

**NGA Glazing Executives Forum**

October 31, 2023  
Atlanta, GA  
[glassbuild.com](http://glassbuild.com)

AT **GlassBuild**   
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# Piercing Through the Noise

Connor Lokar  
ITR Economics Senior Forecaster

## 2022 Global Forecast Results

	Duration	Accuracy
World Industrial Production	13	99.6%
Western Europe Industrial Production	23	99.5%
Eastern Europe Industrial Production	15	96.7%
Canada Industrial Production	24	99.7%
China Industrial Production	16	98.5%
Mexico Industrial Production	13	98.4%
Japan Industrial Production	13	98.7%
India Industrial Production	26	98.7%
Germany Industrial Production	13	99.2%
Brazil Industrial Production	13	98.9%

***ITR Economics provides the best economic intelligence to reduce risk and drive practical and profitable business decisions.***

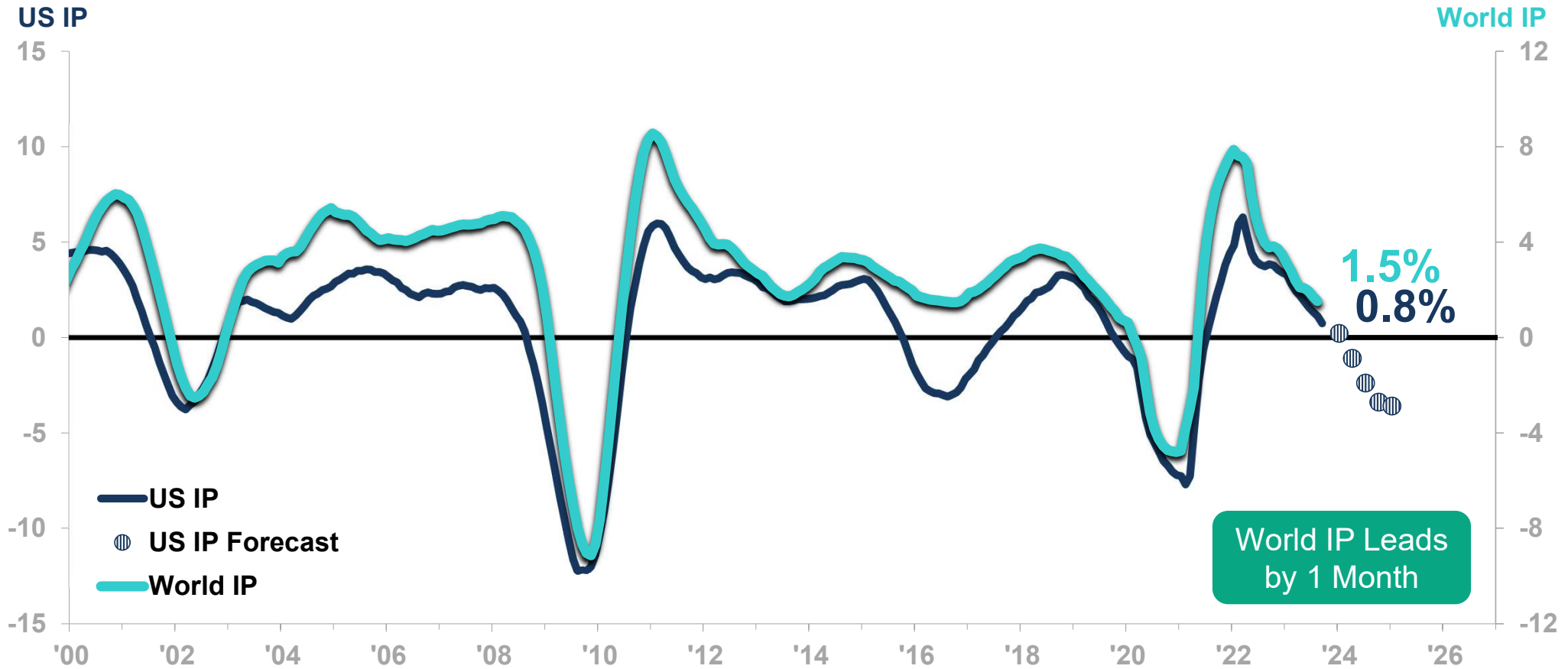
# The Cyclical View; Recession Closing In

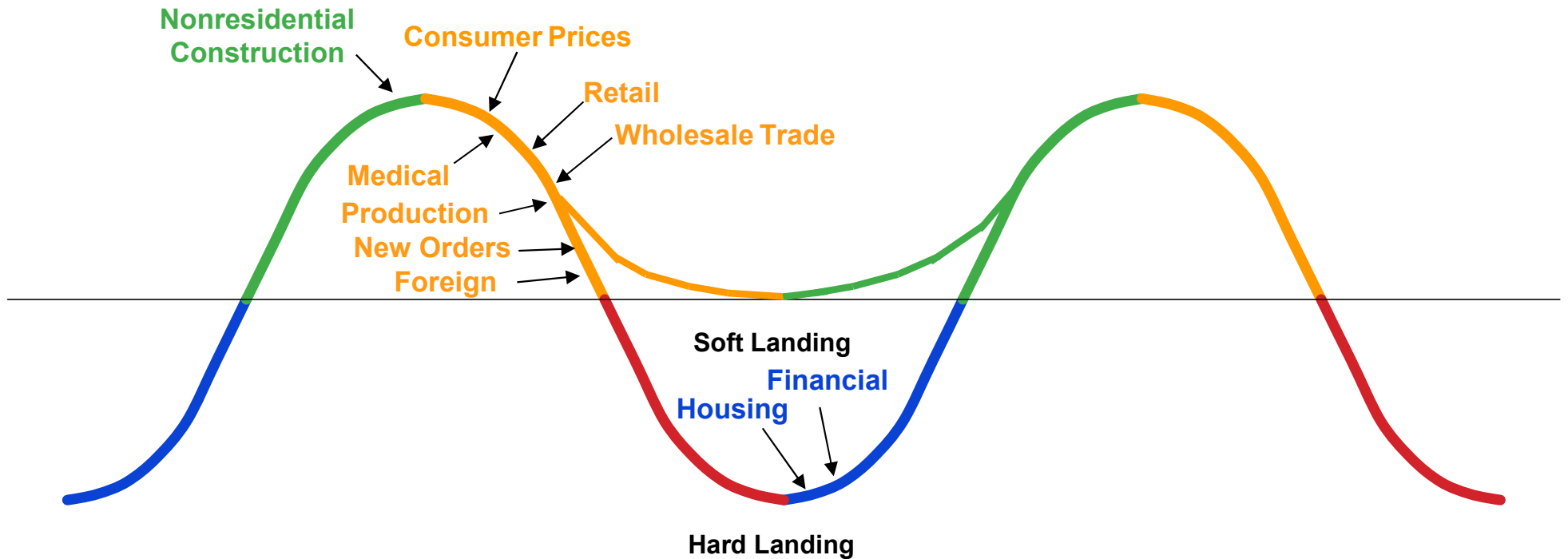
Sources: FRB, CPB Netherlands Bureau For Economic Policy Analysis



## US Industrial Production Index to World Industrial Production Index

12/12 Rates-of-Change



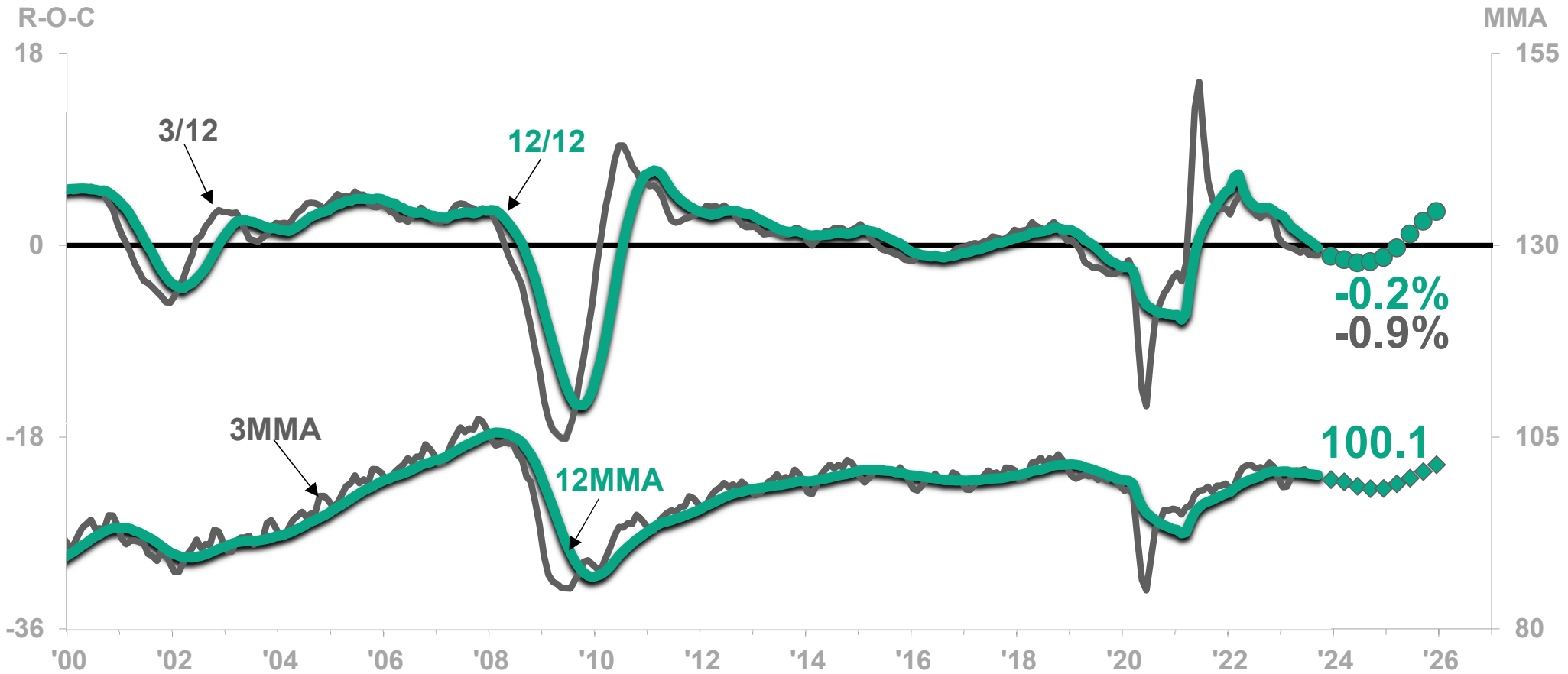


# US Manufacturing Output is Falling (3/12)

Source: FRB

## US Total Manufacturing Production Index

2017 = 100

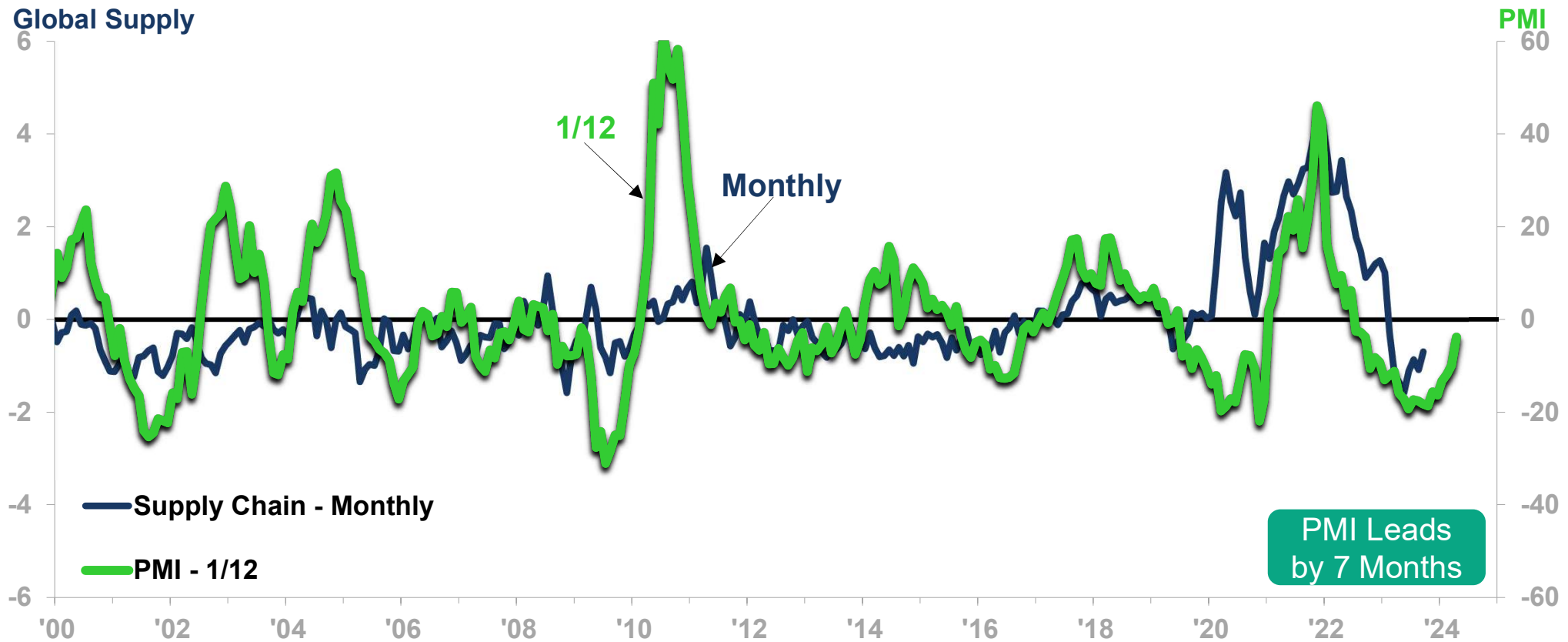


# Slowing Economic Growth Means Less Supply Chain Pressure

Sources:  
FRBNY, ISM

## Global Supply Chain Pressure Index to US Purchasing Managers Index

Pressure Index, Raw to PMI 1/12 Rate-of-Change



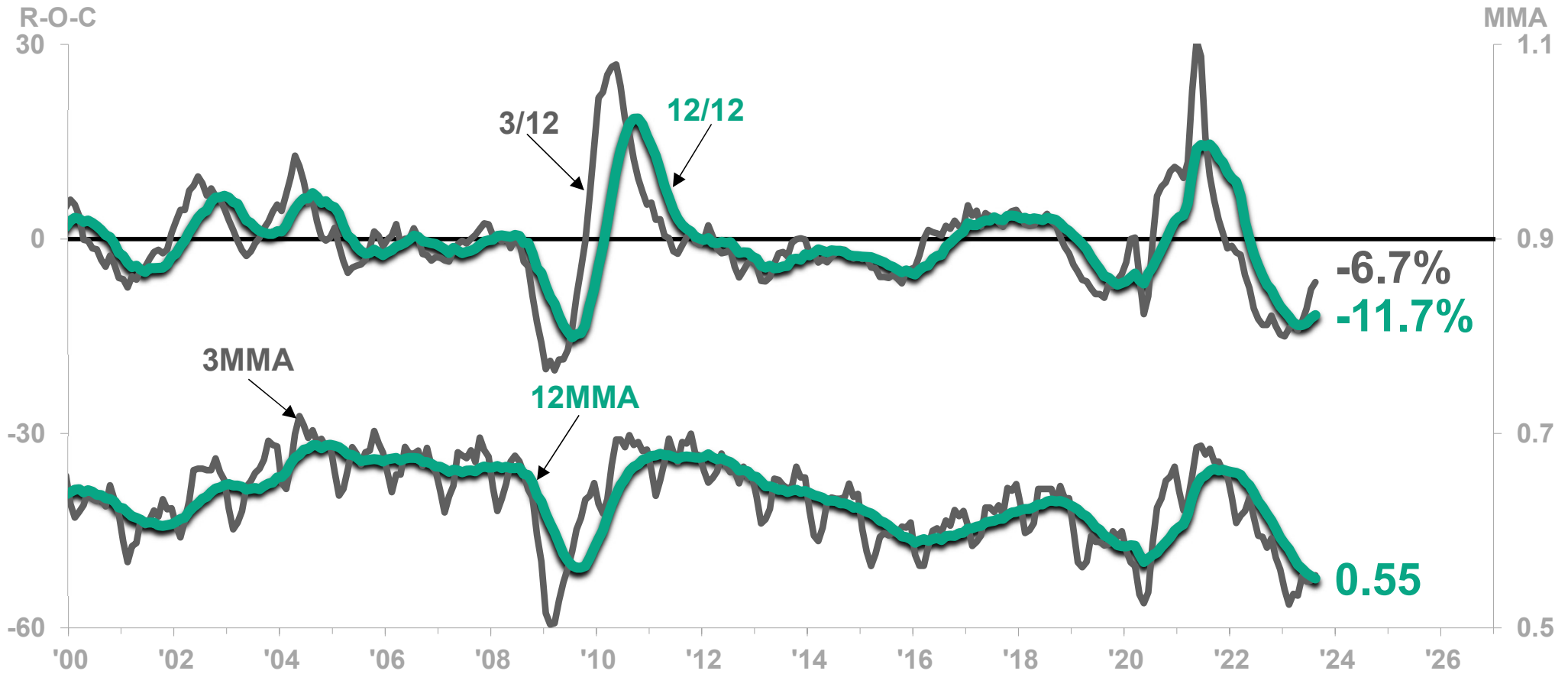
# Supply Chain Recovery Creating Excess Inventory Issues

