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# Recent Developments in the Manufacturing and Transportation Industries

Presentation to the St. Louis Regional  
Freightway Industry Forum & Luncheon

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**Kevin L. Kliesen**

**Business Economist and  
Research Officer**

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# Disclaimer

The views I will express today are my own and do not necessarily reflect the positions of the Federal Reserve Bank of St. Louis or the Federal Reserve System.

# The Big Picture (Macro Stuff)

- A weak first quarter, but few economists are sounding the recession alarm.
- Labor market conditions remain solid and manufacturing activity appears to be picking up.
- Inflation remains near the Fed's 2% target.
- Many Fed policymakers see two additional rate hikes in 2017, but markets are less sure.
- The St. Louis economy is strengthening, but at an uneven pace.

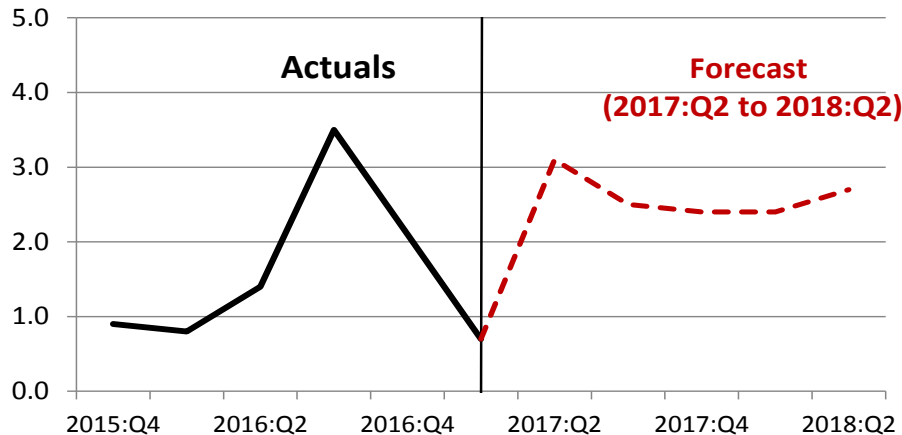
# The Economic Outlook

- We should mostly ignore the weak Q1 signal; U.S. and global growth appears to be strengthening.
- Business surveys indicate an increasing percentage of U.S. firms are planning to boost capital spending. Construction activity still rising; exports solid.
- Oil prices may trend higher with faster global growth, but crude oil output is rising.
- A vibrant start-up environment bodes well for the St. Louis economy longer term.

# The Consensus Forecast: U.S.

## What Are Forecasters Predicting for Real GDP Growth?

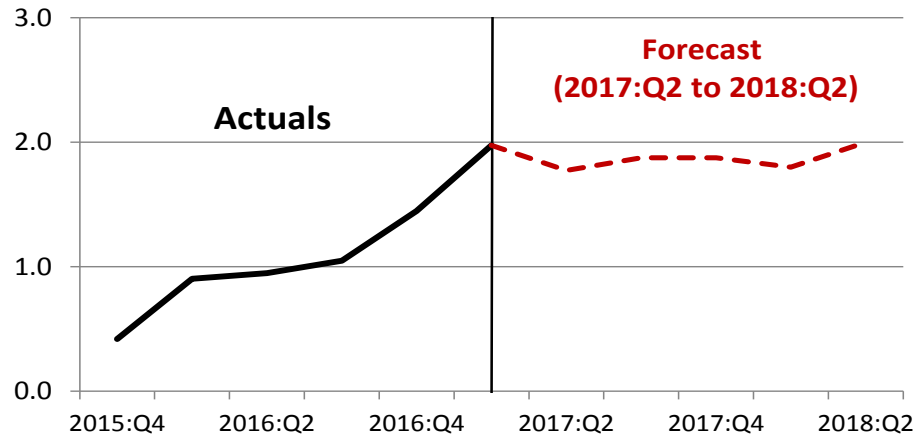
Percent change at annual rates



SOURCE: Survey of Professional Forecasters, May 2017.

## What Are Forecasters Predicting for Inflation?

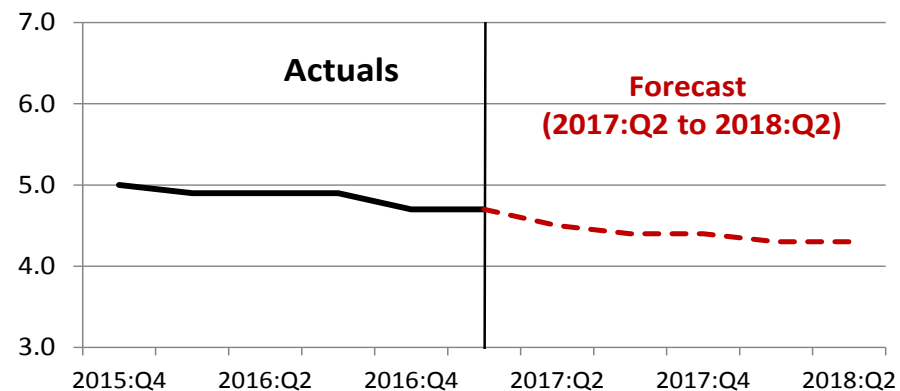
Percent change from Four Quarters Earlier



SOURCE: Survey of Professional Forecasters, May 2017.

## What Are Forecasters Predicting for the Unemployment Rate?

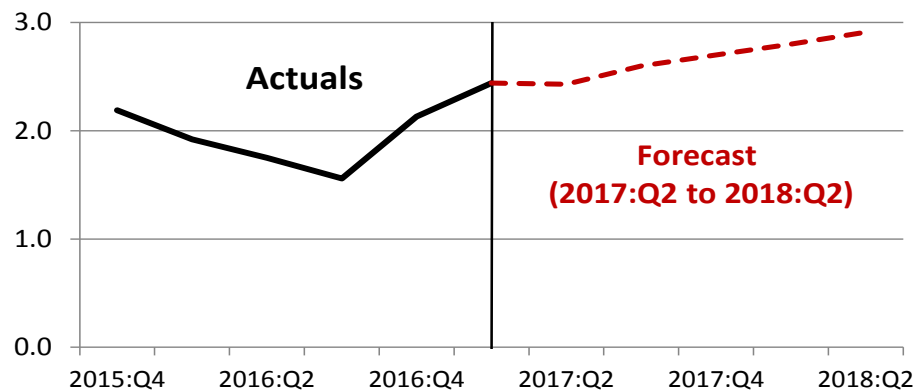
Percent



SOURCE: Survey of Professional Forecasters, May 2017.

## What Are Forecasters Predicting for 10-Year Interest Rates?

Percent, at annual rates



SOURCE: Survey of Professional Forecasters, May 2017.

