

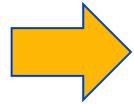


The Potential Recession Risk

FPL Finance
March 7, 2016

DRAFT 03/05/2016 24:15

Agenda



- **Executive Summary**
 - Risk Indicators & Recession Probability
 - Importance of a Recession Indicator
 - The Possible Impact on Florida

Indicators for recession risks were recently reviewed due to heightened global economic uncertainty

Executive Summary

- A review of several economic indicators shows that one indicator in particular, the St. Louis Federal Reserve Probability of Recession Indicator is the best predictor of a recession
- The St Louis Federal Reserve Probability of Recession is currently 4.06, indicating that there is only a 4.06% probability that we are currently in a recession⁽¹⁾
- While this appears to be a very low value, a reading of 4.06 or higher has usually occurred when the economy is either entering or coming out of a recession
- Since 1969, the Probability of Recession Indicator has equaled or exceeded 4.06 only three times in the absence of a recession within six months⁽²⁾

(1) Source: The Federal Reserve Bank of St. Louis - December 2015 reading

(2) The recession occurred either six months prior or six months after reading a 4.06 or higher

Indicators for recession risks were recently reviewed due to heightened global economic uncertainty

Executive Summary (continued)

- Other indicators suggest that the U.S. manufacturing sector is already in a contraction period based on new orders, production, and inventory levels
- The high value of the U.S. dollar is depressing exports, which in turn negatively affects U.S. manufacturing, tourism and trade
- Fortunately, manufacturing accounts for a smaller share of Florida's economy relative to the U.S. (4% versus 9% of employment)
- The high value of the dollar also hurts tourism and trade, two sectors critical to the state economy
- Deceleration in Florida's job growth is already evident particularly in Miami-Dade where job growth has dipped to its lowest rate since 2010

Manufacturing and trade are particularly vulnerable sectors at this time

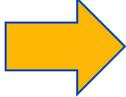
Indicators for recession risks were recently reviewed due to heightened global economic uncertainty

Executive Summary (continued)

- The number of international tourists to Florida is declining; international traffic through Miami-Dade Airport in 2015 grew at a slower rate relative to the prior year
- Contrary to the experience during the Great Recession, overbuilding is not a risk factor for Florida
- Housing permits in the state remain below the levels averaged during the 1990's

There is a proportionately larger downside risk to the economy at this time

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It may take six months to a year after a recession has started before the recession is even officially acknowledged

U.S. Recessions

Start of Recession	Date Announced	Lag
Jan-80	Jun-80	6 months
Jul-81	Jan-82	6 months
Jul-90	Apr-91	9 months
Mar-01	Nov-01	9 months
Dec-07	Dec-08	12 months

- The National Bureau of Economic Research (NBER) establishes the start and end dates for recession in the U.S.
- It typically takes NBER six months to a year after a recessions has started to acknowledge its existence

Because of the long lag time, more timely economic indicators of the recession risk are needed

Seven economic indicators were reviewed for their correlation with U.S. recessions since 1969

Economic Indications and U.S. Recessions

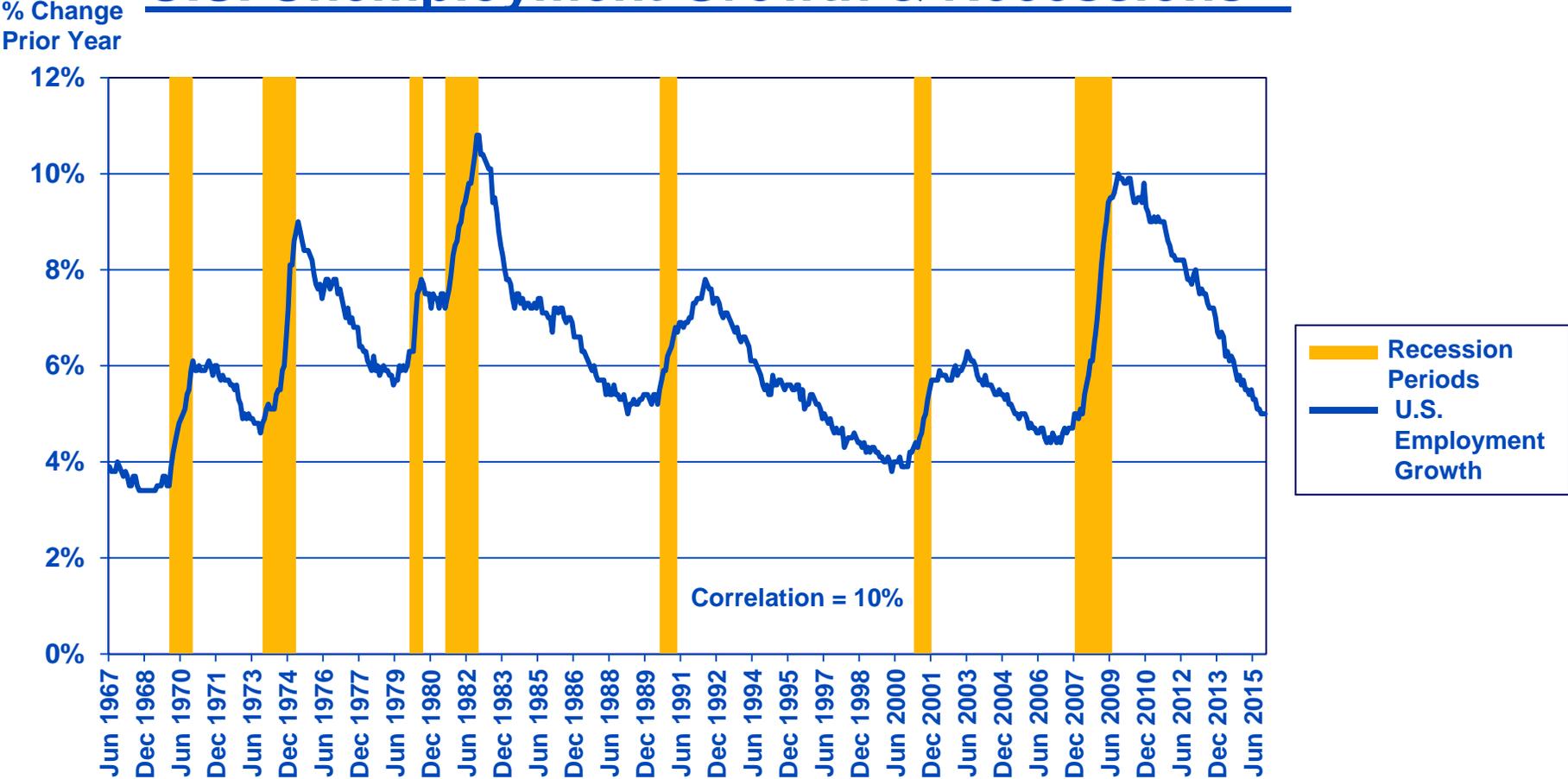
Indicator	Correlation with Periods of Recession	
	Coincident ⁽¹⁾	Leading 4 months ⁽²⁾
Unemployment Rate	10%	-10%
Employment	-37%	-12%
U.S. Housing Starts (% Change from Prior Year)	-47%	-43%
Industrial Production Index	-53%	-24%
ISM : Composite Index for Manufacturing©	-57%	-26%
ISM: New Orders Index for Manufacturing©	-62%	-44%
St Louis Federal Reserve 's Probability of Recession Index	90%	61%

A coincident indicator would be more timely than waiting for the NBER's official announcement

- (1) Assumes indicator mirrors the timing of recession
- (2) Assumes indicator leads recession by four months

The unemployment rate is a lagging indicator, peaking near the end of each recession or just after

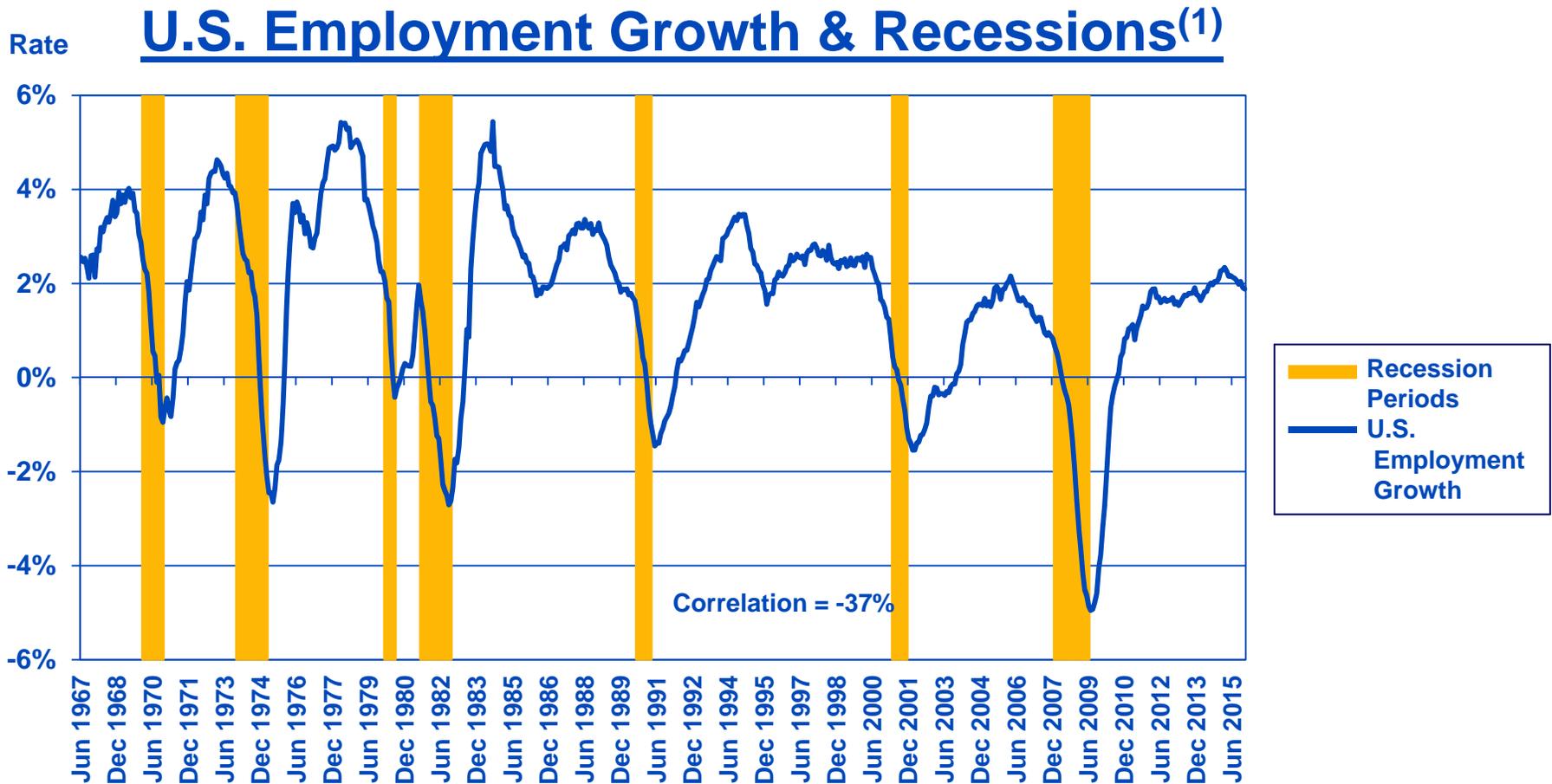
U.S. Unemployment Growth & Recessions⁽¹⁾



The unemployment rate provides little guidance on the current risk of recession

(1) Source: Federal Reserve Bank of St. Louis

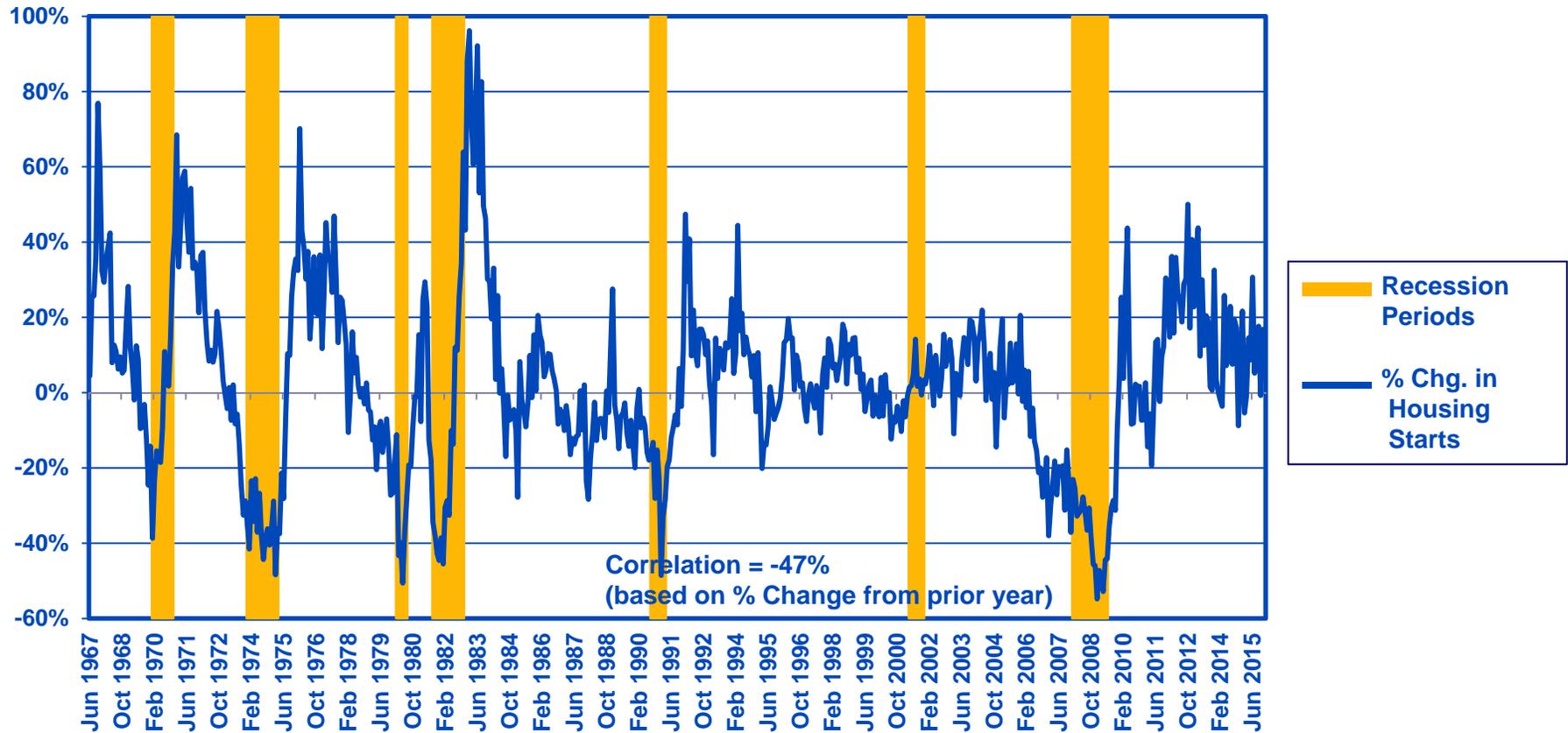
The level of employment typically doesn't start declining until late into a recession



