

3Q 2021 Economic Outlook

FED PIVOTS AS STIMULUS, POLICY, AND IMBALANCES
PUSH ECONOMY TO BRINK OF INFLATION; VIRUS REMAINS THREAT TO EXPANSION

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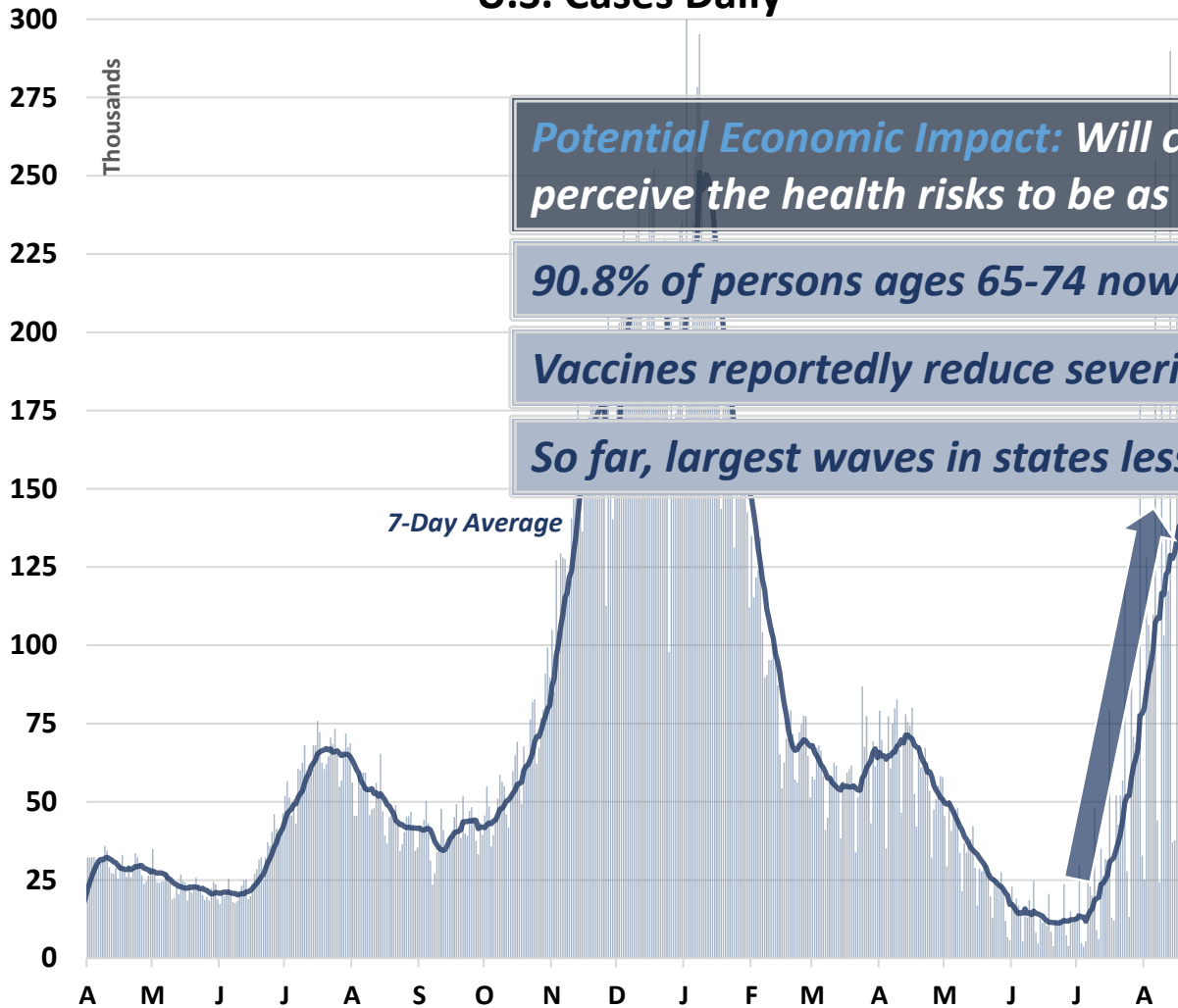
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Updated August 2021

U.S. COVID SITUATION

FRIDAY SAW THIRD-HIGHEST DAILY CASE CONFIRMATIONS AS DELTA WAVE CONTINUES TO SPREAD

U.S. Cases Daily



U.S. Fatalities Daily



Potential Economic Impact: Will consumers, businesses, and policymakers perceive the health risks to be as high as they did during previous waves?

90.8% of persons ages 65-74 now fully vaccinated; 87% of persons 75+

Vaccines reportedly reduce severity of infections

So far, largest waves in states less likely to implement new restrictions

POLICY IMPACT

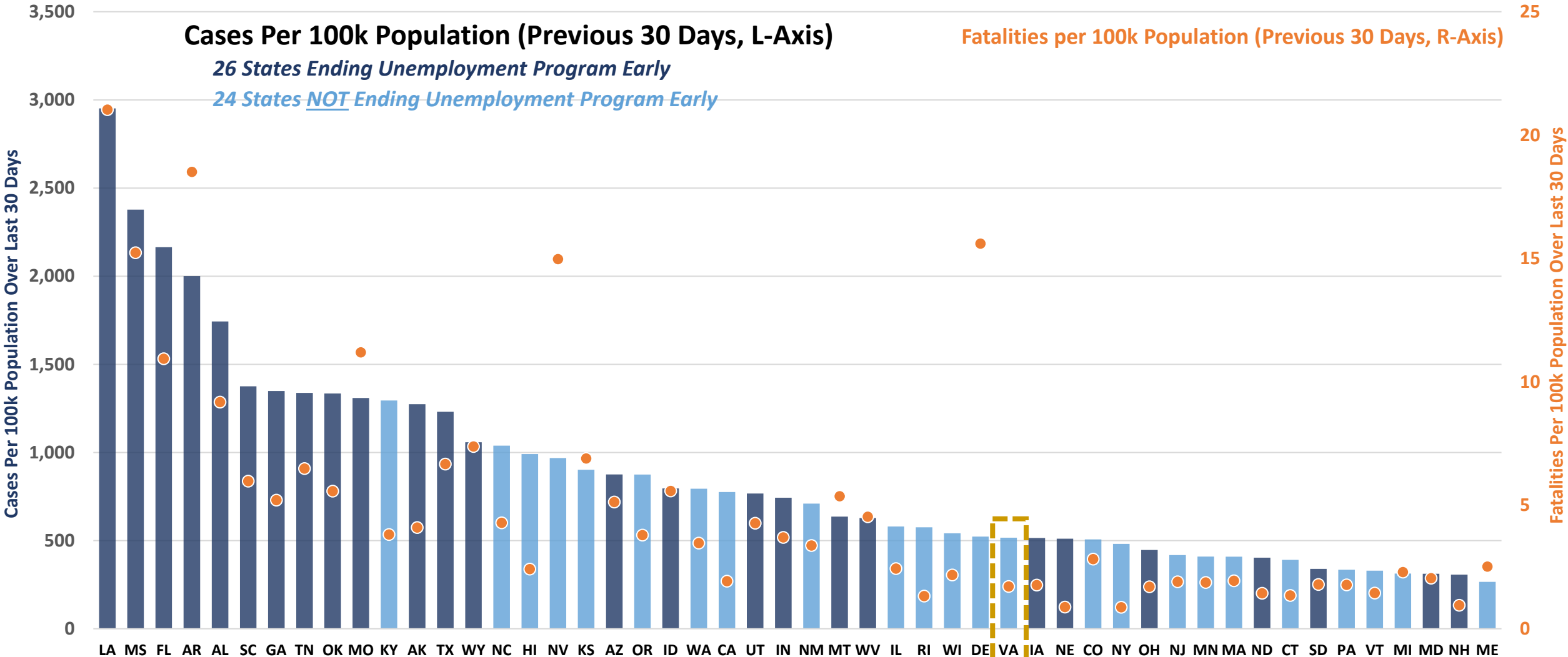
THUS FAR, STATES LESS LIKELY TO IMPLEMENT ECONOMICALLY LIMITING RESTRICTIONS HIT HARDEST

Cases Per 100k Population (Previous 30 Days, L-Axis)

Fatalities per 100k Population (Previous 30 Days, R-Axis)

26 States Ending Unemployment Program Early

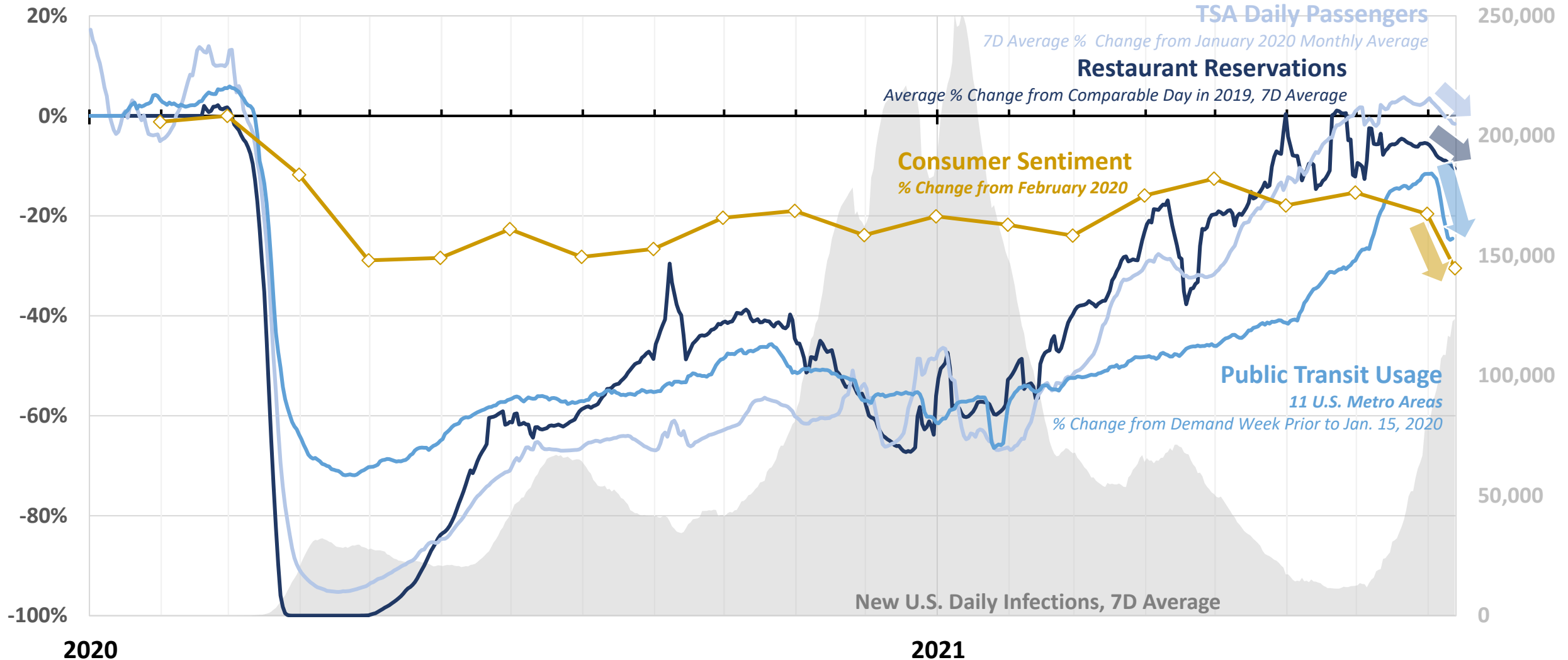
24 States NOT Ending Unemployment Program Early



Sources: Johns Hopkins CSSLData, Bloomberg, Vining Sparks

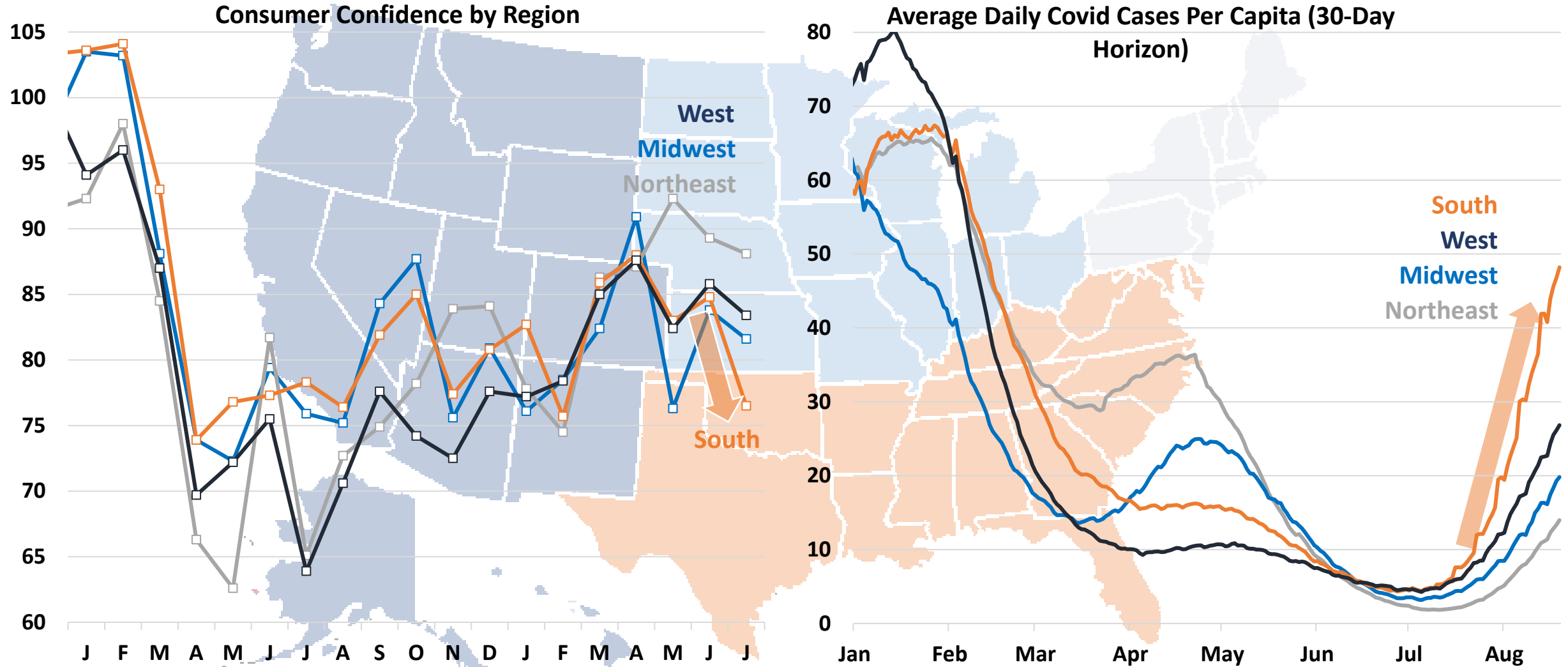
HIGH-FREQUENCY DATA

SOME HIGH-FREQUENCY ECONOMIC DATA BEGINNING TO SHOW DELTA'S SPREAD IMPACTING ACTIVITY



CONSUMER CONFIDENCE

CONFIDENCE PLUNGES IN SOUTH AS COVID CASES SPIKE

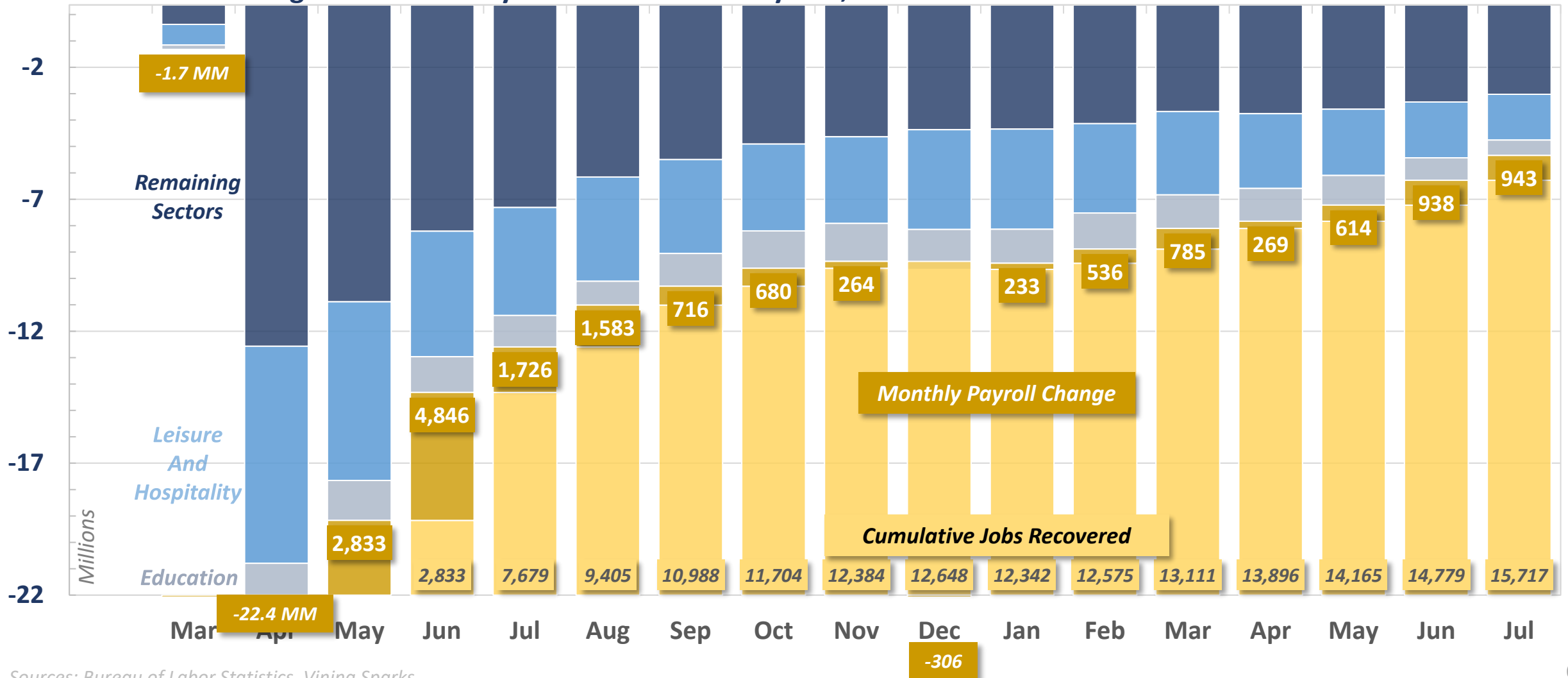


Sources: University of Michigan, Johns Hopkins CSSE Data, Bloomberg, Vining Sparks