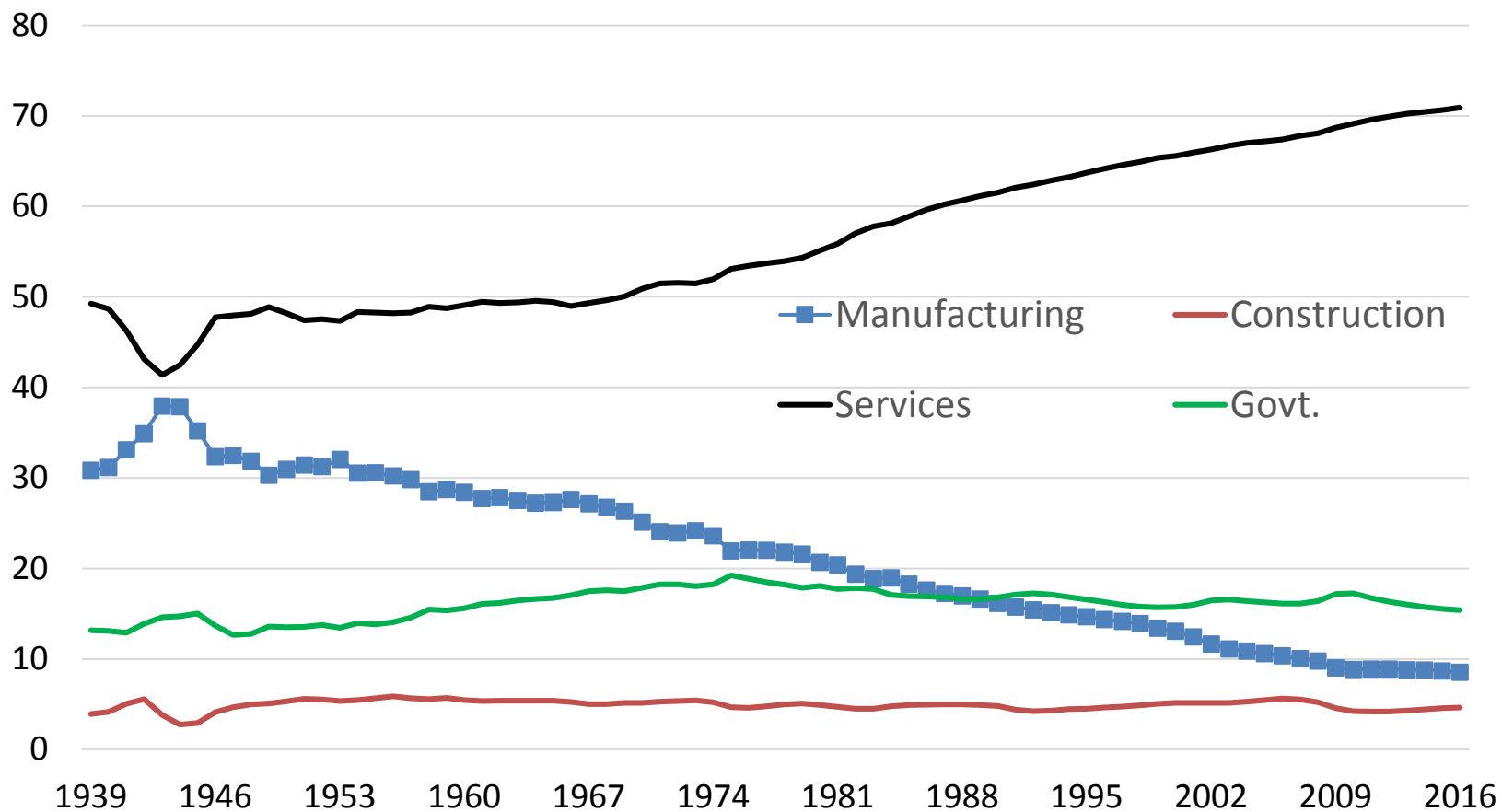
# Manufacturing Facts

- Manufacturing output is volatile—sensitive to changes in U.S. and world economic conditions.
- But U.S. manufacturing benefits more from stronger U.S. real GDP growth than foreign growth.
- Changes in the value of the dollar have modest effects on exports of manufactured goods.
- Manufacturers benefit from imports of intermediate materials that reduce their costs, which raises productivity and profits and wages.

# Manufacturing Facts: Employment

## U.S. Employment Shares by Major Industry and Sector, 1939 to 2016

Percent of Total Nonfarm Payroll Employment

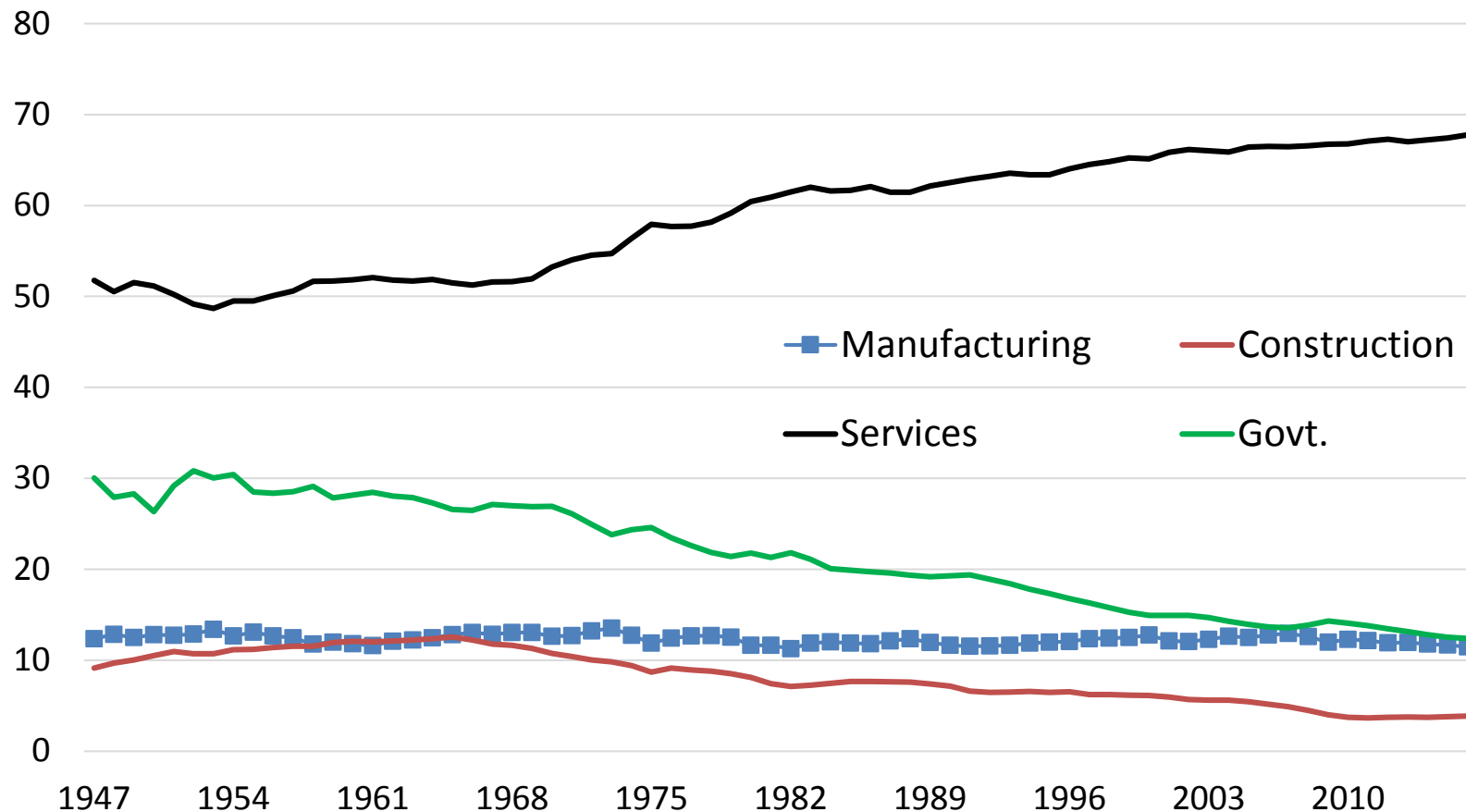


SOURCE: U.S. Bureau of Labor Statistics

# Manufacturing Facts: Output

## U.S. Output Shares by Major Industry and Sector, 1947 to 2016

Percent of Real GDP



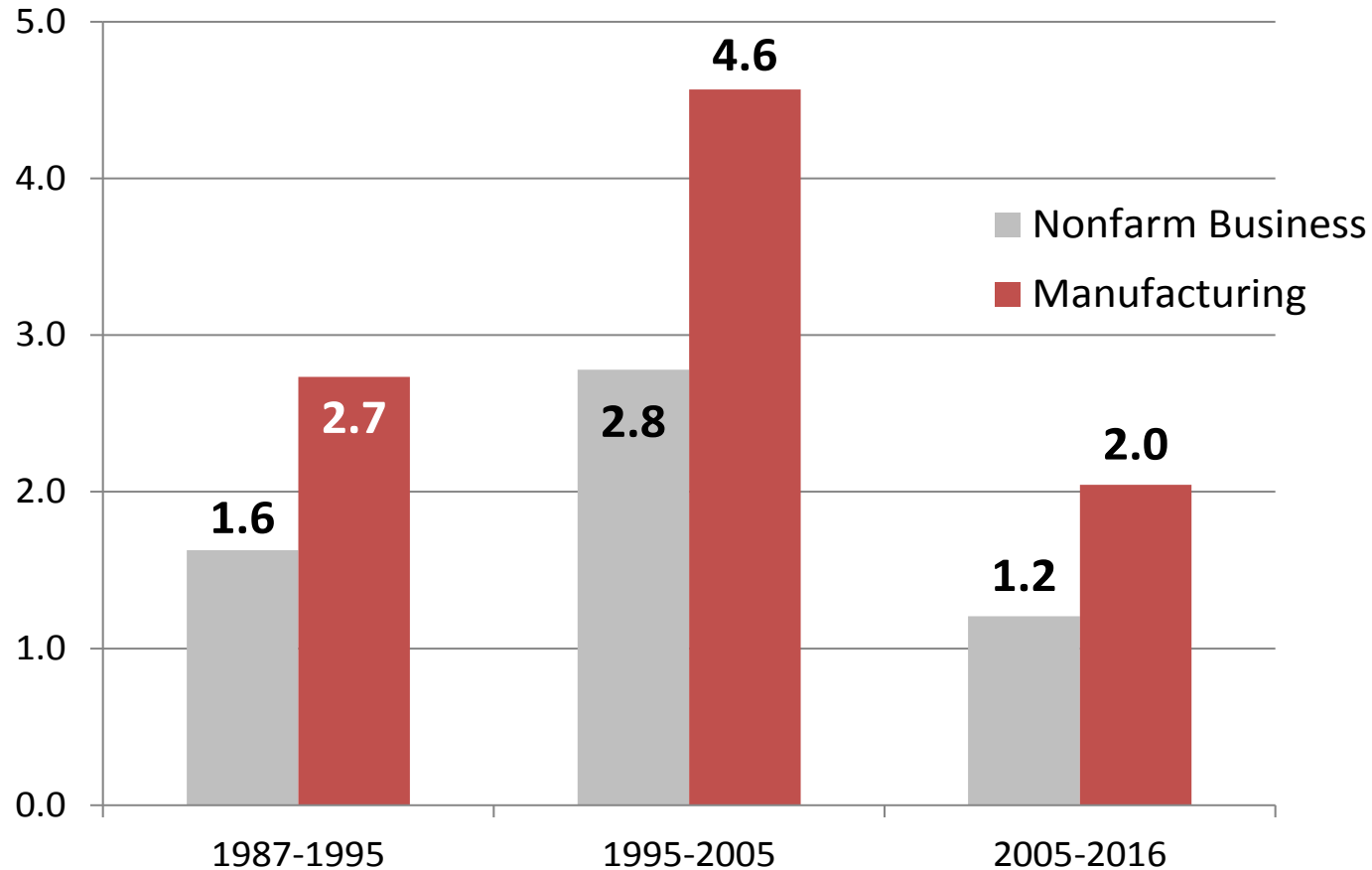
**SOURCE:** U.S. Bureau of Economic Analysis



