

United States Forecast

Headline Numbers, Comparisons to Surveys, & Fed Rate Assumption

This is a persistent inflation, no recession, and Fed pulls back from substantive rate hikes, scenario.

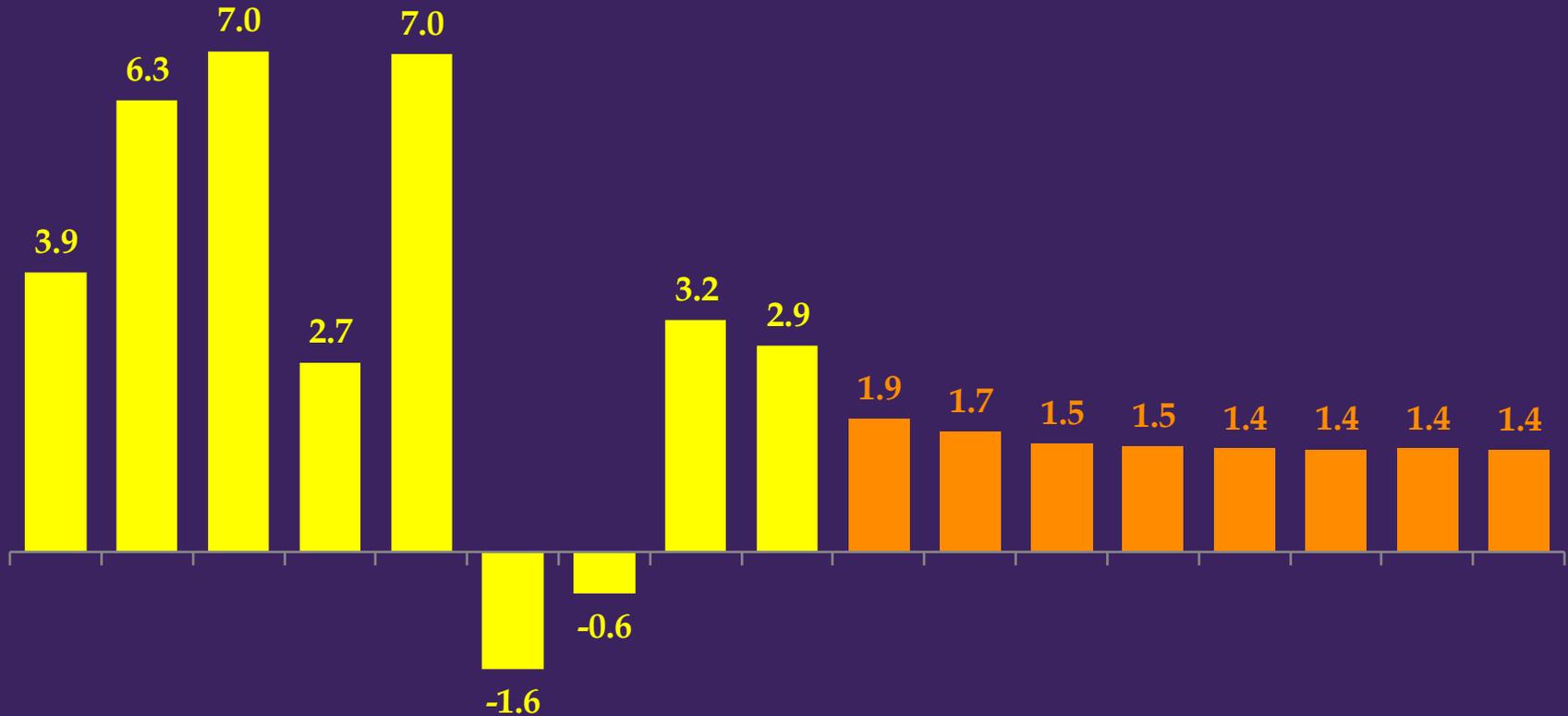
Updated: February 17, 2023

California Lutheran University

CENTER FOR ECONOMIC RESEARCH
& FORECASTING

Headline Numbers

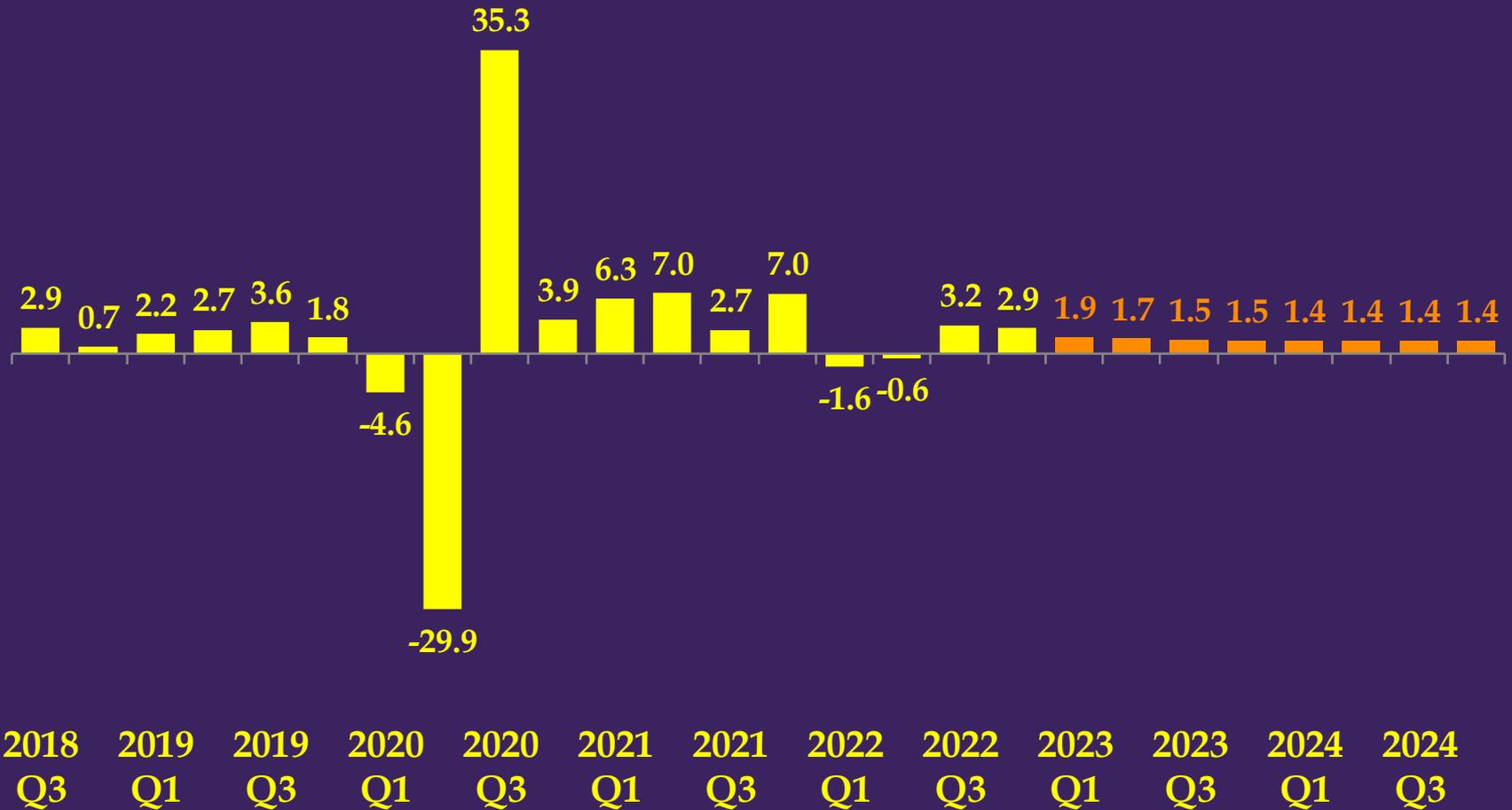
Real Gross Domestic Product



2020 Q4 2021 Q2 2021 Q4 2022 Q2 2022 Q4 2023 Q2 2023 Q4 2024 Q2 2024 Q4

Center for Economic Research and Forecasting
United States - (saar q-o-q percent change)

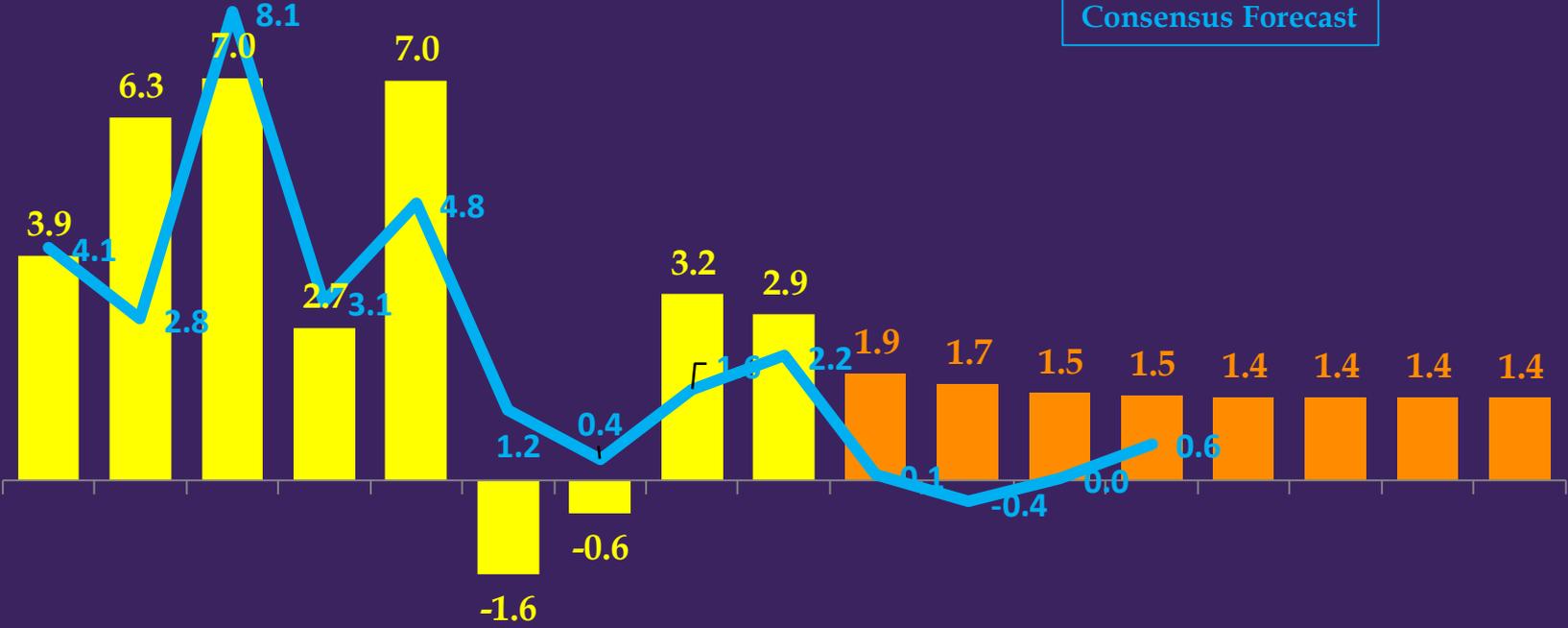
Real Gross Domestic Product



Center for Economic Research and Forecasting
United States - (saar q-o-q percent change)

Real Gross Domestic Product

Wall Street Journal
Consensus Forecast

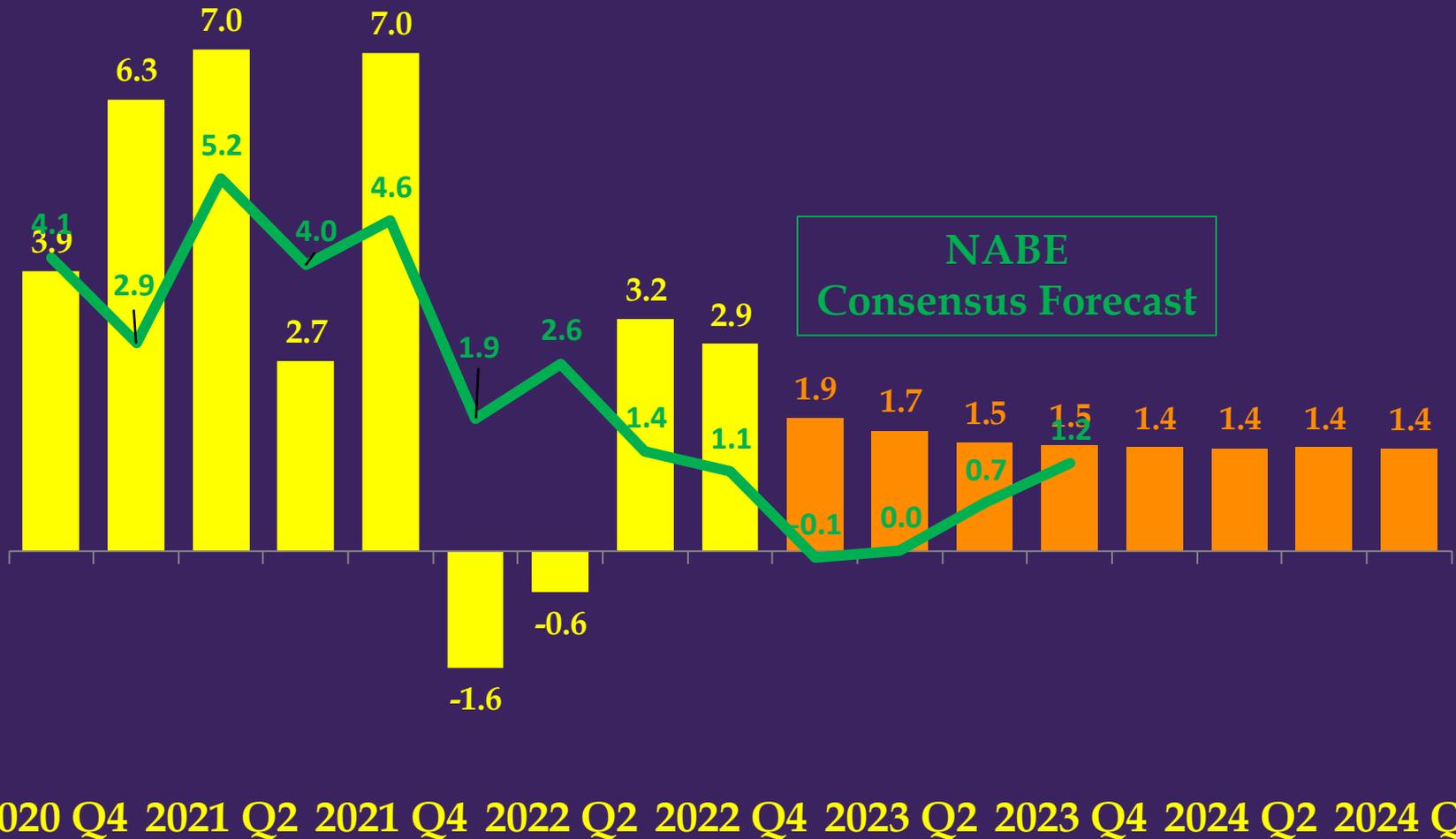


2020 Q4 2021 Q2 2021 Q4 2022 Q2 2022 Q4 2023 Q2 2023 Q4 2024 Q2 2024 Q4

Center for Economic Research and Forecasting
United States - (saar q-o-q percent change)

Wall Street Journal (January)

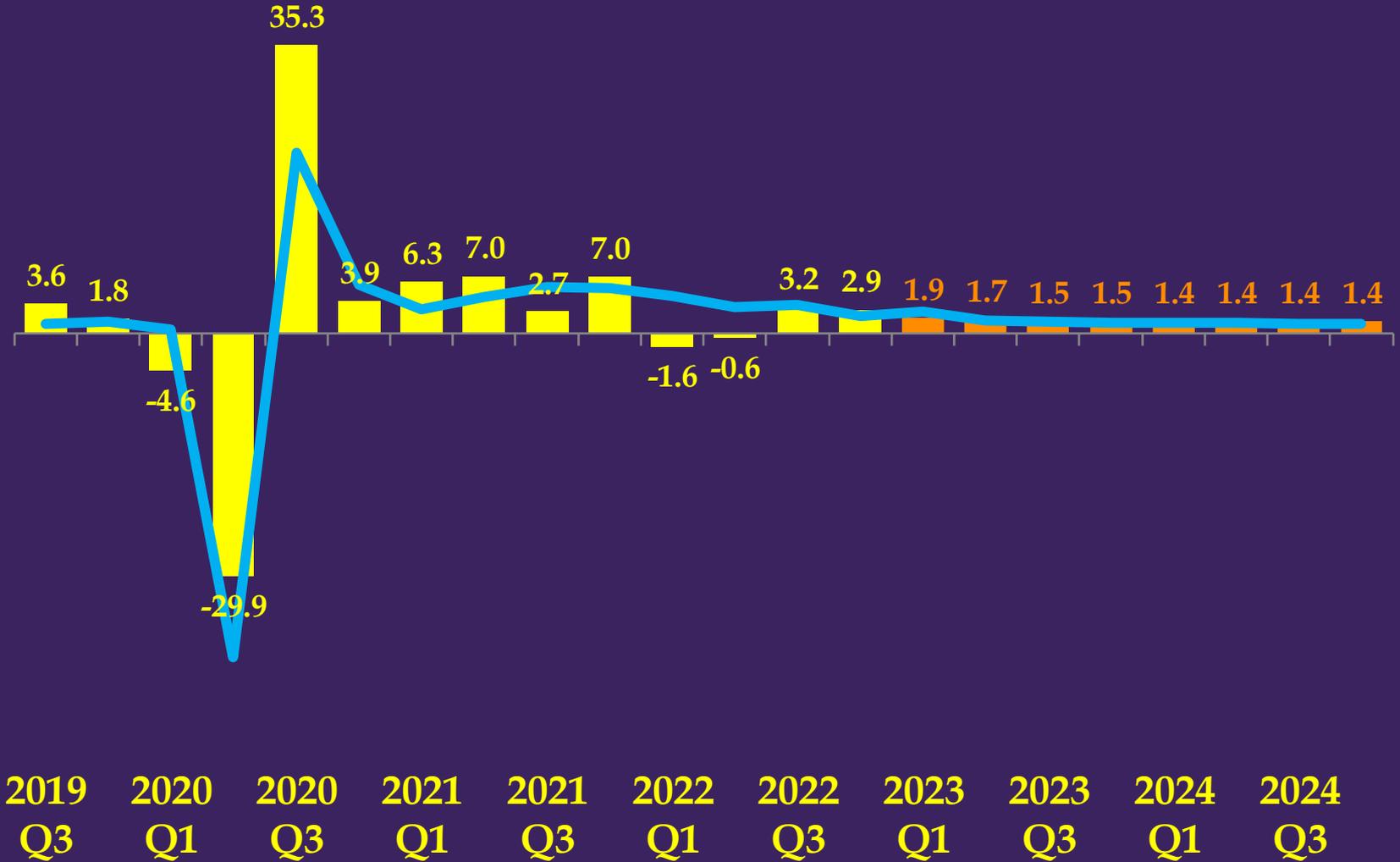
Real Gross Domestic Product



Center for Economic Research and Forecasting
United States - (saar q-o-q percent change)

NABE (Dec 2022)

