

An Economic Outlook: What's Ahead for 2019?

Jerome Segura III, Ph.D.

Founder/Developer/Chief Economist

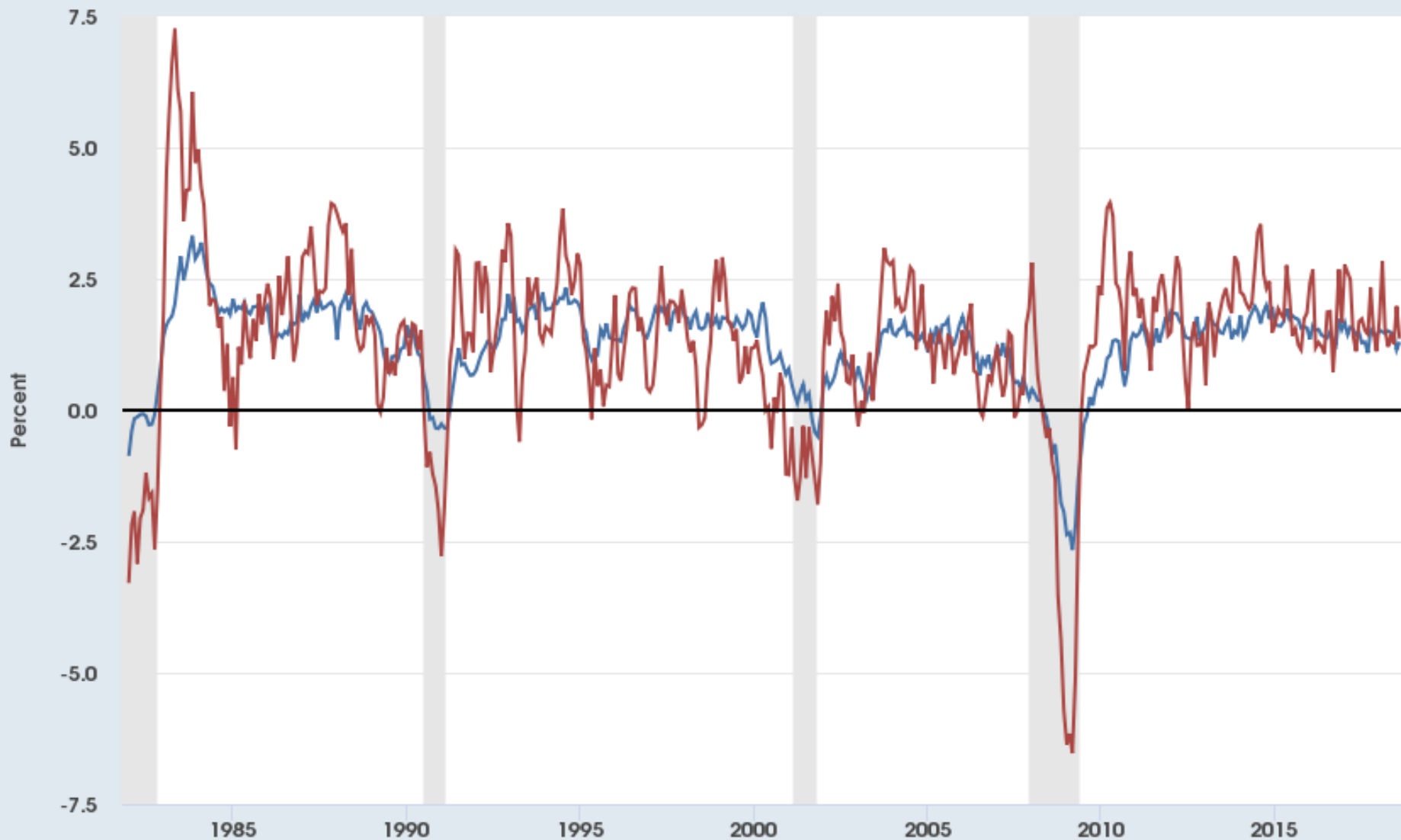
The Central Wisconsin Economy

November 15, 2018

Economic Outlook

FRED

— Leading Index for the United States
— Leading Index for Wisconsin

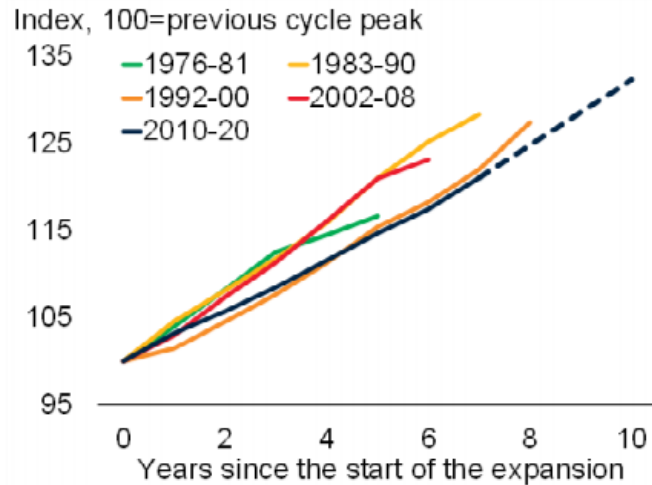


Shaded areas indicate U.S. recessions

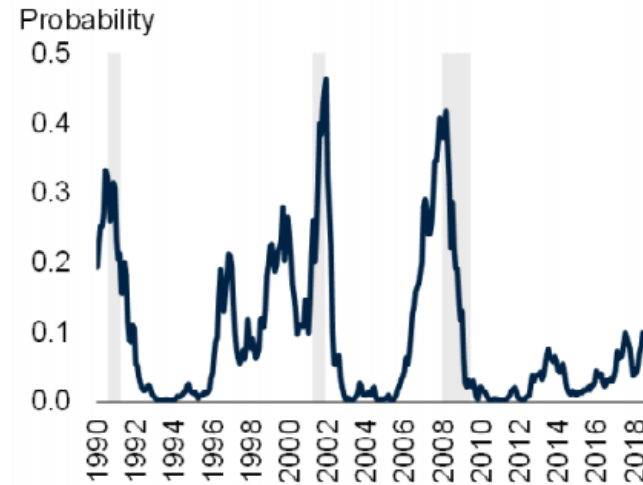
Source: Federal Reserve Bank of Philadelphia

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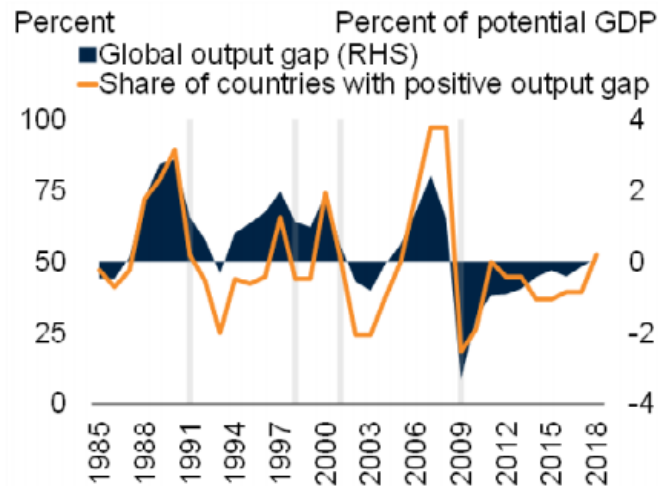
A. Global GDP during expansion periods



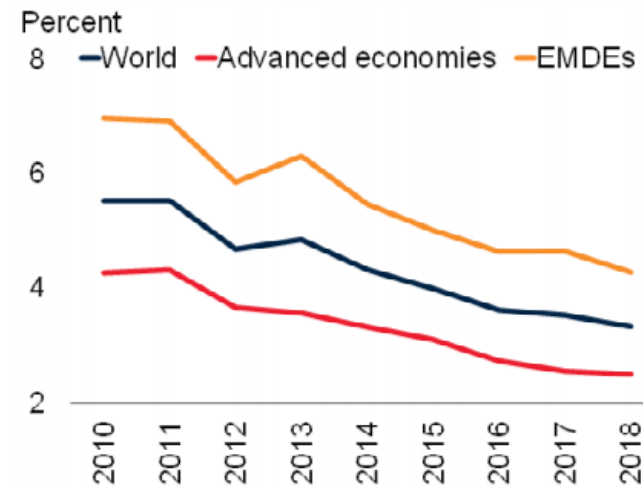
B. Probability of U.S. recession



C. Output gaps around global recessions/slowdowns

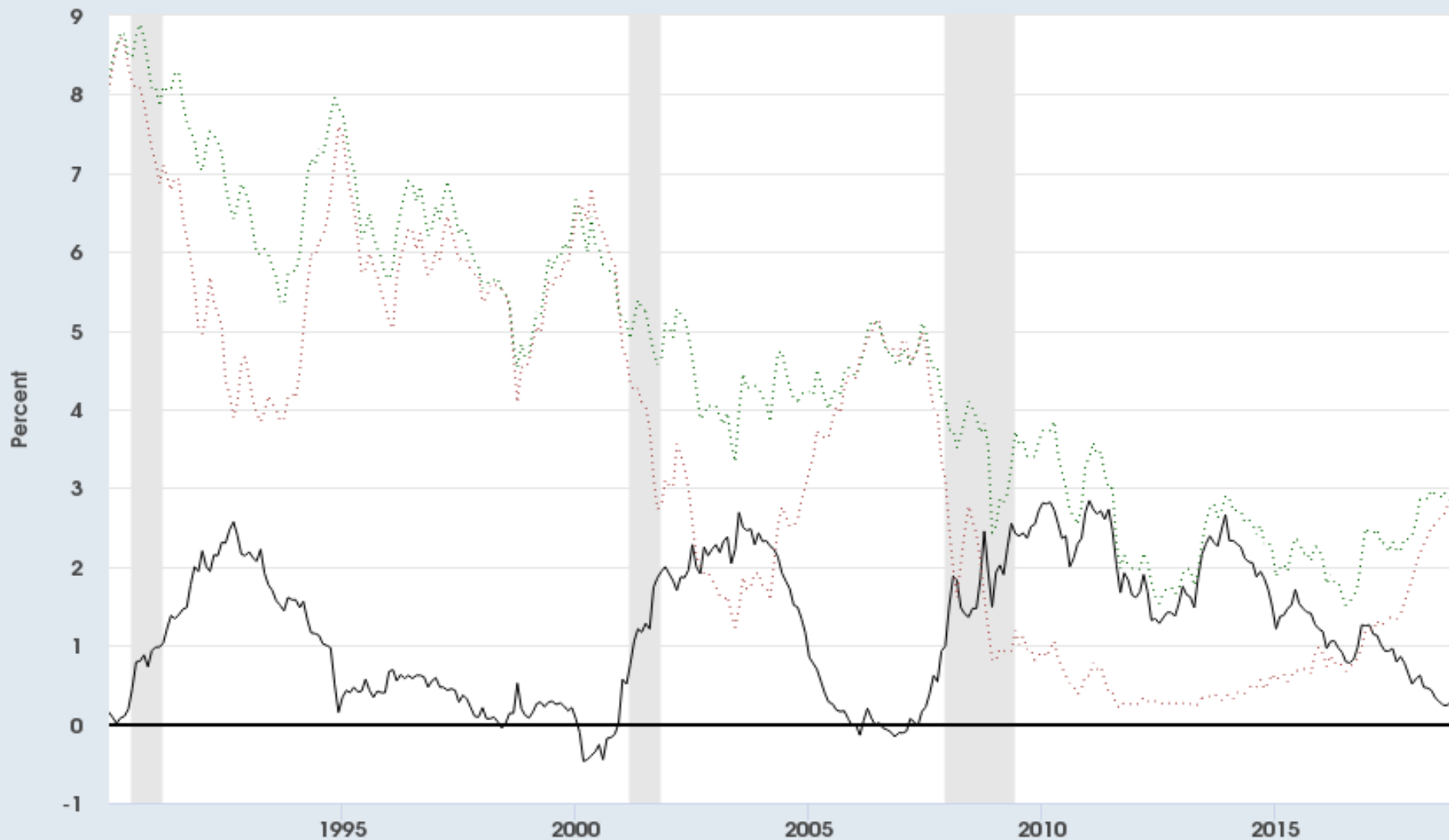


D. Five-year-ahead forecasts of investment growth



FRED

- 10-Year Treasury Constant Maturity Minus 2-Year Treasury Constant Maturity
- ⋯ 10-Year Treasury Constant Maturity Rate
- ⋯ 2-Year Treasury Constant Maturity Rate