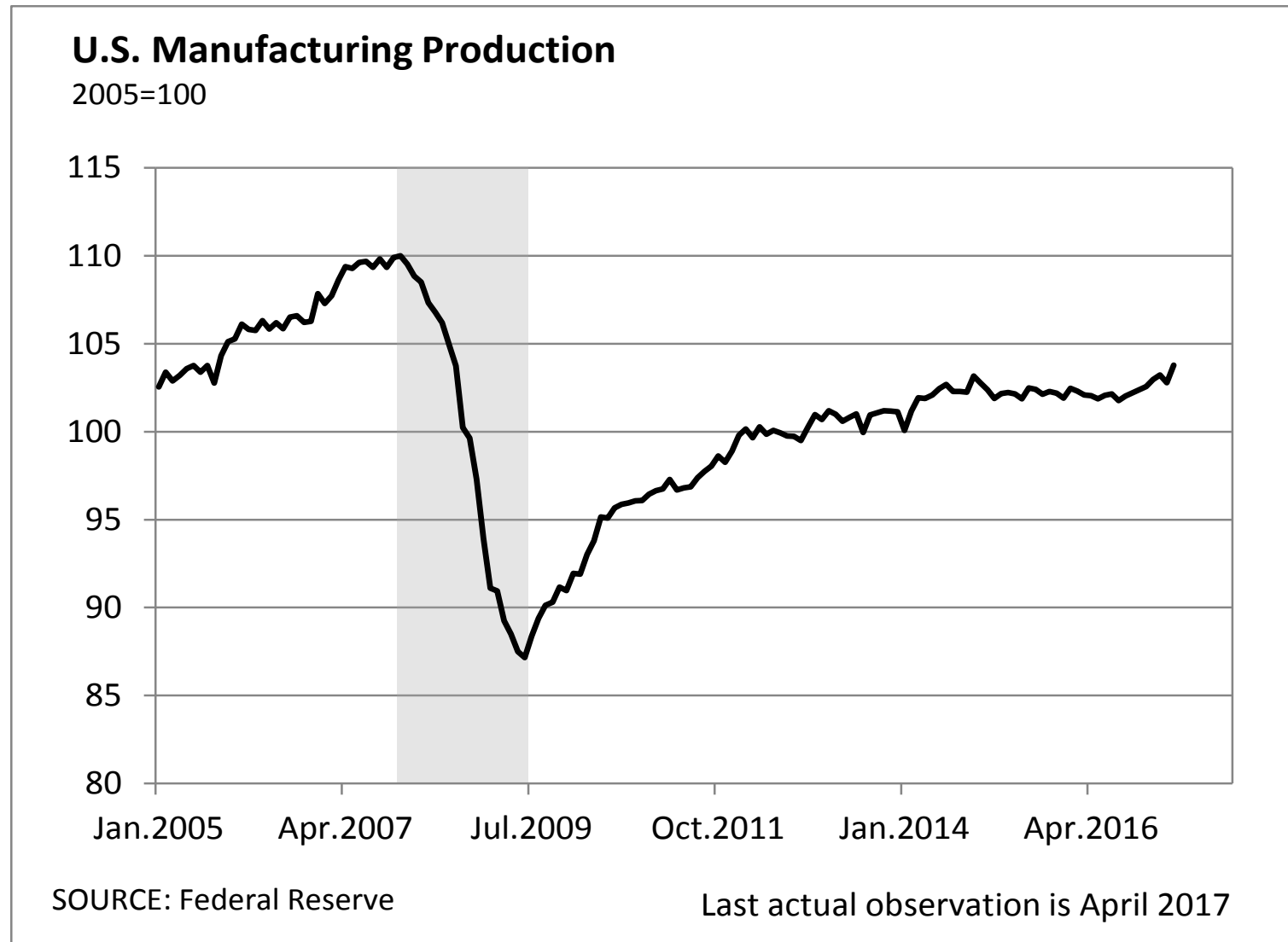
# Manufacturing Facts: Productivity

## Labor Productivity Growth, 1987-95, 1995-2005, and 2005 to 2016

Percent changes at annual rates



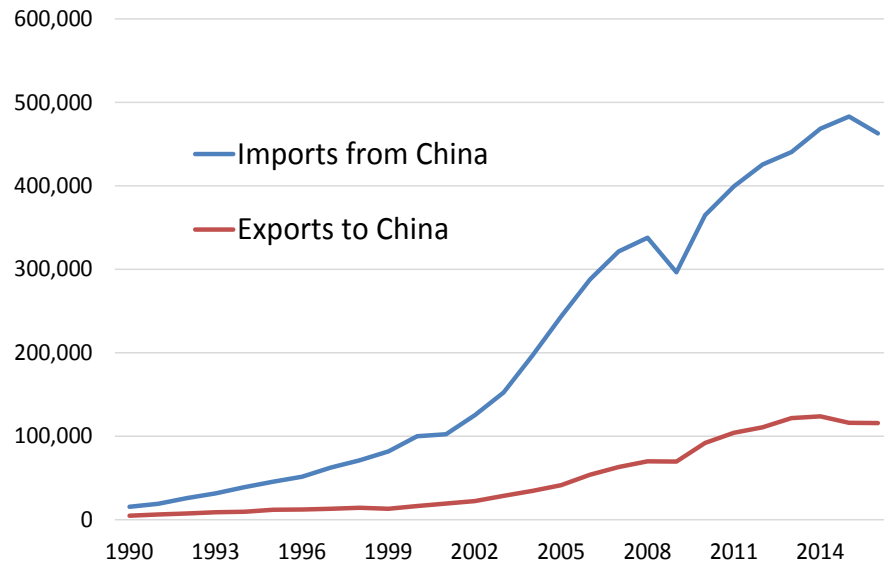
# A Slow Climb out of the Recession



# World Trade has Slowed

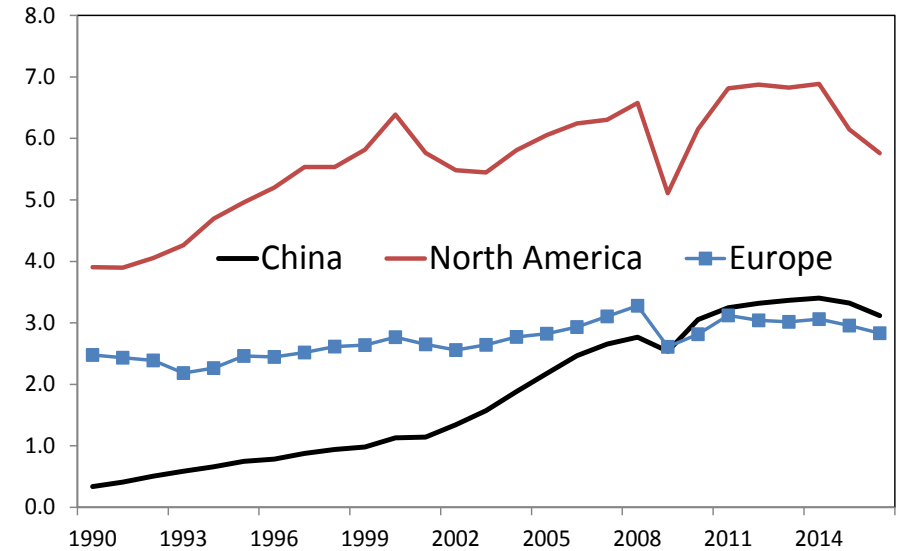
**U.S. Trade in Manufactured Goods with China, 1990-2016**

\$Millions of Dollars



Source: Department of Commerce (Bureau of the Census).

**U.S. Trade in Manufactured Goods with China, Europe, and North America as a Percent of GDP, 1990-2016**



Source: Department of Commerce (Bureau of the Census).

