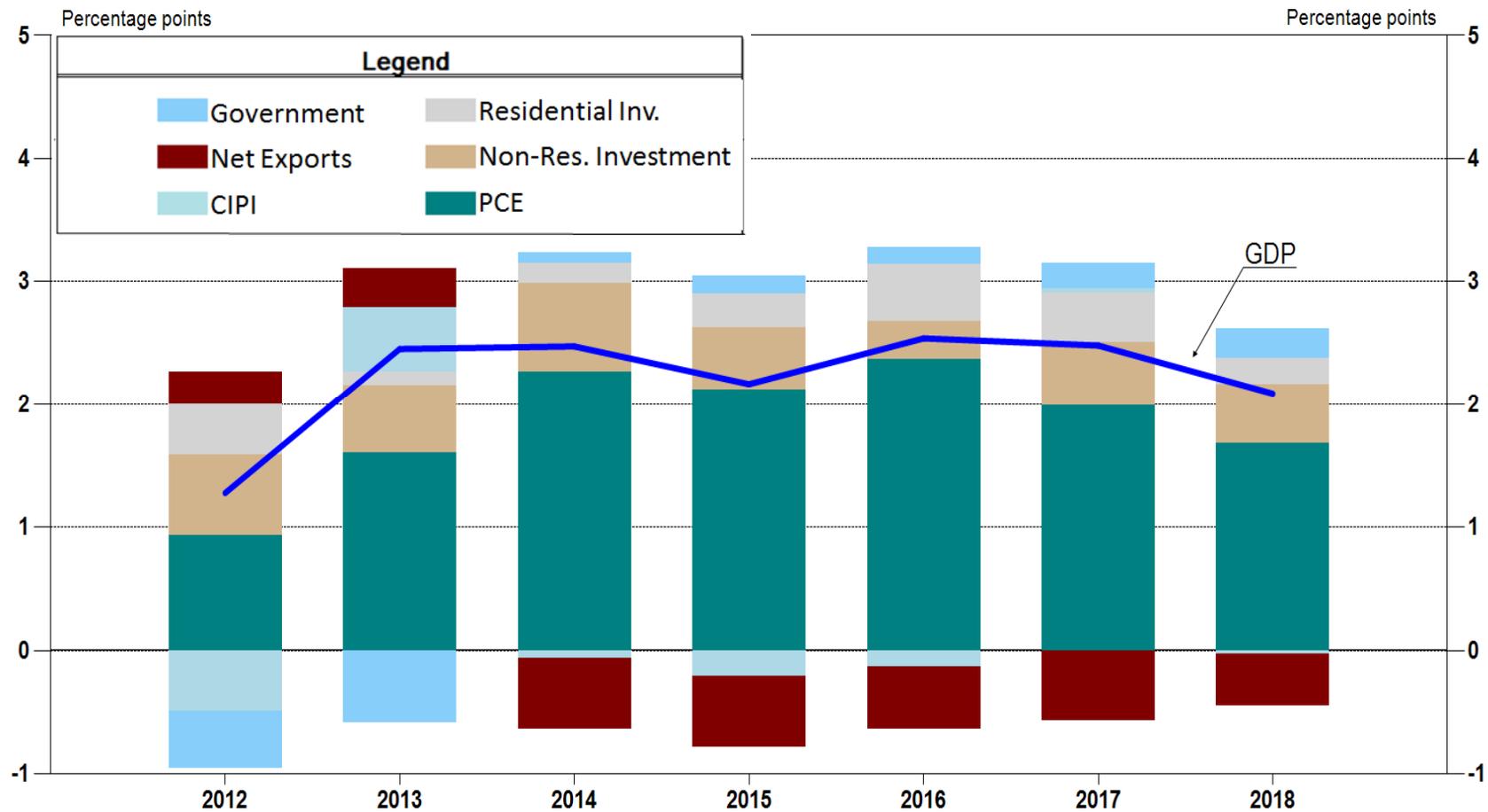
Foreign Growth is Expected to Firm, but Real Dollar Has Risen



Source: Macroeconomic Advisers; Forecast completed on October 8, 2015

# Where Does the Growth Come From?

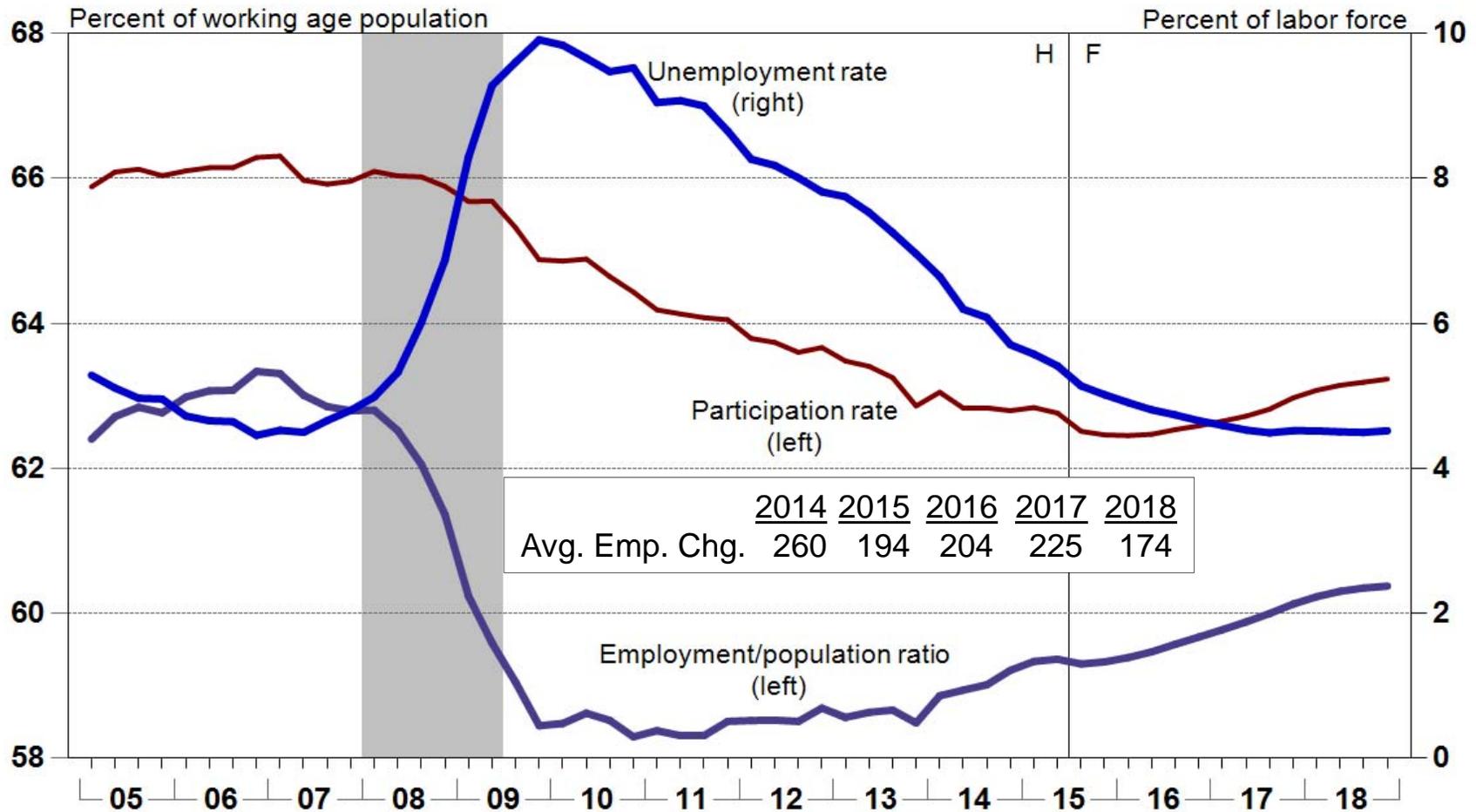
## Contribution to GDP Growth



Source: Macroeconomic Advisers; Forecasted Completed on October 8, 2015

# Labor Market Continues to Improve

## Above-Trend Growth Lifts Employment Ratio & Labor Force Part. Rate

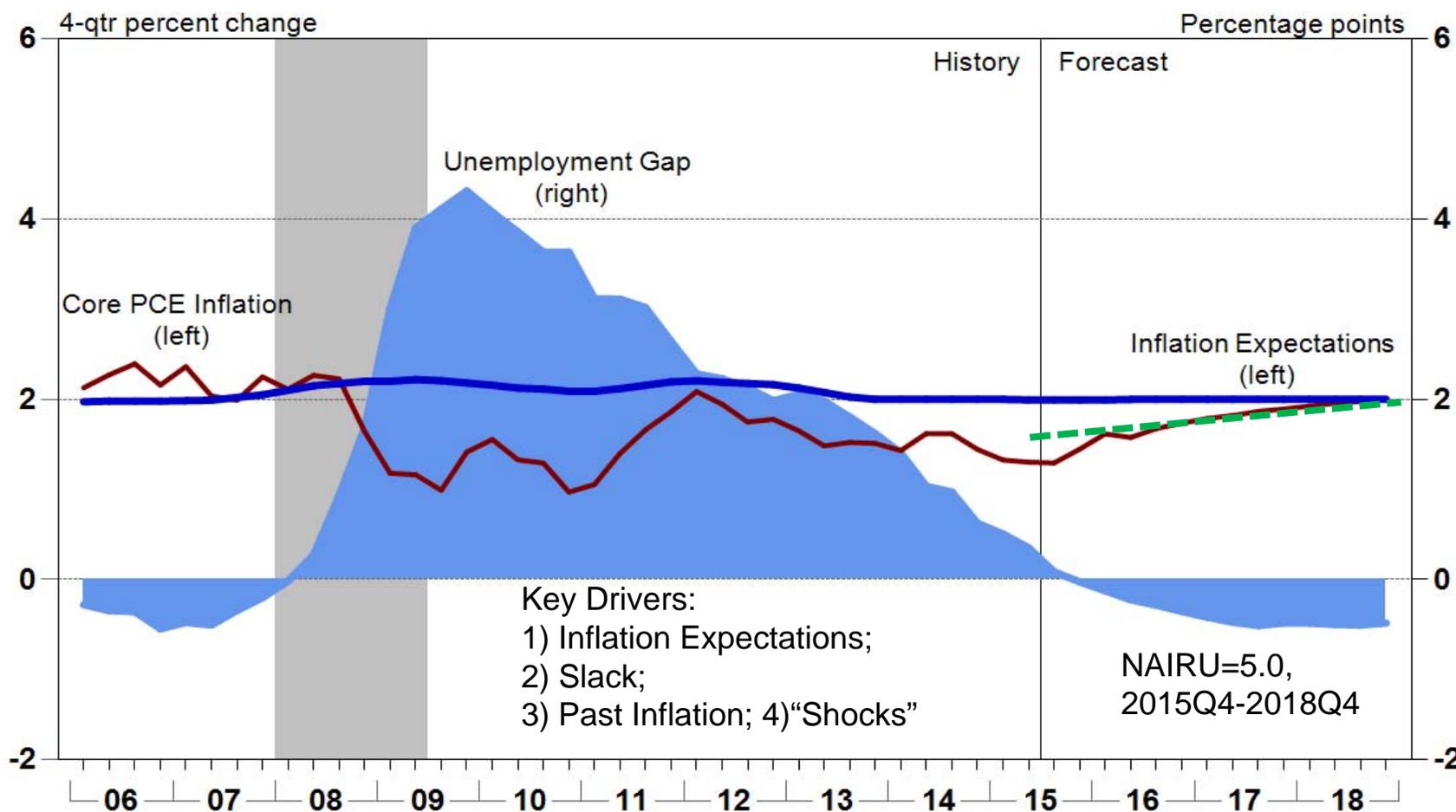


Source: BLS, Macroeconomic Advisers; Forecast completed on October 8, 2015



# As Transitory Factors Wane, Inflation Rises to 2%

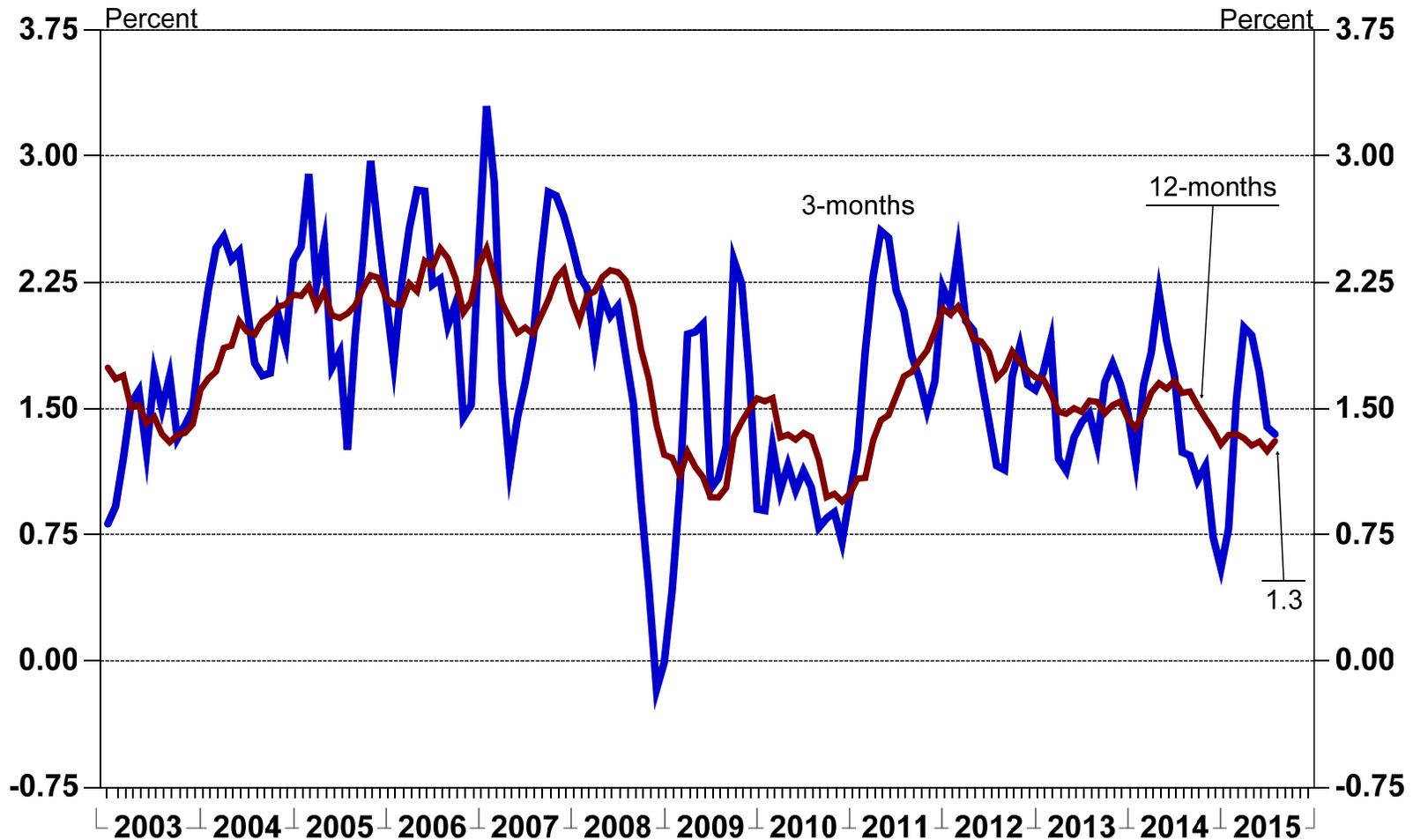
## Core PCE Inflation Rises Slowly to 2%