LABOR RECOVERY

LABOR MARKET CONTINUES RECOVERY BUT 5.7 MILLION JOBS REMAIN LOST, PRIMARILY SERVICES-RELATED

Cumulative Change Since February 2020 in Nonfarm Payrolls, in Millions

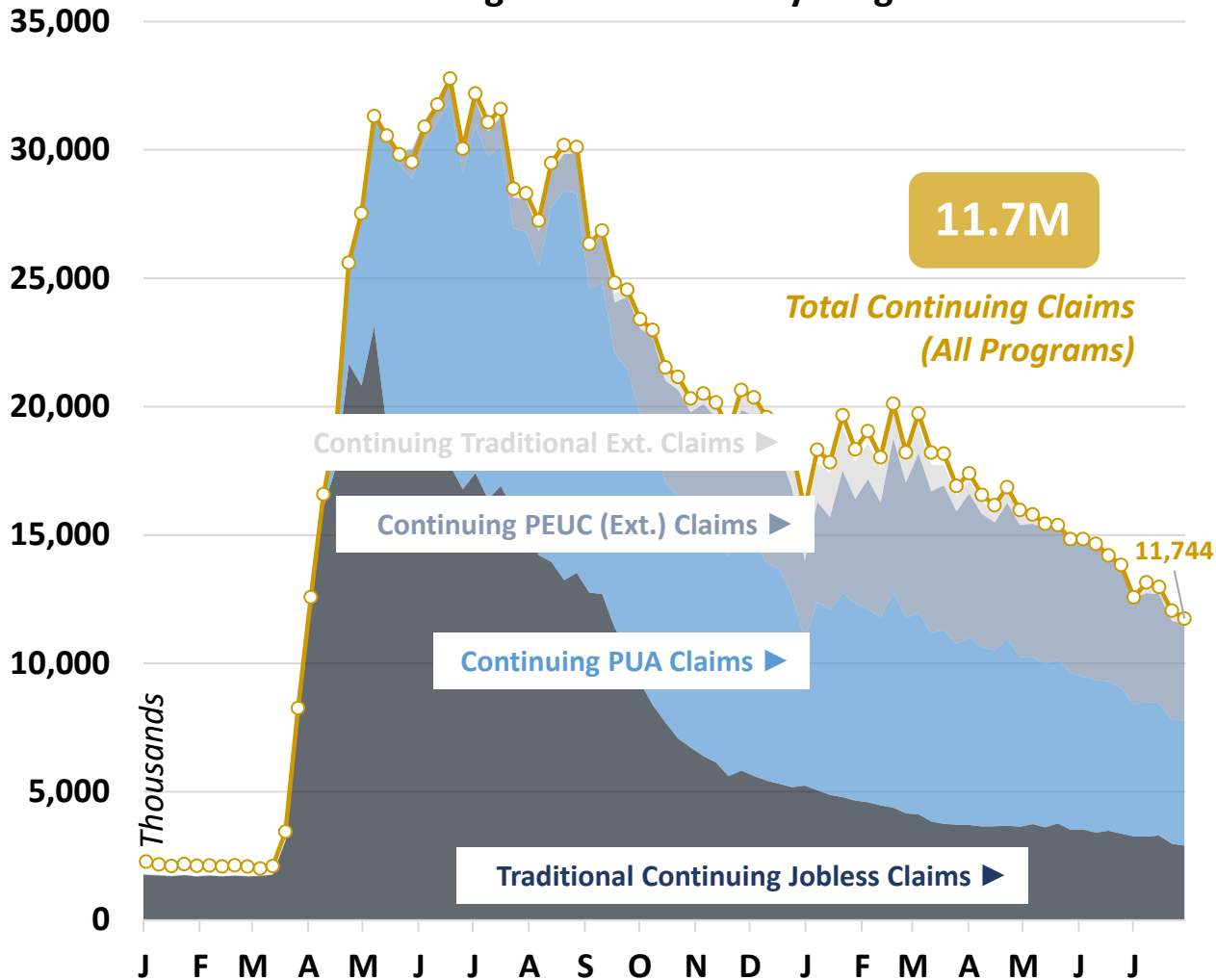


Sources: Bureau of Labor Statistics, Vining Sparks

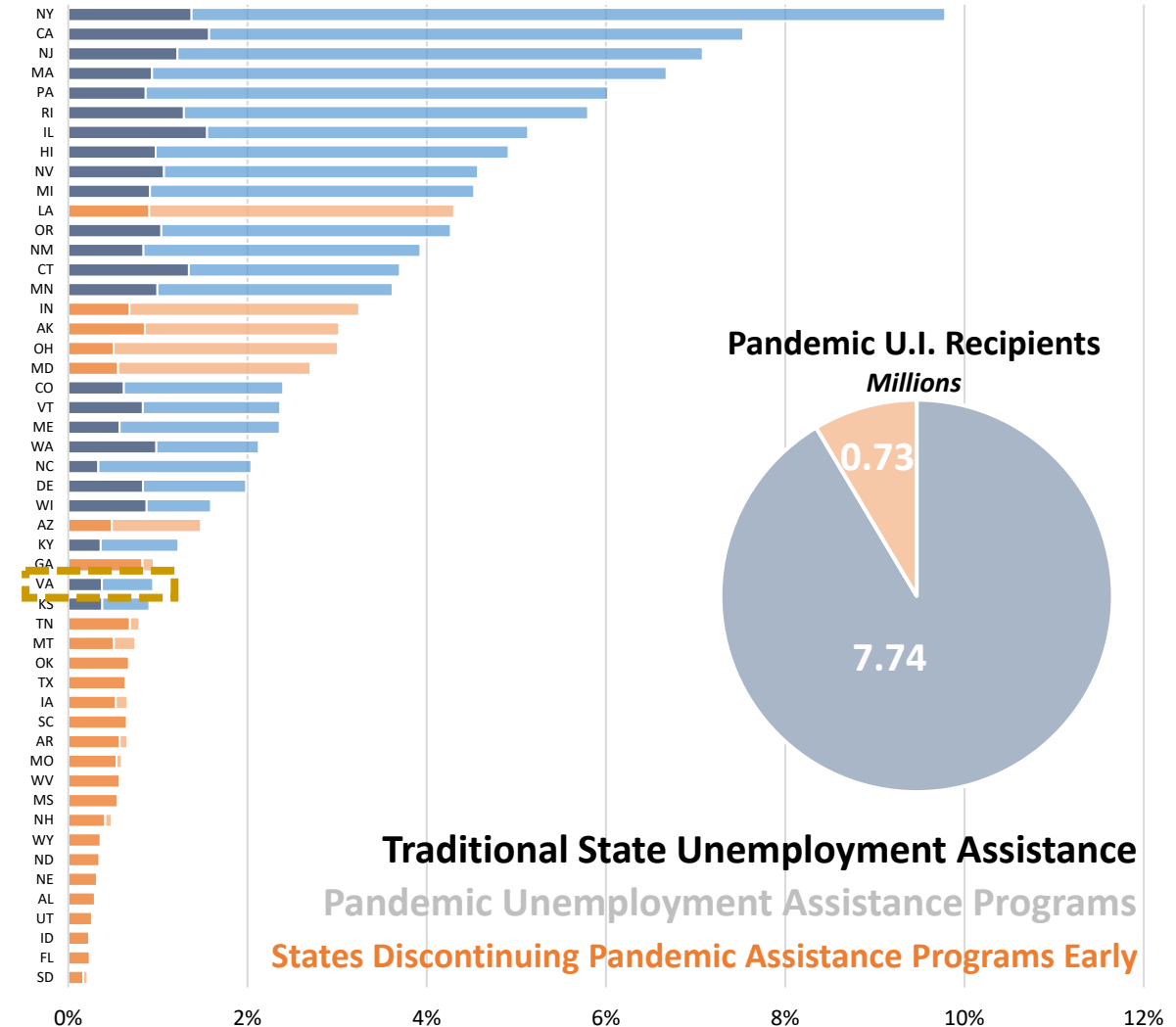
CONTINUING JOBLESS CLAIMS VINING SPARKS

CONTINUING CLAIMS REMAIN ELEVATED WITH SIGNIFICANT GEOGRAPHIC DISPARITIES EVIDENT

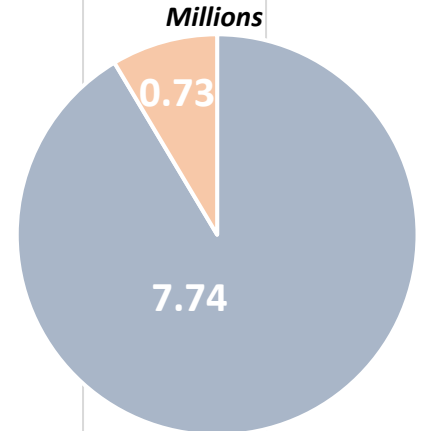
Continuing Jobless Claims by Program



Continuing Jobless Claims - Percent of State Populations

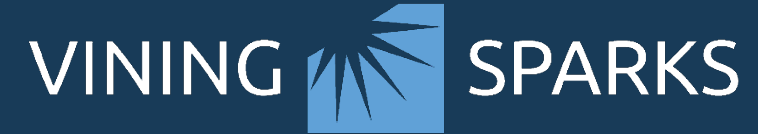


Pandemic U.I. Recipients



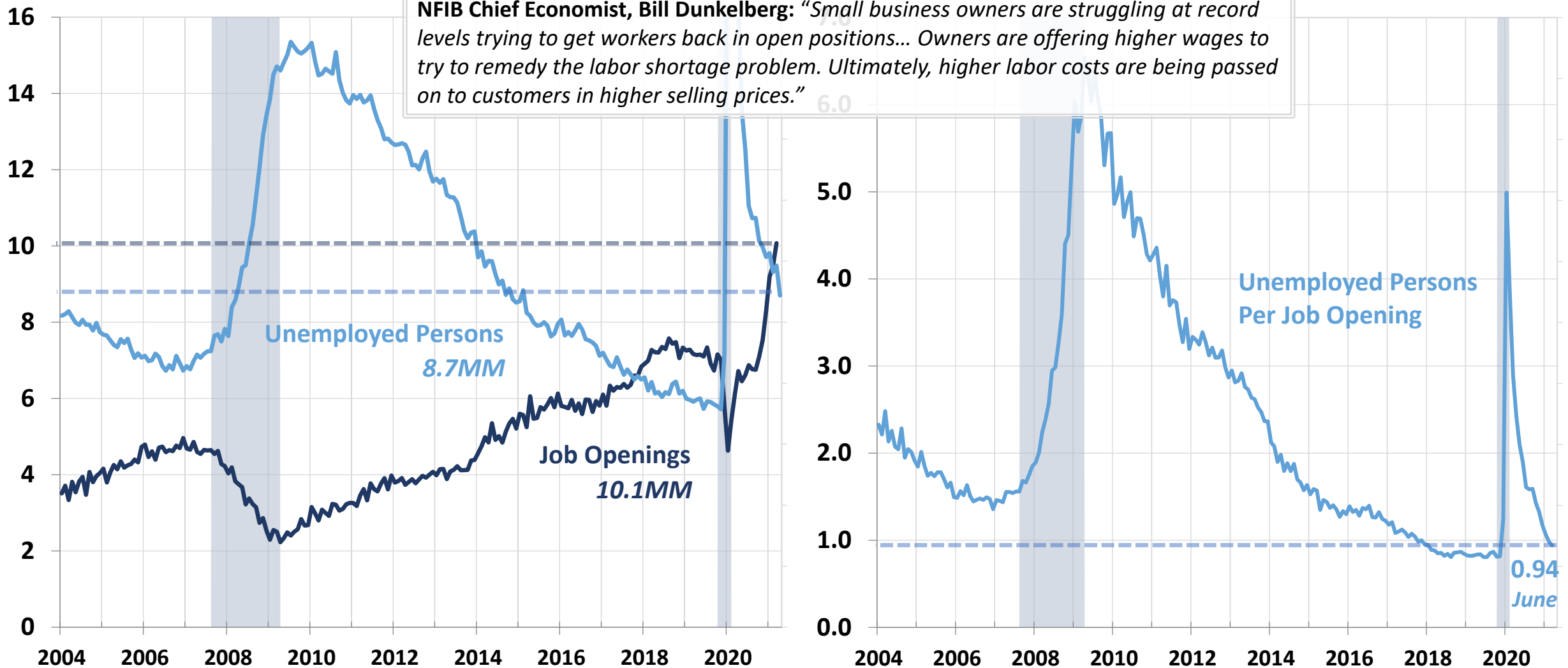
Traditional State Unemployment Assistance
Pandemic Unemployment Assistance Programs
States Discontinuing Pandemic Assistance Programs Early

LABOR MARKET IMBALANCE



NUMBER OF UNEMPLOYED FALLS TO 8.7 MILLION; JOB OPENINGS CLIMB TO RECORD-HIGH 10.1 MILLION

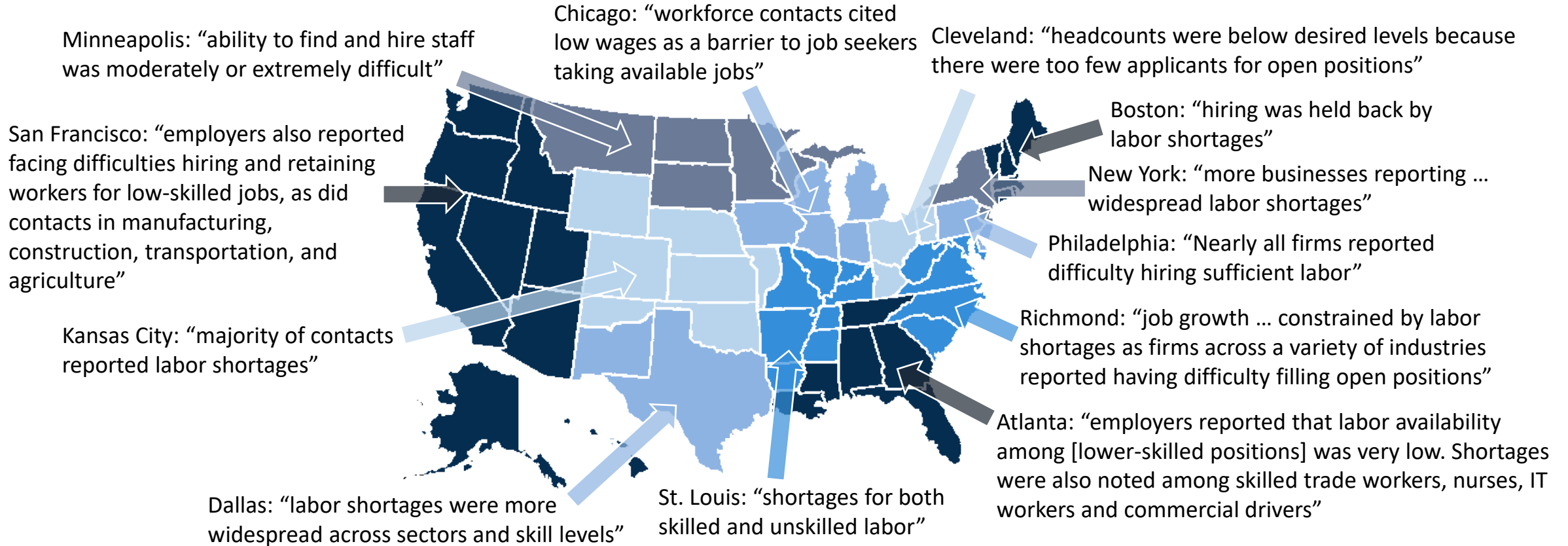
NFIB Chief Economist, Bill Dunkelberg: *"Small business owners are struggling at record levels trying to get workers back in open positions... Owners are offering higher wages to try to remedy the labor shortage problem. Ultimately, higher labor costs are being passed on to customers in higher selling prices."*