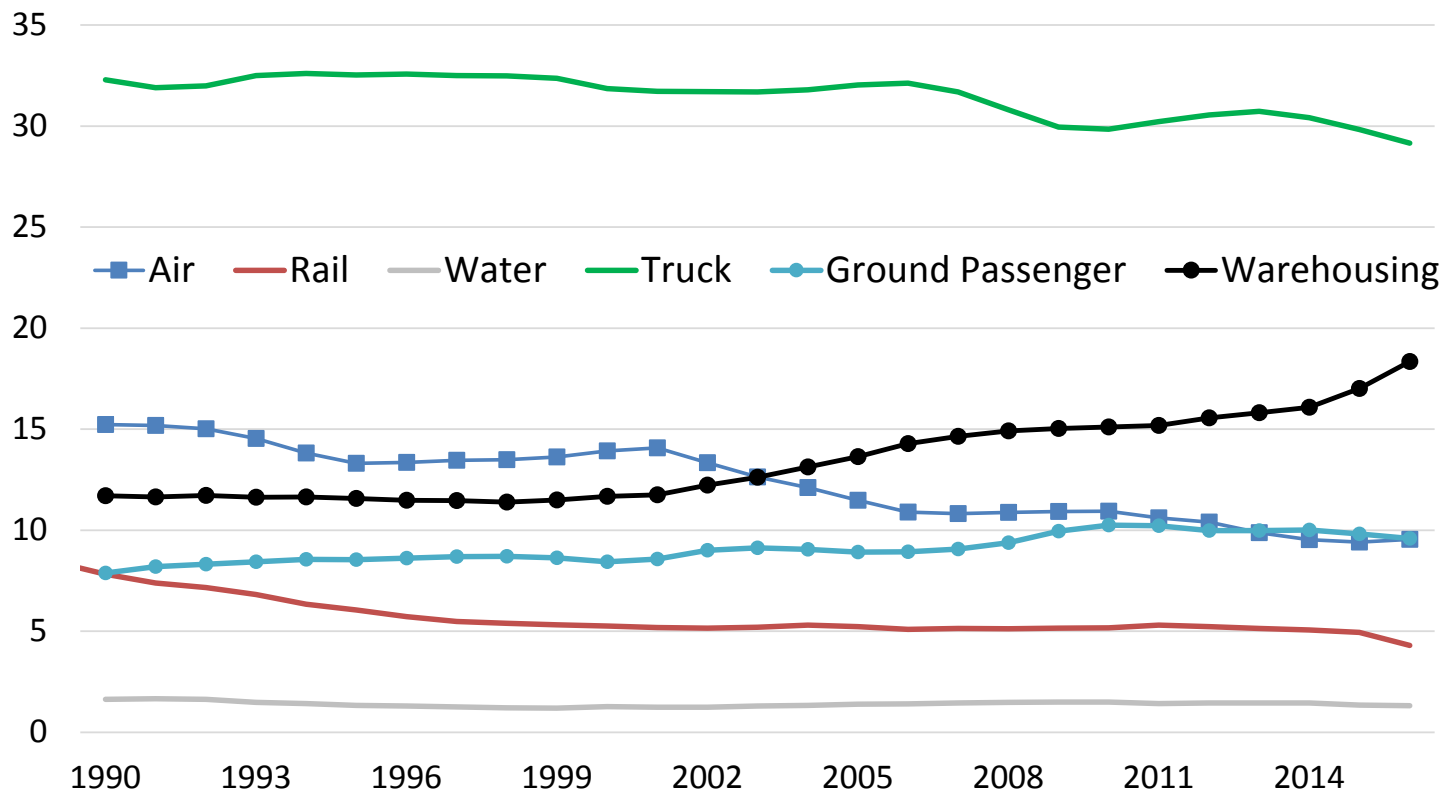
# Transportation Facts

- Transportation is the movement of people and goods from one place to another. Mostly domestic.
- Tends to be an energy-intensive enterprise, so changes in energy prices matter.
- Also sensitive to U.S. manufacturing—moving goods from factory to distributor to retailer.
- Sensitive to consumer demand as well.
- Technology is re-shaping the industry.

# Transportation Facts: Employment

**Transportation Employment Shares by Sector, 1990 to 2016**

Percent of Real GDP



**SOURCE:** U.S. Bureau of Economic Analysis

Total Transp.  
Employment  
as a Percent  
of Total  
Employment:

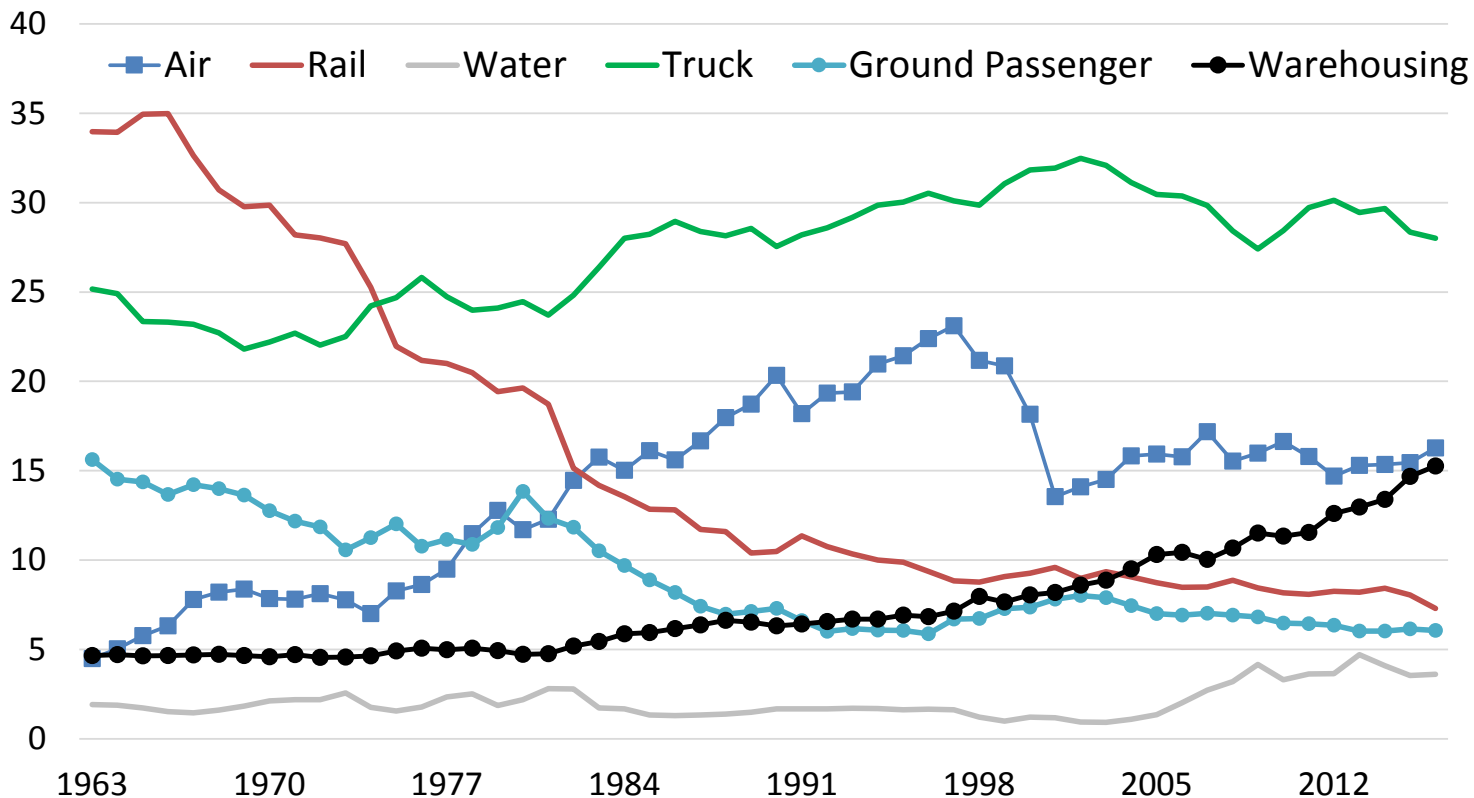
1990: 3.6%

2017: 3.5%

# Transportation Facts: Output

## Transportation Output Shares, 1947 to 2016

Percent of Real GDP



SOURCE: U.S. Bureau of Economic Analysis

Total Transp.  
Output as a  
Percent of  
GDP:

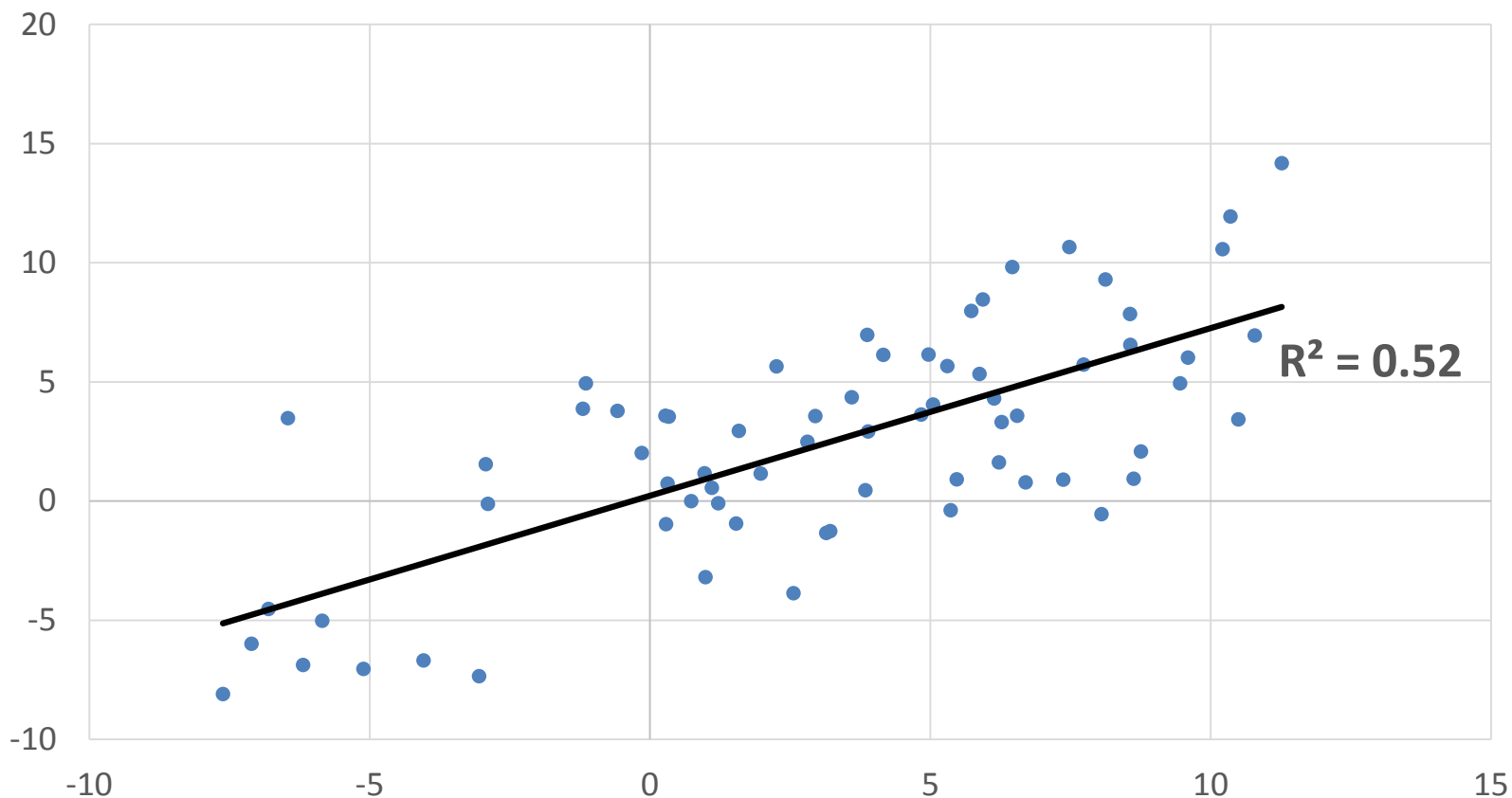
1947: 4.7%

2017: 2.7%

# Transportation Facts: Linkages

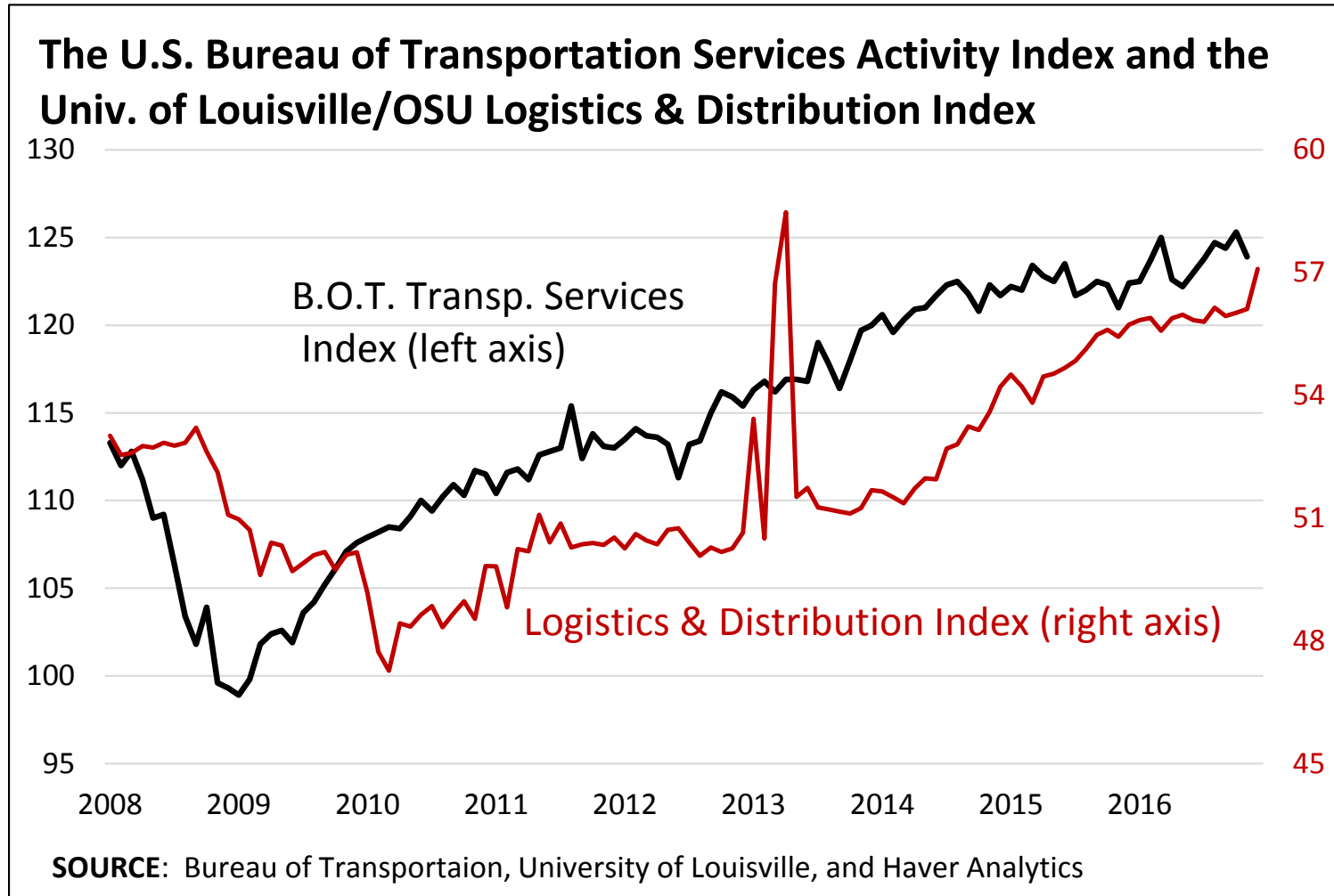
## The Relationship Between Changes in U.S. Manufacturing Output and U.S. Transportation Output, 1948-2016

Manufacturing output: x-axis; transportation output: y-axis



**SOURCE:** U.S. Bureau of Economic Analysis and author's calculations

# Transportation Services Activity Continues to Increase

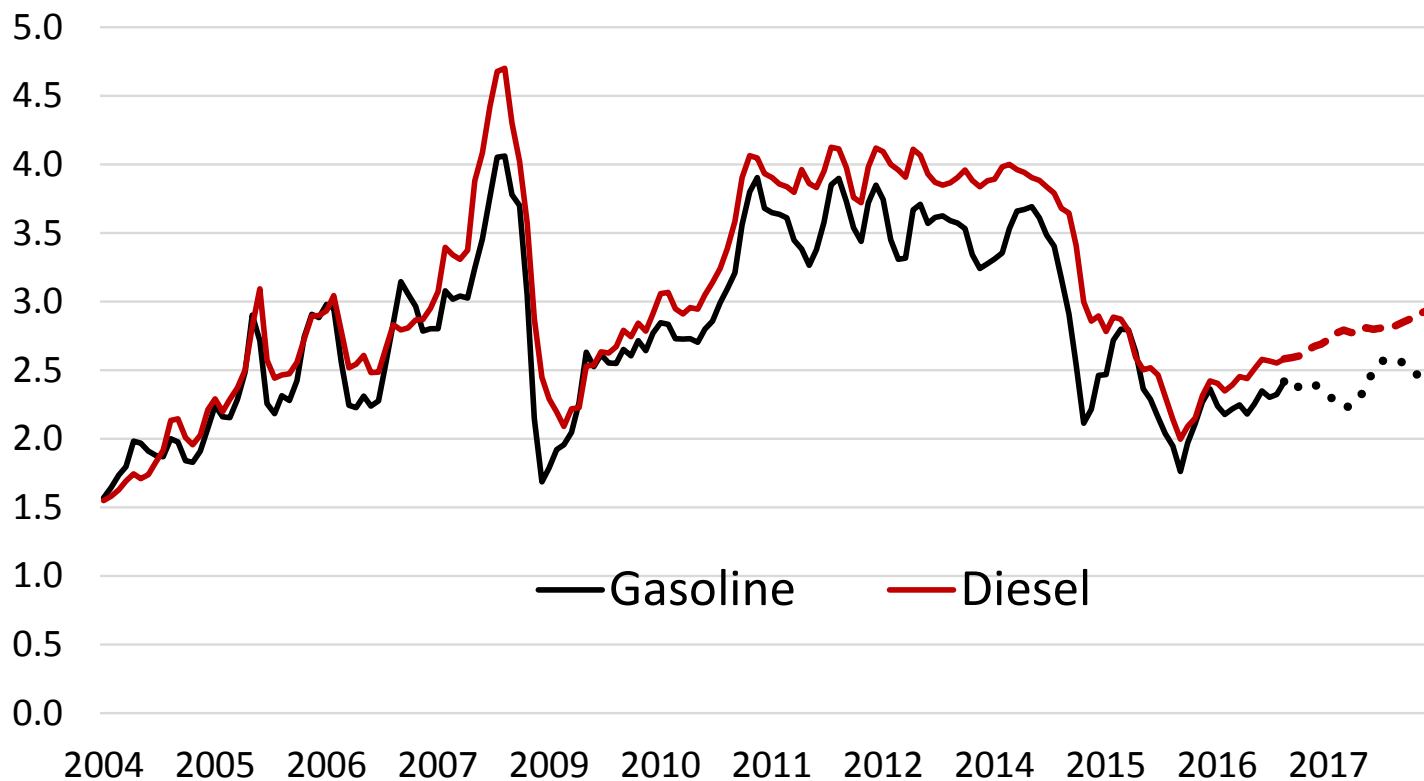




# Energy Prices Expected to Remain Low According to Govt. Forecasts

## Gasoline and Diesel Prices: Actual and Forecast

\$2016 per gallon



SOURCE: U.S. Energy Information Administration and Haver Analytics

# St. Louis and the Global Economy

- St. Louis is insulated from U.S. and global developments to some extent.
- The demand for services and housing are heavily influenced by the strength of the local economy.
- But even here, interest rates and energy prices are determined in national and global markets.
- Many St. Louis companies compete in global markets for goods and labor.
- Big events like recessions affect local economies.