Source: Macroeconomic Advisers; Forecast completed on October 8, 2015

# Core Inflation Still Well Below “Target”

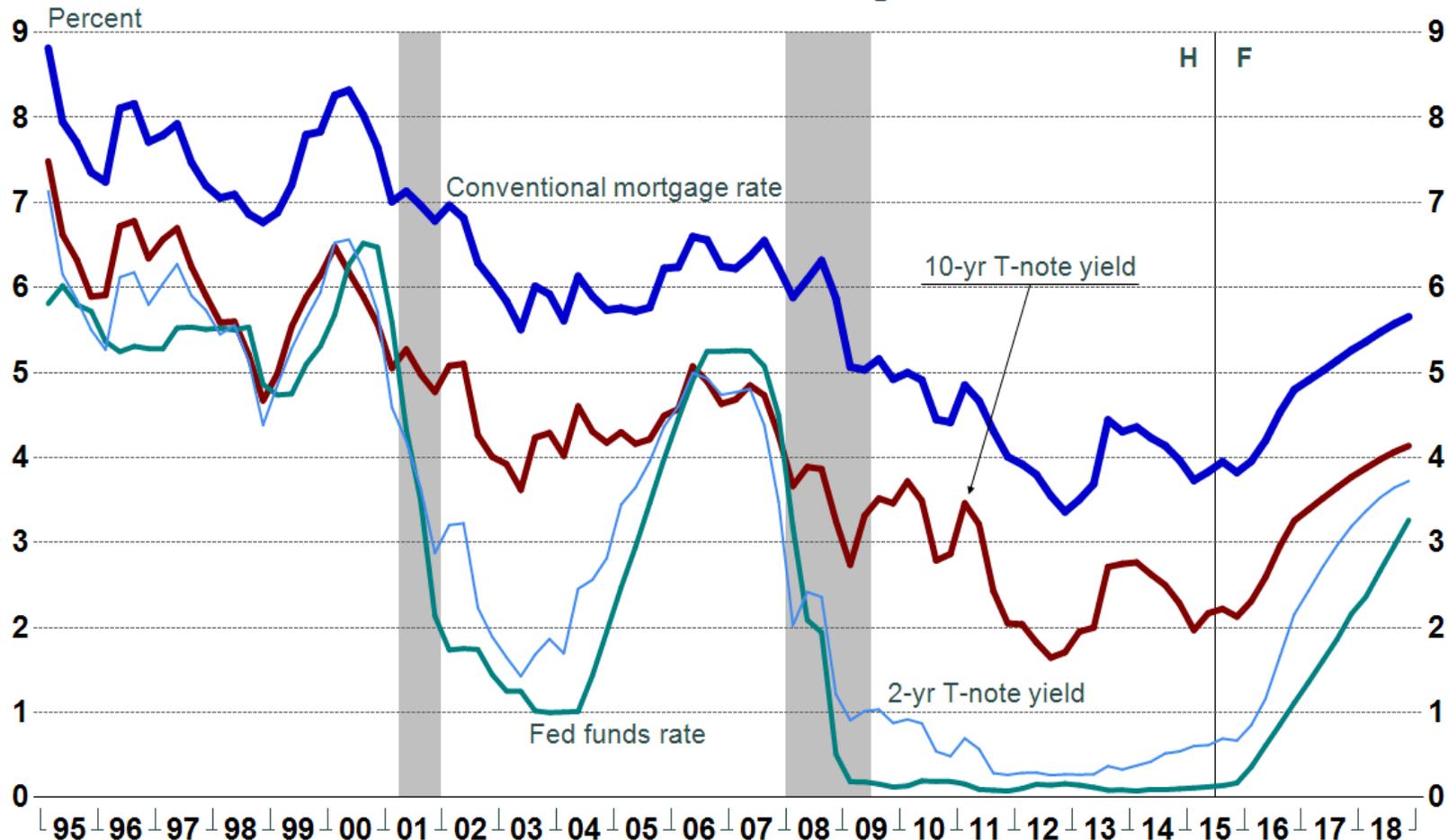
## Core PCE Inflation Over Various Horizons



Source: Bureau of Economic Analysis; Last data plotted for August 2015.

# Date of First Tightening Approaches

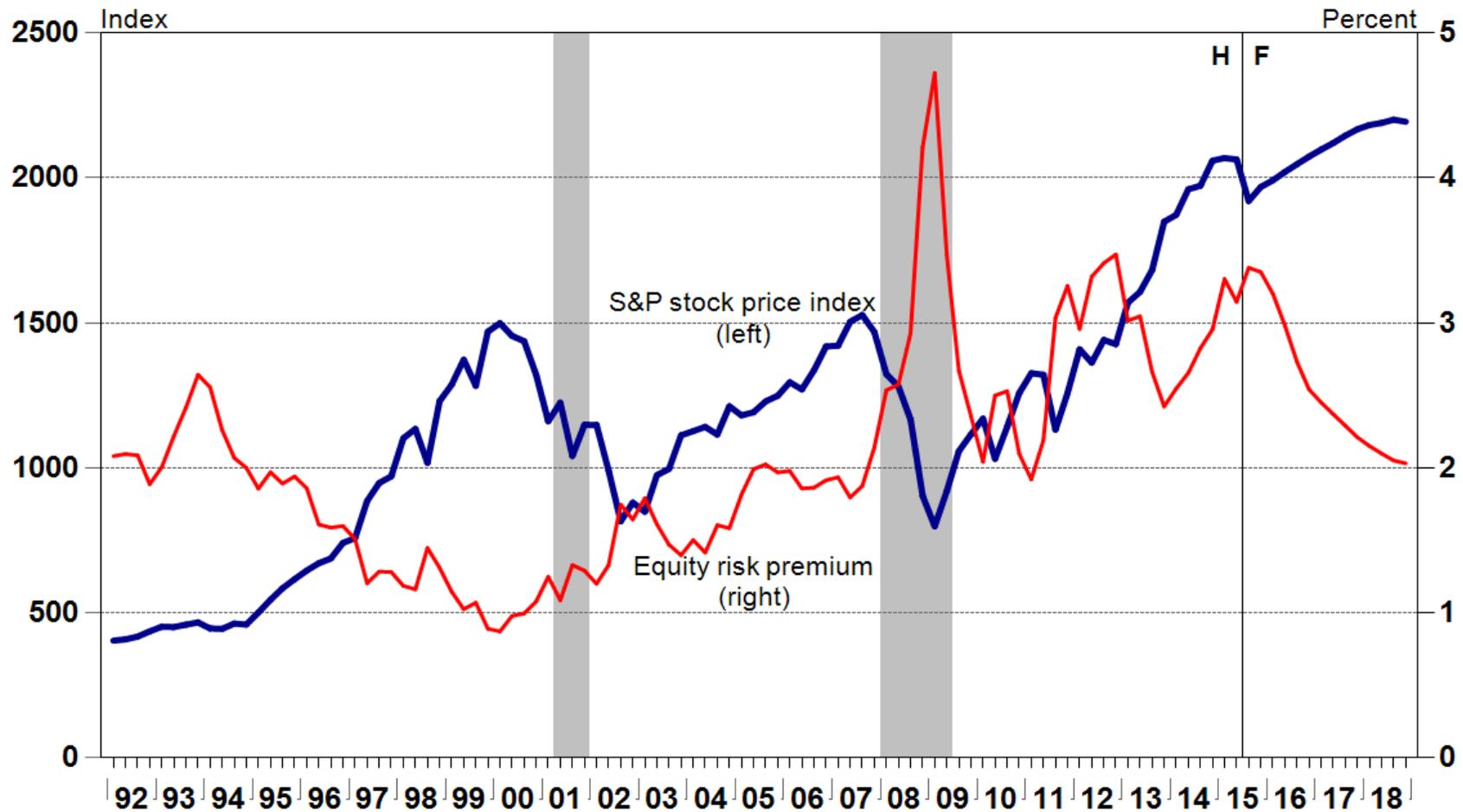
Rising Expected Fed Funds and Normalizing Term Premium Drive Term Yields Higher...to Still Historically Low Levels



Source: Federal Reserve Board, Macroeconomic Advisers, LLC; Forecast completed on October 8, 2015

# Equities Make Incomplete Recovery

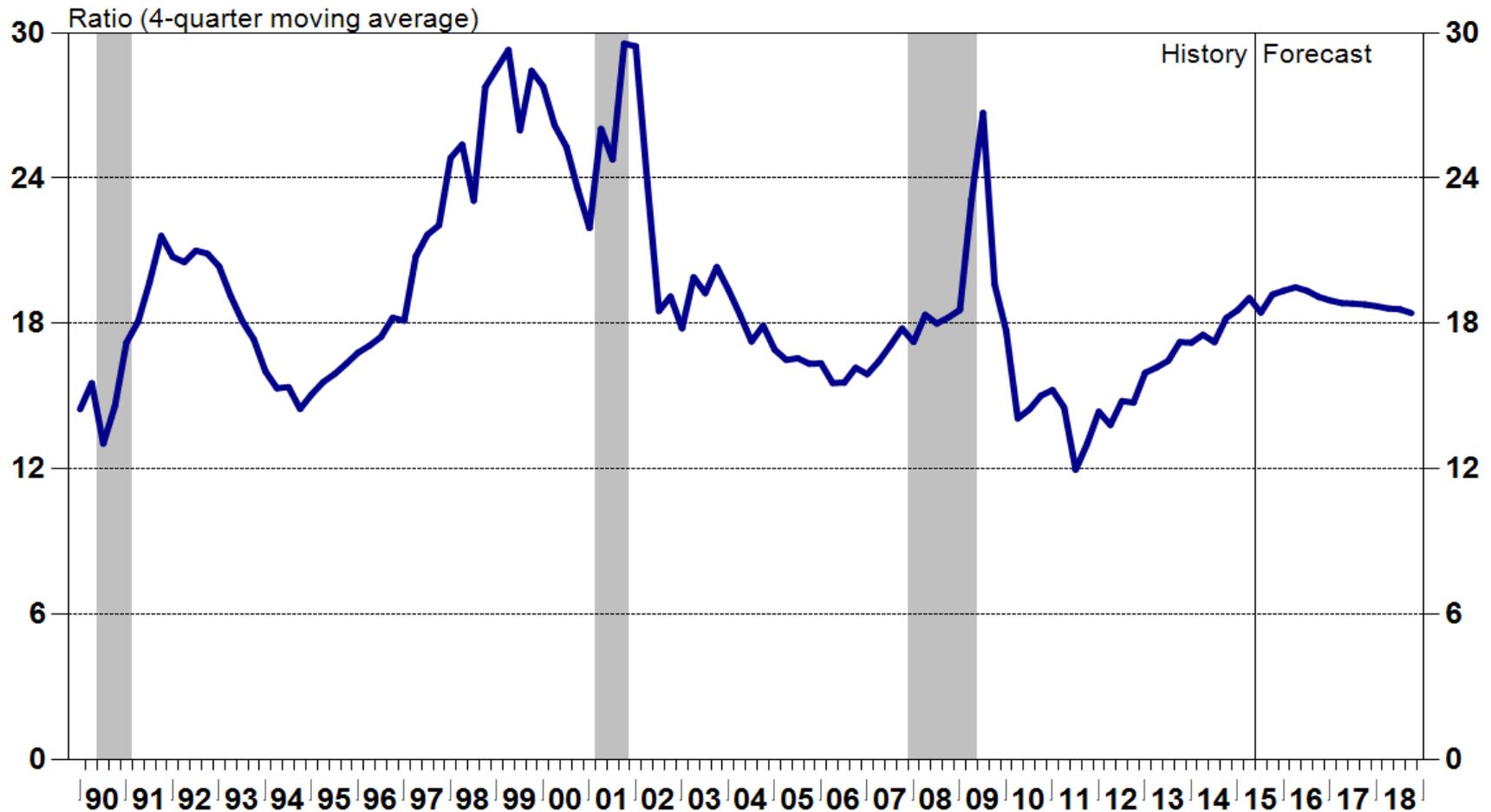
Declining Equity Risk Premium Helps Stocks Weather Rate Increases



Source: Macroeconomic Advisers; Forecast completed on October 8, 2015

# Equities are Fairly Valued; Challenges Ahead

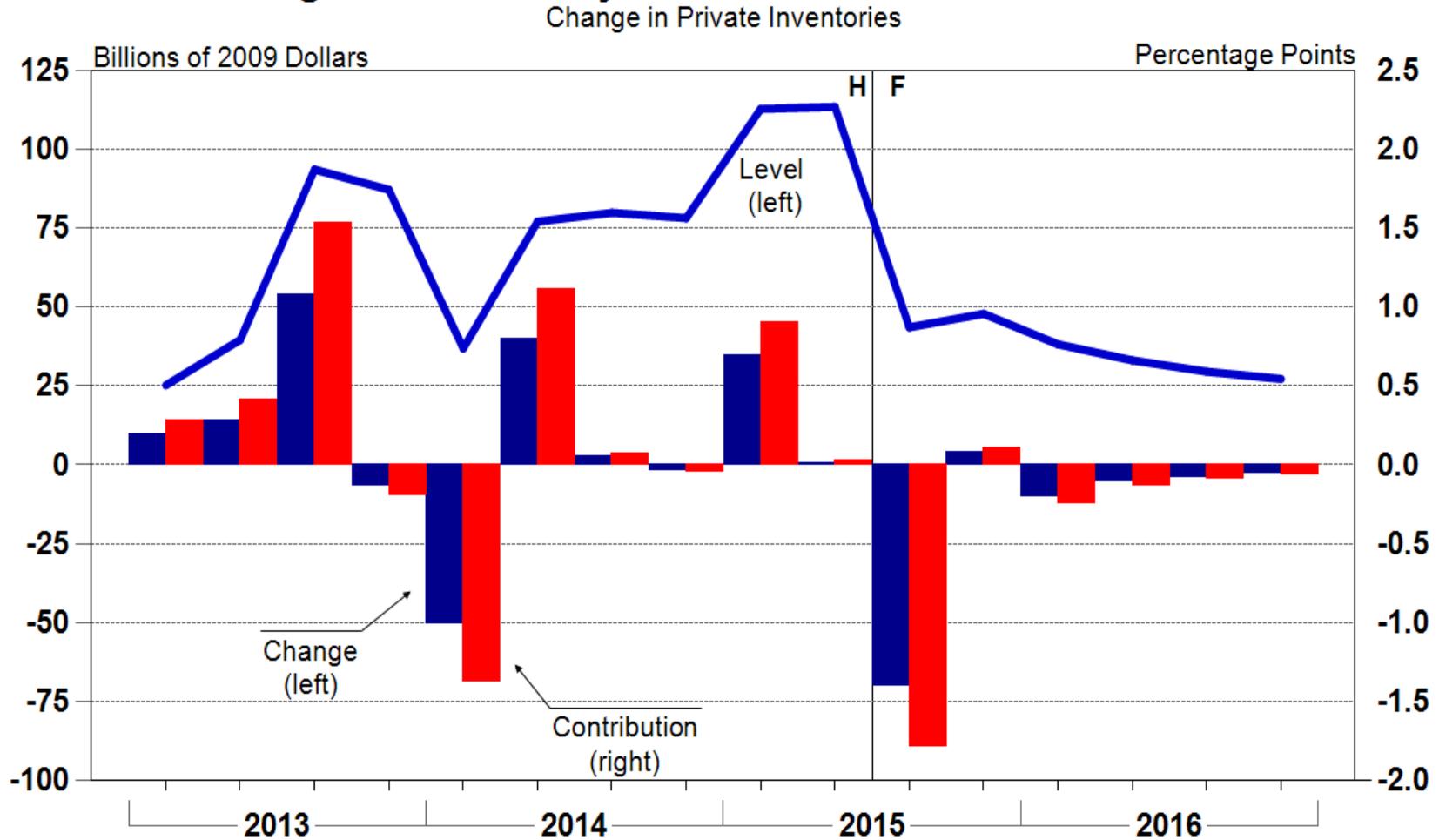
## S&P 500 Price-Earnings Multiple



Source: S&P, Macroeconomic Advisers; Forecast completed on October 8, 2015

# Near-term Growth Accounting

## Drag from Inventory Investment Over 2015 & 2016



Source: Macroeconomic Advisers, LLC. Forecast completed on October 8, 2015

# Key +/- Risks & Uncertainty in the Outlook

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- **China's growth continues to grind lower...**  
...or maybe surprises to the upside
- **Europe's "fix" fails, GREXIT causes slump in markets & growth ...**  
...could turn out better than markets expect...time heals
- **Sharper rise in long rates - slow EM and U.S. more than expected...**  
... potential for more resilience if U.S. powers through
- **Dollar resumes strong rise as rate differential widens again...**  
... strengthening in euro area growth narrows rate differential
- **Home price rise fades and starts are WTE under rate increases...**  
...could surprise to the upside
- **U.S. fiscal follies, gov't shut down, lurch toward restraint...**  
...could all go without a hiccup
- **Geopolitical Risks: Ukraine, ISIS, Iran, Korea...**  
...tensions and uncertainty would ease if ???

