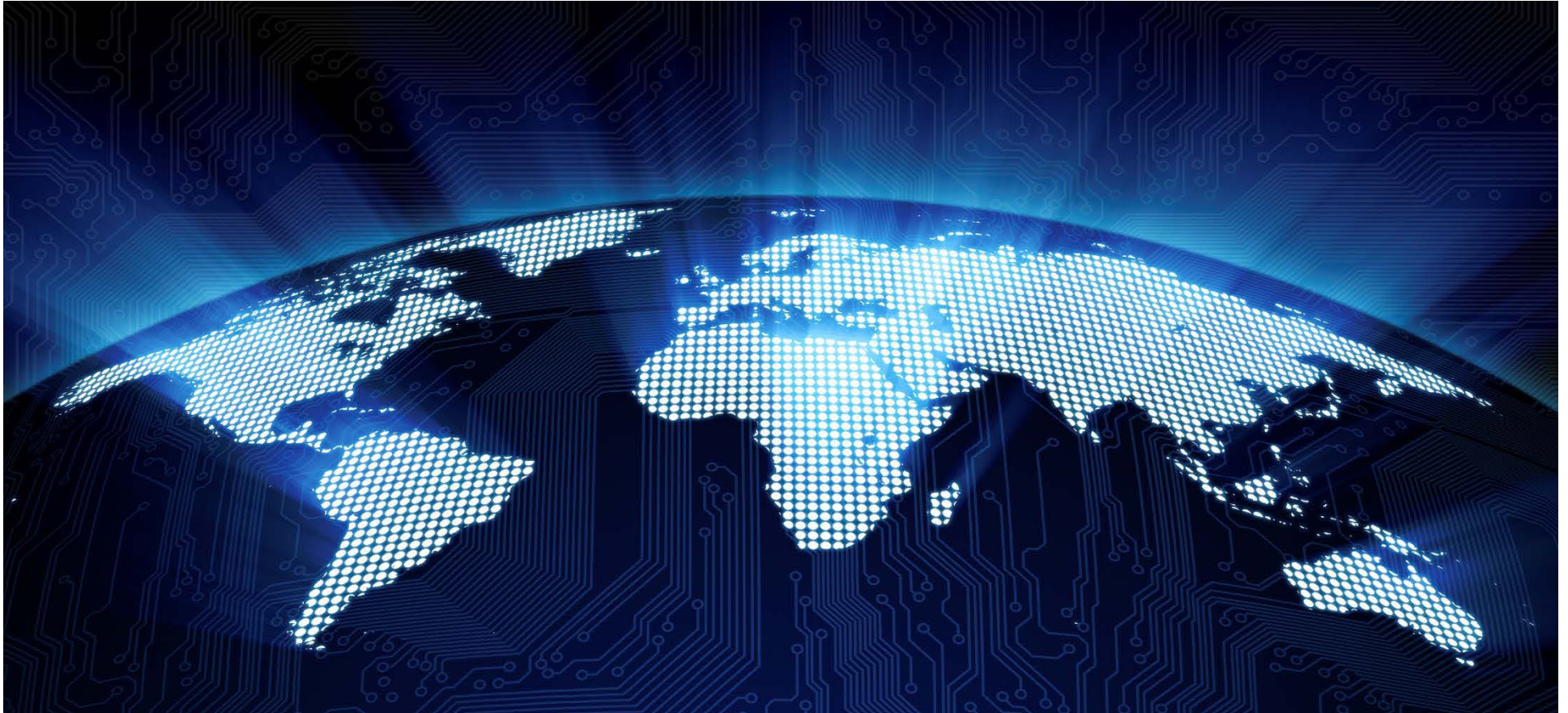


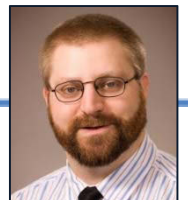
ABMA Webinar



Market Forecast Webinar

 ITR ECONOMICS

Jim Chappelow, Economist
jchappelow@itreconomics.com



Terms and Methods

Data Trends:

Month Moving Totals/Averages are used to smooth out the volatility inherent to monthly data at the product/company level.

Monthly Moving Total (MMT) vs Monthly Moving Average (MMA):

Averages are used when the data can not be compounded such as an Index, percent, price level, or interest rates. Totals are used for things where it makes sense to add the data together. For example, units sold, or total dollars spent.

3MMT/A and 12MMT/A: A three-month or twelve-moving total/average is the total/average of the monthly data for the most recent three and twelve months, respectively. The 3MMT/A illustrate the seasonal changes inherent to the data series. The 12MMT/A removes seasonal variation in order to derive the underlying cyclical trend. It is also referred to as the annual total or average.

Rates-of-Change:

A rate-of-change figure is the ratio comparing a data series during a specified time period to the same time period one year ago. **Rates-of-change** are expressed in terms of the **annual percent change in an MMT or MMA**.

Rates-of-change reveal whether activity levels are getting progressively better or worse compared to last year. Consecutive rate-of-change illustrates and measures cyclical change and trends.

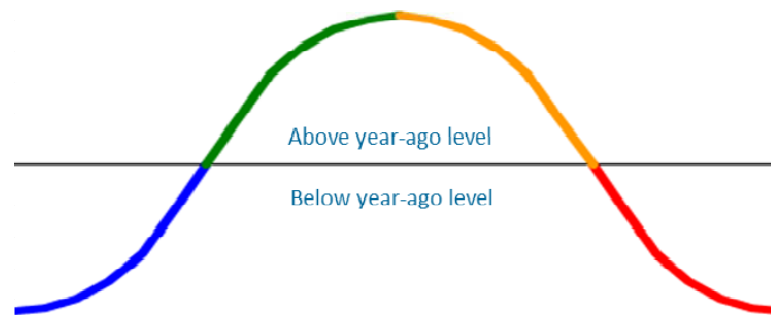
ITR Economics' three commonly used rates-of-change are the **1/12**, **3/12**, and **12/12**, which represent the year-over-year percent change of a single month, 3MMT, and 12MMT (respectively).

A rate-of-change above 0 indicates a rise in the data relative to one year prior, while a rate-of-change below 0 indicates decline.

Growth (B): 12/12 is rising above 0, data trend is accelerating in its ascent, and growth is occurring above year-ago levels. This is the second positive phase of the business cycle.

Recovery (A): 12/12 is rising below 0 and the data trend is either heading toward a low or is in the early stages of recovery. This is the first positive phase of the business cycle.

Business Cycle



The data trends and rates-of-change identify positions in the business cycle, those positions are:

Slower Growth (C): 12/12 is declining but remains above 0, data trend is decelerating in its ascent or has stopped its rise, but it is still above last year. This is the first negative phase of the business cycle.

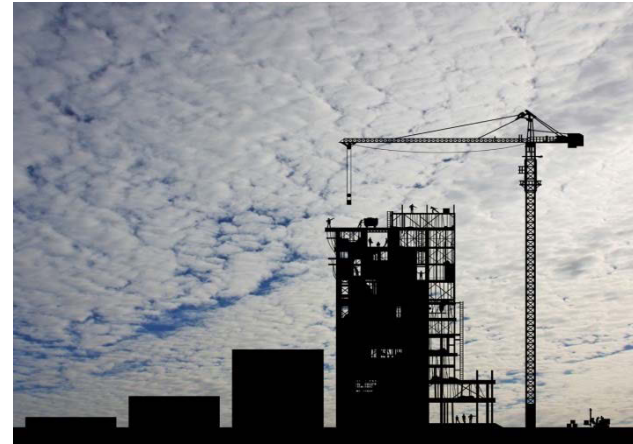
Recession (D): 12/12 is below 0, data trend is at levels below the year-earlier level. This is the final phase and second negative phase of the business cycle.

Connecting the Dots

Internal Trends



Leading Economic Indicators



ITR Long Term Business Cycle Theory



News and Market Observations



Internal Trends



Data Preparation

	<u>Raw</u>	<u>3MMT</u>	<u>3/12</u>	<u>12MMT</u>	<u>12/12</u>
Aug-13	1.4				
Sep-13	1.5				
Oct-13	1.5	4.4			
Nov-13	1.4	4.4			
Dec-13	1.5	4.4			
Jan-14	1.3	4.2			
Feb-14	1.3	4.1			
Mar-14	1.6	4.2			
Apr-14	1.6	4.5			
May-14	1.5	4.7			
Jun-14	1.7	4.8			
Jul-14	1.6	4.8		18.0	
Aug-14	1.7	5.0		18.2	
Sep-14	1.7	5.0		18.4	
Oct-14	1.7	5.1	15.9%	18.6	
Nov-14	1.6	5.0	13.6%	18.8	
Dec-14	1.7	5.0	13.6%	19.0	26.7%
Jan-15	1.5	4.8	14.3%	19.2	25.5%
Feb-15	1.5	4.7	14.6%	19.4	25.2%
Mar-15	1.9	4.9	16.7%	19.7	22.4%
Apr-15	1.7	5.1	13.3%	19.8	20.0%
May-15	1.7	5.3	12.8%	20.0	18.3%
Jun-15	1.9	5.3	10.4%	20.2	15.4%
Jul-15	1.7	5.3	10.4%	20.3	12.7%

3/12 Rate-of-Change

$$= \frac{\text{July 2015 3MMT}}{\text{July 2014 3MMT}} \times 100 - 100$$

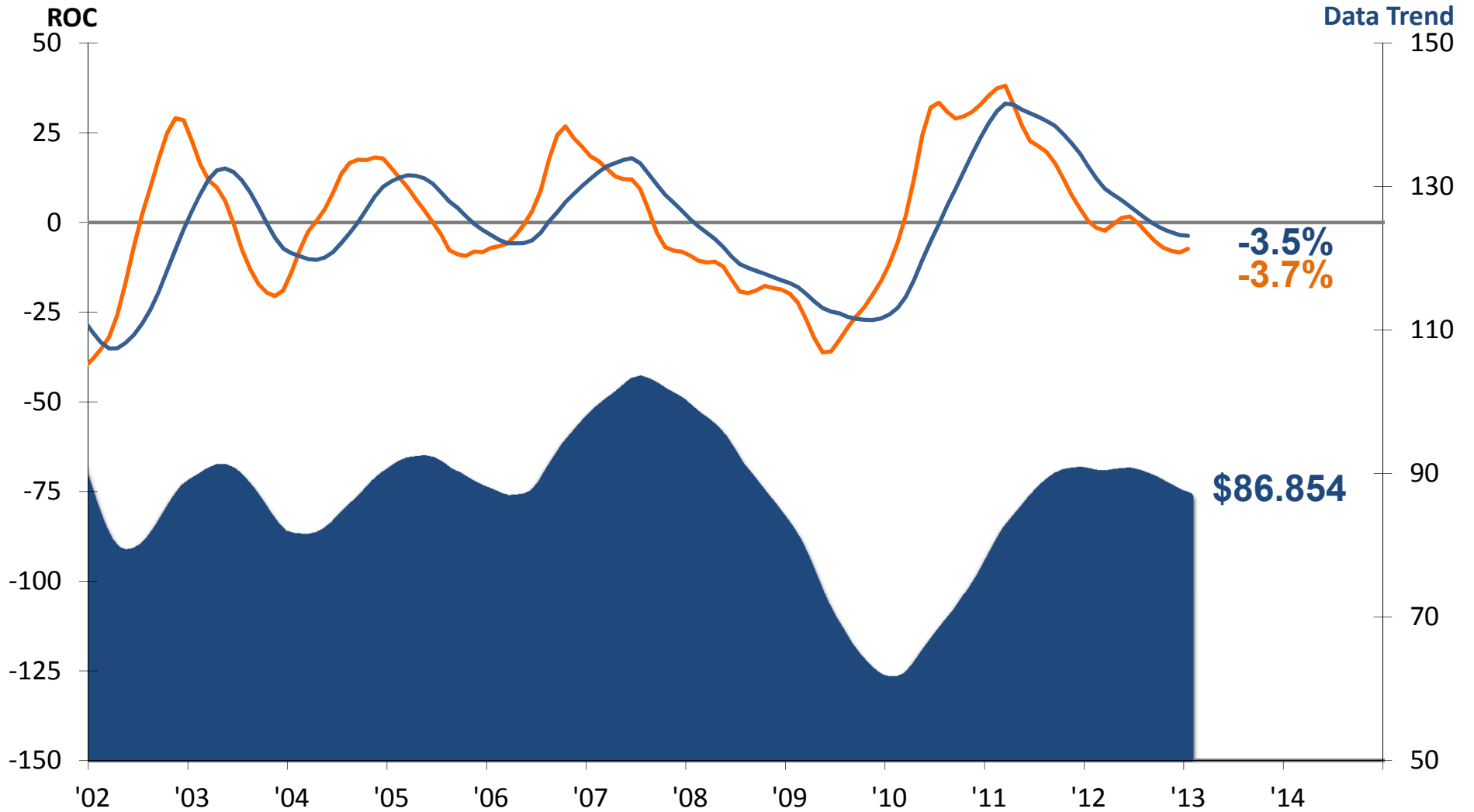
$$= \frac{5.3}{4.8} \times 100 - 100 = 10.4\%$$

12/12 Rate-of-Change

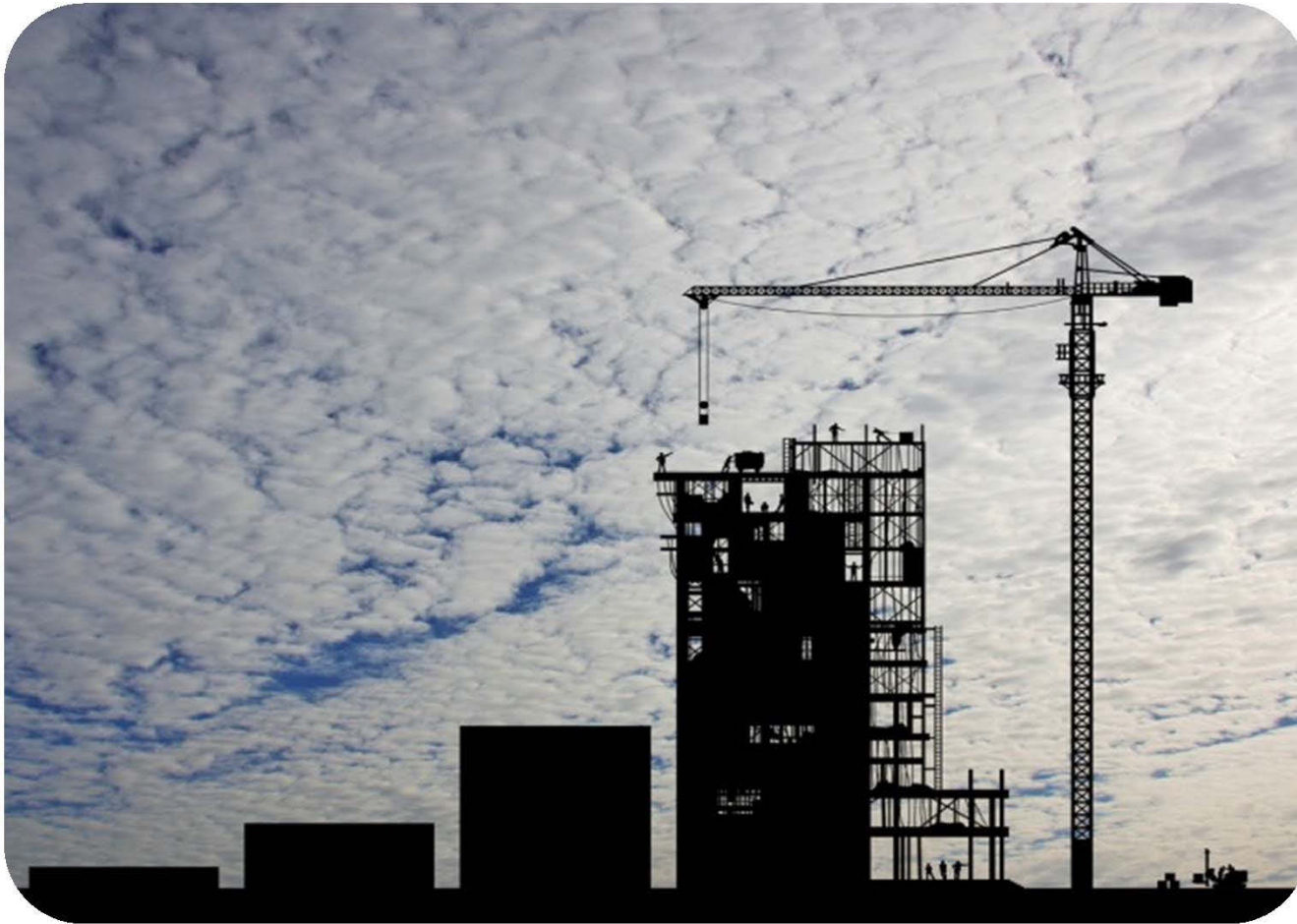
$$= \frac{\text{July 2015 12MMT}}{\text{July 2014 12MMT}} \times 100 - 100$$

