

About Beacon Economics

Our accurate, insightful, and empirically-based analysis drives informed decisions about growth, investment, revenue, and policy. We deliver energetic and engaging forecasts that have drawn audiences for over a decade. Let us guide you into the future! We first built our reputation by being one of the few organizations to stand against the tide and correctly forecast the 'Great Recession'. We continue that commitment to accuracy and empirical excellence every day.

Leveraging unique proprietary models, vast databases, proven methodologies, and sophisticated data processing, we equip our clients with the intel needed to understand today's on-the-ground realities and to make the best business and policy decisions possible.

As part of our commitment to spread accurate, balanced information, Beacon publishes a series of free monthly and quarterly analyses that deliver the latest data and commentary on the direction of the economy, employment, income, real estate markets, consumer and business spending, and more.

Our Clients:



Sustainable Growth & Development

Beacon has deep in-house expertise conducting industry and policy analysis on vital sustainability topics including green innovation, technology and workforce development, long-term economic development, and industry sector strategies.

Housing, Land Use, & Real Estate Advisory

Beacon leverages long- and short-range economic models to identify growth and investment opportunities and advance solutions to housing and real estate challenges across urban, suburban, and rural landscapes.

Economic & Revenue Forecasting

Beacon is a recognized leader in delivering highly accurate economic, fiscal, and revenue outlooks that inform public and private sector decision making. Banks, governments, public utilities, and major industries rely on Beacon forecasts.

Litigation Support & Expert Testimony

Working for both plaintiffs and defendants, we bring our reputation for analytical excellence and objectivity to bear on every client's case.

Economic, Fiscal, & Social Impact Analysis

Beacon evaluates the economic impact and value of universities, events, public policies, and infrastructure/real estate development. Our analyses have provided support and justification for proposed legislation, construction projects, sustainable power projects, and large-scale events.

Regional & Sub-regional Analysis

Beacon conducts analysis at an international, national, state, county, and city level – even down to the zip code. We identify highly specific trends occurring within communities in Employment, Industry, Real Estate, and Consumption, and deliver actionable steps that capitalize on local strengths and address local challenges.

"The professional and technically skilled staff at Beacon Economics delivered an excellent product that has been key in our District's long term planning and fiscal health."
~ East Bay Regional Parks District





The Godot Recession... *and the existential crisis of the Fed*

Focus on Arizona, April 2023

Christopher Thornberg, PhD
Founding Partner, Beacon Economics



2022: Recession!



Renters Hit Breaking Point in a Sudden Reversal for Landlords

Affordability pressures and inflation are holding back tenants, forcing landlords to ease off big increases.

Jamie Dimon Says JPMorgan Is Bracing Itself for Economic 'Hurricane'

- Says Fed actions, war in Europe create unprecedented challenge
- Still too soon to say how intense the storm will be, CEO says

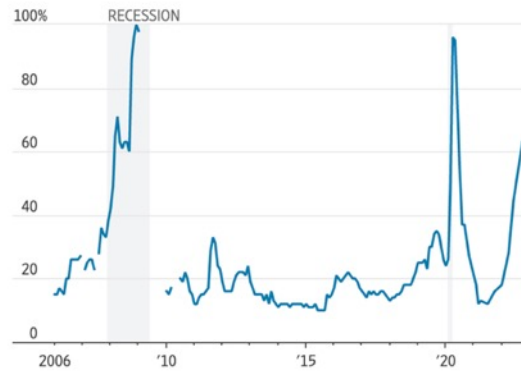
There's a 98% chance of a global recession, research firm warns



By Matt Egan, CNN Business

Updated 11:27 AM EDT, Wed September 28, 2022

Probability the U.S. is in a recession in next 12 months including today



Note: Gaps indicate question not asked or data unavailable.
Source: Wall Street Journal surveys of economists

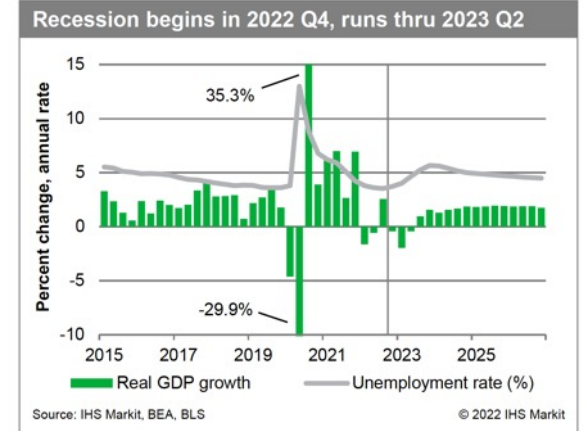
The housing market just slid into a full-blown correction, says top economist Mark Zandi

BY LANCE LAMBERT
May 27, 2022 9:36 AM PDT

BUSINESS

Stocks entered a bear market. Here's what that means

May 20, 2022 · 3:40 PM ET



Source: IHS Markit, BEA, BLS © 2022 IHS Markit

More Americans Are Going Hungry, and It Costs More to Feed Them

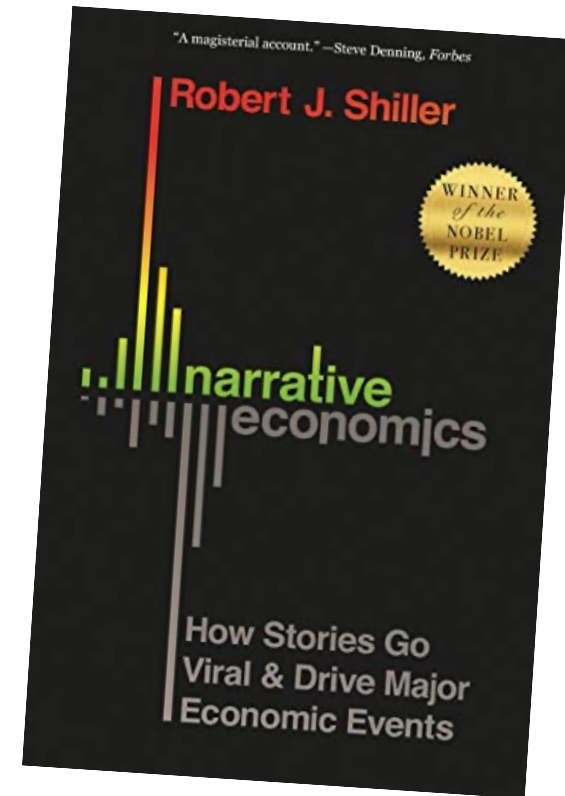
The director of the nation's largest network of food banks is seeing support dwindle as need rises: "You're in the middle of a battle, and people are leaving the field."

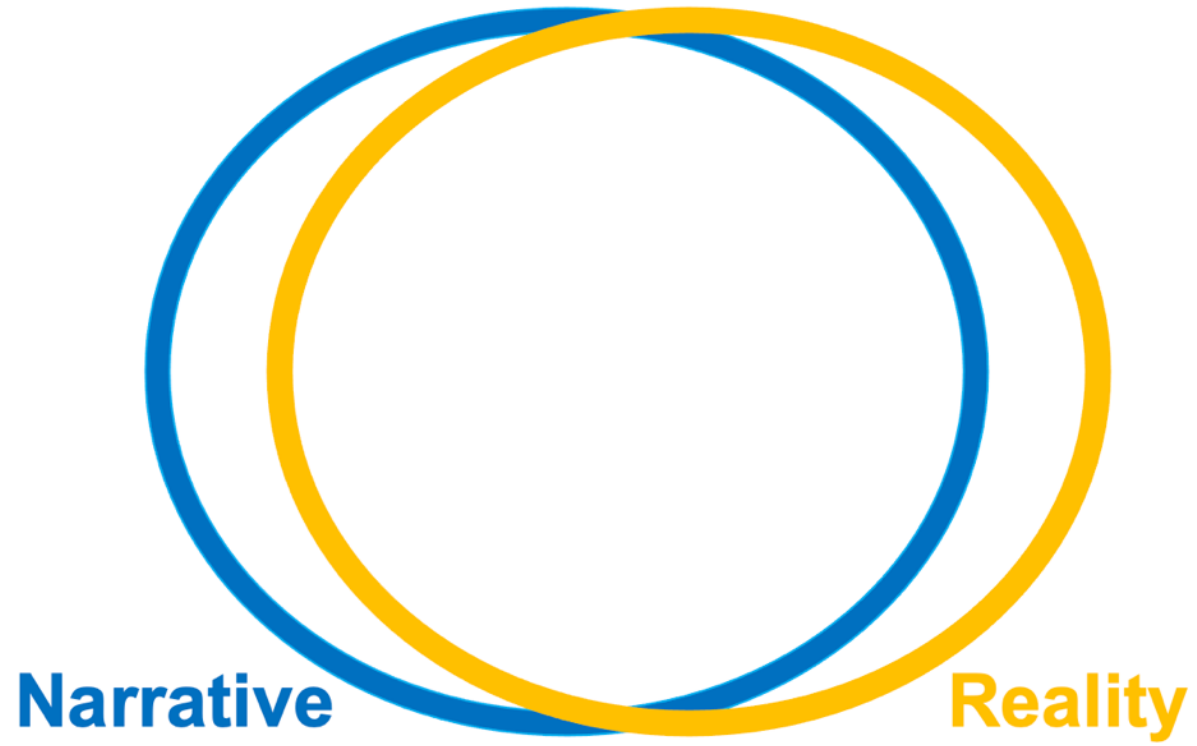
Beware the Narrative!

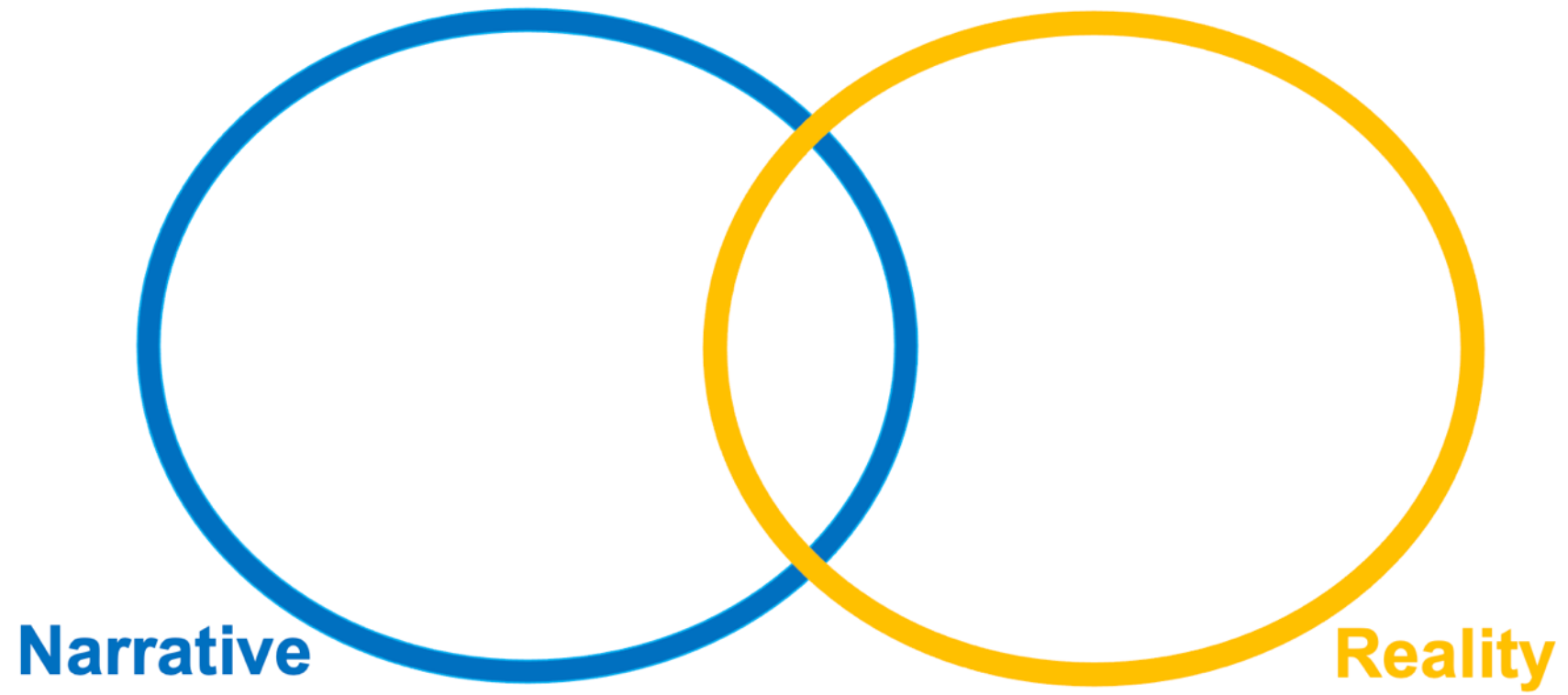


“Trying to understand major economic events by looking only at data ... runs the risk of missing the underlying motivations for change. Doing so is like trying to understand a religious awakening by looking at the cost of printing religious tracts.”

— Robert J. Shiller, [Narrative Economics: How Stories Go Viral and Drive Major Economic Events](#)



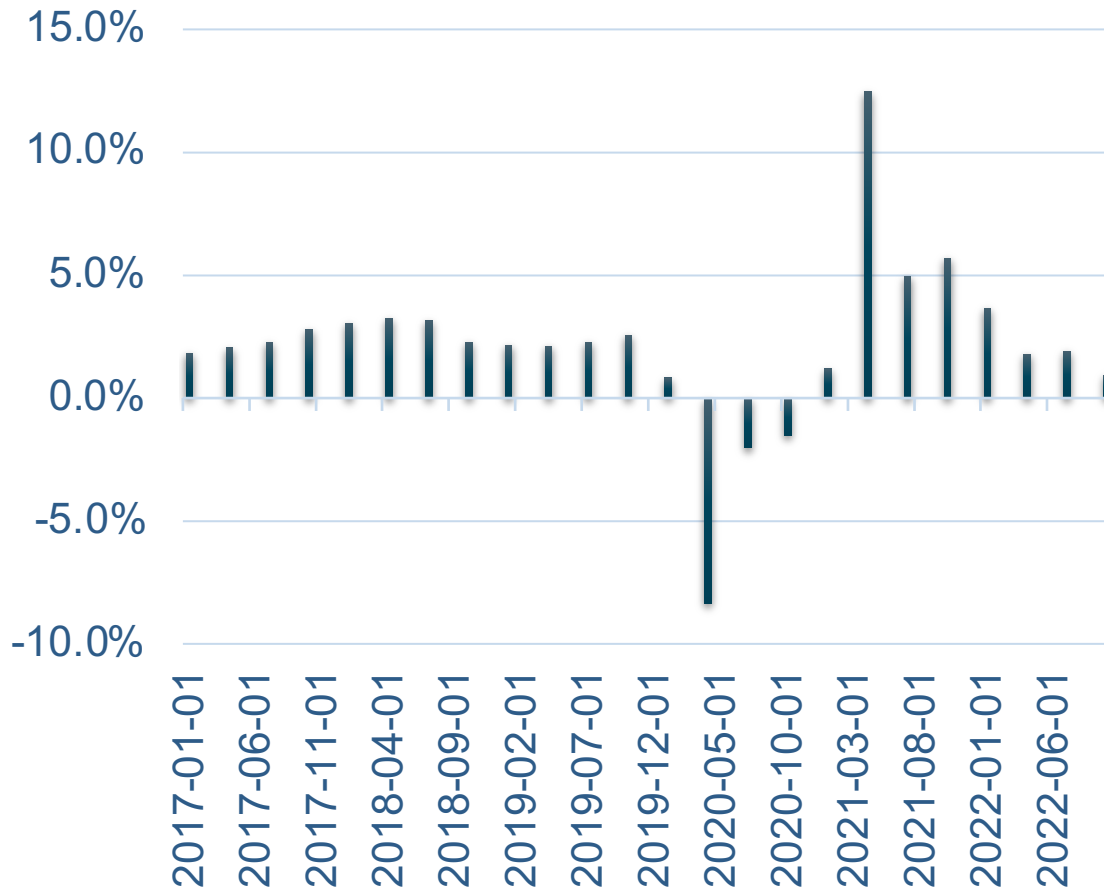




Mixed Economic Signals to start 2023

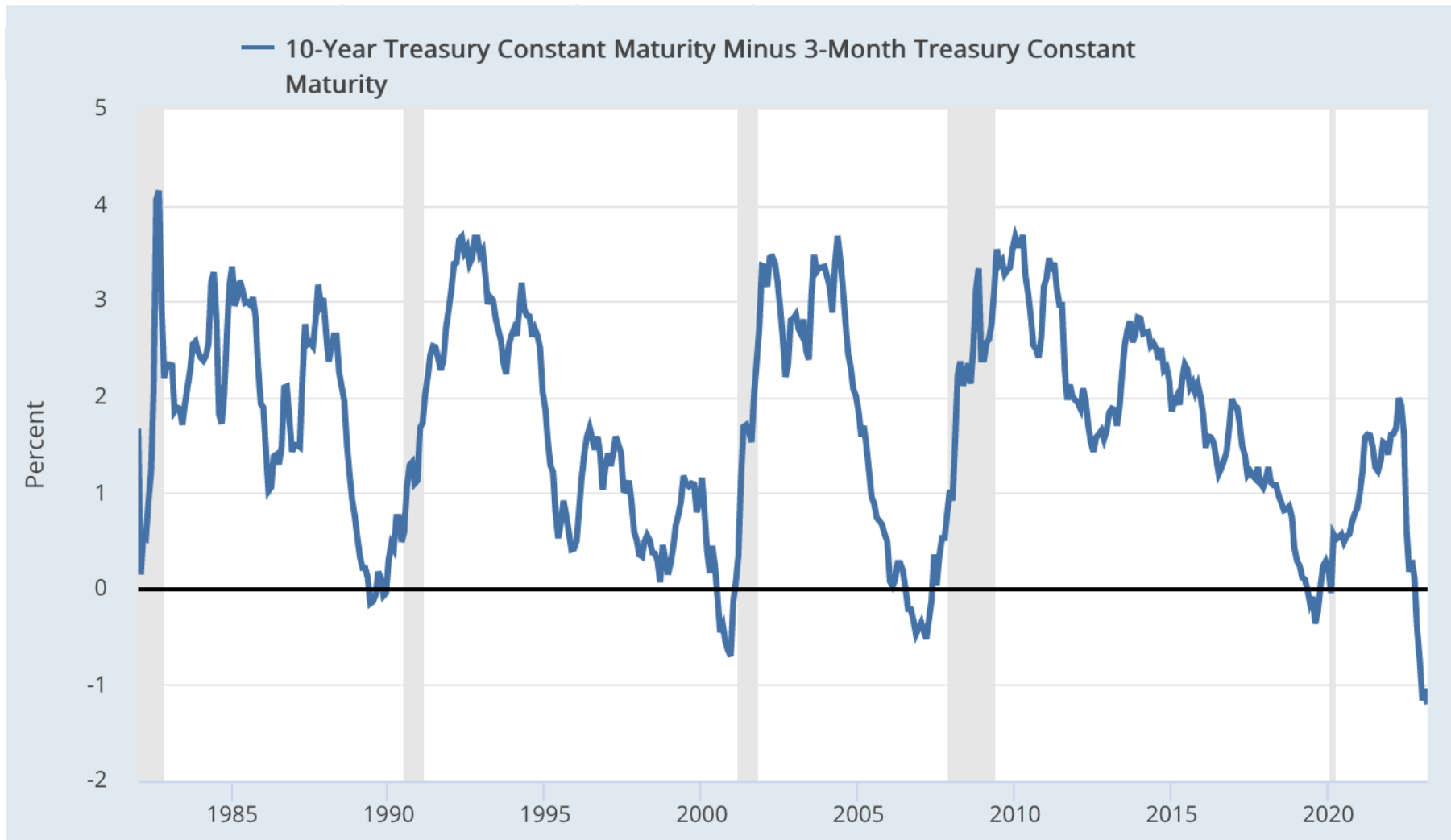


Real GDP Growth (Y-o-Y)