Employment is of limited guidance in assessing the current risk of recession

Housing Starts are moderately coincident with periods of recessions

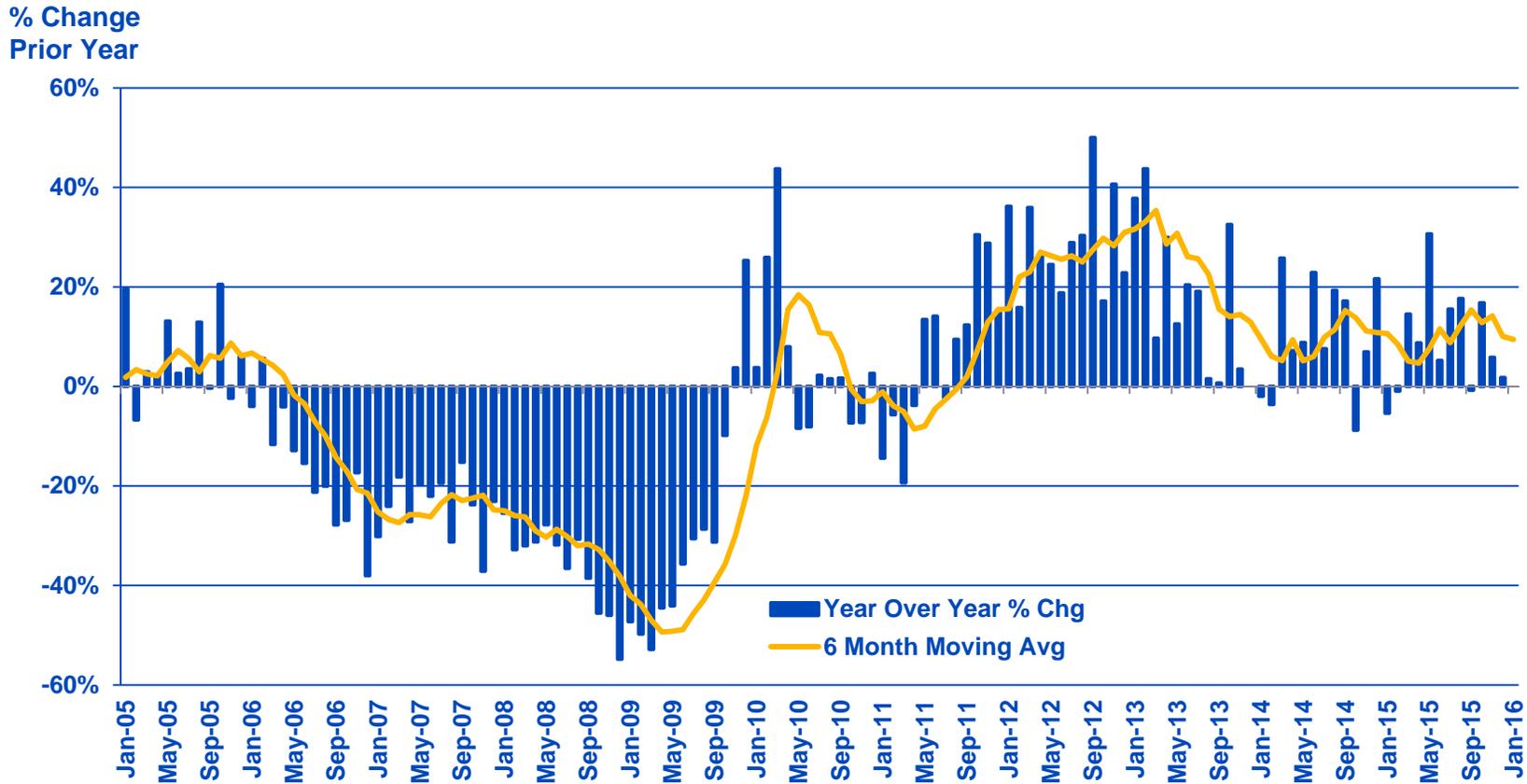
% Change in U.S. Housing Starts & Recessions⁽¹⁾



Housing starts may provide guidance in assessing the current risk of a recession

U.S. housing starts are continuing to increase although at a slower rate relative to 2013

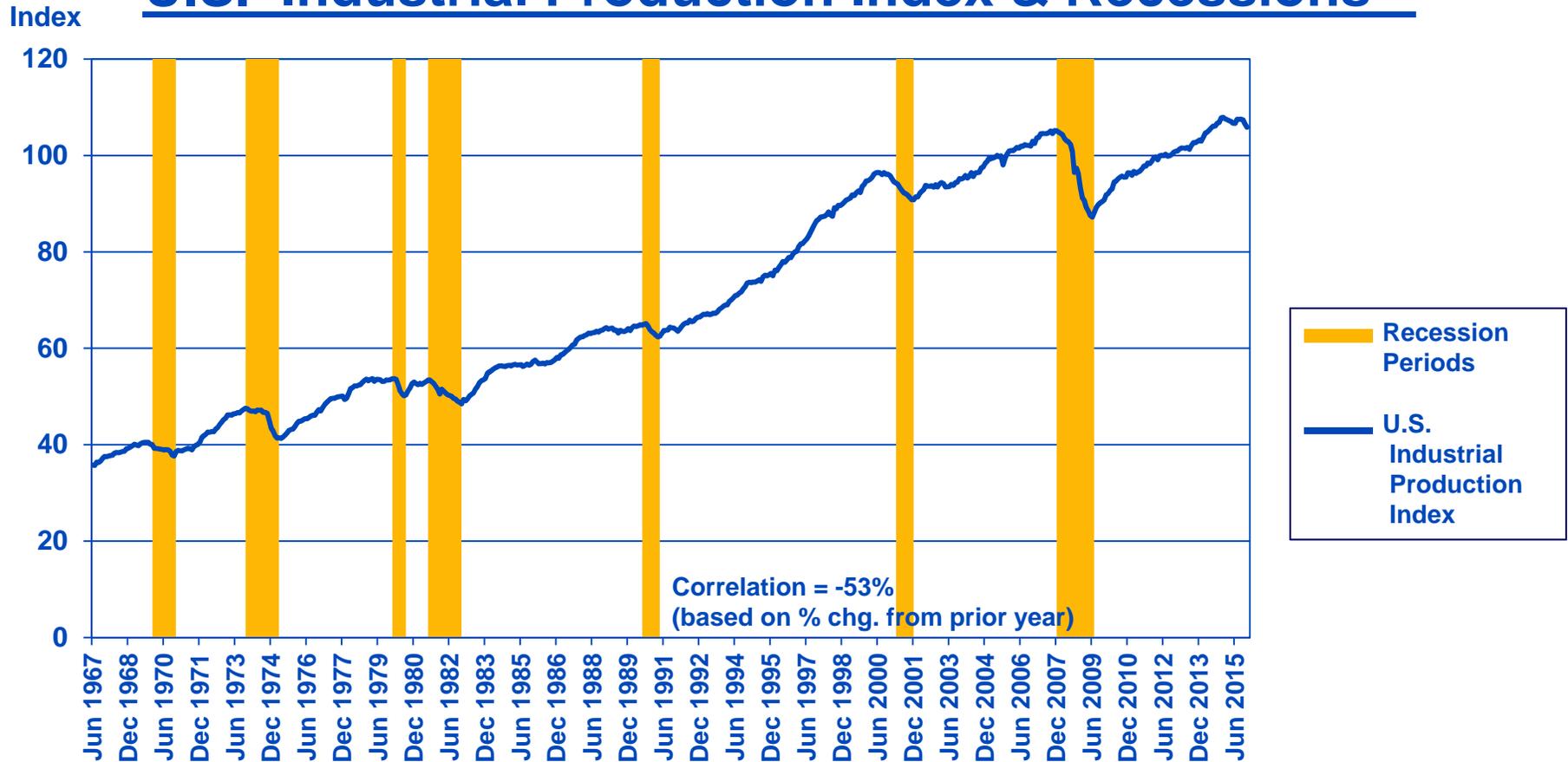
U.S. Housing Starts – % Change from Prior Year⁽¹⁾



Housing starts do not indicate a strong recession risk

U.S. Industrial Production Index tends to decline as the economy enters into a recession

U.S. Industrial Production Index & Recessions⁽¹⁾

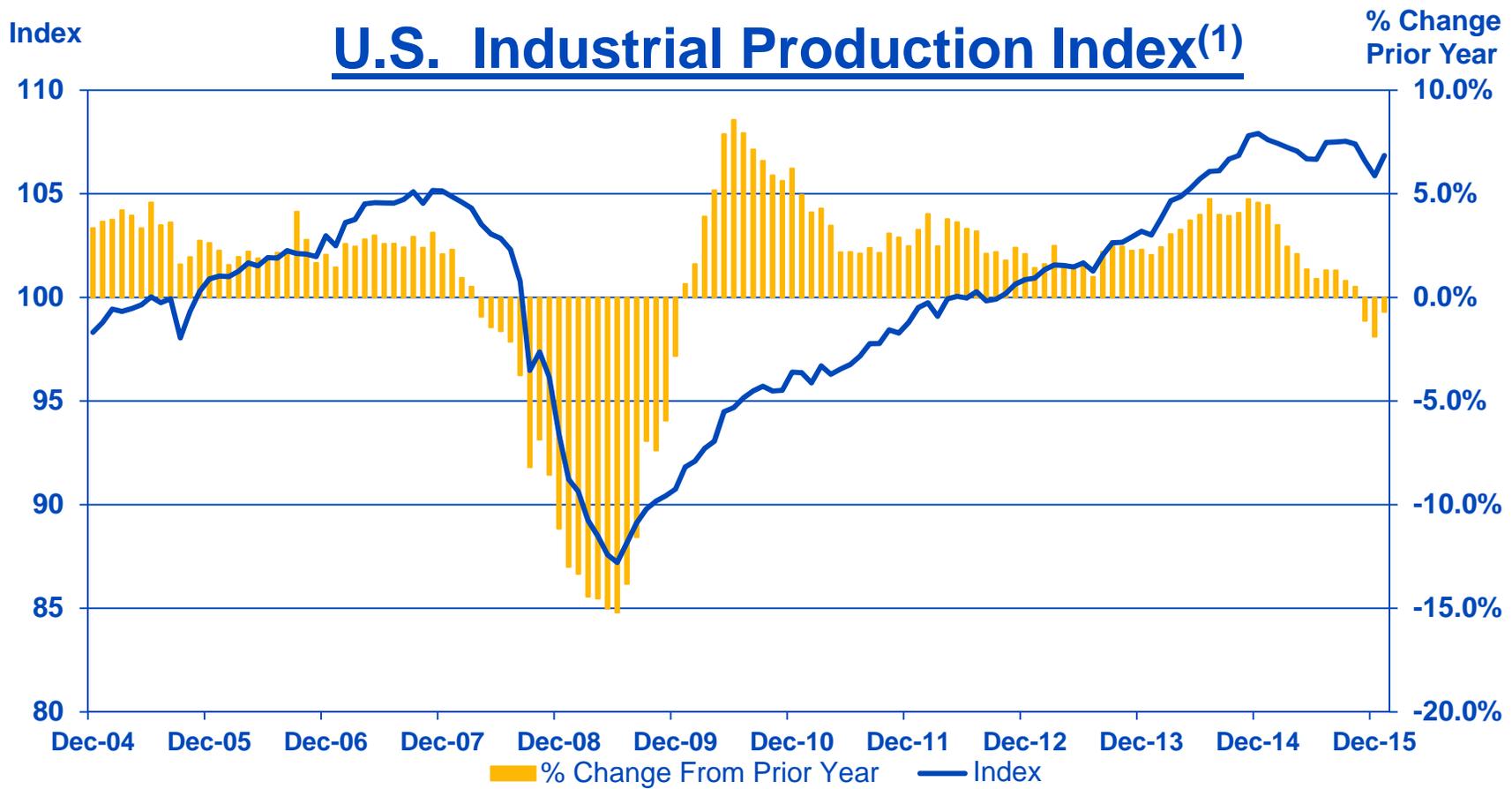


The U.S. Production Index may provide some guidance on assessing the current risk of recession

(1) Source: Federal Reserve Bank of St. Louis

Note: The Industrial Production Index measures real output for all manufacturing, mining, and electrical and gas facilities in the U.S.

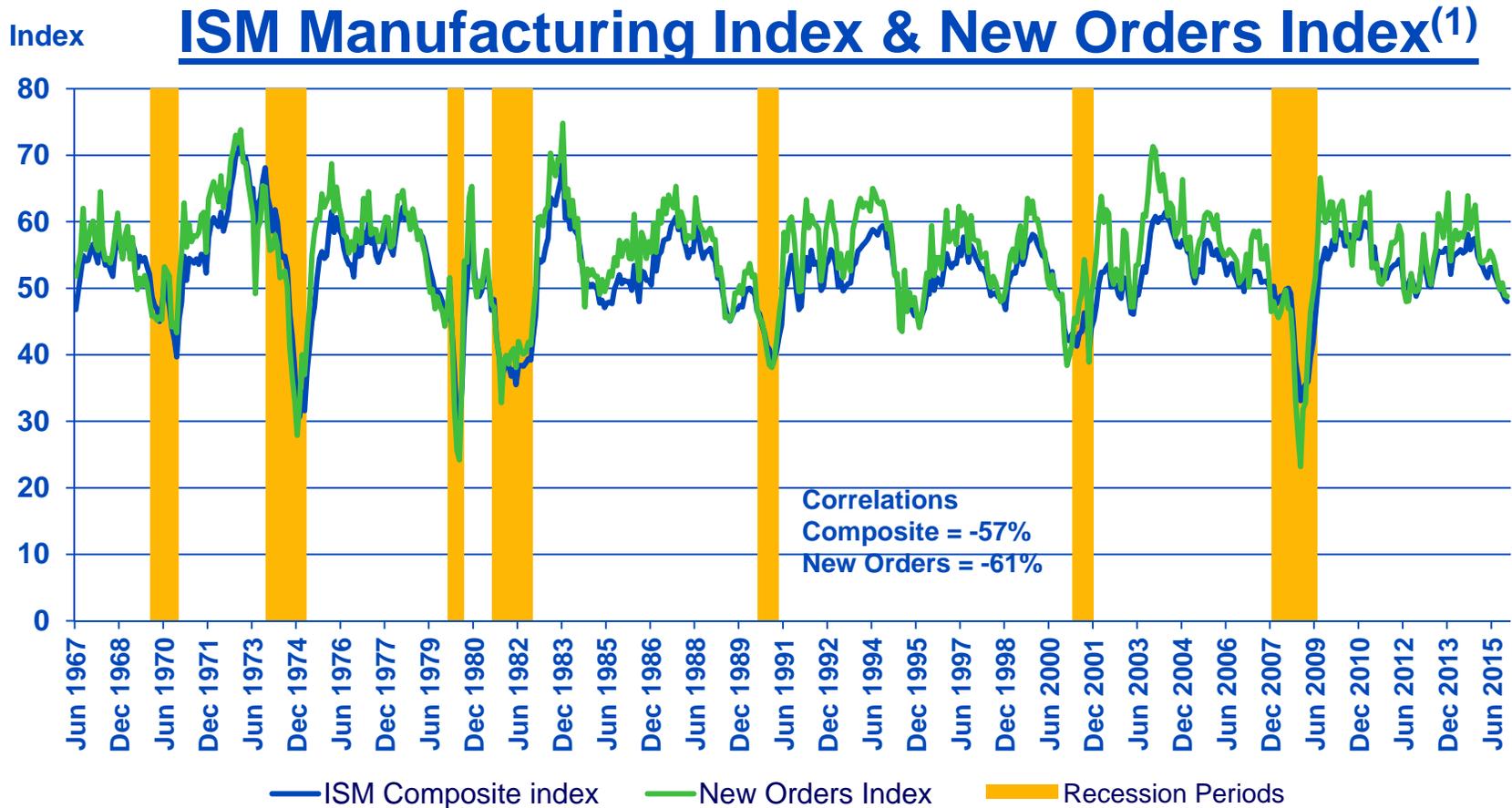
U.S. Industrial Production Index has declined for the past three months



The Industrial Production Index measures real output for all manufacturing, mining, and electric, and gas utilities facilities in the U.S.

