



CENTER FOR
BUSINESS &
ECONOMIC
ANALYSIS

State of the Economy

3.17.22

New North Board

CBEA Research Analysts

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Overview

Economic Updates

GDP, Unemployment, & Inflation

Economic Policy | Fiscal + Monetary

Financial Markets

Housing Market

Inflationary Pressures

The Labor Force

Supply Chain Challenges

Energy Markets

Key Takeaways

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- Housing Market
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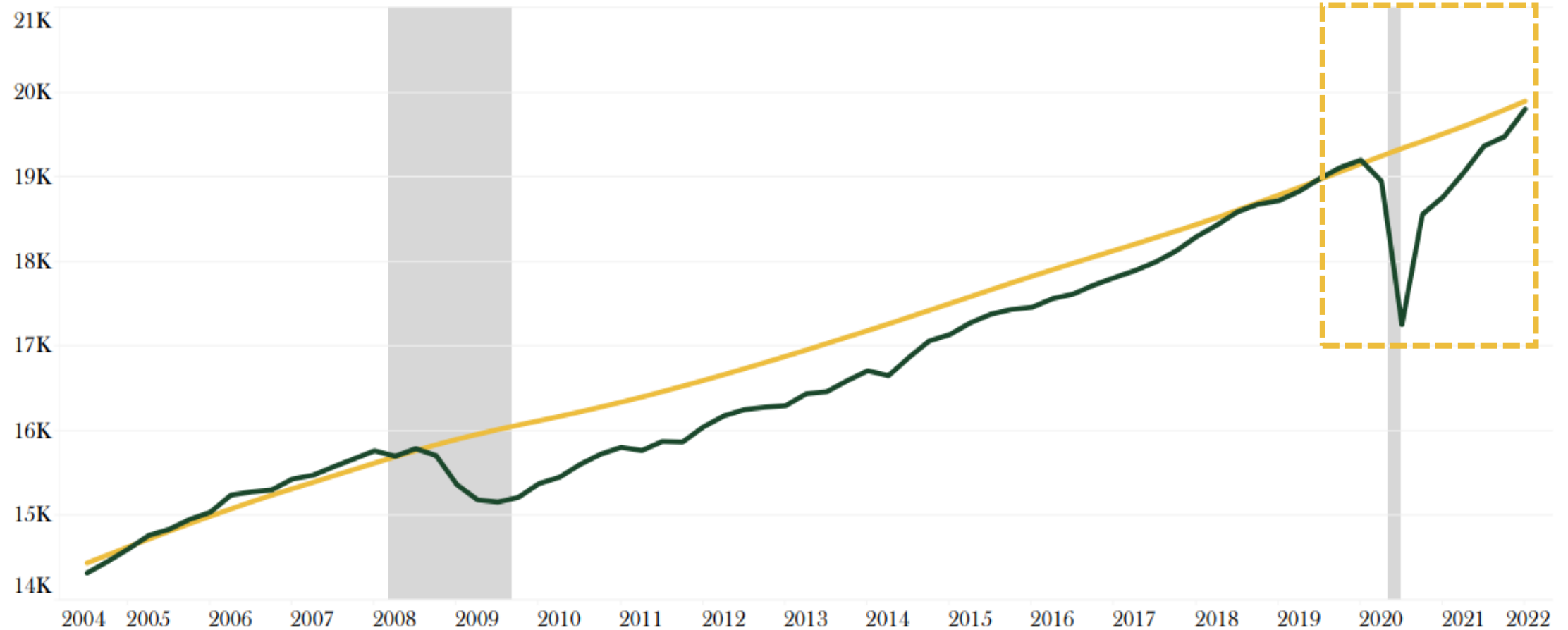
- Supply Chain Challenges
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- Energy Markets
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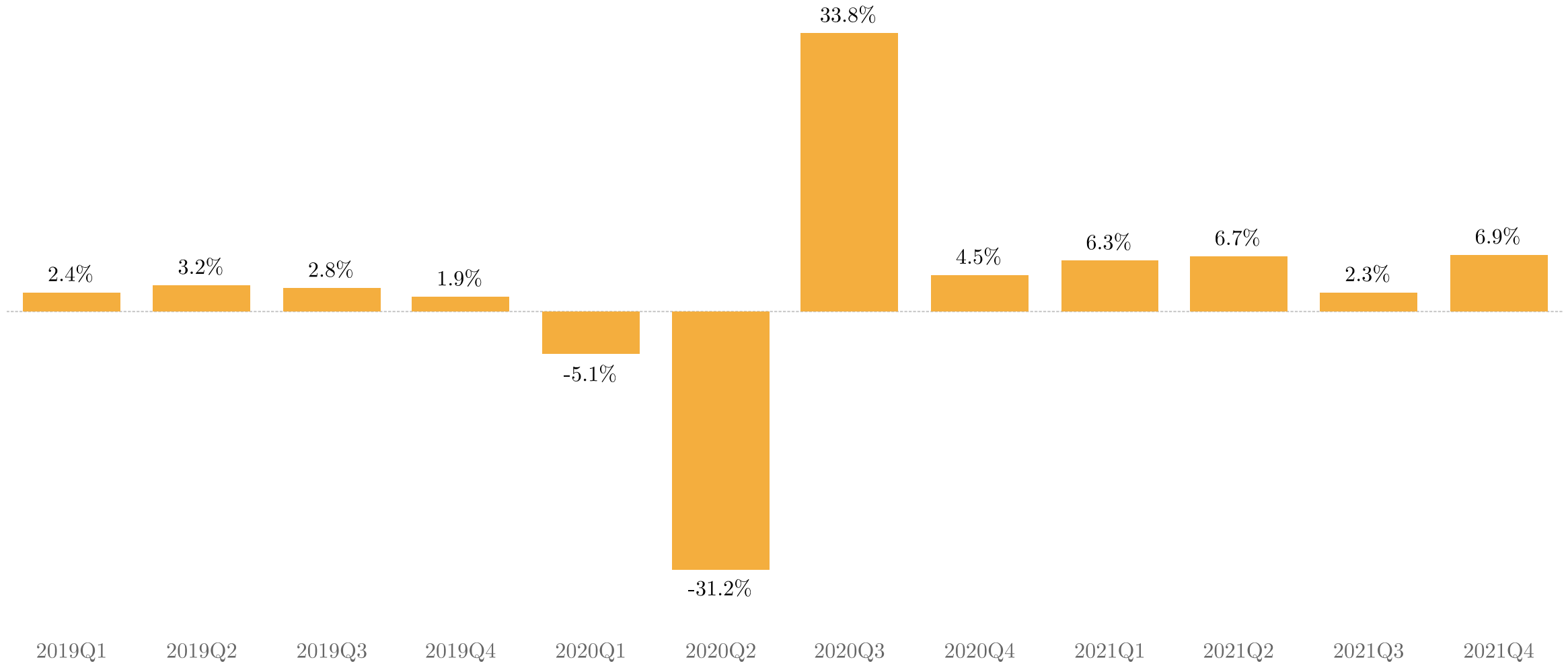
- Key Takeaways
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GDP is nearing pre-pandemic trend

Real GDP vs Real Potential GDP | Billions of Chained 2012 Dollars

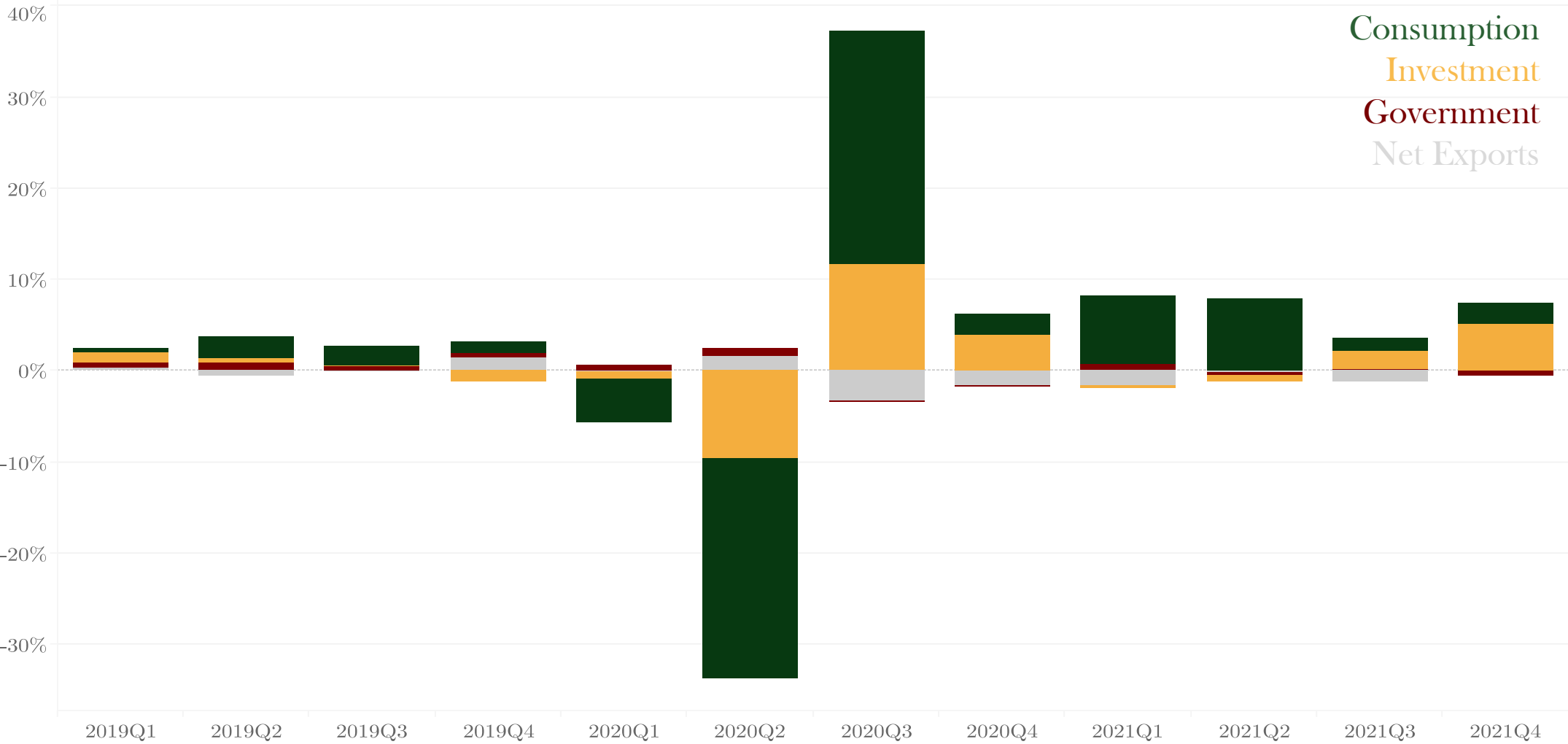


...with a little bit of volatility and a strong Q4 finish to the year



Of course, the details matter with swings in consumption in 2021

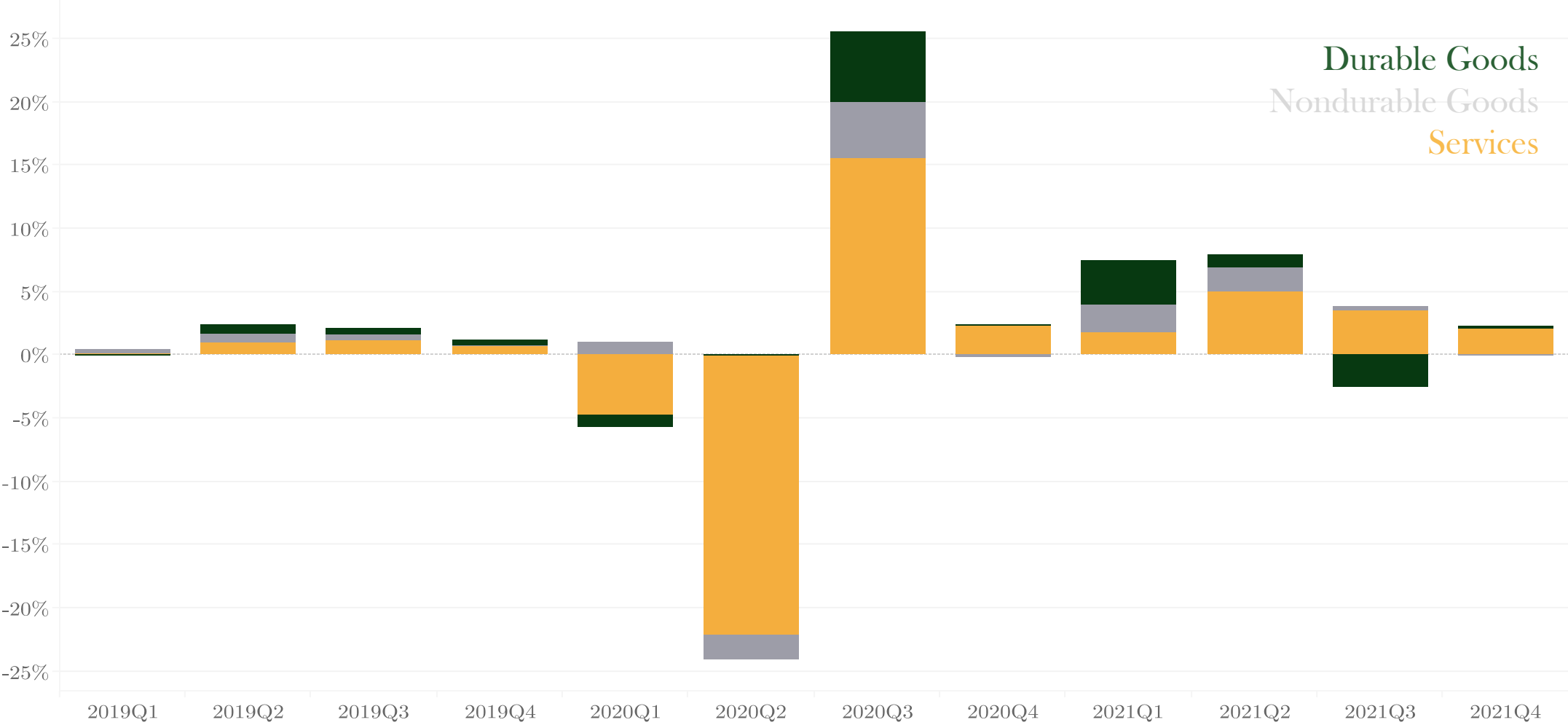
Contributions to the Percentage Change in GDP



Source: BEA

For consumption, trends towards services spending drove Q3/Q4 performance

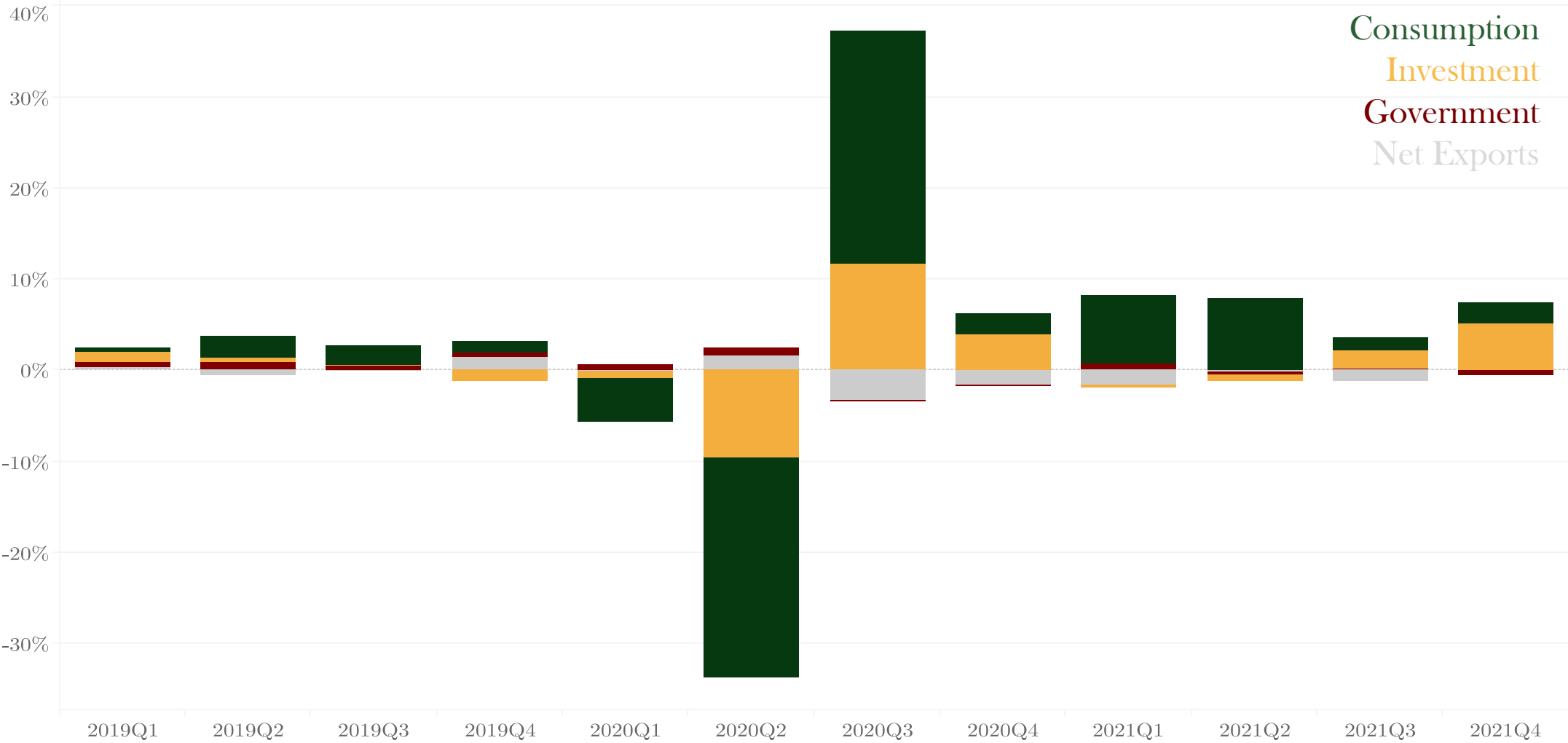
Contributions to the Percentage Change in Consumption



Source: BEA

Of course, the details matter with swings in investment in 2021

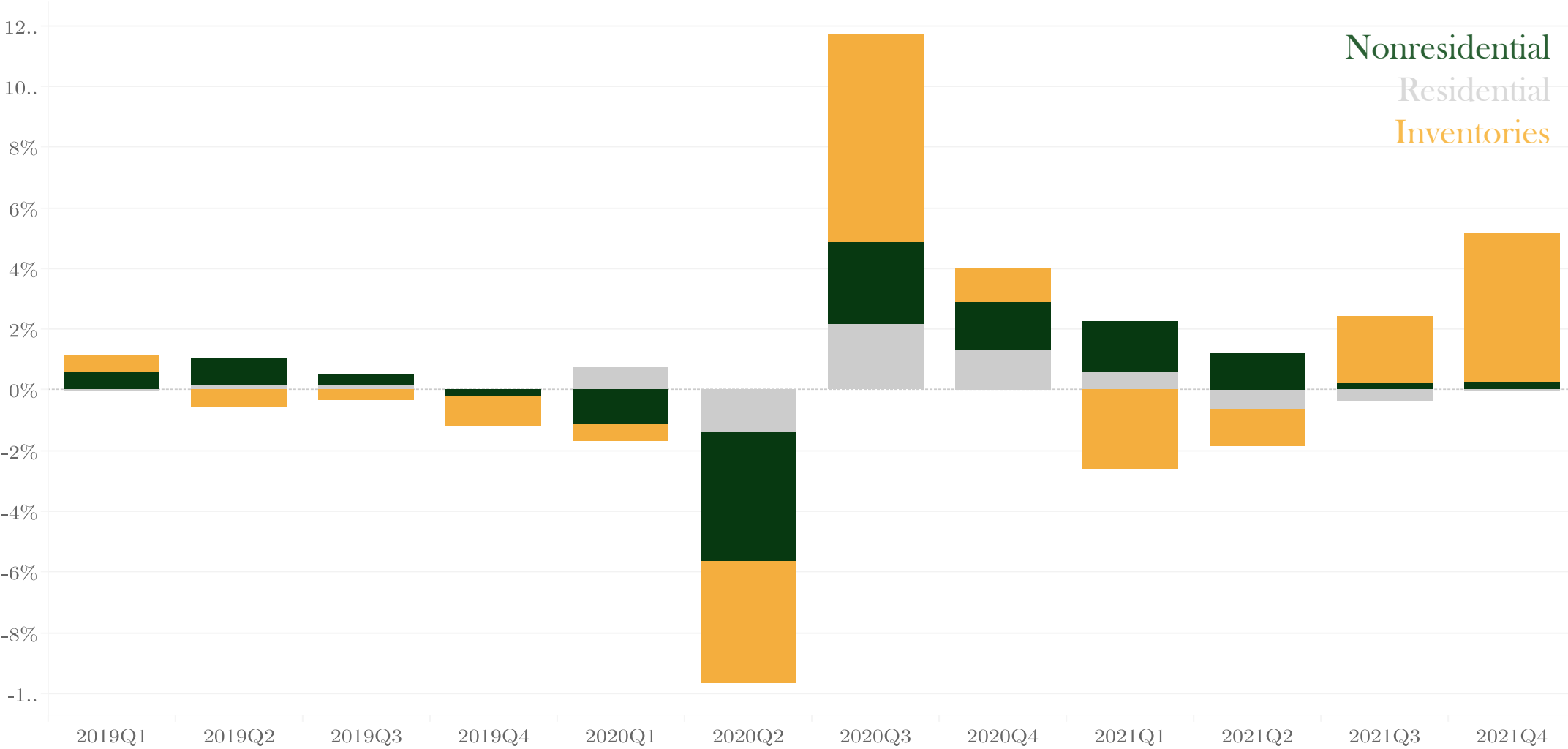
Contributions to the Percentage Change in GDP



Source: BEA

The Q4 investment was driven in large part to inventory growth which adds important perspective to the Q4 GDP numbers

Contributions to the Percentage Change in Investment



Source: BEA

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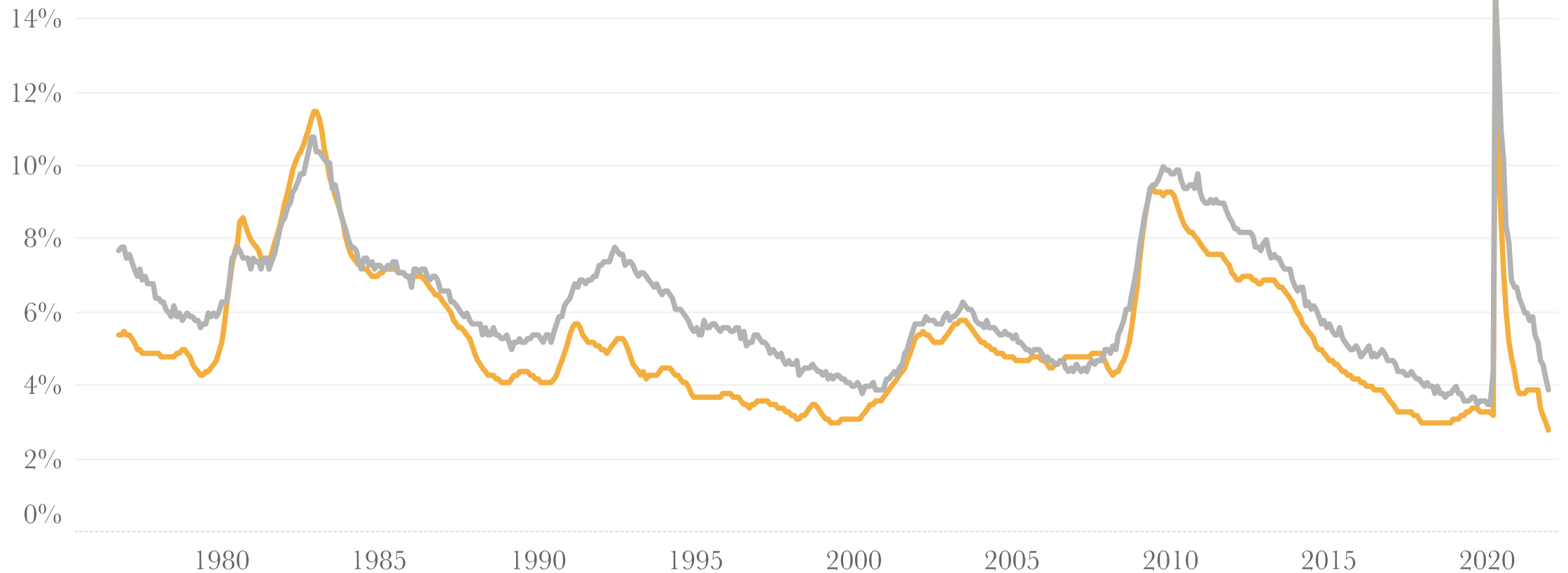
Key Takeaways

After skyrocketing, unemployment finally returns to pre-pandemic levels

US & WI Unemployment Rates

Dec. 2021 | US: 3.9% | WI: 2.8%

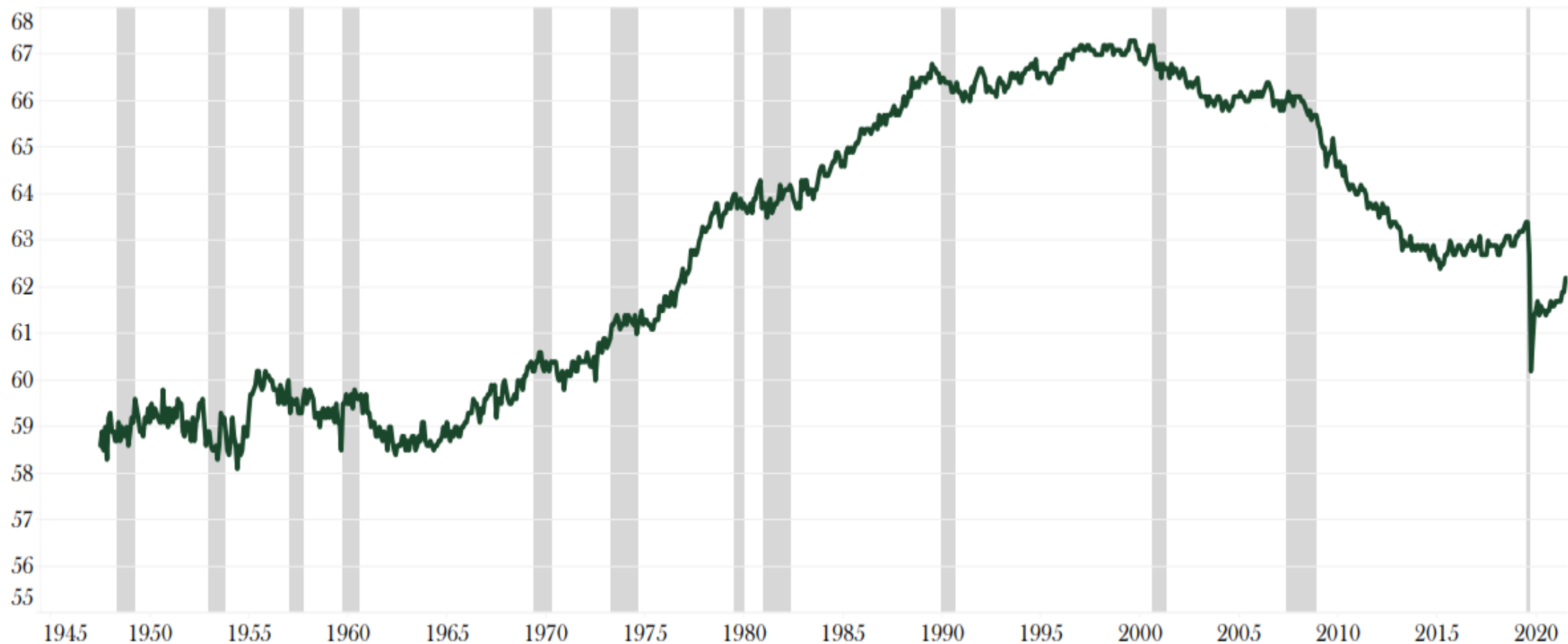
Feb. 2022 | US: 3.8% | WI: --



Drop in labor force participation may have something to do with it

Labor Force Participation Rate

Percent



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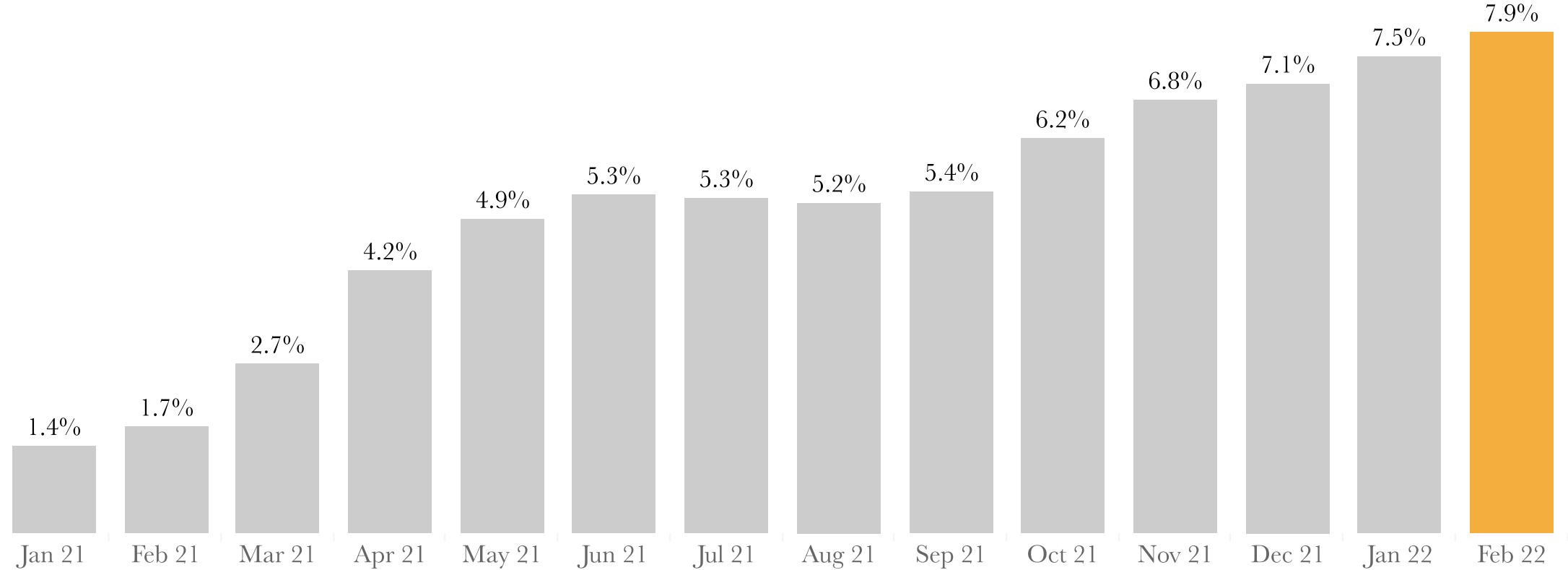
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Inflation is still on the rise