Sources: Bureau of Labor Statistics, Vining Sparks

WIDESPREAD LABOR SHORTAGE

FED BEIGE BOOK: ALL DISTRICTS REPORT SOME FORM OF CHALLENGE IN FILLING JOB OPENINGS



Increased unemployment benefits

Government transfer payments

Childcare challenges

Children’s school schedules

Transportation issues

Inability to guarantee hours

Job search fatigue

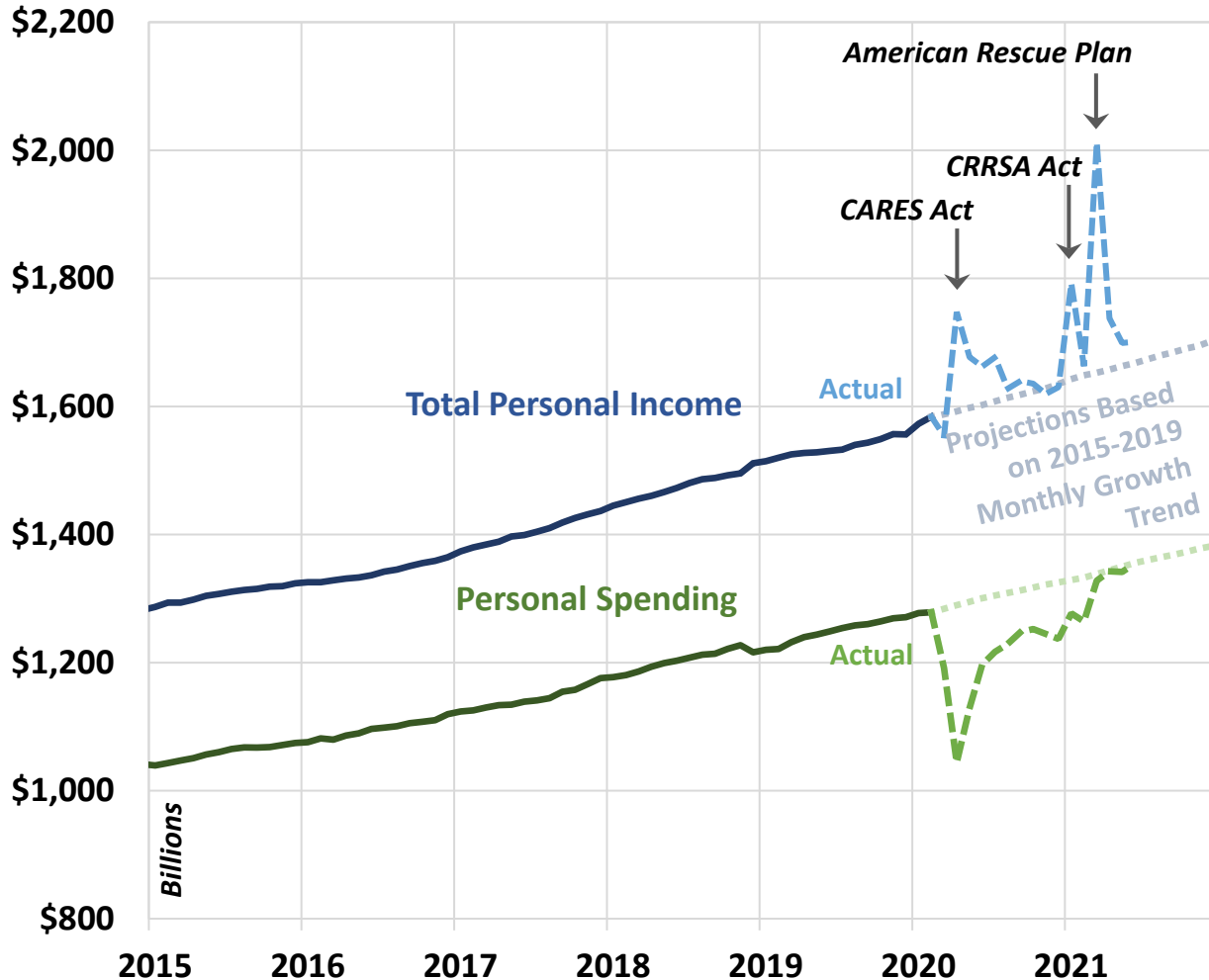
Health

Increased interest in working from home

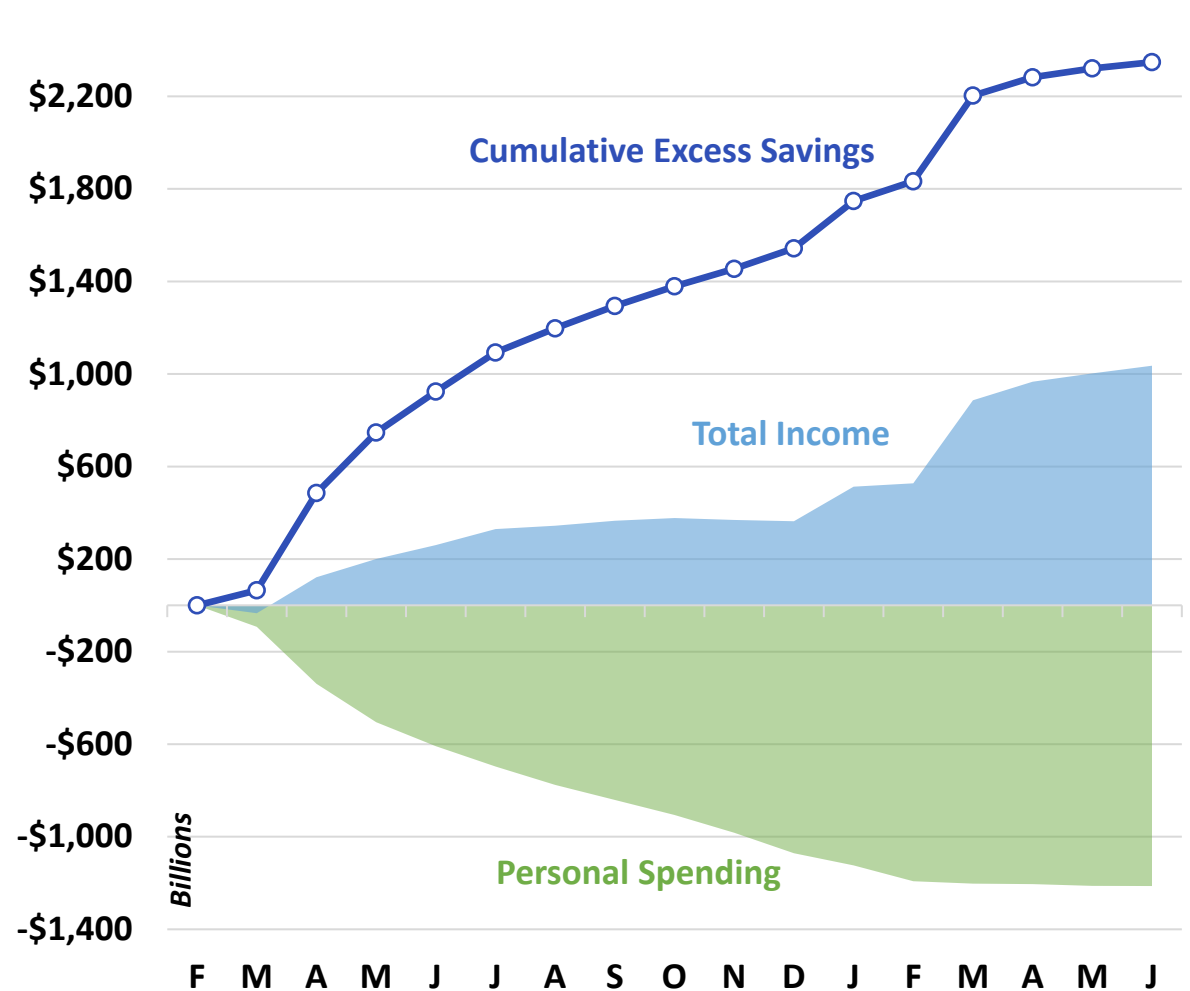
STIMULUS BUOYS CONSUMERS

WITH INCOMES BOOSTED BY STIMULUS TRANSFERS AND SPENDING LAGGING, SAVINGS UP TO \$2.3 TRILLION

Income and Spending (Monthly)



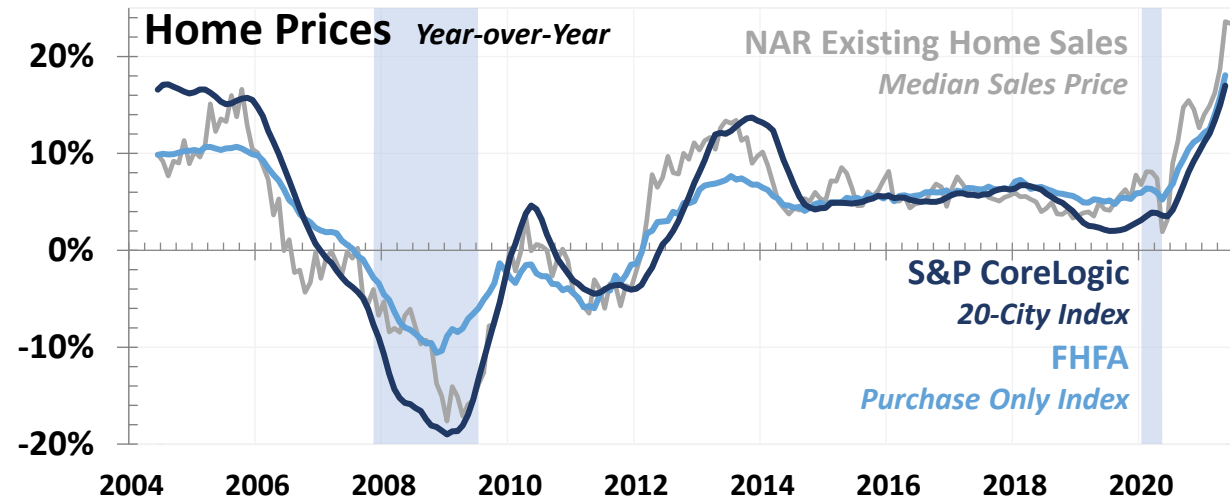
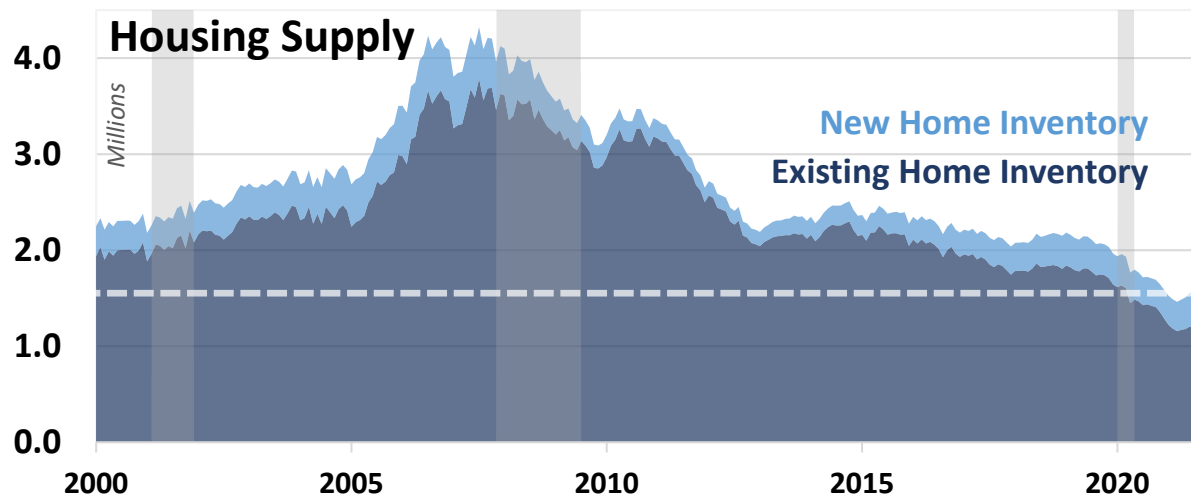
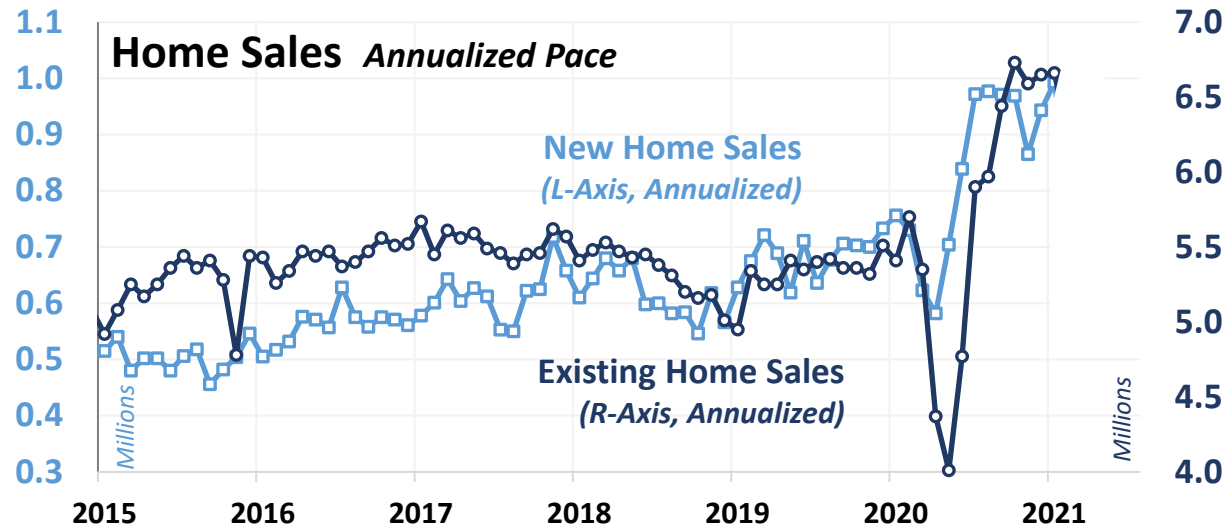
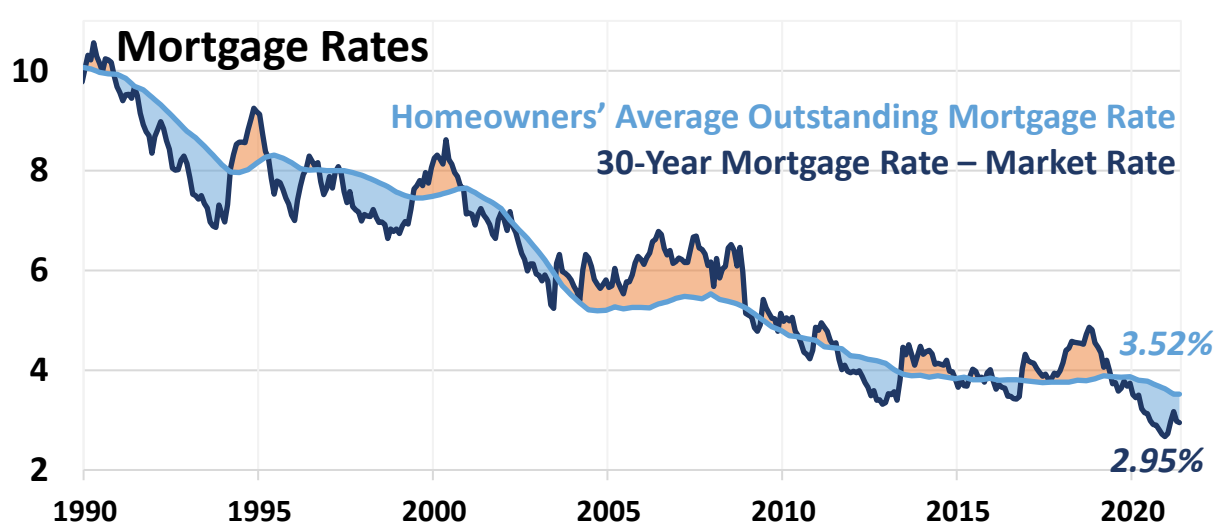
Cumulative Difference from Projected Since Feb. 2020