Source: US Census Bureau

## US Durable Goods Wholesale Sales/Inventory Ratio

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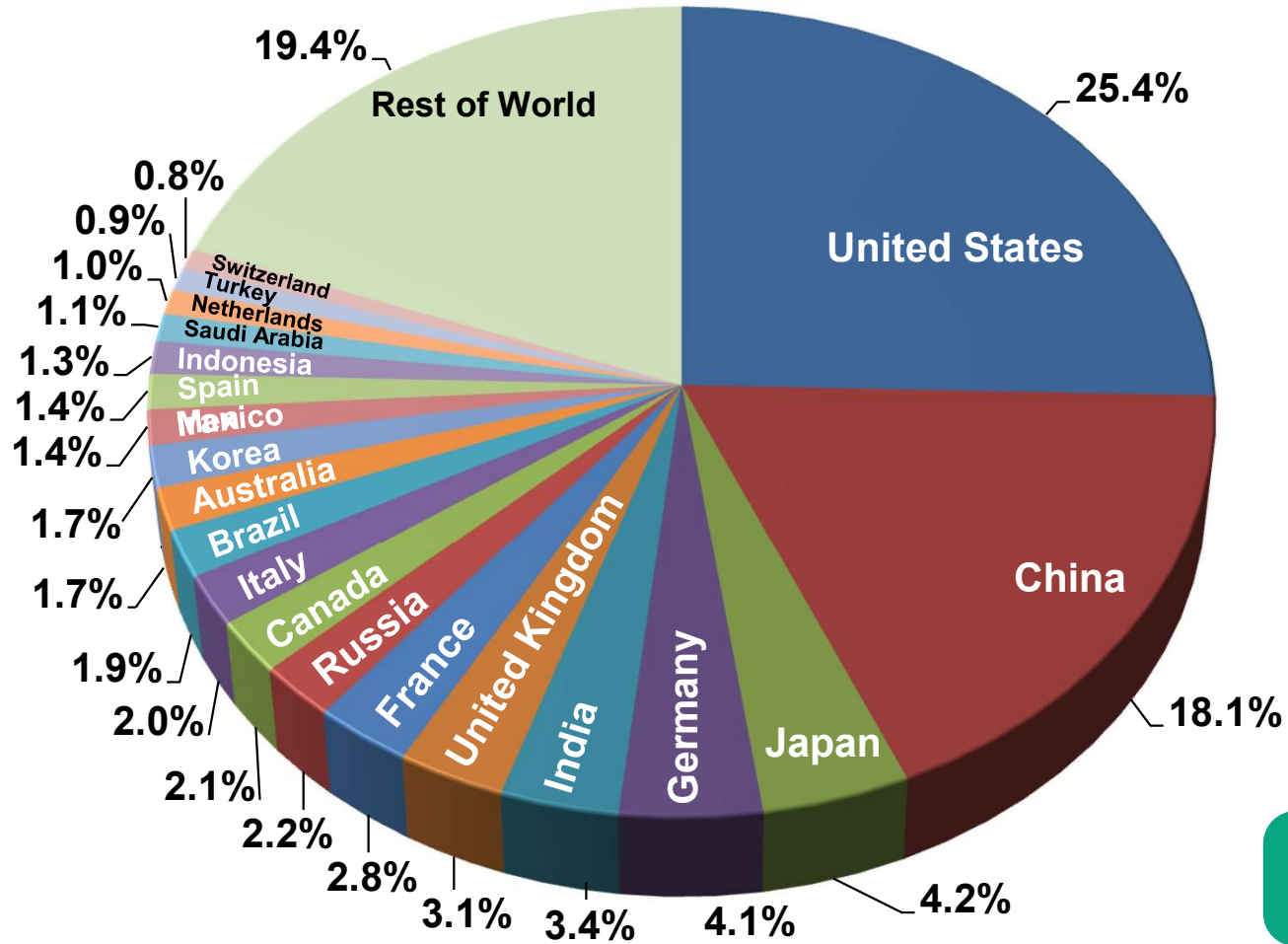
Ratio





# Percent of World GDP by Country

Source: IMF, \*ROW: 70% are IMF Estimated Figures



\*Total World GDP:  
\$100.2 Trillion US \$



# 2030 - Breaking Down the Causal Factors

-  1. Demographics
-  2. Health Care Costs
-  3. Entitlements
-  4. Inflation
-  5. US National Debt



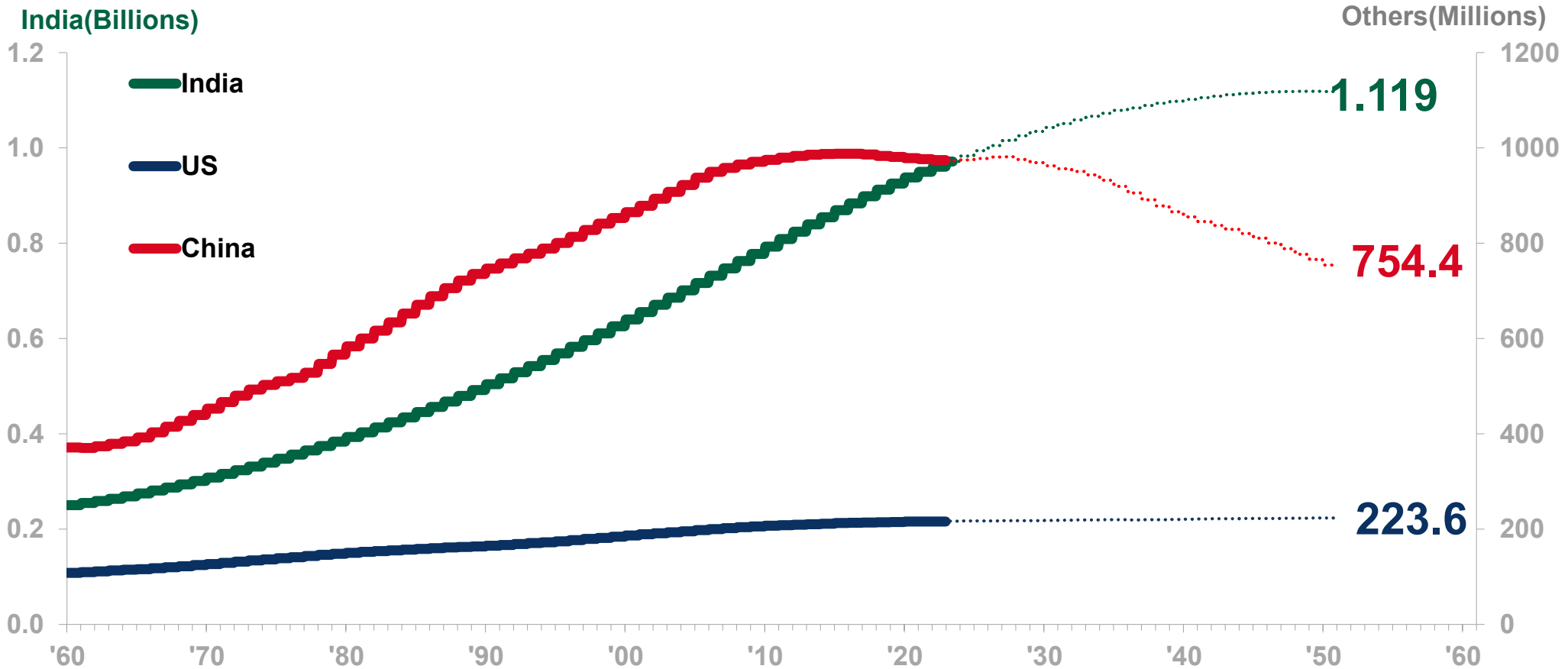
# India is Now the Most Populous Country

Source: World Bank



## Total Population Age 15-64 With Projections

Millions of Persons

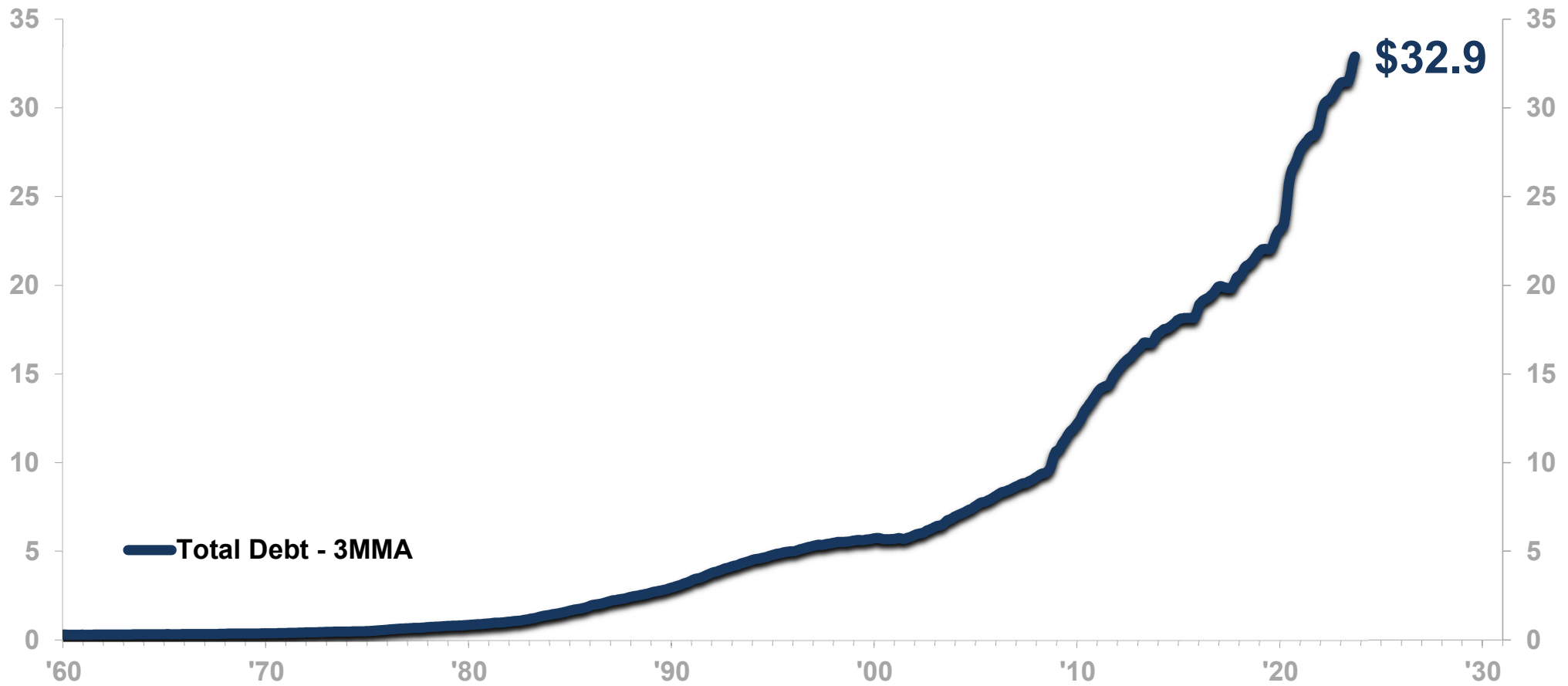


# The Mountain of Debt Continues to Grow

Source: US Department of the Treasury

## US Total Public Debt Outstanding

Quarterly Data Trends: Trillions of Dollars



-  Expect inflation to ease as the US & global economies enter recession
-  Supply chain stress is fading, with oversupply showing up in pockets
-  Follow the leading indicators to determine if they are sustained and becoming more widespread

## *Next Steps*

- Long term on-shoring is real, despite mild recession in 2024
- Watch for competitors to try to regain lost share as supply chain and capacity issues resolve