Shaded areas indicate U.S. recessions

Sources: Board of Governors, St. Louis Fed

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Yield Curve

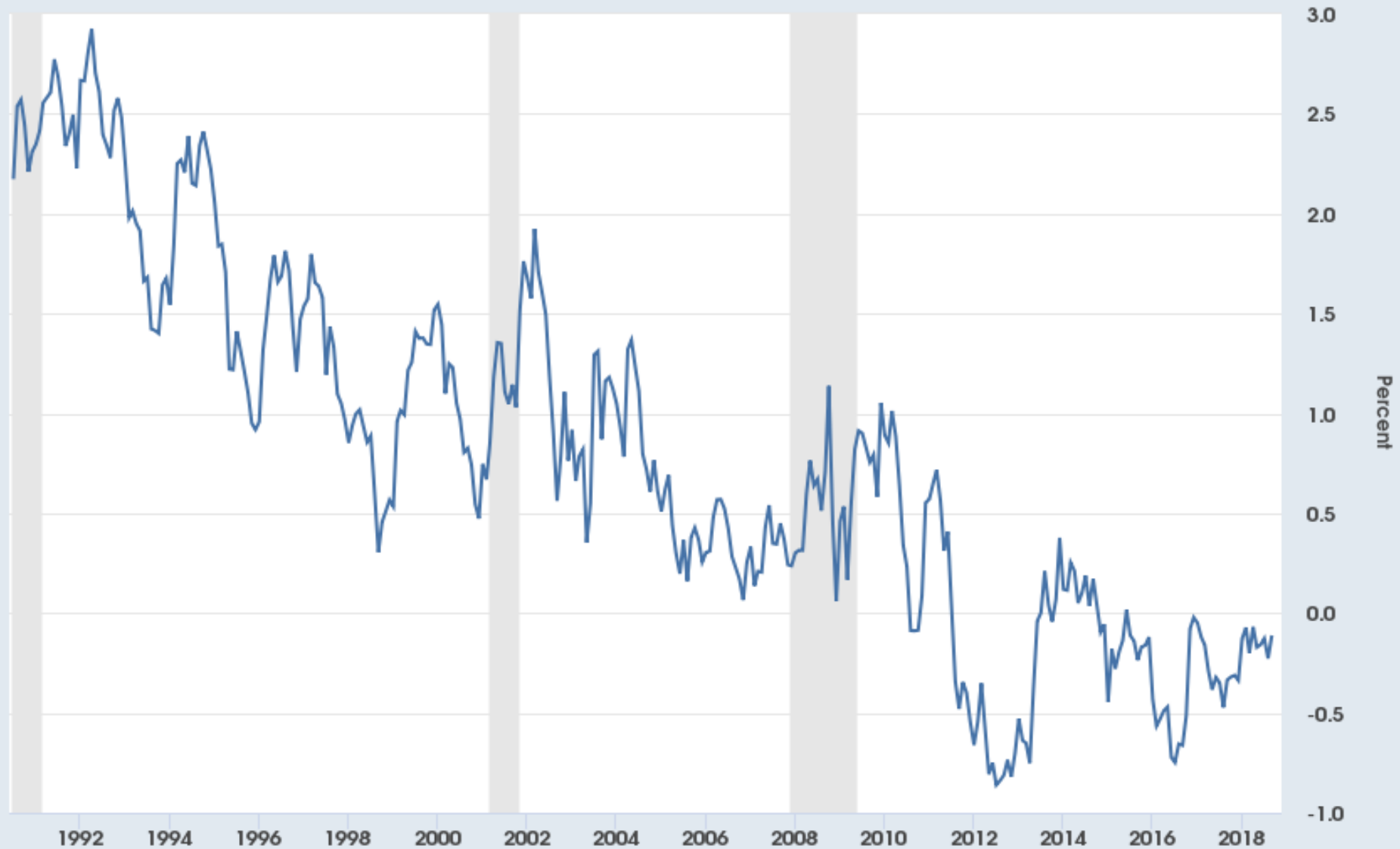
- $R_t - r_t = \text{Yield Spread}$
- $E_t[X_{t,n}] = \frac{1}{n} (r_t + r_{t+1} + \dots + r_{t+n-1}) = R_t$
- $T_t = R_t - E_t[X_{t,n}] = \text{Term Premium}$

$$R_t - r_t = \{E_t[X_{t,n}] - r_t\} + T_t$$

Spread = Expectations Component + Term Premium

- **So, the spread consists of two parts:**
 1. **Expected yield spread**
 2. **Term premium**

FRED — Term Premium on a 10 Year Zero Coupon Bond



Shaded areas indicate U.S. recessions

Source: Board of Governors of the Federal Reserve System (US)

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FRED

— Term Premium on a 10 Year Zero Coupon Bond (right)
— 10-Year Treasury Constant Maturity Rate (left)

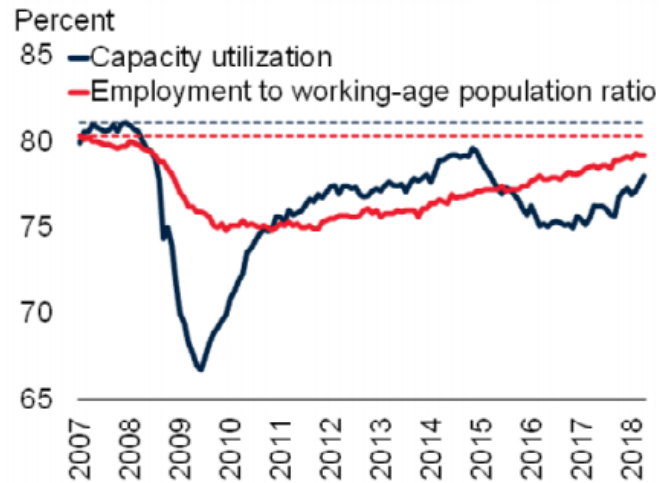


Shaded areas indicate U.S. recessions

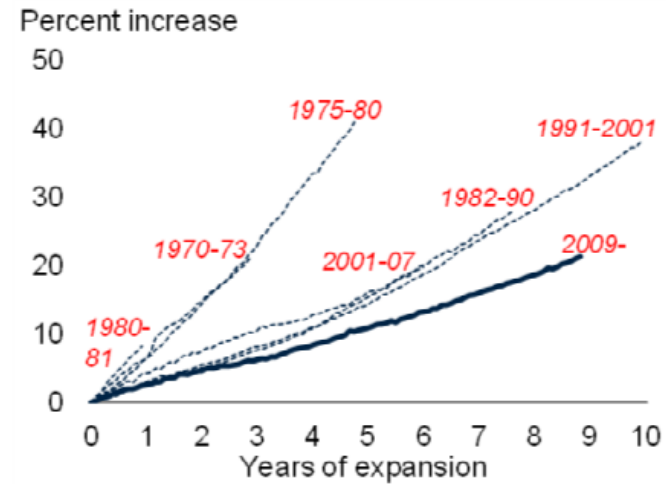
Source: Board of Governors of the Federal Reserve System (US)

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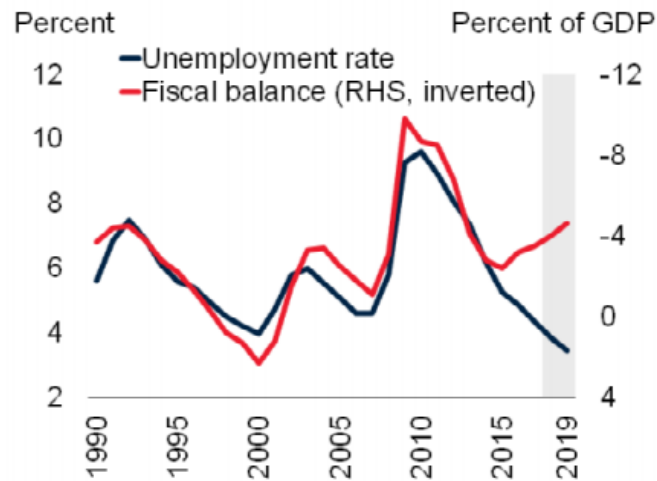
A. Productive capacity