U of Mich: Consumer Sentiment





Some questions to keep you up tonight

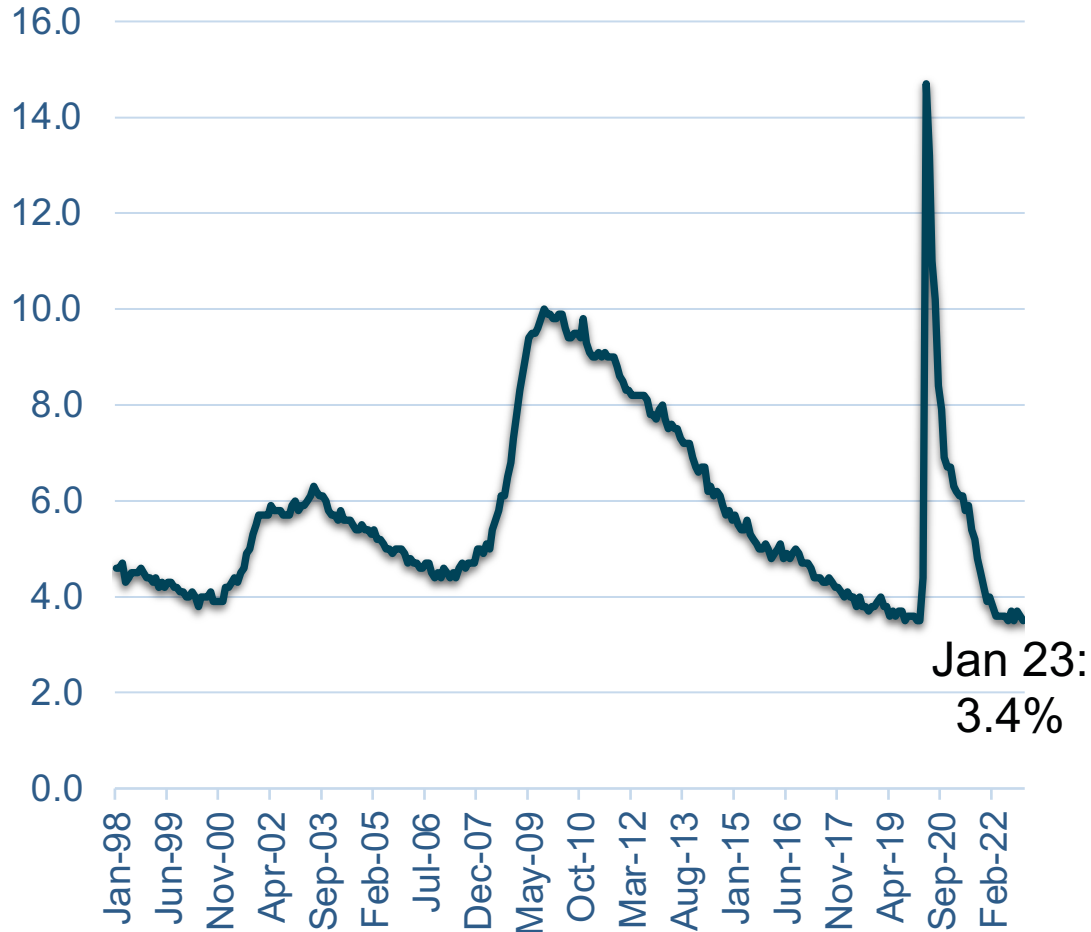


- Does free will truly exist?
- Why is there a "d" in "fridge" but not in "refrigerator"?
- Does expecting the unexpected make the unexpected the expected?
- If the Fed inverts the yield curve and the economy is otherwise fine, will it cause a recession?

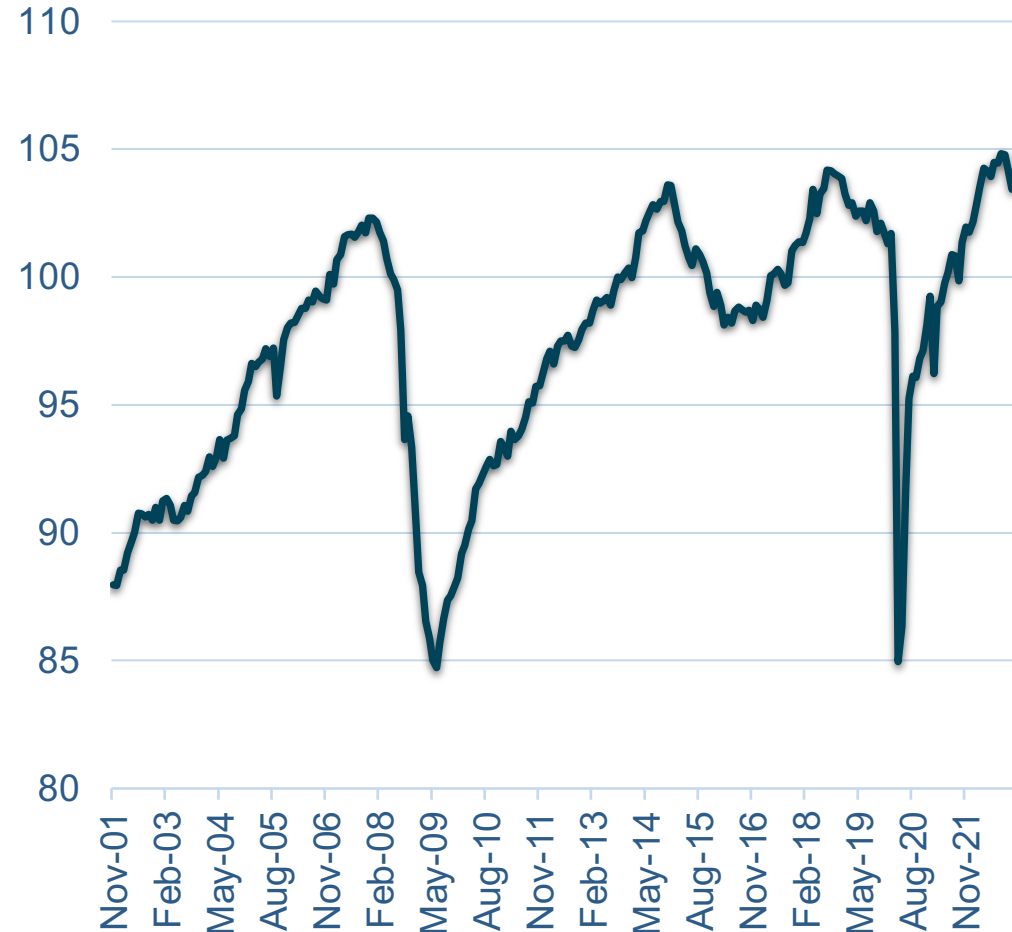
The US is clearly not in a recession now



Unemployment Rate



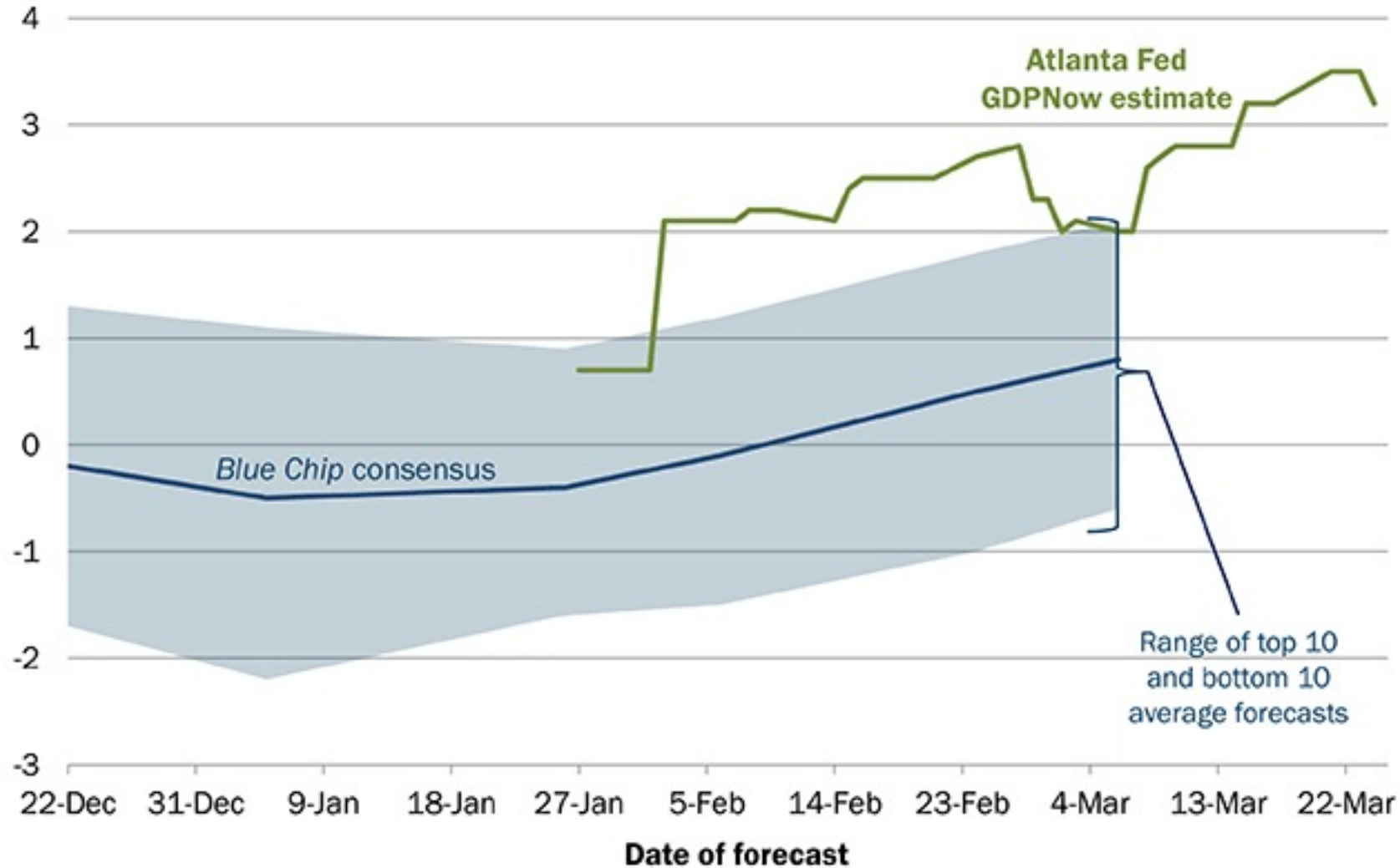
Industrial Production





Evolution of Atlanta Fed GDPNow real GDP estimate for 2023: Q1

Quarterly percent change (SAAR)



So where are we heading?



- **The Narrative: A recession is nigh!**

- Economy already in crisis due to ... (pick your favorite boogie man)
- Inflation is hurting consumers, Real Estate collapse driven by mortgage rate hikes
- The banking stresses are a sign of the rot

- **The Reality: Recession highly unlikely in the next 2 years**

- Inflation / rising rates are the consequences of excessive stimulus
- No major structural imbalances in the economy
- Consumers / business investment will offset real estate, finance
- Asset prices, including homes, will continue to slowly deflate, yet fundamentals will remain steady

- **The Real Worries**

- Collapse in filtering will intensify housing shortages
- Labor shortages are now endemic
- Public deficit challenges at state and federal levels
- The potential (and pointless) bank credit crisis
- The ongoing gap between the narrative and the reality

How did we get here? Miserabilism...



CBO: Coronavirus pandemic will scar U.S. labor market for the next decade

30-40 Million People in America Could Be Evicted from Their Homes by the End of 2020

Coronavirus: Leading economist warns of 10 years of depression and debt

© 22 May 2020

As many as 30% of Americans with home loans — about **15 million** households — could stop paying if the U.S. economy remains closed through the summer or beyond, according to an estimate by Mark **Zandi**, chief economist for Moody's Analytics.

Coronavirus to cause worst economic downturn since Great Depression, IMF forecasts

FINANCE · ECONOMY

What shape will the recovery take? U-shape, check mark, square root symbol, and swoosh are all on the table, say economists

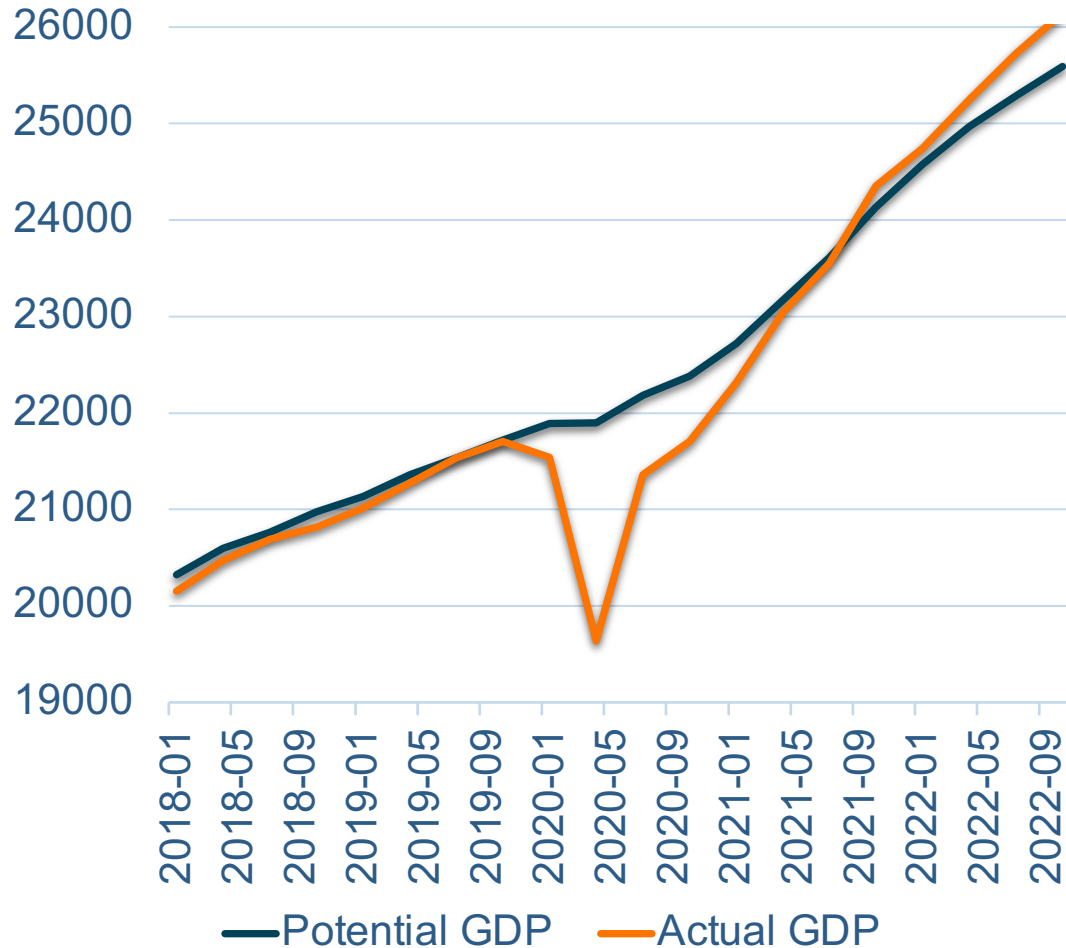
Home prices rose in June, but they'll likely fall in 2021: CoreLogic