$$= \frac{20.3}{18.0} \times 100 - 100 = 12.7\%$$

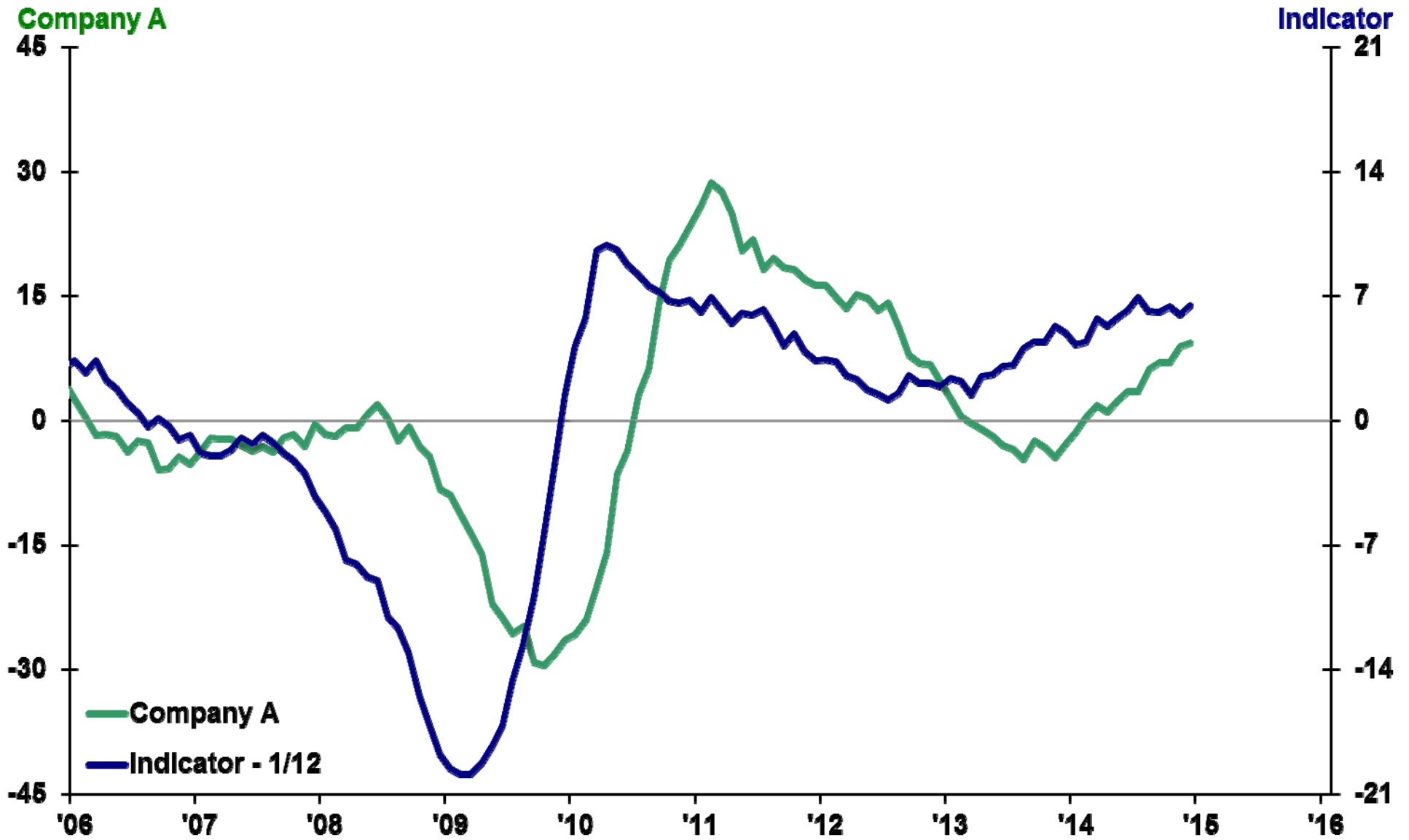
Internal Trends



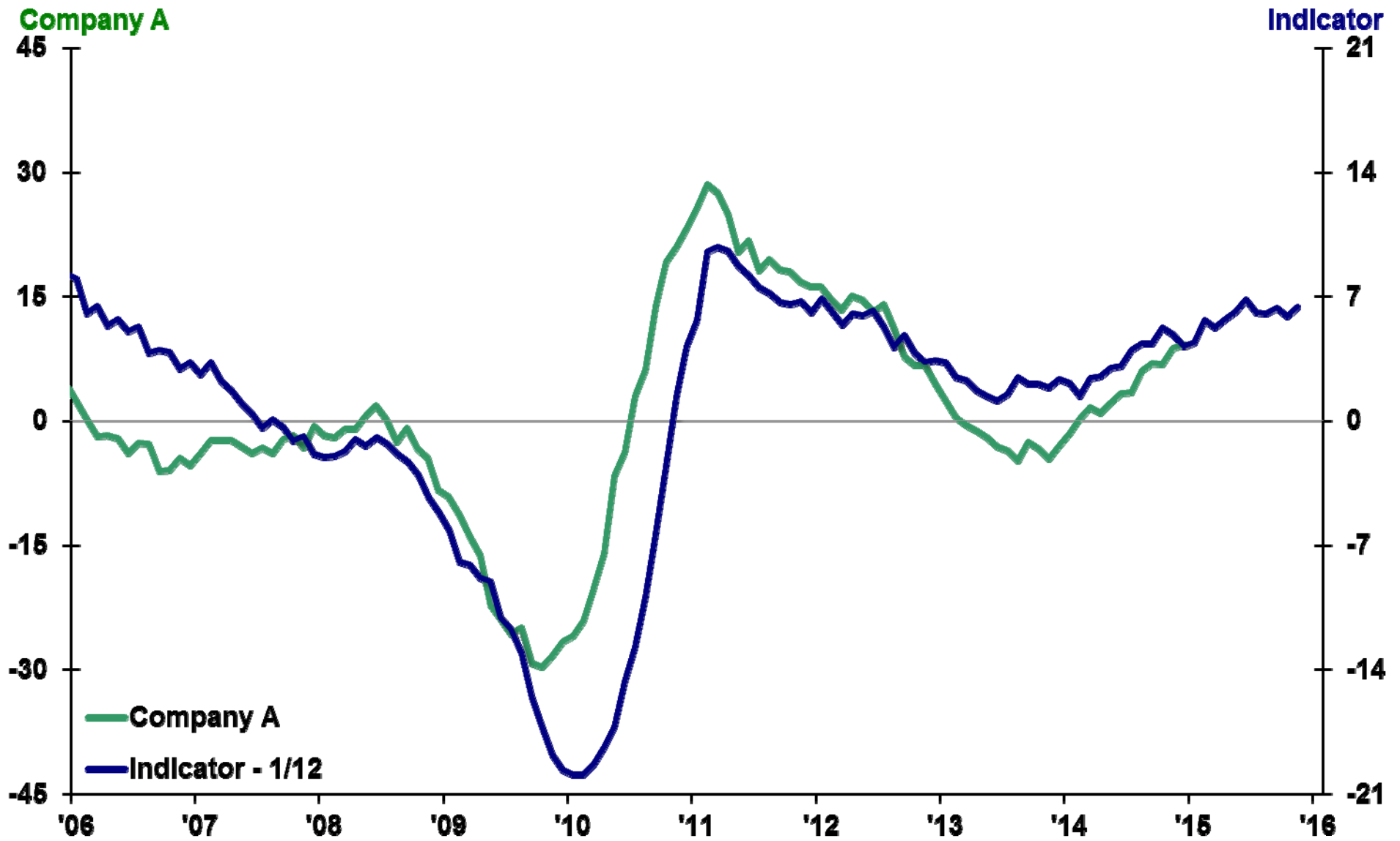
Leading Economic Indicators



Leading Economic Indicators



Leading Economic Indicators



Connecting the Dots

**ITR Long Term Business Cycle
Theory**



**News and Market
Observations**



US/Global Recovery – Good Days Ahead

Leading indicators pointing up

World is relatively calm

Employment rising (companies right-sized)

Banks are lending

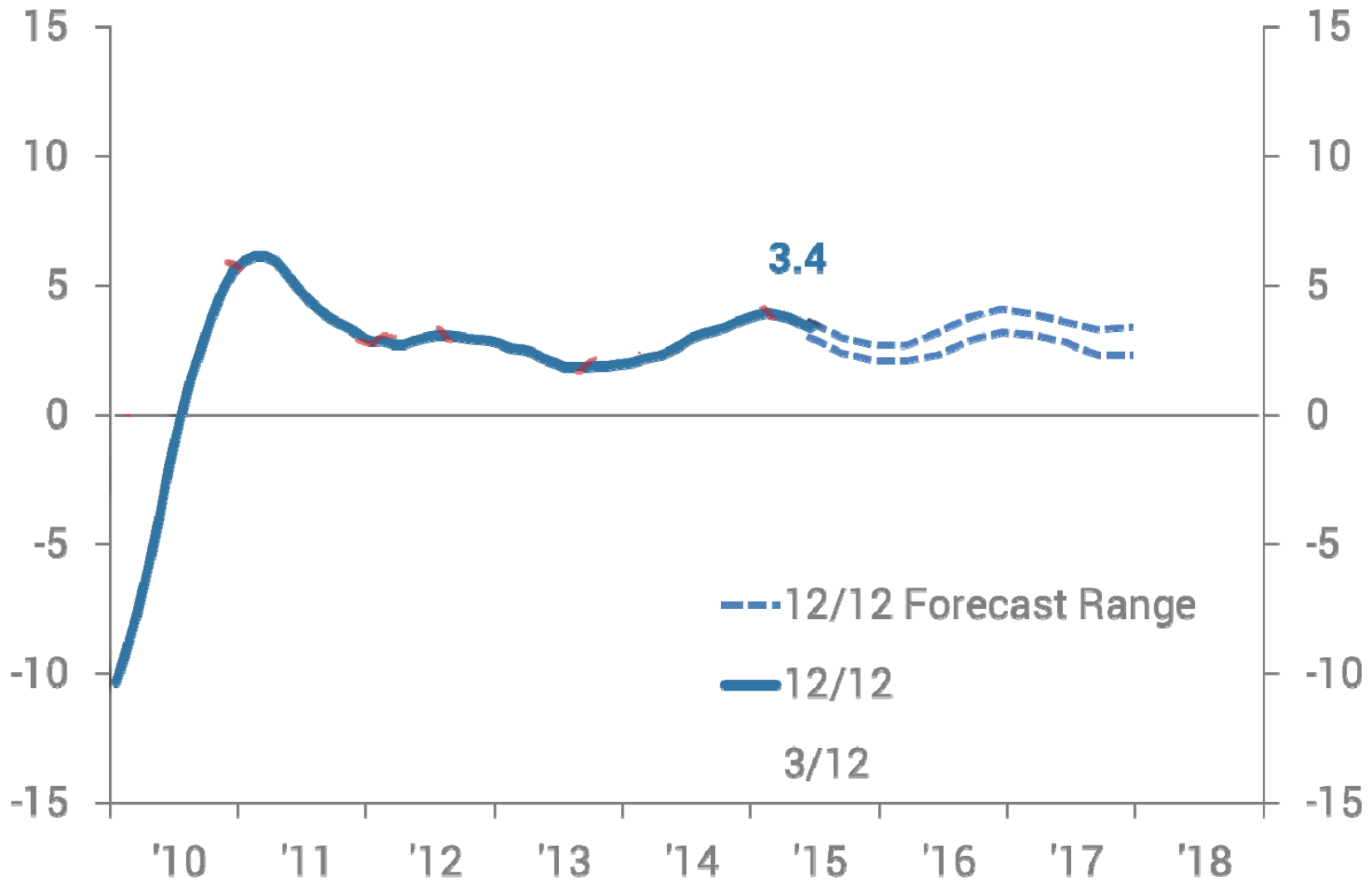
US consumer is strong

Retail Sales are rising

Deficit spending continues – no fear of austerity

US Industrial Production Index

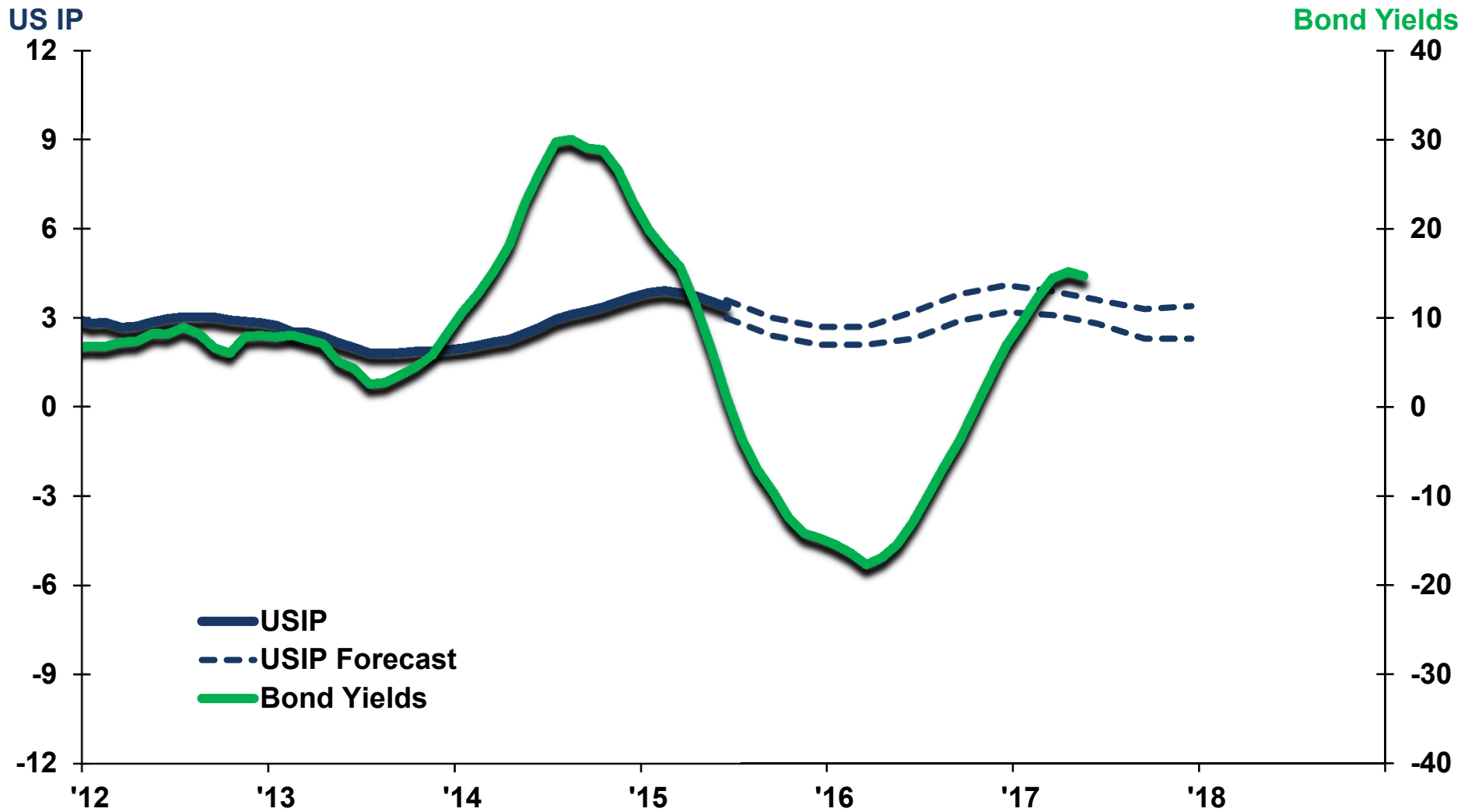
Rate-of-Change



Indicators for 2016

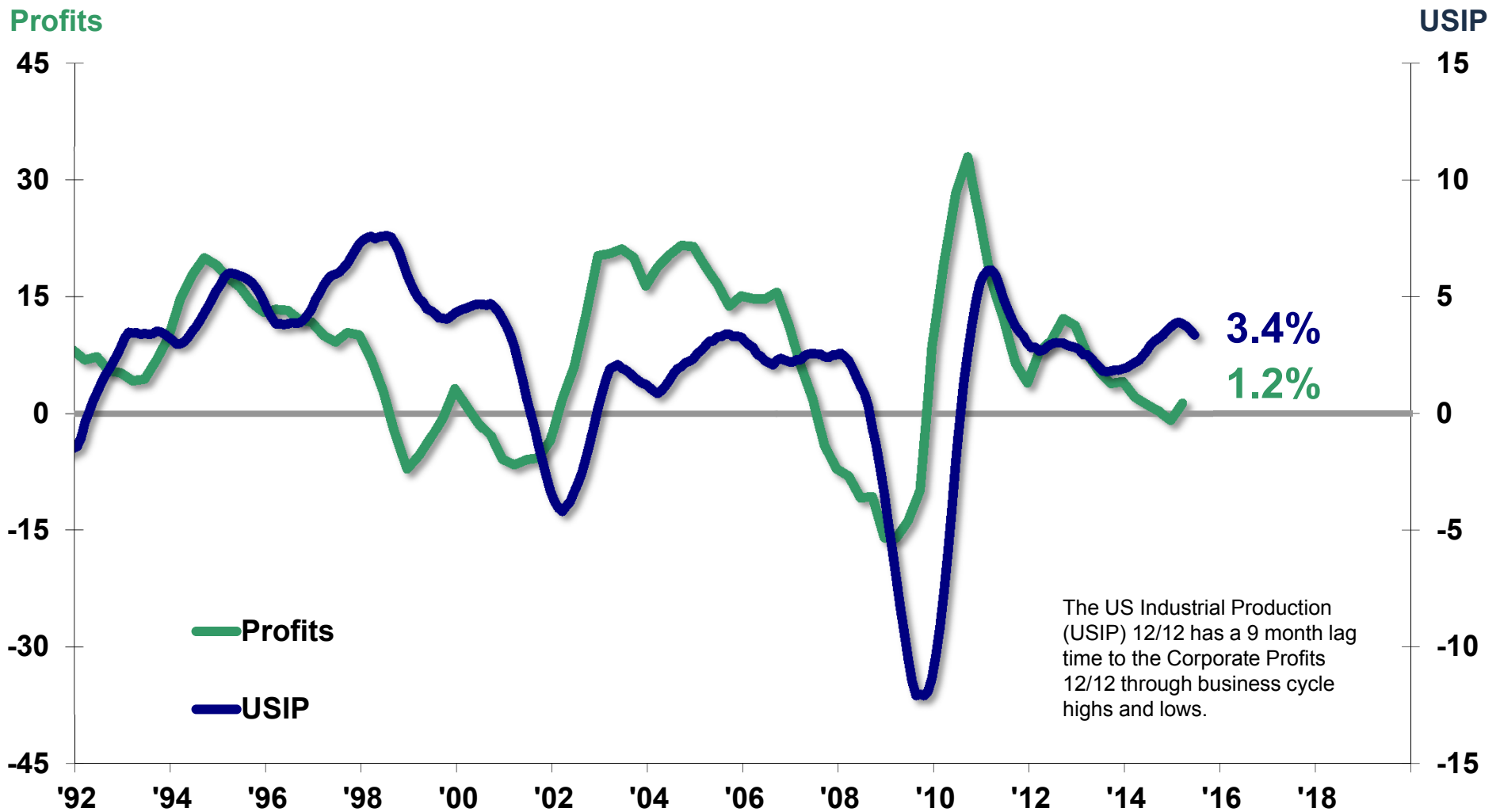
- ITR Leading Indicator gaining
- US Leading Indicator 1/12 rising
- Purchasing Manager Index improving
- Housing Starts on the rebound
- Existing Home Sales rising
- Corporate Bond Prices signal growth in 2016
- Upturn in Corporate Profits rate-of-change