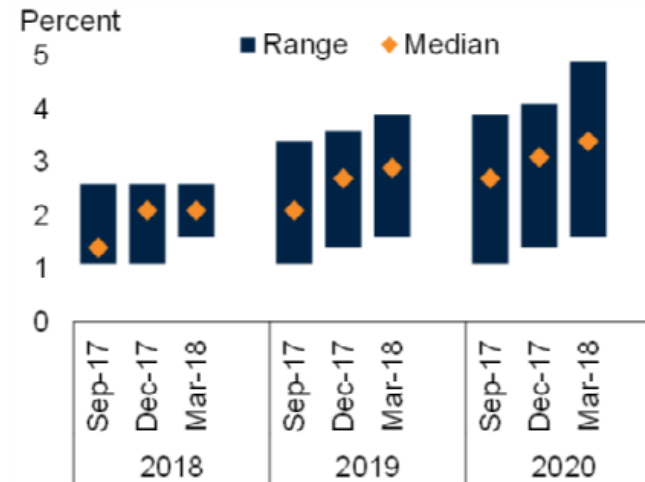
B. Wage growth during expansions



C. Federal deficit and unemployment rate

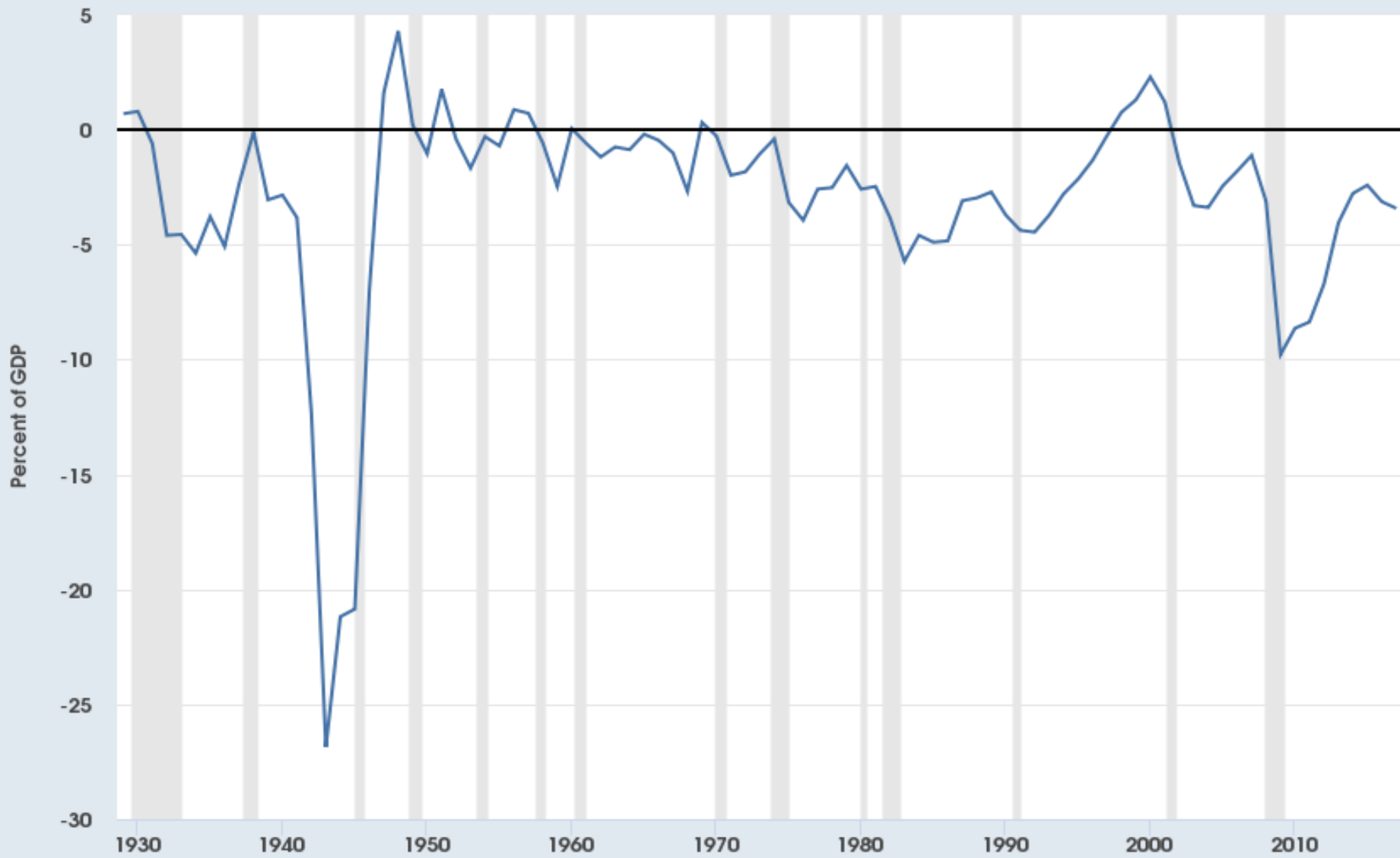


D. U.S. Federal Reserve policy rate projections over time



'Dualing' Deficits

FRED — Federal Surplus or Deficit [-] as Percent of Gross Domestic Product



Shaded areas indicate U.S. recessions

Source: Federal Reserve Bank of St. Louis

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Twin Deficits Hypothesis

- $Y = C + I + G + (X - M)$
- $Y - C - T = S$
 - $S = (G - T) + (X - M) + I$

$$G - T = S + (M - X) - I$$

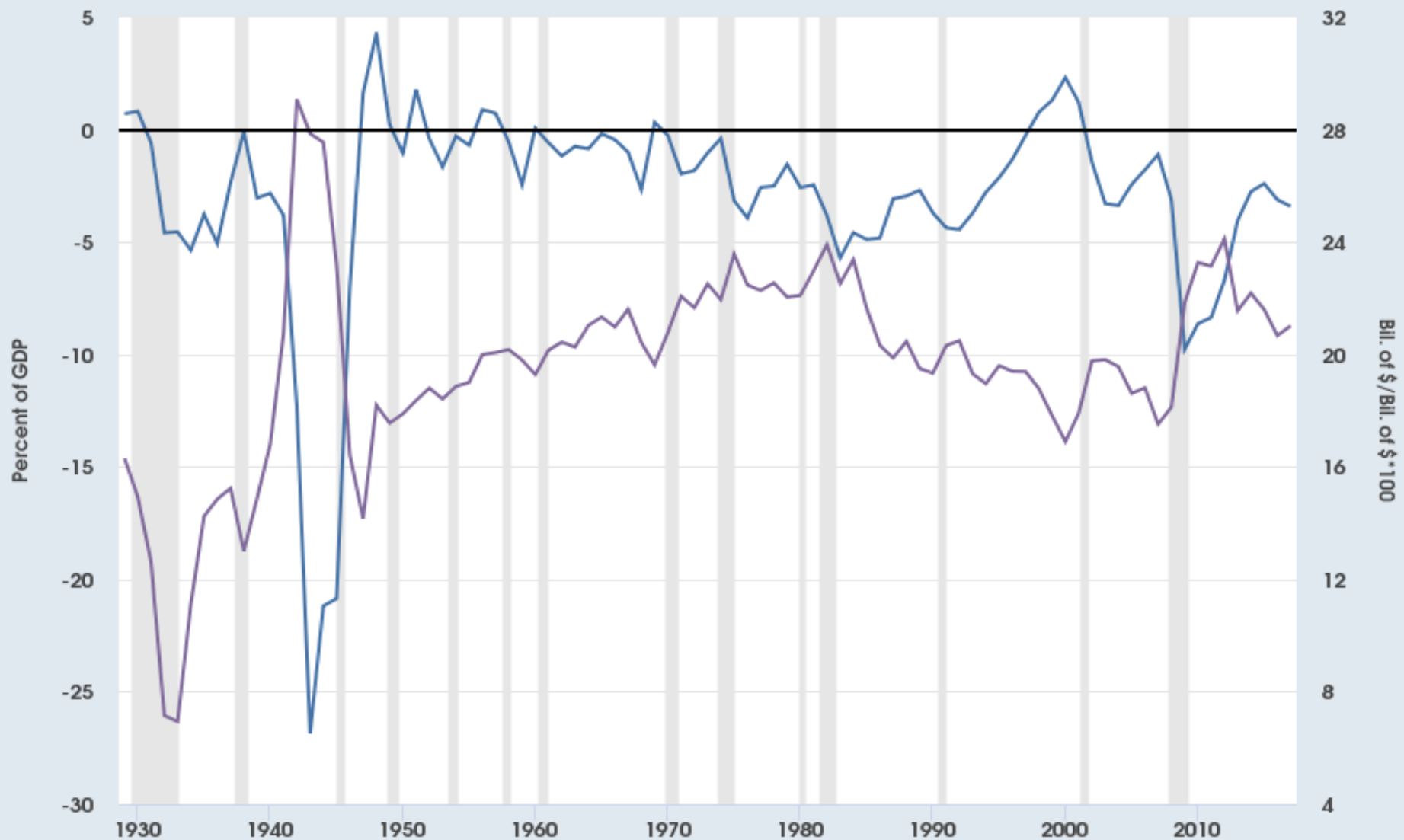
Budget Deficit

= Savings + Trade Deficit - Investment

- So, if the Budget Deficit increases, then either Private Savings must increase, the Trade Deficit must increase, or Private Investment will fall.

FRED

— Federal Surplus or Deficit [-] as Percent of Gross Domestic Product (left)
— Gross private saving/Gross Domestic Product*100 (right)



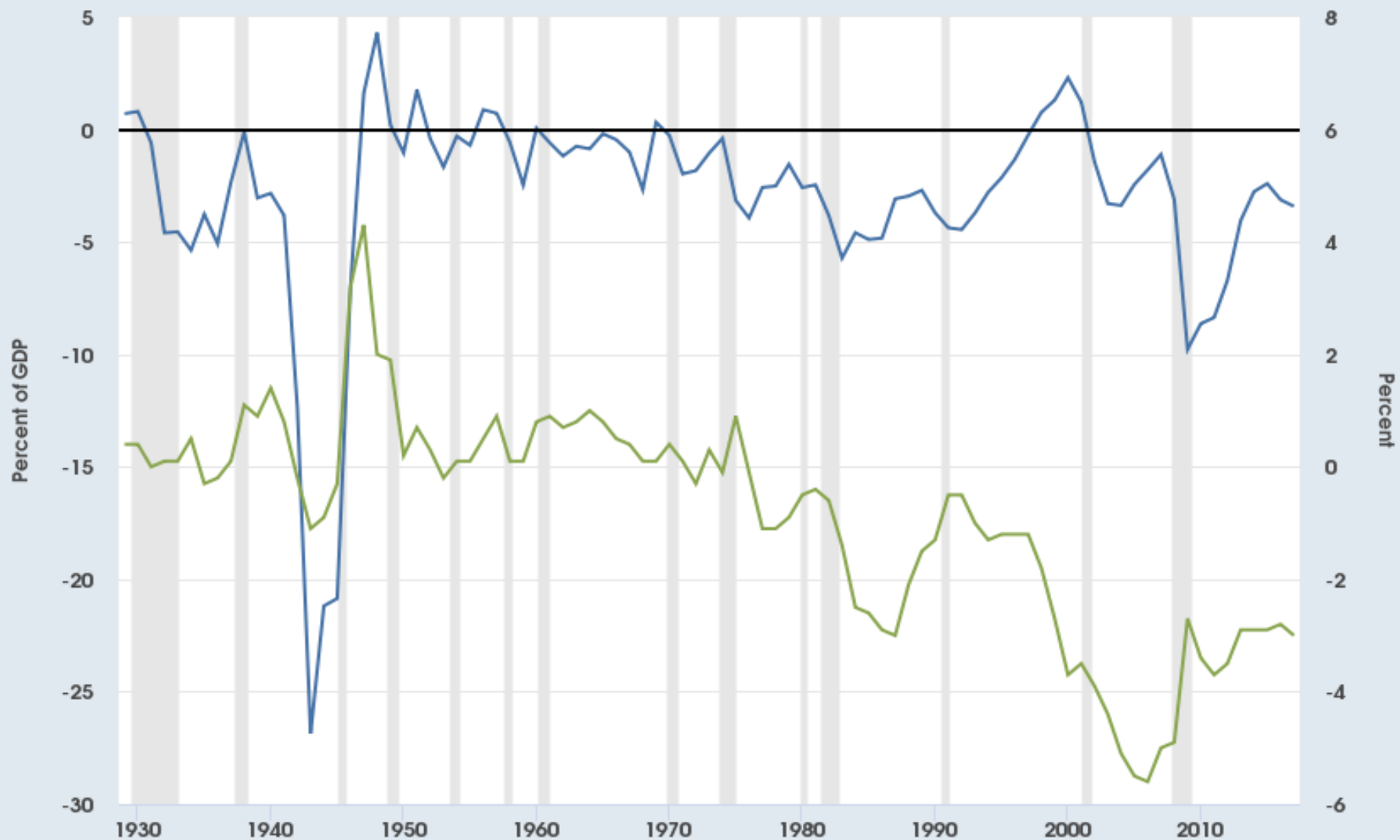
Shaded areas indicate U.S. recessions

Sources: BEA, St. Louis Fed

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FRED

— Federal Surplus or Deficit [-] as Percent of Gross Domestic Product (left)
— Shares of gross domestic product: Net exports of goods and services (right)



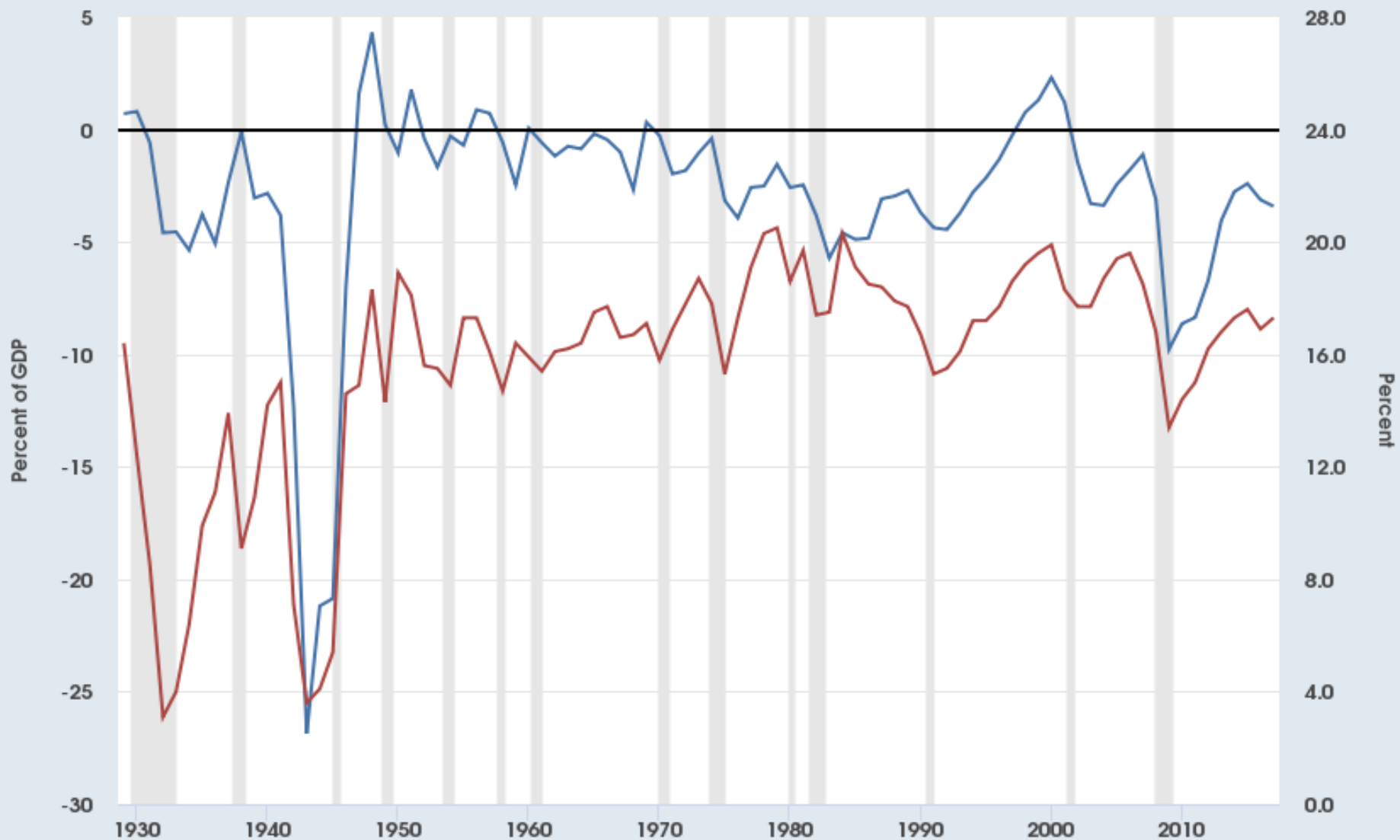
Shaded areas indicate U.S. recessions

Sources: BEA, St. Louis Fed

myf.red/g/IMaR

FRED

— Federal Surplus or Deficit [-] as Percent of Gross Domestic Product (left)
— Shares of gross domestic product: Gross private domestic investment (right)



Shaded areas indicate U.S. recessions

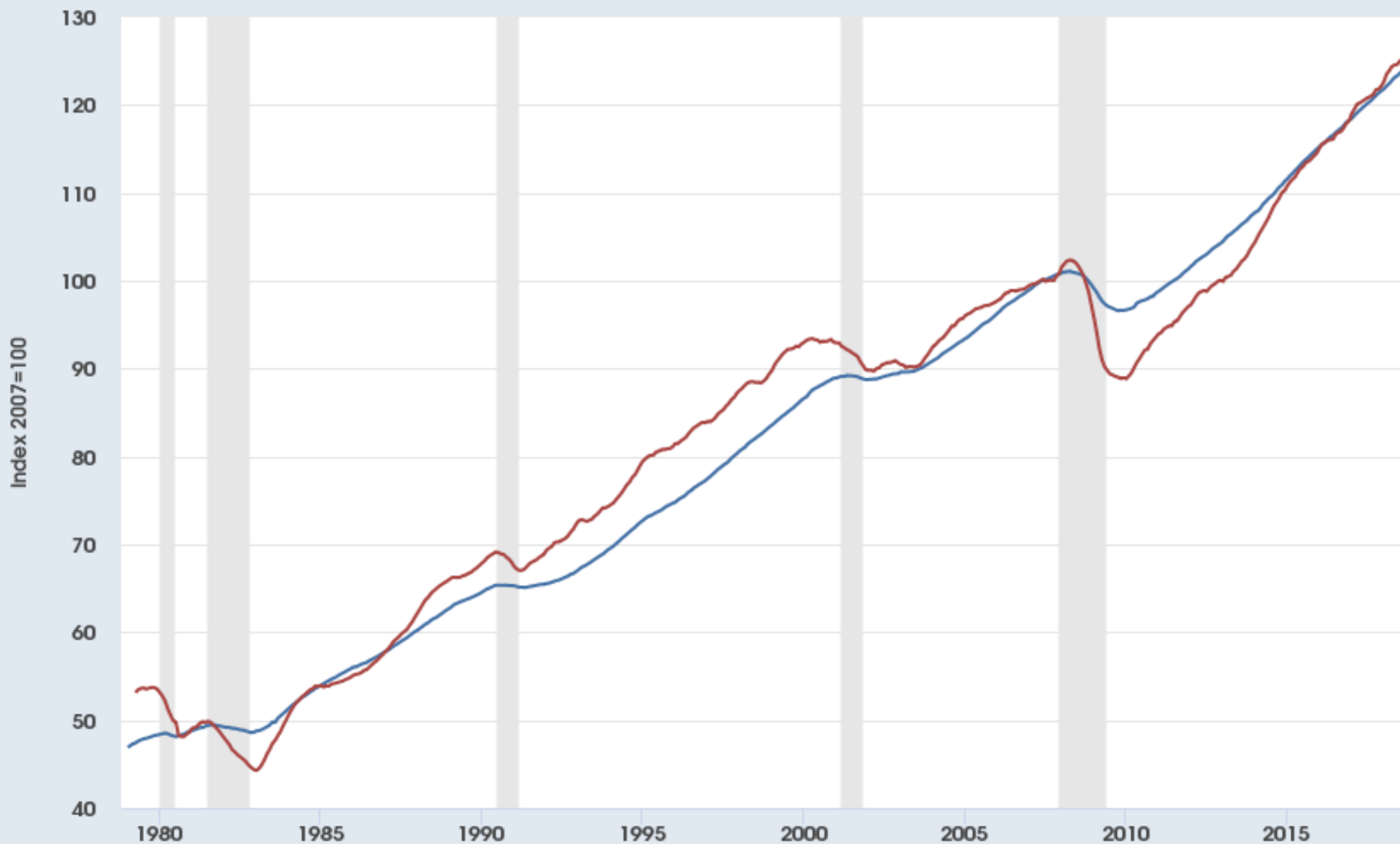
Sources: BEA, St. Louis Fed

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National and State Economies