Sources: Bureau of Economic Analysis, Vining Sparks

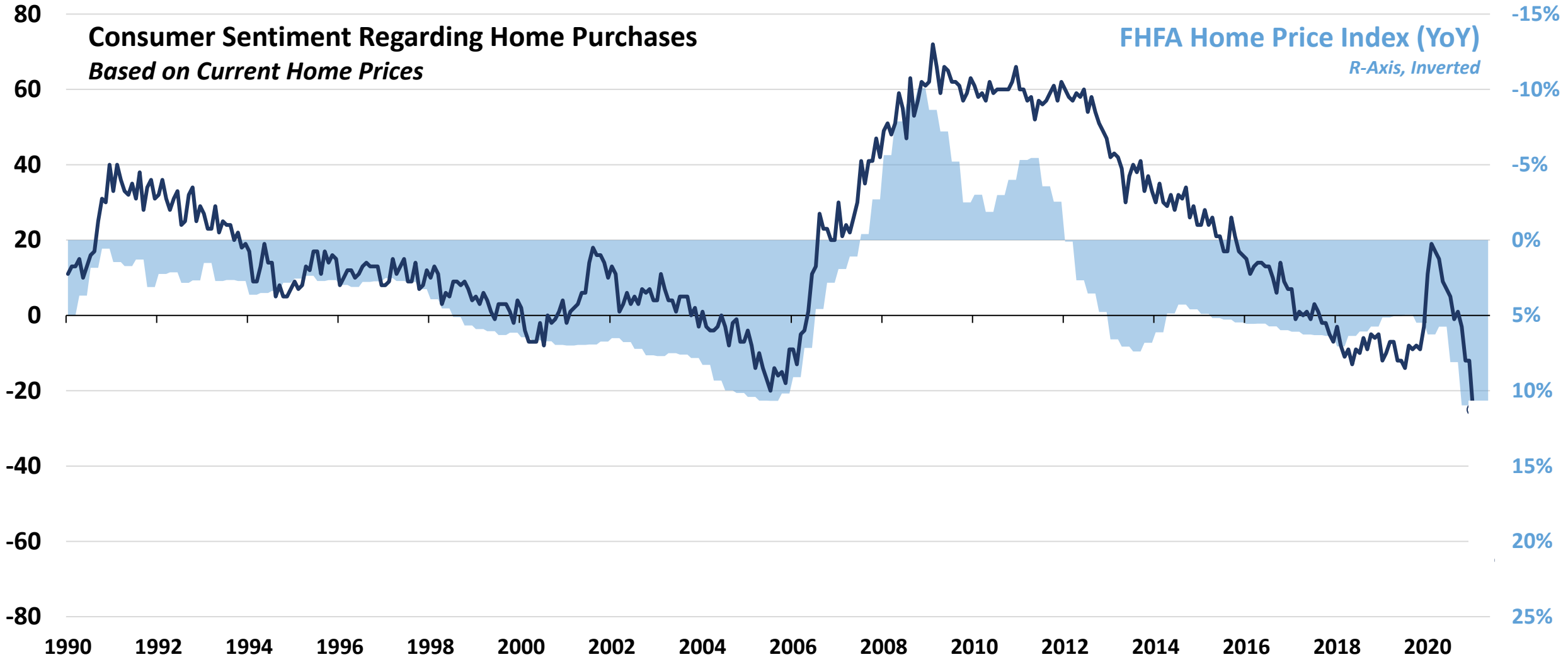
HOUSING IMBALANCE

HOUSING DYNAMICS TURBO-CHARGED BY RECORD-LOW MORTGAGE RATES AND INVENTORY LEVELS



HOME-BUYING SENTIMENT

CONSUMER SENTIMENT REGARDING HOME PRICES CONTINUES TO DECLINE IN JUNE



Sources: University of Michigan, Vining Sparks

AUTO IMBALANCE

AUTO SALES PLUNGE AS PRODUCTION HALTED AND INVENTORIES SHRINK TO RECORD-LOW

Semiconductor Chip Shortage

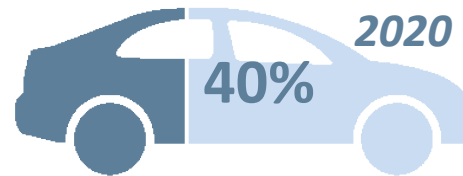
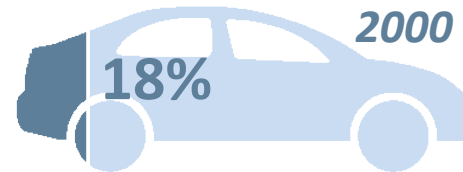
Factors Affecting Supply / Production Capacity

- Industry shifted from making basic chips (autos and electronics) to higher-margin chips (5G and servers)
 - Reduced scalability of manufacturing basic chips
- Pandemic-related disruptions shuttered production of semiconductors, including basic chips used heavily in autos
- Fire at Japan's Renesas Semiconductor Manufacturing Co. (March 19)
 - Renesas supplies two-thirds of all chips used by auto industry (Ford CEO)
 - Plant was running at 10% of capacity in April, Back up to 100% by end of May (Renesas Executive)
- Worst drought in 50 years in Taiwan, the world's largest chip producer
 - Chip production requires large amounts of water
 - Taiwan Semiconductor Manufacturing is world's largest producer of microcontrollers used in autos
- Severe February weather in Texas (snow) disrupted domestic production

Factors Affecting Demand

- Surge in demand following initial months of pandemic, fueled by consumer savings and additional stimulus
- Average age of U.S. vehicle fleet rose to record 12.1 years in 2020 (IHS Markit)