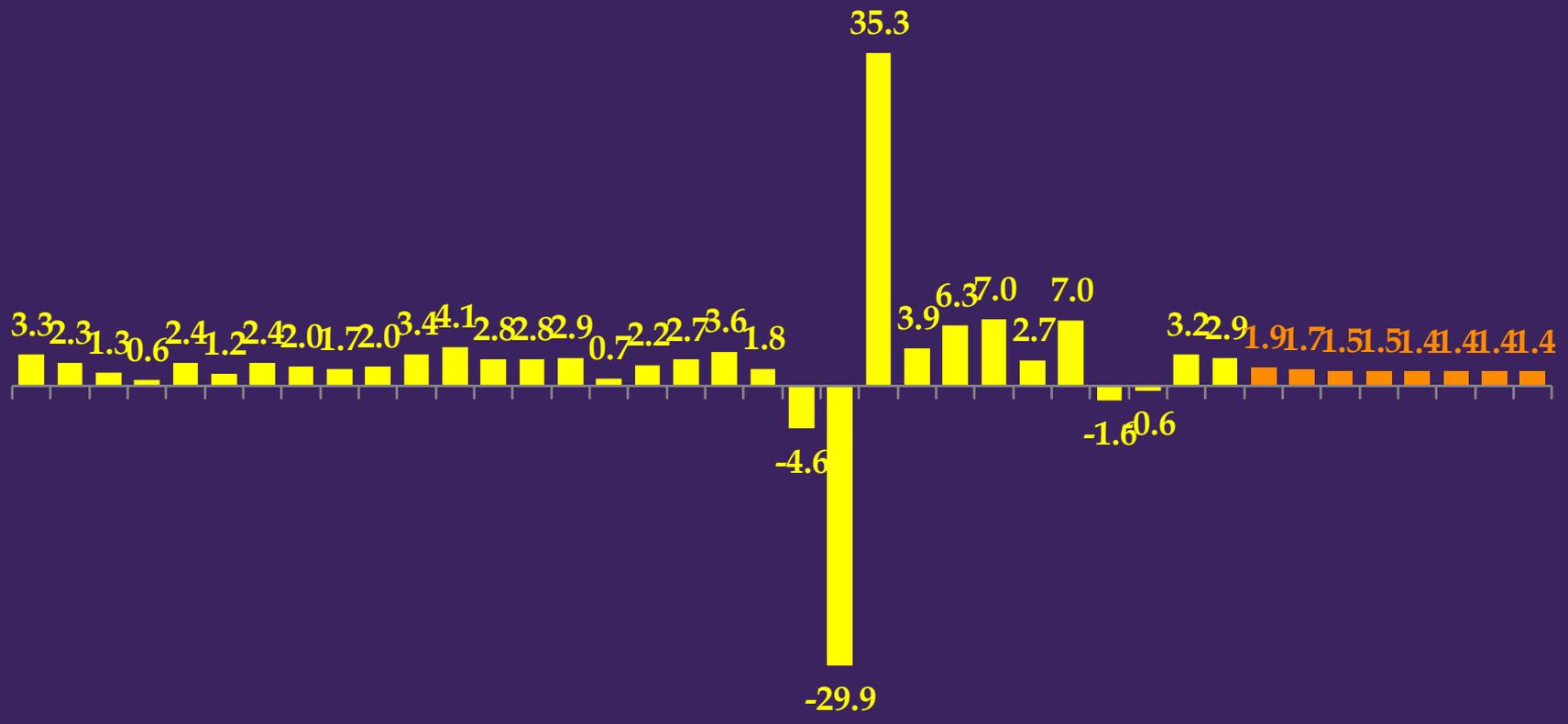
Real Gross Domestic Product



Center for Economic Research and Forecasting
United States - (saar q-o-q percent change)

Non-Farm Jobs-SA

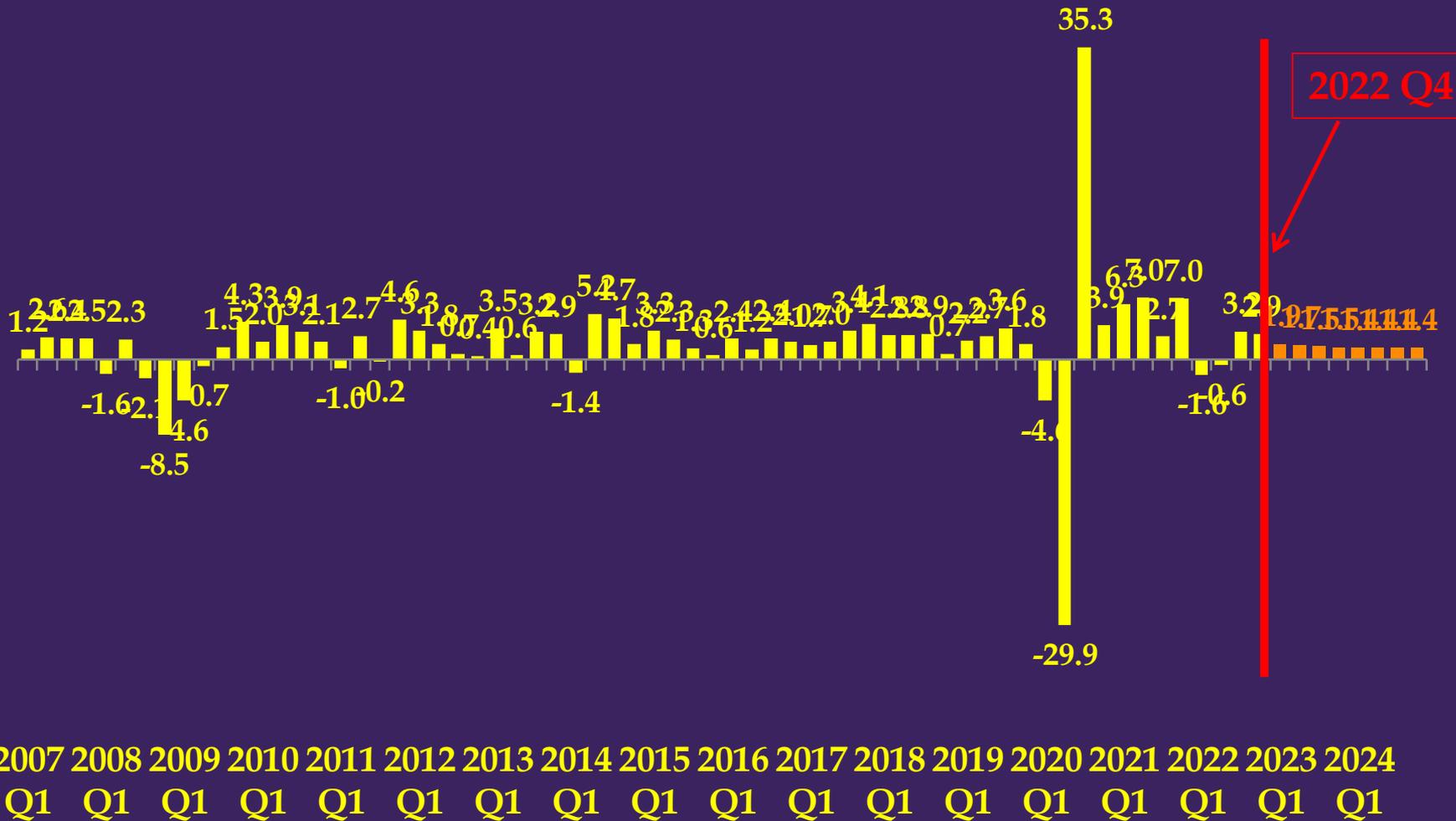
Real Gross Domestic Product



2015 Q1 2016 Q1 2017 Q1 2018 Q1 2019 Q1 2020 Q1 2021 Q1 2022 Q1 2023 Q1 2024 Q1

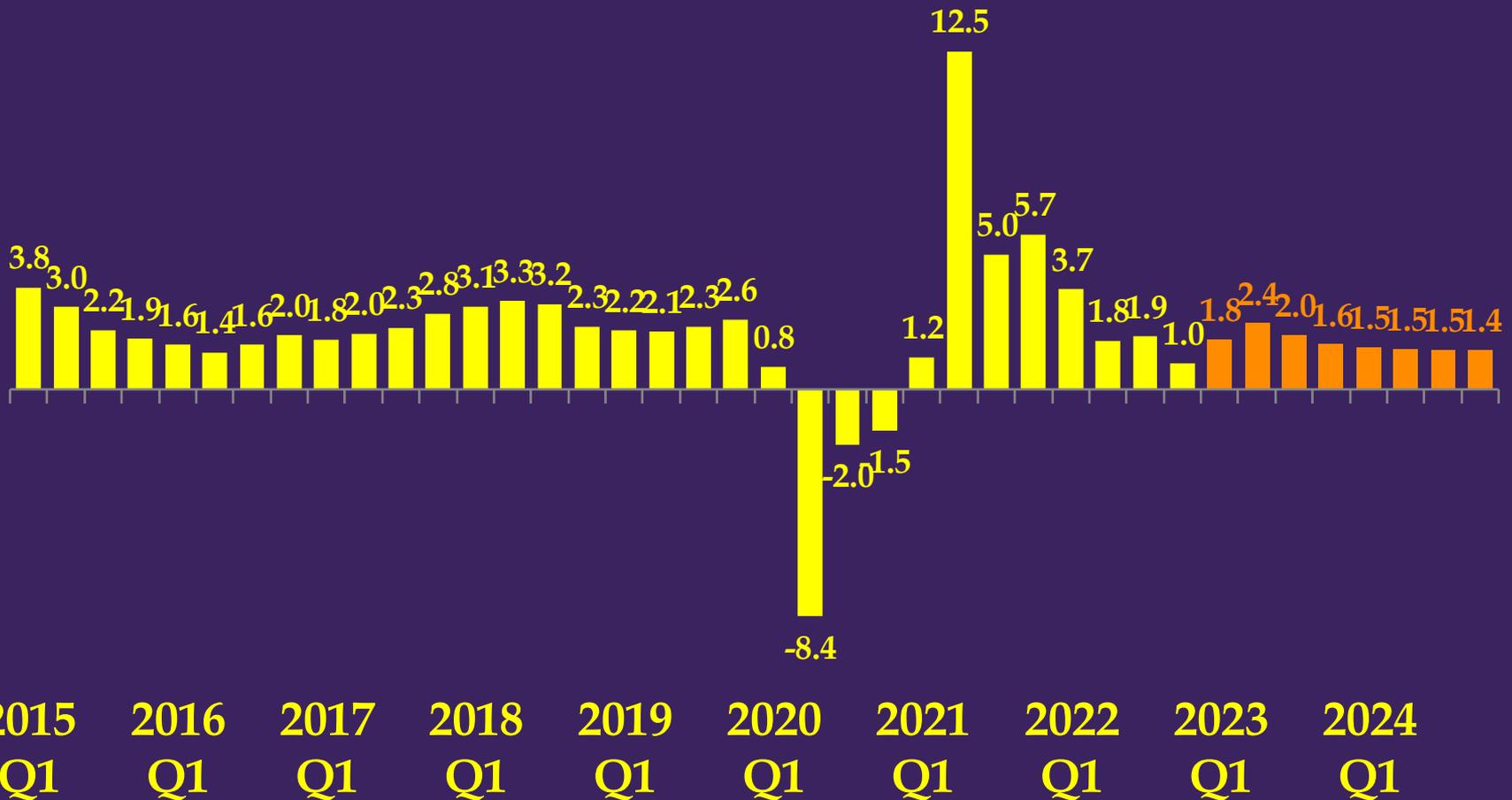
Center for Economic Research and Forecasting
United States - (saar q-o-q percent change)

Real Gross Domestic Product



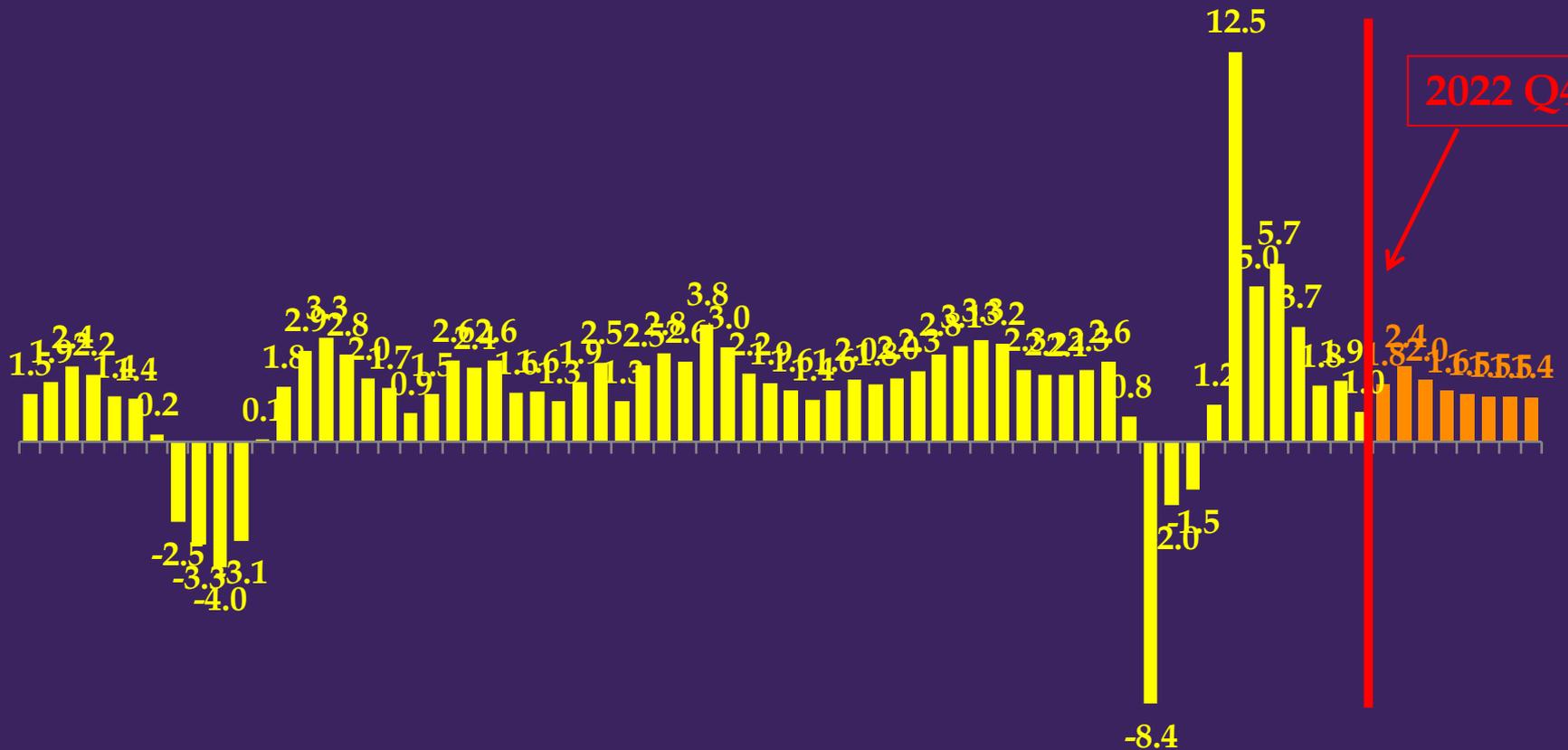
Center for Economic Research and Forecasting
 United States - (saar q-o-q percent change)

Real Gross Domestic Product



Center for Economic Research and Forecasting
United States - (y-o-y percent change)

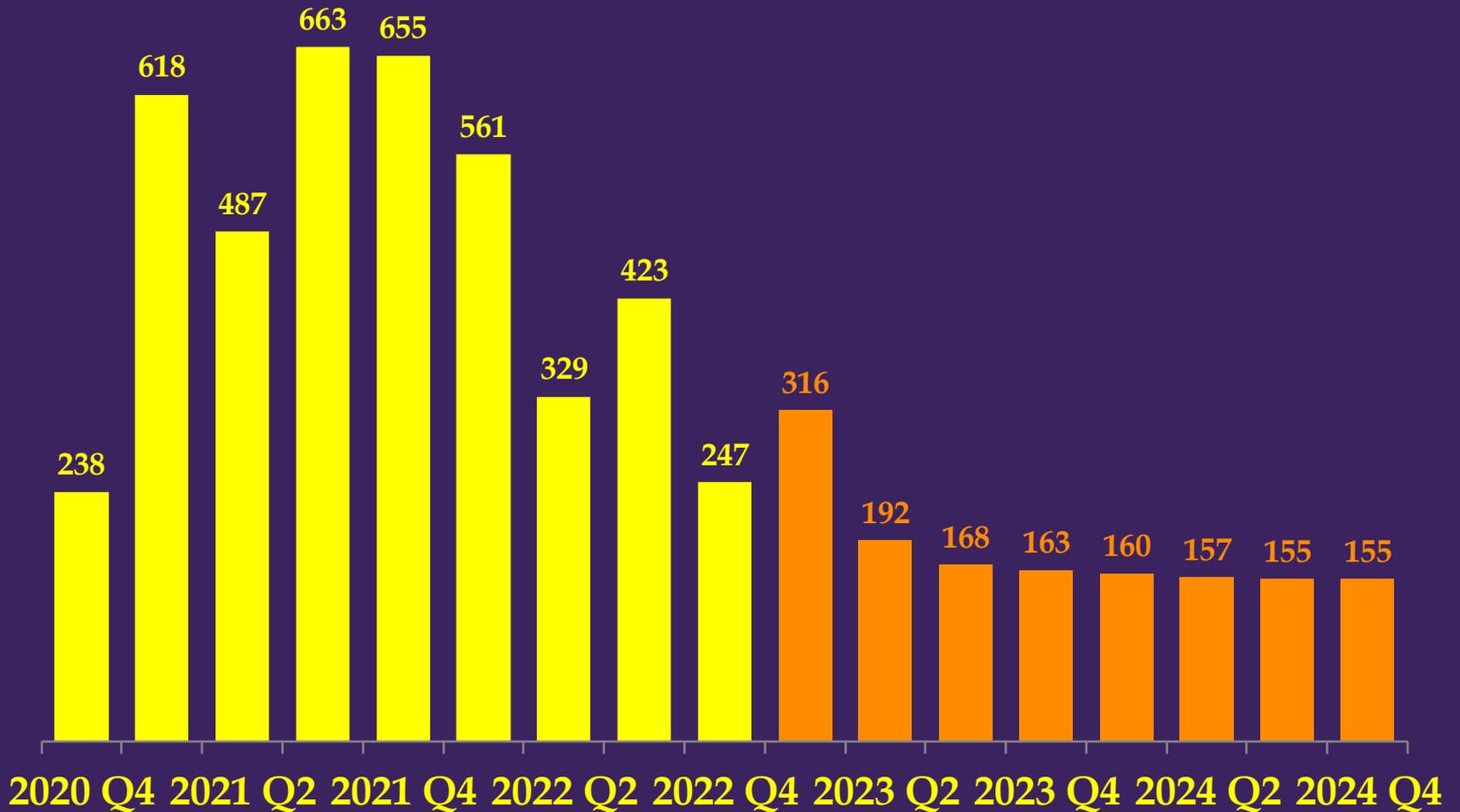
Real Gross Domestic Product



2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024
 Q1 Q1

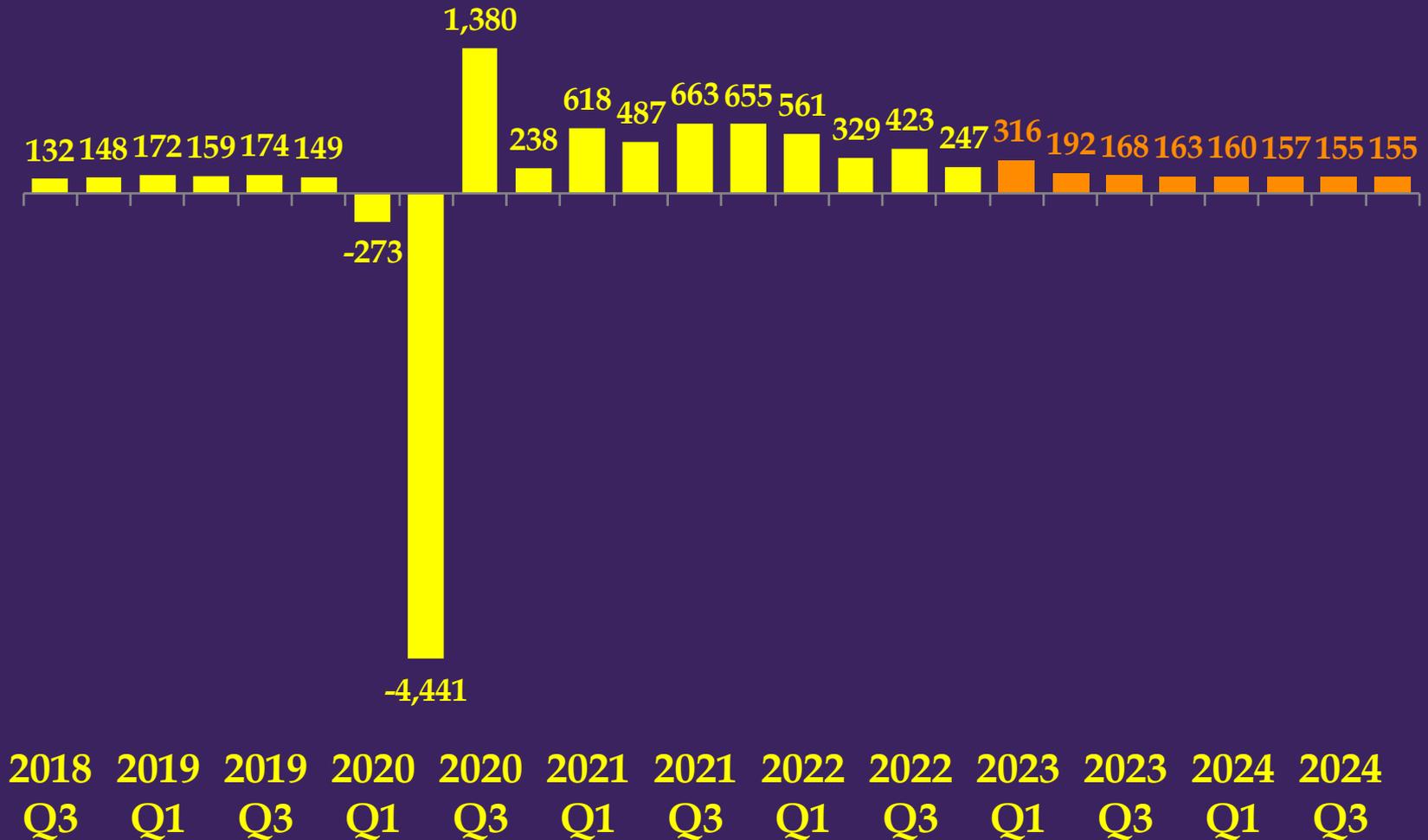
Center for Economic Research and Forecasting
 United States - (y-o-y percent change)

