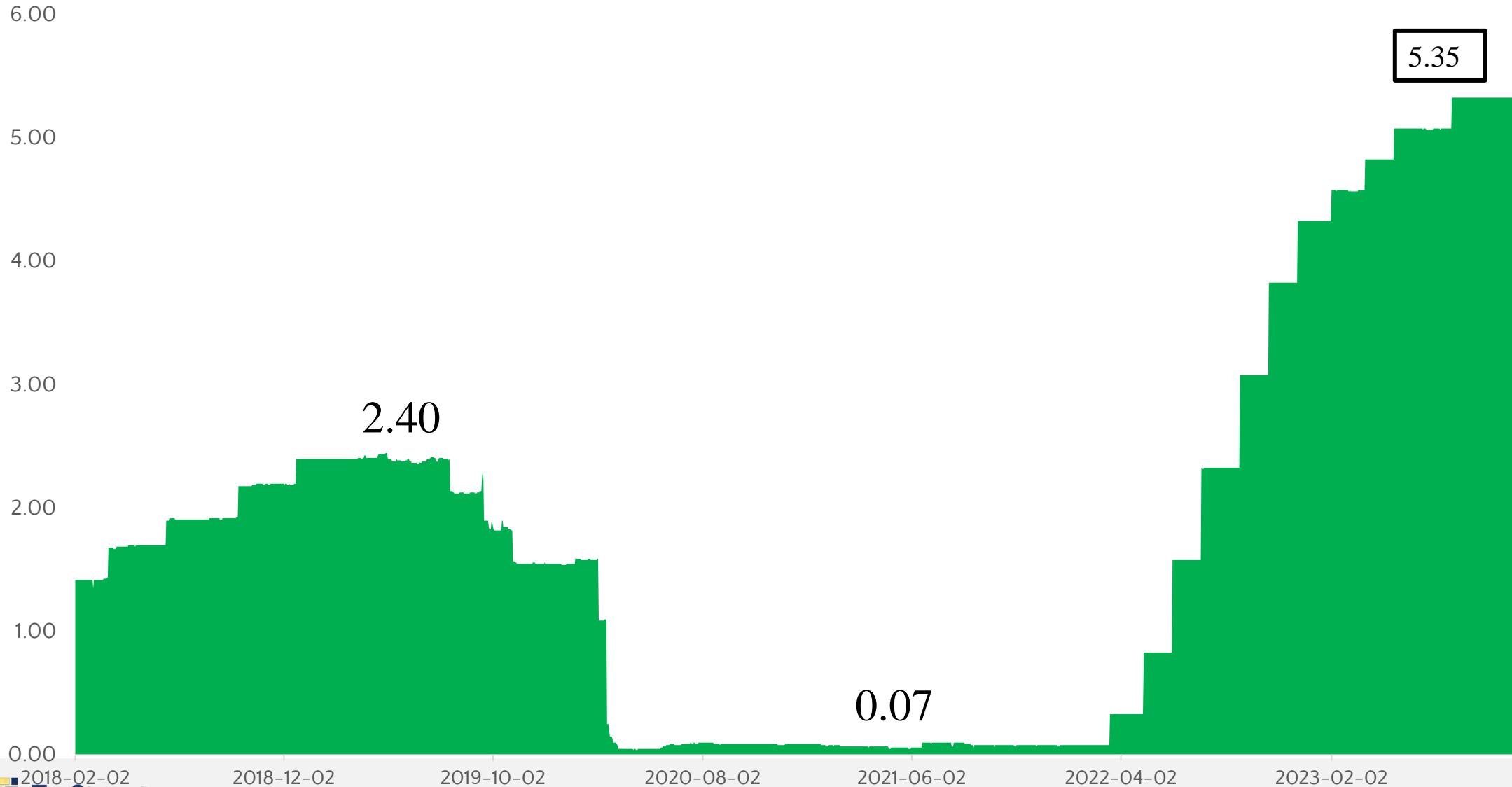


Economic Update

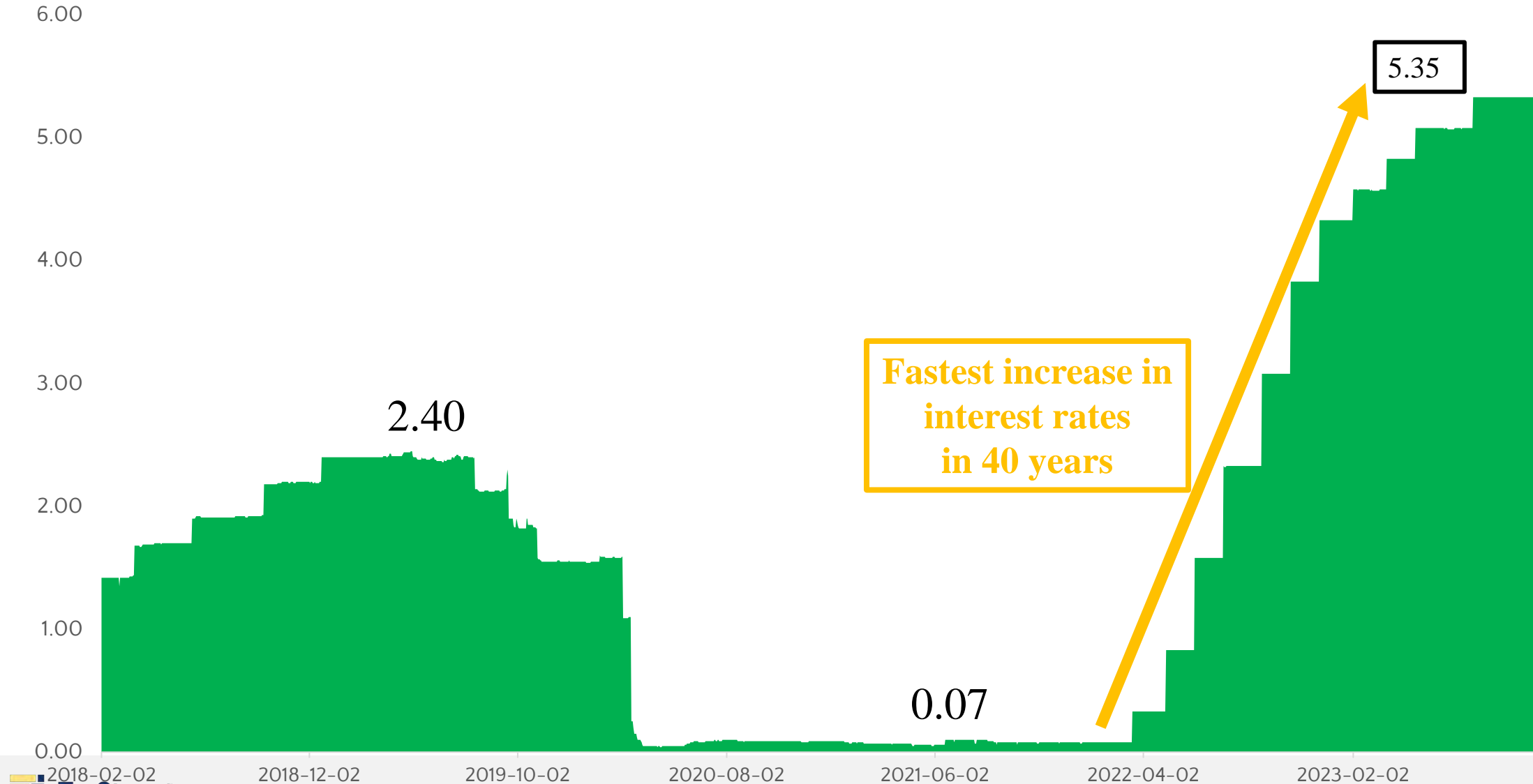
December 2023

If you have any questions or
comments, please contact:
Steven Rick, Chief Economist
Trustage - Economics
800.356.2644, Ext. 665.5454
Steve.rick@TruStage.com

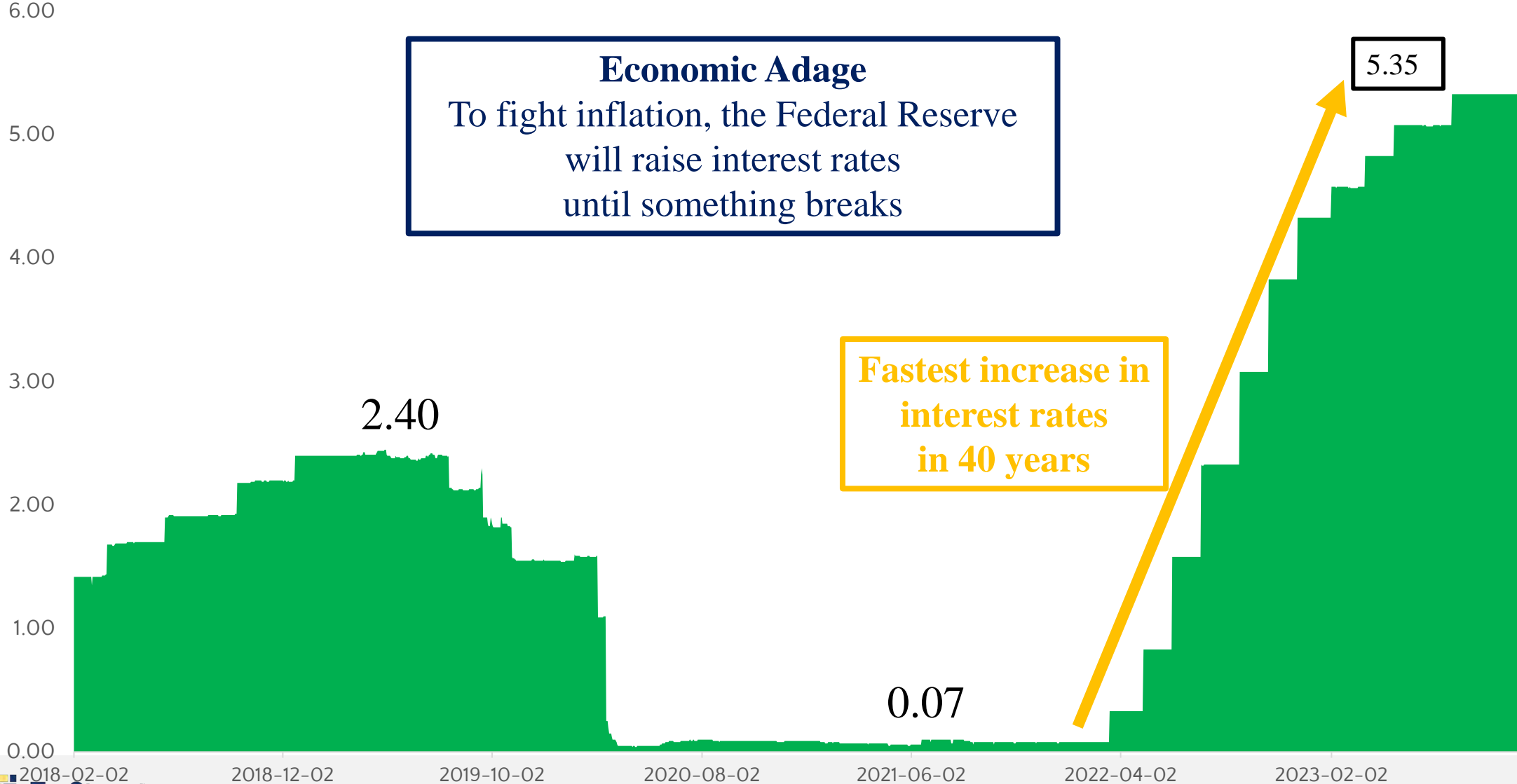
Federal Funds Rate, 2018 - 2023



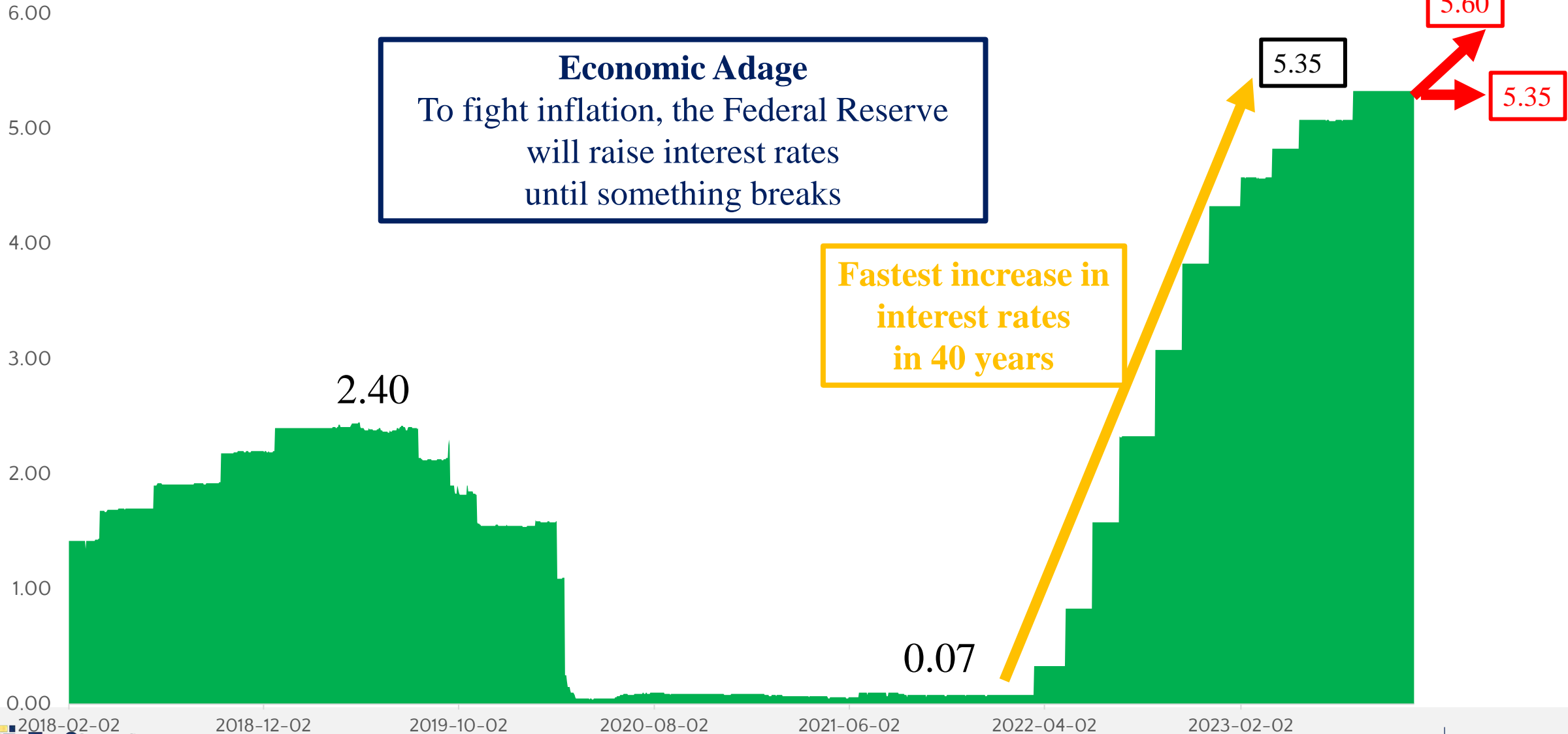
Federal Funds Rate, 2018 - 2023



Federal Funds Rate, 2018 - 2023



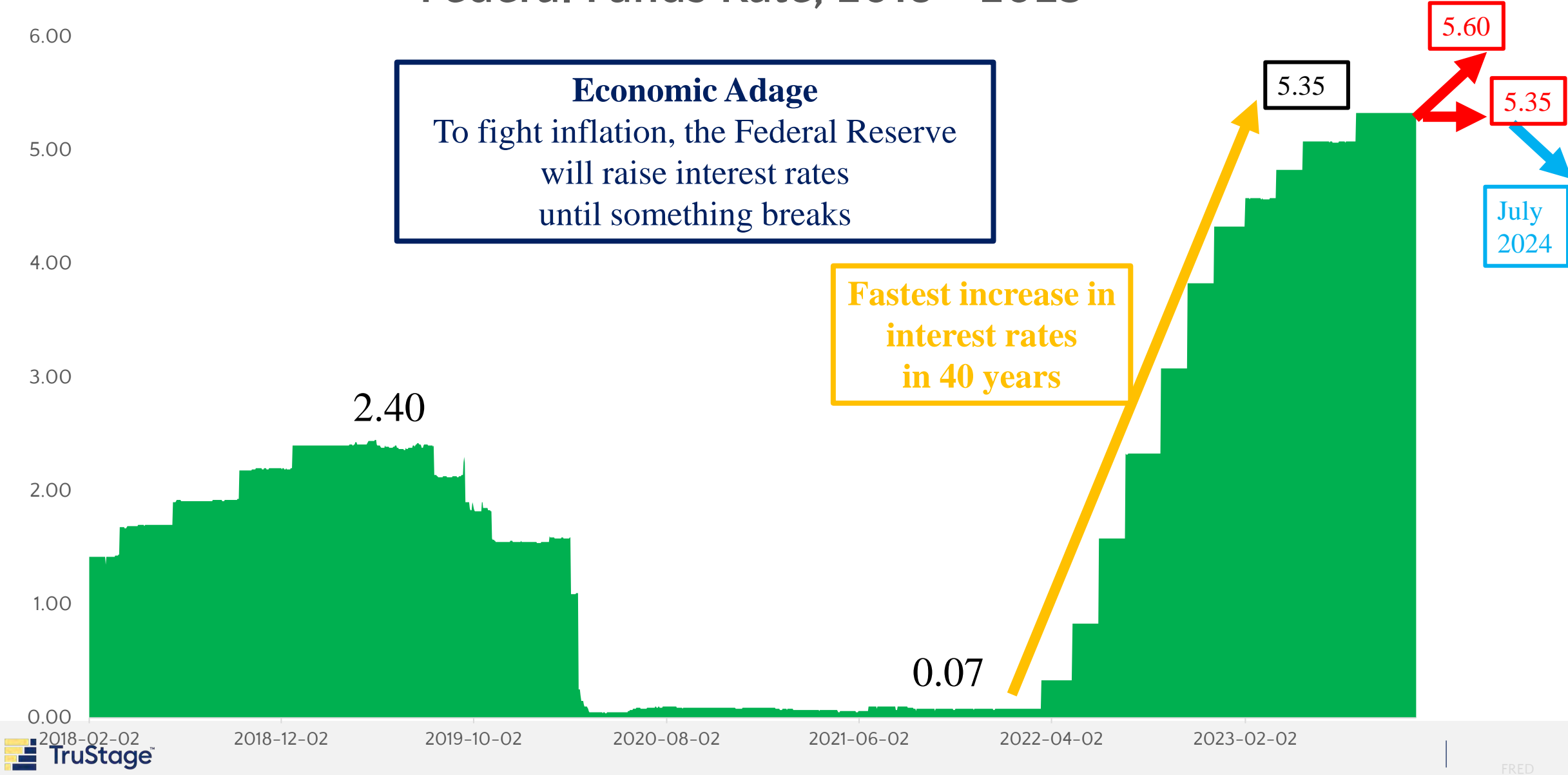
Federal Funds Rate, 2018 - 2023



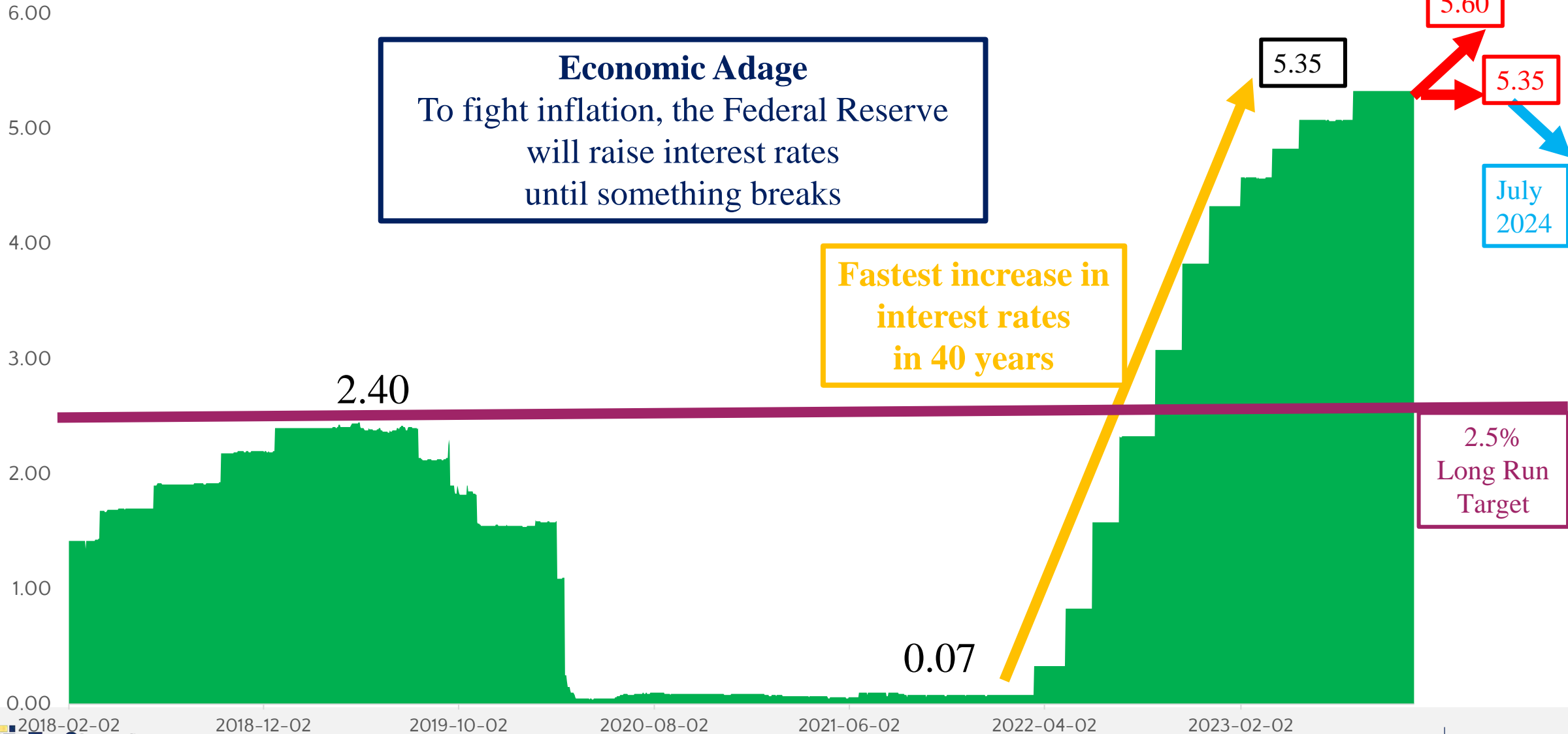
Federal Funds Rate, 2018 - 2023

Economic Adage
To fight inflation, the Federal Reserve will raise interest rates until something breaks

Fastest increase in interest rates in 40 years

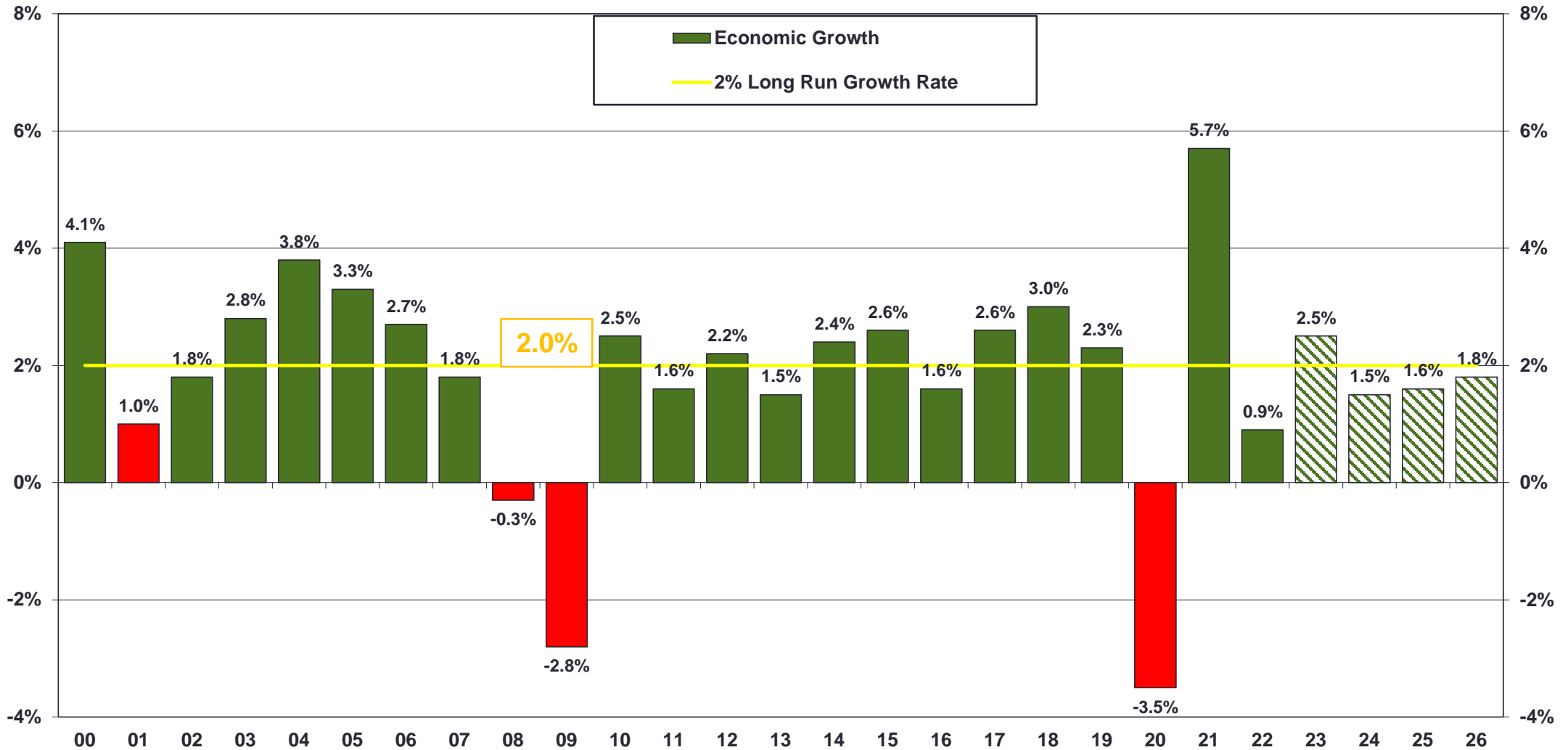


Federal Funds Rate, 2018 - 2023



Weak Economic Growth for Next 2 Years

U.S. Economic Growth Rate

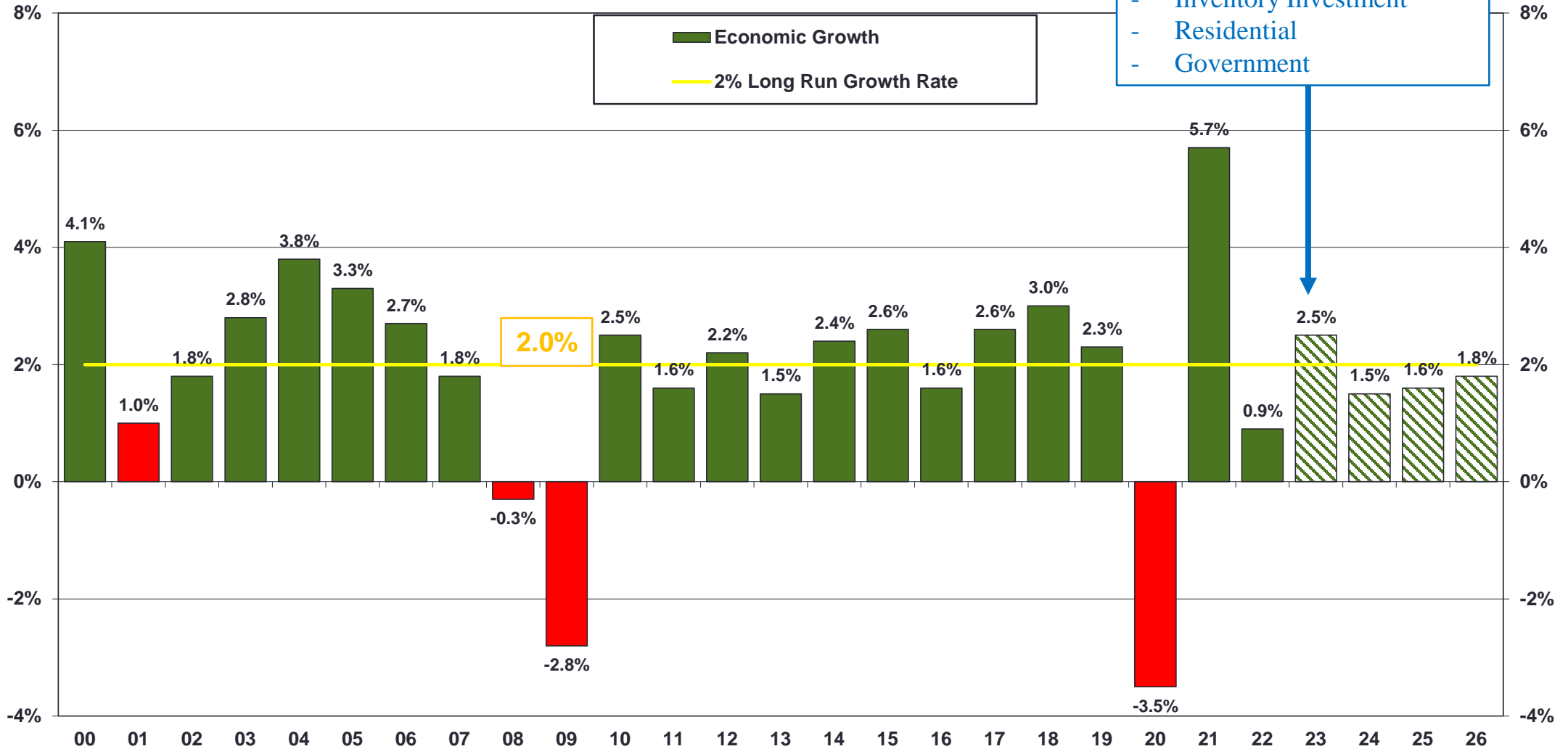


Weak Economic Growth for Next 2 Years

U.S. Economic Growth Rate

Strong Spending by:

- Consumers
- Inventory Investment
- Residential
- Government

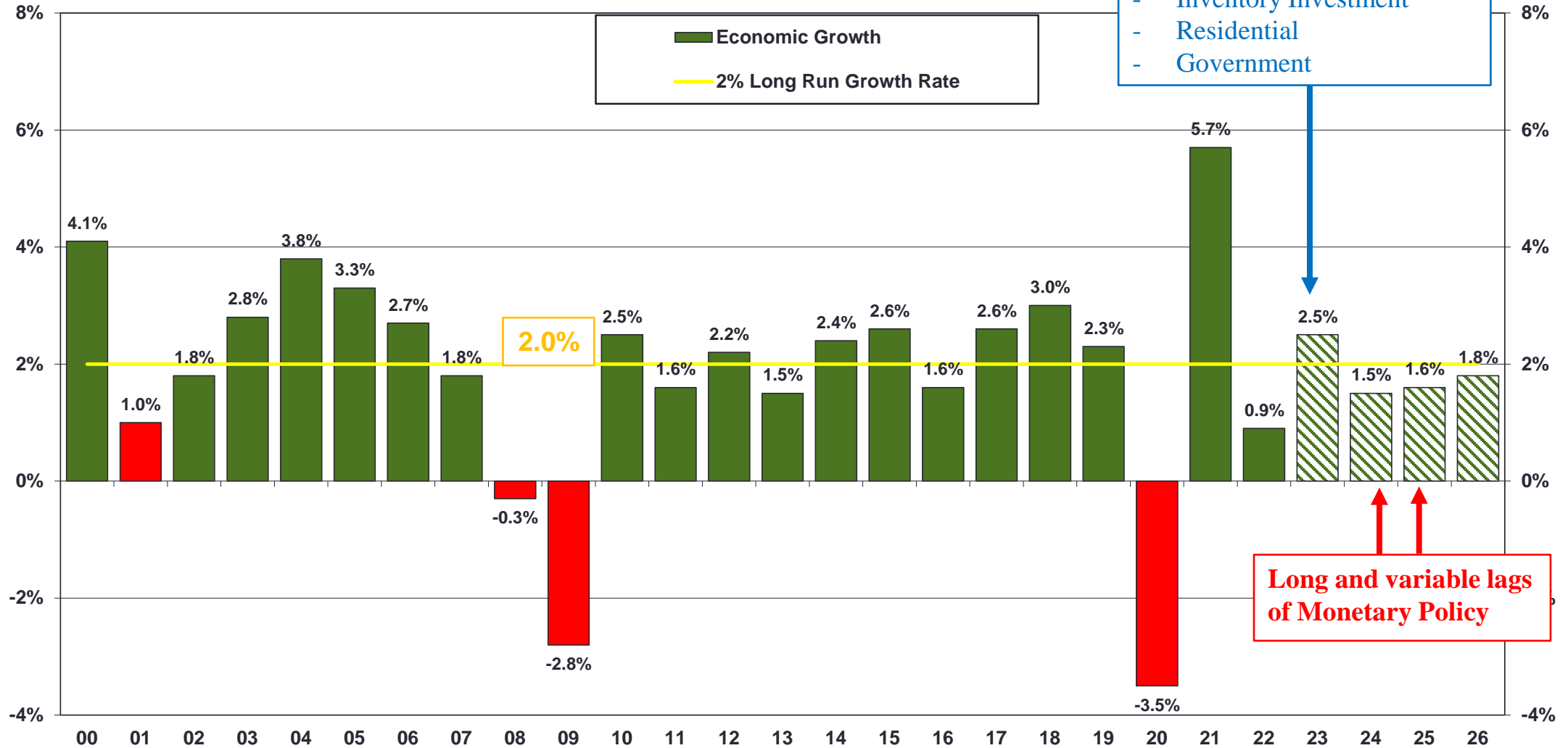


Weak Economic Growth for Next 2 Years

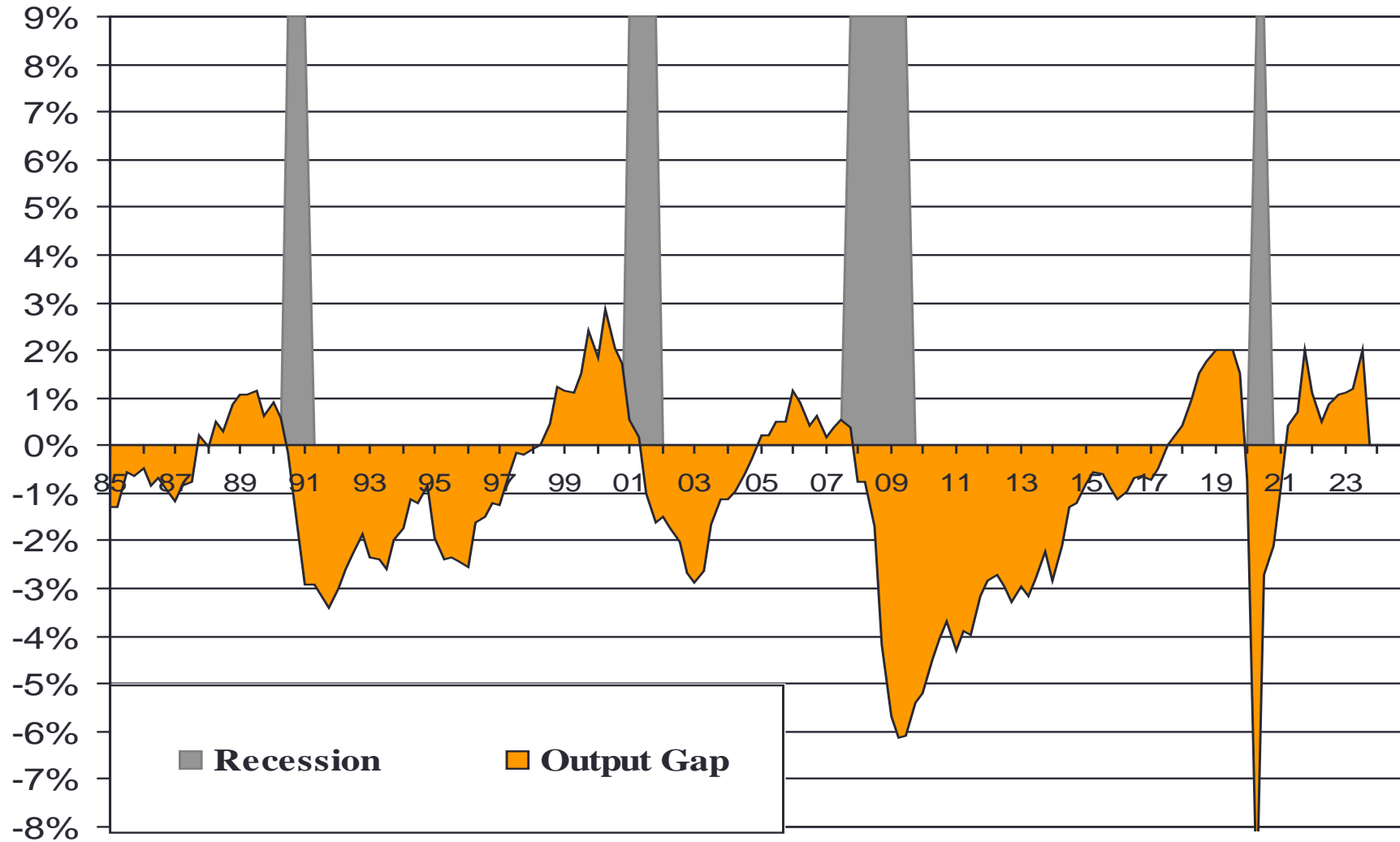
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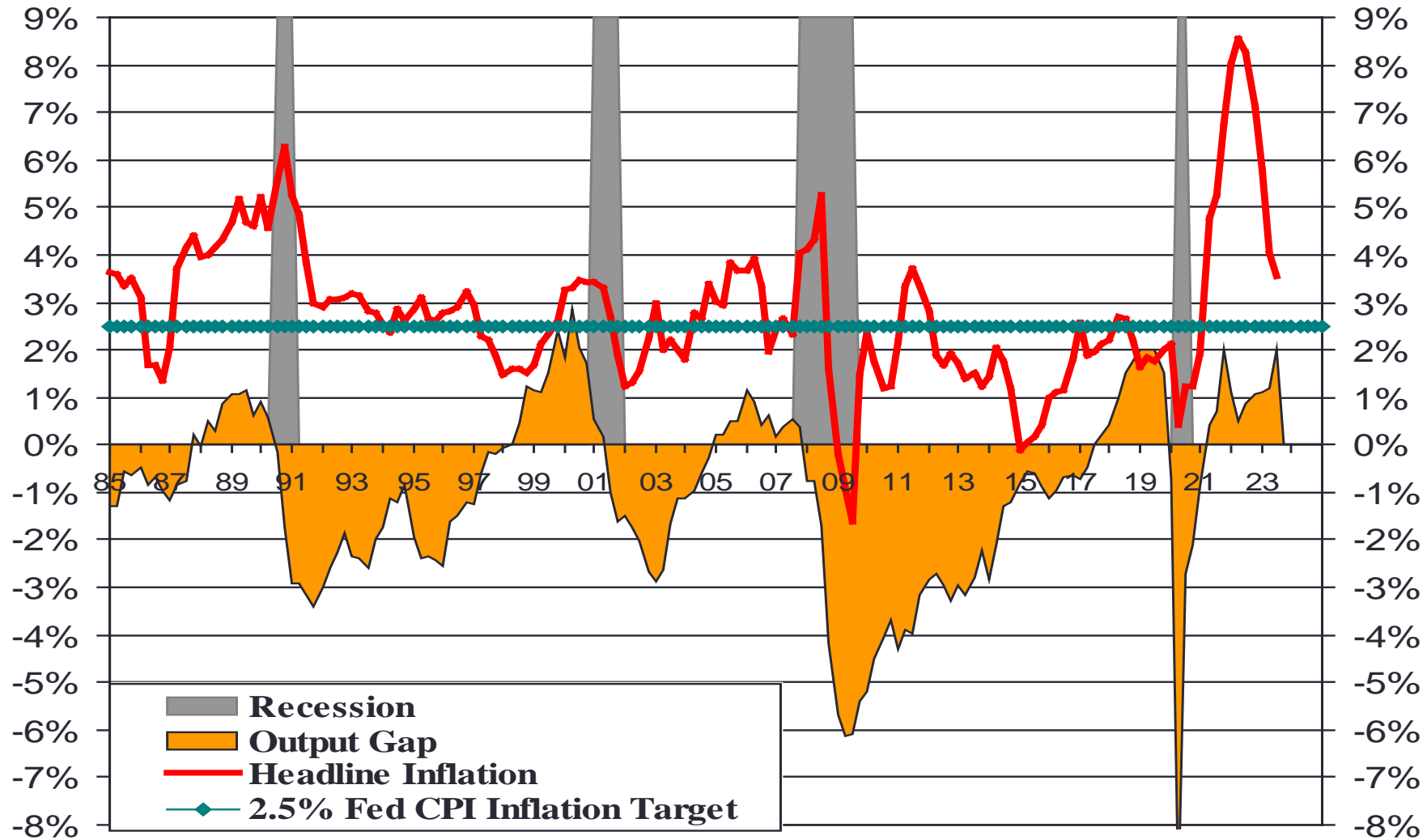


GDP Output Gap vs. Inflation (CPI)



Source: CBO & Federal Reserve.