# Expect an Essentially Flat 2024

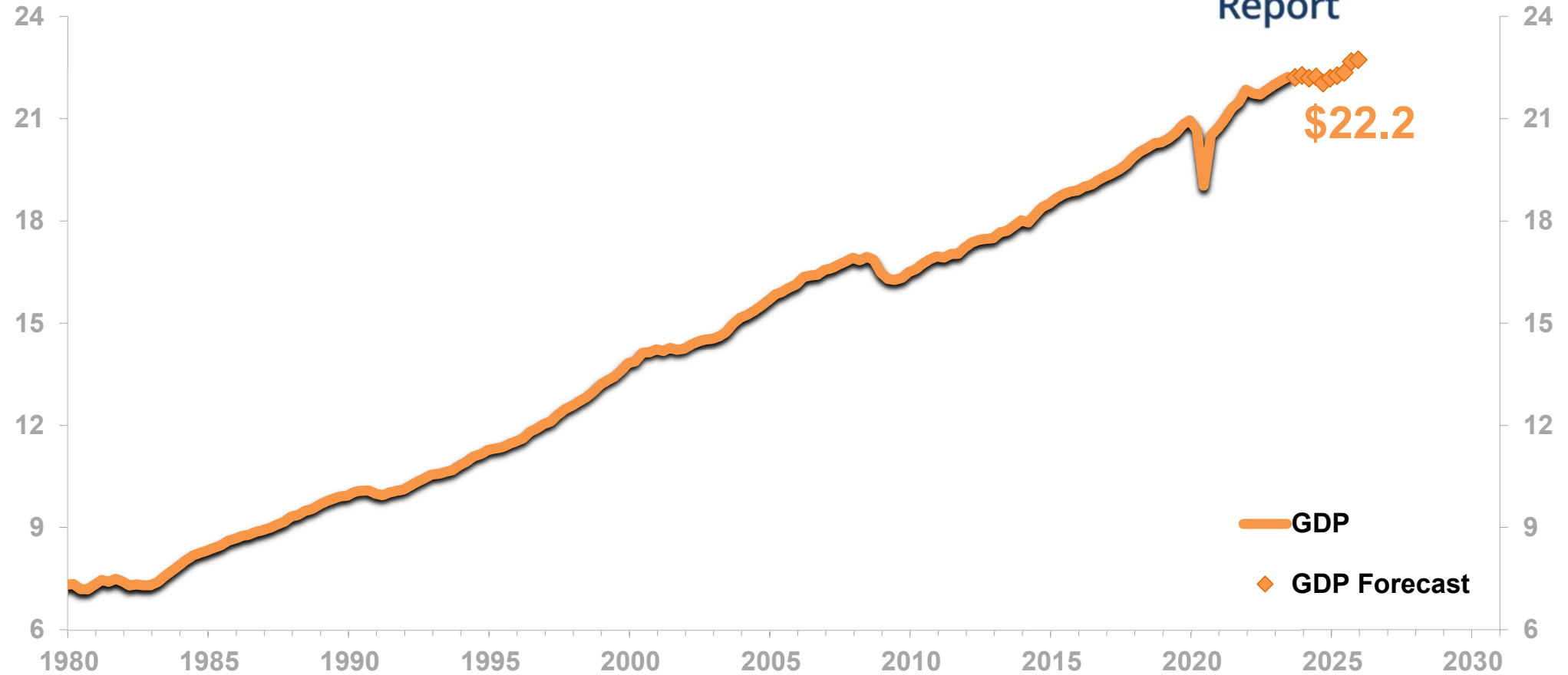
Source: BEA

## US Real Gross Domestic Product

Quarterly Data Trends: Trillions of Chained 2017 Dollars

as seen in  
ITR Economics'  
**Trends  
Report**

  
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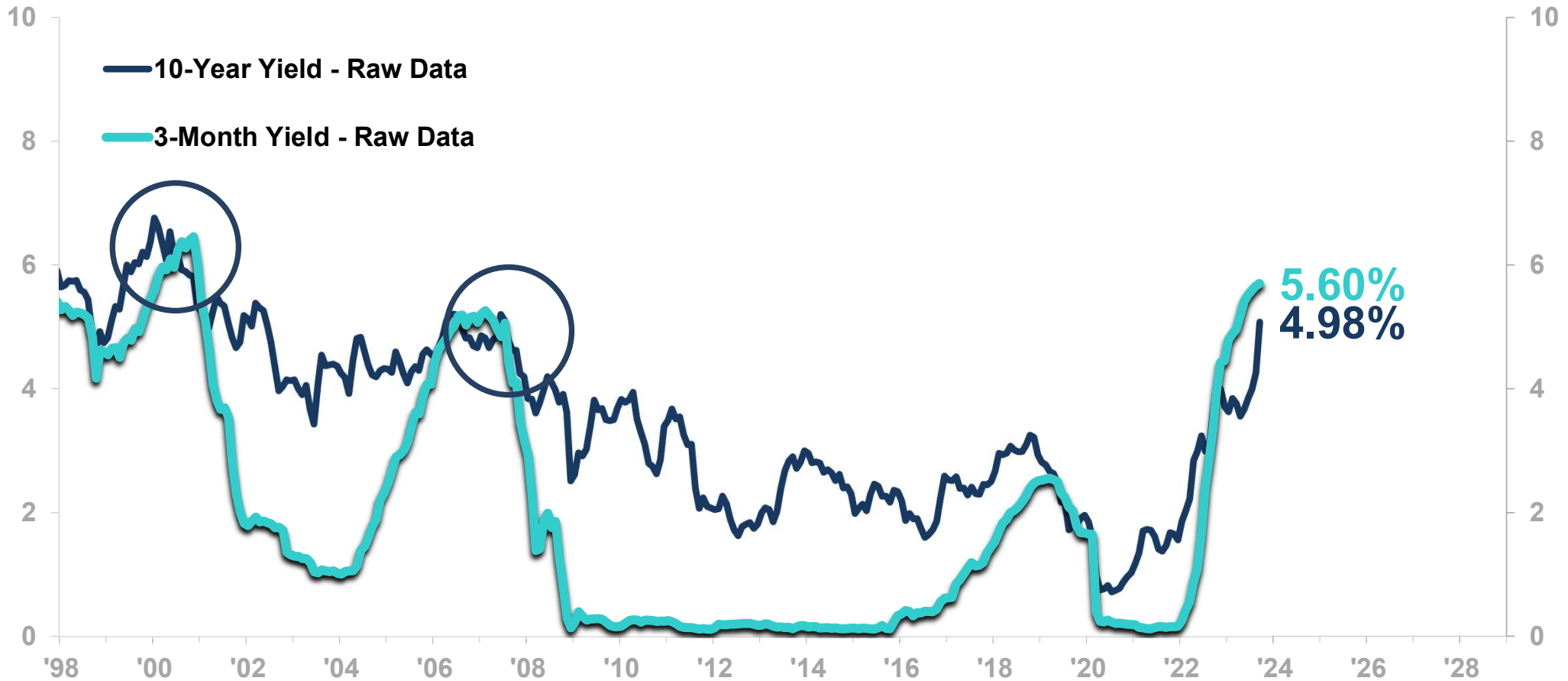
# Inverse Yield Curve in Place: Business Cycle Decline Ahead

Source: FRB,  
US Treasury Dept.

## US Government Long-Term Bond Yields to US 3-Month Treasury Bond Yield

Raw Data: Percent

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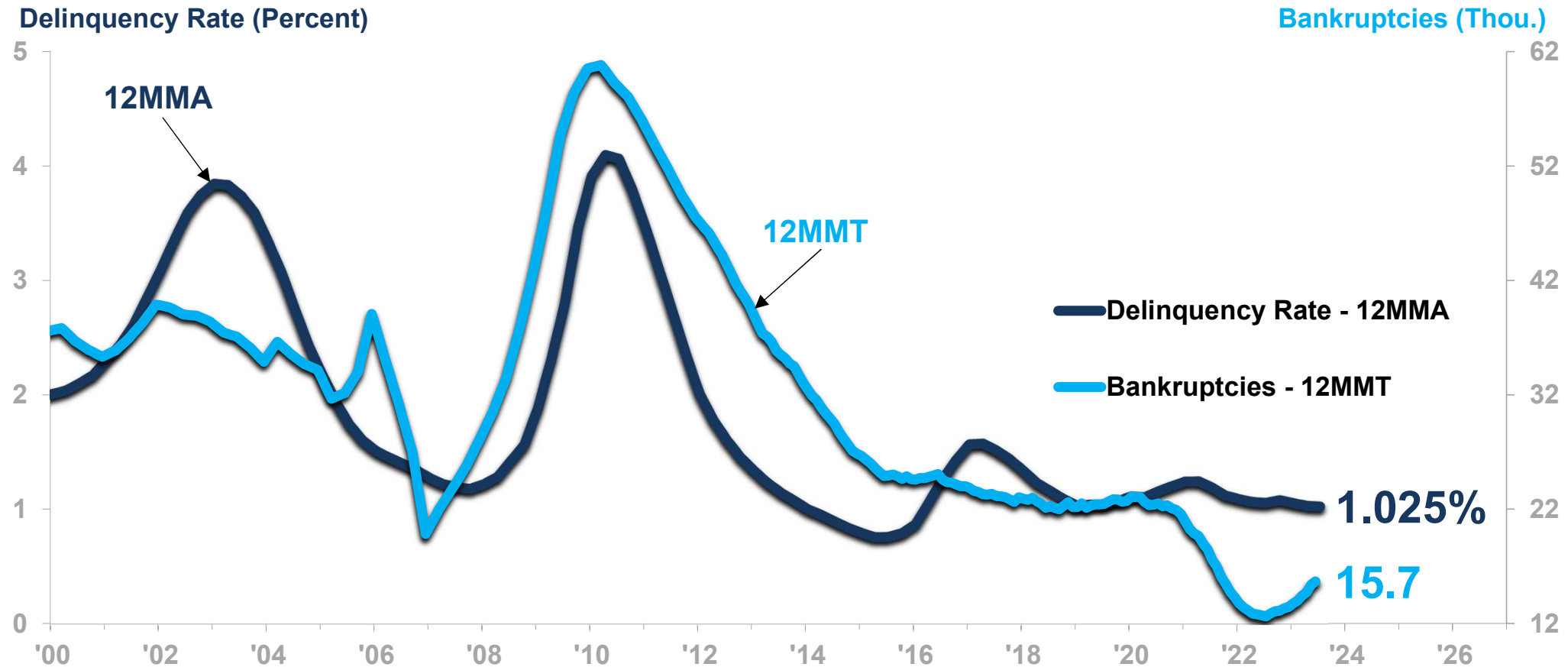
# Bankruptcies Still Very Low, But Rising

Sources: FRB, US Courts



## US Commercial and Industrial Loan Delinquency Rate to US Business Bankruptcies

Annual Data Trends



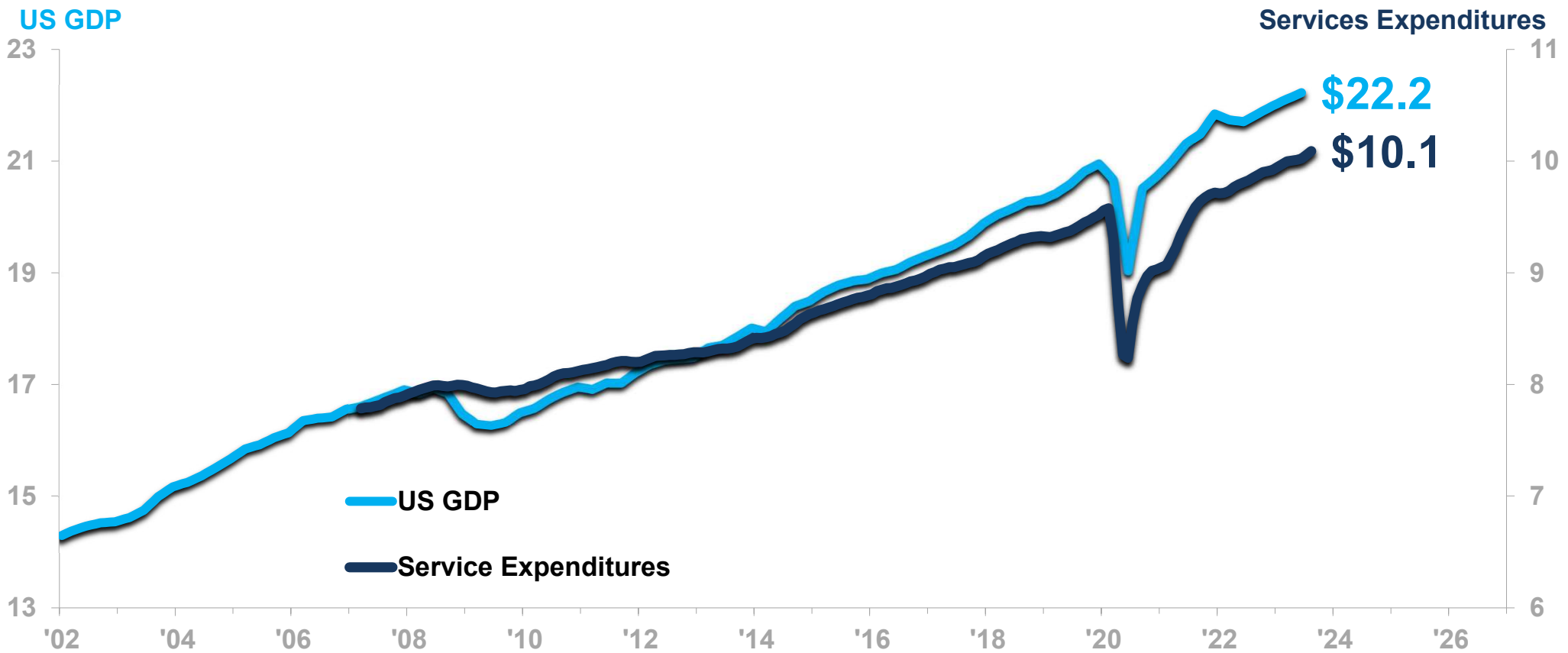


# Service Sector Showing Signs of Strength Relative to Total GDP

Source: BEA

## US Real Gross Domestic Product to US Services Personal Consumption Expenditures (deflated)

Quarterly Data Trends: Trillions of Chained 2017 Dollars

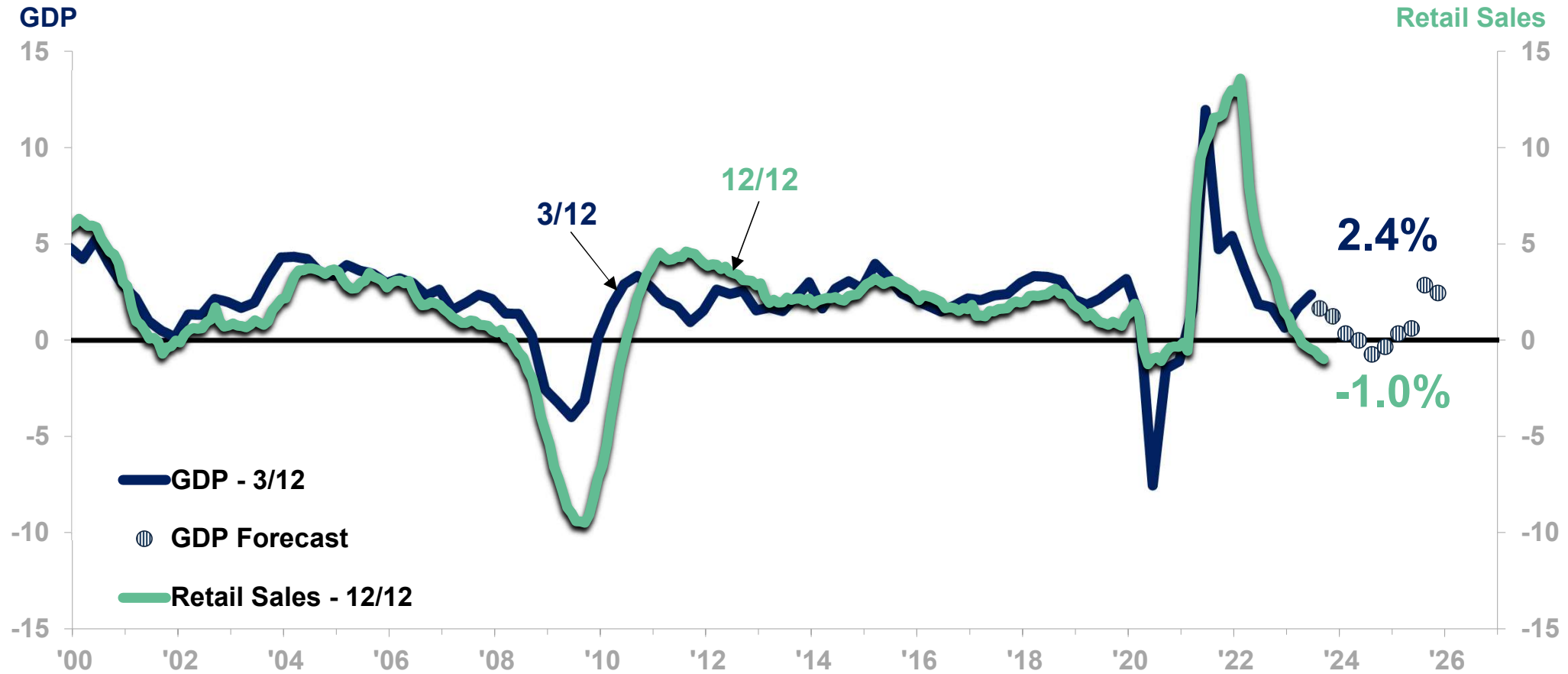


# Deflated Retail Sales Trend is Now Mildly Negative

Source: BEA, US Census Bureau



## US Total Retail Sales (deflated) to US Real Gross Domestic Product Rates-of-Change



# Inflation-Adjusted Wages Are Rising

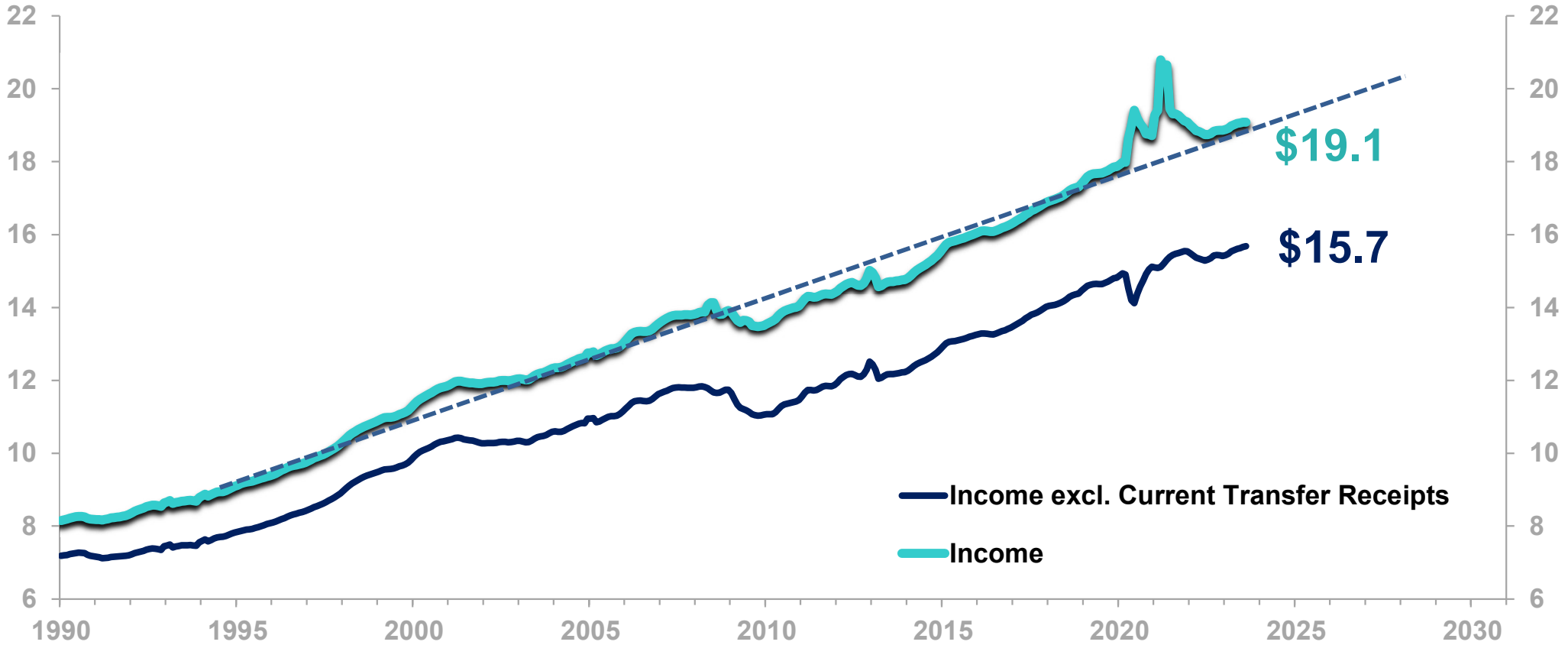
Source: BEA

## US Real Personal Income (excluding current transfer receipts) to US Real Personal Income

Quarterly Data Trends in Trillions of Chained 2017 Dollars



Income excl. Transfers



# Consumer is Able to Service the Debt Loads

Source: FRBNY, FRB, BEA

## US Profits and Delinquency Rates



	Monthly	Notes
Auto Loan Delinquency	3.82%	Up from Oct '22 5-yr low of 3.73%
Credit Card Delinquency	2.58%	Pre-Covid 10yr avg 2.76%
Residential Delinquency (>90 days)	1.68%	Lowest in 16 ¾ years
Domestic Nonfinancial Corp Profits	\$2.21T	Down 5.3% from a Sept '22 ^