Average Quarterly Non-Farm Job Change



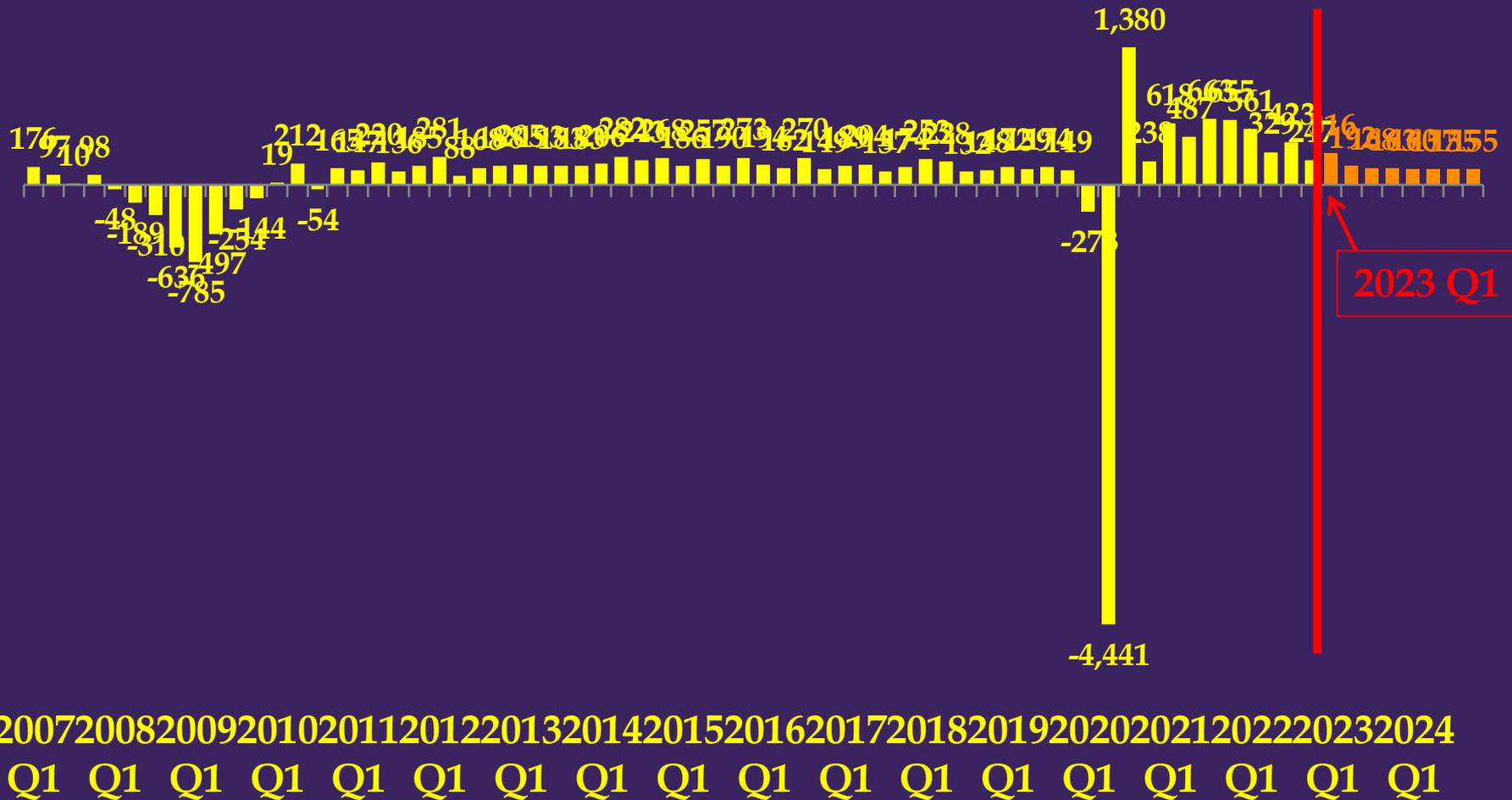
Center for Economic Research and Forecasting
United States - (thousands of jobs)

Average Quarterly Non-Farm Job Change



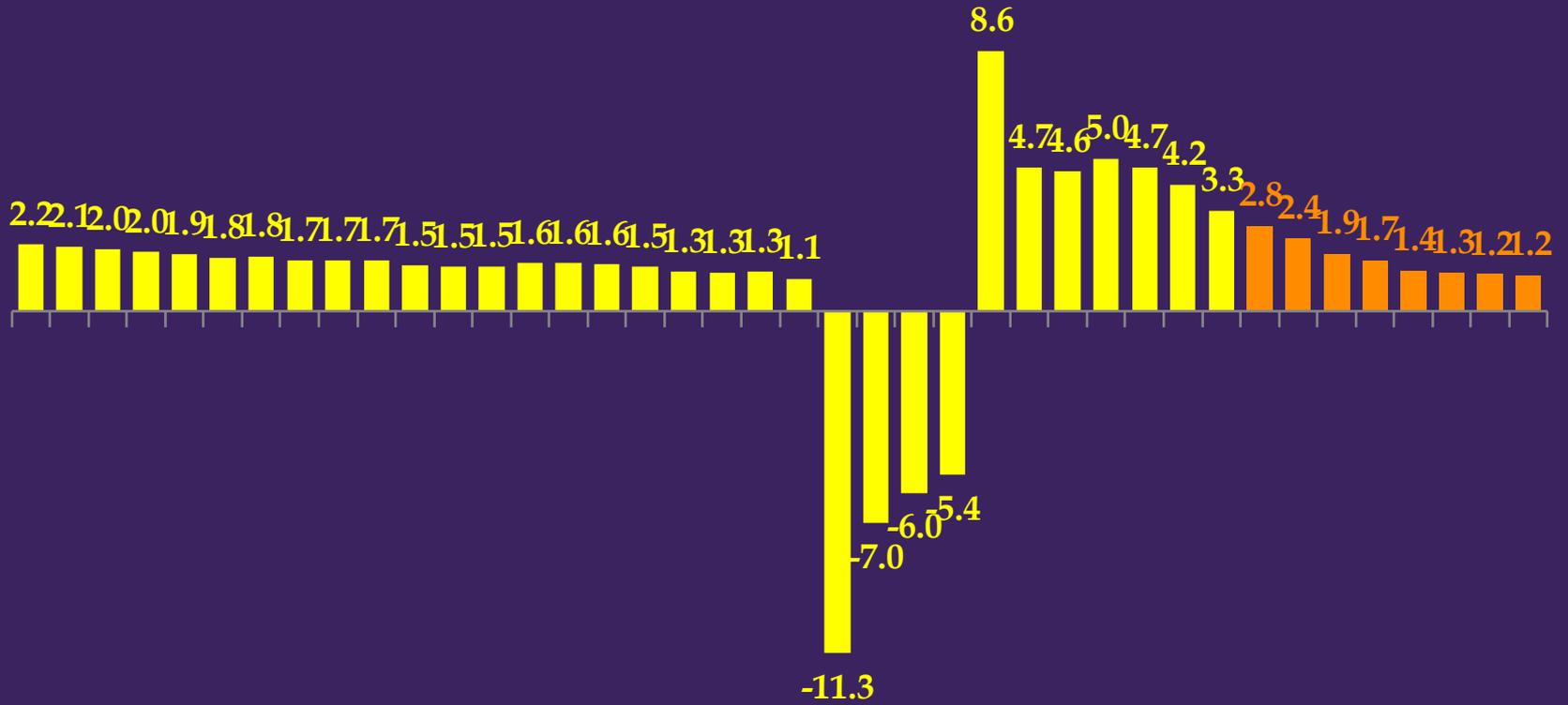
Center for Economic Research and Forecasting
 United States - (thousands of jobs)

Average Quarterly Non-Farm Job Change



Center for Economic Research and Forecasting
United States - (thousands of jobs)

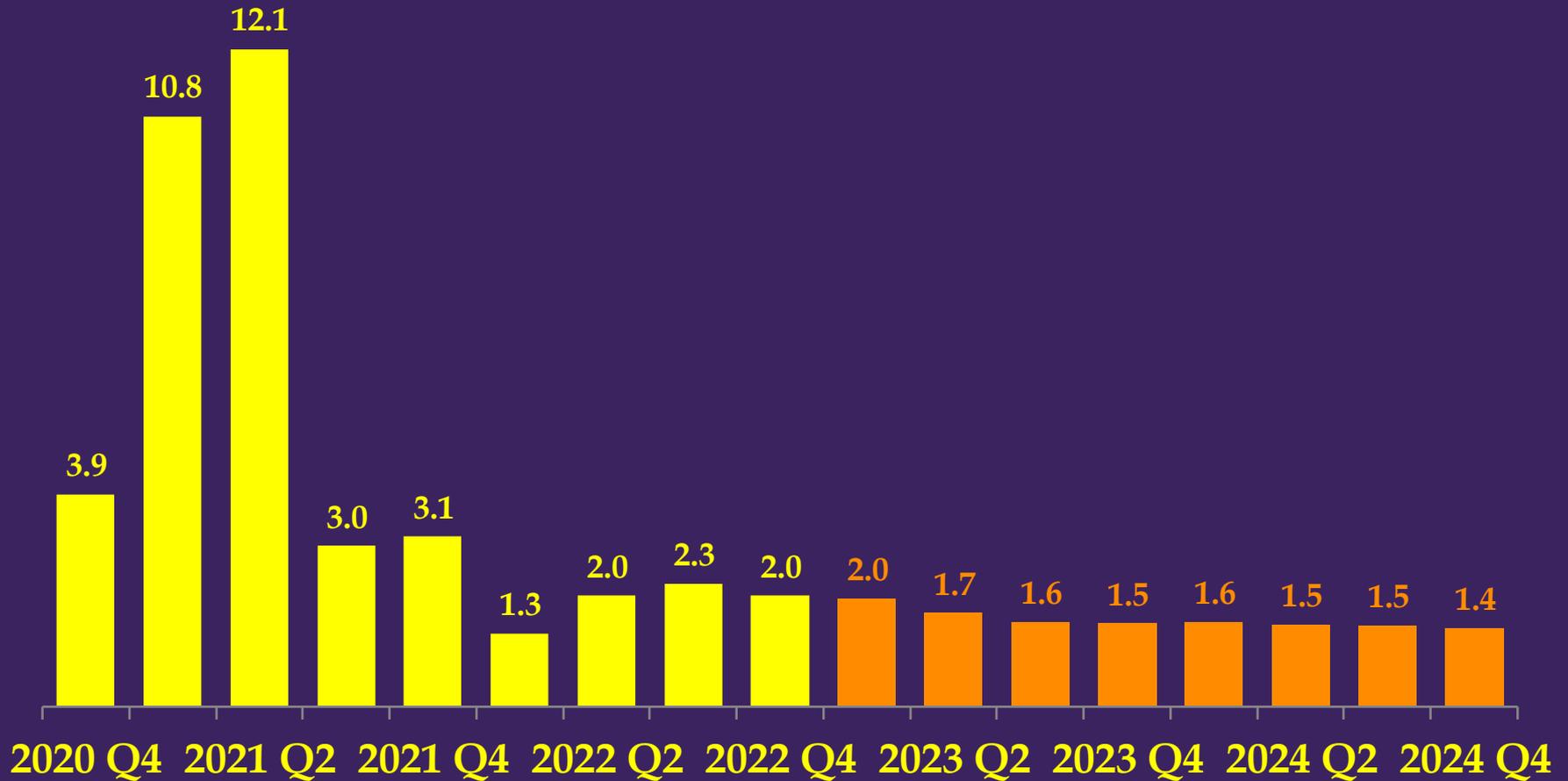
Non-Farm Jobs-SA



2015 Q1 2016 Q1 2017 Q1 2018 Q1 2019 Q1 2020 Q1 2021 Q1 2022 Q1 2023 Q1 2024 Q1

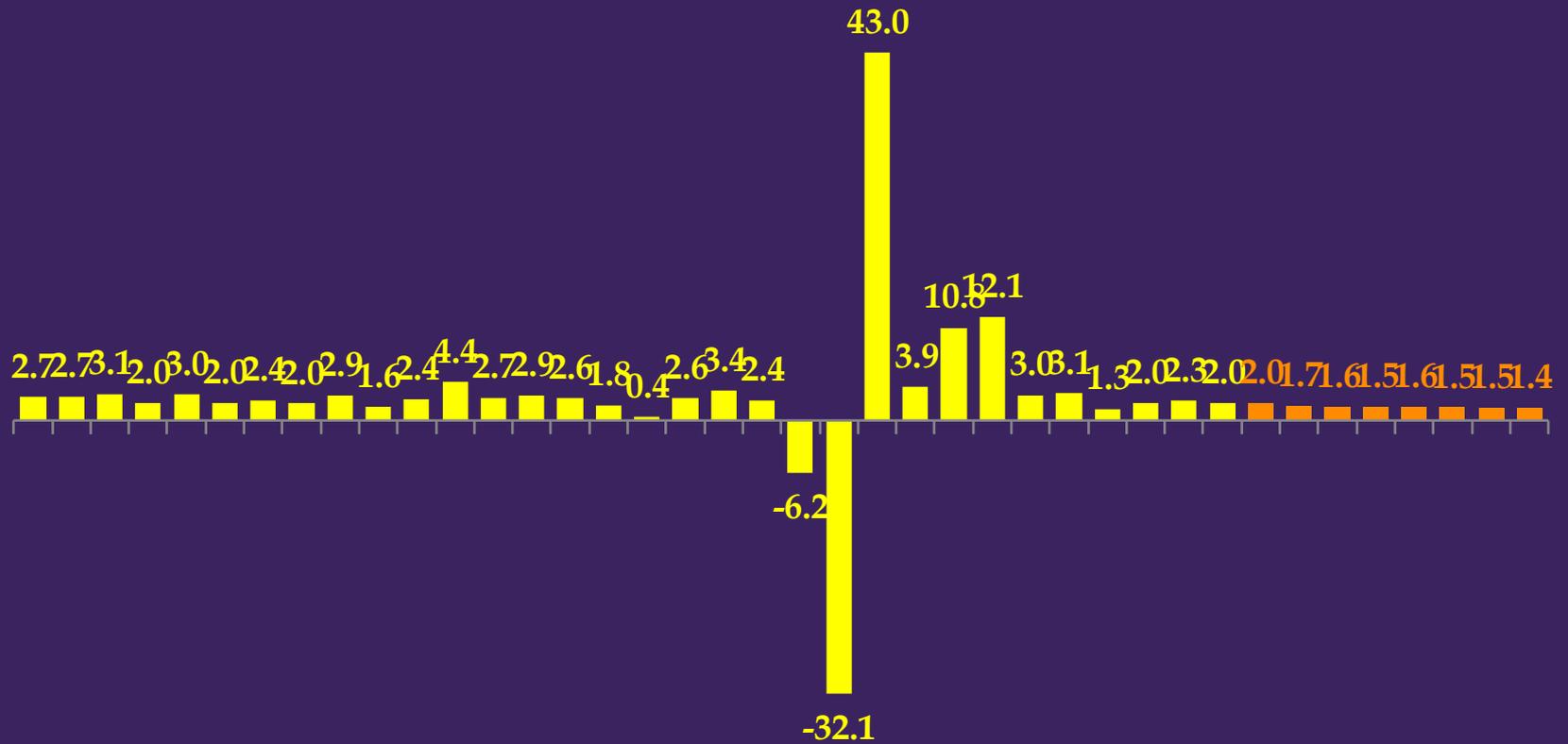
Center for Economic Research and Forecasting
 United States - (year on year percent change)

Real Consumption Growth



Center for Economic Research and Forecasting
United States - (saar q-o-q percent change)