'Make no mistake...the pandemic morphed into a Depression-like crisis,' says UCLA economist, who predicts U.S. economy won't recover from coronavirus until 2023

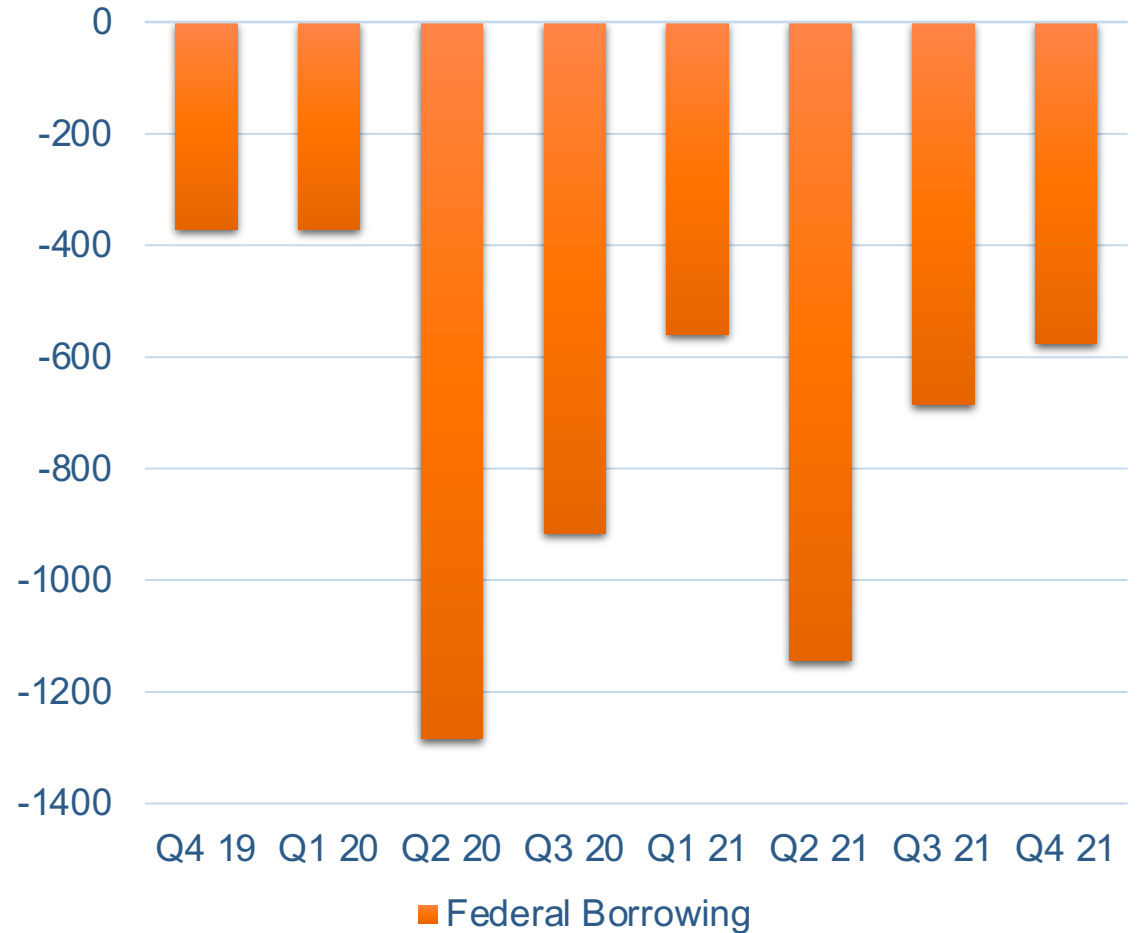
Federal Fiscal (Over)reaction



GDP Trends (\$Billions)



Fiscal Deficit Spending \$Bil





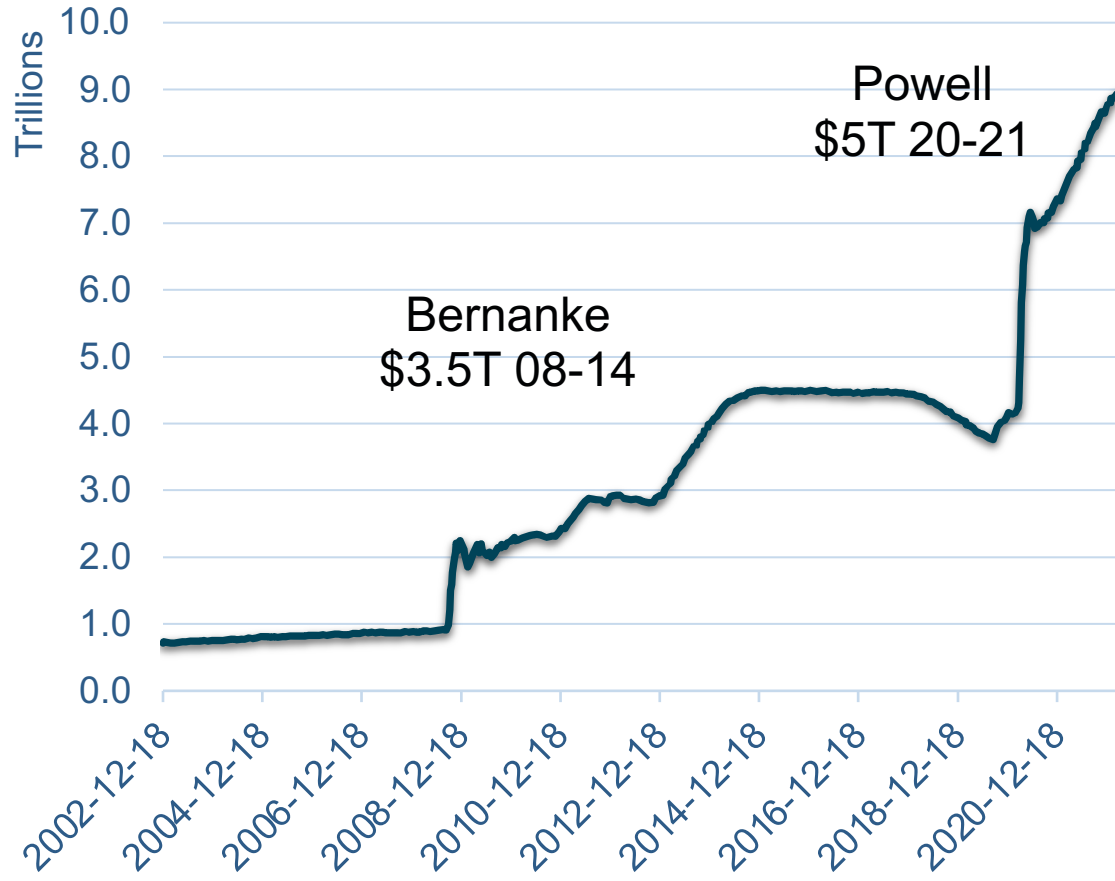
**Pandemic “Lost” GDP:
\$1.2 Trillion**

**Fiscal Deficit Spending:
\$6 Trillion**

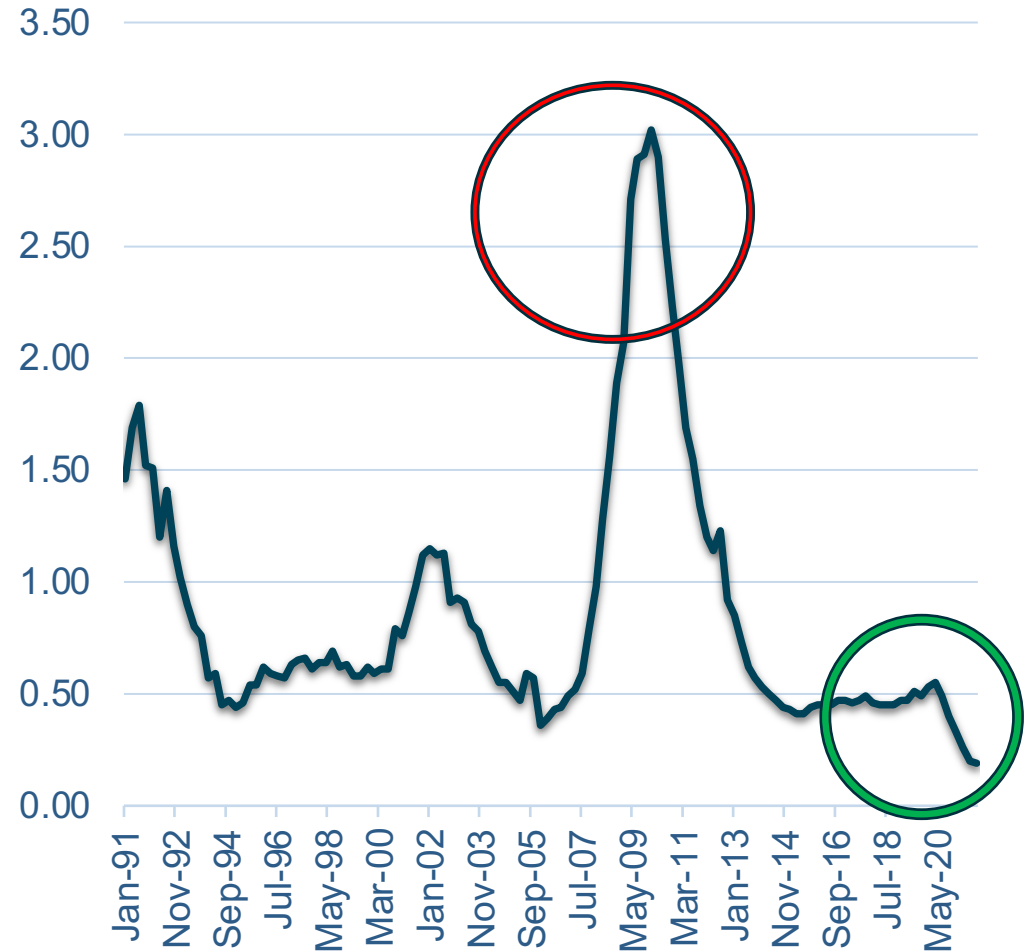
Better Call Powell...



Federal Reserve Balance Sheet Holdings of Government Debt



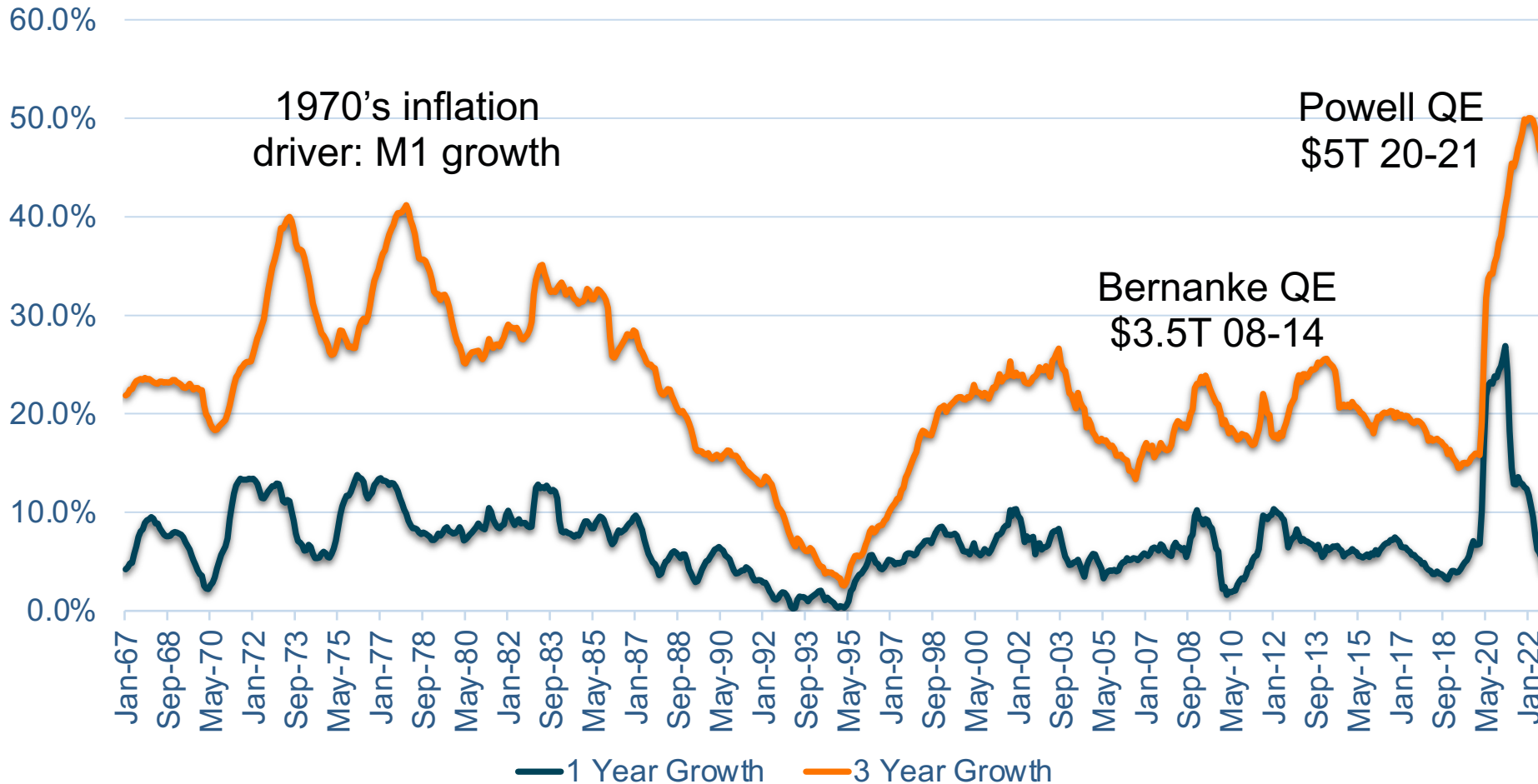
Bank Loan Charge-Off Rate



QE and Money: Now vs Then



Money Supply (M2) 3 Year Growth Rates



QE and Money: Then vs Now



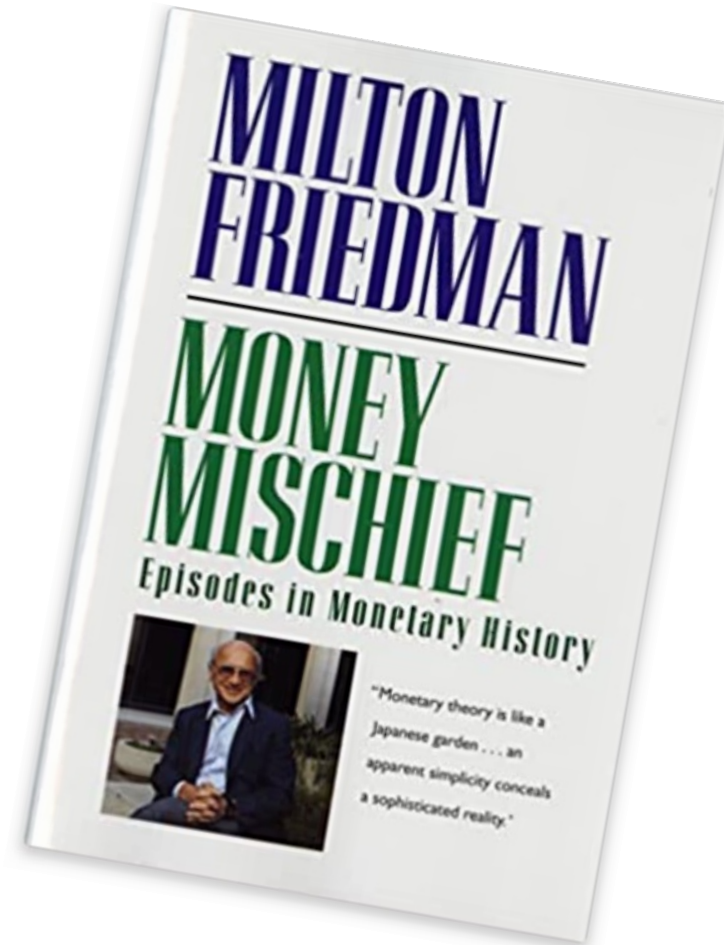
The Problem of Excess Money

Short run: Money illusion

- Falling interest rates
- Asset price bubbles form
- Spending and investment binge ensues