(1) Source: Federal Reserve Bank of St. Louis

The Institute for Supply Management (ISM)'s Composite Index for Manufacturing has a moderate correlation with periods of recession

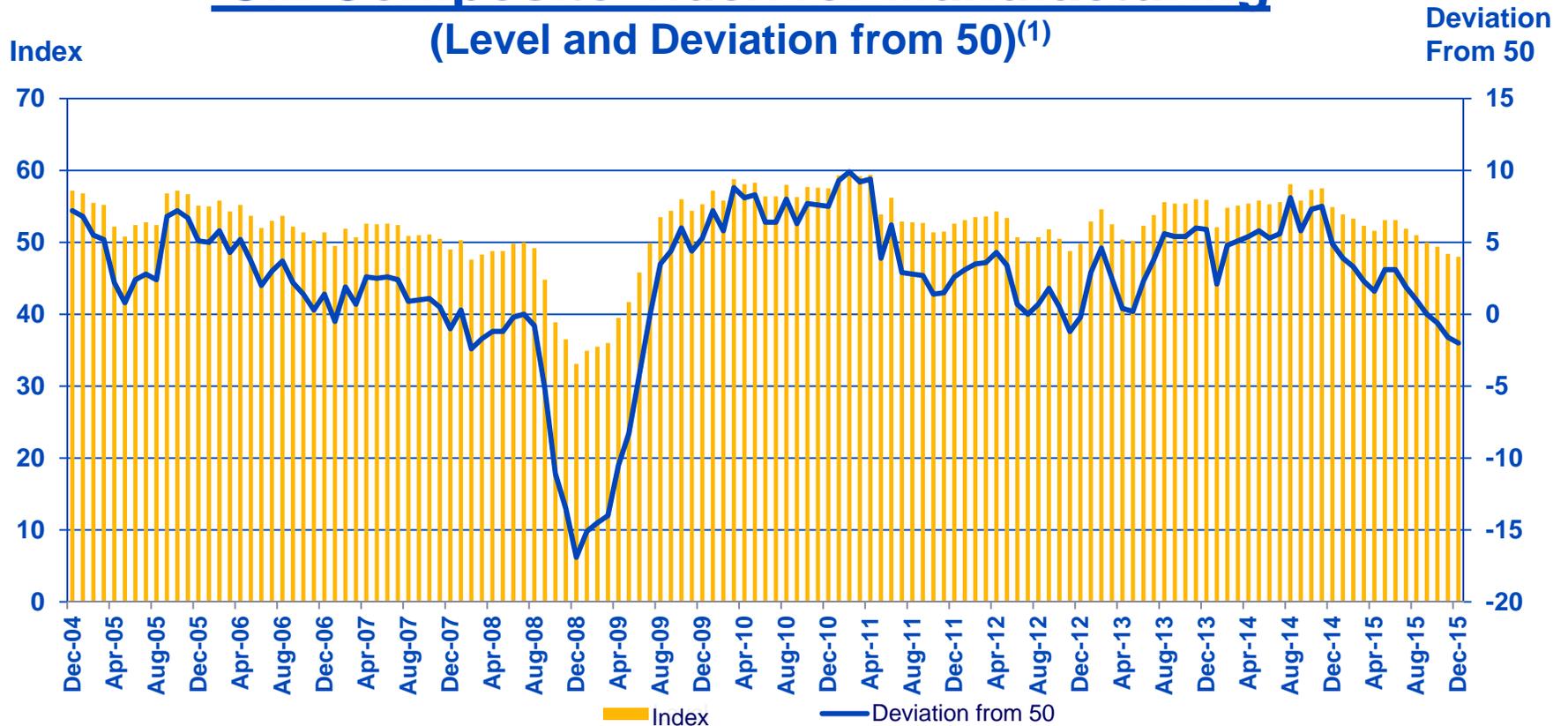


The Index for New Orders in Manufacturing has an even higher correlation with periods of recession

(1) Source: Institute for Supply Management

The ISM Composite index for Manufacturing has been below 50 since Sept 2015; this indicates a contraction in manufacturing

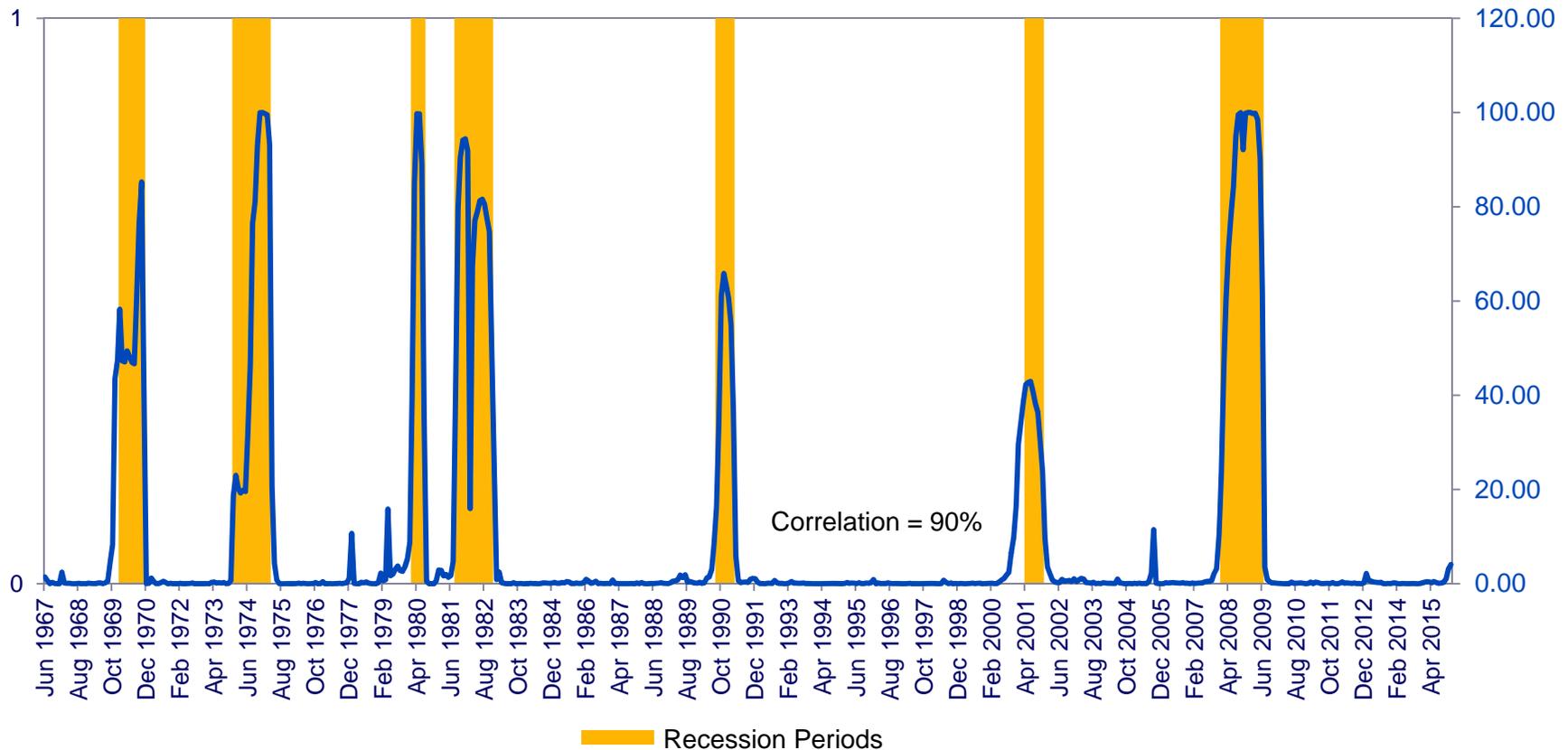
ISM Composite Index for Manufacturing (Level and Deviation from 50)⁽¹⁾



The Composite Index for Manufacturing is based on five major indicators: new orders, inventory levels, production, supplier deliveries and the employment environment.

The St Louis Federal Reserve's Probability of Recession Index is highly correlated with periods of recession

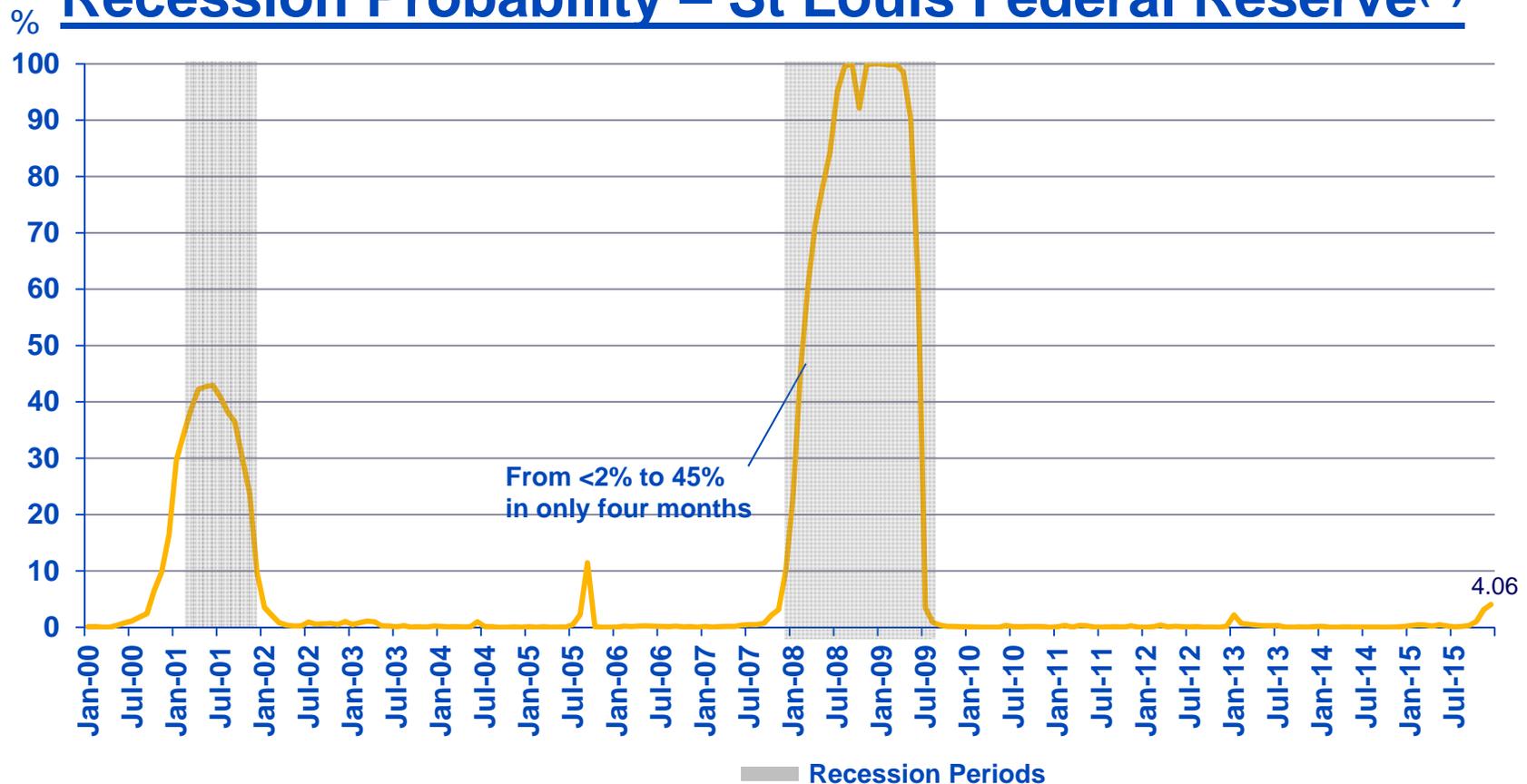
Probability of Recession Index & Recessions⁽¹⁾



The Probability of Recession Index also has a decent 61% correlation with periods of recession lagged four months

As of December 2015, the Probability of Recession Index was only 4.06%, which indicates that there is only a 4.06% probability that the economy is currently in a recession

Recession Probability – St Louis Federal Reserve⁽¹⁾



As was the case with the Great Recession, the probability of a recession can increase significantly in just a few months

In five of the last seven recessions, the Probability of Recession Index equaled or exceeded its current level, 4.06, one to five months before the start of the recession

U.S. Recessions Since 1969

Date Probability > 4.06%	Recession Start Date	Warning
1969-09	1969-12	1 month
1973-12	1973-11	None (1 month lag)
1979-12	1980-01	1 month
1981-02	1981-07	5 months
1990-07	1990-07	None
2000-10	2001-03	5 months
2007-11	2007-12	1 month

In the remaining two recessions, the Probability of Recession Index equaled or exceeded its current level right at the start of the recession

Since 1969 the Probability of Recession Index has equaled or exceeded its current level, 4.06, in the absence of a recession only three times

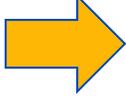
Recession Index at Its Current Level and No Recession⁽¹⁾

Date Probability > 4.06%	Date of Next Recession	
1978-01	1980-01	2 years too early
1979-04	1980-01	9 months too early
2005-09	2007-12	2 years too early
2015-11	???	