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# Back-up Slides

**MA Base Forecast, September 2015 (BASE509): 2015:Q3 - 2018:Q4**  
**Major Economic Indicators**

	2015.1	2015.2	2015.3	2015.4	2016.1	2016.2	2016.3	2016.4	2017.1	2017.2	2017.3	2017.4	2018.1	2018.2	2018.3	2018.4	Q4/Q4 % change or annual avg.				
																	2014	2015	2016	2017	2018
<b>Key Indicators of Real Activity</b>																					
Real gross domestic product*	0.6	3.9	1.4	2.7	2.7	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.3	2.2	2.0	1.9	2.5	2.2	2.5	2.5	2.1
Contributions to growth:																					
Final sales	-0.3	3.9	3.2	2.6	2.9	2.6	2.6	2.5	2.5	2.5	2.4	2.3	2.3	2.2	2.0	1.9	2.5	2.4	2.7	2.4	2.1
To domestic purchasers	1.7	3.7	3.6	2.6	3.0	3.1	3.3	3.2	3.0	3.1	2.9	2.8	2.7	2.6	2.4	2.4	3.1	2.9	3.2	3.0	2.5
Net exp. of goods & services	-1.9	0.2	-0.4	0.0	-0.1	-0.5	-0.7	-0.7	-0.5	-0.6	-0.5	-0.5	-0.4	-0.4	-0.4	-0.4	-0.6	-0.6	-0.5	-0.6	-0.4
Change in private inventories	0.9	0.0	-1.8	0.1	-0.2	-0.1	-0.1	-0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	-0.1	-0.2	-0.1	0.0	0.0
<b>Major components of real GDP:</b>																					
Personal consumption expend.*	1.8	3.6	3.6	3.0	3.4	3.4	3.4	3.2	2.9	2.8	2.7	2.6	2.5	2.4	2.2	2.3	3.2	3.0	3.3	2.8	2.3
Nonres. fixed investment*	1.6	4.1	6.5	3.1	1.7	2.0	2.4	3.0	3.4	3.9	4.1	4.1	4.0	3.8	3.5	3.3	5.5	3.8	2.3	3.9	3.6
Residential investment*	10.1	9.3	6.4	6.2	12.0	12.2	14.6	12.4	10.9	12.3	9.4	7.8	6.8	5.6	3.9	3.3	5.1	8.0	12.8	10.1	4.9
Change in private inventories**	112.8	113.5	43.6	47.9	38.2	33.1	29.5	27.2	27.1	28.2	30.8	33.3	32.3	30.9	30.2	28.7	68.0	79.4	32.0	29.8	30.5
Exports of goods & services*	-6.0	5.1	1.2	3.4	5.2	5.6	5.6	5.8	5.5	5.0	5.1	4.7	4.8	4.5	4.2	3.8	2.4	0.8	5.5	5.1	4.3
Imports of goods & services*	7.1	3.0	3.7	2.9	4.9	7.6	9.0	9.1	8.0	7.8	7.6	6.9	6.3	5.9	6.0	5.7	5.4	4.2	7.6	7.6	6.0
Gov't consump. & gross invest.*	-0.1	2.6	0.7	-0.1	0.4	0.7	0.9	0.9	1.1	1.0	1.1	1.1	1.3	1.3	1.5	1.3	0.4	0.8	0.7	1.1	1.3
Pvt. housing starts (thous. units)	978	1158	1142	1164	1226	1293	1356	1413	1468	1530	1581	1627	1666	1704	1735	1759	1001	1110	1322	1552	1716
Light vehicle sales (mil. units)	16.7	17.1	17.8	17.5	17.3	17.2	17.1	17.0	16.8	16.8	16.8	16.7	16.7	16.7	16.7	16.6	16.4	17.3	17.1	16.8	16.7
Industrial production, total*	-0.3	-2.6	2.2	1.0	2.5	2.2	2.0	1.9	2.0	2.3	2.3	2.2	2.2	2.0	1.7	1.6	4.5	0.0	2.2	2.2	1.9
Industrial production, mfg*	-0.7	1.1	2.1	1.1	2.4	2.1	2.0	1.9	2.2	2.5	2.6	2.5	2.5	2.3	2.0	1.8	3.4	0.9	2.1	2.4	2.1
Capacity utilization (mfg, %)	75.9	75.9	76.0	75.9	75.9	75.9	75.9	75.9	75.9	76.0	76.0	76.1	76.1	76.1	76.1	76.0	75.3	75.9	75.9	76.0	76.1
Nonfarm payroll employ. (mil.)	141.0	141.6	142.2	142.7	143.3	143.9	144.5	145.2	145.8	146.5	147.1	147.8	148.5	149.1	149.6	150.0	139.0	141.9	144.2	146.8	149.3
Private nonfarm hours*	1.6	1.4	1.4	1.4	1.8	1.9	2.0	2.0	2.0	2.0	2.0	2.1	1.9	1.6	1.3	1.1	3.0	1.5	1.9	2.1	1.5
Civilian unemployment rate (%)	5.6	5.4	5.1	5.0	4.9	4.8	4.7	4.7	4.6	4.5	4.5	4.5	4.5	4.5	4.5	4.5	6.2	5.3	4.8	4.5	4.5
<b>Prices, Productivity, &amp; Costs</b>																					
GDP chain-type price index*	0.1	2.1	1.3	0.5	1.9	2.1	2.1	2.2	2.3	2.2	2.2	2.3	2.4	2.3	2.3	2.3	1.3	1.0	2.0	2.2	2.3
CPI, all items (all urban)*	-3.1	3.0	1.8	0.2	1.5	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.1	2.2	1.2	0.5	2.1	2.2	2.2
CPI excl food & energy (all urb)*	1.7	2.5	1.6	1.7	1.9	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	1.7	1.9	2.0	2.1	2.2
PCE price index*	-1.9	2.2	1.3	0.1	1.5	1.9	1.9	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	1.1	0.4	1.8	2.0	2.0
PCE price excl food & energy*	1.0	1.9	1.4	1.6	1.6	1.7	1.7	1.8	1.8	1.8	1.9	1.9	2.0	2.0	2.0	2.0	1.4	1.4	1.7	1.9	2.0
PPI (finished goods)*	-11.2	3.6	2.3	-2.5	2.0	2.4	2.2	2.2	2.2	2.0	2.0	2.0	1.9	1.9	1.8	1.9	0.7	-2.1	2.2	2.1	1.9
Compensation per hour*	1.5	1.8	2.2	2.2	3.0	3.1	3.1	3.2	3.4	3.2	3.1	2.9	3.2	3.2	3.4	3.4	2.8	1.9	3.1	3.1	3.3
Output per hour*	-1.1	3.6	0.0	1.9	1.3	1.0	0.8	0.8	0.8	0.9	0.8	0.6	0.7	0.8	0.9	1.0	0.0	1.1	1.0	0.8	0.9
Unit labor cost*	2.6	-1.7	2.2	0.3	1.7	2.1	2.2	2.4	2.5	2.3	2.3	2.3	2.5	2.4	2.5	2.4	2.8	0.8	2.1	2.3	2.4
CoreLogic house price index***	2.1	0.0	2.4	1.1	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	5.2	5.7	3.5	3.3	3.0
Price of WTI crude oil (\$/barrel)	48.64	57.86	46.47	45.45	47.04	48.62	49.59	50.49	51.53	52.29	53.14	53.95	54.42	55.21	55.59	56.33	93.26	49.60	48.93	52.73	55.39
Price of Brent crude oil (\$/barrel)	53.92	61.69	50.31	48.36	50.15	51.98	53.38	54.82	55.89	57.05	58.01	58.63	59.38	60.06	60.58	60.99	99.02	53.57	52.58	57.40	60.25
<b>Selected Financial Variables</b>																					
Federal funds rate	0.11	0.12	0.14	0.17	0.36	0.61	0.85	1.11	1.35	1.61	1.86	2.16	2.36	2.66	2.96	3.26	0.09	0.13	0.73	1.75	2.81
Yield on 10-Yr Treasury Notes (%)	1.97	2.17	2.22	2.13	2.31	2.59	2.95	3.25	3.39	3.52	3.64	3.77	3.87	3.97	4.06	4.14	2.54	2.12	2.78	3.58	4.01
Baa corporate bond yield	4.50	4.83	5.24	5.45	5.38	5.43	5.55	5.70	5.74	5.77	5.84	5.92	6.03	6.11	6.18	6.25	4.85	5.01	5.52	5.82	6.14
Broad trade-weighted US\$	114.4	114.8	118.8	120.7	120.7	120.7	120.7	120.7	120.7	120.7	120.7	120.7	120.7	120.7	120.7	120.7	104.2	117.2	120.7	120.7	120.7
S&P 500 stock price index***	0.4	-0.2	-6.9	2.5	1.2	1.5	1.3	1.3	1.2	1.1	1.2	1.0	0.7	0.3	0.5	-0.3	11.4	-4.4	5.3	4.6	1.2
<b>Incomes &amp; Related Measures</b>																					
Corporate profits w/ IVA & CCAAdj*	-21.1	14.8	-17.3	1.1	3.5	2.8	2.4	2.4	3.1	4.4	4.6	4.8	3.9	3.7	3.2	3.5	3.4	-6.7	2.8	4.2	3.6
Real disposable personal income*	3.9	1.2	3.2	2.8	2.2	1.8	1.9	2.1	2.7	2.3	2.3	2.3	3.0	2.3	2.2	2.3	3.6	2.8	2.0	2.4	2.4
Personal saving rate (%)	5.2	4.6	4.5	4.5	4.2	3.9	3.5	3.3	3.2	3.0	2.9	2.8	2.9	2.8	2.8	2.8	4.8	4.7	3.7	3.0	2.8
Fed. surplus (unified, FY, bil. \$)	-1051.3	492.5	-469.0	-565.1	-742.9	-119.4	-422.8	-523.0	-732.6	-199.9	-445.7	-555.4	-781.9	-258.3	-513.0	-631.1	-483.4	-433.6	-462.5	-475.3	-527.1

\* Percent change at annual rate  
\*\* Billions of chained (2009) dollars  
\*\*\* Quarterly percent change not annualized

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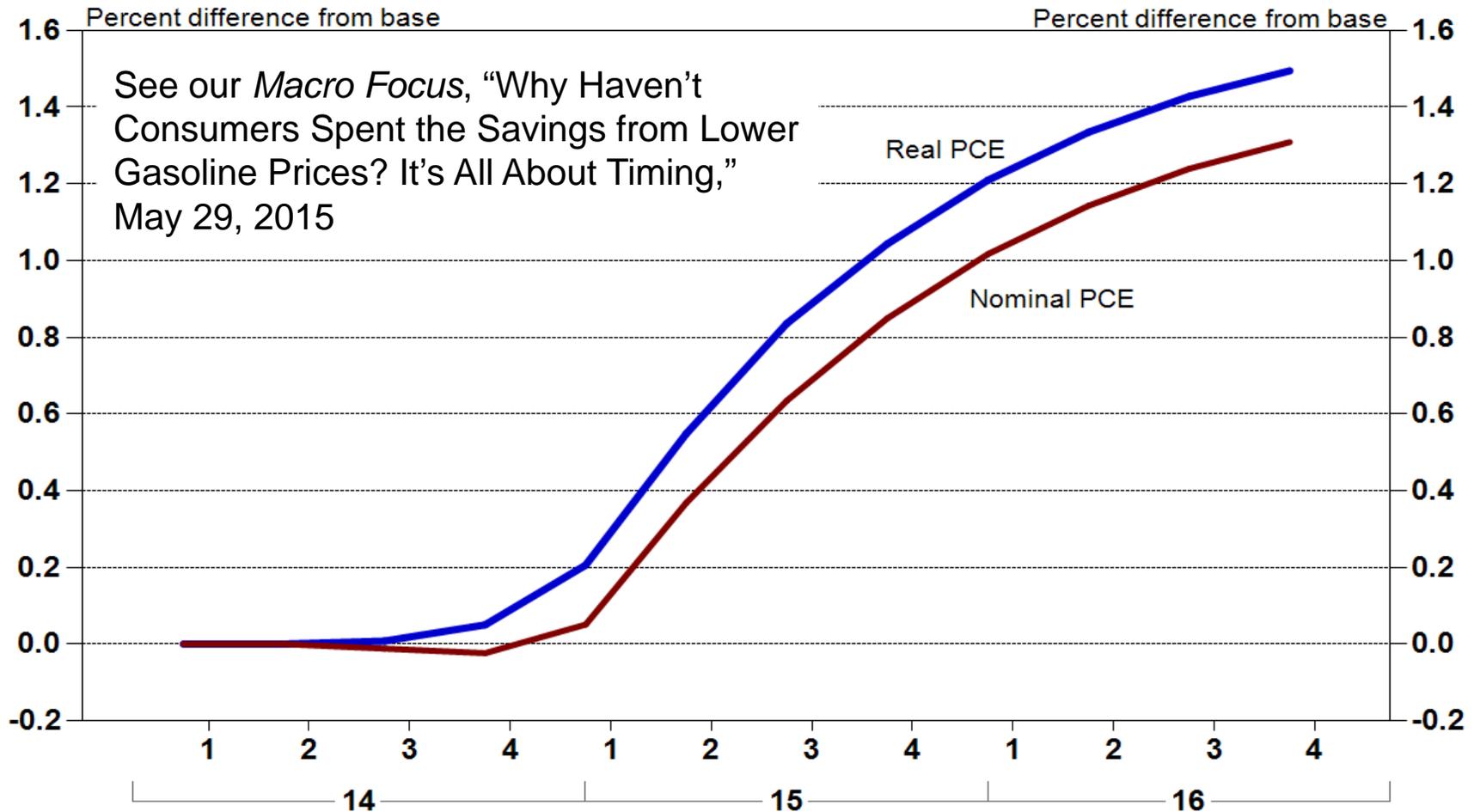
# Key "Assumptions" of the MA Forecast

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- **Fiscal policy assumptions:** Discretionary spending broadly consistent with Bipartisan Budget Act; transition from drag to stimulus; no shutdowns
- **Home prices** ↑ 5.7% in 2015, ↑ 3.5% in 2016, ↑ 3.3% in 2017, and ↑ 3.0% in 2017
- **S&P 500** ↓ 4.5% in 2015, ↑ 5.3% in 2016, ↑ 4.5% in 2017, ↑ 1.0% in 2018;
- **Risk spreads** to narrow (Baa spread to 20-yr falls ~130 bps thru 2018.4)
- **Foreign growth** 2.5% in '14, 2.0% in '15, and 3.0% in '16, 3.1% in '17, and 2.9% in '18
- **Trade-weighted *real* \$** peaks in 15Q4 then falls ~1% thru 2018;  
***nominal* \$** peaks in '15Q4 at 120.7 and remains thru 2018
- **Oil prices** (Brent/WTI) fell to \$62/58 in 2015Q2; expected to bottom out at \$48/45 in 2015Q4 and then rise to \$61/56 by 2018Q4
- **Inflation expectations** remain anchored at 2%
- **Fed:** Rate increases commence December 2015