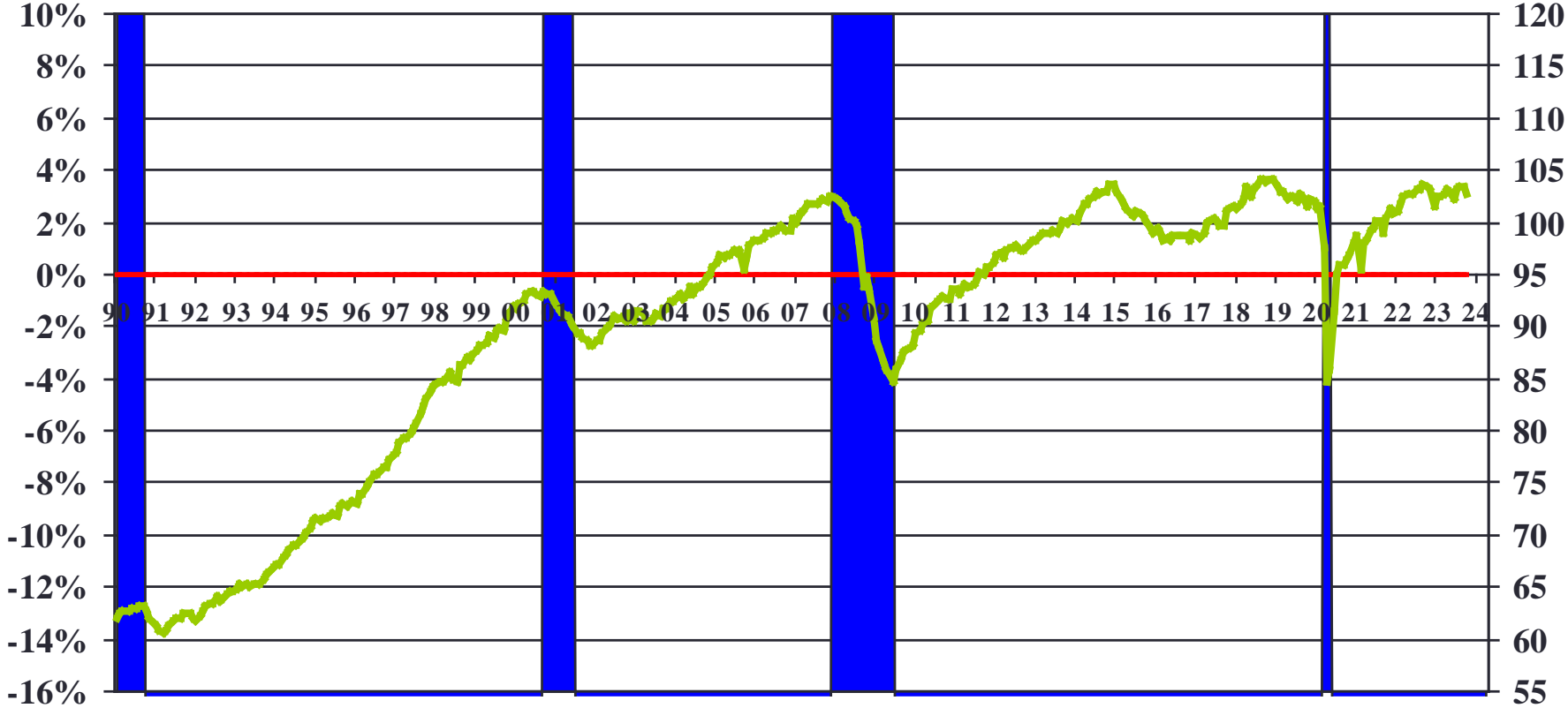
GDP Output Gap vs. Inflation (CPI)



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Industrial Production Index

(2007 = 100)

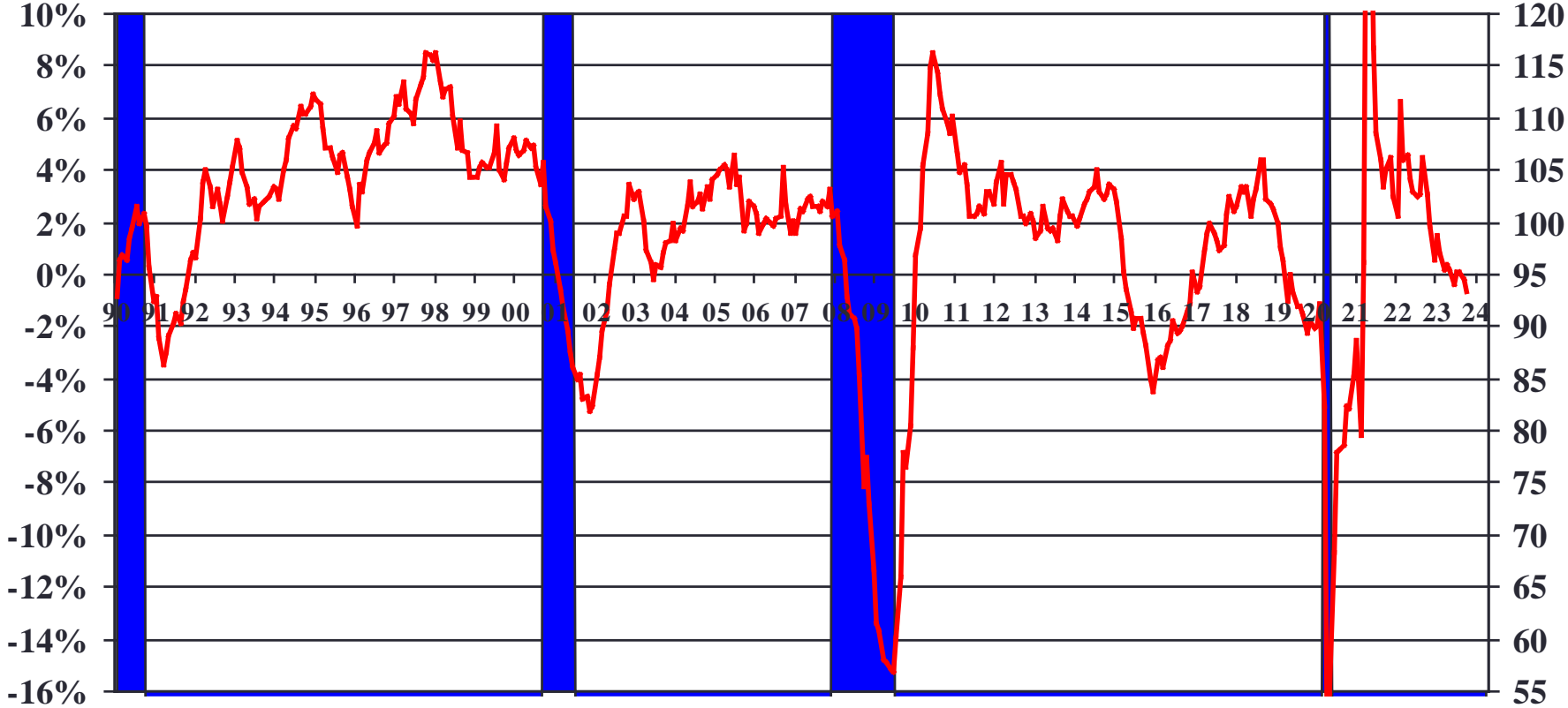


■ Recession — IP Y/Y Growth — IP Index

The **Industrial Production Index** is an economic indicator that measures real output for all facilities located in the United States manufacturing, mining, and electric, and gas utilities

Industrial Production Index

(2007 = 100)

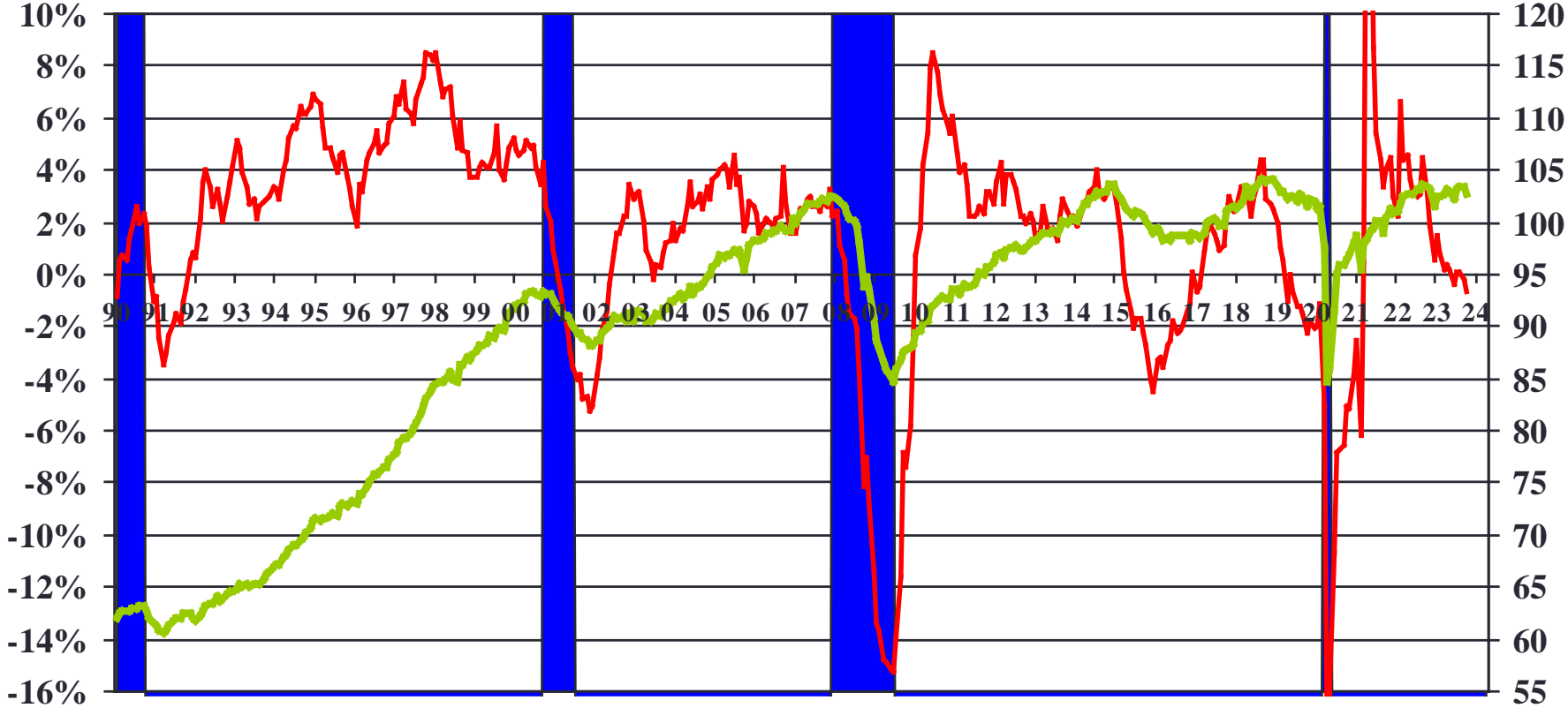


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Industrial Production Index

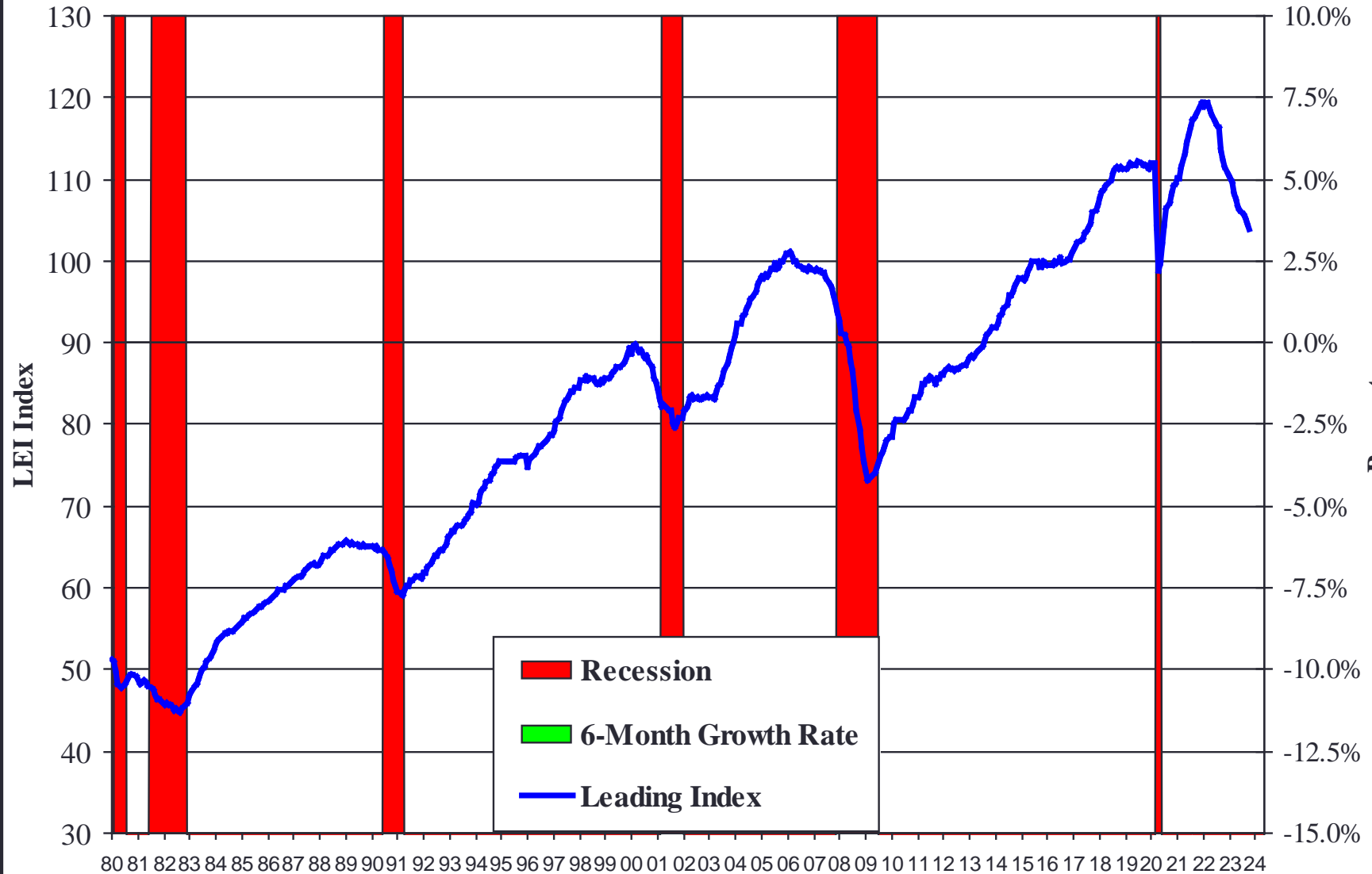
(2007 = 100)



■ Recession — IP Y/Y Growth — IP Index

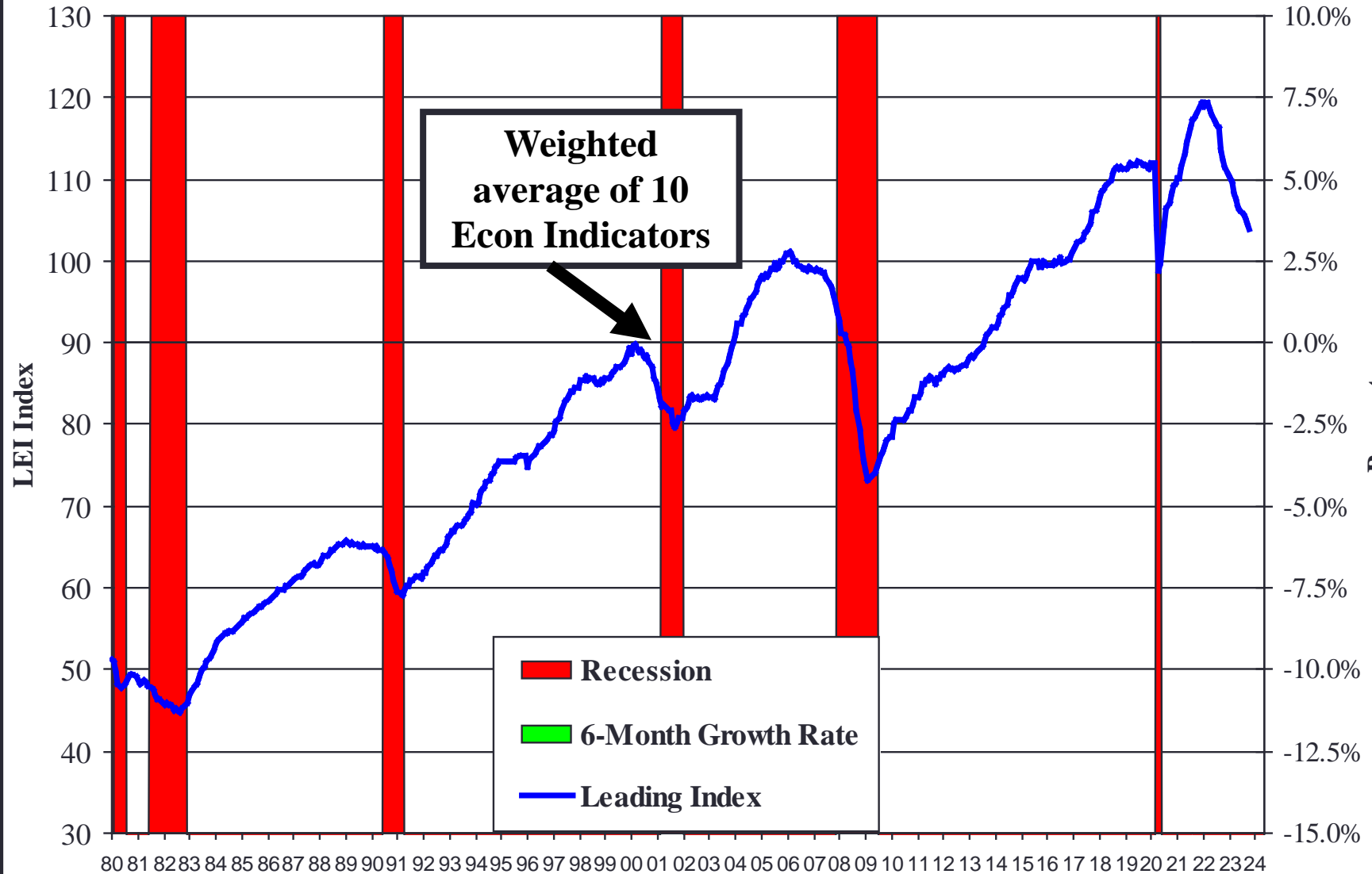
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Index of Leading Economic Indicators



Growth rate < -2% => Recession
3 months Index increase => Recovery

Index of Leading Economic Indicators



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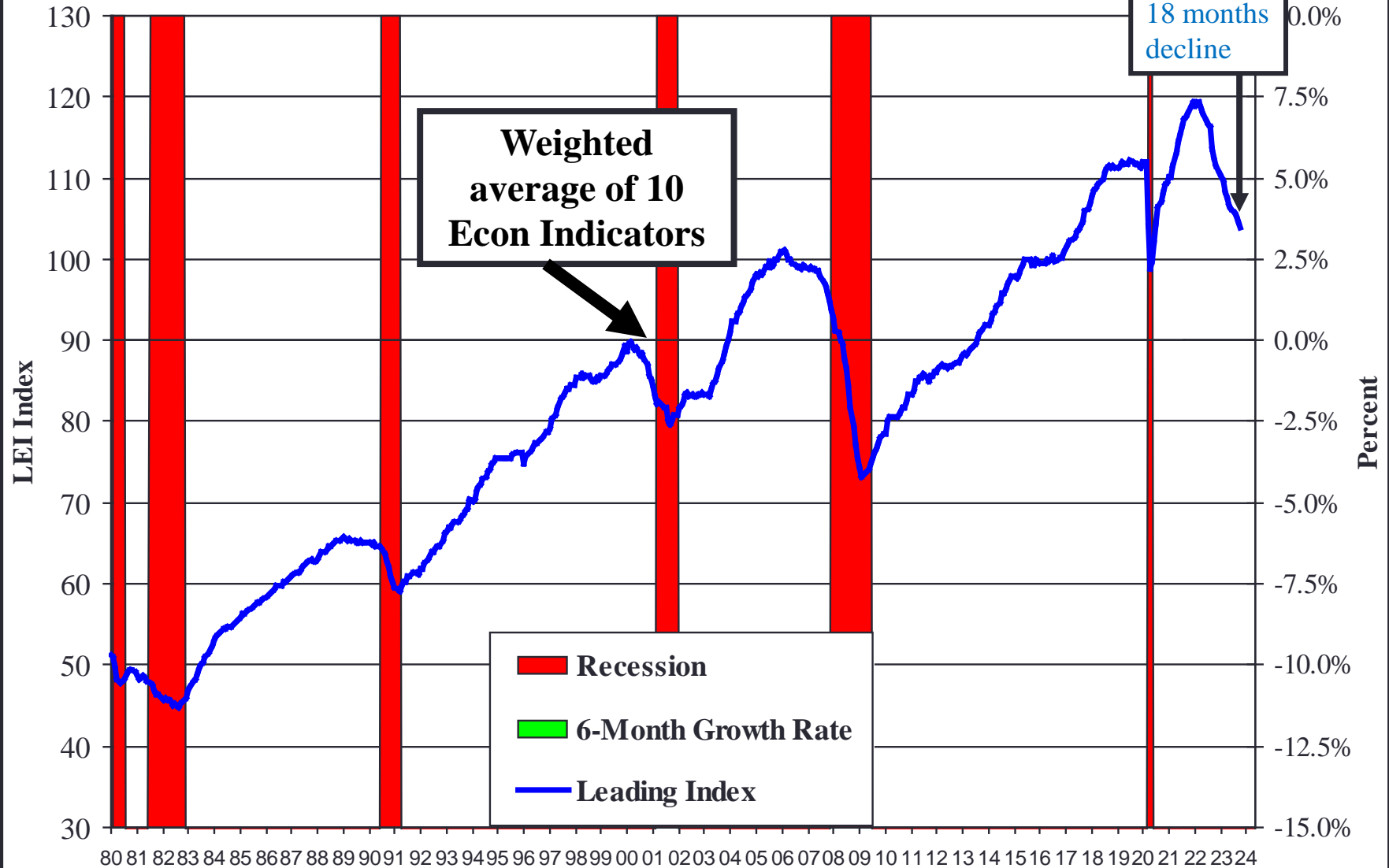
LEI Components and Relative Weights:

1. Interest rate spread between the 10-year Treasury bond and the federal funds rate
2. Leading Credit Index
3. Stock prices based on the S&P 500 stock index
4. Average hourly workweek in manufacturing
5. Manufacturers' new orders for consumer goods and materials
6. ISM Index of new orders
7. Average weekly initial claims for unemployment insurance
8. Building permits for new private homes
9. Index of consumer expectations by the University of Michigan
10. Manufacturers' new orders for nondefense capital goods

Wall Street

Main Street

Index of Leading Economic Indicators



Weighted average of 10 Econ Indicators

18 months decline

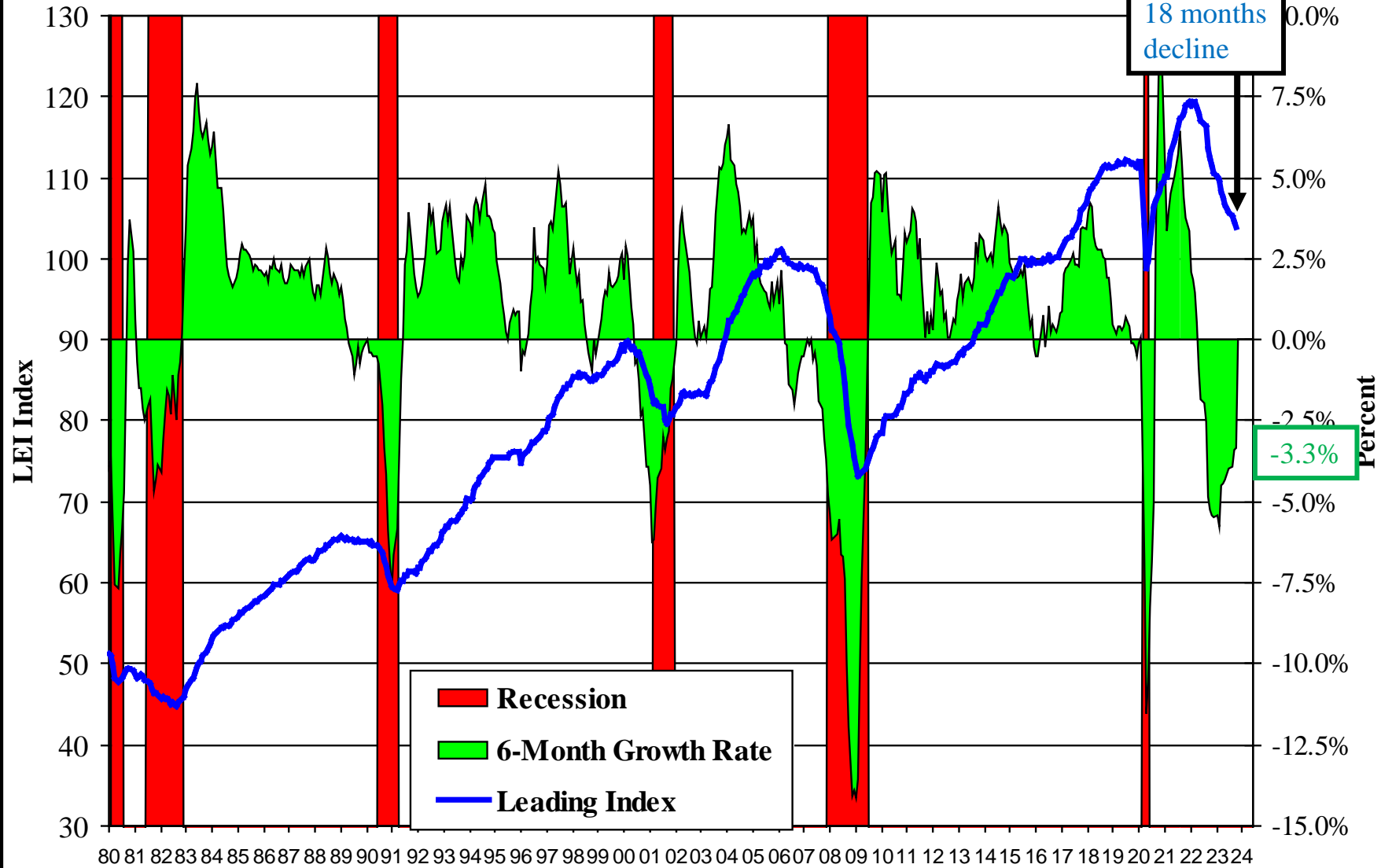
Recession

6-Month Growth Rate

Leading Index

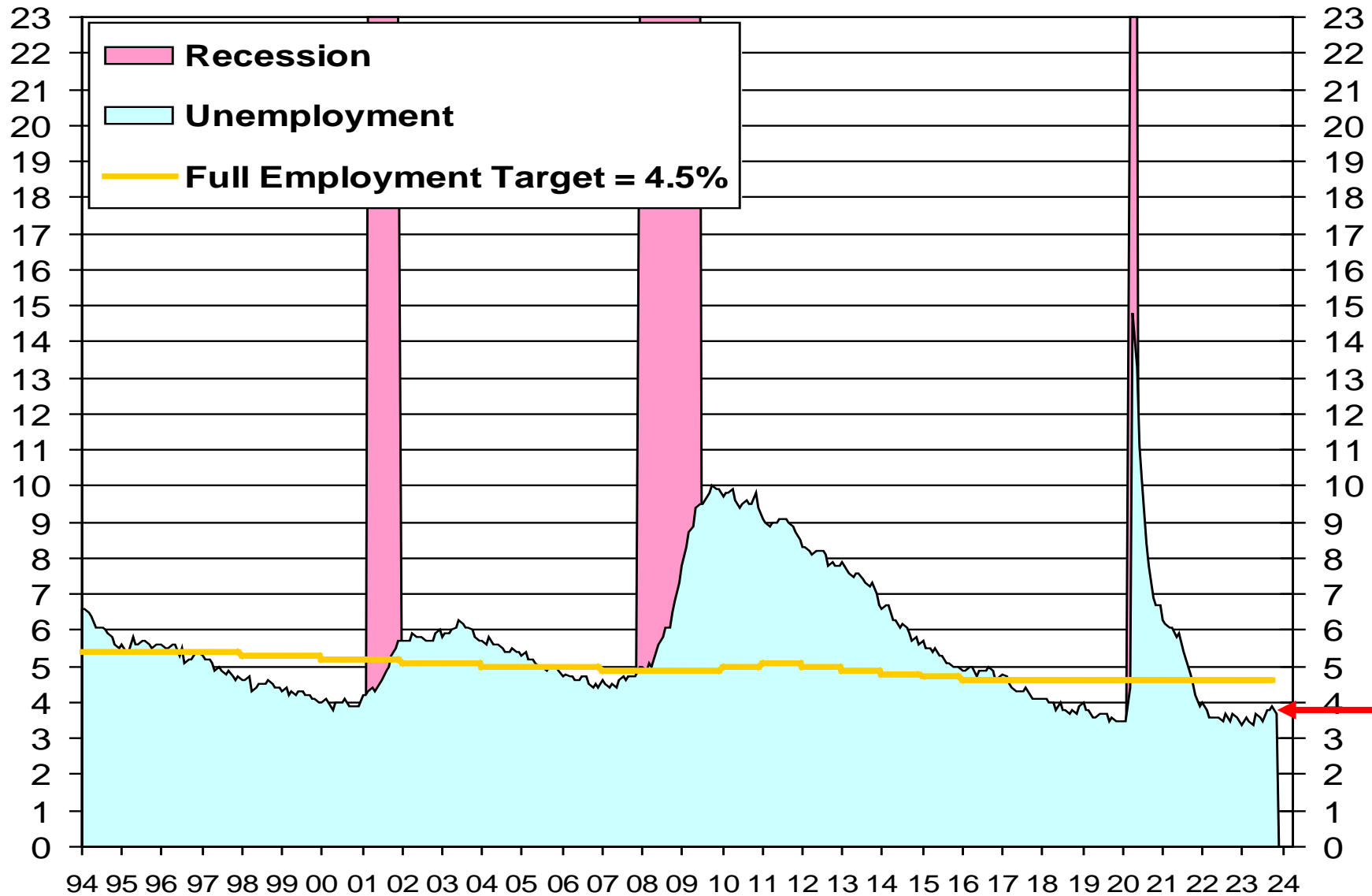
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Index of Leading Economic Indicators



Growth rate < -2% => Recession
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Unemployment Rate

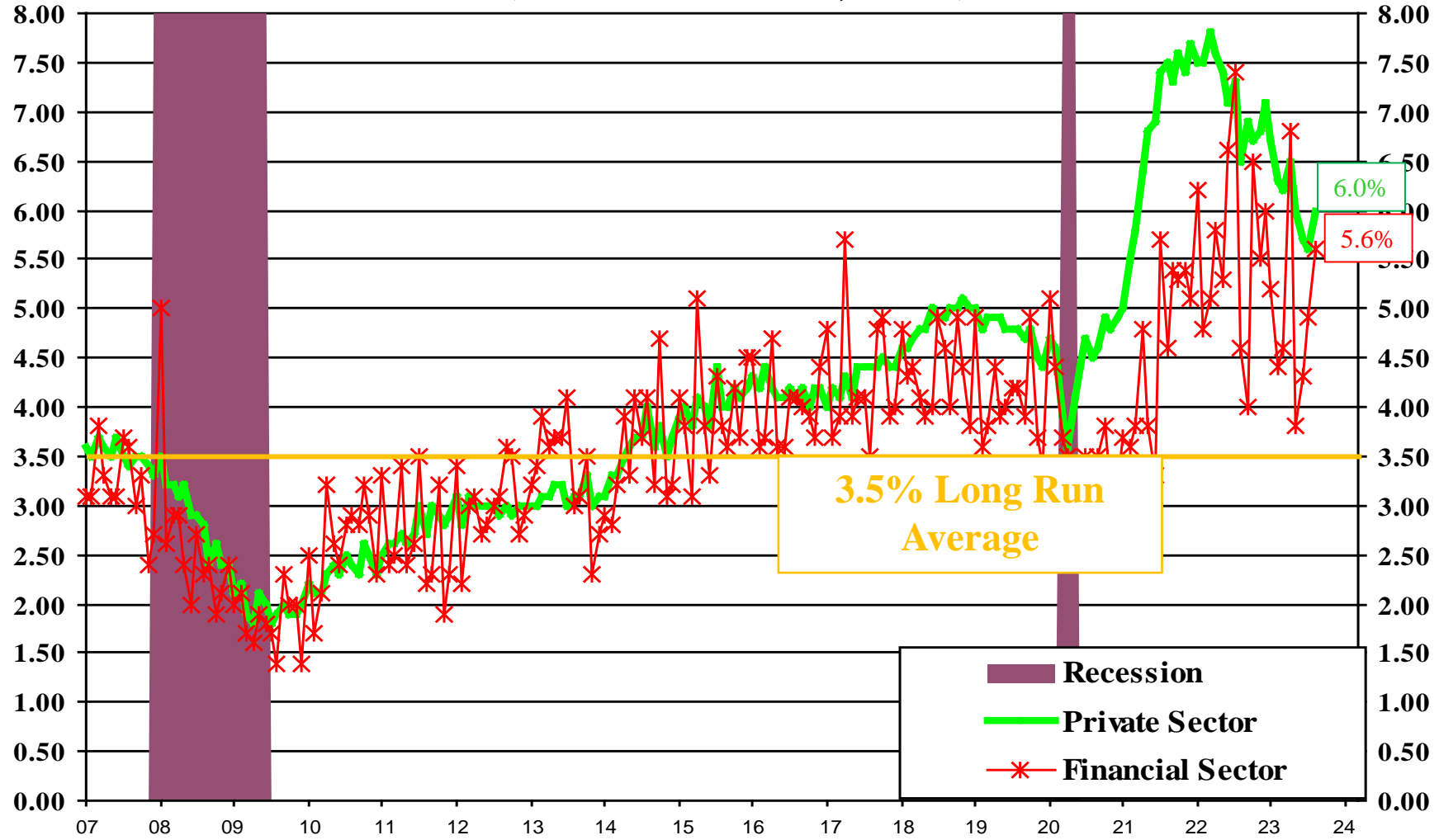


Source: Department of Labor.

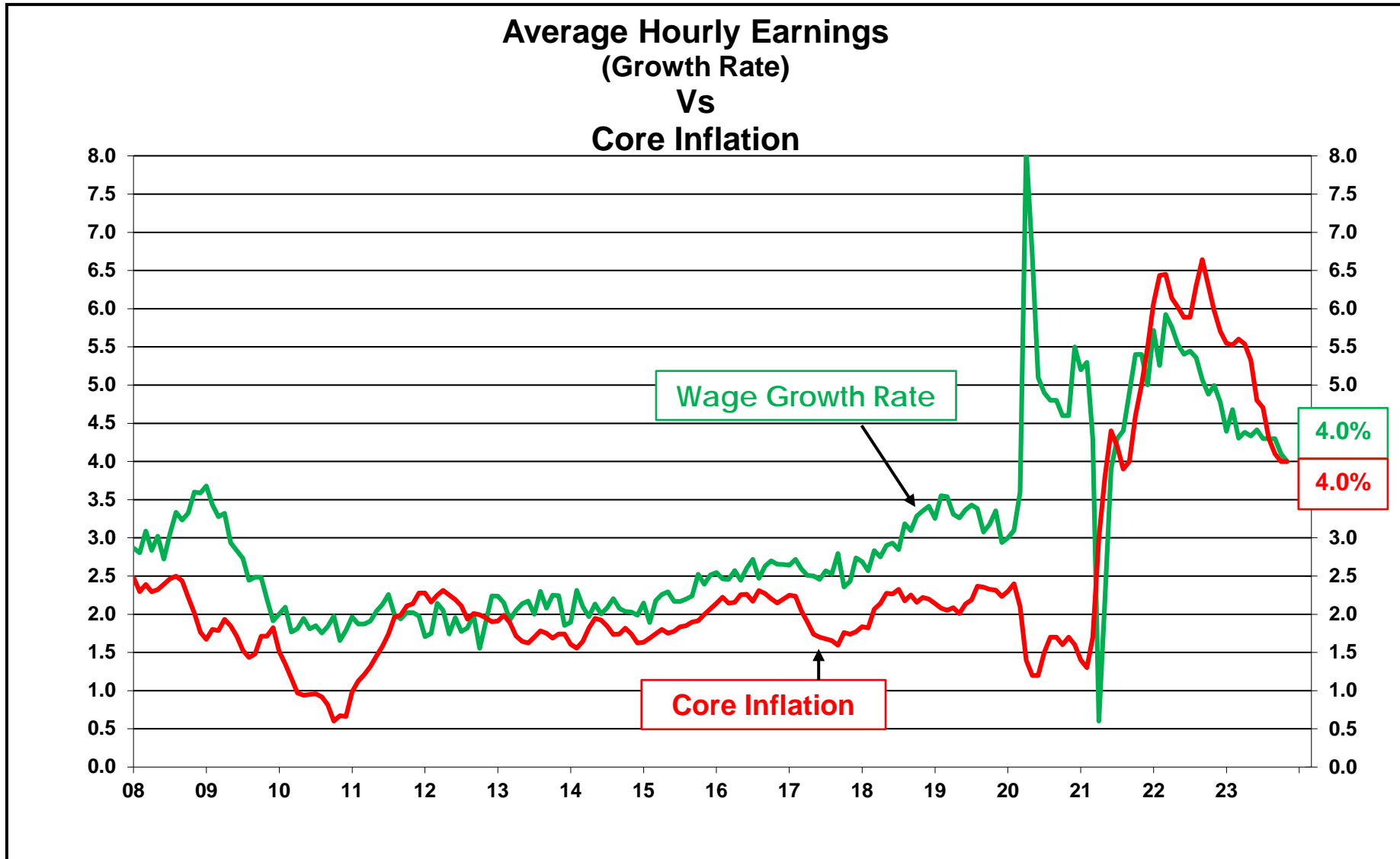
3.7%

Job Openings Rate is the number of job openings on the last business day of the month as a percent of total employment plus job openings.

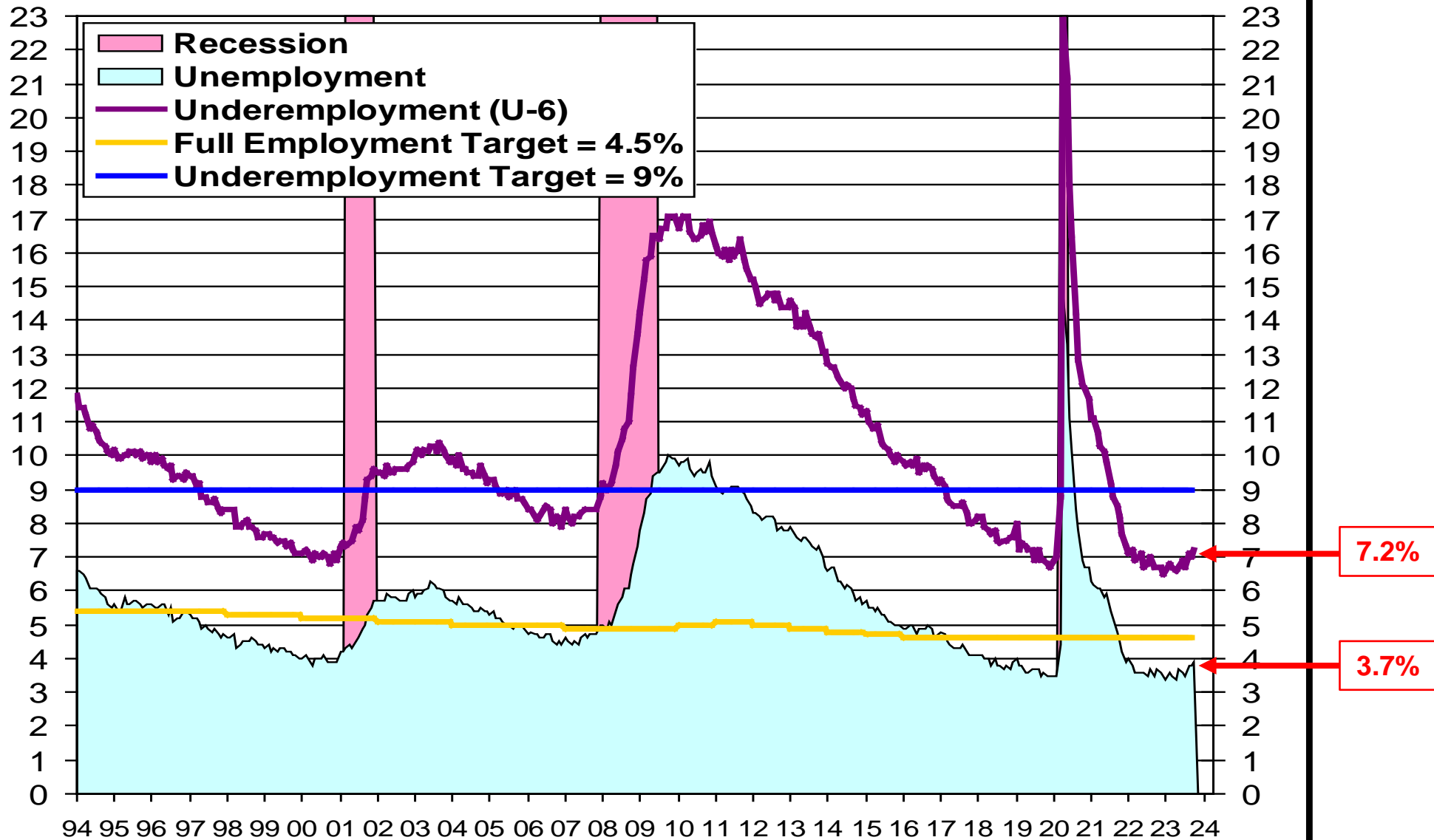
Job Openings Rate (Thousands, SA)



Wage Growth Slowing as Core Inflation Falls

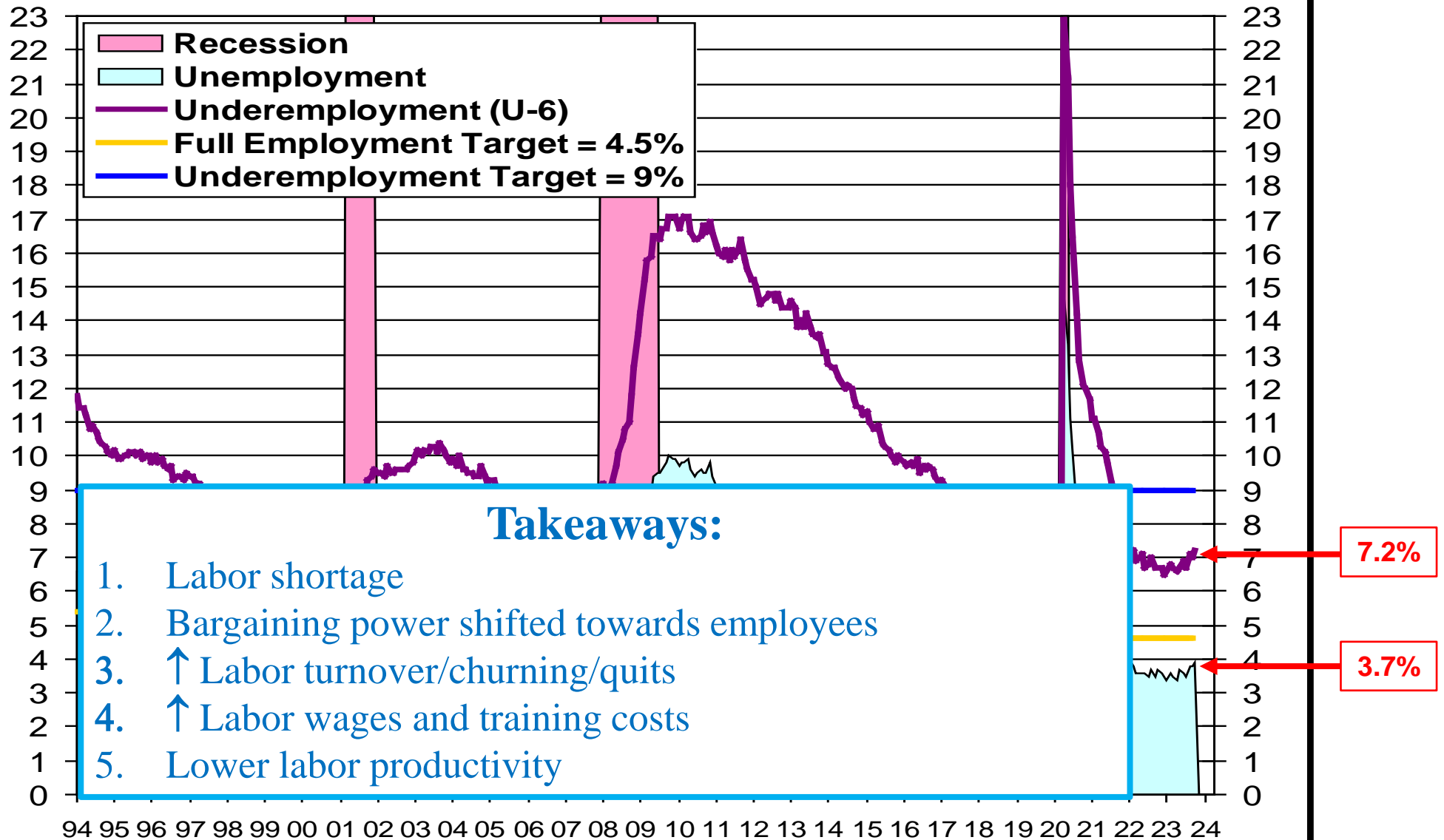


Unemployment Rate



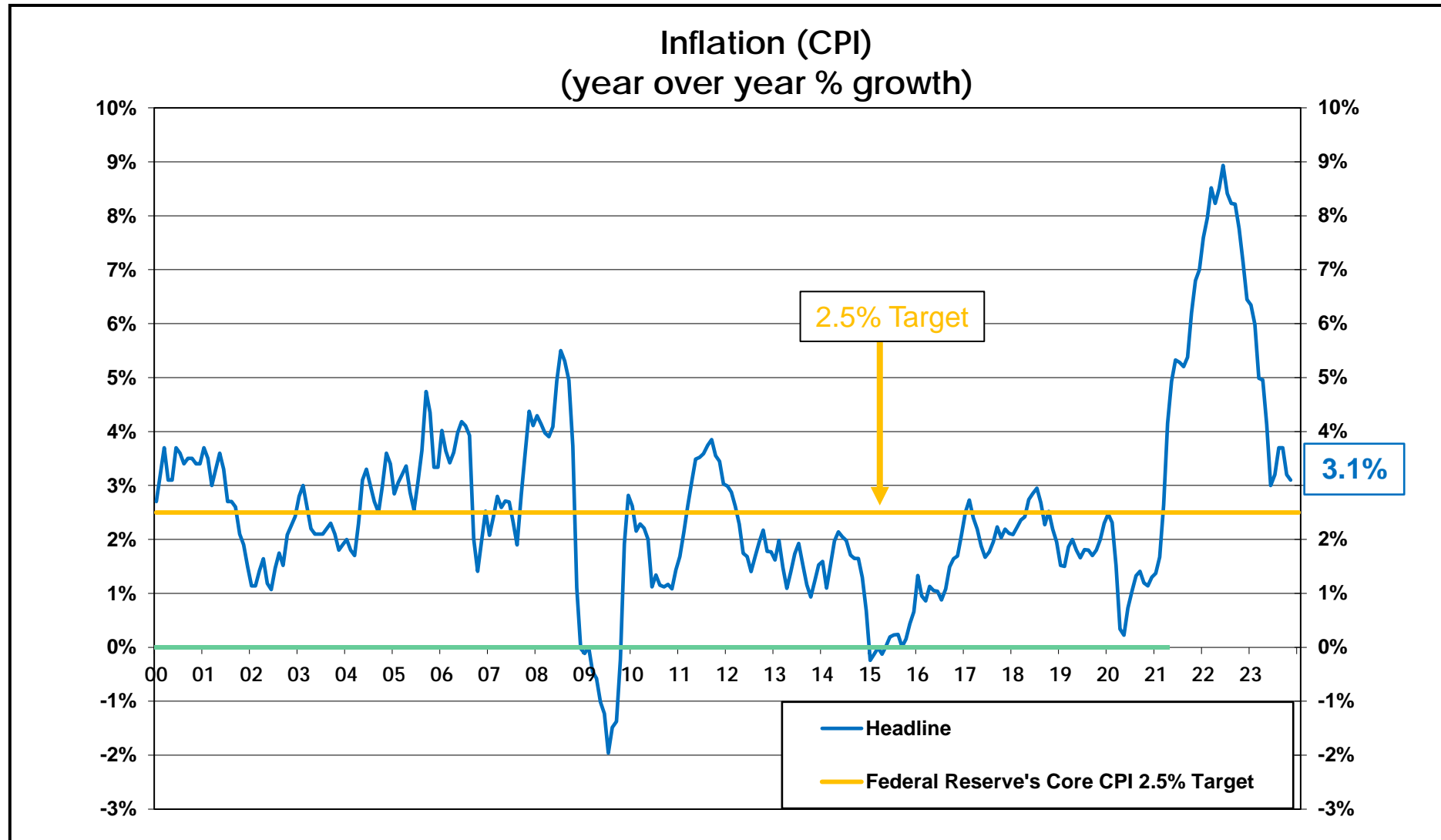
Source: Department of Labor.

Unemployment Rate

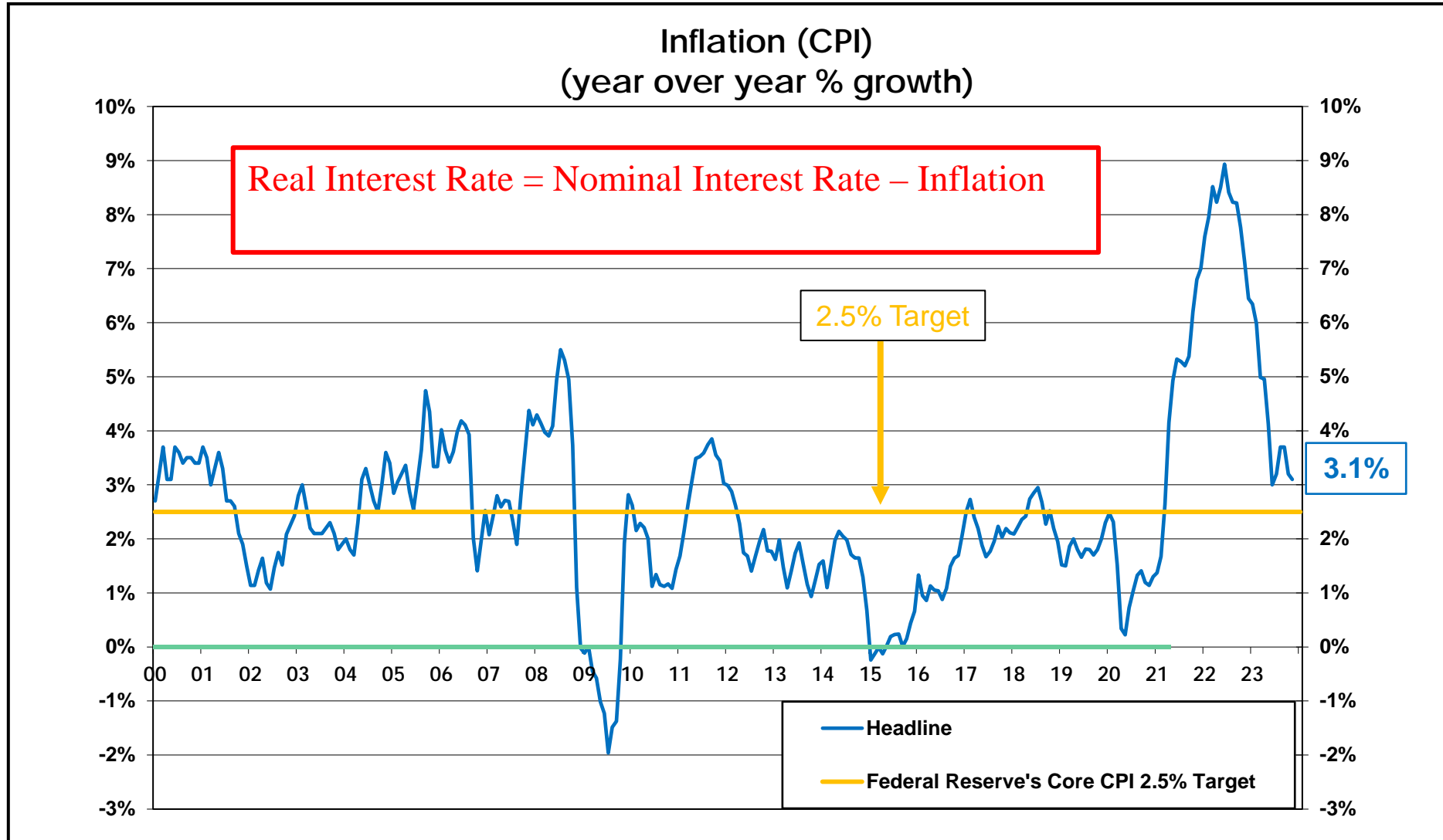


Source: Department of Labor.