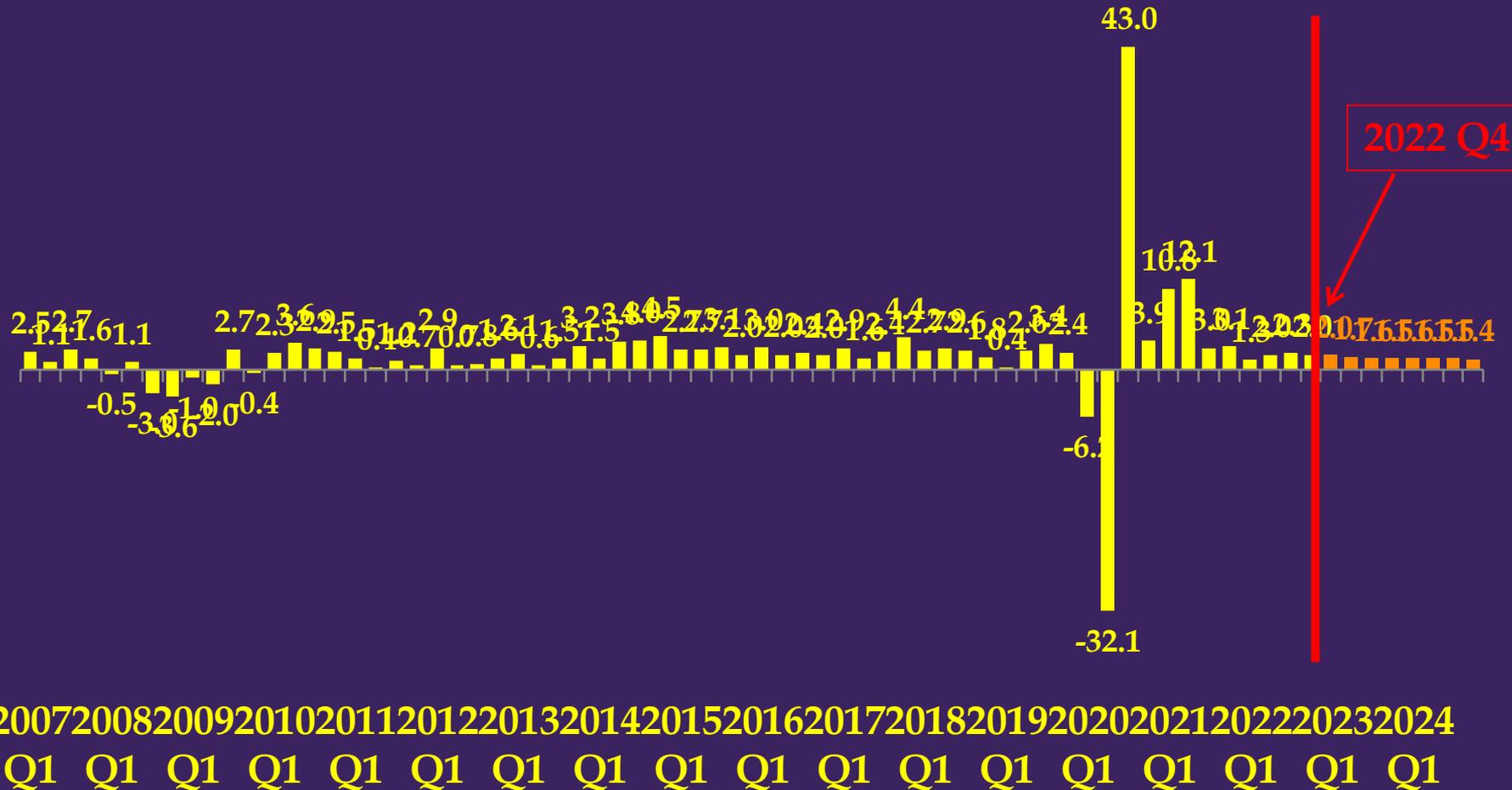
Real Consumption Growth



2015 Q1 2016 Q1 2017 Q1 2018 Q1 2019 Q1 2020 Q1 2021 Q1 2022 Q1 2023 Q1 2024 Q1

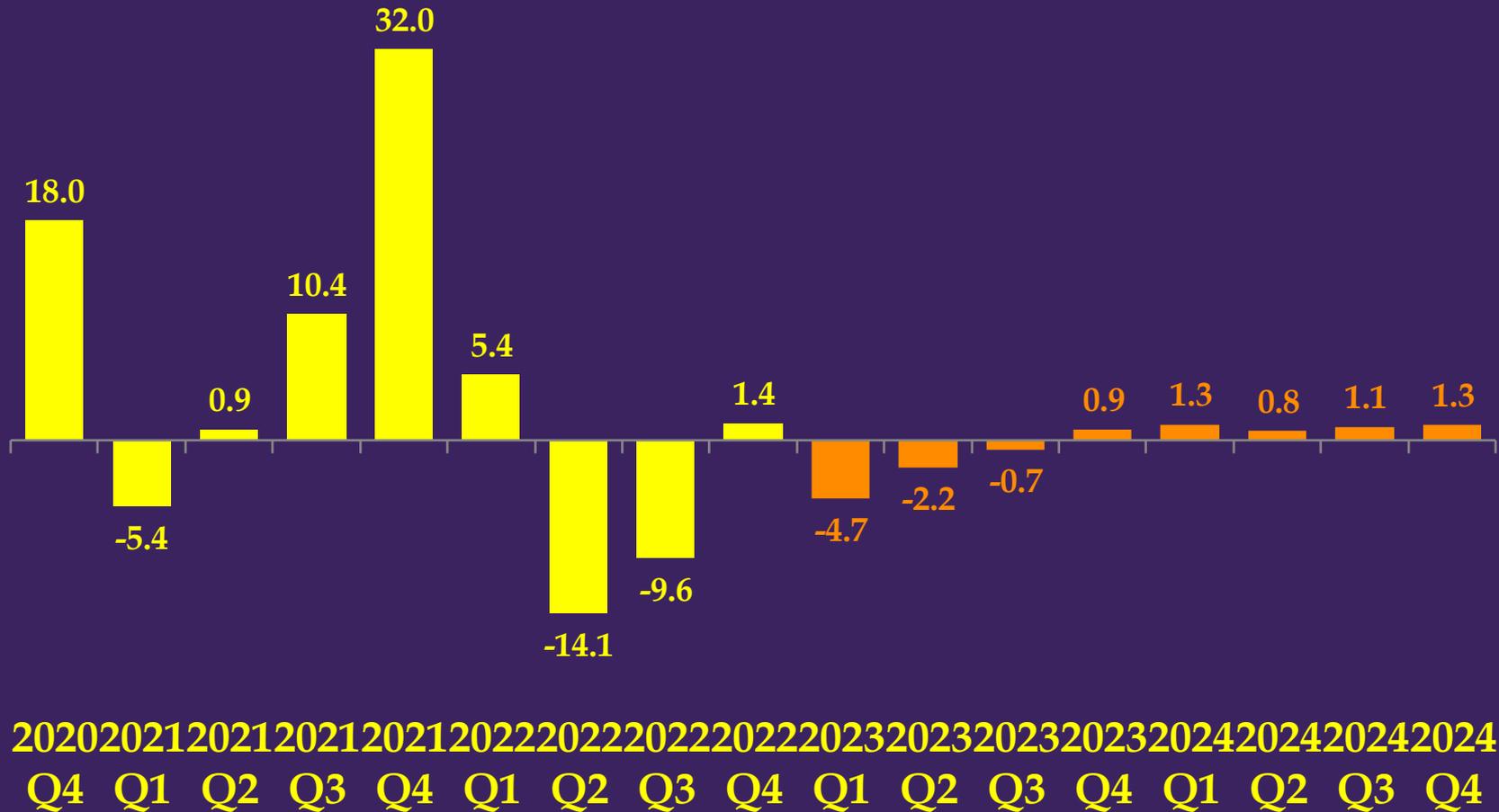
Center for Economic Research and Forecasting
 United States - (saar q-o-q percent change)

Real Consumption Growth



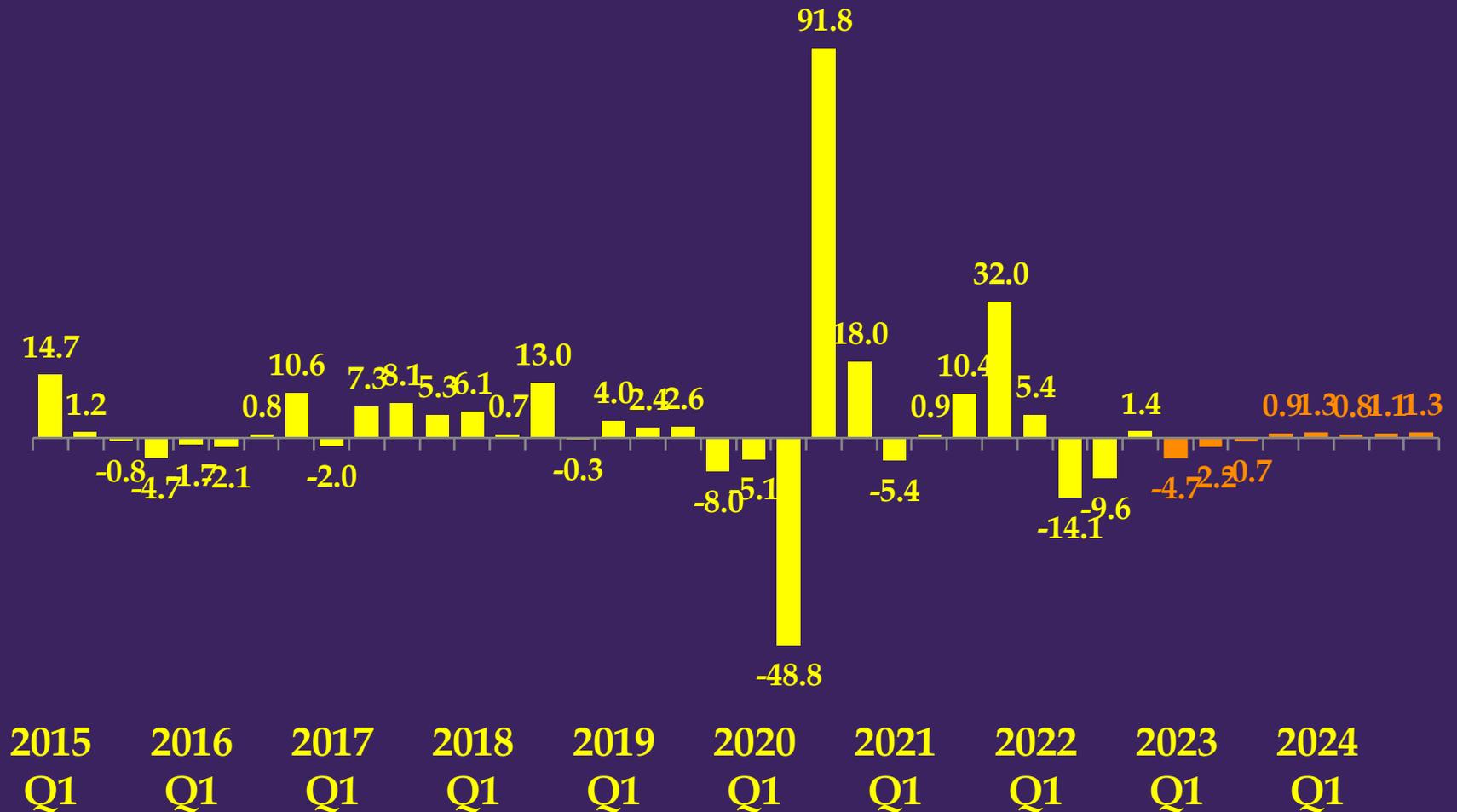
Center for Economic Research and Forecasting
 United States - (saar q-o-q percent change)

Real Investment



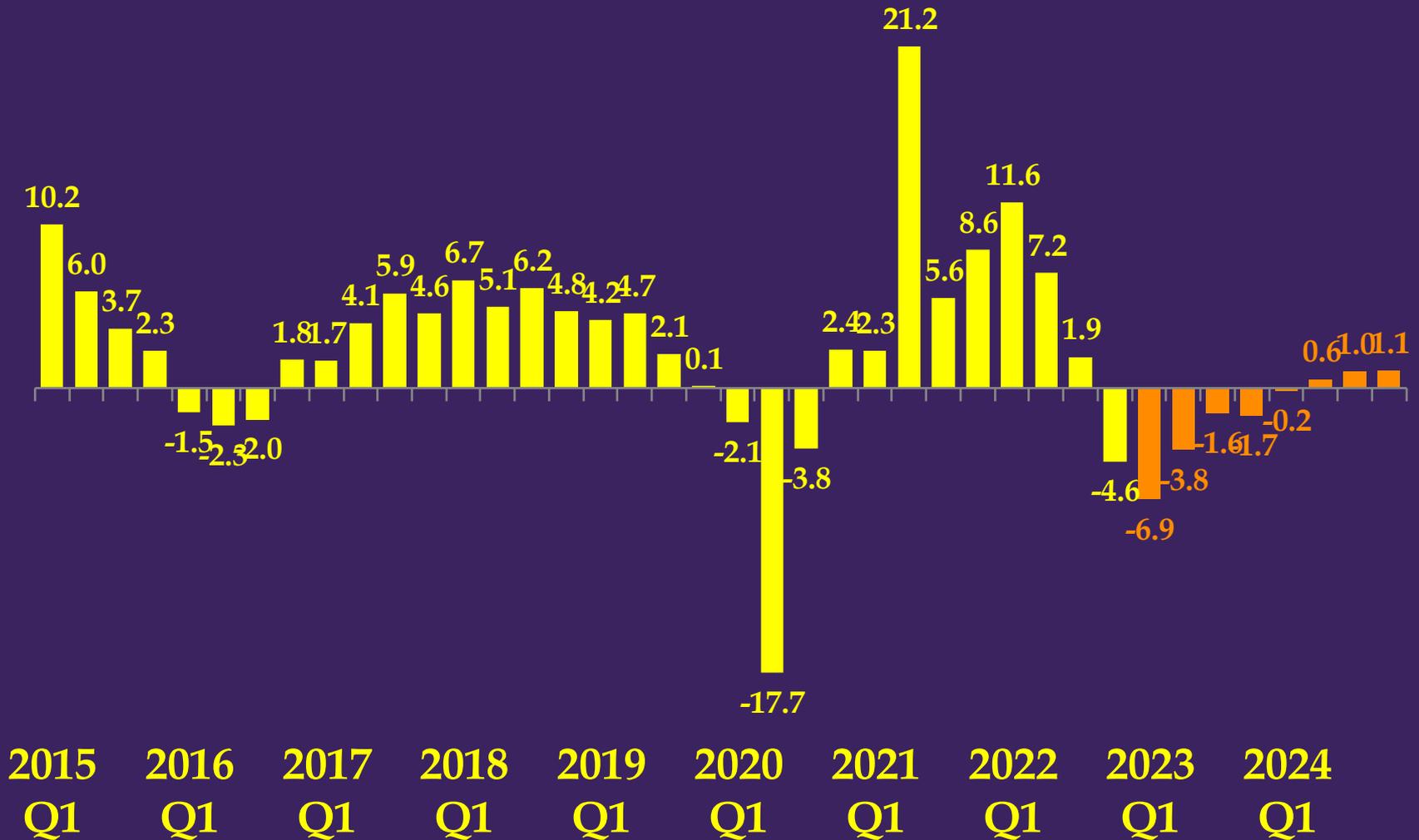
Center for Economic Research and Forecasting
United States - (saar q-o-q percent change)

Real Investment



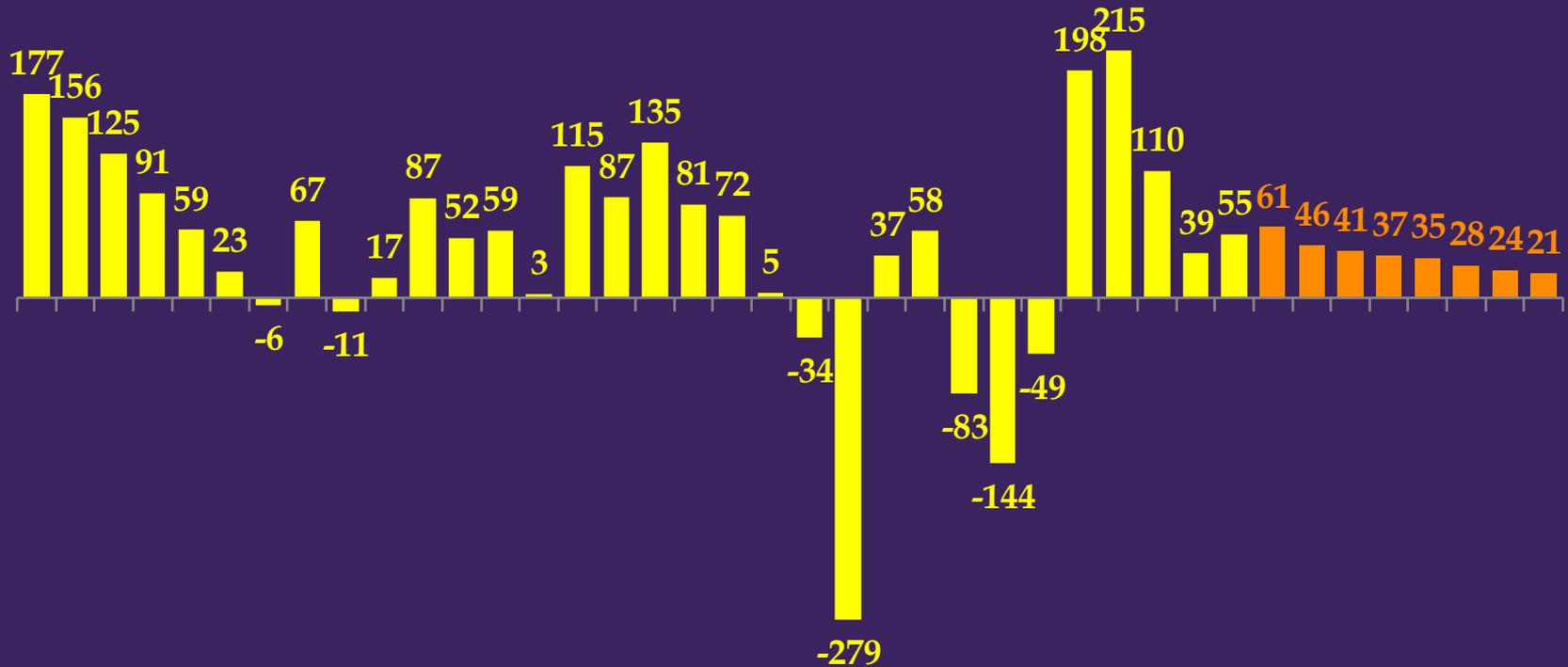
Center for Economic Research and Forecasting
United States - (saar q-o-q percent change)

Real Investment



Center for Economic Research and Forecasting
United States - (y-o-y percent change)

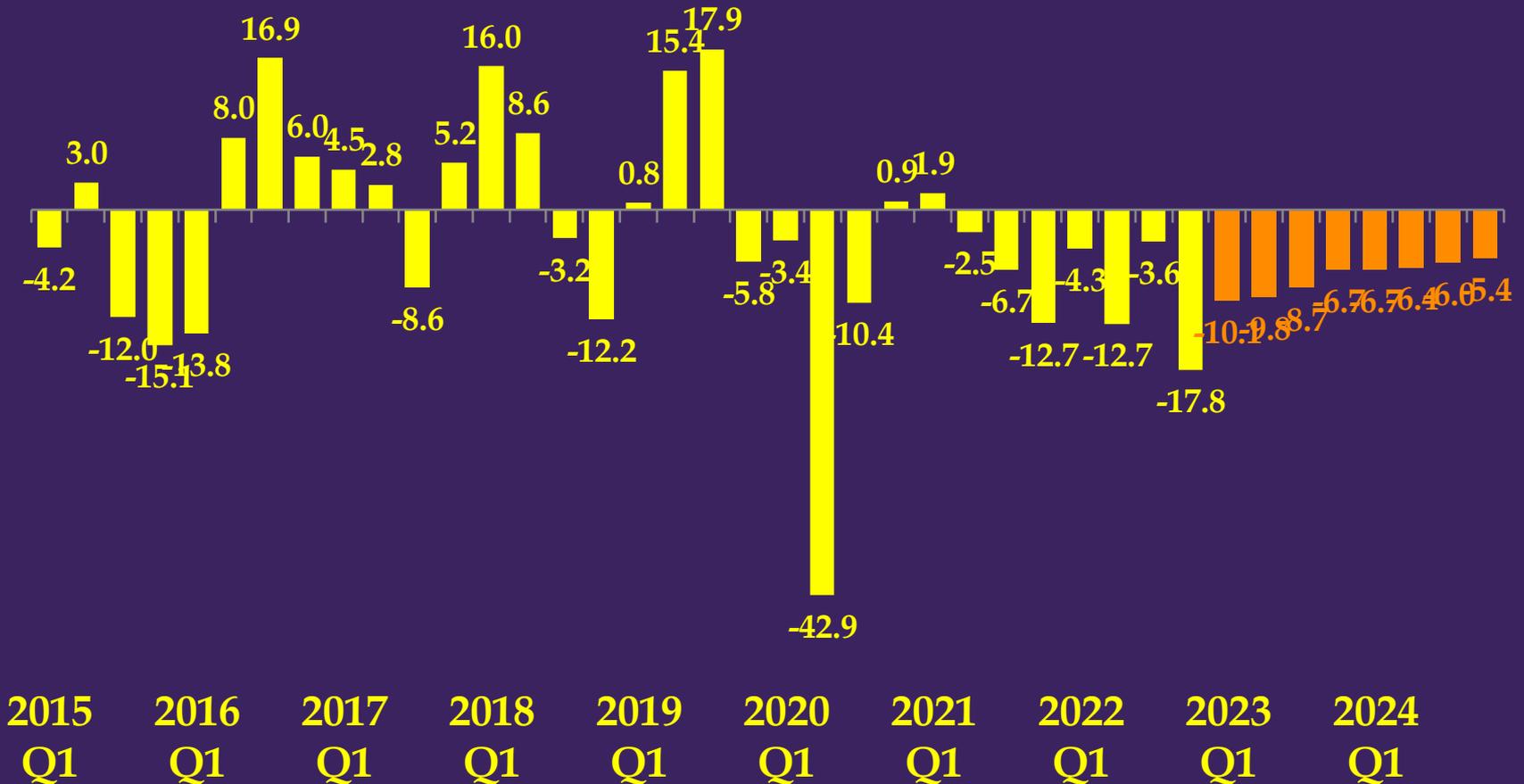
Real Inventory Investment



2015 Q1 2016 Q1 2017 Q1 2018 Q1 2019 Q1 2020 Q1 2021 Q1 2022 Q1 2023 Q1 2024 Q1

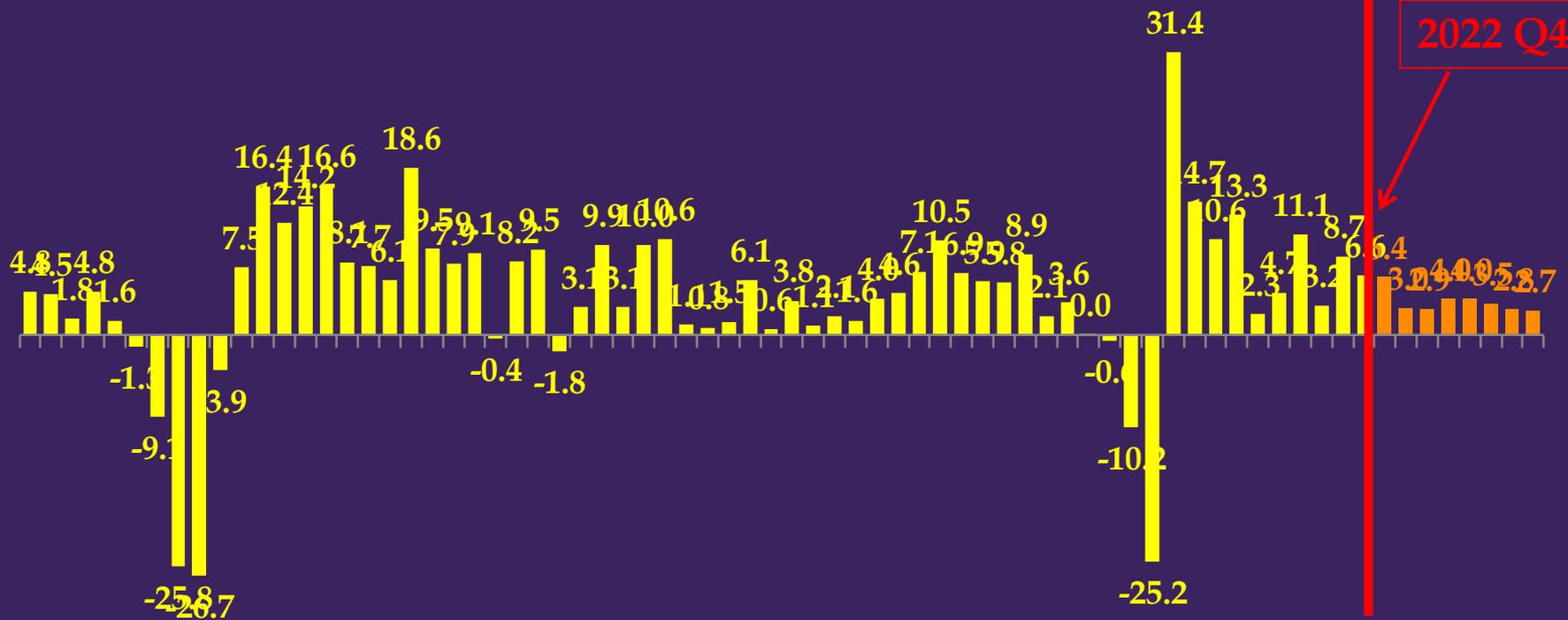
Center for Economic Research and Forecasting
United States - (billions of 2012 dollars)