Long run: The Hangover

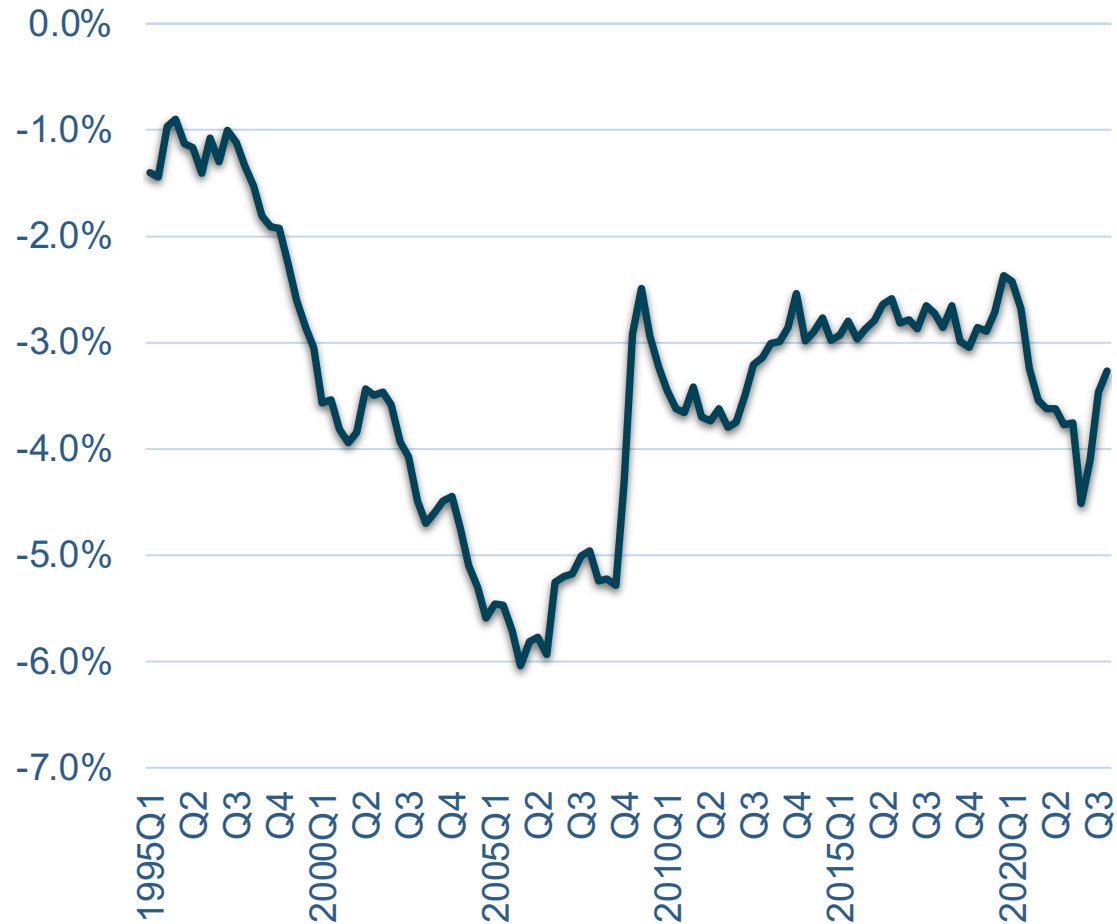
- SR: Inflation and rates rise
- SR: Asset markets sag
- LR: Sharp transfers of real wealth
- LR: Investments risk rises



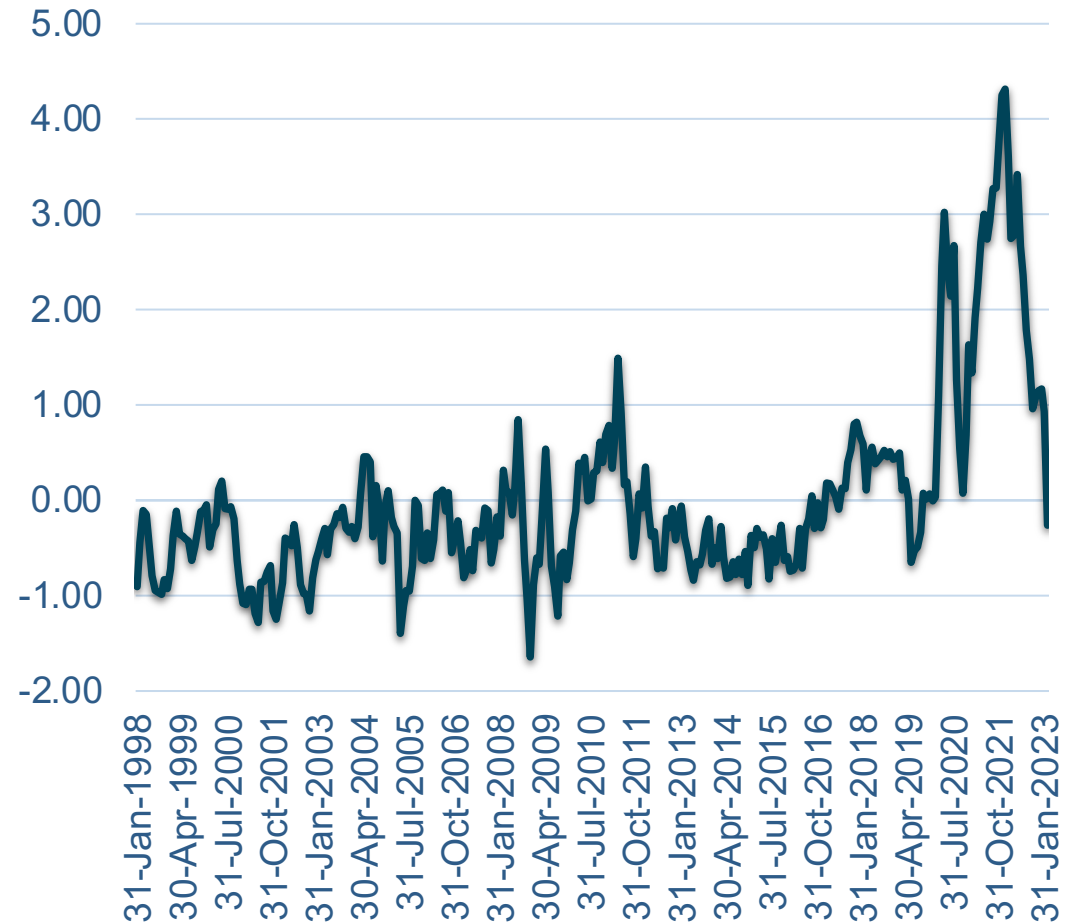
US Spending Binge



US Trade Deficit as % of GDP



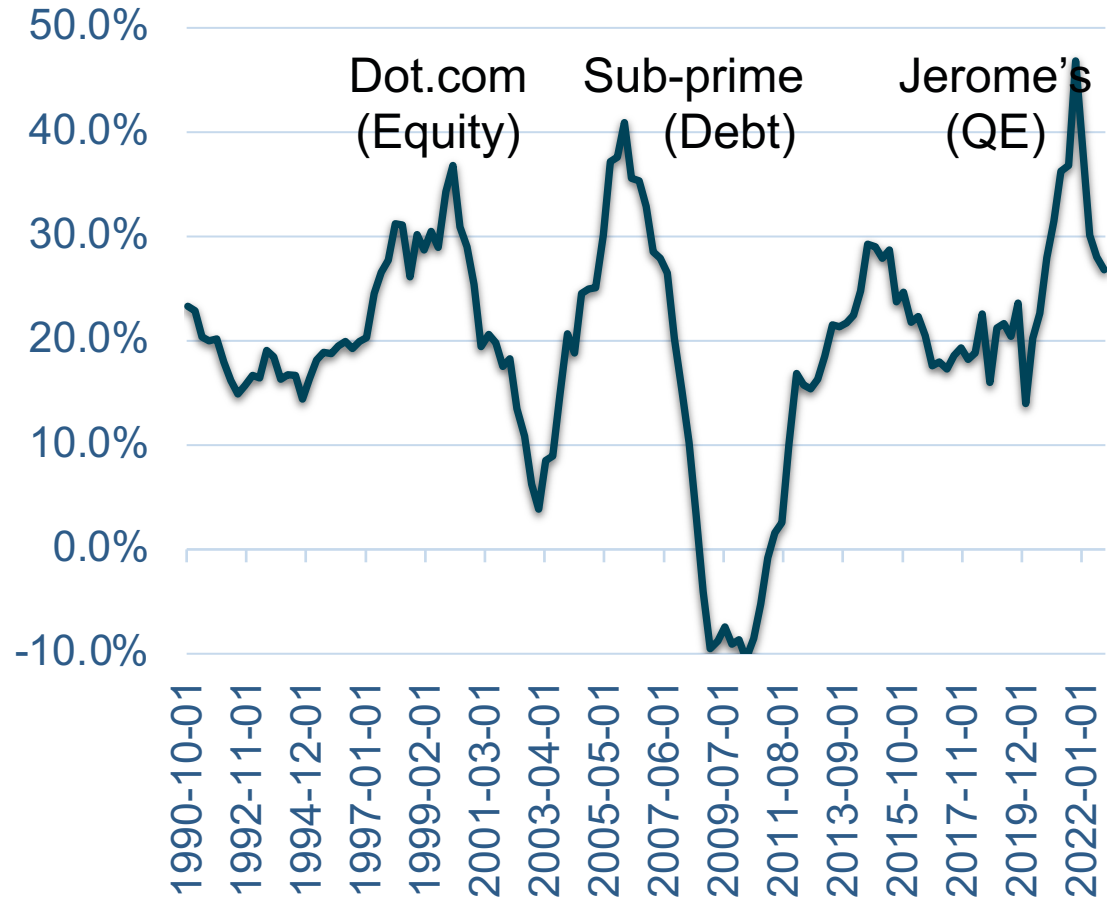
Global Supply Chain Pressure Index



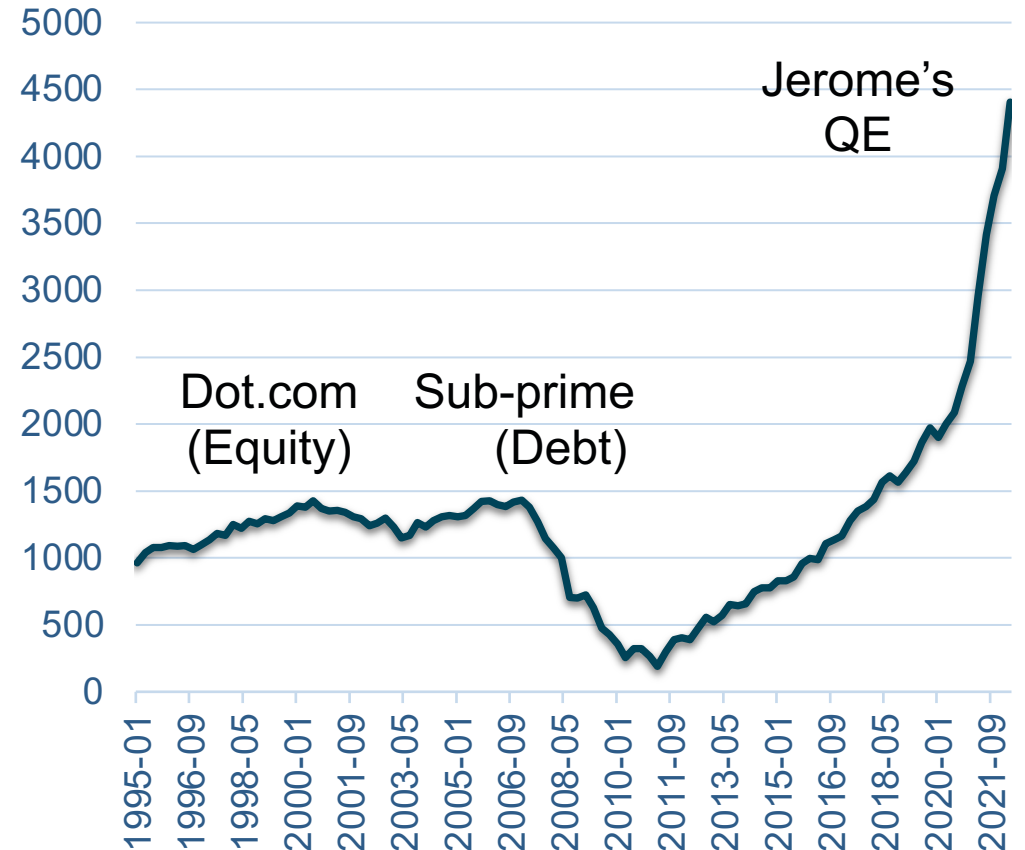
A progressive asset bubble...