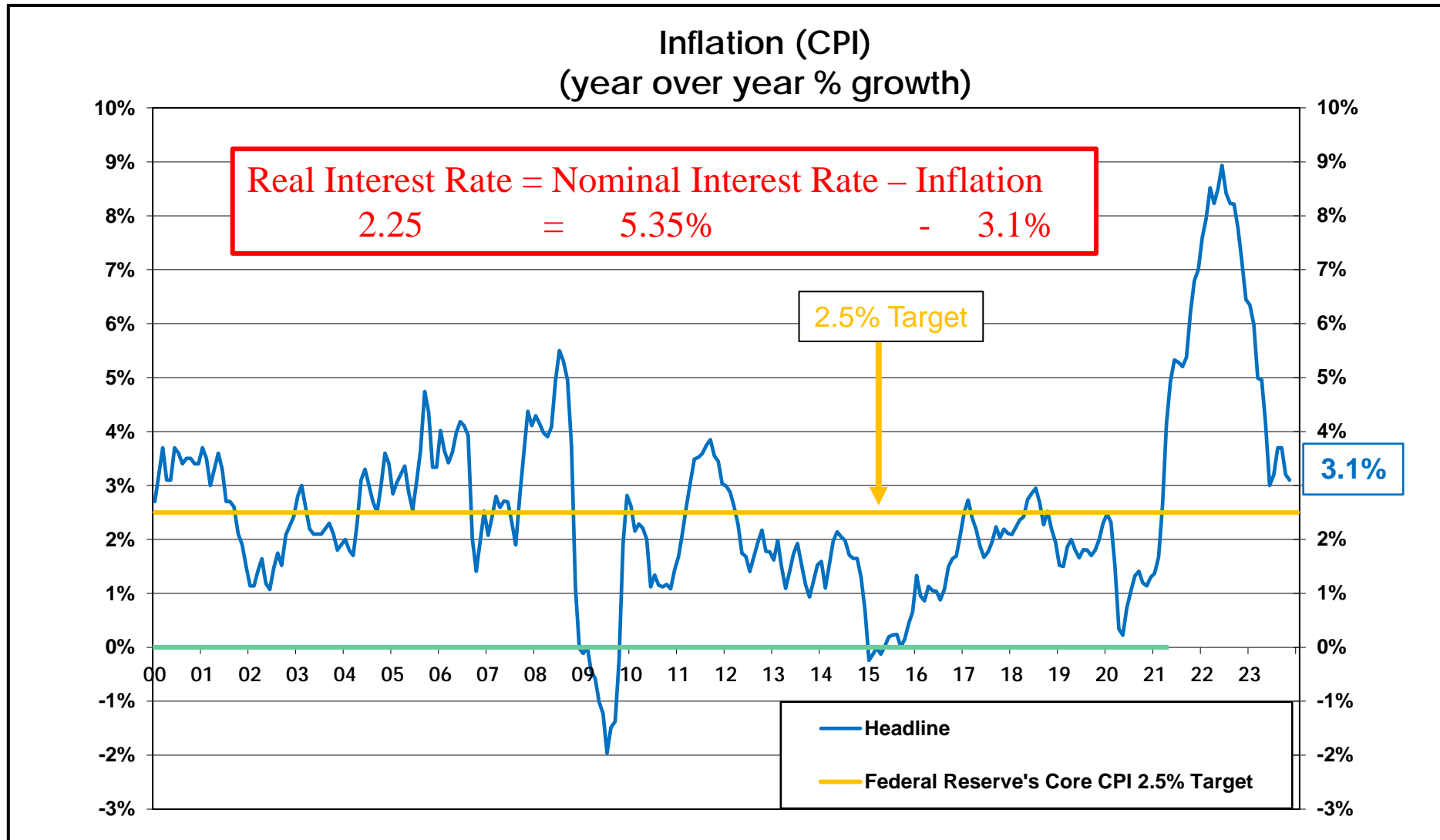
High Inflation for the Next Year



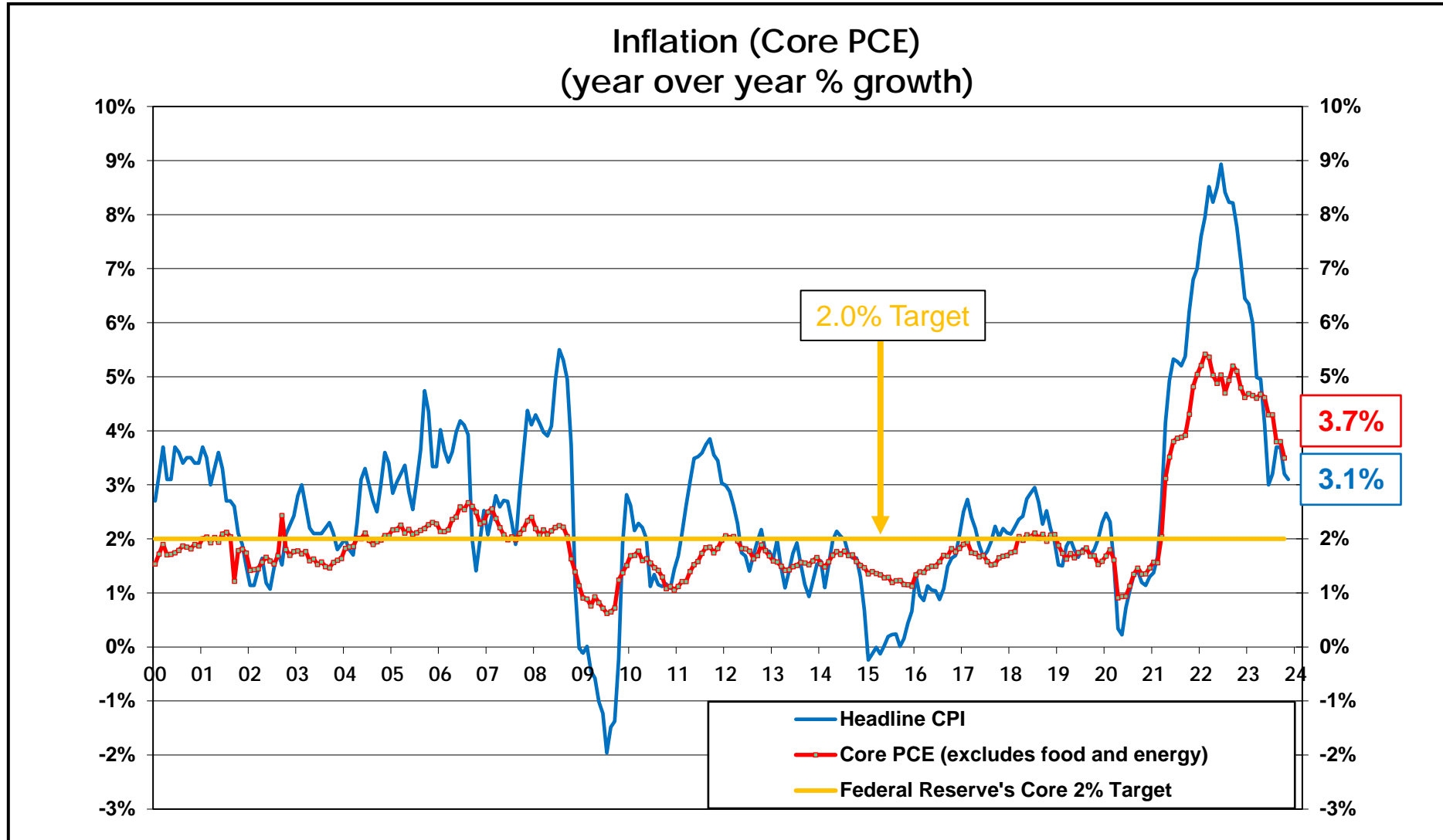
High Inflation for the Next Year



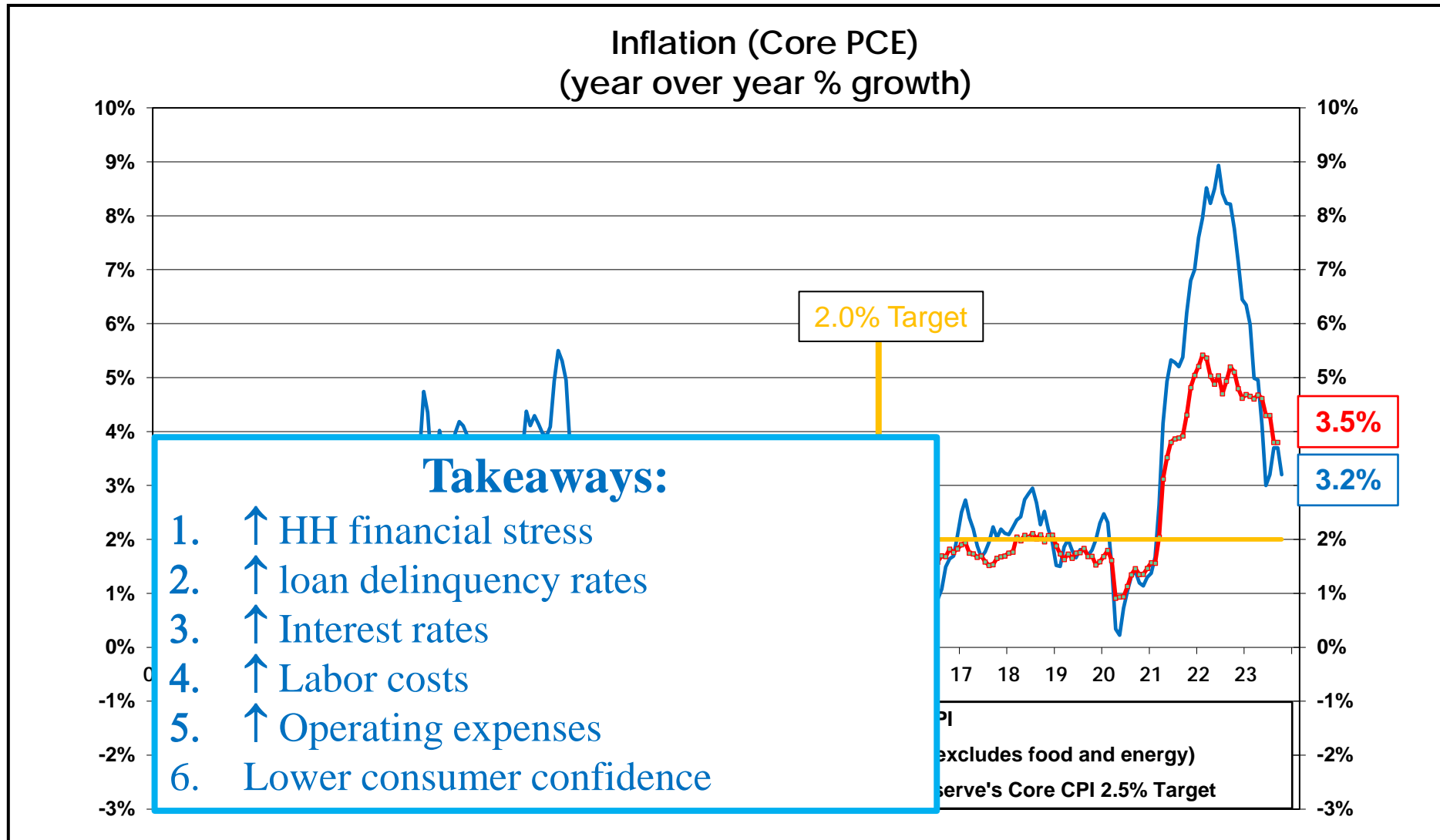
High Inflation for the Next Year



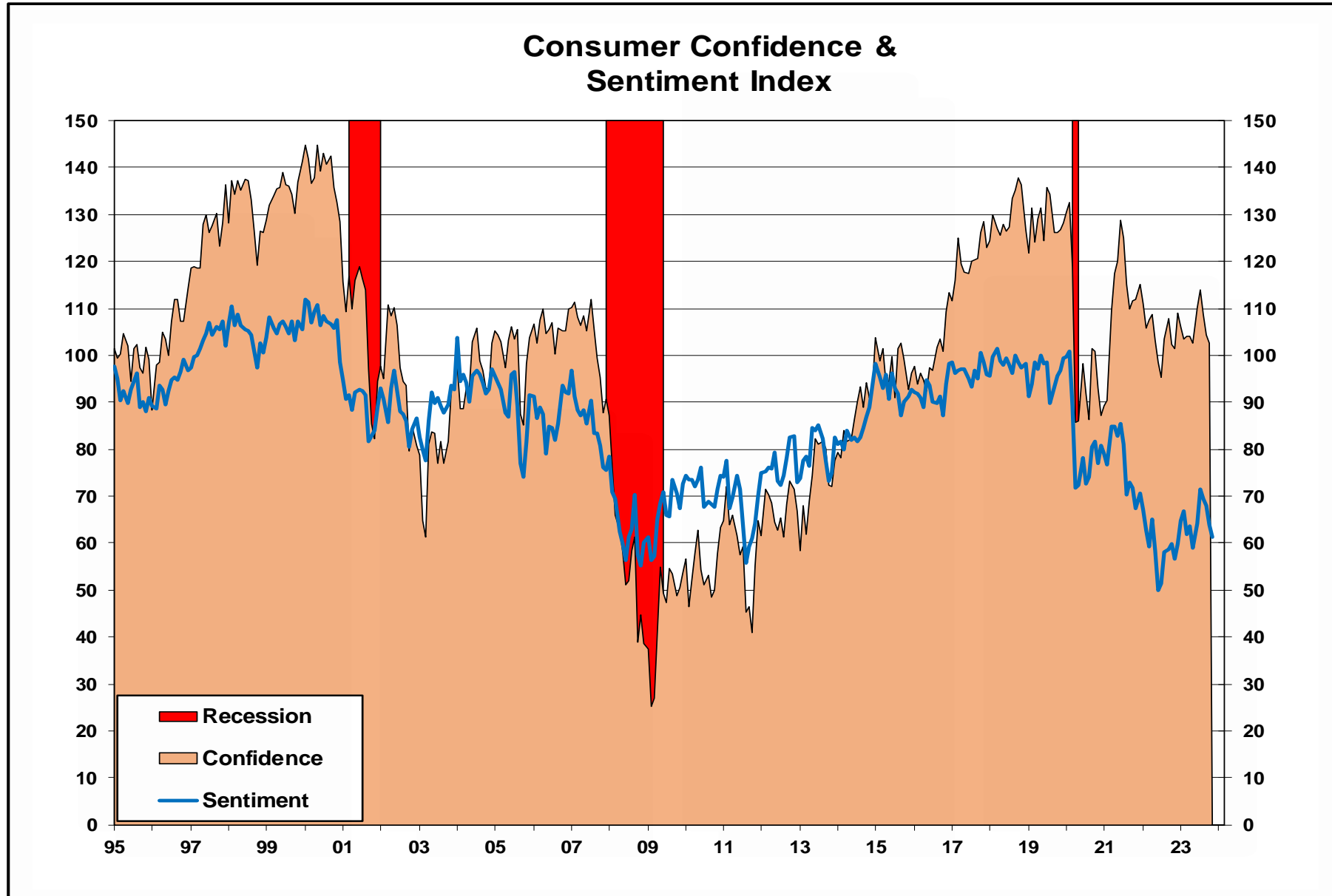
High Inflation for the Next Year



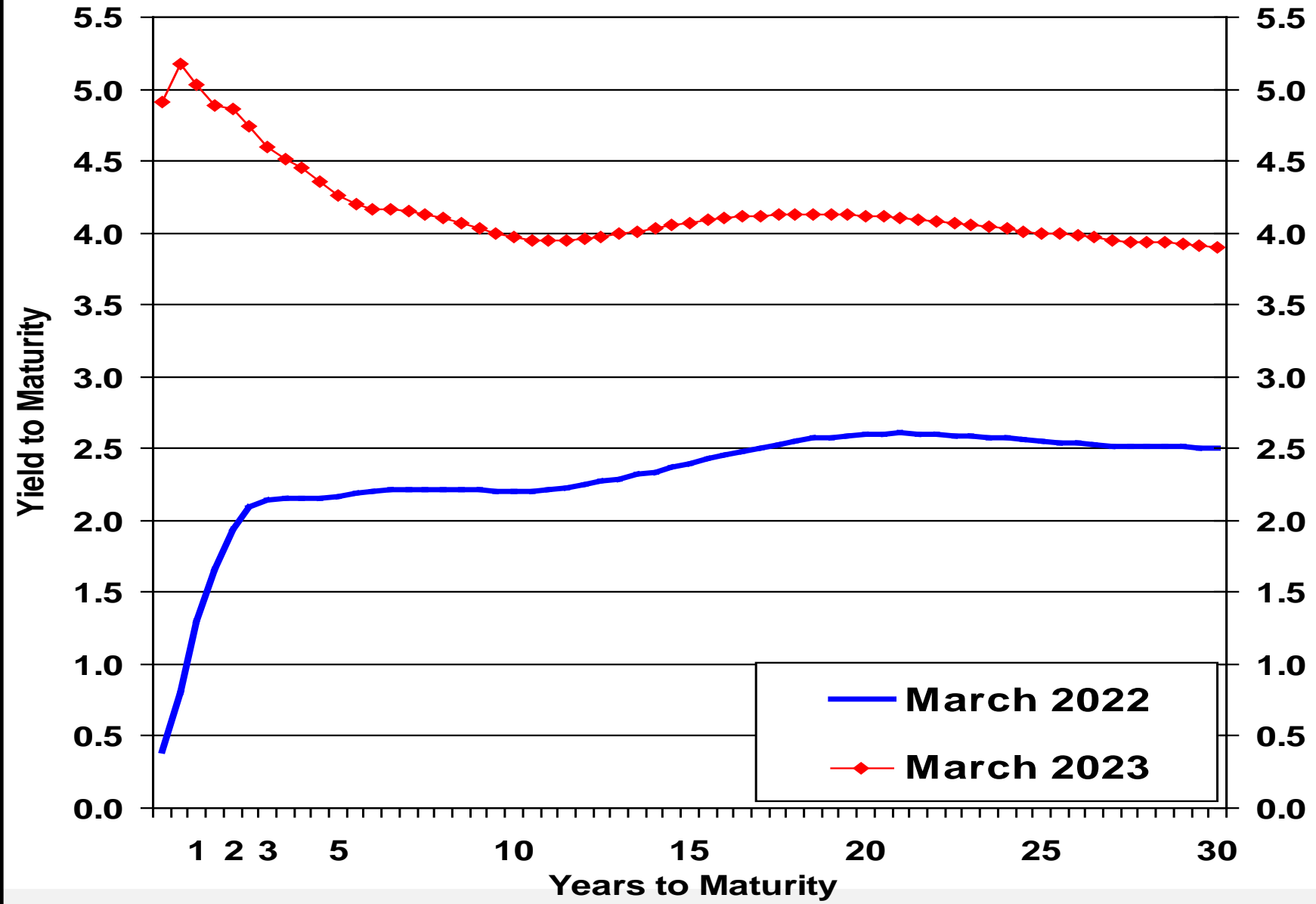
High Inflation for the Next Year



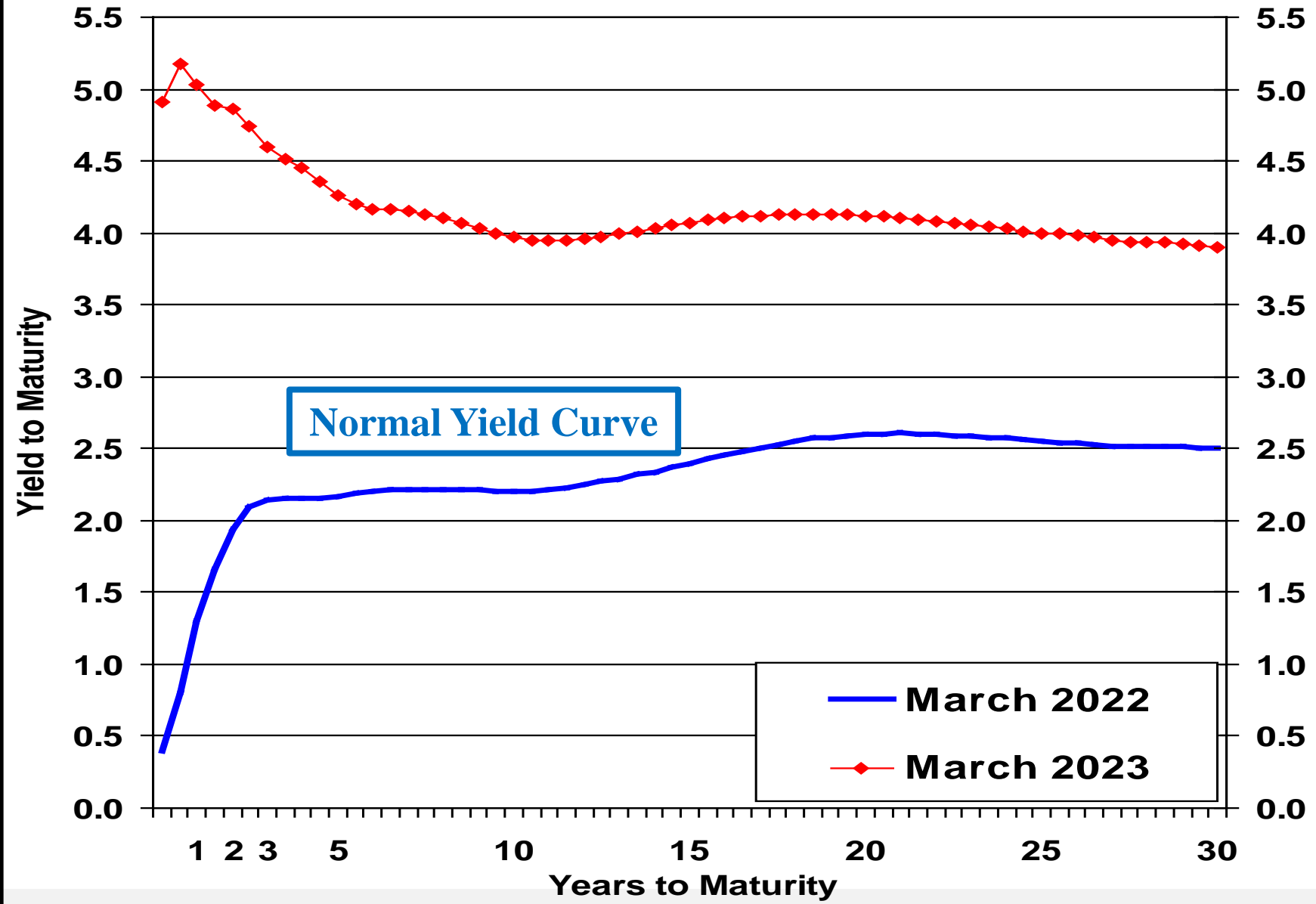
Low Consumer Confidence Due to High Inflation