**The consumer balance sheet is strong.**



**Savings are back to normal. Will the trend stop there?**



**Retail Sales expressed in units will trend lower than nominal \$ retail sales.**

## *Next Steps*

- **Weakness likely becomes apparent 2H23**
- **Budget for reduced inventory turns**
- **Hold on to your A & B level talent**



# ***Pricing Pressures***

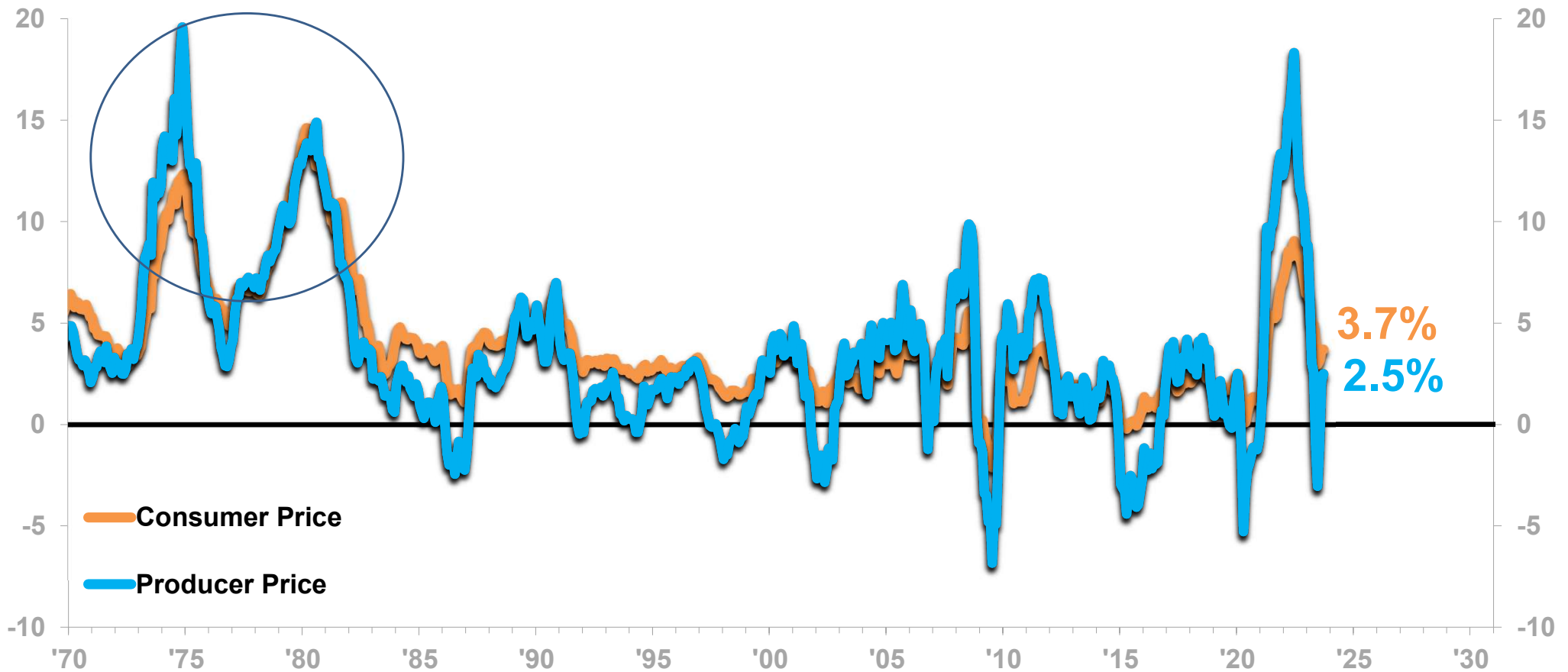


# Disinflationary Trend Through 2024

Source: BLS

## US Consumer Price Index to US Producer Price Index

1/12 Rates-of-Change





# Generally Deflationary Metals Trends

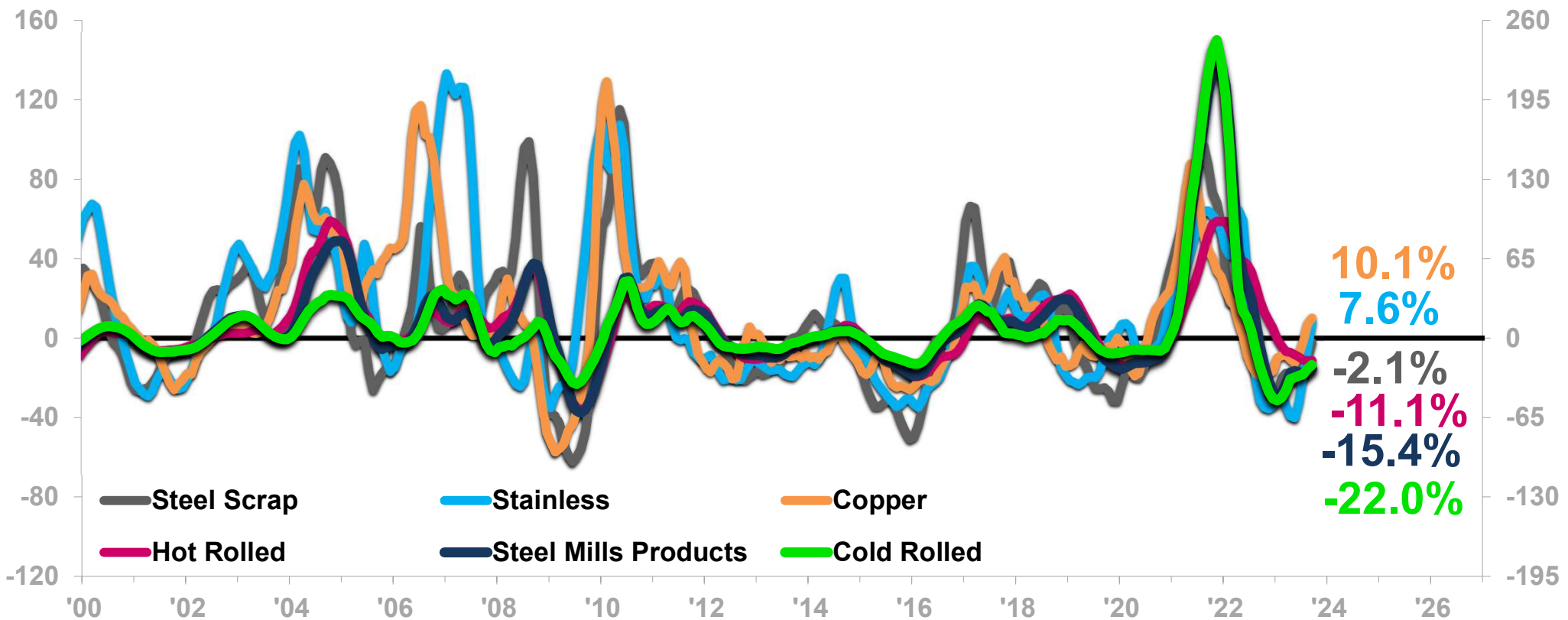
Sources: WSJ, BLS

## Commodity Prices Copper to US Producer Price Indexes for Steel Scrap, Stainless, Hot Rolled Steel, Cold Rolled Steel and Steel Mills Products



3/12 Rates-of-Change

All Others



# Cheap Vs. Cheaper Than Last Year

Sources: LME, BLS

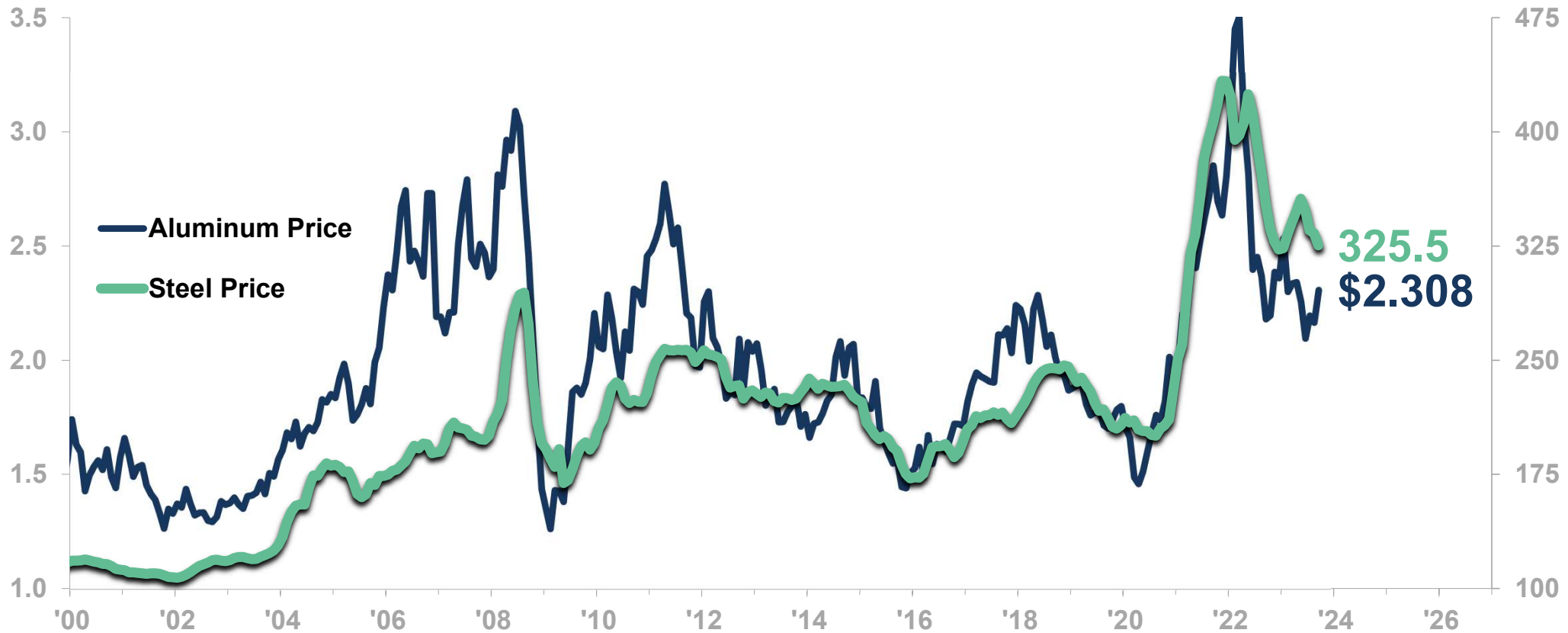
## Aluminum Spot Prices to US Iron and Steel Producer Price Index



### Raw Data Trends

Aluminum Price (Thou. \$)

Steel Price(1982 = 100)



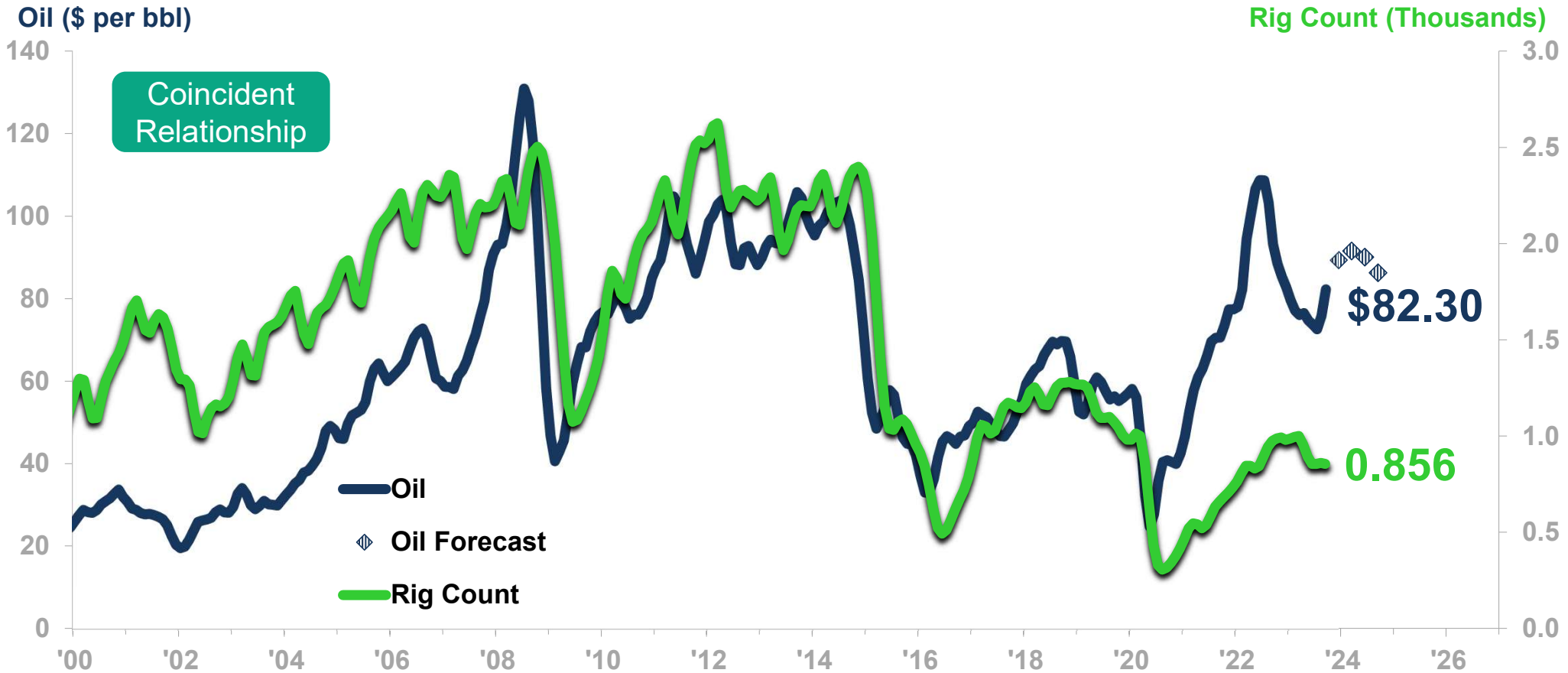
# Oil Prices Rebounding

Sources: EIA, Baker Hughes



## Crude Oil Spot Prices to North America Rotary Rig Count

Quarterly Data Trends



# Disinflation Through Most of 2024

Sources: BLS

## US Consumer Price Index

### 3/12 Rates-of-Change





**Inflation is decreasing**



**Fed should stop raising interest rates; will likely stop soon**



**Banks tightening credit**

## *Next Steps*

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- **Budget understanding that wage inflation will abate for 2023 & 2024**
- **Tout your competitive advantages to protect margins**