3 Year Growth HH Net Worth

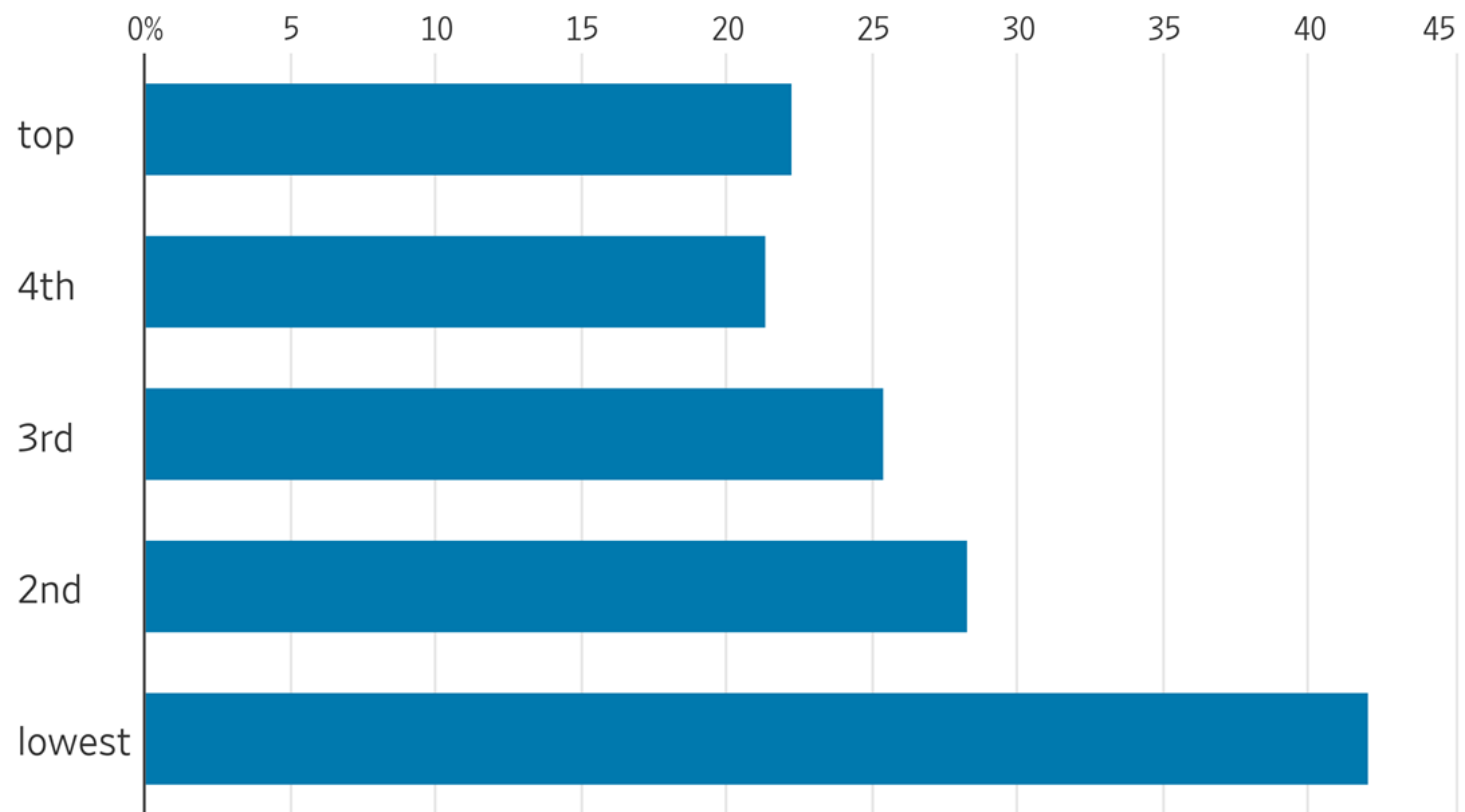


Wealth Level in bottom 50% of Household, \$Billion





Change in household net worth by income quintile, 4Q 2019 to 3Q 2022

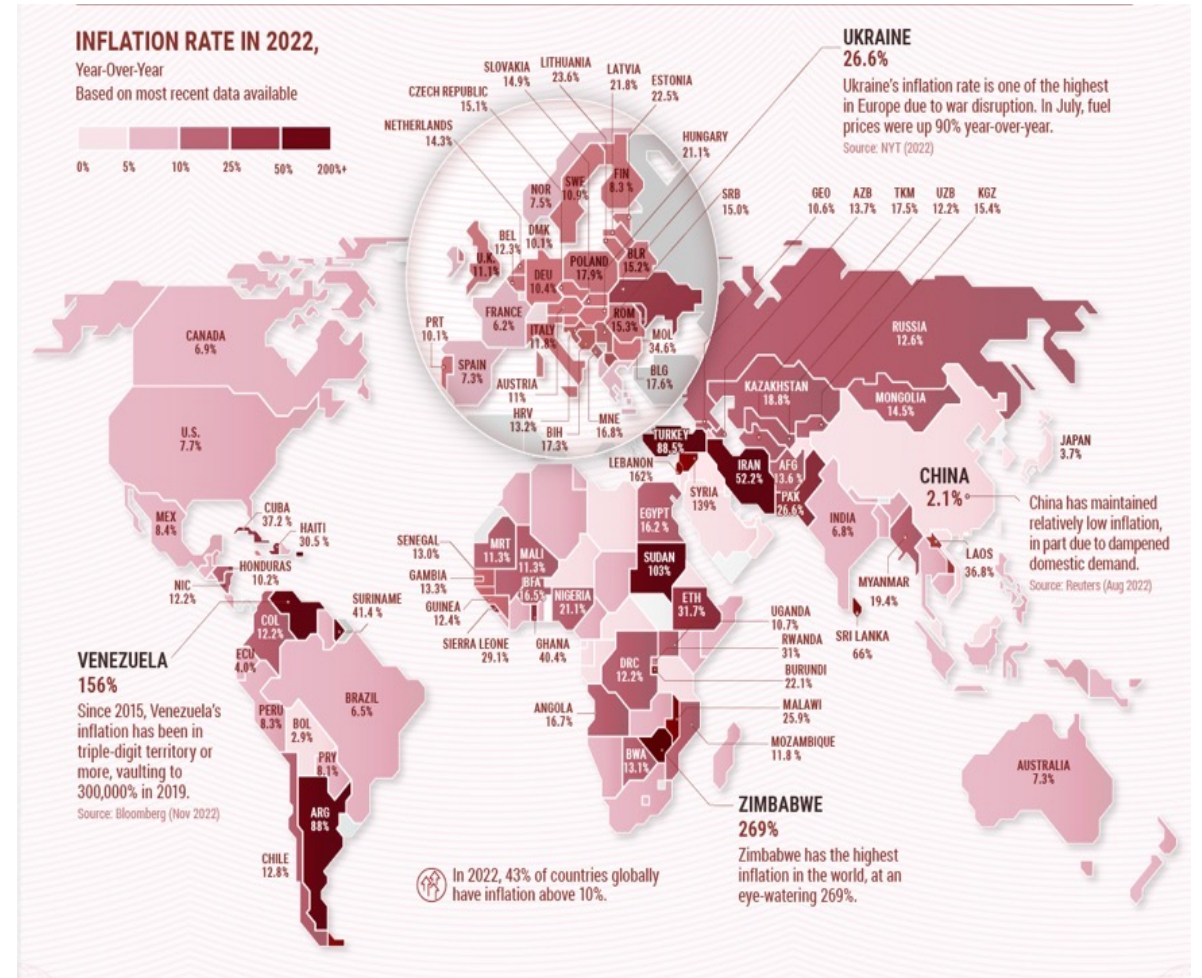
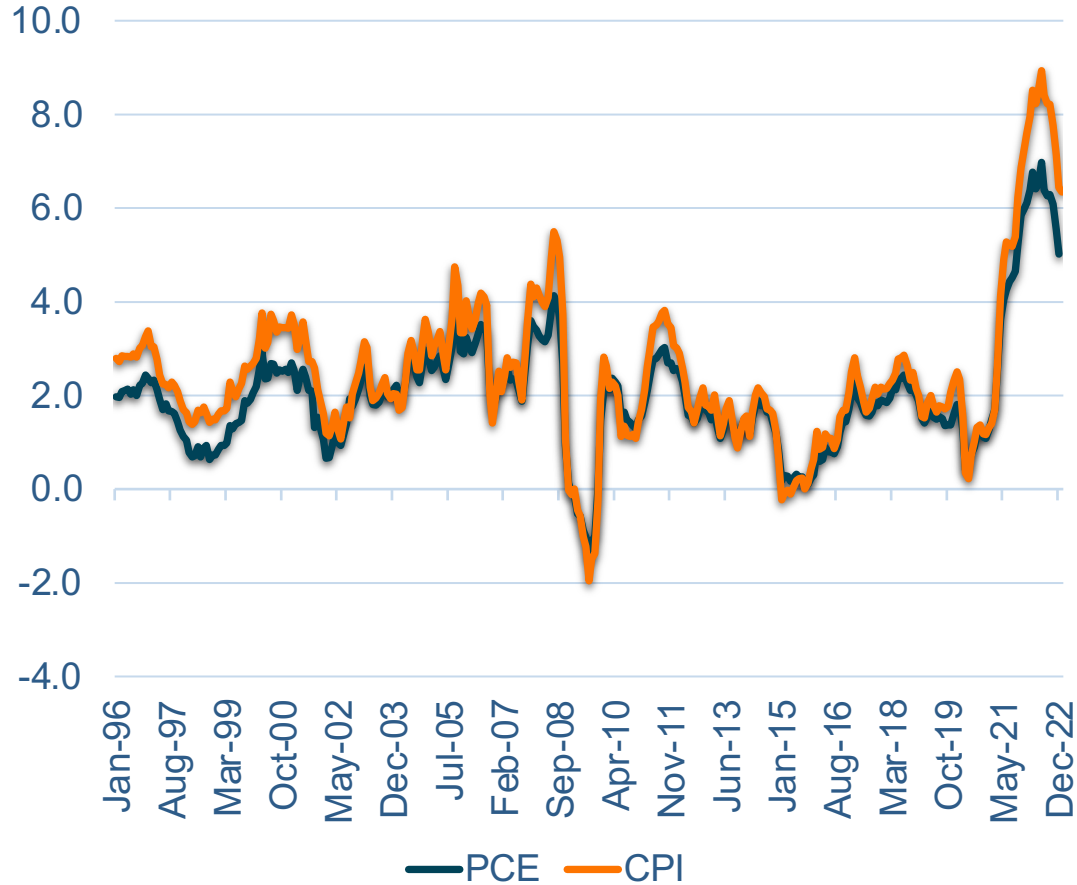


Source: Federal Reserve

Inflation nation...



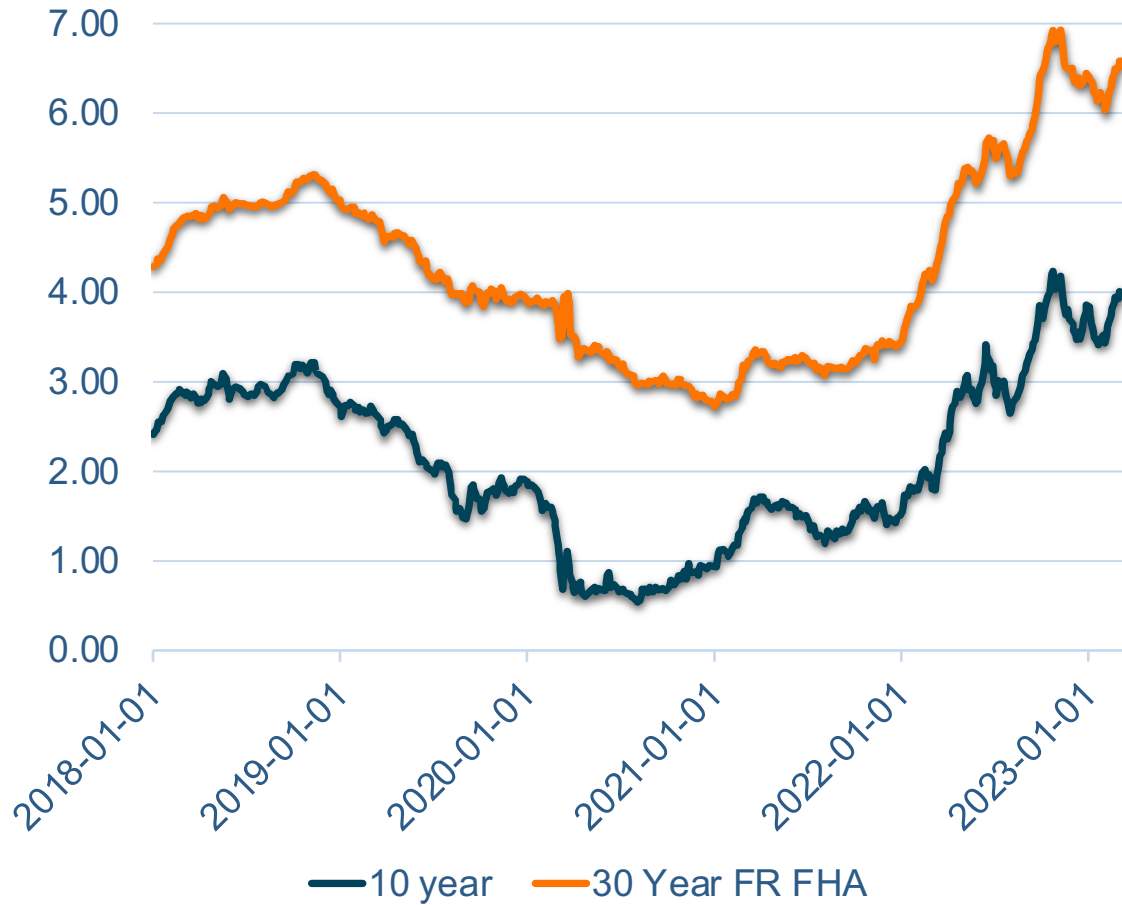
US Price Indexes



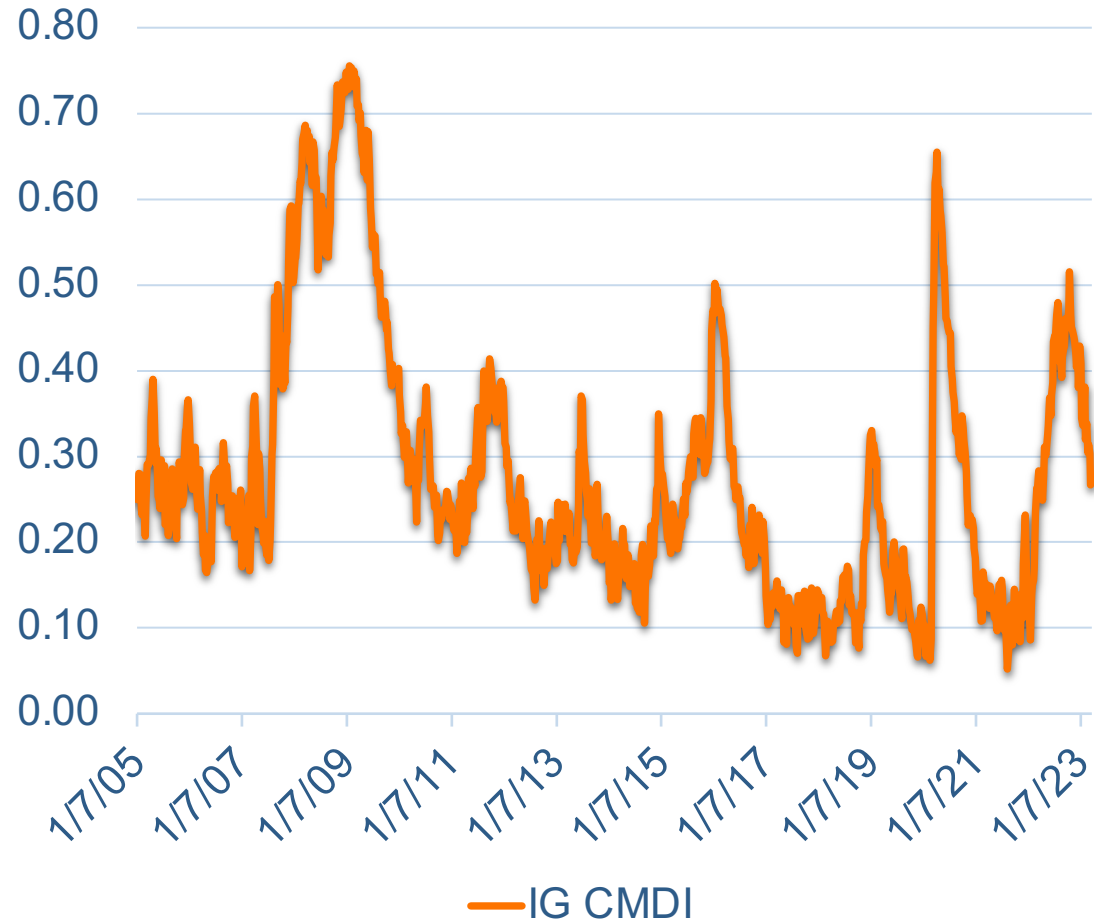
The Rate and Debt Response...



Long Run Interest Rates



Bond Market Distress (NYFed)



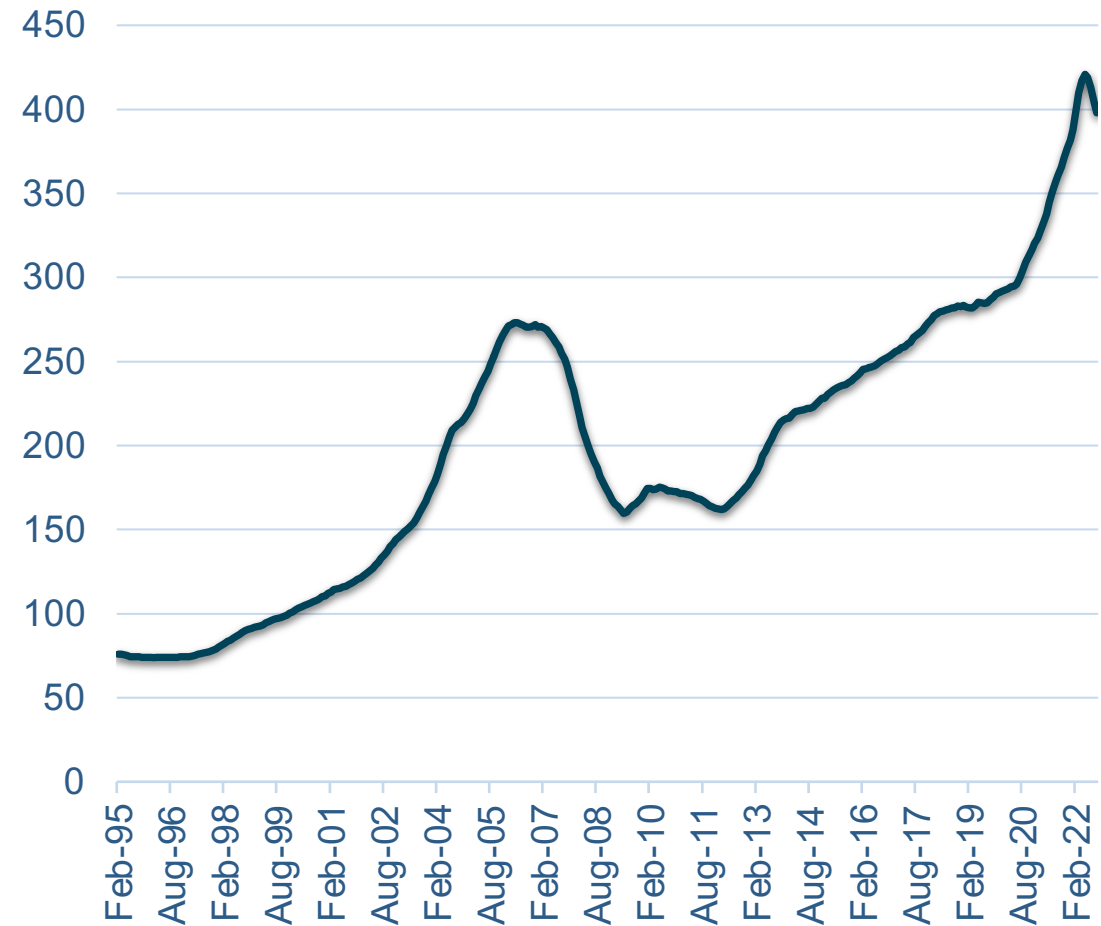
What goes up...



Nasdaq Composite



Case Shiller: US





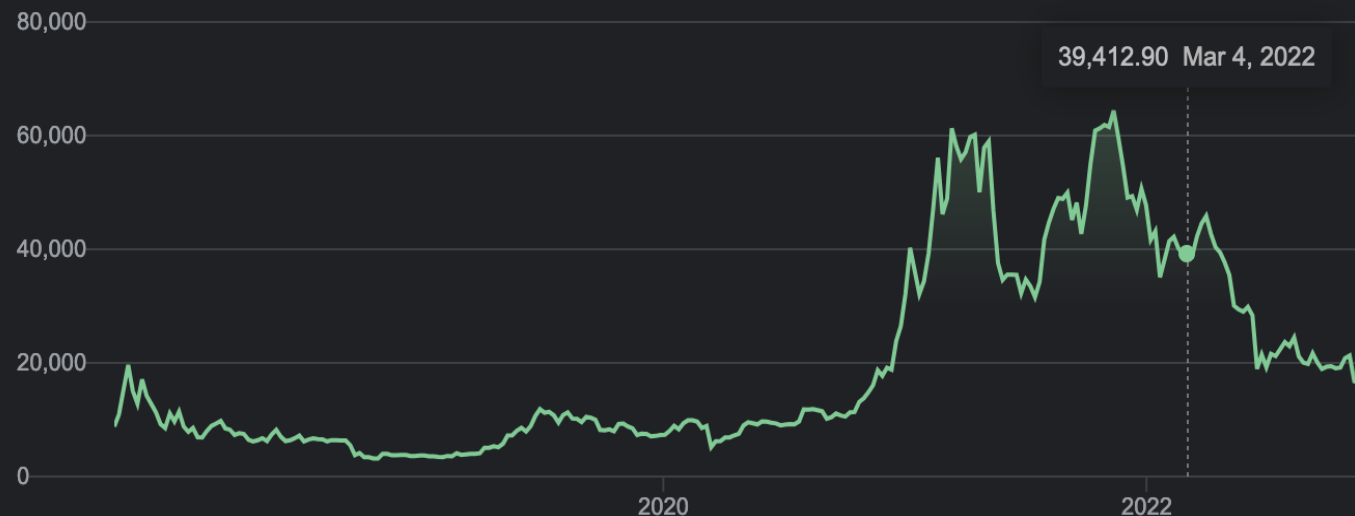
16,493.90 USD

+ Follow

+7,698.40 (87.53%) ↑ past 5 years

Nov 16, 5:05 PM UTC · [Disclaimer](#)