Electronics as % of Total Car Cost



Time to Produce Basic Chip

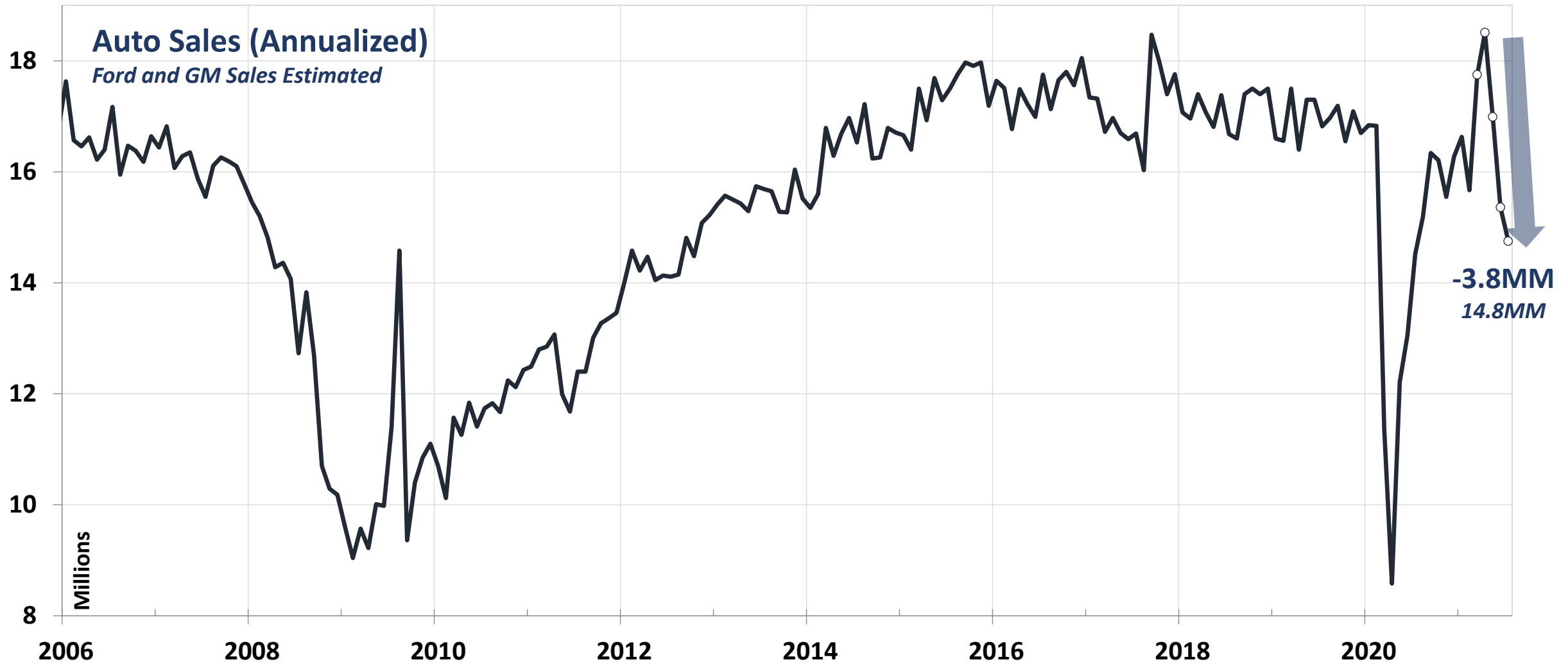
3
Months

Time to Build Fabrication Plant

2
Years

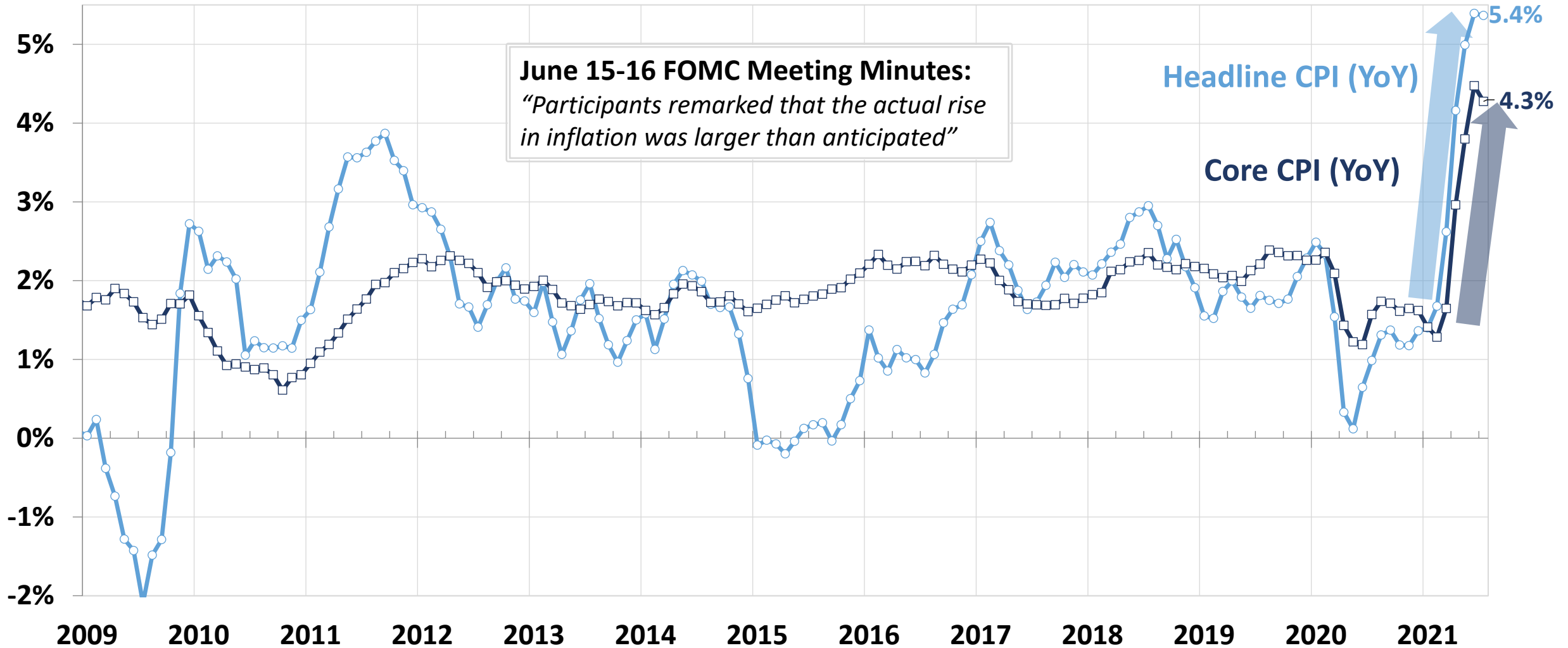
AUTO IMBALANCE

AUTO SALES PLUNGE AS PRODUCTION HALTED AND INVENTORIES SHRINK TO RECORD-LOW



CONSUMER PRICES JUMP

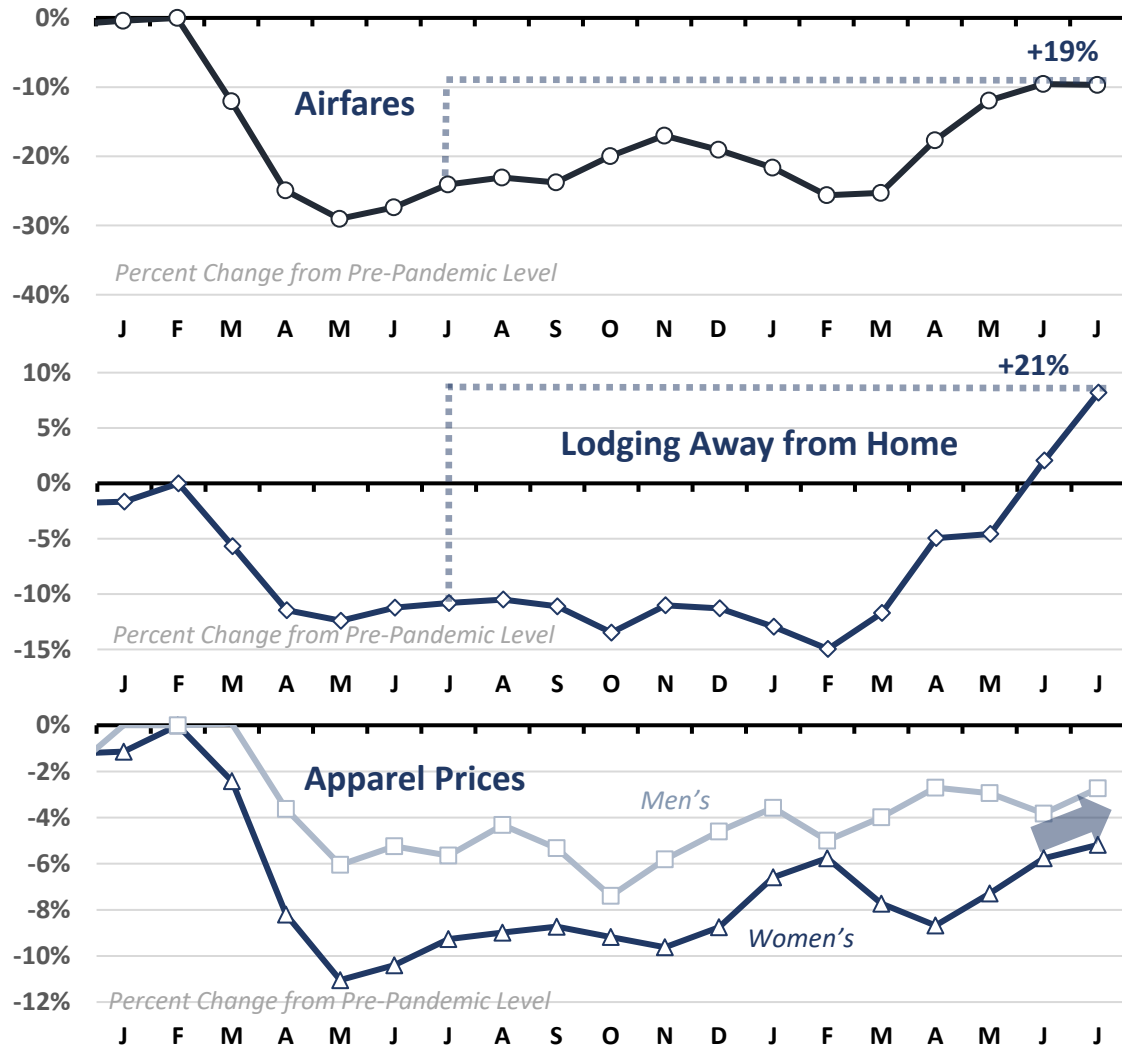
HEADLINE PRICES RISE MOST SINCE 2008 WHILE CORE PRICES JUMP MOST SINCE 1992



CPI INFLATION COMPONENTS

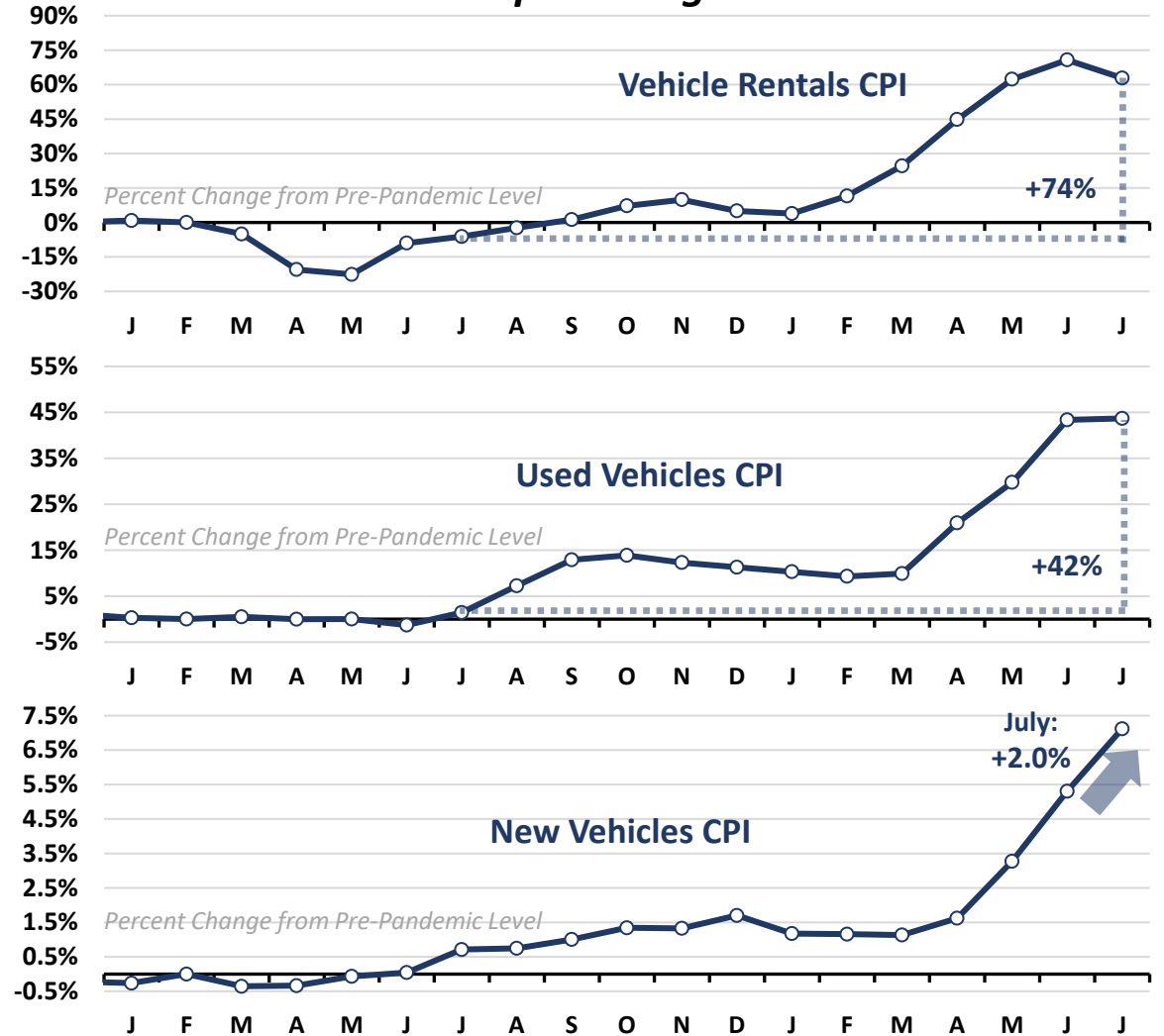
PANDEMIC RECOVERY AND CHIP SHORTAGE EXACERBATING FIRMER BROAD-BASED INFLATION

Pandemic Prices



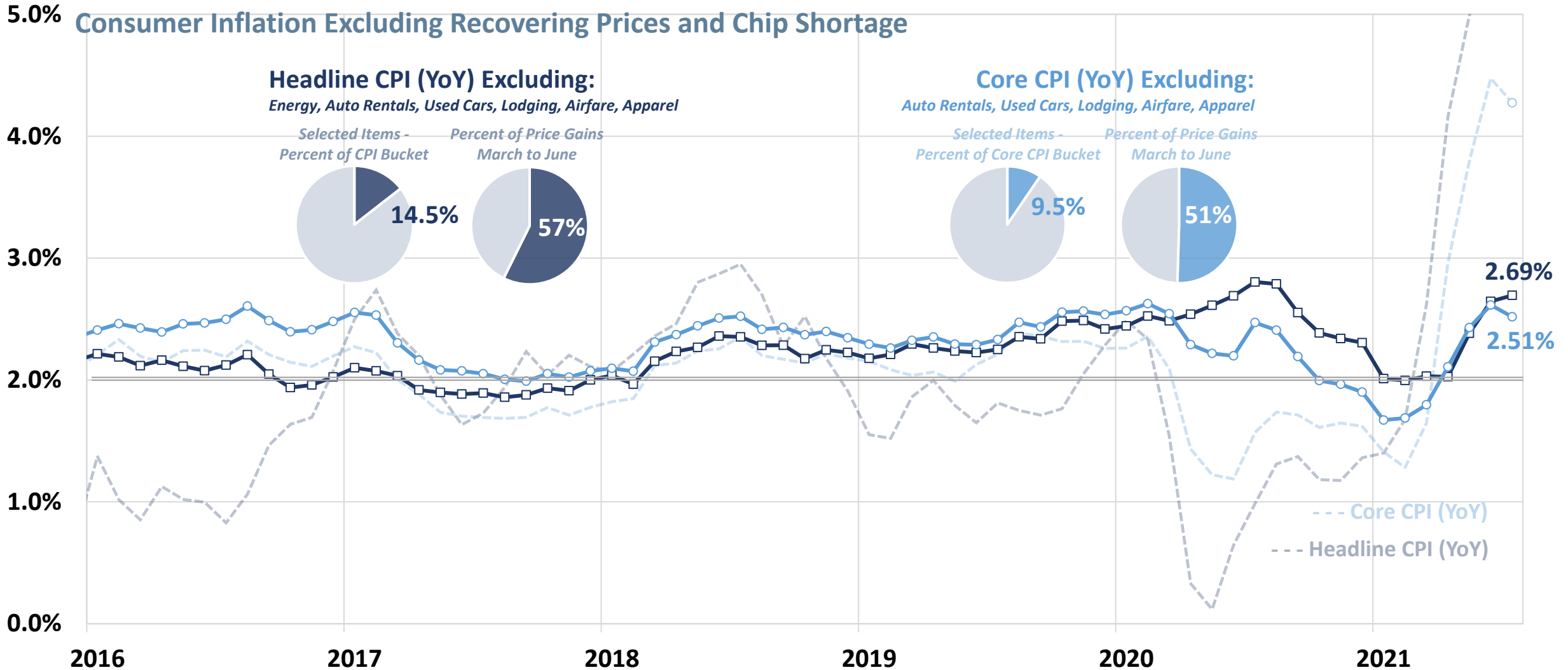
Sources: BLS, Vining Sparks

Chip Shortage



CPI INFLATION COMPONENTS

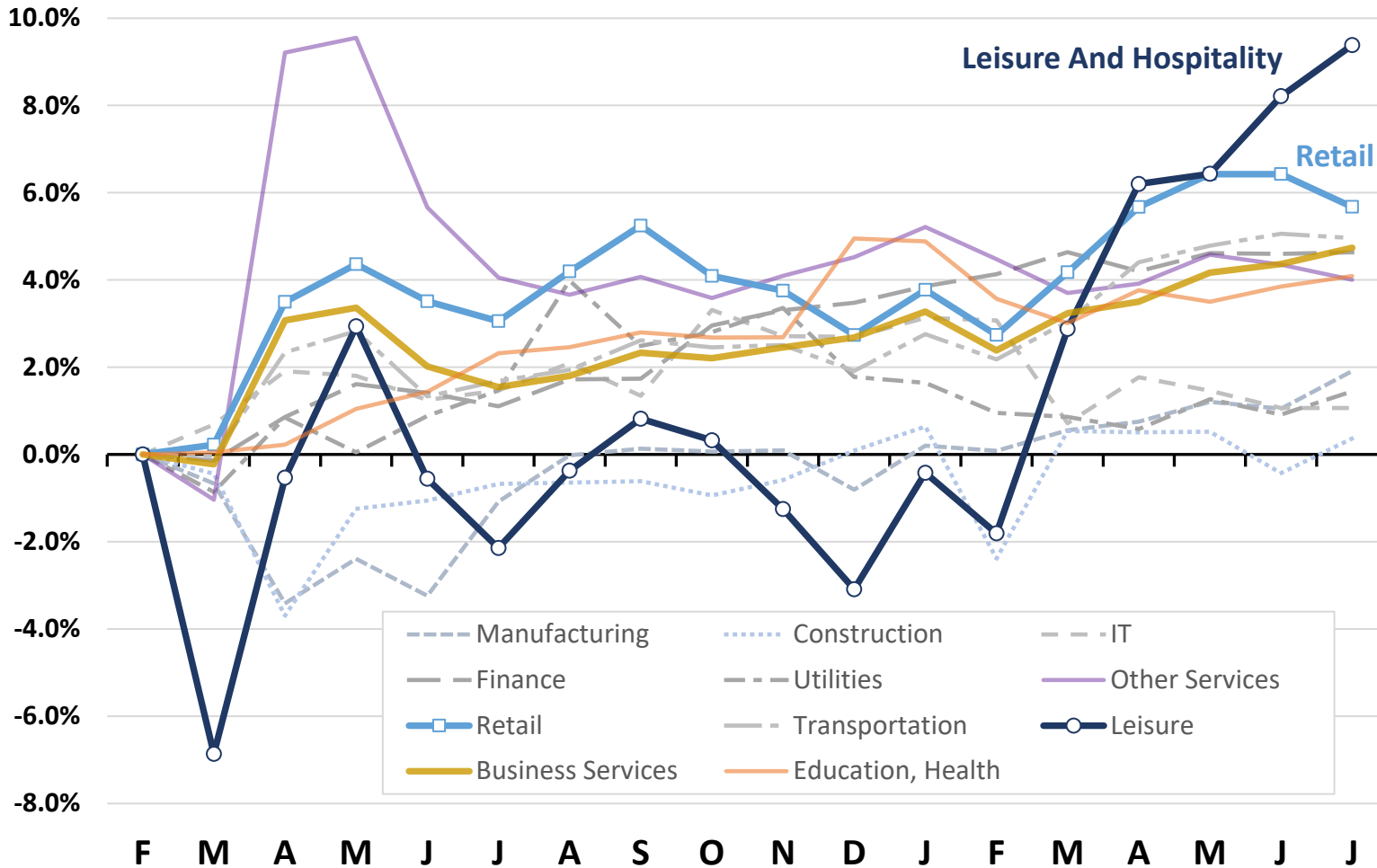
PANDEMIC RECOVERY AND CHIP SHORTAGE EXACERBATING INCREASE IN BROAD-BASED INFLATION



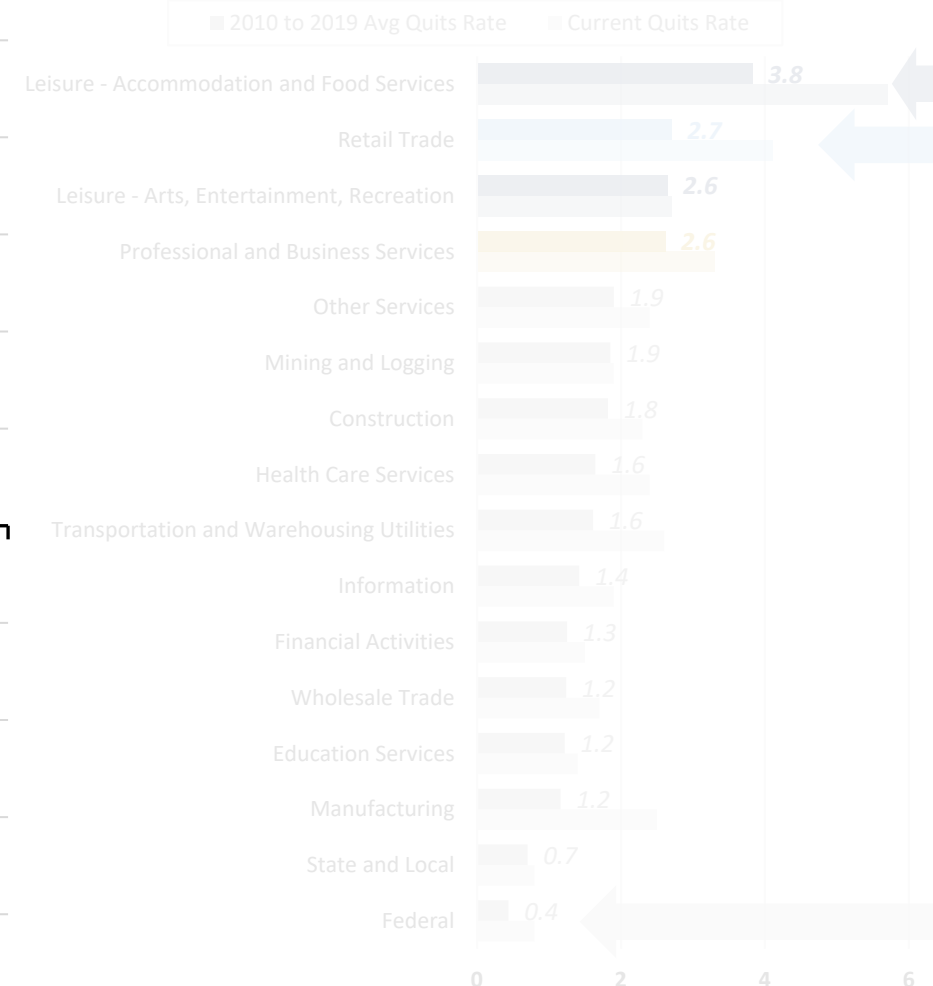
WAGE GROWTH

SECTORS SEEING HIGHEST WAGE GROWTH HAVE HISTORICALLY SEEN HIGHEST TURNOVER

Change in Total Weekly Earnings (Above or Below Pre-Virus Trend)