# Lower Oil Prices on Net Boost Growth

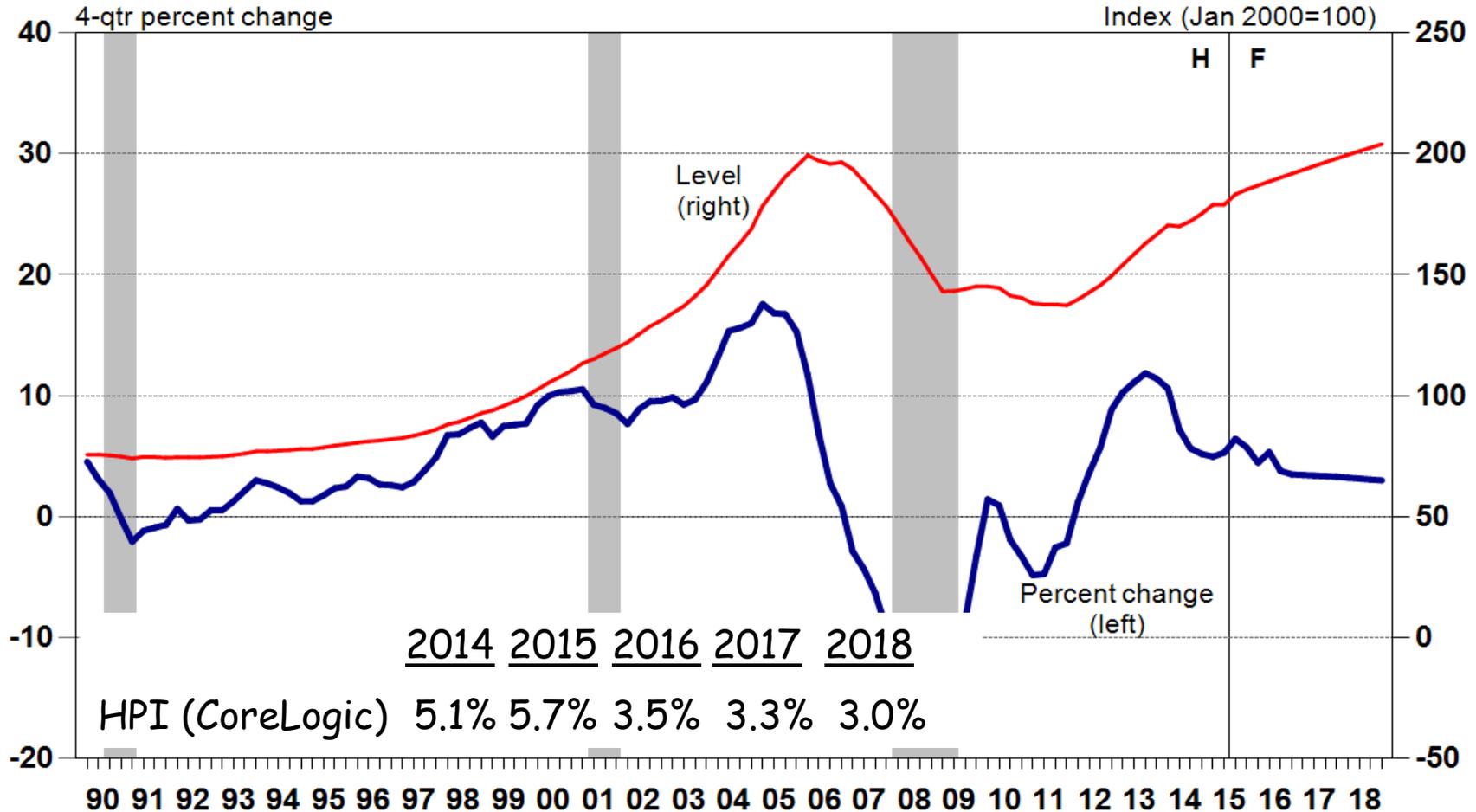
## Response of PCE to 32% Sustained Gasoline Price Drop



Source: BEA; Macroeconomic Advisers

# Home Price Gains Add to Household NW

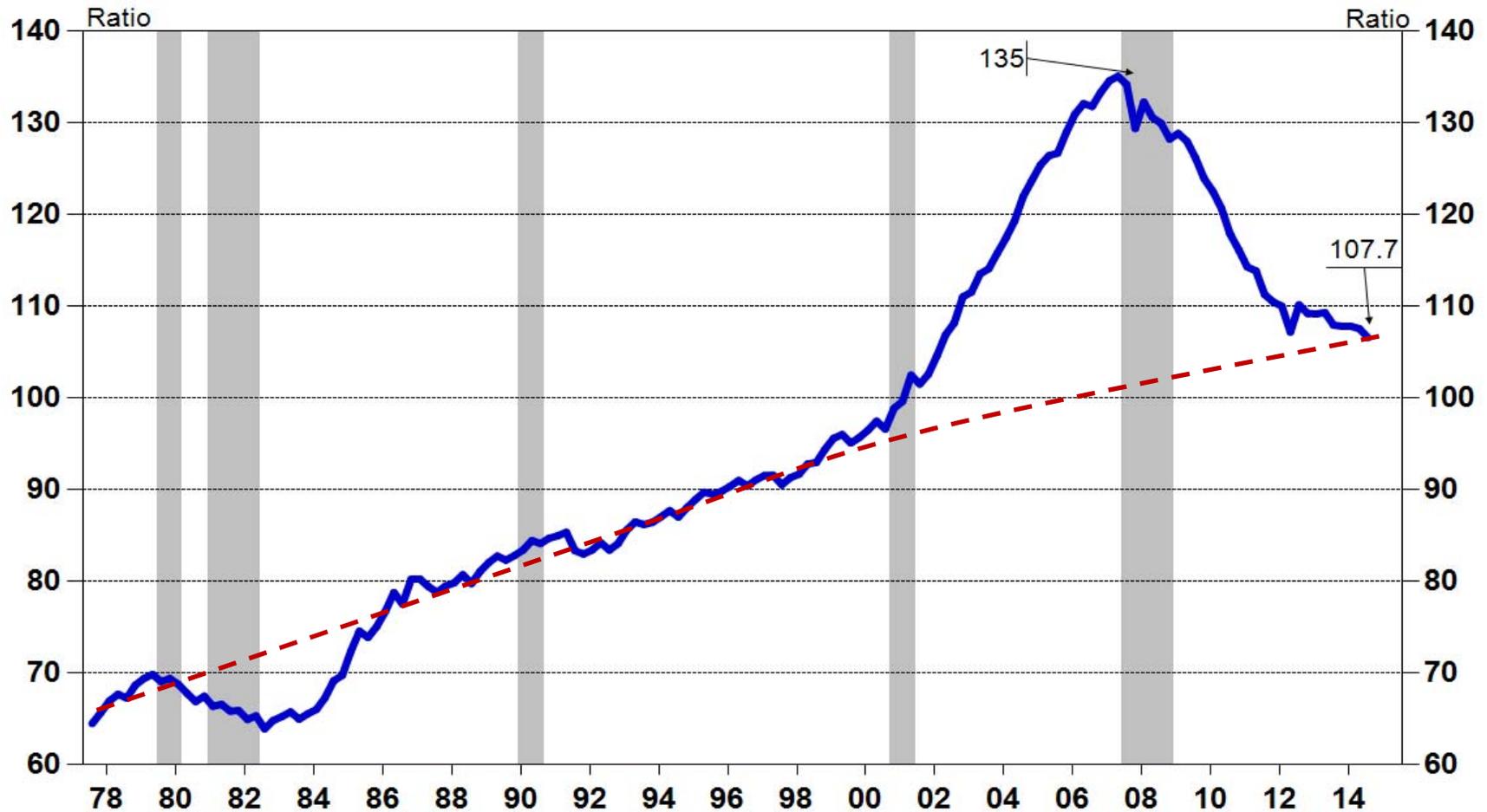
## Home Prices Continue a Solid, but Slower Recovery



Source: CoreLogic, Haver Analytics, Macroeconomic Advisers, LLC; Forecast completed on October 8, 2015

# HH Deleveraging Close to Complete?

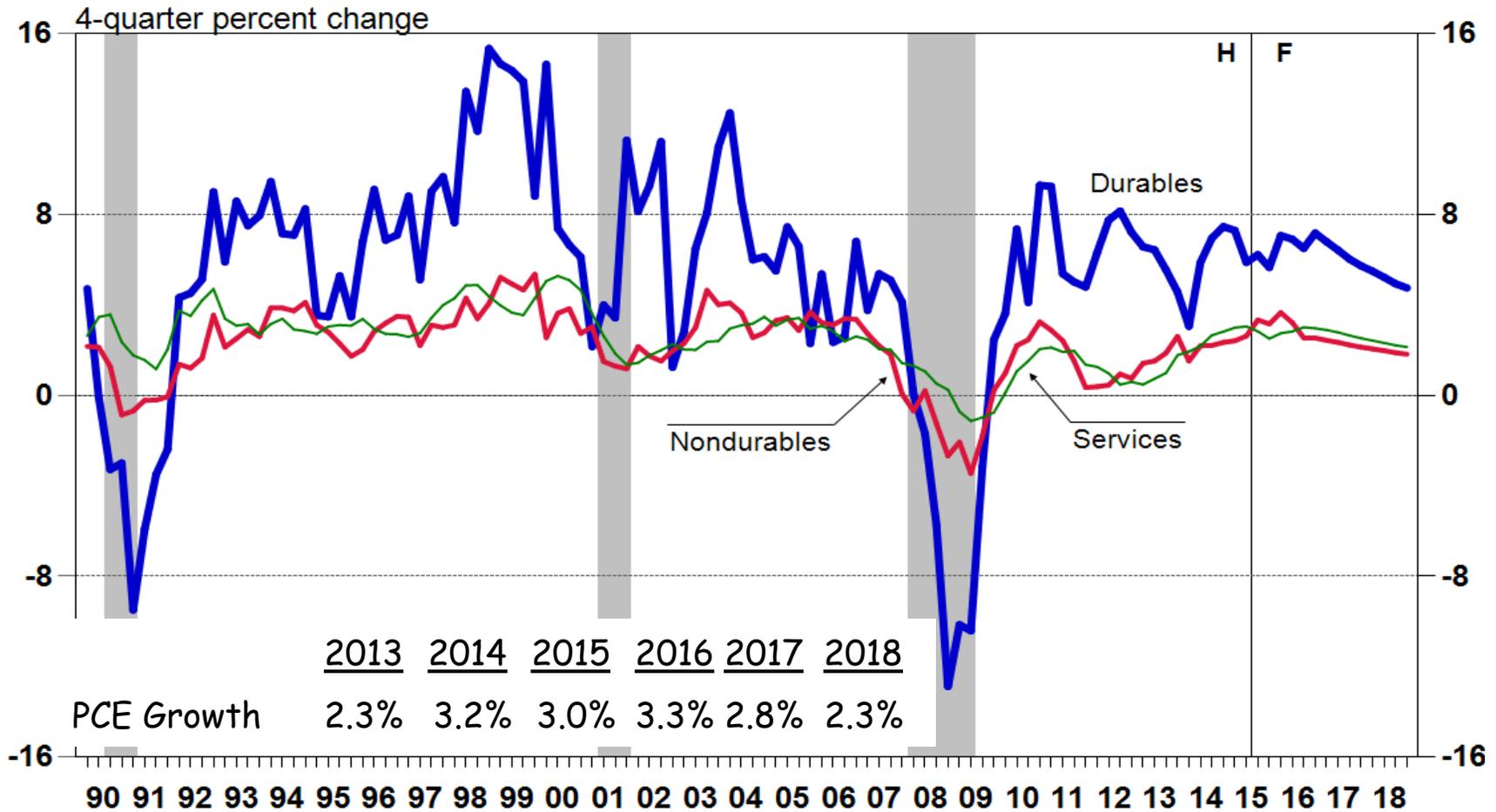
**Household Debt Ratio**  
(Ratio of Household Sector Debt to Personal Disposable Income)



Source: Federal Reserve; Latest data plotted for 2015.1

# Sharp Rise in HH Net Worth and Incomes!

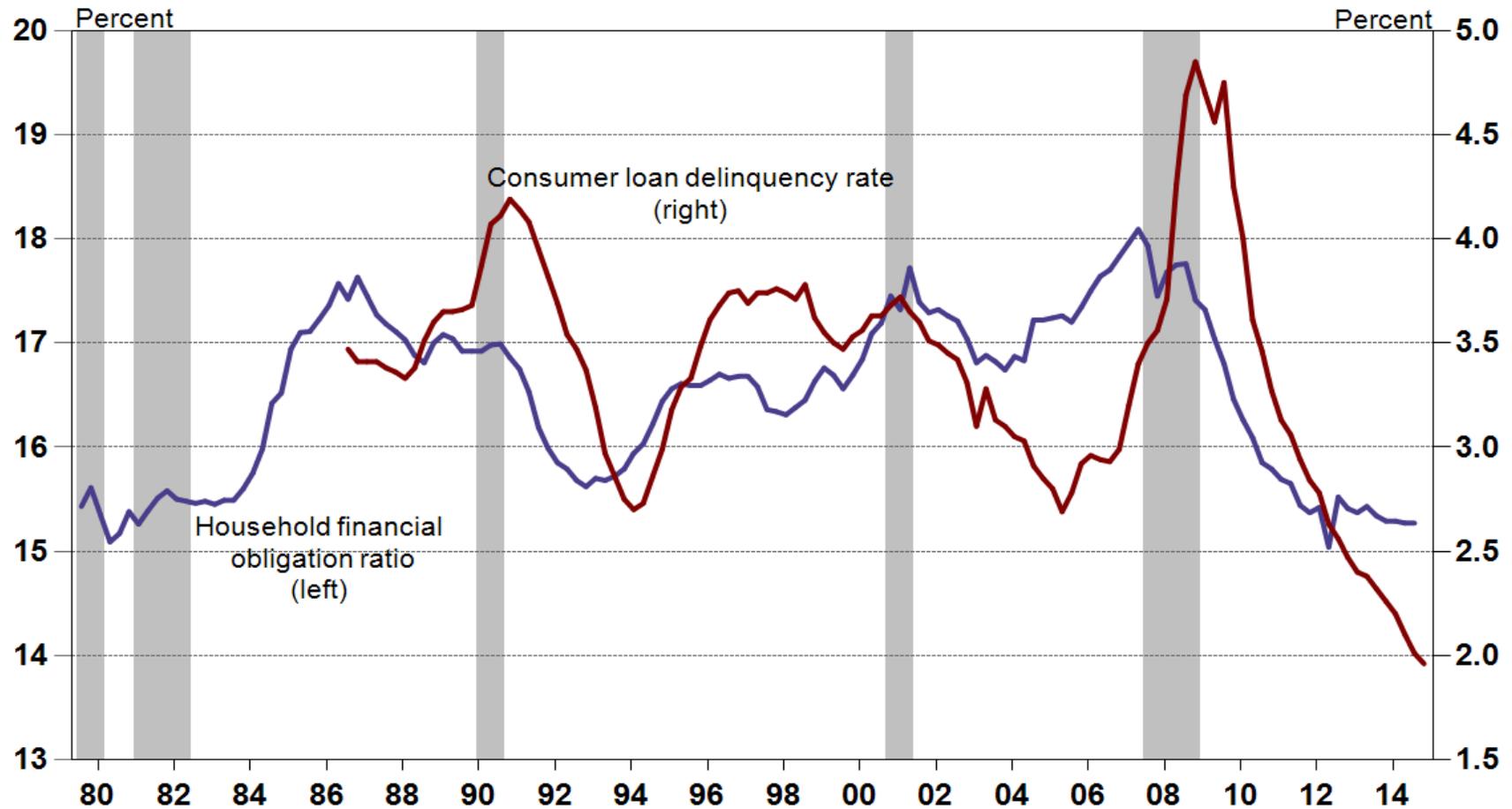
## Growth of Personal Consumption Expenditures



Source: Bureau of Economic Analysis, Macroeconomic Advisers, LLC; Forecast completed on October 8, 2015

# HH's Ready to Take on More Debt?

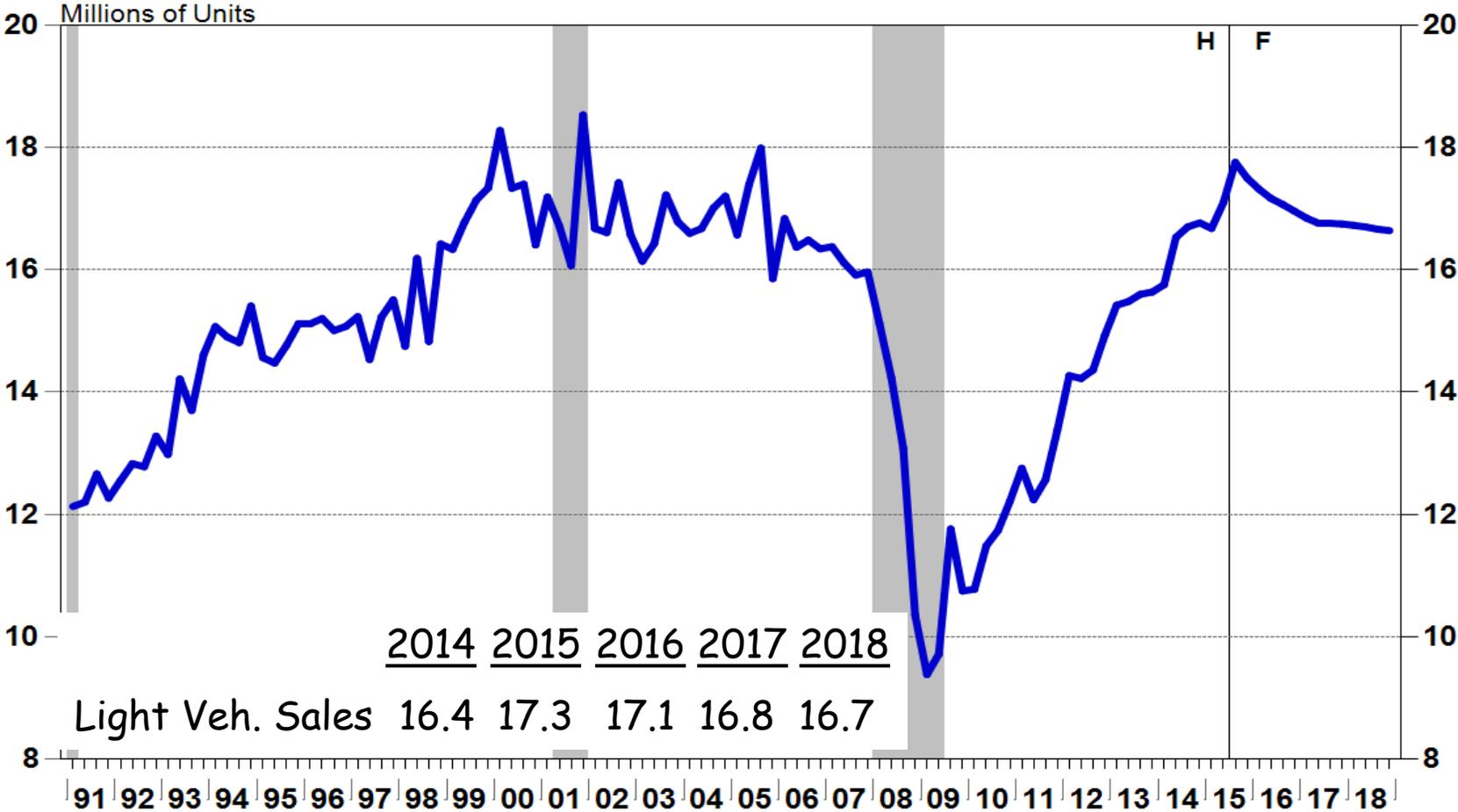
## Financial Obligations and Delinquency Rate



Source: Federal Reserve Board/Haver Analytics; Last data plotted is 2015Q1 for Fin. Ob. ratio and 2015Q2 for Del. rate.