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# *Construction Outlook*

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# Housing Recovery is Starting

Source: US Census Bureau

## US Single Unit Housing Starts

Millions of Units

as seen in  
ITR Economics'  
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# US Regional Single-Family Housing Unit Building Permits

Source: US Census Bureau



Region	12/12	Phase	3/12	Annual Trend	Direction
<b>Northeast</b> ME, NH, VT, MA, CT, RI, NY, NJ, PA	-13.3%	<b>A</b>	-2.9%	54.598	Down
<b>Southeast</b> DC, DE, MD, VA, WV, NC, SC, GA, FL, AL, MS, TN, KY	-15.0%	<b>A</b>	5.9%	352.084	Up
<b>Great Lakes</b> OH, MI, WI, IN, IL	-16.2%	<b>A</b>	0.4%	64.546	Up
<b>Plains</b> KS, IA, MN, MO, NE, ND, SD	-22.3%	<b>A</b>	-2.2%	42.903	Up
<b>Southwest</b> AR, LA, OK, TX	-21.1%	<b>A</b>	3.6%	163.827	Up
<b>Mountains</b> AZ, CO, ID, MT, NV, NM, UT, WY	-30.1%	<b>A</b>	6.7%	94.305	Up
<b>Pacific</b> AK, CA, HI, OR, WA	-19.6%	<b>A</b>	1.7%	82.443	Down

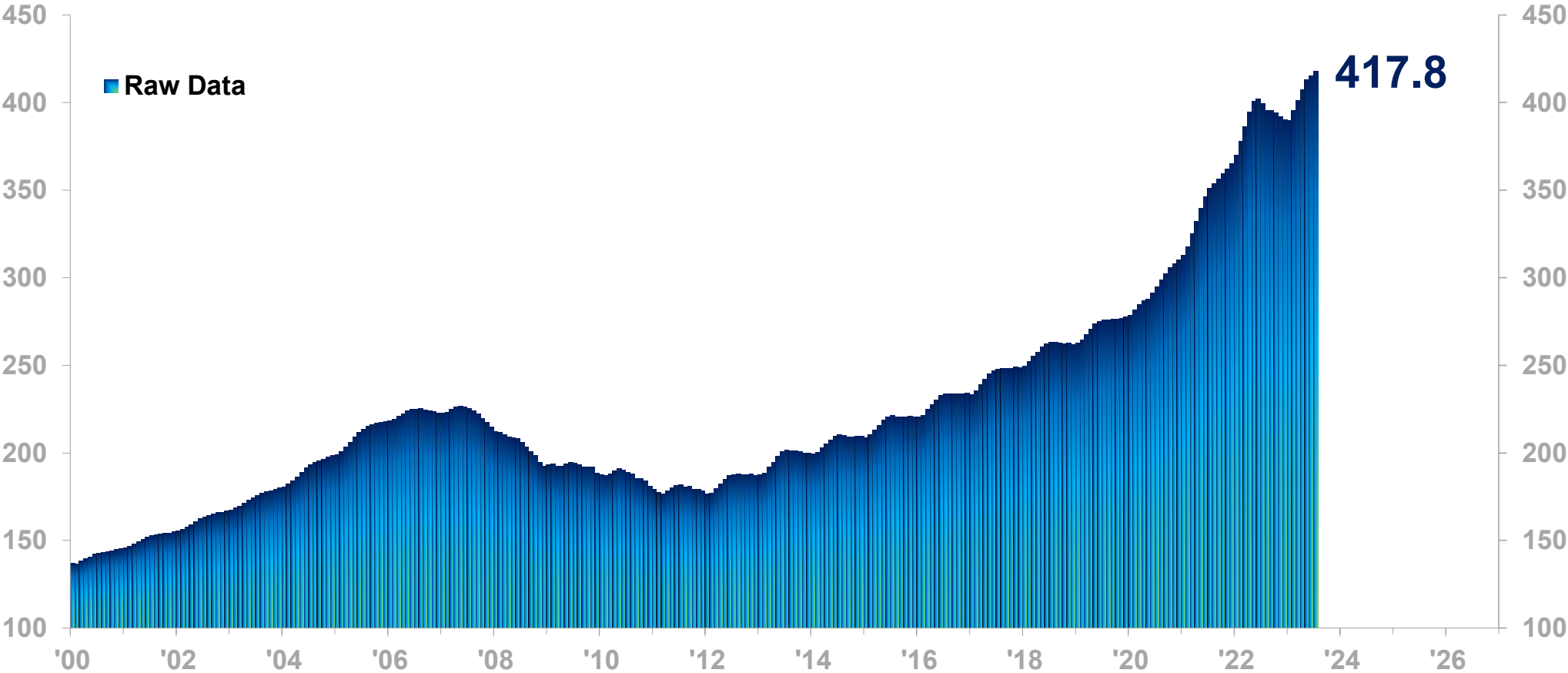
# Affordability Issues Remain an Issue

Source: Federal Housing Finance Agency



## US Housing Price Index

Raw Data (1991 = 100)

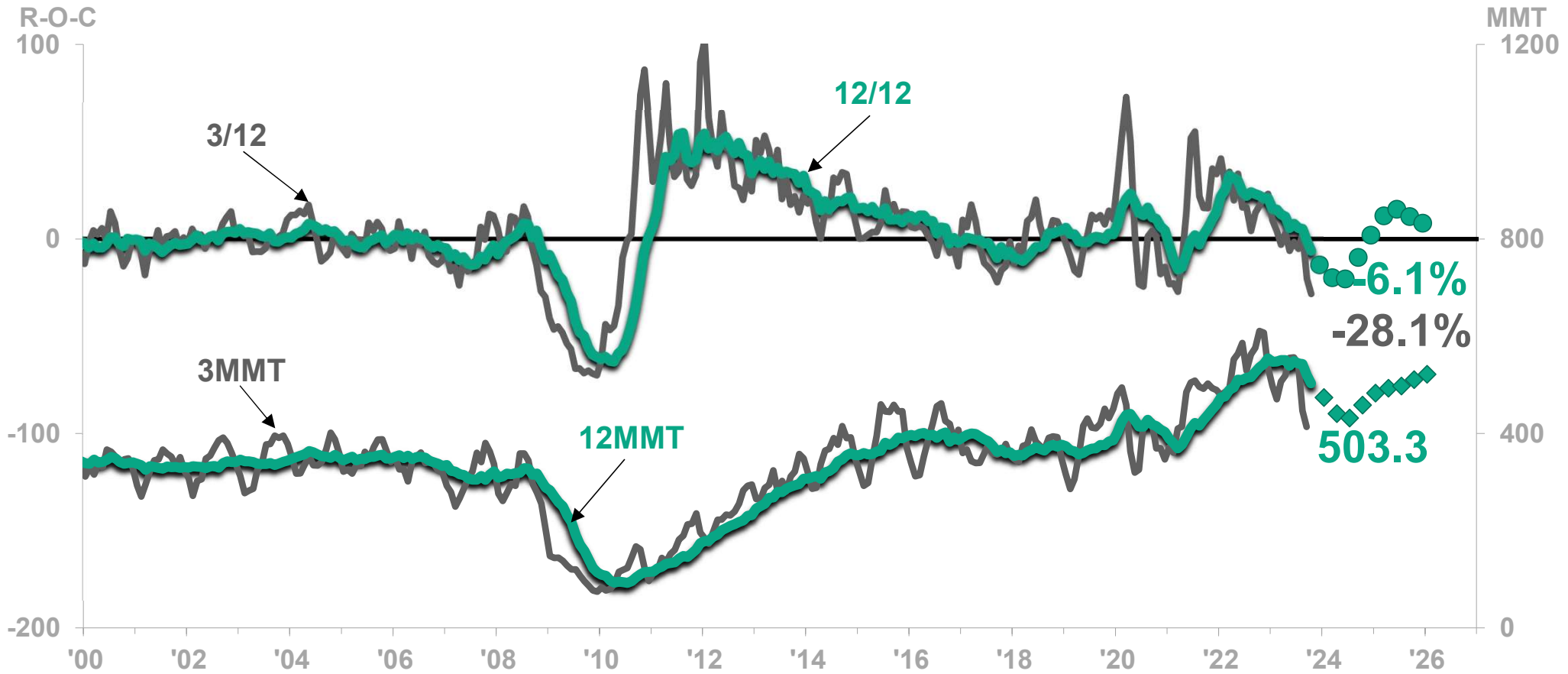


# Multi Family Market Entering Recession

Source: US Census Bureau

## US Multi-Unit Housing Starts

Thousands of Units



# Housing Leads – Nonresidential Lags

Source: US Census Bureau

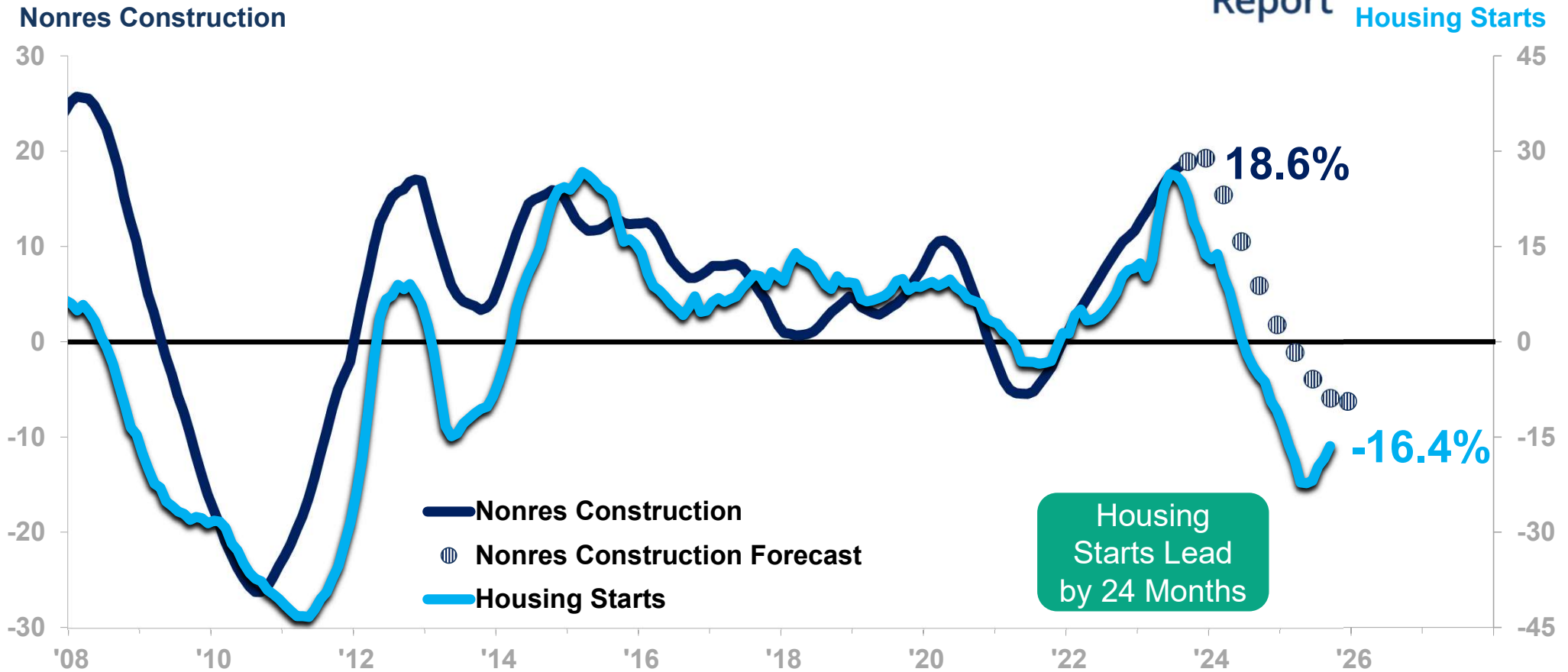
## US Private Nonresidential Construction to US Single-Unit Housing Starts