FRED

— Coincident Economic Activity Index for the United States
— Coincident Economic Activity Index for Wisconsin



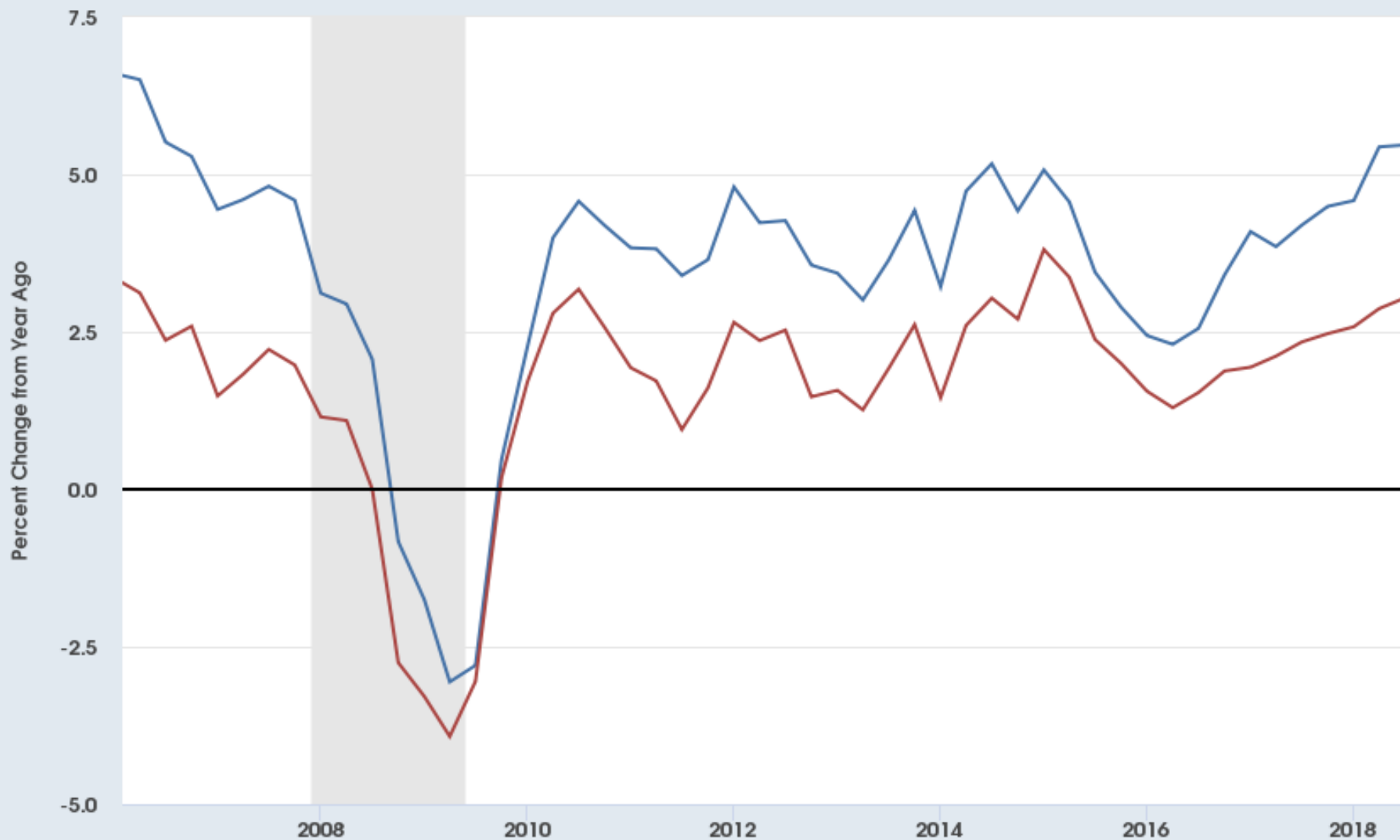
Shaded areas indicate U.S. recessions

Source: Federal Reserve Bank of Philadelphia

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FRED

— Gross Domestic Product
— Real Gross Domestic Product



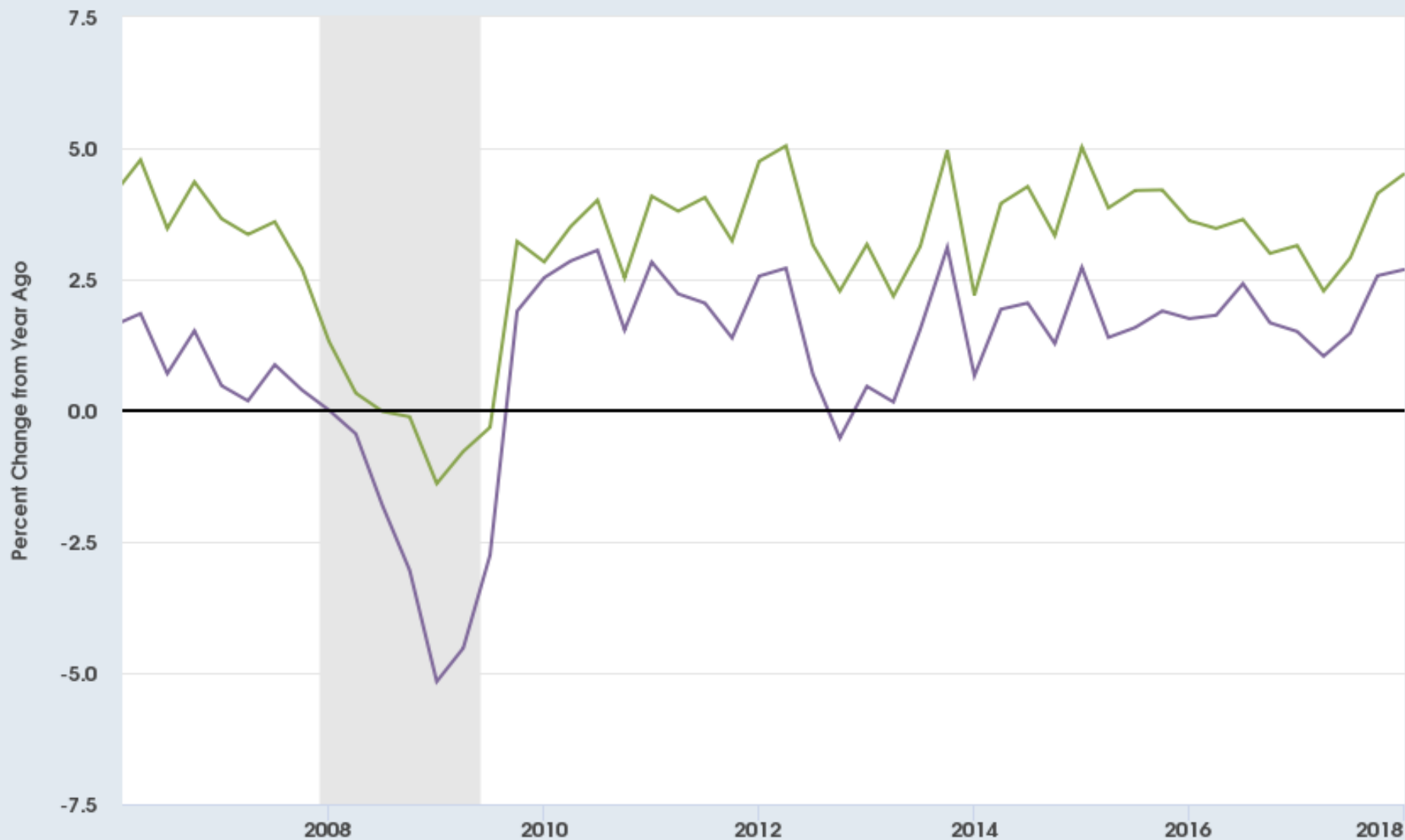
Shaded areas indicate U.S. recessions

Source: U.S. Bureau of Economic Analysis

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FRED

— Total Gross Domestic Product by Industry for Wisconsin
— Total Real Gross Domestic Product by Industry for Wisconsin

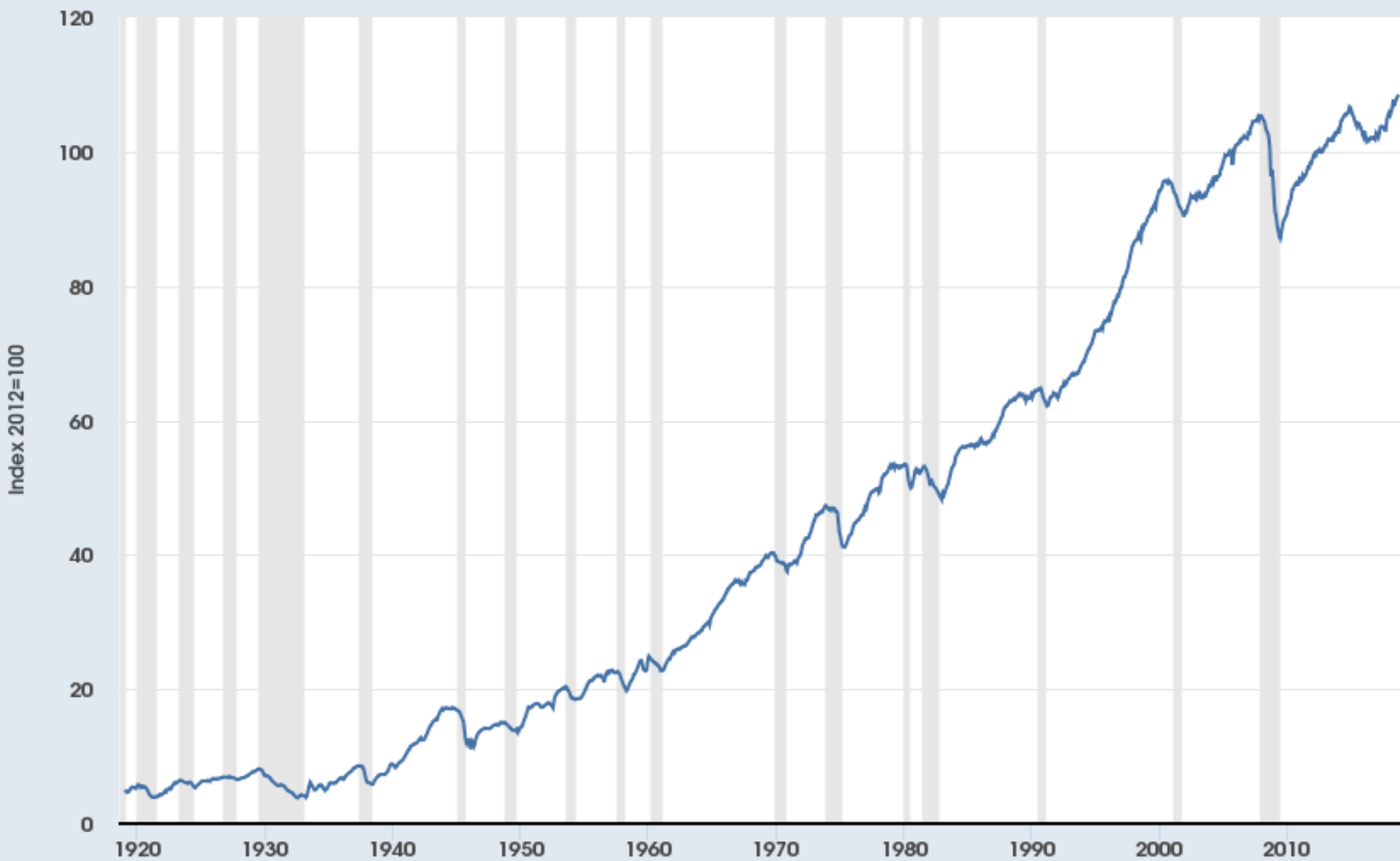


Shaded areas indicate U.S. recessions

Source: U.S. Bureau of Economic Analysis

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FRED — Industrial Production Index