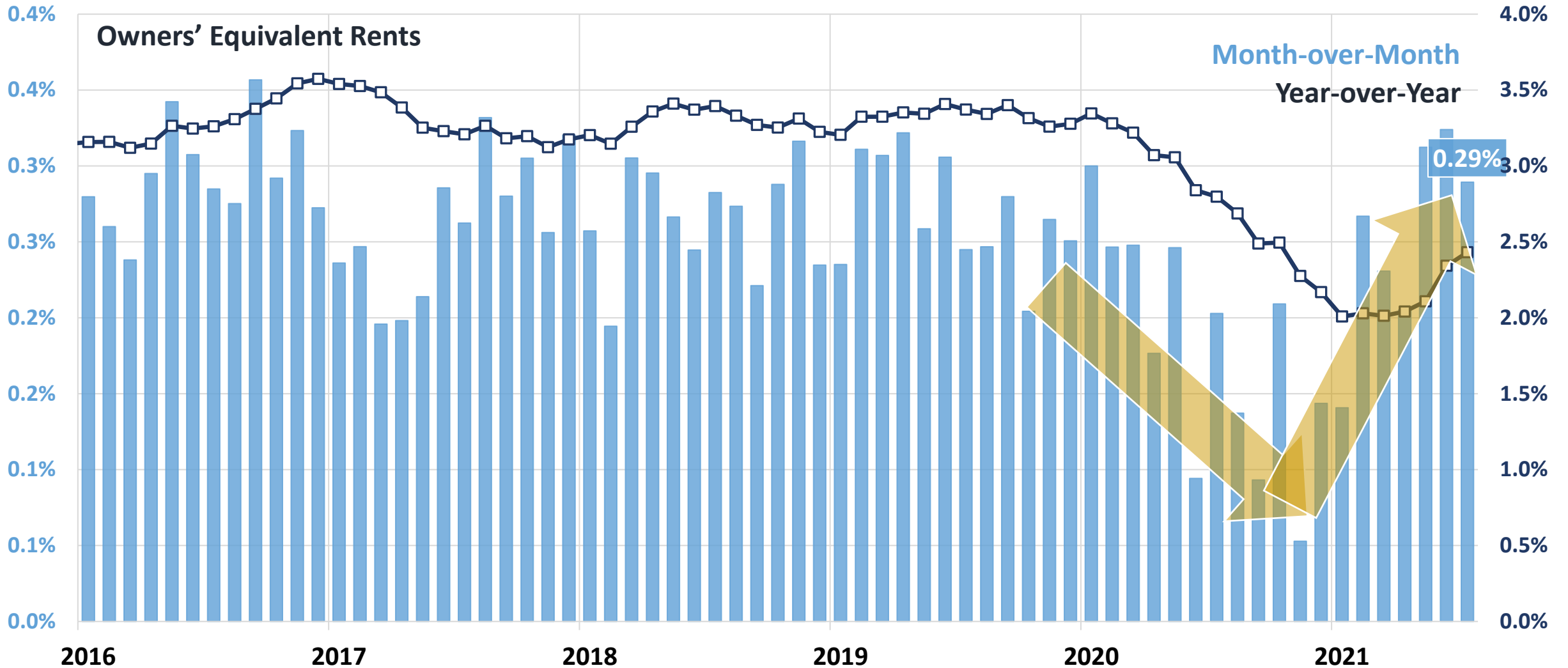
Quits Rate, by Sector



Sources: Bureau of Labor Statistics, Bloomberg, Vining Sparks

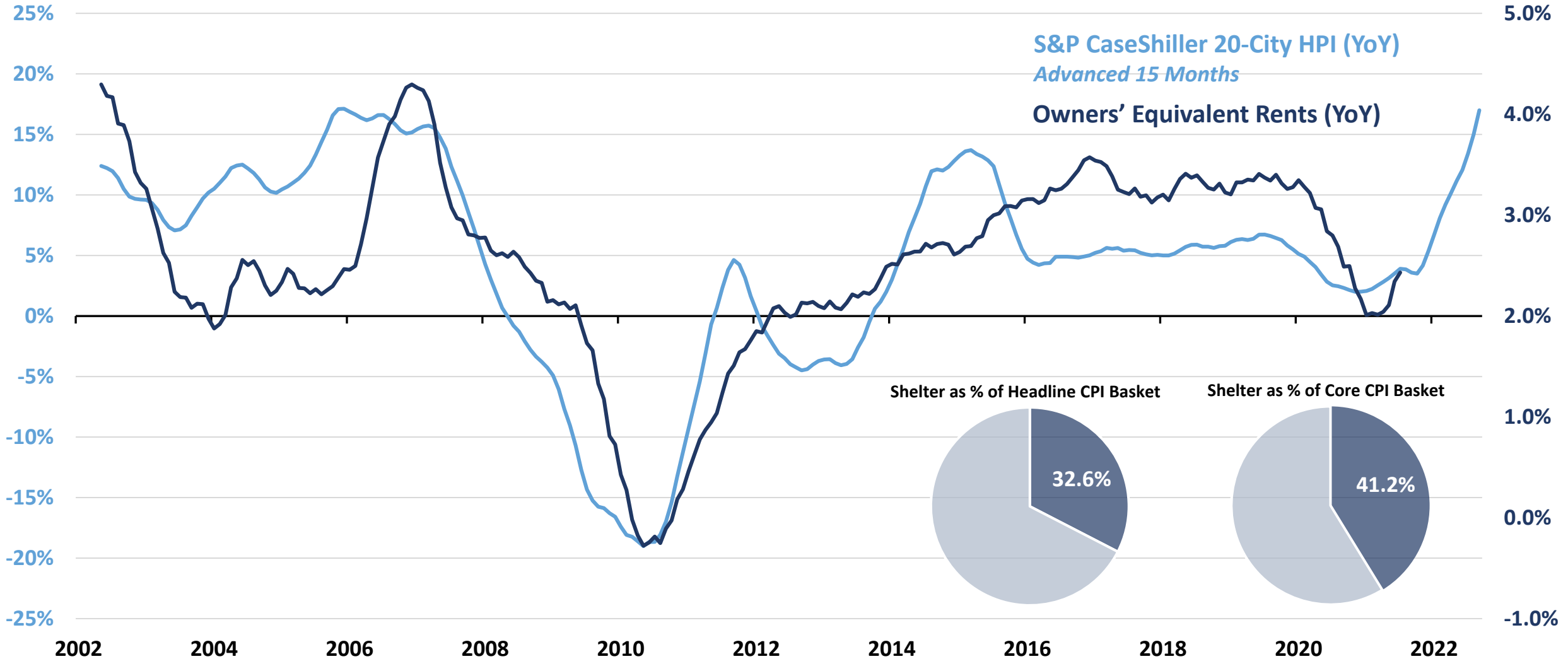
HOUSING INFLATION - RENTS VINING SPARKS

AFTER FALLING DURING PANDEMIC, OWNERS' EQUIVALENT RENTS NOW ON THE RISE AGAIN



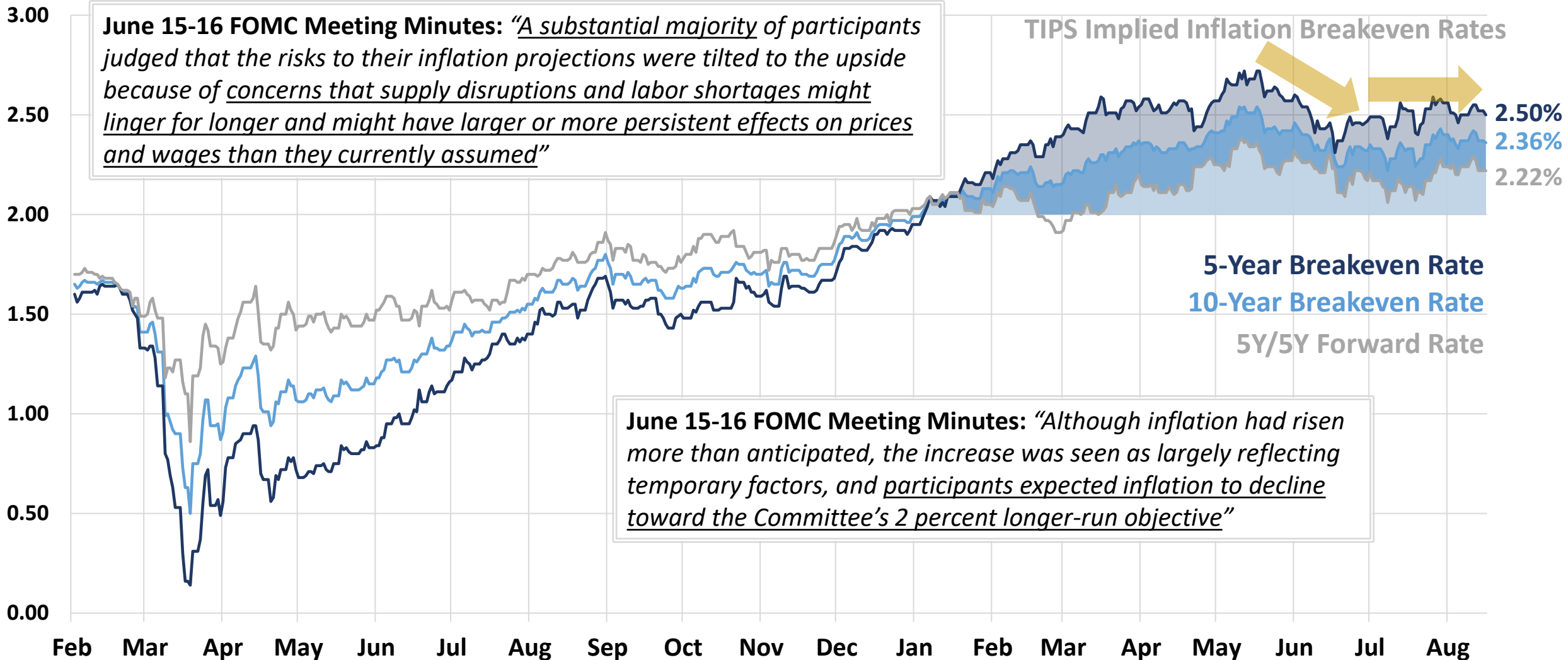
RISING RENT INFLATION

GAINS IN HOME PRICES PORTEND ADDITIONAL INFLATION PRESSURE FROM LARGEST CATEGORY



MARKET INFLATION EXPECTATIONS

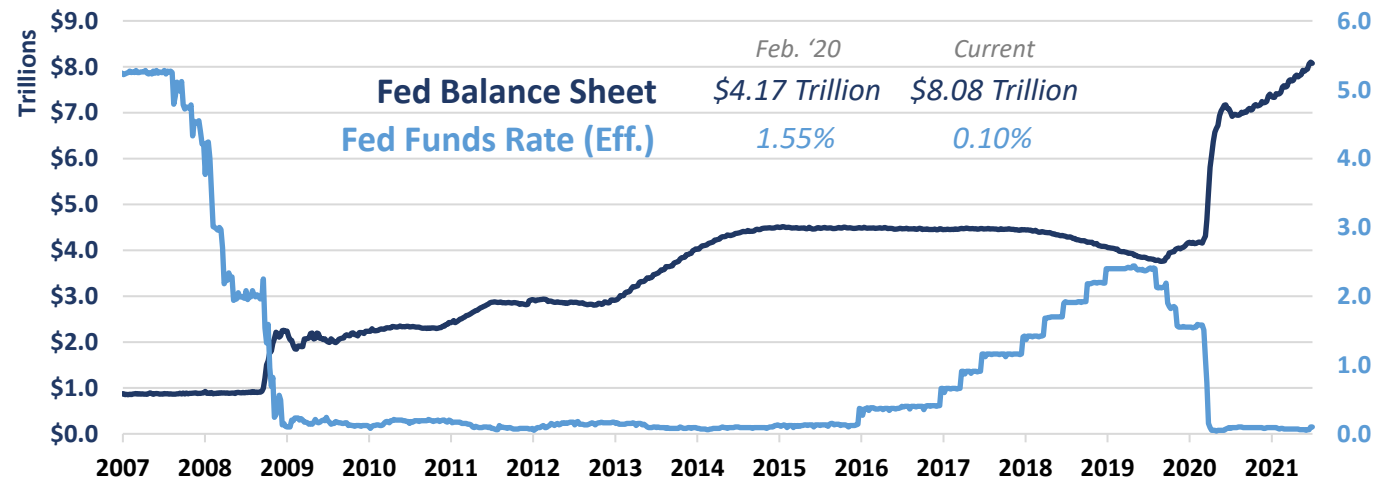
MARKET MEASURES SHOW INFLATION EXPECTATIONS ROLLING OVER AFTER MAY PEAK



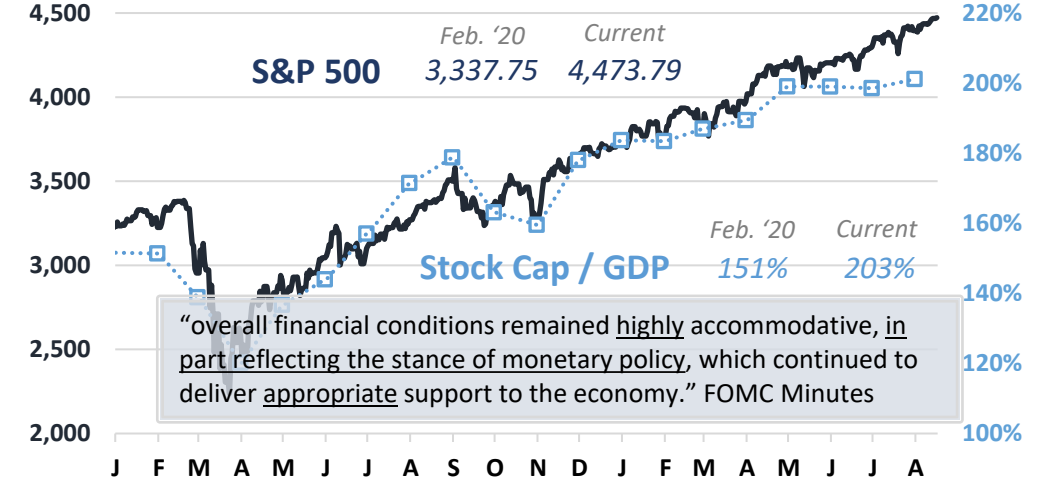
FED'S BALANCING ACT