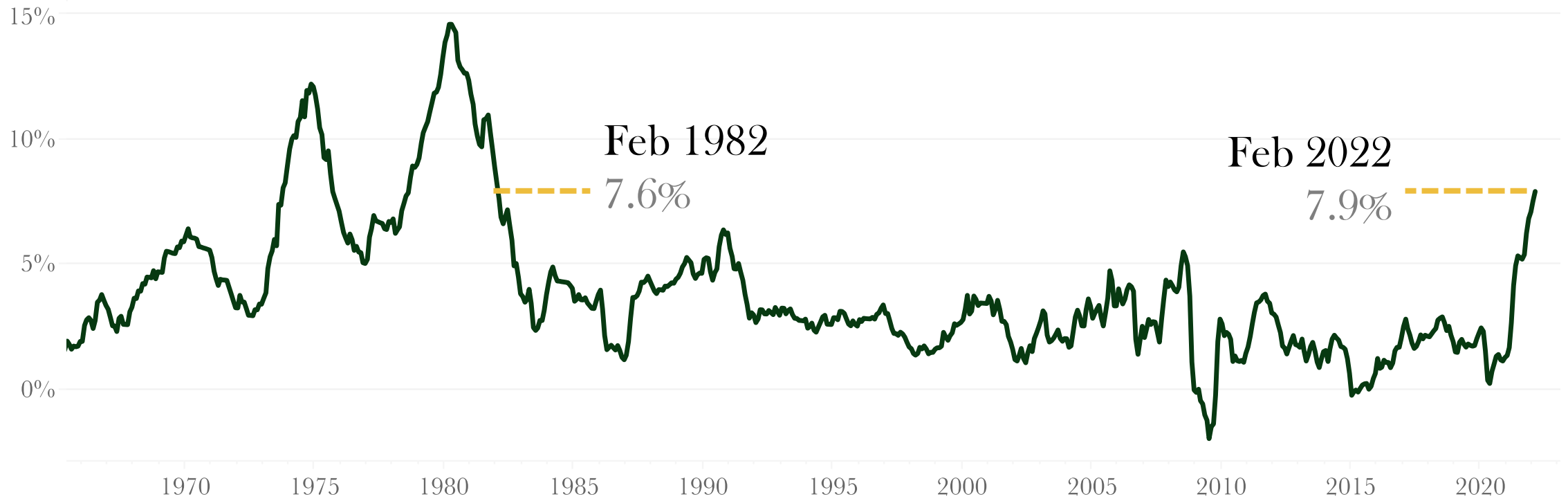
Monthly US Inflation
annual percentage change



Source: BLS

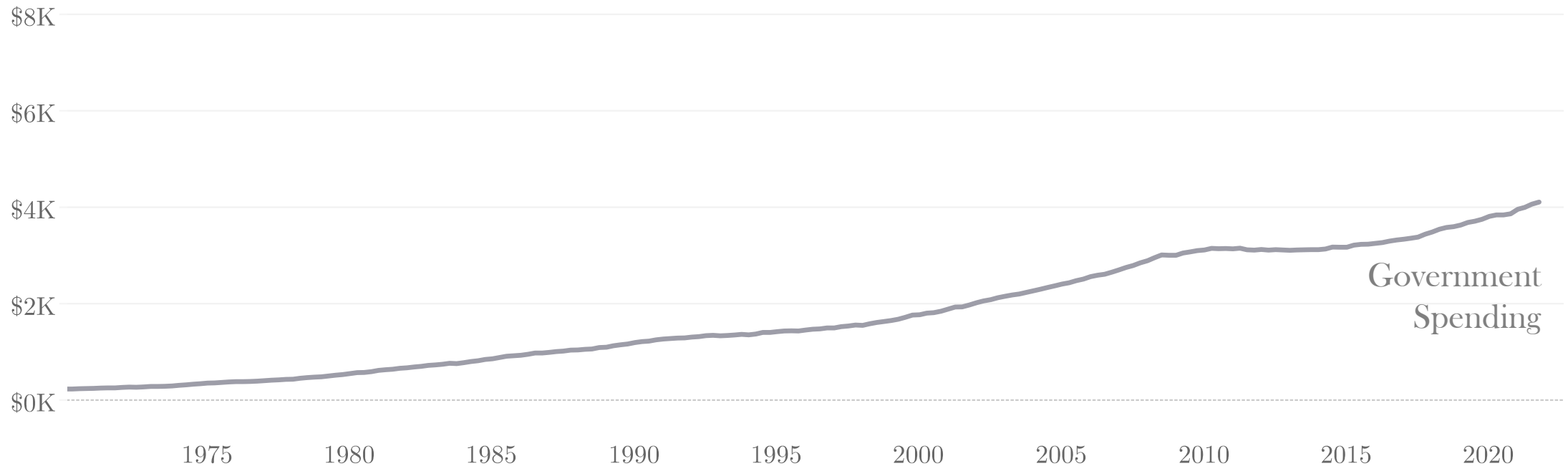
Highest inflation in 40 years...

Historical Inflation
annual percentage change



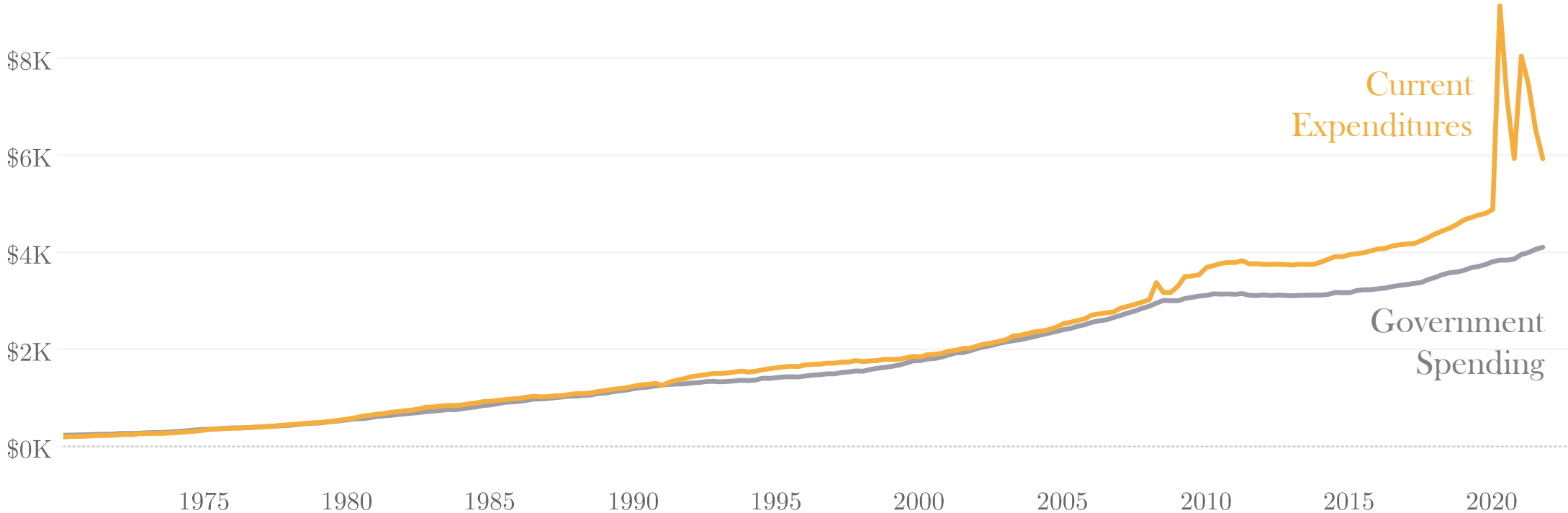
Fiscal policy has been front and center throughout the pandemic...or has it?

Current Government Expenditures vs. Government Spending | Billions of \$



When accounting for transfer payments, the scope of fiscal policy is put into perspective...it has been significant

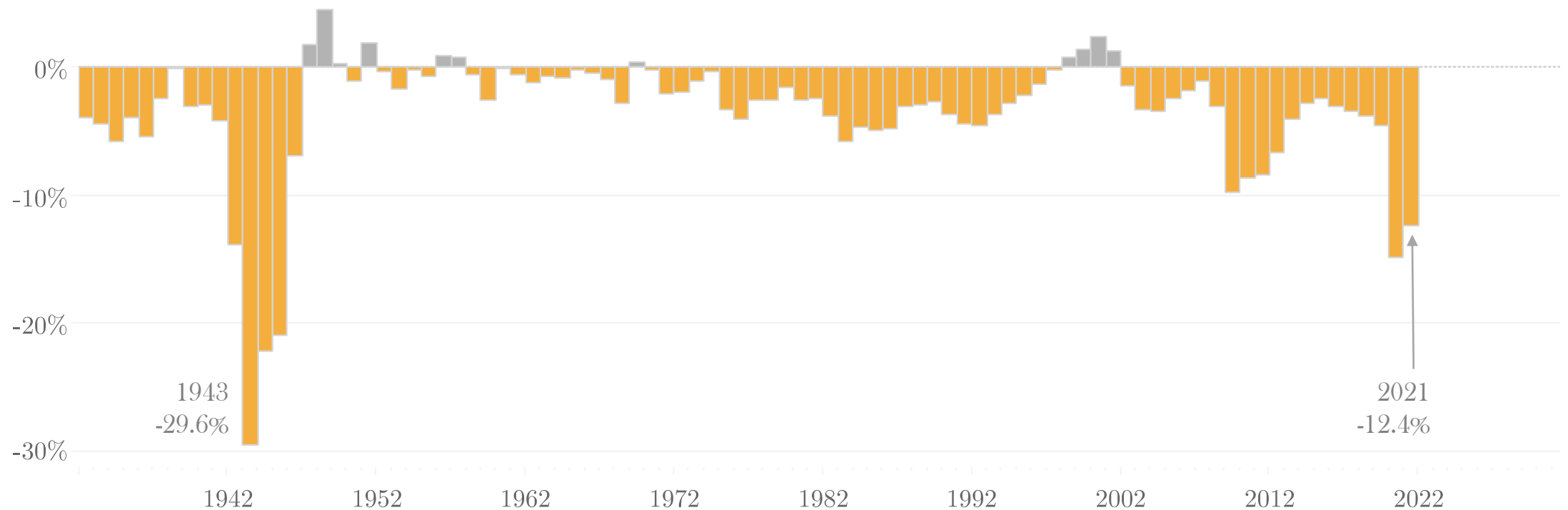
Current Government Expenditures vs. Government Spending | Billions of \$



Source: FRED

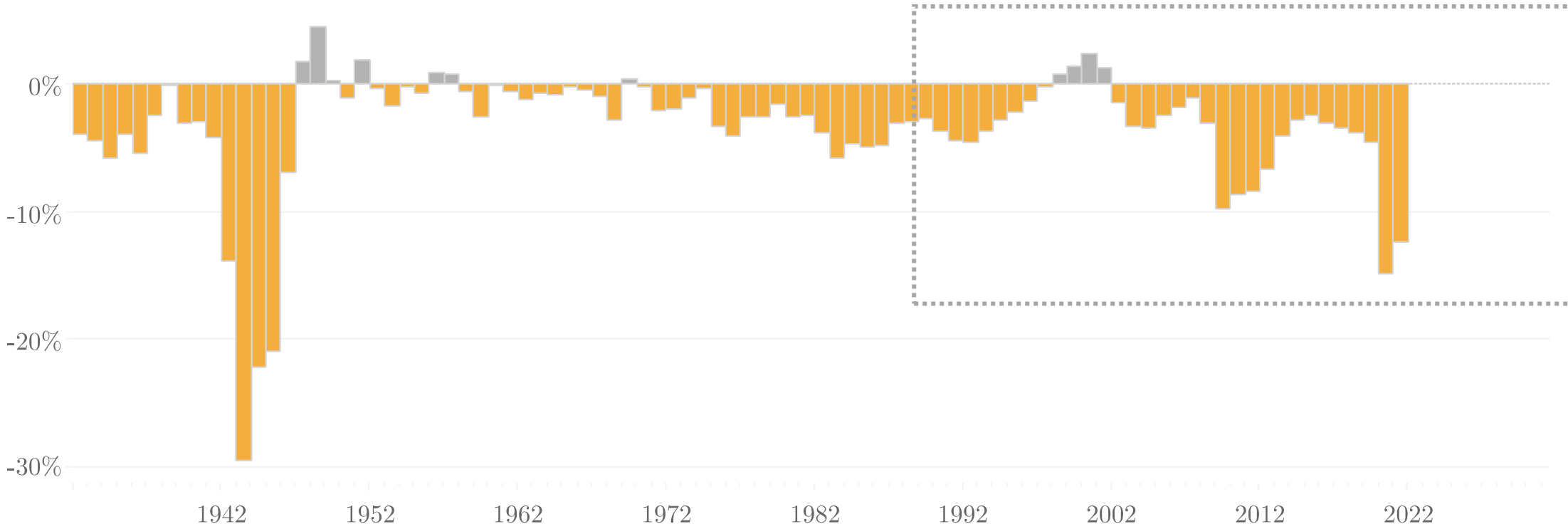
Of course, how have we paid for that spending? As a percentage of GDP, the pandemic period has led to our largest deficits post WWII

Federal Budget Surplus/Deficit | % of GDP



Let's take a closer look at the recent government budget situation...

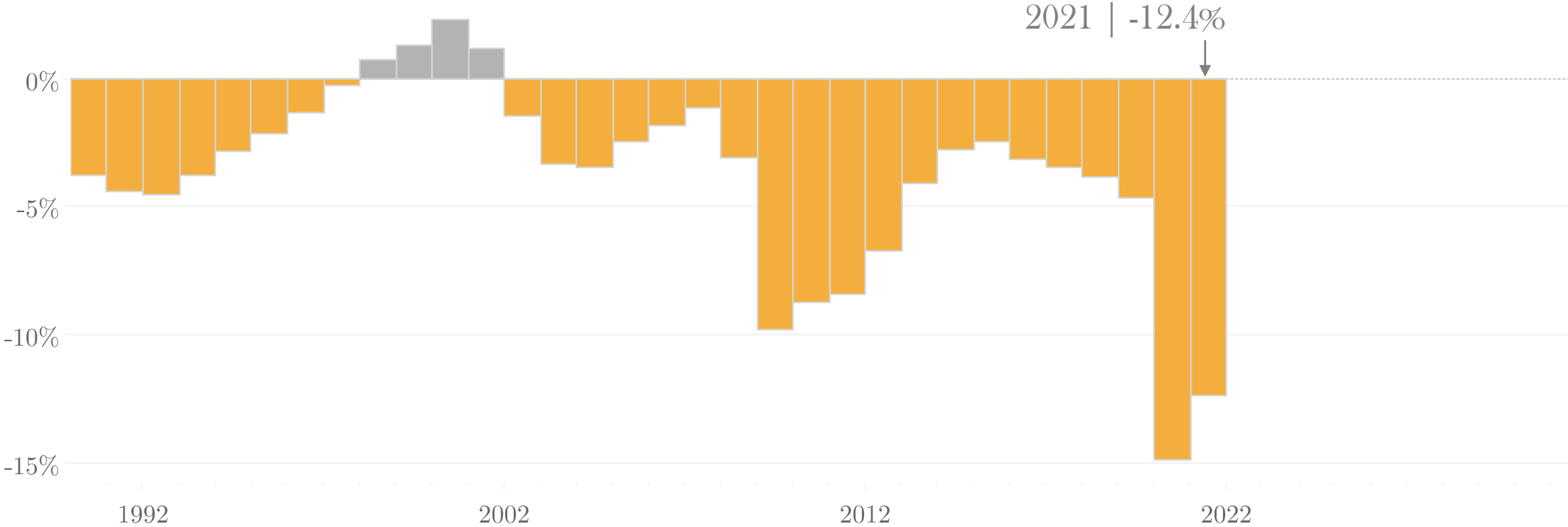
Federal Budget Surplus/Deficit | % of GDP



Source: FRED

The current deficits are larger than the Great Recession deficits by a sizeable margin

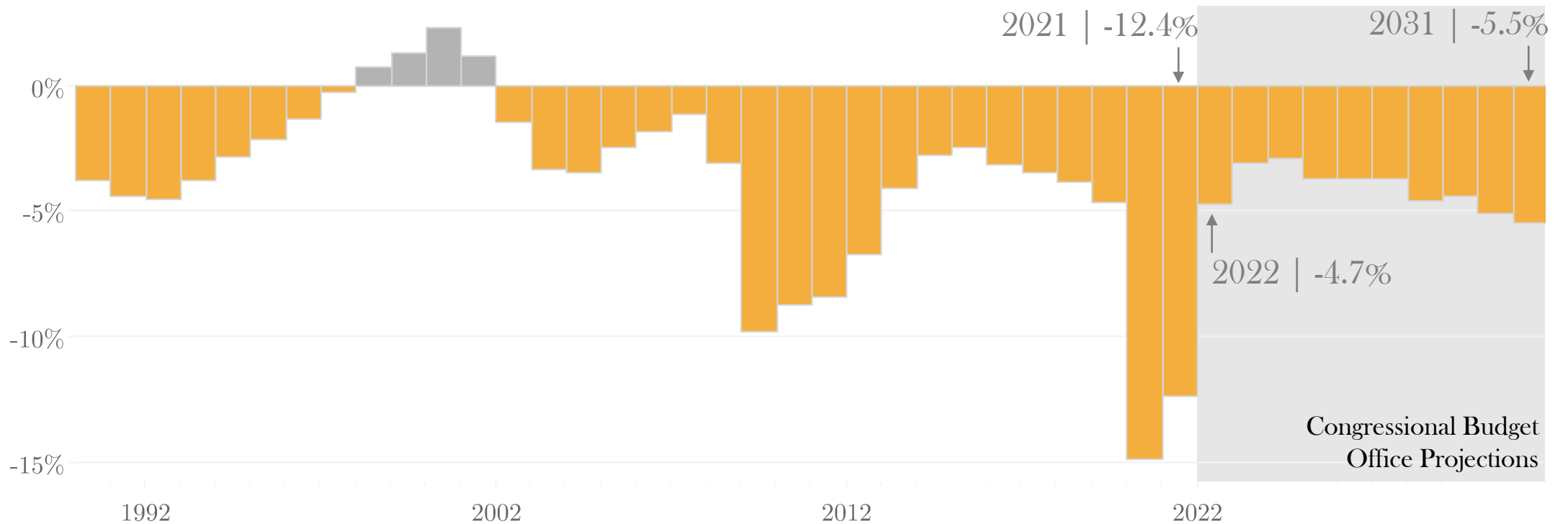
Federal Budget Surplus/Deficit | % of GDP



Source: FRED

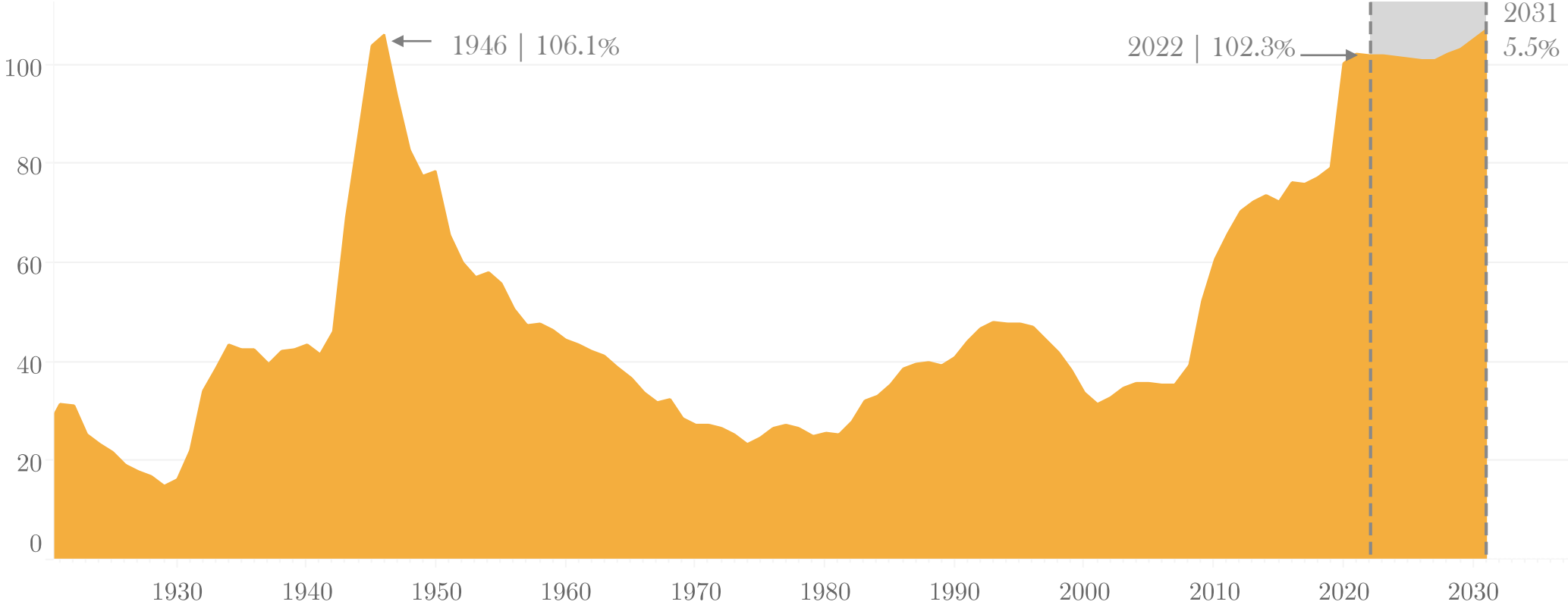
Current CBO projections estimate smaller deficits moving forward

Federal Budget Surplus/Deficit | % of GDP



The deficits contribute to the broader measure of US debt which is nearing WWII levels...this begs the question...is this a problem?

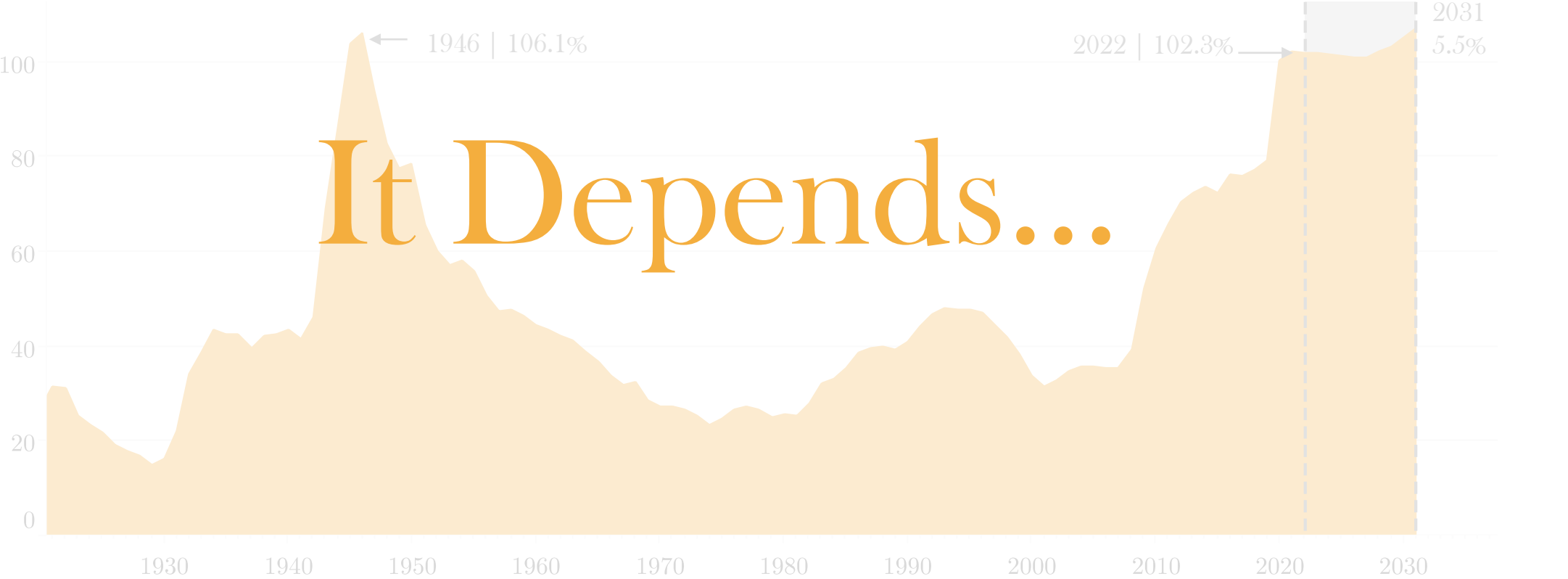
Federal Net Debt | % of GDP



Source: FRED, CBO

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Federal Net Debt | % of GDP



It Depends...

Source: FRED, CBO

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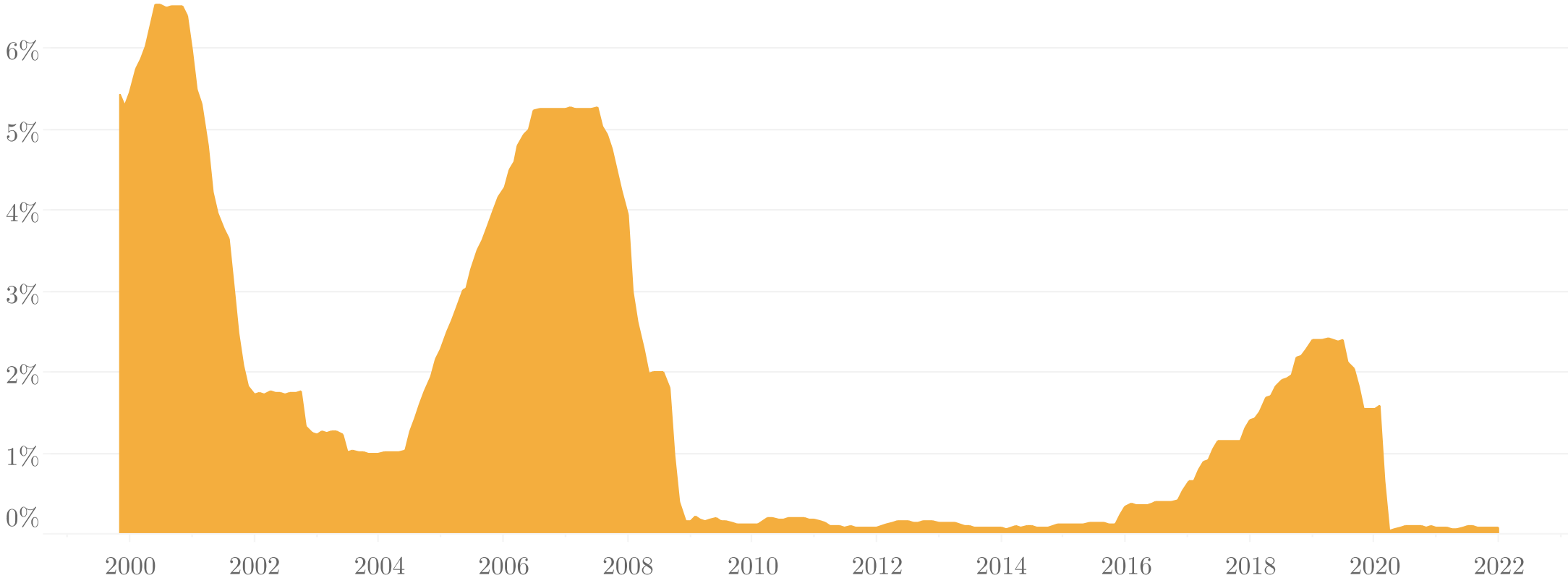
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Currently, the federal funds rate is hovering at the zero lower bound, but this is the tip of the iceberg in terms of monetary policy response to the pandemic

Federal Funds Rate

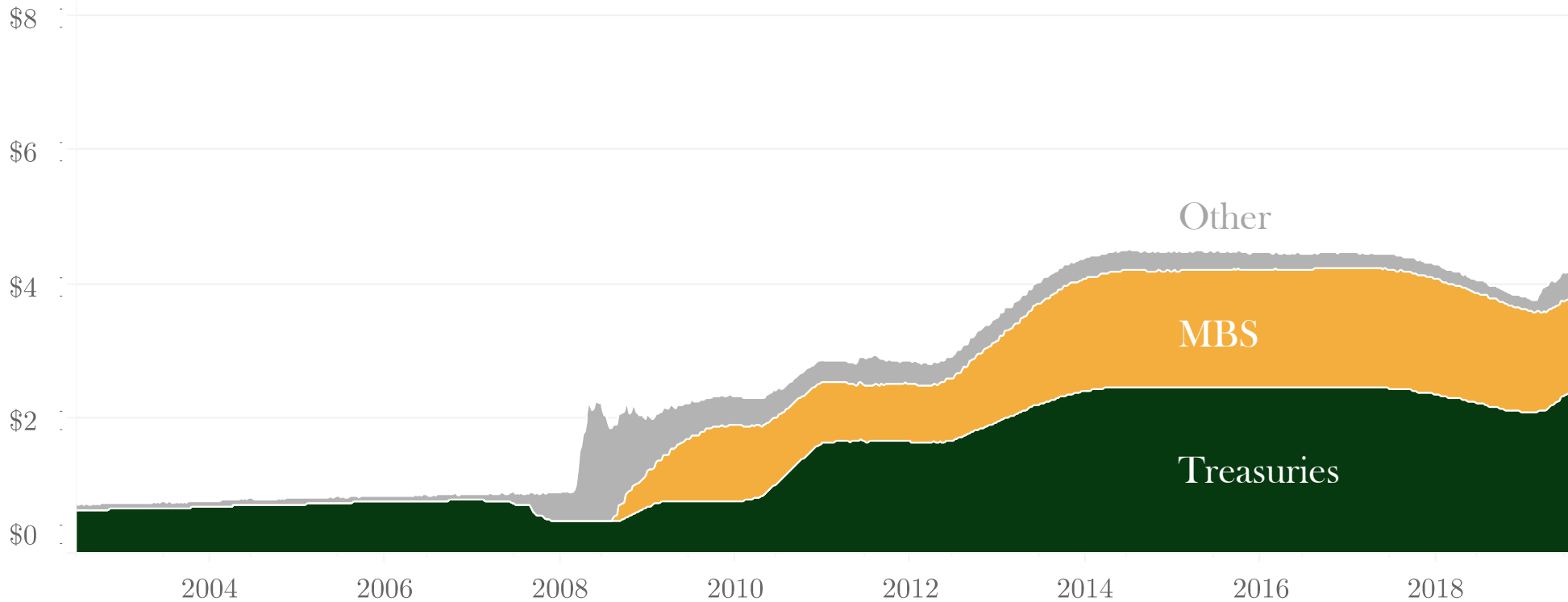


Source: Federal Reserve

Quantitative Easing has been a new policy tool of the Fed beginning in the Great Recession