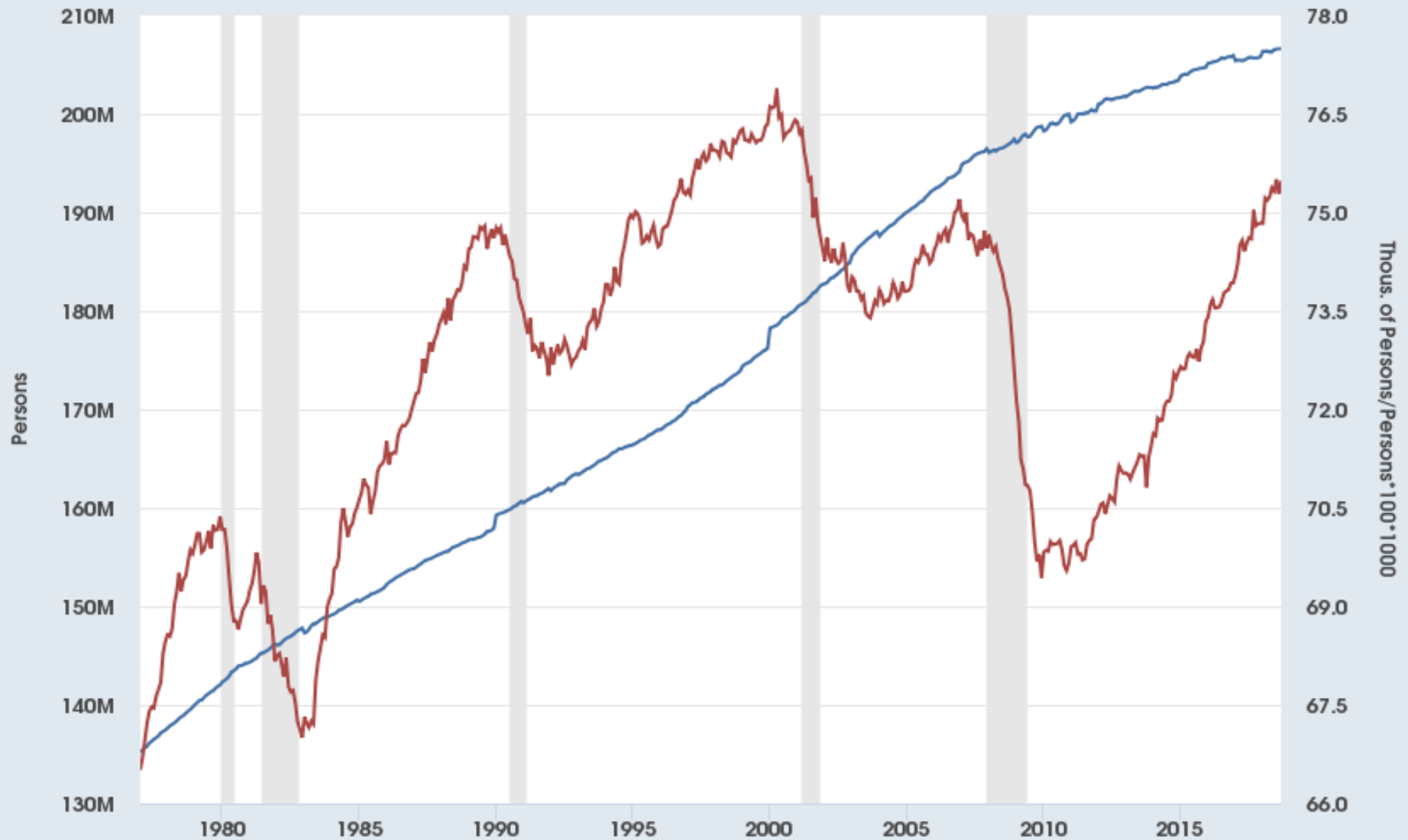
Shaded areas indicate U.S. recessions Source: Board of Governors of the Federal Reserve System (US)

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FRED



— Working Age Population: Aged 15-64: All Persons for the United States (left)
— Civilian Employment Level/Working Age Population: Aged 15-64: All Persons for the United States*100*1000 (right)



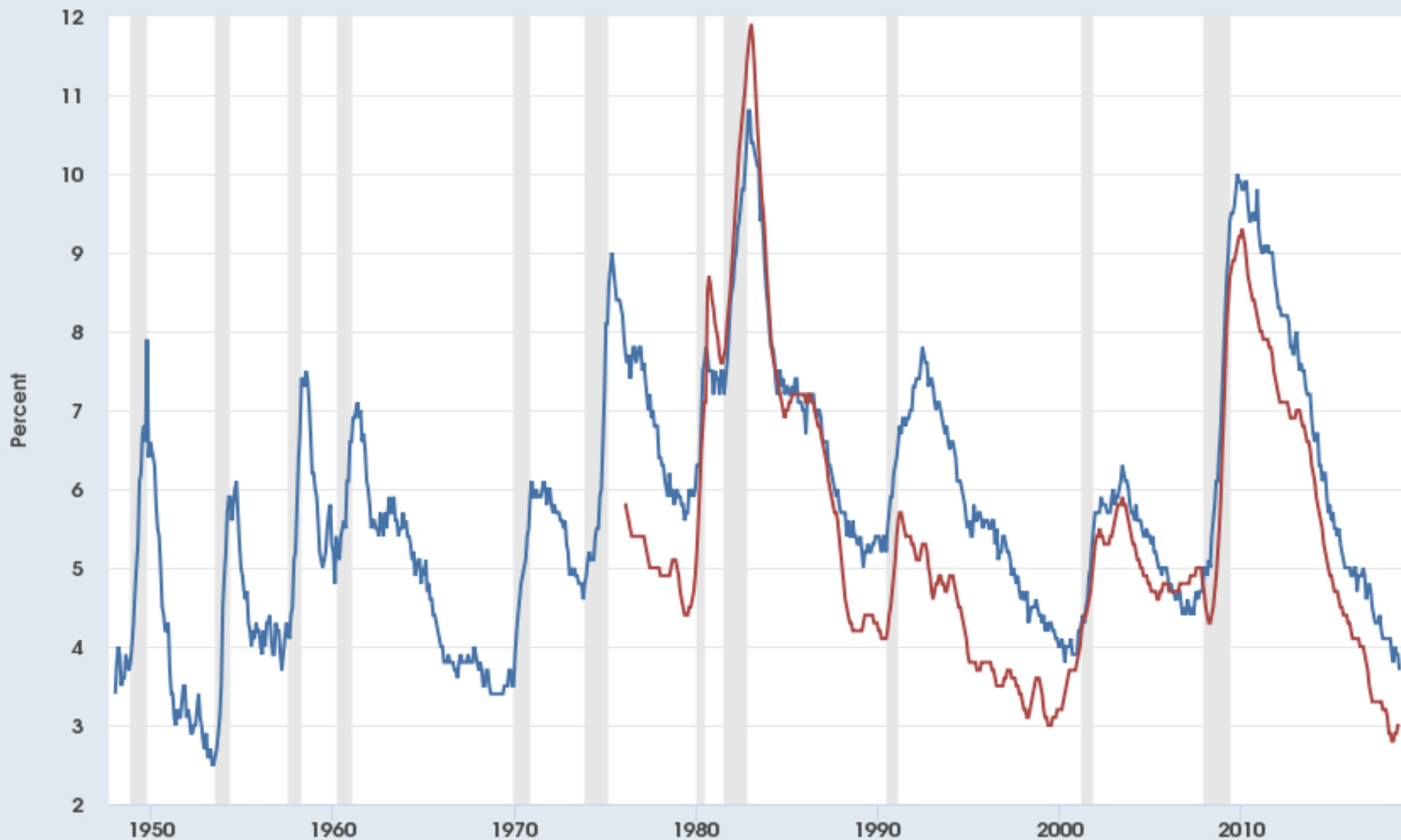
Shaded areas indicate U.S. recessions

Sources: BLS, OECD

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FRED

— Civilian Unemployment Rate
— Unemployment Rate in Wisconsin



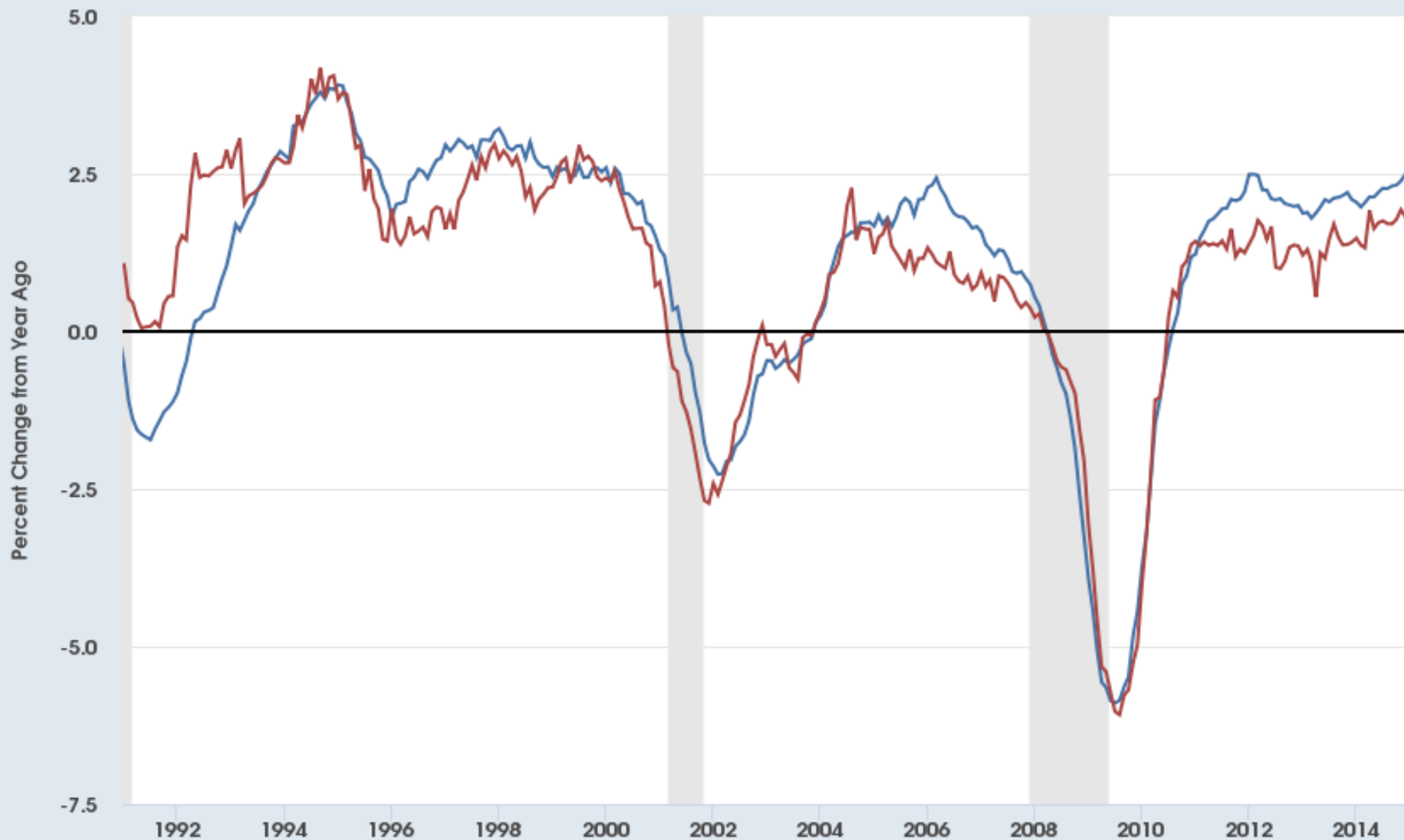
Shaded areas indicate U.S. recessions

Source: U.S. Bureau of Labor Statistics

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FRED

— All Employees: Total Private Industries
— All Employees: Total Private in Wisconsin