Real Investment Growth: Business Structures



Center for Economic Research and Forecasting
 United States - (saar q-o-q percent change)

Real Investment Growth: Equipment & Software

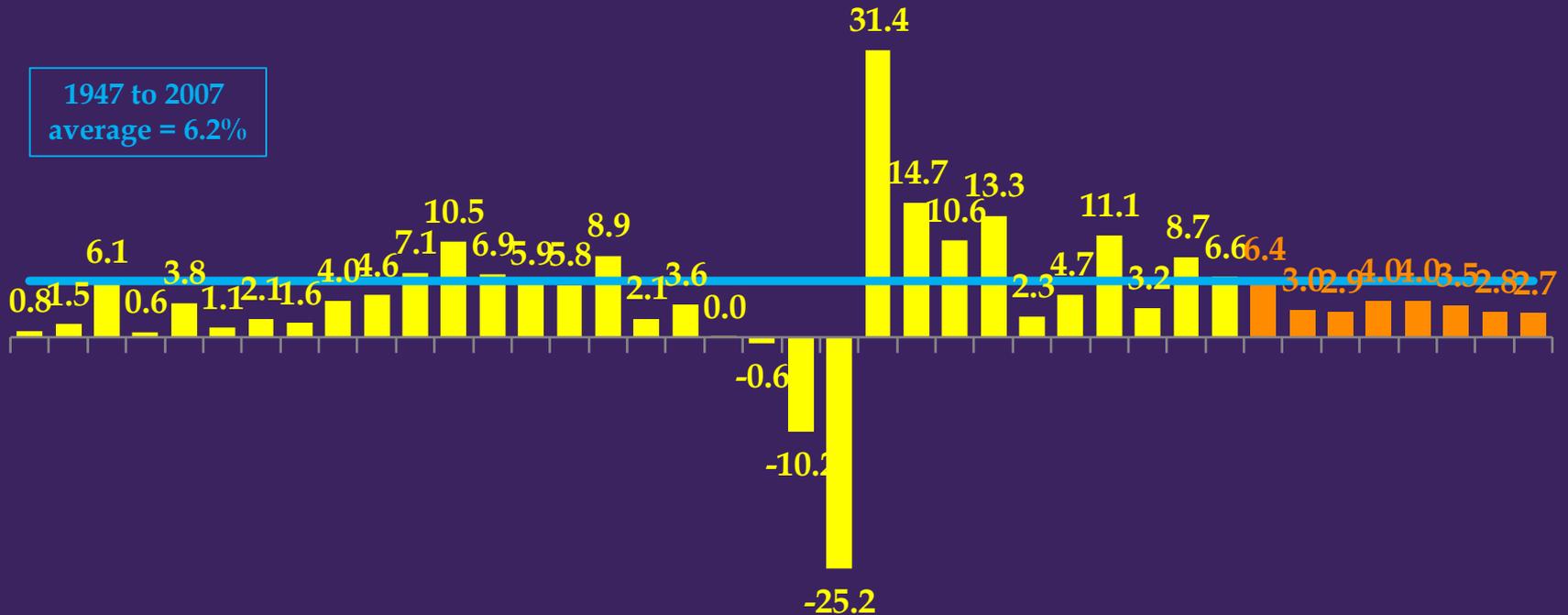


2007 Q1 2008 Q1 2009 Q1 2010 Q1 2011 Q1 2012 Q1 2013 Q1 2014 Q1 2015 Q1 2016 Q1 2017 Q1 2018 Q1 2019 Q1 2020 Q1 2021 Q1 2022 Q1 2023 Q1 2024 Q1

Center for Economic Research and Forecasting
United States - (saar q-o-q percent change)

Real Investment Growth: Equipment & Software

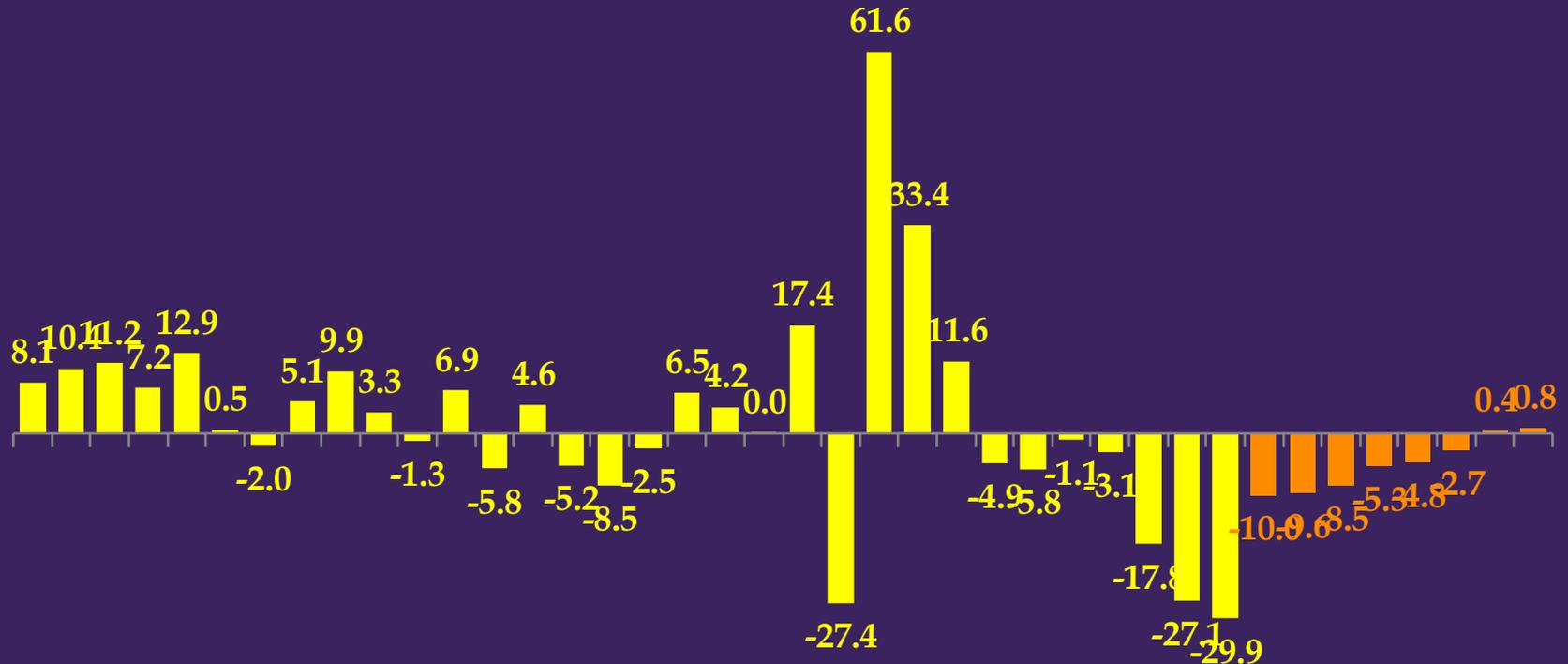
1947 to 2007
average = 6.2%



2015 Q1 2016 Q1 2017 Q1 2018 Q1 2019 Q1 2020 Q1 2021 Q1 2022 Q1 2023 Q1 2024 Q1

Center for Economic Research and Forecasting
United States - (saar q-o-q percent change)

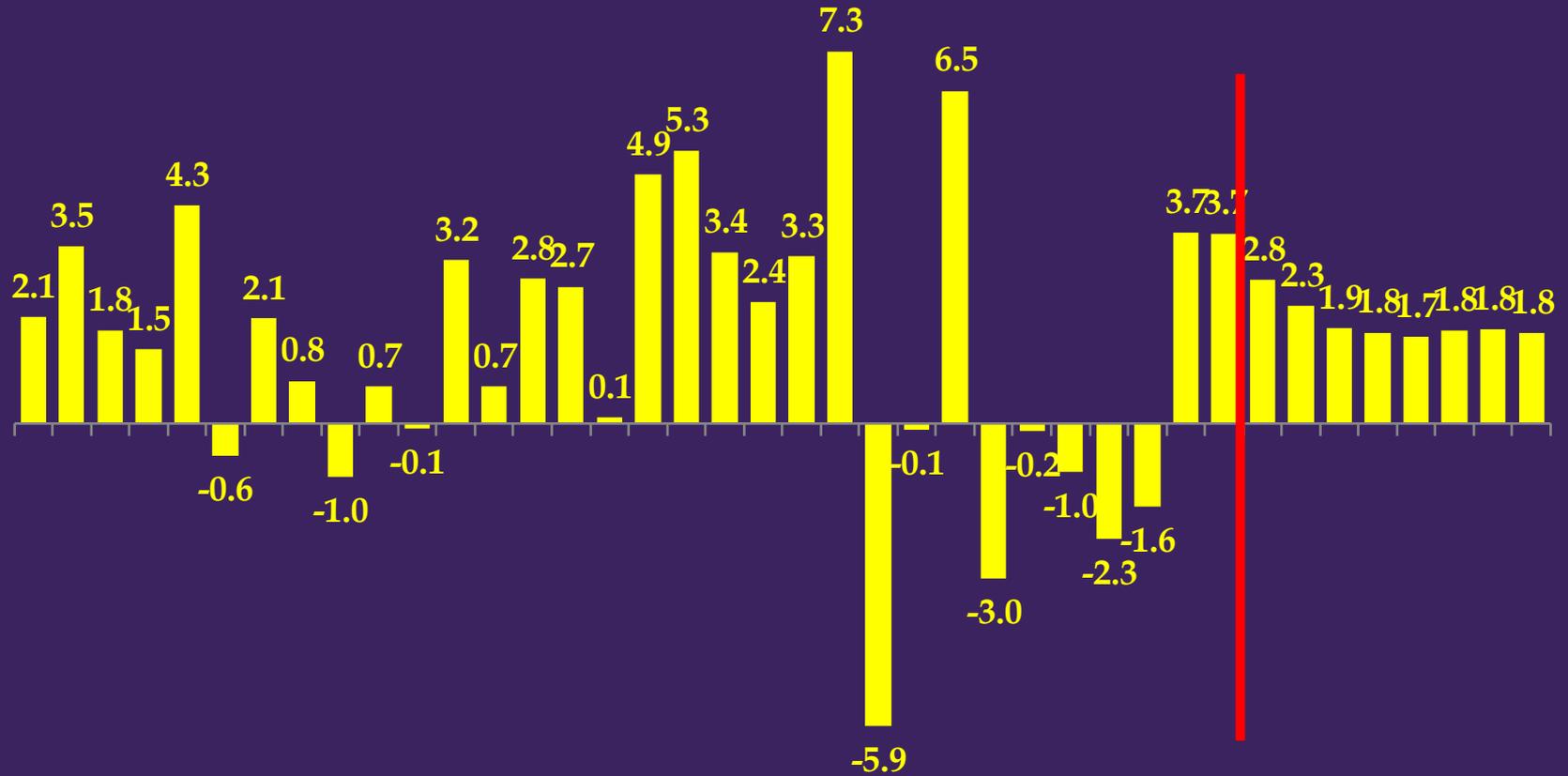
Real Investment Growth: Residential Structures



2015 Q1 2016 Q1 2017 Q1 2018 Q1 2019 Q1 2020 Q1 2021 Q1 2022 Q1 2023 Q1 2024 Q1

Center for Economic Research and Forecasting
United States - (saar q-o-q percent change)