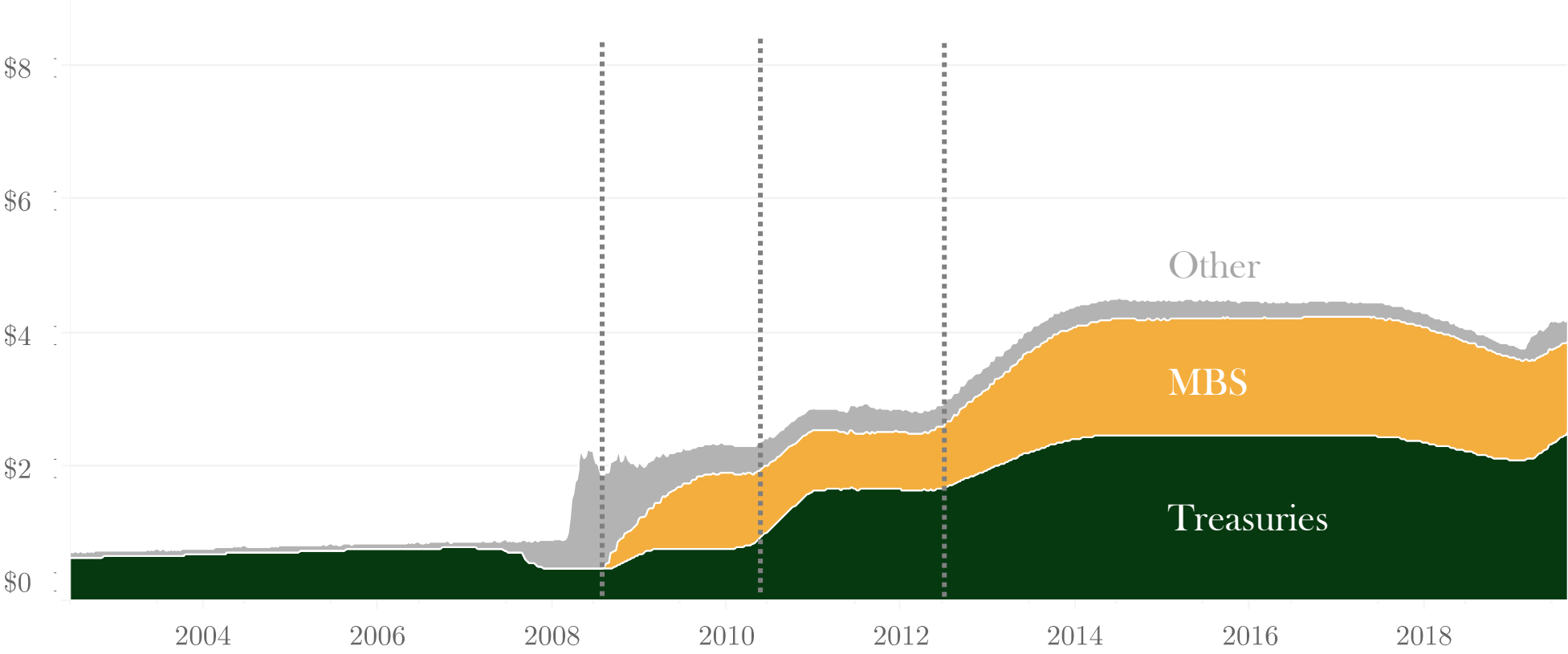
Federal Reserve Balance Sheet | USD trillions

Assets



The first rounds of QE are evident when looking at the Federal Reserve assets

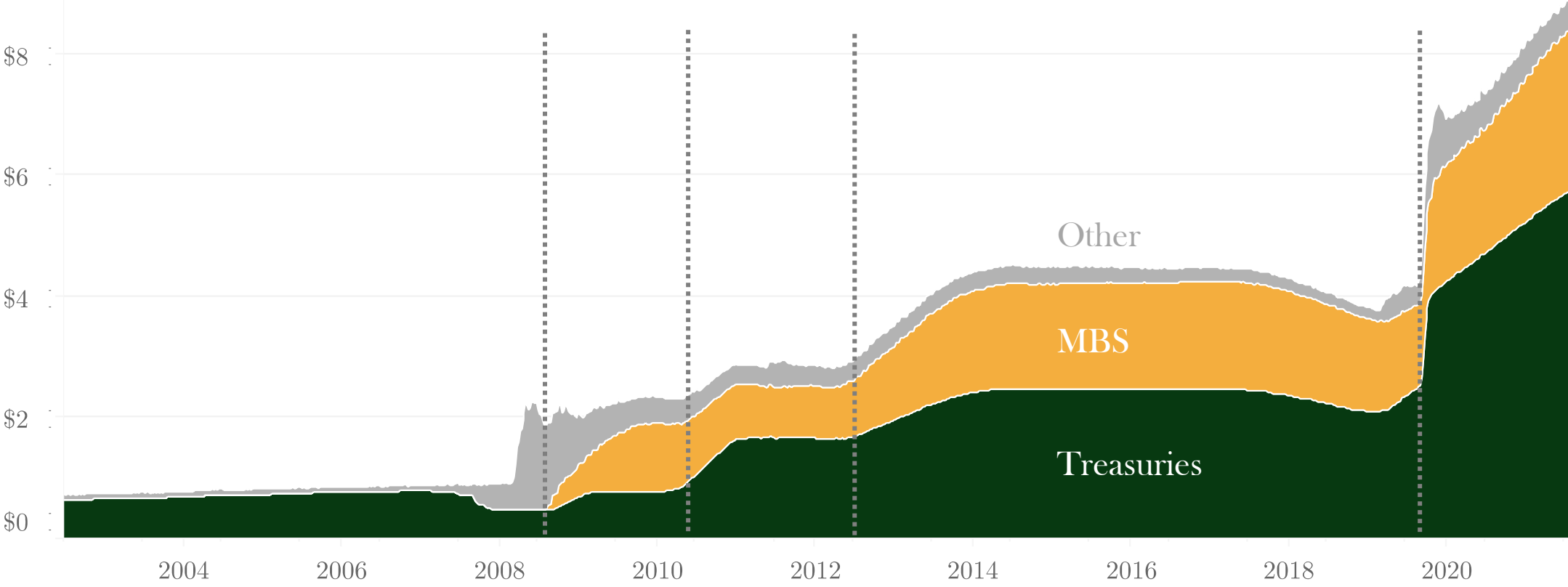
Federal Reserve Balance Sheet | USD trillions
Assets



Source: Federal Reserve

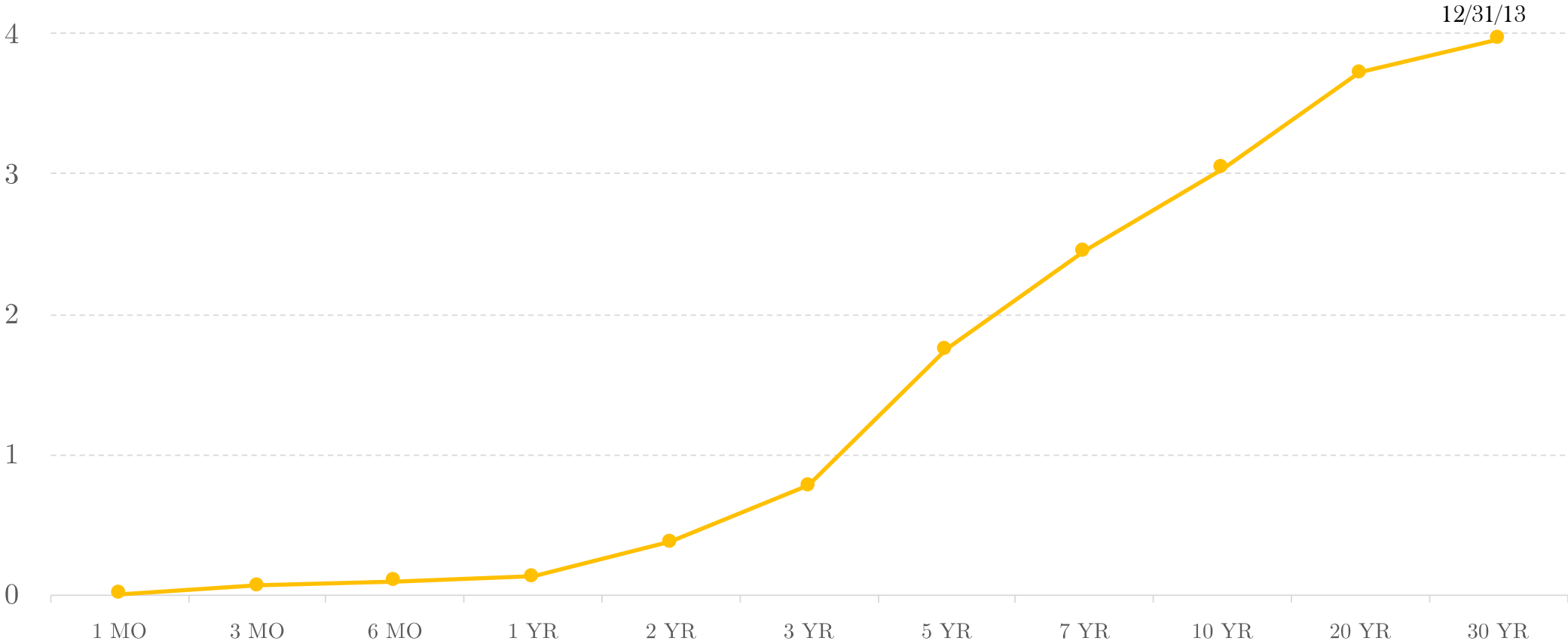
The Fed pulled out the Great Recession playbook for their pandemic response with another round of QE

Federal Reserve Balance Sheet | USD trillions
Assets



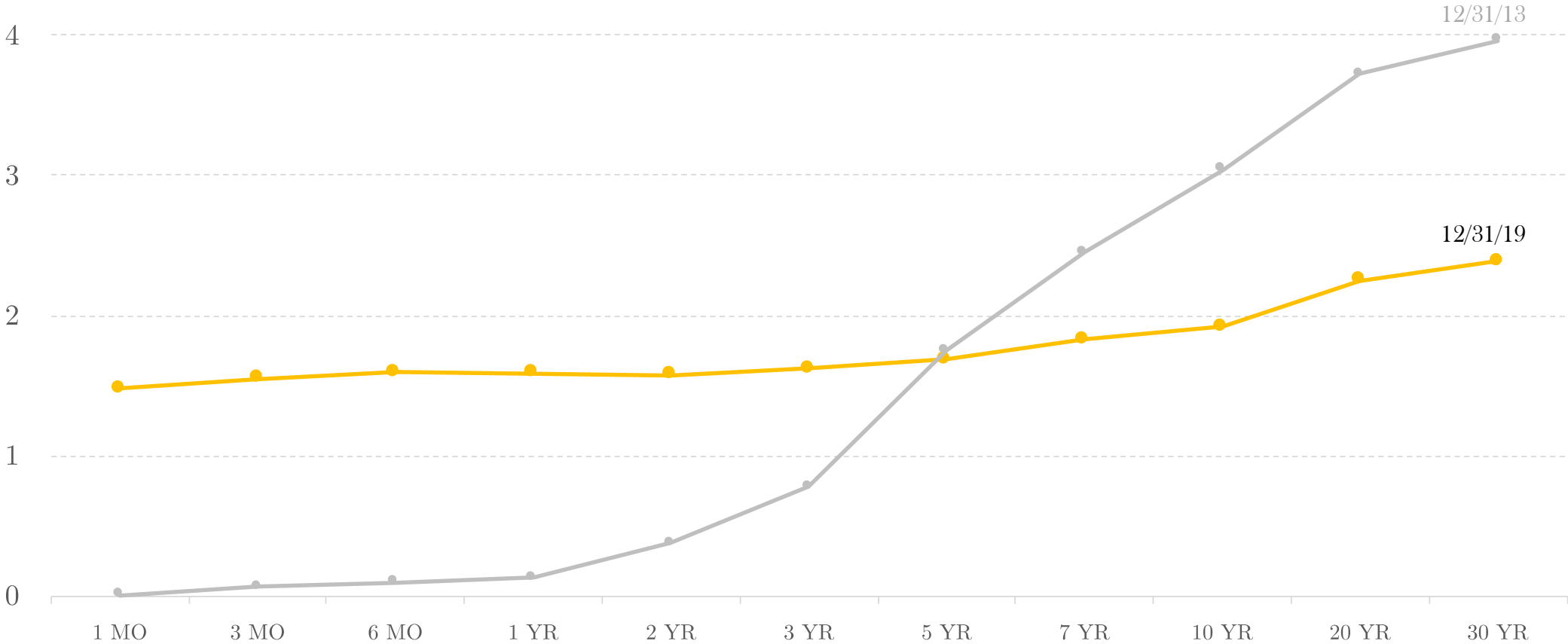
Source: Federal Reserve

So, why is the Fed playing the QE game again? They are pushing down longer term rates that are not as responsive to the short-term Federal Funds rate



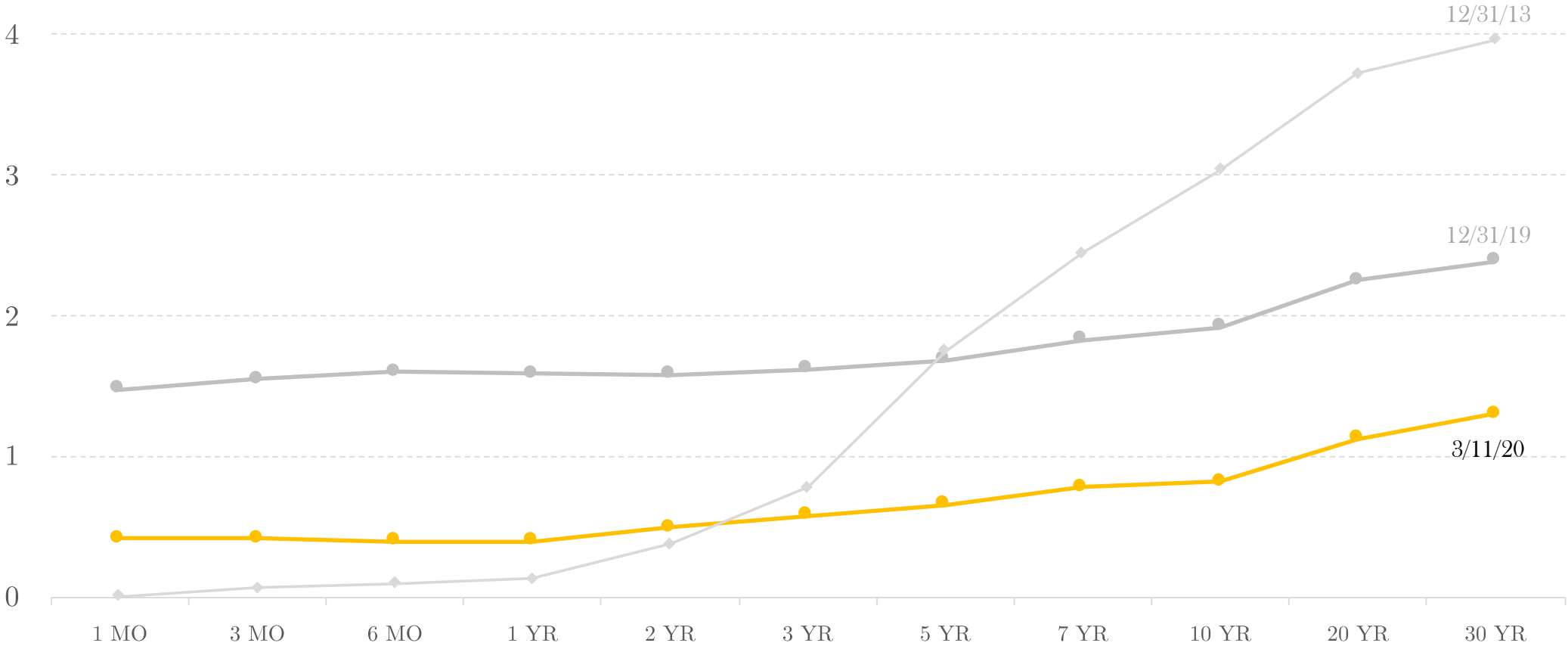
Source: Federal Reserve

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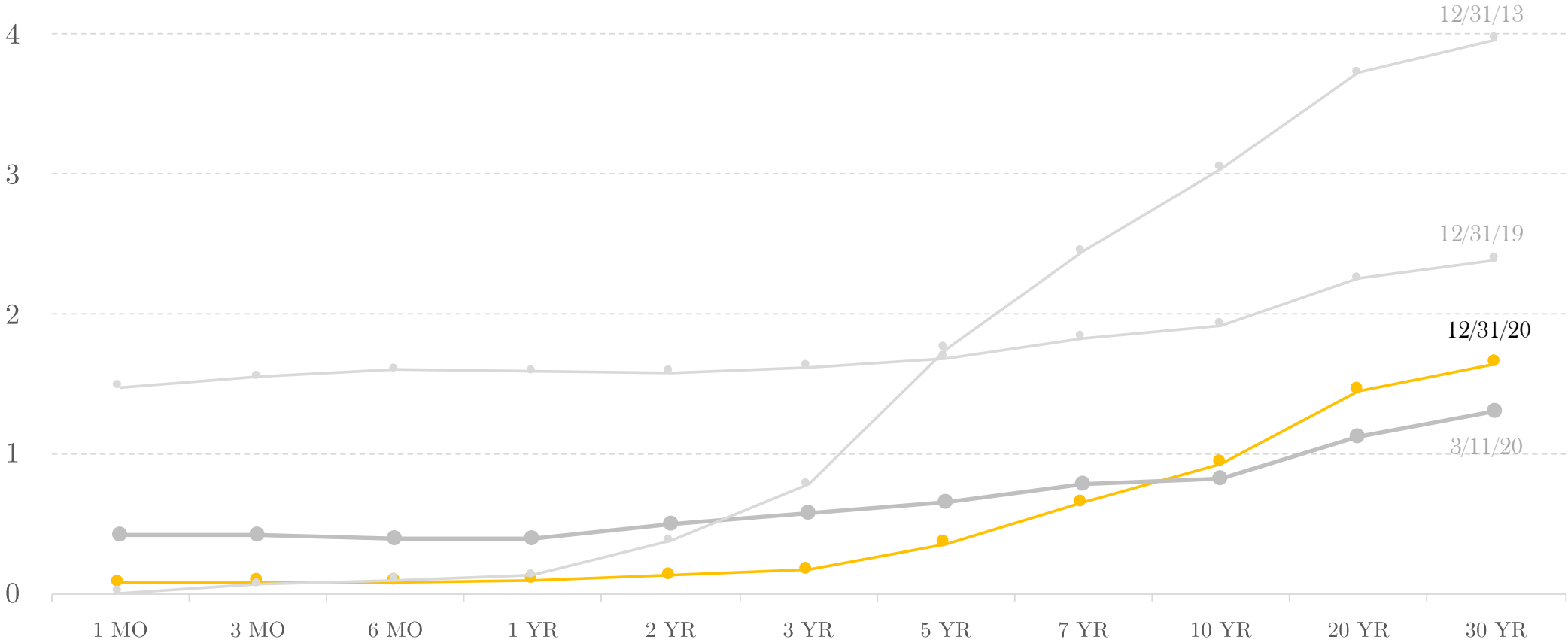
Source: Federal Reserve

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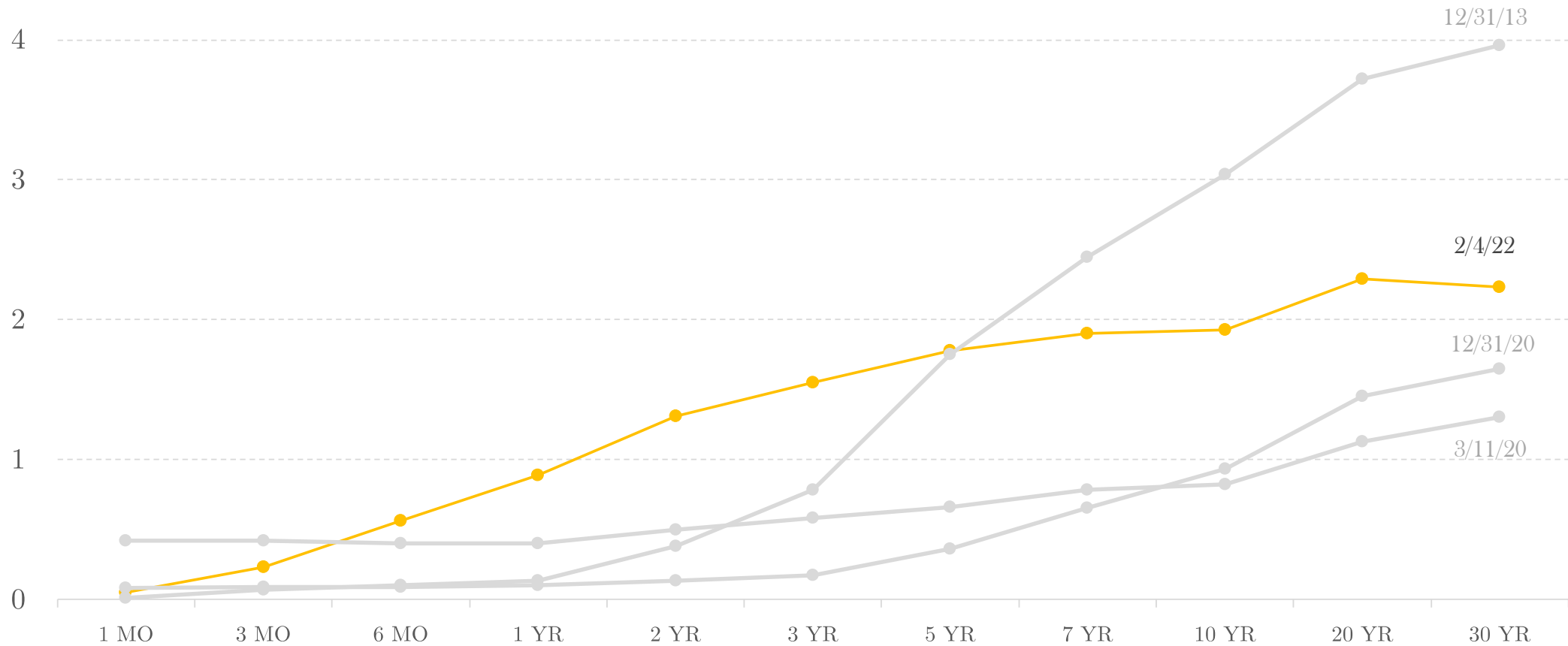
Source: Federal Reserve

So, why is the Fed playing the QE game again? They are pushing down longer term rates that are not as responsive to the short-term Federal Funds rate



Source: Federal Reserve

Notice that the expectation of raising rates is already being picked up in the yield curve



So the Federal Reserve just flooded the market with money, won't this lead to inflation (which is what we are seeing currently)?



Teaching the Linkage Between Banks and the Fed: R.I.P. Money Multiplier

Jane Ihrig, PhD, Board of Governors of the Federal Reserve System

Gretchen Weinbach, PhD, Board of Governors of the Federal Reserve System

Scott Wolla, PhD, Federal Reserve Bank of St. Louis

GLOSSARY

Administered rate: An interest rate that is set directly by a central bank rather than being determined by the market forces of supply and demand.

Ample reserves regime: The name of the Fed's approach to implementing monetary policy. This regime features a sizable level of reserves in the banking system such that small adjustments to the level

"Well, when you and I studied economics a million years ago, M2 and monetary aggregates generally seemed to have a relationship to economic growth... that classic relationship between monetary aggregates and economic growth and the size of the economy, it just no longer holds... so something we have to unlearn, I guess."

—**Jerome Powell, Federal Reserve Chair**¹

Traditional economic models suggest this is the case, but the Fed is suggesting that traditional theory may need some updating



PAGE ONE Economics[®] Econ Primer

Teaching the Linkage Between Banks and the Fed: **R.I.P. Money Multiplier**

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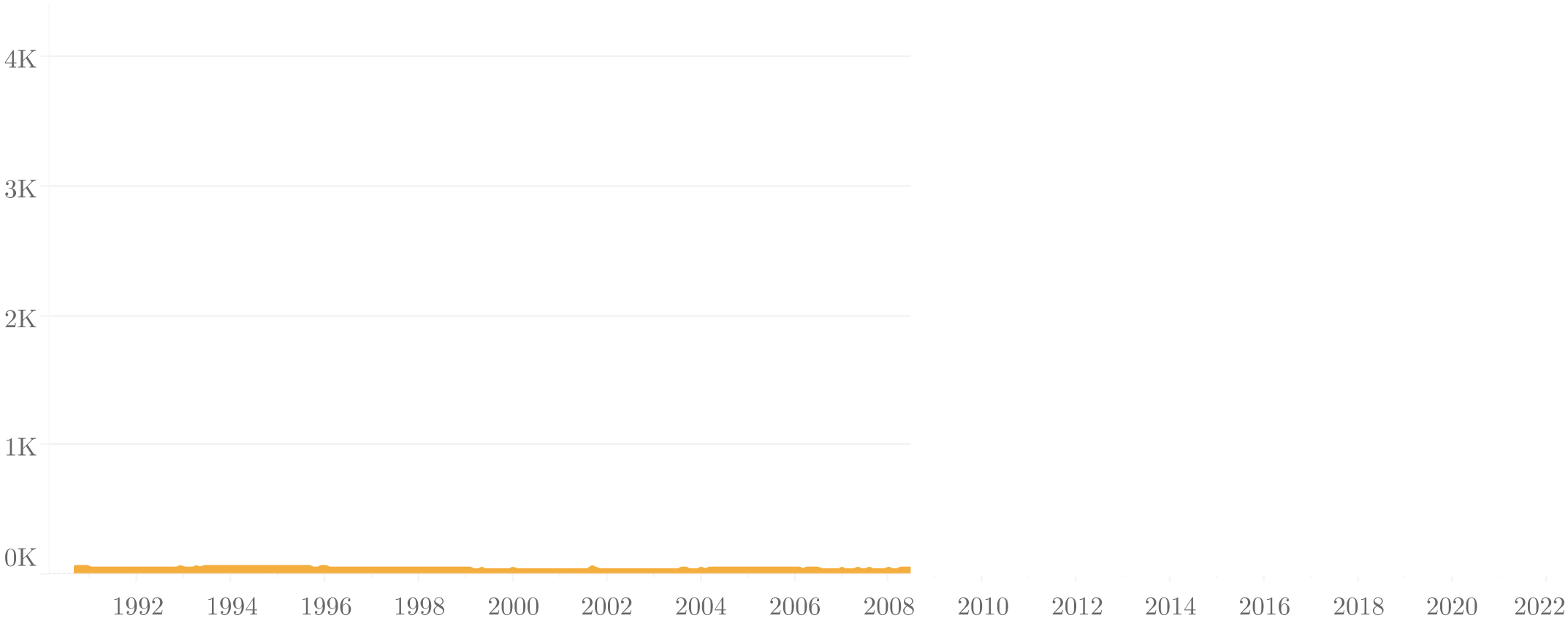
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The quantity theory of money which implies inflation in the long run due to increases in the money supply, hinges on banks putting that money to work in the economy which has historically been the case

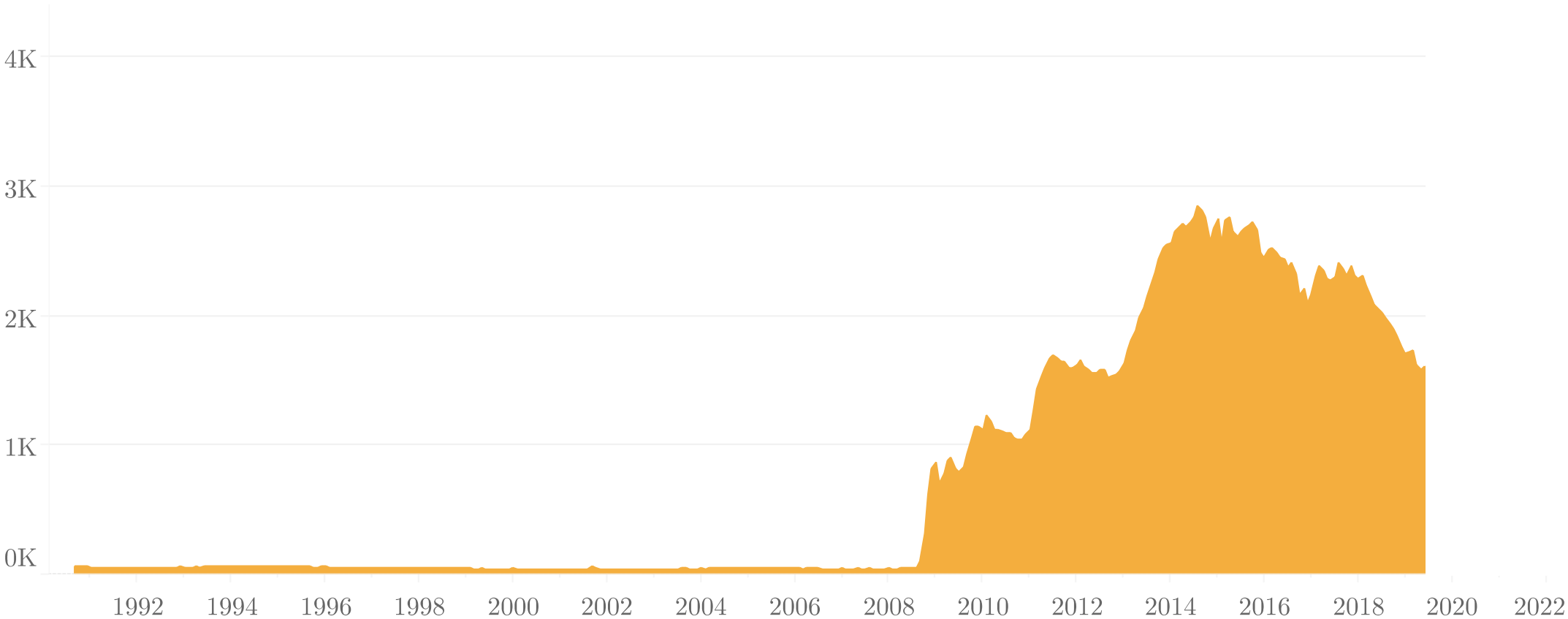
Reserves of Depository Institutions | Billions of \$