# Including Demand for Light Vehicles

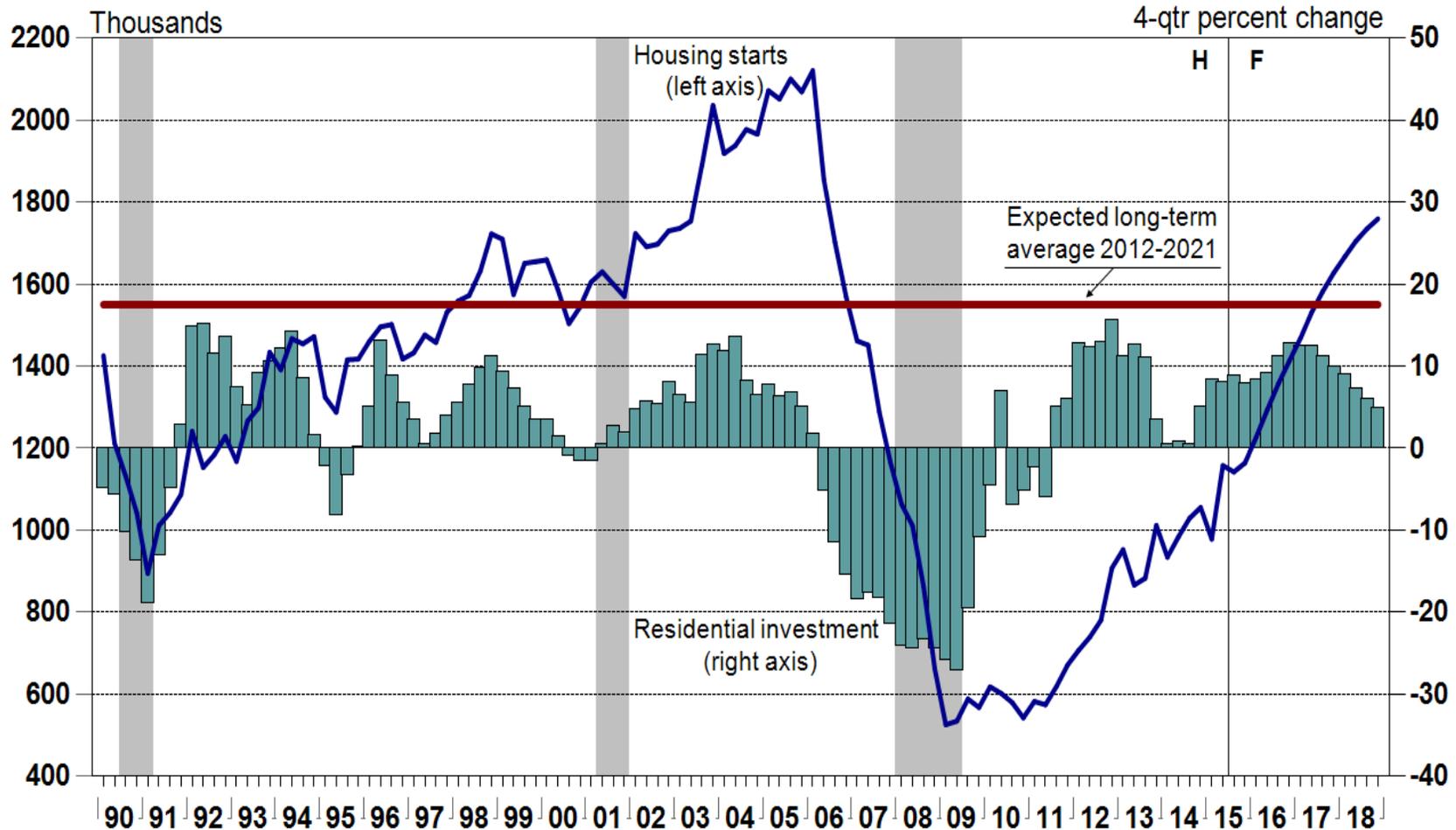
## Post-Recession Rise in Light Vehicle Sales Expected To Stall



Source: Bureau of Economic Analysis, Macroeconomic Advisers, LLC; Forecast completed on October 8, 2015

# Demographics vs. Credit and HH formation

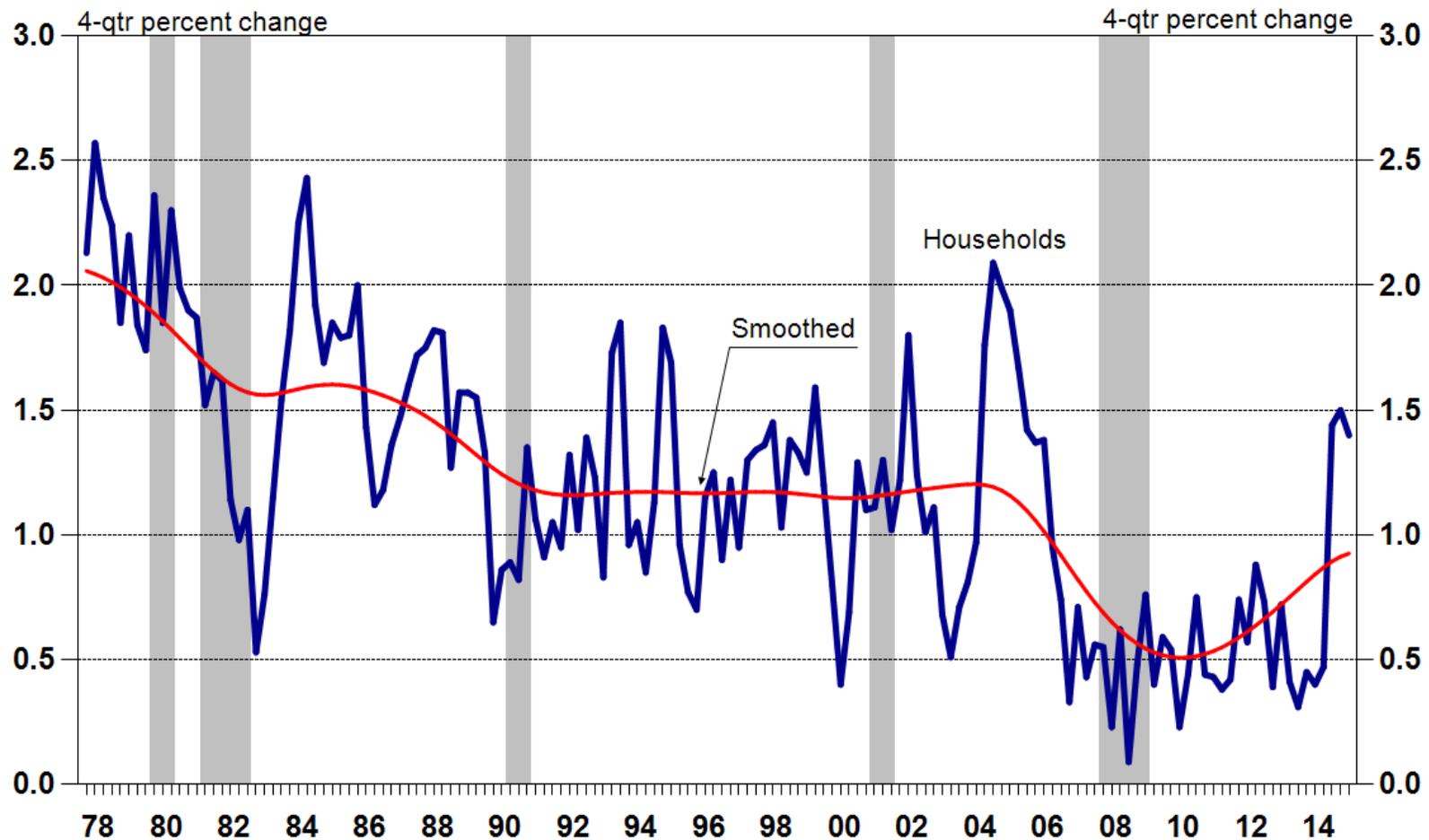
## Housing Continues Along a Rising Track



Source: Macroeconomic Advisers, LLC; Forecast completed on October 8, 2015

# Spillover from Still Depressed Employment

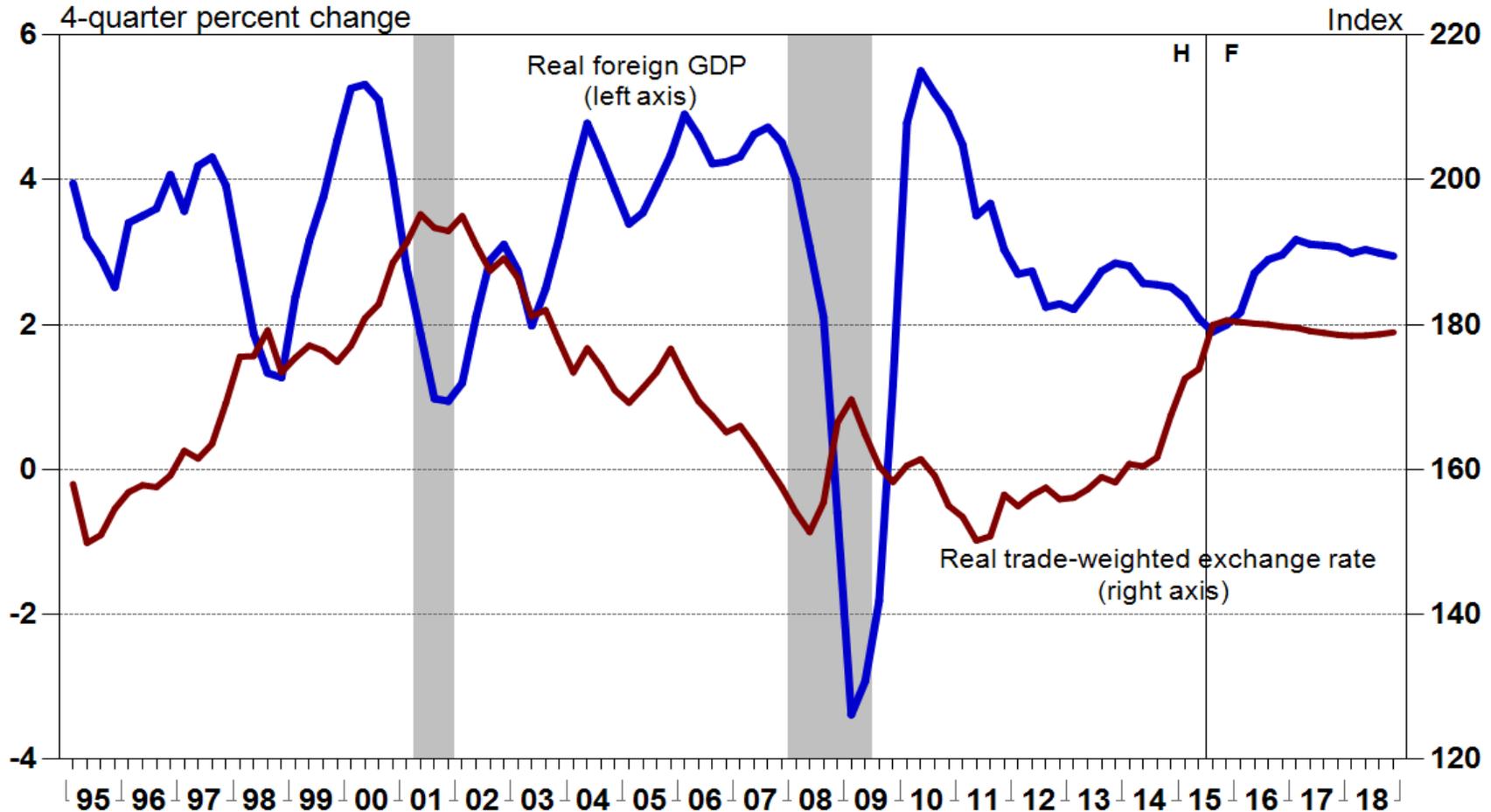
## Weak Household Formation Holding Back Starts...About to Change?