US Industrial Production Index to Corporate AAA Bond Yields Inverted for Prices

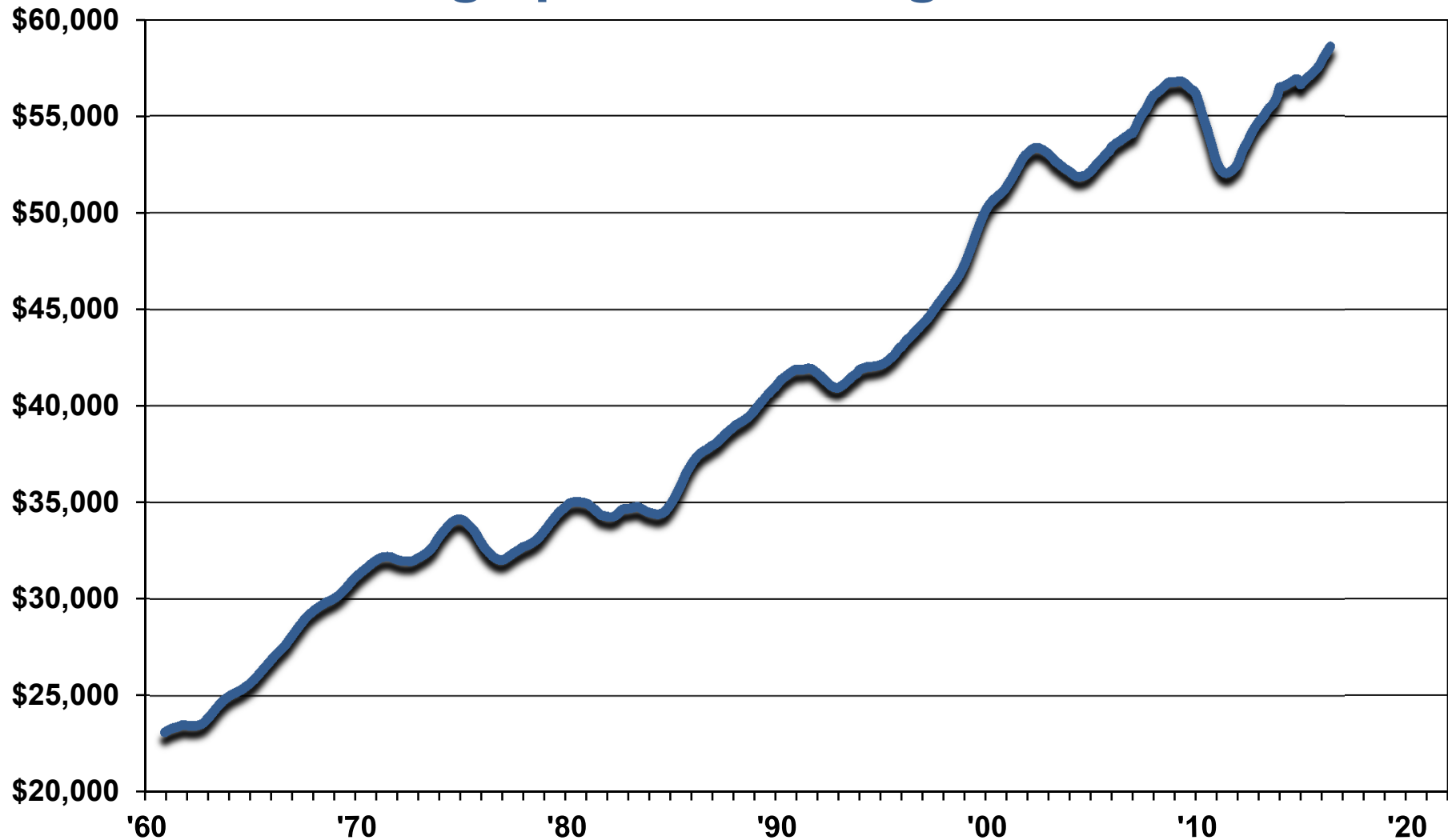


12/12 Rates-of-Change

Corporate Profits to US Industrial Production

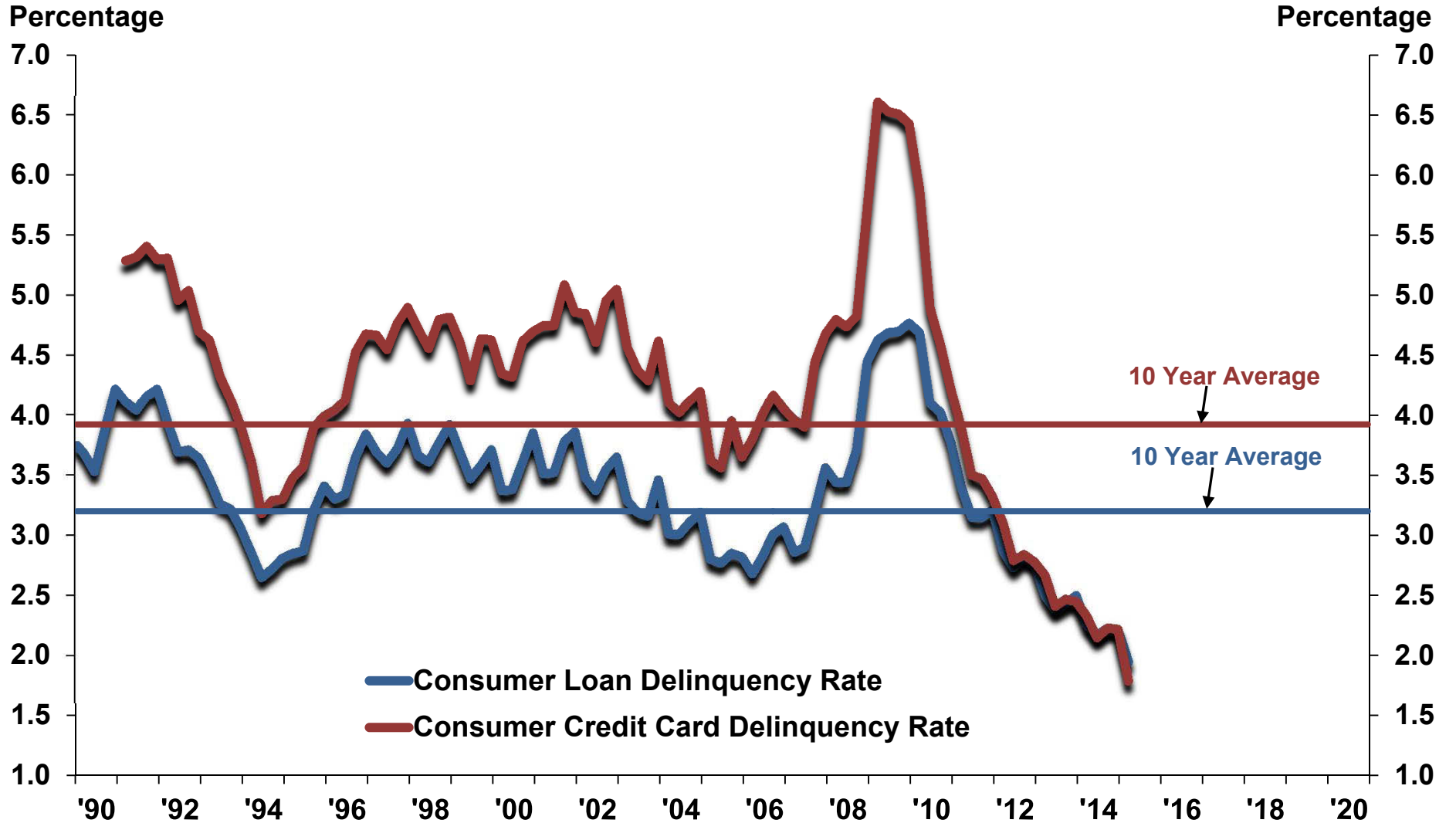


Real Personal Income Less Transfer Receipts Average per Person Age 18 to 65



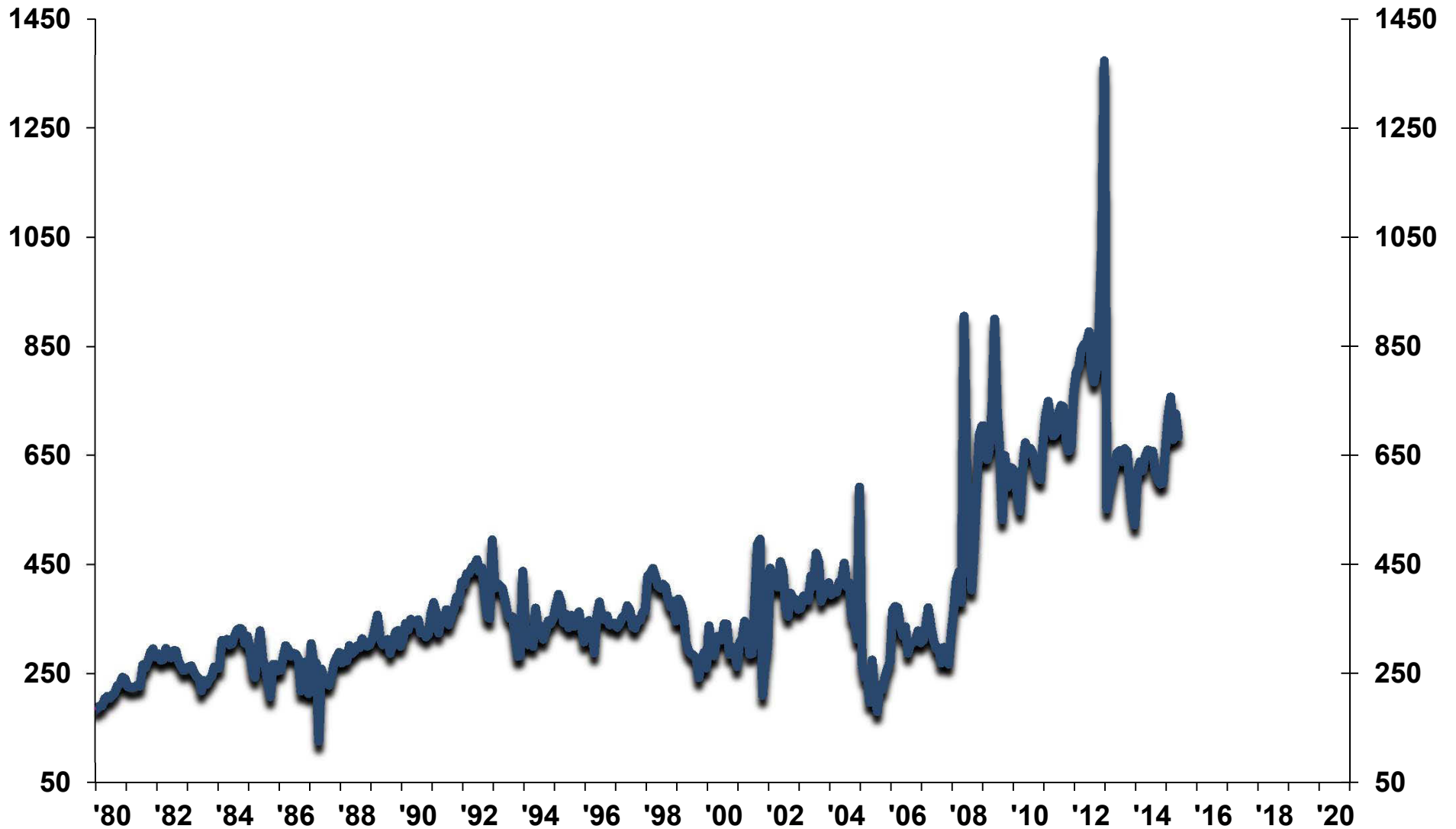
12MMA Data Trend

Delinquency Rates on Consumer Loans



3MMA Data Trends

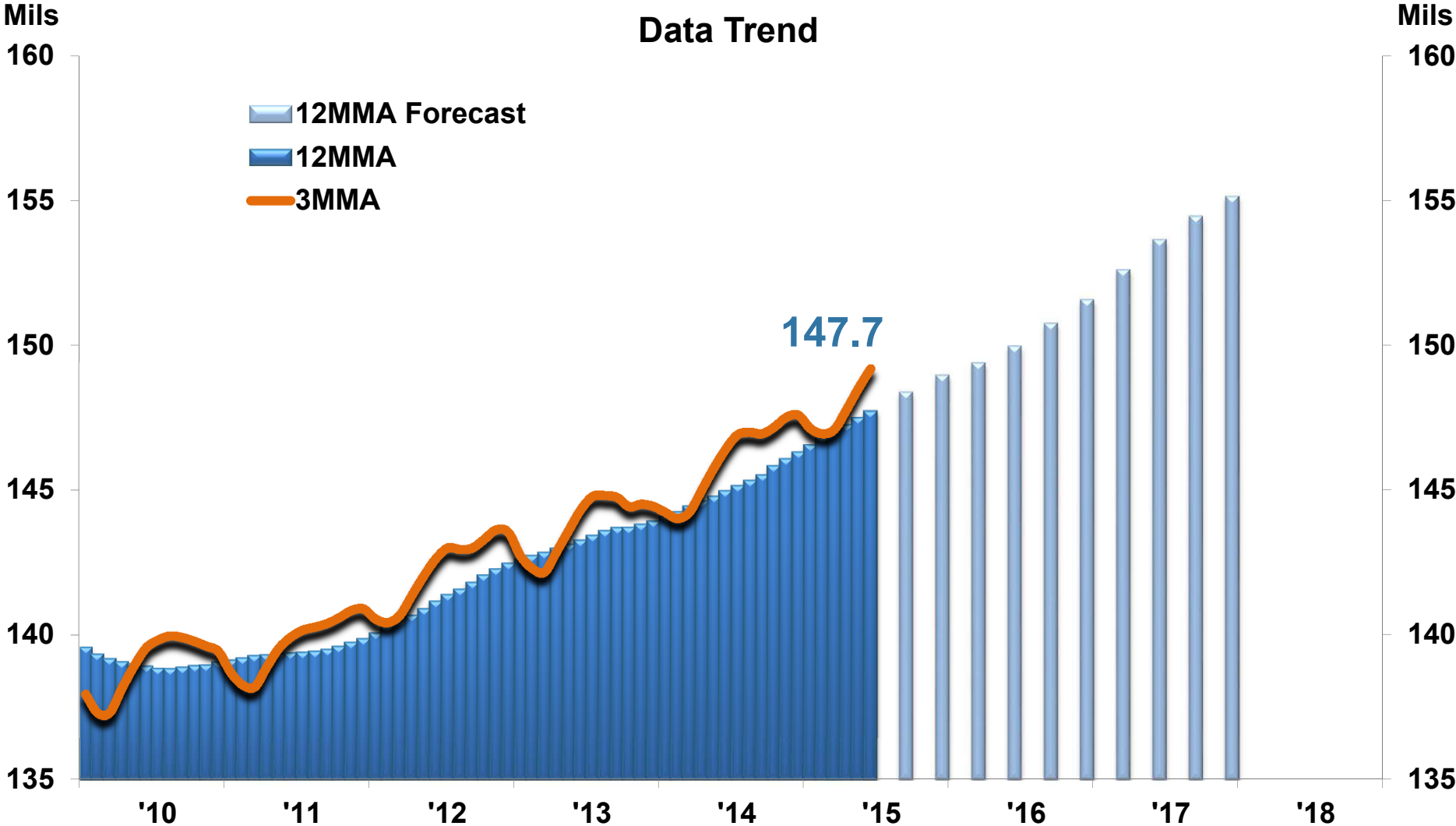
Personal Savings



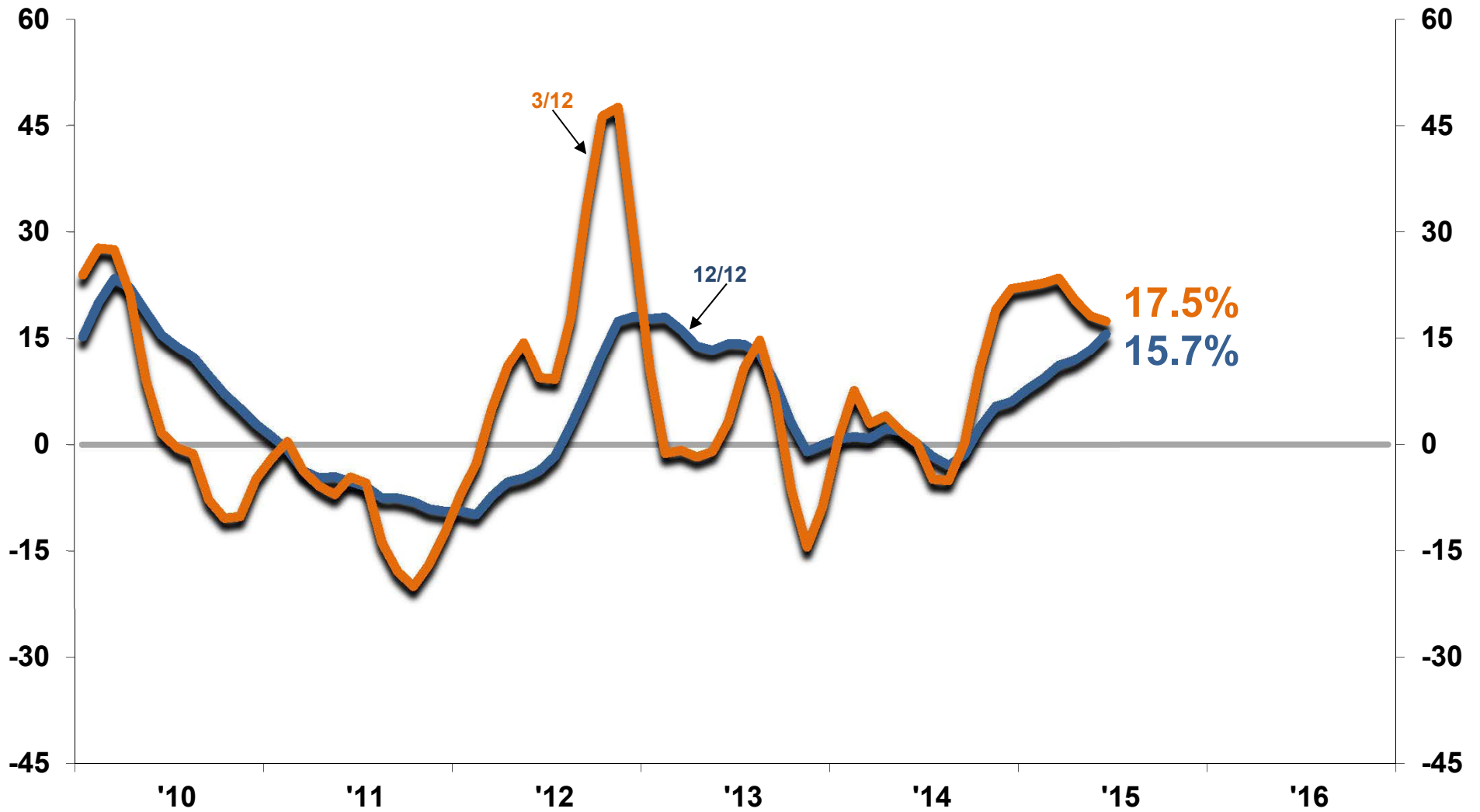
Billions of Dollars, Annual Data Trend SAAR

Employment

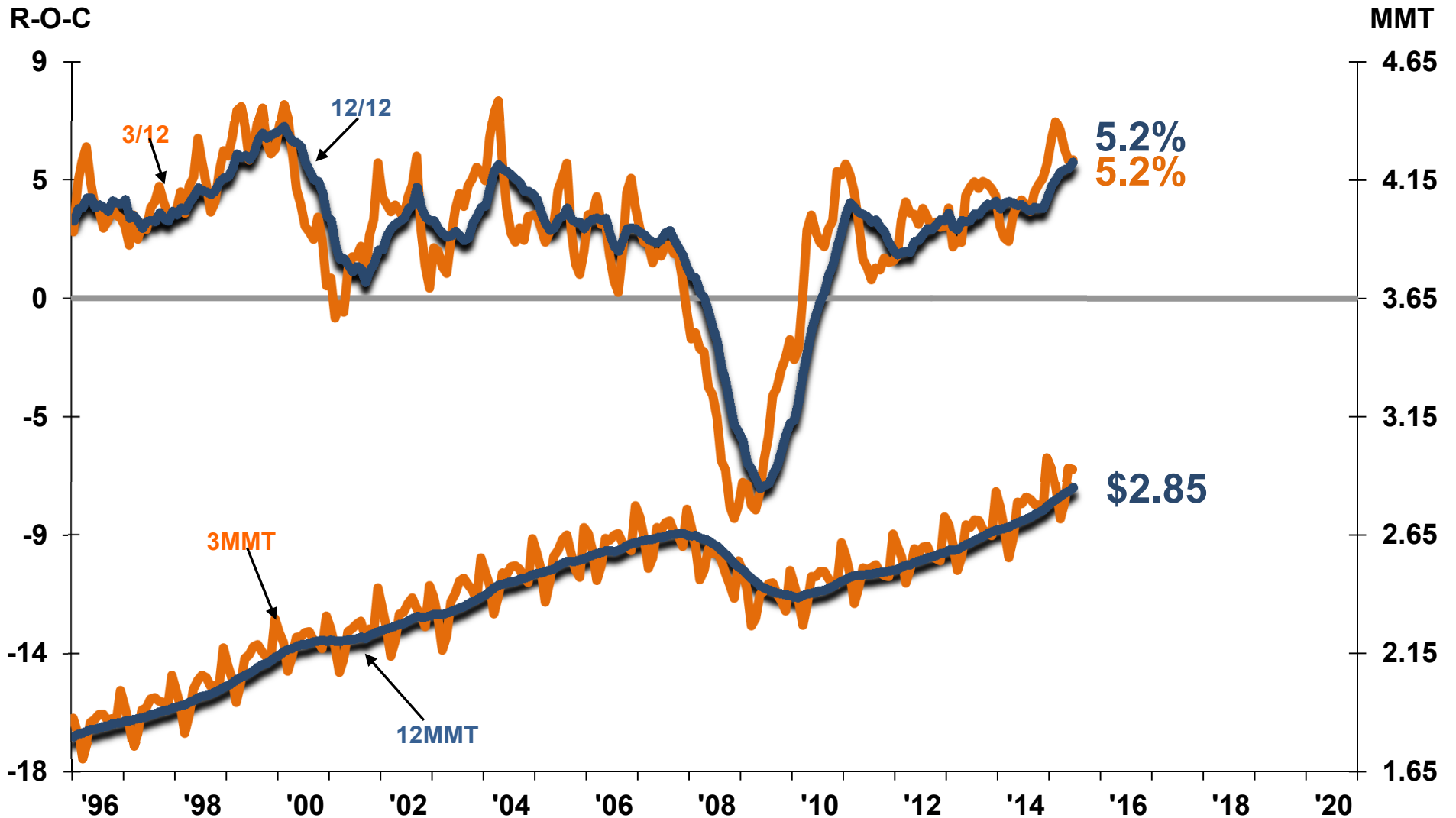
Data Trend



University of Michigan Consumer Expectations Index

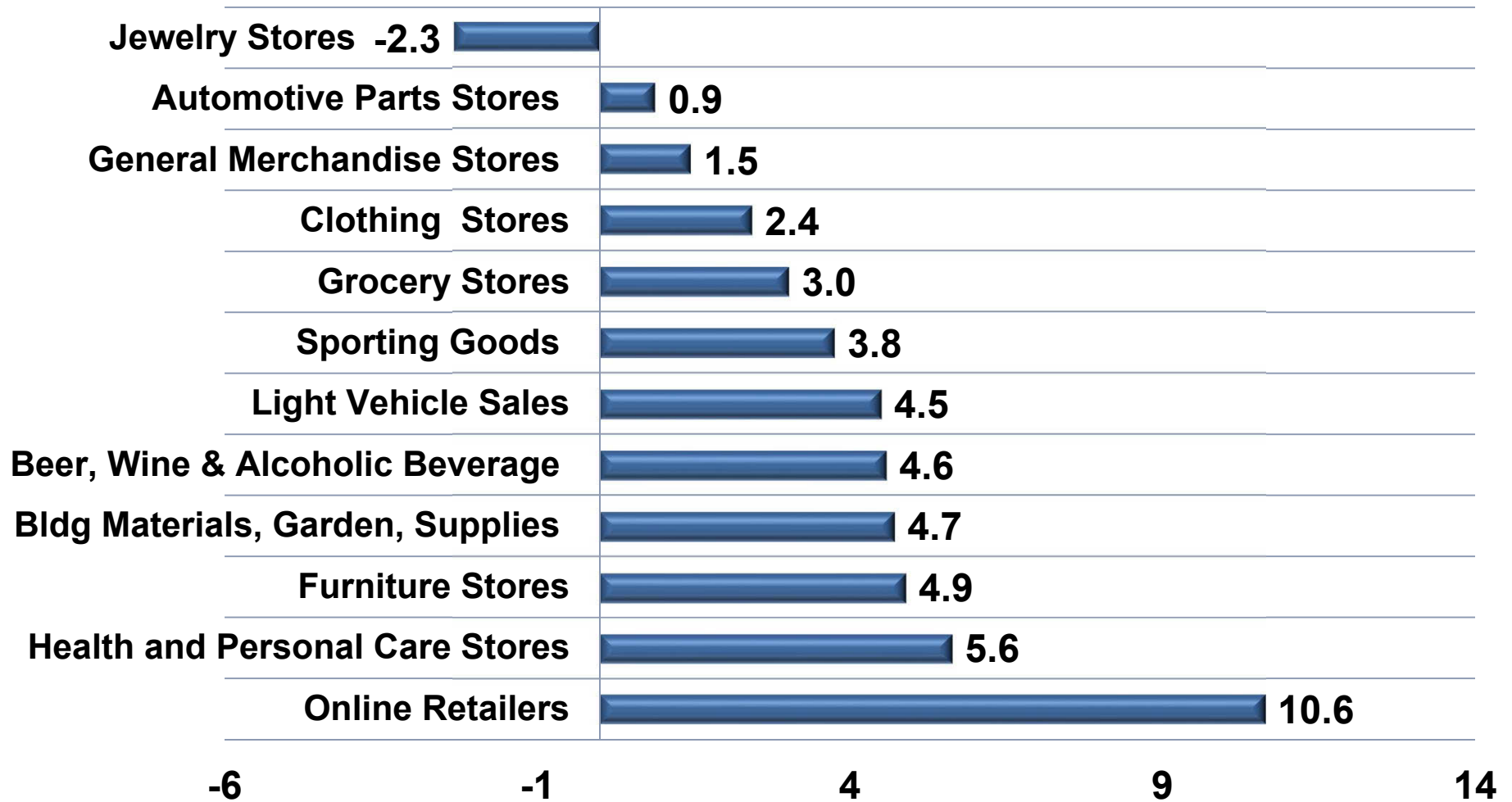


Total Retail Sales (deflated)