Real Government Expenditures

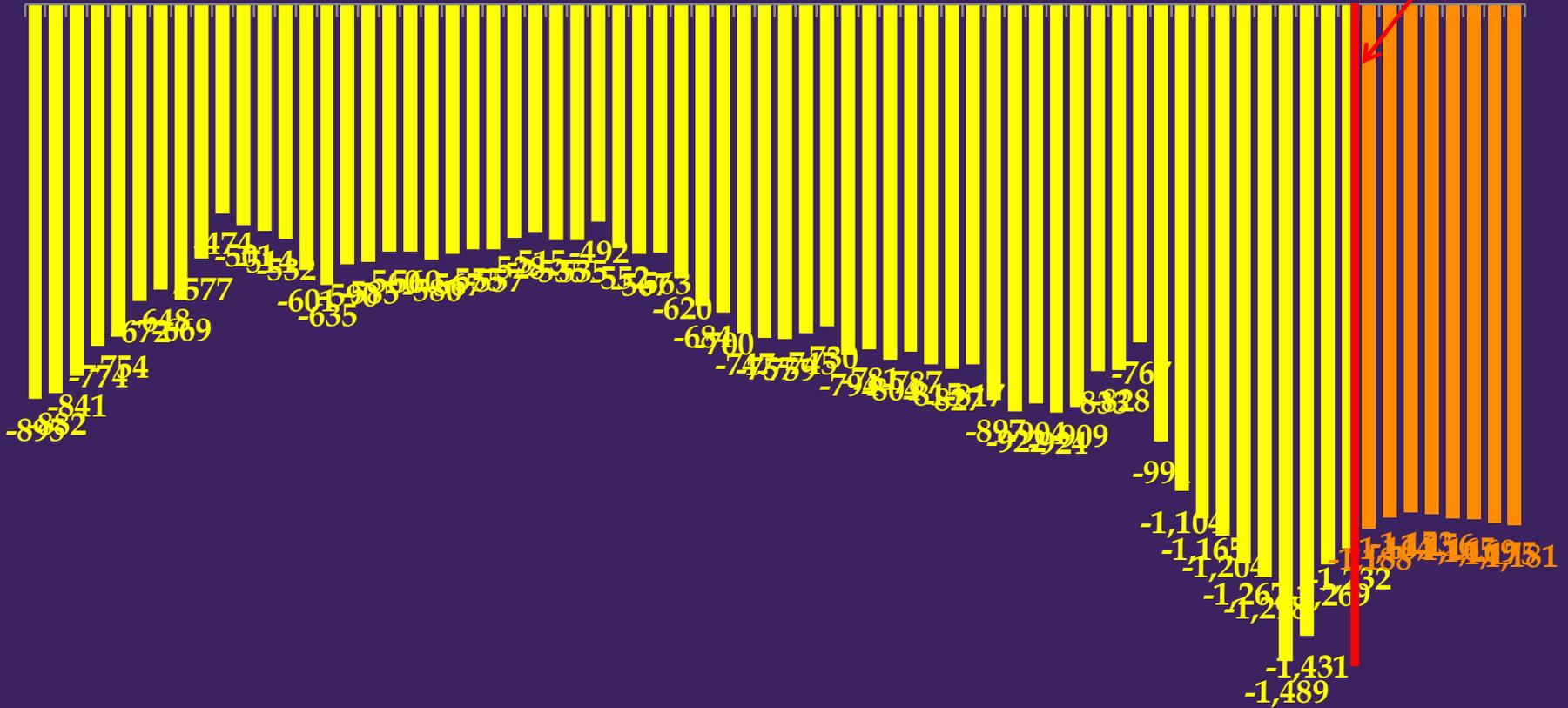


2015 Q1 2016 Q1 2017 Q1 2018 Q1 2019 Q1 2020 Q1 2021 Q1 2022 Q1 2023 Q1 2024 Q1

■ percent change: 2012 constant dollars

Real Net Exports

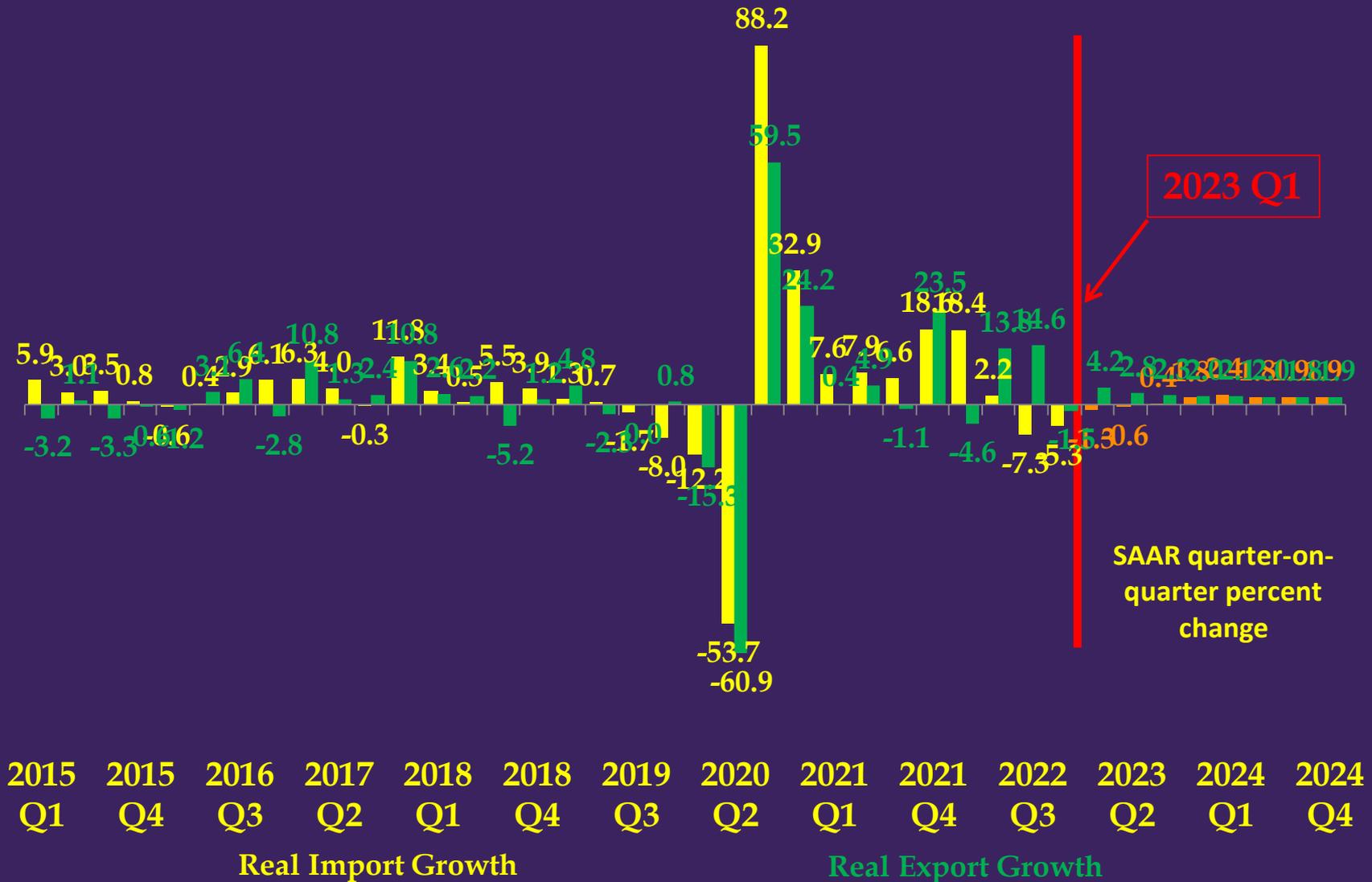
2023 Q1



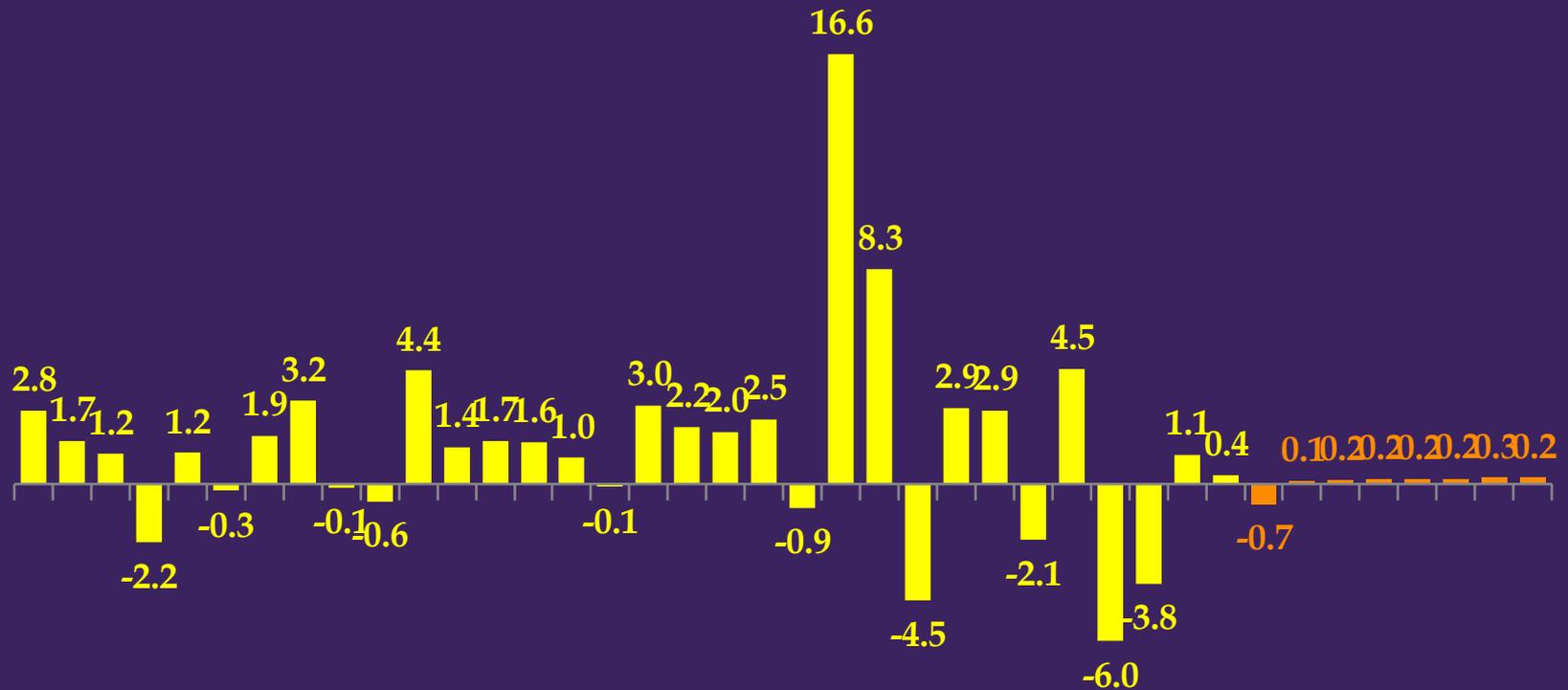
2007 Q1 2008 Q1 2009 Q1 2010 Q1 2011 Q1 2012 Q1 2013 Q1 2014 Q1 2015 Q1 2016 Q1 2017 Q1 2018 Q1 2019 Q1 2020 Q1 2021 Q1 2022 Q1 2023 Q1 2024 Q1

Center for Economic Research and Forecasting
United States - (Billions of 2012 dollars)

Real Imports & Exports



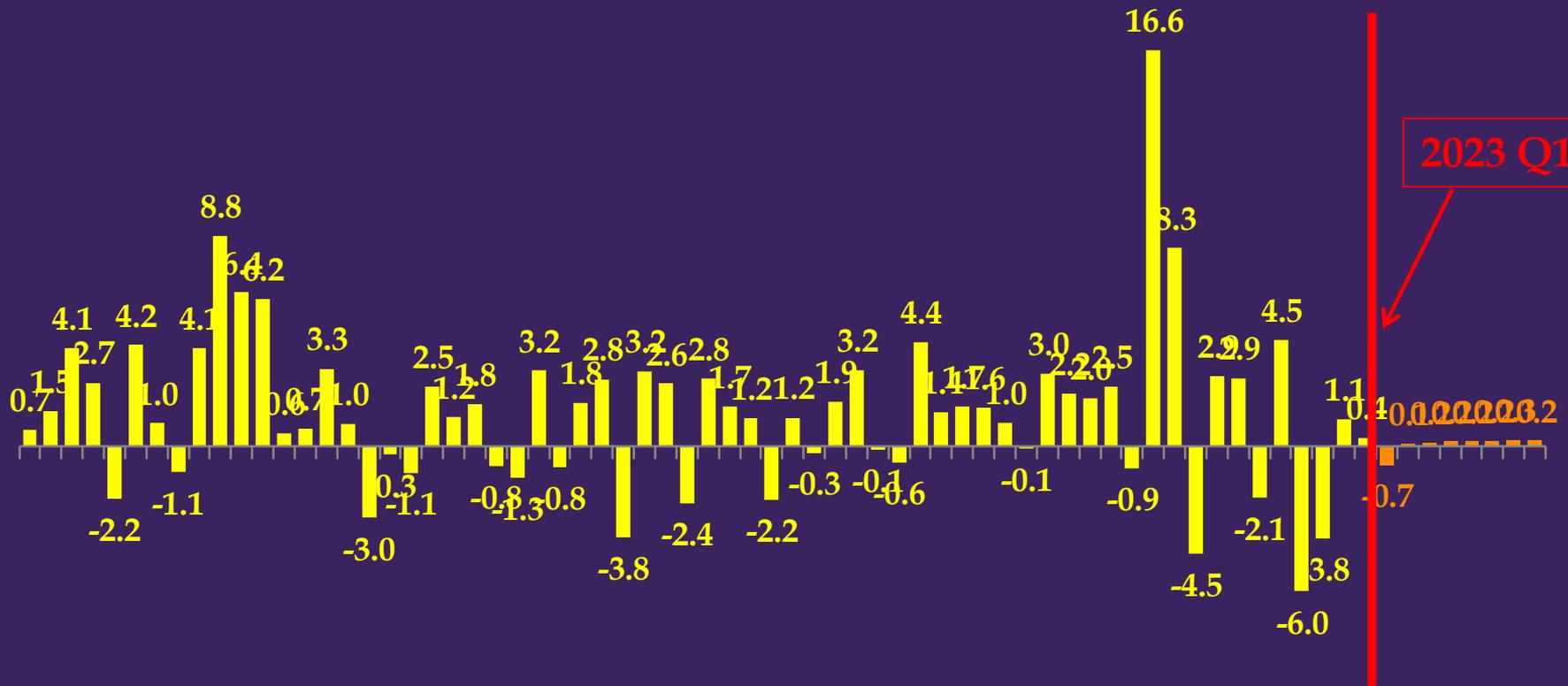
Real Productivity



2015 2016 2017 2018 2019 2020 2021 2022 2023 2024
 Q1 Q1 Q1 Q1 Q1 Q1 Q1 Q1 Q1 Q1

Center for Economic Research and Forecasting
 United States - (ar q-o-q percent change)

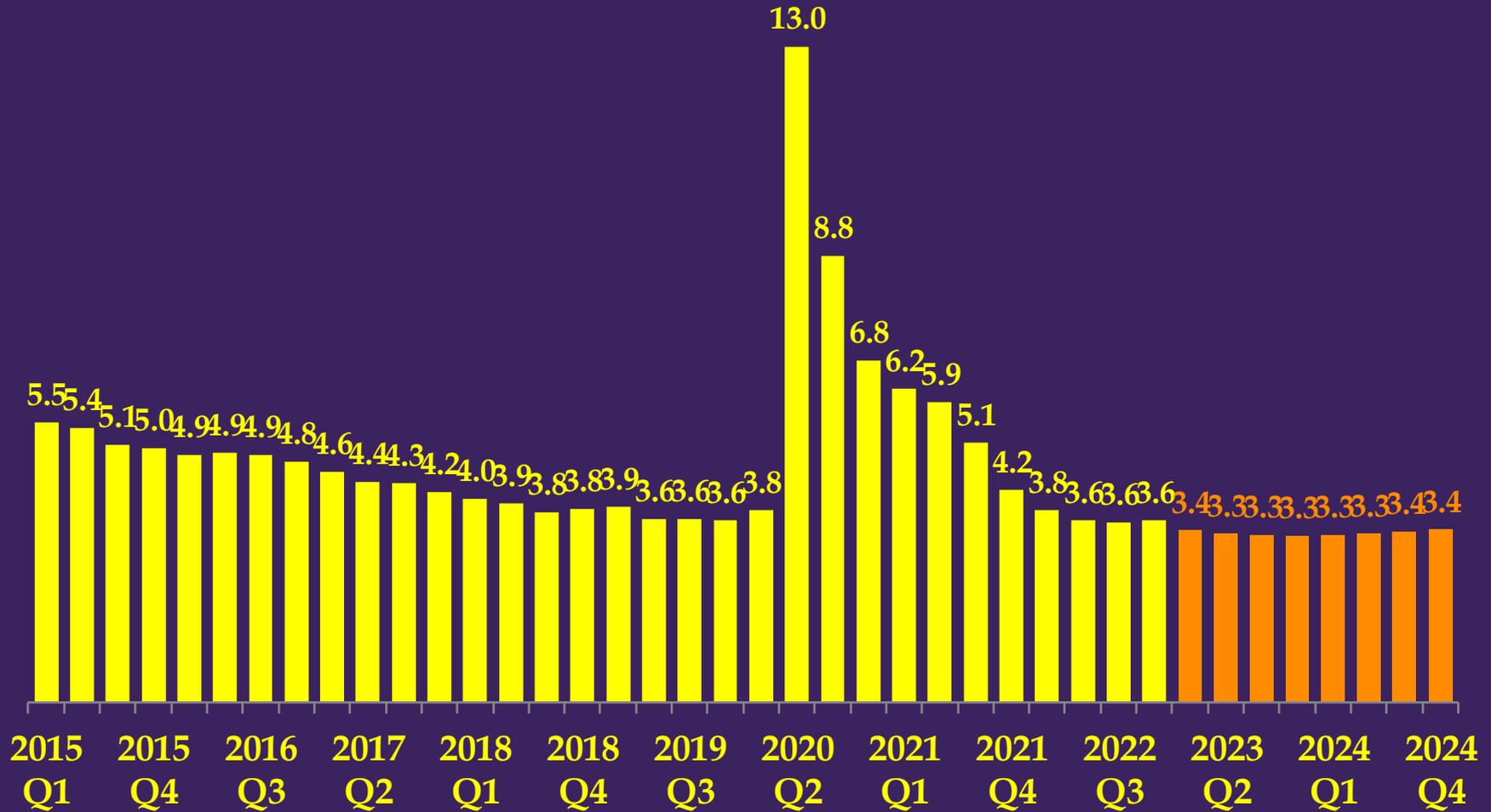
Real Productivity



2007 Q1 2008 Q1 2009 Q1 2010 Q1 2011 Q1 2012 Q1 2013 Q1 2014 Q1 2015 Q1 2016 Q1 2017 Q1 2018 Q1 2019 Q1 2020 Q1 2021 Q1 2022 Q1 2023 Q1 2024 Q1

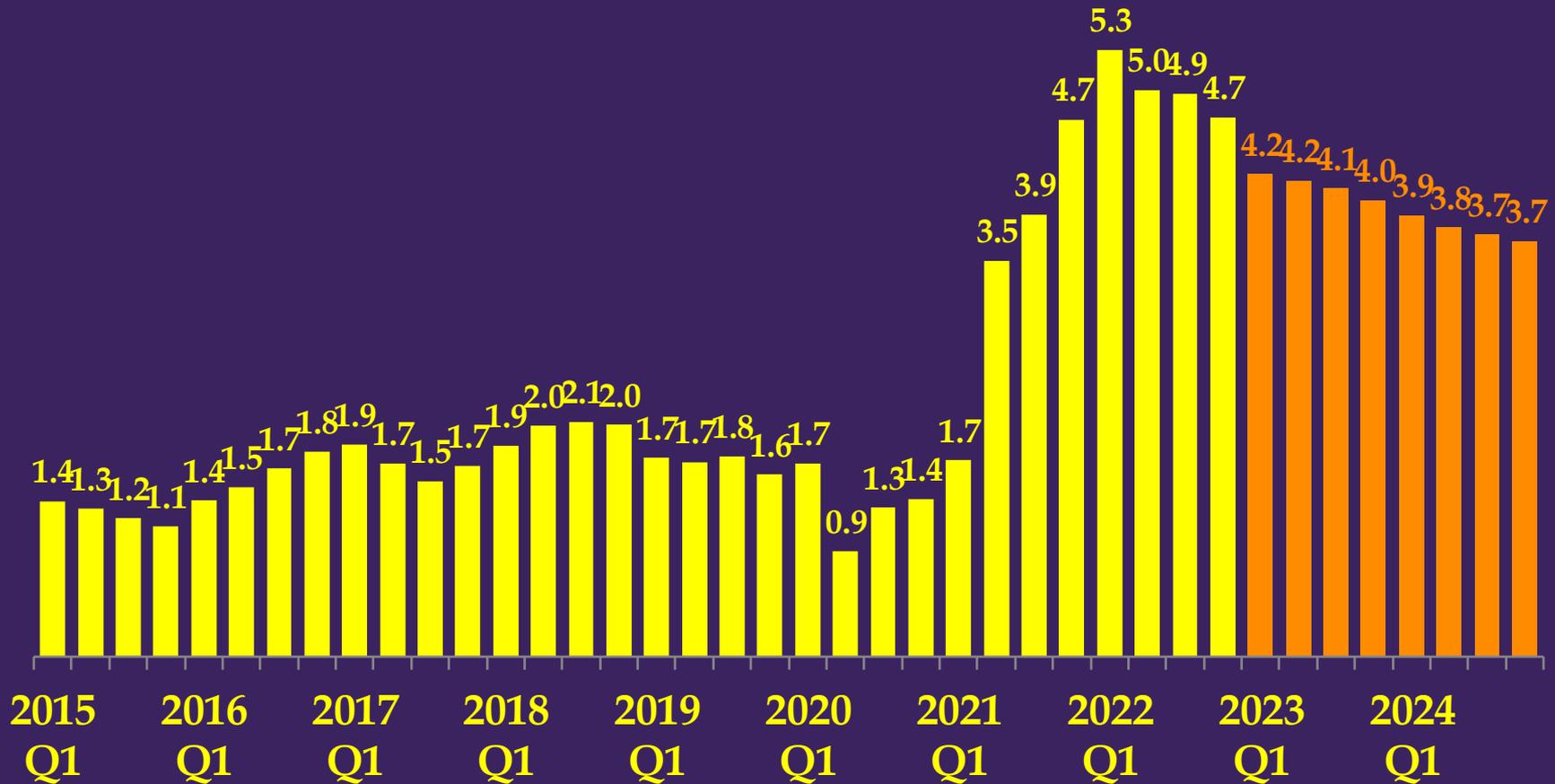
Center for Economic Research and Forecasting
 United States - (ar q-o-q percent change)

Unemployment Rate - SA



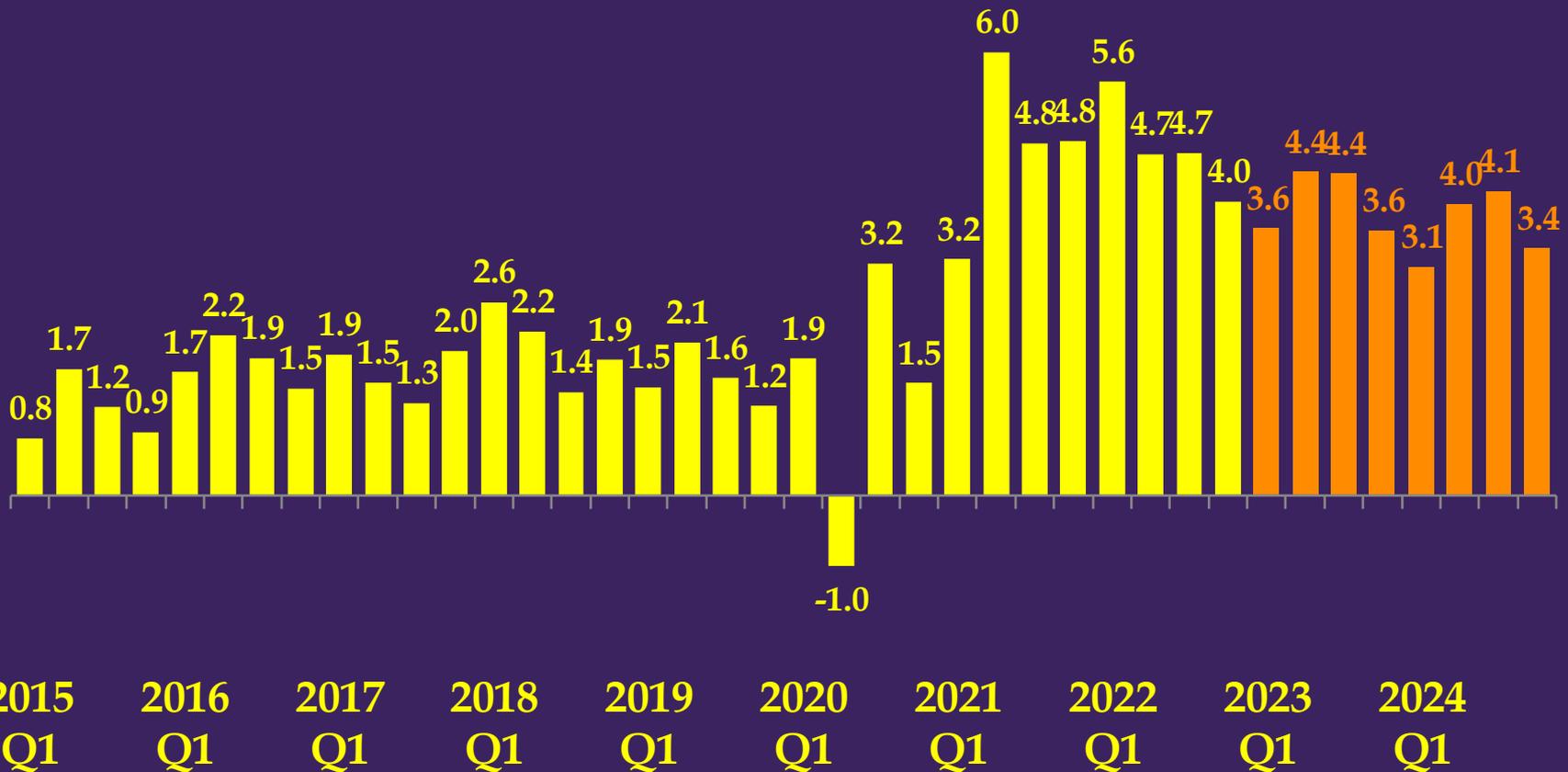
Center for Economic Research and Forecasting
United States - (Percent of labor force)