Source: Federal Reserve

However, a quick look at reserve holdings for banks shows a different story at the beginning of the Great Recession

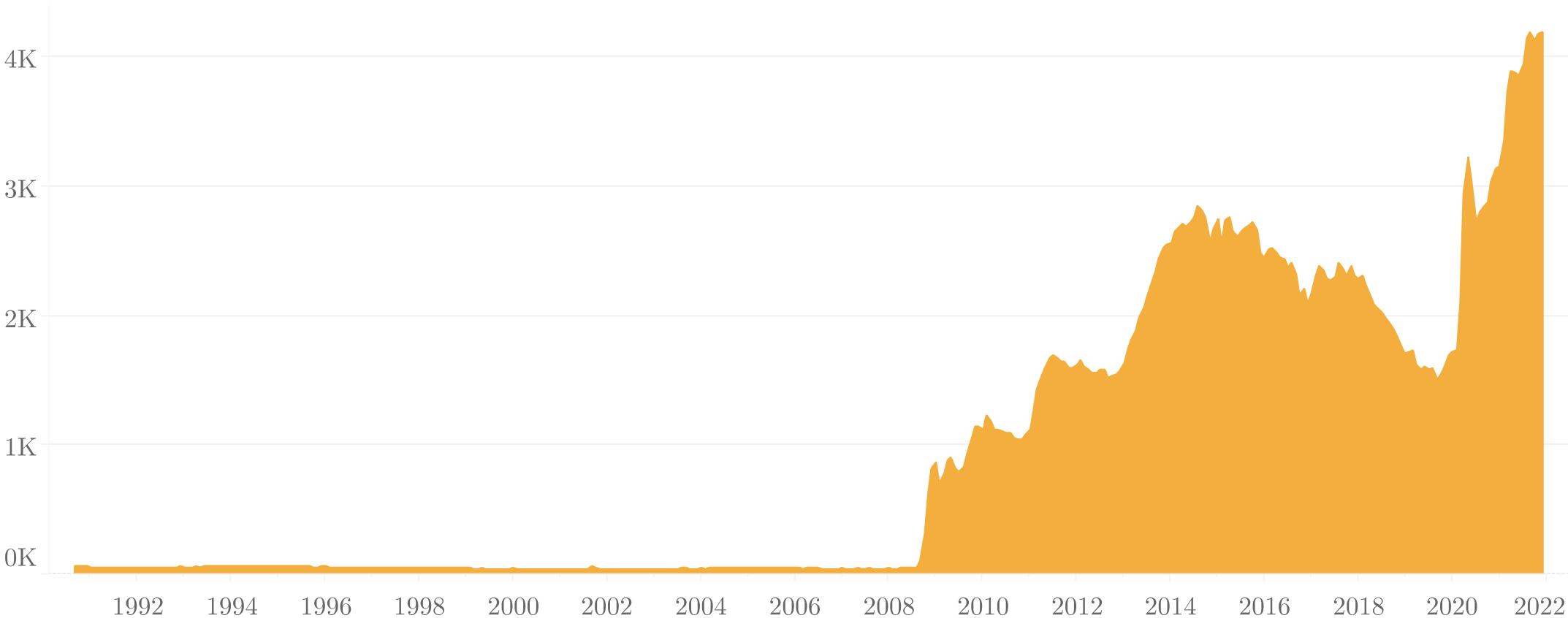
Reserves of Depository Institutions | Billions of \$



Source: Federal Reserve

A story which continues in the pandemic...

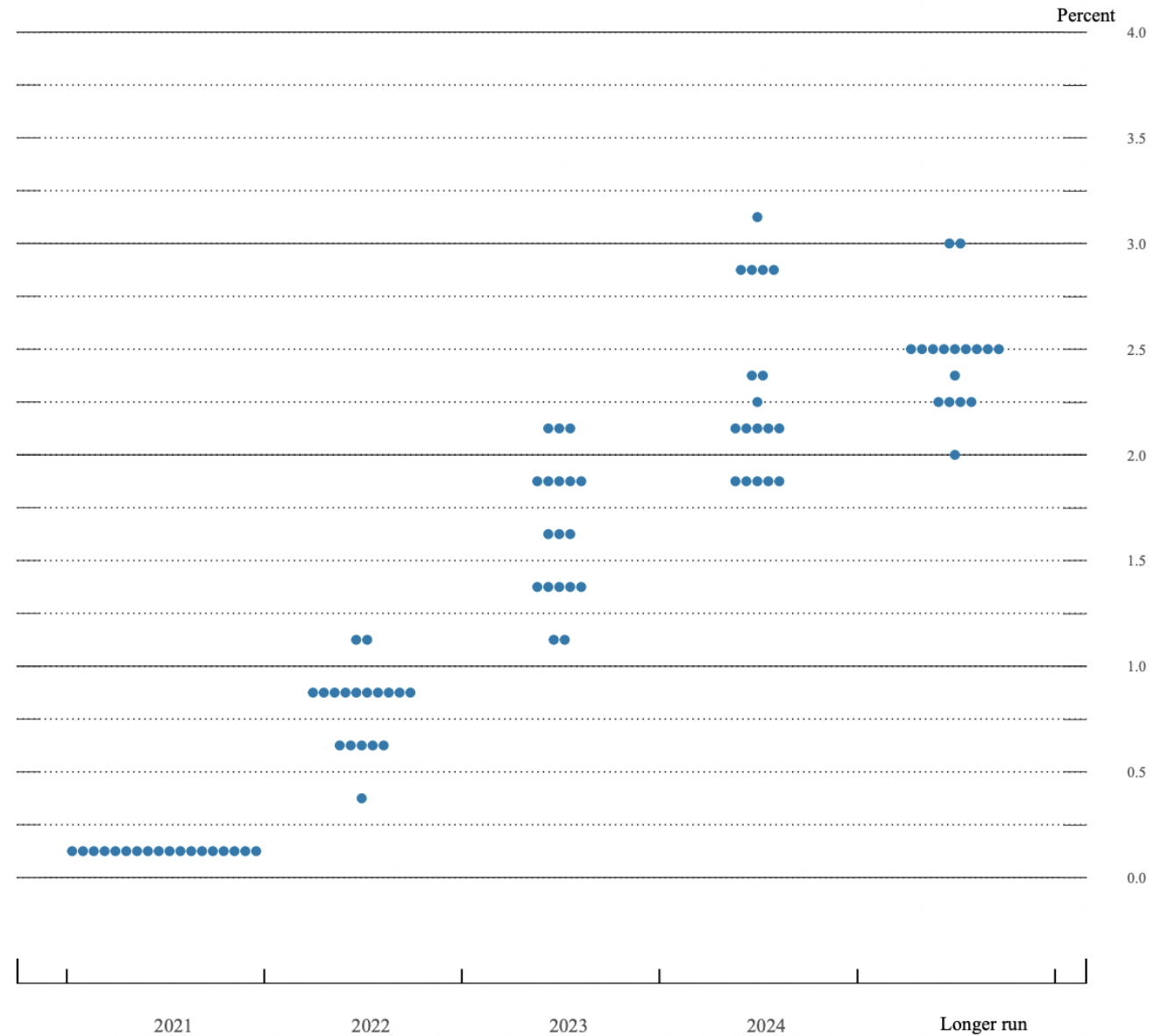
Reserves of Depository Institutions | Billions of \$



Source: Federal Reserve

What is in store for interest rates and monetary policy moving forward?

Figure 2. FOMC participants' assessments of appropriate monetary policy: Midpoint of target range or target level for the federal funds rate



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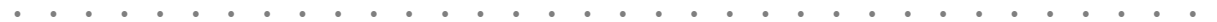
What's
everyone's least
favorite thing?



What's
everyone's least
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Uncertainty

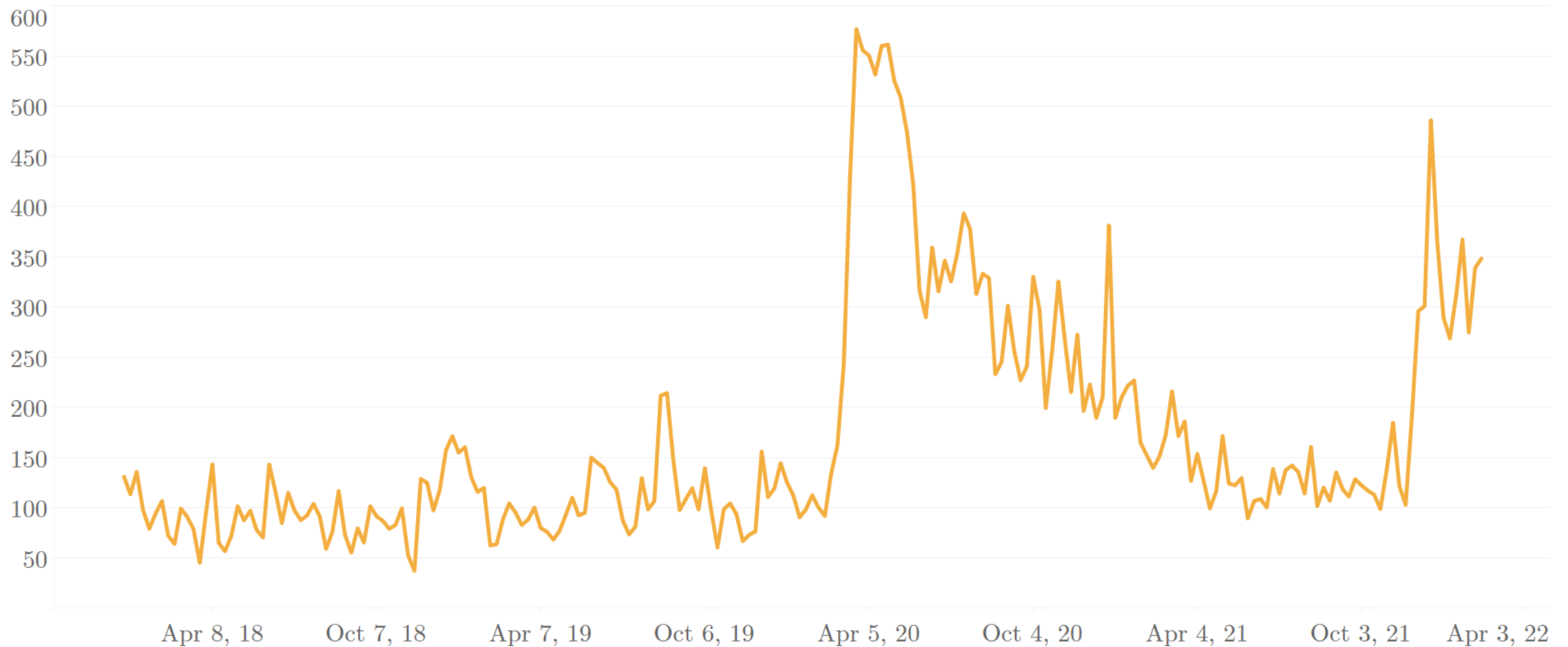
“It’s more about future expectations than current conditions.”



Michael Arone, Chief Investment Strategist
State Street Global Advisors

Uncertainty is on the rise

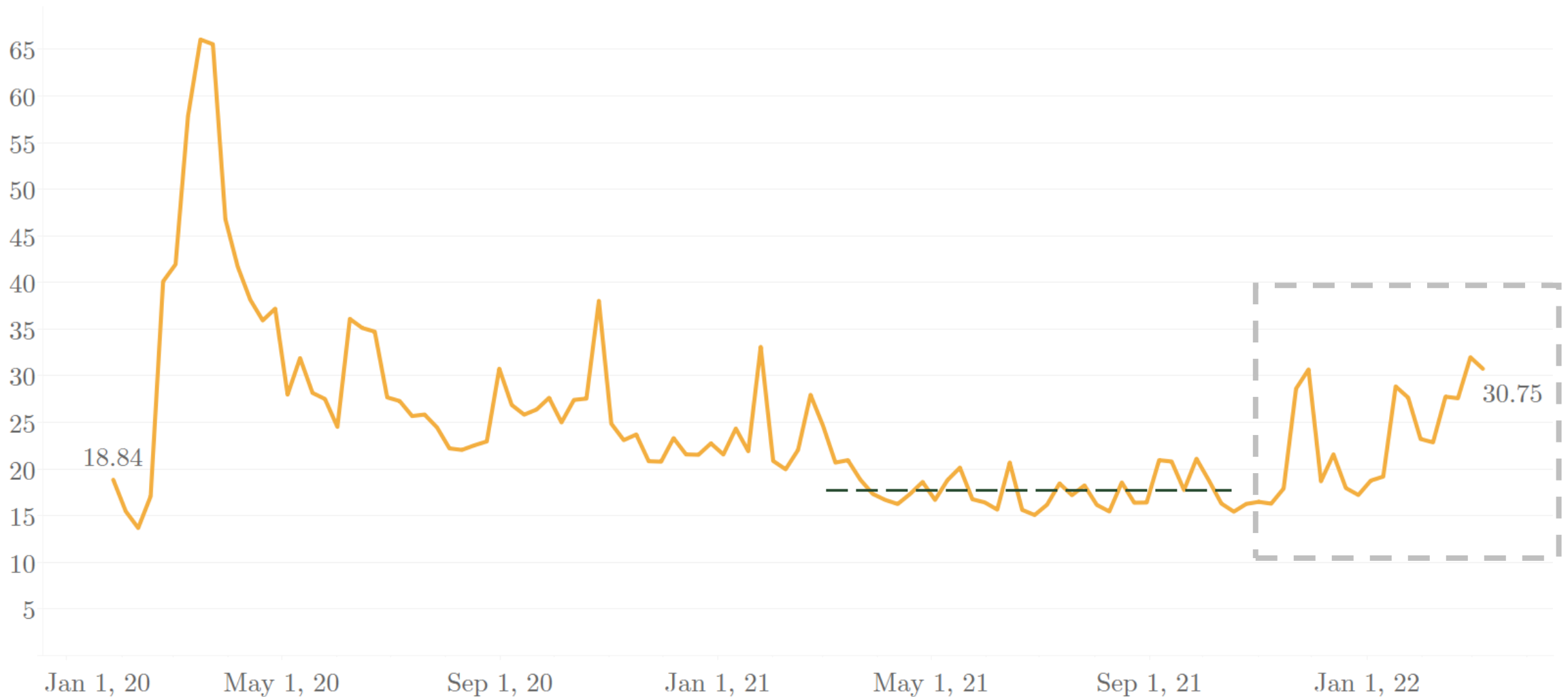
US Economic Uncertainty Index Weekly 2018 to 2022



Source: US Economic Uncertainty Index

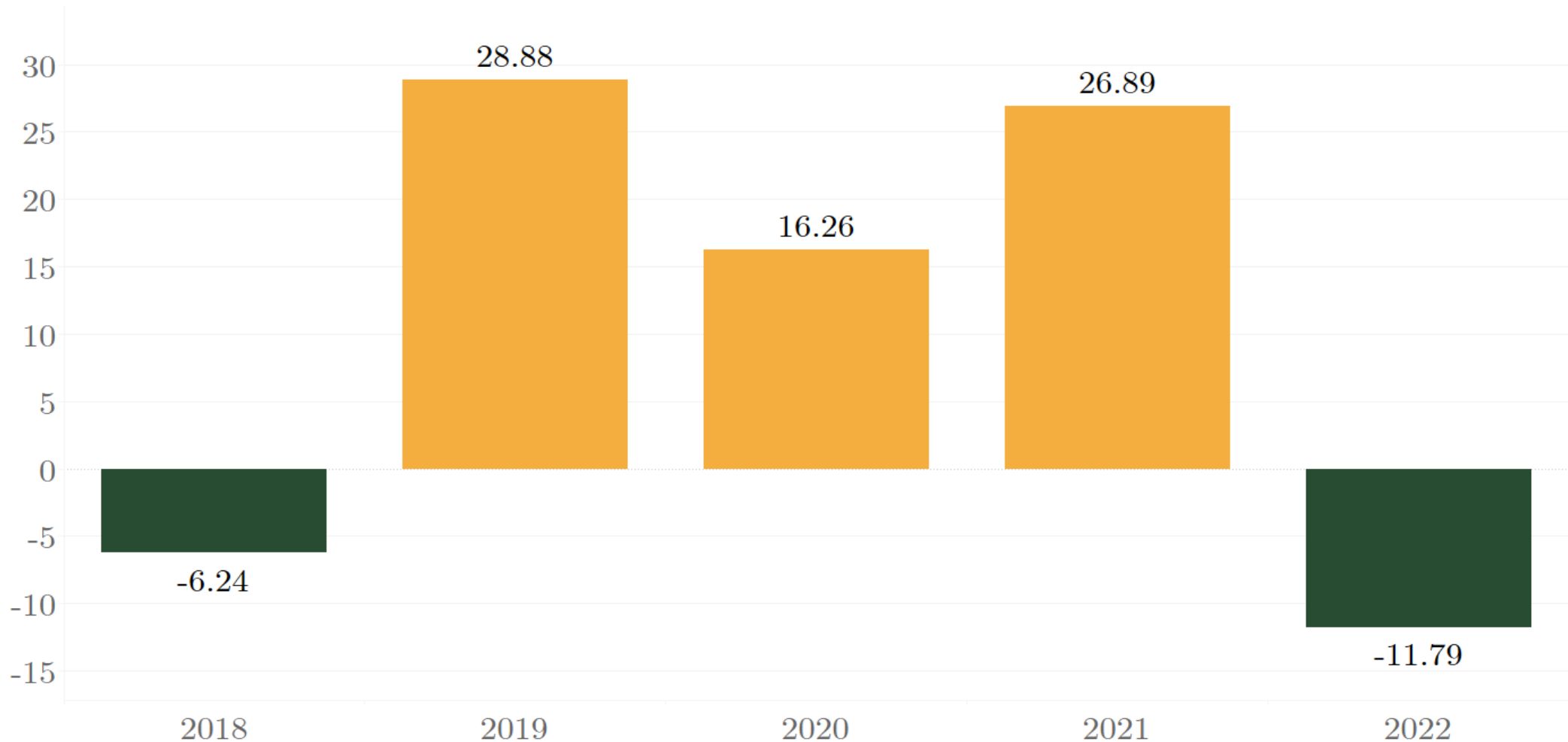
Volatility on the rise in financial markets

CBOE Volatility Index Adjusted Closing Price in USD February 2020 - March 2022



S&P500 annualized returns high during pandemic

S&P 500 Historical Annual Returns 2018 to 2022 | as of 03/14/2022



Strong financial market performance during pandemic despite other economic challenges

- 1 US technology companies led the way
- 2 Preferred relative substitution to stock market with low interest rates
- 3 Stimulus checks provided an alternative source of investment funds & the wealthy invested more

Stock market pandemic climb begins dip...

NASDAQ Composite February 2020 to March 2022



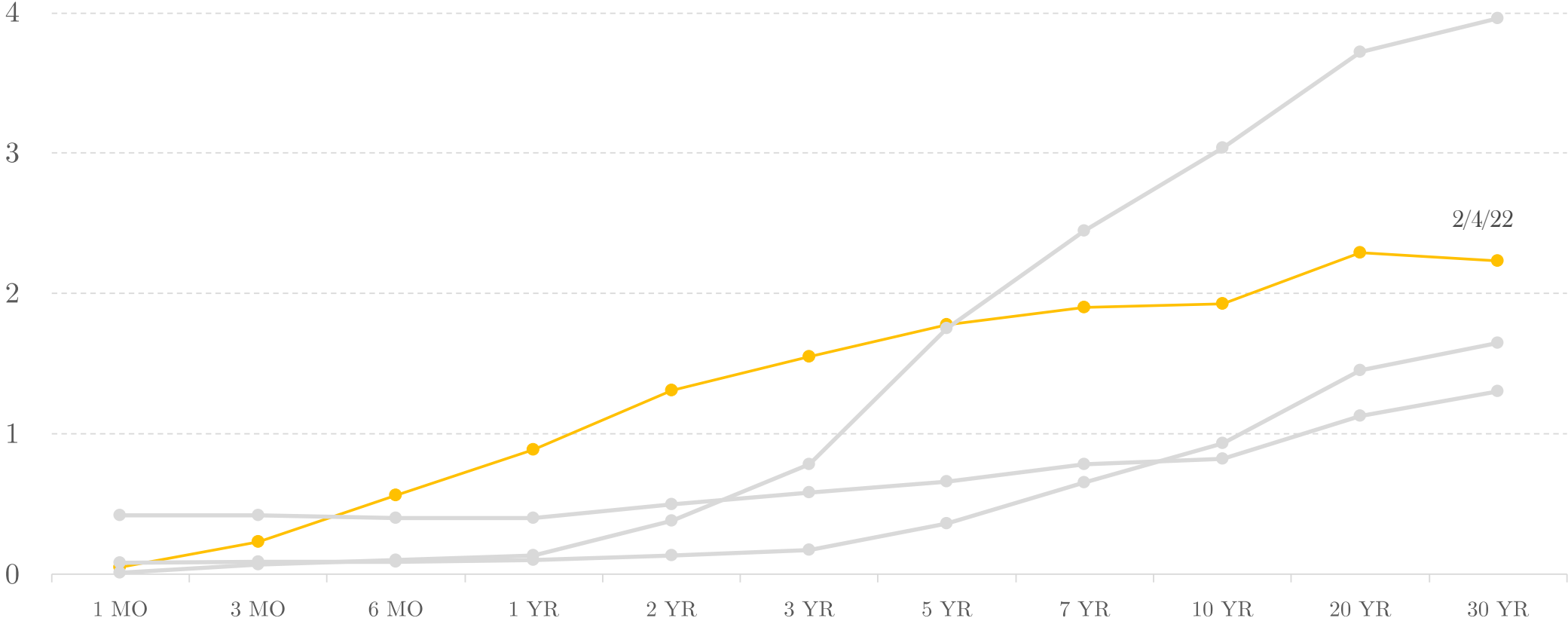
Source: Yahoo Finance

... as market starts to fall to speculation

NASDAQ Composite August 2021 to March 2022



Rising rates suggest interest in the stock market relative to the bond market, expectations are already playing a role



Commodities in the spotlight as Ukraine War Continues

S&P-GSCI Commodity Index Future September 2021 to March 2022



Source: Yahoo Finance

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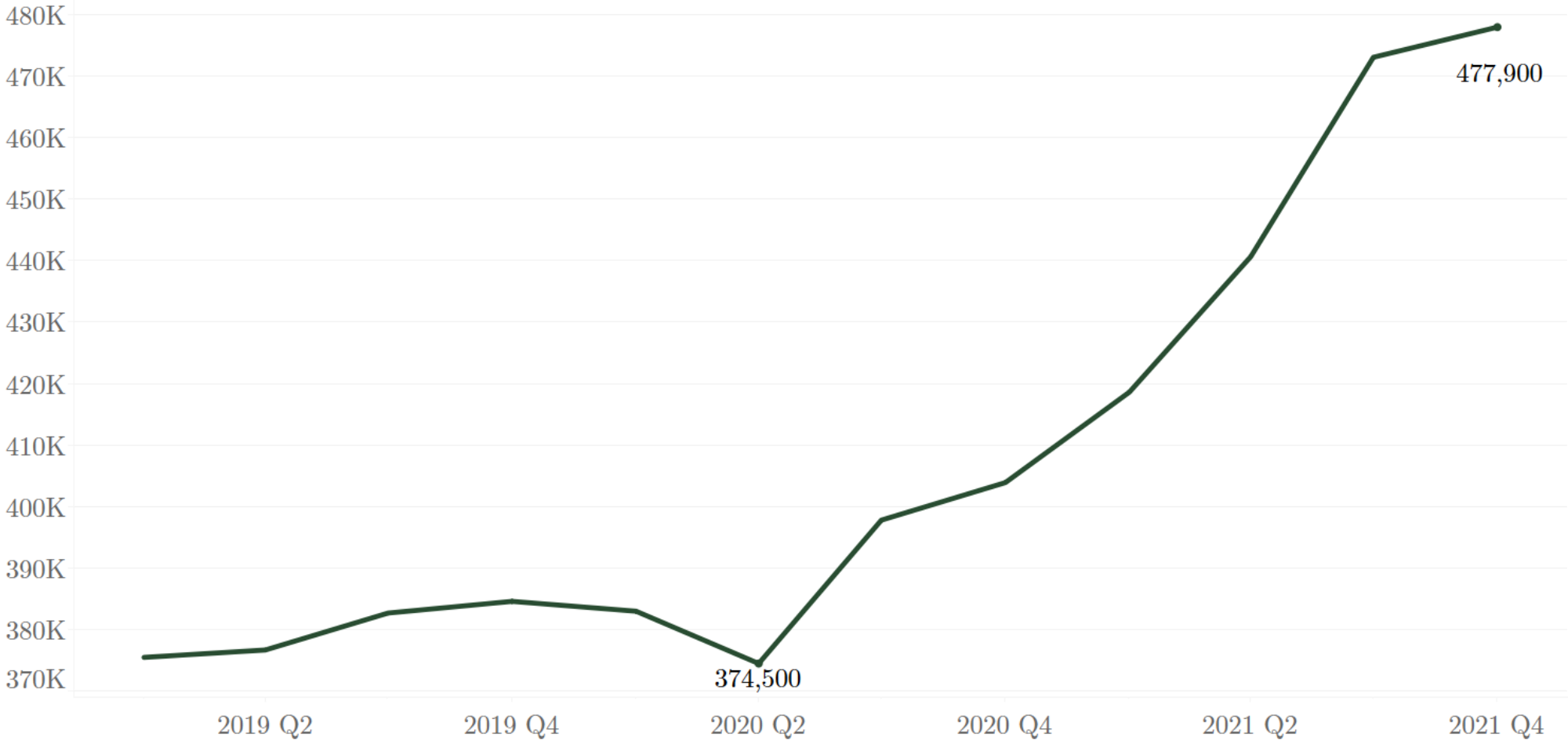
Supply Chain Challenges

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Key Takeaways

Home prices continue to rise

Average Sold Home Prices in the United States



Source: Federal Reserve of Economic Data

How will
housing
prices
change in the next
year?