The current level, 4.06, is not considered the “official “ sign of a recession; however it apparently has some predictive power

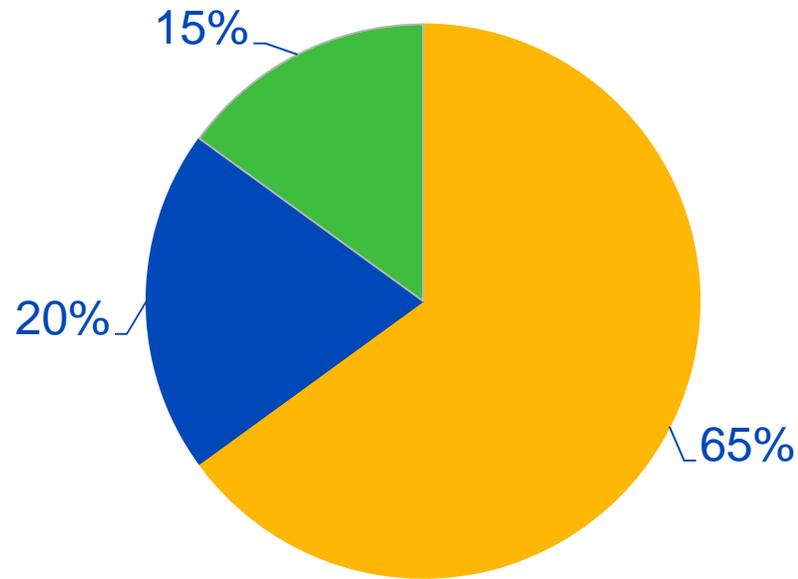
(1) Based on readings of 3.84 or higher which occurred in the absence of a recession within six months either before or after the reading

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IHS Global Insight's base case forecast for the U.S. indicates solidly positive economic growth

Probability of Economic Outcomes⁽¹⁾



- Base Case: Solid Positive Growth
- Pessimistic: Mild Recession
- Optimistic: Recovery Gains Momentum

However, according to IHS Global Insight, there is a disproportionate downside risk of a mild recession

Falling commodity prices, deflation and global instability are among the top risks identified by IHS Global Insight

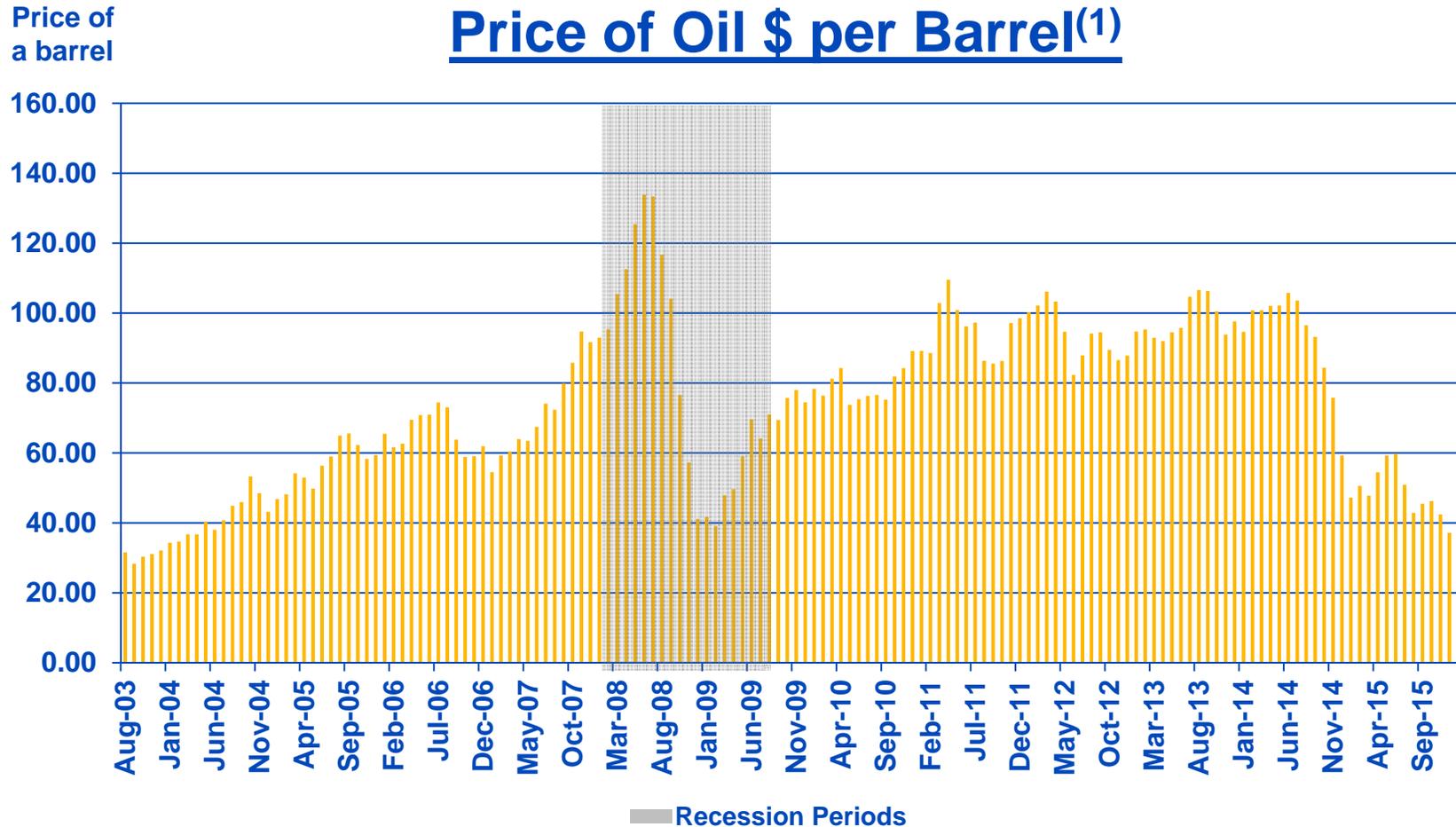
Top Risks to the Global Economy

- World growth disappointments
- Deflationary pressures intensify
- Energy and raw material prices do not stabilize
- Emerging markets private sector debt stress
- Global investment drought
- China hard landing
- U.S. dollar appreciation
- EU political crisis
- Cyber attack
- Geopolitical risks



The Conference Board has likewise cited weakness in trade and investment as risk factors

In January 2016, the price of crude oil was \$31.68 per barrel, its lowest price since 2003

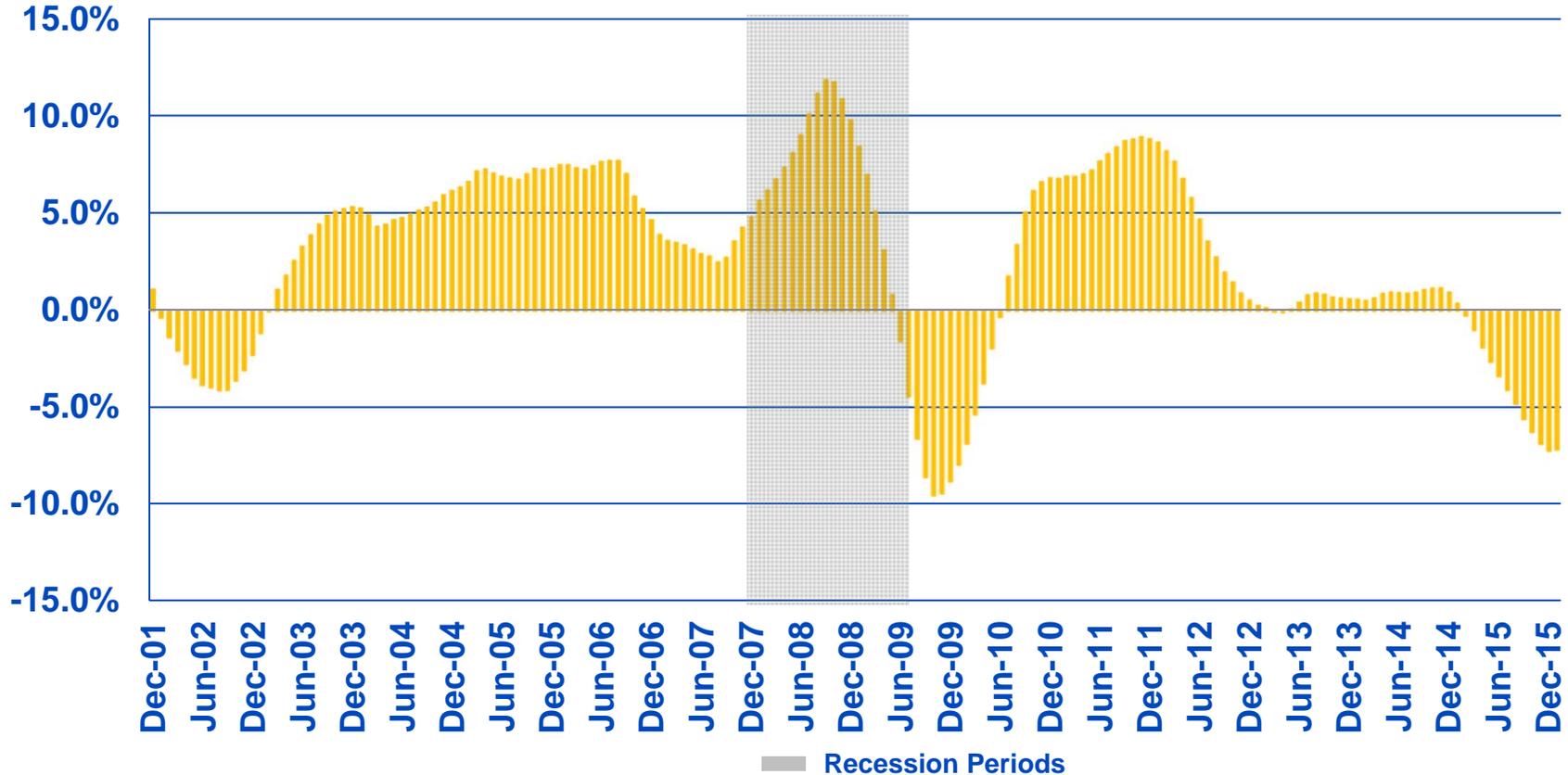


By contrast, the price of oil increased immediately prior to the Great Recession

The Producer Price Index for All Commodities in January 2016 fell at its sharpest rate since 2009

Producer Price Index for All Commodities⁽¹⁾

% Change in
12 Month
Moving Avg.

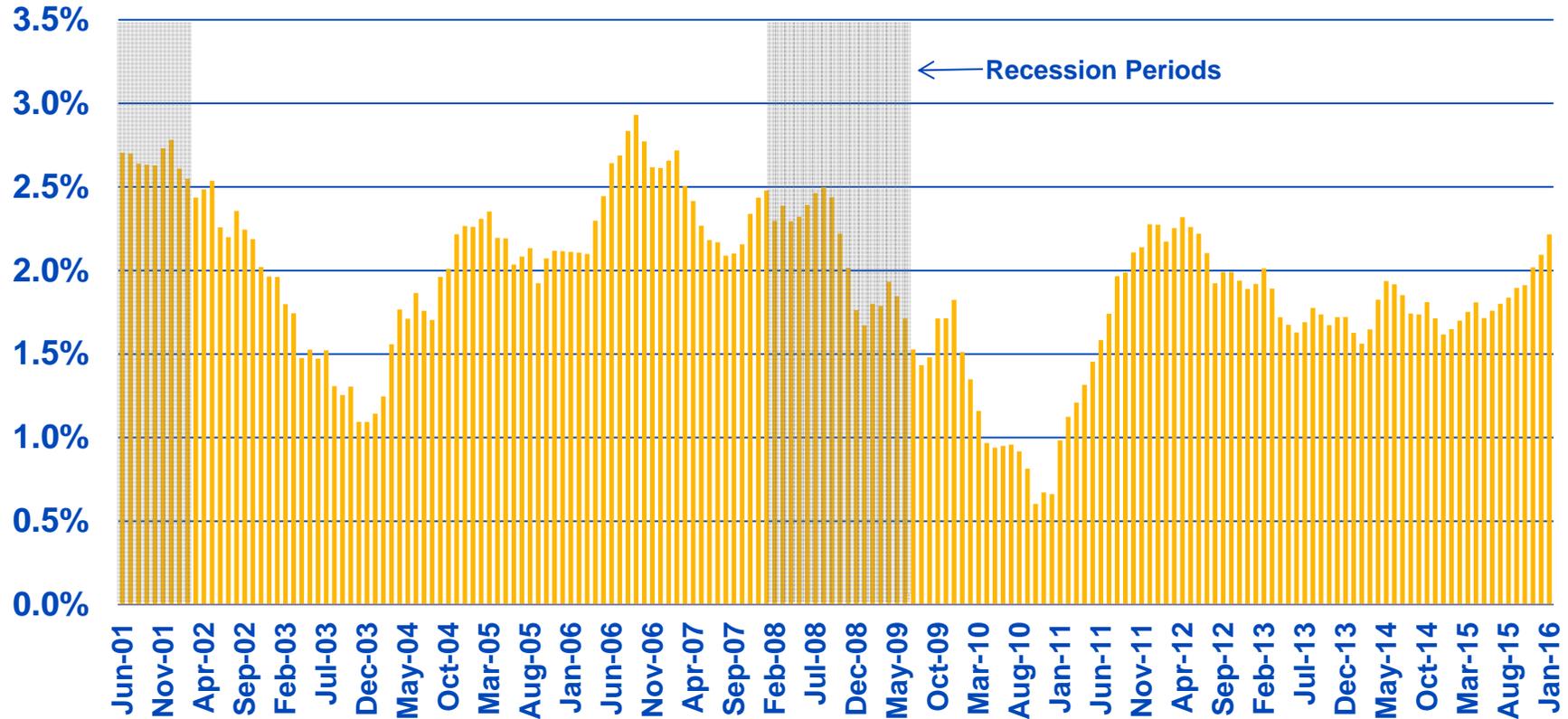


Inflation in commodity prices also peaked during the Great Recession

The Core Consumer Price Index , which excludes the volatile food and energy sectors, has been increasing at a fairly steady rate since 2012