12/12 Rates-of-Change

as seen in  
ITR Economics'  
Trends  
Report

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Housing Starts

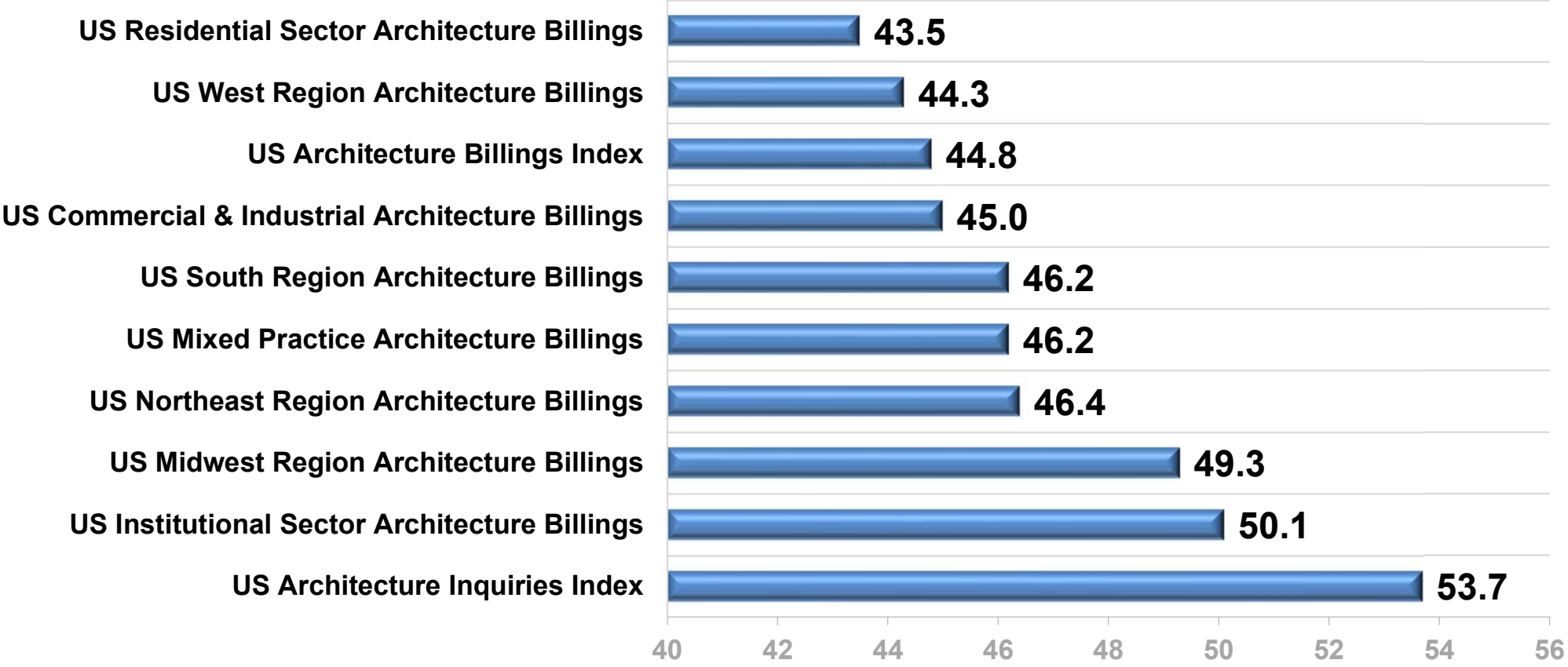


# ABI's Slipping Below 50.0 – Warning Signs For Next Year

Source: AIA

## Architecture Billings Index

Above 50 indicates an increase in demand



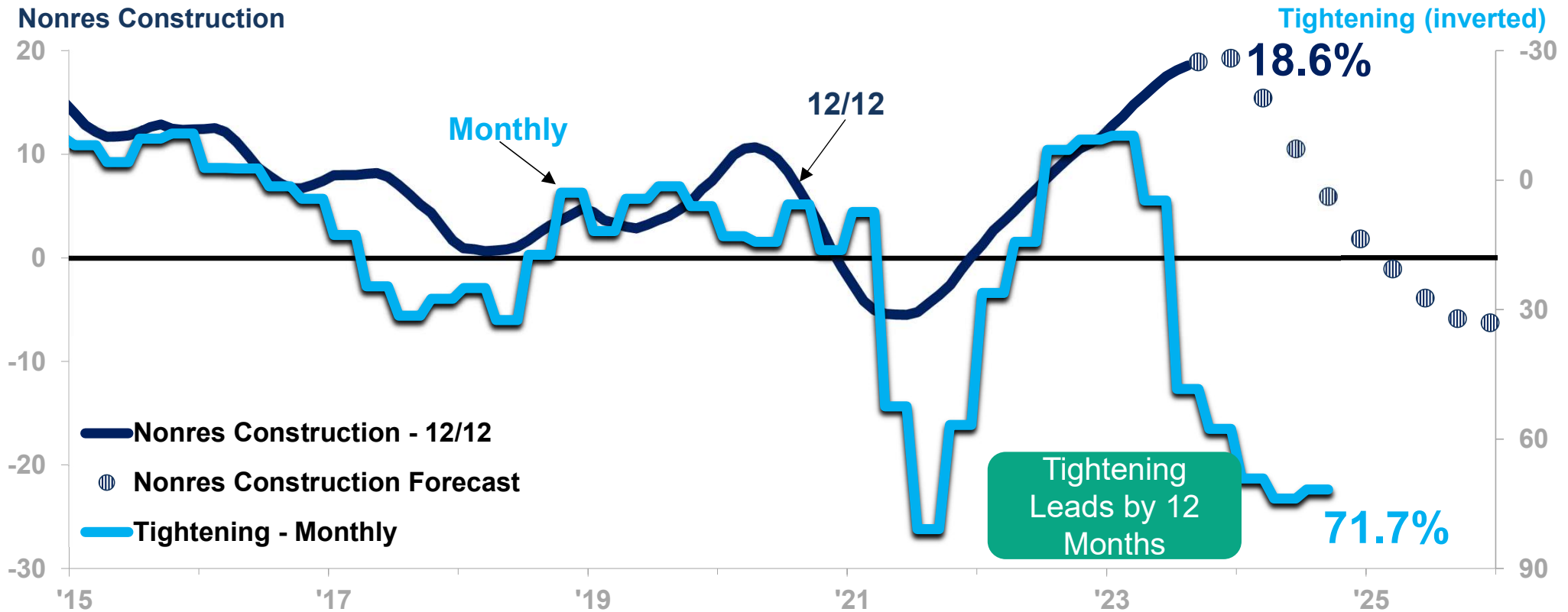
# Credit Tightening Portends Slowing Growth, Then Recession

Sources: US Census Bureau, FRB

## US Private Nonresidential Construction to US Net Percentage of Domestic Respondents Tightening Standards for Commercial Real Estate Construction & Land Development Loans



12/12 Rate-of-Change to Raw Data

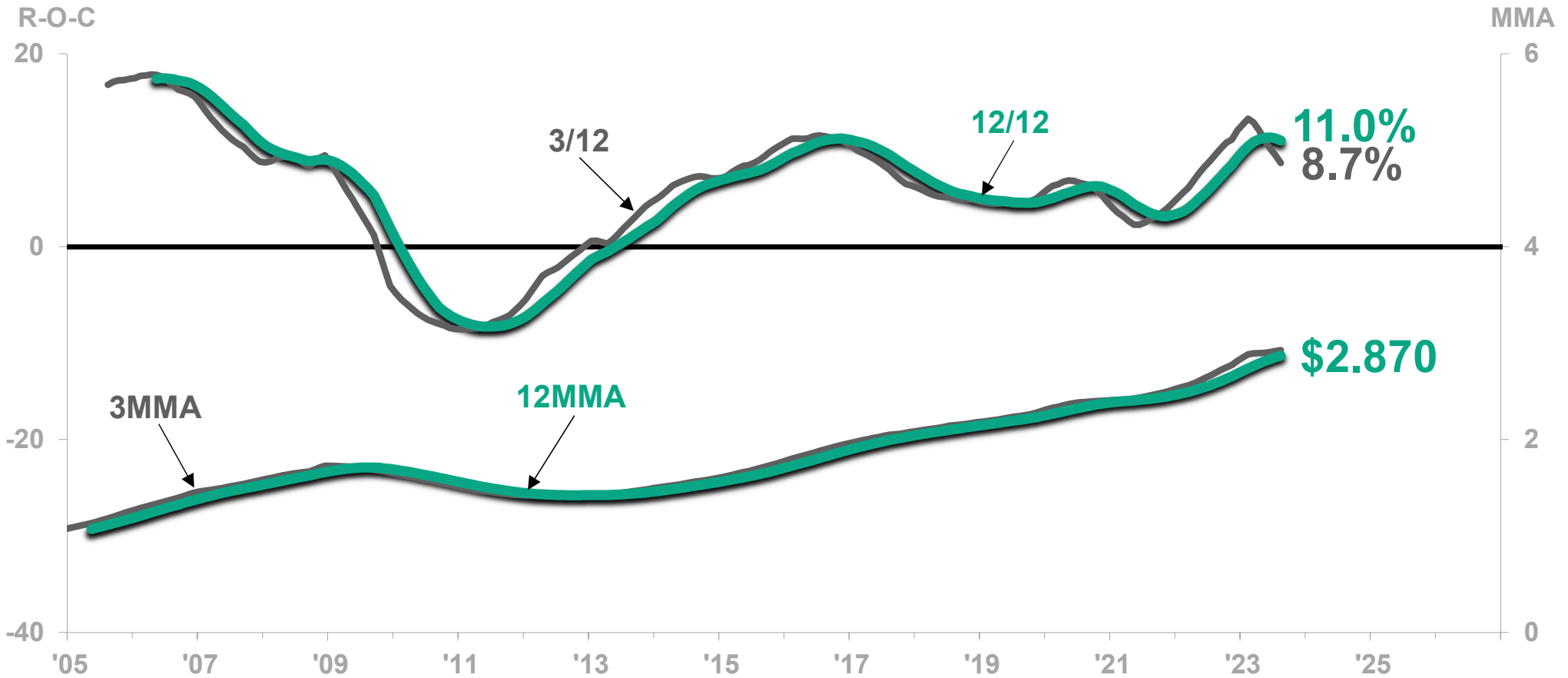


# CRE Lending Cycle Starting to Turn

Source: FRB

## US Commercial Real Estate Loans by Commercial Banks

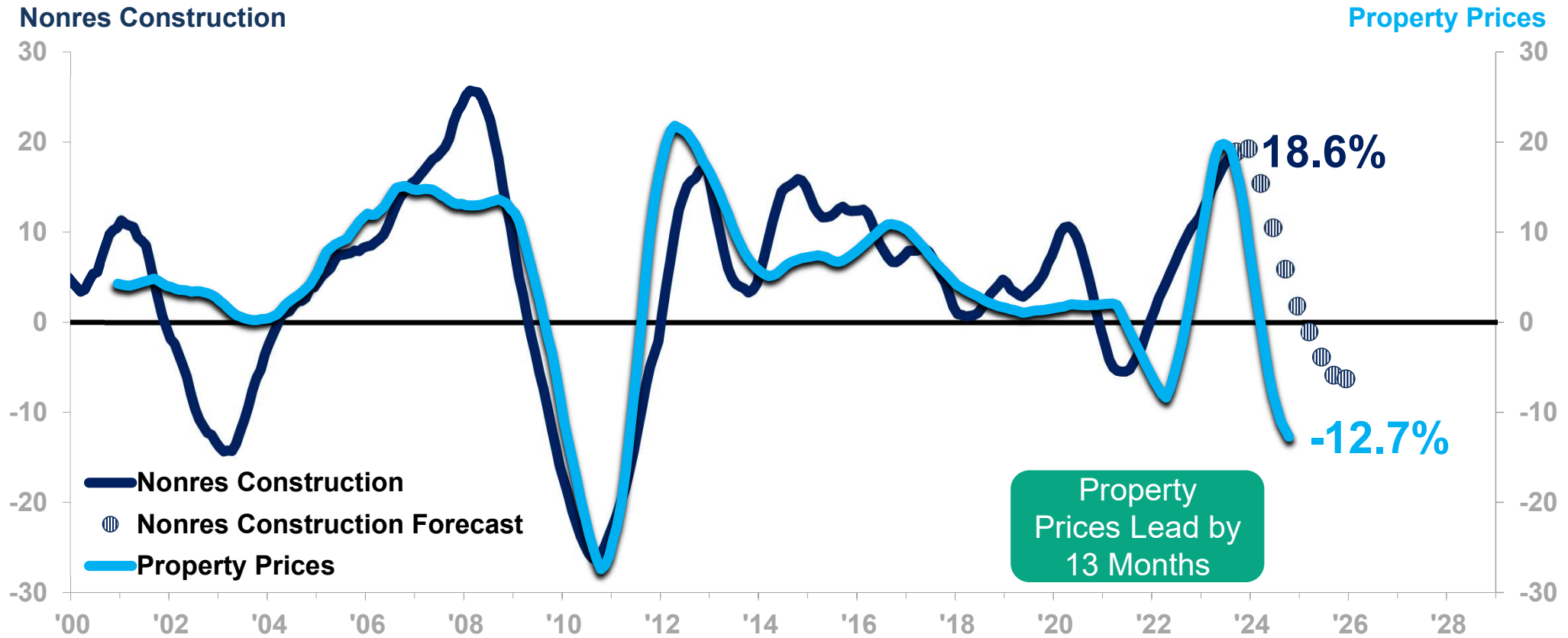
Trillions of Dollars



# Declining Prices an Indicator of Future Downturn in Construction

Sources: US Census Bureau, Green Street

## US Private Nonresidential Construction to Green Street All Commercial Property Price Index 12/12 Rates-of-Change





# Falling Real Estate Pricing Across The Board

Source: CoStar Group

## US Value-Weighted Real Estate Index of Prices

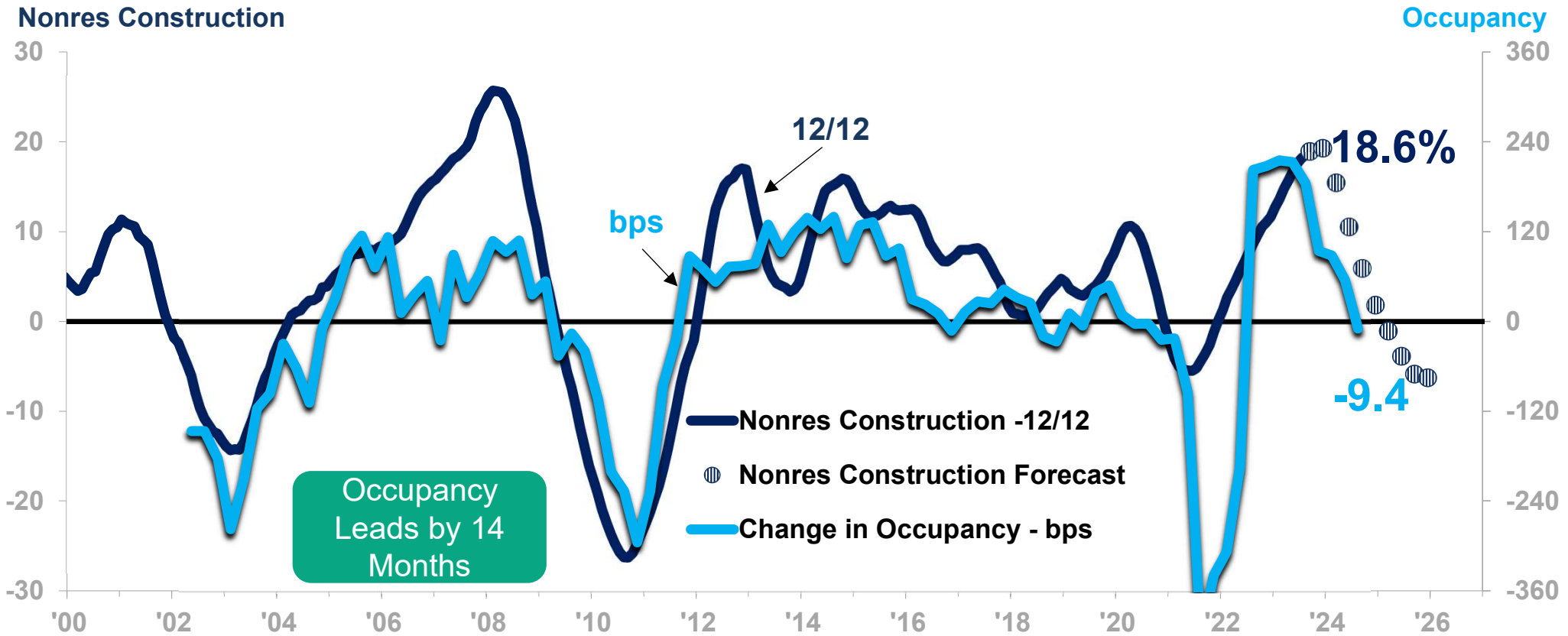


	<b>1/12 R-O-C</b>	<b>10-Year Average</b>
Apartments	<b>-15.7%</b>	8.8%
Industrial	<b>-2.8%</b>	12.0%
Office	<b>-15.6%</b>	3.5%
Retail	<b>-1.2%</b>	4.4%

# Occupancy Foreshadows Softer Nonres Construction

Sources: US Census Bureau, Nareit

## US Private Nonresidential Construction to US Commercial Real Estate Occupancy Rate 12/12 Rate-of-Change to Change in 3MMA vs. one year ago



# Office Vacancies Are Elevated and Getting Worse

Source: Nareit

## US Vacancy Rates

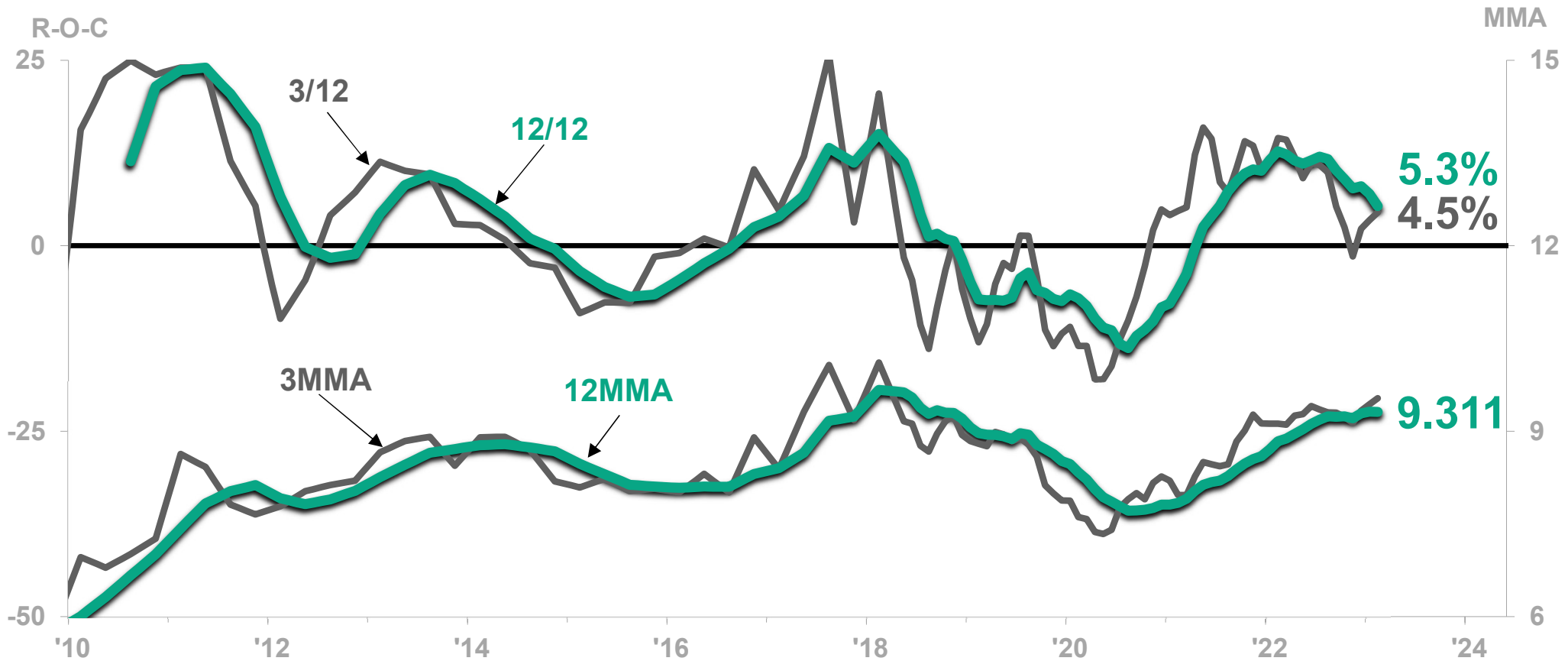


	Monthly	10-Year Average	Difference
Apartments	4.4%	4.7%	-0.5 pct. pts
Industrial Building	3.0%	4.3%	-1.3 pct. pts
Office	11.6%	8.9%	+2.8 pct. pts
Retail	3.5%	4.8%	-1.3 pct. pts