Consumers doubt housing price decrease in early 2022

Fannie Mae Consumer Response to Purchasing a Home
December 2020

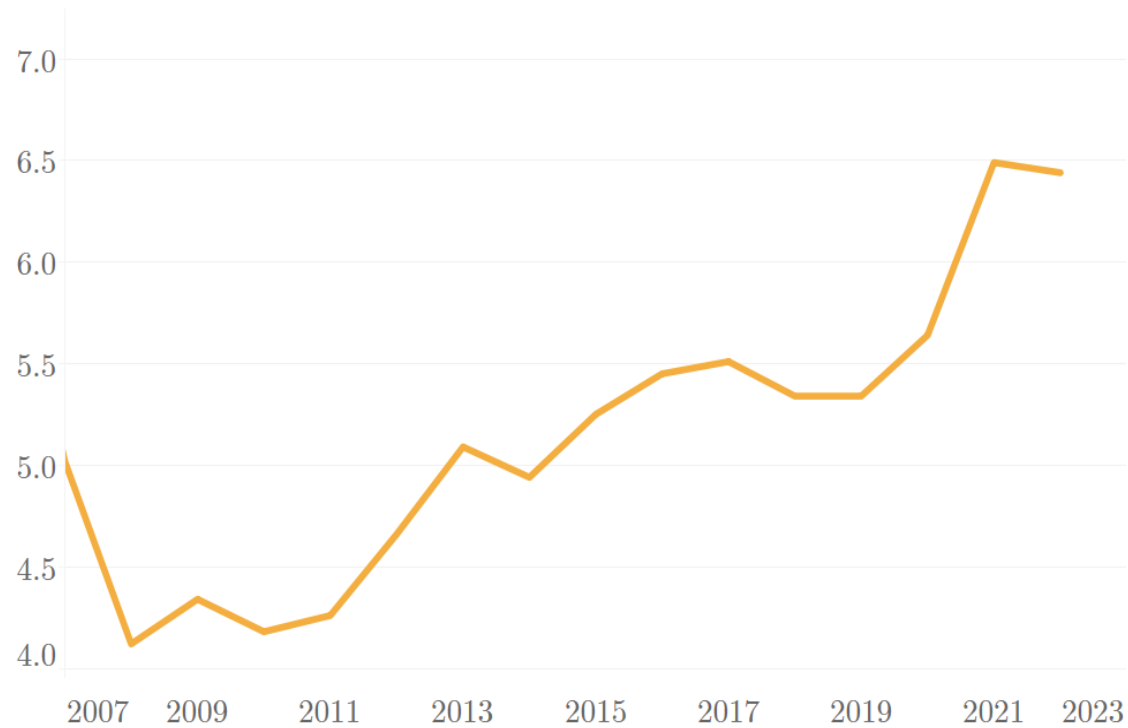


Fannie Mae Consumer Response to Purchasing a Home
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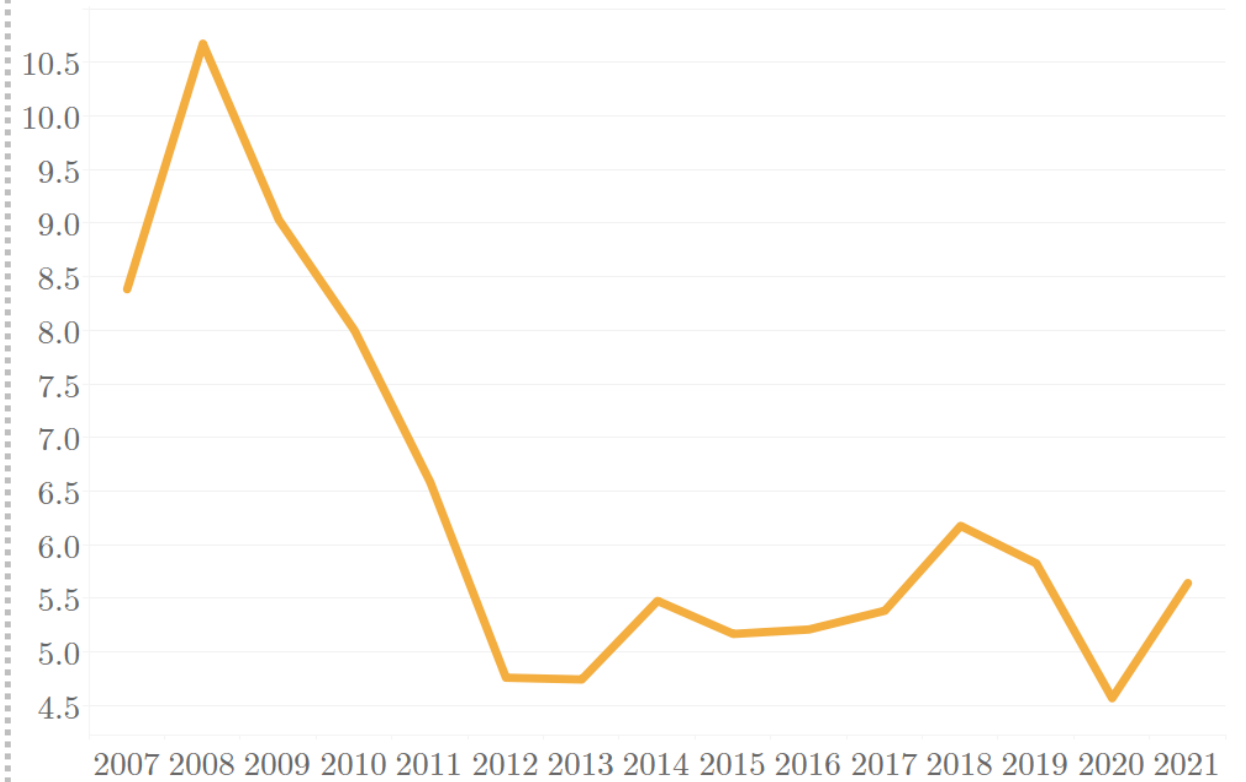


Home sales climb as supply drops

U.S. Home Sales in Millions 2007 to 2022

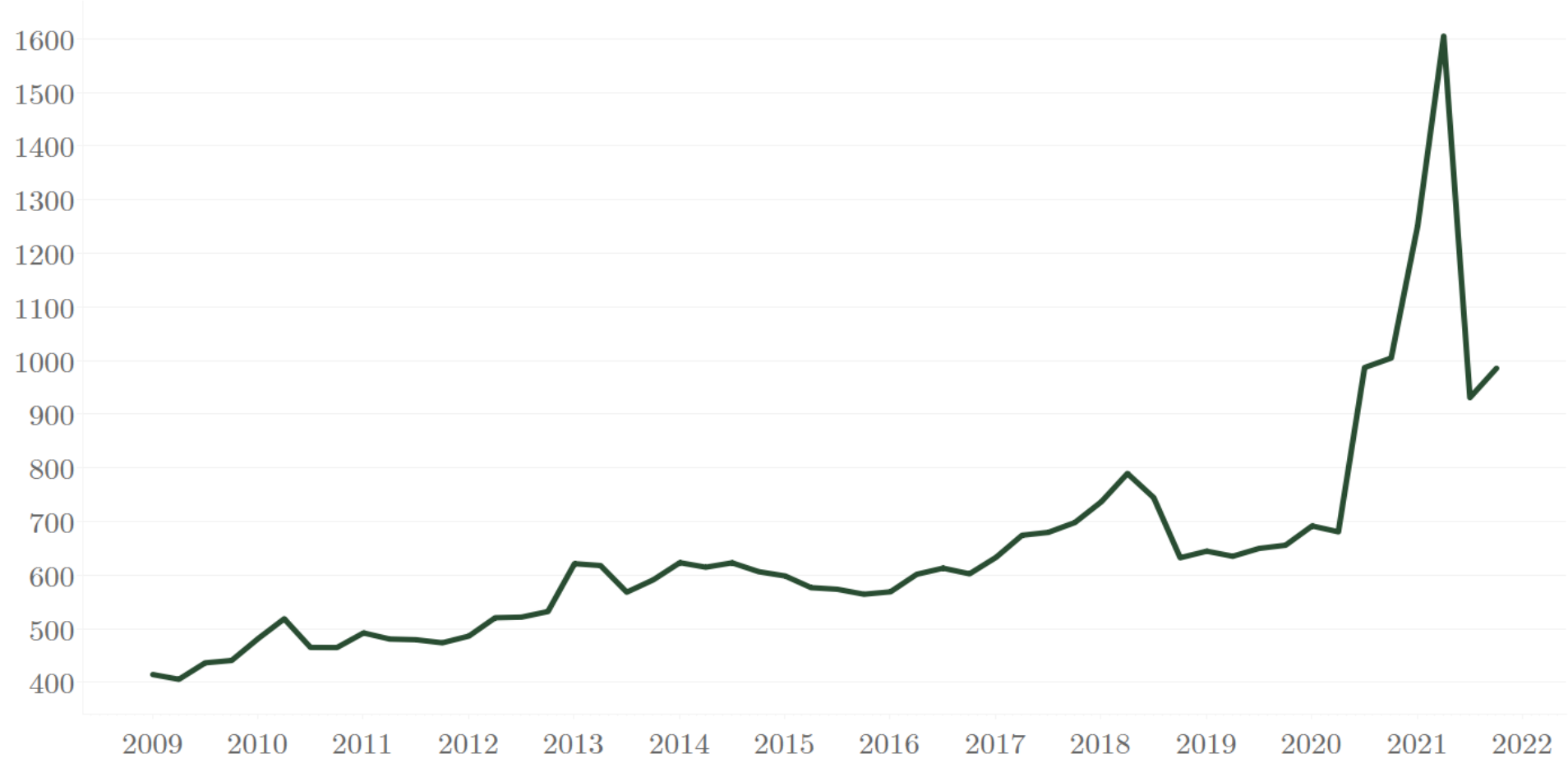


U.S. Home Supply 2007 to 2022 (ratio of houses for sale to houses sold)



Lumber prices still trending high

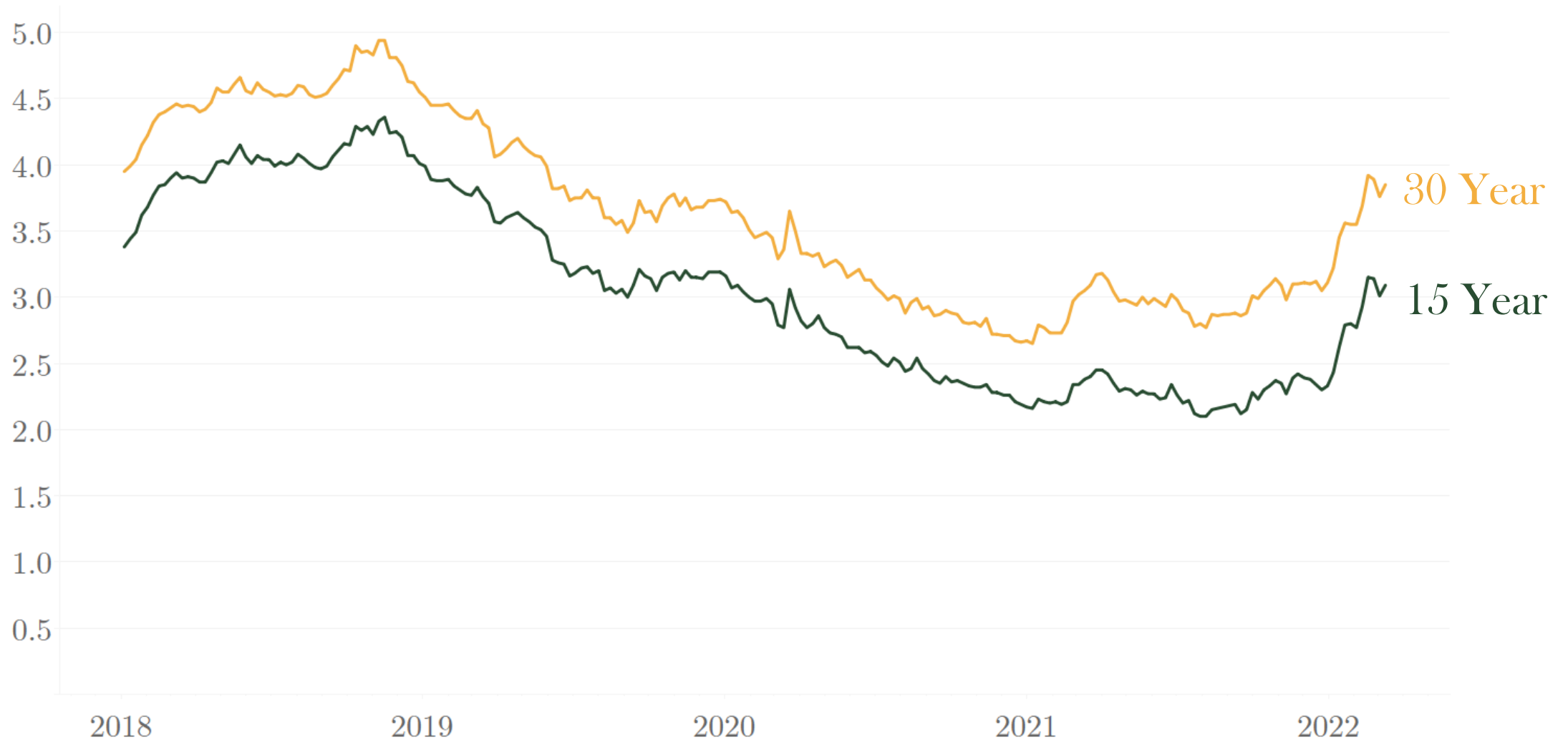
Producer Price Index Softwood Lumber 2009 to 2022



Source: Federal Reserve of Economic Data

Mortgage rates starting to increase with expectations

15-Year and 30-Year Fixed Rate Mortgage Averages 2017 to 2022



How likely is a
housing
price reversal?



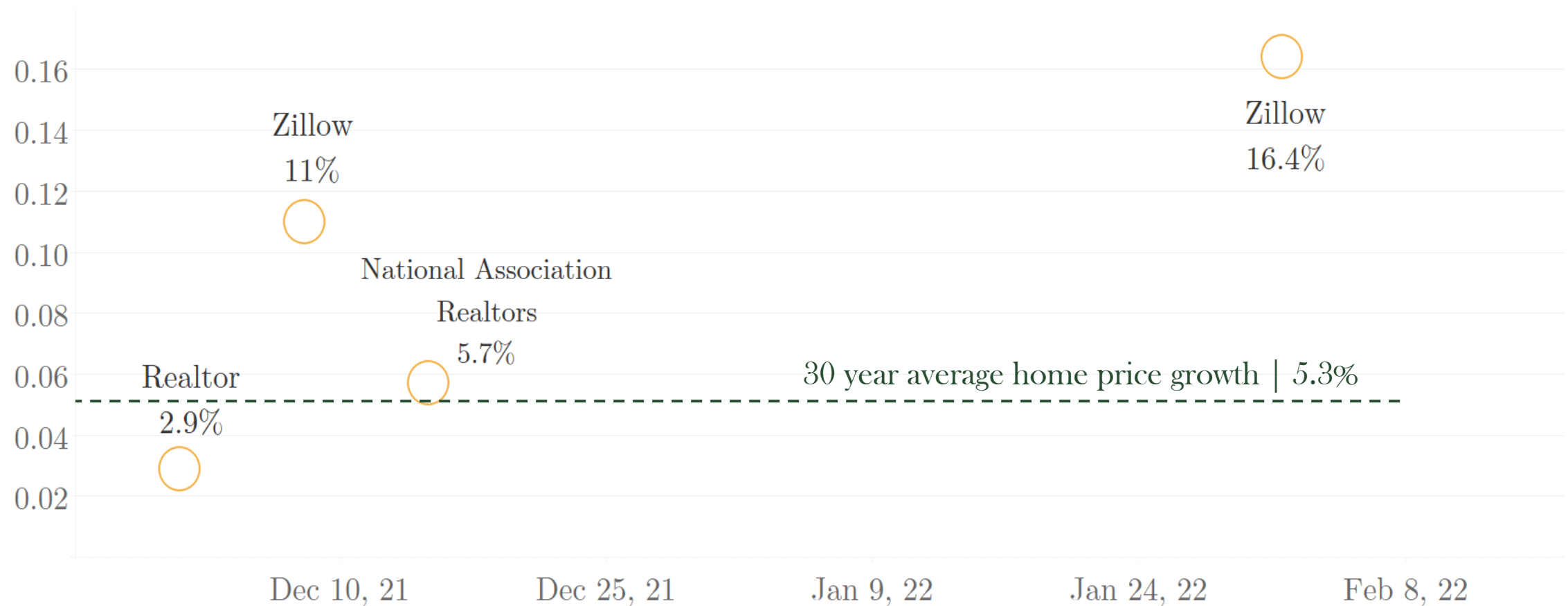
Housing market price reversal is not likely

3 Forces influencing the future market:

- 1 Interest rates are at, and will likely remain at, historically low levels - even if rates move higher by a percent or two
- 2 First-time homebuyers or buyers looking to upgrade would likely be eager to step in should prices start drop
- 3 Supply is low and housing inventory isn't sufficient to cause a drop

Forecasted home prices reflect uncertainty

Forecasted Home Price Growth in 2022



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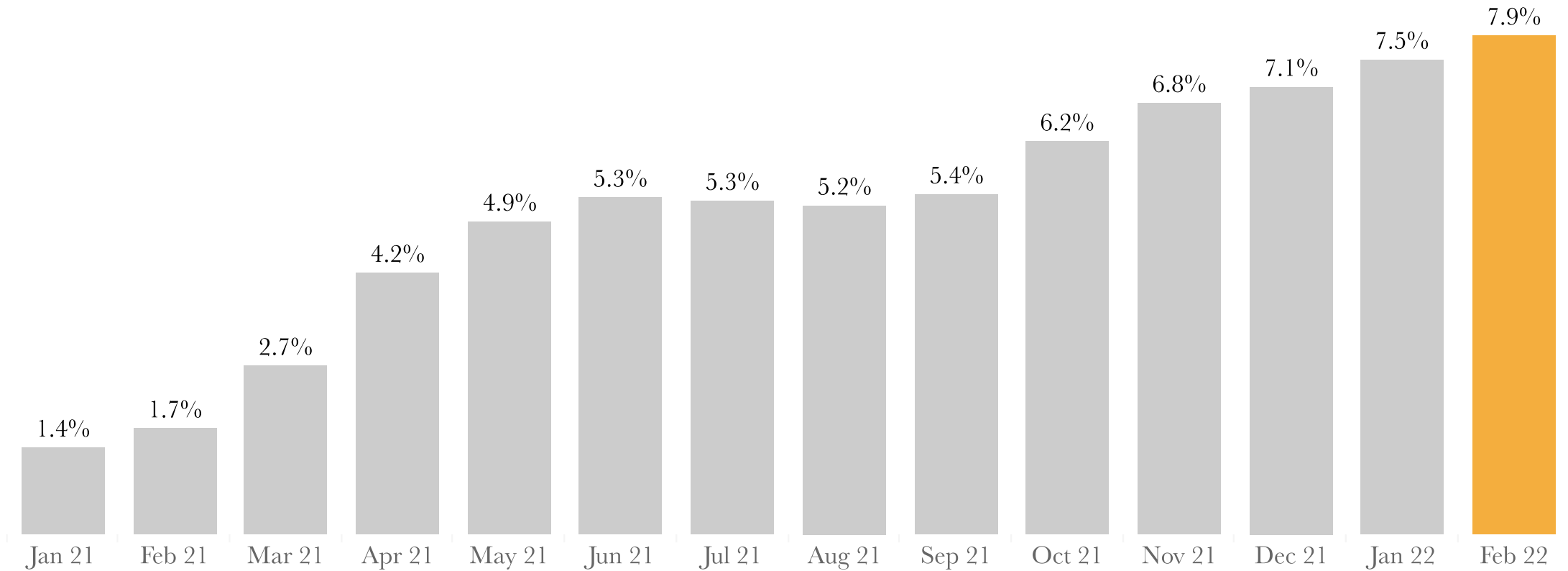
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Inflation is still on the rise

Monthly US Inflation
annual percentage change



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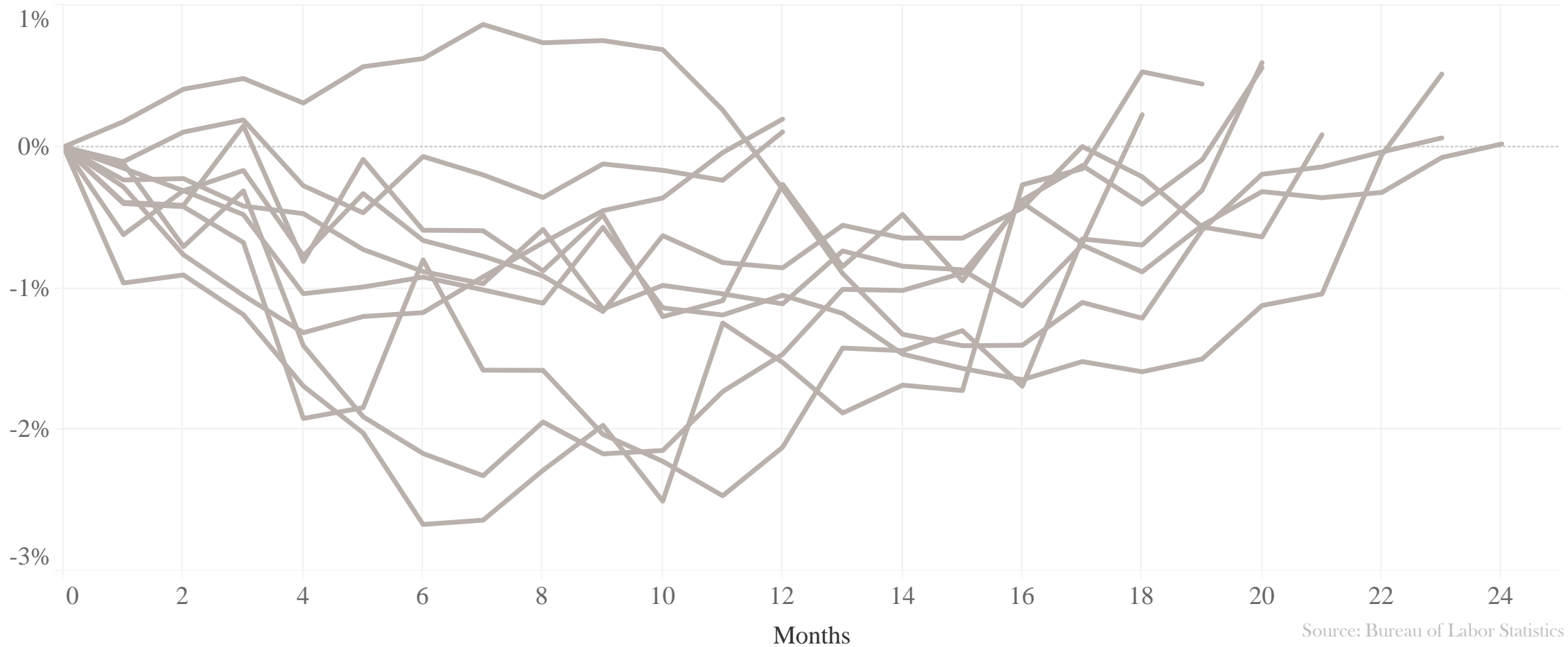
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A look at recessions and job recovery...

Job Losses during post-WWII Recessions

Percent change relative to first month of a recession through the beginning of positive trend (updated through July 2021)

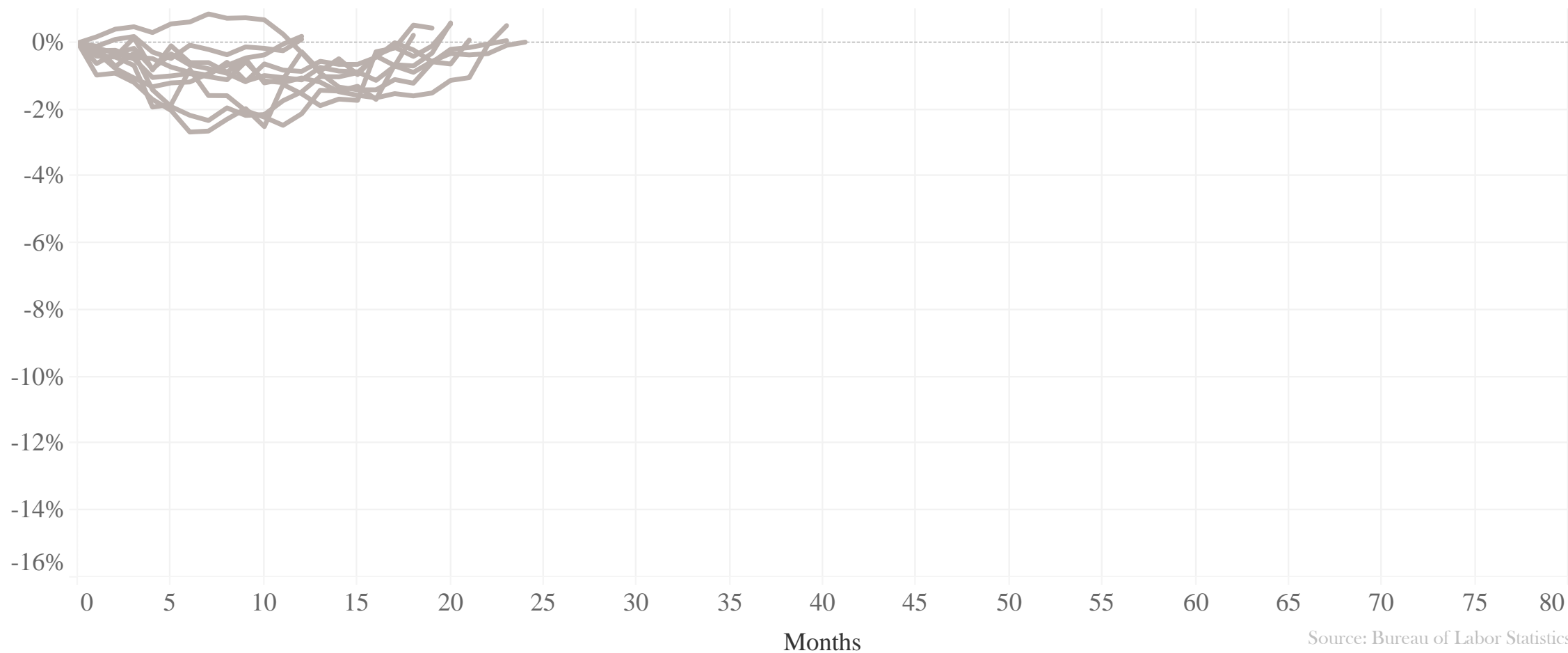


Source: Bureau of Labor Statistics

What happens when we add our last two recessions?

Job Losses during post-WWII Recessions

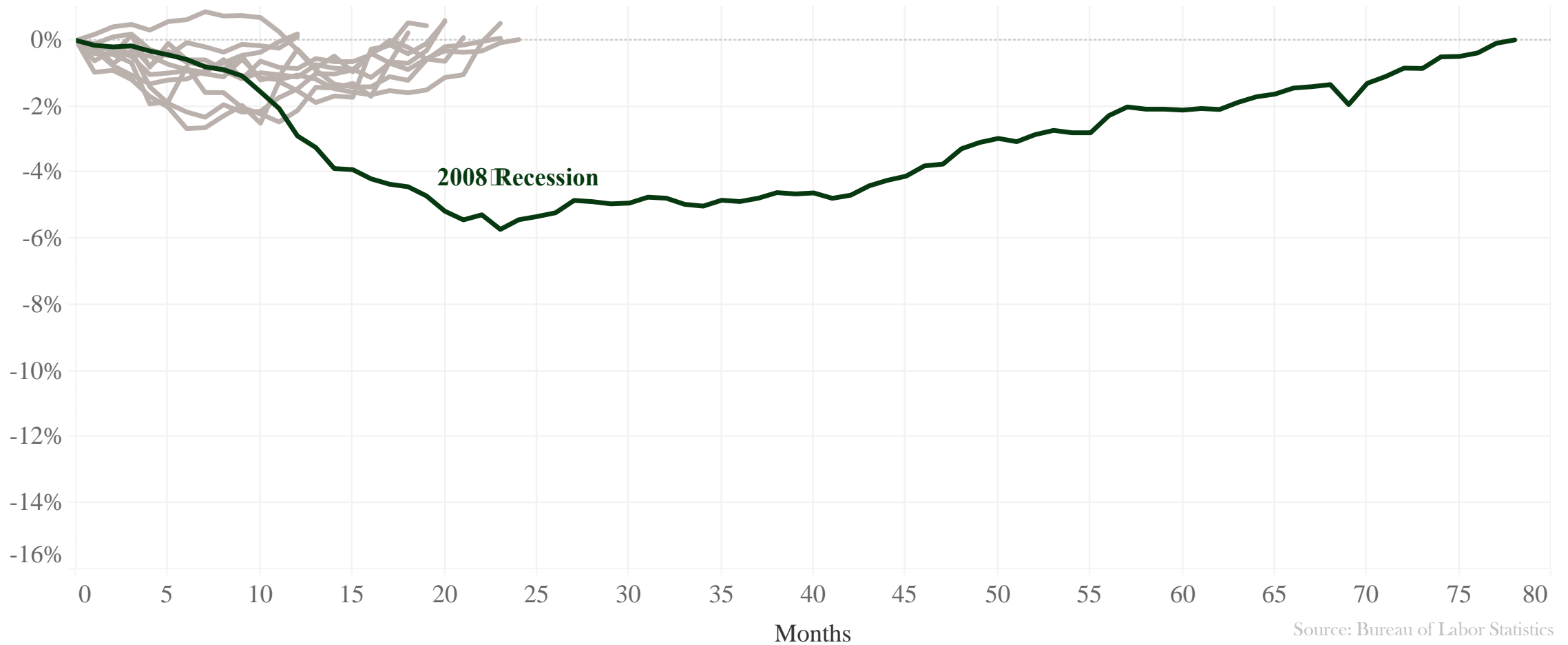
Percent change relative to first month of a recession through the beginning of positive trend (updated through July 2021)



The 2008 recession added length...