Consumption: Price Deflator - Core



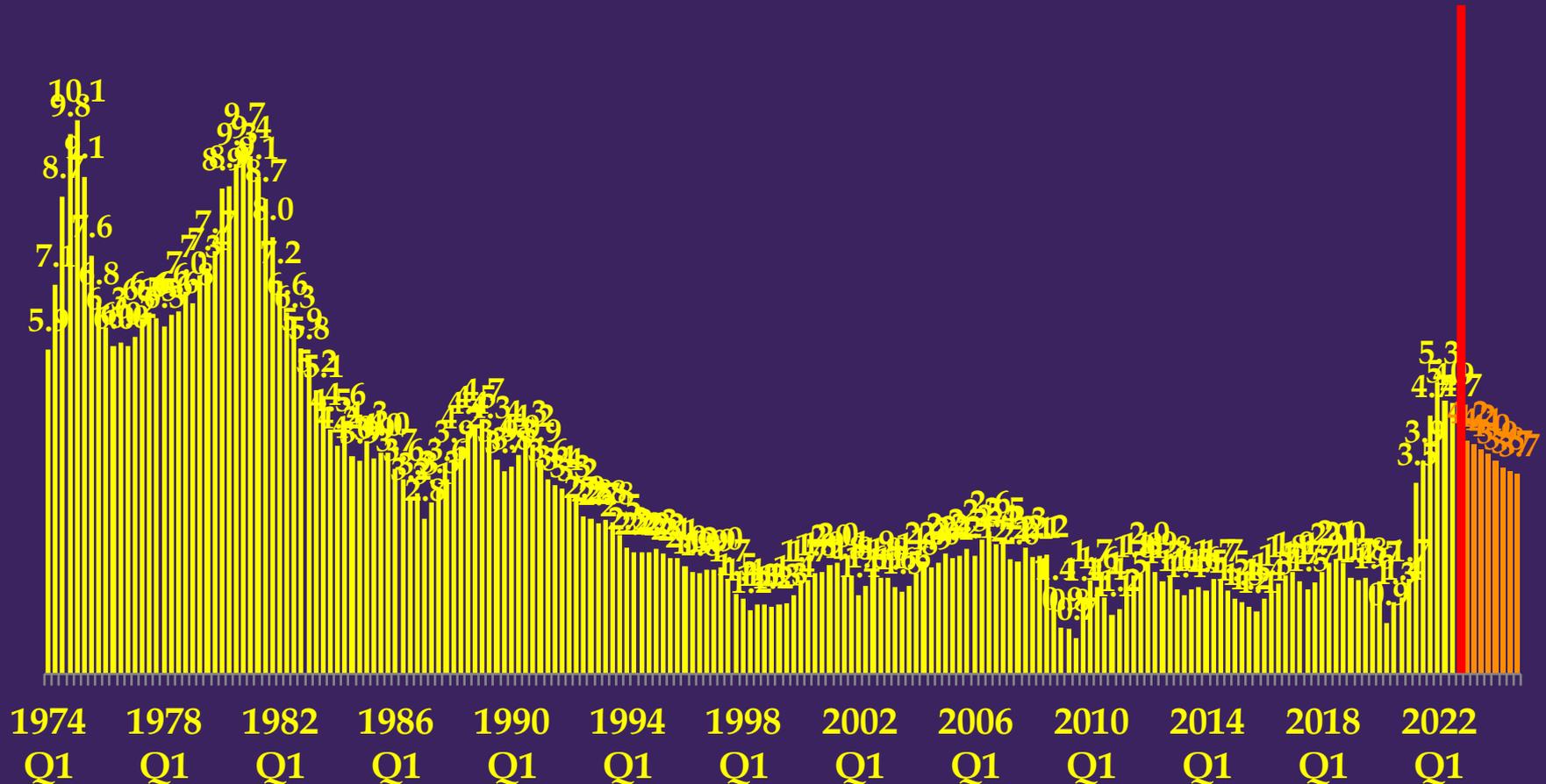
Center for Economic Research and Forecasting
United States - (y-o-y percent change)

Consumption: Price Deflator - Core



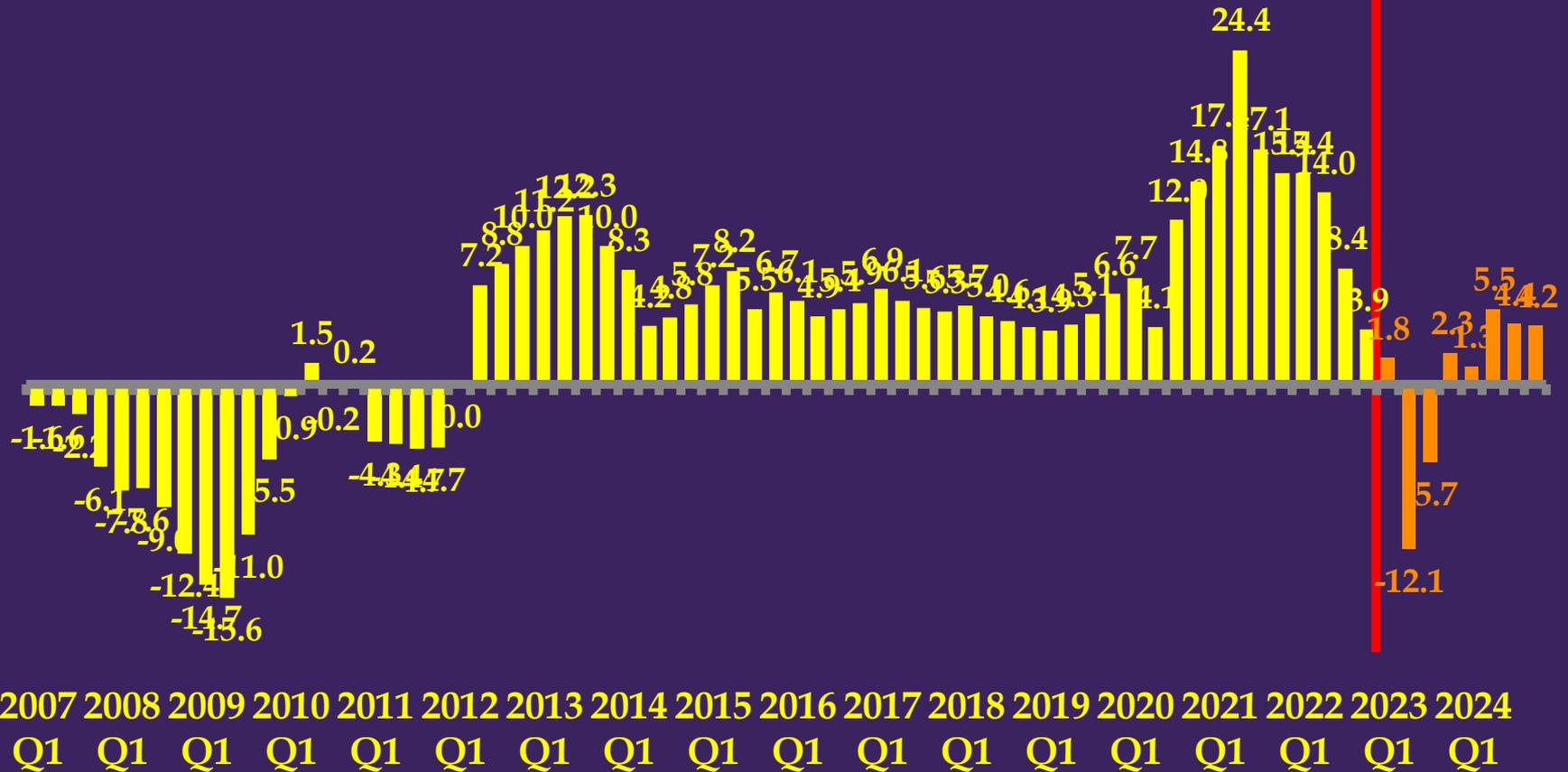
Center for Economic Research and Forecasting
United States - (saar q-o-q percent change)

Consumption: Price Deflator - Core



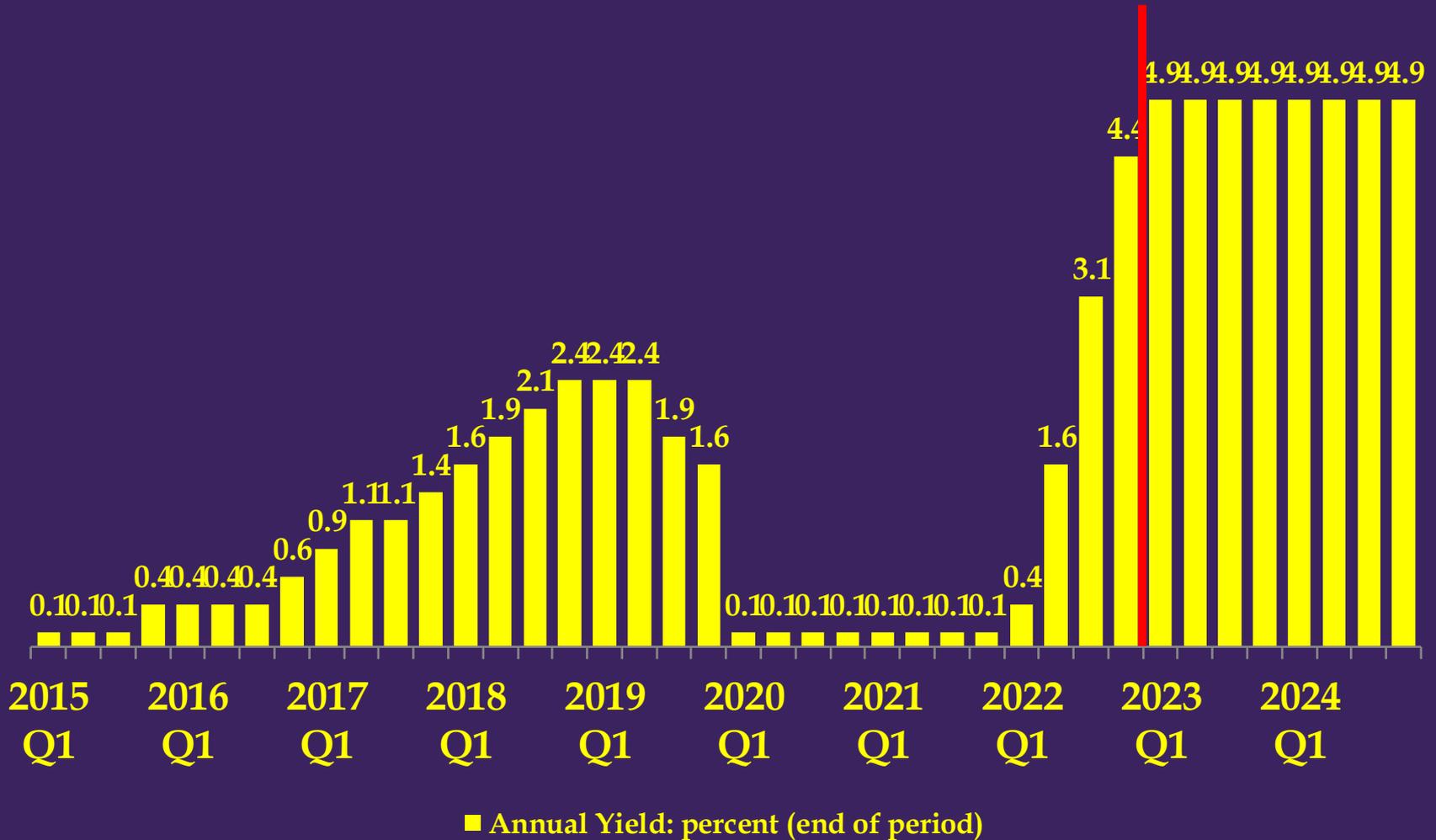
Center for Economic Research and Forecasting
United States - (y-o-y percent change)

Median Home Price Existing Single-family Houses

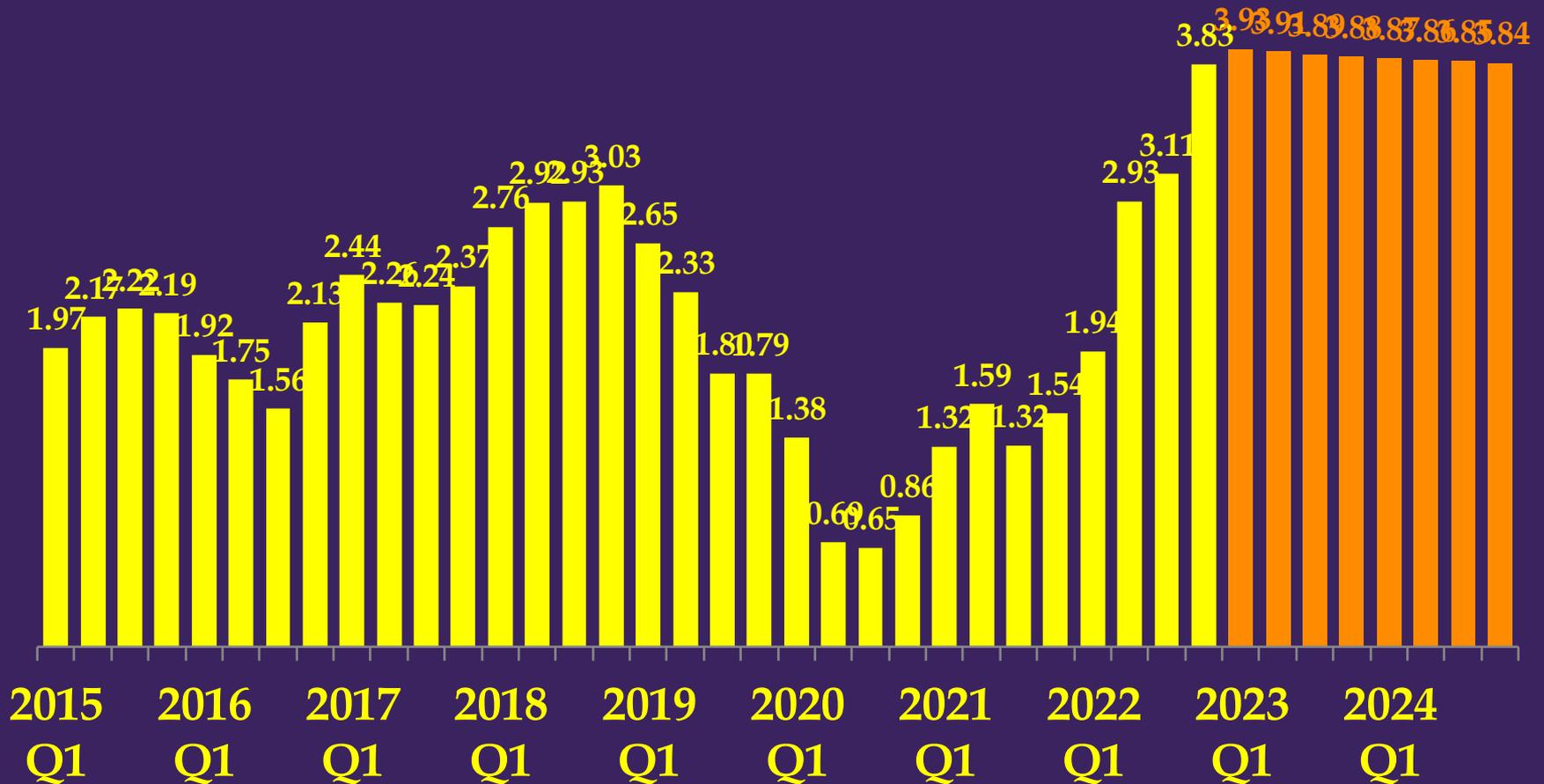


Center for Economic Research and Forecasting
United States - (y-o-y percent change)

FED Funds Target (Midpoint)

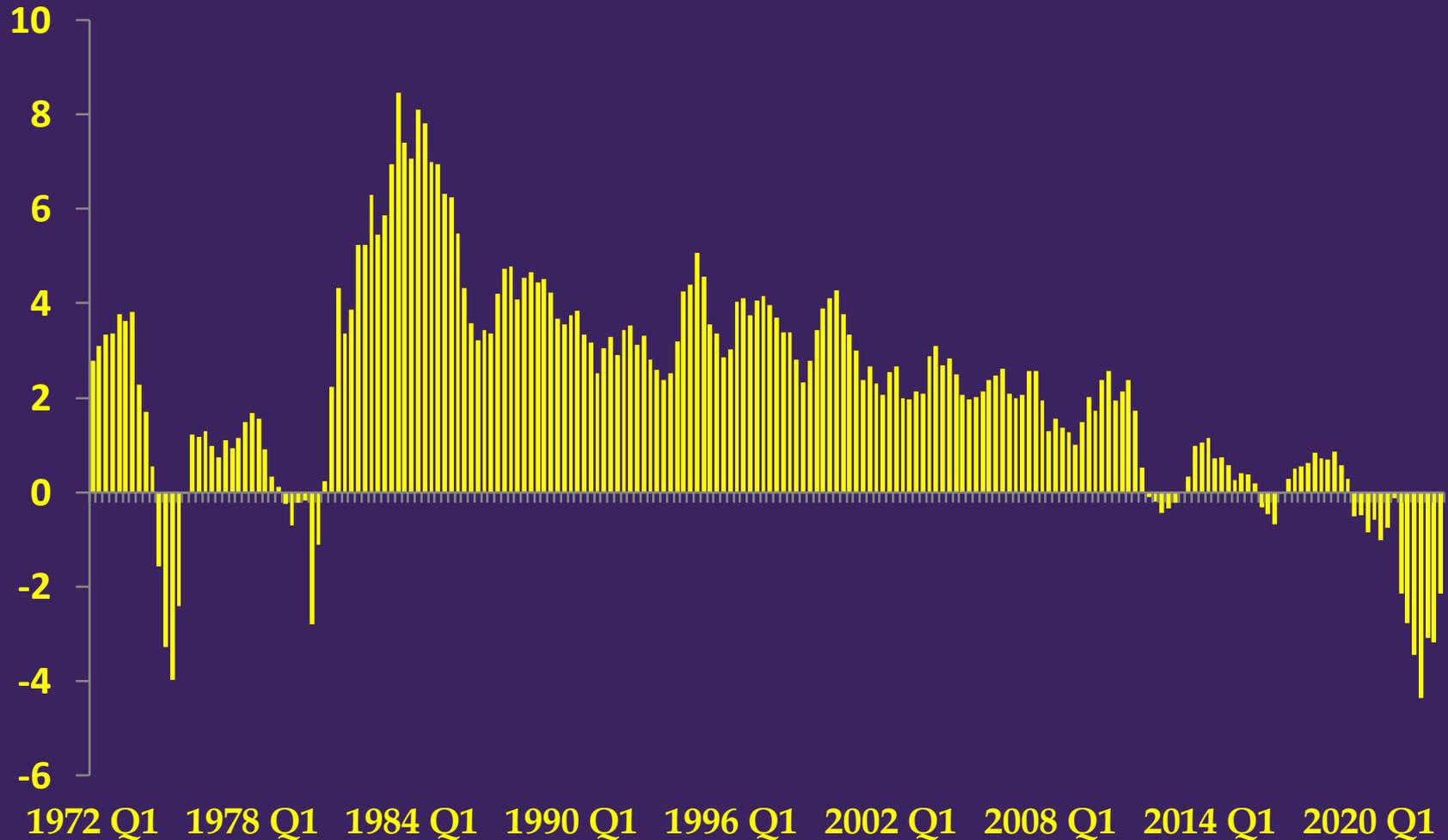


10-year Treasury Yield



Center for Economic Research and Forecasting
United States - (annual percent yield)