# Industry Backlog Is Slowing

Source: Associated Builders and Contractors

## US Construction Backlog Indicator For Commercial and Industrial Months



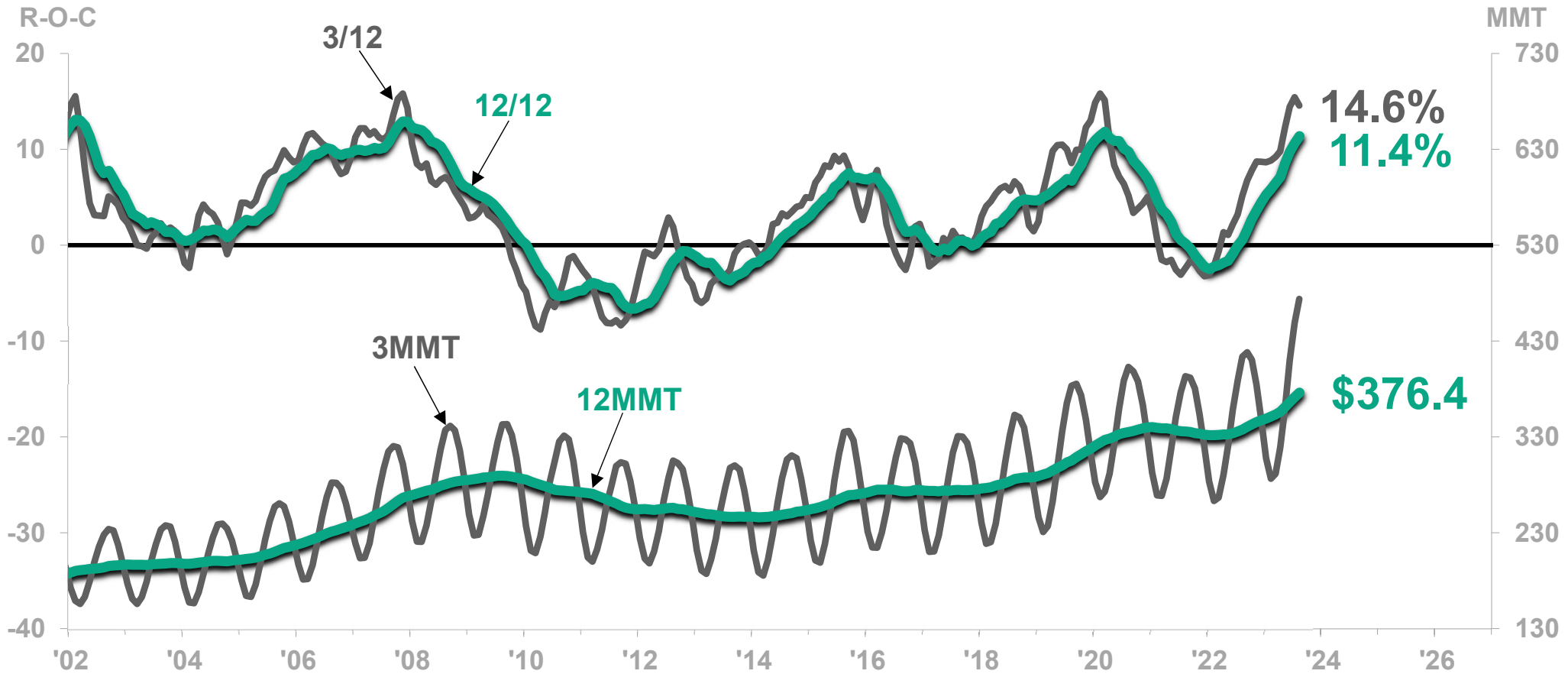
# Record Amount of S&L Dollars to be Garnered

Source: US Census Bureau

## US Total State and Local Government Construction



Billions of Dollars



# Additional Rise Indicated

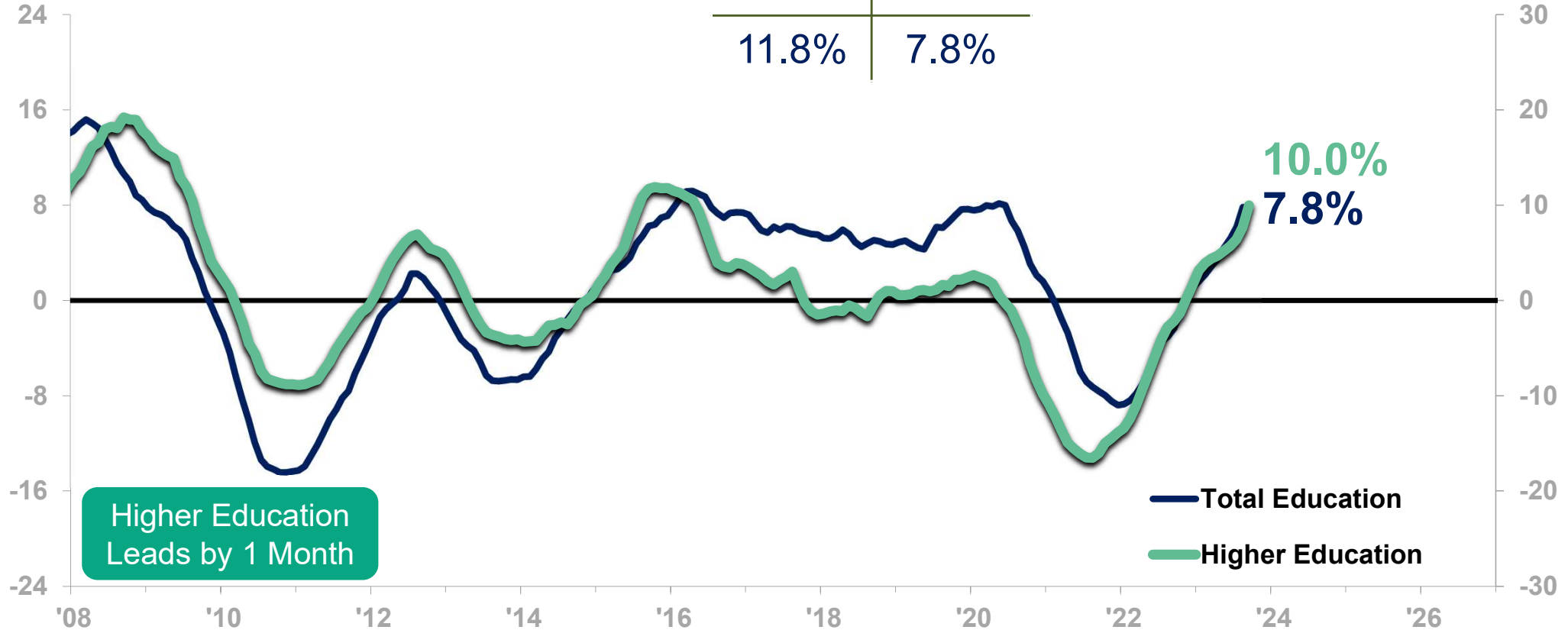
Source: US Census Bureau

## US Total Education Construction to US Total Higher Educational Building Construction



12/12 Rates-of-Change

Total Education



3/12	12/12
11.8%	7.8%

Higher Education

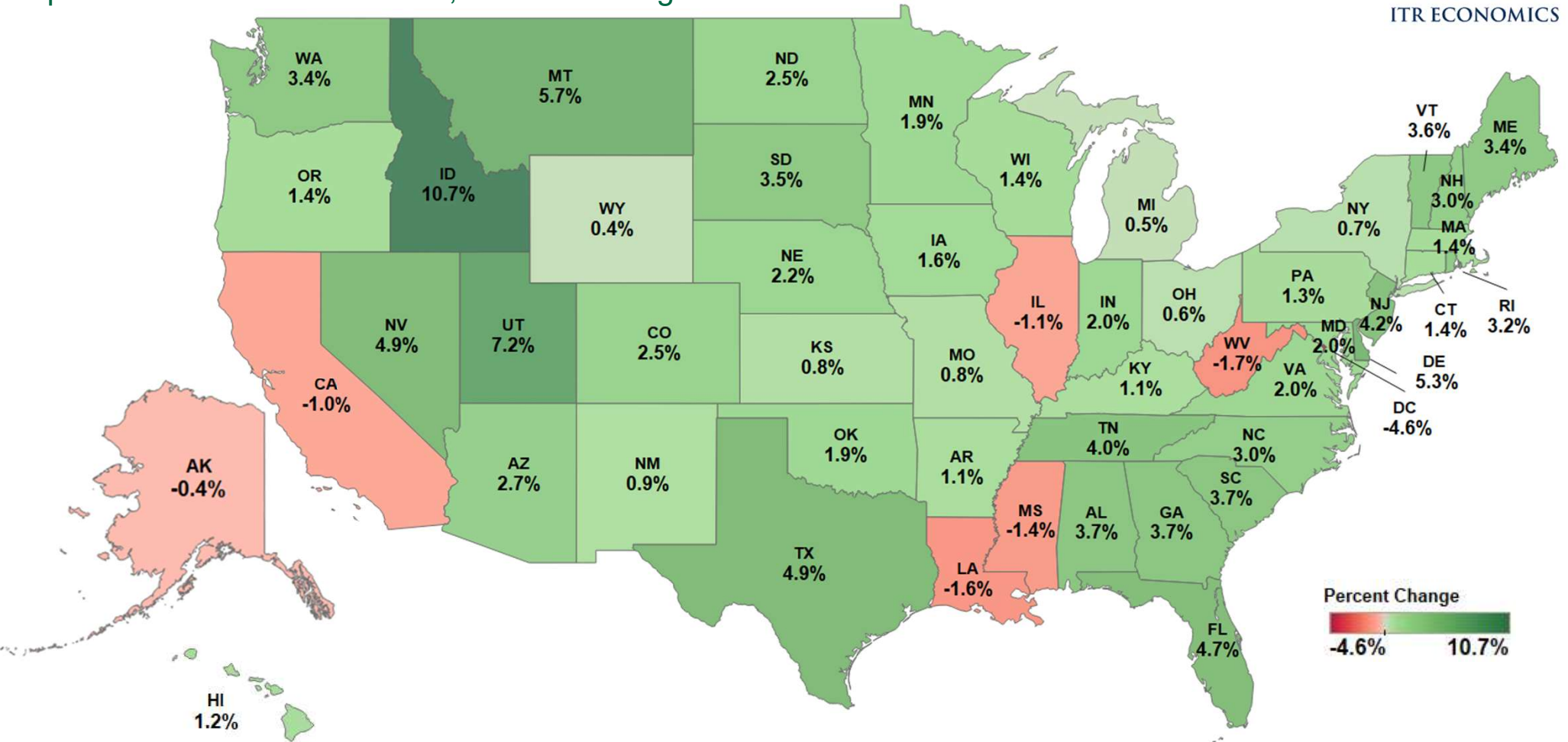
Higher Education Leads by 1 Month

— Total Education  
— Higher Education

# Southeast Demographics Continue Favorable Trend

Source: US Census Bureau

## Population Growth 2018 – 2022, Percent Change







# *People*

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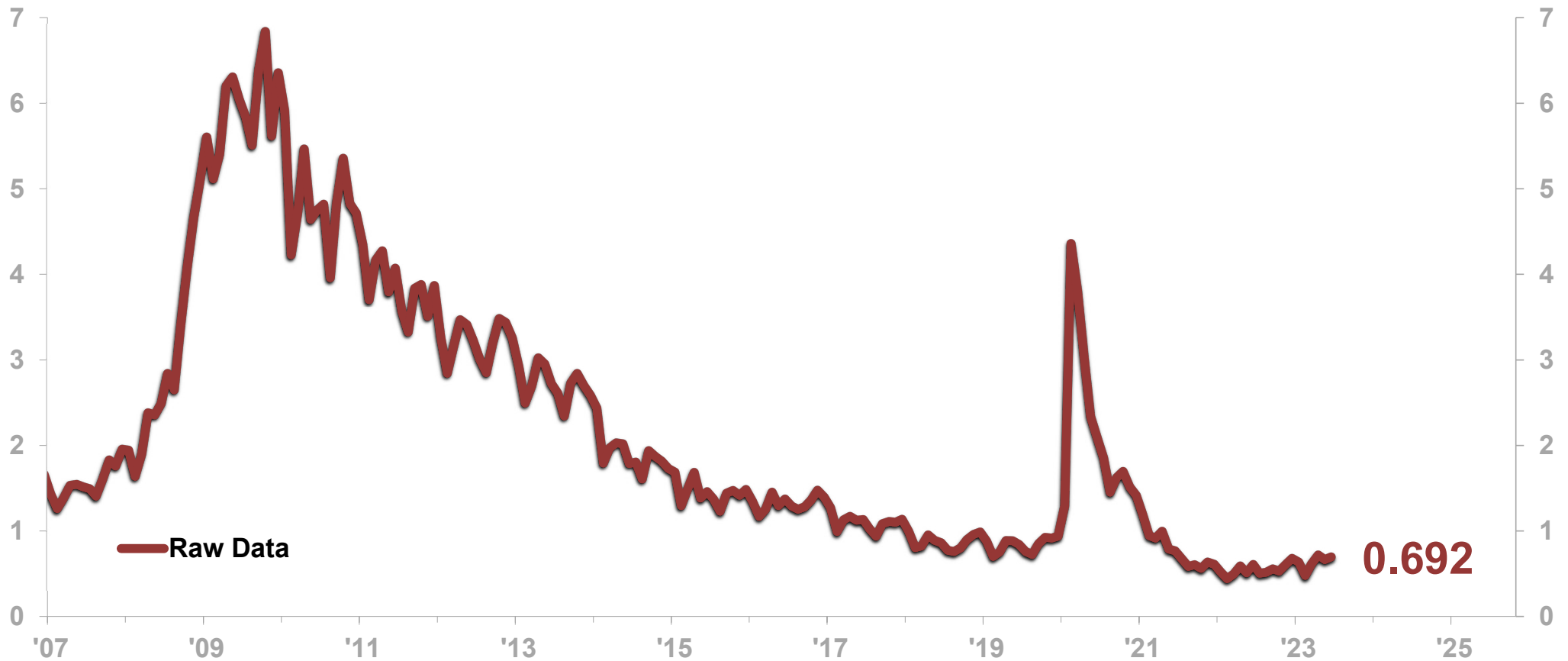