Trillions of Dollars

Retail Sales



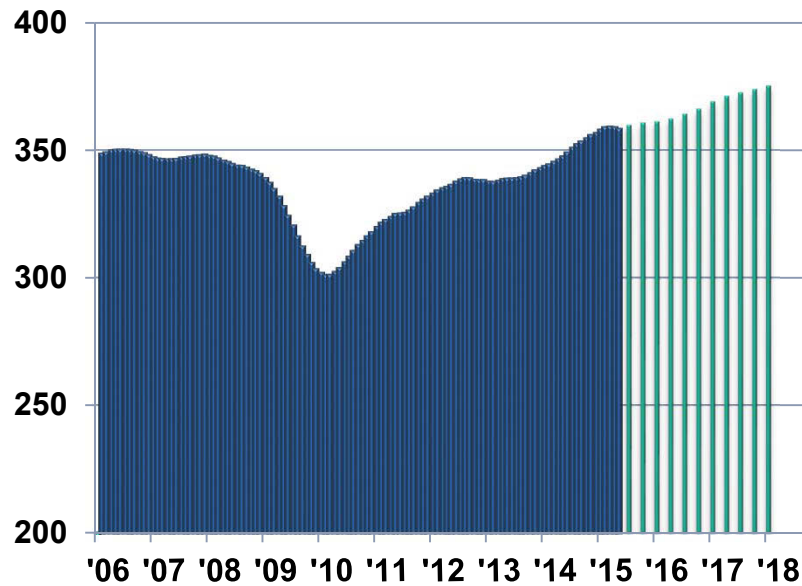
12/12 Rates-of-Change

Management Objectives for 2015: Preparing for the Rise Ahead

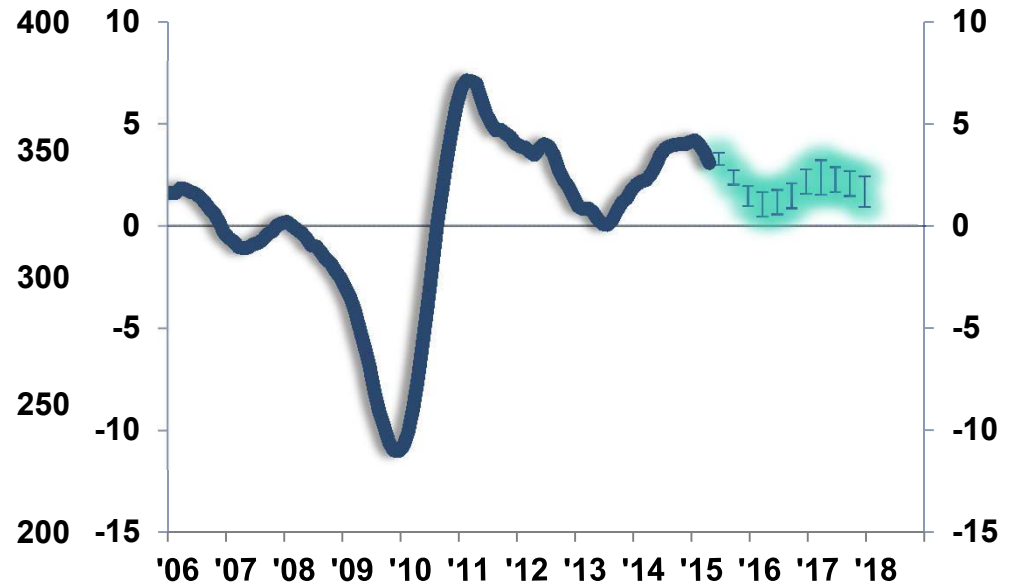
- Plan for a rough year if you are in heavy industrial goods, export oriented or exposed to oil
- Invest in customer market research; advertising and marketing will be increasingly effective
- Borrow and use cash to finance material input stocks, equipment, targets of opportunity
- Lock in costs late in 2015
- Hire sales people and leaders; invest in training and retention
- Plan ahead to avoid 2019 recession

Canada Industrial Production


Canada Industrial Production
12-Month Moving Total

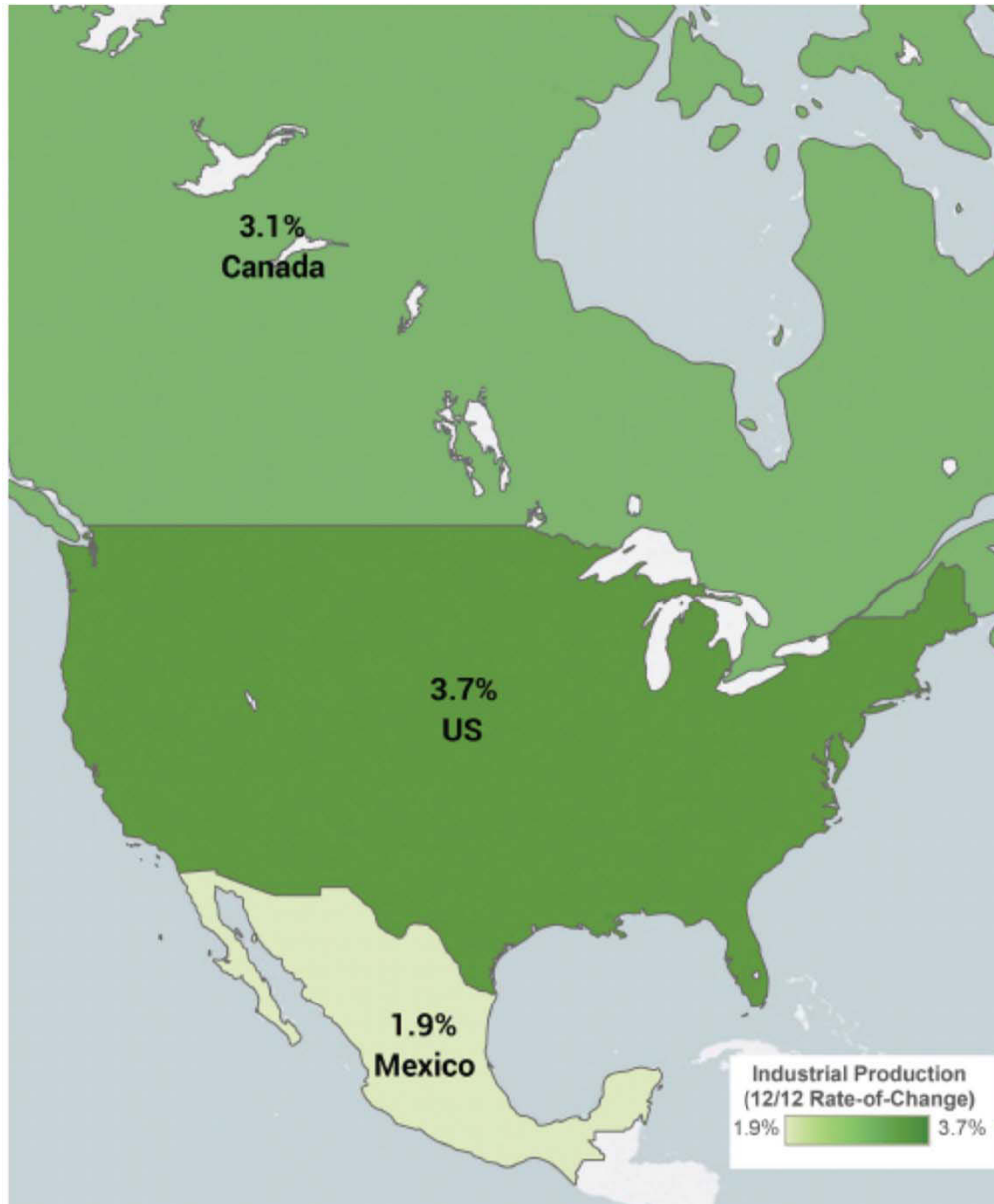


Year-over-Year Growth Rate
12/12 Rate-of-Change



- Annual Trend: C\$358.4
- Phase: C
- Year-over-Year: 3.1%

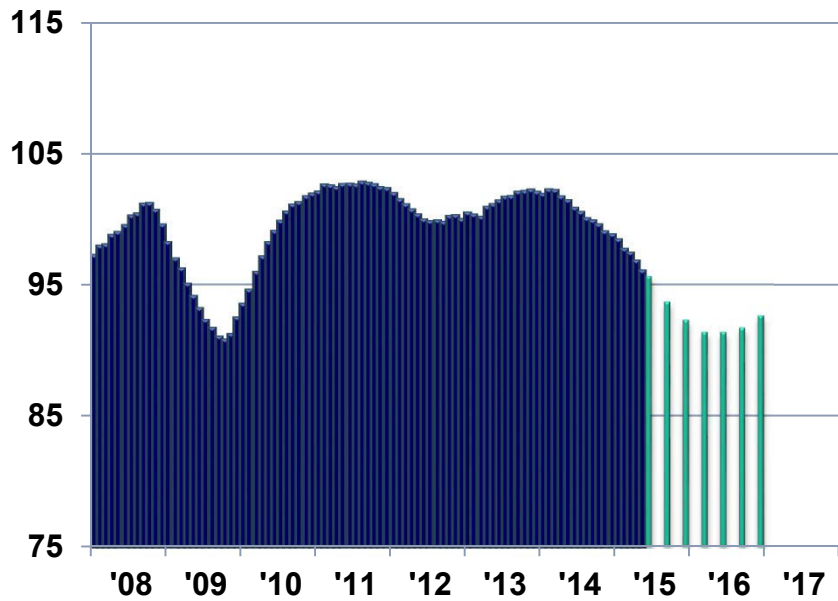
Industry  Outlook	2015: -0.4%
	2016: 2.7%
	2017: 2.5%



Brazil Industrial Production Index

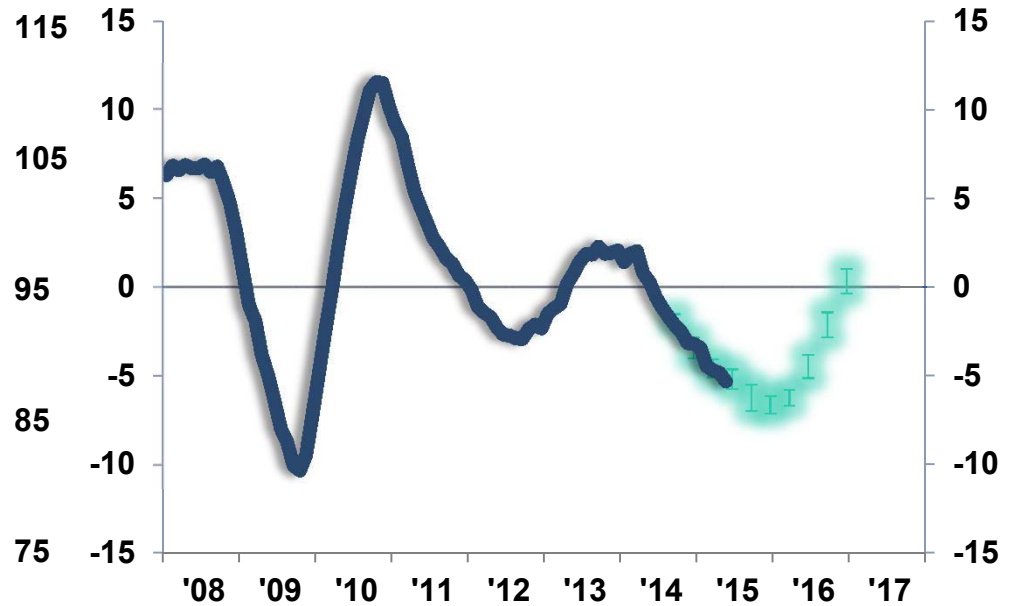
Brazil Industrial Production Index

12-Month Moving Average



Year-over-Year Growth Rate

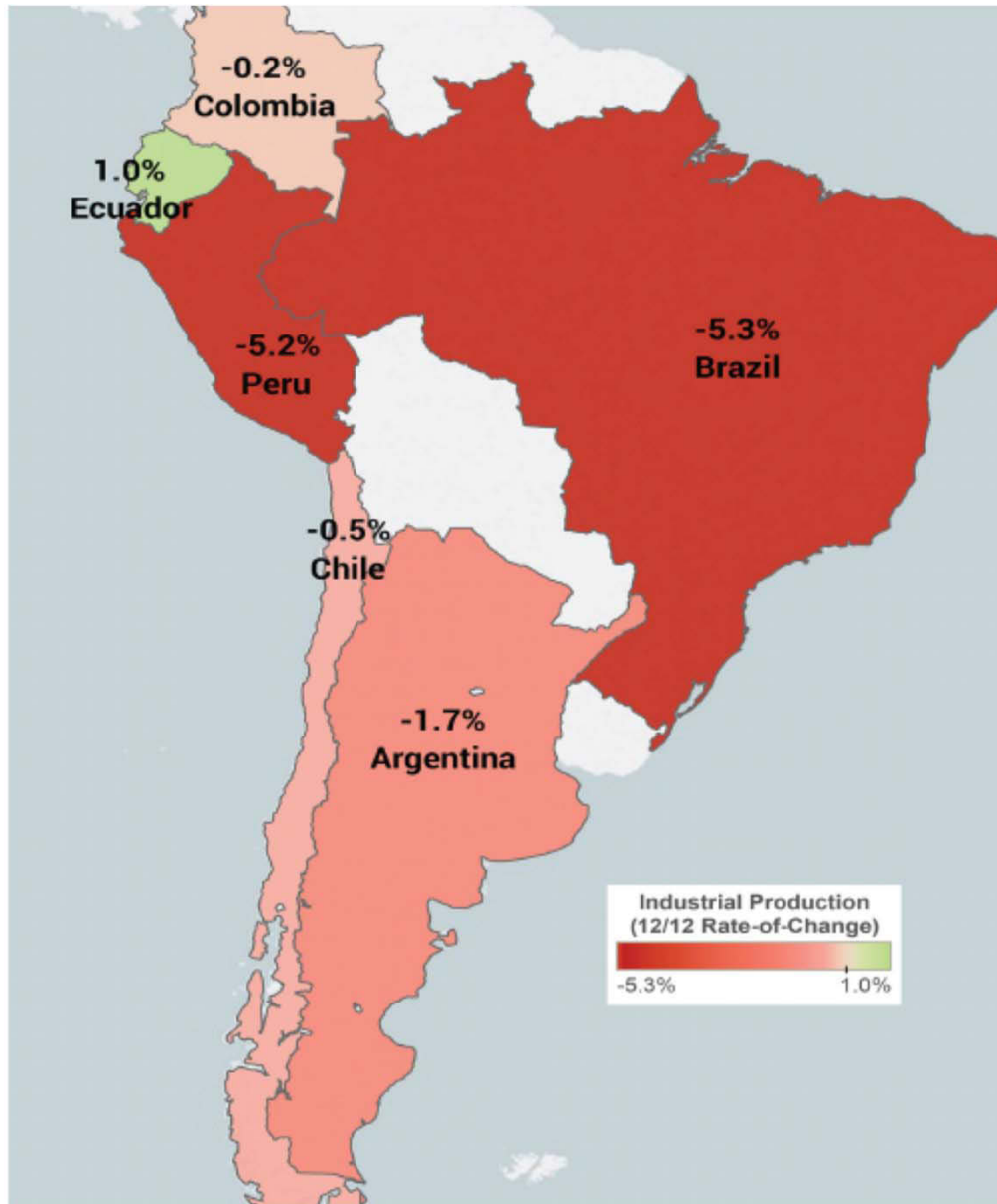
12/12 Rate-of-Change



- Annual Trend: 96.1
- Phase: D
- Year-over-Year: -5.3%

Industry Outlook

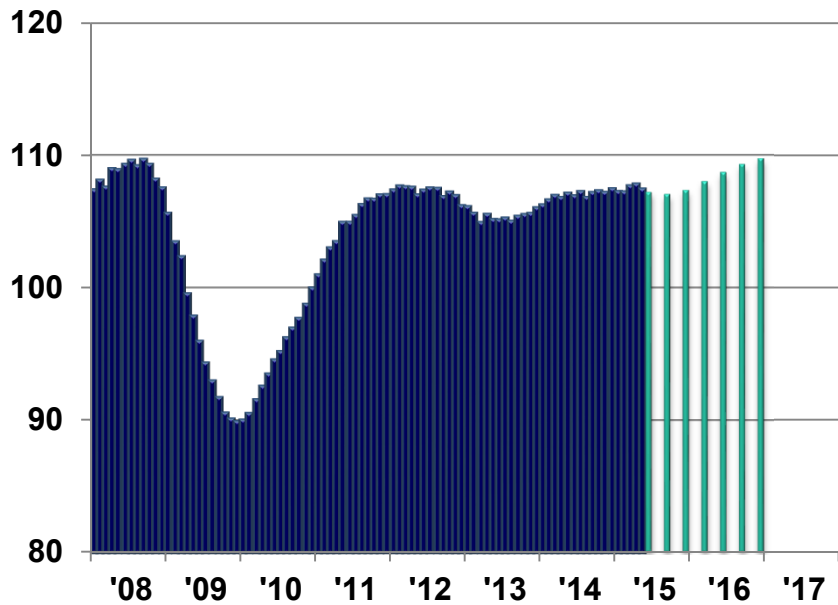
2015: -6.6%
2016: 0.4%
2017: 4.5%



Germany Industrial Production Index

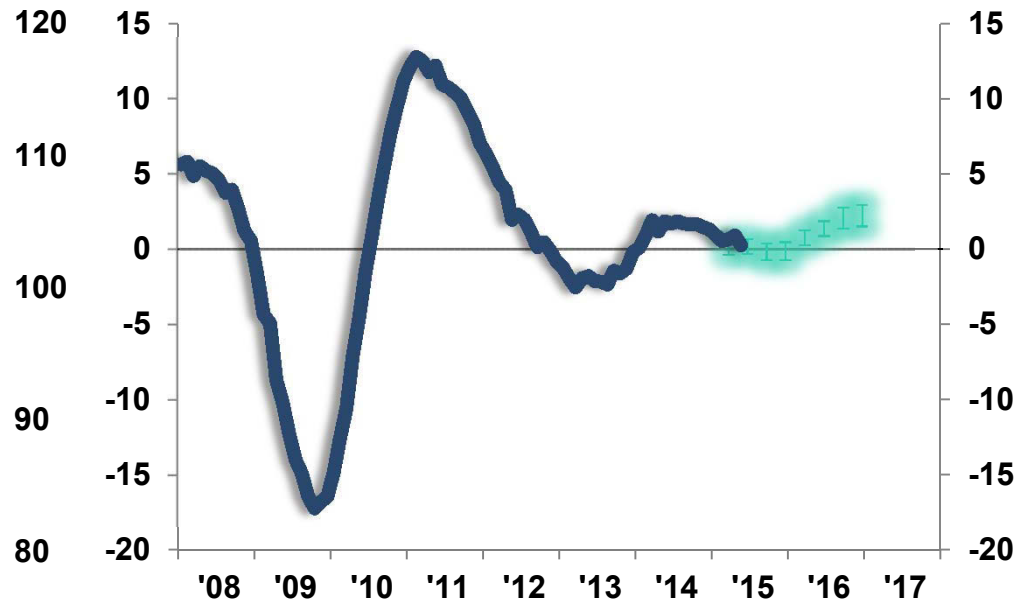
Germany Industrial Production Index

12-Month Moving Average



Year-over-Year Growth Rate

12/12 Rate-of-Change

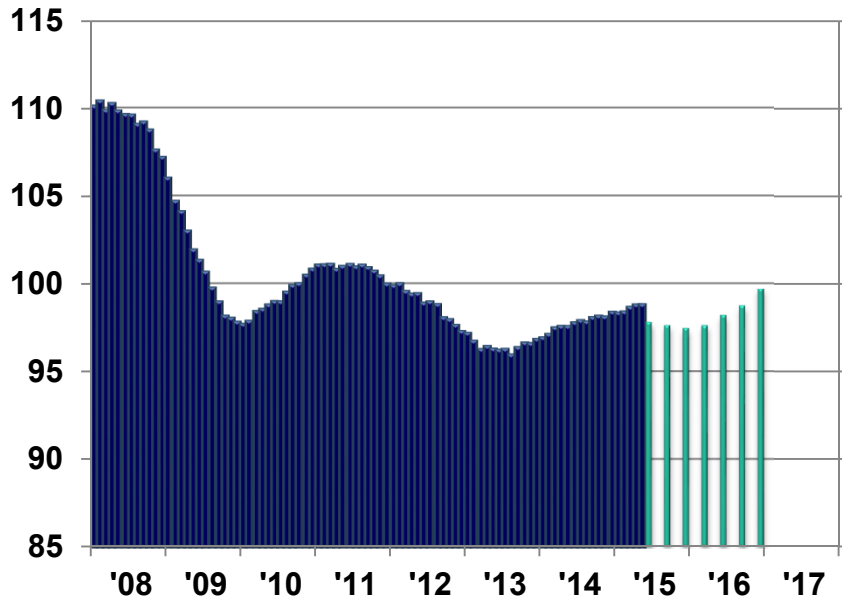


- Annual Trend: 107.5
- Phase: C
- Year-over-Year: 0.3%

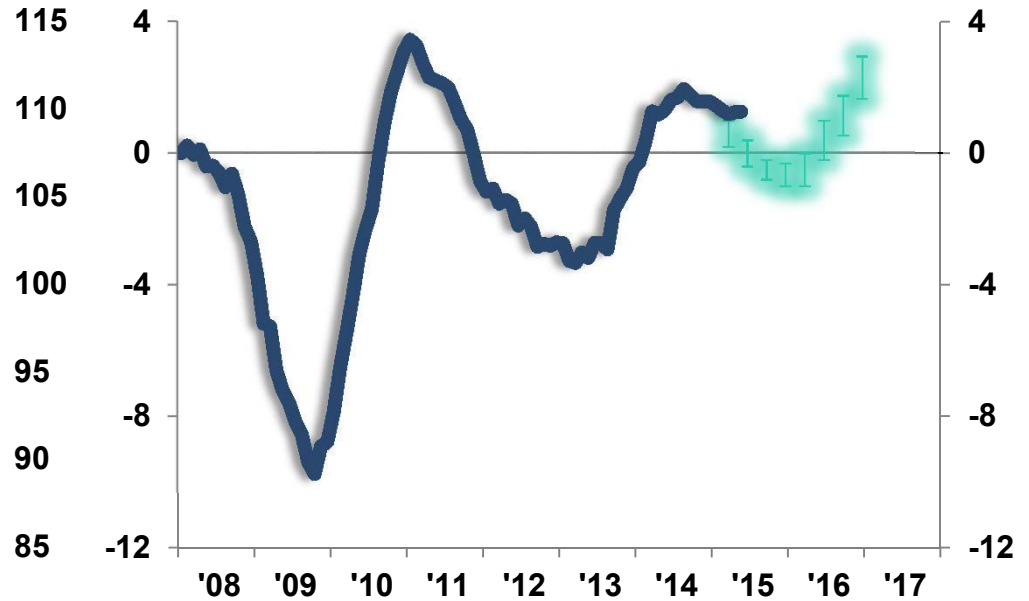
Industry  Outlook	2015: 1.3%
	2016: 2.5%
	2017: 2.3%