Source: Census, Haver Analytics, Macroeconomic Advisers; Smoothed is HP filtered; Latest data plotted for 2015.2

# Foreign Growth: A Mixed Bag

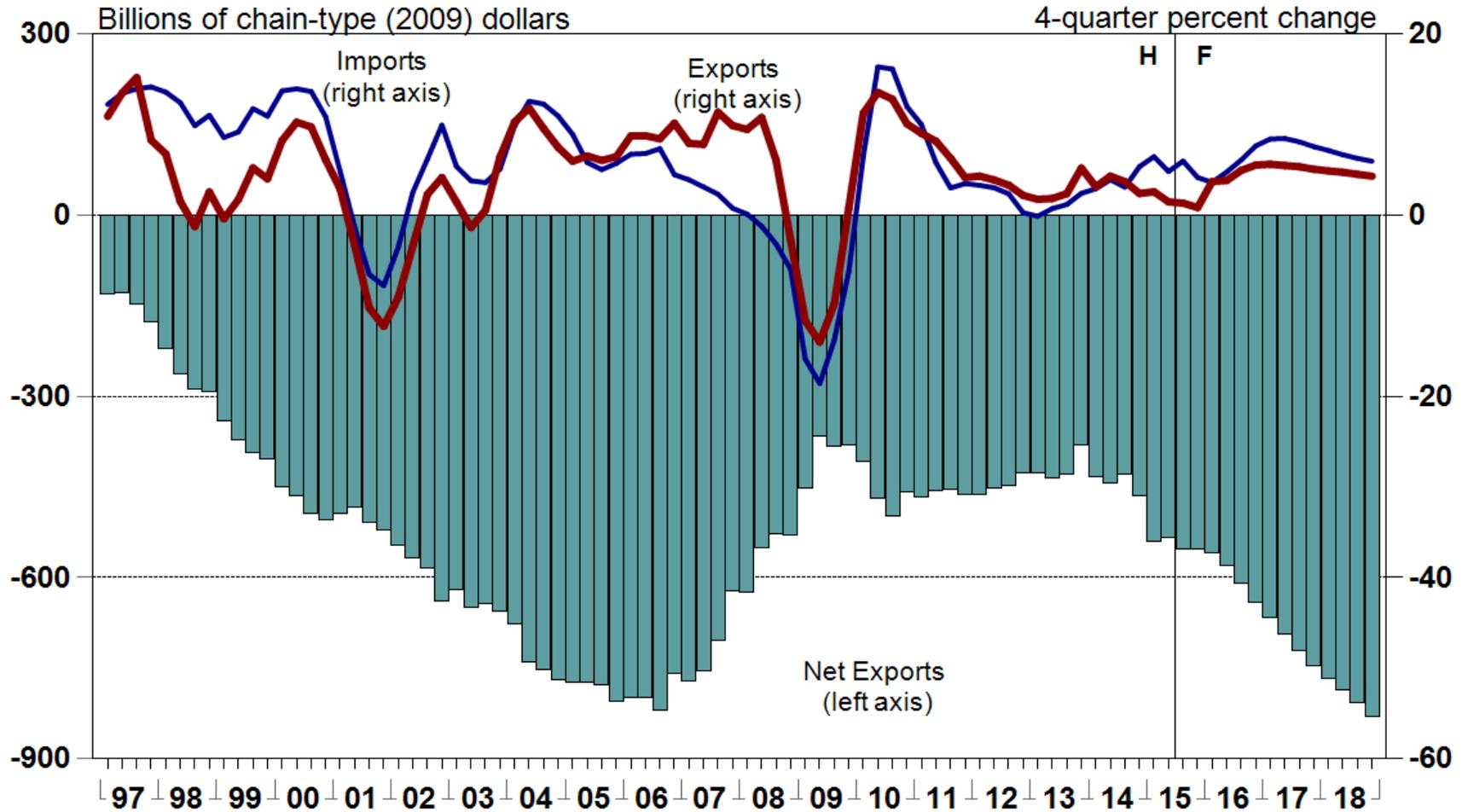
Foreign Growth is Expected to Firm, but Real Dollar Has Risen



Source: Macroeconomic Advisers; Forecast completed on October 8, 2015

# Net Exports Buffeted by Shifting Winds

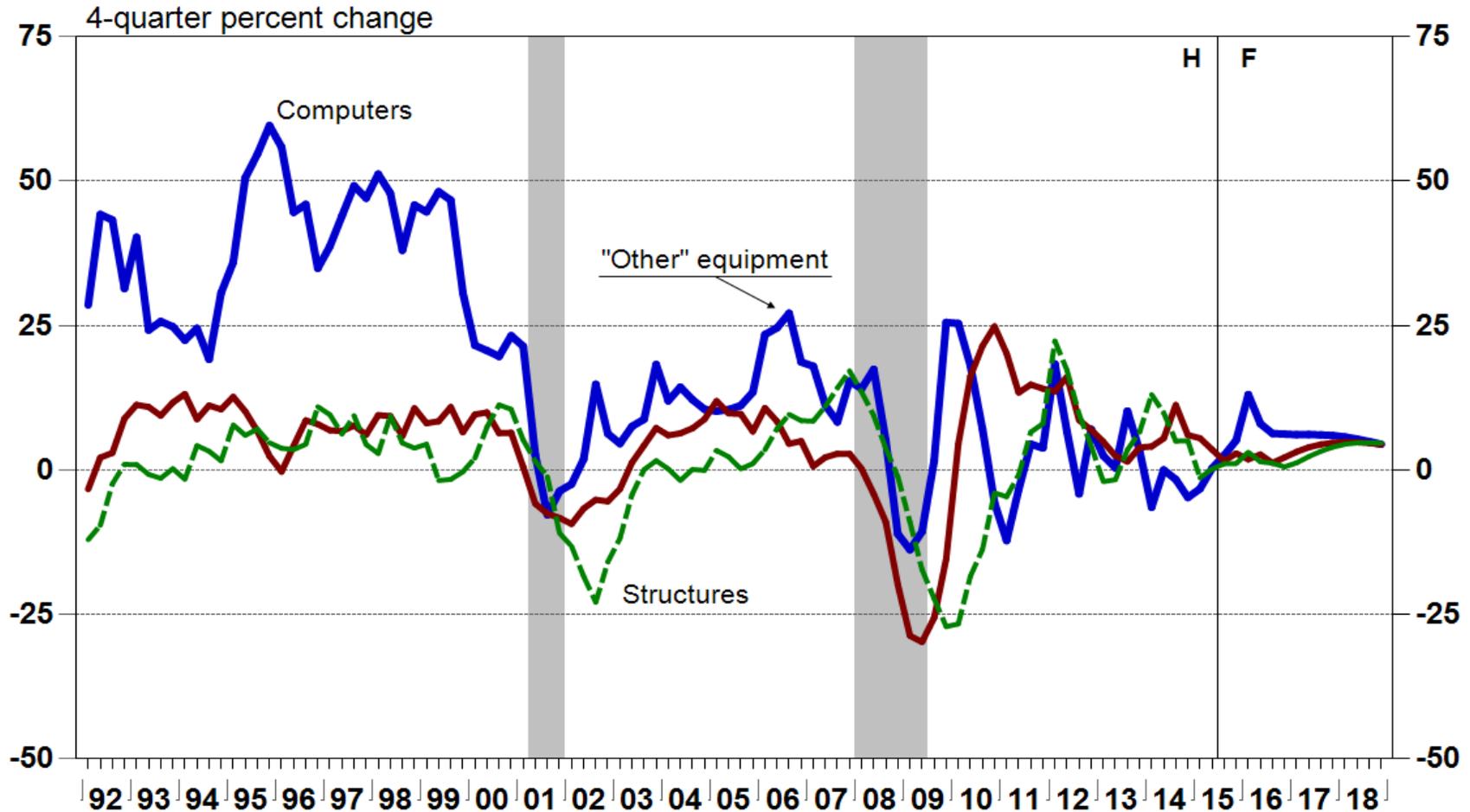
## Exports, Imports, and Net Exports



Source: Bureau of Economic Analysis, Macroeconomic Advisers, LLC; Forecast completed on October 8, 2015

# CapEx: Restrained, but with Upside Risk?

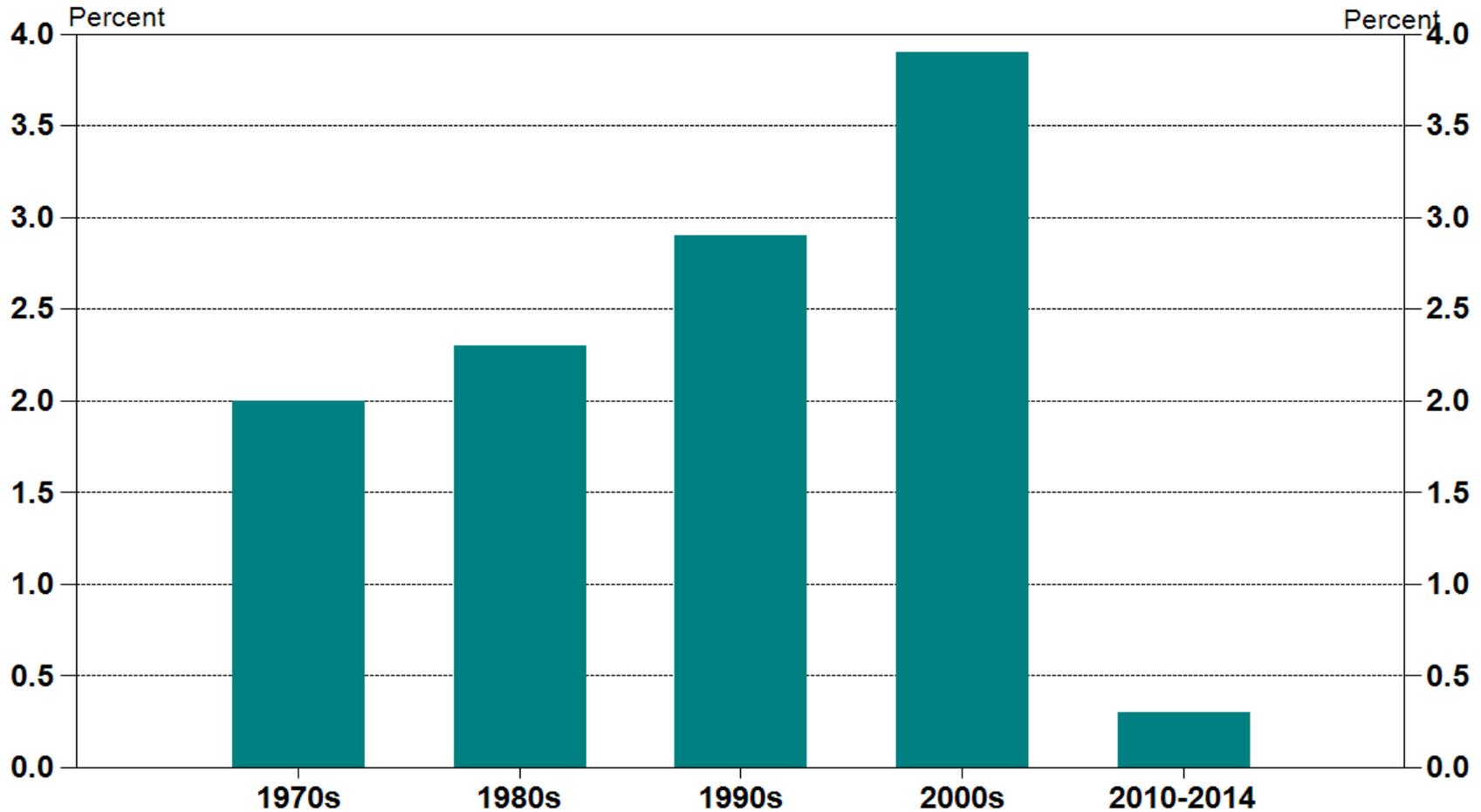
## Growth of Nonresidential Fixed Investment



Source: Bureau of Economic Analysis, Macroeconomic Advisers, LLC; Forecast completed on October 8, 2015

# CapEx: Restrained, but with Upside Risk?

## Growth of Capital Services per Worker



Source: Macroeconomic Advisers;

# **Factors For and Against Stronger Growth**

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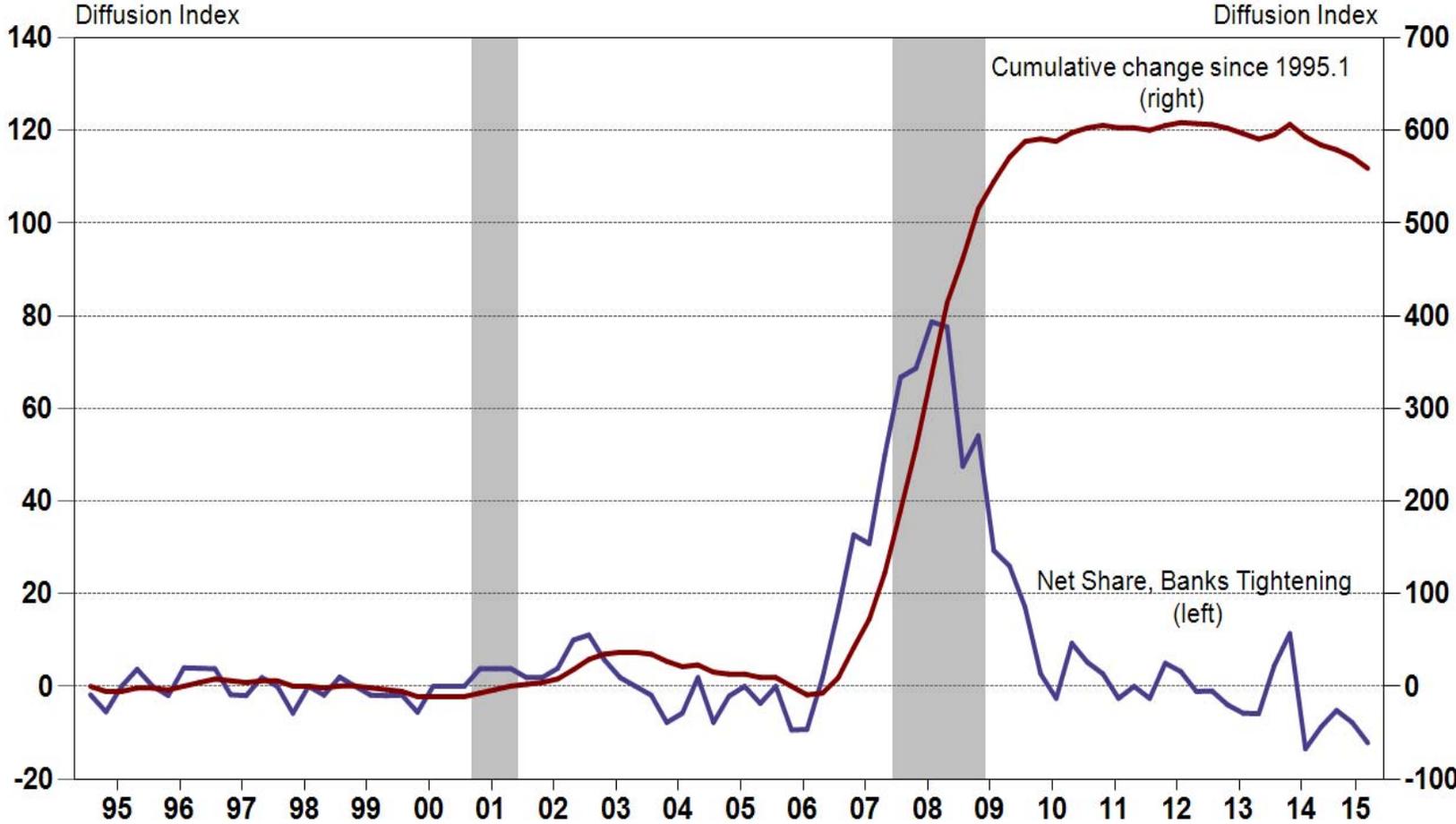
- **Swing from significant fiscal drag to neutral or slight boost**
  - **Normal cyclical dynamics**
  - **Receding uncertainty: return of risk appetite & confidence**
  - **Uneven (through time) improvement in financial conditions**
    - Easing credit terms, rising equities (interrupted) & shrinking spreads
    - Slowing pace of de-leveraging
  - **Rising home prices and favorable long-term demographics**
  - **Low natural gas prices and oil prices**
  - **Gradually firming global growth**
- Versus**
- **Rise in dollar, recent slump in equities & tight mort. credit**
  - **Still “weak” household formation rate**
  - **Other headwinds & risks (Euro area, Ukraine, China, EM...)**
-

## **Inflation Risks “Balanced” Around a Path to 2%**

- In the post-GR period, core PCE inflation has come in somewhat higher than expected by a traditional PC.
  - Inflation expectations appear to be playing an important role in preventing more disinflation than has occurred.
  - Downward nominal wage rigidity might also have played a role.
  - Past commodity price increases (at time of high unemployment) may have helped lessen extent of disinflation.
  - Short-run Phillips curve is very flat.
- Slack is imperfectly measured. Uncertainty regarding most relevant measure for inflation...or where is NAIRU.
- Recent plunge in oil prices and sharp rise in dollar suggests softer near-term headline & core PCE inflation!