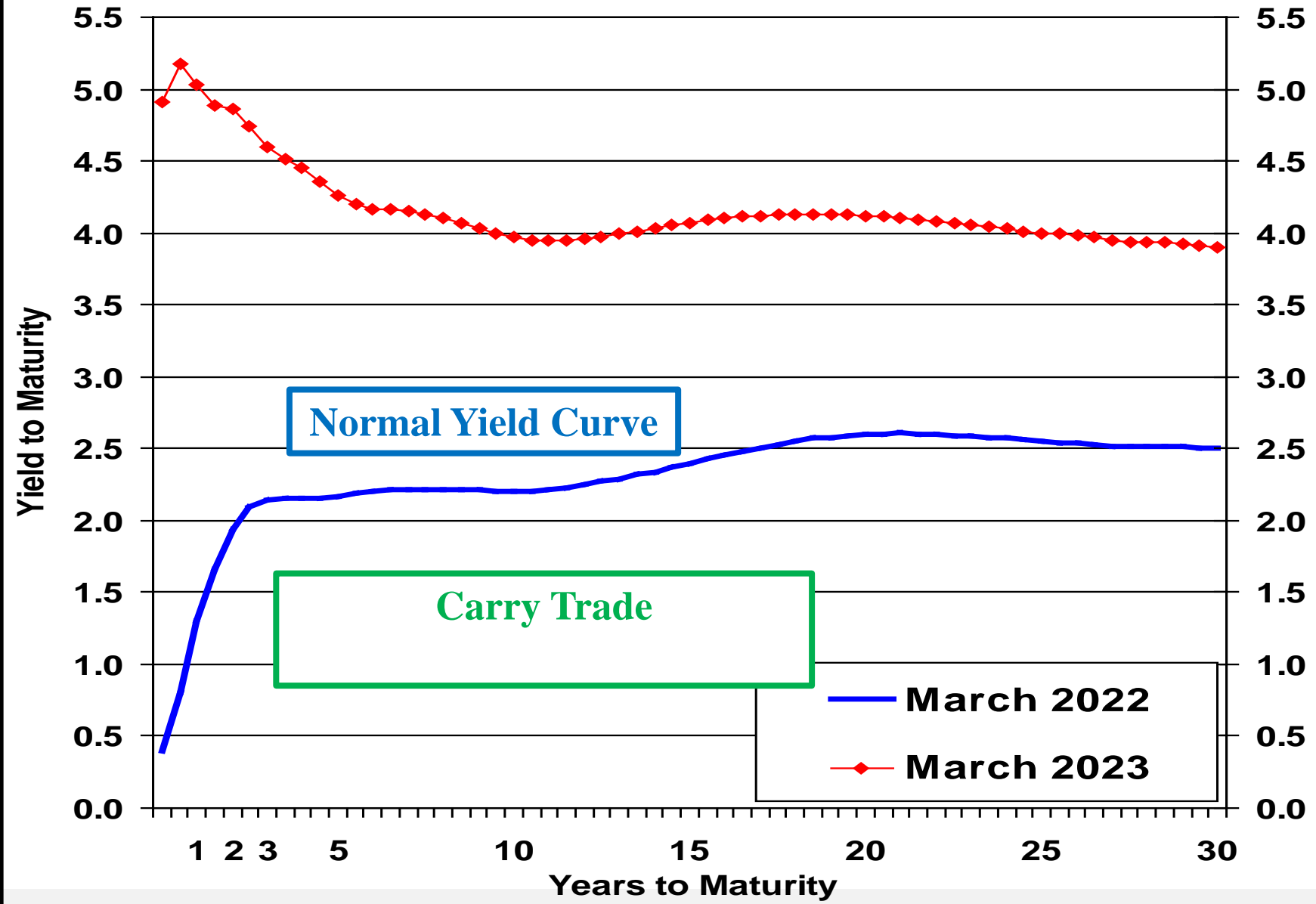
Treasury Yield Curves



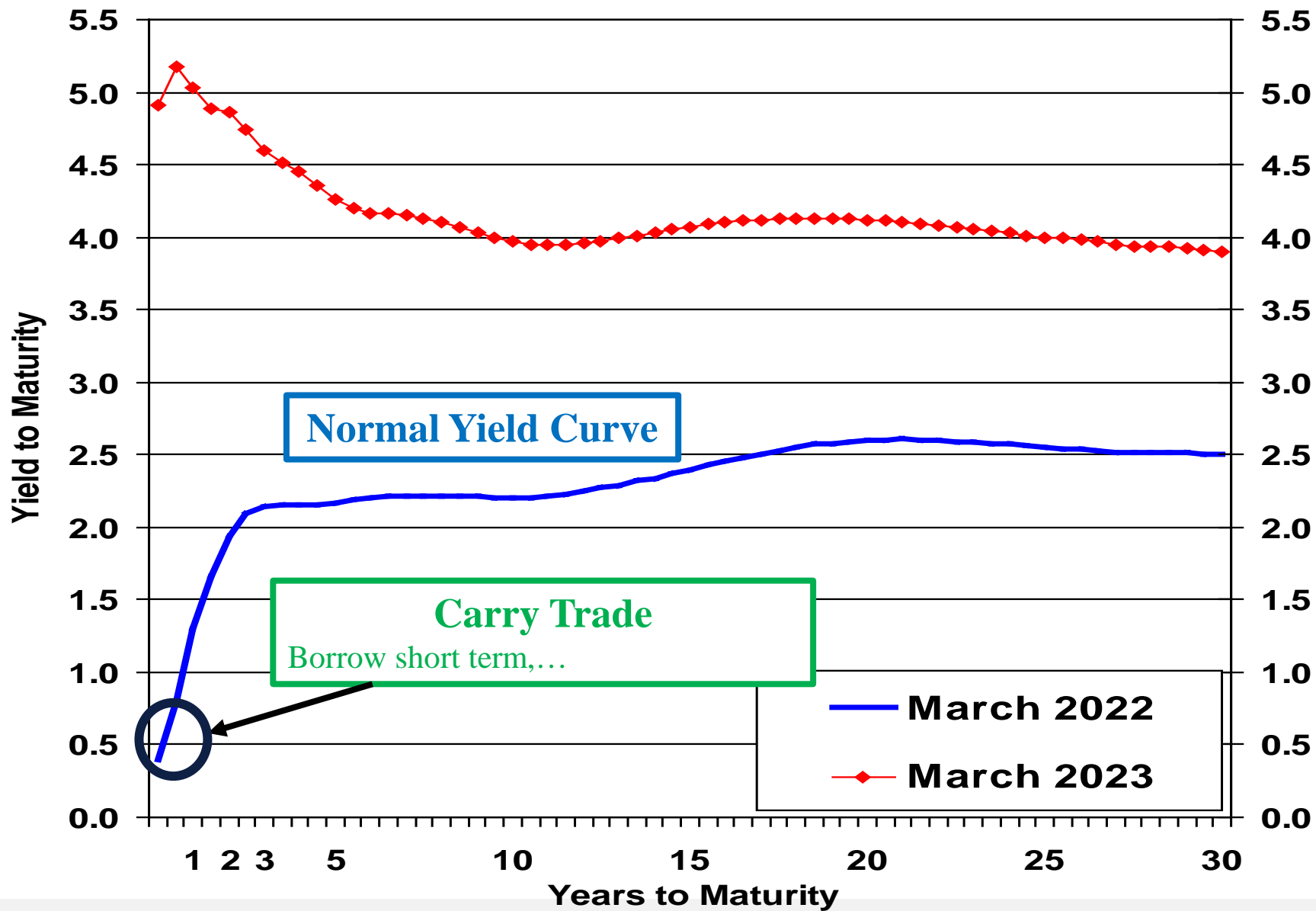
Treasury Yield Curves



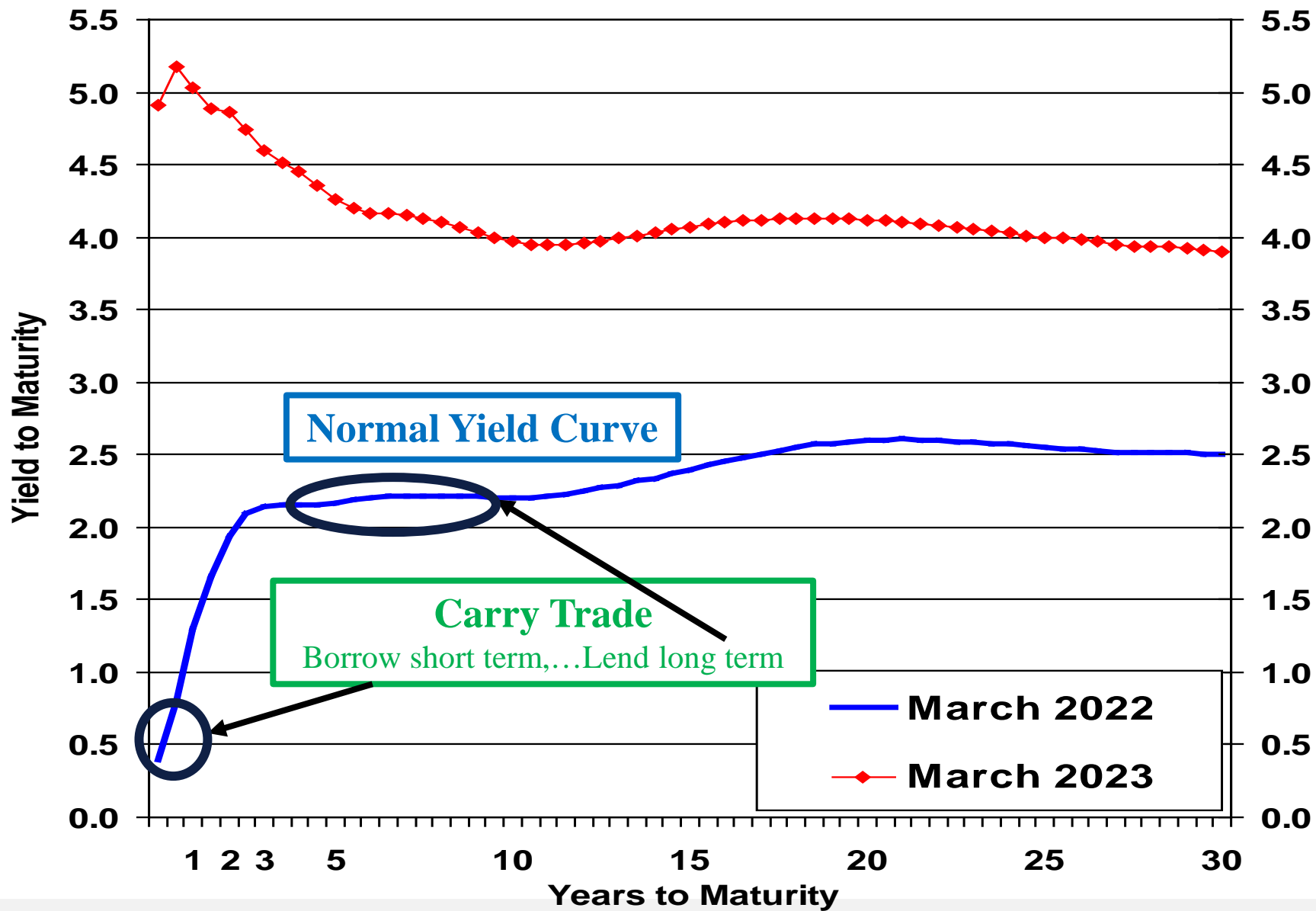
Treasury Yield Curves



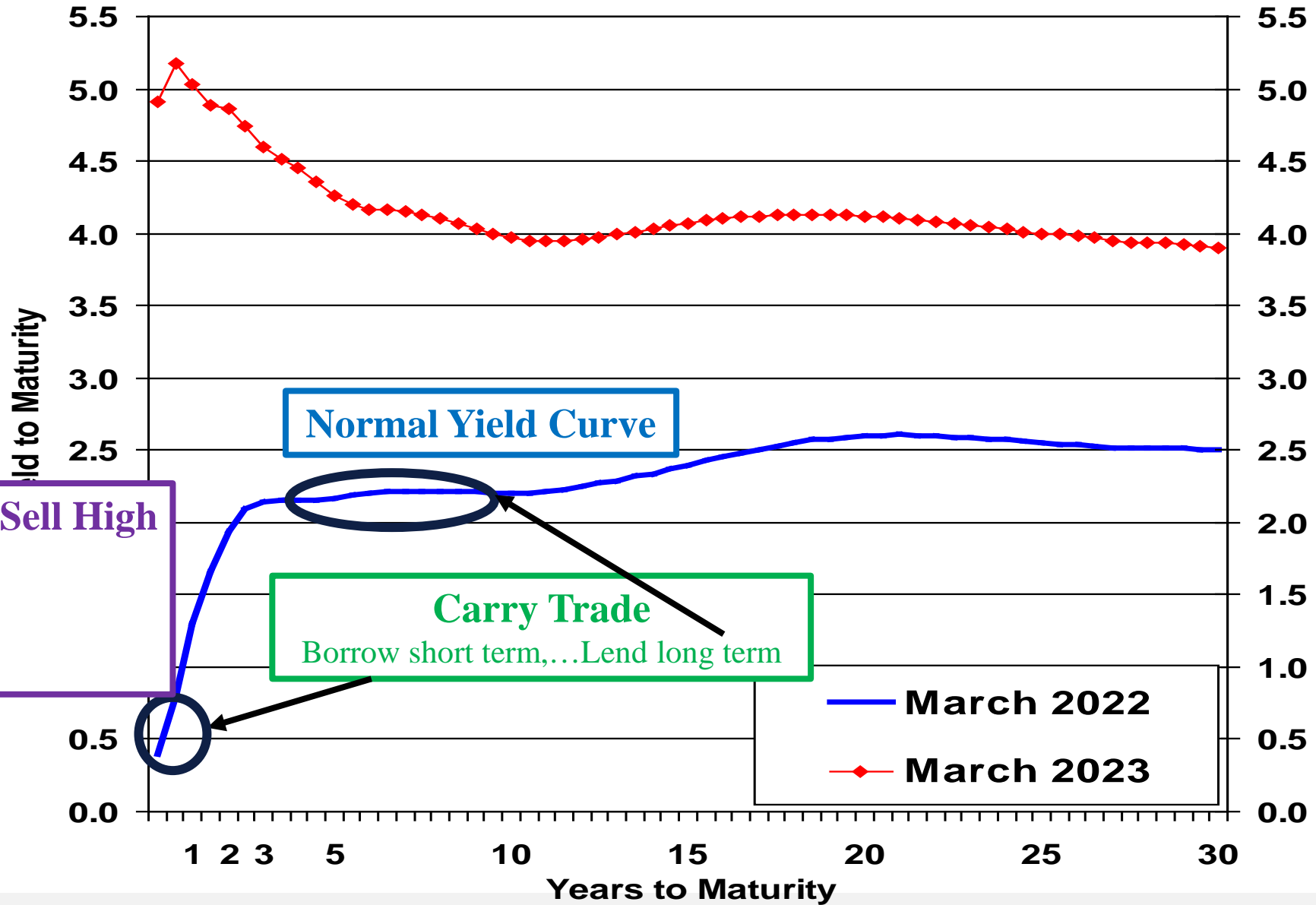
Treasury Yield Curves



Treasury Yield Curves



Treasury Yield Curves



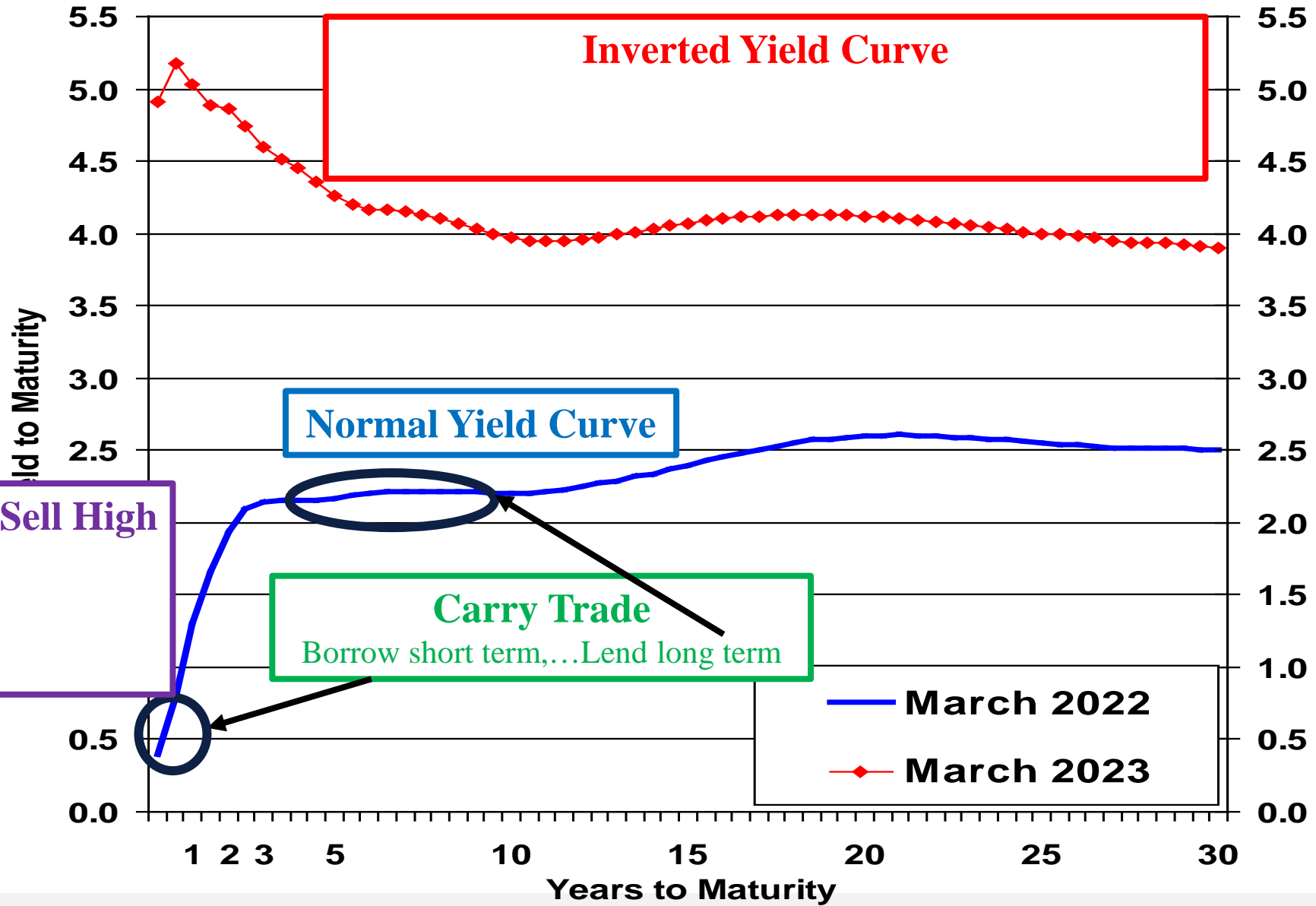
Buy Low...
...Sell High

Normal Yield Curve

Carry Trade
Borrow short term,...Lend long term

March 2022
March 2023

Treasury Yield Curves



Buy Low...
...Sell High

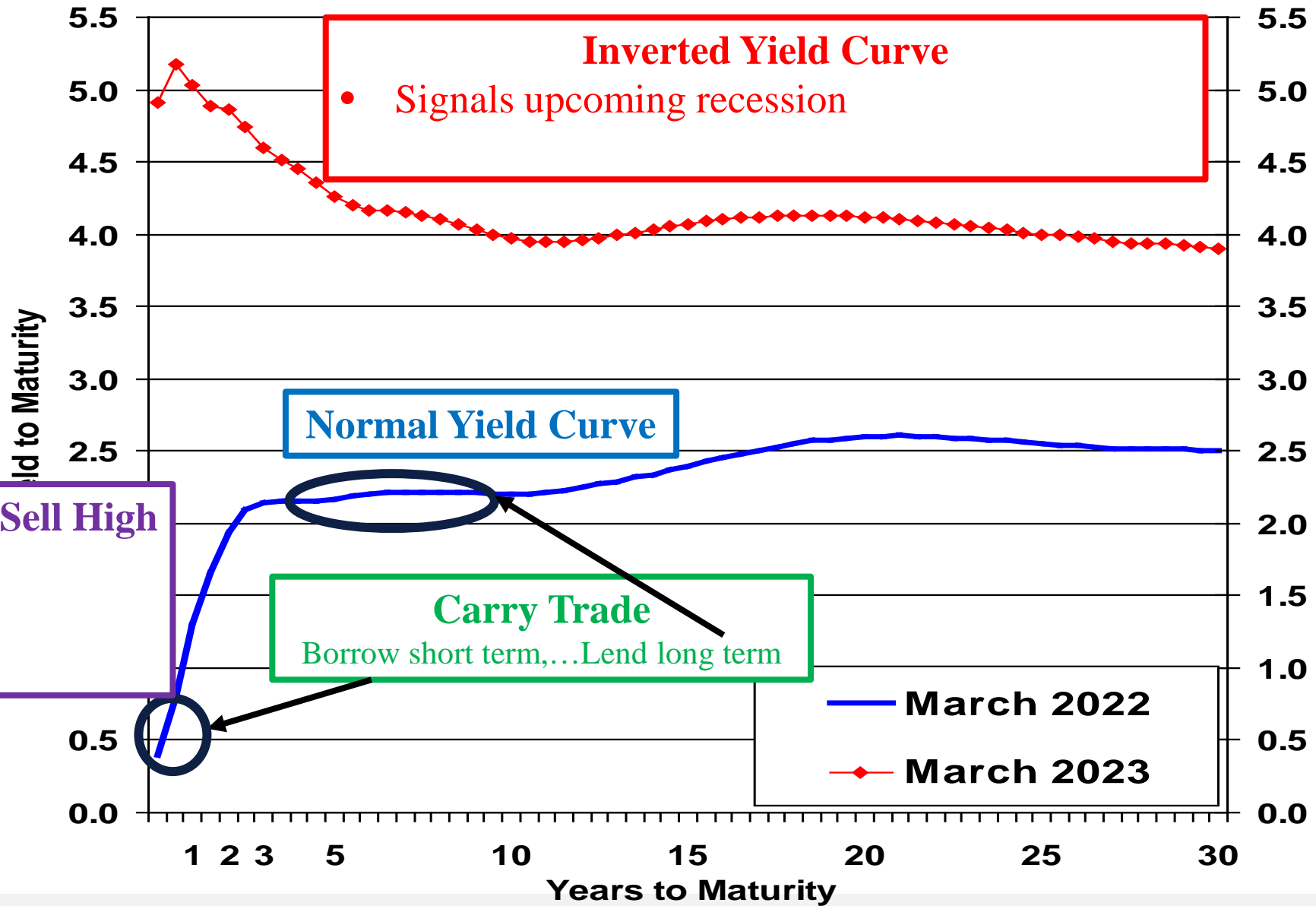
Normal Yield Curve

Carry Trade
Borrow short term,...Lend long term

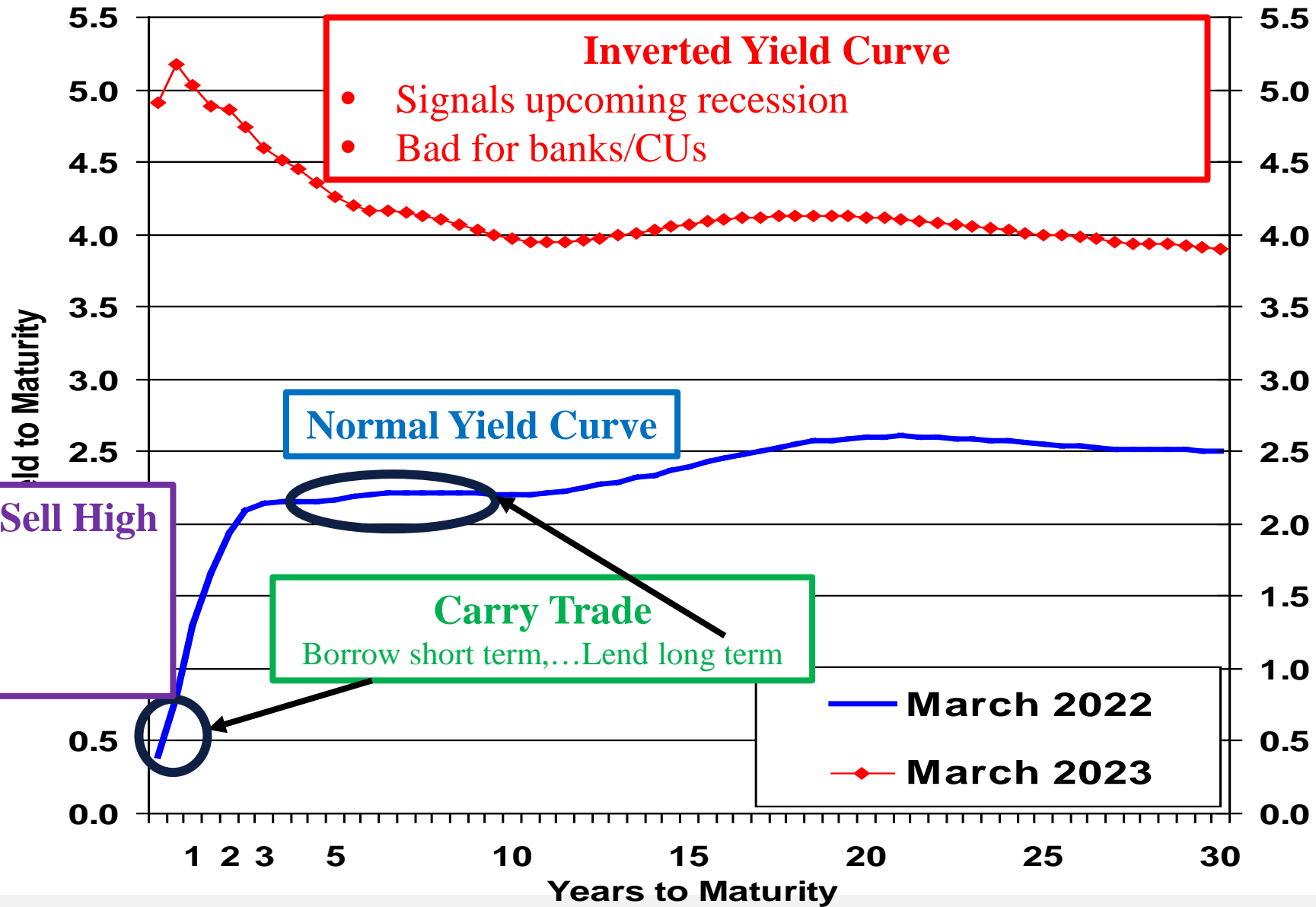
Inverted Yield Curve

March 2022
March 2023

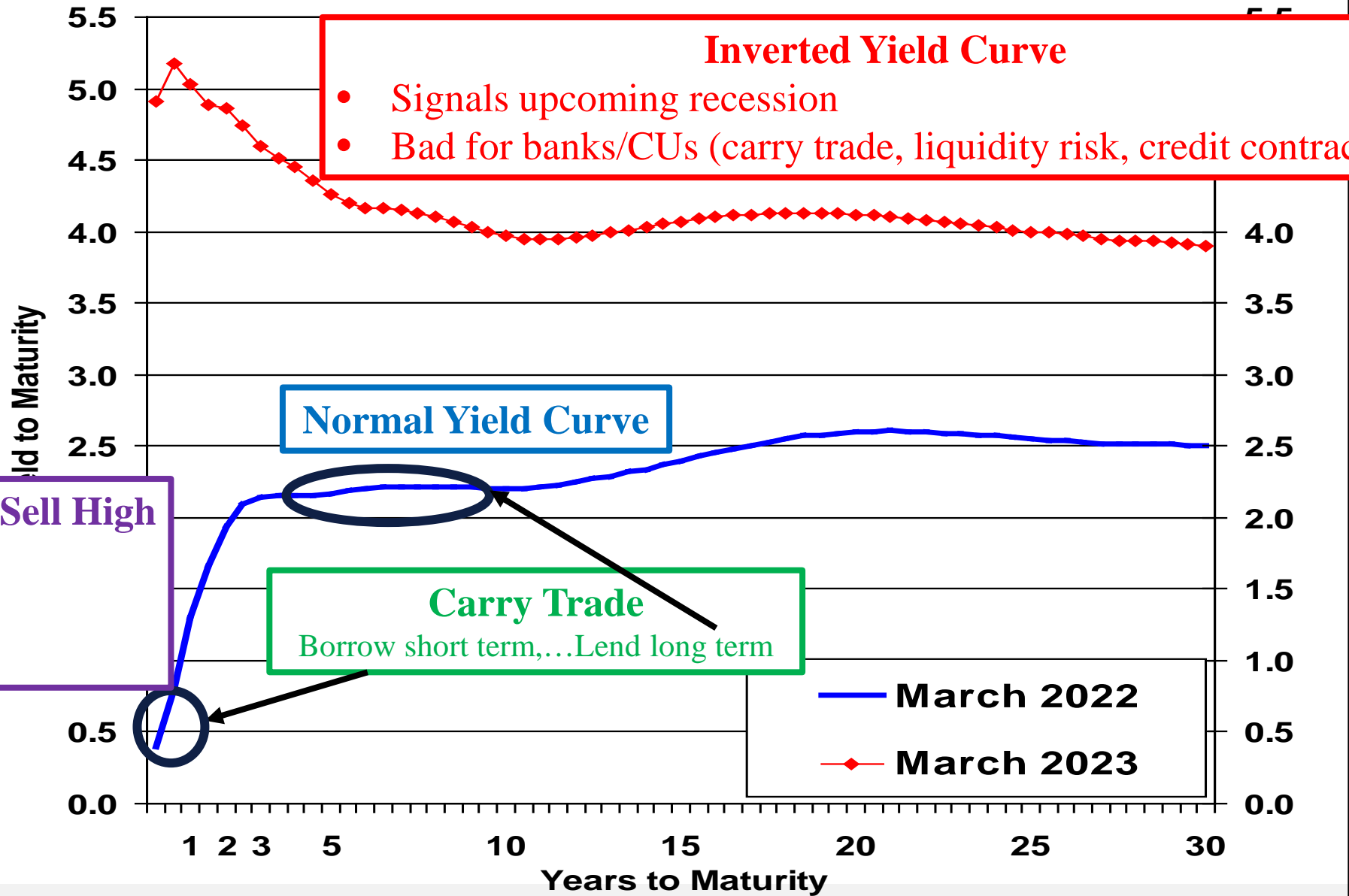
Treasury Yield Curves



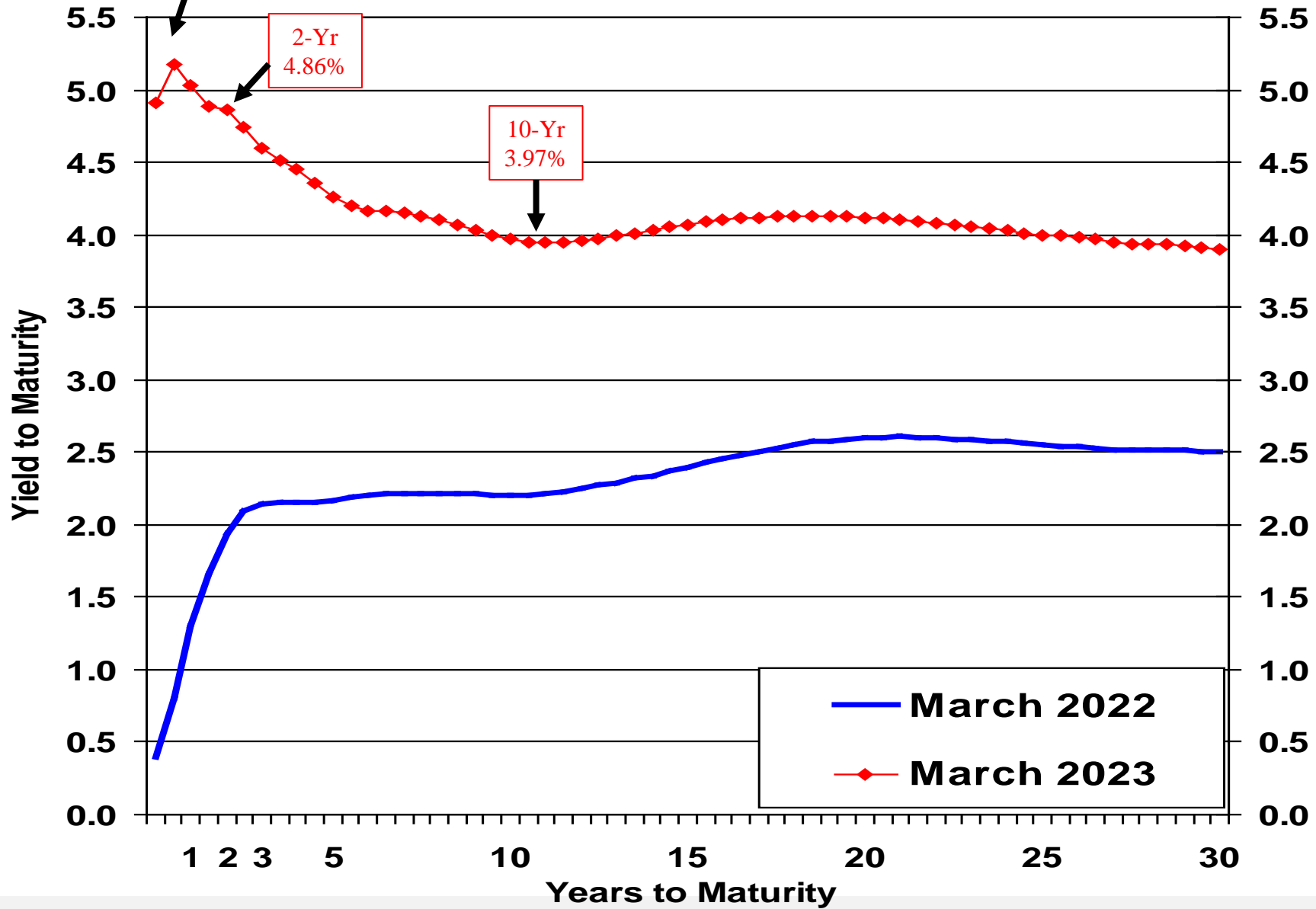
Treasury Yield Curves



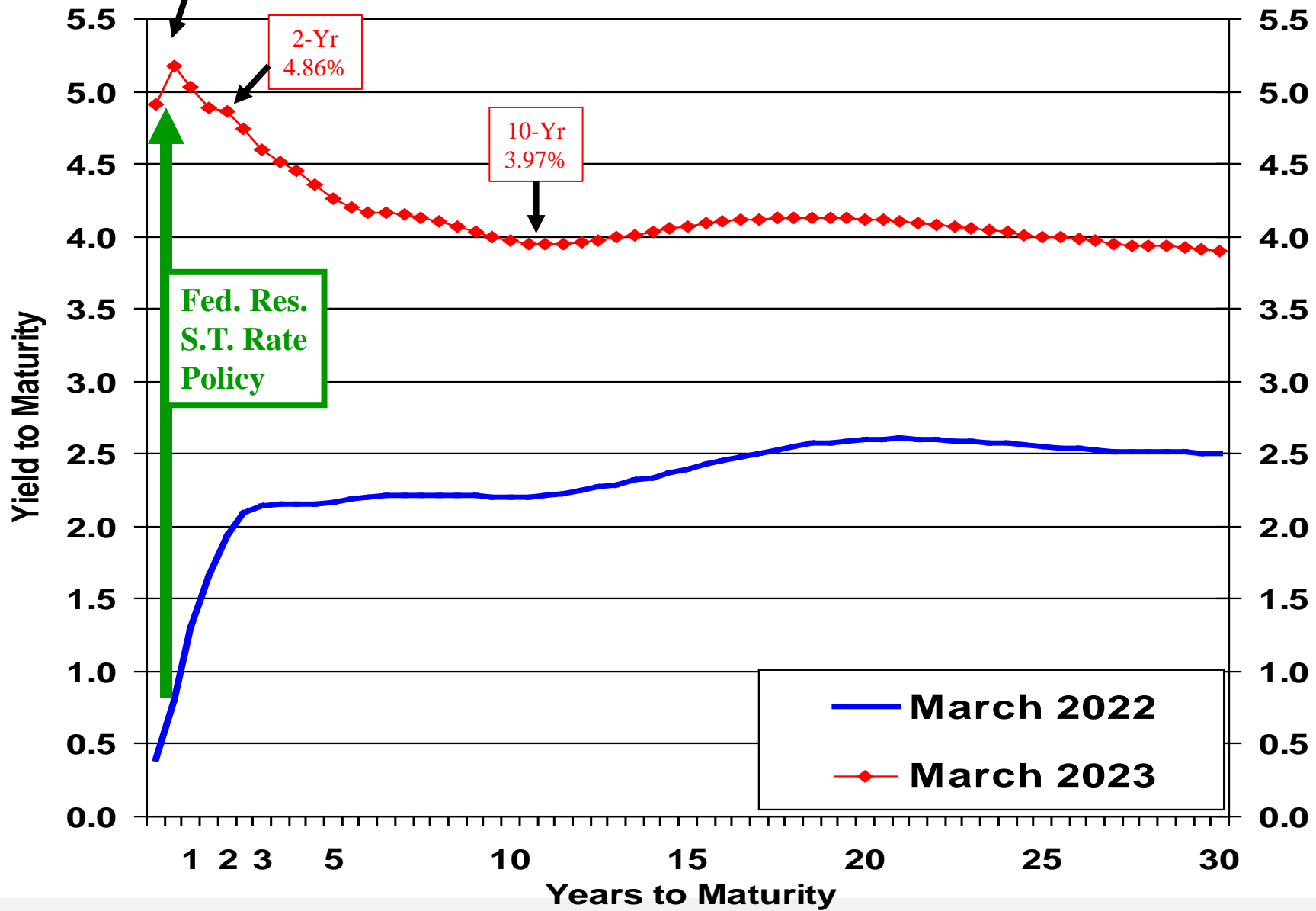
Treasury Yield Curves



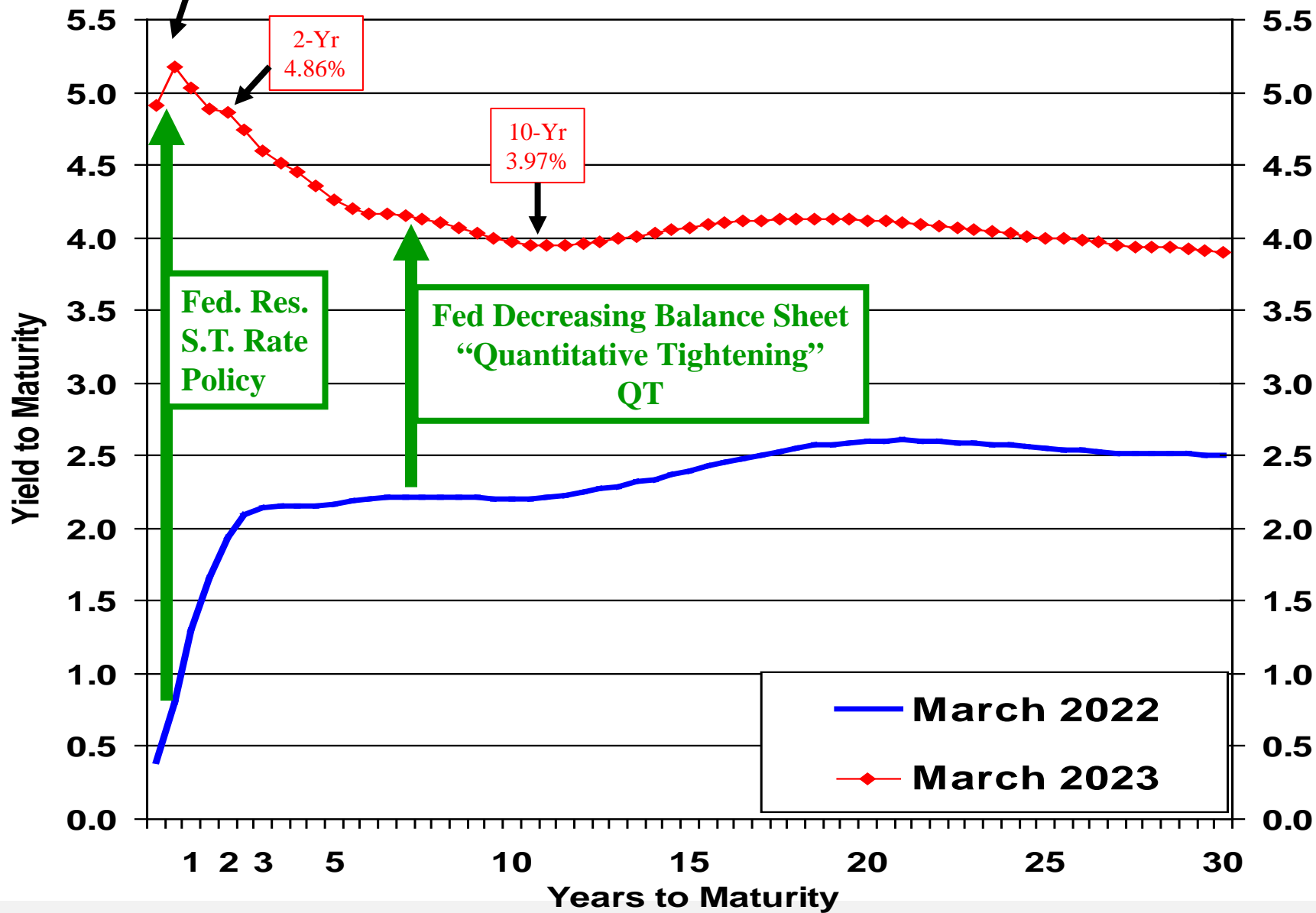
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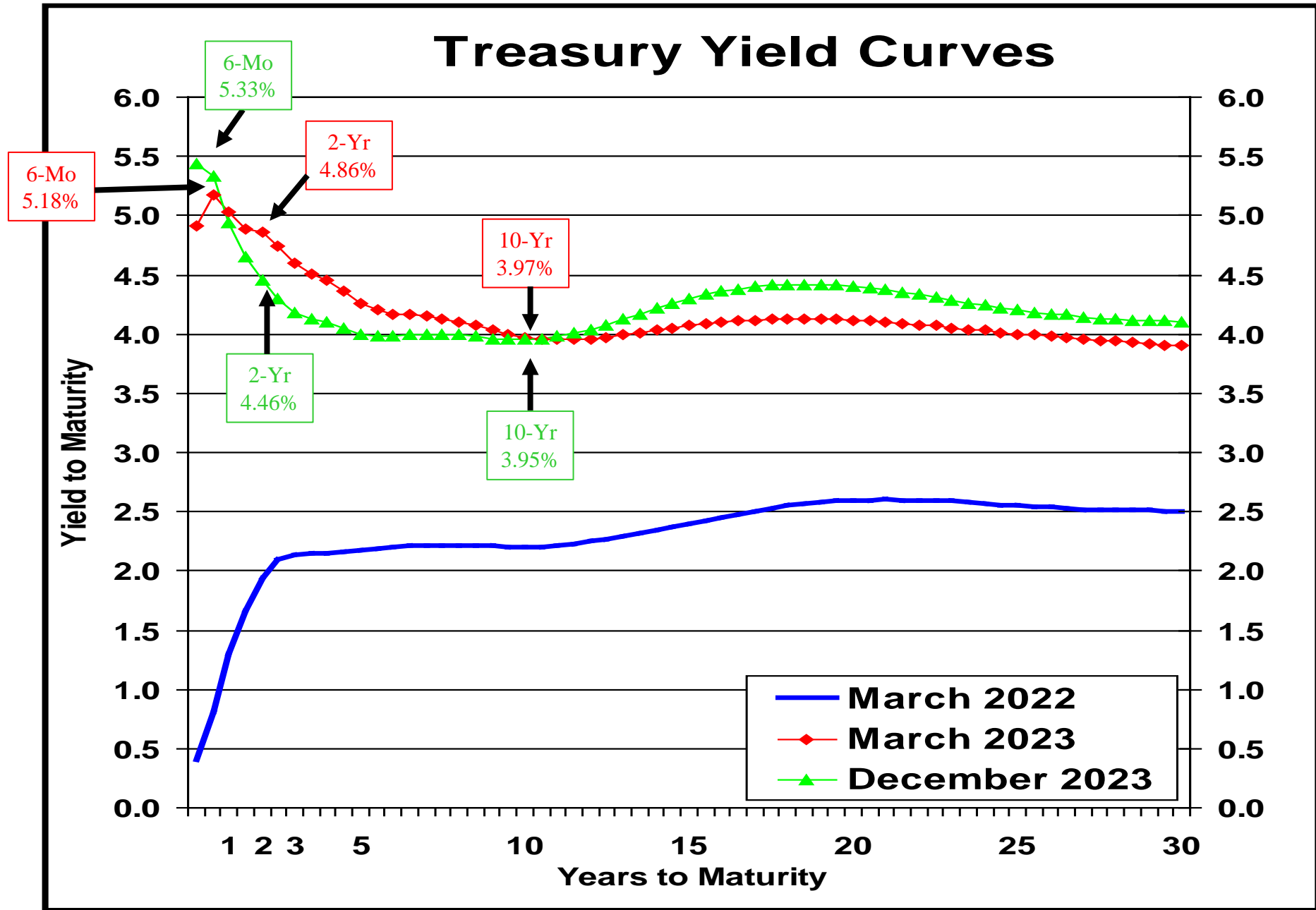
Treasury Yield Curves



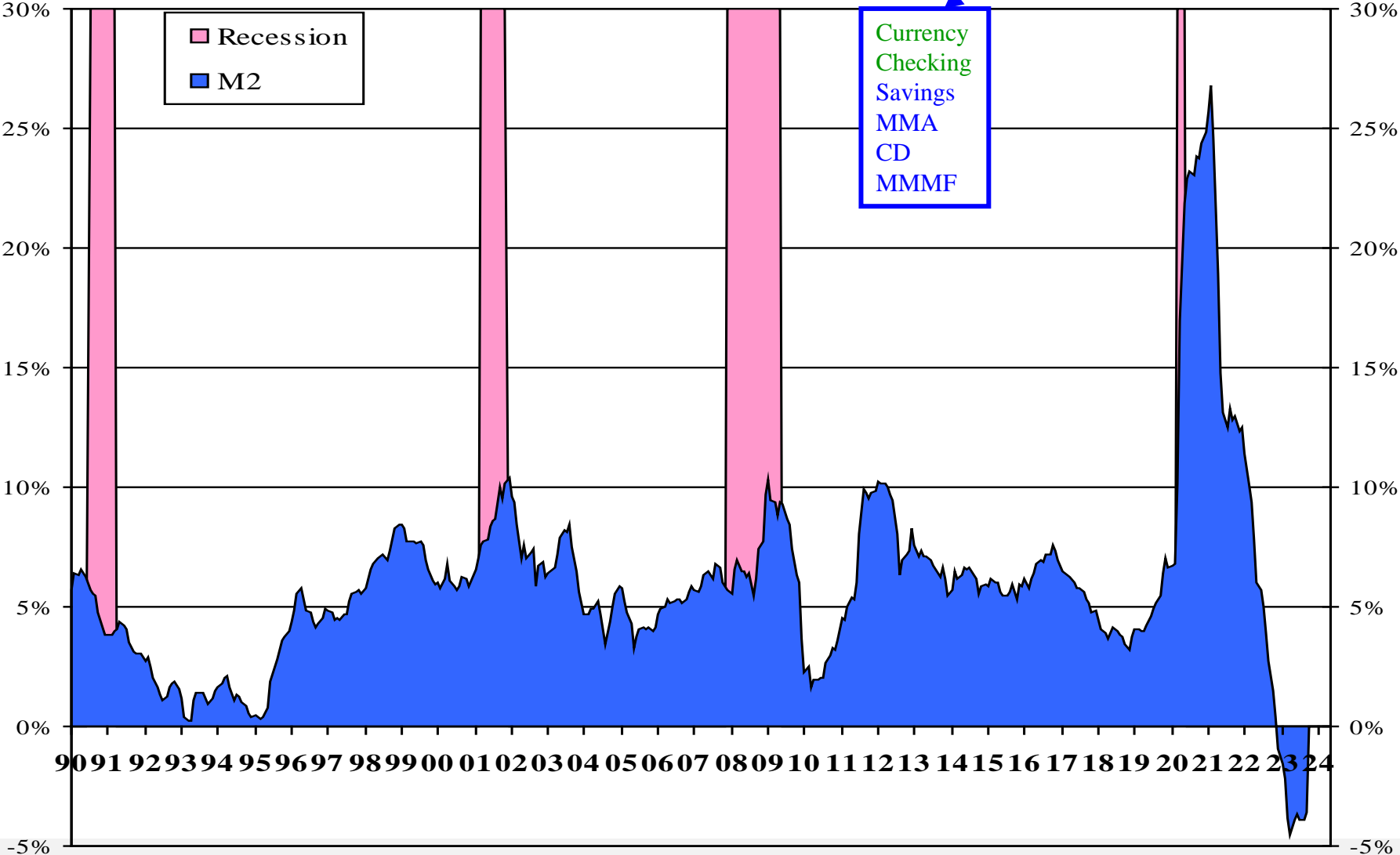
Treasury Yield Curves



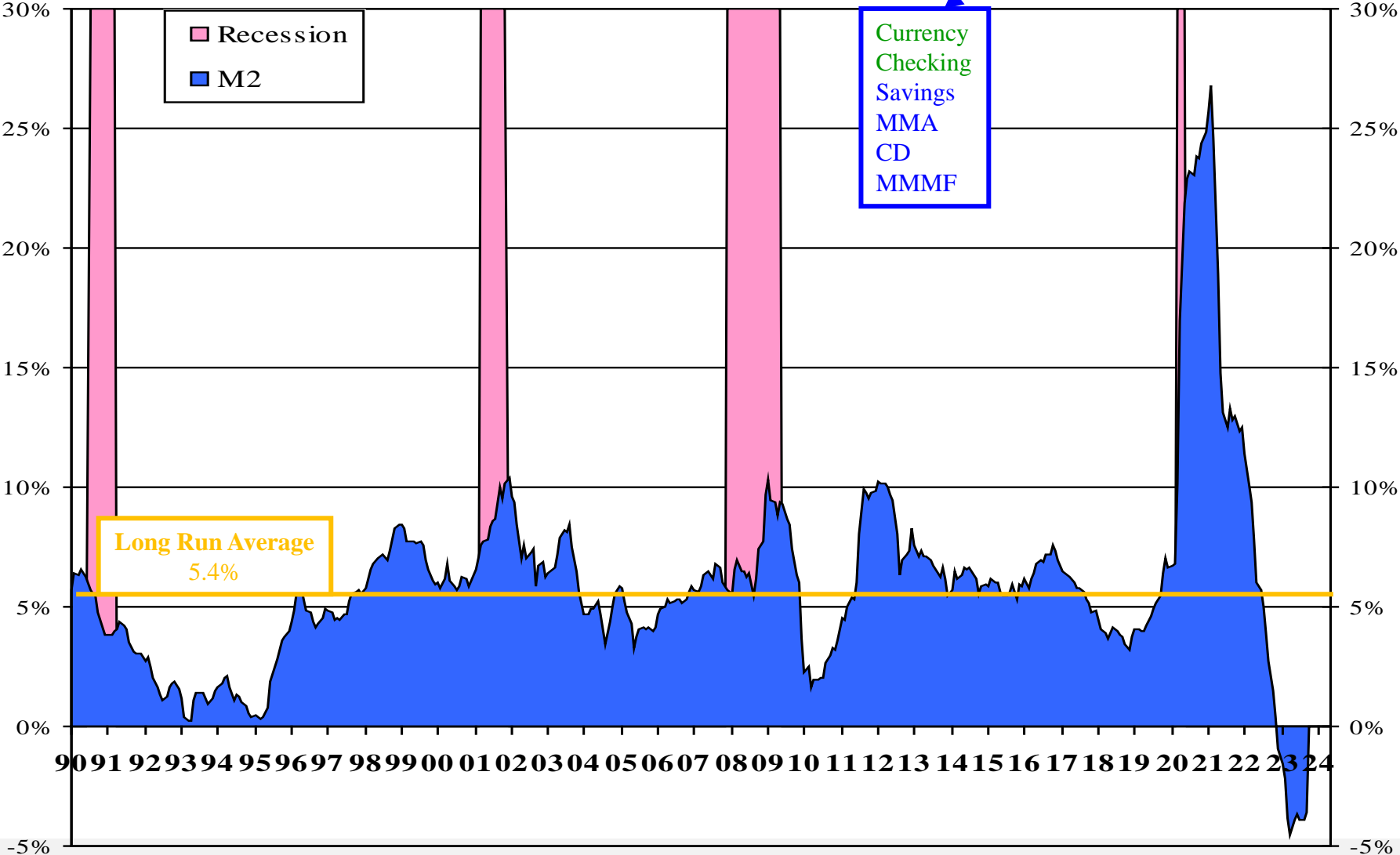
Treasury Yield Curves



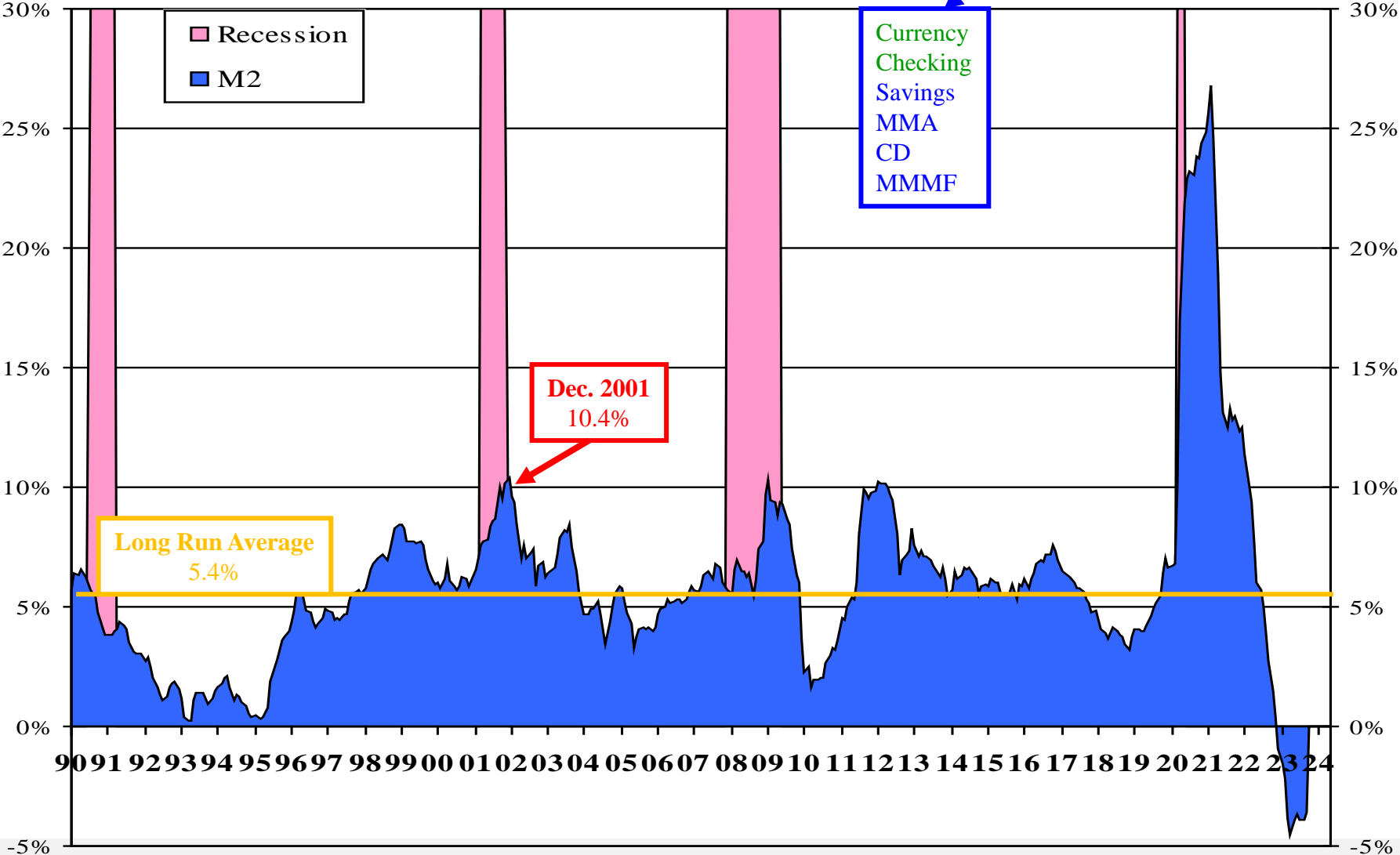
Money Supply Growth, M2



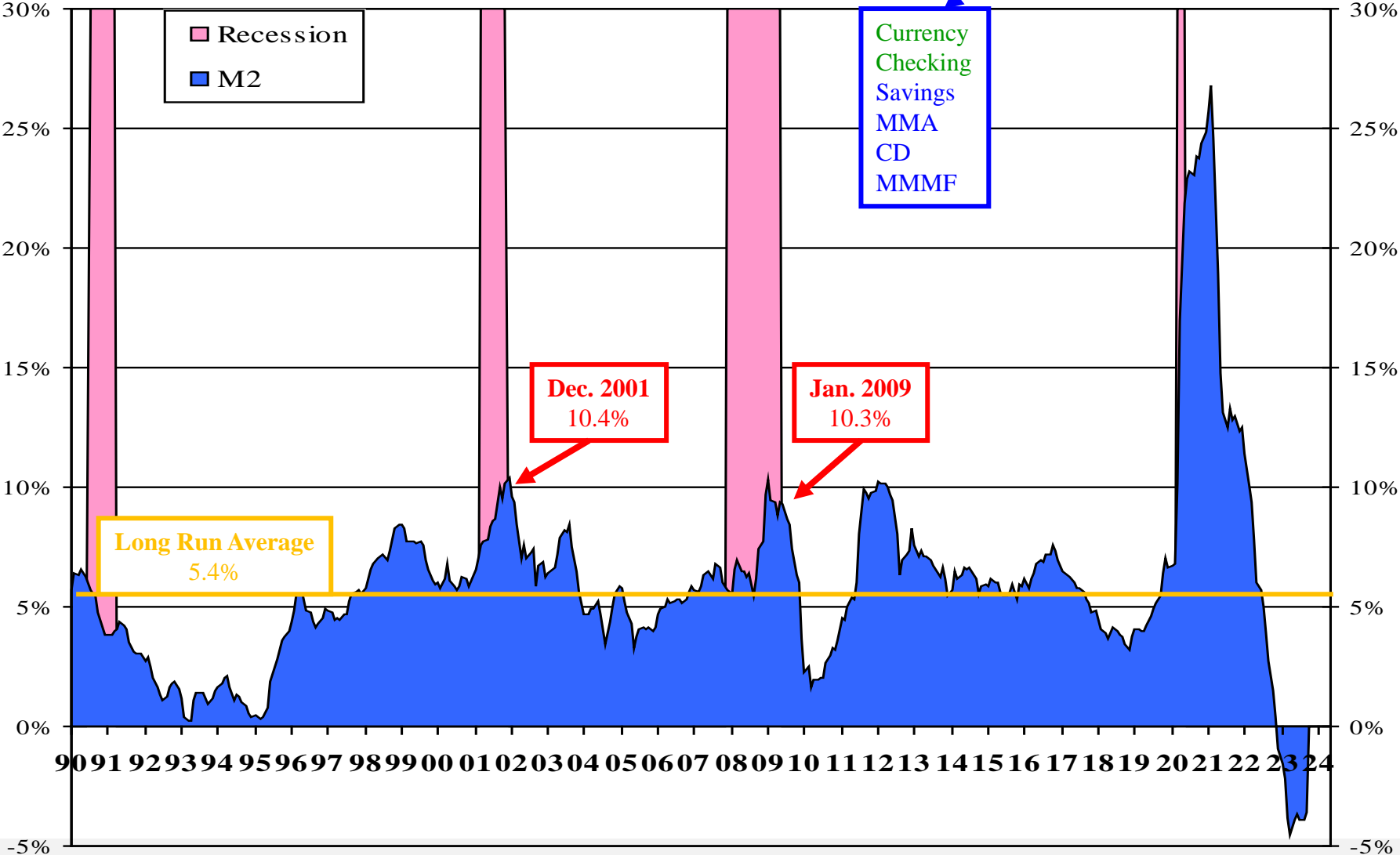
Money Supply Growth, M2



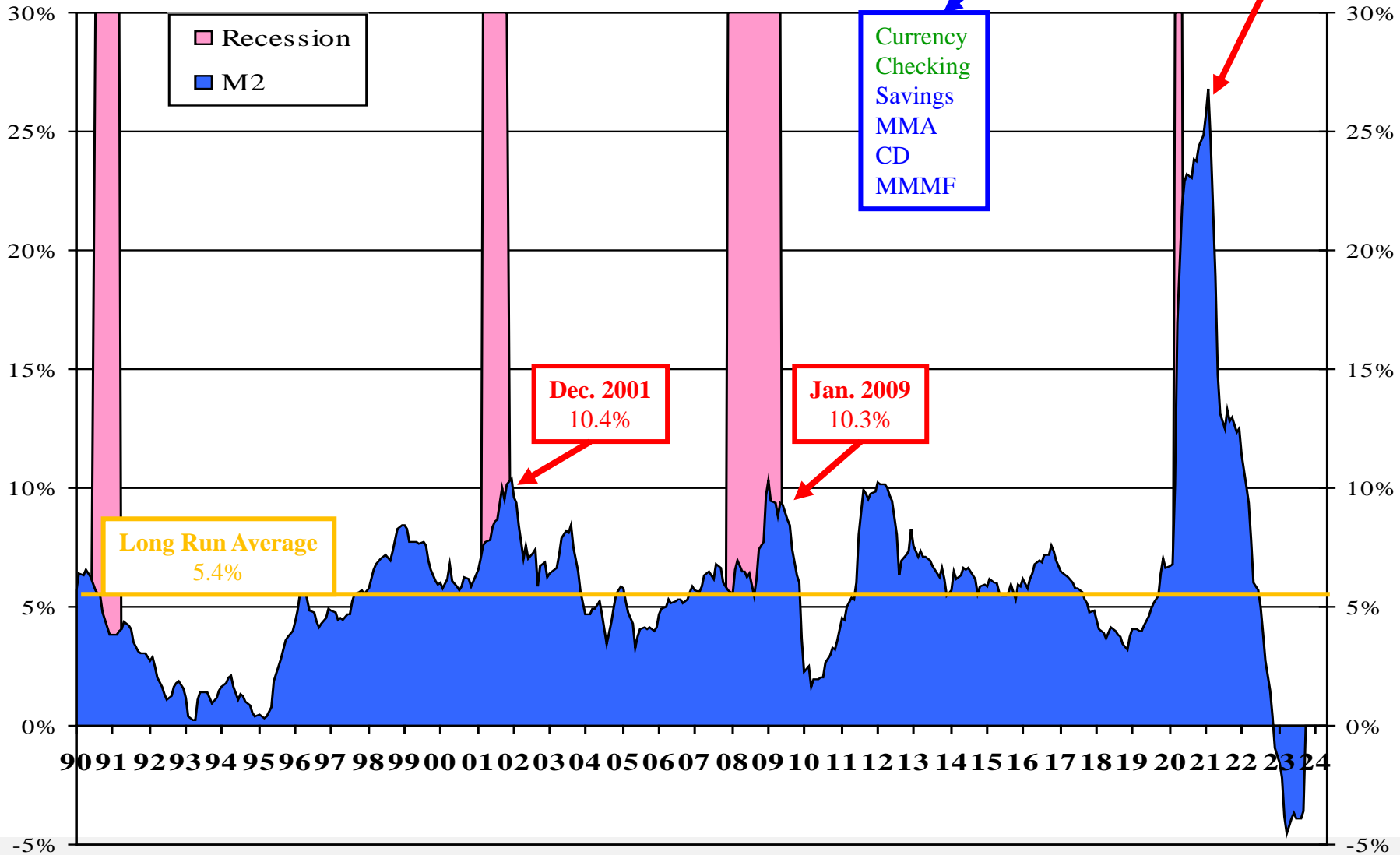
Money Supply Growth, M2



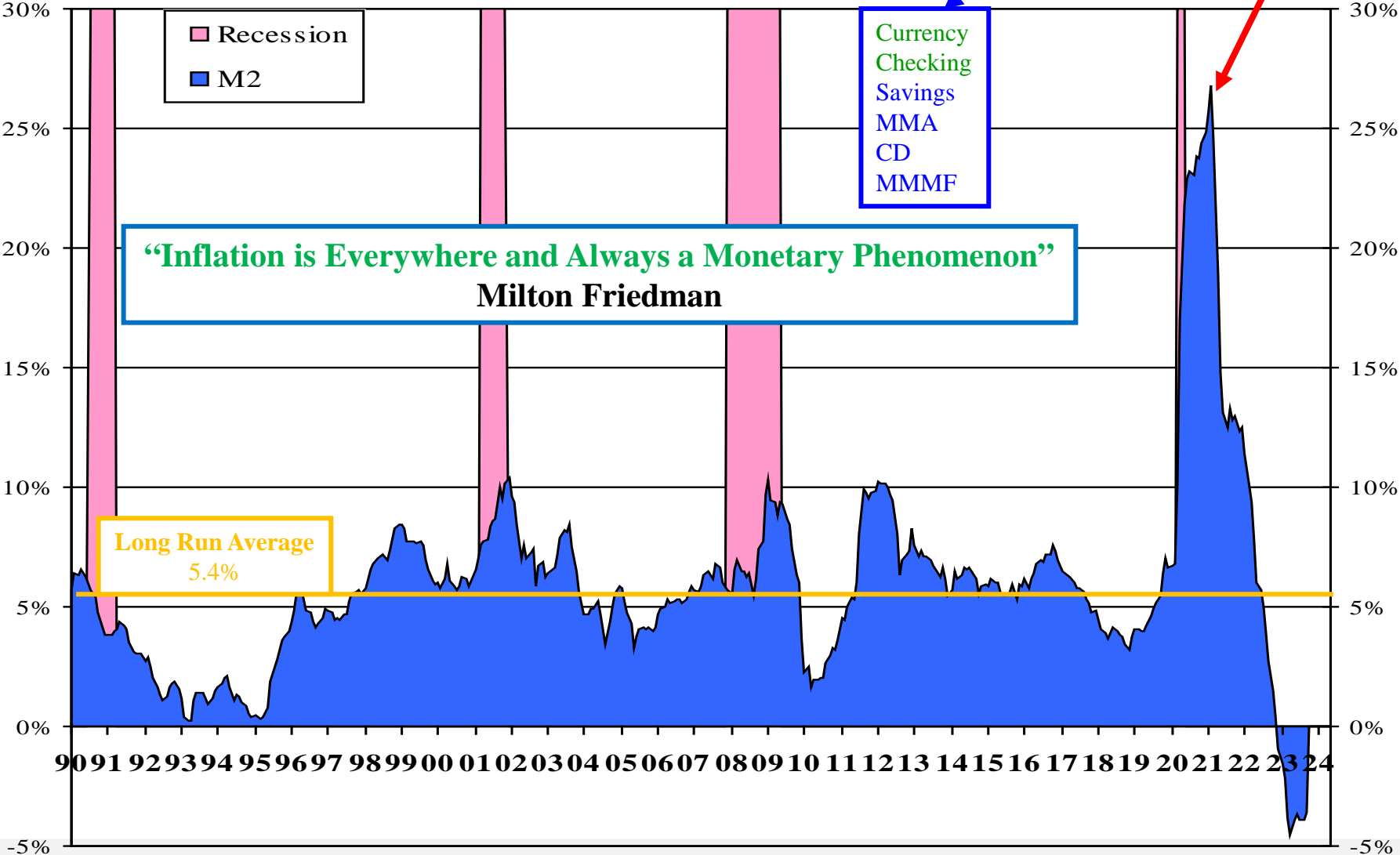
Money Supply Growth, M2



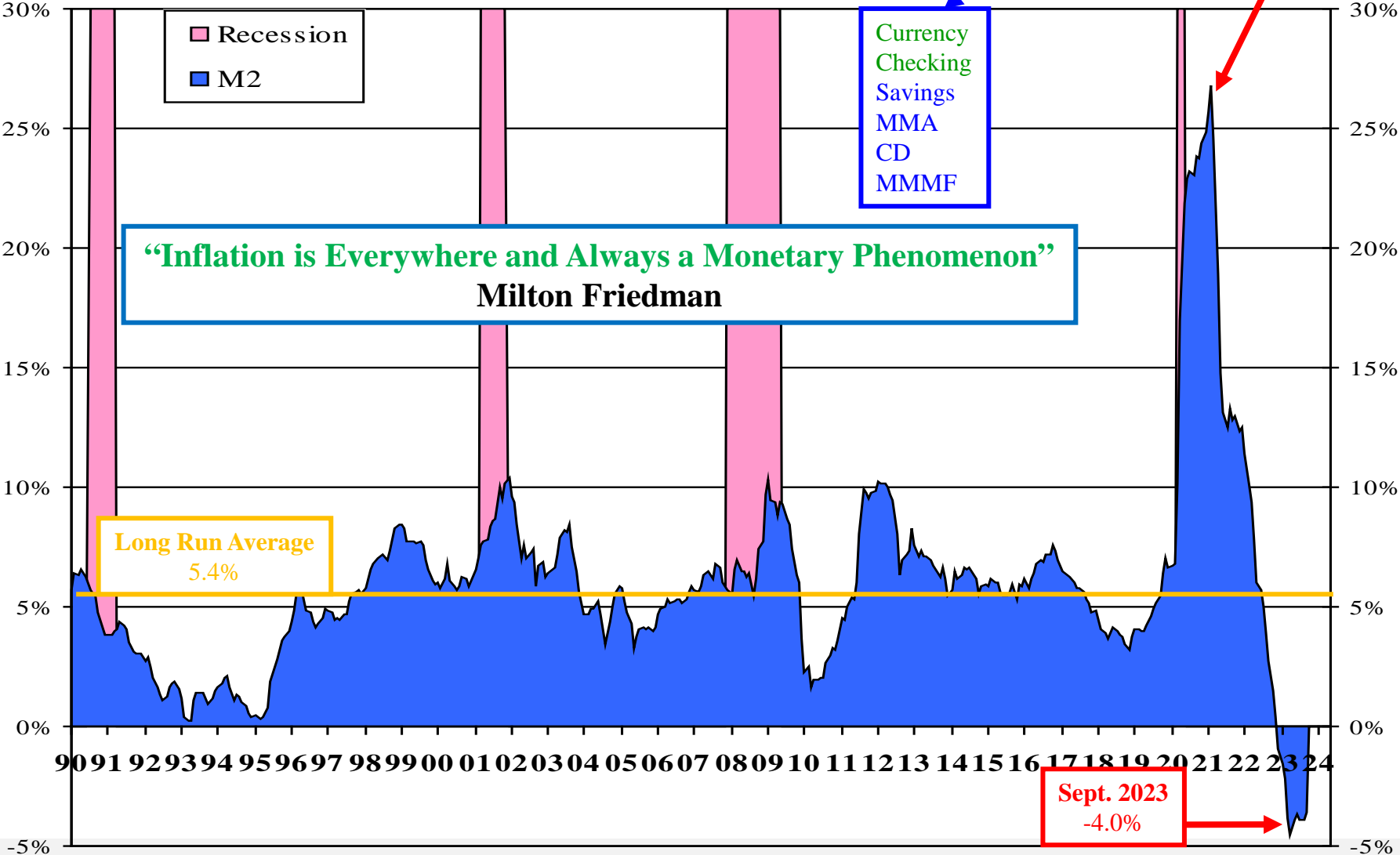
Money Supply Growth, M2



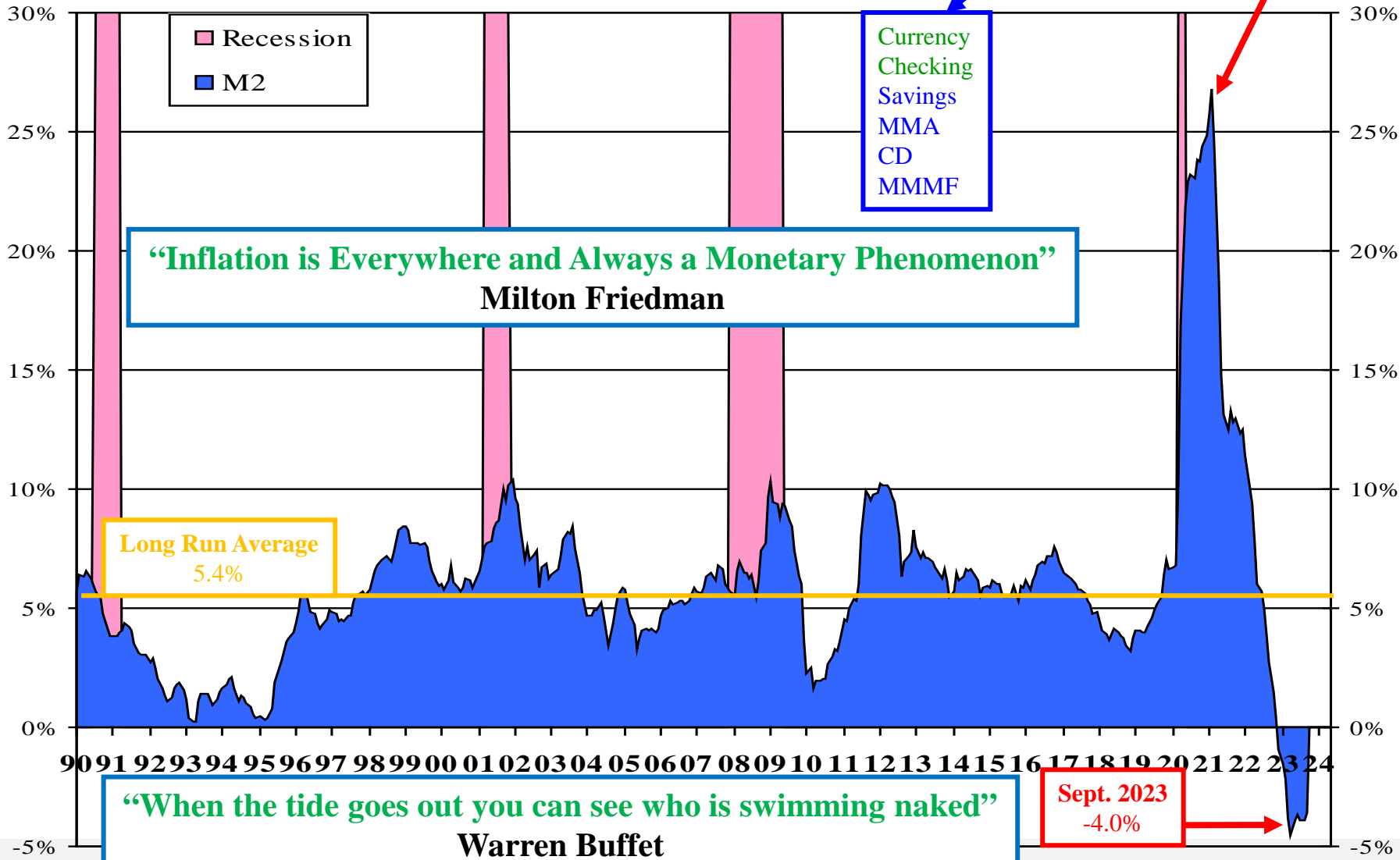
Money Supply Growth, M2



Money Supply Growth, M2



Money Supply Growth, M2



Limerick of the Day

There once was a bank that had quite a scare

Limerick of the Day

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For their liquidity seemed quite rare