Core Consumer Price Index⁽¹⁾

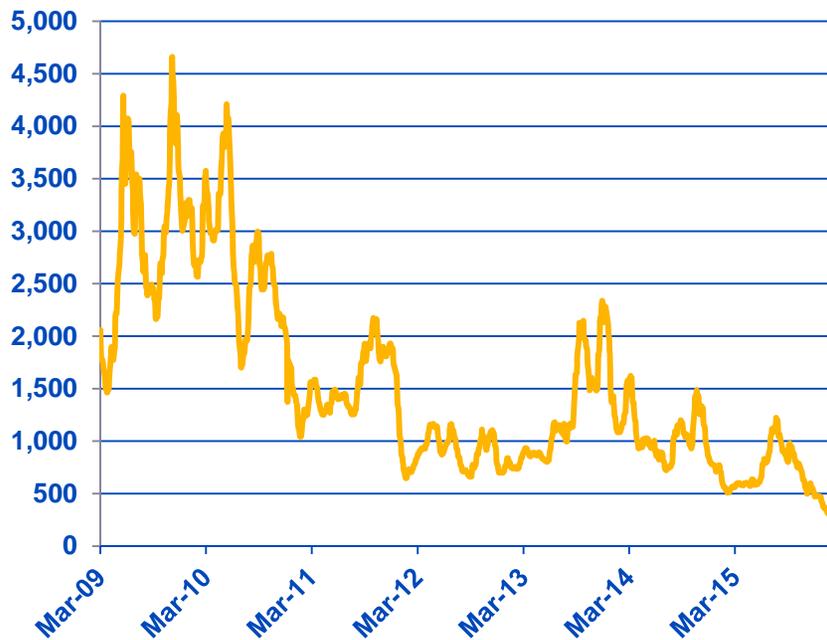
Annual %
Change



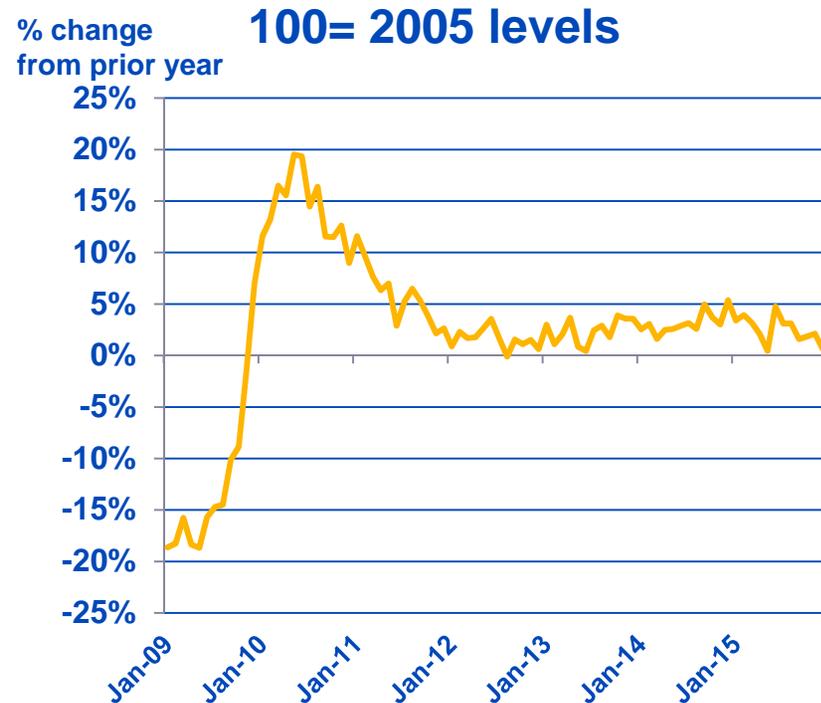
Stability in the Core CPI suggests that the underlying rate of inflation remains positive

In December 2015, world trade was growing at an annual rate of only 0.6%

Baltic Dry Index⁽¹⁾

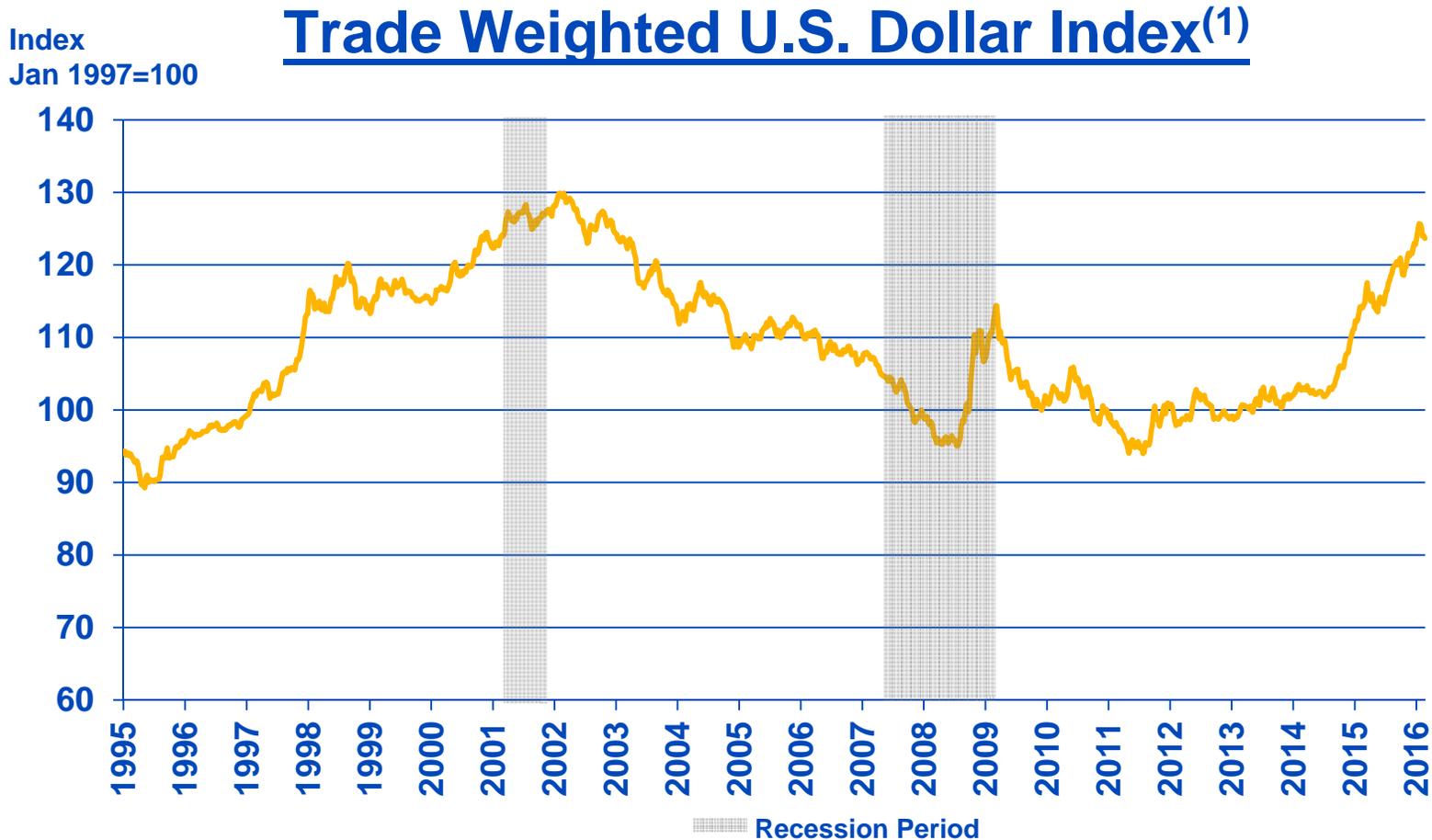


World Trade Index⁽¹⁾



The Baltic Dry Index, a measure of the price of shipping major raw materials sometimes used a bell weather of trade, is falling at a record pace in 2016

The Trade Weighted U.S. dollar is at its highest level since early 2003

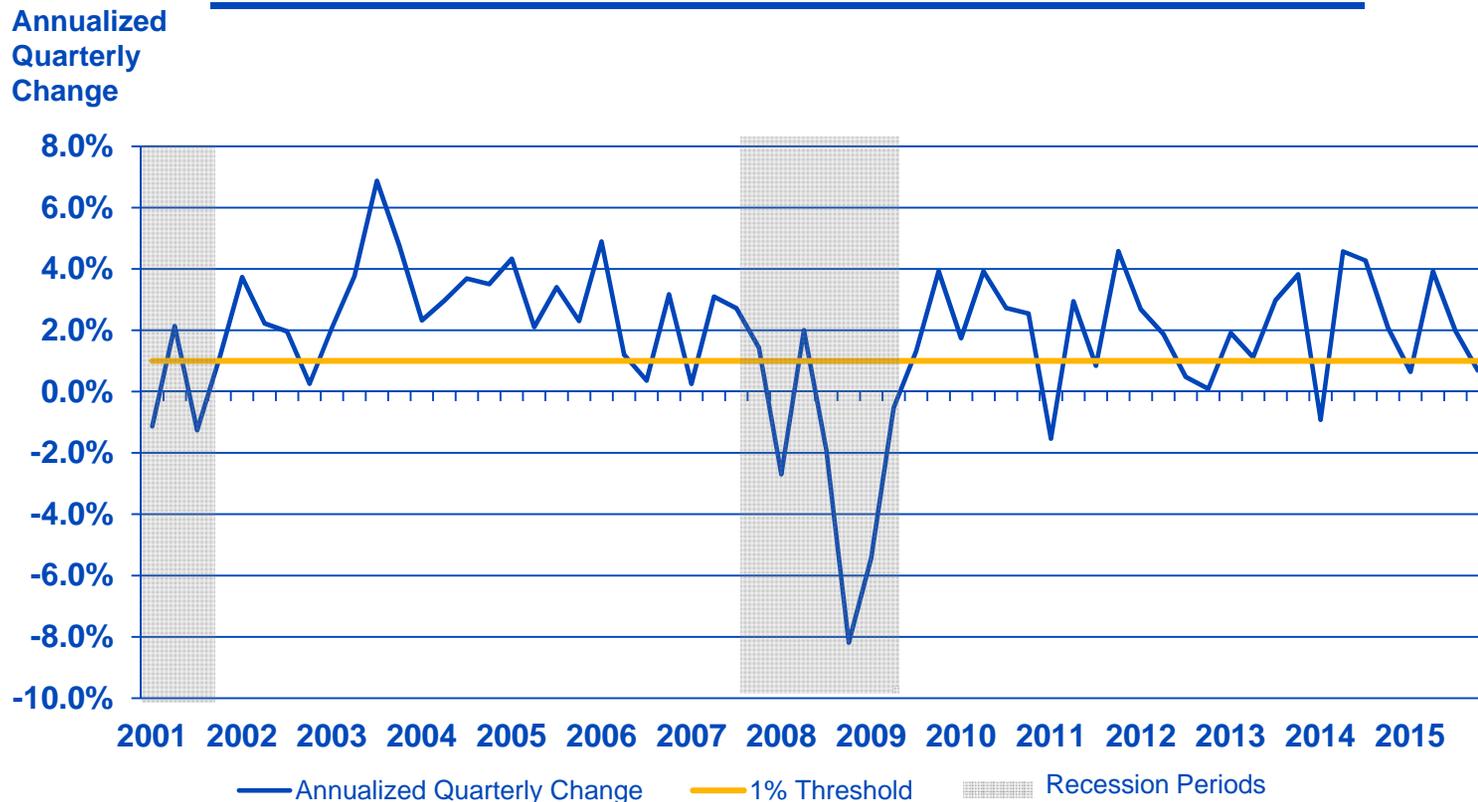


A high value for the U.S. dollar puts U.S. exports at a disadvantage and makes imports relatively less expensive

(1) Source: Trade Weighted U.S. Dollar Index: Broad, Index Jan 1997=100, Weekly, Not Seasonally Adjusted

Some analysts suggest that annualized growth of less than 1% in the real GDP is a warning signal for a recession

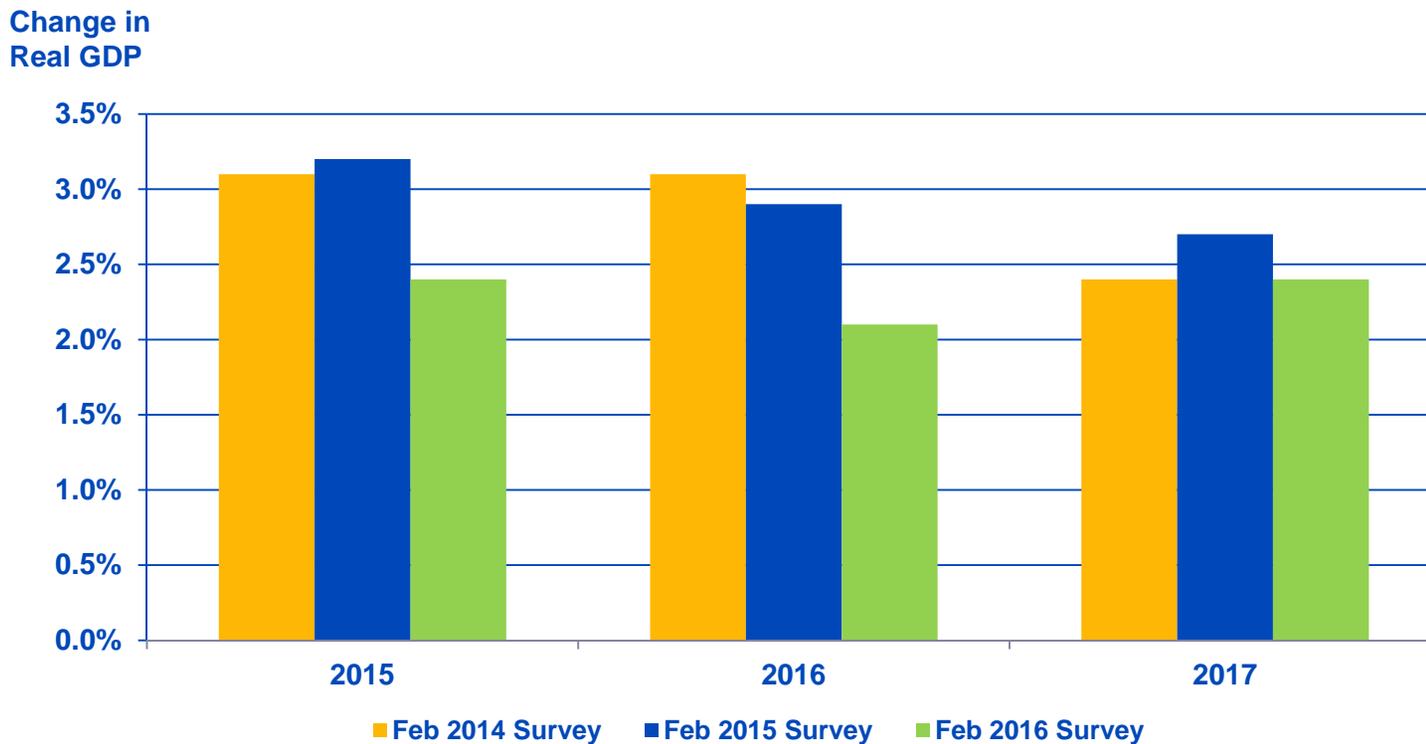
Annualized Growth in U.S. Real GDP⁽¹⁾



The U.S. has experienced real GDP growth of less than 1% multiple times since the end of the Great Recession, most recently in 2015 Q4