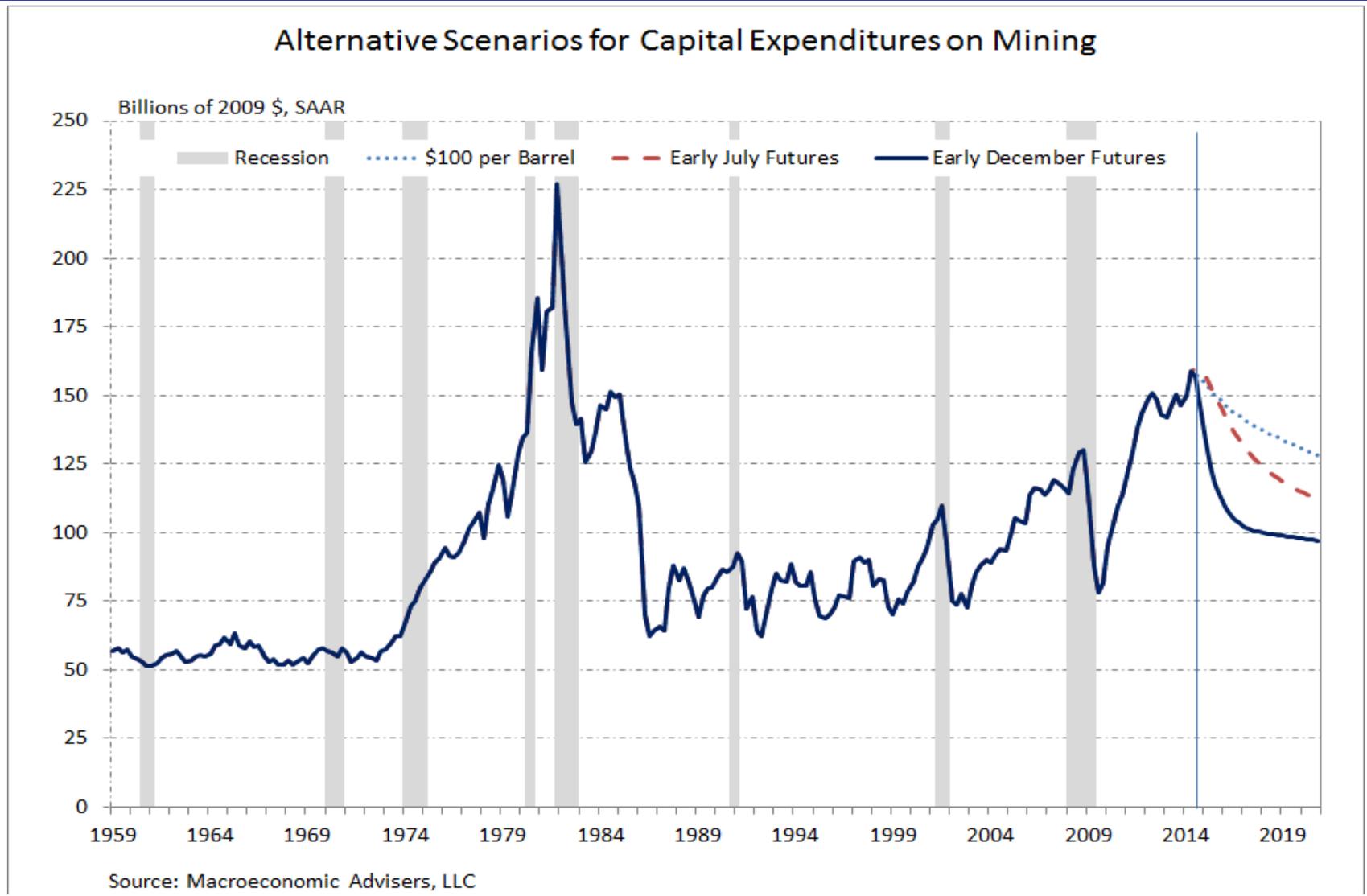
# Housing Restrained by Tight Mortgage Credit

## Hint of a Turn in Mortgage Lending Standards?



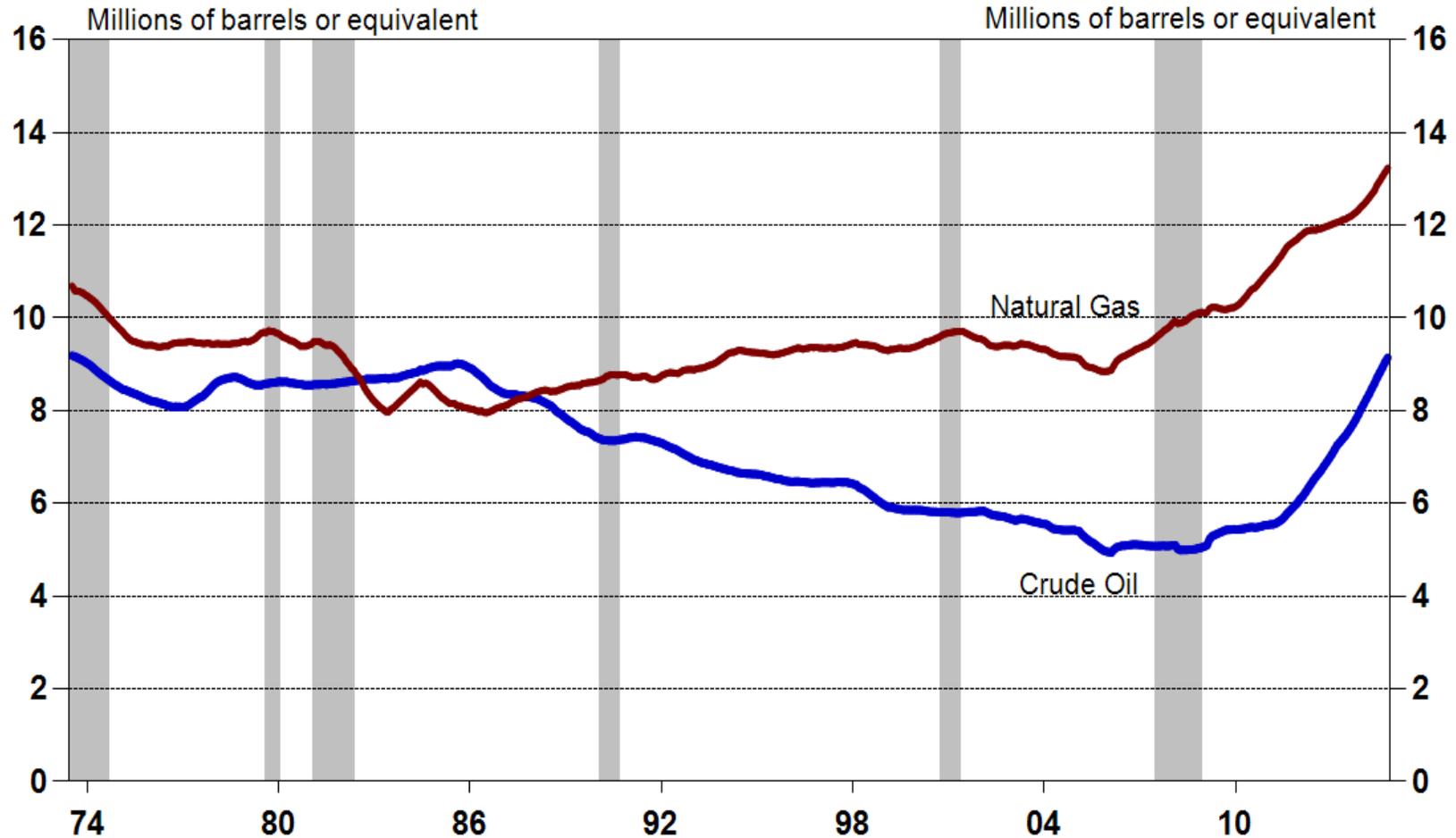
Source: Federal Reserve Board; Latest data is for 2015Q3.

# CapEx: Oil Price Decline Poses Downside Risk



# Sharply Improving Energy Production ...

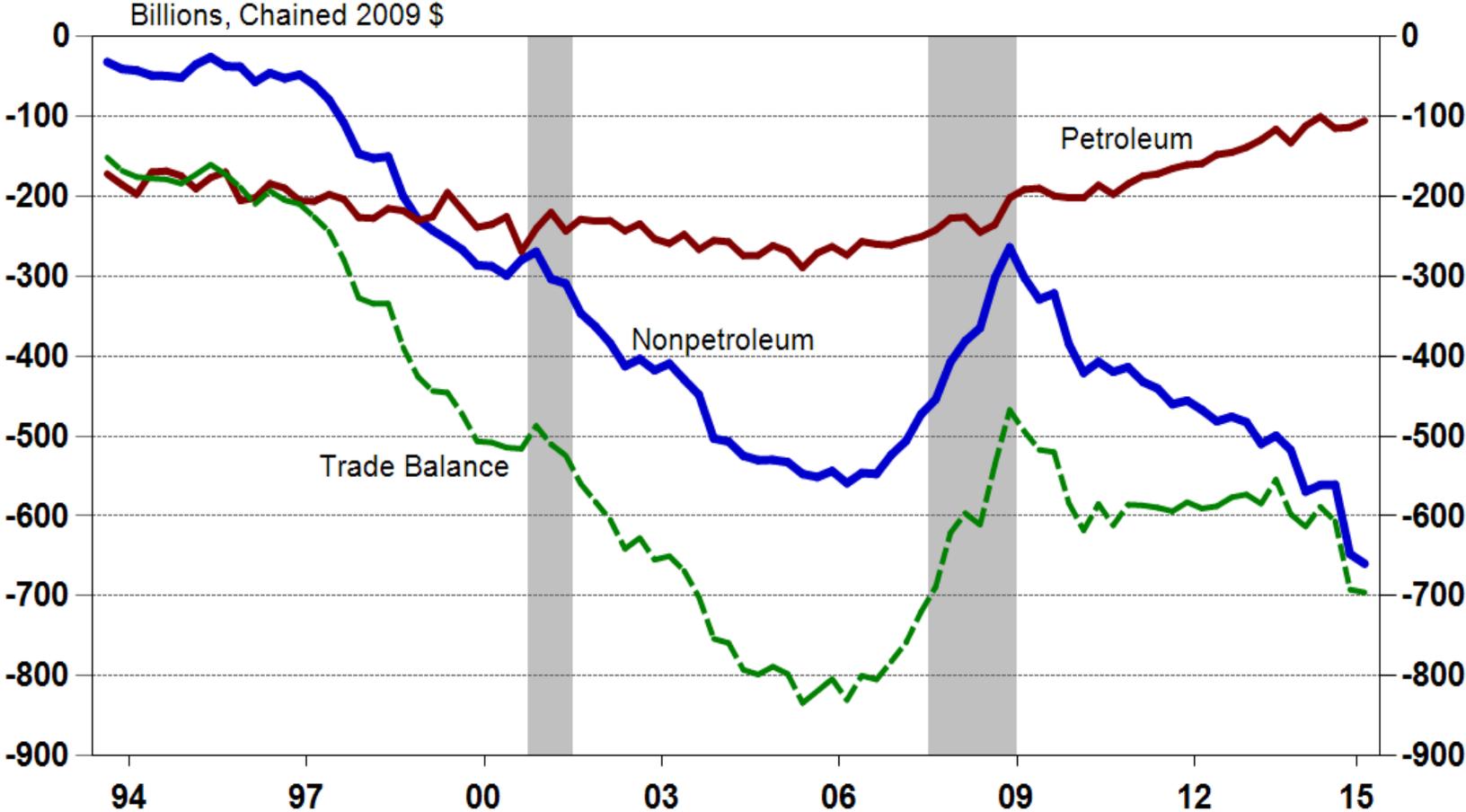
## U.S. Crude and Natural Gas Production



Source: US EIA; Data are 12-month moving average; Last Data plotted for May 2015

# Petro Production Rise Aids Current Account

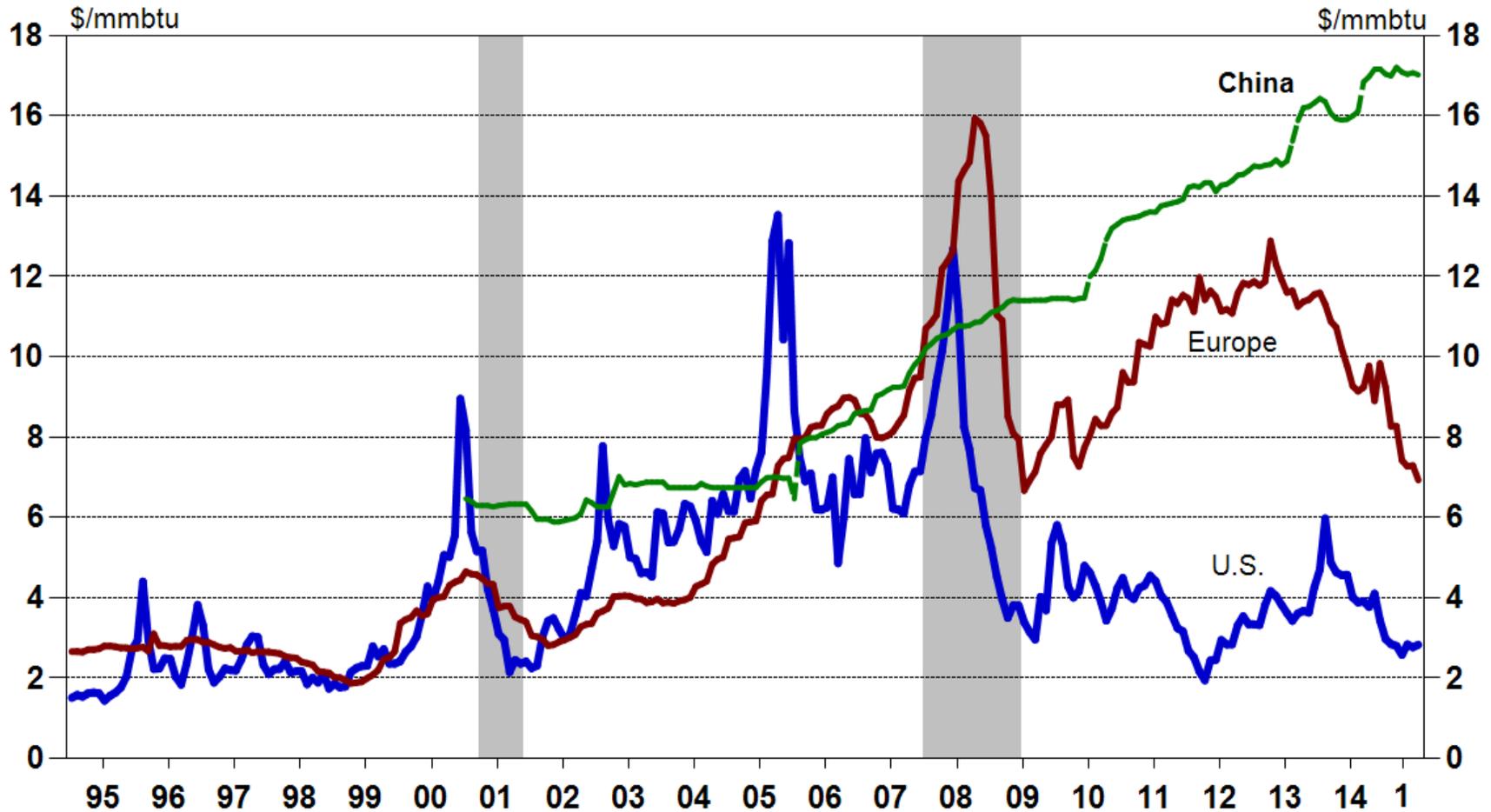
## U.S. Goods Balance



Source: Census Bureau; SA, annual rate

# ...and Low Natural Gas Price Advantages U.S.

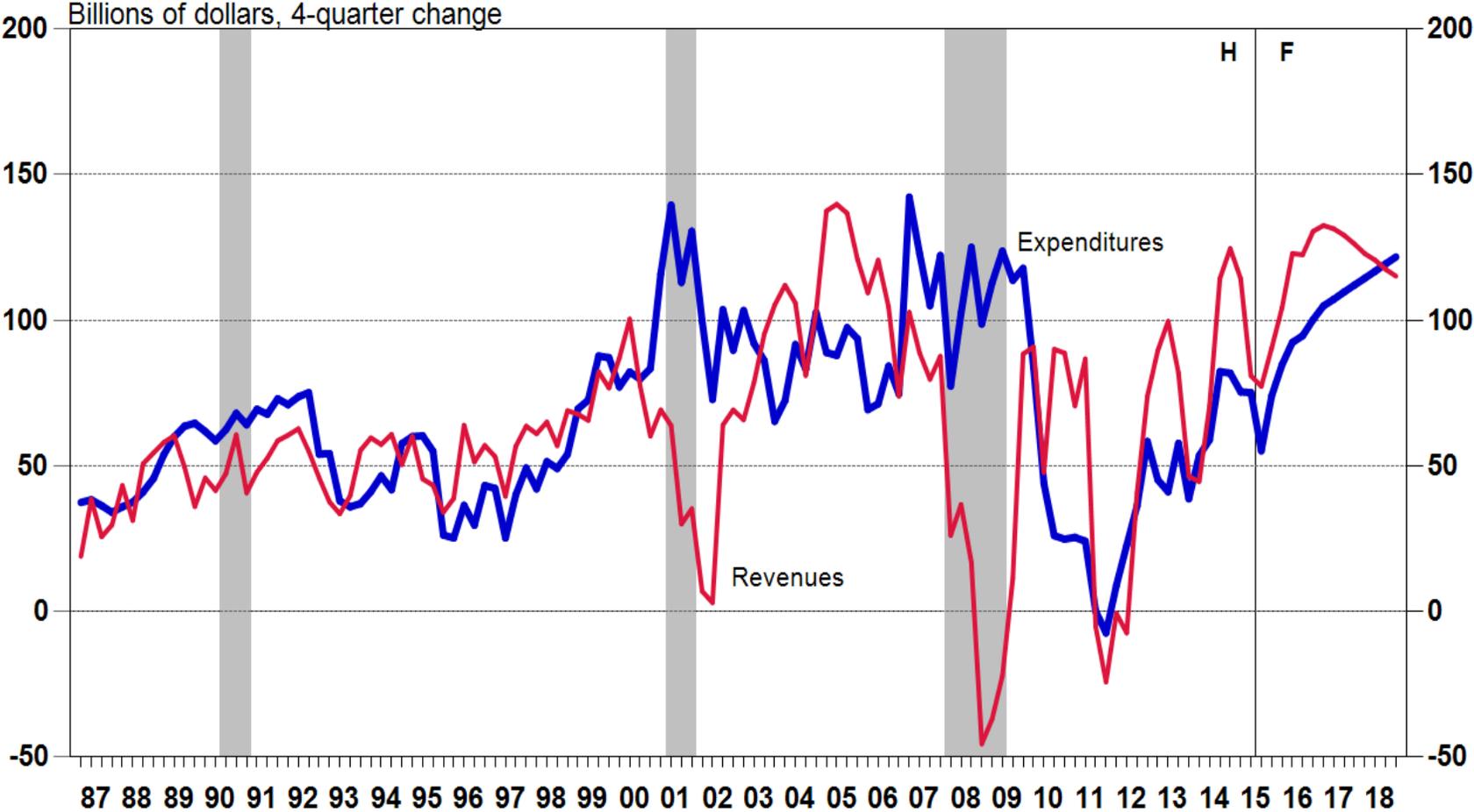
## Shale Gas Revolution Lowers U.S. Price of Natural Gas