# St. Louis Facts

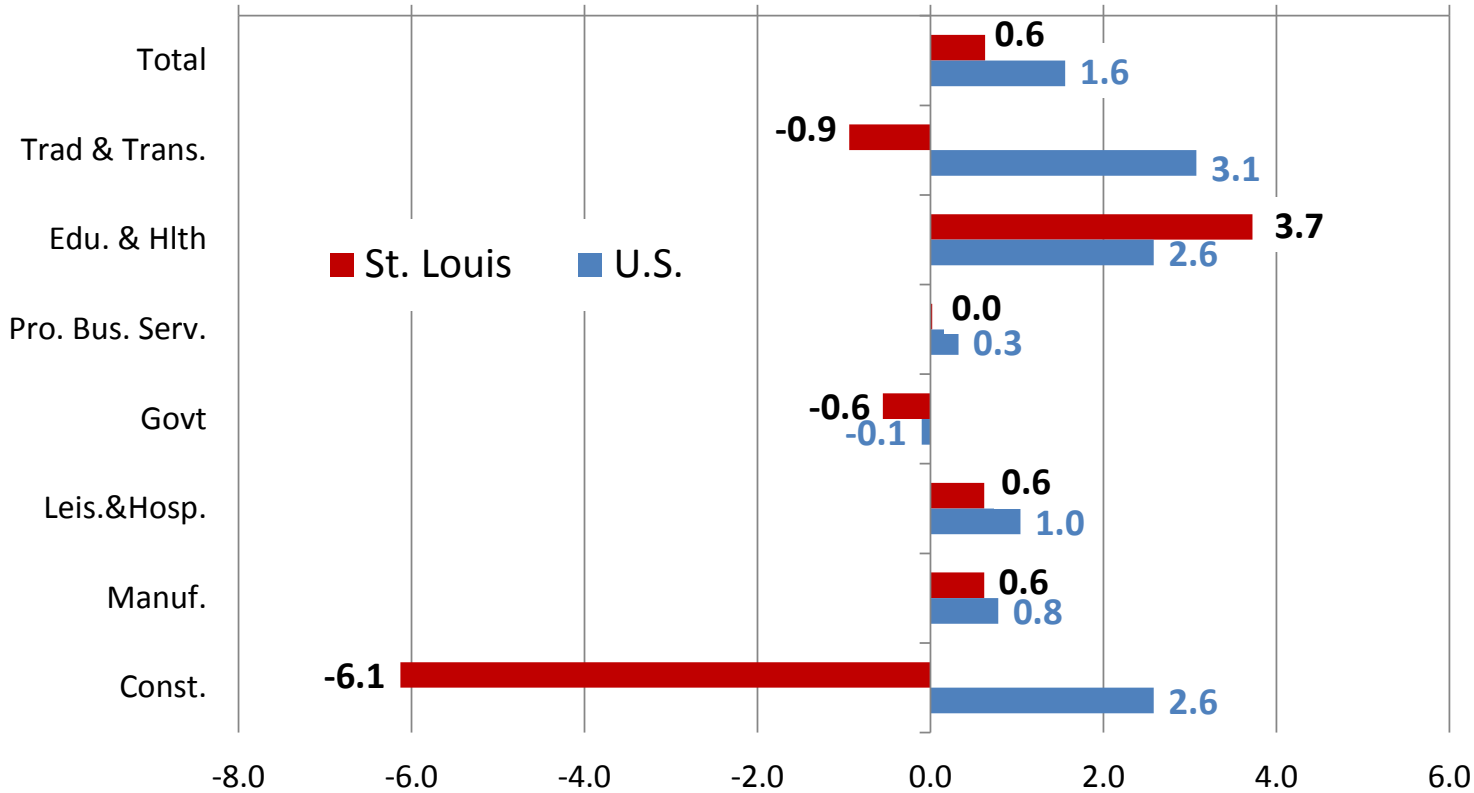
- “St. Louis” refers to the Metropolitan Statistical Area (MSA), a 14-county area of Illinois and Missouri surrounding the city of St. Louis.
- The St. Louis MSA’s labor force is currently about 1.5 million; population is about 2.8 million.
- In 2015, household median income in the St. Louis MSA was about \$56,500; it was \$55,800 for the United States.

# St. Louis Facts (Continued)

- St. Louis' largest three industries in terms of total employment in 2016:
  1. Trade, transportation, and utilities (18.7%)
  2. Education and health (18.1%)
  3. Professional business services (15.5%)
- Manufacturing comprised 8.4% of employment.
- Employment shares since 1990:
  - Less trade and transportation and manufacturing;
  - More PBS and education & health.

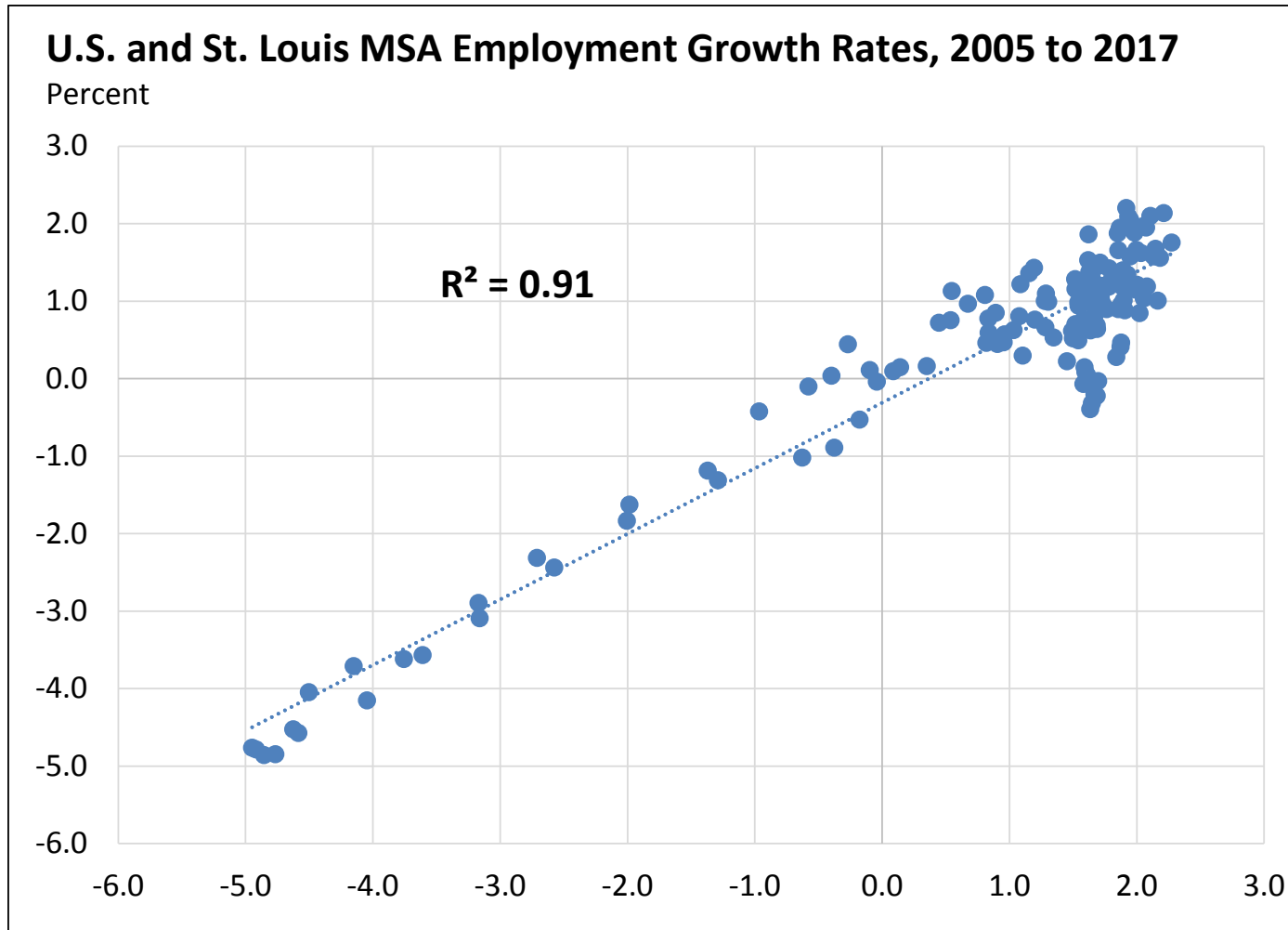
# St. Louis' Employment Growth has slowed relative to the Nation.