1D | 5D | 1M | 6M | YTD | 1Y | 5Y | Max



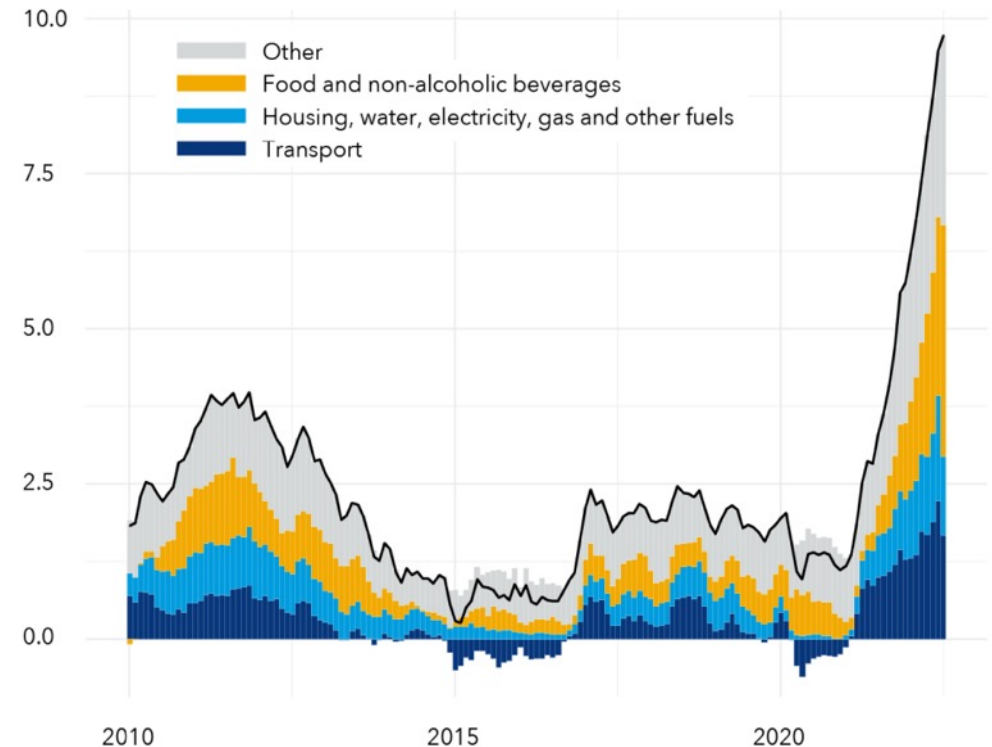
The Inflation Conversation



- Supply chain issues
- The federal deficit
- Greedy corporations and profiteering
- Not enough manufacturing jobs in the US
- Biden's bad green energy policies
- Putin's fault!
- Saturn is aligned with Jupiter
- Kim shouldn't have dumped Kanye
- The Lakers horrible trades

Inflation drivers

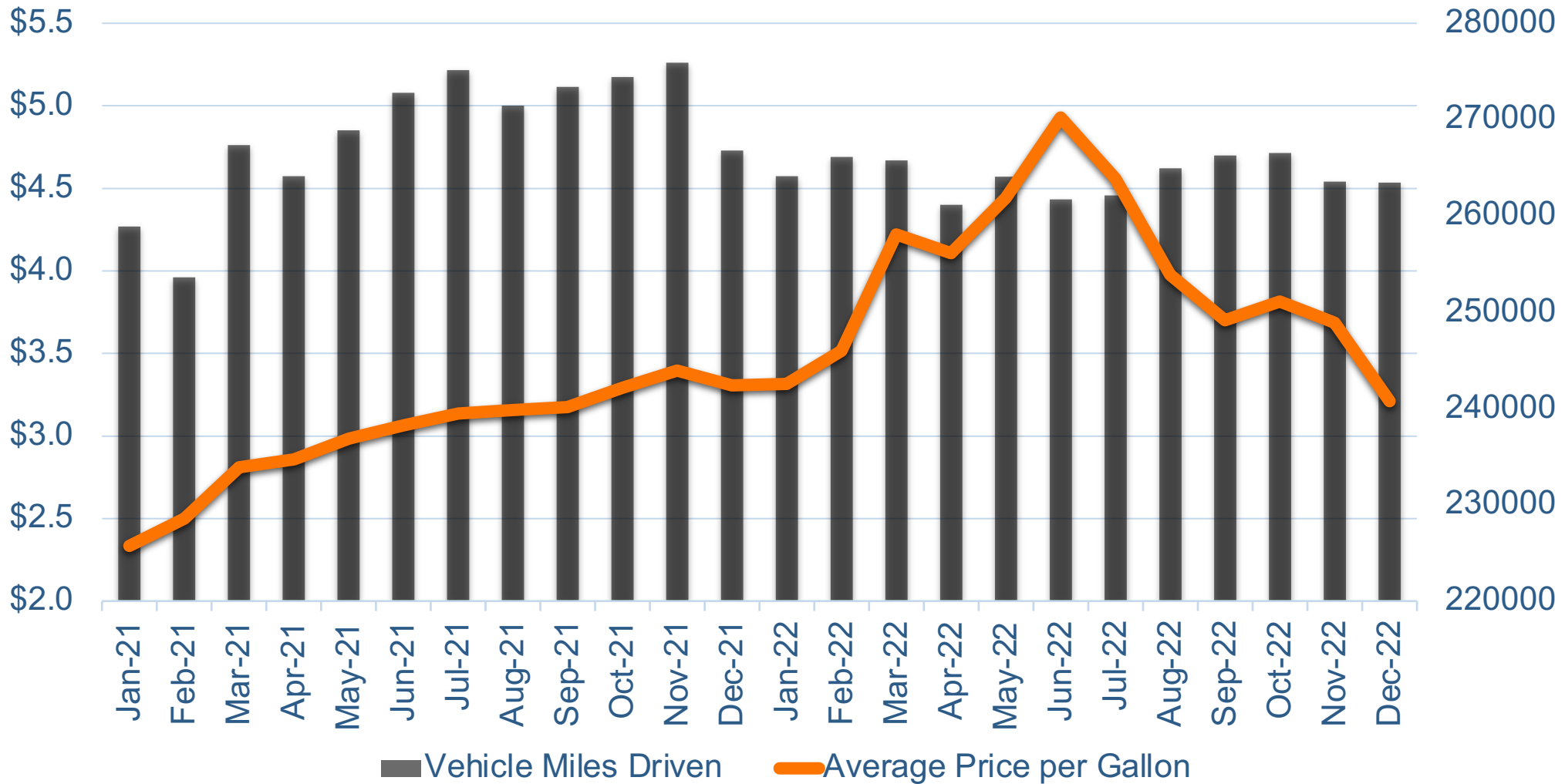
Food and energy prices continue to drive the global inflation surge.
(percent, median inflation rate)



Source: IMF CPI database and IMF staff calculations.
Note: Chart shows median total inflation and in select categories across 88 countries, including 28 advanced economies and 60 emerging and developing economies.

IMF

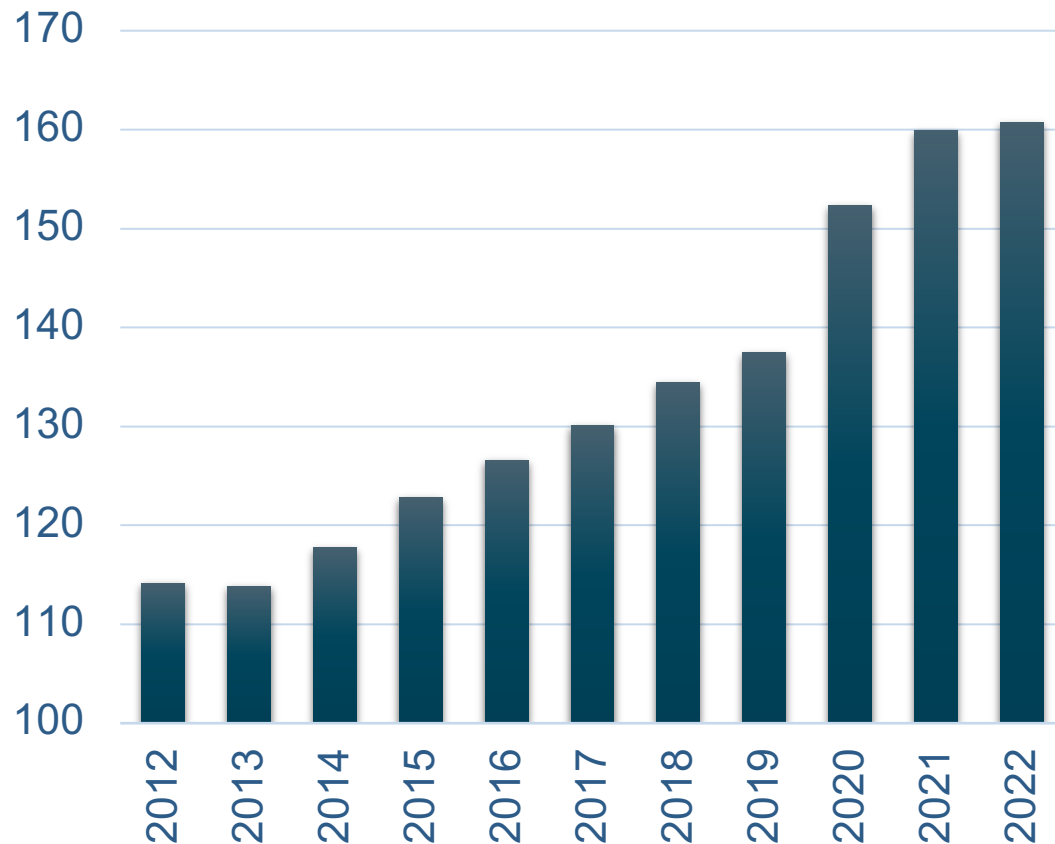
Supply or Demand?



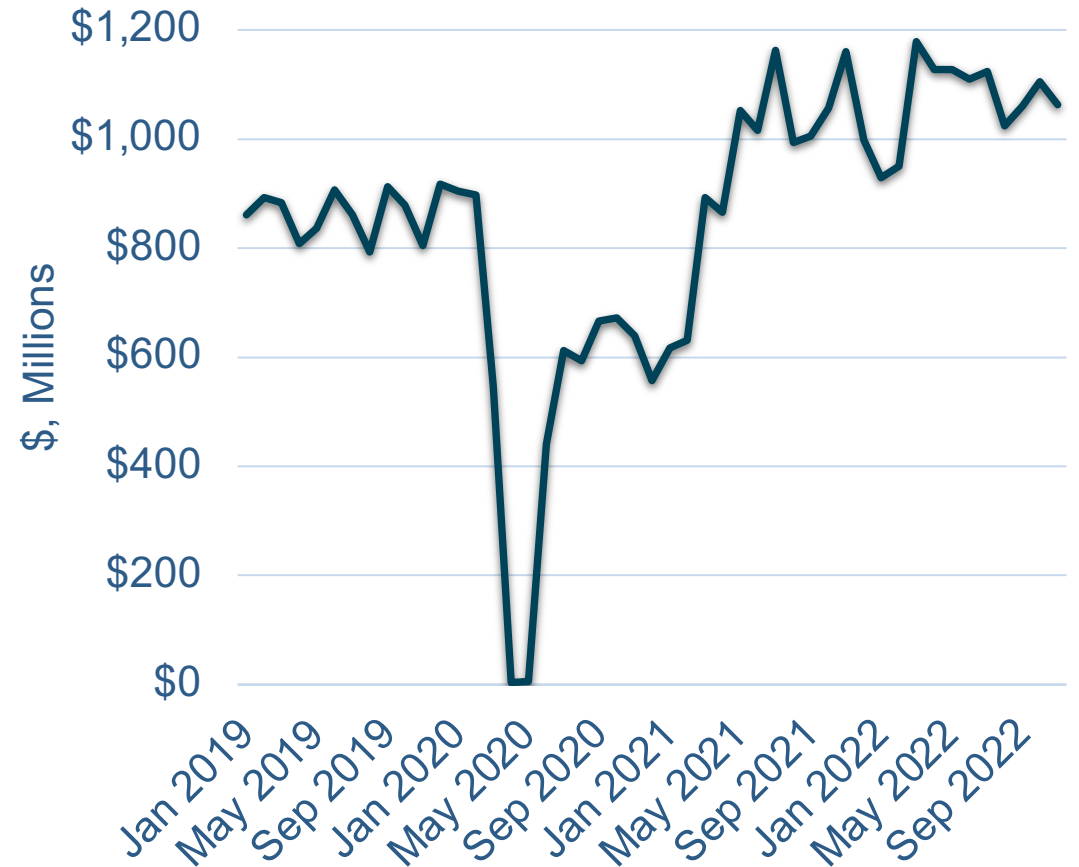
Americans: How rough do we have it?



Consumer Spending: Off-Site Alcohol (Real, \$Billions)



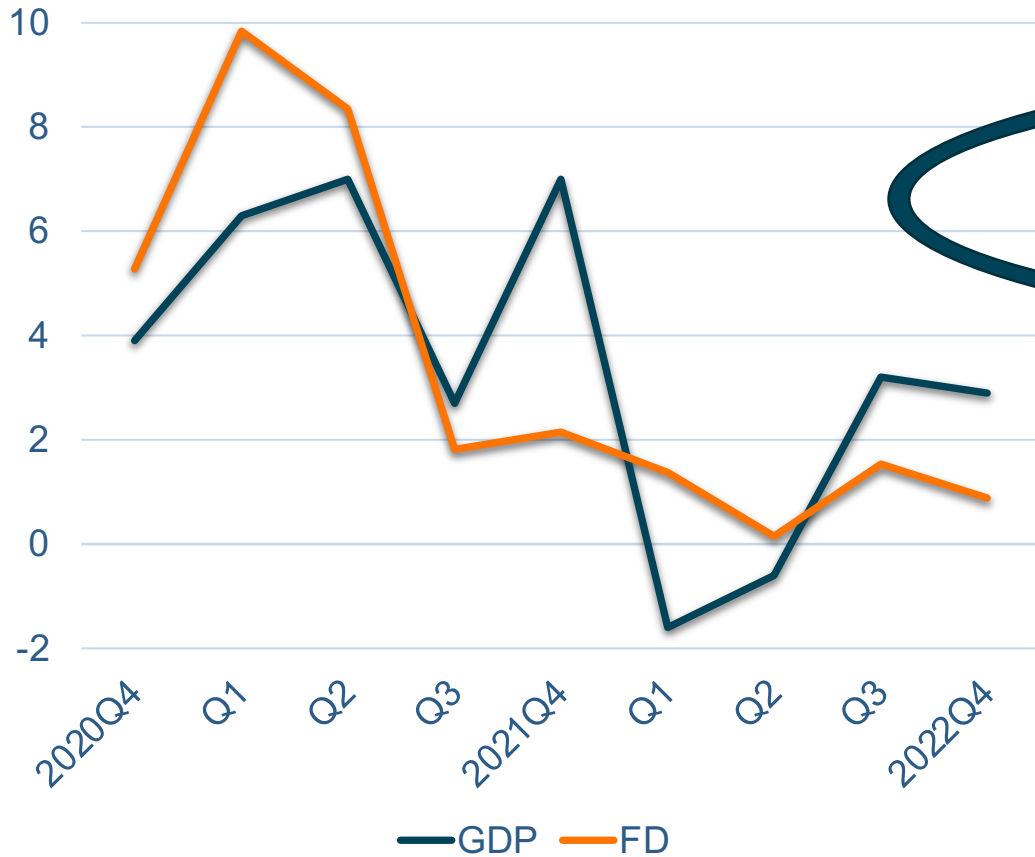
Las Vegas Gaming Revenue



Recent Real GDP Growth



Growth Trends



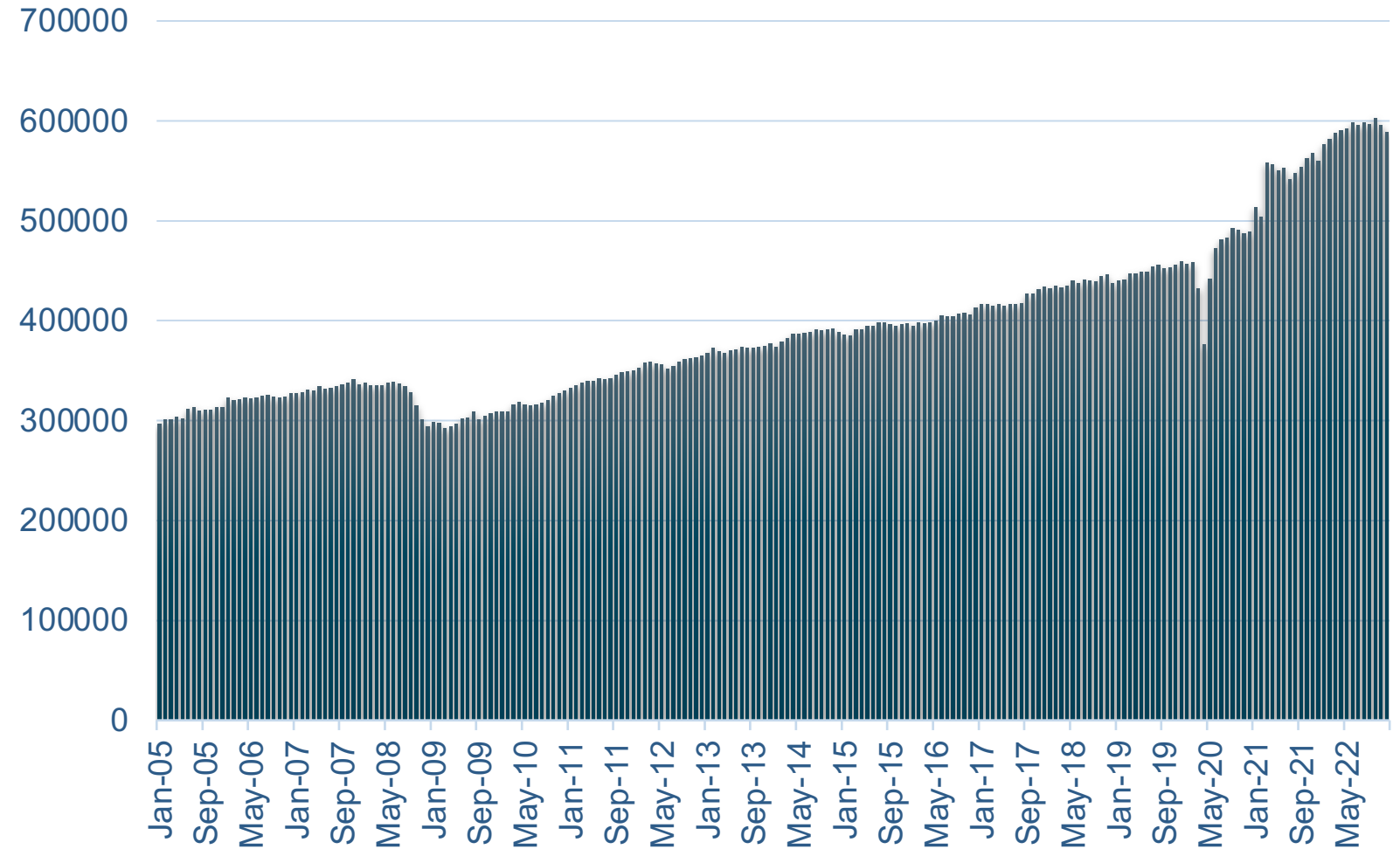
Contributions to Real GDP Growth

	2019	2020	2021	2022
GDP	2.30	-2.80	5.90	2.10
Final Demand	2.36	-1.99	6.91	1.76
Personal consumption	1.34	-2.01	5.54	1.90
Durable goods	0.27	0.70	1.46	-0.03
Nondurable goods	0.39	0.37	1.26	-0.07
Services	0.69	-3.08	2.83	1.99
Fixed investment	0.44	0.48	1.50	-0.06
Structures	0.07	-0.32	-0.19	-0.20
Equipment	0.07	-0.59	0.52	0.22
Intellectual property	0.34	0.23	0.50	0.45
Residential	-0.04	0.28	0.47	-0.54
Change in inventories	0.05	-0.55	0.24	0.74
Net exports	-0.11	-0.26	-1.25	-0.40
Exports	0.06	-1.54	0.64	0.81
Imports	-0.17	1.28	-1.89	-1.20
Government	0.58	0.45	0.11	-0.10
Federal	0.25	0.41	0.17	-0.17
State and local	0.32	0.04	-0.06	0.07