Source: US EIA; Latest data plotted for July 2015

# Cyclical Rise in Revenues = Spending Growth

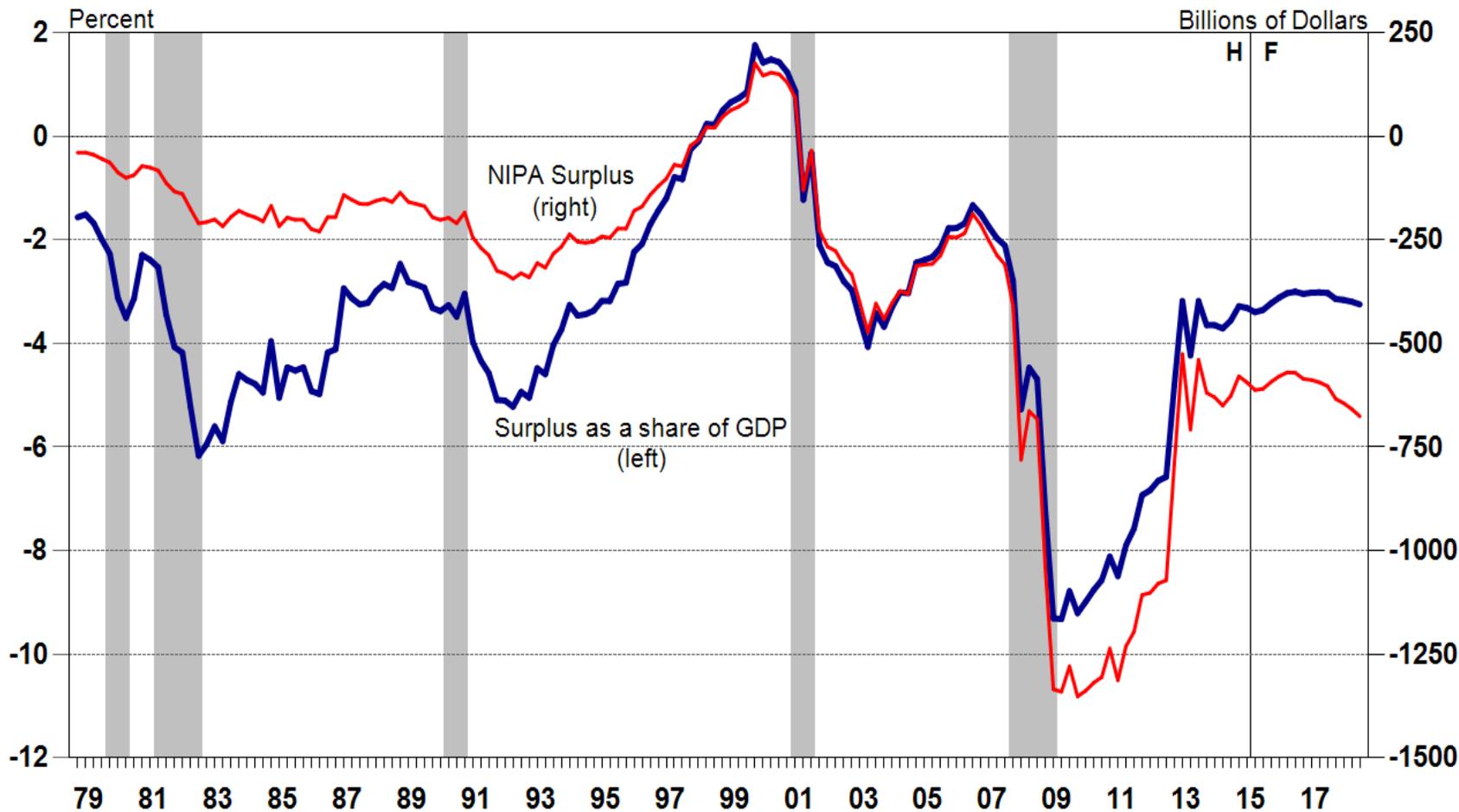
## State and Local Current Revenues and Expenditures



Source: Macroeconomic Advisers, LLC; Forecast completed on October 8, 2015

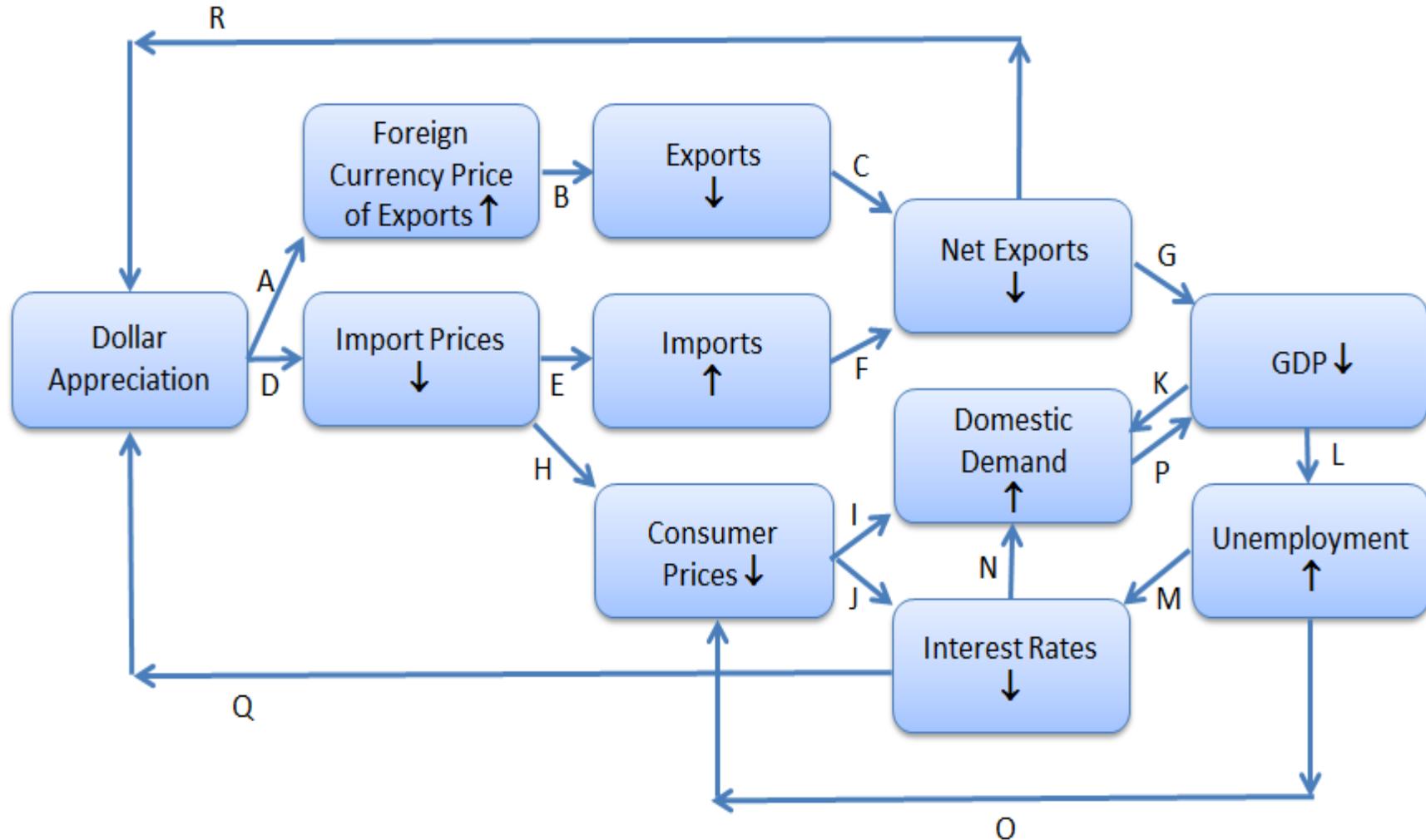
# Cyclical Rise in Revenues + Spending Restraint

Federal Deficit Improves Slightly Over the Near-term Before Heading South



Source: Macroeconomic Advisers, LLC. Forecast completed on October 8, 2015

# Tracing the Effects of Dollar Appreciation

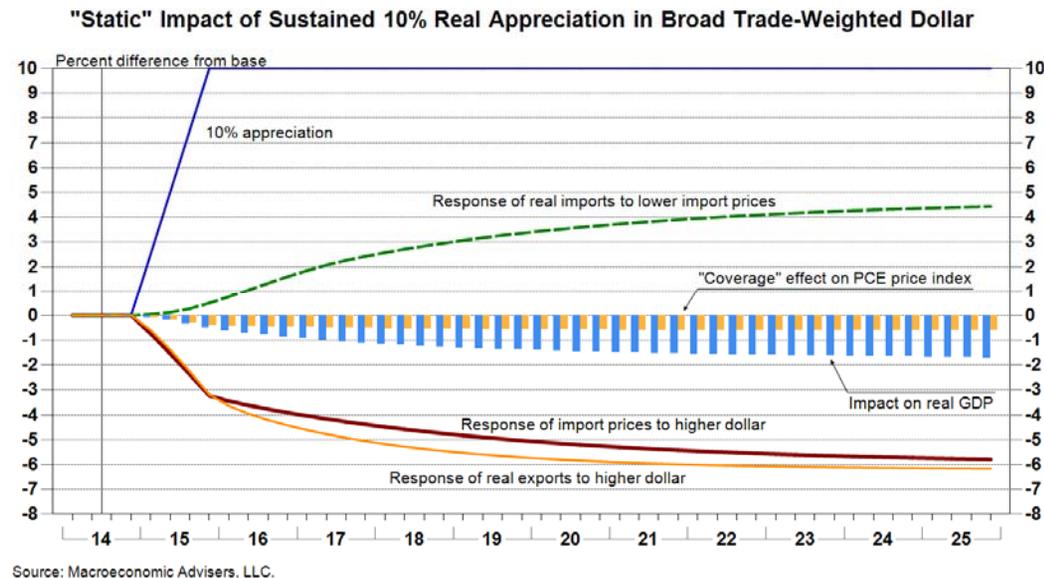


See our *Alternative Scenarios report*, "Impact of a Rising Dollar," October 25, 2014 for details.

# Tracing the Effects of Dollar Appreciation

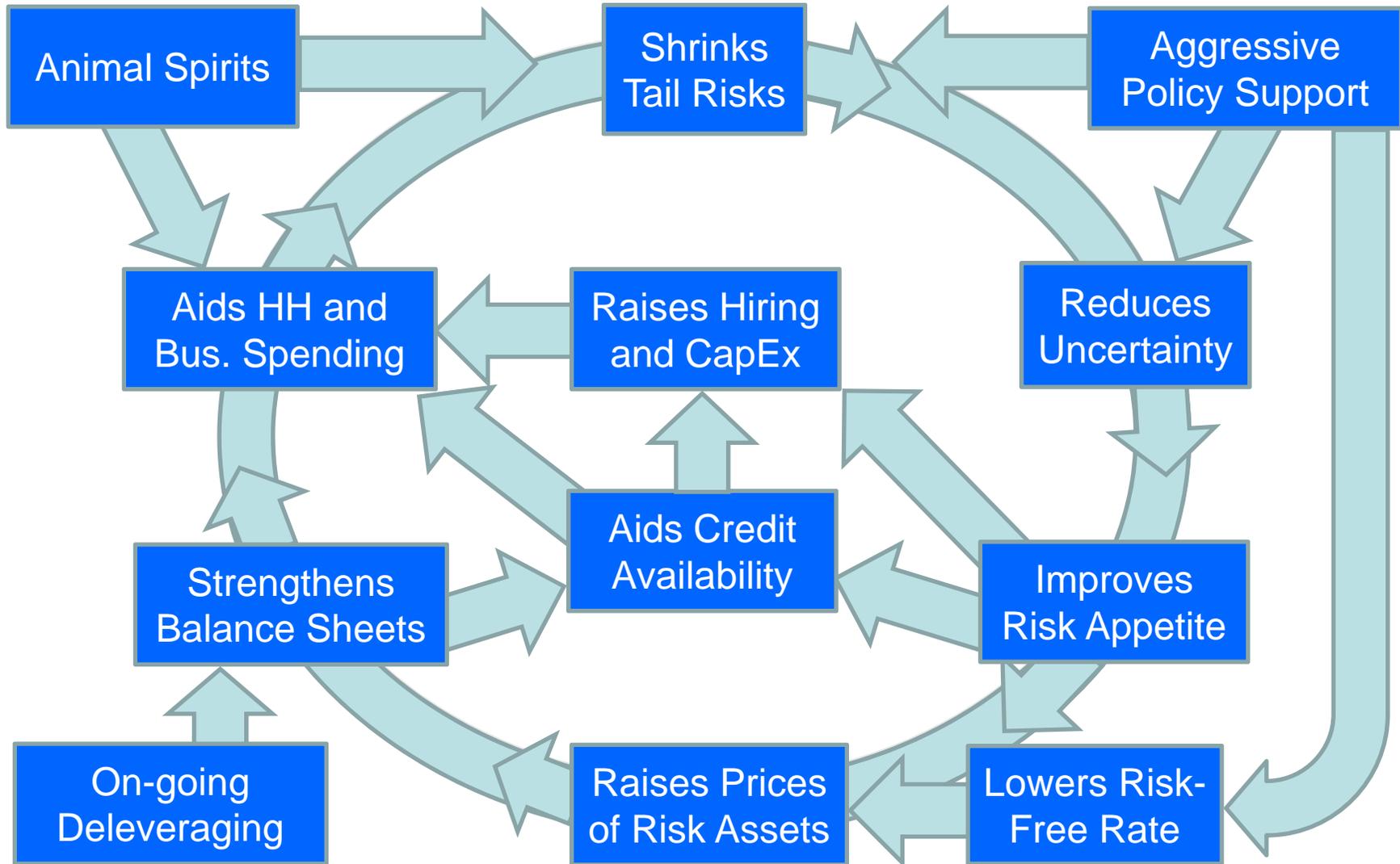
Key Elasticities in the Trade Sector of MA/US 2014							
	\$ Elasticities		Price Elasticities				
	Import Prices		Real Imports		Real Exports		
	Short-run	Long-run	Short-run	Long-run		Short-run	Long-run
Non-Petro Goods	-0.33	-0.76	0.00	-1.00	Agr. Goods	0.00	-0.50
Petroleum	na	na	na	na	Non-Agr. Goods	-0.39	-0.73
Services	-0.37	-0.54	-0.70	-1.00	Services	-0.18	-0.45
Composite*	-0.30	-0.64	-0.12	-0.88	Composite	-0.30	-0.63

\* Calculation of the composite includes zero response in petro import prices and volumes.



See our *Alternative Scenarios report*, "Impact of a Rising Dollar", October 25, 2014 for details.

# Breaking Through to Escape Velocity



# Waxing/Waning Uncertainty & Growth

Emerging Tail Risks Shift the Distribution Leftward