DASHBOARD OF EMPLOYMENT, INFLATION, AND FINANCIAL STABILITY SHOWS A DELICATE BALANCING ACT

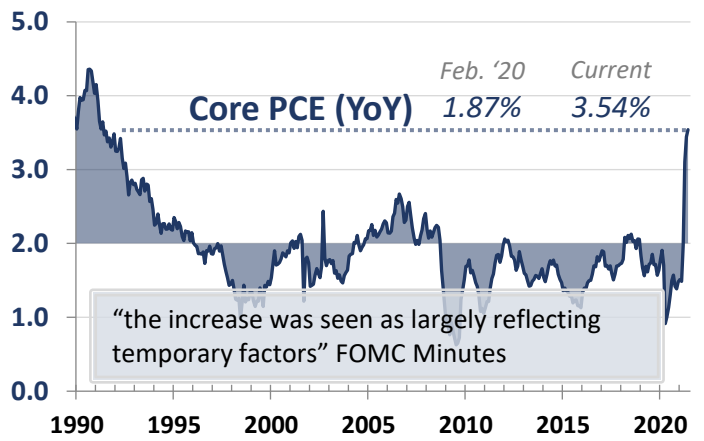
Monetary Policy Levers



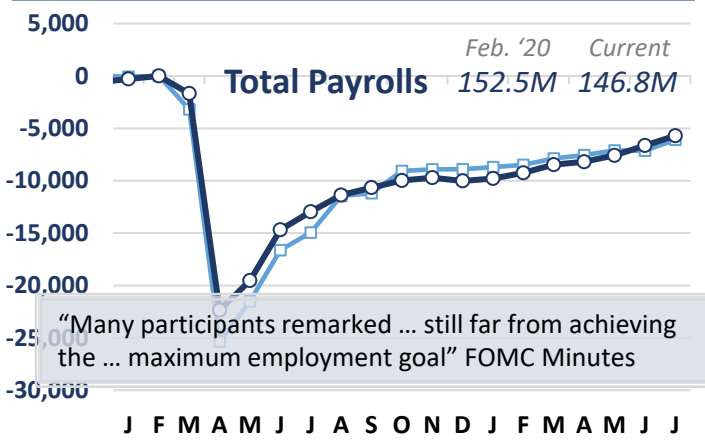
Asset Prices



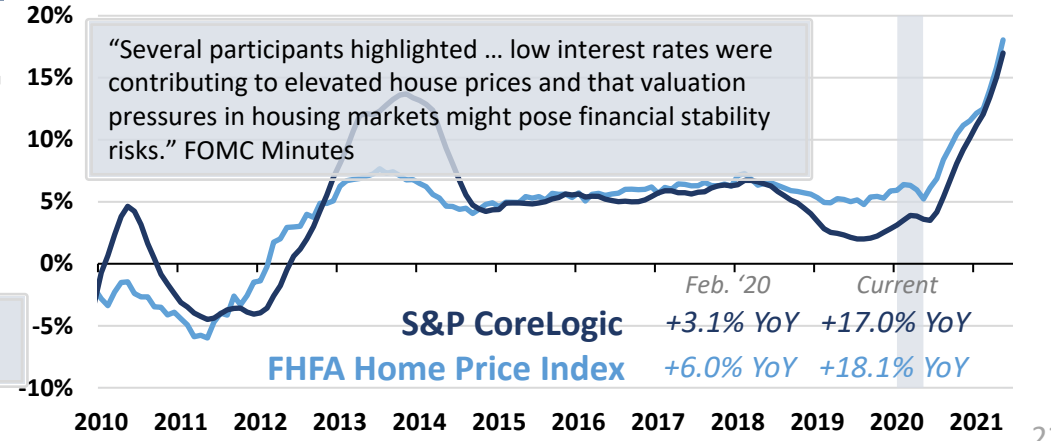
Inflation



Employment

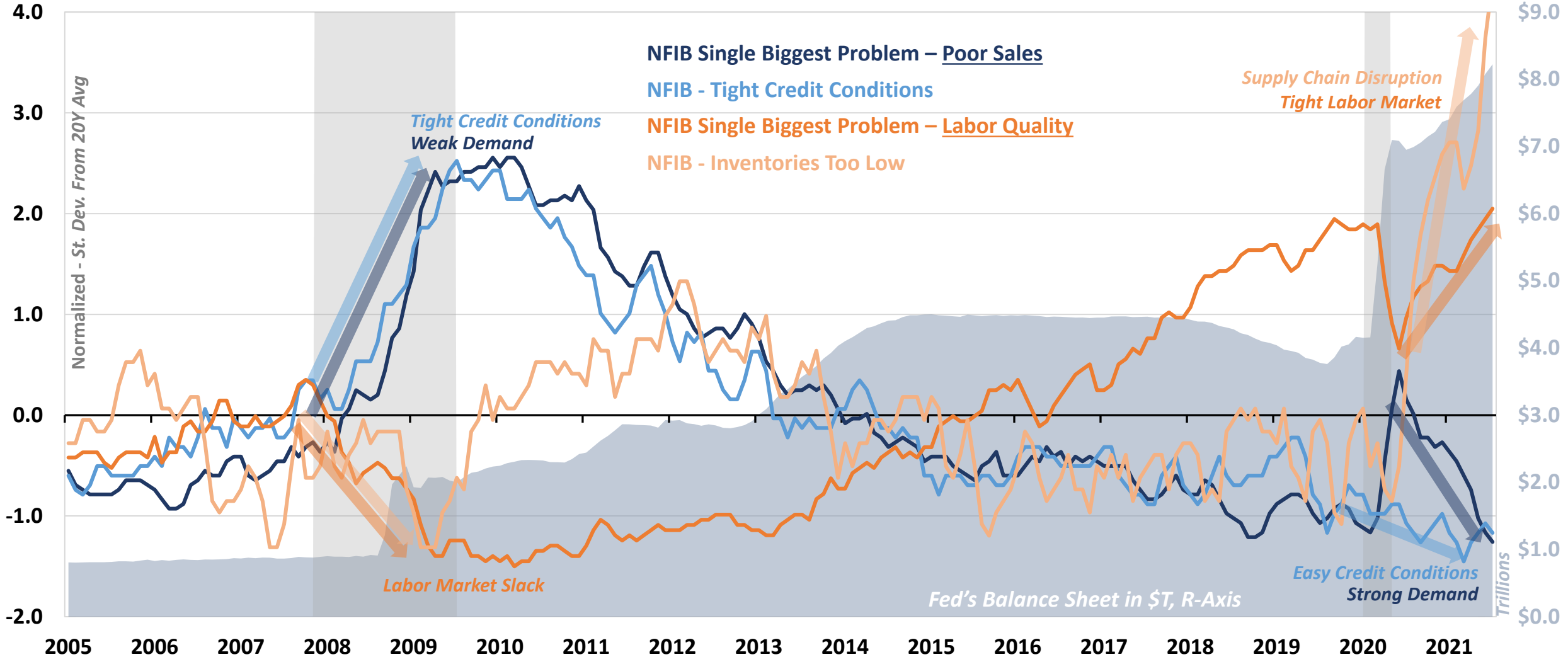


Home Prices



QE EFFICACY

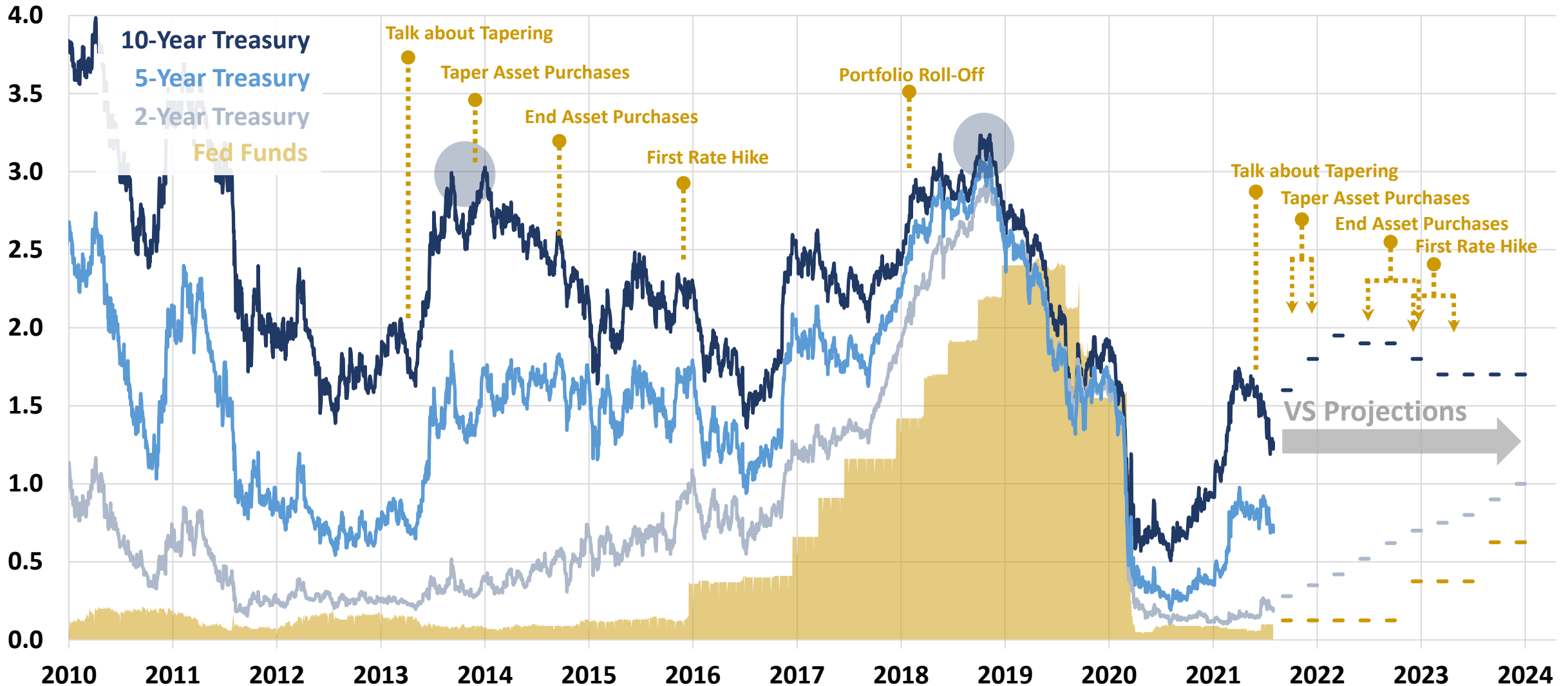
FED OFFICIALS ARE ON TRACK TO TAPER ASSET PURCHASES AS RECOVERY FACES SUPPLY, NOT DEMAND ISSUES



Sources: NFIB, Bloomberg, Vining Sparks

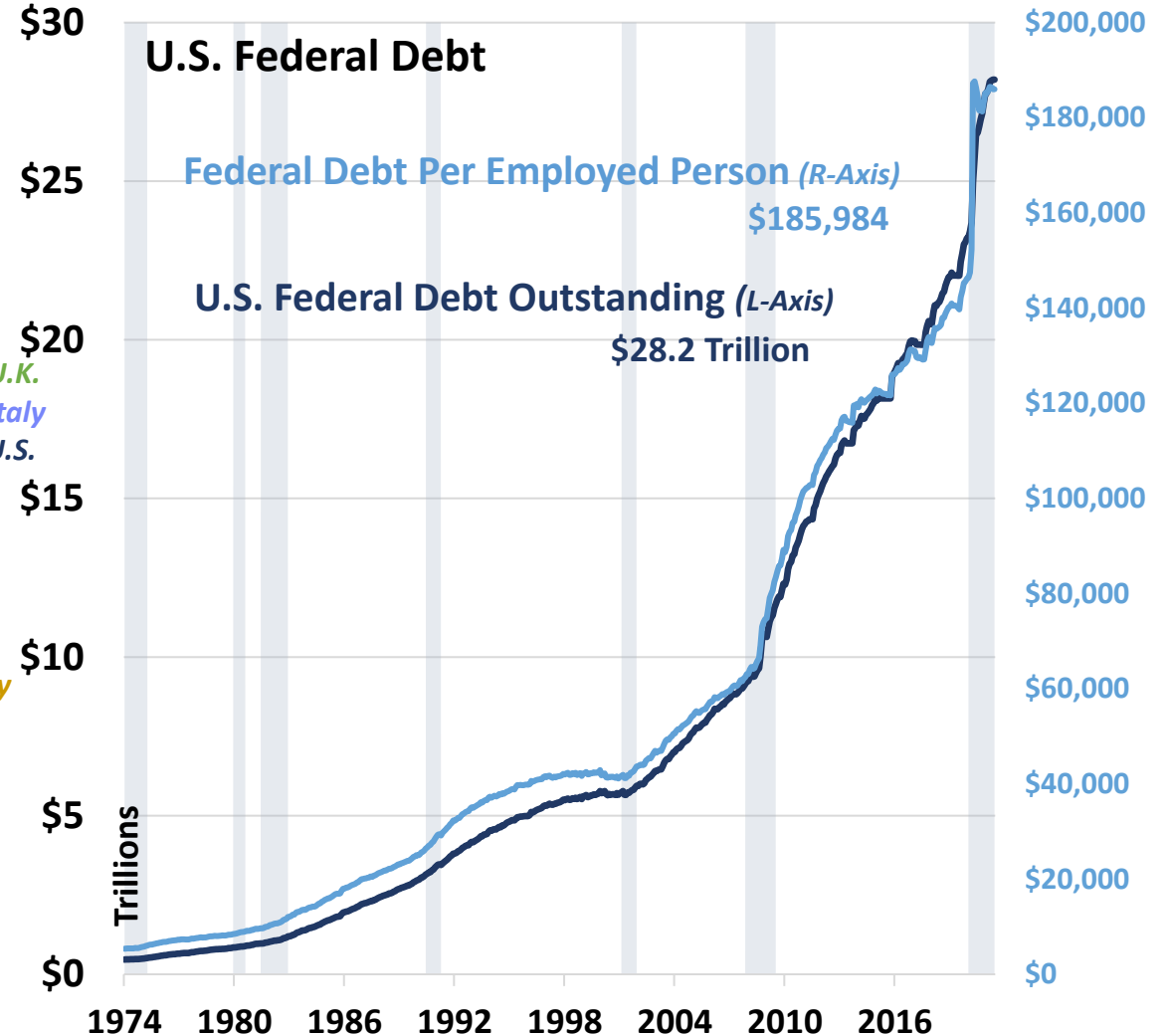
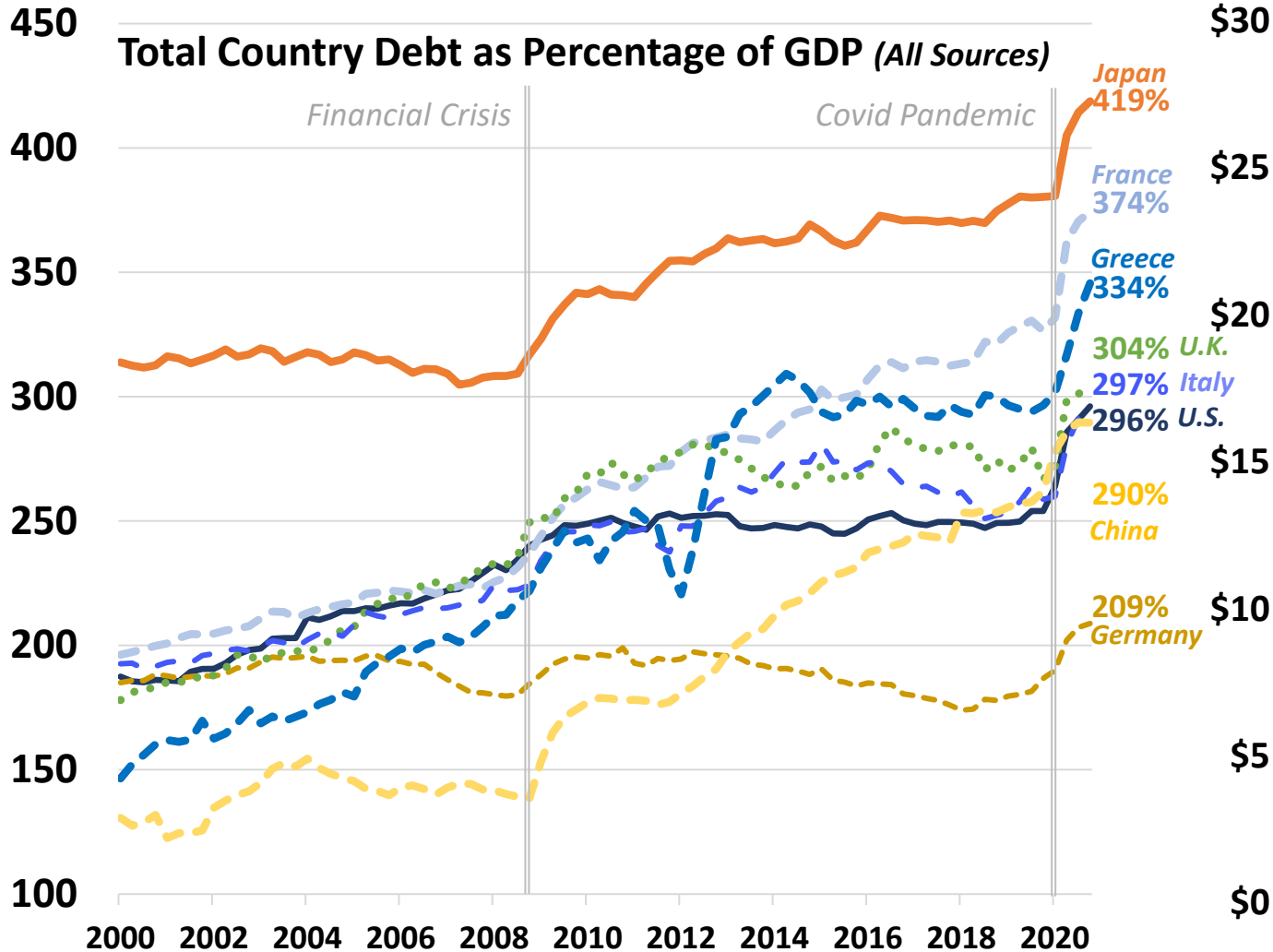
MONETARY POLICY PATH