Economists have lowered their expectations for the U.S. economy over the last year

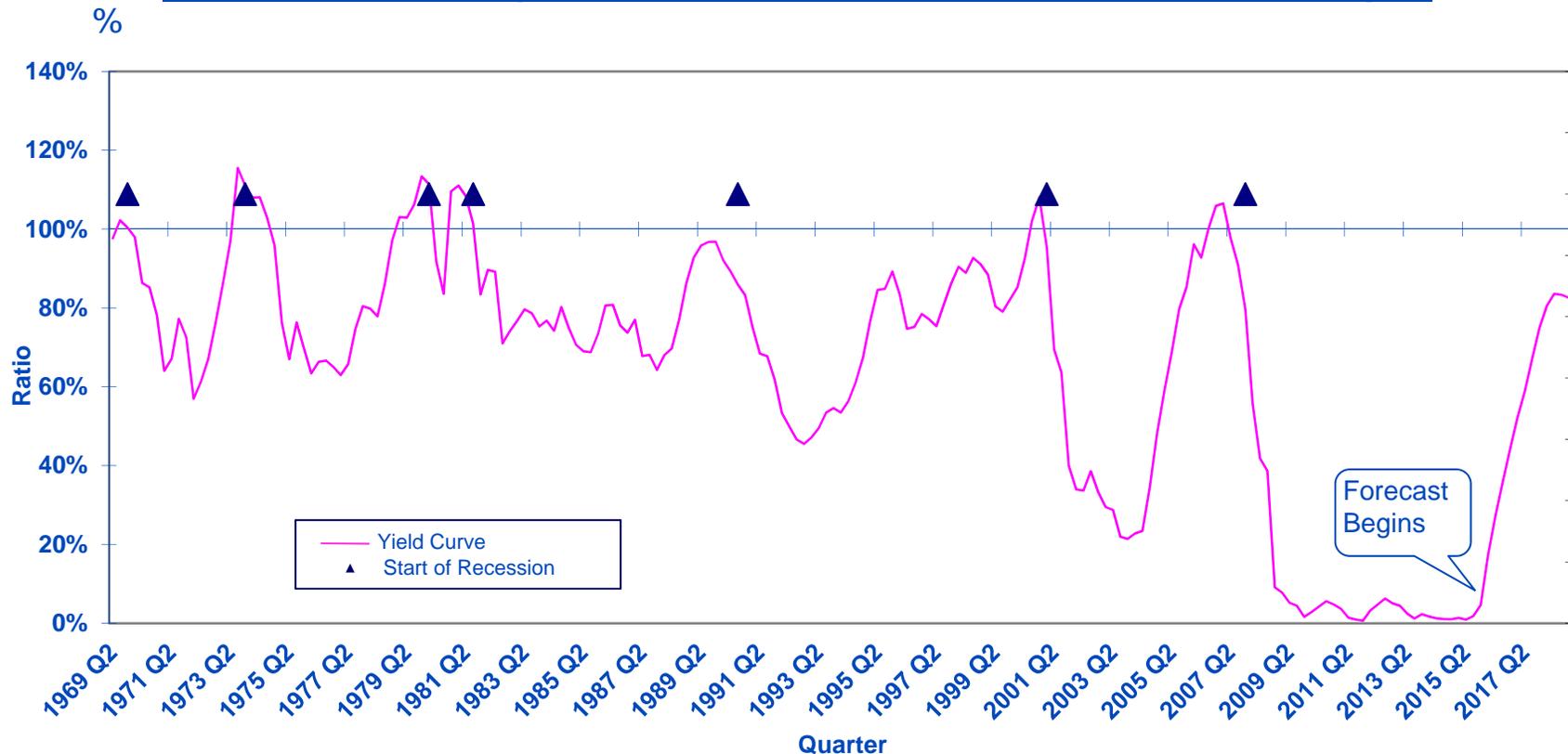
Forecast U.S. Real GDP Growth (Philadelphia Federal Reserve Survey of Economists)



Real GDP growth in 2015 is estimated at 2.4% versus forecasted growth of over 3%

The spread between 3 month and 10 year treasuries is in uncharted territory due to years of near zero interest rates

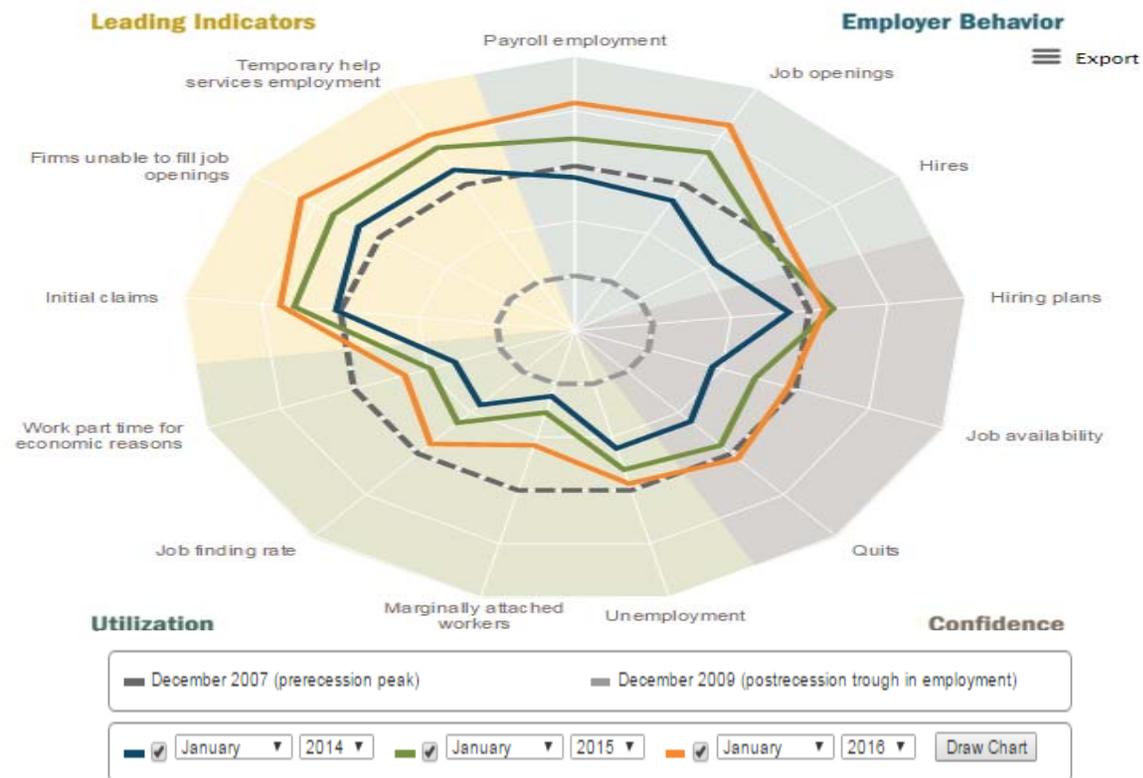
Yield Curve (3 Month to 10 Year Treasuries)⁽¹⁾



Historically, the start of a recession typically occurs when the yield curve inverts

The spider chart is designed to allow monitoring of broad labor market developments by comparing current conditions to those in the fourth quarters of 2007 (pre-recession peak) and 2009 (post-recession trough in employment)

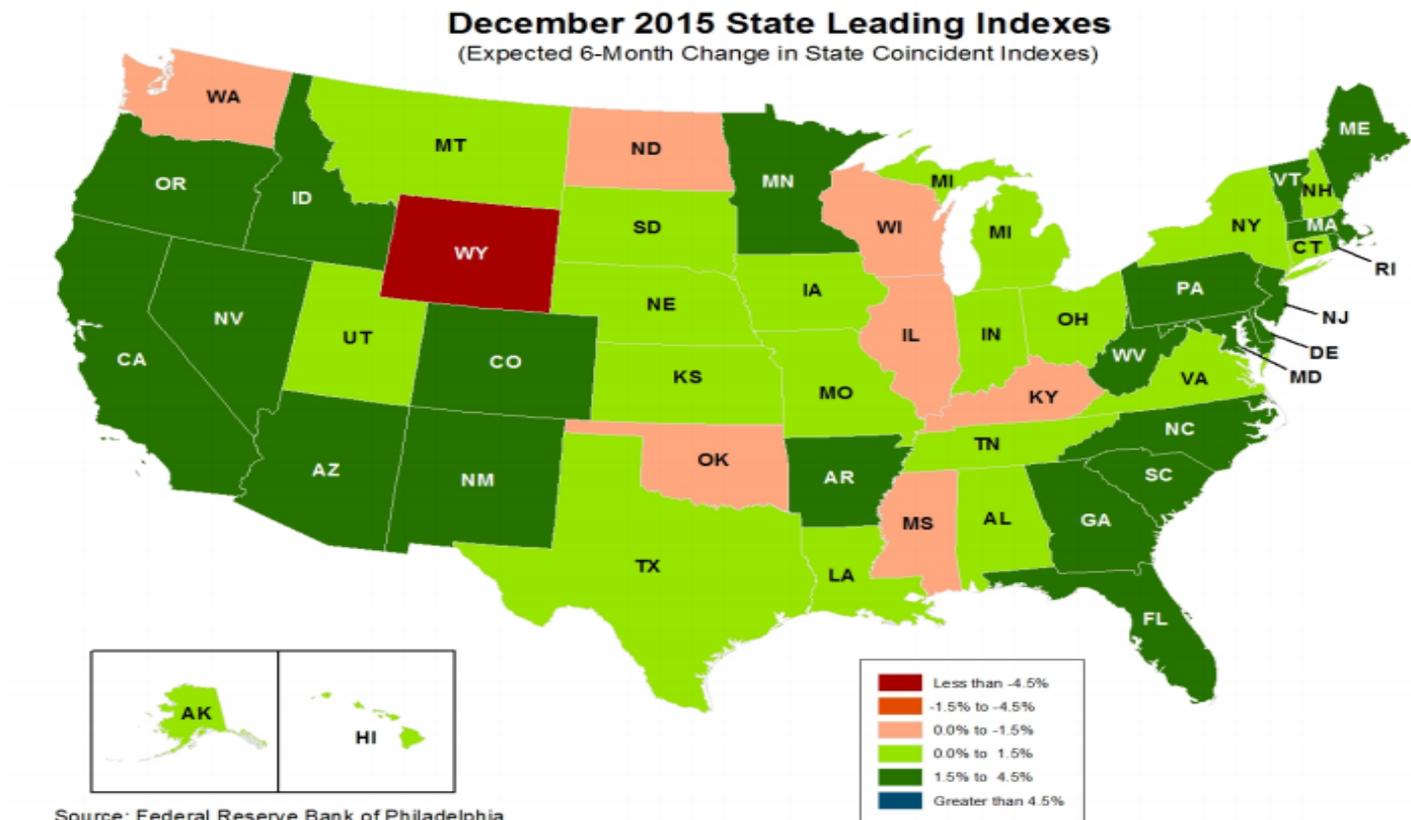
Atlanta Federal Labor Market Spider Chart⁽¹⁾



The spider chart shows the leading indicators in the labor market have surpassed their pre-recession levels

Forty-two states are projected to grow their economies over the next six months, while eight are projected to experience declines

Leading Indexes by State⁽¹⁾



The eight states projected to decline are generally vulnerable to falling energy prices

There appears to be more downside than upside risks to the U.S. economy at present

The U.S. Economic Environment

- The high value of the U.S. dollar is depressing the manufacturing sector, which already appears to be in a contraction
- Expectations for the U.S. economy have been progressively scaled back over the last years
- The labor market in some respects remains strong – if somewhat unbalanced
- Firms continue to report difficulty hiring qualified candidates while the ranks of those who've dropped out of the labor force remains substantial
- Partly as a result of declining energy prices, the economies in eight states are expected to decline over the next six months

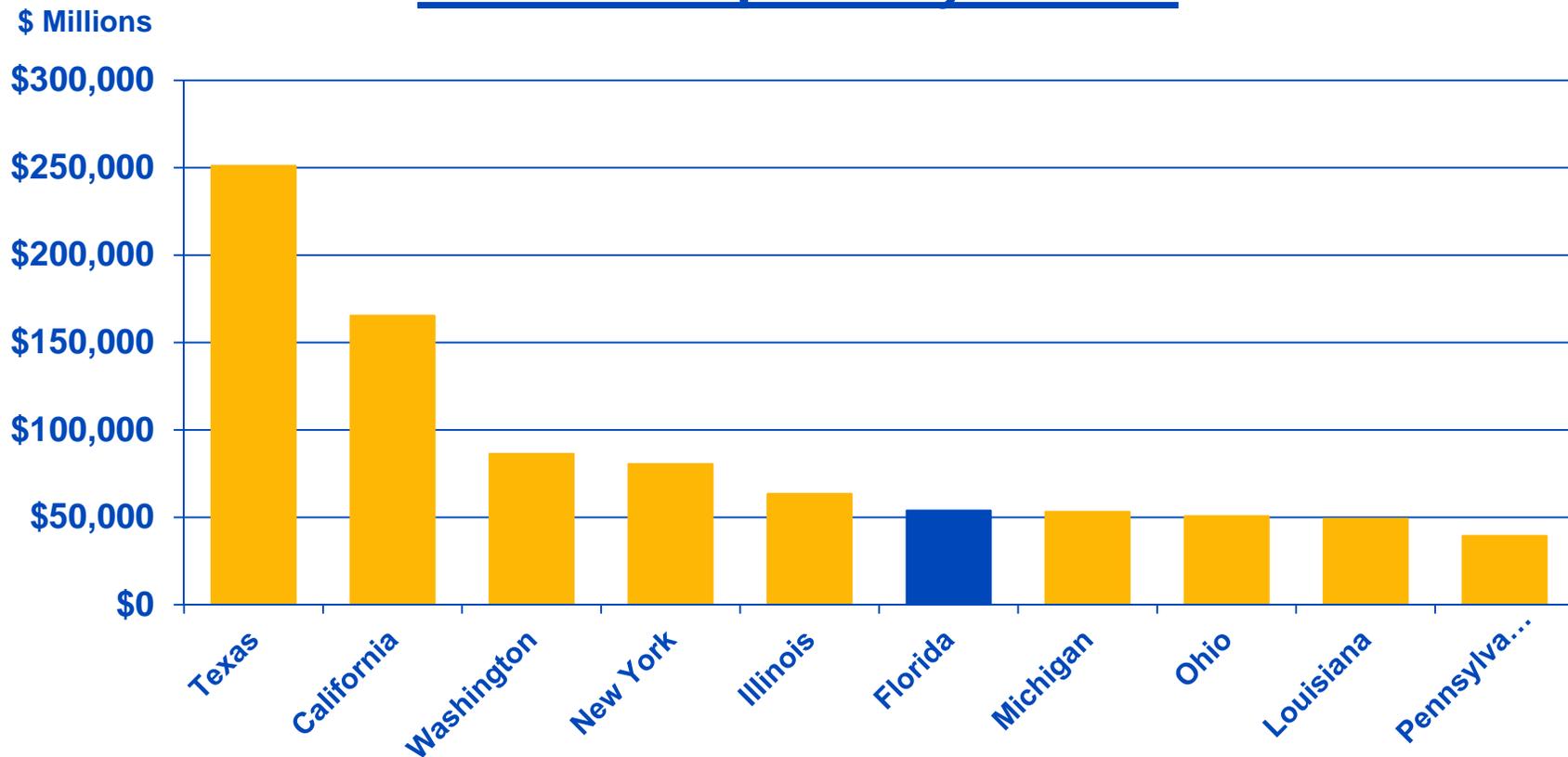
Key economic indicators should continue to be regularly monitored