Limerick of the Day

There once was a bank that had quite a scare
For their liquidity seemed quite rare
But with some quick loans

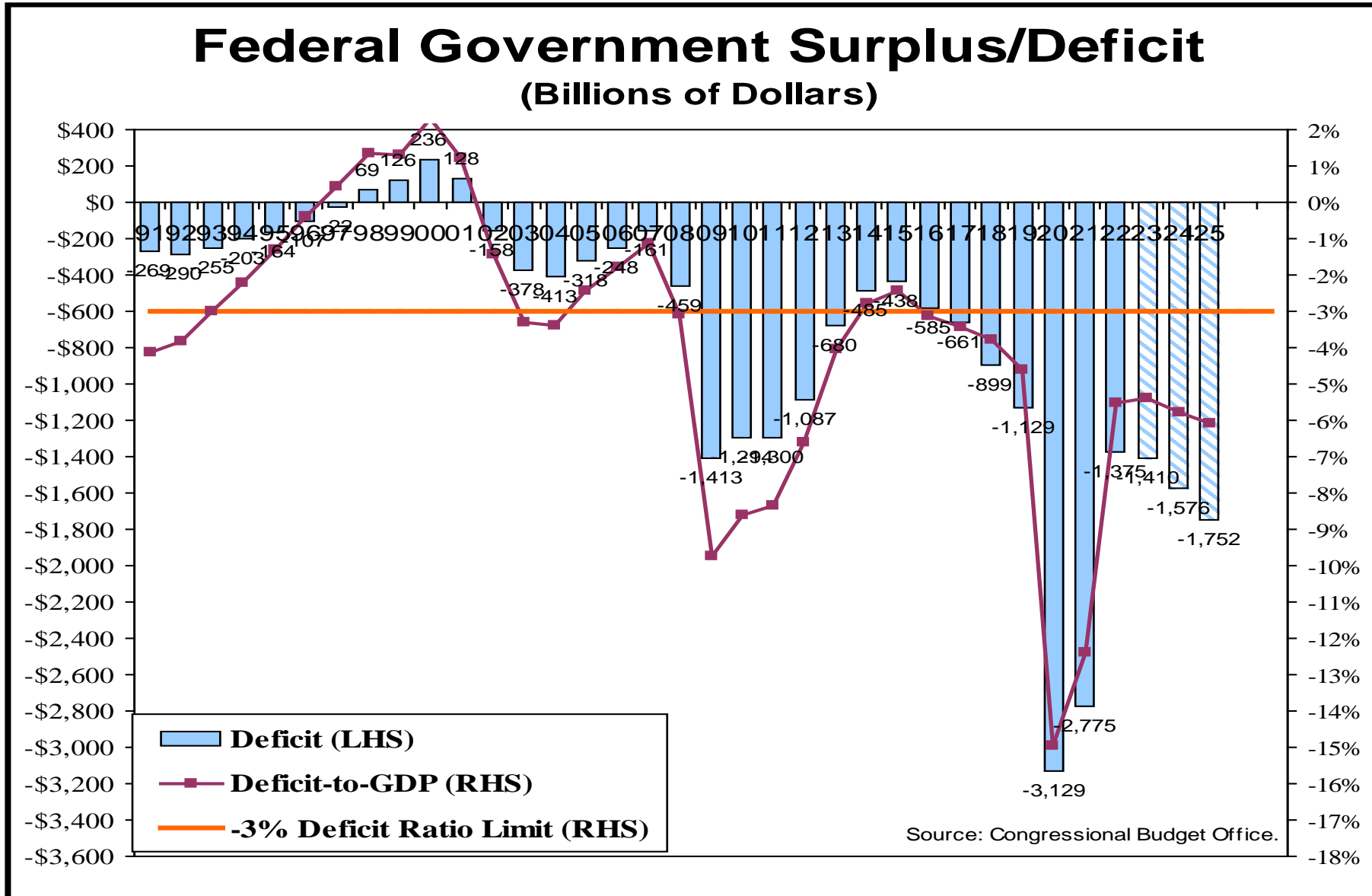
Limerick of the Day

There once was a bank that had quite a scare
For their liquidity seemed quite rare
But with some quick loans
And more cash in their bones

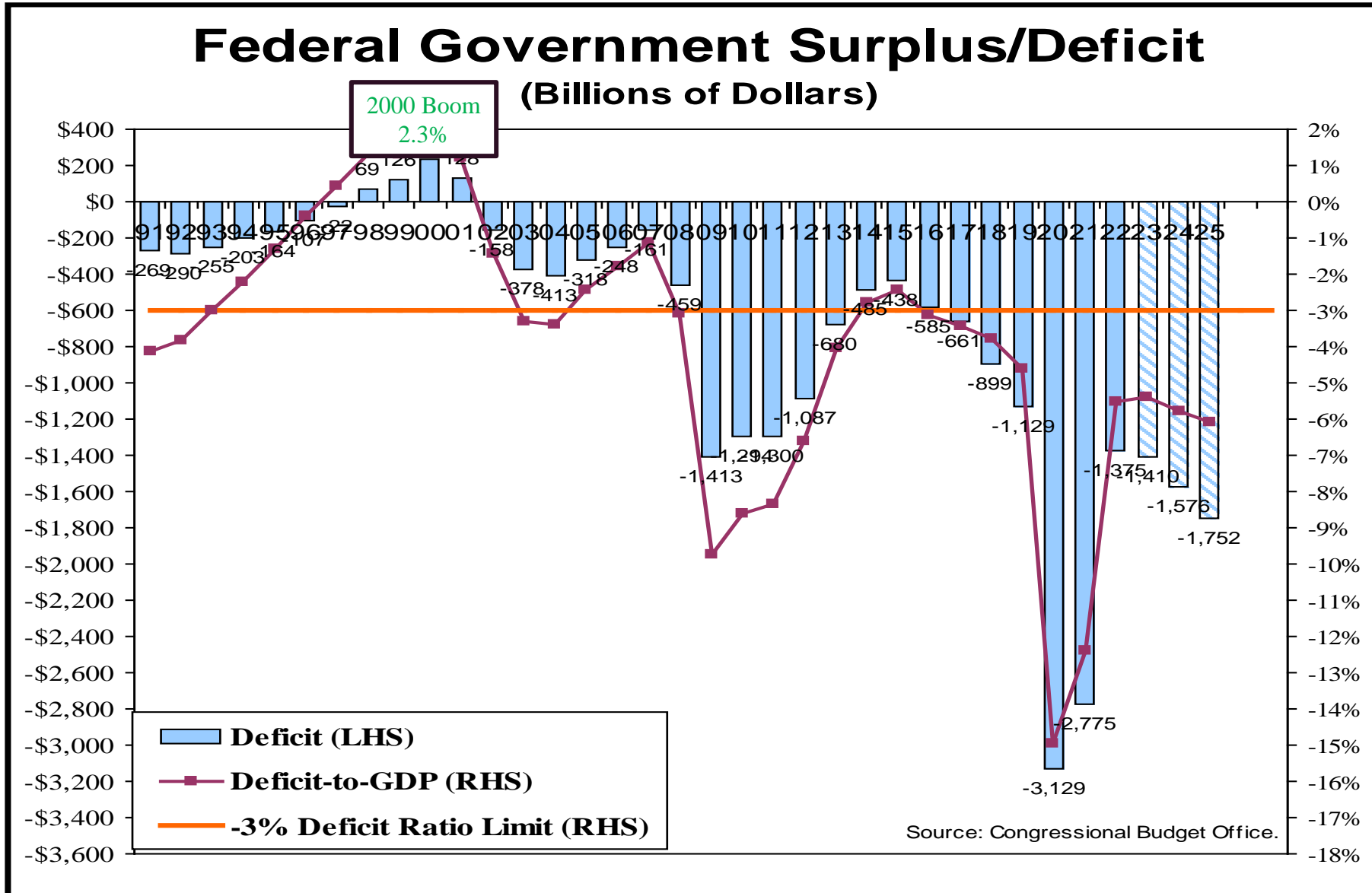
Limerick of the Day

There once was a bank that had quite a scare
For their liquidity seemed quite rare
But with some quick loans
And more cash in their bones
They managed to keep their head above the despair.

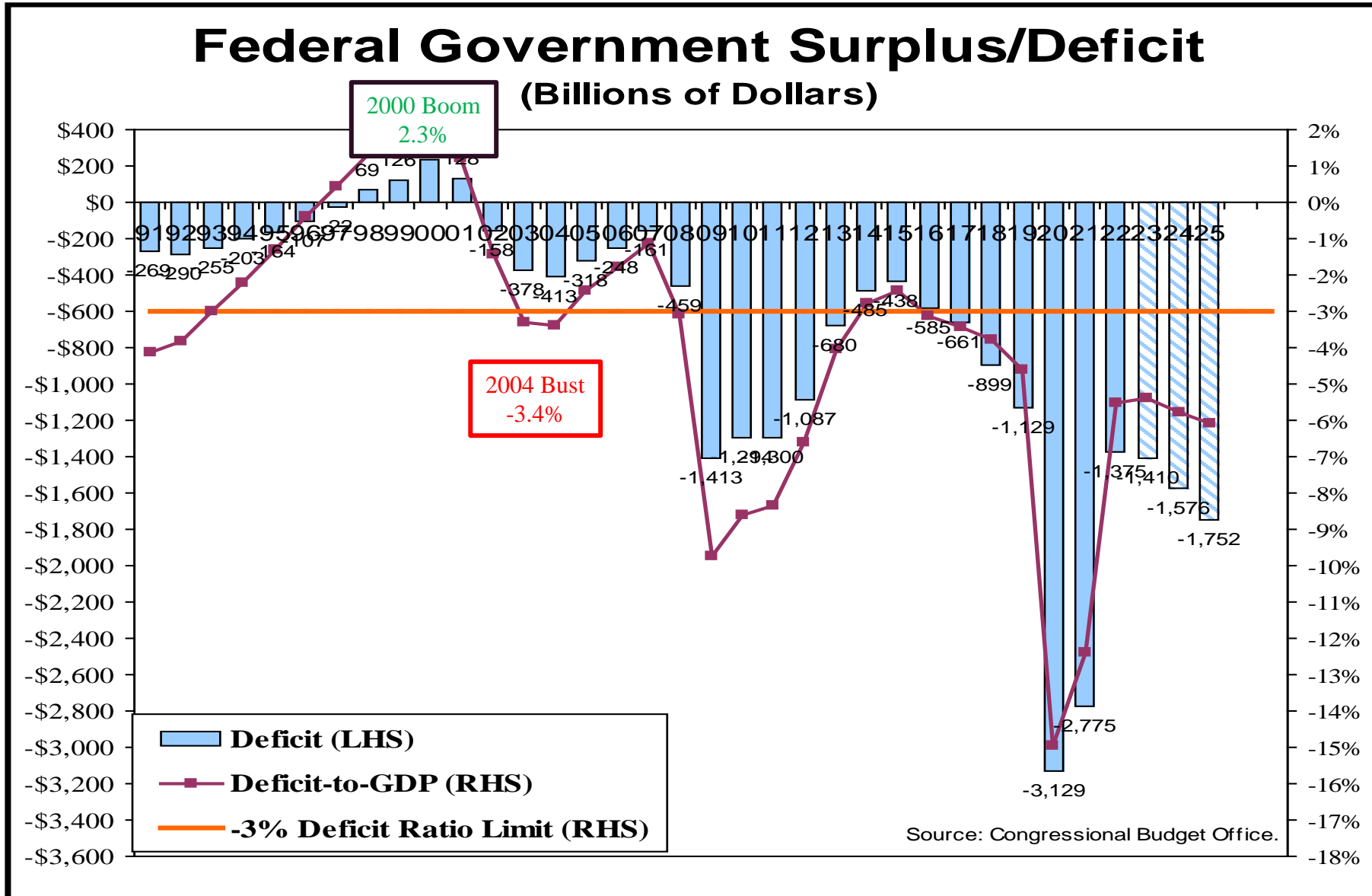
Deficits During Good Times and Bad



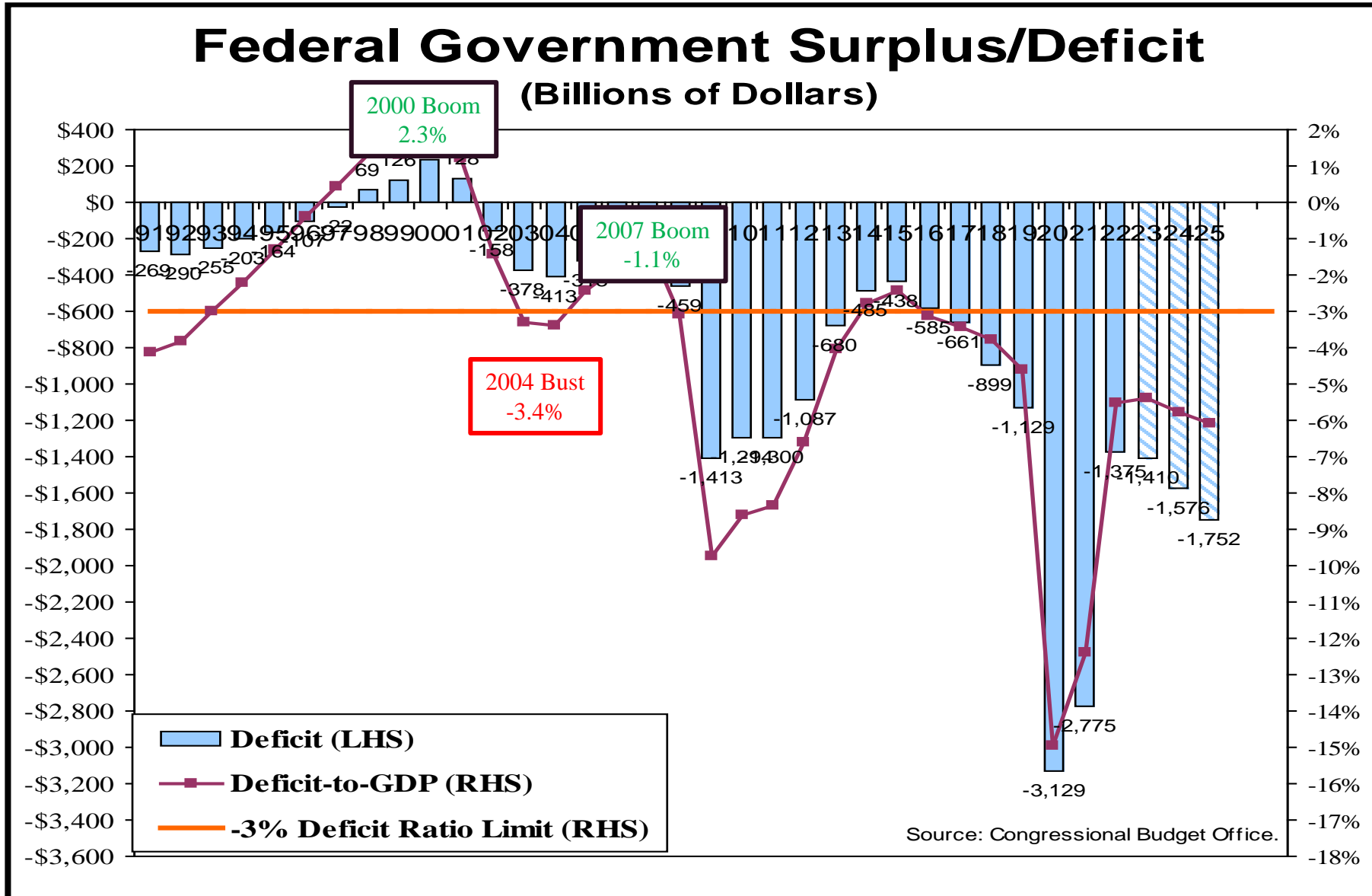
Deficits During Good Times and Bad



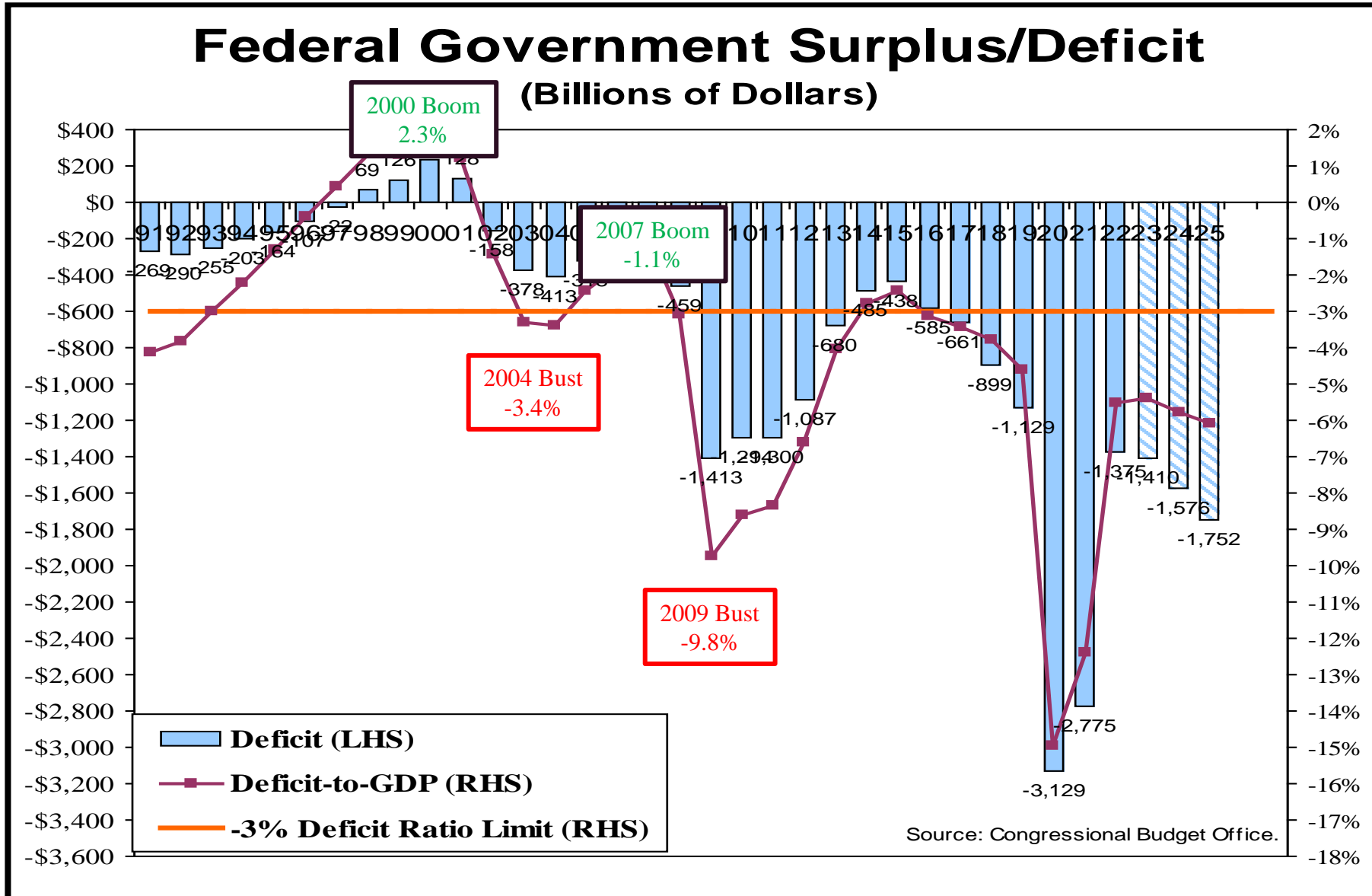
Deficits During Good Times and Bad



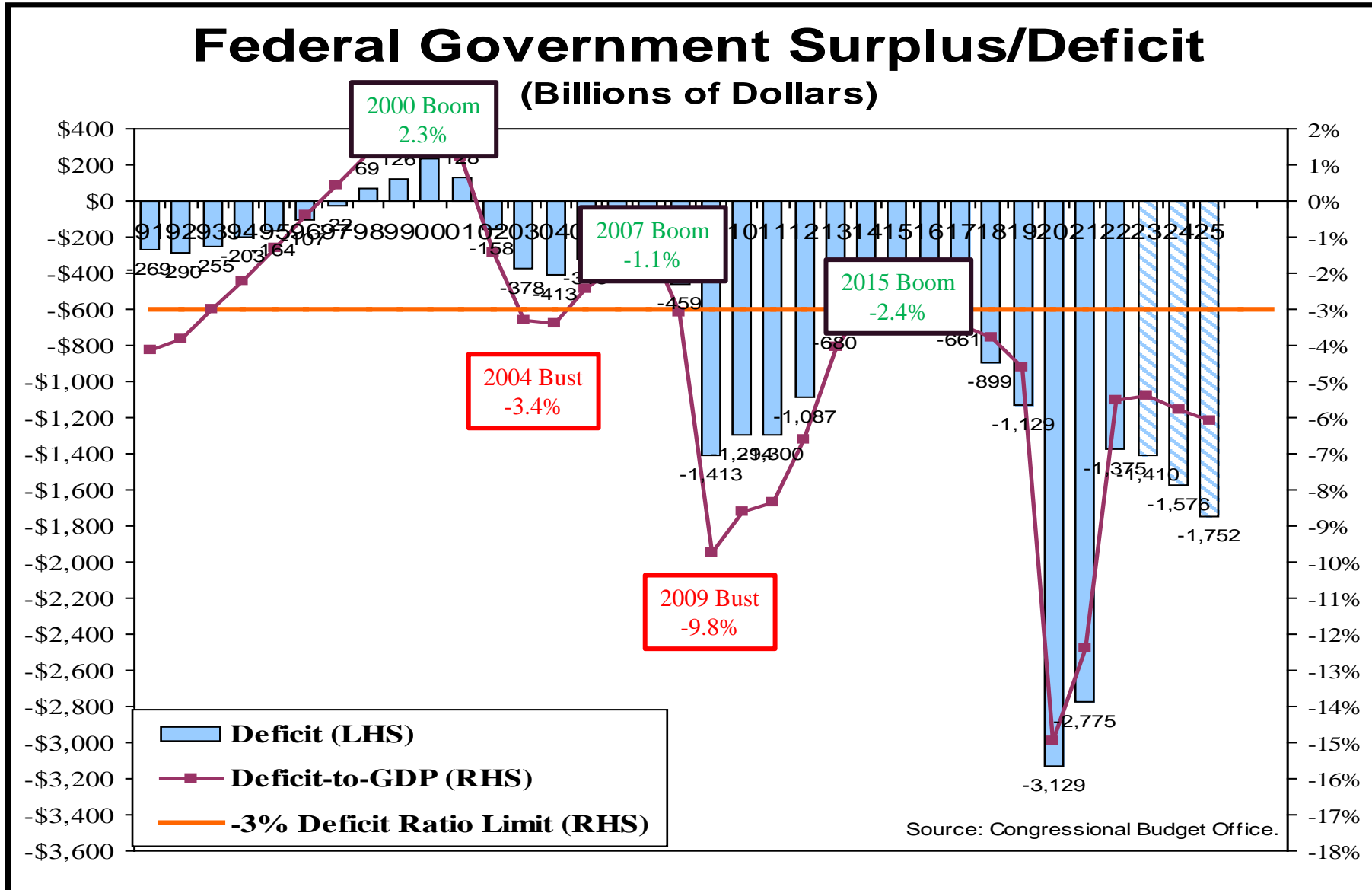
Deficits During Good Times and Bad



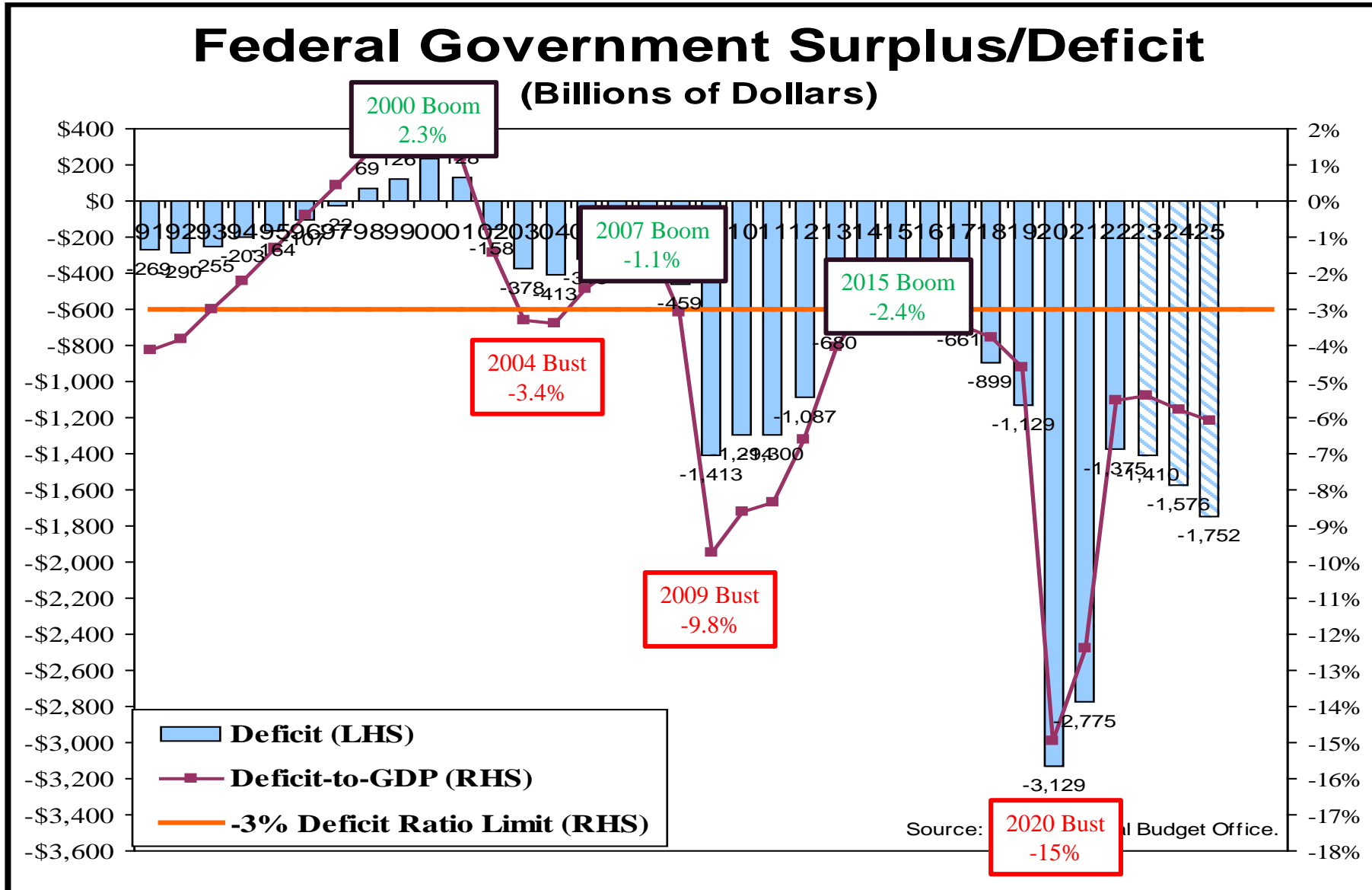
Deficits During Good Times and Bad



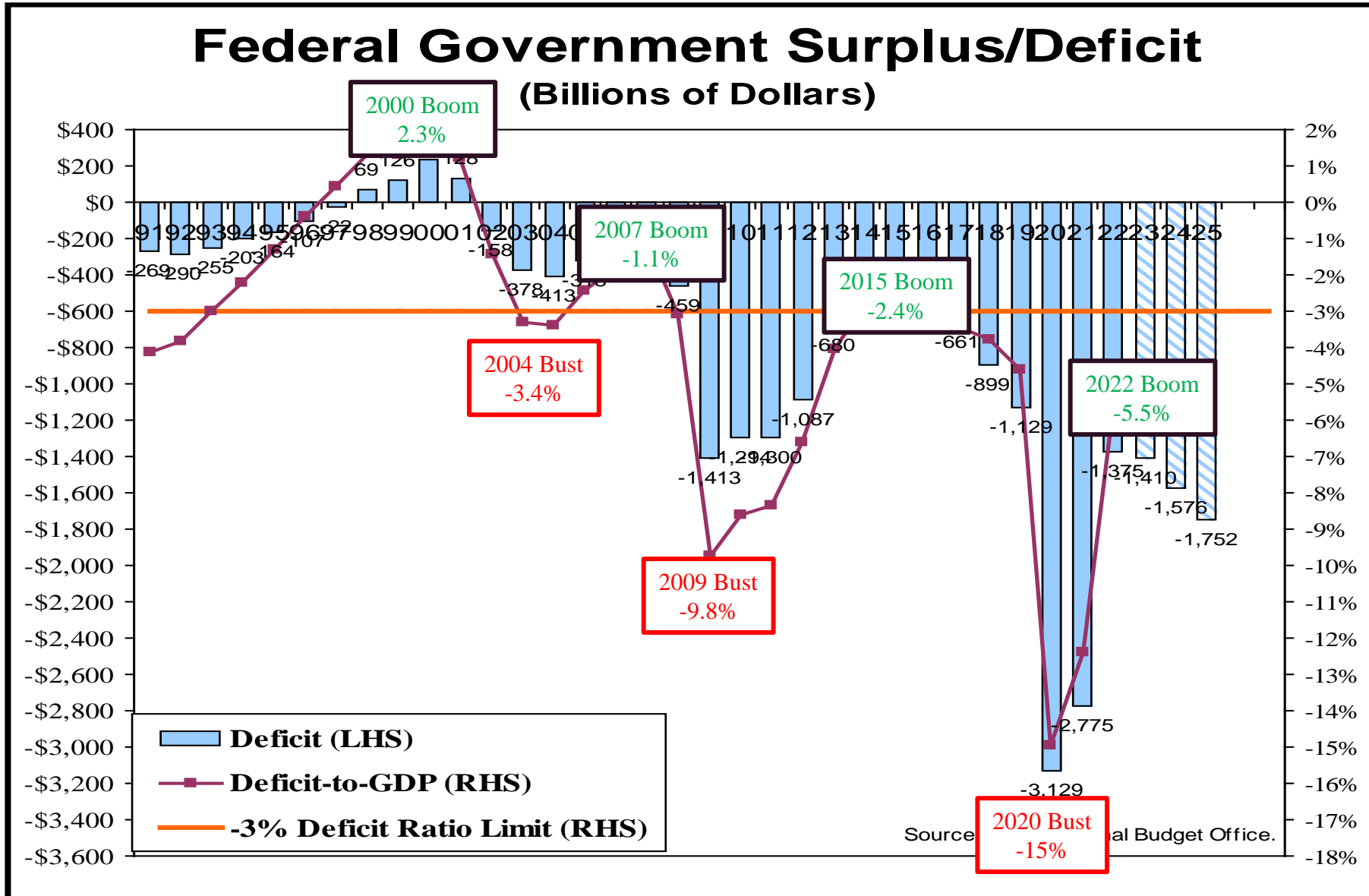
Deficits During Good Times and Bad



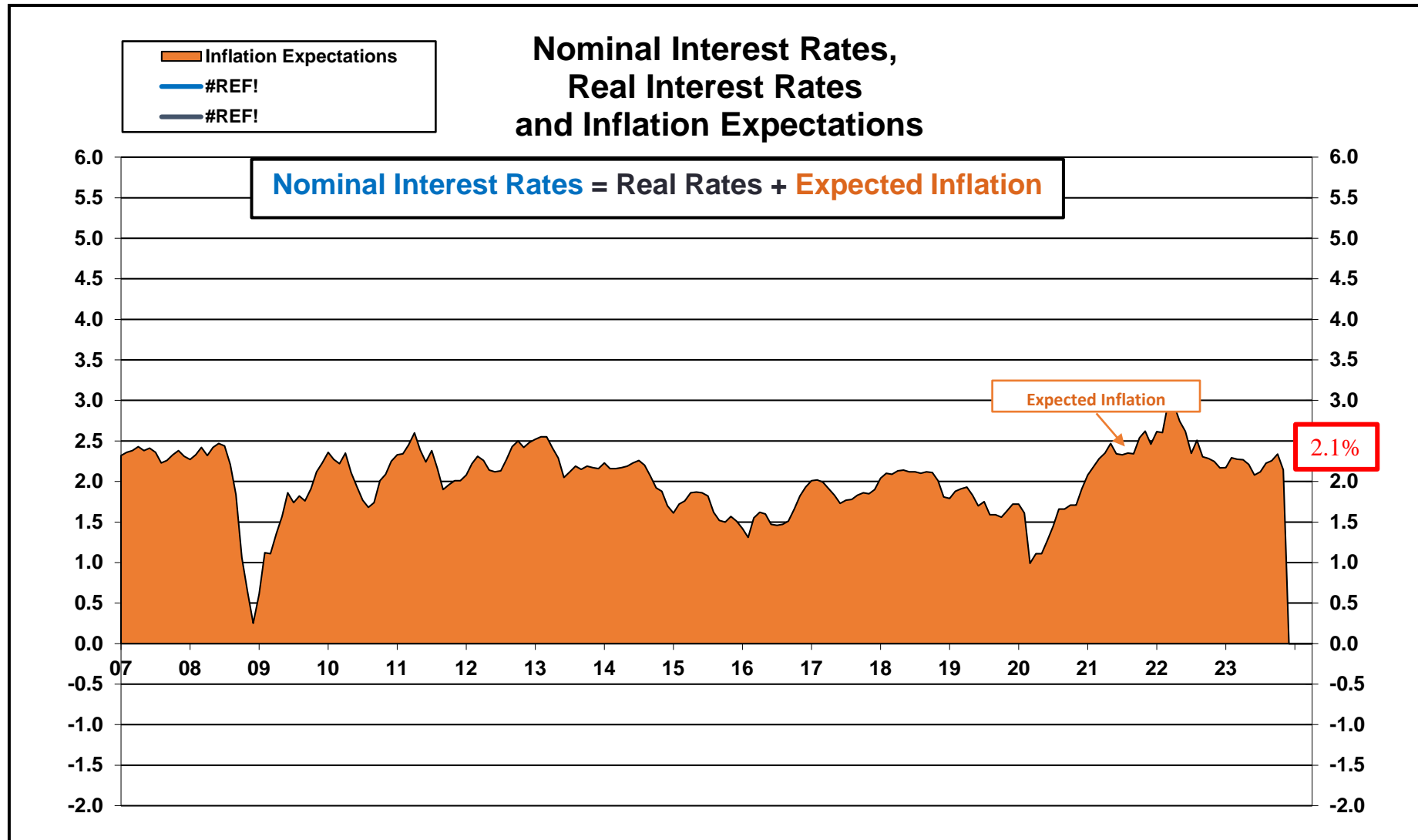
Deficits During Good Times and Bad



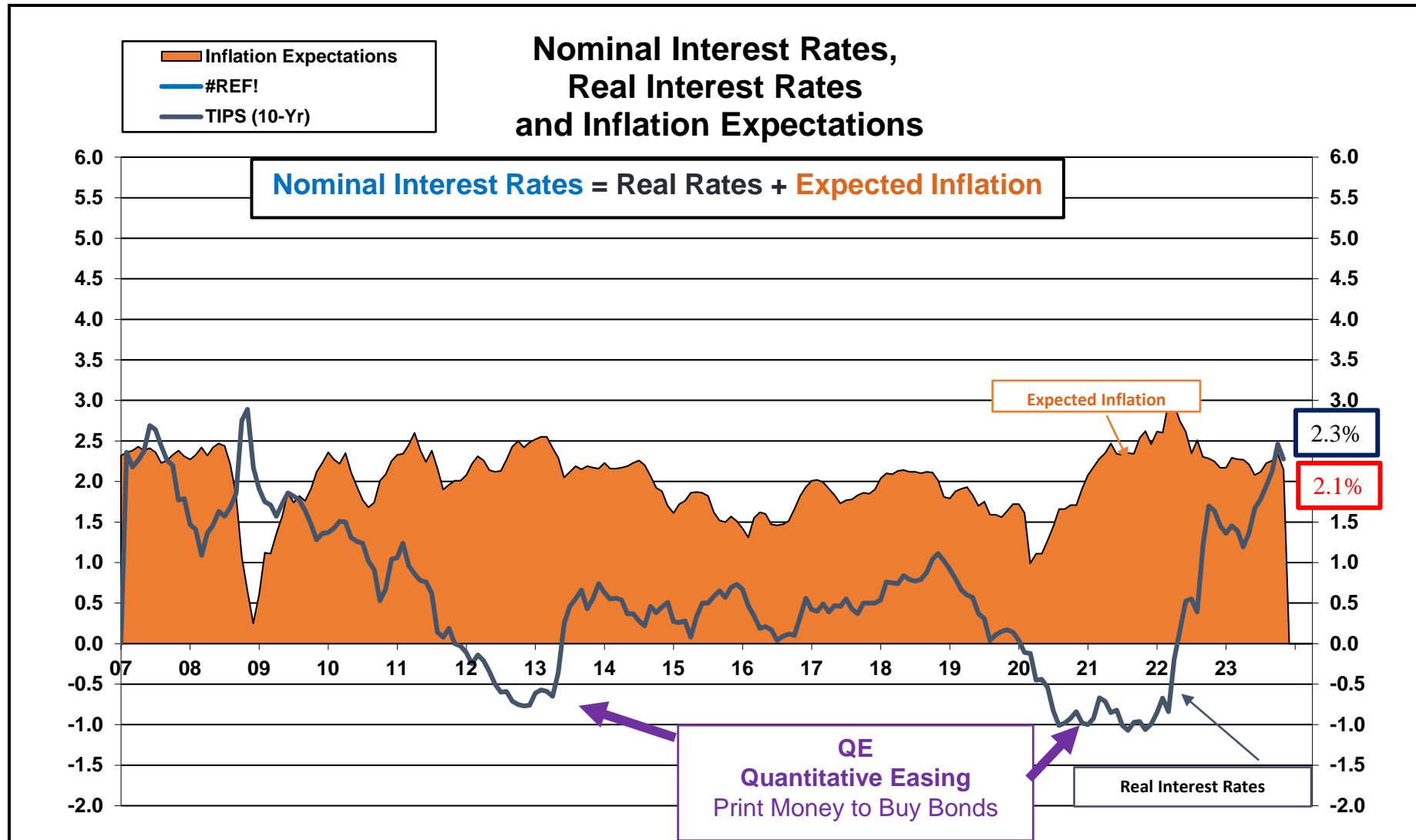
Deficits During Good Times and Bad



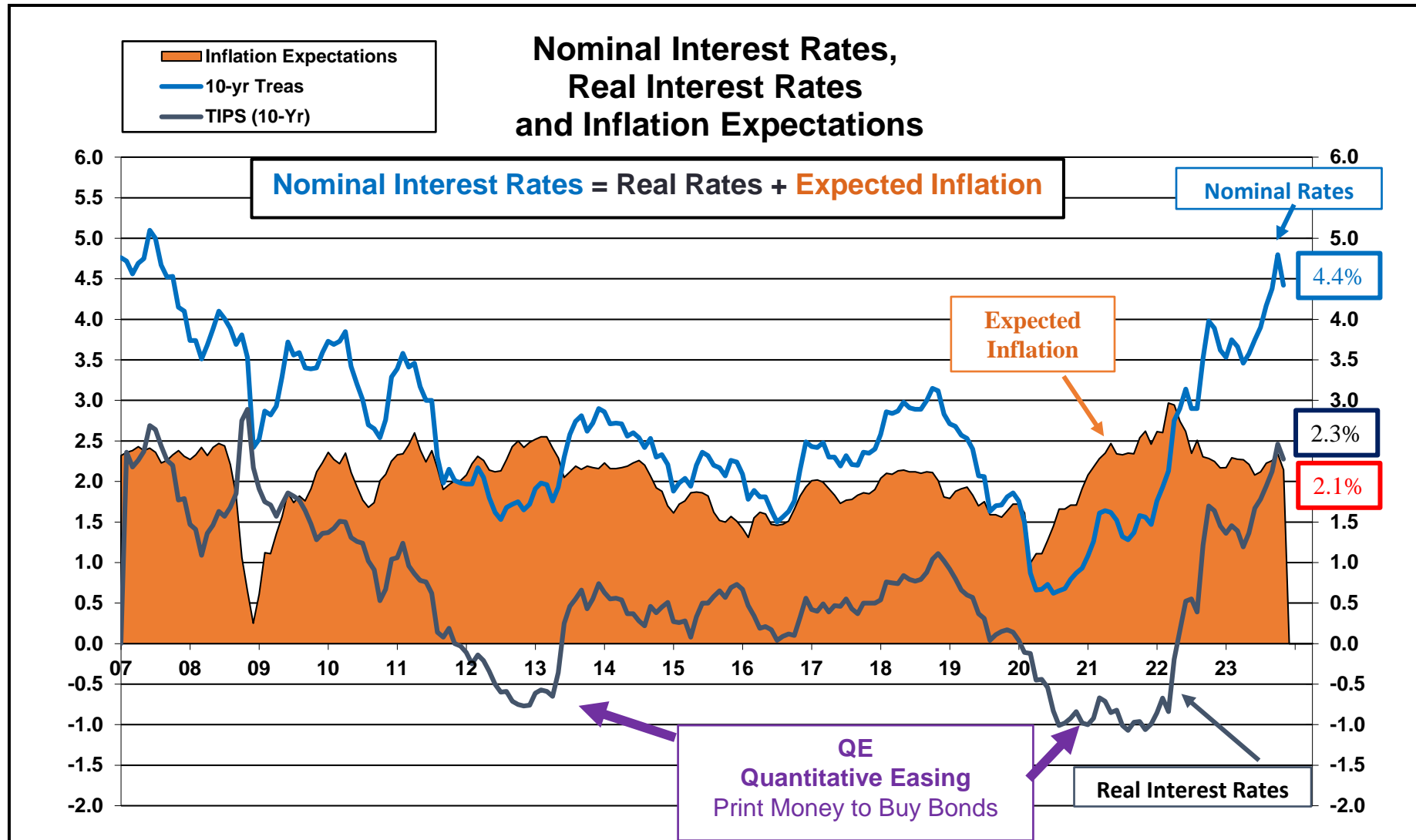
Rising Real Interest Rates are offsetting Falling Inflation Expectations to Push Up Nominal Interest Rates