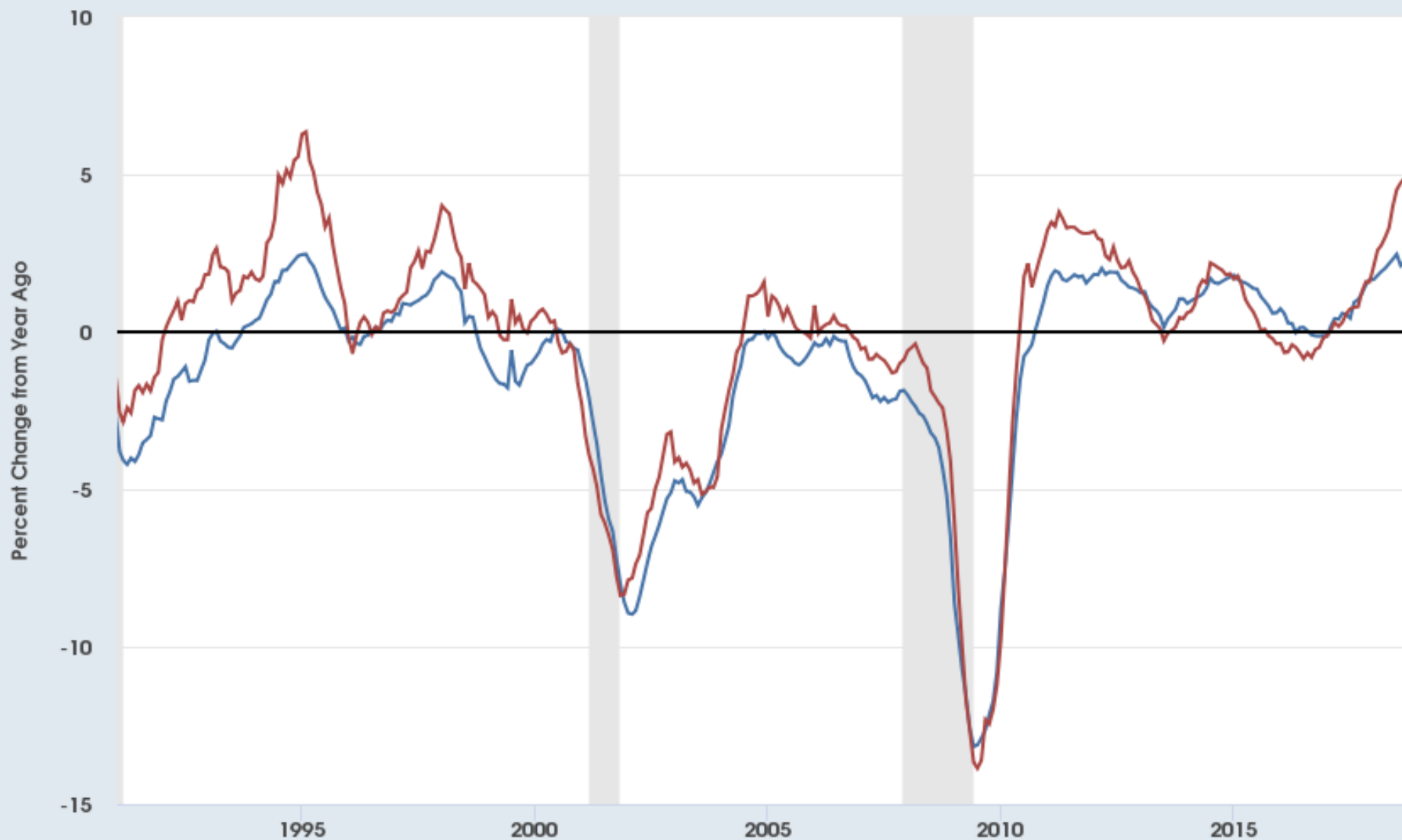
Shaded areas indicate U.S. recessions

Sources: BLS, St. Louis Fed

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FRED

— All Employees: Manufacturing
— All Employees: Manufacturing in Wisconsin

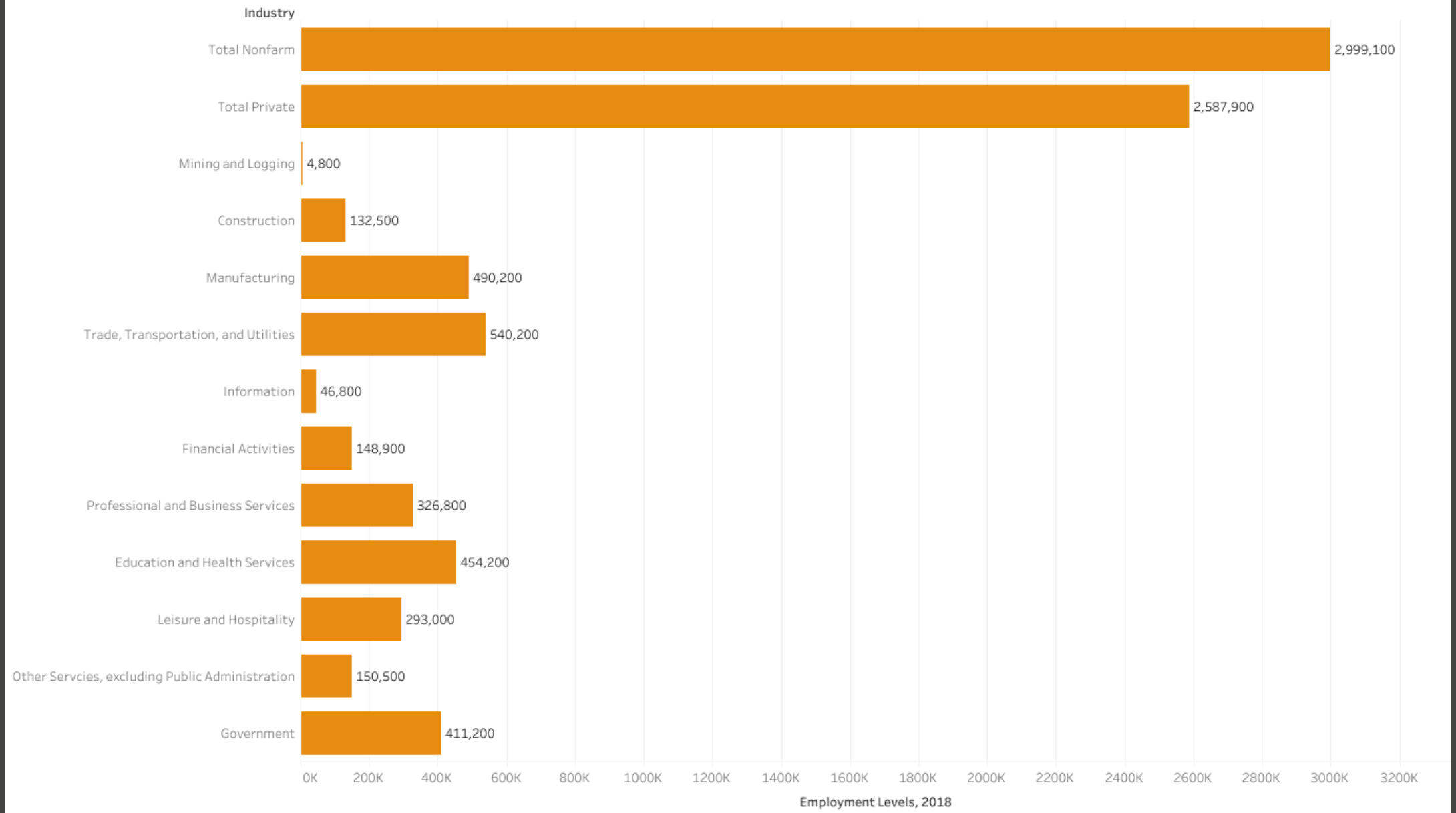


Shaded areas indicate U.S. recessions

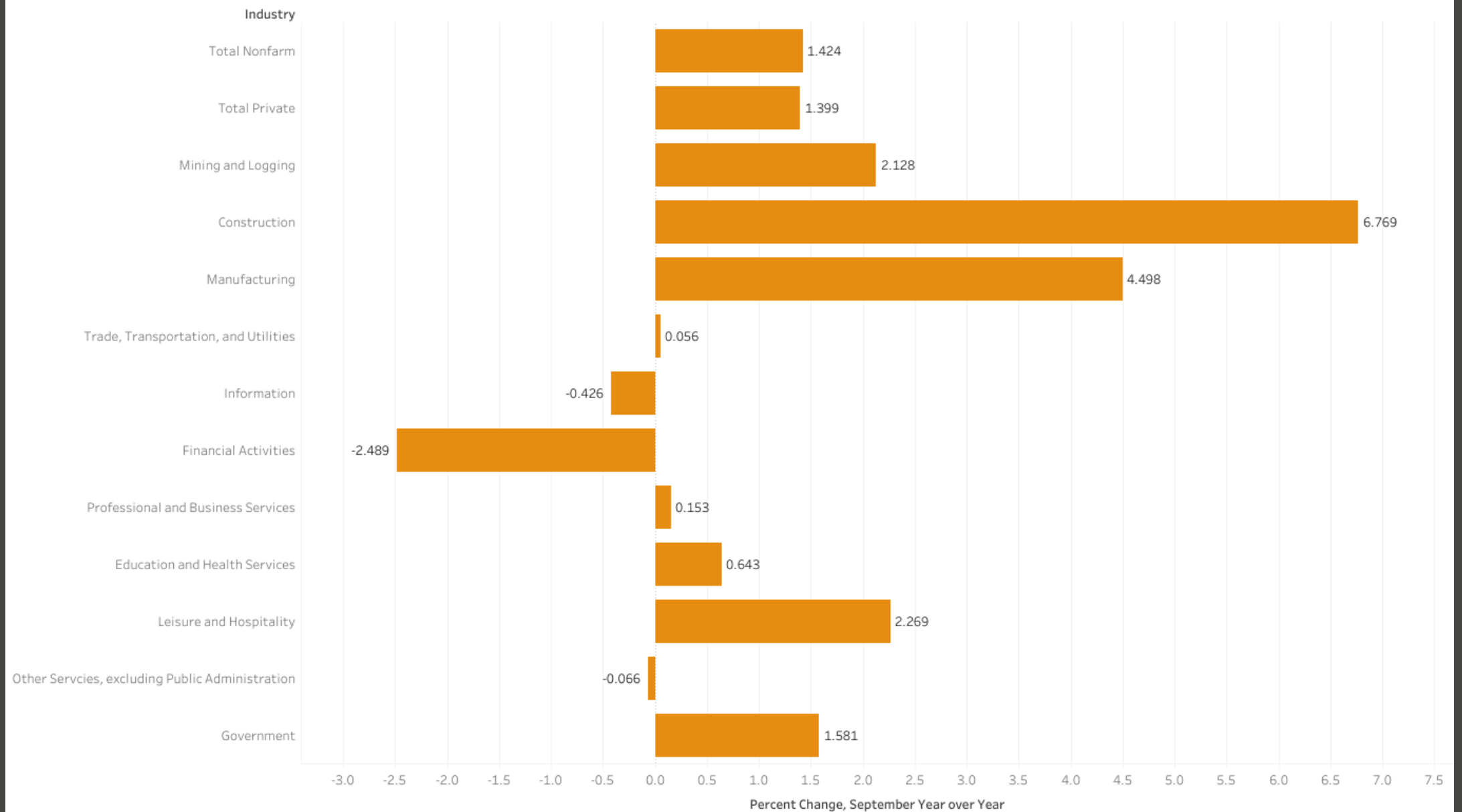
Source: U.S. Bureau of Labor Statistics

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Wisconsin Employment by Industry

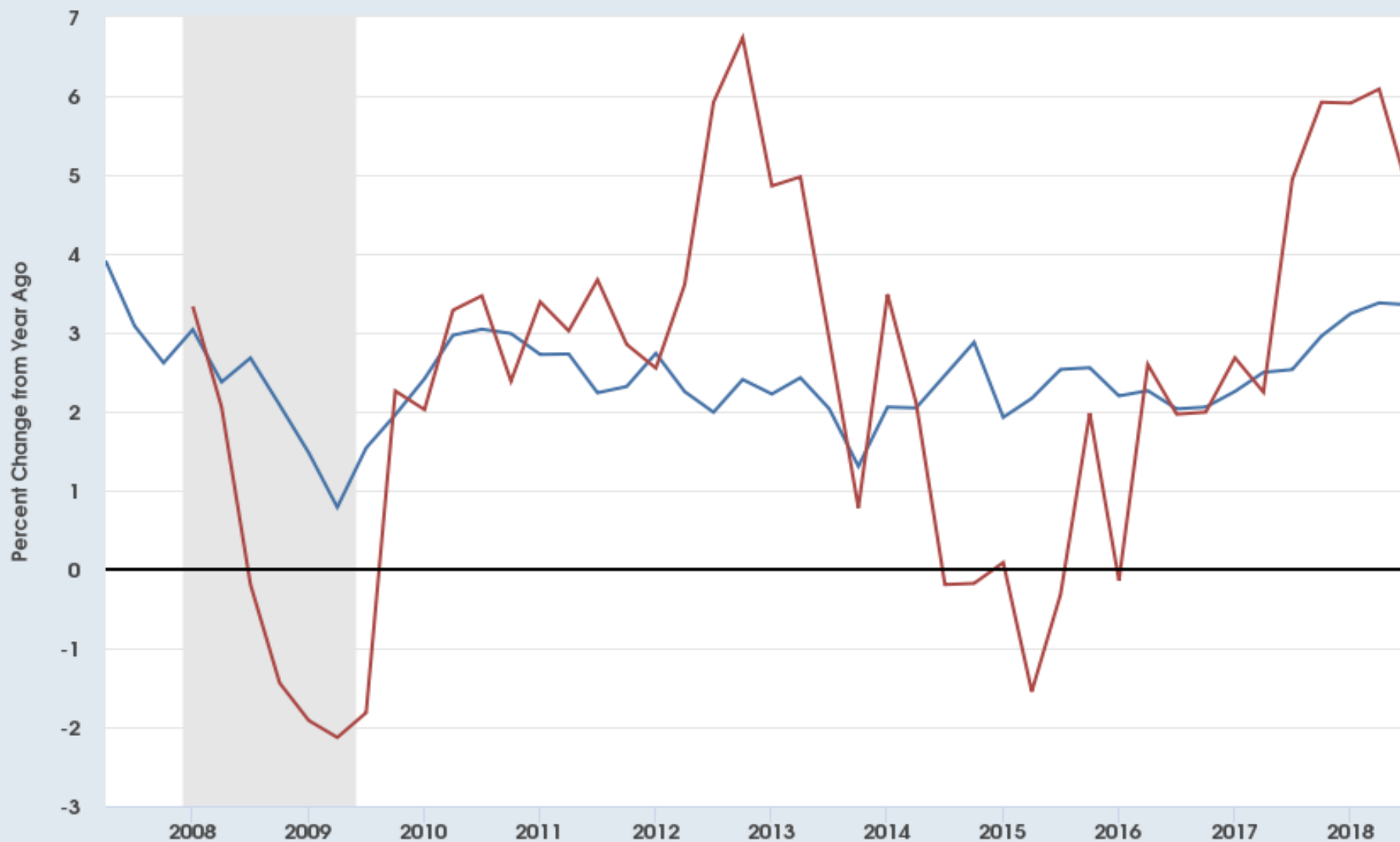


Wisconsin Employment Change by Industry



FRED

— Average Weekly Earnings of All Employees: Total Private
— Average Weekly Earnings of All Employees: Total Private in Wisconsin