UK Industrial Production Index

UK Industrial Production Index
12-Month Moving Average



Year-over-Year Growth Rate
12/12 Rate-of-Change



- Annual Trend: 98.8
- Phase: B
- Year-over-Year: 1.3%

Industry

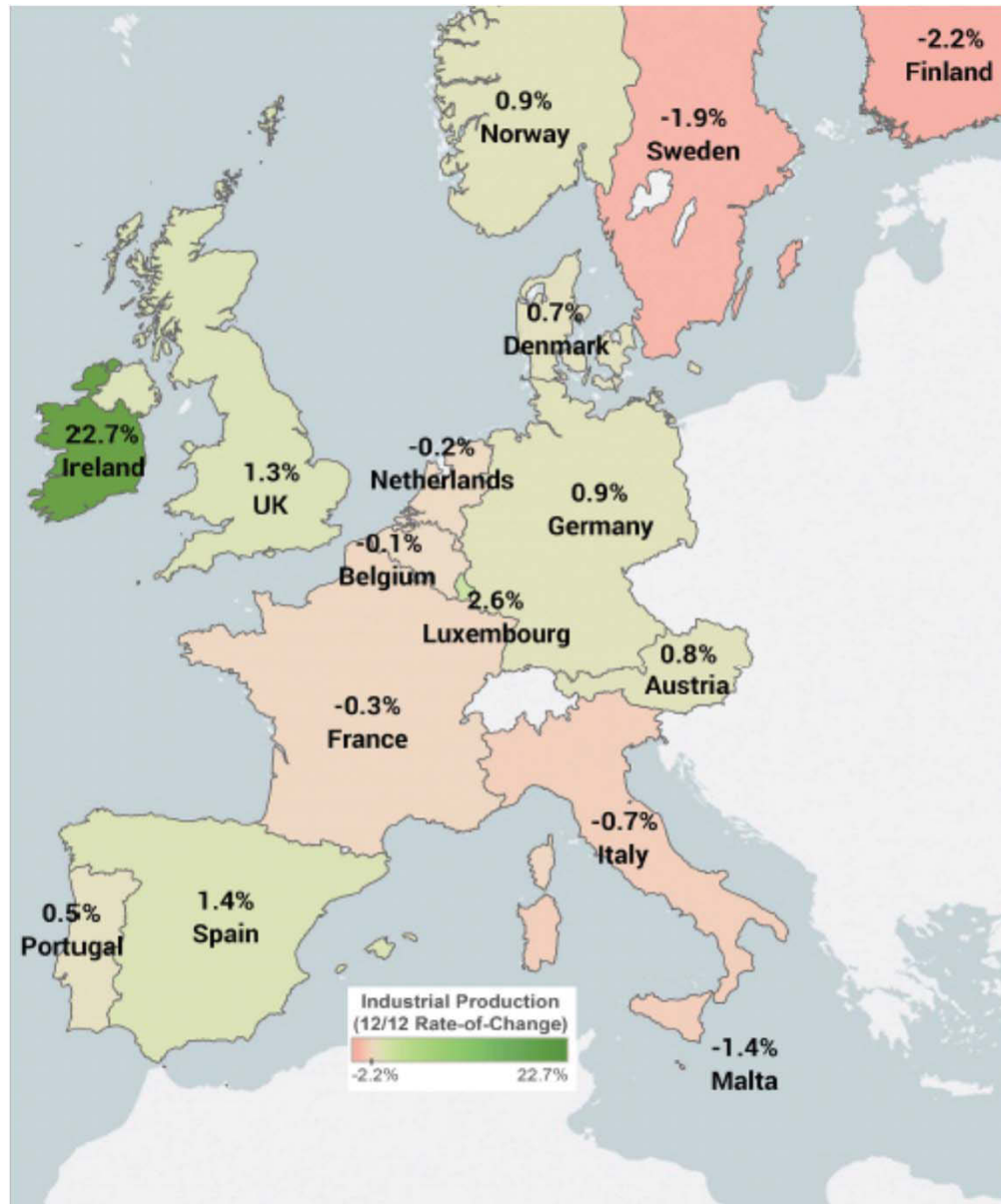


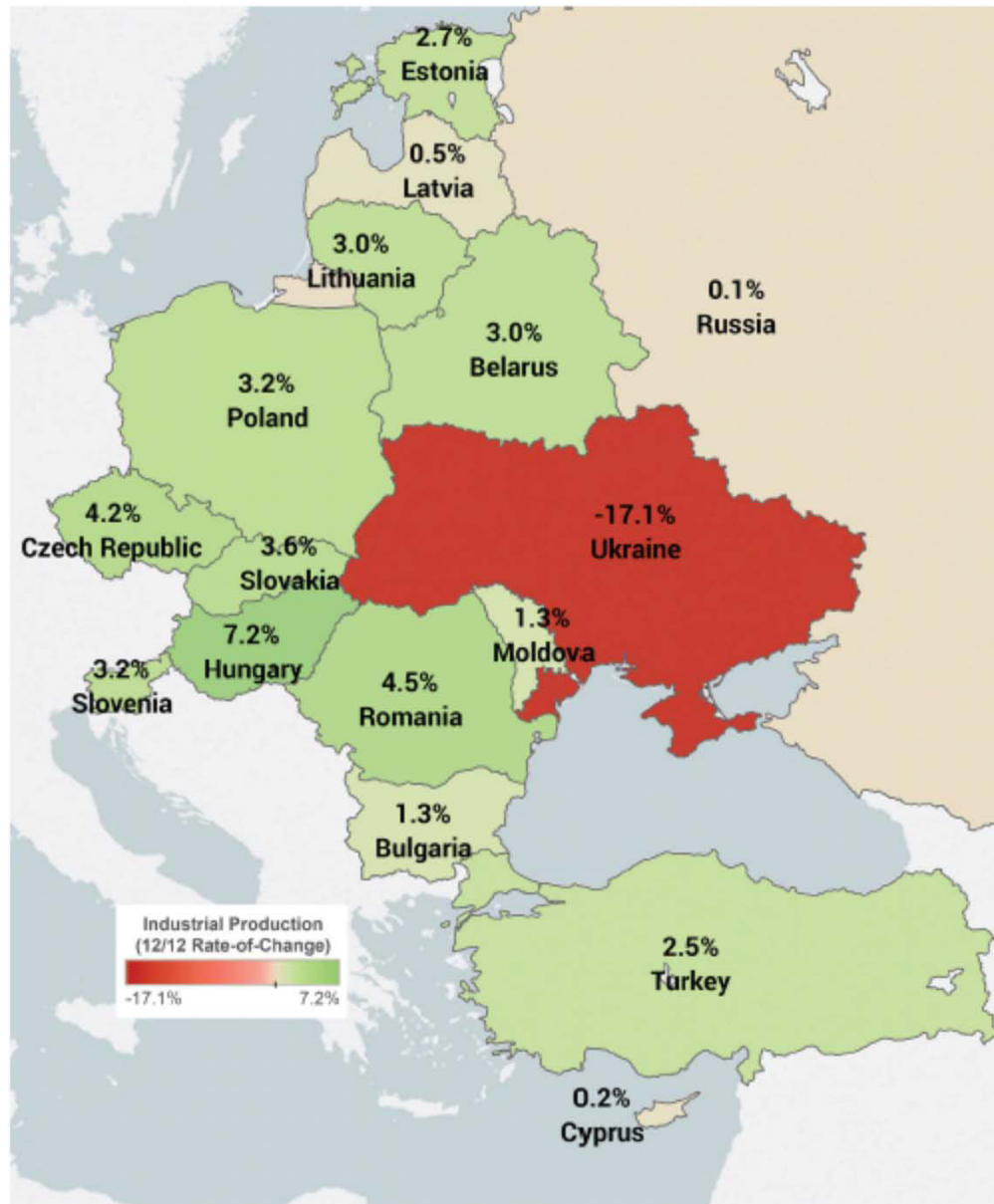
Outlook

2015: -0.7%

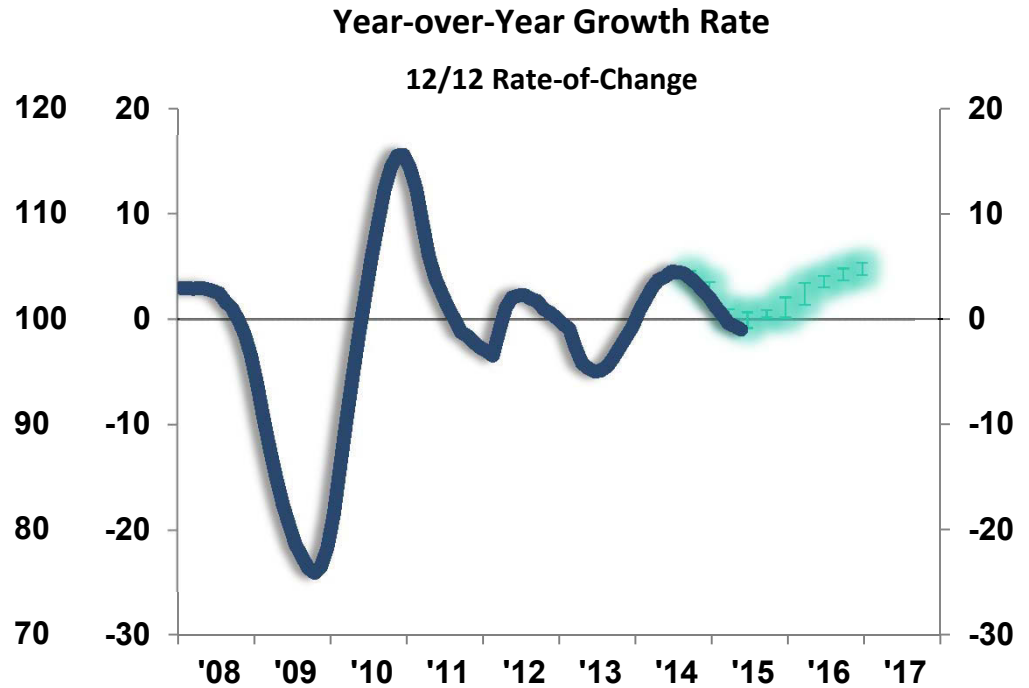
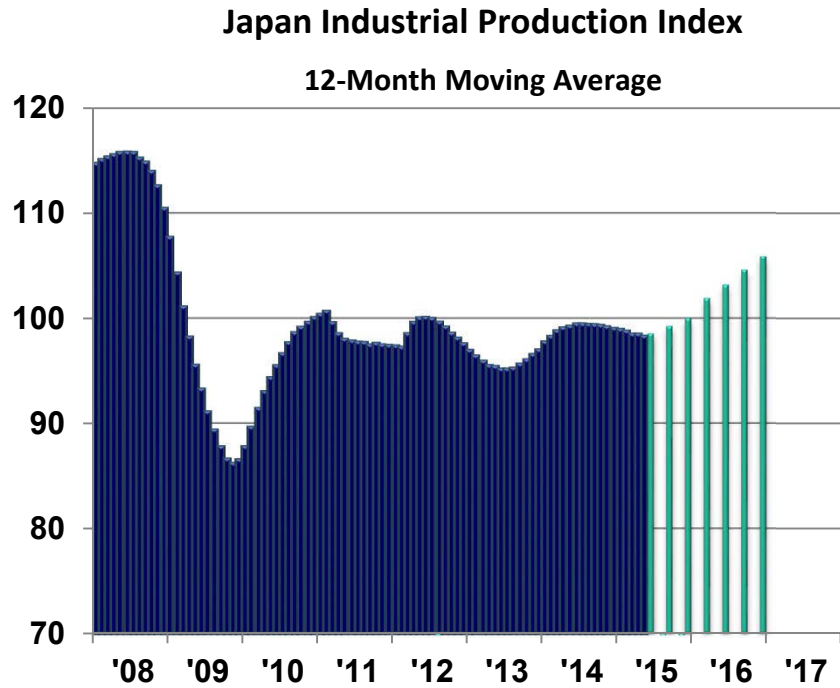
2016: 2.3%

2017: 0.9%






Japan Industrial Production Index



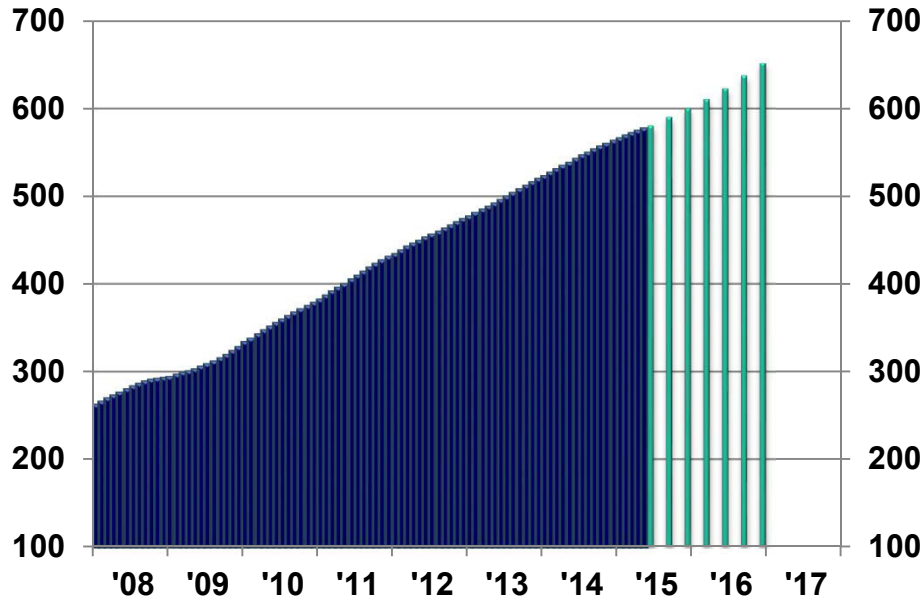
- Annual Trend: 98.3
- Phase: D
- Year-over-Year: -1.0%

Industry	2015: 1.2%
 Outlook	2016: 4.8%
	2017: 3.4%

China Industrial Production Index

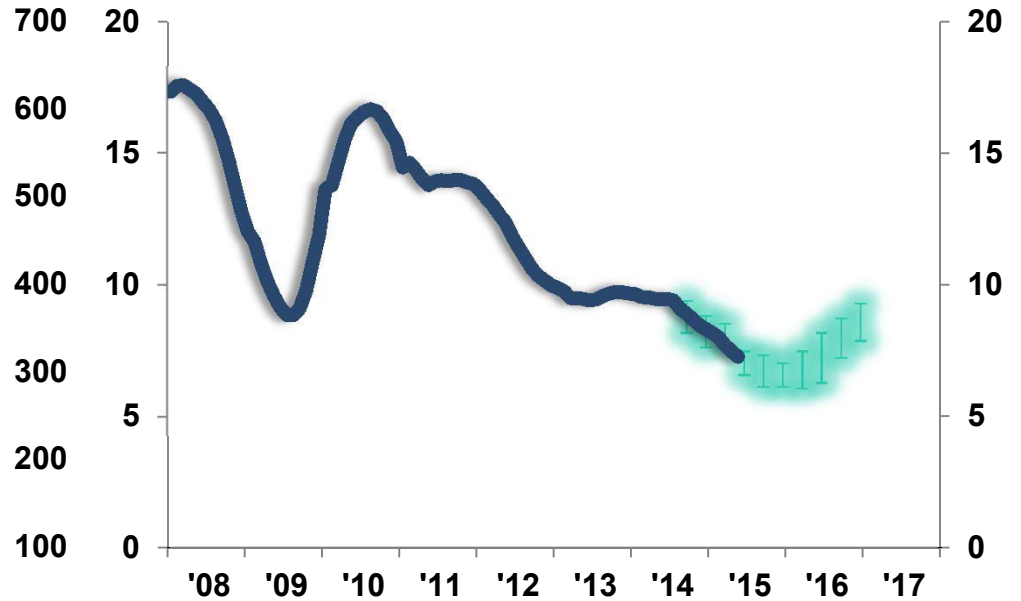
China Industrial Production Index

12-Month Moving Average



Year-over-Year Growth Rate

12/12 Rate-of-Change



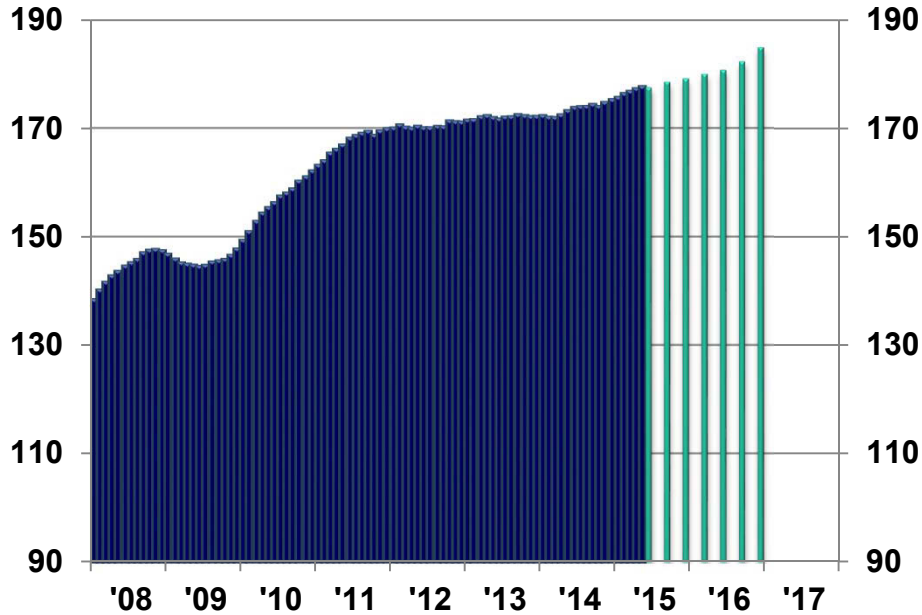
- Annual Trend: 577.7
- Phase: C
- Year-over-Year: 7.3%