Job Losses during post-WWII Recessions

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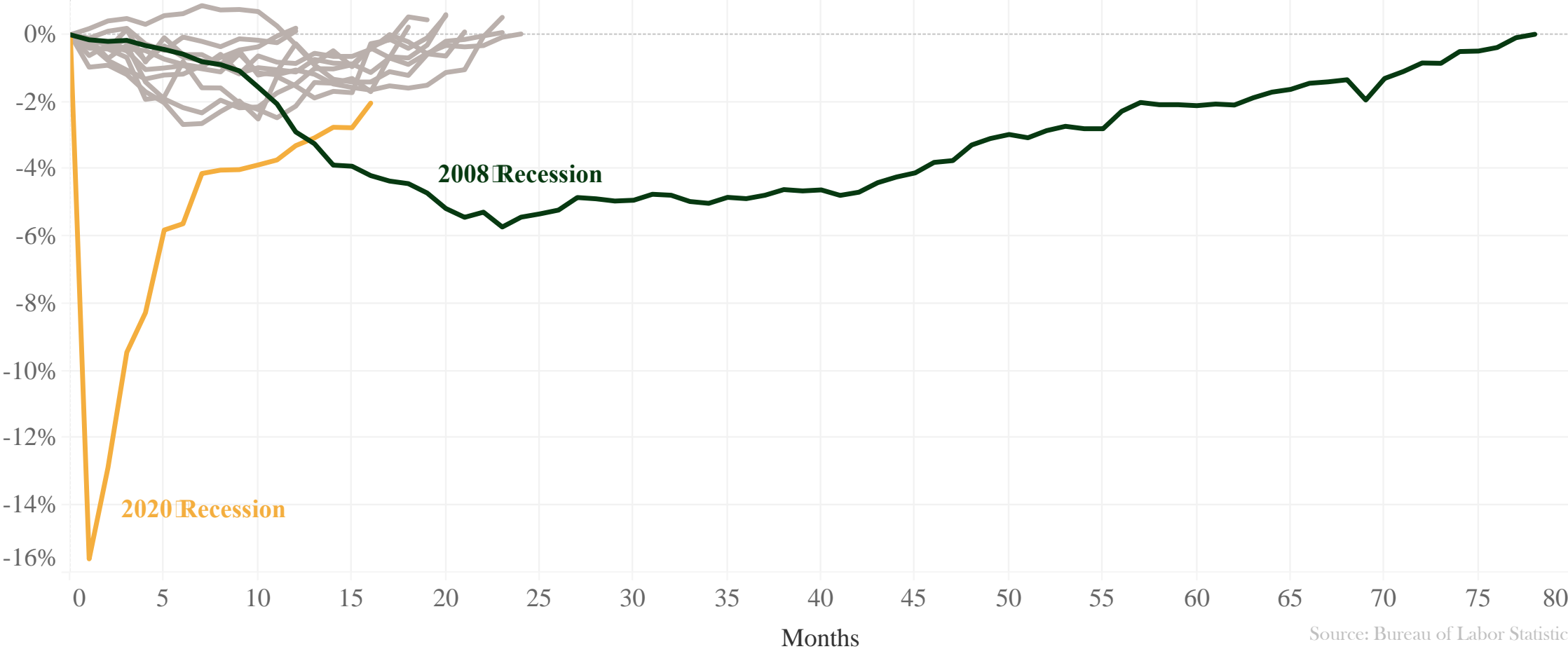


Source: Bureau of Labor Statistics

While the 2020 recession added depth, job recovery is trending towards “normal” length time frames

Job Losses during post-WWII Recessions

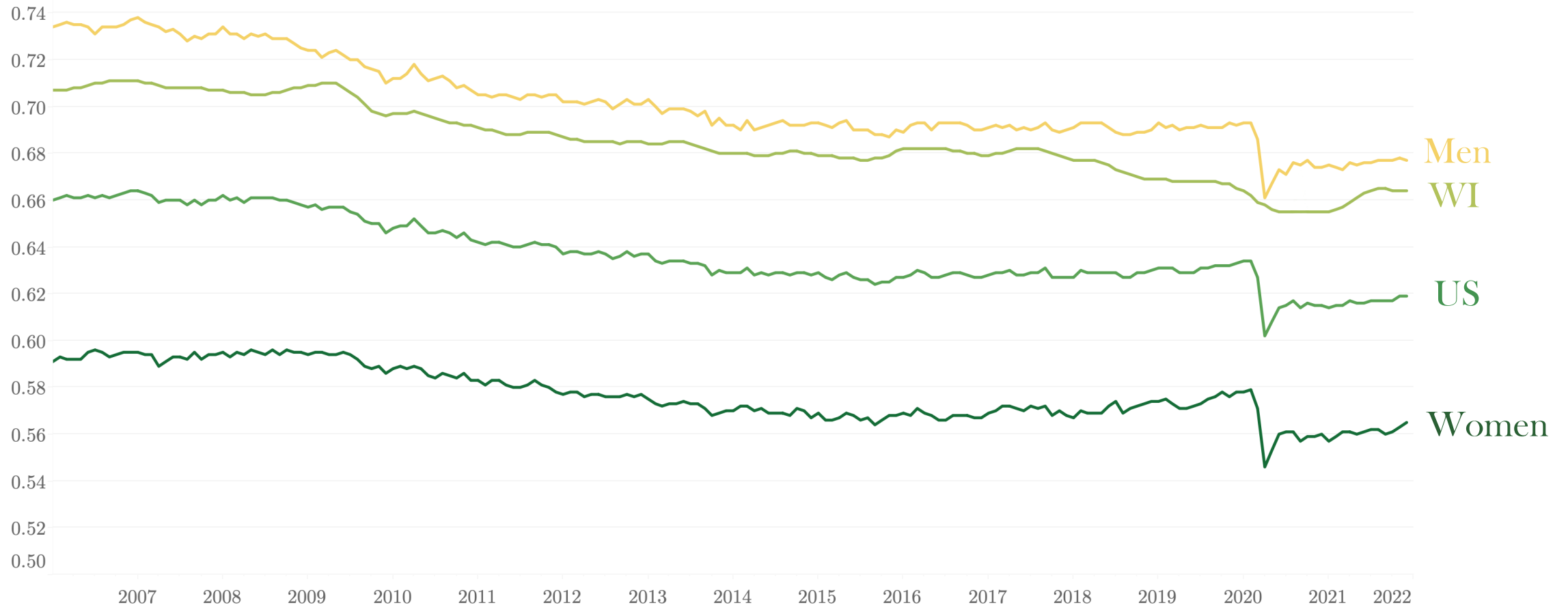
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Source: Bureau of Labor Statistics

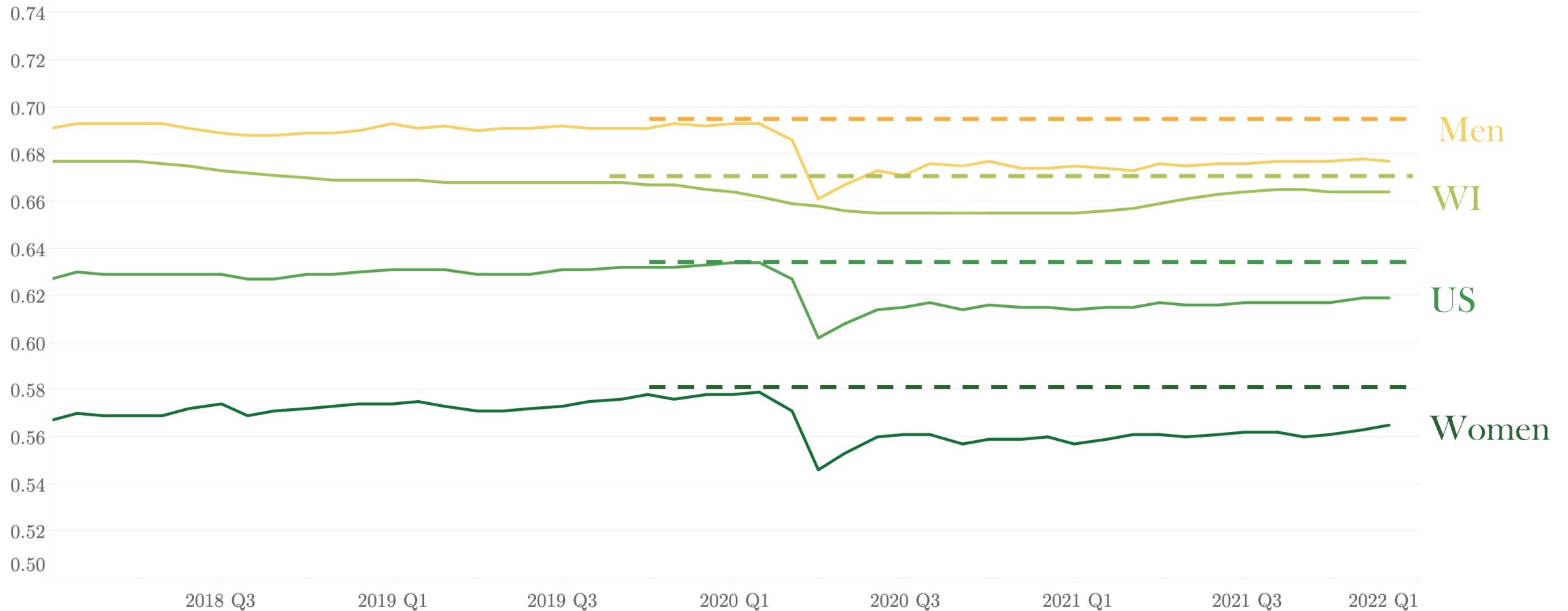
Labor force participation still recovering from pandemic drop

Labor Force Participation Rate



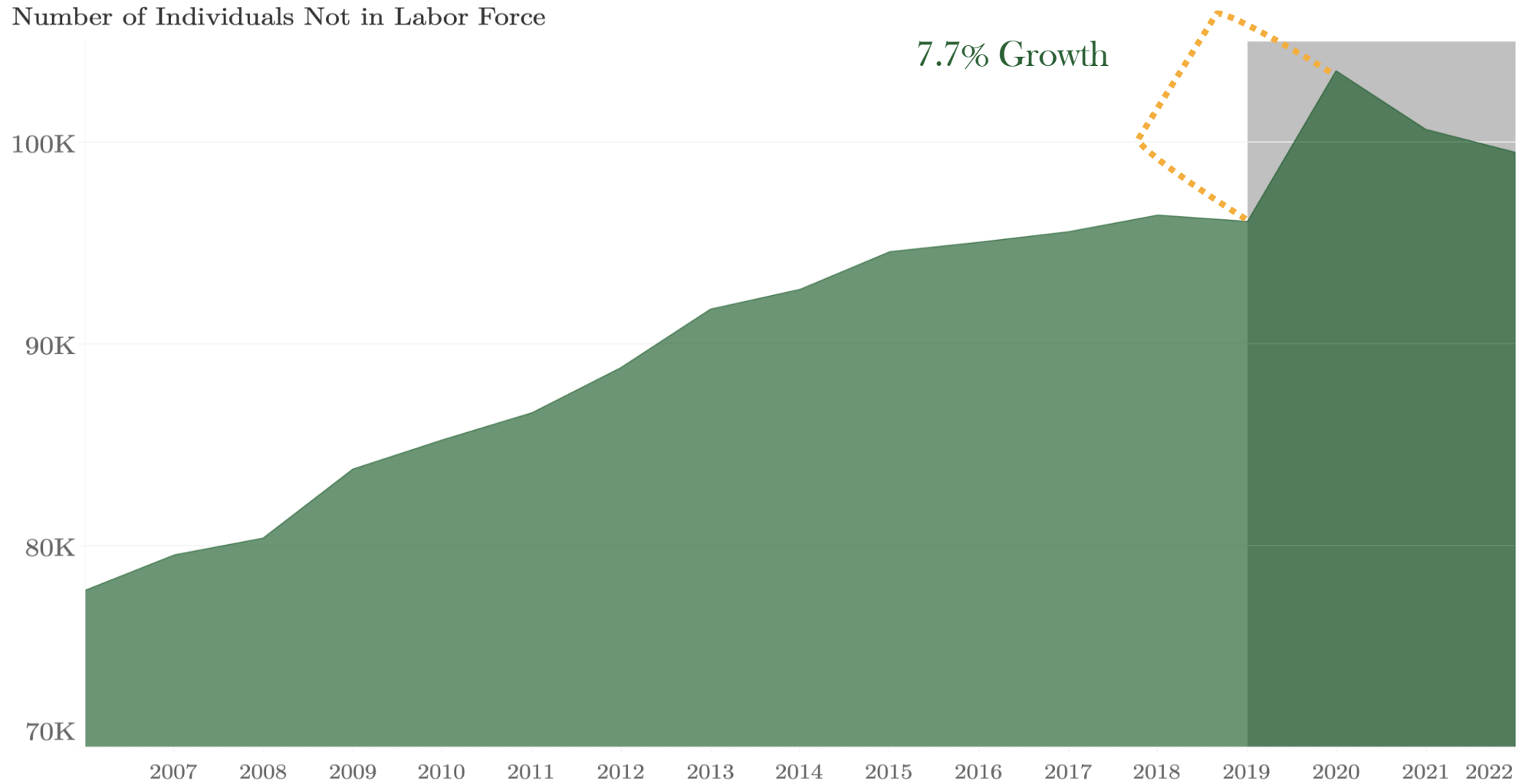
National Labor Force Participation Lagging Behind Pre-Pandemic Levels while Wisconsin Returns

Labor Force Participation Rate



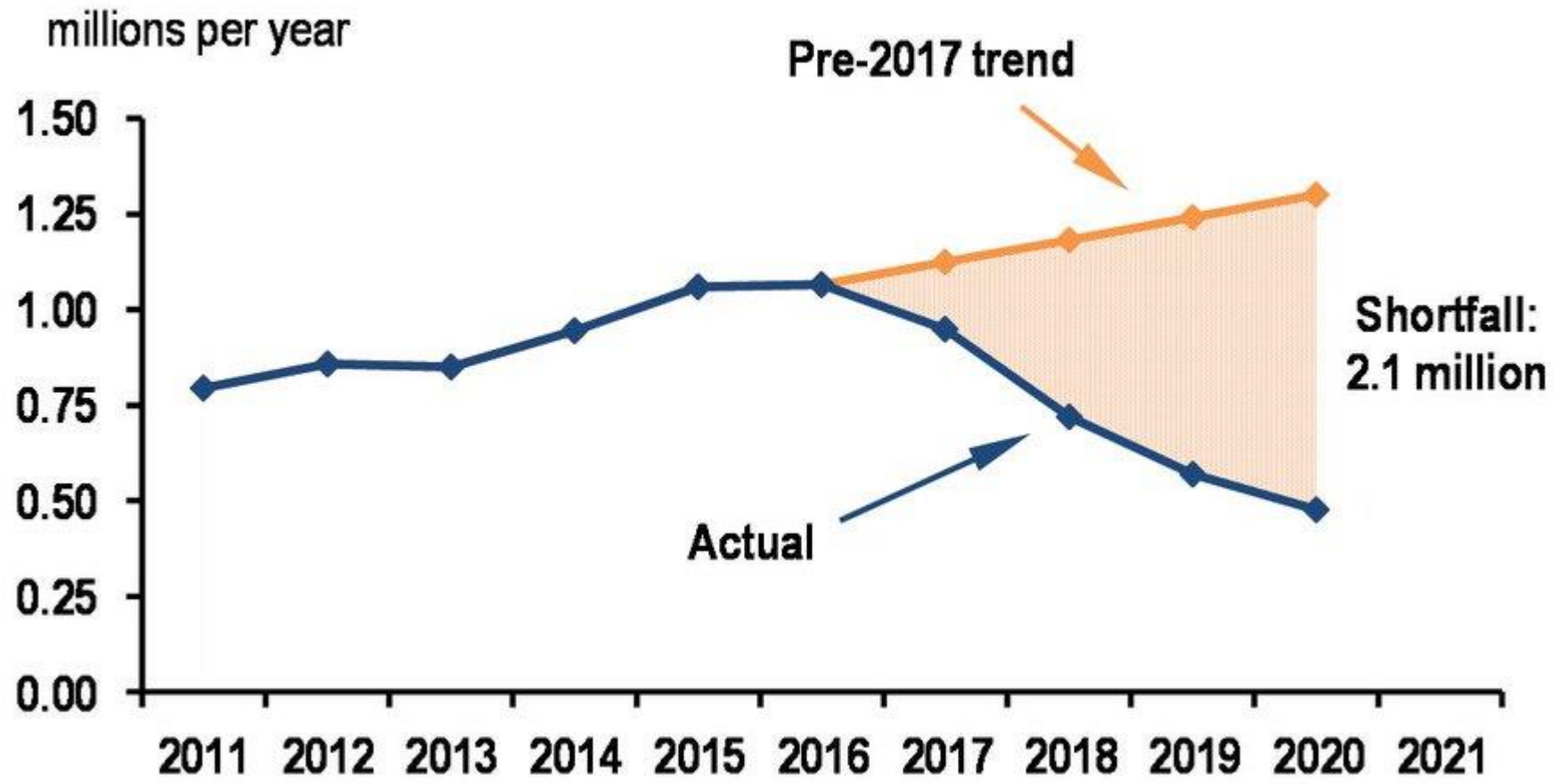
Individuals not in labor force still high following pandemic

Number of Individuals Not in Labor Force



Decline in International Migration Adds to Labor Worker Shortage

Figure 2: Contribution of international migration to population growth

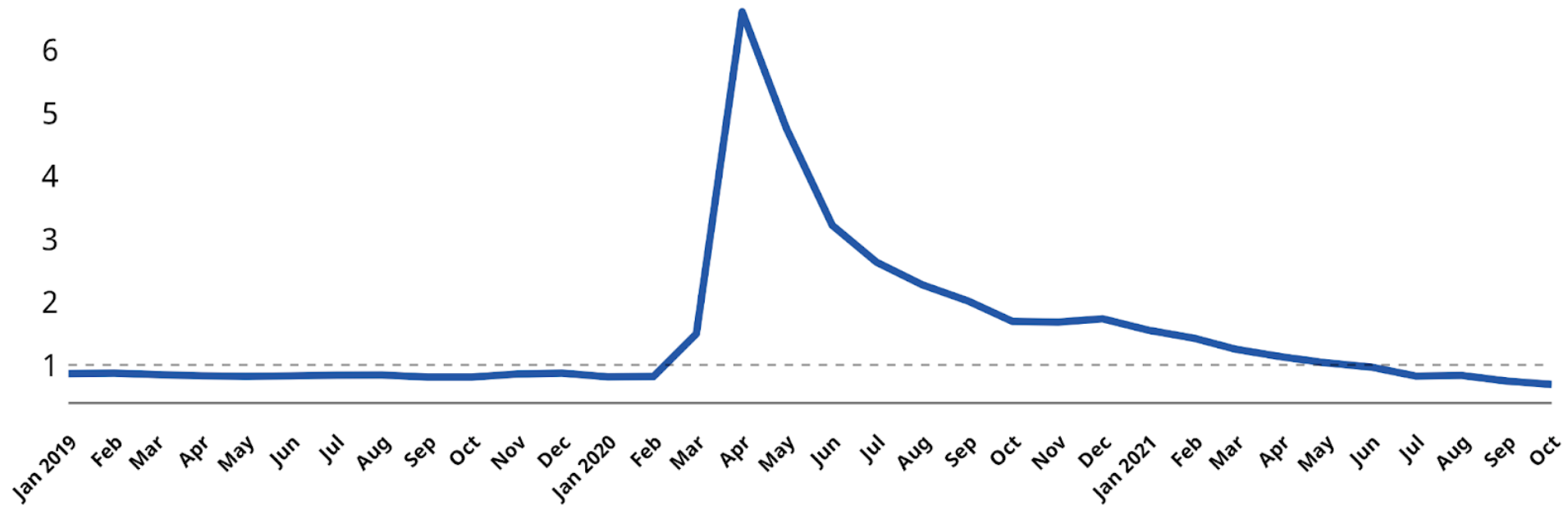


Source: Census Bureau, J.P. Morgan

Change in labor force dynamics contributing to rising input labor costs...

Job openings outnumber unemployed workers

Unemployed workers per job openings, Jan 2019 - Oct 2021



Note: unemployment adjusted for potential misclassification

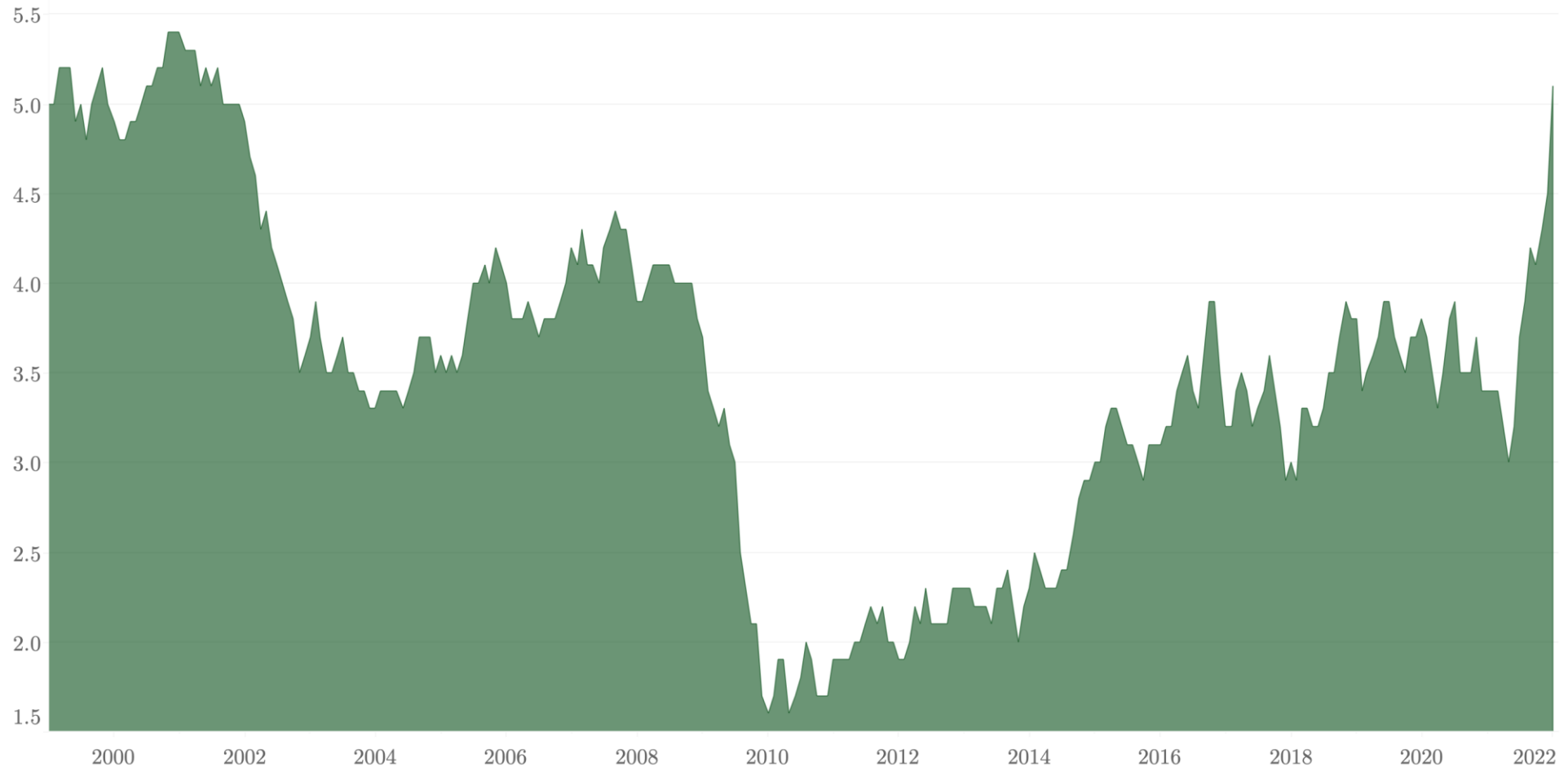
Source: BLS



... which causes wage growth and inflationary pressure

Wage Growth Tracker

three-month moving average of median wage growth



Source: Atlanta Fed

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Overview



Supply Chain Challenges

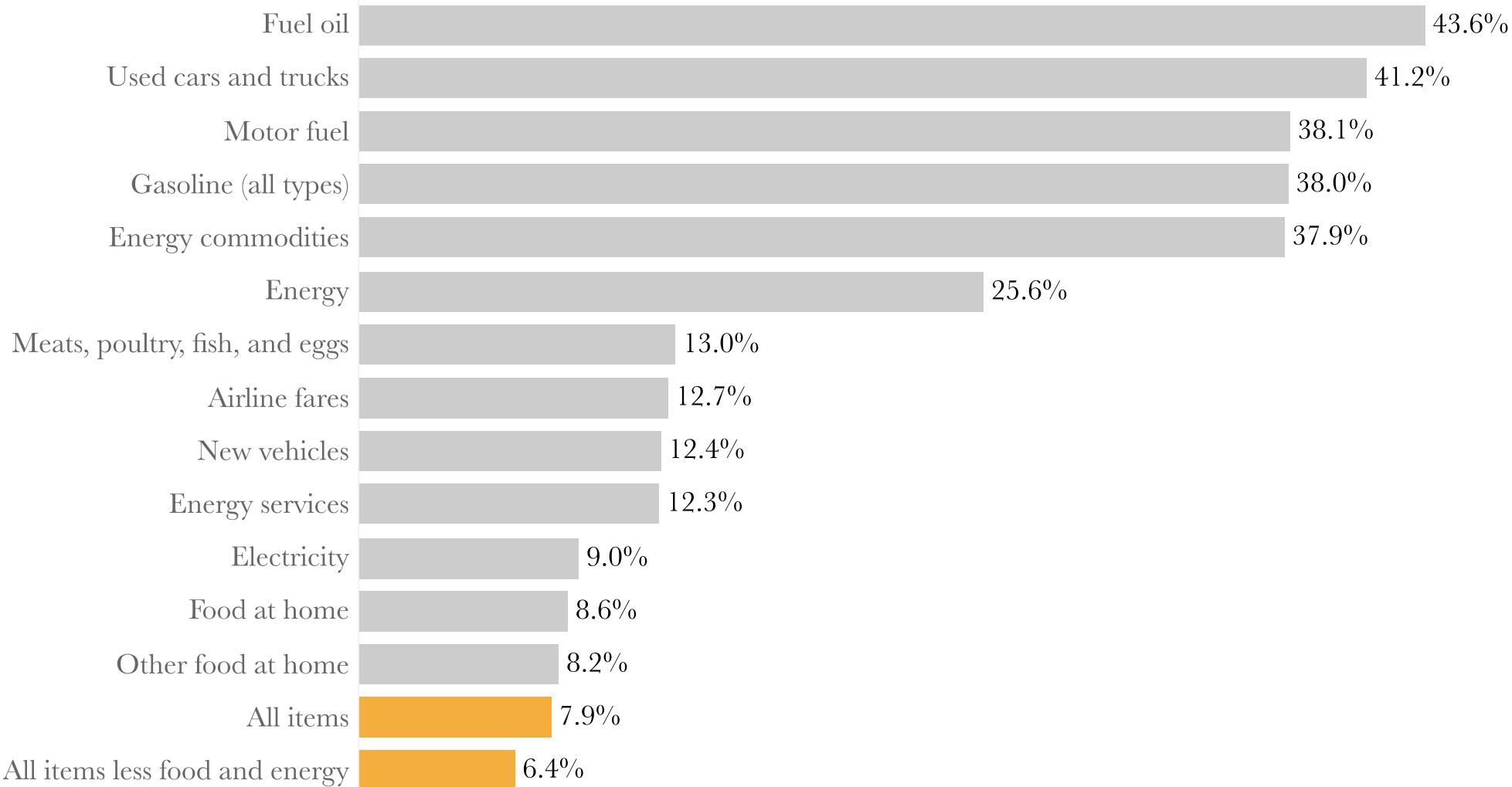
Product shortages

Transportation issues

Overheated consumer demand

Product shortages tied to COVID-related production challenges are clearly having downstream impacts...

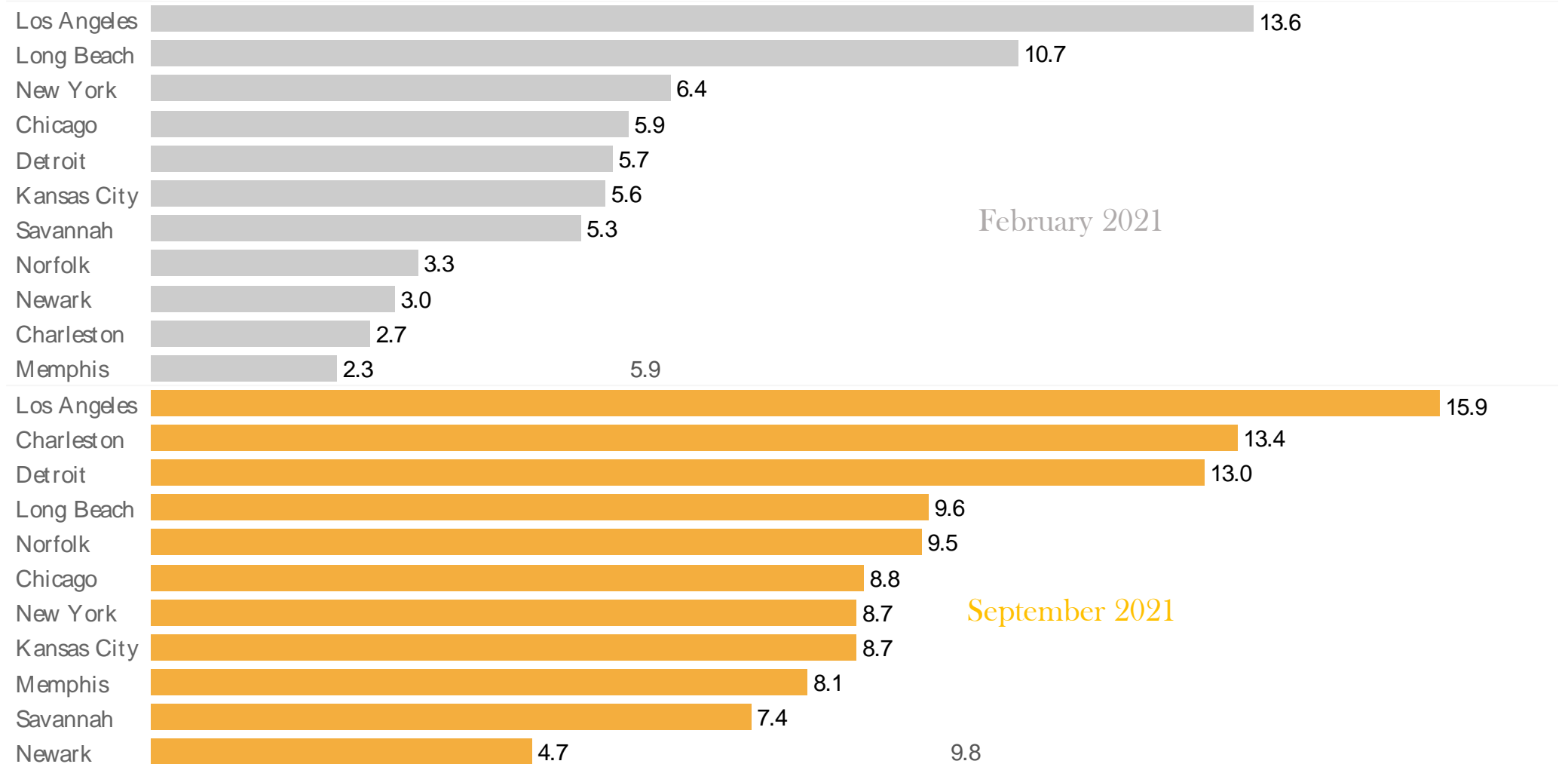
Price Movers Perspective Feb 2022 | annual percentage change of selected categories