# Interest Rate Pressure Has Yet to Emerge in Labor Market

Source: BLS

## US Number of Unemployed Persons per Job Opening

Raw Data, Number of Persons

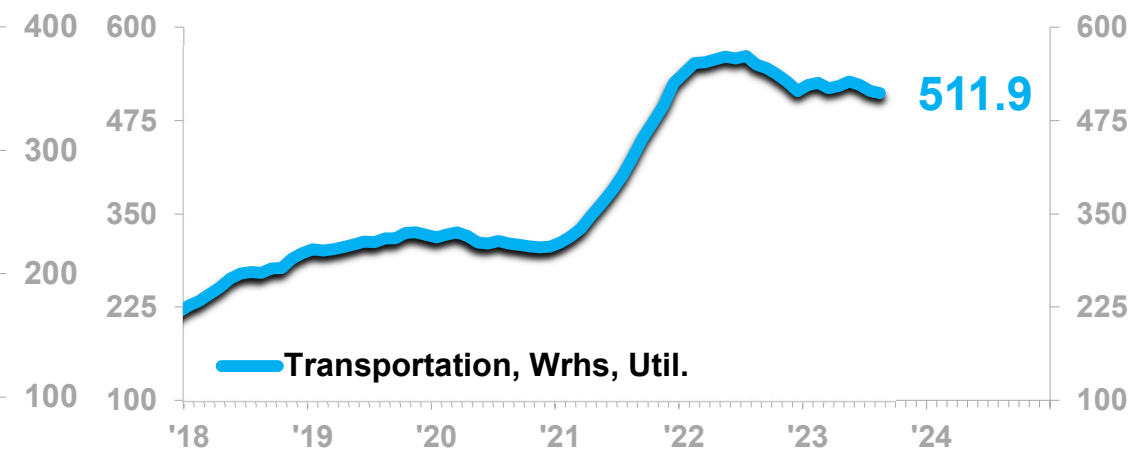
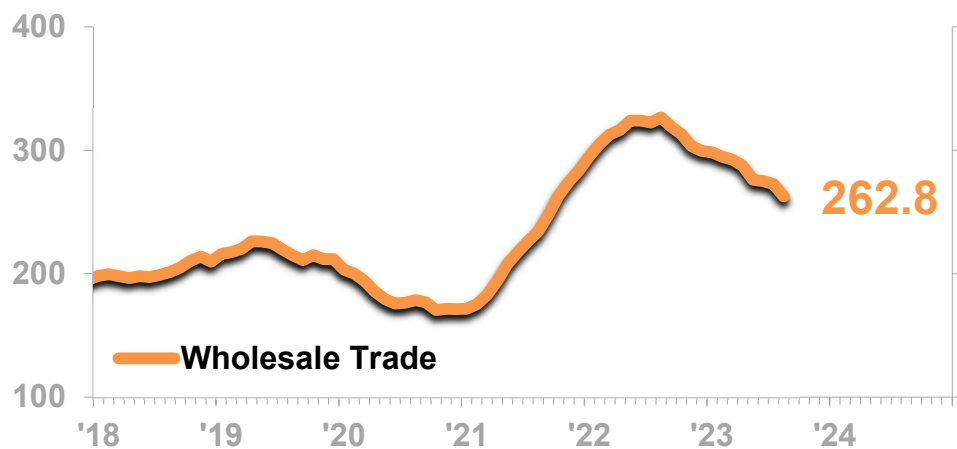
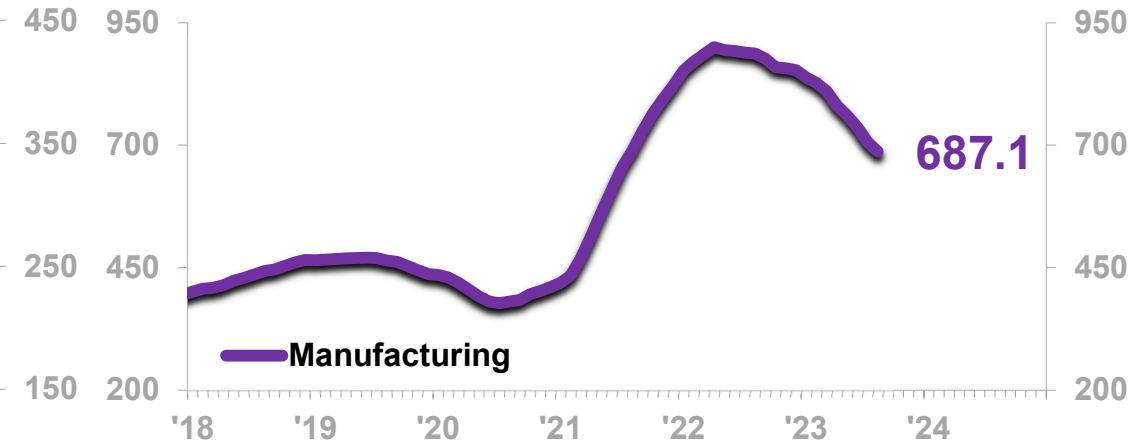
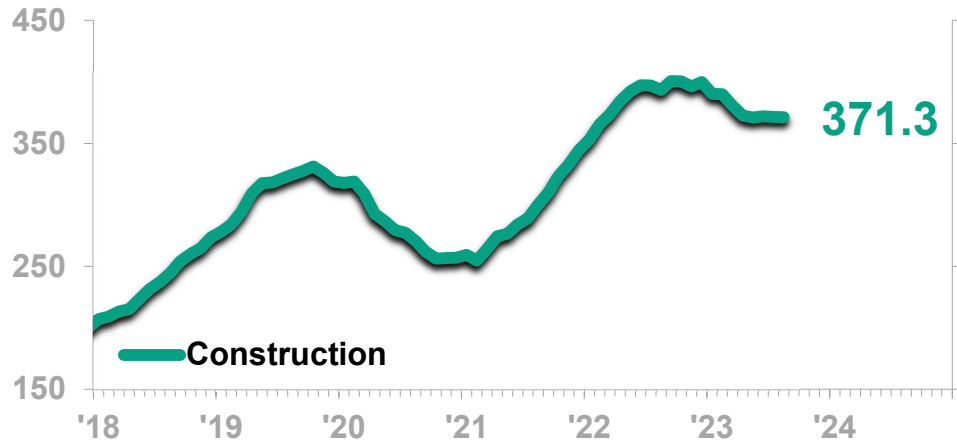


# Labor Shortage Will Not End Anytime Soon

Source: BLS

## US Job Openings by Industry

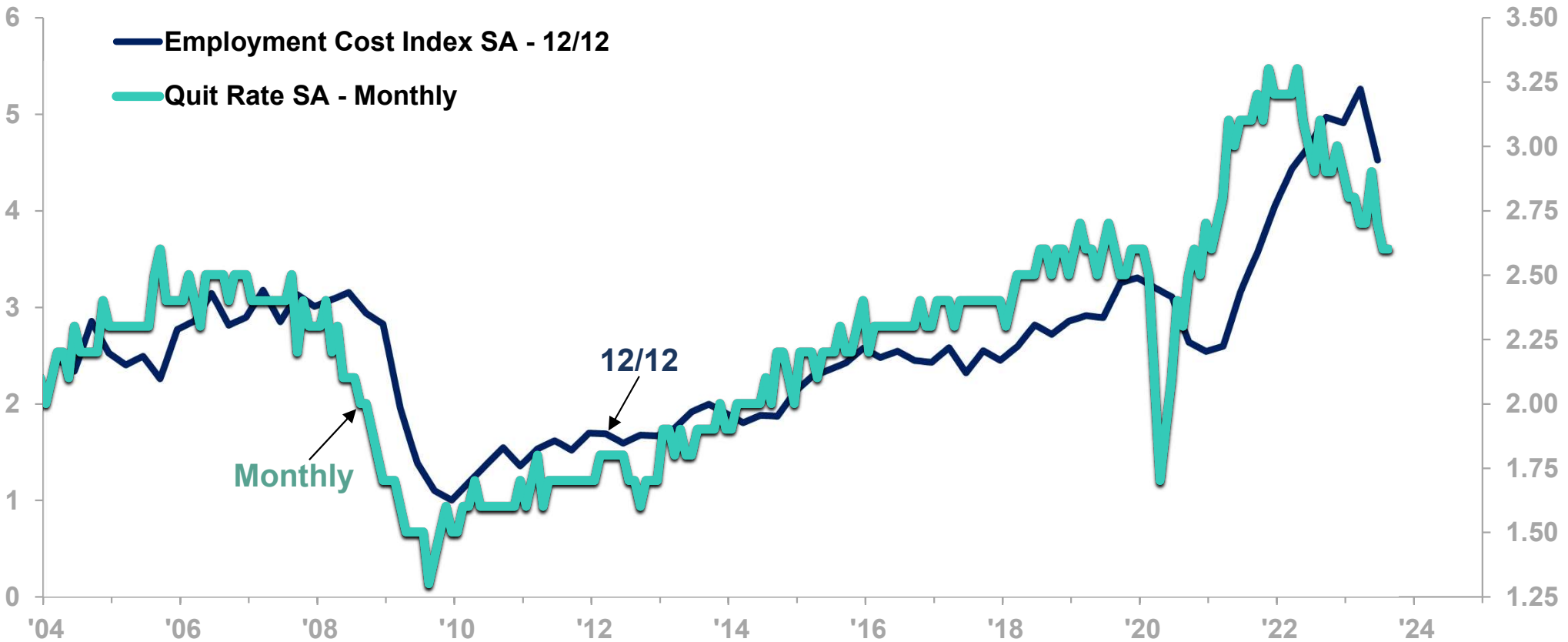
12MMA in Thousands



# An Easing in the Quit Rate Will Moderate Employment Costs

Source: BLS

**US Employment Cost Index to US Quit Rate**  
Index: 12/12 Rate-of-Change, Quit Rate: Percent





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# ***Financial Markets***

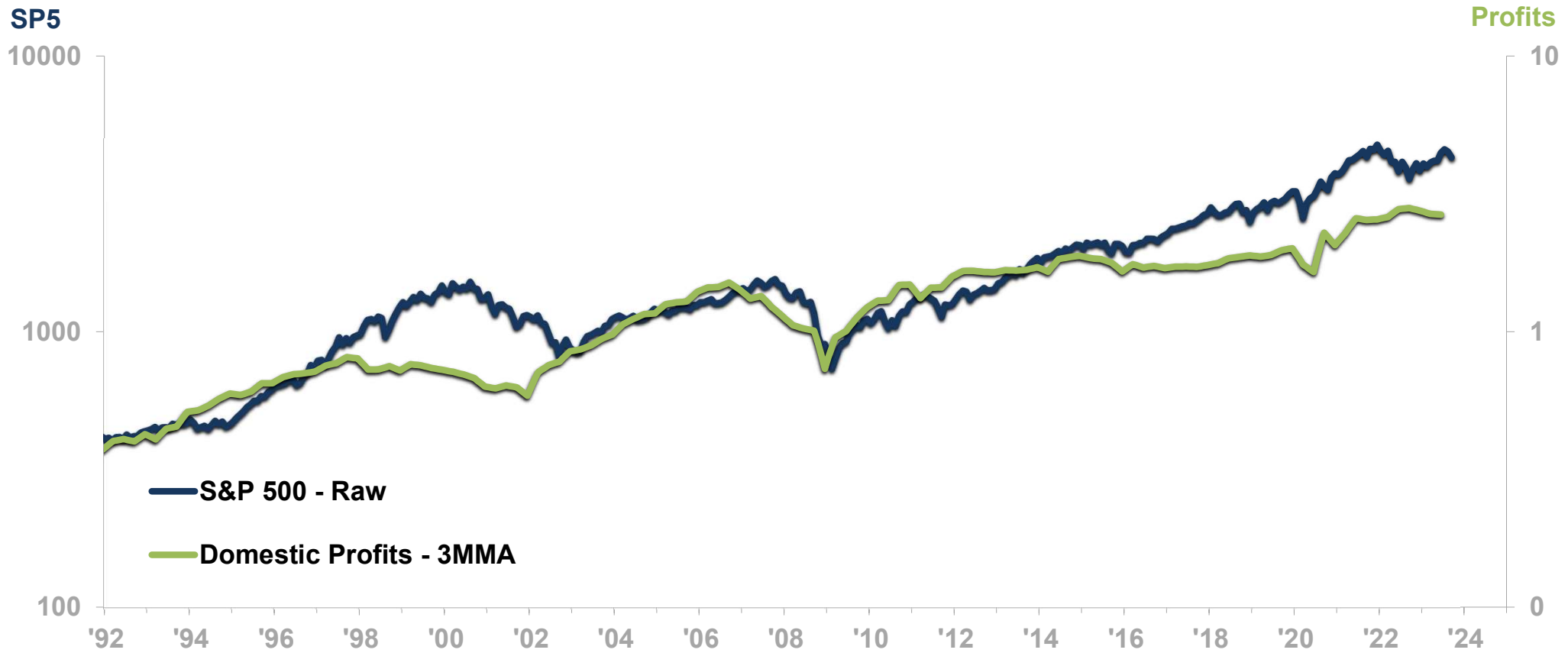
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# Increasingly Risk Laden

Sources: WSJ, BEA

## US Stock Prices Index to US Domestic Corporate Profits with Capital Consumption Adjustments Data Trends

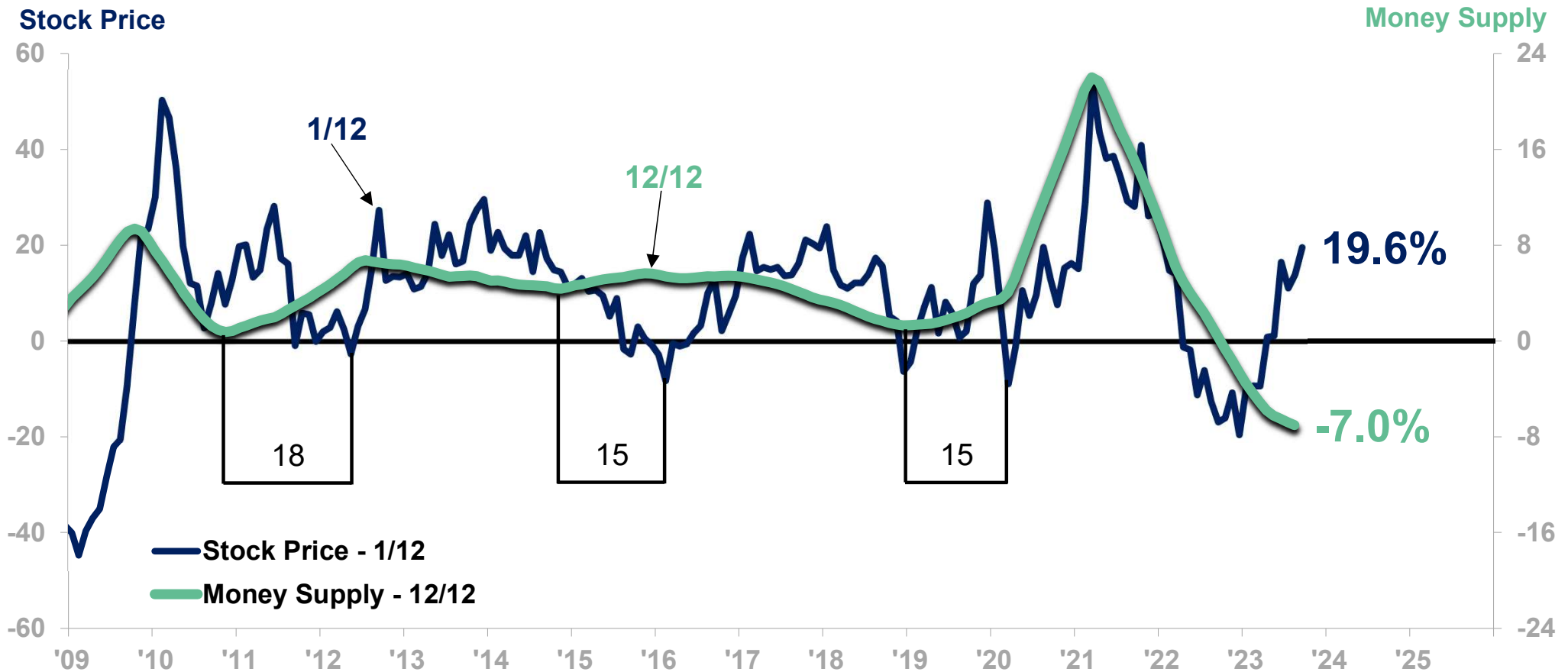


# Downside Pressure Stemming from Monetary Policy

Sources: WSJ, FRB

## US S&P 500 Stock Prices Index to M2 Money Supply (deflated)

### Rates-of-Change



# Optimizer A Oct 1, 2020 through September 30, 2023



-  Higher inflation/interest rates will compress multiples
-  Optimizer Leading Indicator, M2, & Margin Debt signal caution regarding S&P 500
-  Caution does not mean exit the market; continue to build wealth but the strategies will change

## *Next Steps*

**Assess exposure to a future bear trend by market.**

**Today's price correction is different than a bear market. Stay engaged.**





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2 QUESTIONS