**U.S. and St. Louis MSA Payroll Employment by Industry Over the Past Year**  
 Percent change, through April 2017



SOURCE: U.S. Department of Labor and Haver Analytics

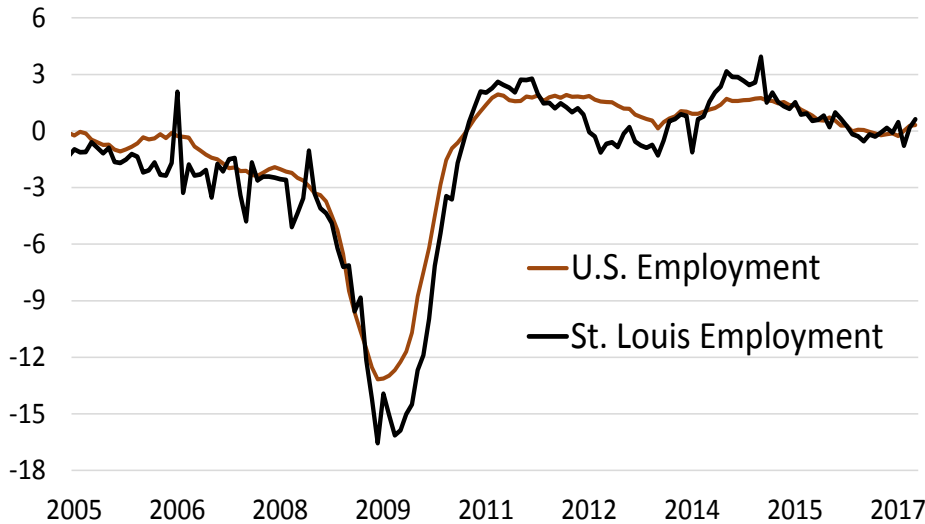
# But St. Louis' Employment Growth is Highly Correlated with the Nation.



# Manufacturing and Transportation Services Employment: US vs. StL

## Growth of Manufacturing Employment: United States and the St. Louis MSA

Percent change from 12 months earlier

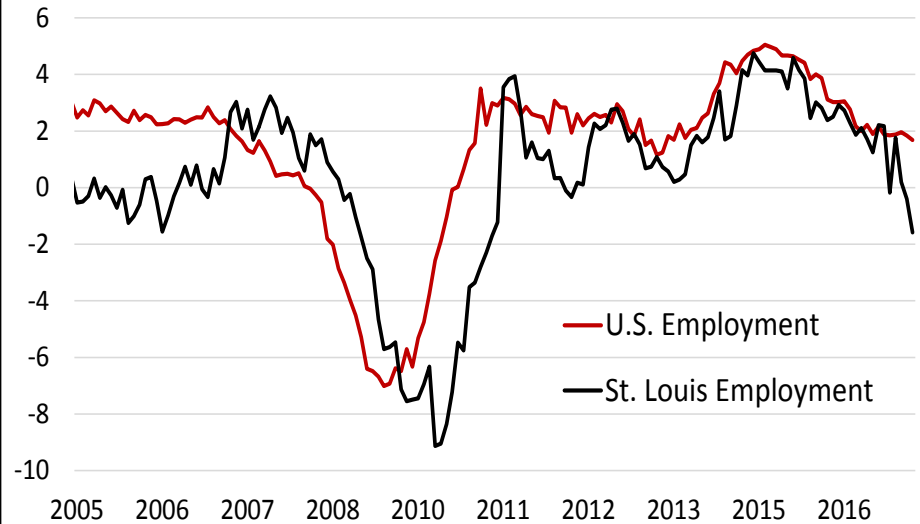


SOURCE: U.S. Bureau of Labor Statistics

Data through April 2017.

## Growth of Transportation Employment: United States and the St. Louis MSA

Percent change from 12 months earlier



SOURCE: U.S. Bureau of Labor Statistics

Data through April 2017.

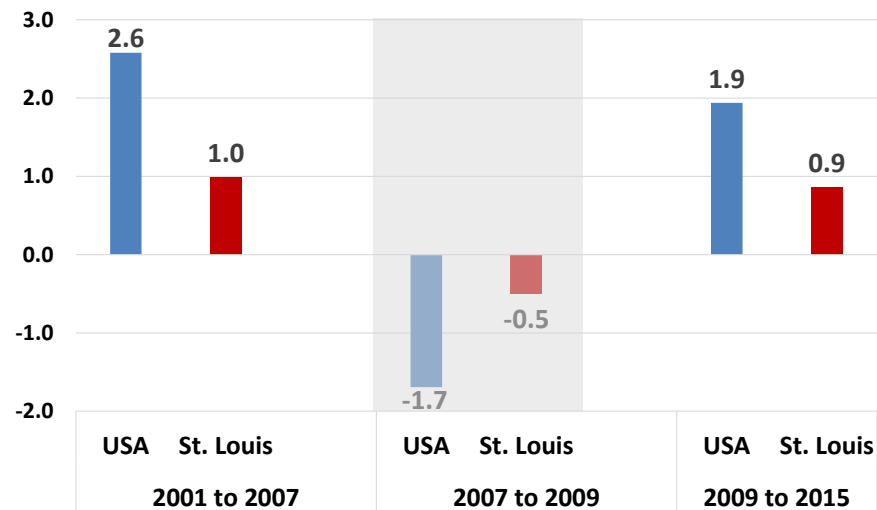
## Manufacturing

## Transportation

# St. Louis' Economic Growth: Trailing the Nation and Other Large MSAs.

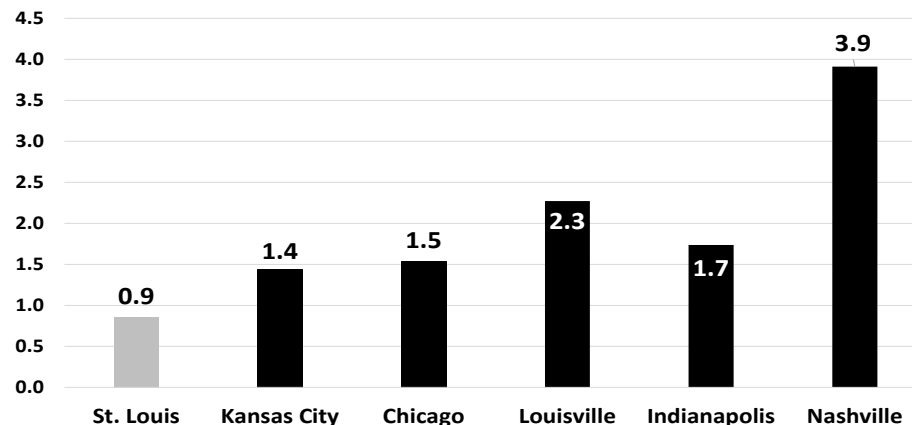
**Growth of the St. Louis Economy vs. the U.S. Economy: 2001 to 2015**

Percent changes at annual rates



**Growth of the St. Louis-Area Economy vs. Selected Other, Large Metropolitan Economies: 2009 to 2015**

Percent changes at annual rates



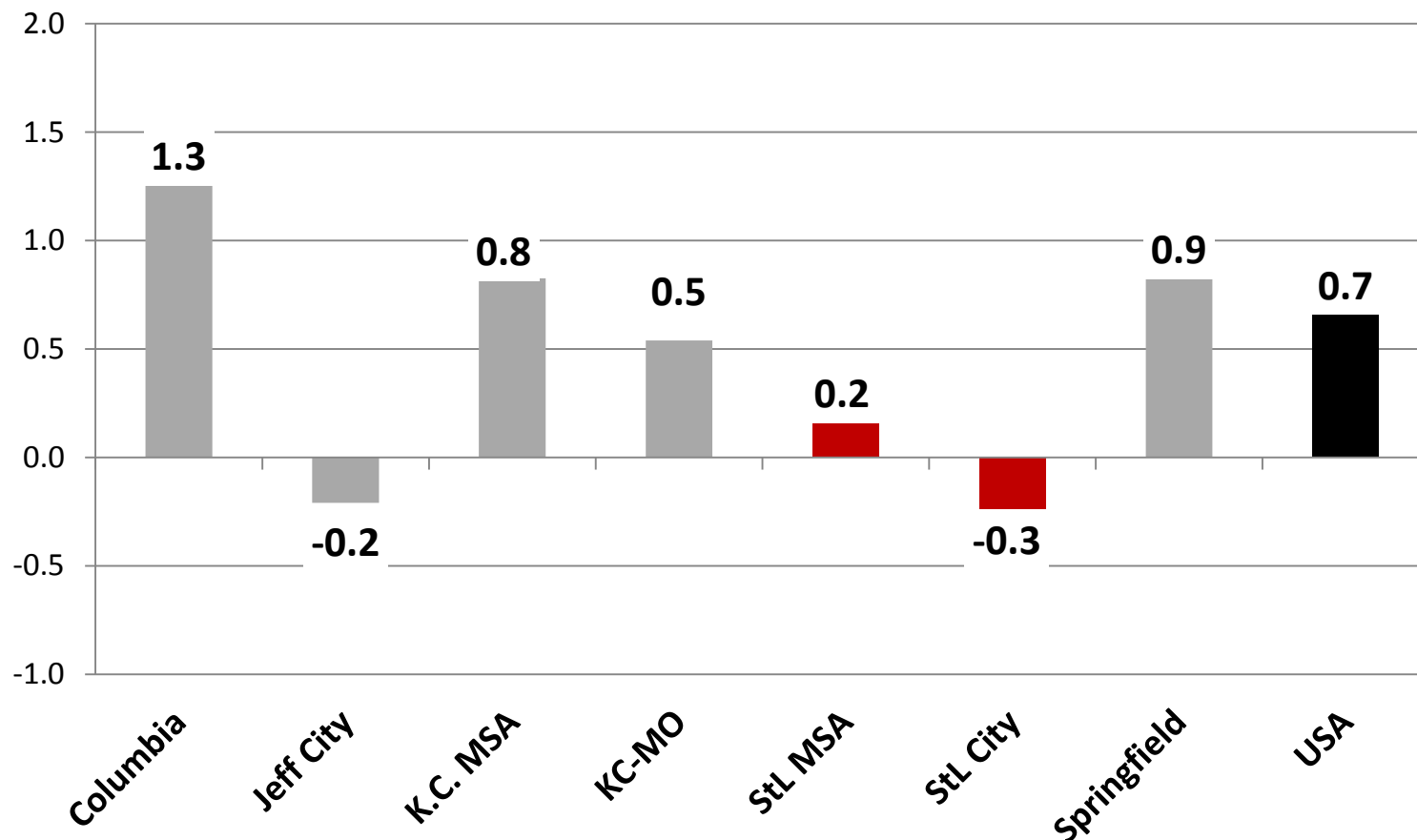
SOURCE: U.S. Bureau of Economic Analysis and Author's calculations