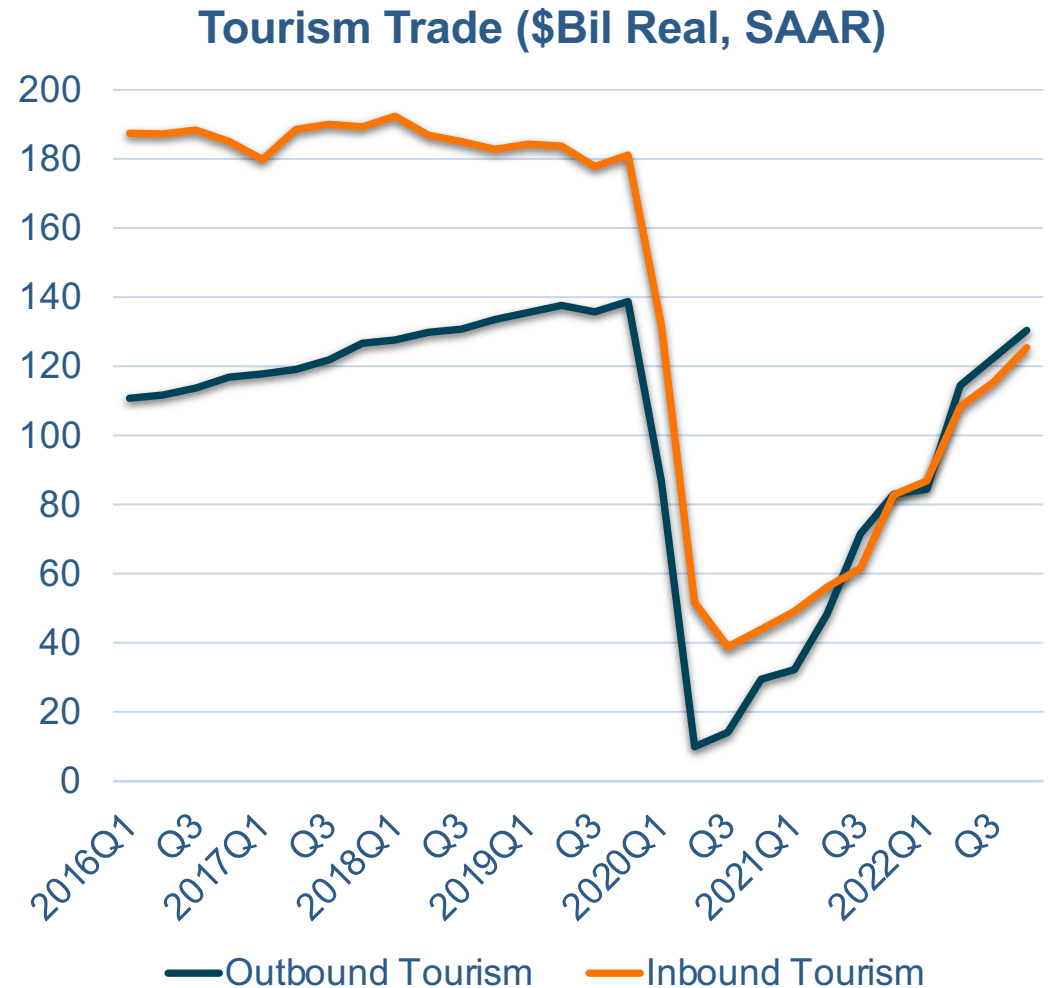
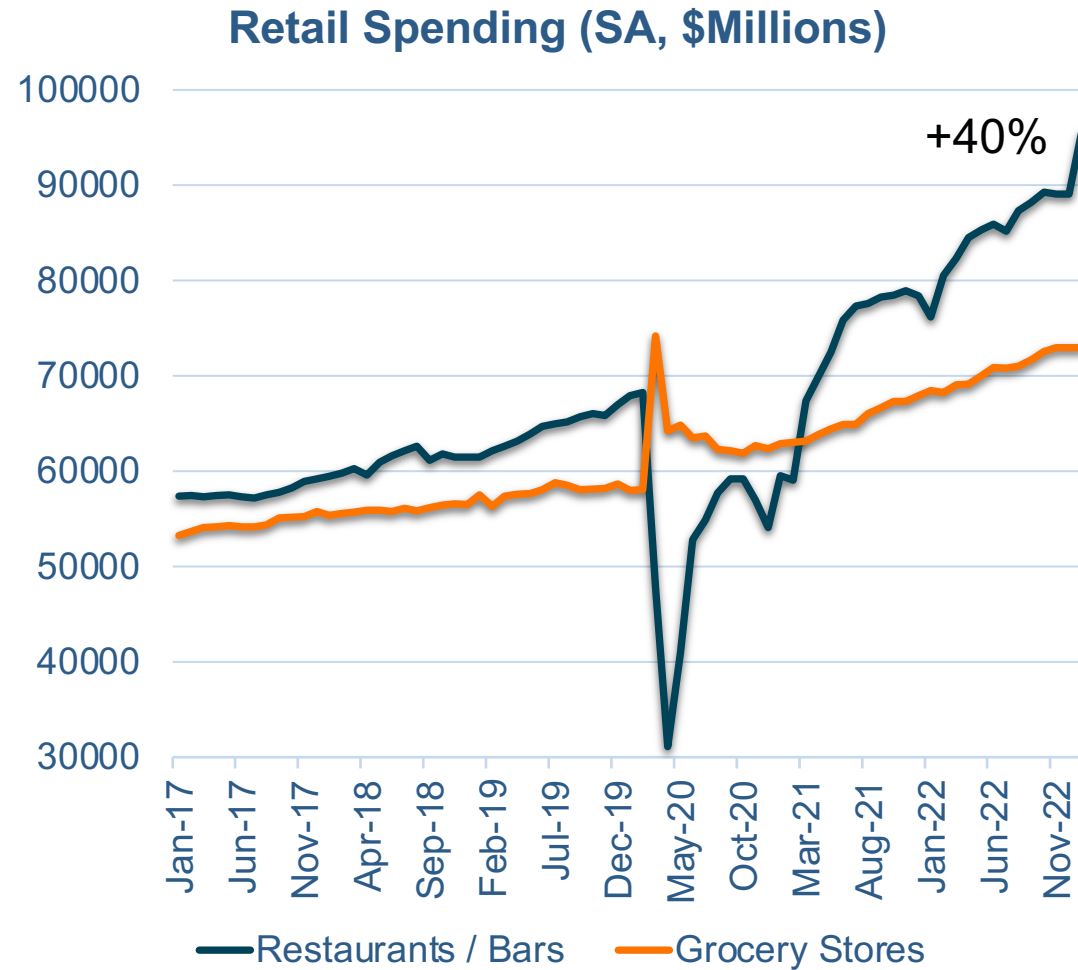
Bad News?



Nominal Retail Sales to December



A shift back to consumer services...



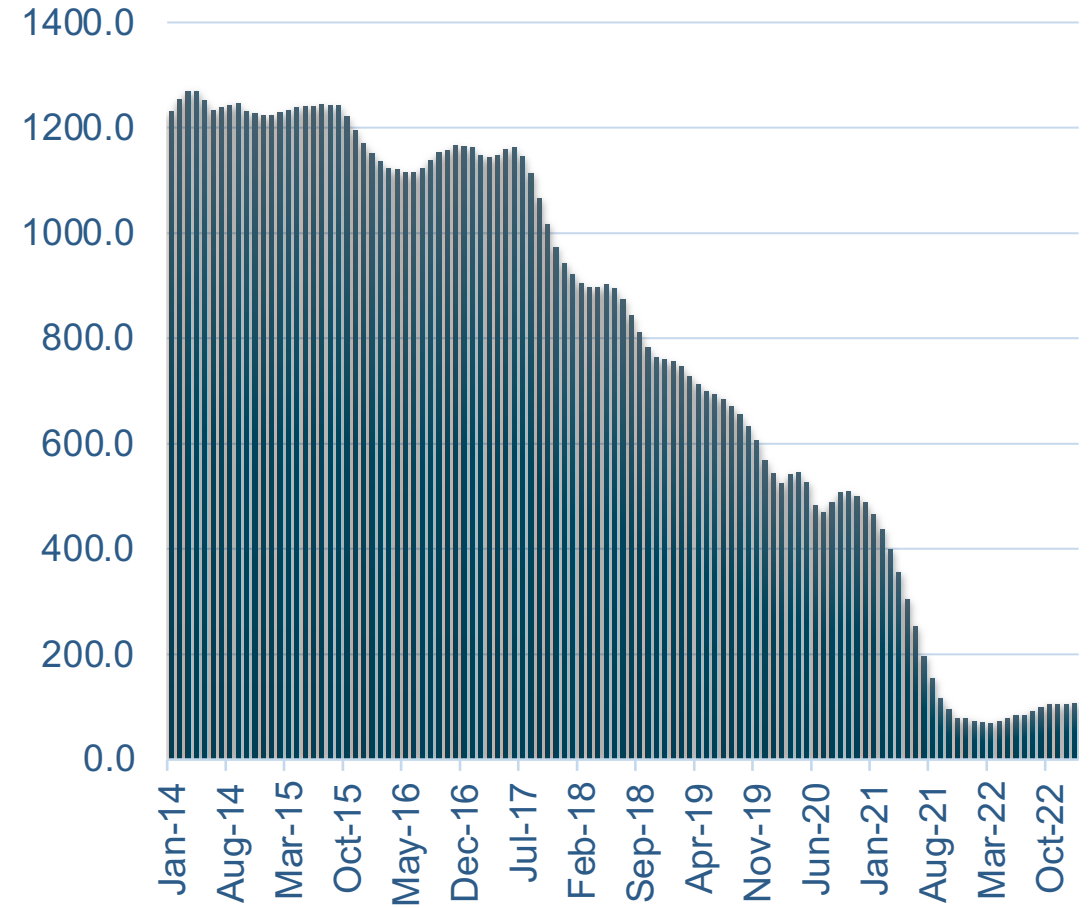
Still Pent-Up Consumer Demand



New Auto Sales SAAR (Mil Units)



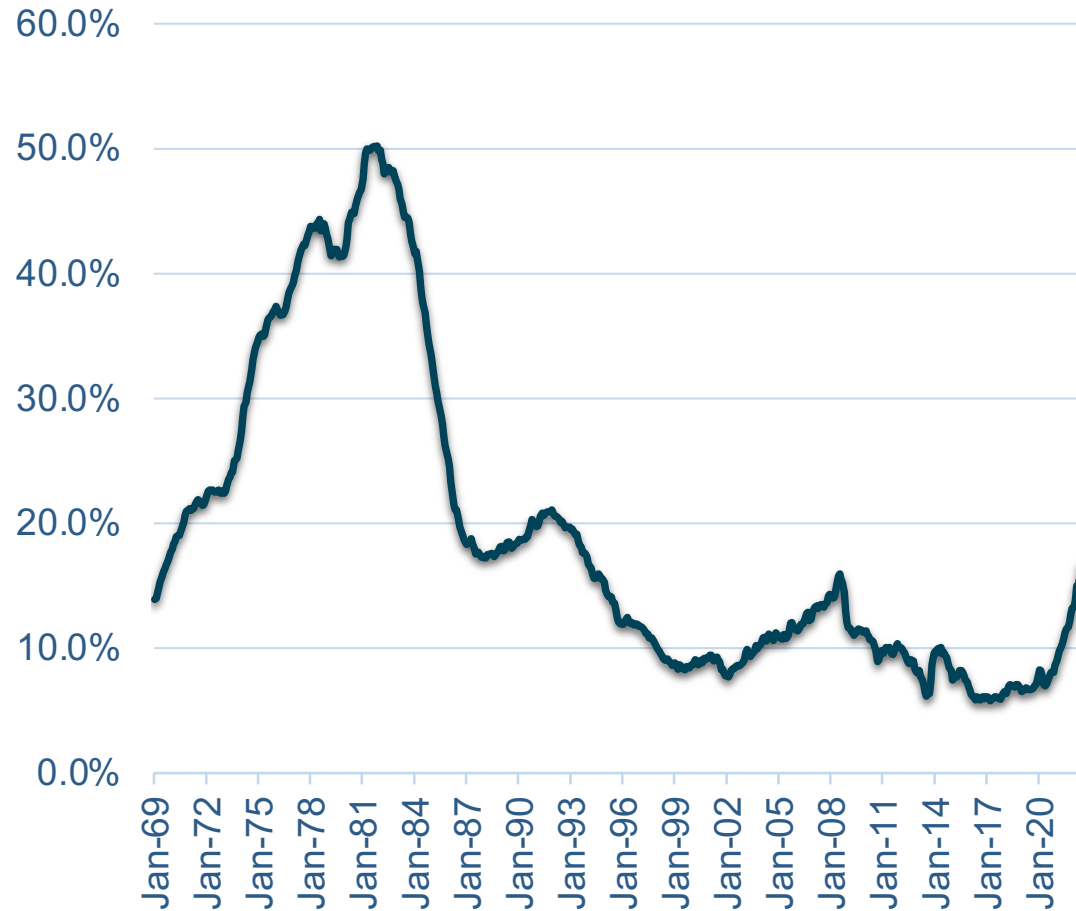
Domestic Auto Inventories (SA, 000s)



Can the consumer survive? Context...



5 Year Cumulative Inflation (PCE Basis)



US Financial Obligations Ratio (% of DPI)