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- ➔ • **The Possible Impact on Florida**

Florida ranks sixth in the U.S. in terms of global exports

Value of Exports by State⁽¹⁾

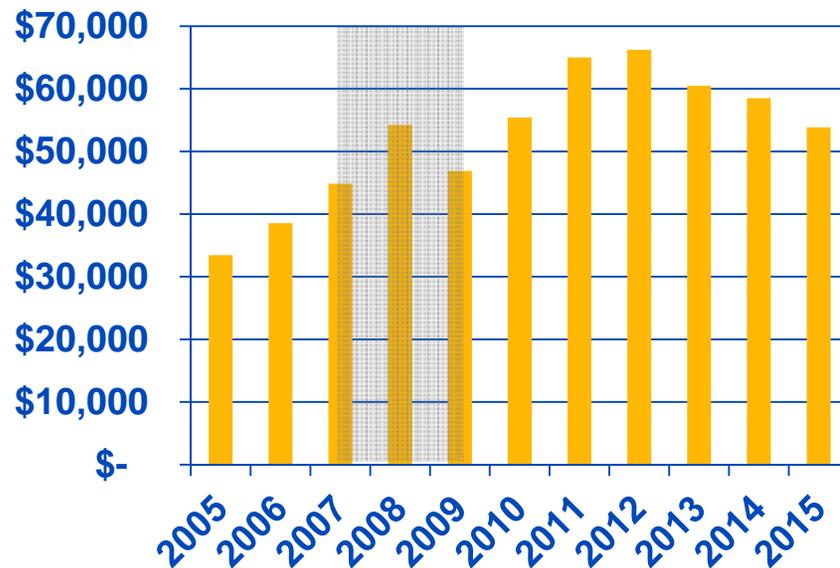


Florida's exports in 2015 were valued at \$53.8 billion

The value of Florida's global exports declined by 8% last year

Florida Exports to the World⁽¹⁾

(In Millions)



Florida's 2015 Top Markets for Exports⁽¹⁾

(In Millions)

Canada	\$3,875
Brazil	\$3,694
Mexico	\$2,714
Colombia	\$2,536
Venezuela	\$2,017
Germany	\$1,787
Dominican Republic	\$1,700

In 2015, Canada replaced Brazil as the top export market for Florida

Florida is a major re-exporter of products produced in other countries

Florida's 2014 Top Imports⁽¹⁾

(In Millions)

Petroleum	\$ 4,614
Non-Monetary Unfinished Gold	\$ 4,335
Cell Phones	\$ 3,049
Passenger Vehicles	\$ 1,370
Light Oil	\$ 1,247



Florida's 2014 Top Exports⁽¹⁾

(In Millions)

Engine Parts for Civilian Aircraft	\$ 4,799
Non-Monetary Unfinished Gold	\$ 3,283
Cell Phones	\$ 2,923
Diammonium Phosphate	\$ 1,058
Data Processing Machines	\$ 993

Gold and cell phones are popular products that are re-exported from Florida

As of February 2016 the U.S. Dollar is at its highest level relative to the Brazilian Reals in more than a decade

Brazil to U.S. Dollar Exchange Rate⁽¹⁾

Brazilian Reals
To One U.S. Dollar



The high value of the U.S. dollar makes exports to Brazil more expensive

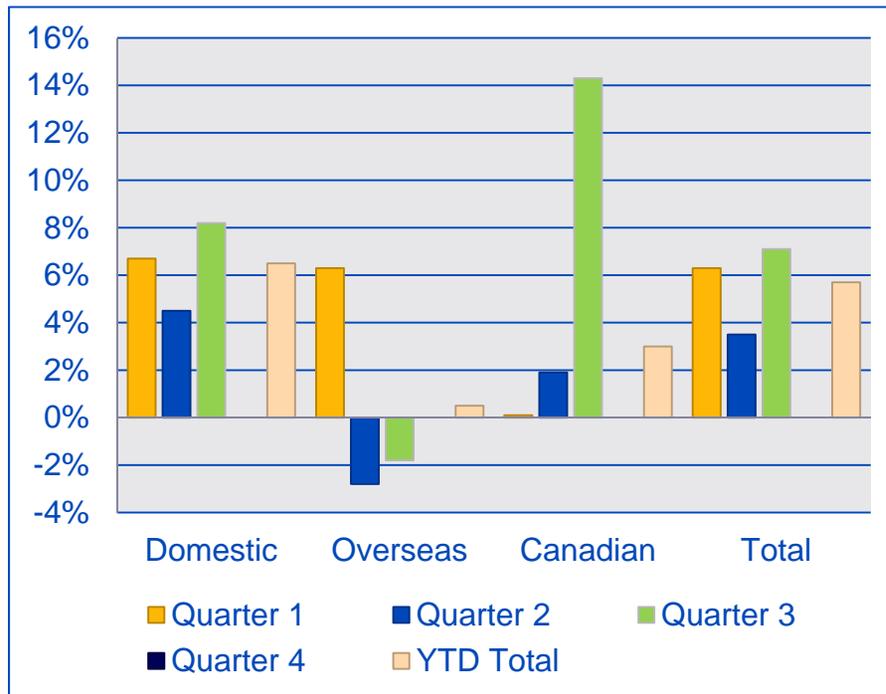
(1) Source: Federal Reserve Bank of St. Louis

While tourism continues to grow, the number of tourists from overseas began to decline in 2015 Q2

Florida Tourism

2015 Estimates of Visitors to Florida by Quarter⁽¹⁾

% Change



Top Countries for International Visitation to Florida⁽²⁾

No.	Origin Country	2013 Visitation	2014 Visitation	% Change
1	Canada	4,187,000	4,016,000	-4%
2	United Kingdom	1,516,000	1,642,000	8%
3	Brazil	1,819,000	1,641,000	-10%
4	Argentina	818,000	724,000	-11%
5	Colombia	404,000	594,000	47%
6	Venezuela	626,000	490,000	-22%
7	Germany	423,000	448,000	6%
8	Mexico	413,000	430,000	4%
9	Australia	317,000	320,000	1%
10	France	300,000	313,000	4%

No.	World Region	2013 Visitation	2014 Visitation	% Change
1	South America	4,307,000	4,117,000	-4%
2	Europe	3,861,000	4,091,000	6%
3	Canada	4,187,000	4,016,000	-4%
4	Asia/Oceania	1,191,000	1,199,000	1%
5	Caribbean	599,000	629,000	5%
6	Central America	595,000	601,000	1%
7	Mexico	413,000	430,000	4%
8	Middle East/Africa	222,000	249,000	12%

Source: VISIT FLORIDA estimates, excluding Canada, are based on and extrapolated from aggregate card data provided by VisaVue® Travel and incorporate data from other research sources; Preliminary Canadian estimates are derived from historical data and obtained from Statistics Canada.

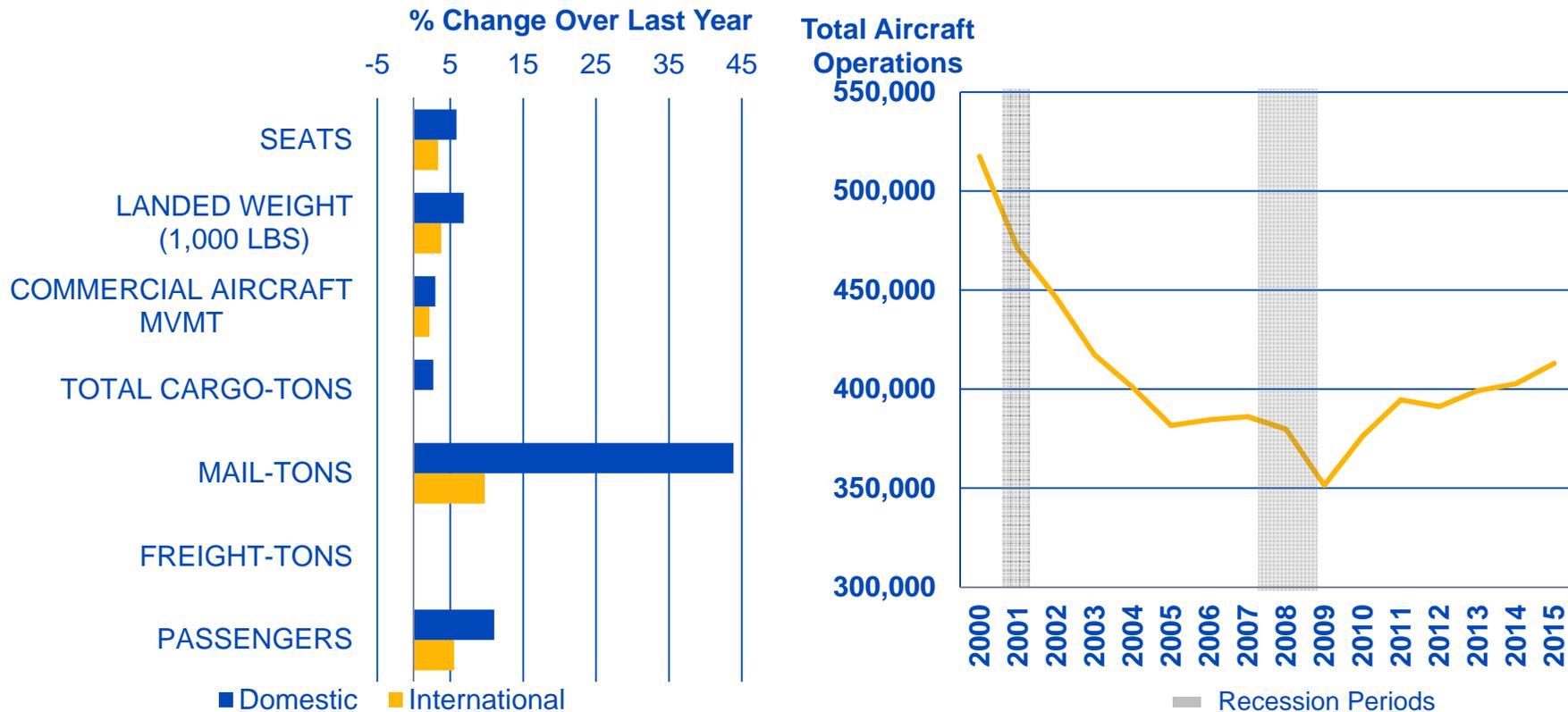
Canada accounts for the largest visitation to Florida

(1) Source: TNS Travels America

(2) Source: www.visitflorida.org

Miami Airport saw slower growth in its international traffic in 2015

Miami International Airport Traffic Report for 2015⁽¹⁾

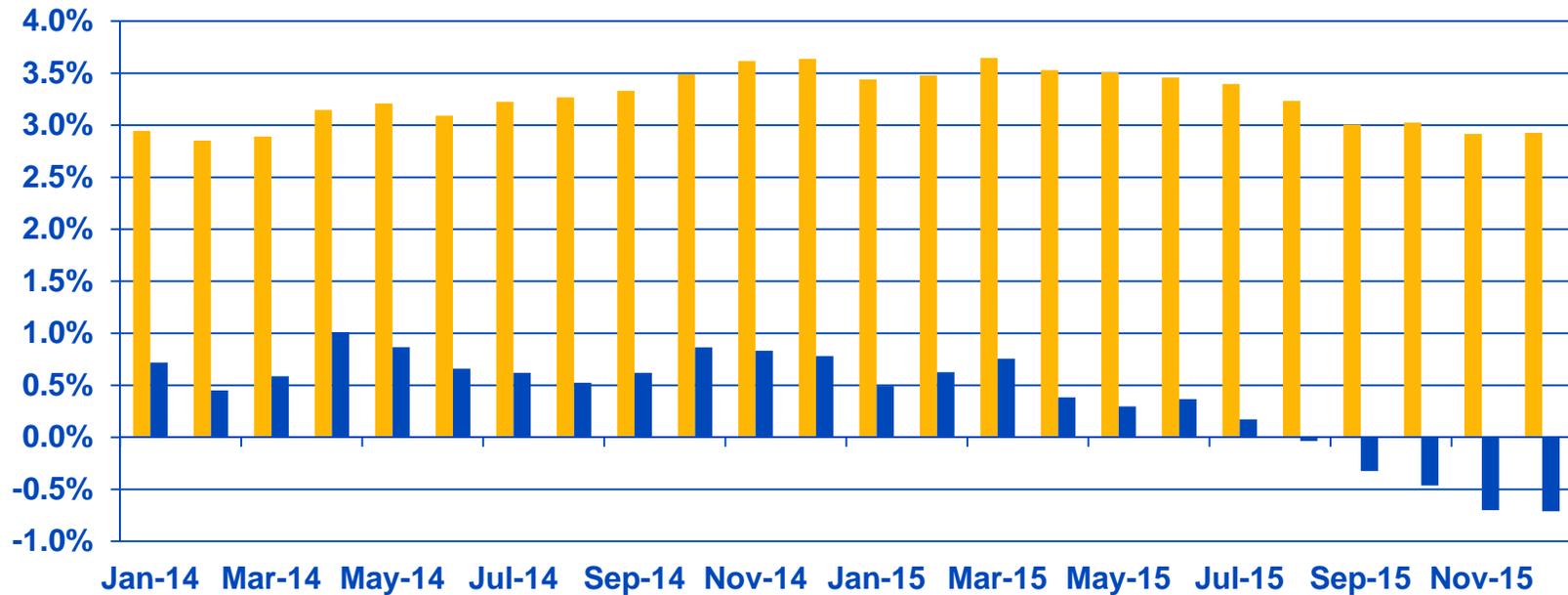


Miami's air travel has not recovered from pre Sept. 11 levels.