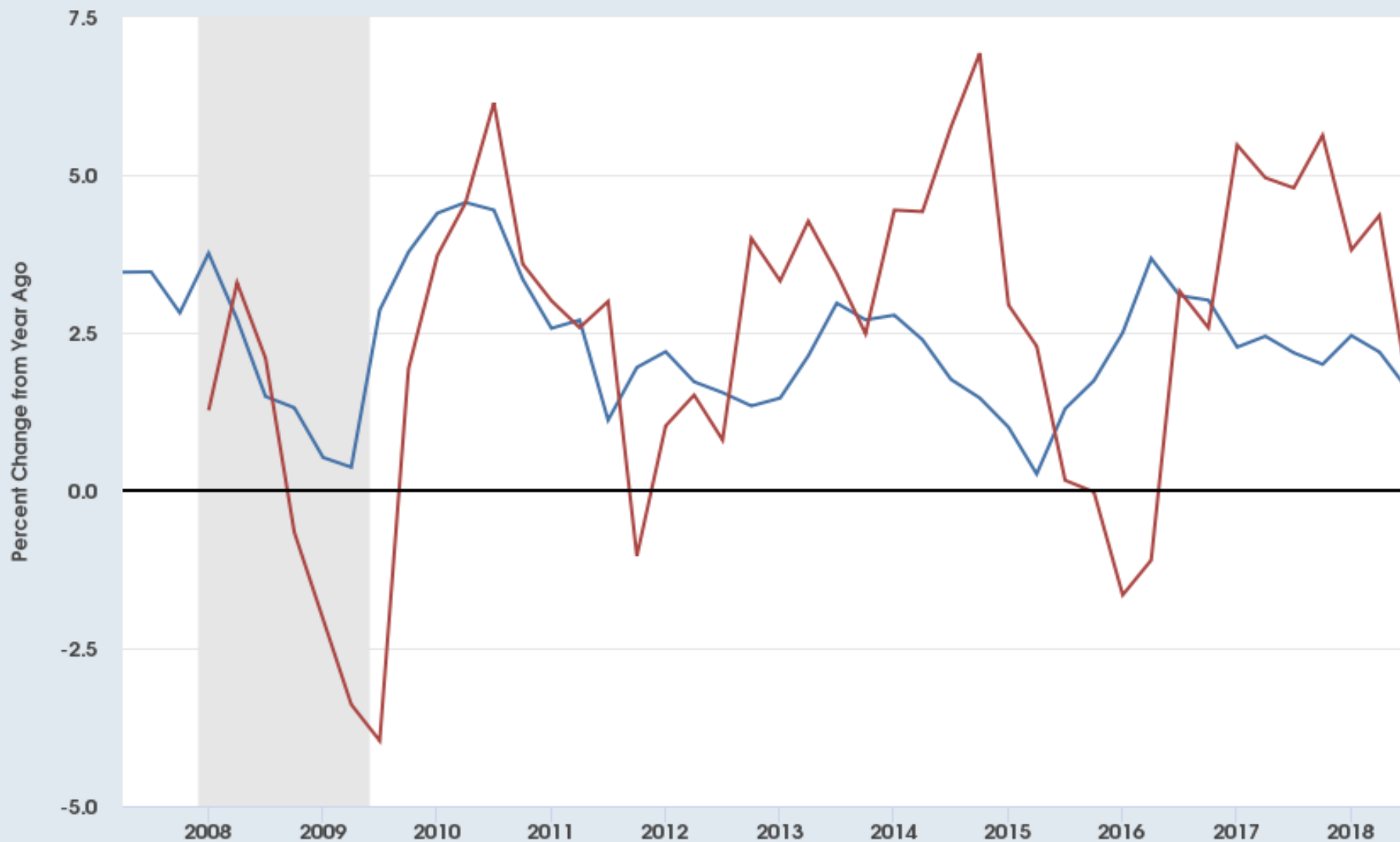
Shaded areas indicate U.S. recessions

Sources: BLS, St. Louis Fed

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FRED

— Average Weekly Earnings of All Employees: Manufacturing
— Average Weekly Earnings of All Employees: Manufacturing in Wisconsin



Shaded areas indicate U.S. recessions

Sources: BLS, St. Louis Fed

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FRED

— Housing Affordability Index (Composite) (left)
— Monthly Supply of Houses in the United States (right)



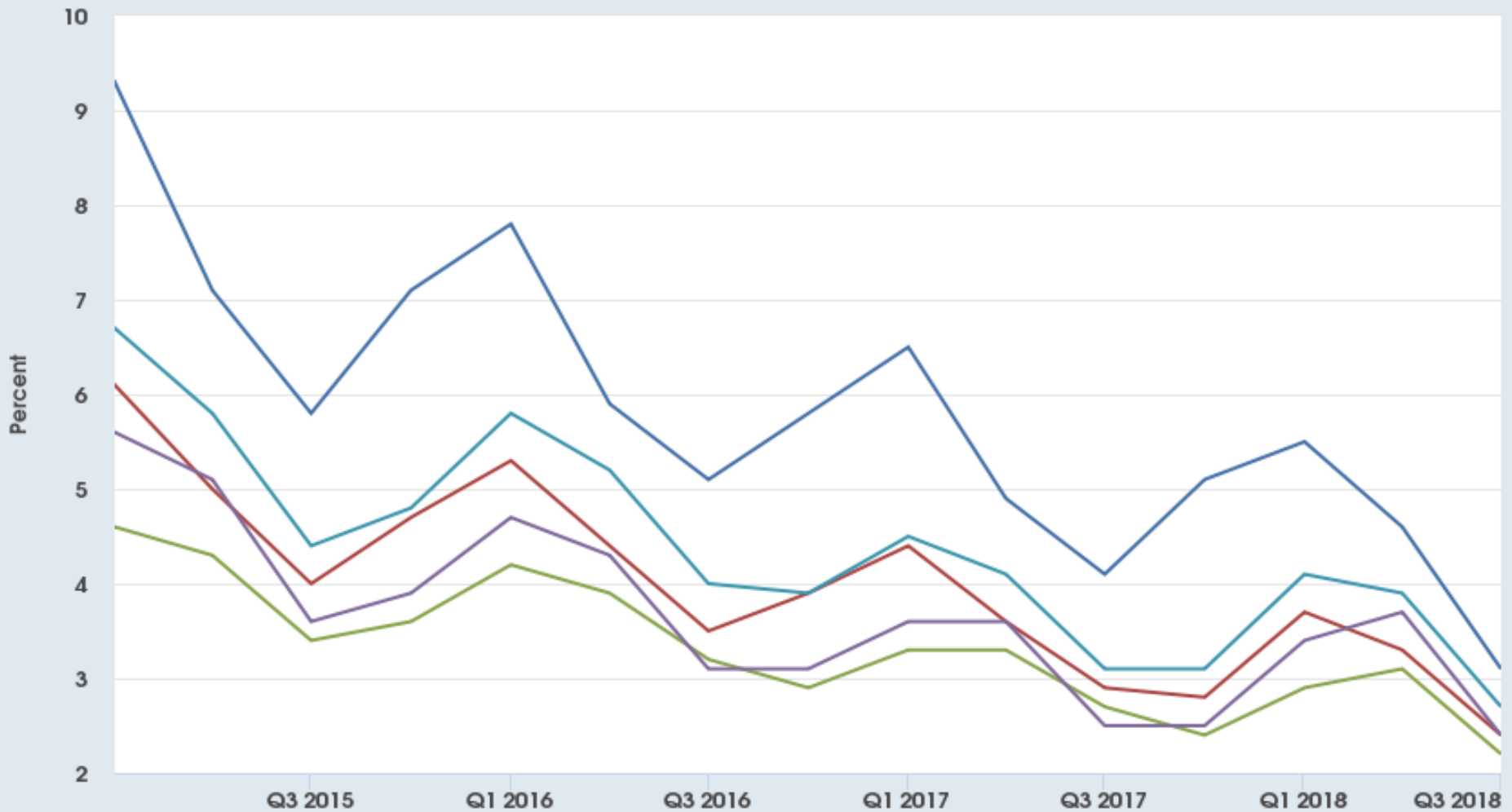
Shaded areas indicate U.S. recessions Source: National Association of Realtors, U.S. Bureau of the Census

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The Central Wisconsin Economy

FRED

- Unemployment Rate in Adams County, WI
- Unemployment Rate in Lincoln County, WI
- Unemployment Rate in Marathon County, WI
- Unemployment Rate in Portage County, WI
- Unemployment Rate in Wood County, WI



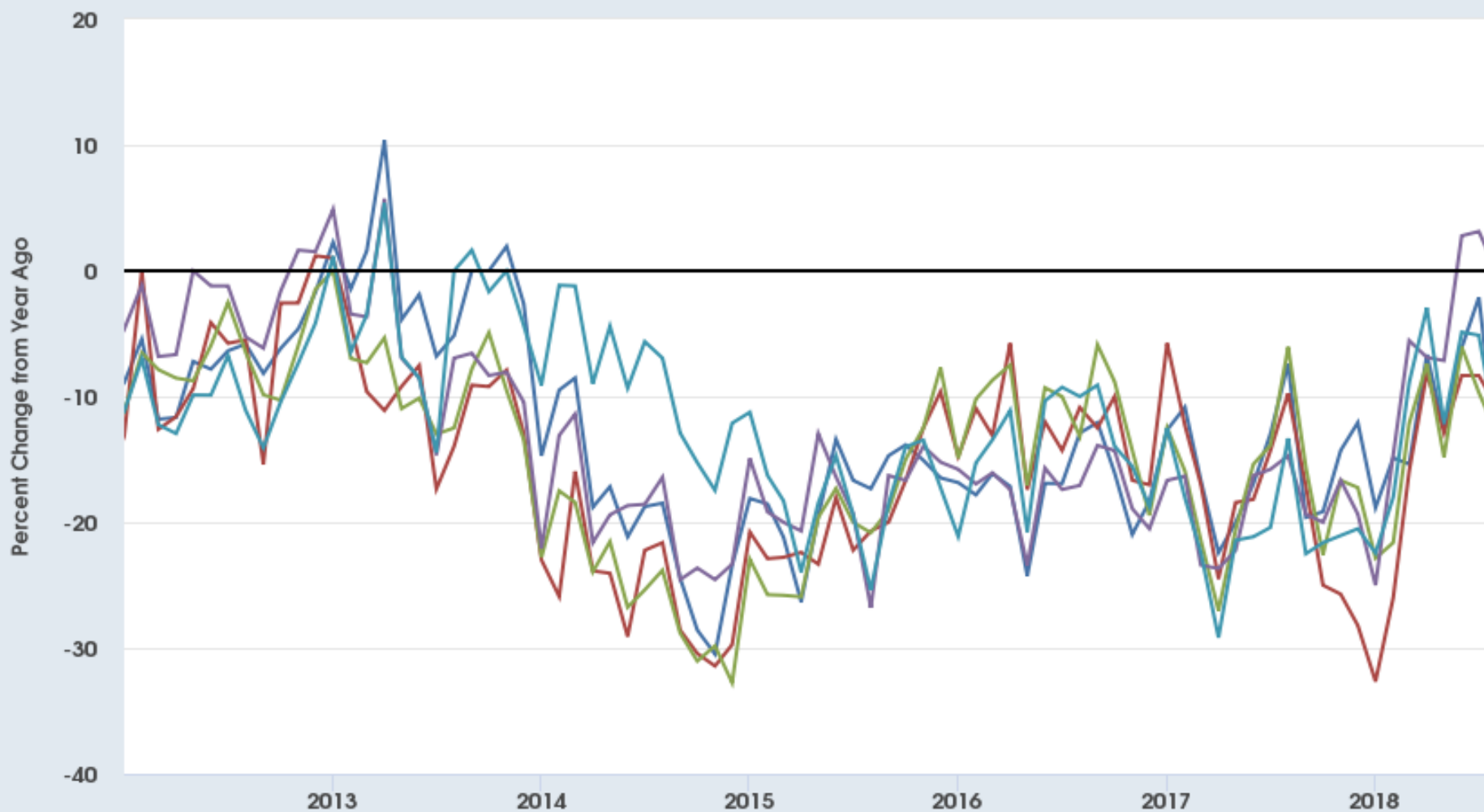
Shaded areas indicate U.S. recessions

Source: U.S. Bureau of Labor Statistics

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FRED

- Unemployment Rate in Adams County, WI
- Unemployment Rate in Lincoln County, WI
- Unemployment Rate in Marathon County, WI
- Unemployment Rate in Portage County, WI
- Unemployment Rate in Wood County, WI