Real 10-year Treasury Yield



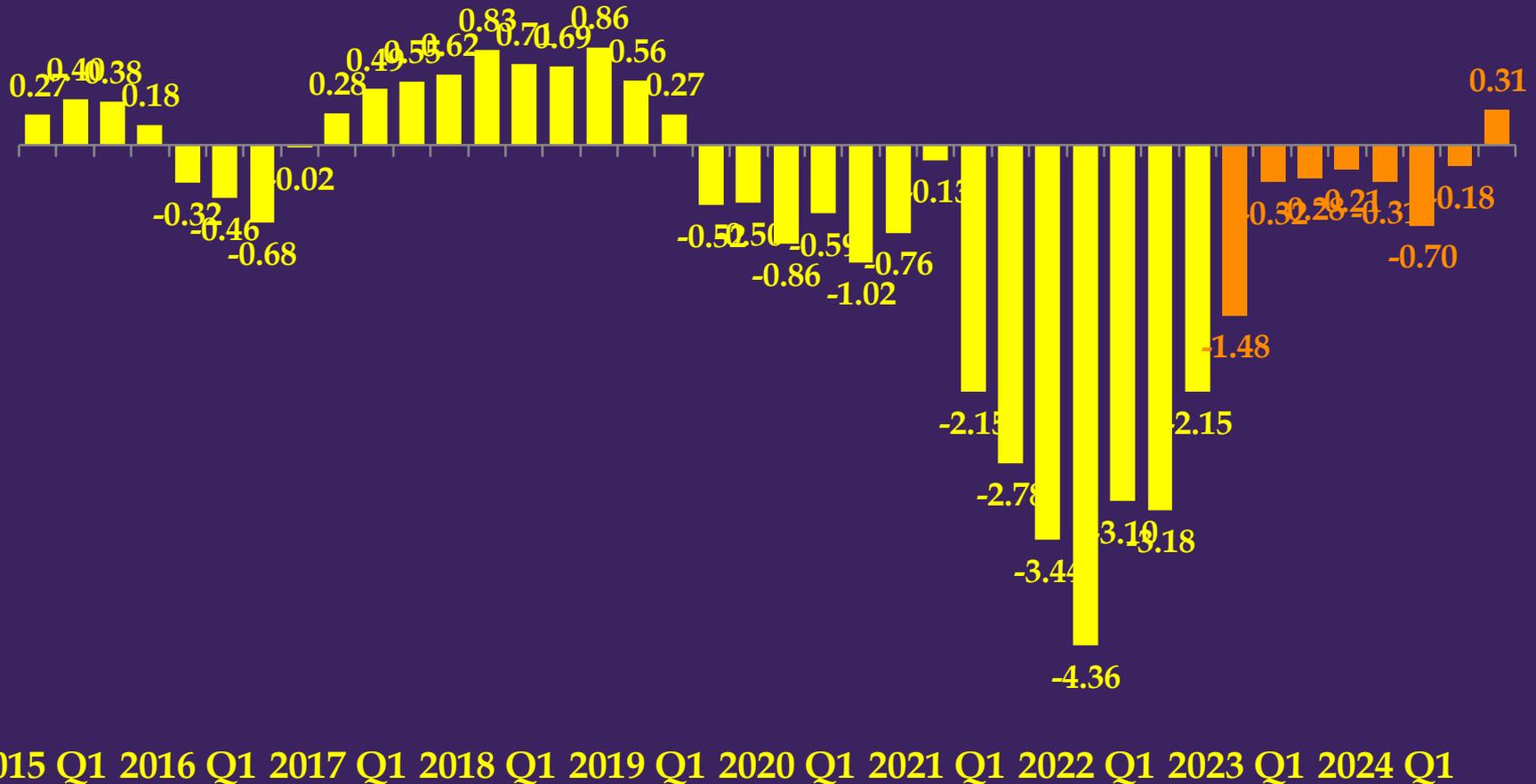
■ Center for Economic Research and Forecasting
United States - (annual percent yield)

Real 10-year Treasury Yield



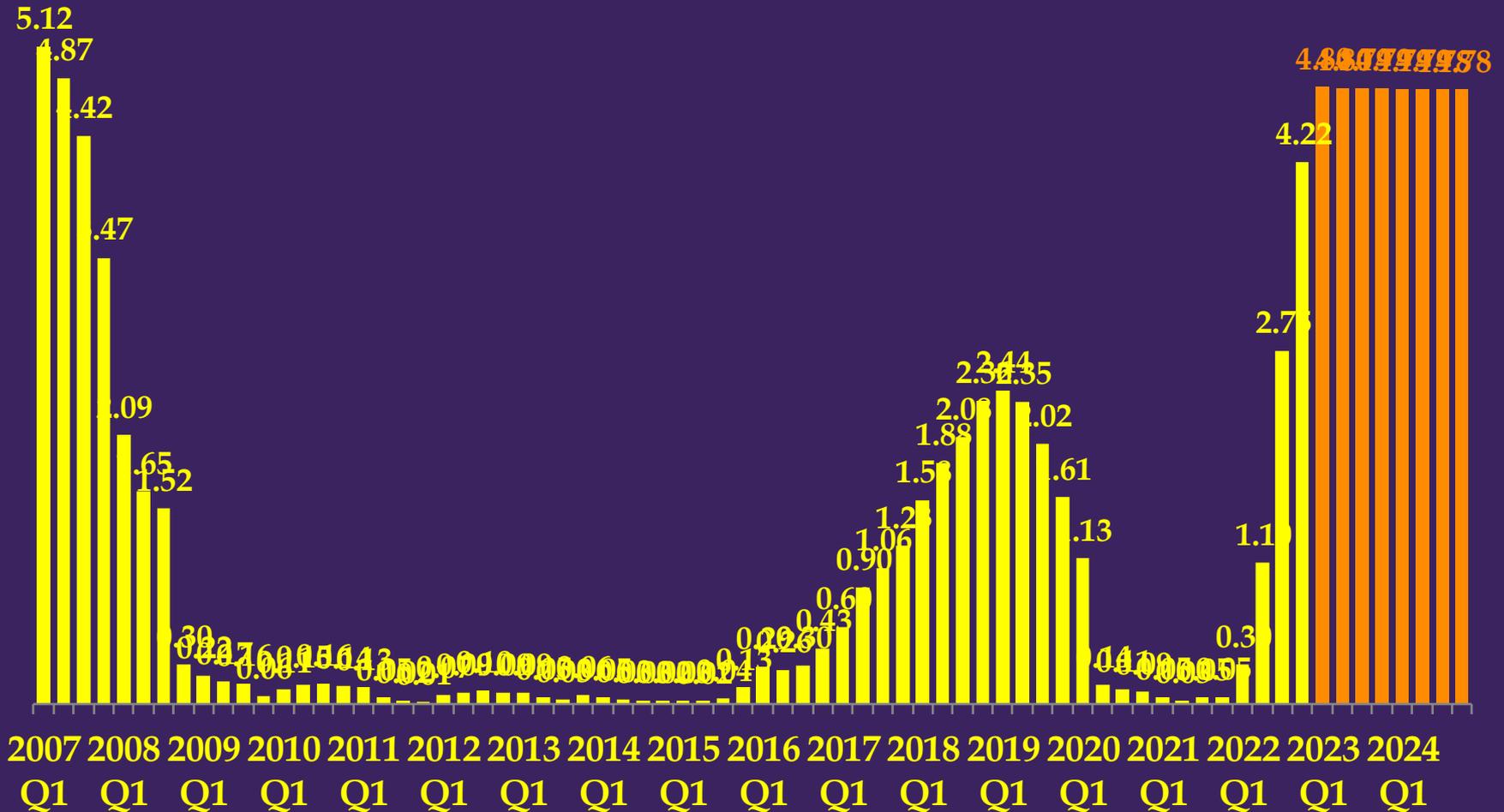
■ Center for Economic Research and Forecasting
United States - (annual percent yield)

Real 10-year Treasury Yield



Center for Economic Research and Forecasting
United States - (annual percent yield)

3-month Treasury Yield



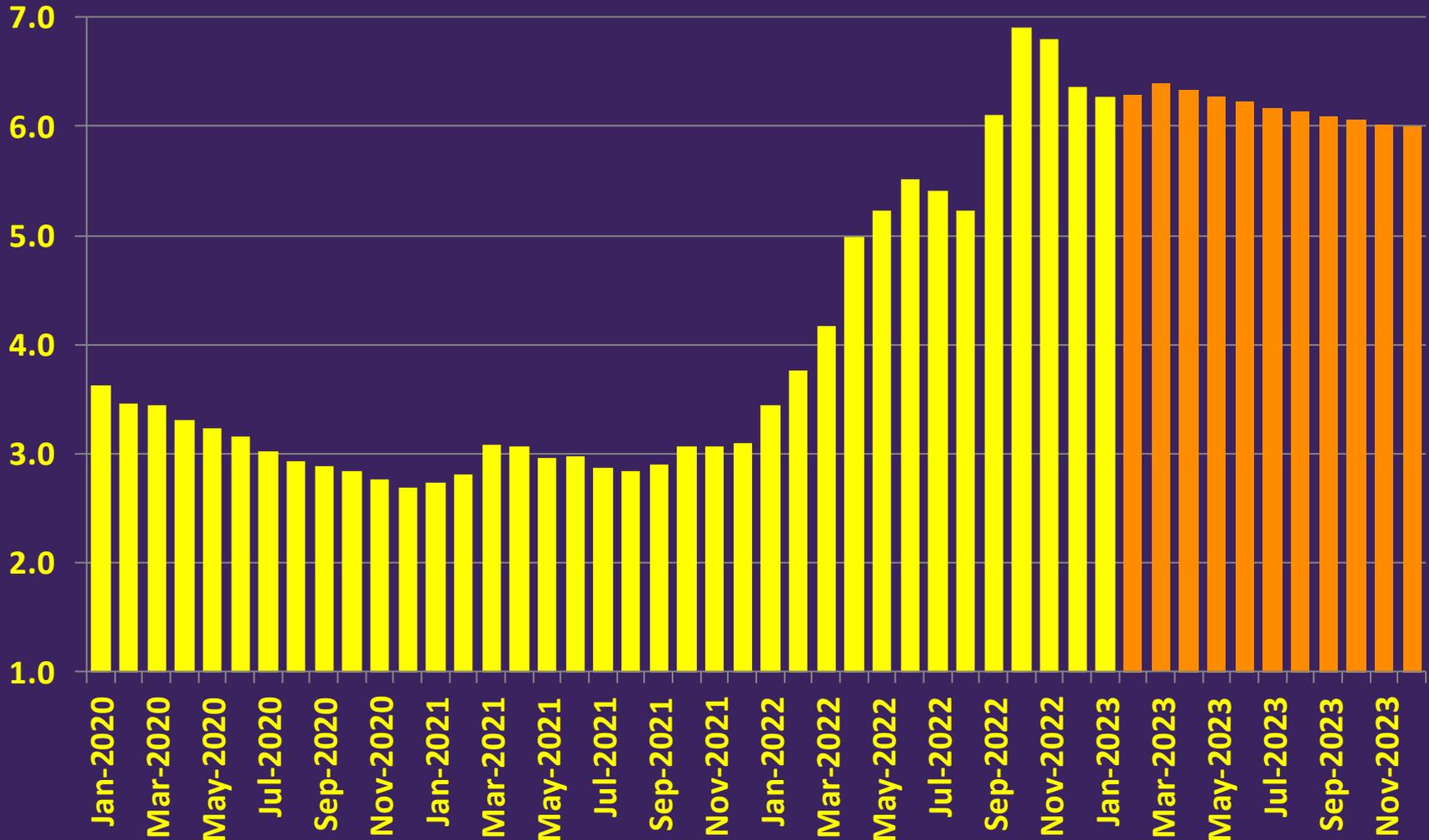
Center for Economic Research and Forecasting
United States - (annual percent yield)

Yield Curve



Center for Economic Research and Forecasting
 United States - (10-year minus 3-month APR)

Interest Rates: Conventional 30-year Fixed Mortgages



Fed Rate Assumption

The Federal Funds Target Rate – Midpoint

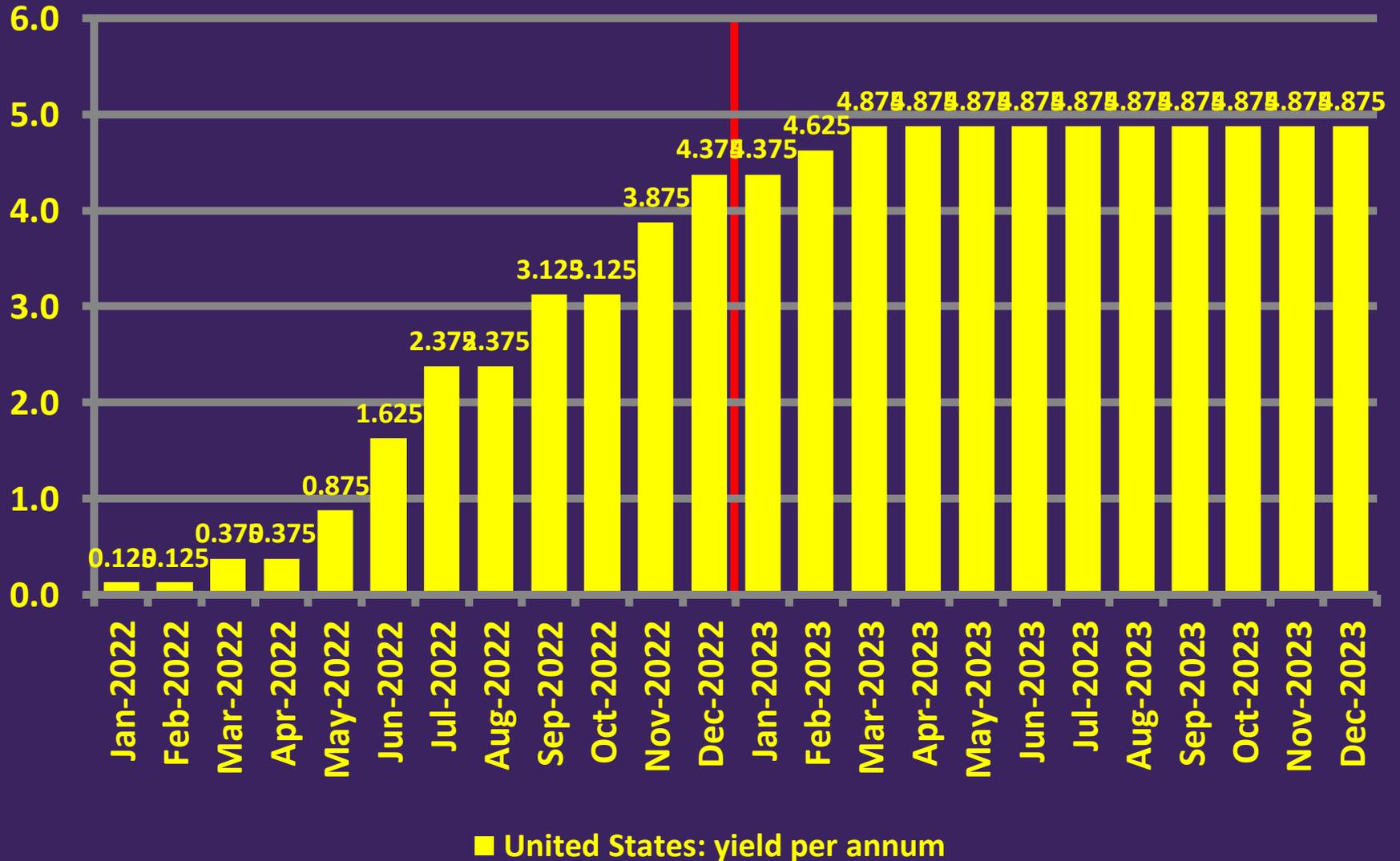
| | | <u>FFRT</u> |
|-------------|------------|-------------|
| Dec Meeting | 50 bp hike | 4.375 |
| ===== | ===== | ===== |

| <u>2023</u> | <u>CERF Forecast</u> | |
|-------------|----------------------|-------|
| Jan/Feb | 25 bp hike | 4.625 |
| Mar | 25 bp hike | 4.875 |
| May | no hike | 4.875 |
| July | no hike | 4.875 |
| Sept | no hike | 4.875 |
| Oct | no hike | 4.875 |
| Dec | no hike | 4.875 |

Interest Rates: Federal funds target rate - Range midpoint



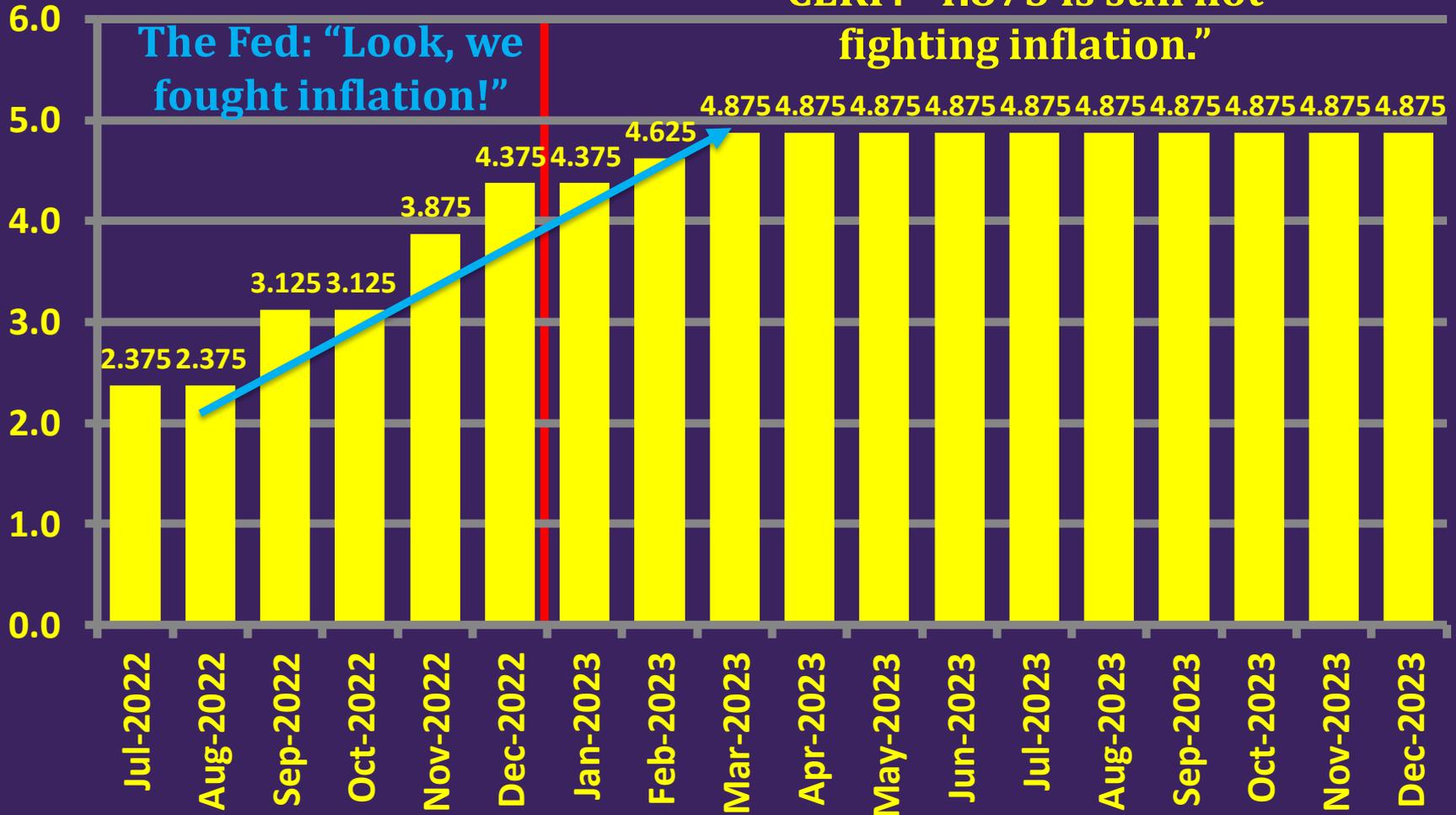
Federal funds target rate - Midpoint



Federal funds target rate - Midpoint

CERF: "4.875 is still not fighting inflation."

The Fed: "Look, we fought inflation!"



■ United States: yield per annum

Competing Forecasts

Competing Forecasts

2023: Quarter 1

| | | |
|---------------------|-----|--------------|
| WSJ Consensus | 0.1 | Jan 15, 2023 |
| Moody's High-Freq | 0.6 | Feb 08, 2023 |
| Atlanta Fed GDP Now | 2.2 | Feb 08, 2023 |
| CERF | 1.9 | Feb 09, 2023 |

2023: Full Year

| | | |
|------------------------|-----|--------------|
| Fed Board of Governors | 0.5 | Dec 14, 2022 |
| IMF | 1.4 | Jan 30, 2023 |
| CERF | 2.0 | Feb 07, 2023 |
| Moody's | 1.3 | Feb 07, 2023 |
| CBO | 0.3 | Feb 15, 2023 |

Decomposing the WSJ Survey

| | <u>CERF</u> | <u>WSJ Recession</u> | <u>WSJ Expansion</u> |
|-------------|-------------|--------------------------|--------------------------|
| <u>2023</u> | | | |
| Q1: | 1.9 | -1.1 (30) | 1.1 (38) |
| Q2: | 1.7 | -1.3 (39) | 1.0 (26) |
| Q3: | 1.5 | -1.3 (28) | 1.1 (36) |
| Q4: | 1.5 | -1.2 (20) | 1.4 (47) |

There were 77 forecasters included in the January 2023 WSJ Survey that was released on Jan 15. Not all of the forecasters responded to all of the questions.