EXPECT FASTER MONETARY POLICY CYCLE GIVEN FASTER NATURE OF THE ECONOMIC CYCLE



INTEREST-RATE SENSITIVITY

GROWTH OF GOVERNMENT AND CORPORATE DEBT LEVELS MAKE ECONOMIES MORE RATE-SENSITIVE



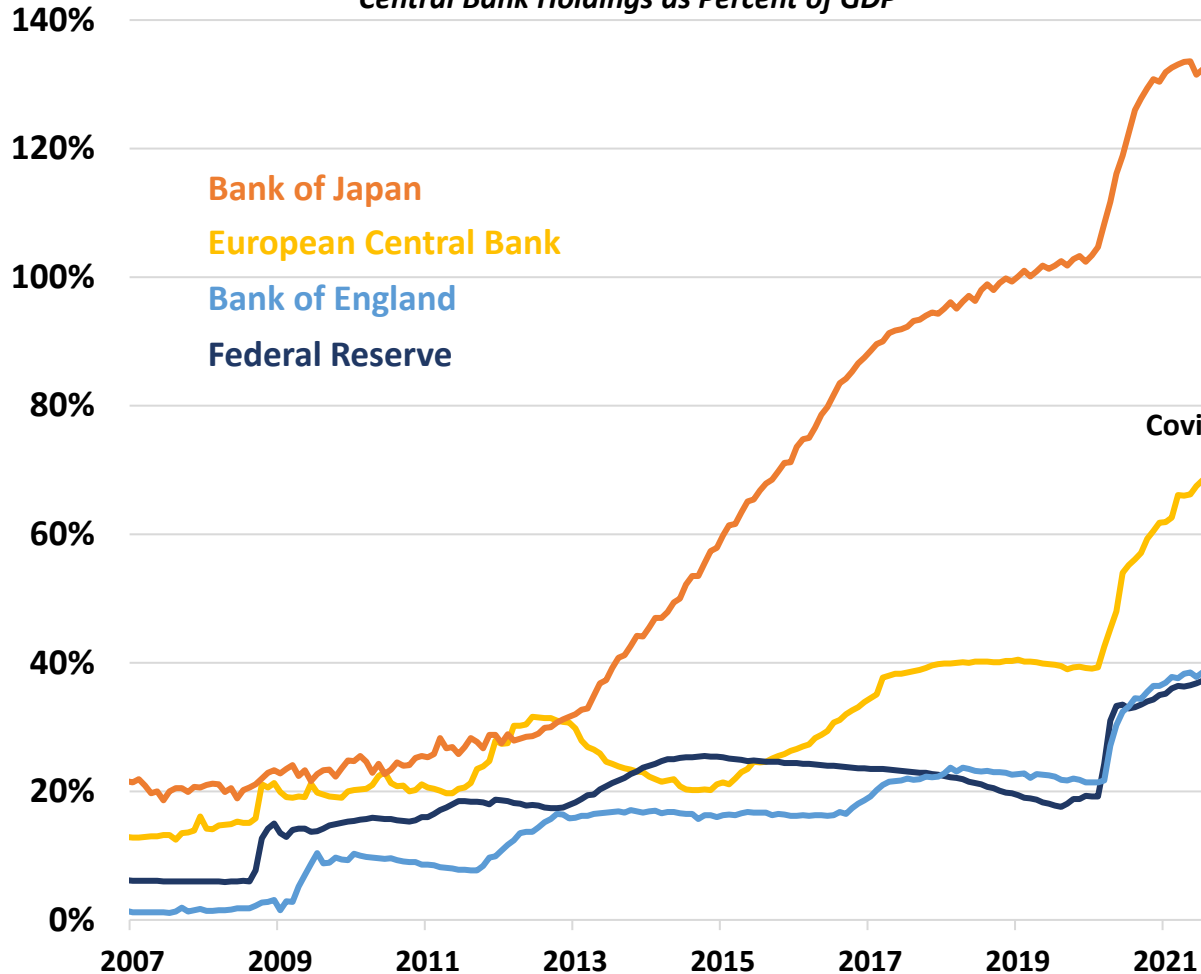
Sources: Bank for International Settlements, Federal Reserve, Bloomberg, BLS, Vining Sparks

QUANTITATIVE EASING ERA

LIMITED BY ZLB, G4 CENTRAL BANKS HAVE SHOWN GREATER PROPENSITY TO USE BALANCE SHEETS

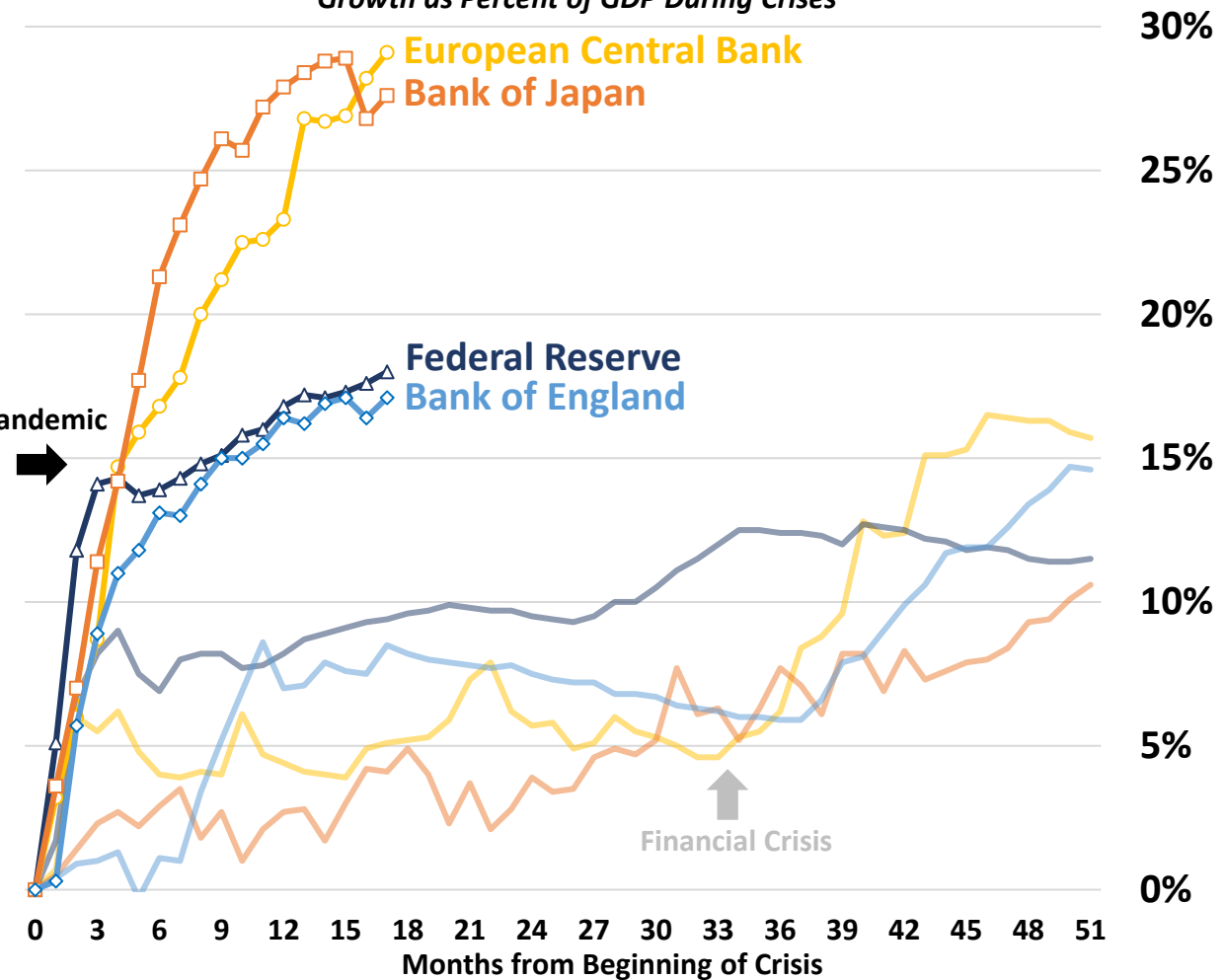
G4 Central Bank Balance Sheets

Central Bank Holdings as Percent of GDP



Quicker to Use Bank Balance Sheets

Growth as Percent of GDP During Crises



Sources: Federal Reserve, Bank of England, Bank of Japan, European Central Bank, Bloomberg, Vining Sparks

ECONOMIC OUTLOOK

IMBALANCES EVIDENT THROUGHOUT ECONOMY, RAISING RISK OF INFLATION; VIRUS REMAINS CHALLENGE

U.S. OVERVIEW

- \$10 trillion of fiscal and monetary policy support have pushed economy to brink of inflation
- Virus variants have become notable risk to the continuation of economic progress
- Supply chain disruptions proving longer-lasting and having significant negative effects
- Consumer continues to drive growth with pent-up savings and an improved health situation
- Resolution of imbalances in labor market and dysfunction in supply chain at critical point

CONSUMER

- Stimulus payments have sufficiently boosted national income to weather the pandemic storm
- Spending on services to help boost recovery as areas re-open; ongoing wave poses risk to timing
- Dysfunction persists in labor market with 5+ million payrolls still lost but 10+million job openings
- Savings rate remains elevated, expected to drop but unlikely to return to pre-virus levels quickly

MONETARY POLICY AND INTEREST RATES

- Tapering of asset purchases now appears imminent; focus to be on taper timing, pace, and composition
- Conditions expected to warrant consideration of rate hike in 2H22 or 2023
- Rate cycle expected to be more shallow than previous cycles given:
 - Significant amount of central bank intervention
 - Debt build-up domestically and globally

OTHER CONCERNS

- Growth of U.S. Debt
- Inflated Asset Valuations and Process of Removing Unprecedented Support
- Future Stimulus Cliff
- Geopolitical Risk Rising

BUSINESS OUTLOOK AND PRIVATE INVESTMENT

- Business investment in equipment has been exceptionally strong
- Outlook for investment in structures less pessimistic than earlier in pandemic
- Travel, leisure, hospitality, restaurants, etc... still recovering, potentially limited by variants
- Inventory rebuild expected to be significantly accretive to economic growth in coming quarters

RESIDENTIAL INVESTMENT

- Outlook for residential investment now neutral given sharp rise in prices
- Record-low rates and inventories colliding with higher construction costs pushing prices higher
- Rising interest rates would further reduce affordability
- Average outstanding mortgage rate today: 3.52%; Average new mortgage rate: 3.02%
- New construction pipeline remains contained

INFLATION OUTLOOK

- Inflation has jumped on base effects, pandemic rebound, and broader gains
- Supply chain disruptions are significant and resulting in higher prices, uncertain outlook regarding duration of disruptions
- Labor market dynamics resulting in rising wages, expected to be temporary
- Efficiencies of global trade expected to re-exert downward pressure on goods prices once supply chain disruptions ease, but risks to overshoot increasing

ECONOMIC PROJECTIONS

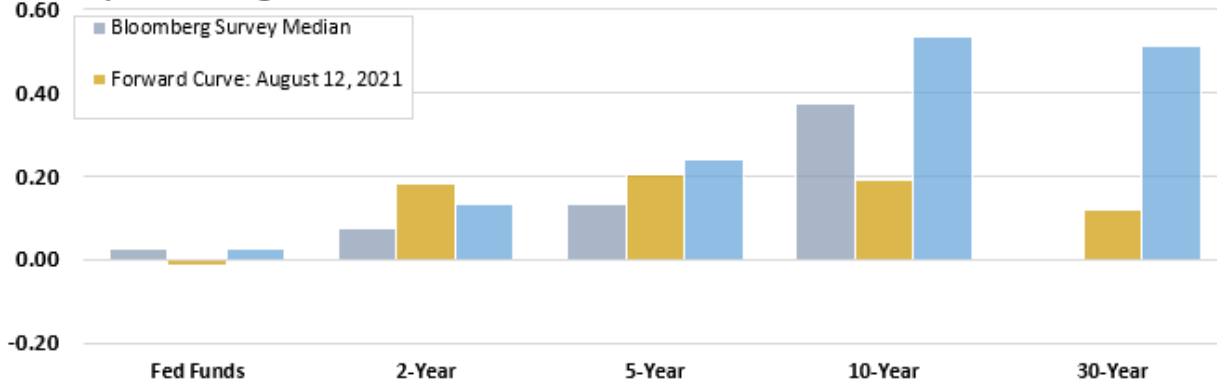
Vining Sparks Projections

August 2021

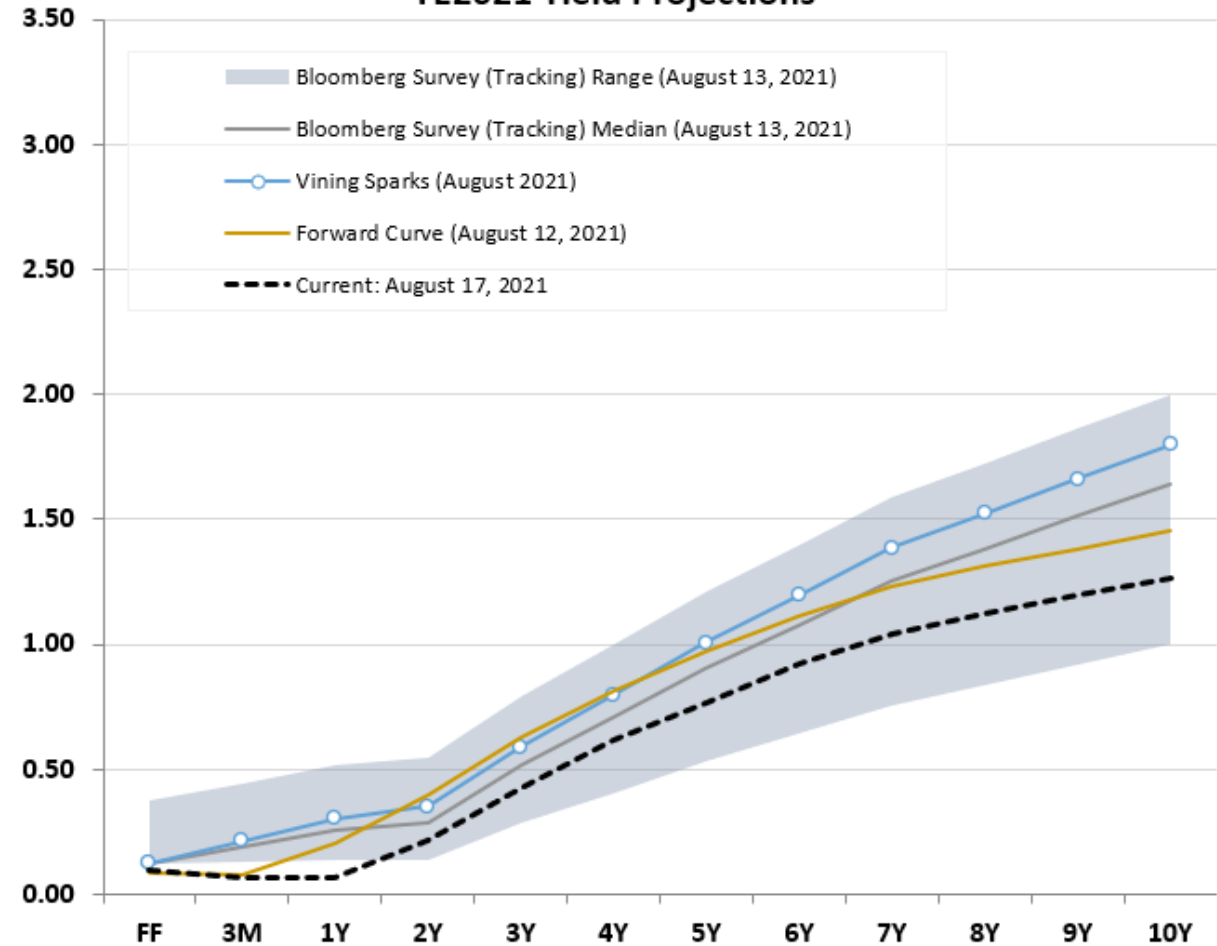
	Q321	Q421	Q122	Q222	Q322	Q422	2021	2022
<i>GDP (QoQ, SAAR)</i>	5.6	5.8	4.8	4.2	3.0	2.6	6.1	3.7
<i>Headline CPI (YoY)</i>	4.8	4.5	3.9	2.7	2.5	2.5	4.0	2.6
<i>Core PCE (YoY)</i>	3.1	3.2	3.0	2.4	2.1	2.1	2.7	2.3
<i>Unemployment Rate</i>	5.2	5.0	4.8	4.5	4.2	4.1	5.4	4.4
<i>Nonfarm Payrolls (Monthly)</i>	1000	500	350	250	220	160	550	250

	Q321	Q421	Q122	Q222	Q322	Q422	Q123	Q223
<i>Fed Funds Target</i>	0.13	0.13	0.13	0.13	0.13	0.38	0.38	0.63
<i>2-Year Treasury Yield</i>	0.28	0.35	0.42	0.52	0.62	0.70	0.75	0.80
<i>10-Year Treasury Yield</i>	1.60	1.80	1.95	1.90	1.90	1.80	1.70	1.70
<i>30-Year Treasury Yield</i>	2.20	2.44	2.61	2.51	2.48	2.33	2.19	2.17
<i>Prime Rate</i>	3.25	3.25	3.25	3.25	3.25	3.50	3.50	3.75
<i>30-Year Mortgage Rate</i>	3.30	3.65	3.85	3.85	3.90	3.80	3.70	3.70

Expected Change from Current to Year-End 2021



YE2021 Yield Projections



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