Industry	2015: 6.6%
 Outlook	2016: 8.6%
	2017: 7.8%

India Industrial Production Index

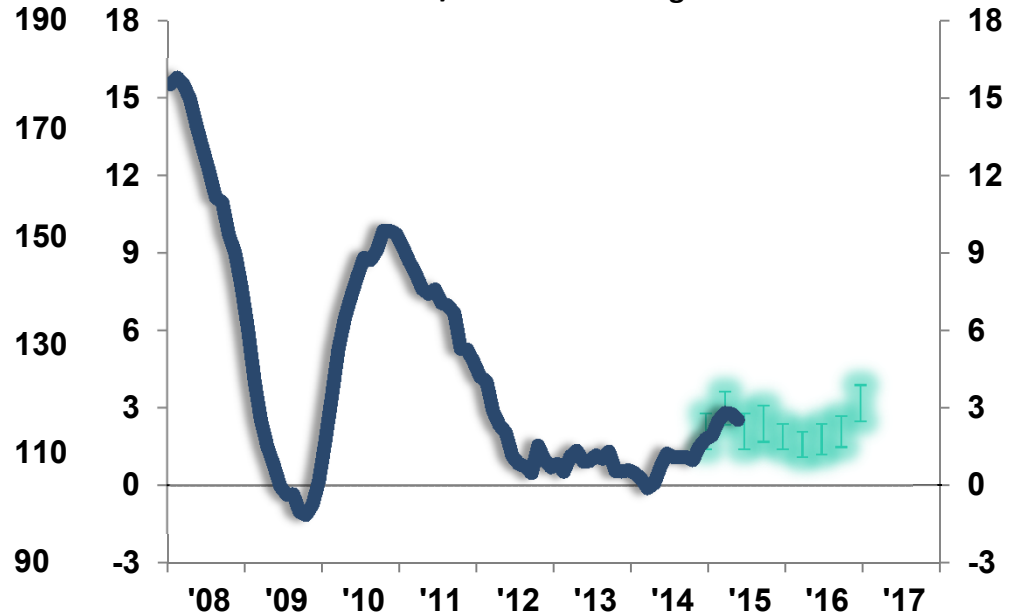
India Industrial Production Index

12-Month Moving Average




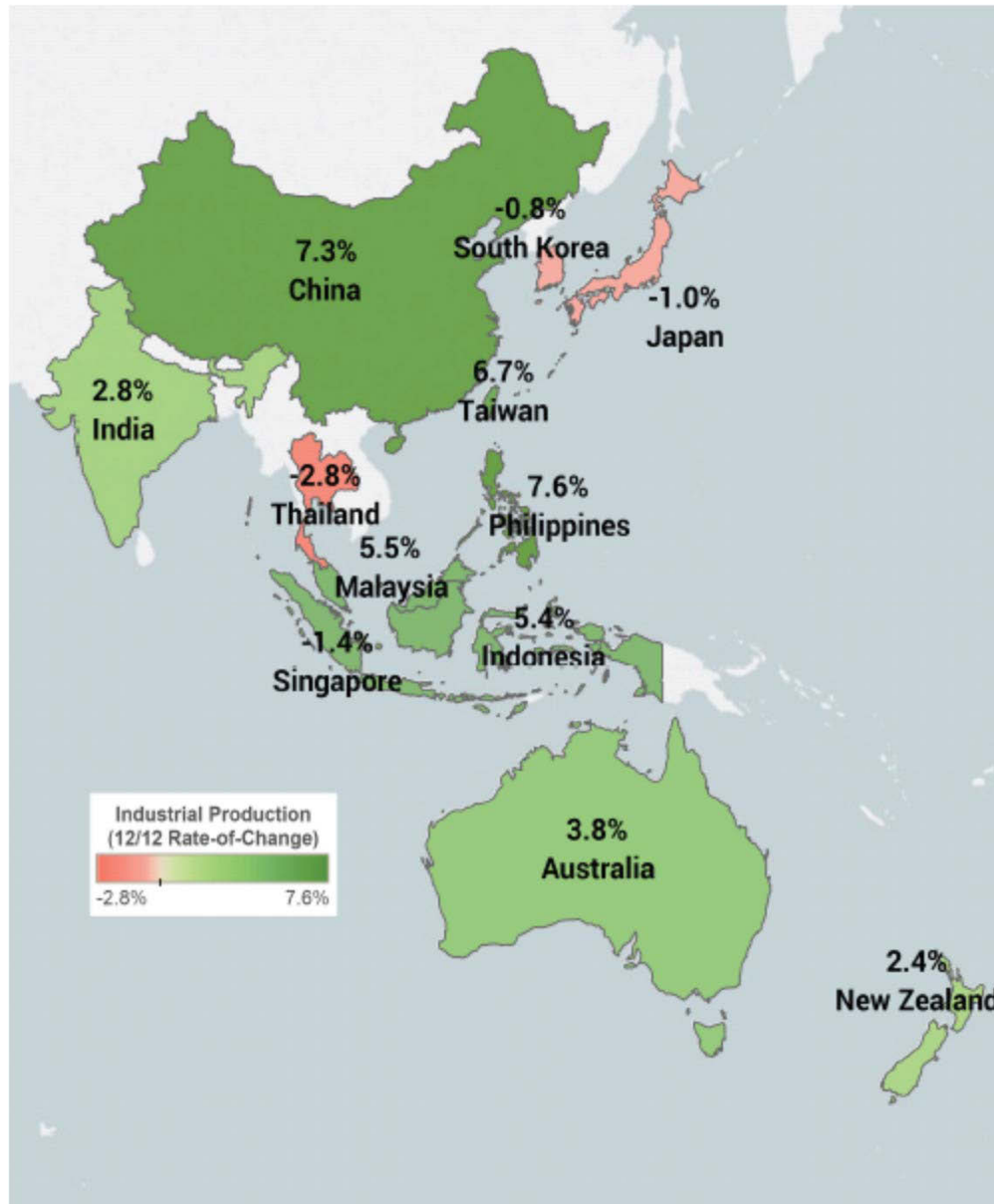
Year-over-Year Growth Rate

12/12 Rate-of-Change



- Annual Trend: 177.8
- Phase: C
- Year-over-Year: 2.6%

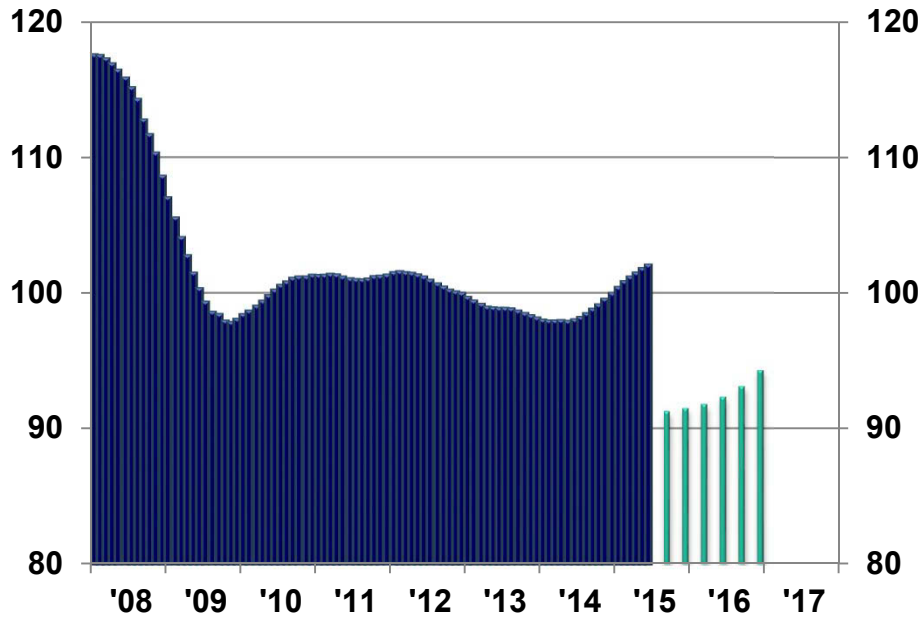
Industry  Outlook	2015: 1.9%
	2016: 3.2%
	2017: 5.1%



US Chemical Products Production Index

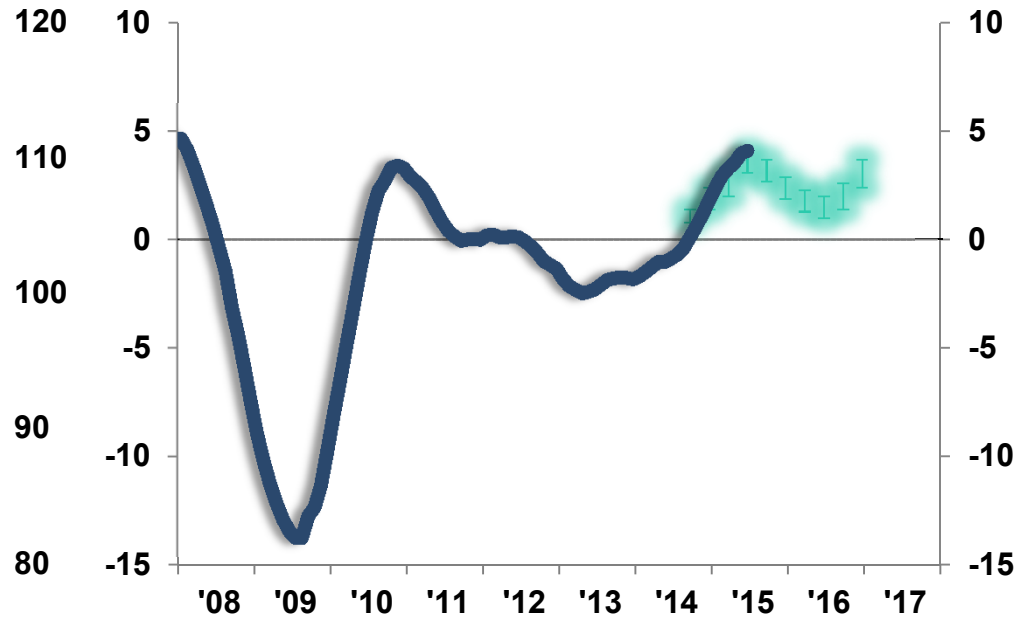
US Chemical Products Production Index

12-Month Moving Average



Year-over-Year Growth Rate

12/12 Rate-of-Change



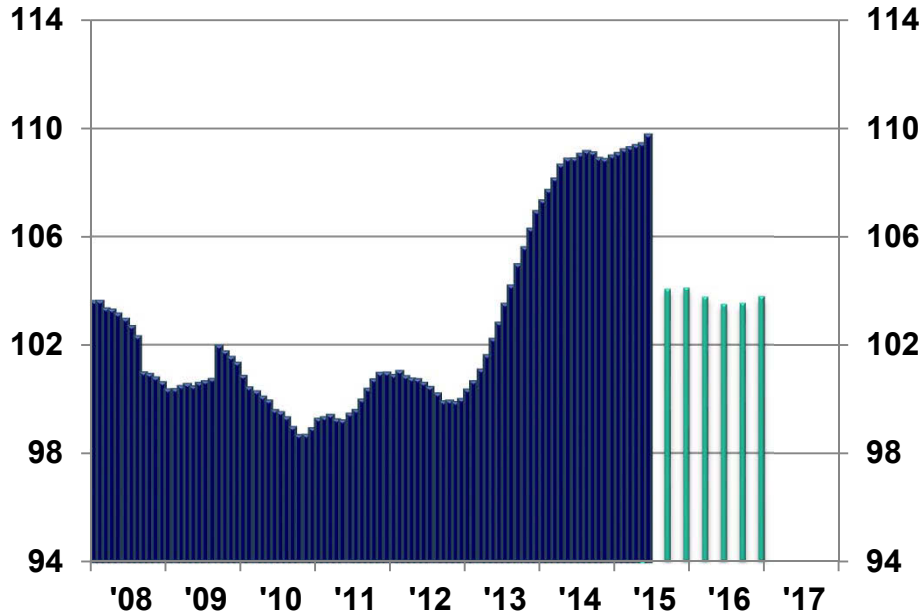
- Annual Trend: 102.1
- Phase: B
- Year-over-Year: 4.1%

Industry  Outlook	2015: 2.4%
	2016: 3.1%
	2017: 3.4%

US Petroleum Refineries Production Index

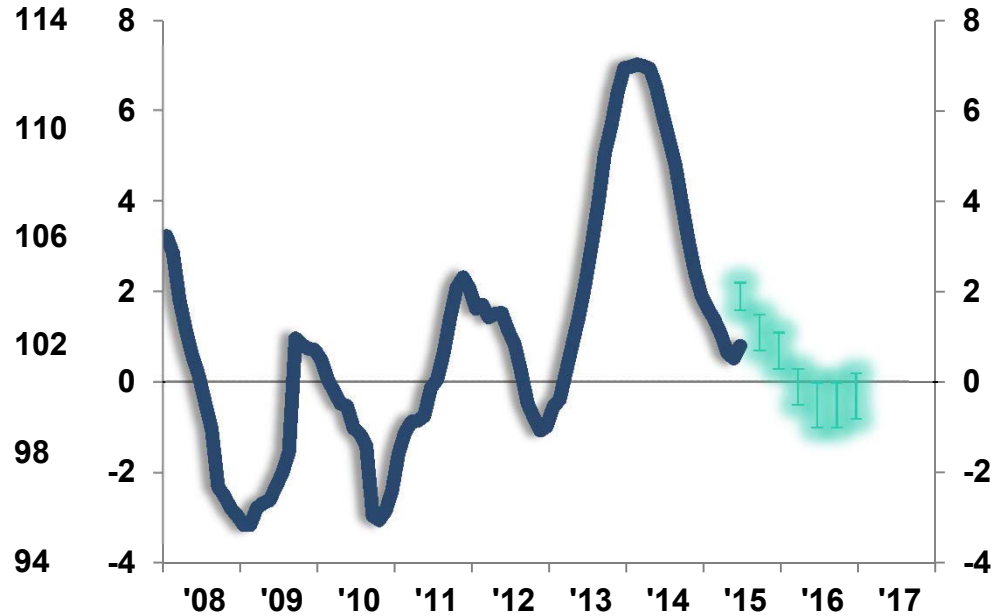
US Petroleum Refineries Production Index

12-Month Moving Average




Year-over-Year Growth Rate

12/12 Rate-of-Change



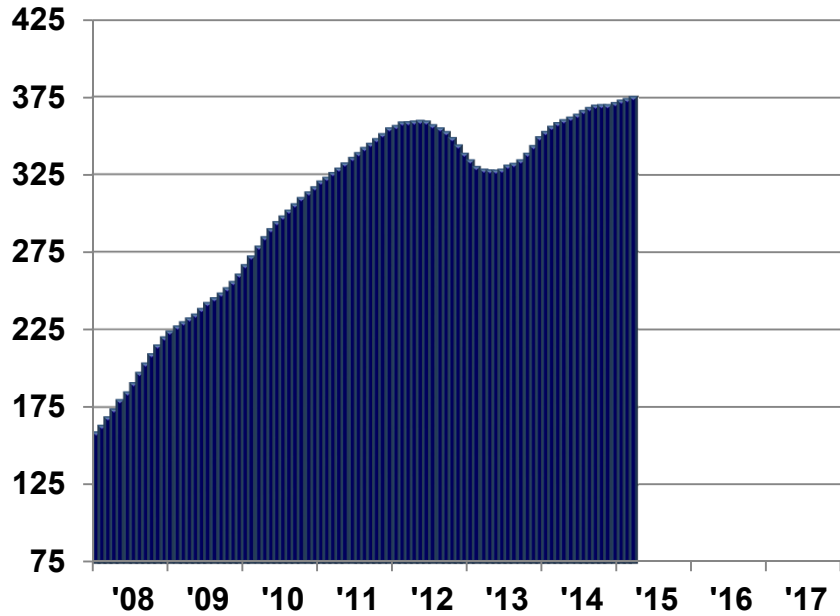
- Annual Trend: 109.8
- Phase: B
- Year-over-Year: 0.8%

Industry  Outlook	2015: 0.7%
	2016: -0.3%
	2017: 1.4%

US Fuel Ethanol Production

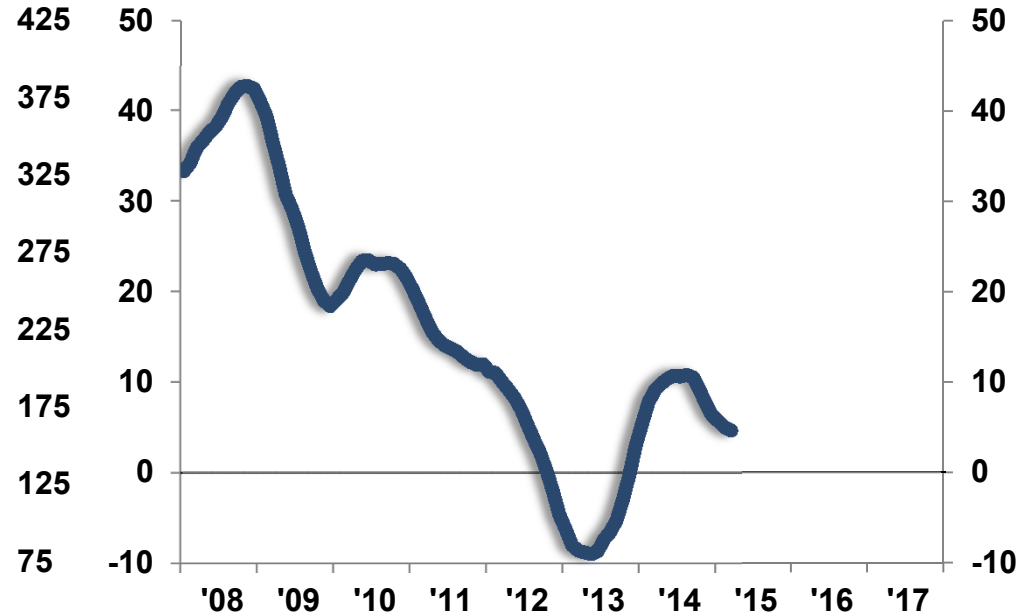
US Fuel Ethanol Production Index

12-Month Moving Average



Year-over-Year Growth Rate

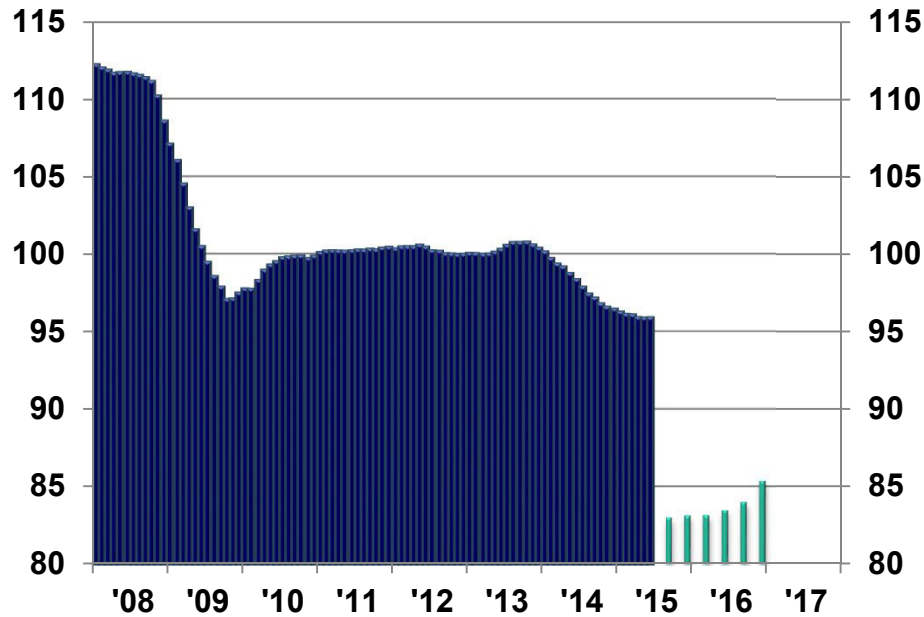
12/12 Rate-of-Change



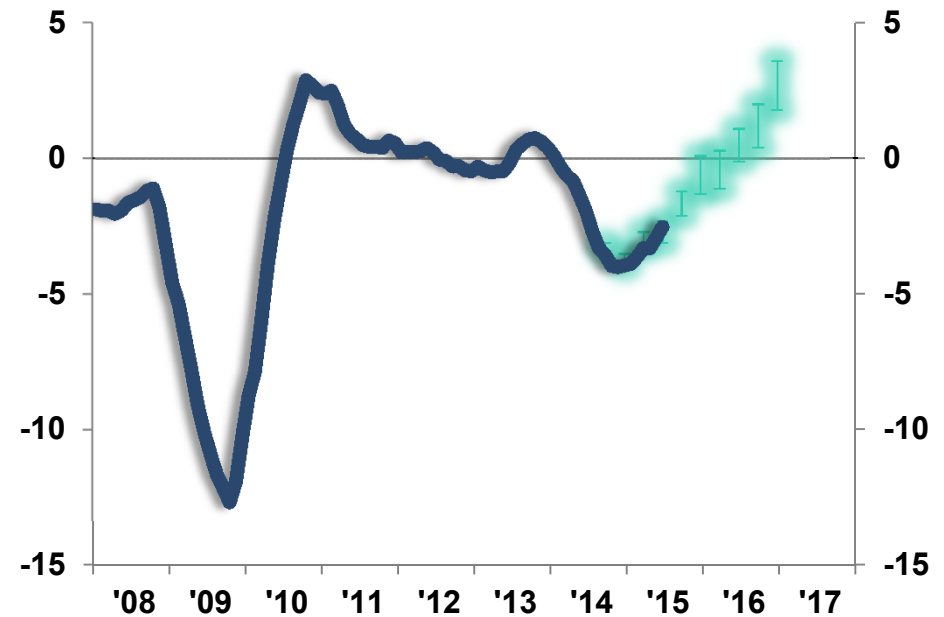
- Annual Trend: 104.4
- Phase: B
- Year-over-Year: 2.3%

US Pulp and Paper Mill Production Index


US Pulp and Paper Mill Production Index
12-Month Moving Average



Year-over-Year Growth Rate
12/12 Rate-of-Change



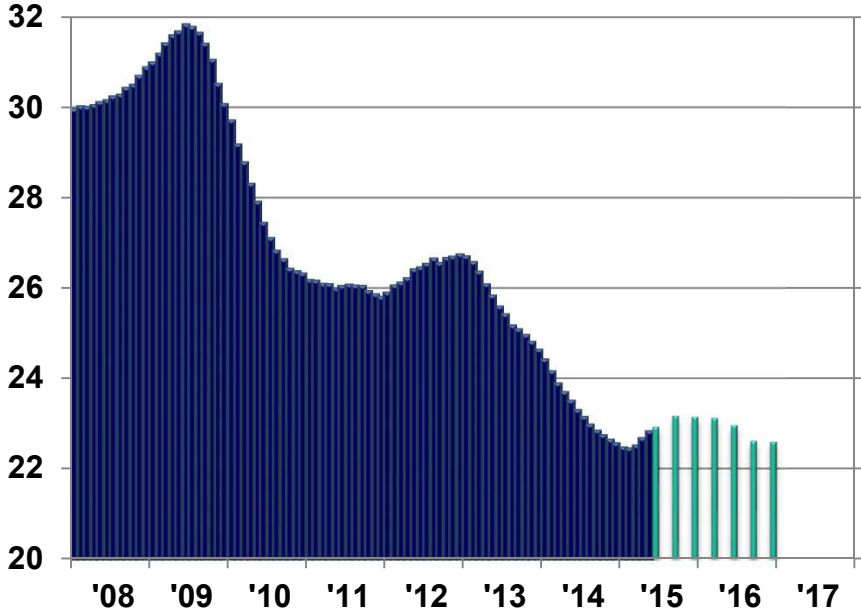
- Annual Trend: 95.9
- Phase: A
- Year-over-Year: -2.5%