# A Key Reason for Weak Economic Growth? Weak Labor Force Growth.

## Growth of Labor Force in Selected Missouri Cities

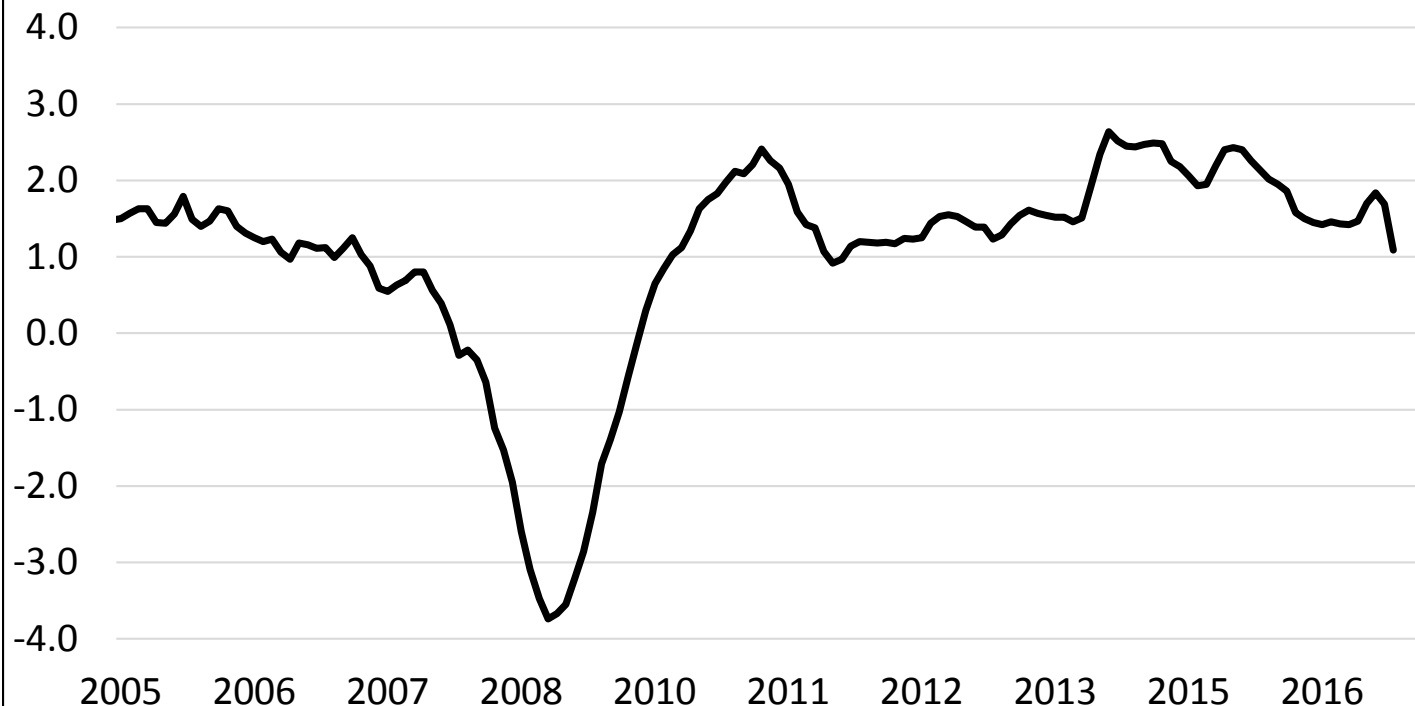
Annualized percent change since 2001 (through March 2017)



# The St. Louis Fed's Economic Conditions Index

## The St. Louis Fed's Economic Conditions Index for the St. Louis Metropolitan Statistical Area

Percent change from 12 months earlier



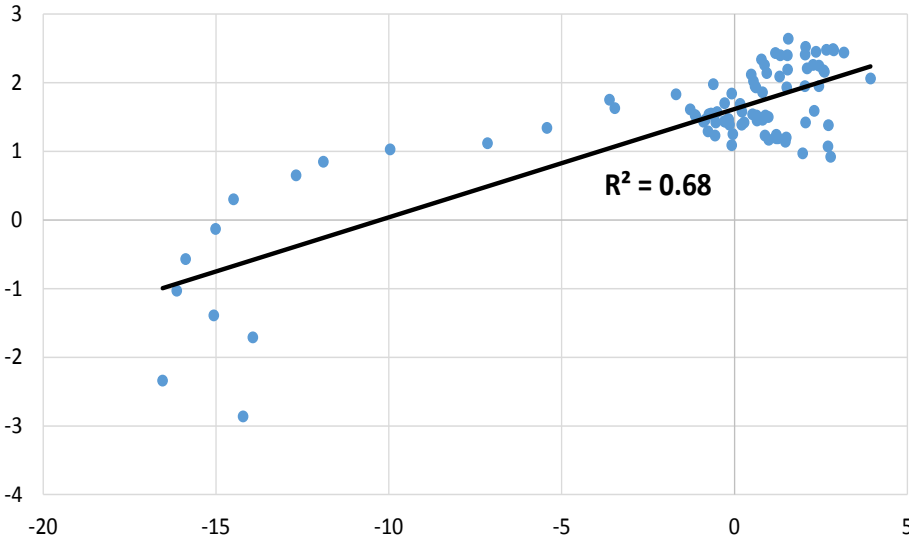
SOURCE: FRB St. Louis

Data through December 2016.

# Manufacturing and Transportation Services Employment: US vs. StL

The Relationship Between the St. Louis MSA Economic Conditions Index and St. Louis Manufacturing Employment

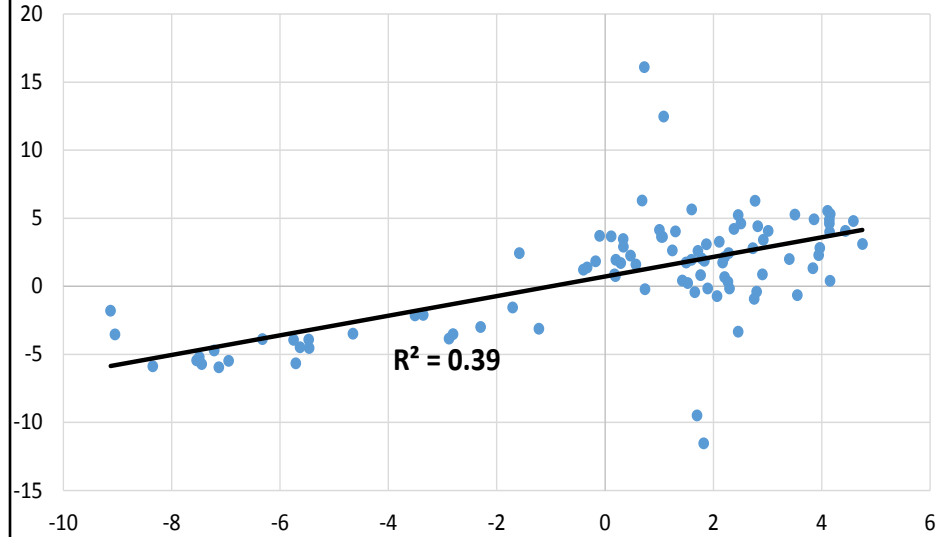
Employment: x-axis; Economic index: y-axis



SOURCE: Bureau of Labor Statistics, FRB St. Louis, and Haver Analytics

The Relationship Between the Logistics and Distribution Index and St. Louis Transportation and Retail Trade Employment, 2009-2017

Employment: x-axis; Economic index: y-axis



SOURCE: Bureau of Labor Statistics, University of Louisville, and Haver Analytics

## Manufacturing

## Transportation

# St. Louis: Green Shoots

- St. Louis economy has been growing slower than the nation's economy for quite some time. A key reason has been weak labor force growth.
- Housing and commercial construction have been a source of strength for the U.S. economy, but this is a relatively small part of the St. Louis economy.
- A “booming” entrepreneurial sector could portend stronger future growth.

# QUESTIONS



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