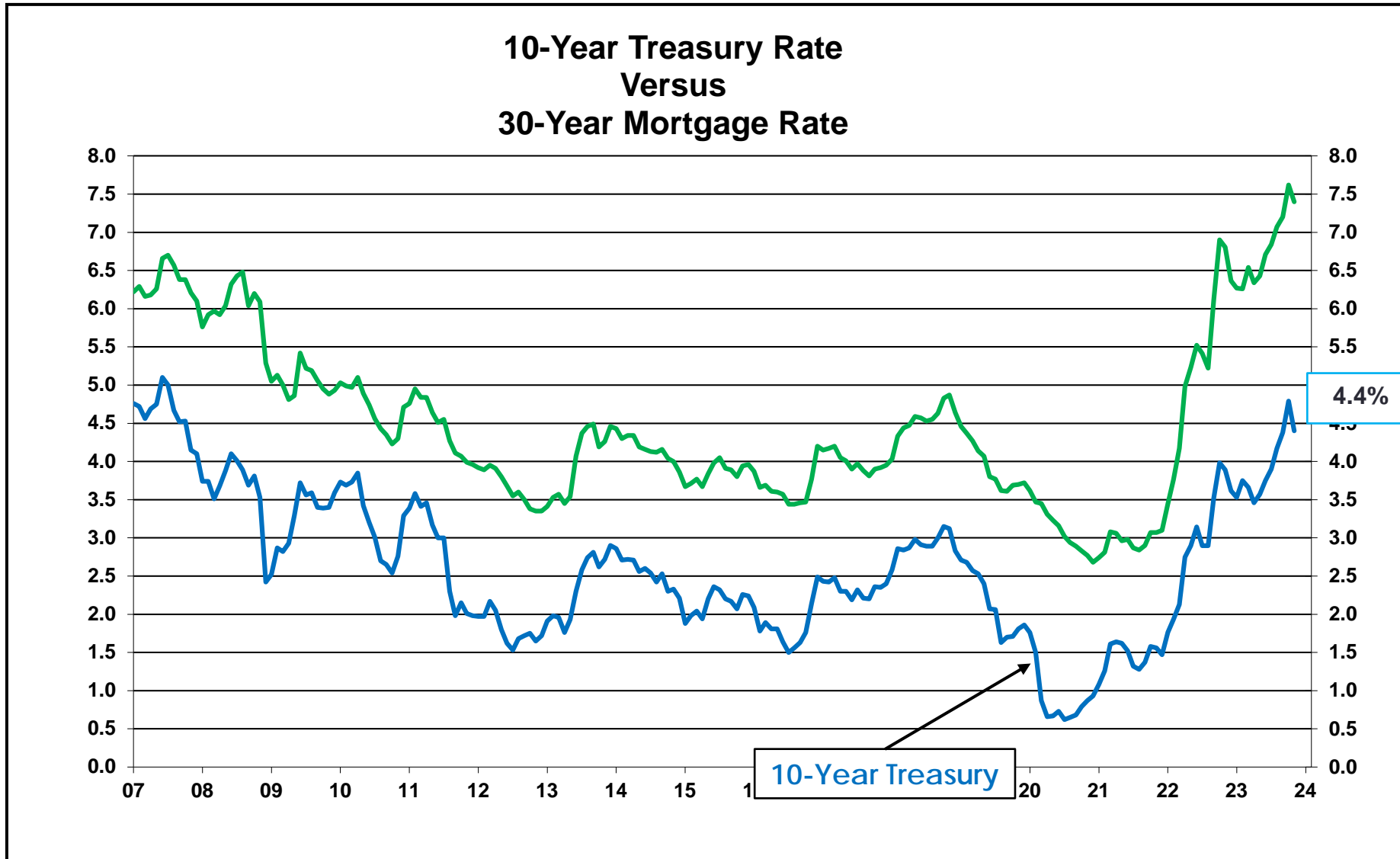
Rising Real Interest Rates are offsetting Falling Inflation Expectations to Push Up Nominal Interest Rates



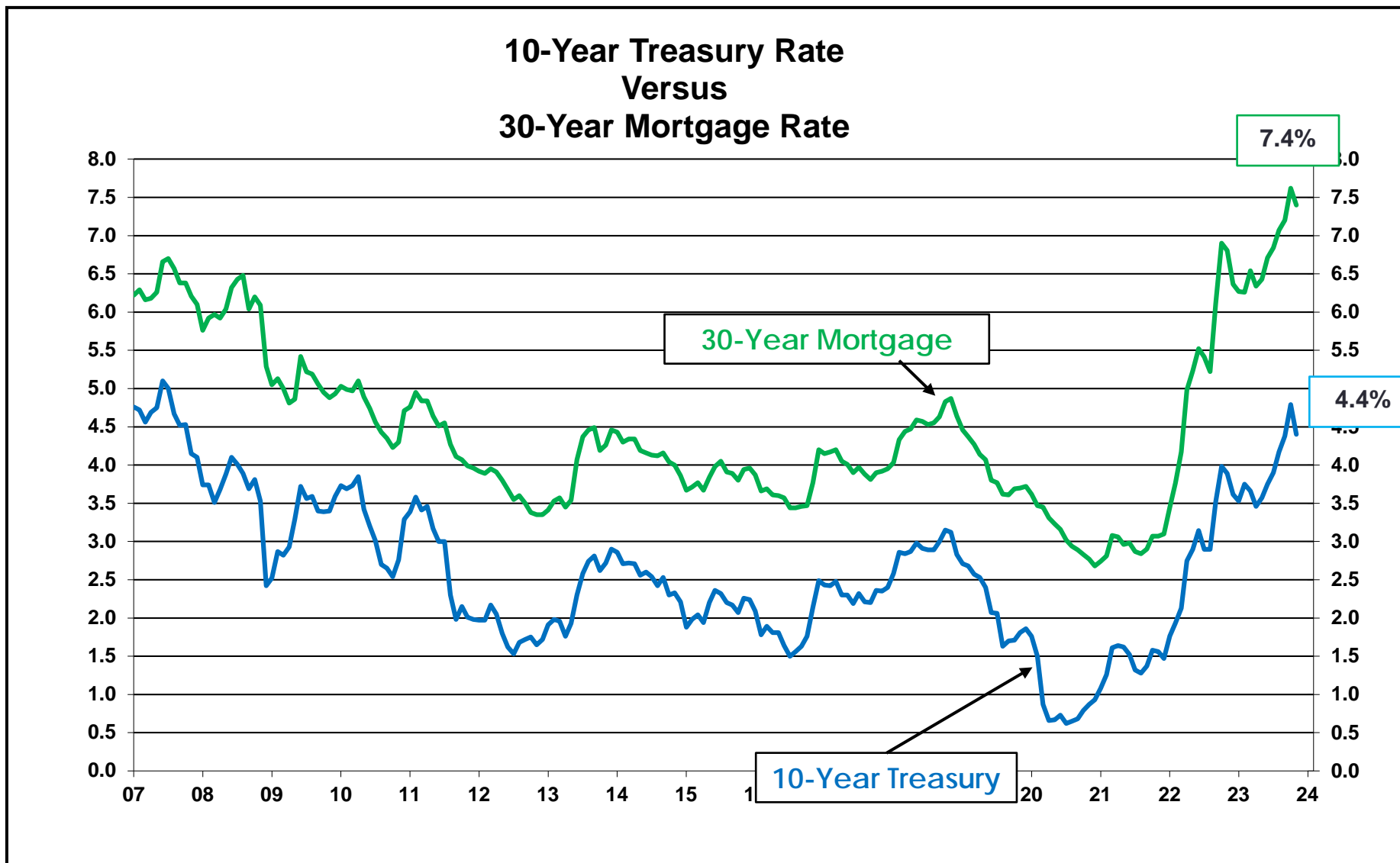
Rising Real Interest Rates are offsetting Falling Inflation Expectations to Push Up Nominal Interest Rates



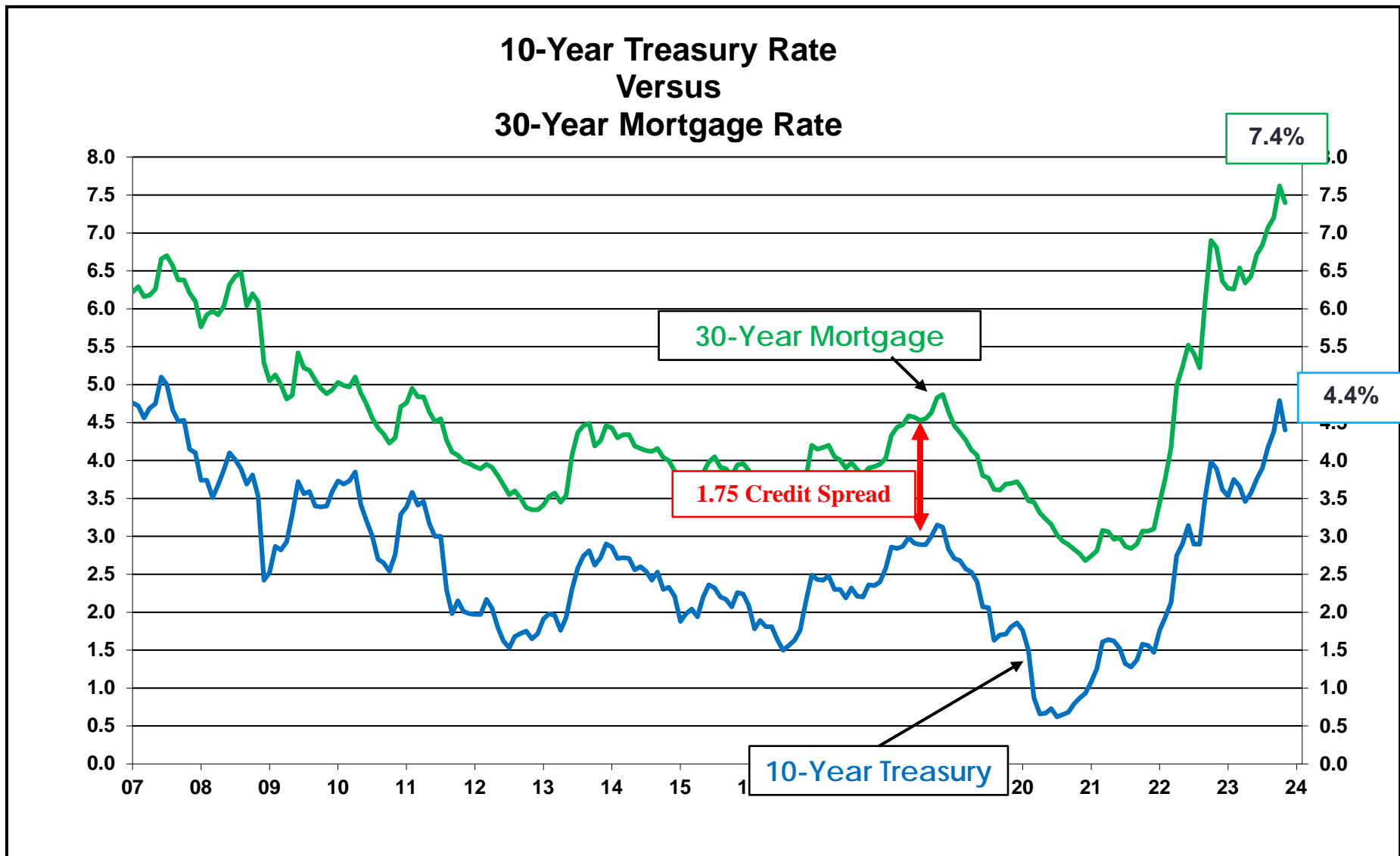
Rising Real Interest Rates, a Strong Economy and Falling Foreign Bond Demand is Pushing Up Nominal Interest Rates



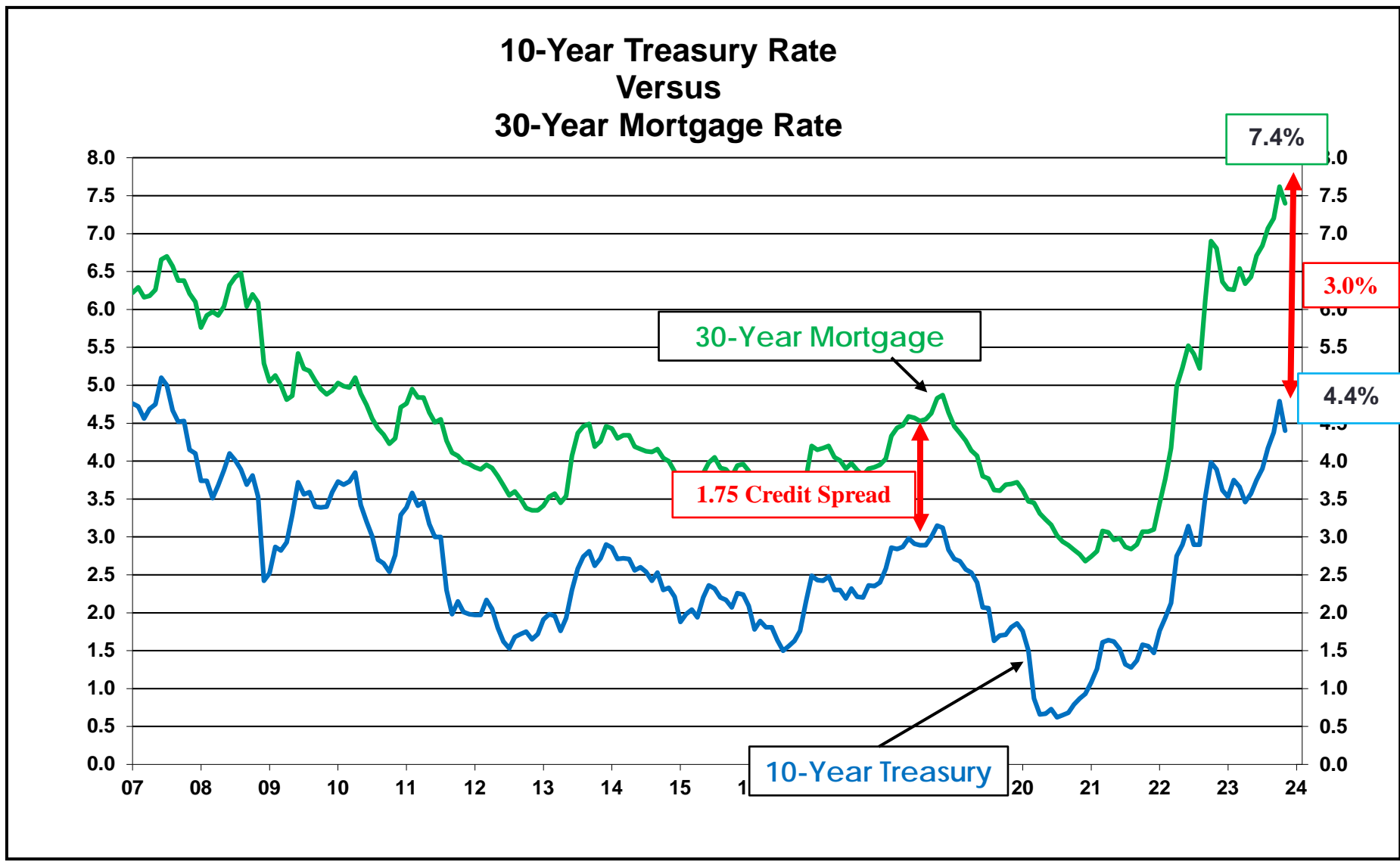
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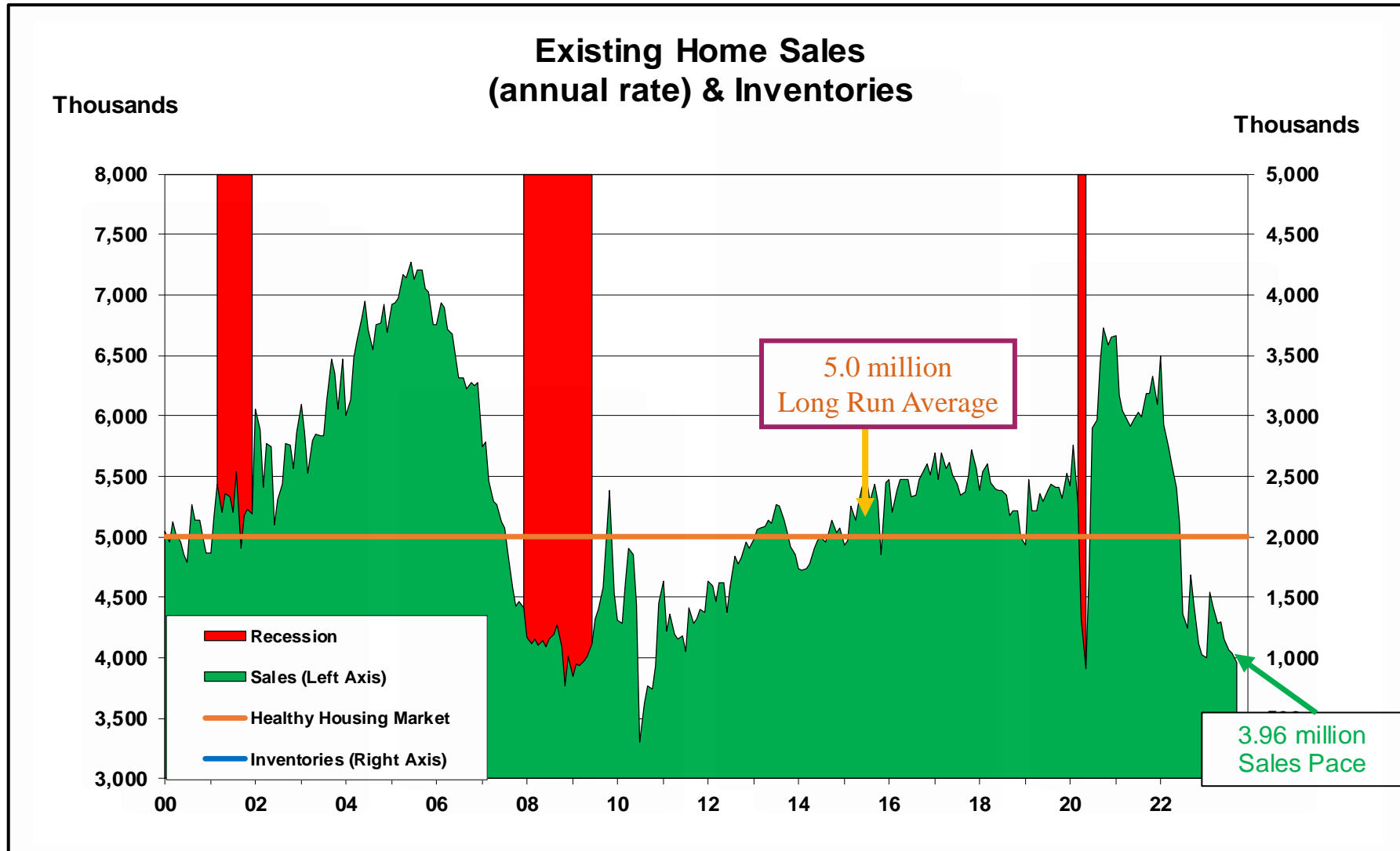
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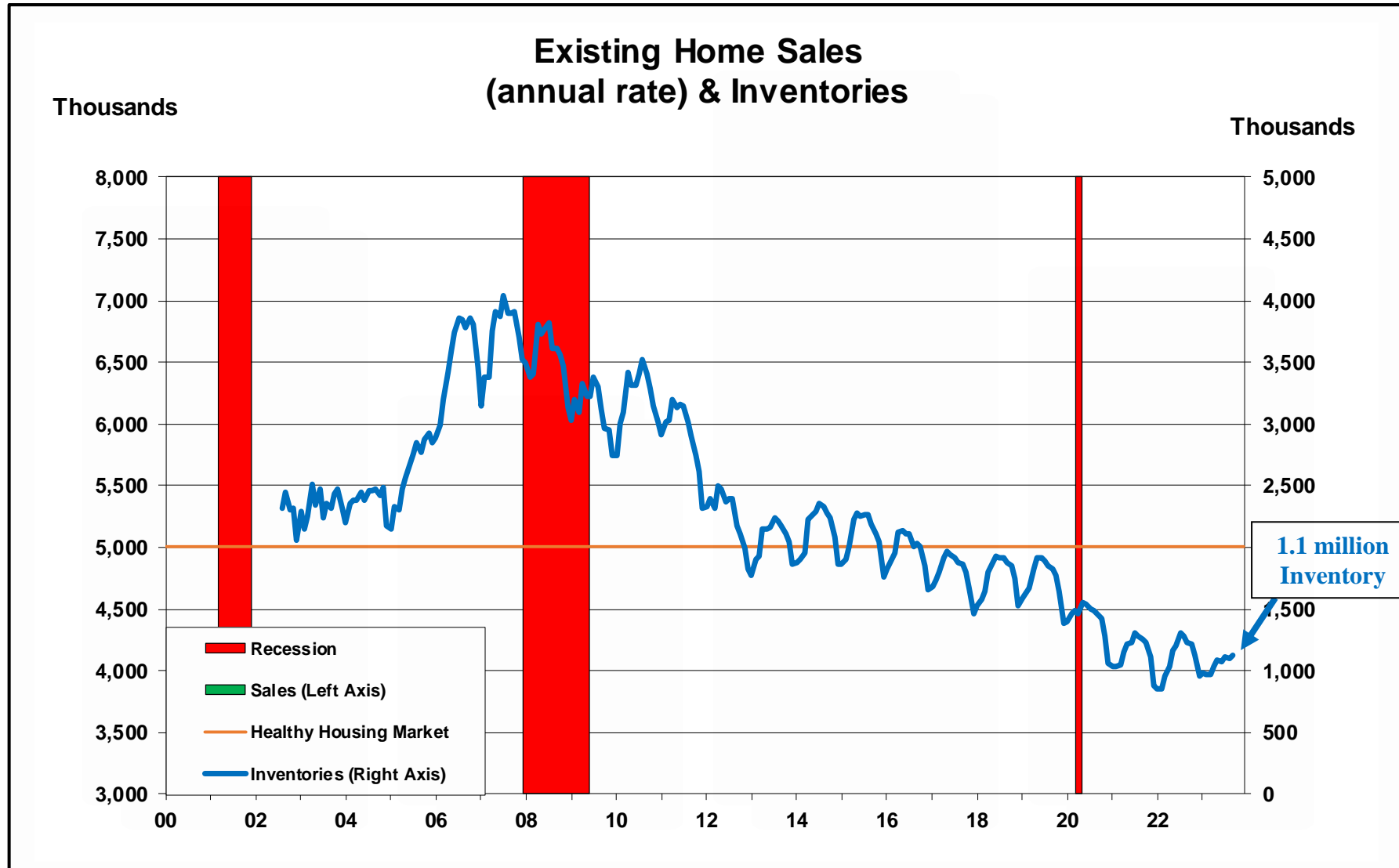
Rising Real Interest Rates, a Strong Economy and Falling Foreign Bond Demand is Pushing Up Nominal Interest Rates



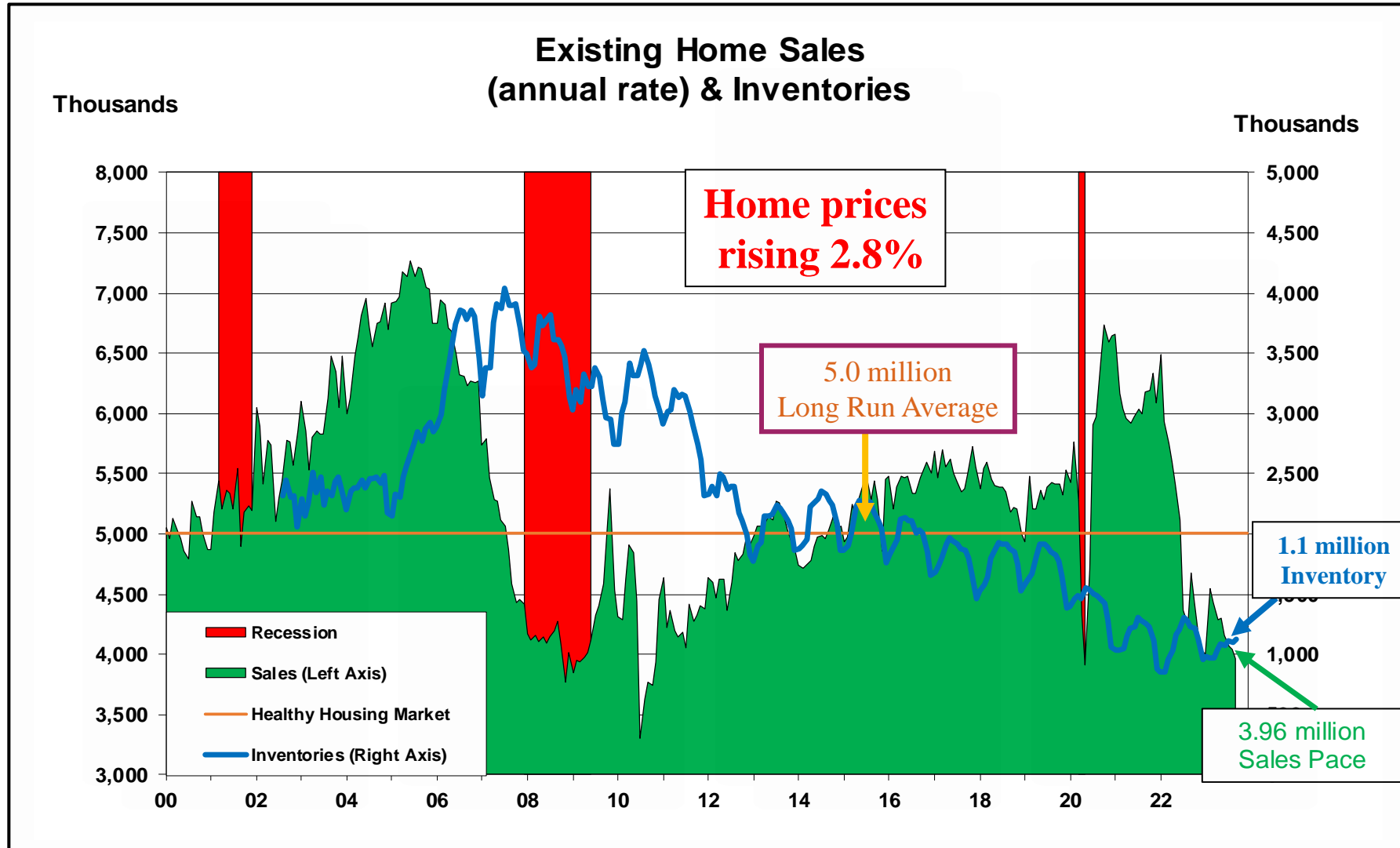
Home Sales are Weak, and Inventories are Low



Home Sales are Weak, and Inventories are Low

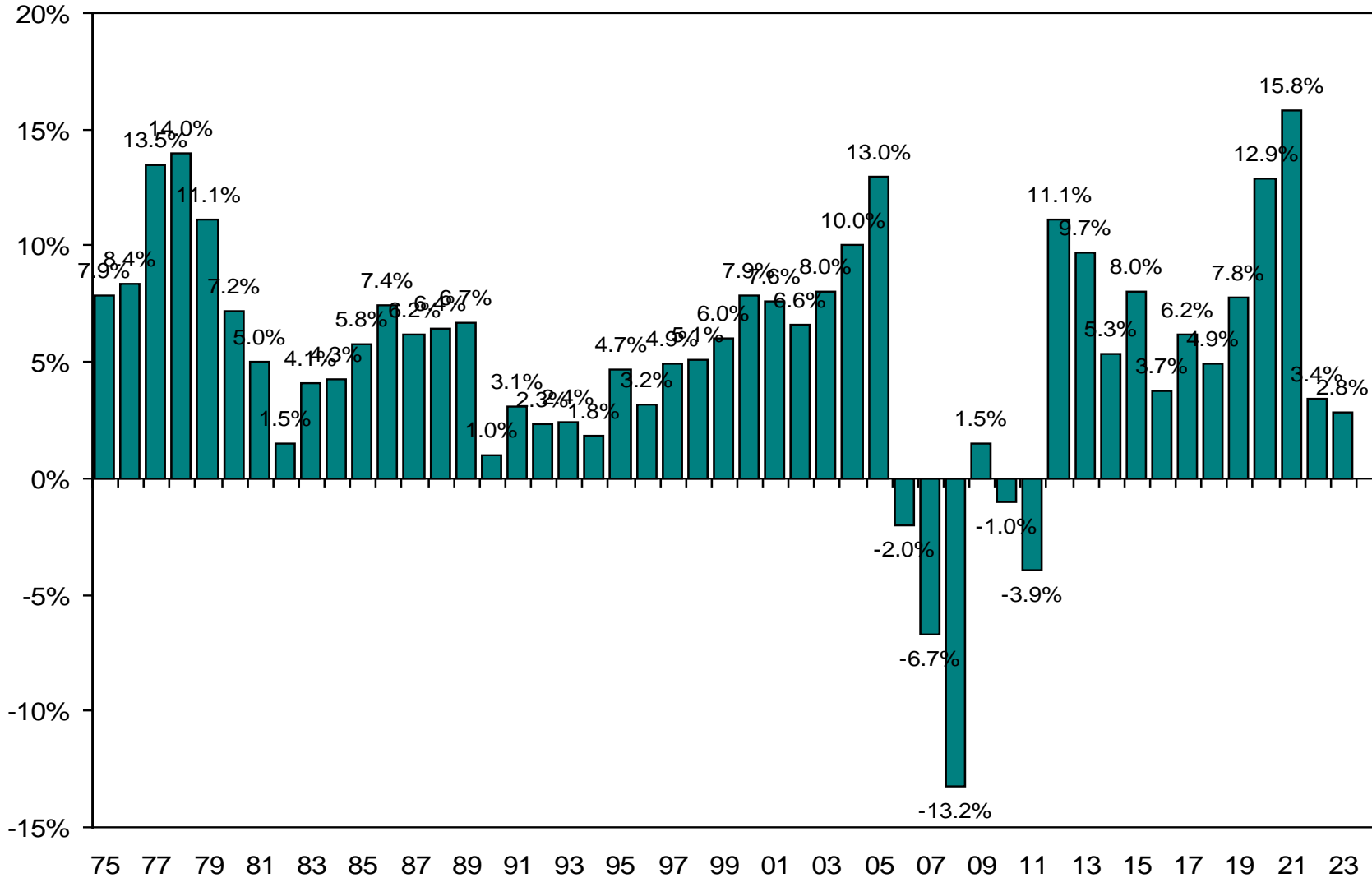


Home Sales are Weak, and Inventories are Low



Median Existing Home Prices

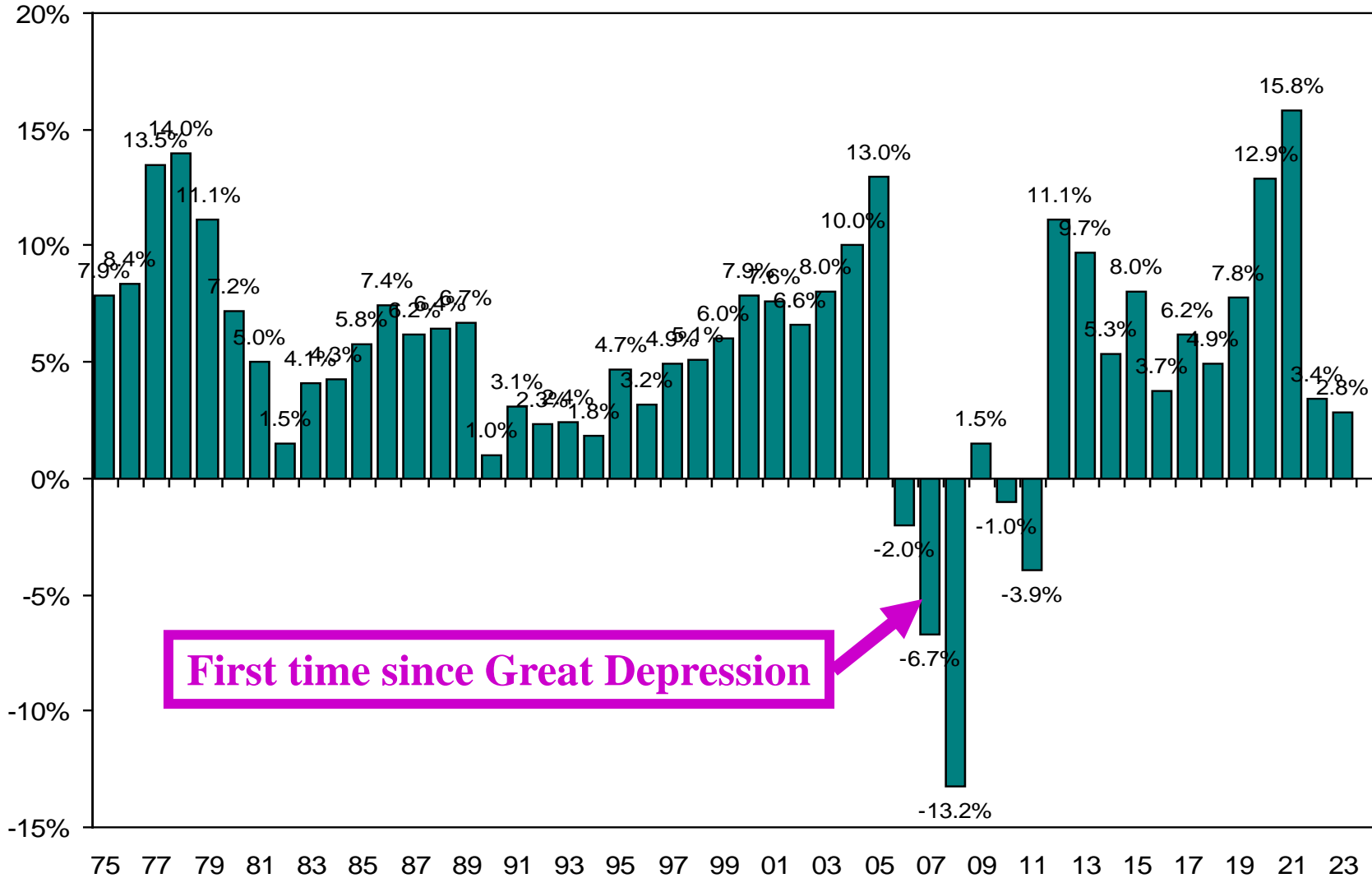
(Nominal Annual Home Price Increases)



Source: National Association of Realtors.

Median Existing Home Prices

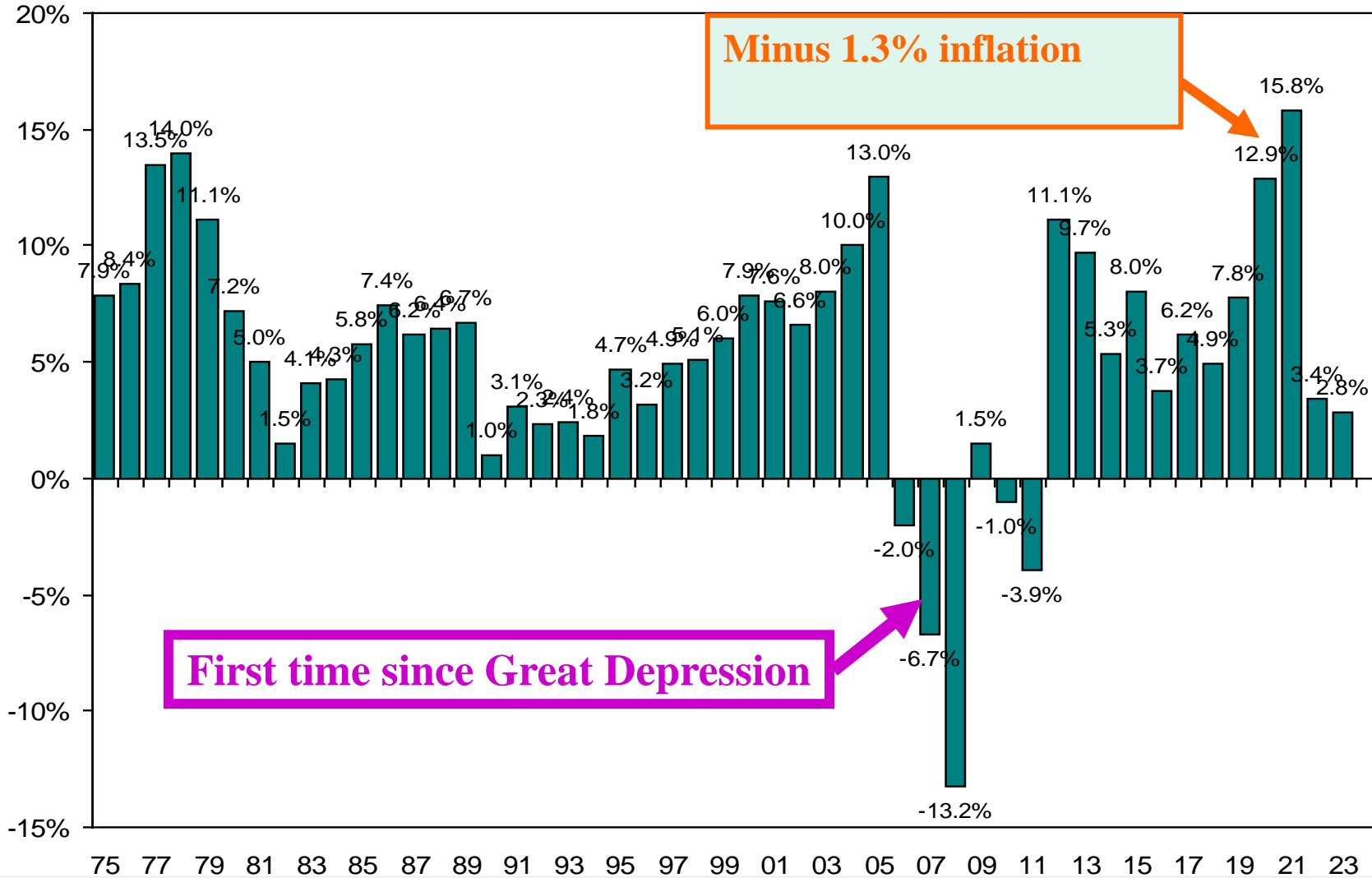
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Median Existing Home Prices

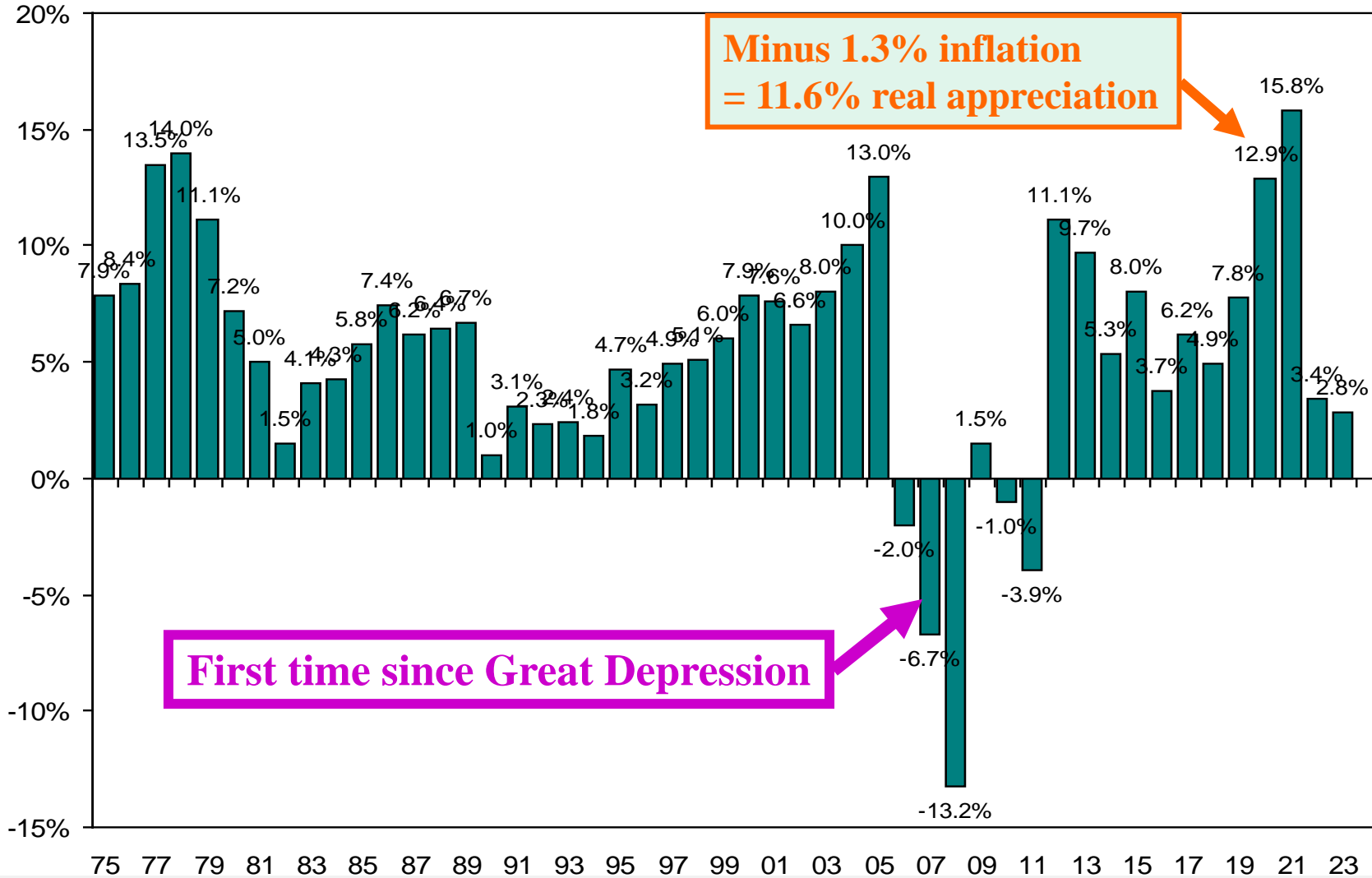
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Median Existing Home Prices

(Nominal Annual Home Price Increases)

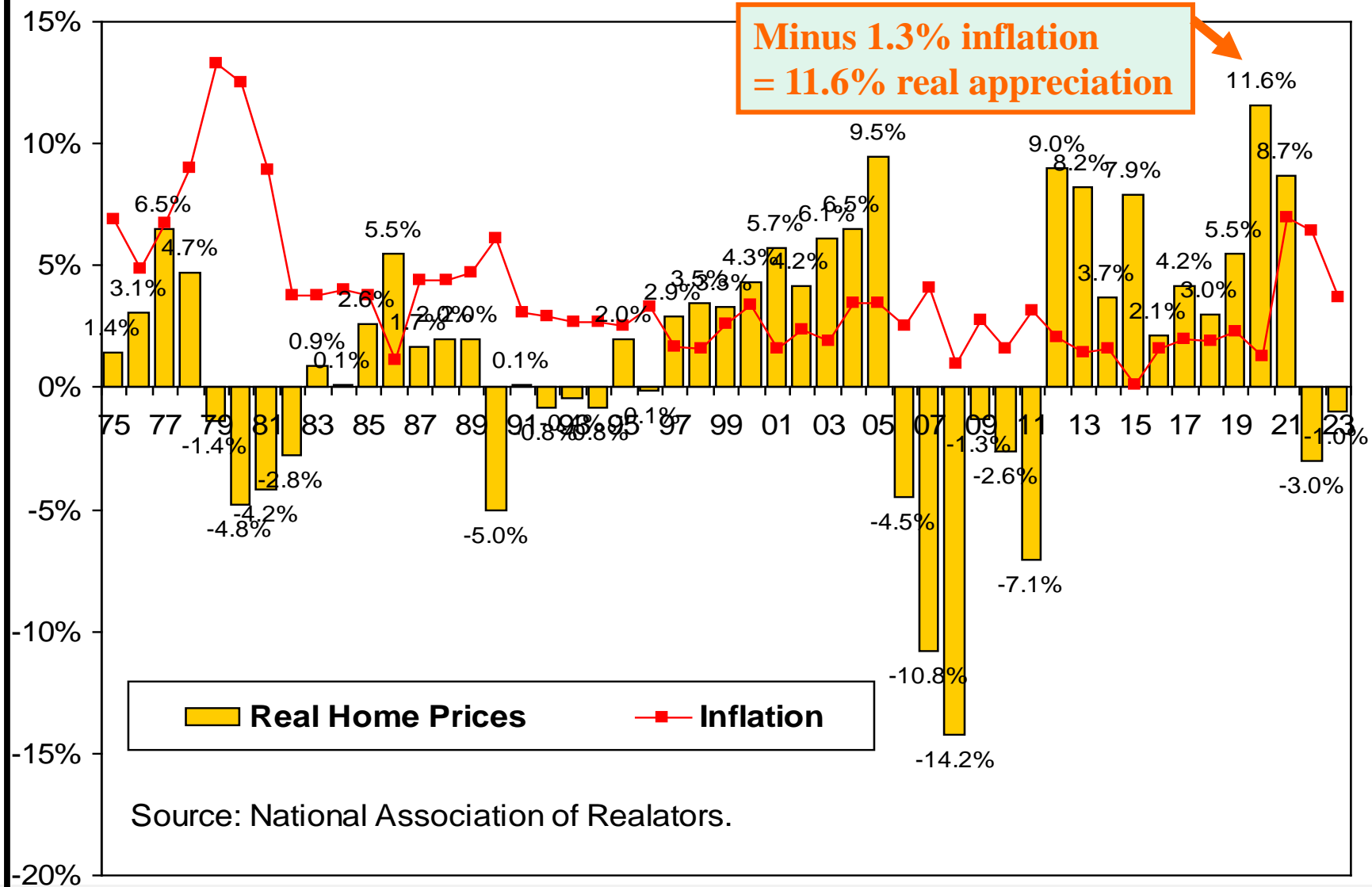


First time since Great Depression

Source: National Association of Realtors.