Source: St. Louis FRED

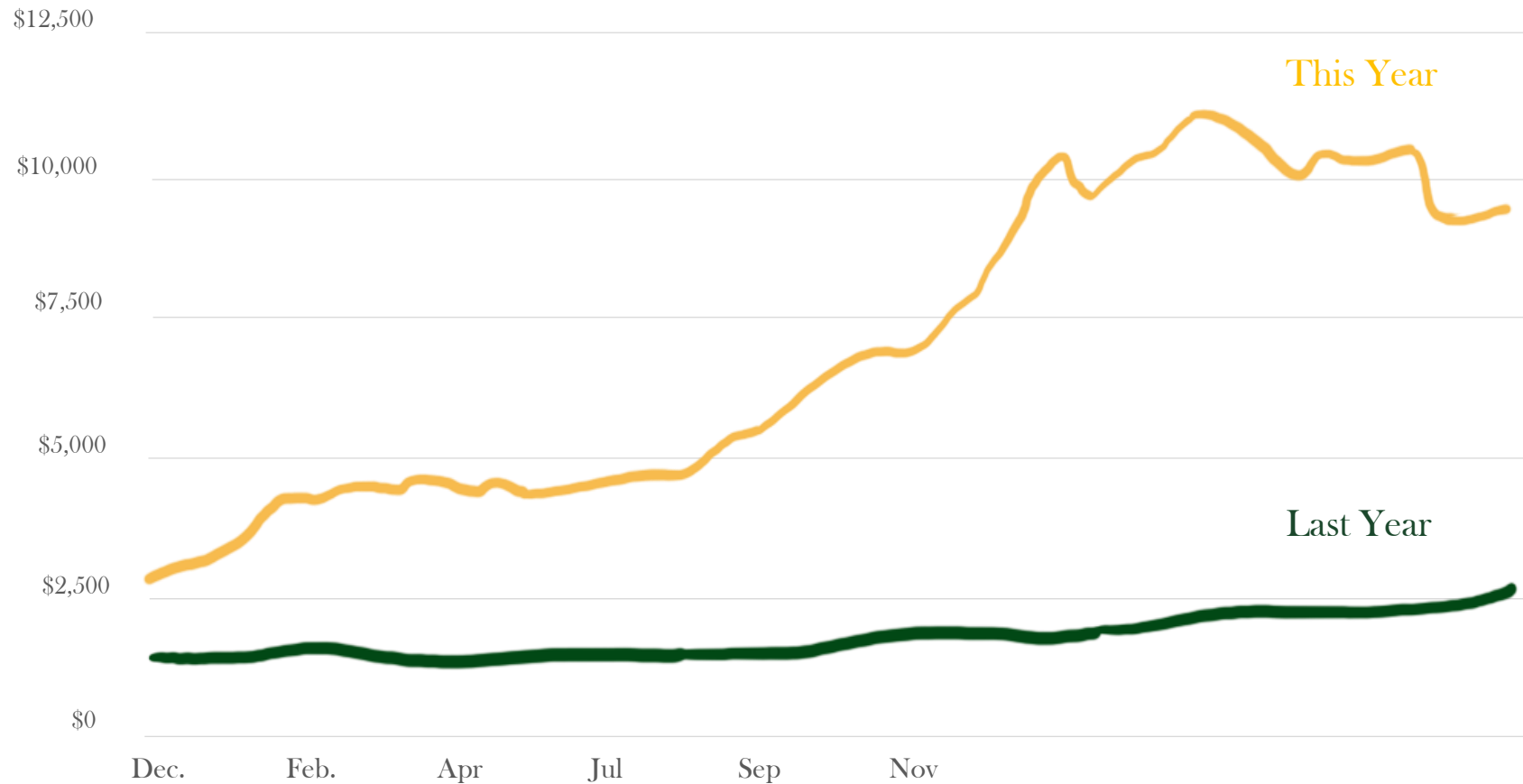
...in addition to the challenges associated with getting goods downstream

Dwell Times for Shipping Containers at Rail Yards in Days



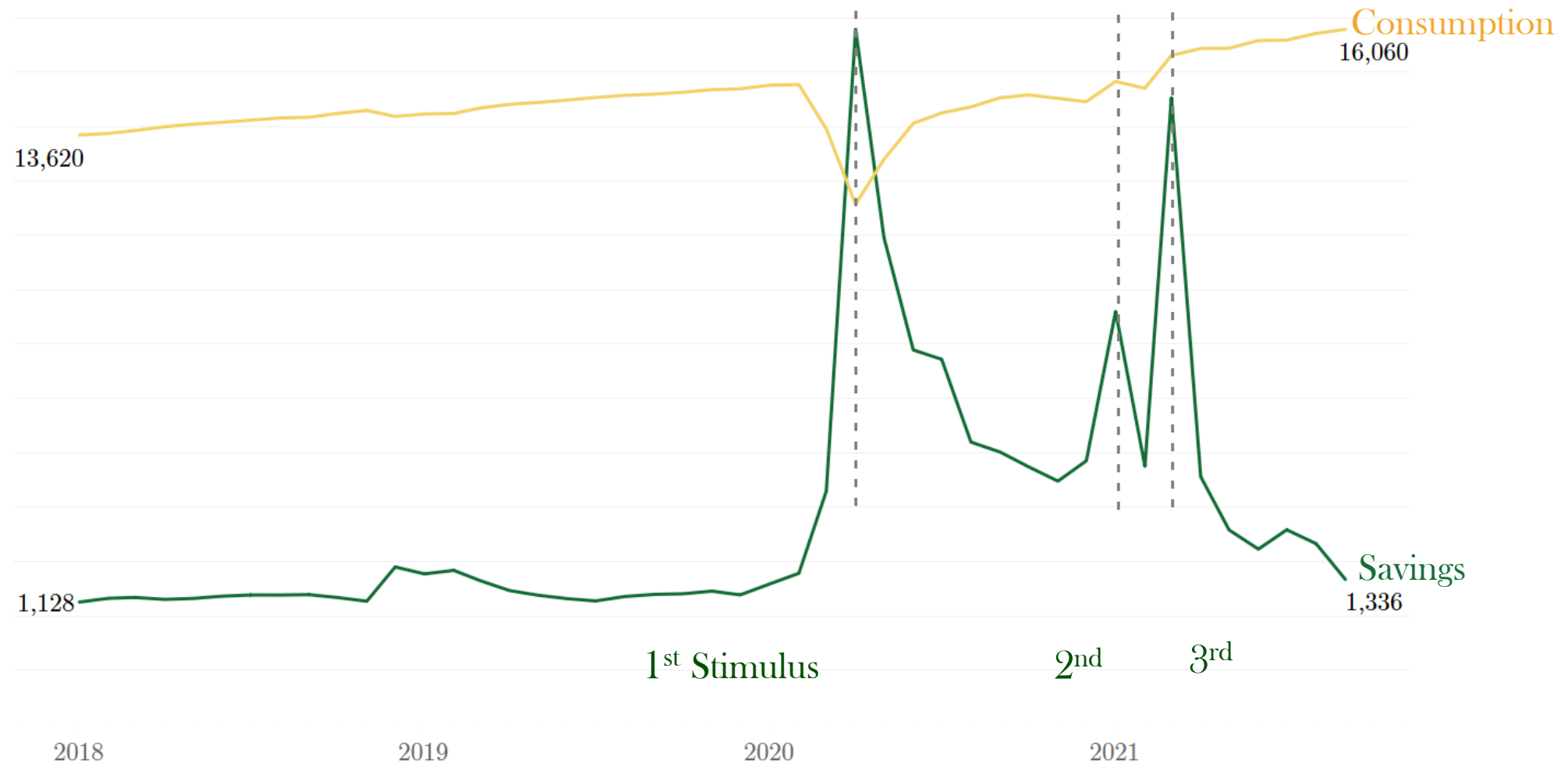
And considering that transportation costs are still significantly elevated

Freightos Baltic Index (FBX) Global Container Index
Year-over-Year



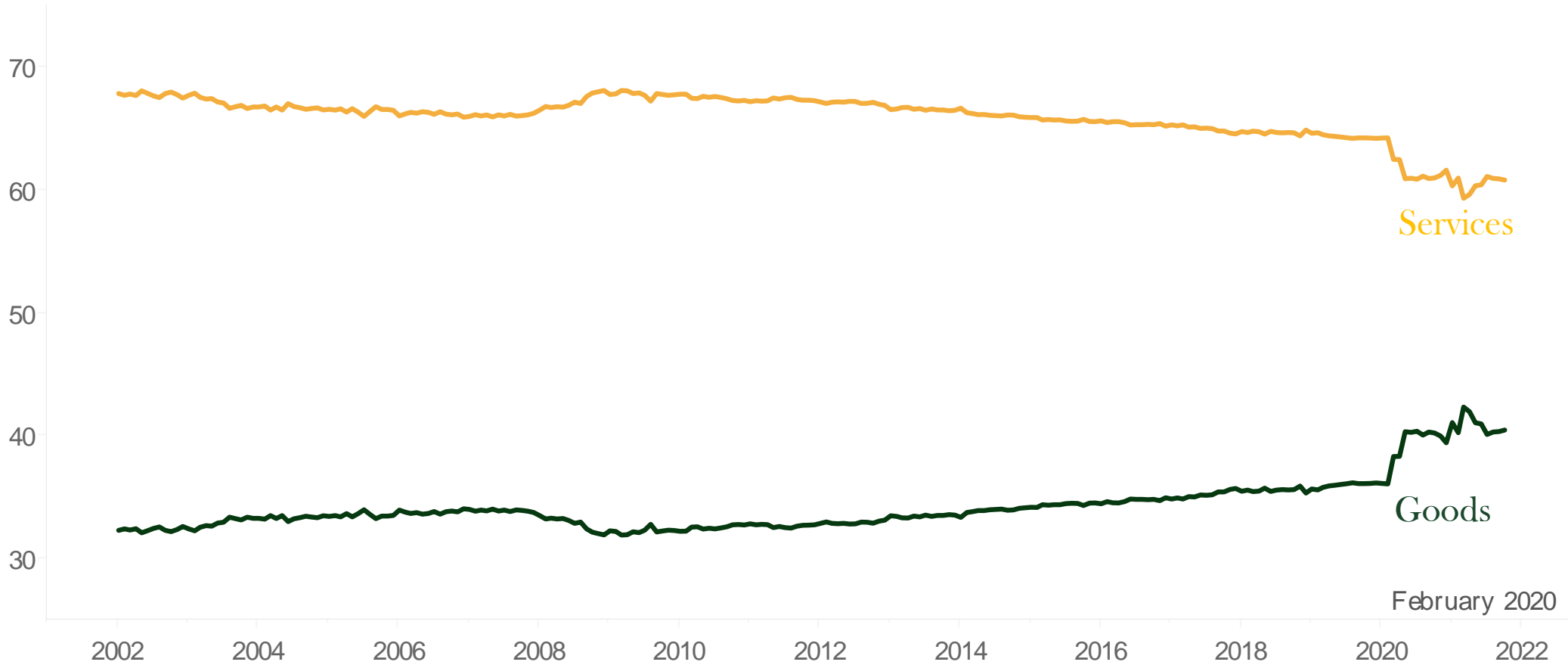
The 3rd stimulus payment seem to have elevated consumption back to its pre-pandemic trajectory, indicating robust spending

National Personal Savings vs. Personal Consumption Expenditures



Shifting consumer preferences towards goods over services during the pandemic have weighed heavily in driving supply chain challenges

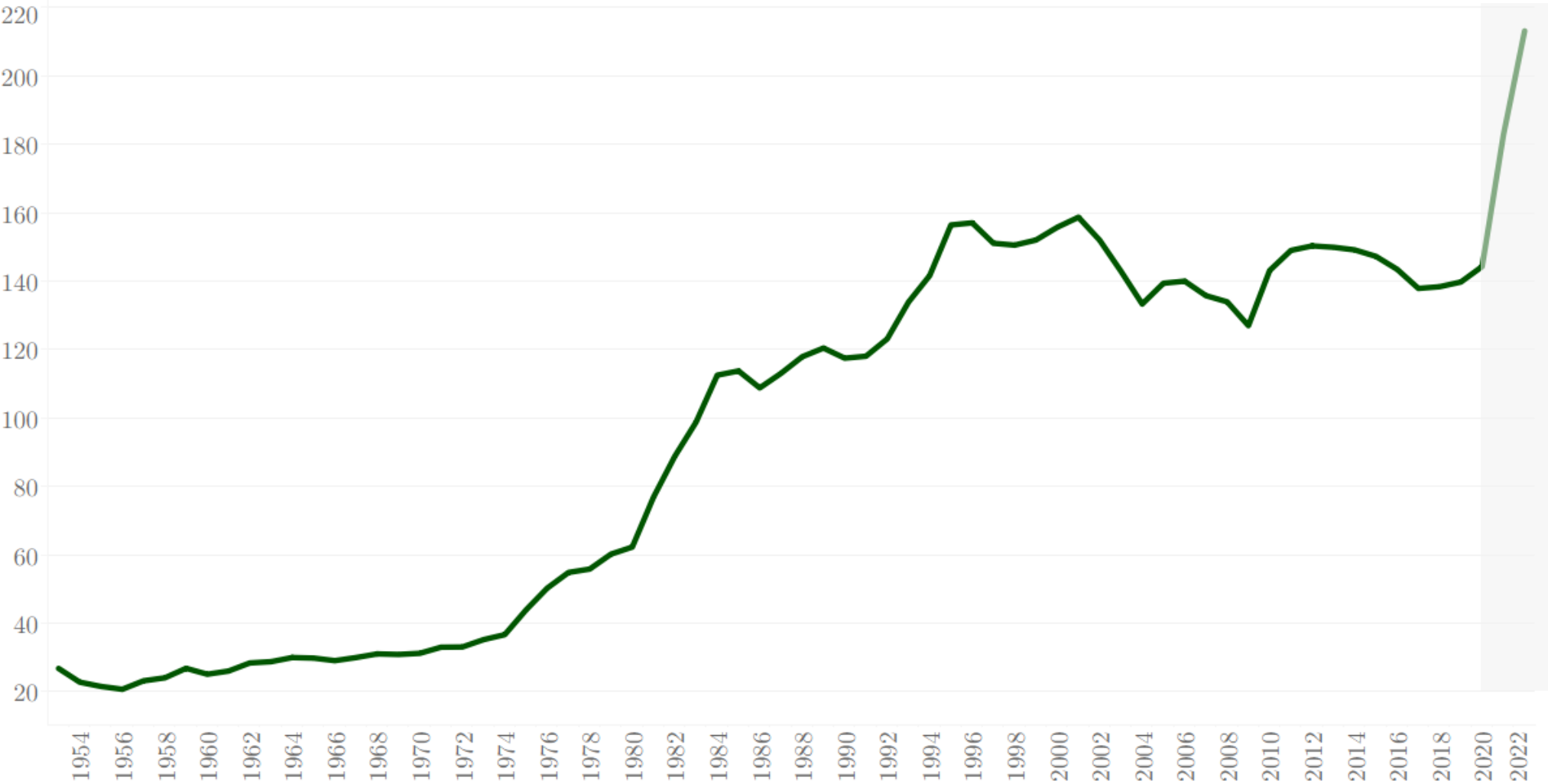
Share of Real Personal Consumption Expenditures
Goods vs. Services



Source: St. Louis FRED

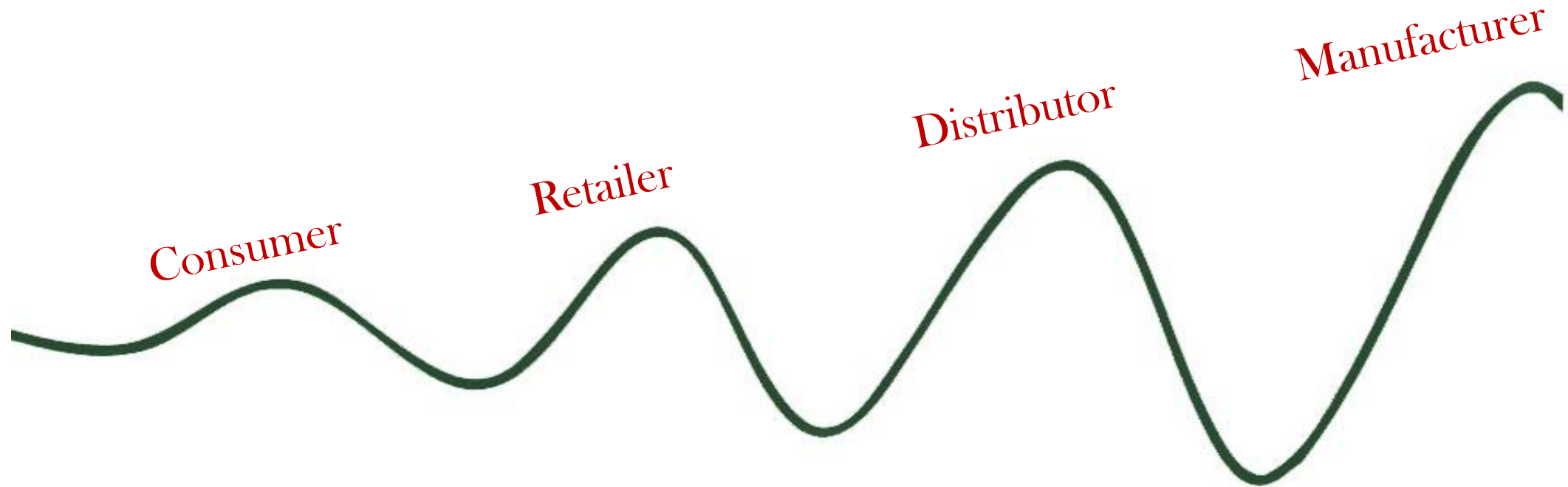
Not to mention the sky-high demand in the used car market, which continues to drive inflation with prices rising over 41% from one year ago

Price Index of Used Cars and Trucks

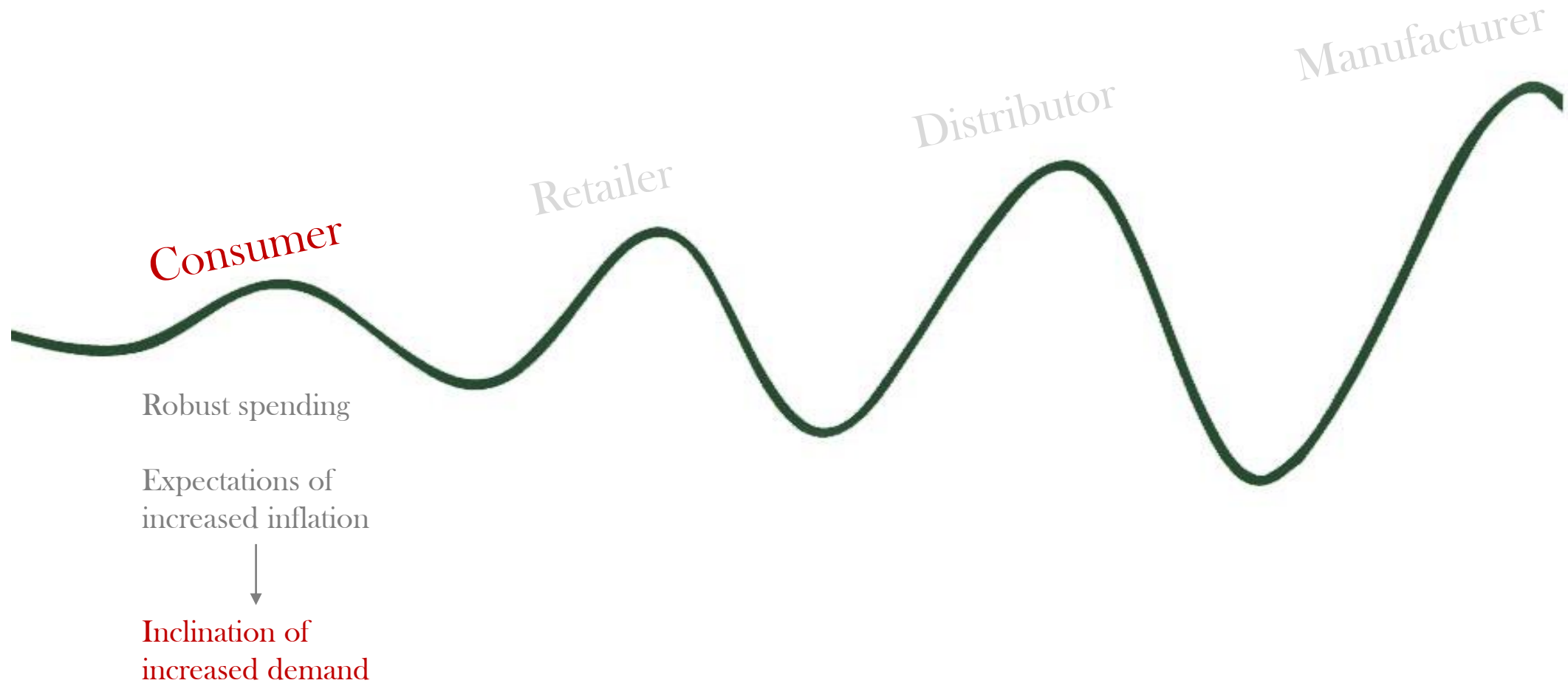


Source: St. Louis FRED

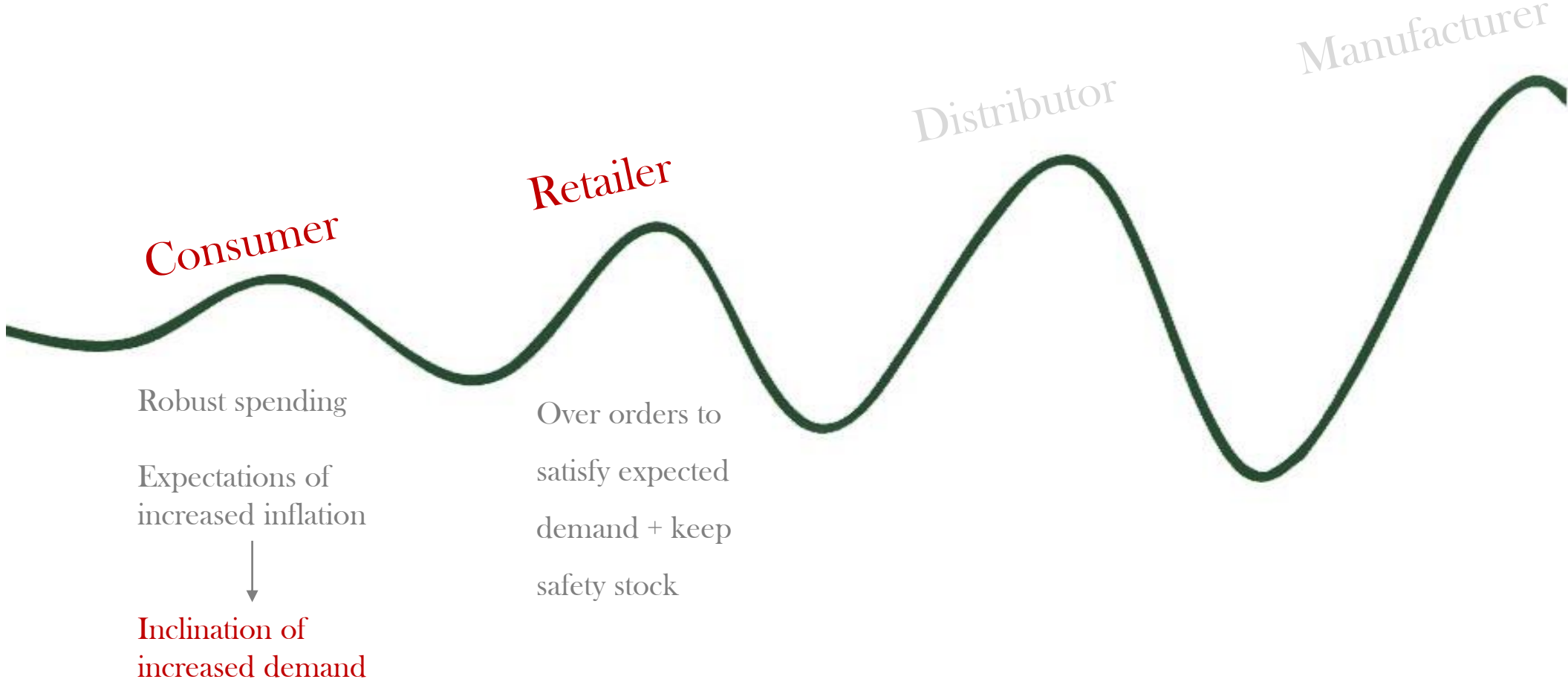
One factor contributing to supply chain challenges is a phenomena called the Bullwhip Effect...



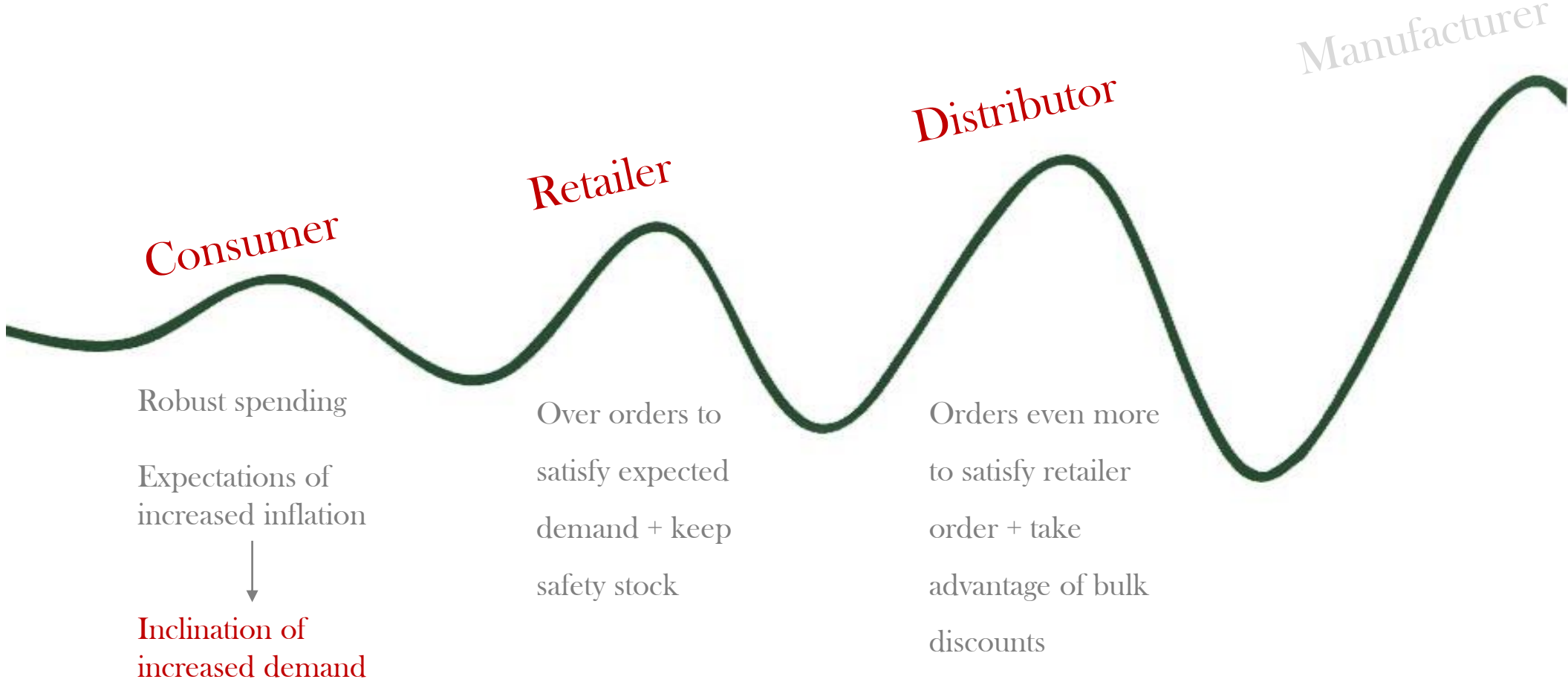
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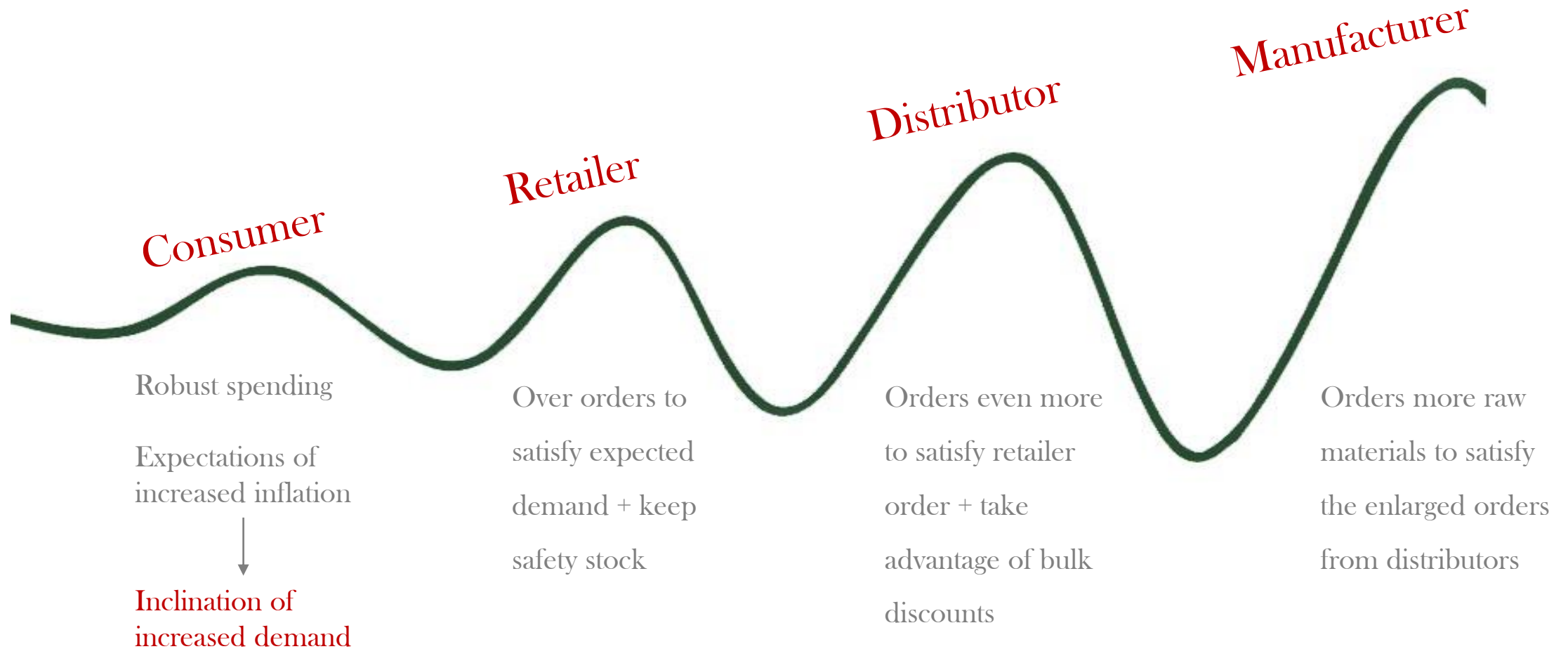
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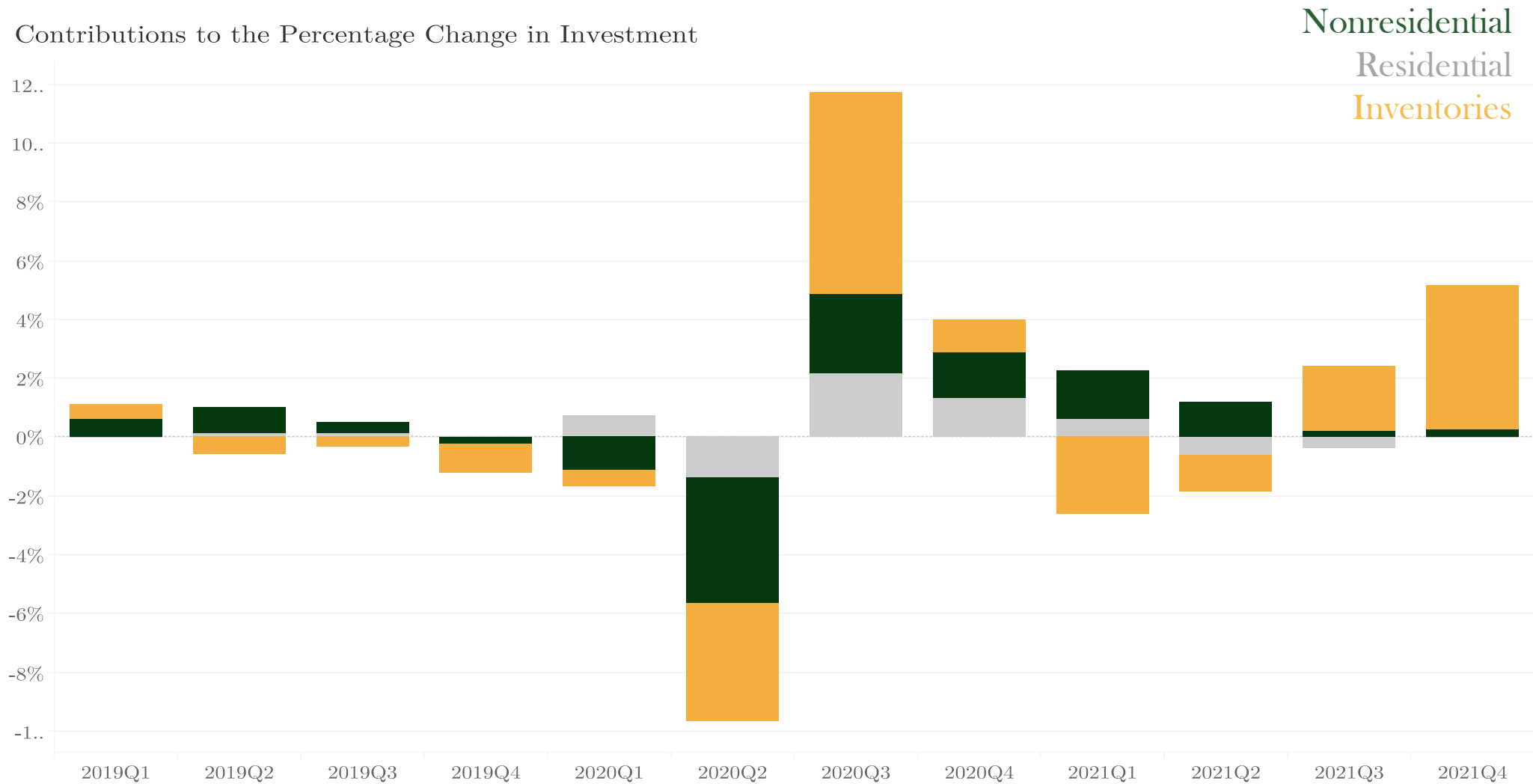
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Q4 investment of 2021 was largely driven by inventories, which adds perspective to interpreting economic activity via GDP