Florida continues to add jobs but the pace of employment growth has slowed in recent months

Florida's Employment Growth⁽¹⁾

% change
from prior year



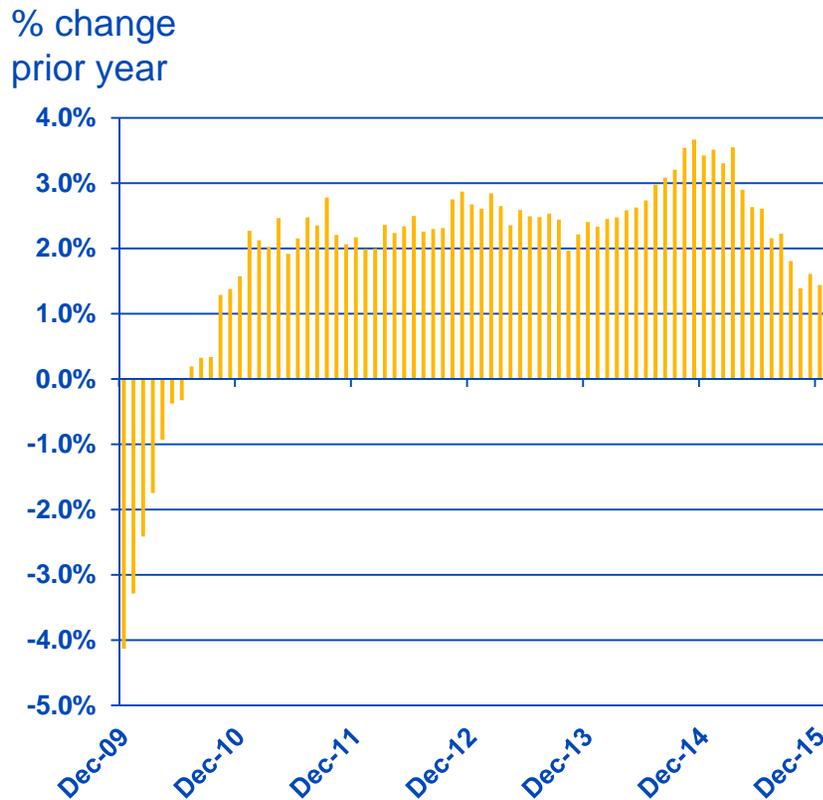
■ % Change in Employment

■ Change in % Growth from Prior Year

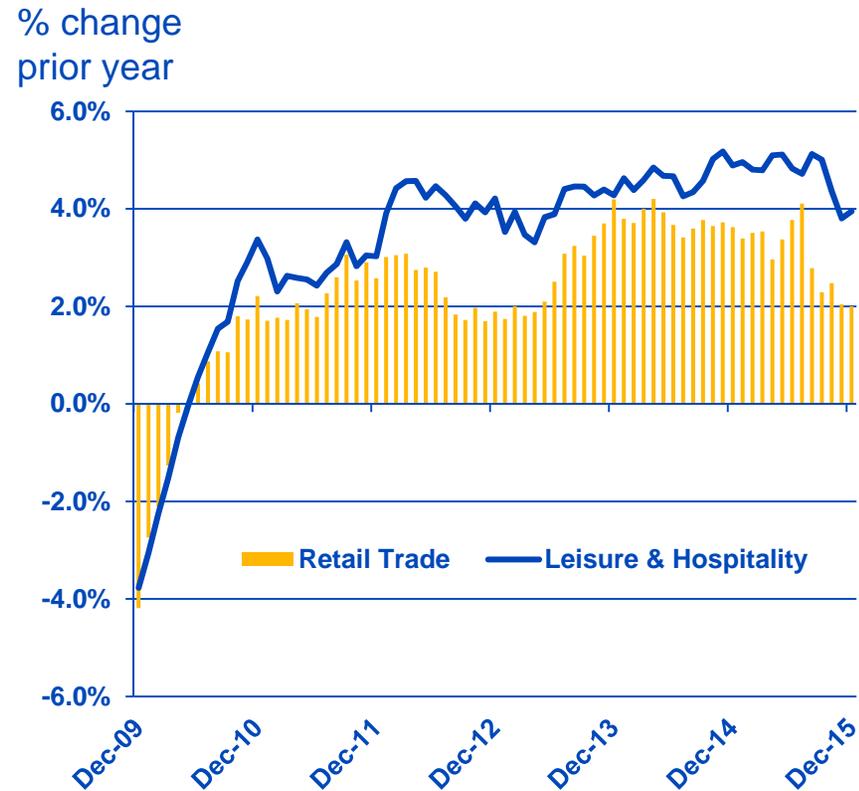
Slower employment growth suggests some deceleration in the rate of economic growth

Employment growth in Miami-Dade, which is heavily influenced by international trade and tourism, has fallen to levels not seen since 2010

Miami-Dade Employment⁽¹⁾

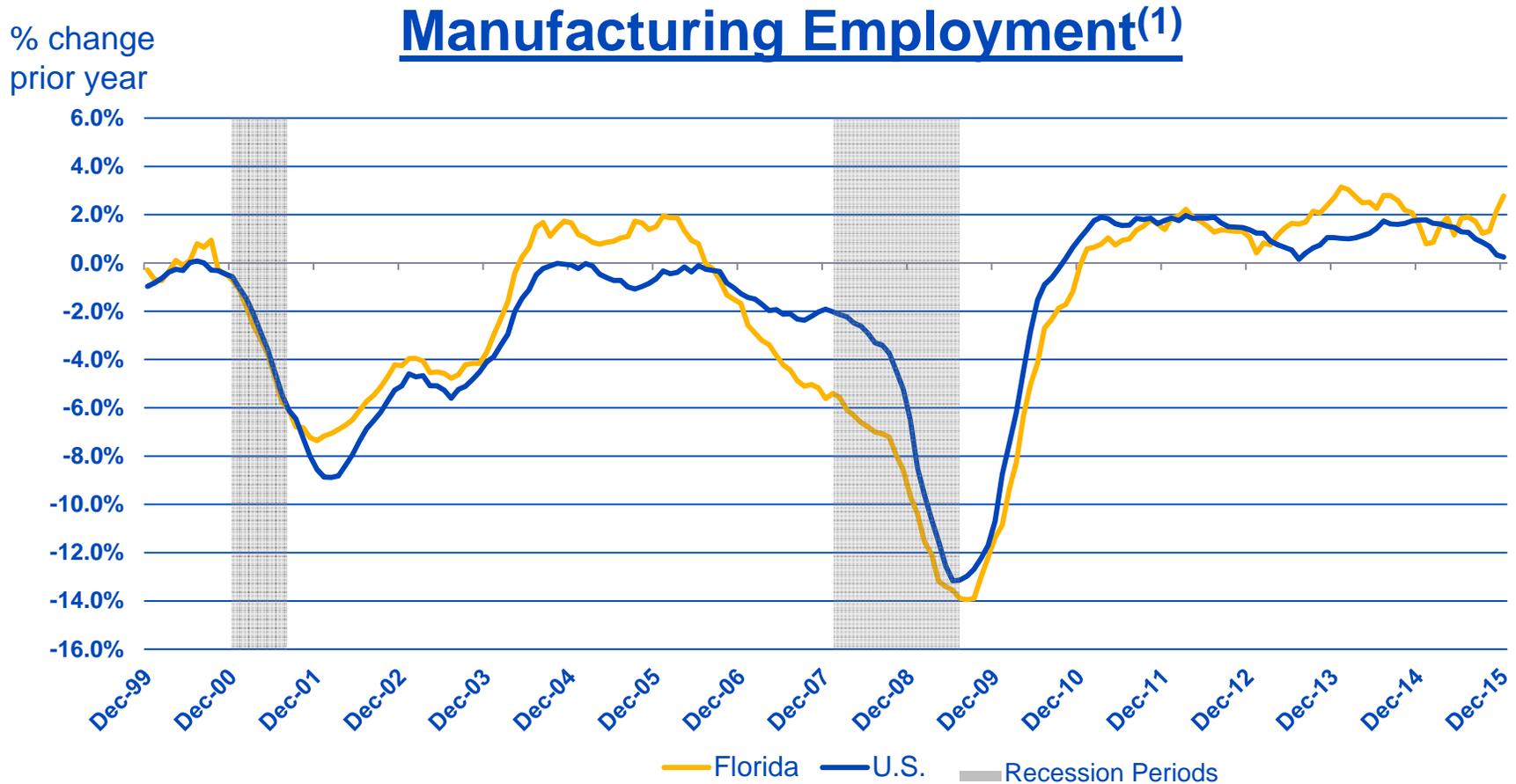


Florida Retail Trade and Tourism Employment⁽¹⁾



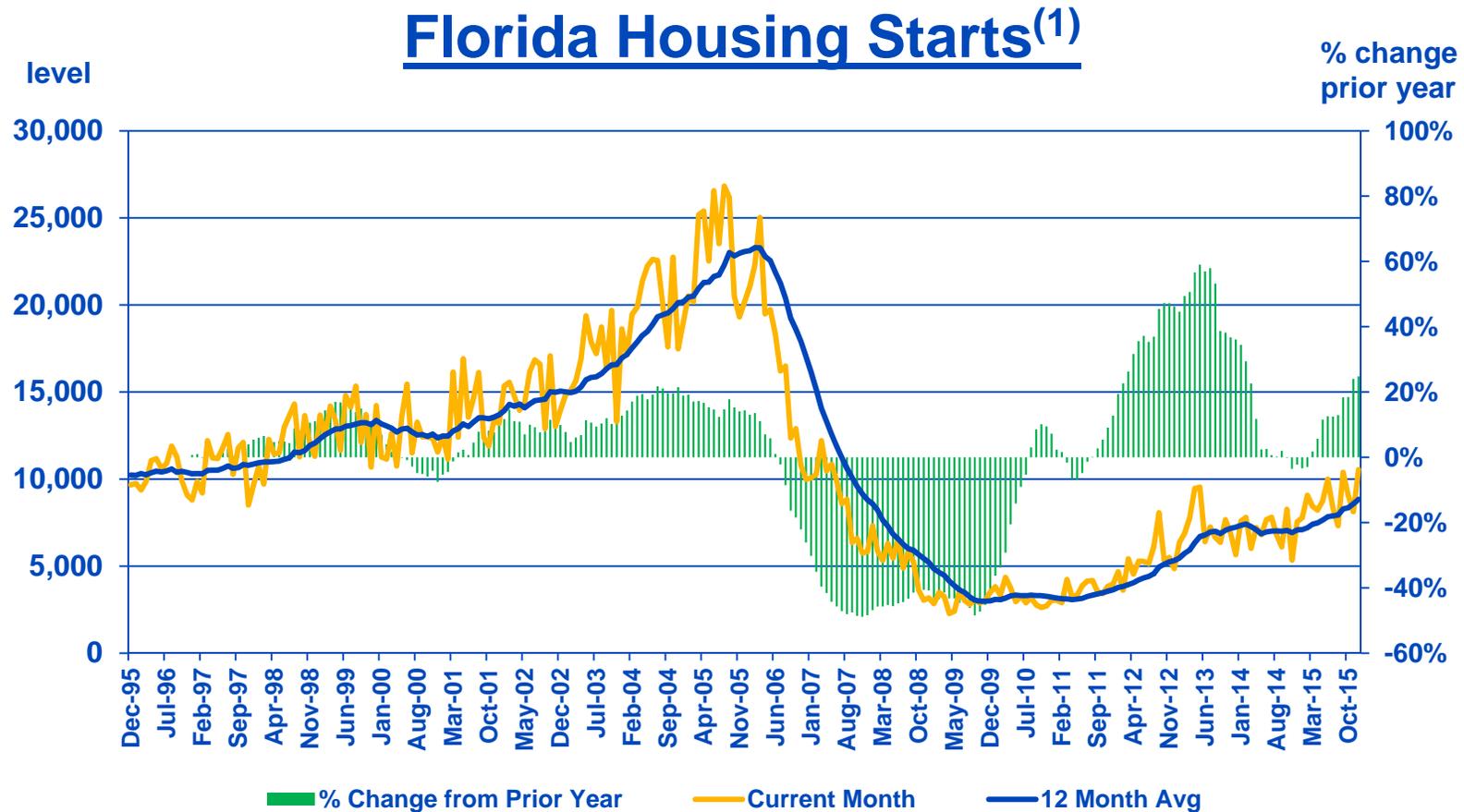
Statewide employment growth in retail trade and tourism has fallen to levels last seen in 2013

Manufacturing employment in the U.S. grew by only 0.2% in December versus a statewide increase of 2.8%



The high value of the U.S. dollar is hurting U.S. manufacturing

After stalling in 2014 and 2015, housing starts in Florida are again on the rise

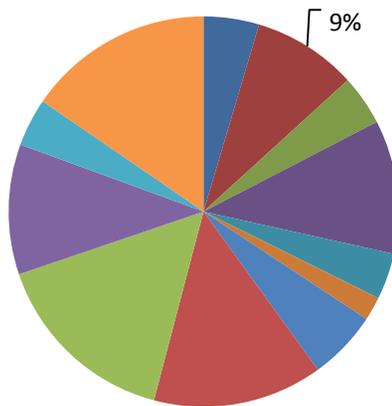


Housing starts remain low relative to the levels experienced in the 1990's

Manufacturing employment accounts for 9% of U.S. employment versus 4% of Florida employment

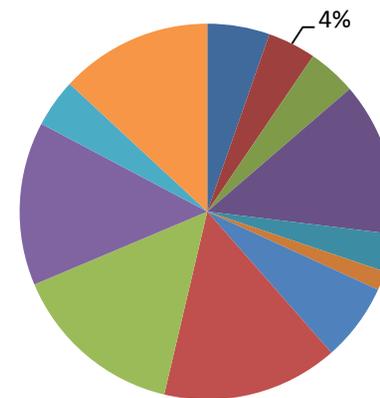
Employment Sector⁽¹⁾

U.S.



- Construction
- Manufacturing
- Wholesale Trade
- Retail Trade
- Transportation & Utilities
- Information
- Financial Activities
- Professional & Business Services
- Education & Health Services
- Leisure & Hospitality
- Other Services
- Government

Florida



- Construction
- Manufacturing
- Wholesale Trade
- Retail Trade
- Transportation & Utilities
- Information
- Financial Activities
- Professional & Business Services
- Education & Health Services
- Leisure & Hospitality
- Other Services
- Government

Florida has a higher concentration of employment in leisure & hospitality and retail

Florida's economy is less vulnerable to a U.S. downturn than was the case at the start of the Great Recession

Florida's Economy vs. U.S Economy

- Weak trade and the high value of the U.S. dollar are already limiting Florida's economic growth -- particularly in Miami-Dade and in the retail and tourism sectors
- Some deceleration in the state's rate of job growth is evident
- Nationally the manufacturing sector has stalled – so far manufacturing in Florida remains solid
- Manufacturing accounts for a smaller share of the state's economy relative to the U.S.
- Contrary to the experience in the Great Recession, overbuilding does not appear to be a risk to the Florida economy at present

Florida's economy, particularly in South Florida, is susceptible to global risks