 Industry Outlook	2015: -0.6%
	2016: 2.7%
	2017: 2.0%

US Hospital Buildings Construction Spending

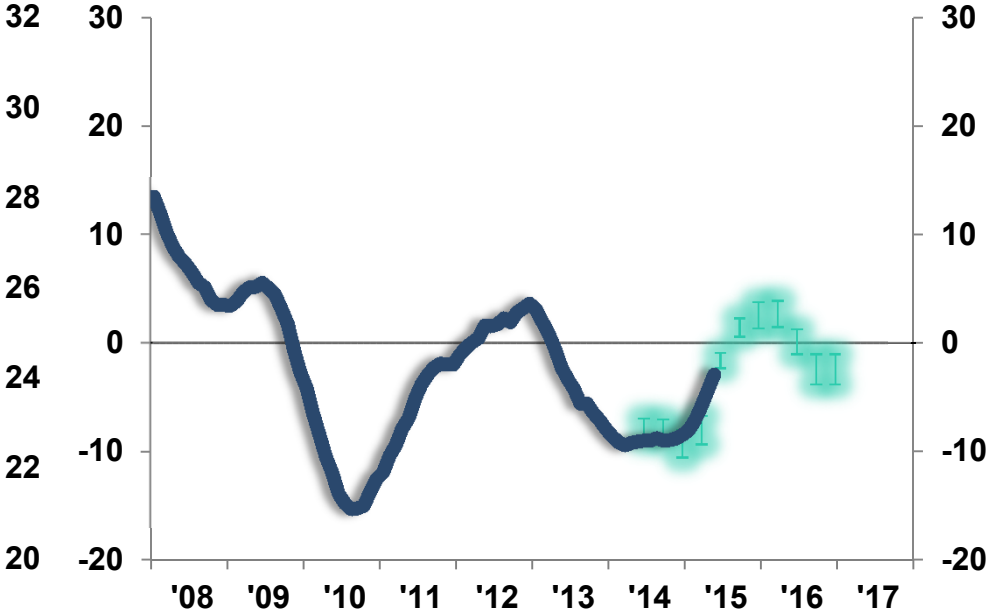
US Hospital Buildings Construction Spending

12-Month Moving Average



Year-over-Year Growth Rate

12/12 Rate-of-Change

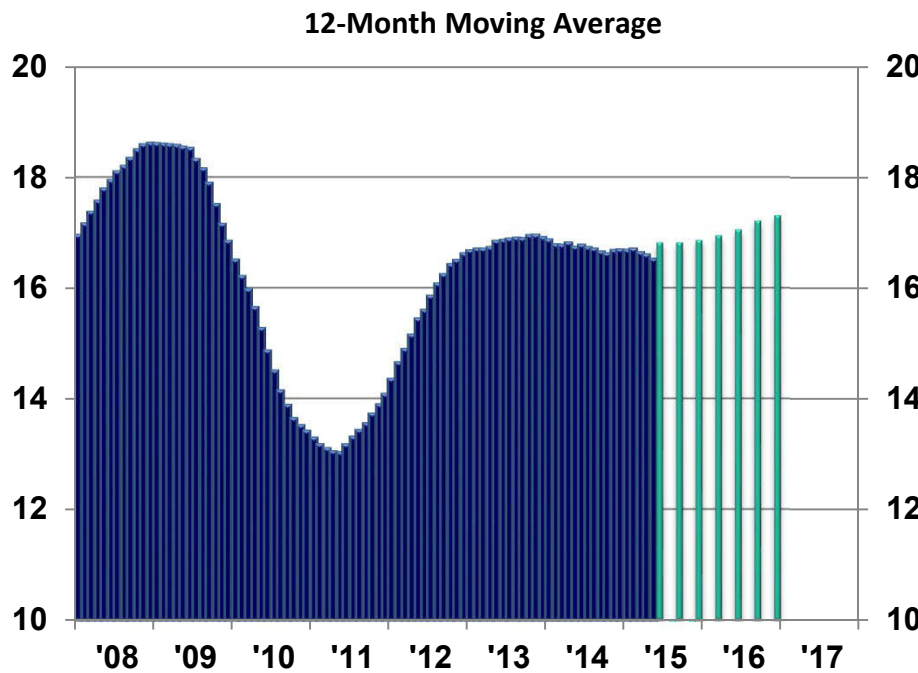


- Annual Trend: 22.8
- Phase: A
- Year-over-Year: -2.9%

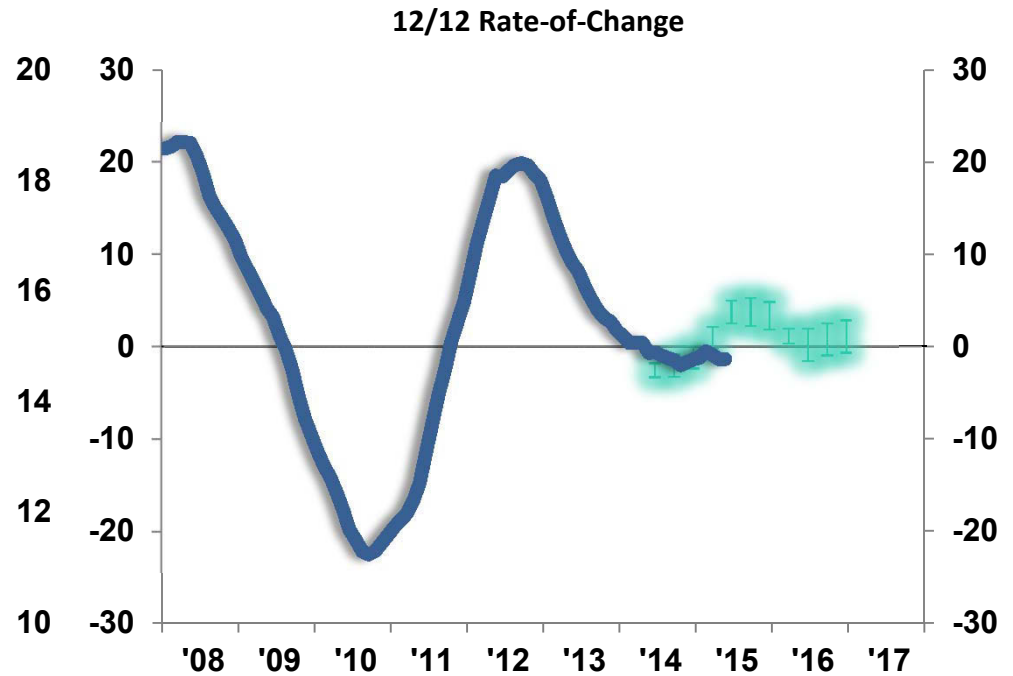
	Industry	2015: 2.6%
	Outlook	2016: -2.4%
		2017: 1.5%

US Private Educational Buildings Construction Spending

US Private Educational Buildings Construction Spending



Year-over-Year Growth Rate

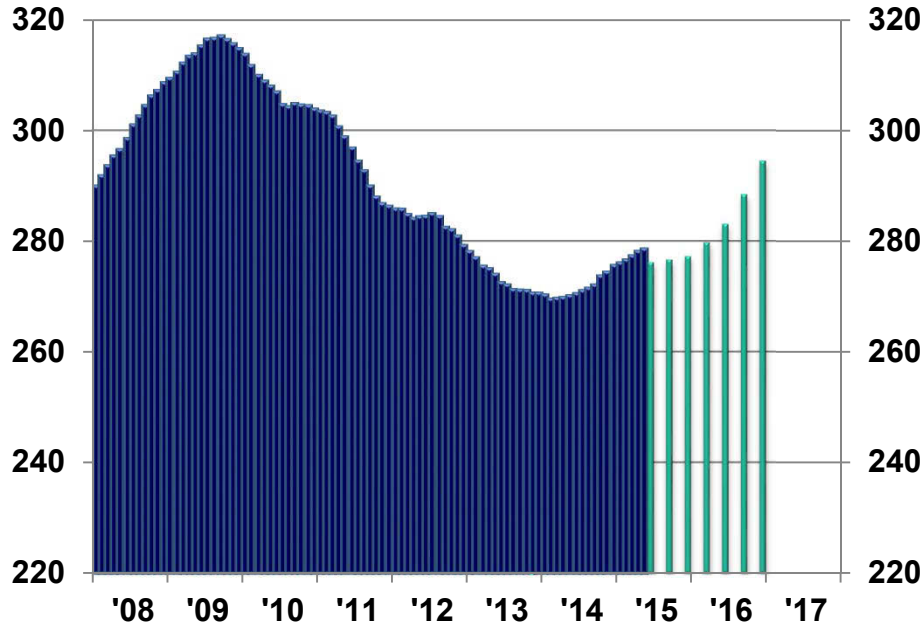


- Annual Trend: 16.5
- Phase: D
- Year-over-Year: -1.3%

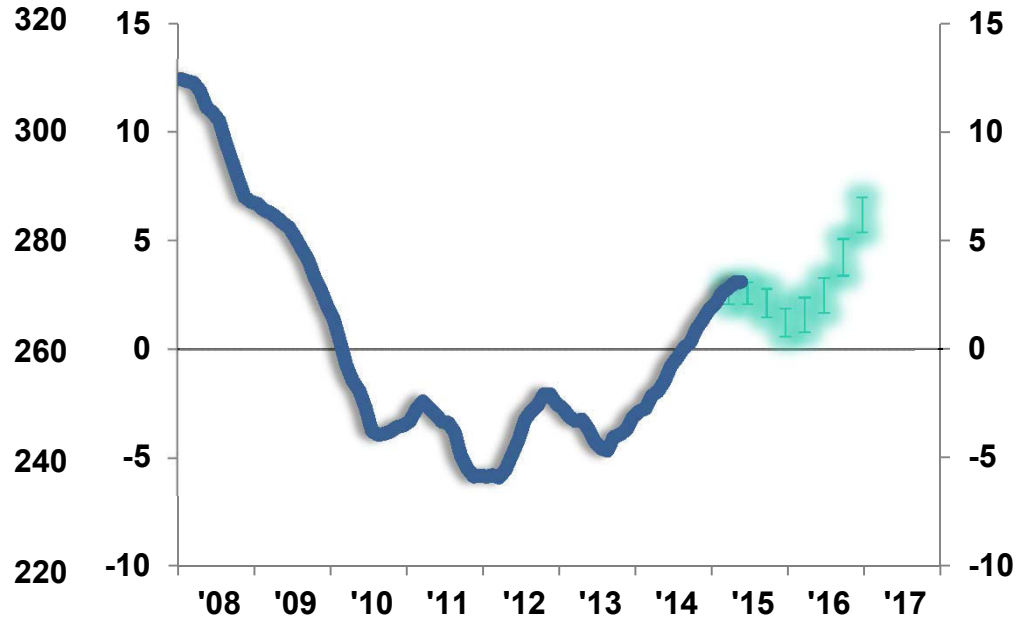
Industry Outlook 2015: 3.4%
 2016: 1.2%

US Total Public Construction Spending


US Total Public Construction Spending
12-Month Moving Average



Year-over-Year Growth Rate
12/12 Rate-of-Change



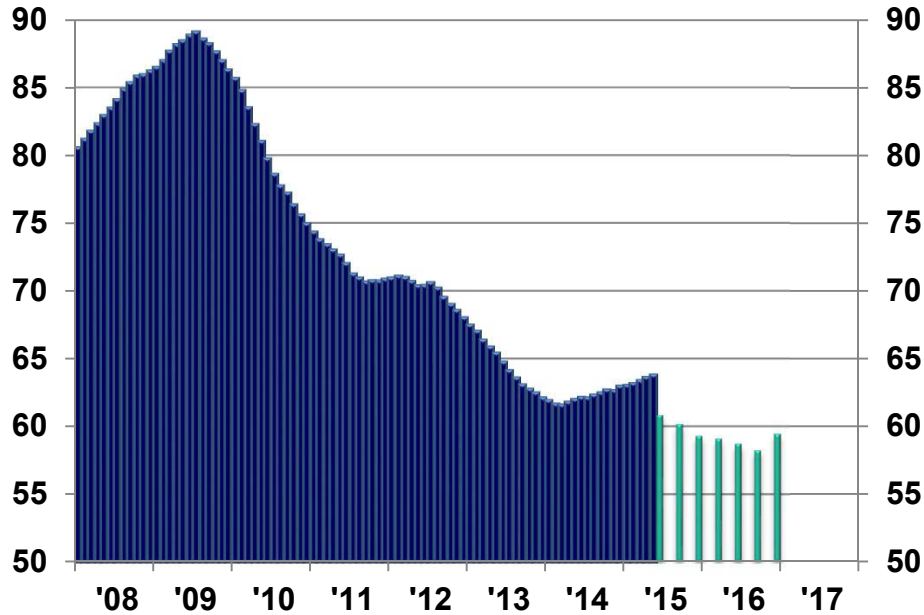
- Annual Trend: 278.7
- Phase: B
- Year-over-Year: 3.1%

Industry Outlook 	2015: 1.3%
	2016: 6.2%
	2017: 7.3%

US Public Educational Buildings Construction Spending

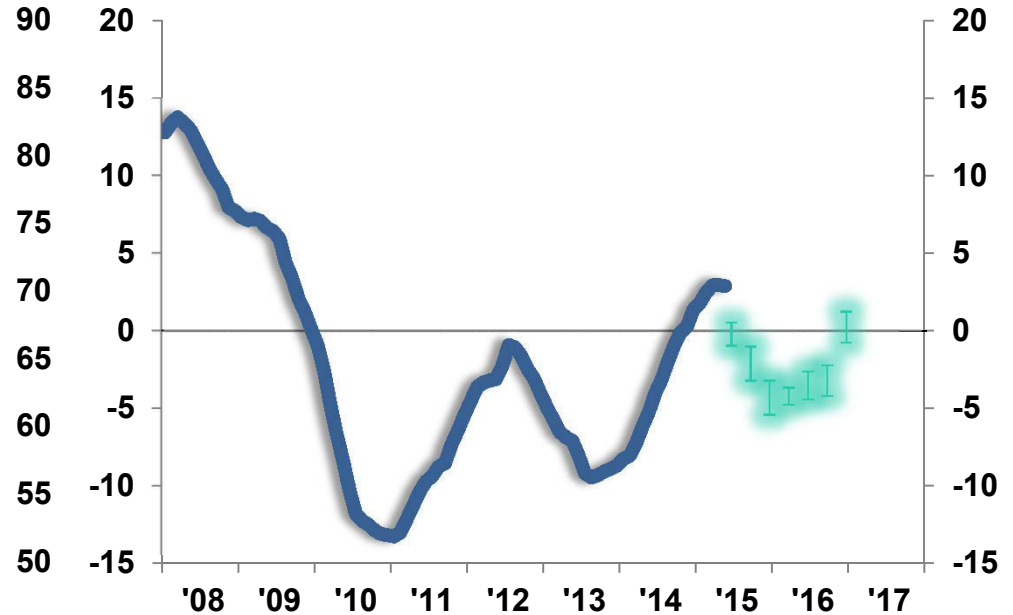
US Public Educational Buildings Construction Spending

12-Month Moving Average



Year-over-Year Growth Rate

12/12 Rate-of-Change

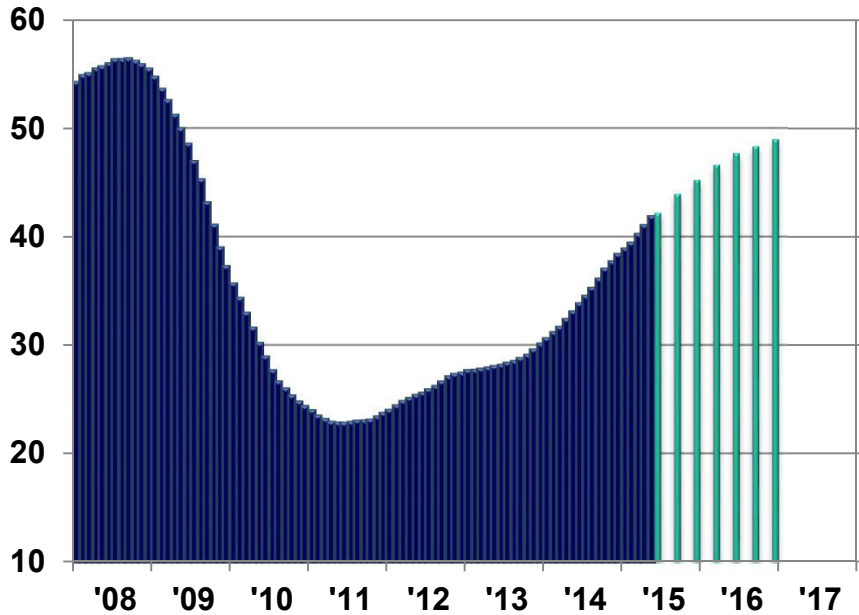


- Annual Trend: 63.8
- Phase: C
- Year-over-Year: 2.9%

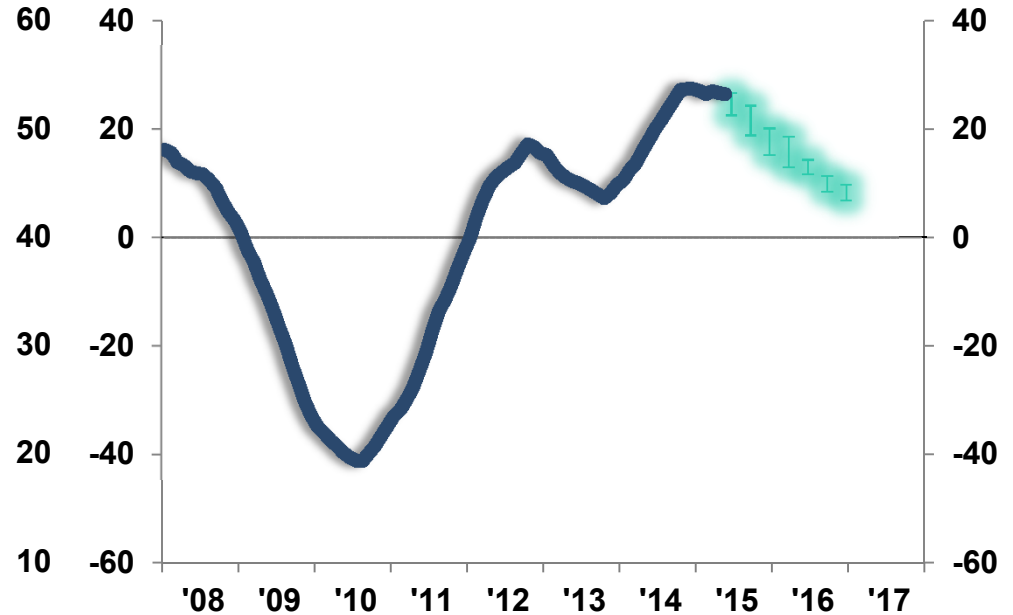
	Industry	2015: -4.3%
	Outlook	2016: 0.3%
		2017: 7.6%

US Office Buildings Construction Spending


US Office Buildings Construction Spending
12-Month Moving Average



Year-over-Year Growth Rate
12/12 Rate-of-Change



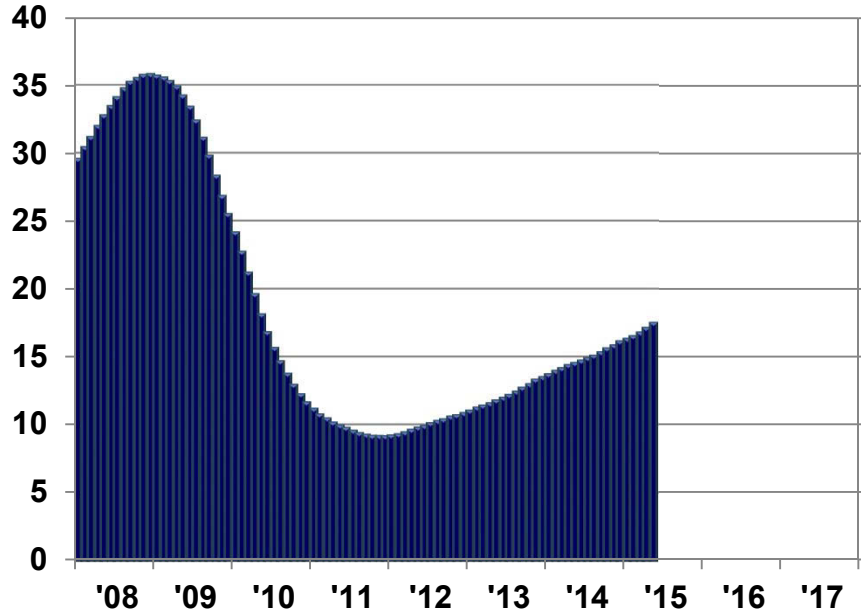
- Annual Trend: 41.9
- Phase: C
- Year-over-Year: 26.5%