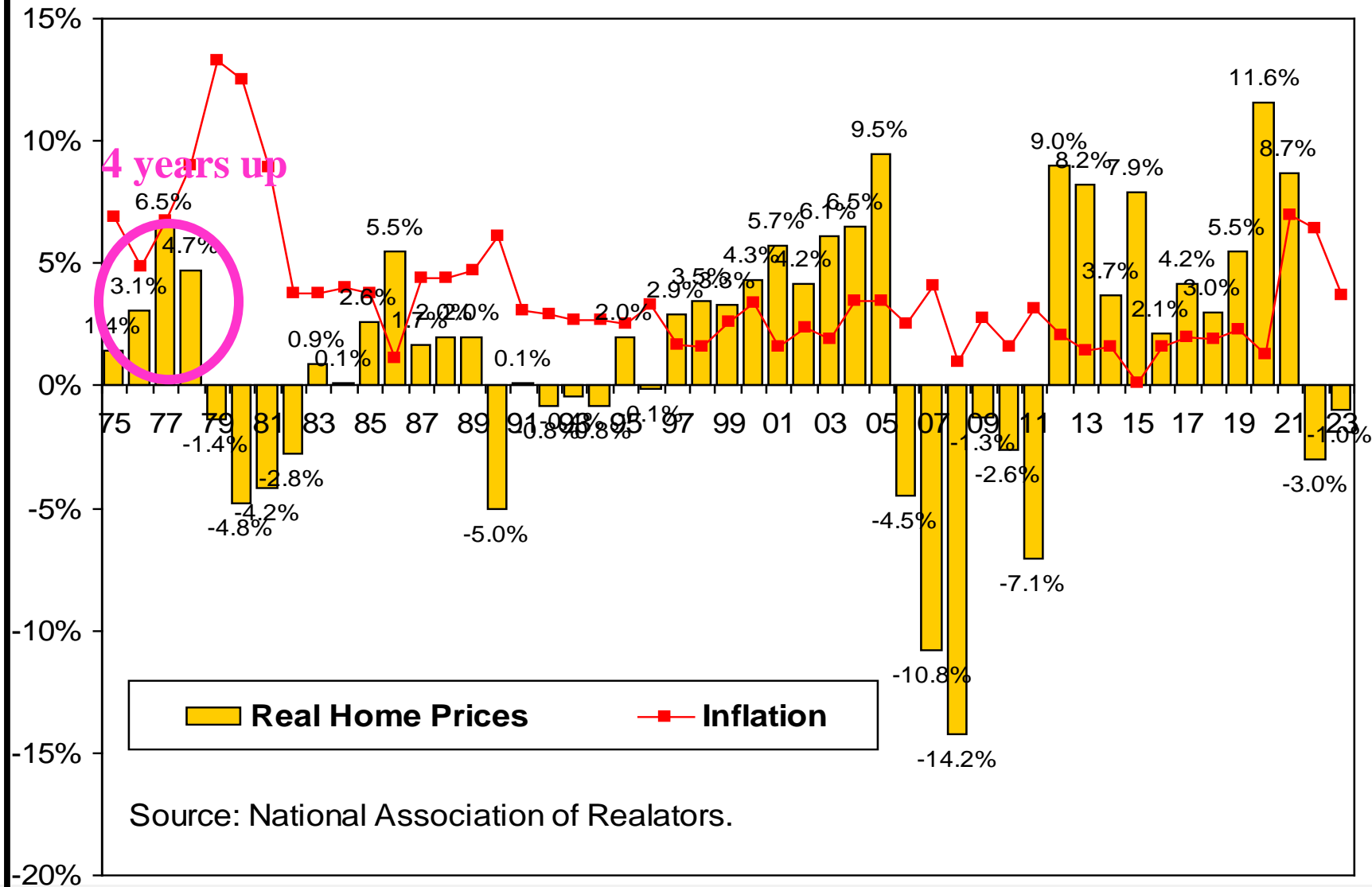
The Housing Cycle

(Inflation-Adjusted Annual Home Price Increases)



The Housing Cycle

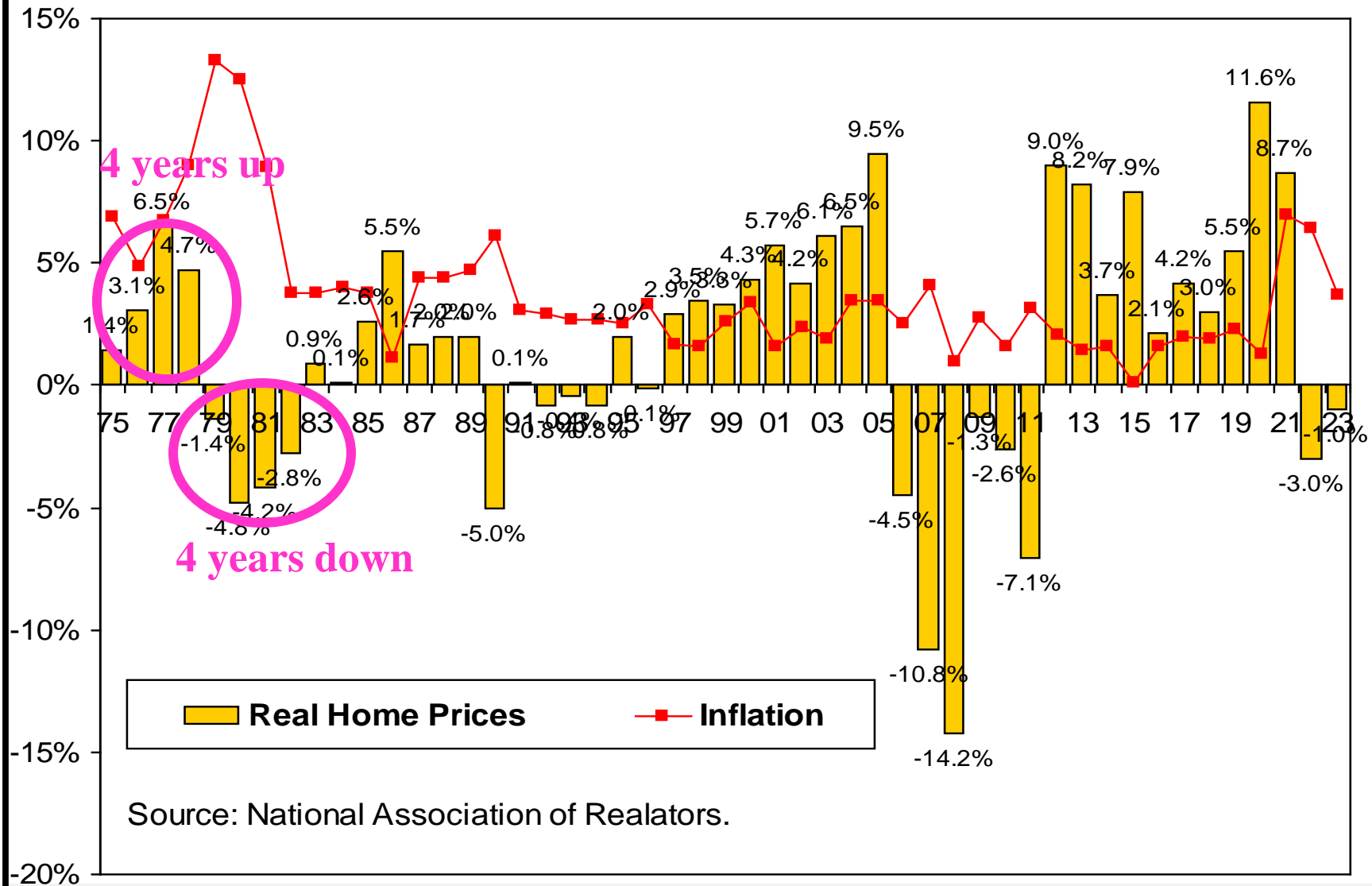
(Inflation-Adjusted Annual Home Price Increases)



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The Housing Cycle

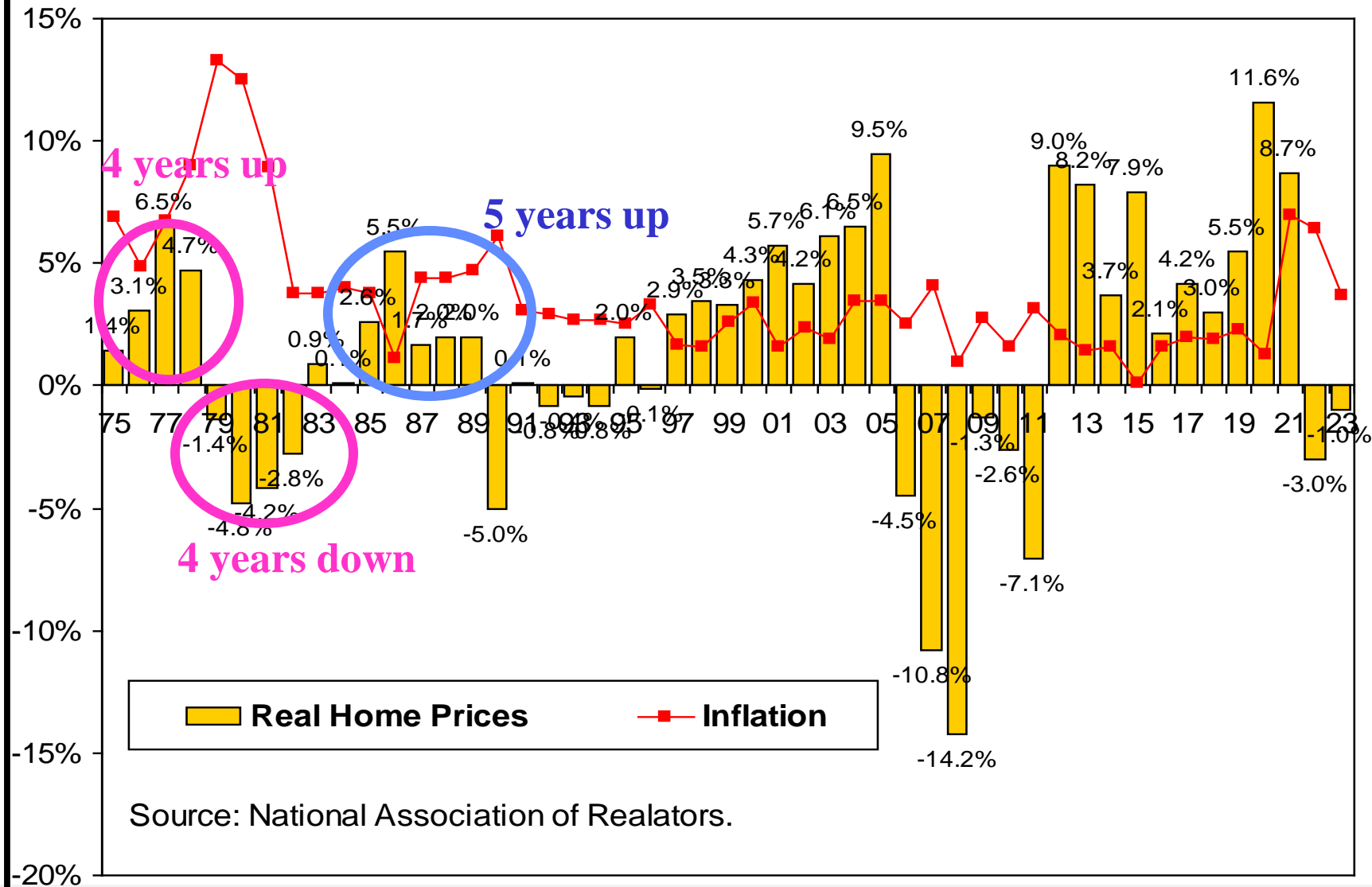
(Inflation-Adjusted Annual Home Price Increases)



Source: National Association of Realtors.

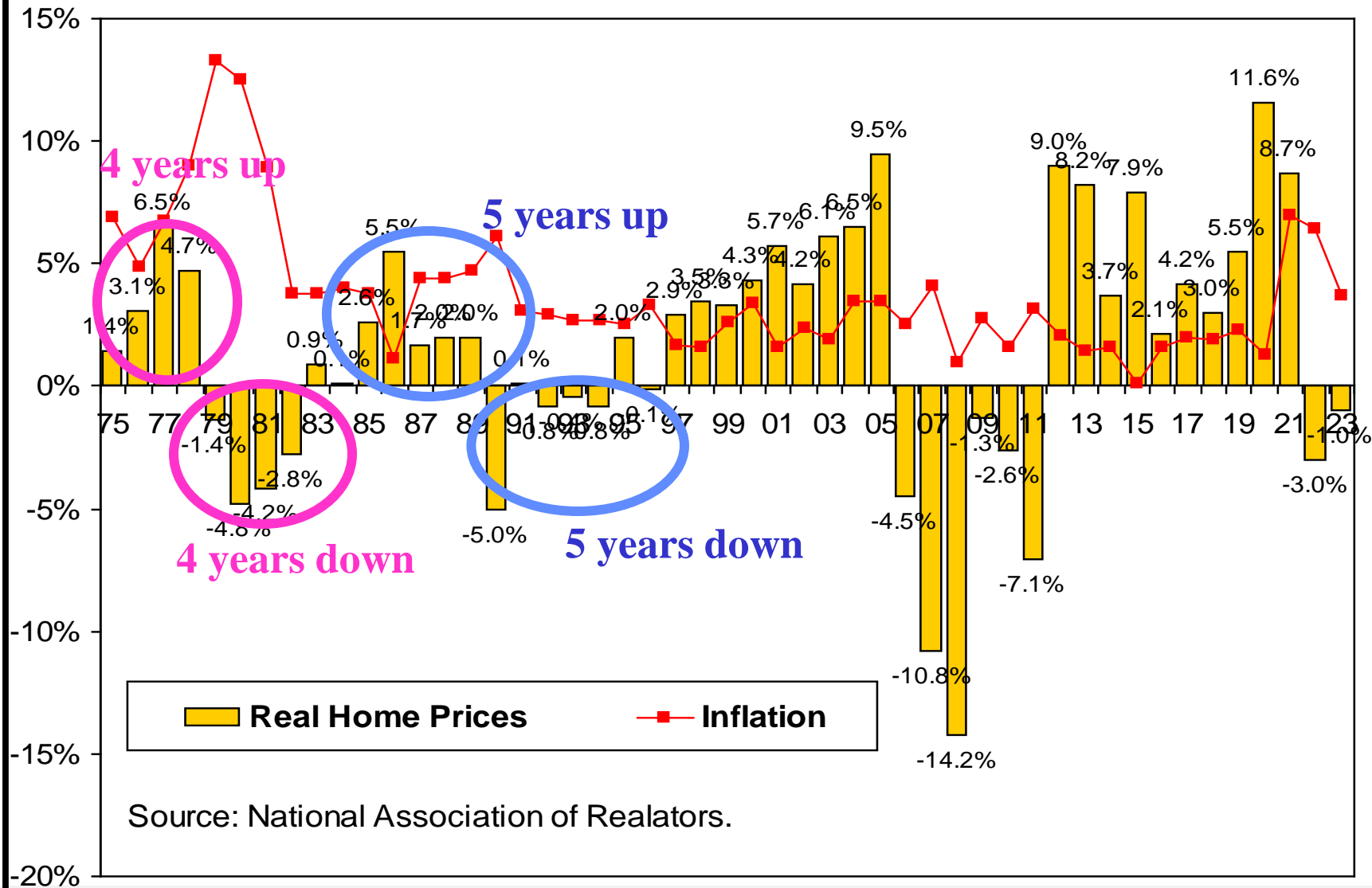
The Housing Cycle

(Inflation-Adjusted Annual Home Price Increases)



The Housing Cycle

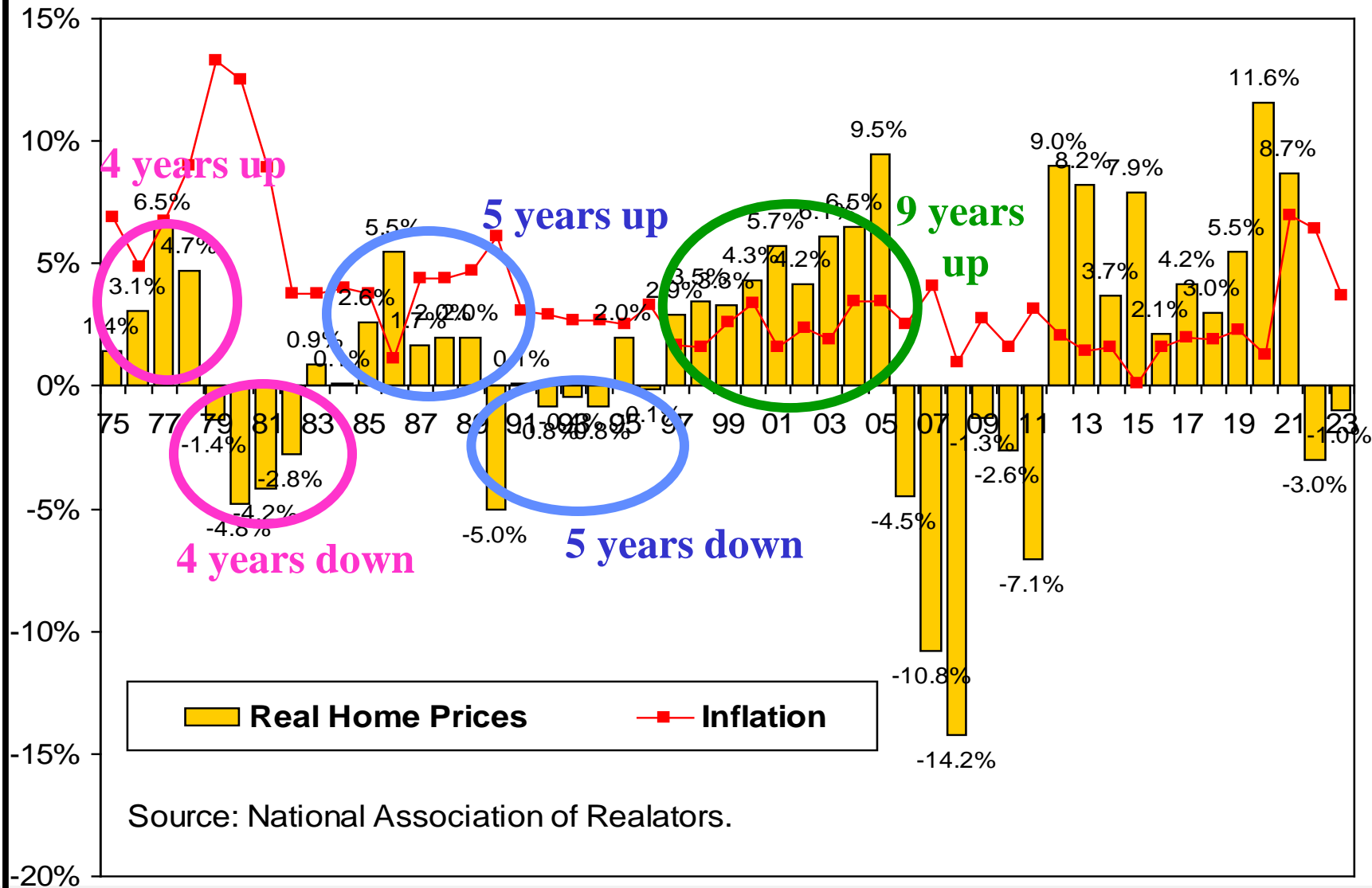
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The Housing Cycle

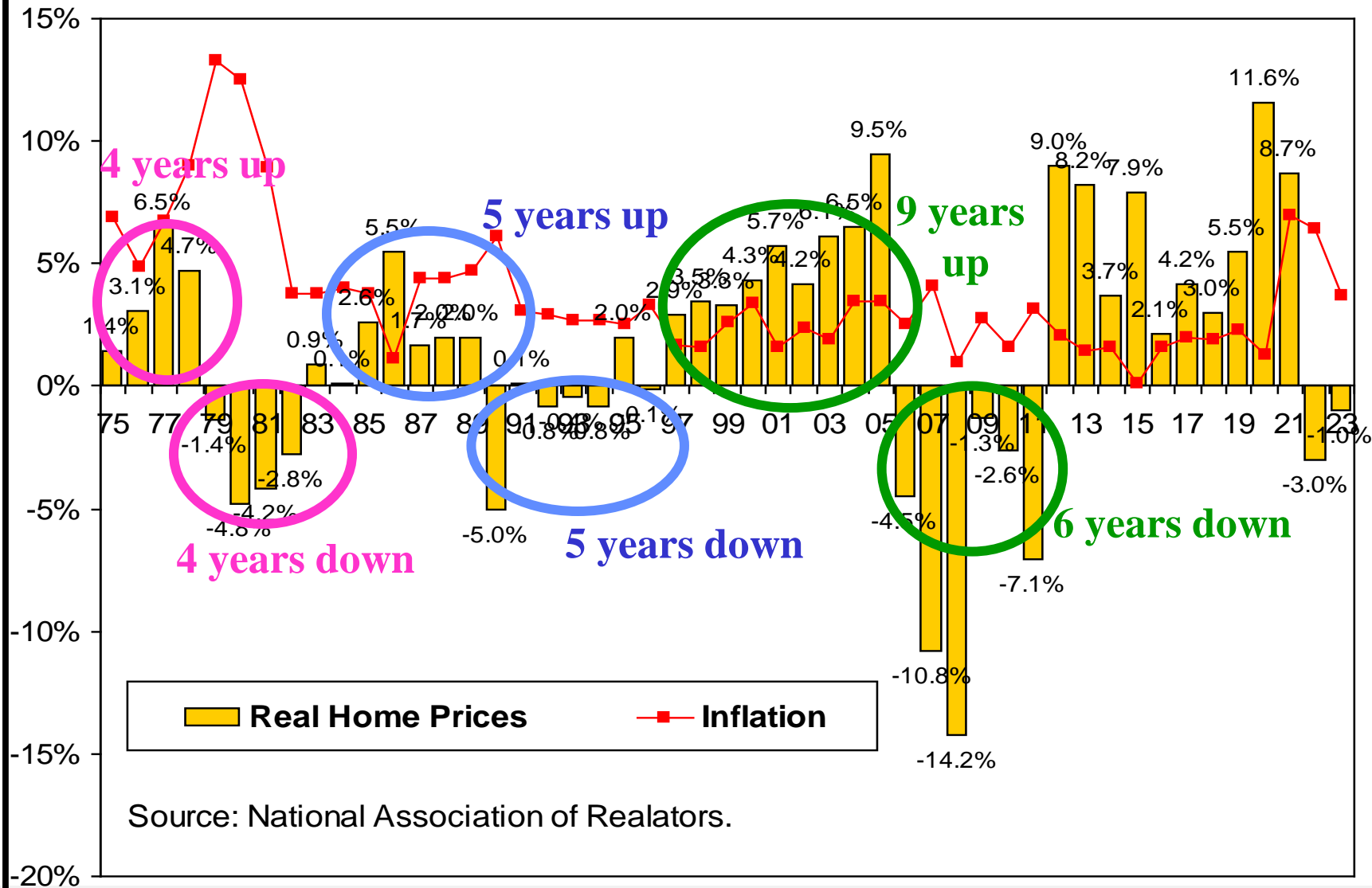
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The Housing Cycle

(Inflation-Adjusted Annual Home Price Increases)

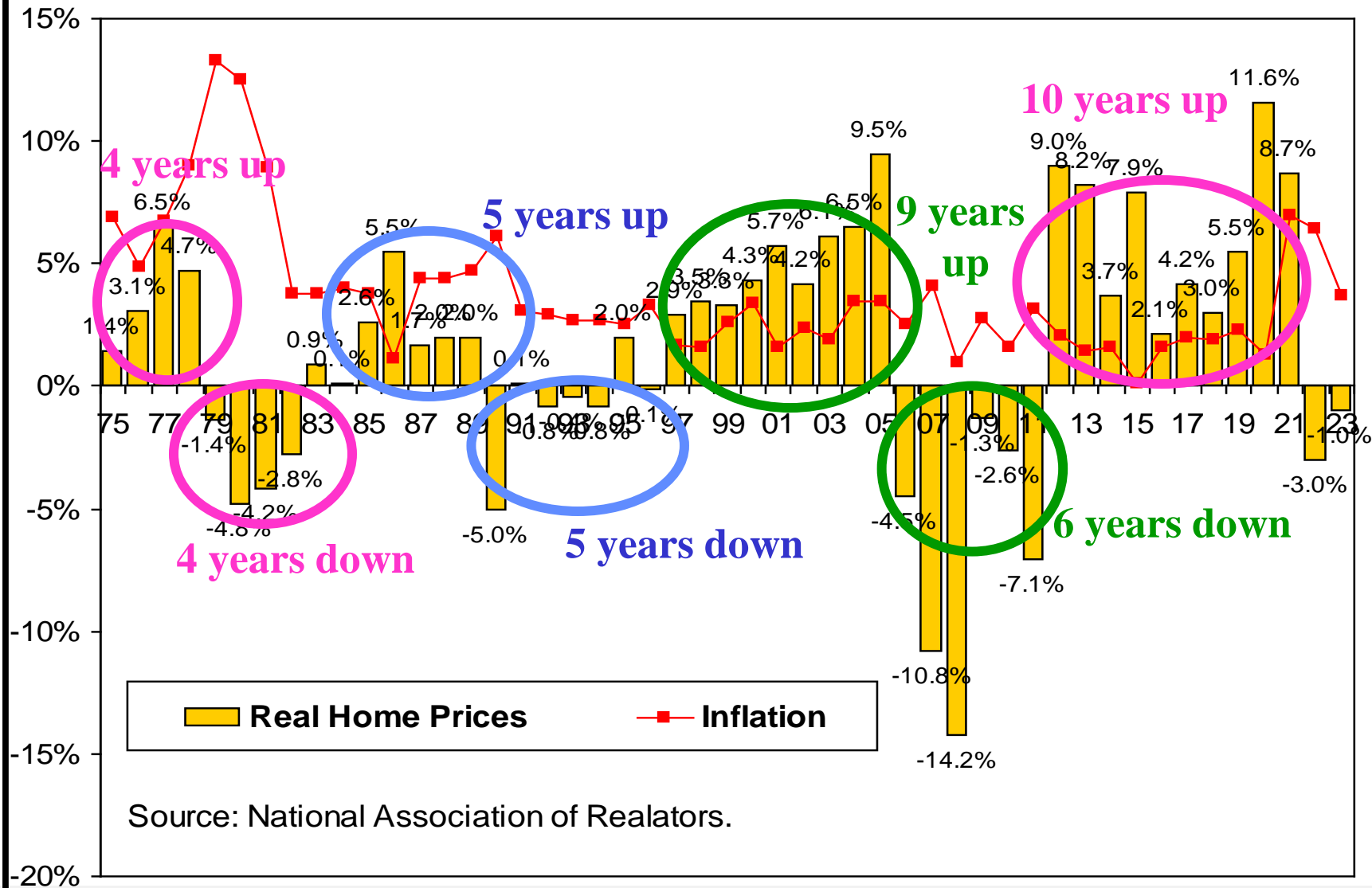


Real Home Prices
 Inflation

Source: National Association of Realtors.

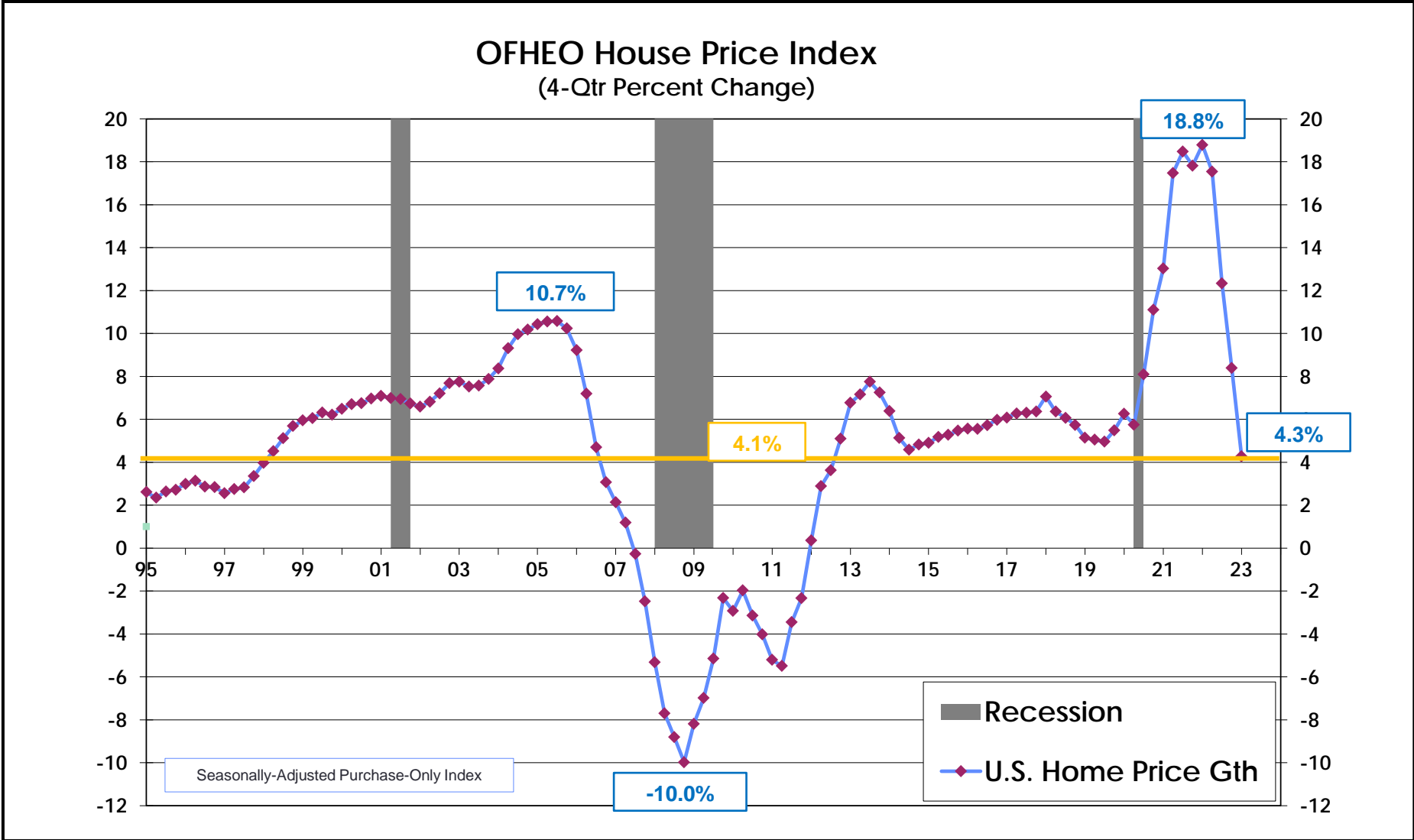
The Housing Cycle

(Inflation-Adjusted Annual Home Price Increases)

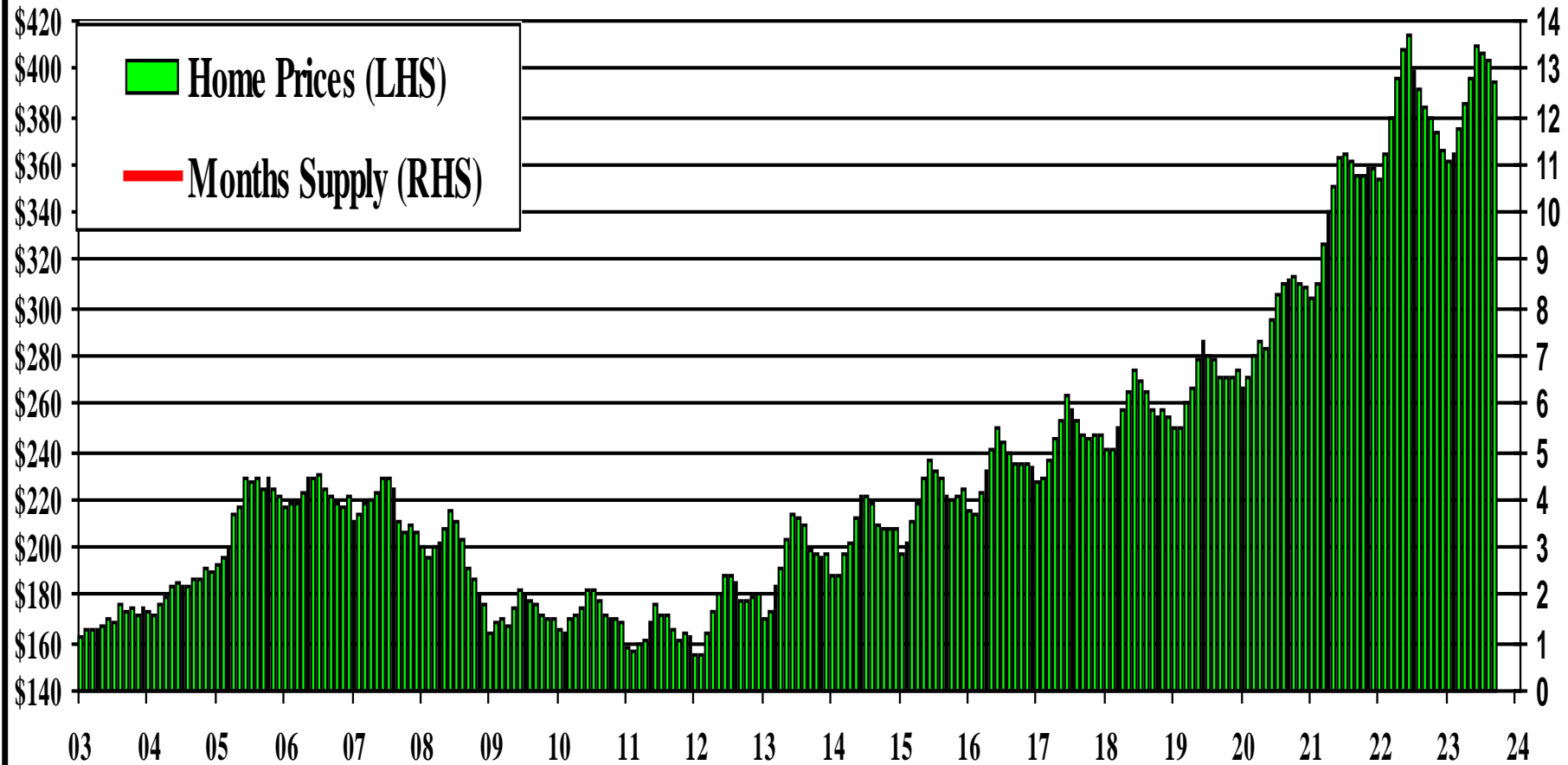


Source: National Association of Realtors.

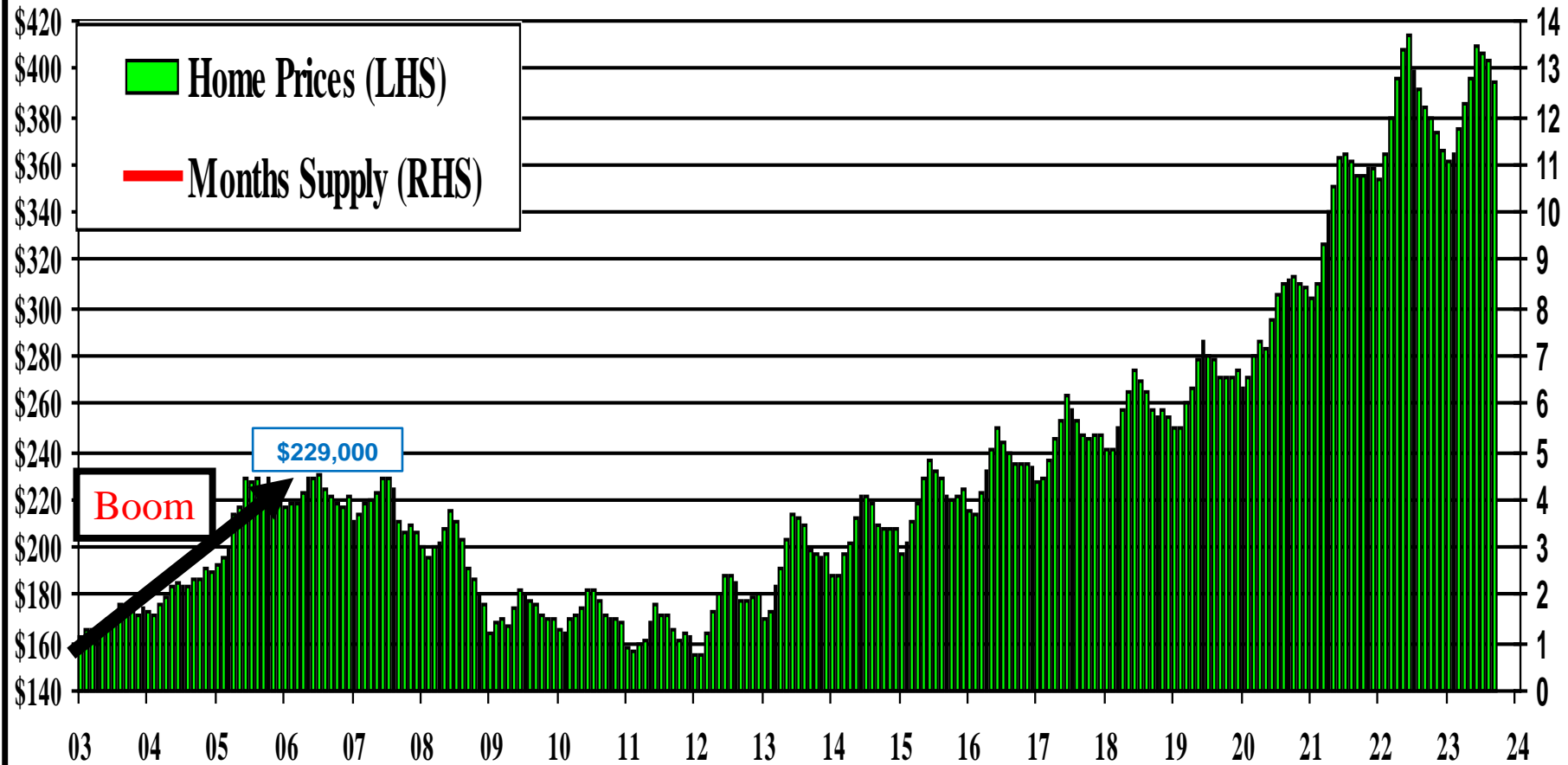
Home Price Appreciation are at Long Run Levels



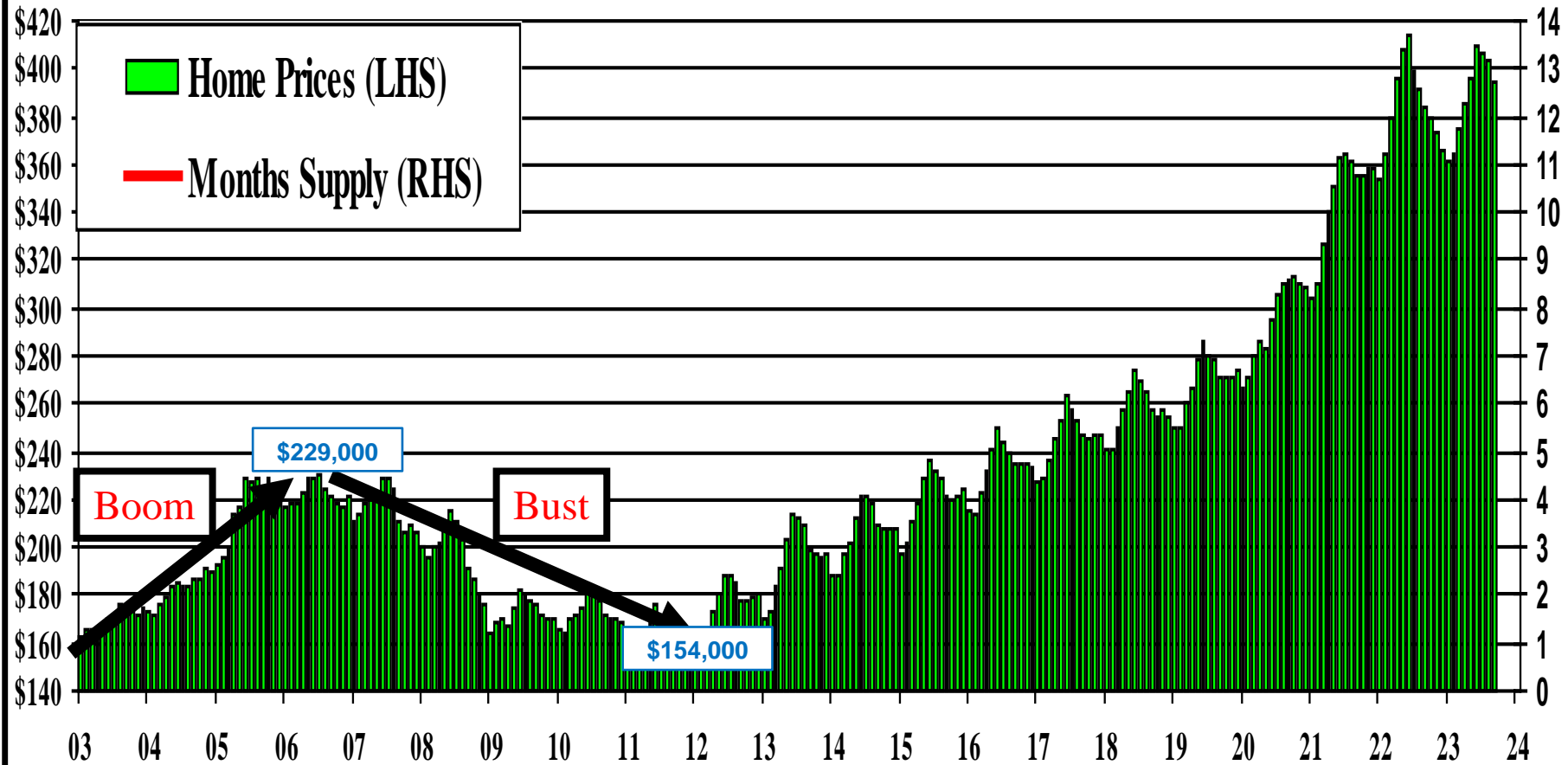
Median Existing Home Price & Months Supply at Current Sales Rate



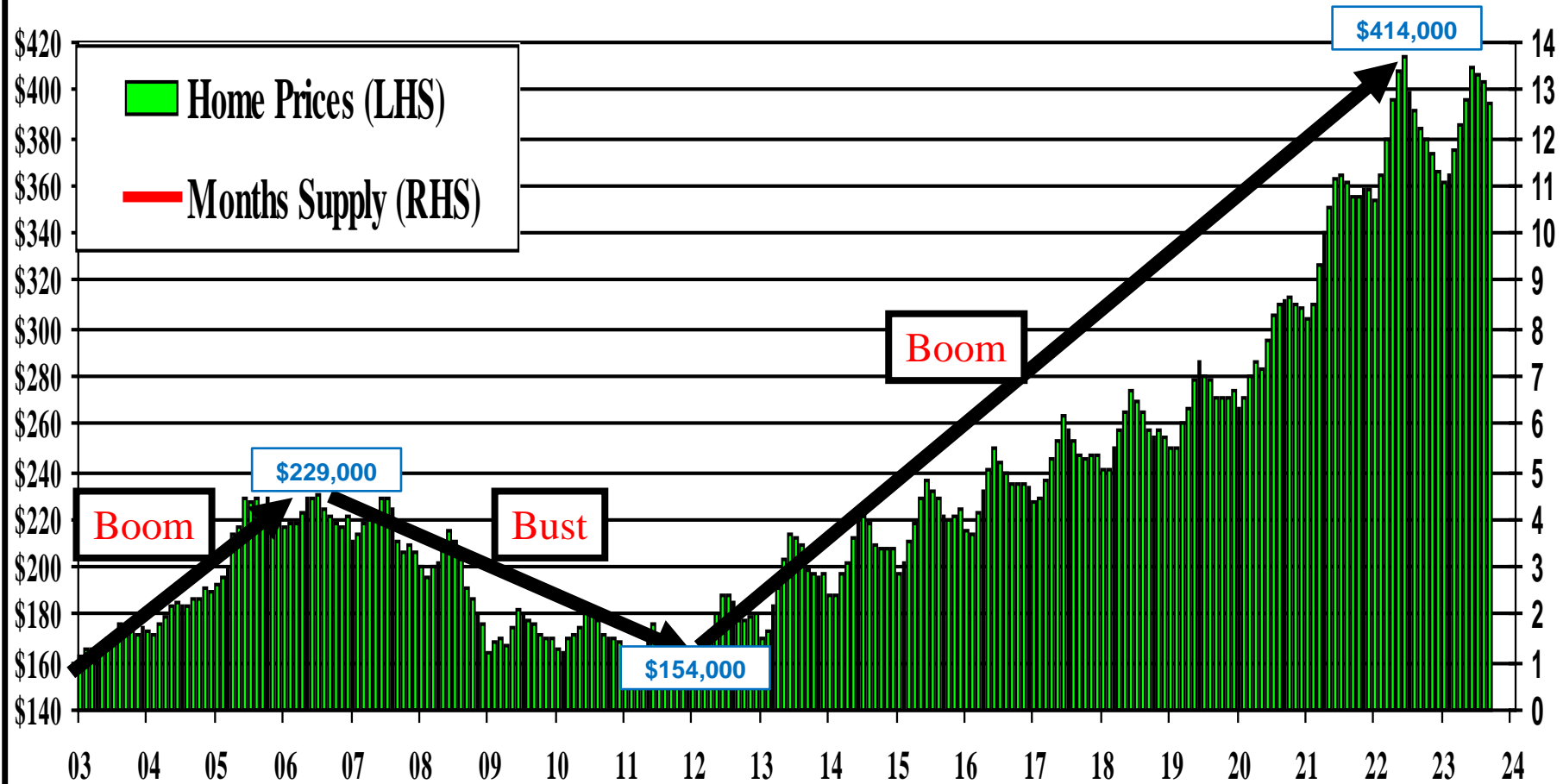
Median Existing Home Price & Months Supply at Current Sales Rate



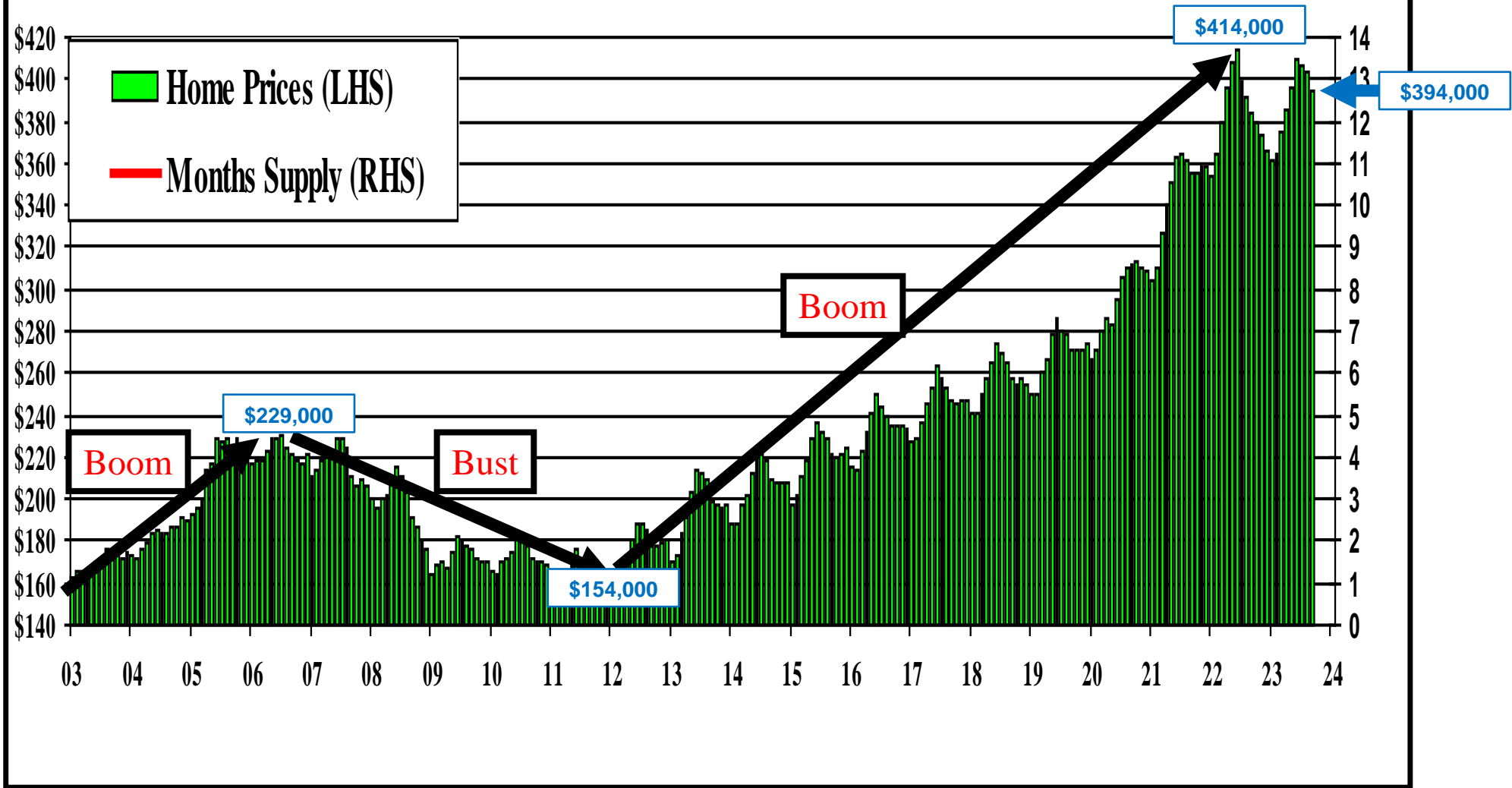
Median Existing Home Price & Months Supply at Current Sales Rate