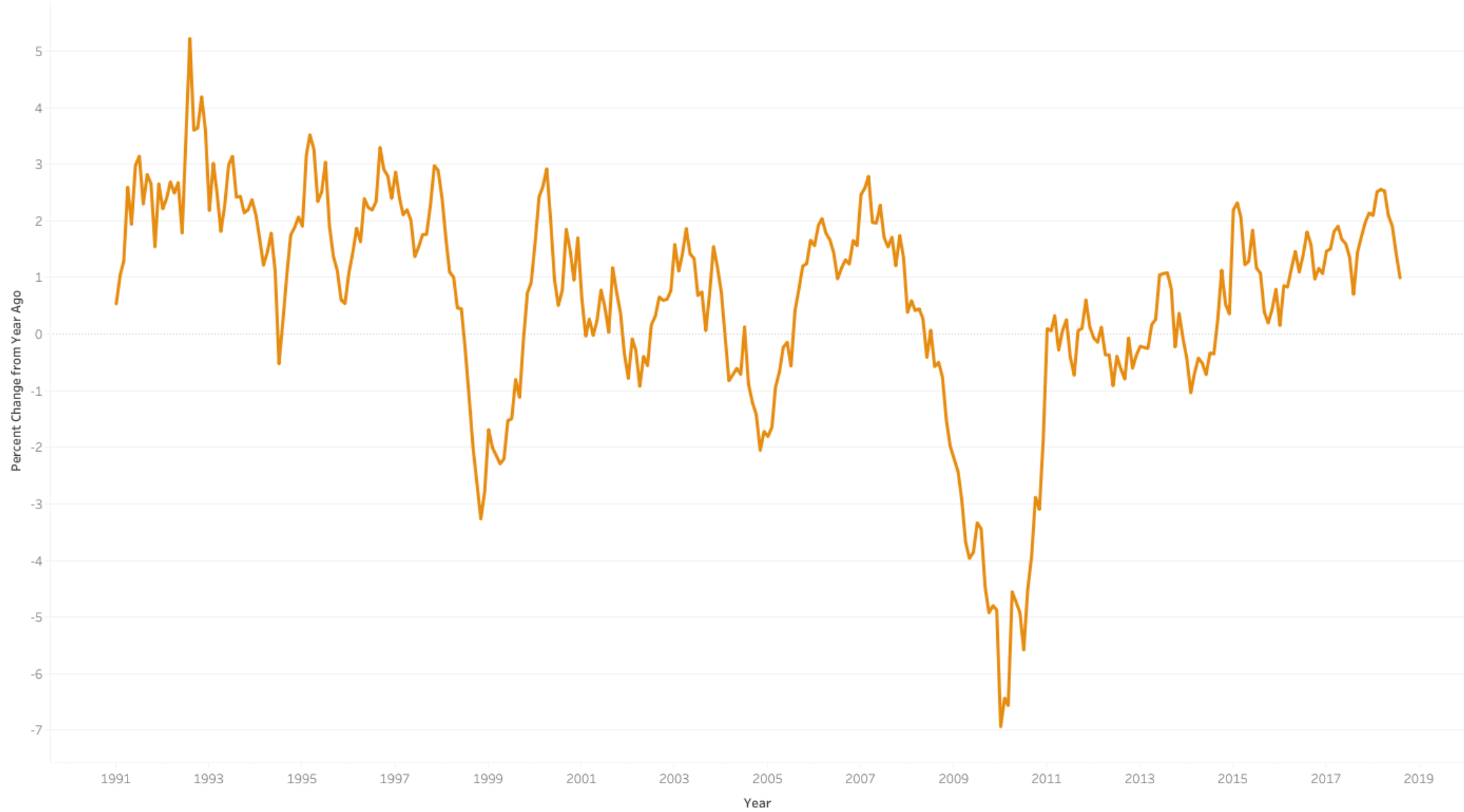


Shaded areas indicate U.S. recessions

Source: U.S. Bureau of Labor Statistics

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All Employees: Central Wisconsin - Adams, Lincoln, Marathon, Portage, and Wood Counties



Housing Statistics

Year to Date, September				
	Number of Sales		Median Price	
	2017*	2018	2017*	2018
Adams County	554	418	\$ 124,950	\$ 130,000
Lincoln County	472	438	\$ 109,500	\$ 128,500
Marathon County	1,796	1,403	\$ 144,900	\$ 160,000
Portage County	758	577	\$ 162,750	\$ 170,000
Wood County	1,008	755	\$ 110,000	\$ 120,100
Central Wisconsin	4,588	3,591		

* Data are for the full year.

Housing Statistics

September over September				
	Number of Sales		Median Price	
	2017	2018	2017	2018
Adams County	82	35	\$ 137,450	\$ 120,000
Lincoln County	50	63	\$ 100,525	\$ 130,000
Marathon County	178	165	\$ 141,250	\$ 162,900
Portage County	66	60	\$ 174,000	\$ 157,175
Wood County	83	70	\$ 123,500	\$ 135,000
Central Wisconsin	459	393		

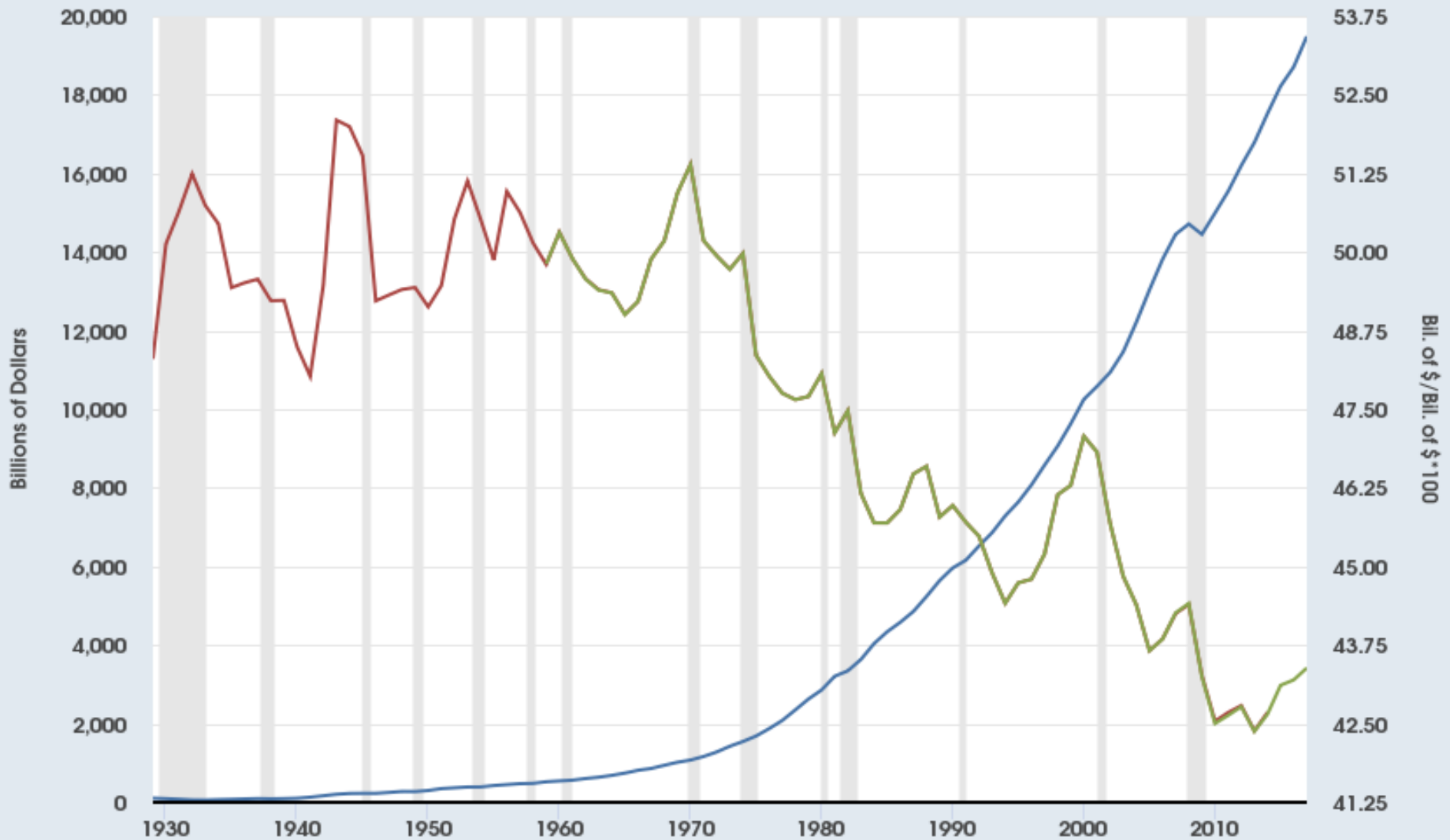
Sales Tax Distributions

	Q3 2017	Q3 2018	Percent Change Q3 over Q3
Adams County	\$ 453,215.53	\$ 475,025.81	4.8%
Lincoln County	\$ 556,710.68	\$ 575,093.19	3.3%
Marathon County	\$ 3,207,512.45	\$ 3,308,120.62	3.1%
Portage County	\$ 1,694,443.86	\$ 1,819,071.20	7.4%
Wood County	\$ 1,563,297.37	\$ 1,623,058.83	3.8%
Central Wisconsin, Year to Date	\$20,416,467.73	\$21,174,627.19	3.7%

Threats

FRED

- Gross Domestic Product (left)
- Compensation of employees: Wages and salaries (DISCONTINUED)/Gross Domestic Product*100 (right)
- Compensation of Employees, Received: Wage and Salary Disbursements/Gross Domestic Product*100 (right)

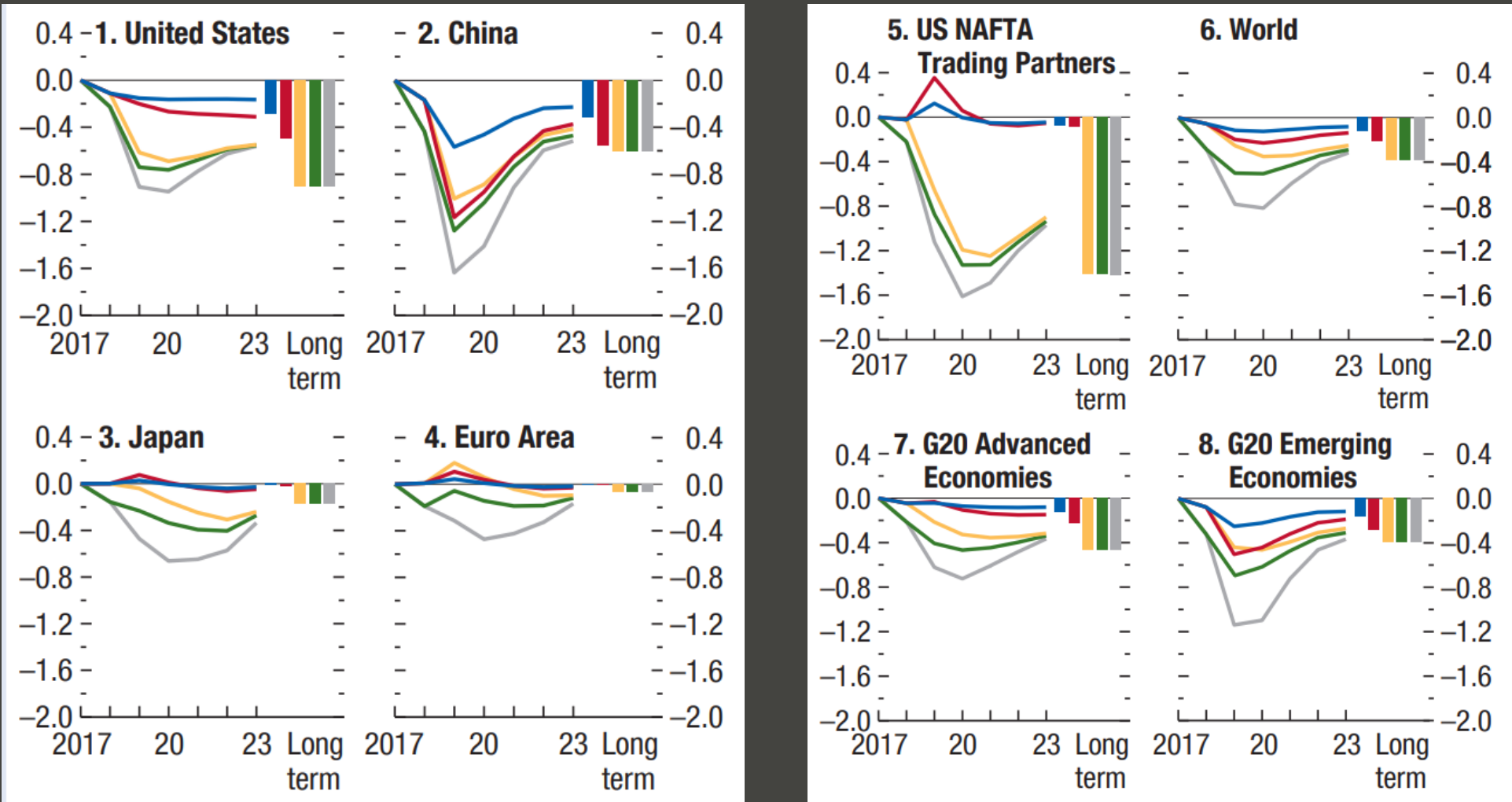


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Source: U.S. Bureau of Economic Analysis

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- Tariffs in baseline
- Add China (25 percent on \$267 billion) with retaliation
- Add cars, trucks, and parts with retaliation
- Add confidence effect
- Add market reaction



Additional Threats

- Debt Levels in EMDE
- Disorderly Monetary Policy
- Financial Stress
- Geopolitical Uncertainty
- Inflation

Thank you!

Questions?