Supply Chain Issues + Overheated

Consumer Demand +

Already Enlarged Inventories

Amplified Bullwhip

Effect

Consequences of the Bullwhip Effect

... More inflation

... More supply chain issues

Transportation
issues surrounding
the Russia/Ukraine
conflict could
further disrupt
supply chains

- 1 Increasing fuel costs making trips more expensive
- 2 Freight plane diversion of Russian airspace making trips longer

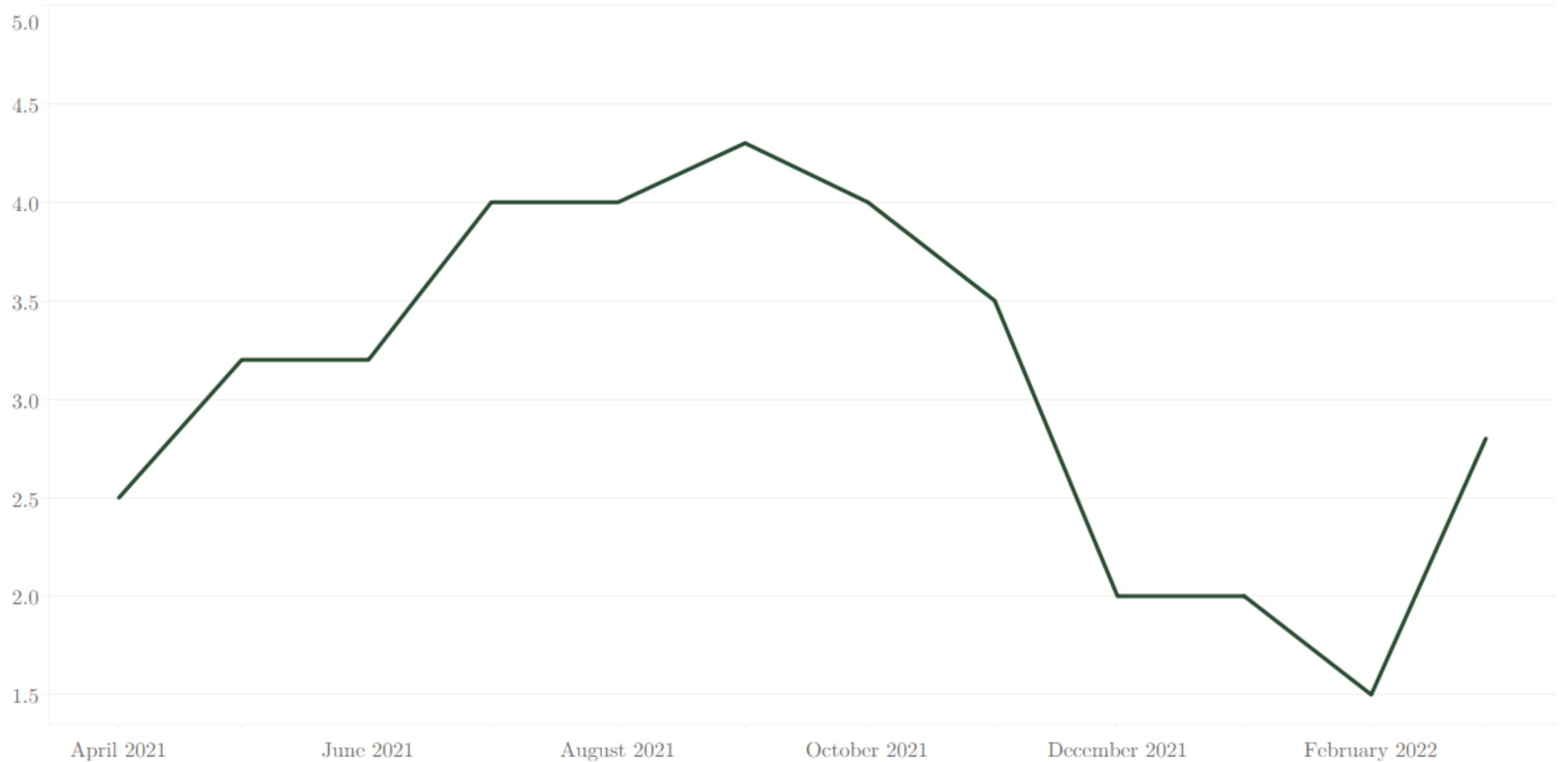
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Air Cargo Volume (tons/km) of Freight Flights from Almaty, Kazakhstan (ALA) to Hong Kong, China (HKG)

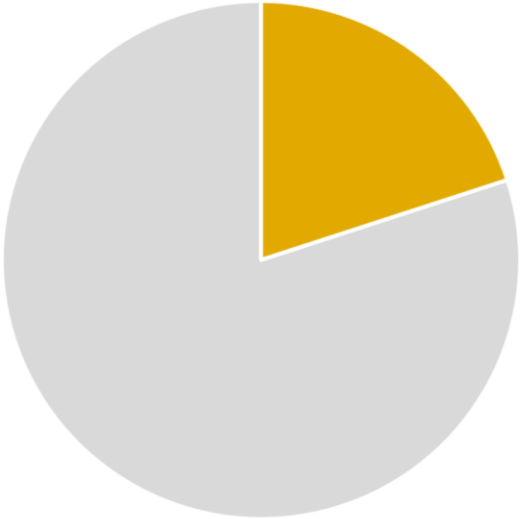


Ukraine and Russia also account for high global shares of key exports that are indispensable to a range of industries

7.5% Iron & Steel	→	Machinery, automotives
10% Raw Aluminum	→	Machinery, appliances
16% Platinum	→	Jewelry, dentistry, automotives
24% Palladium	→	Jewelry, dentistry, automotives
28% Raw Nickel	→	Coin minting, batteries, boat manufacturing
50% Neon gas	→	Microprocessor chips in PCs, smartphones, etc.

Supply chain impacts from these commodity shocks could also trickle downstream into the food and energy industries...

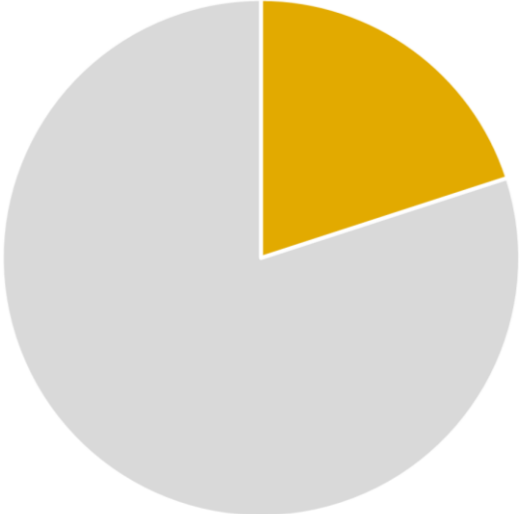
20%



global corn sales

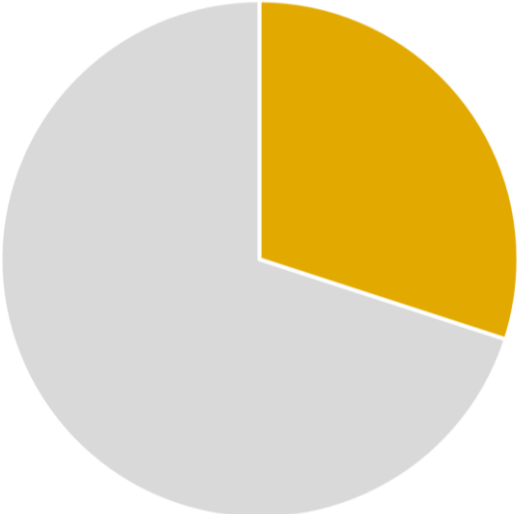
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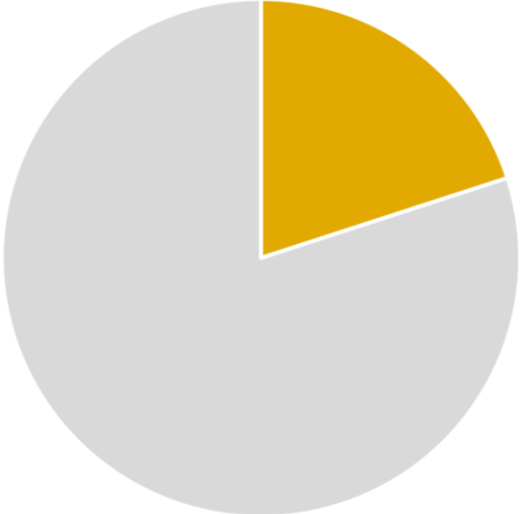
30%



global wheat sales

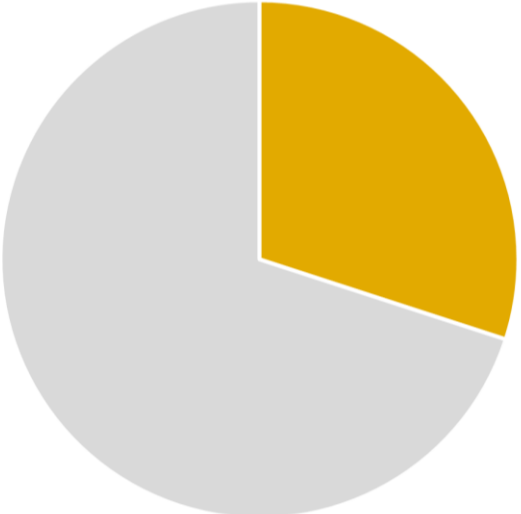
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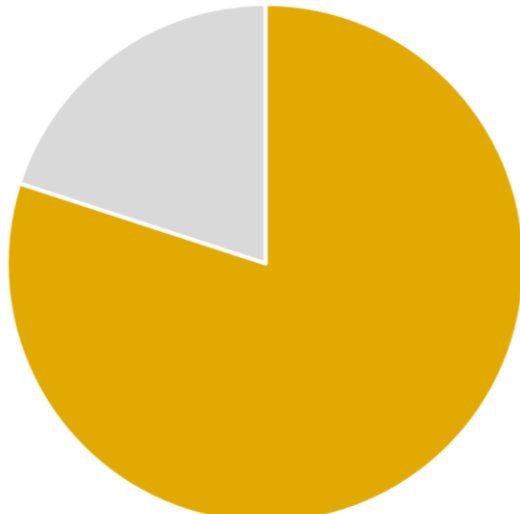
global corn sales

30%



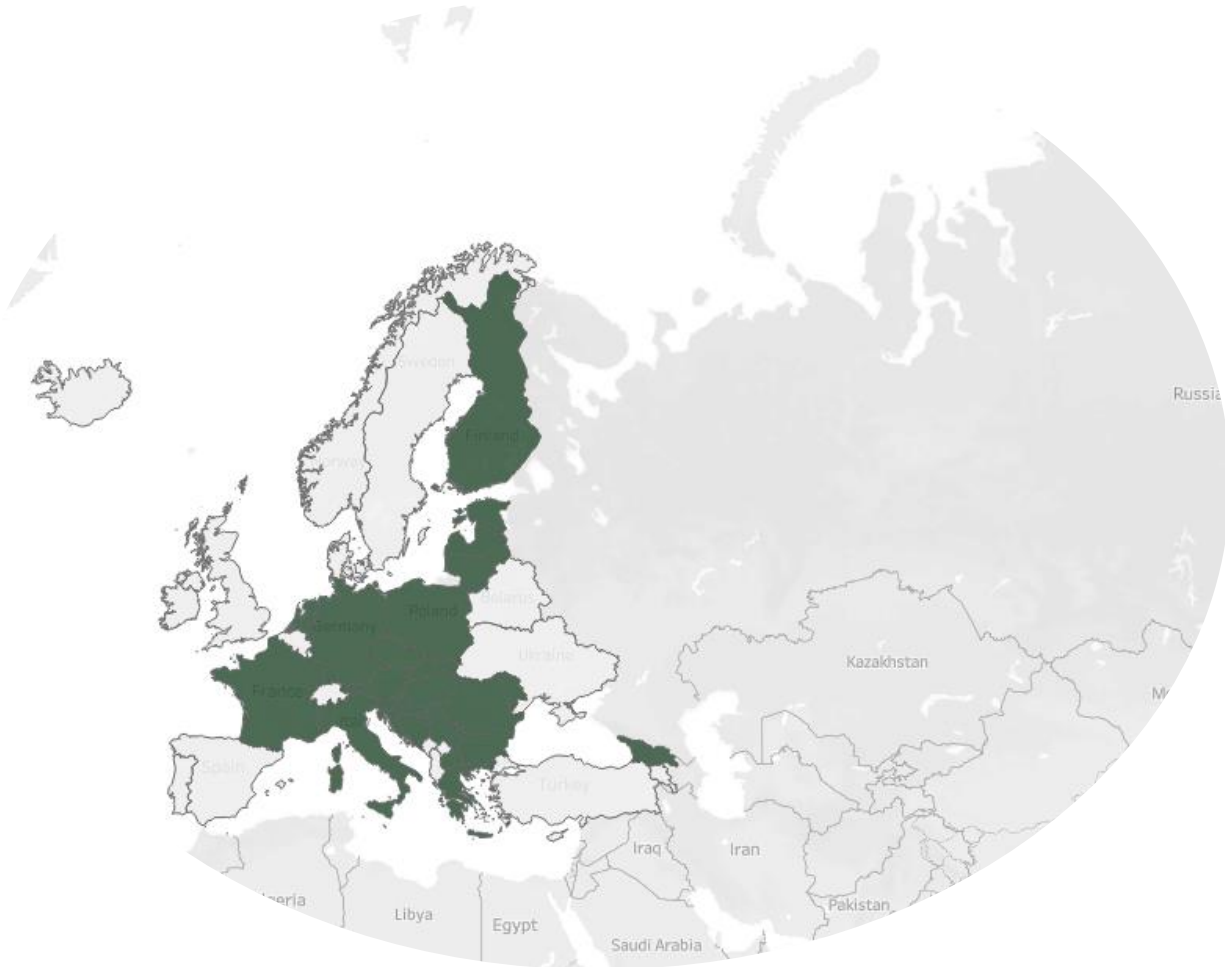
global wheat sales

80%



global sunflower oil

...Especially when it comes to natural gas and energy production



Russia supplies **14%** of global coal briquettes used in manufacturing and power generation

Europe receives almost **40%** of its natural gas from **Russia**

Overview

·
·
· Economic Updates

· GDP, Unemployment, & Inflation

· Economic Policy | Fiscal + Monetary

· Financial Markets

· Housing Market

· **Inflationary Pressures**

· The Labor Force

· Supply Chain Challenges

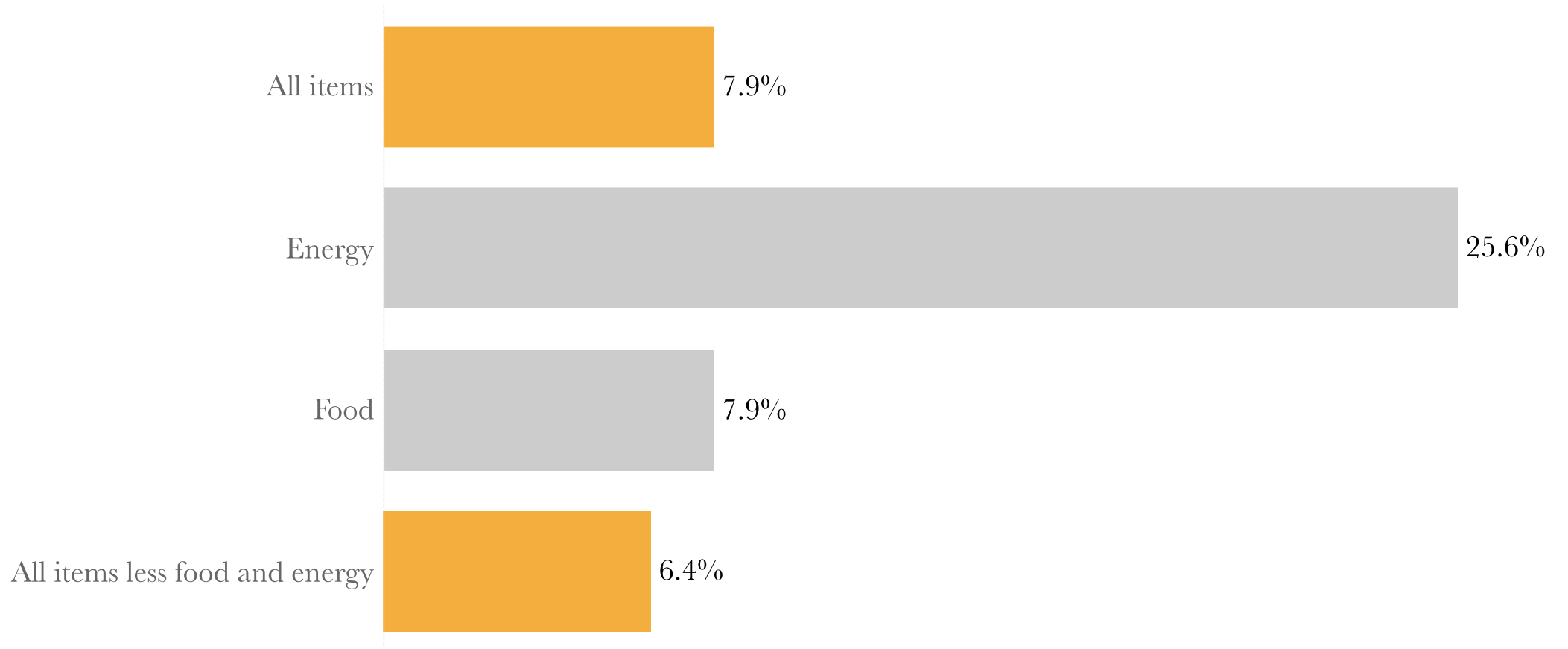
· Energy Markets

· Key Takeaways

·
·

The energy markets have experienced a near 26% annual change in year-over-year inflation

Price Movers Perspective Feb 2022 | annual percentage change



Energy price drivers

- Russia supplies nearly half of Europe with natural gas and a sixth of the world with coal briquettes, threatening supply and production of energy enterprises
- Changing consumer preferences have limited exploration and growth of fossil fuel reserves in recent years, which has limited supply
- Alternative energy sources are still too immature to provide a steady supply of energy
- Global oil and gas companies had to pay debt accrued over the pandemic before growing production, increasing input costs and output prices to compensate
- Global demand for manufactured materials and fuel was restored faster than global suppliers could increase production, further decreasing supply

Energy price drivers

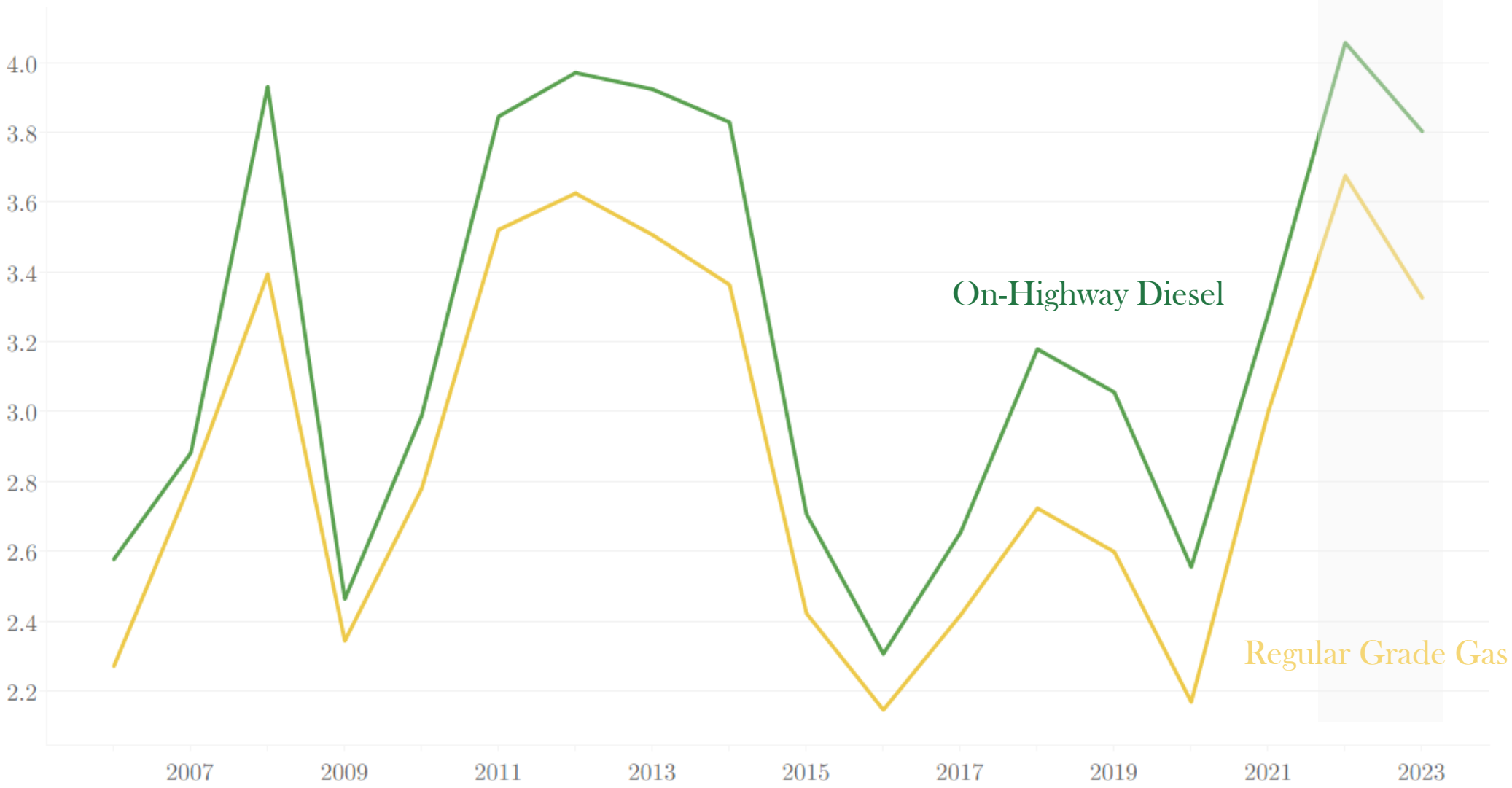
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Pressure on prices

Fuel prices have been on the rise since last year, hopefully spiking in 2022 and steadily decreasing through 2023

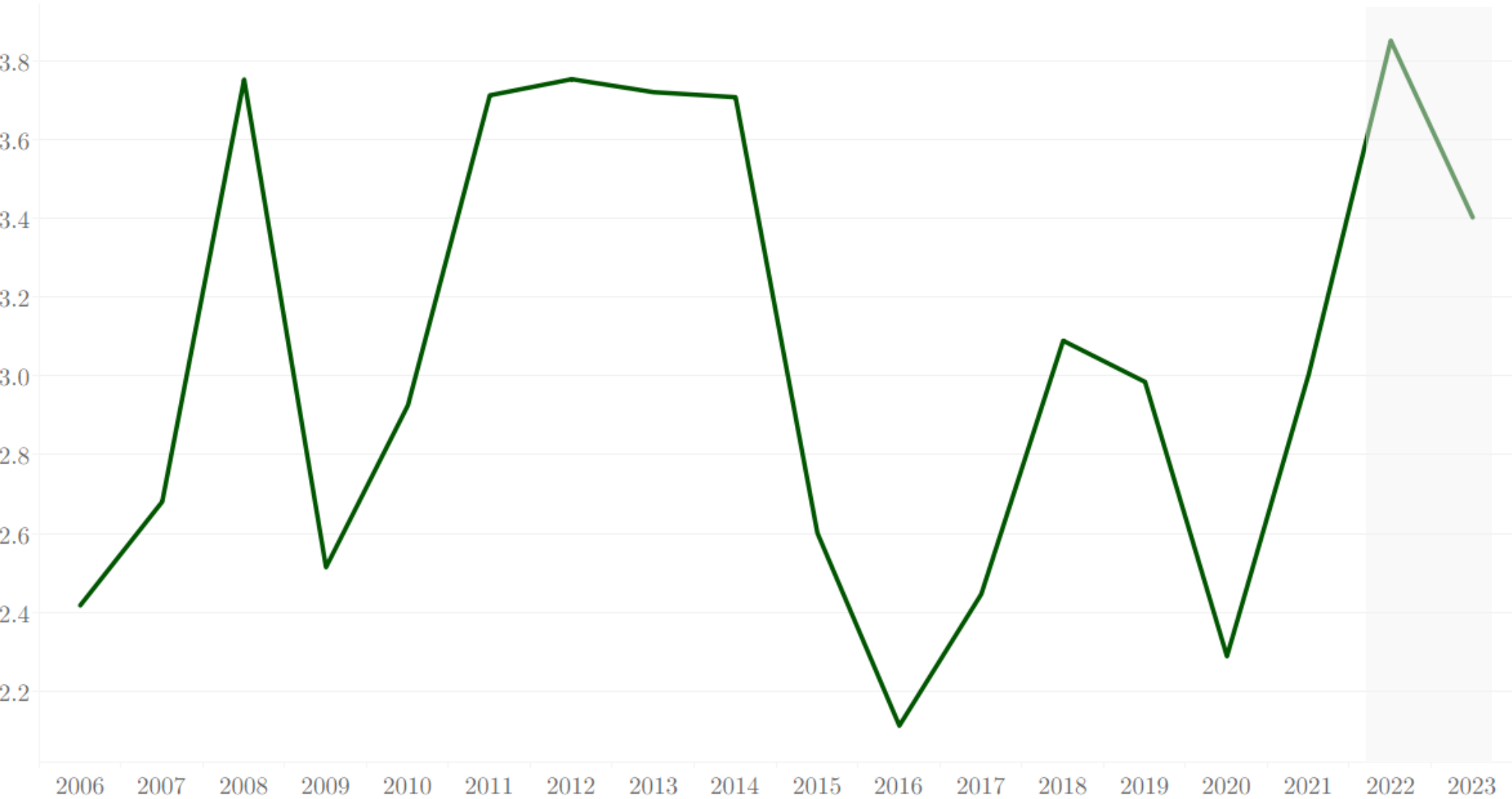
Average gas and diesel prices in dollars per gallon



Source: US Energy Information Administration

The same pattern is applicable to heating oil, which fuels water heaters and furnaces in residential homes

Average heating oil prices in dollars per gallon



Source: US Energy Information Administration

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-

- The Labor Force
-

- Supply Chain Challenges
-

- Energy Markets
-

- Key Takeaways
-
-

Takeaways

- 1 Growth in inventories drove GDP to finish strong in 2021 after a lower than expected performance in Q3, need other components to perform well in 2022
- 2 Unemployment numbers continue to decrease, but some challenges remain such as labor force participation
- 3 2022 picked up where 2021 left off as inflation continues to rise to record highs fueled by supply chain challenges, energy market prices, and labor market issues

Takeaways

- 4 Uncertainty and expectations are playing an important role in the economy, notability in the financial markets with stock market volatility along with the housing market
- 5 Policy this year will likely play a key role in the future of the economy as fiscal policy continues to pull back some of its strong pandemic support and the Fed grapples with inflation, interest rates, and policy response in uncertain times
- 6 The Russia/Ukraine conflict is a wild card weighing on uncertainty and possibly policy in 2022



CENTER FOR
BUSINESS &
ECONOMIC
ANALYSIS

State of the Economy 2022

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