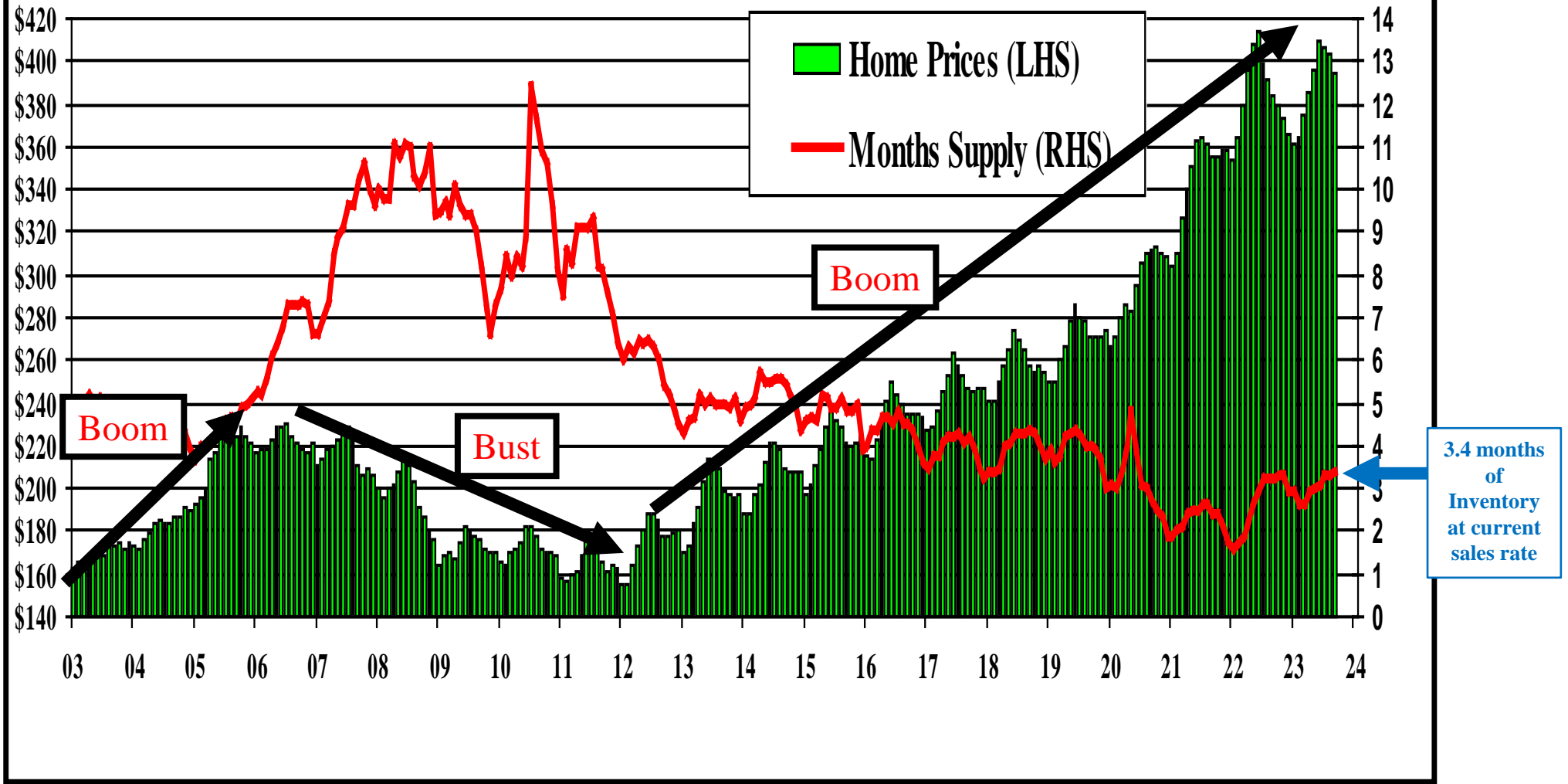
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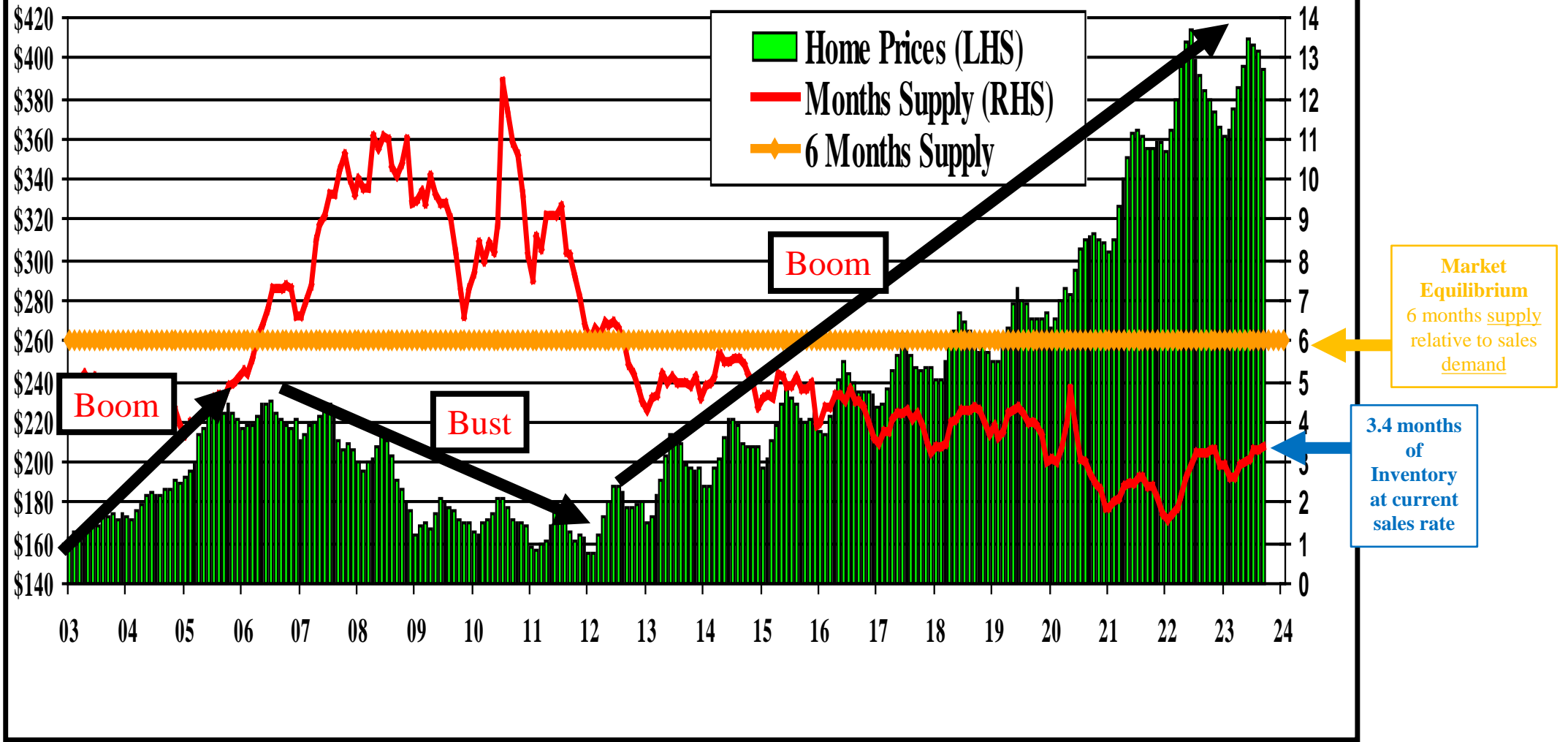
Median Existing Home Price & Months Supply at Current Sales Rate



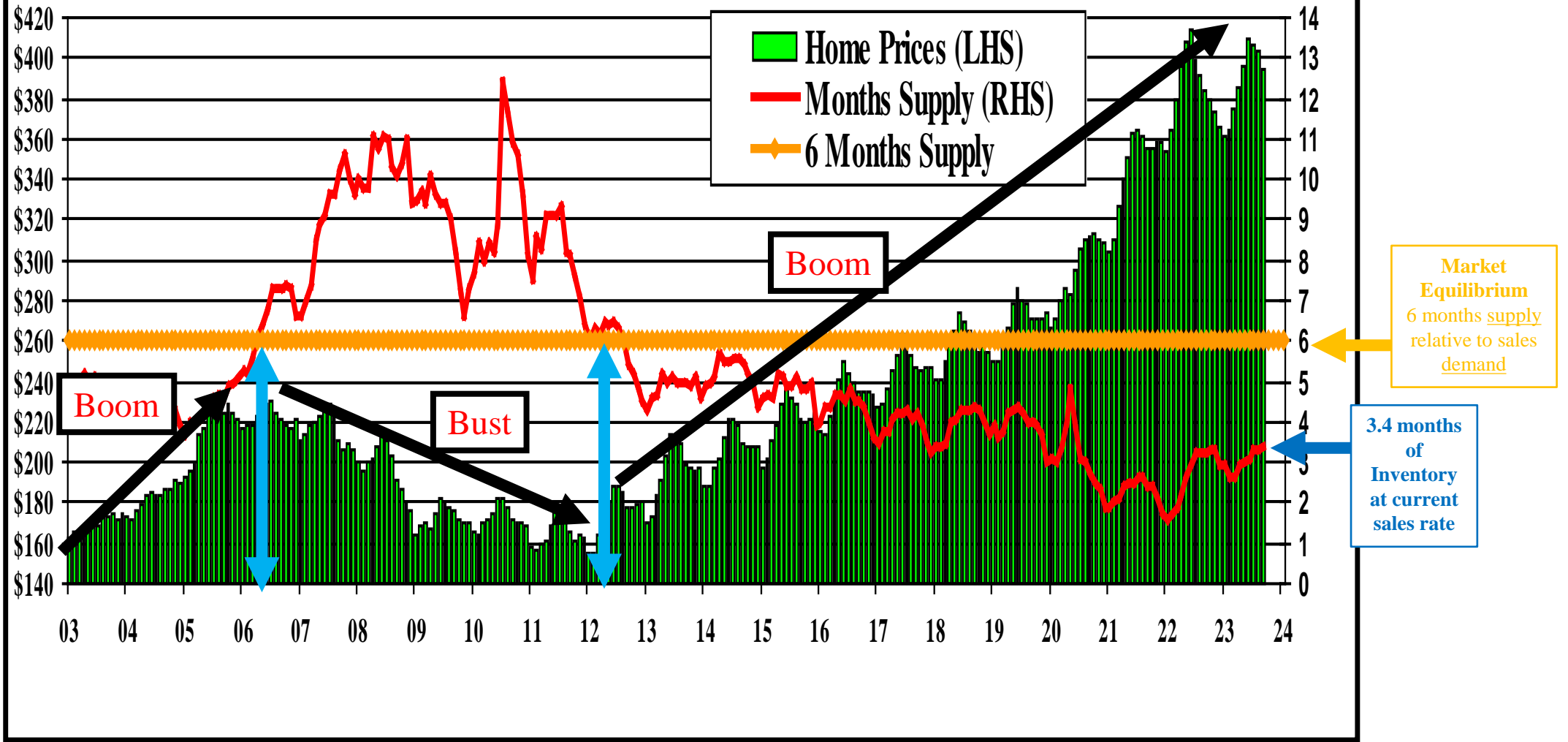
Median Existing Home Price & Months Supply at Current Sales Rate



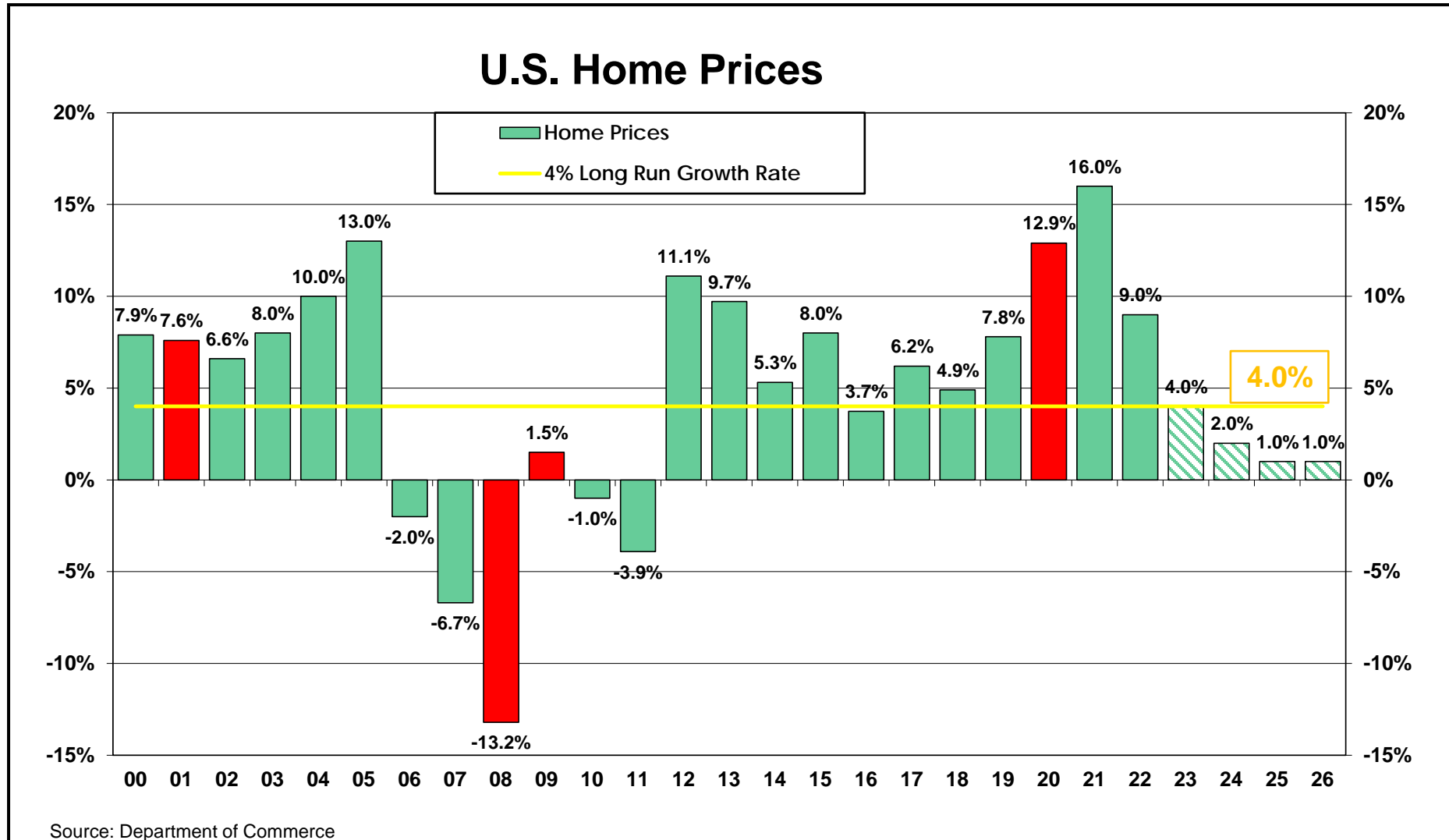
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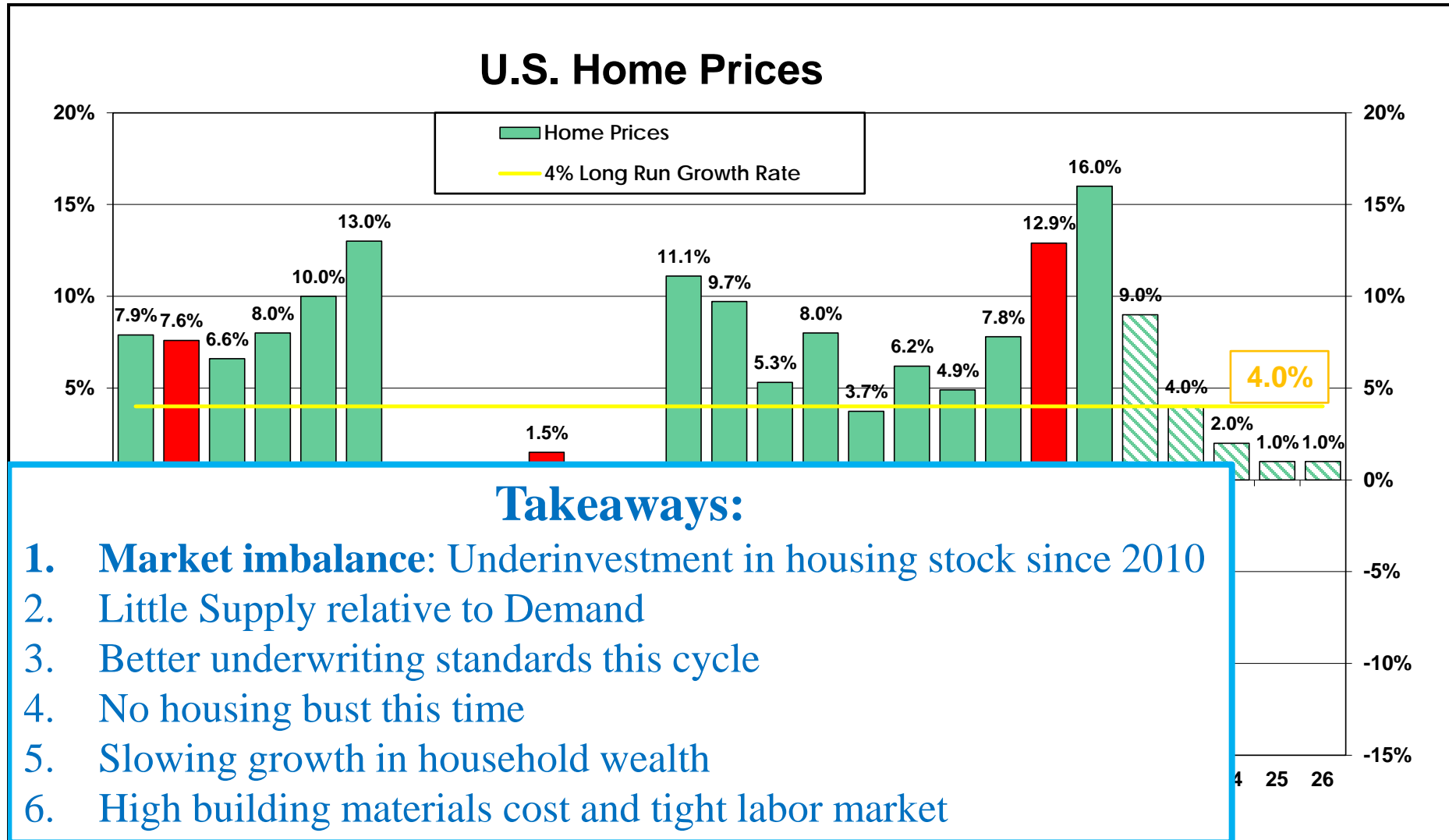
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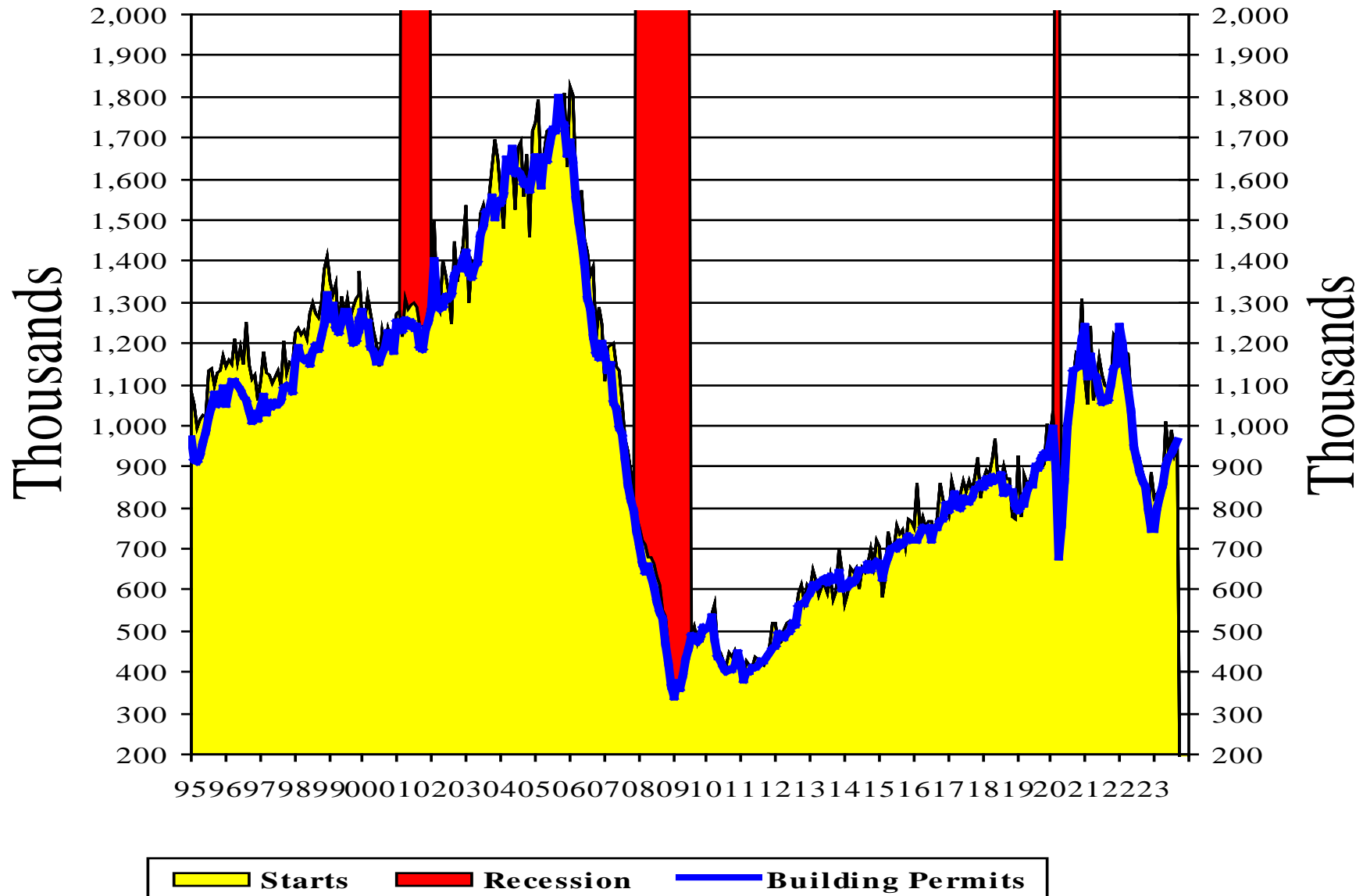
Home Price Growth Rate Slowing



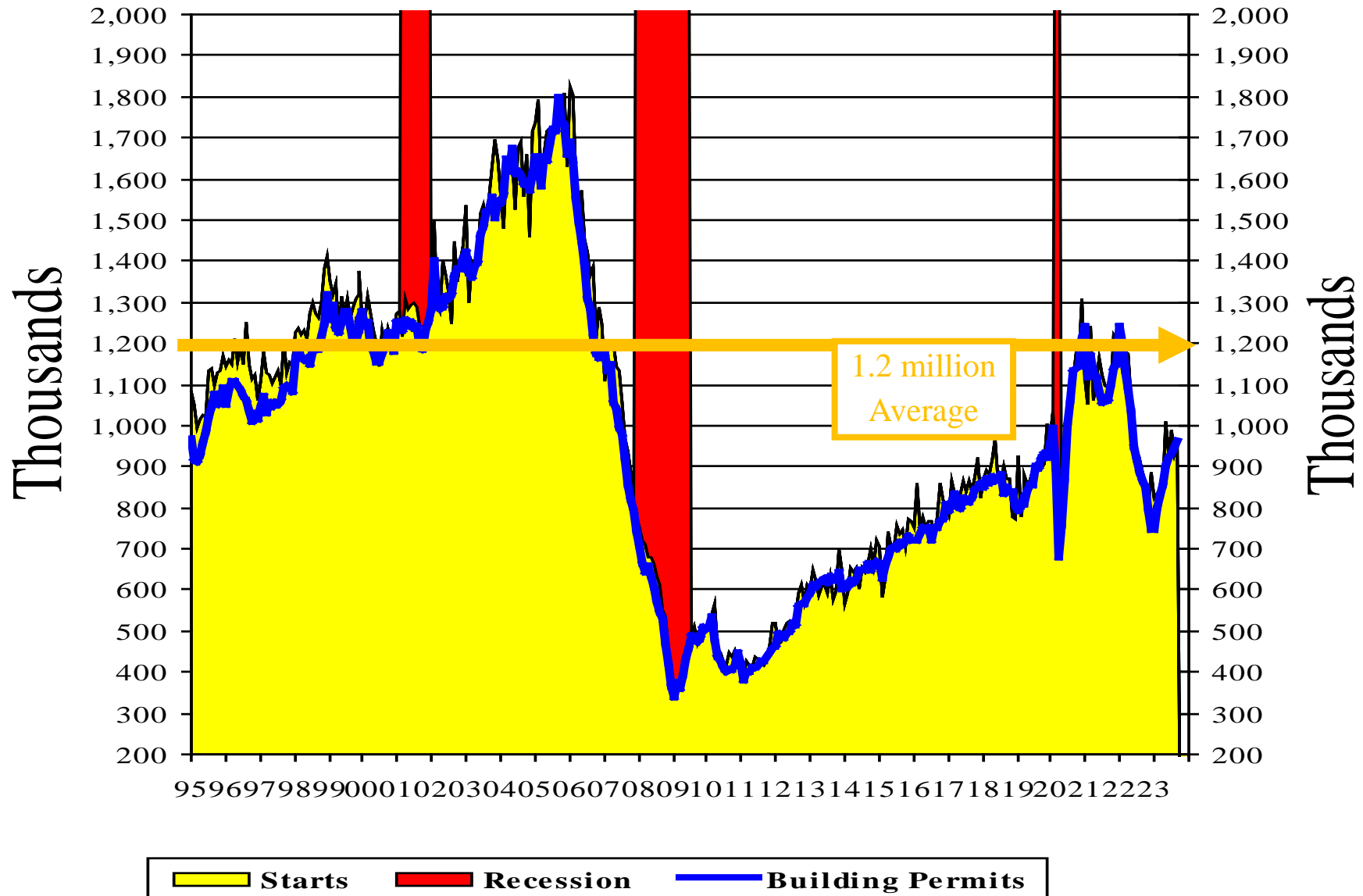
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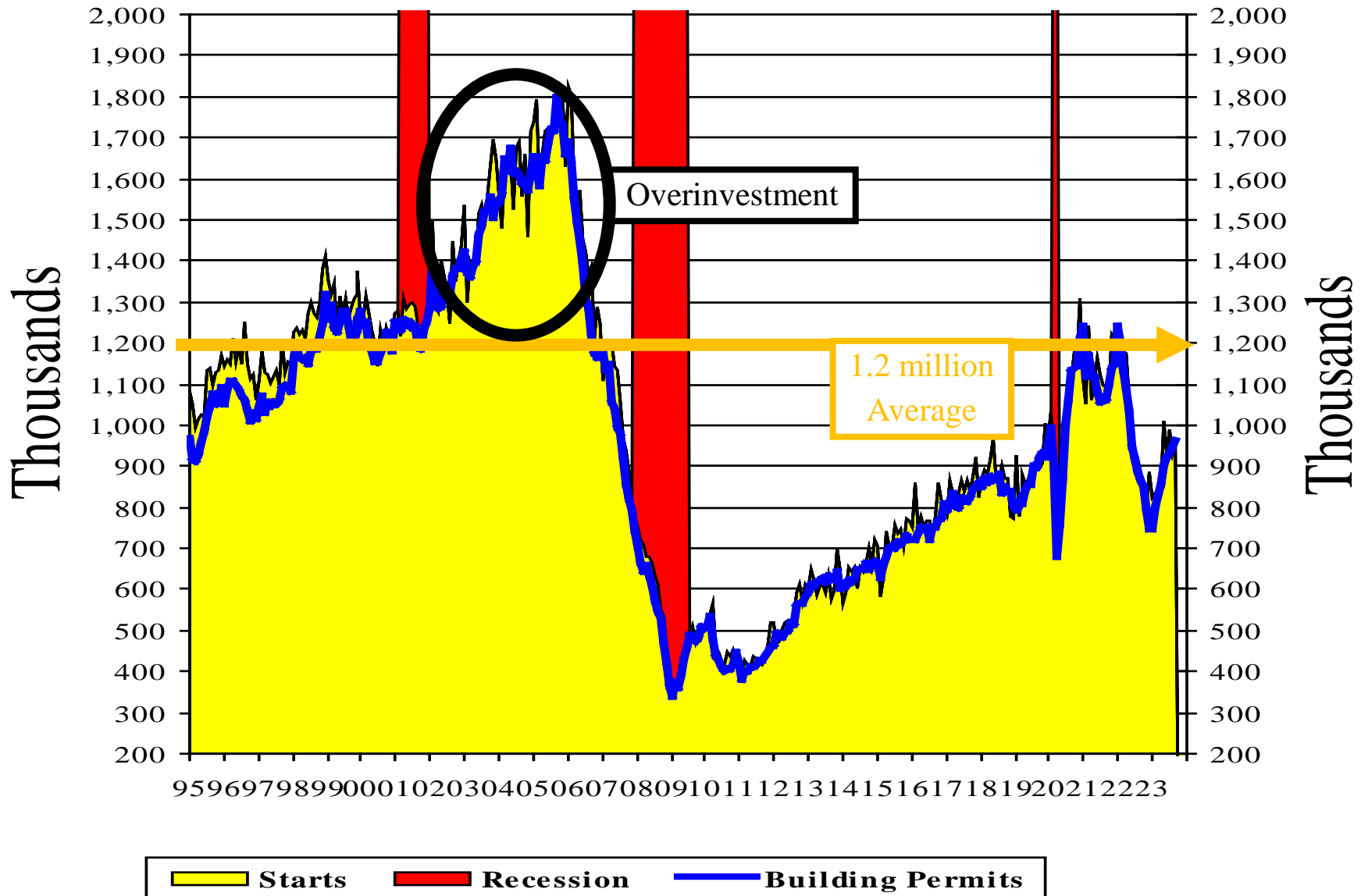
Single Family Housing Starts & Building Permits (seasonally adjusted annual rate)



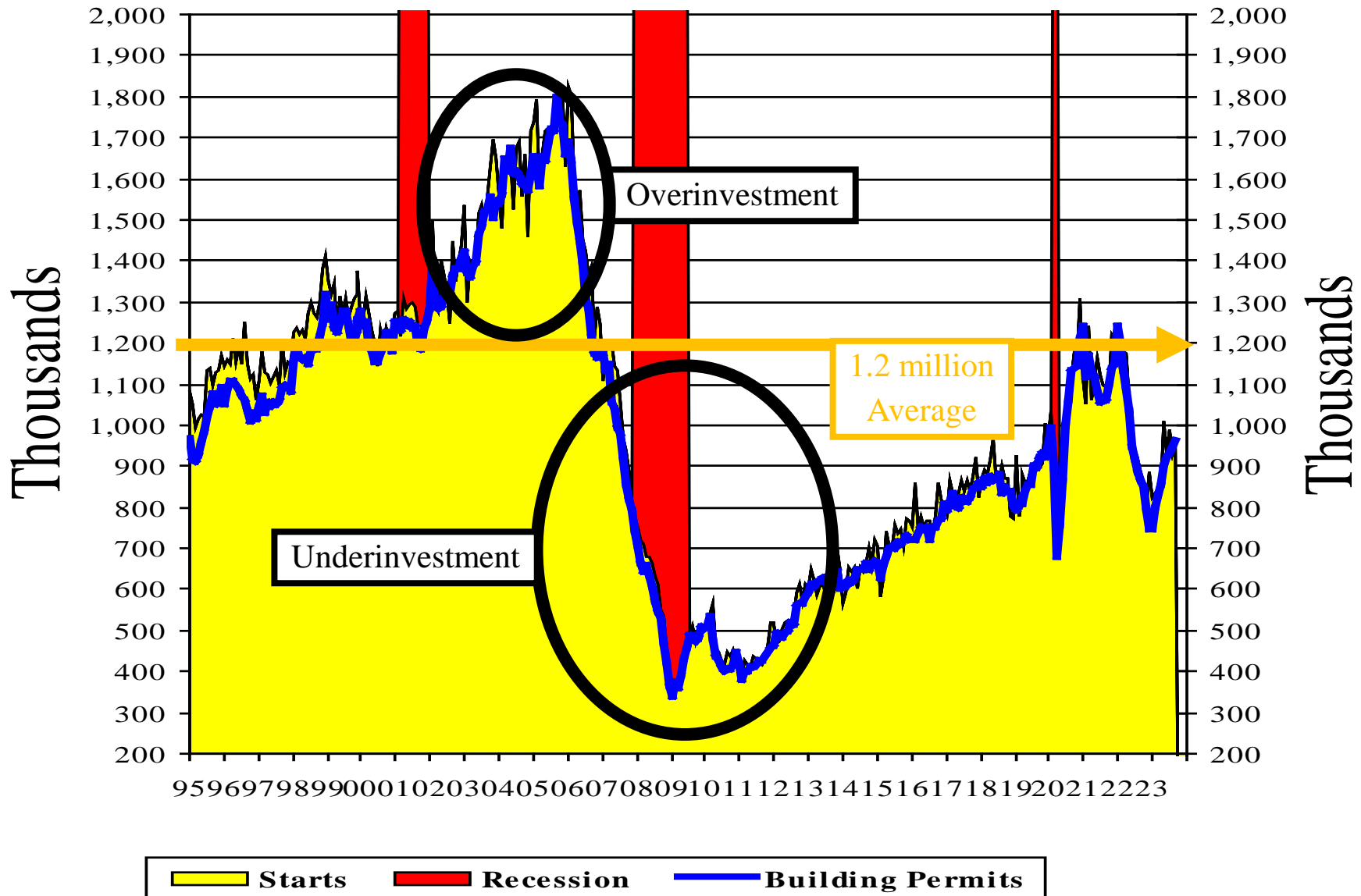
Single Family Housing Starts & Building Permits (seasonally adjusted annual rate)



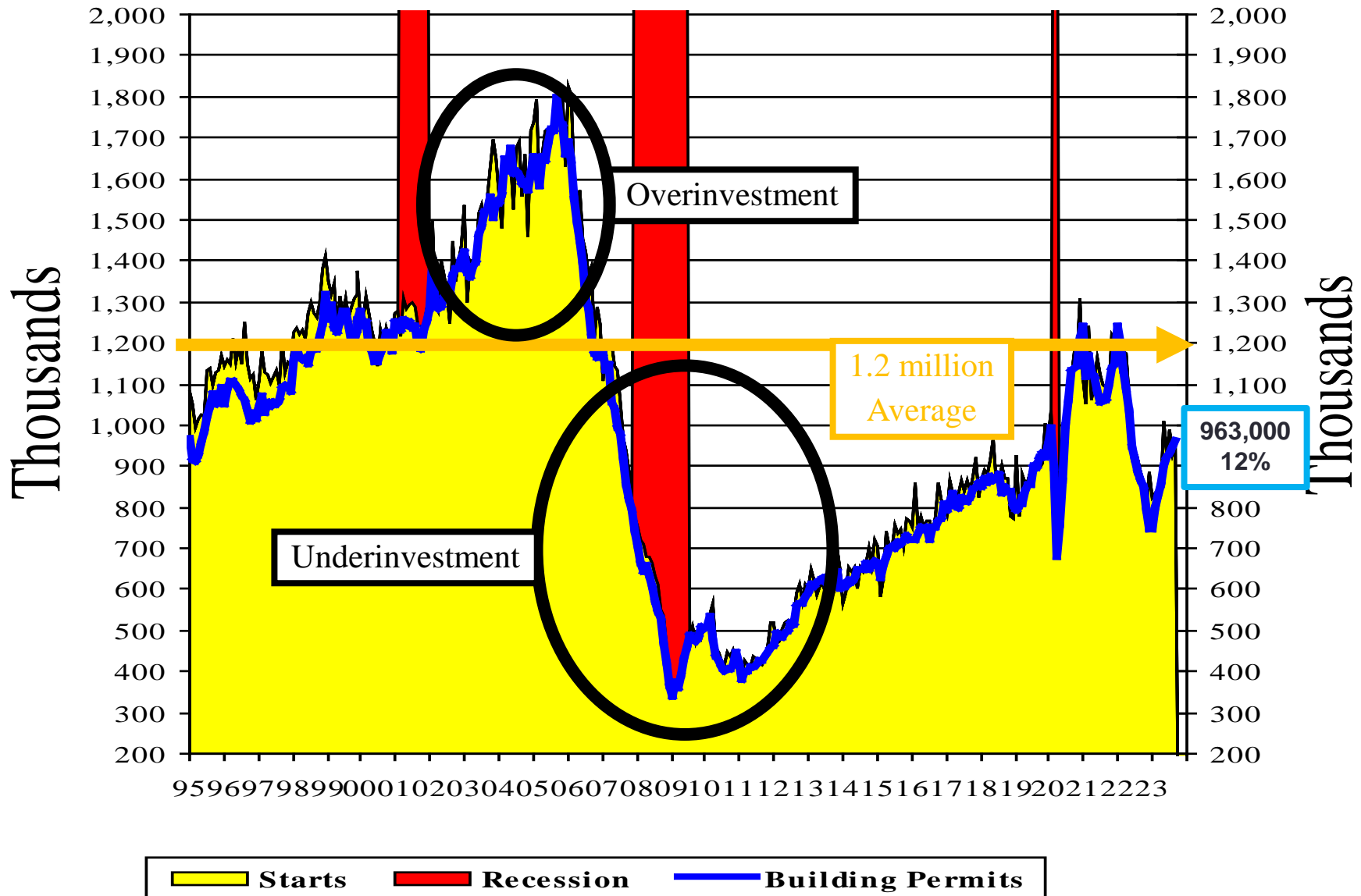
Single Family Housing Starts & Building Permits (seasonally adjusted annual rate)



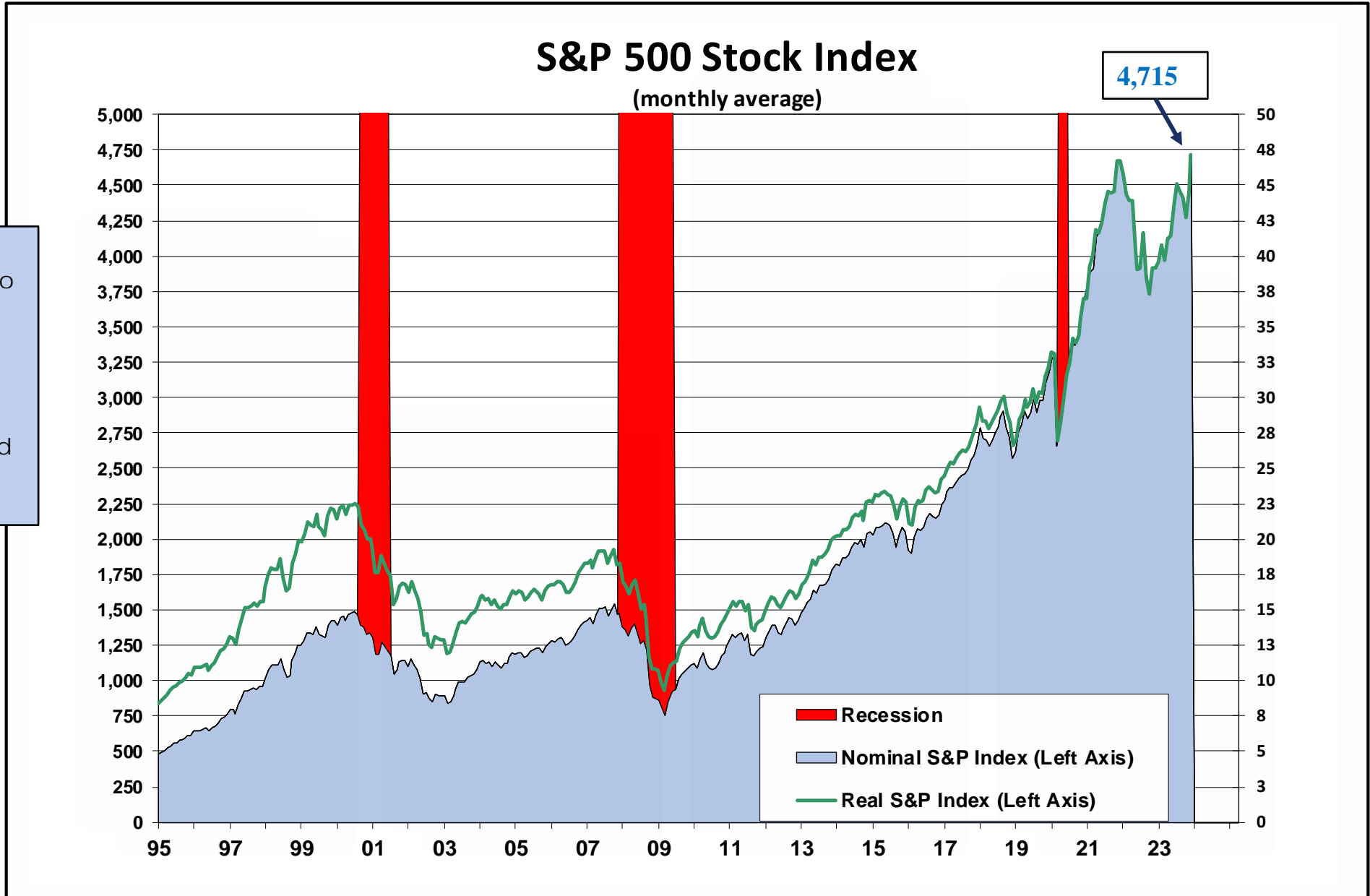
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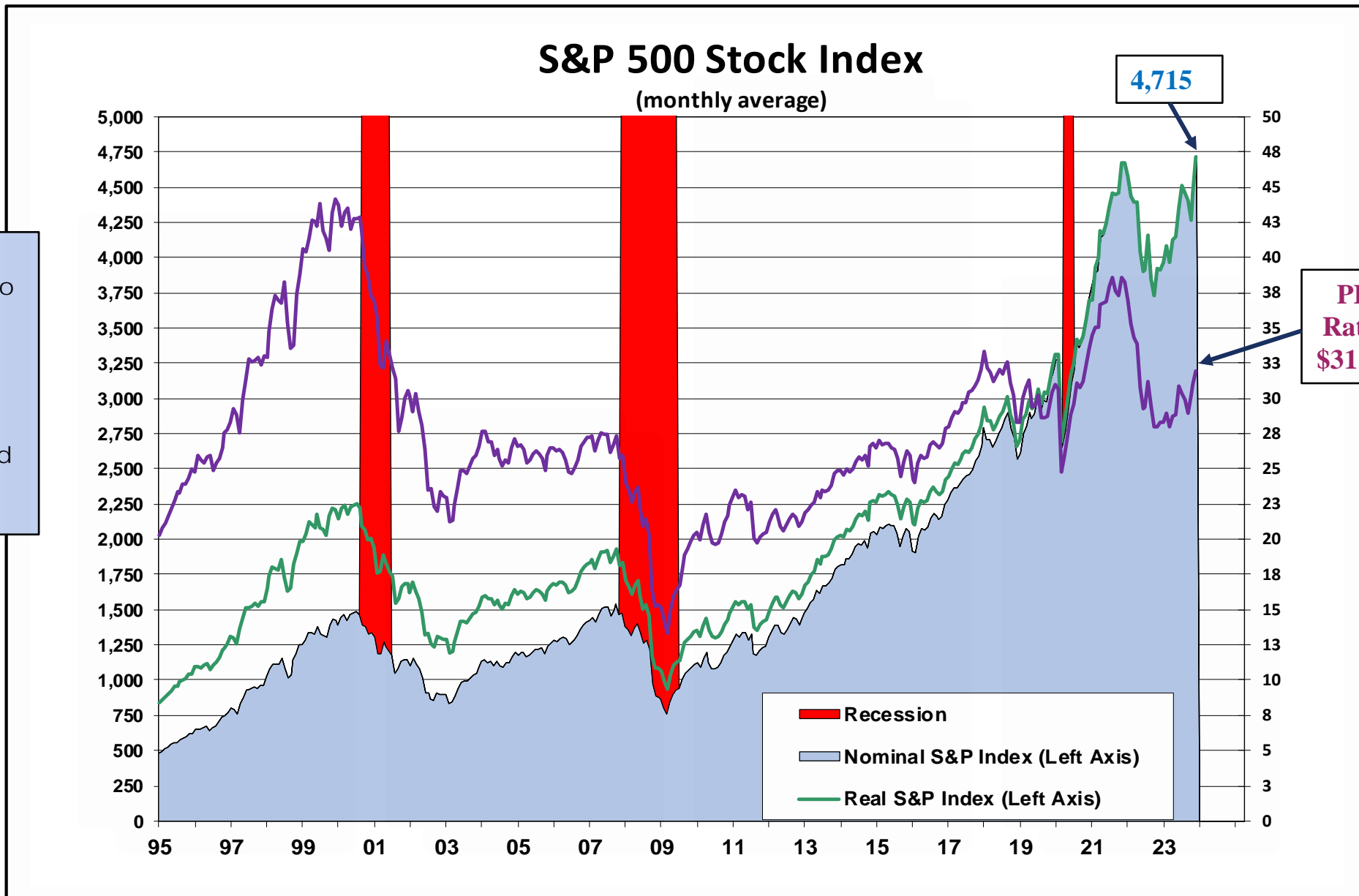
Rising Stock Prices Producing Positive “Wealth Effect” among High-Income Households



Shiller PE Ratio
Price earnings ratio is based on average inflation-adjusted earnings from the previous 10 years. Cyclically adjusted PE Ratio (CAPE Ratio)

■ Recession
■ Nominal S&P Index (Left Axis)
— Real S&P Index (Left Axis)

Rising Stock Prices Producing Positive “Wealth Effect” among High-Income Households



Economic Update Summary For 2024

1. Slow economic growth for the next year

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4. Short-term interest rates above long-term interest rates in 2024

Economic forecast

November 2023

	Past results		Forecasts					
	Previous 10 Yr. Avg	2022	2023 Q1	2023 Q2	2023 Q3	2023Q4	2023	2024
Growth rates:								
Economic Growth (% chg GDP)*	2.1%	2.1%	2.0%	2.4%	4.9%	2.0%	2.5%	1.5%
Inflation (CPI, 12 mth % chg)	2.2%	6.5%	5.0%	3.1%	3.7%	3.7%	3.7%	3.0%
Unemployment Rate (BLS)	6.0%	3.5%	3.5%	3.6%	3.8%	3.9%	3.9%	4.3%
Federal Funds Rate (effective)	0.58%	4.33%	4.83%	5.08%	5.33%	5.33%	5.33%	5.10%
10-Year Treasury Rate	2.11%	3.88%	3.48%	3.81%	4.59%	4.80%	4.80%	4.80%
10-Year-Fed Funds Spread	1.53%	-0.45%	-1.35%	-1.27%	-0.77%	-0.53%	-0.53%	-0.3%

*Percent change, annual rate. All other numbers are end-of-period values.

Questions?