Industry Outlook 	2015: 17.8%
	2016: 8.3%
	2017: 21.9%

US Total Lodging Construction Spending

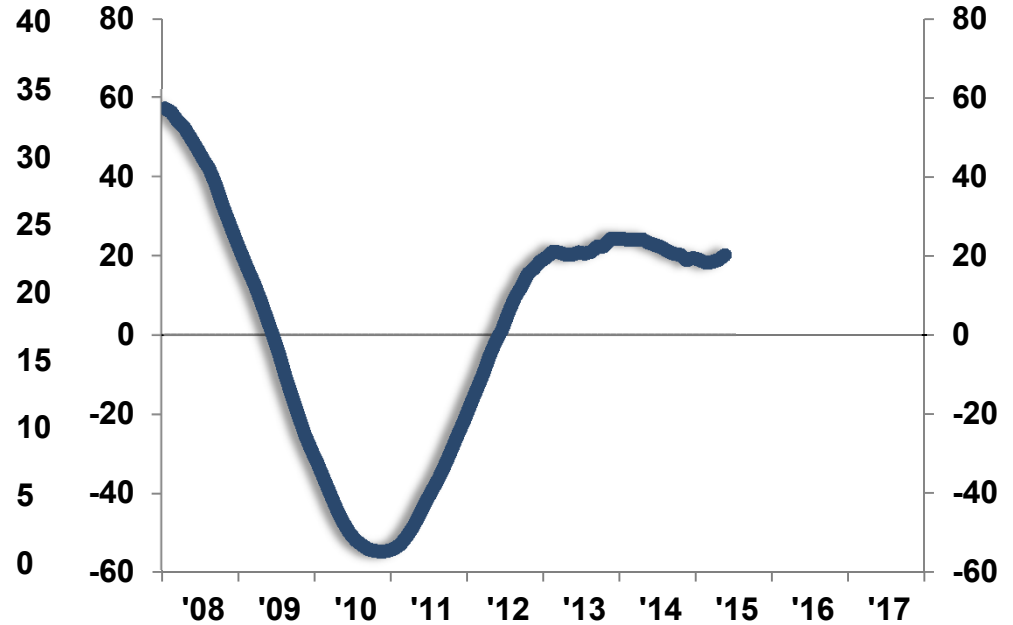
US Total Lodging Construction Spending

12-Month Moving Average



Year-over-Year Growth Rate

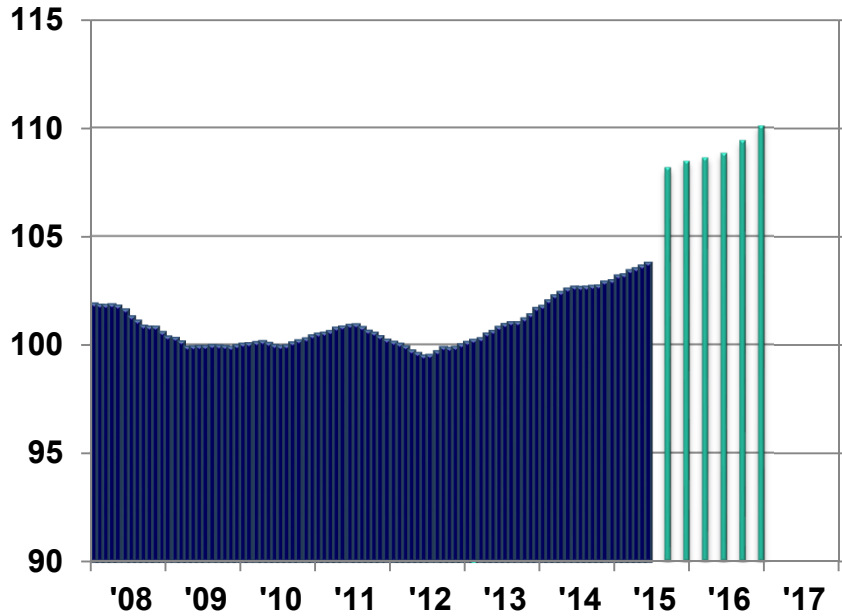
12/12 Rate-of-Change



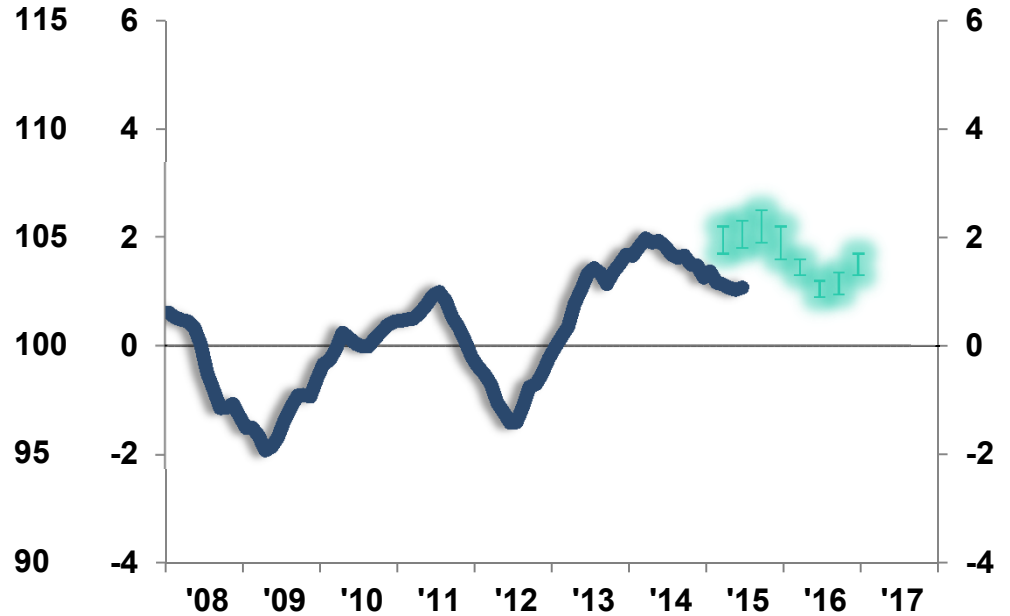
- Annual Trend: 17.5
- Phase: B
- Year-over-Year: 20.3%

US Food Production Index

US Food Production Index
12-Month Moving Average



Year-over-Year Growth Rate
12/12 Rate-of-Change

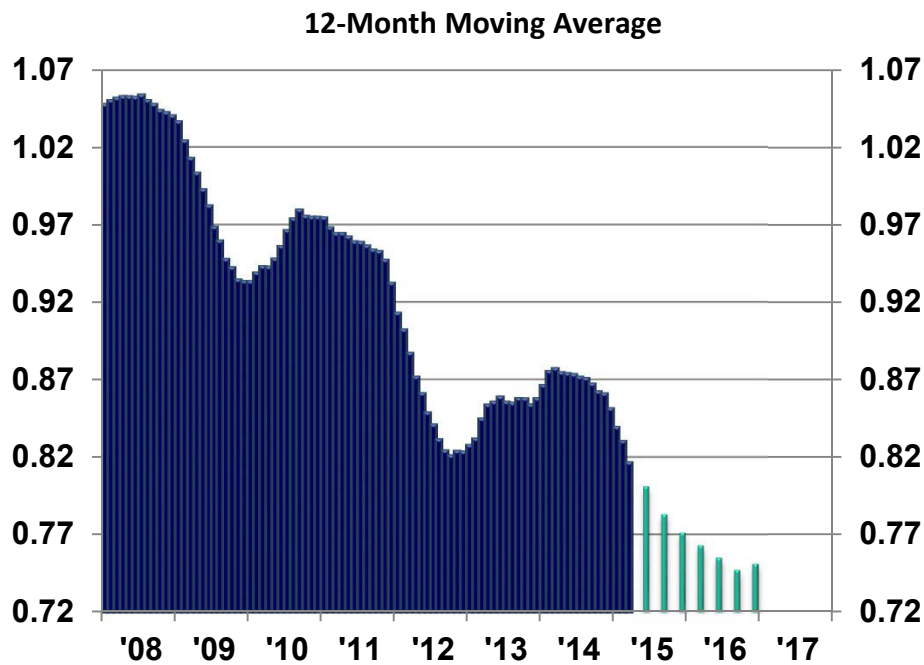


- Annual Trend: 103.8
- Phase: B
- Year-over-Year: 1.1%

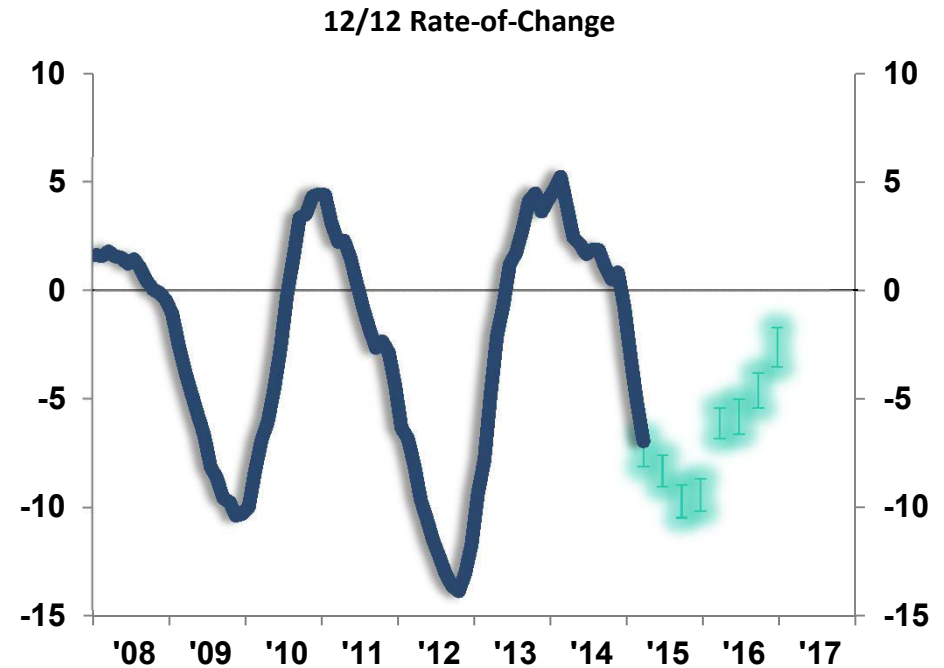
Industry Outlook	2015:	1.9%
	2016:	1.5%
	2017:	2.5%

US Coal Consumption for the Electric Power Sector


US Coal Consumption for the Electric Power Sector



Year-over-Year Growth Rate



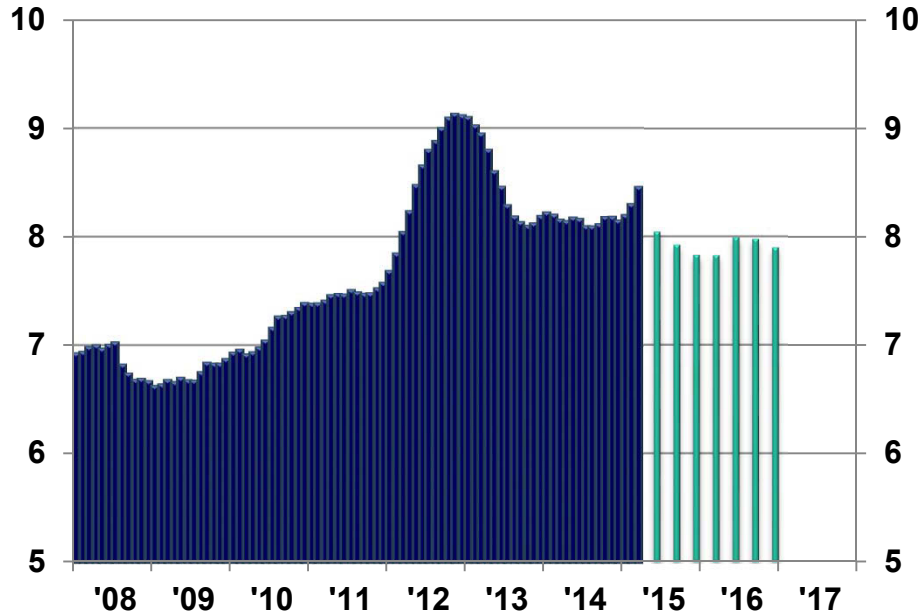
- Annual Trend: 0.8
- Phase: D
- Year-over-Year: -6.9%

Industry  Outlook	2015: -9.4%
	2016: -2.6%
	2017: 2.4%

US Natural Gas Deliveries to Electric Power Consumers

US Natural Gas Deliveries to Electric Power Consumers

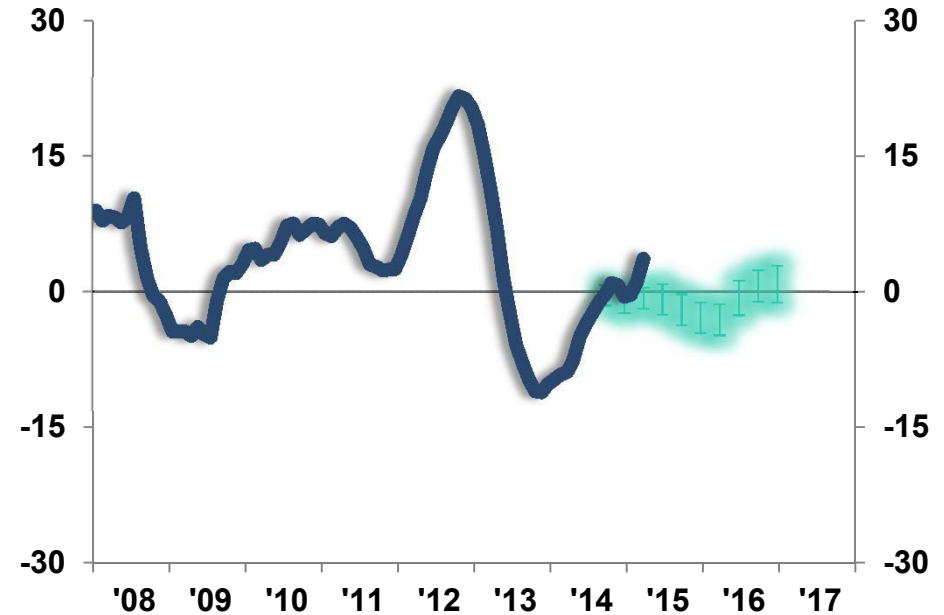
12-Month Moving Average



- Annual Trend: 8.5
- Phase: B
- Year-over-Year: 3.7%

Year-over-Year Growth Rate

12/12 Rate-of-Change

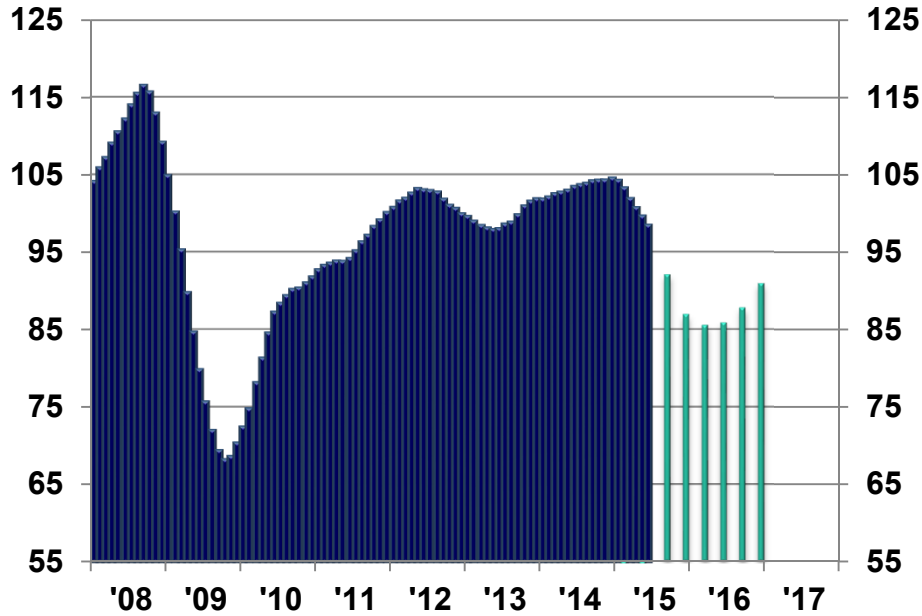


Industry	2015: -2.9%
 Outlook	2016: 0.9%

US Iron & Steel Products Production Index

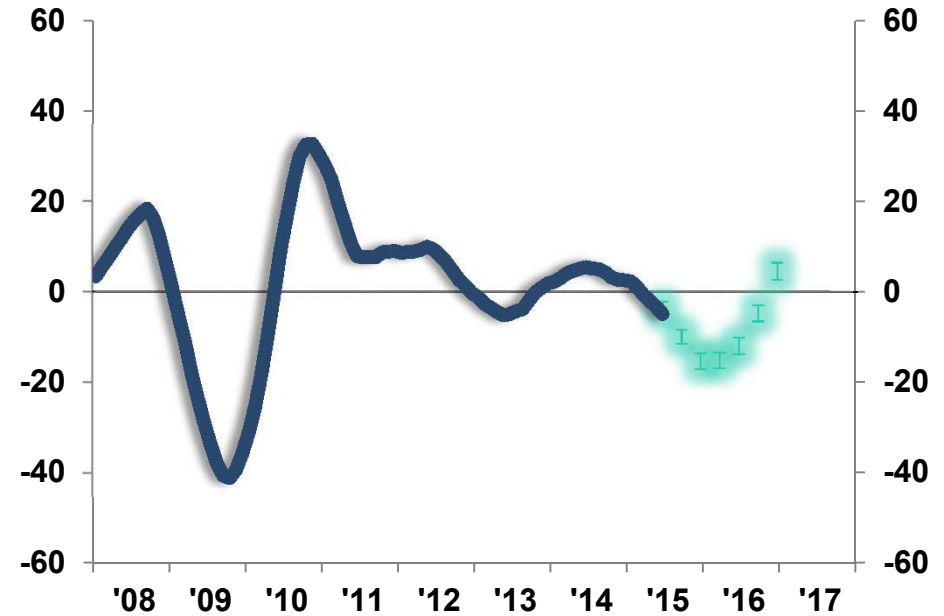
US Iron & Steel Products Production Index

12-Month Moving Average




Year-over-Year Growth Rate

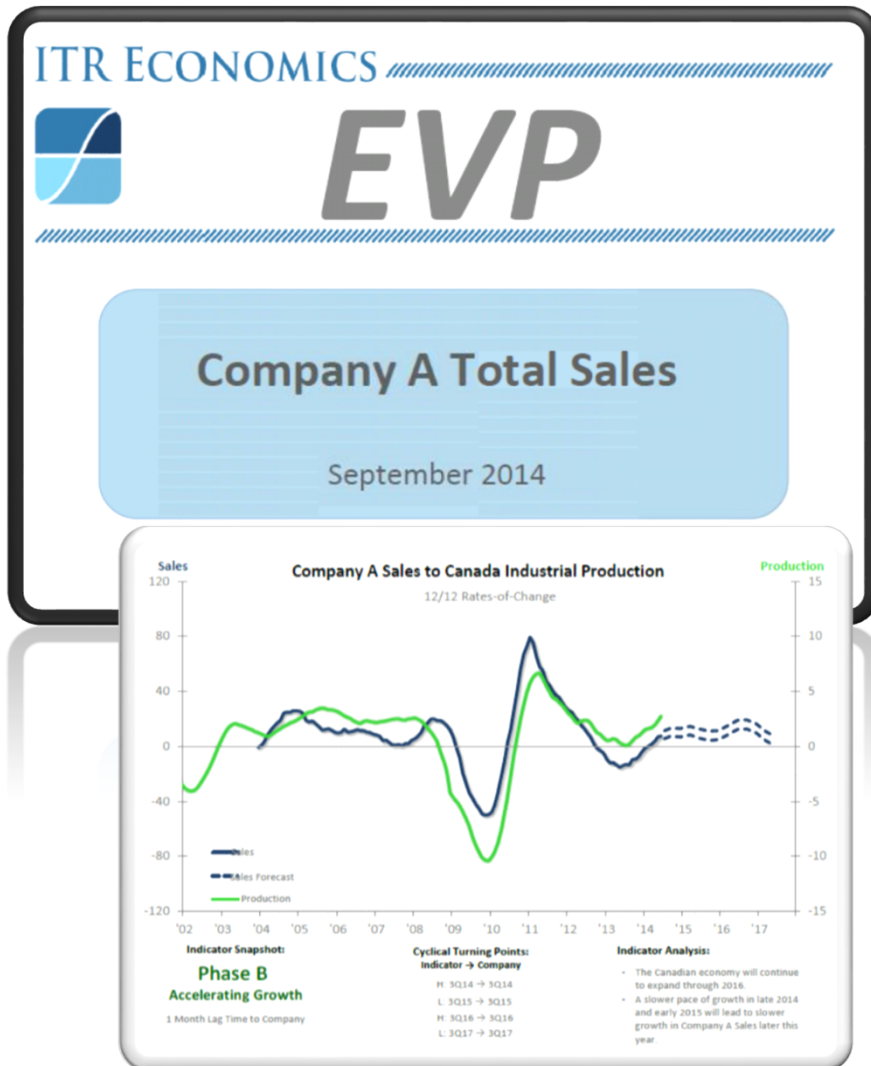
12/12 Rate-of-Change



- Annual Trend: 98.5
- Phase: D
- Year-over-Year: -4.8%

Industry	2015: -15.3%
 Outlook	2016: 4.6%
	2017: 5.6%

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