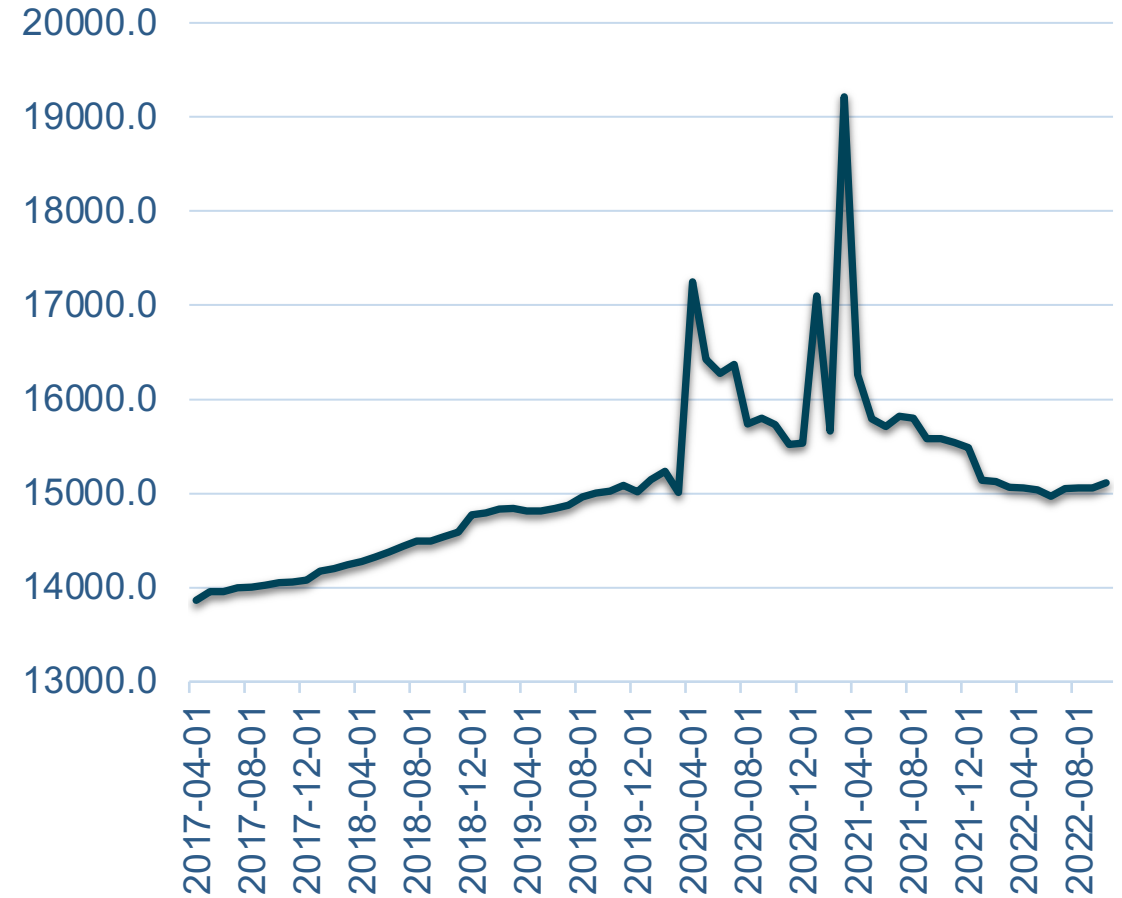
The Income Argument



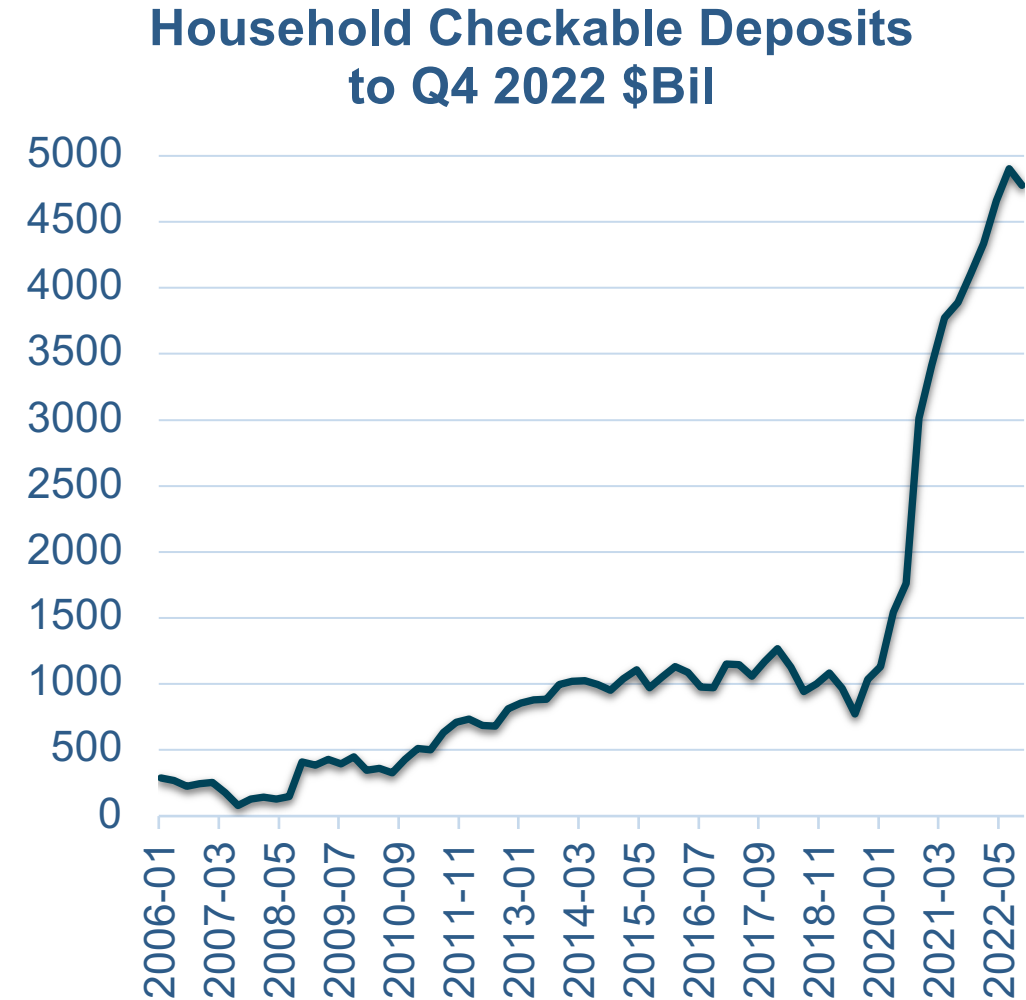
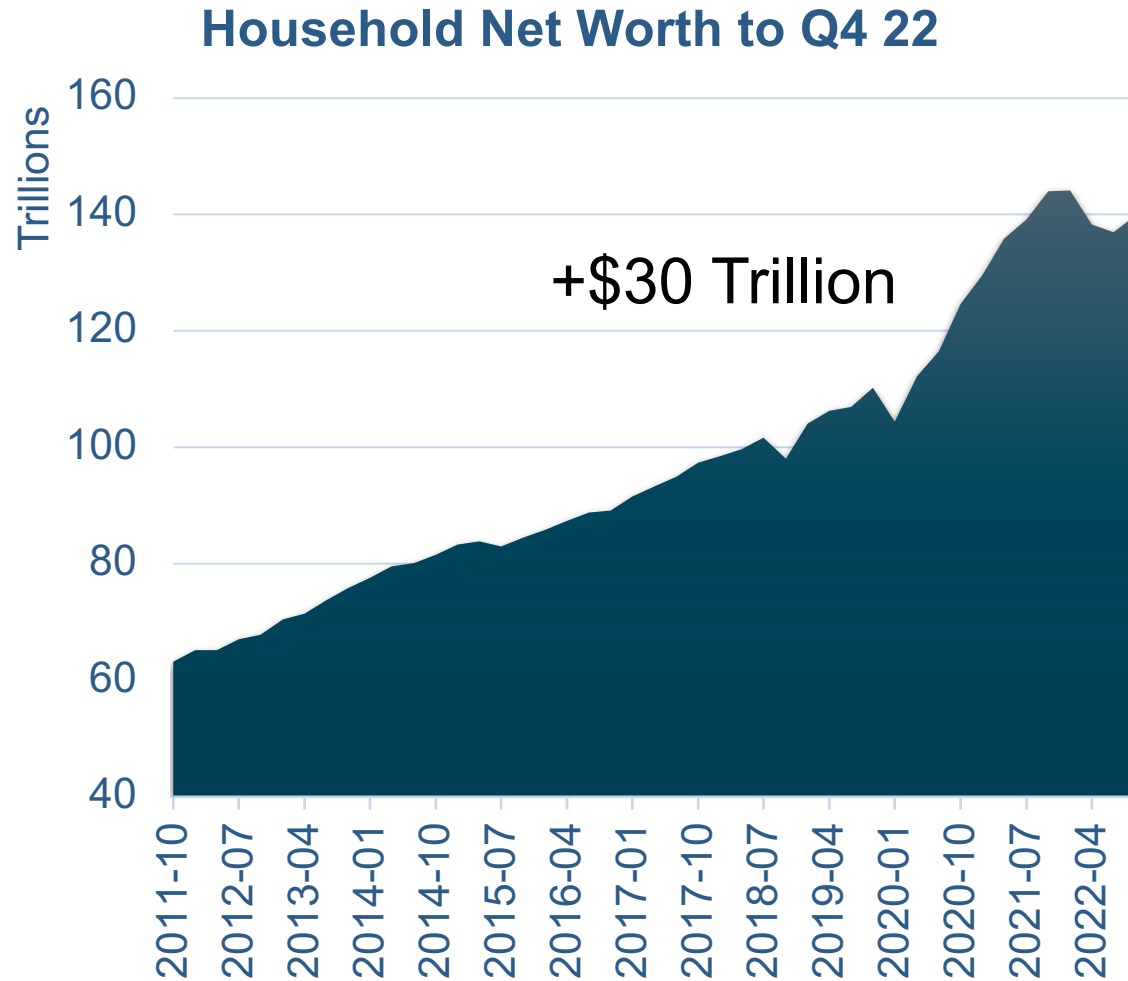
US Savings Rate



US Real Disposable Income

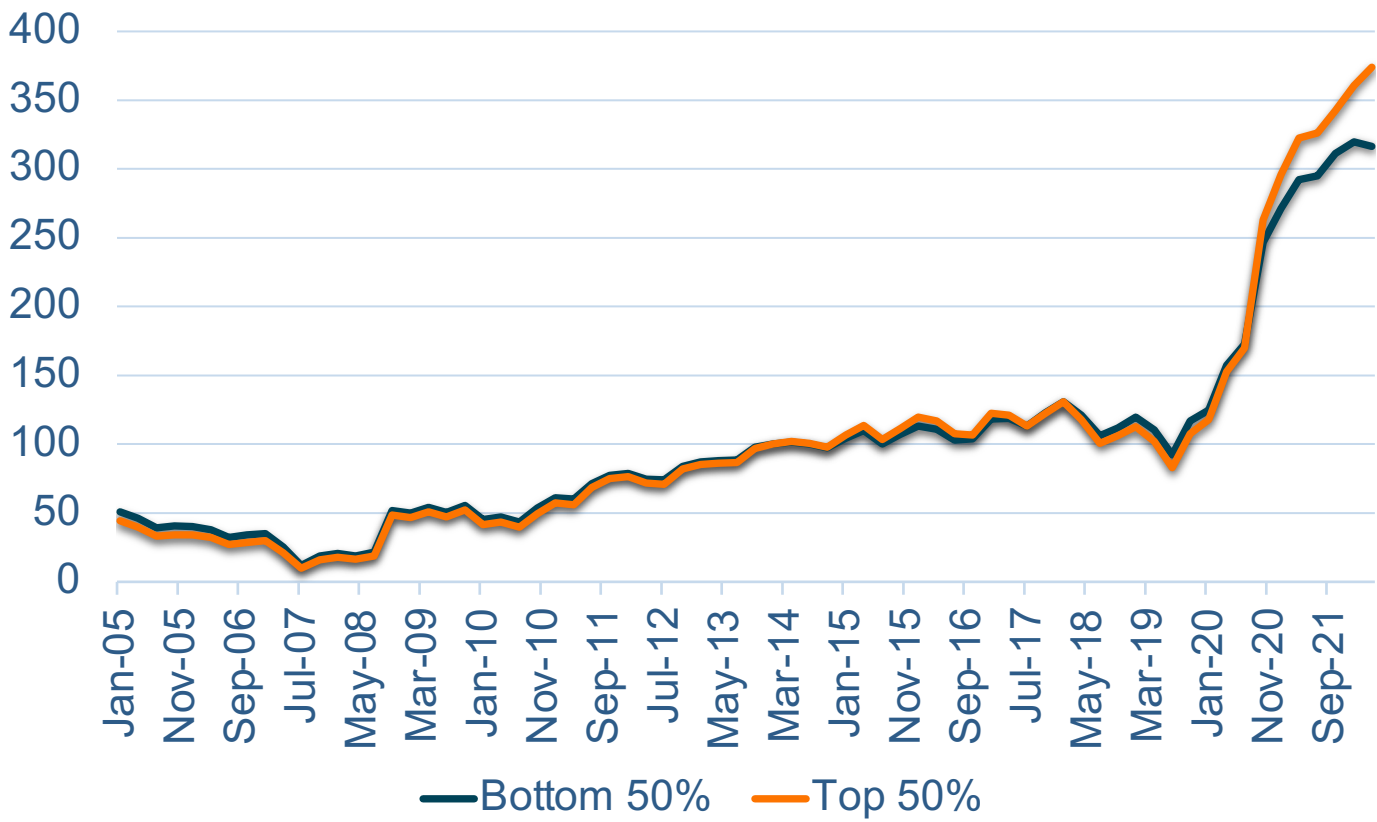


Income vs Wealth





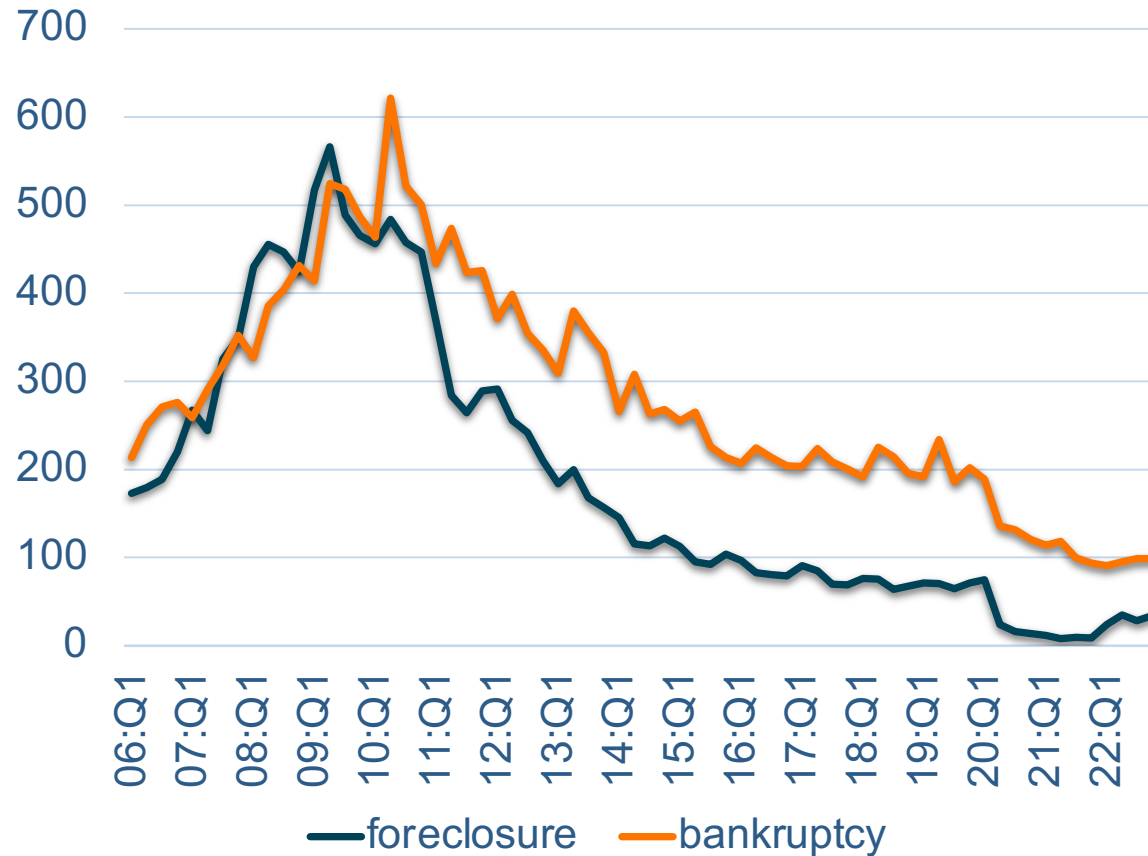
Indexes of Checkable Deposits by Household Income Level



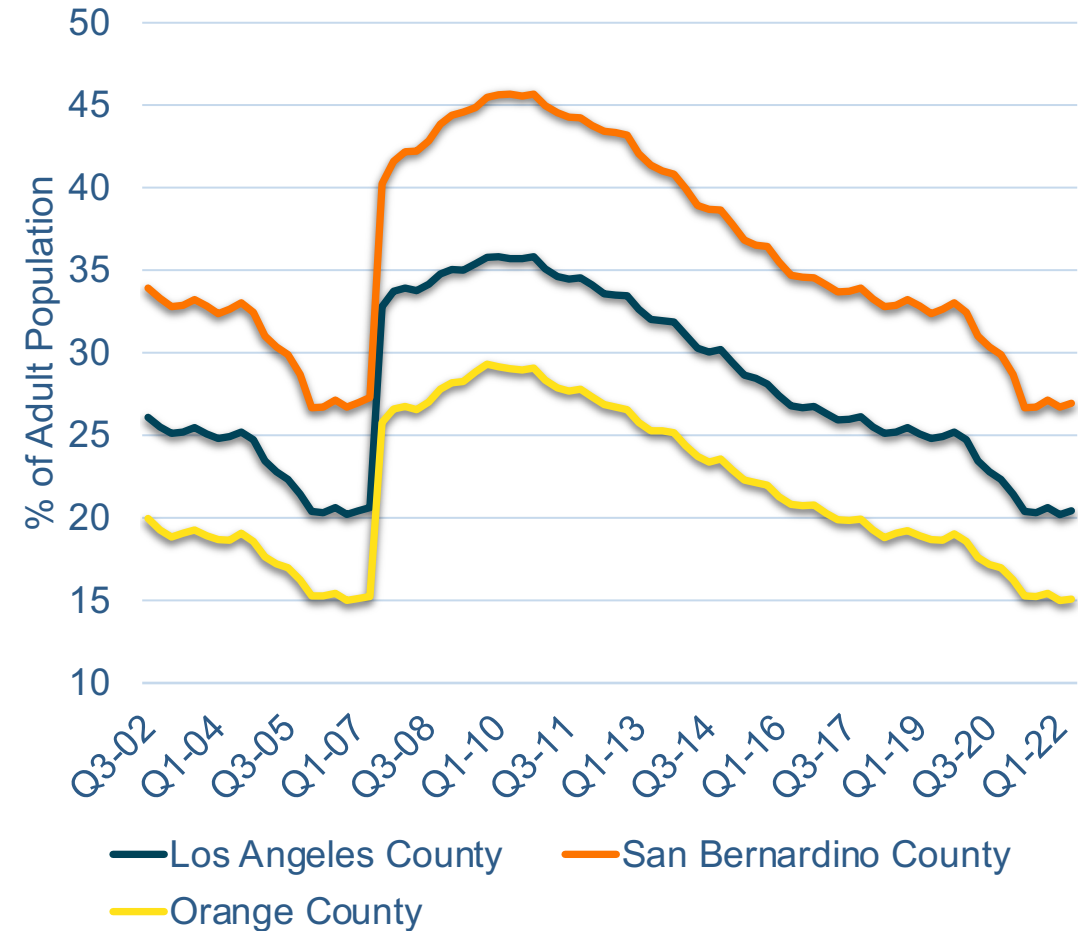
Consumer Credit



Consumers with Credit Issues (000's)



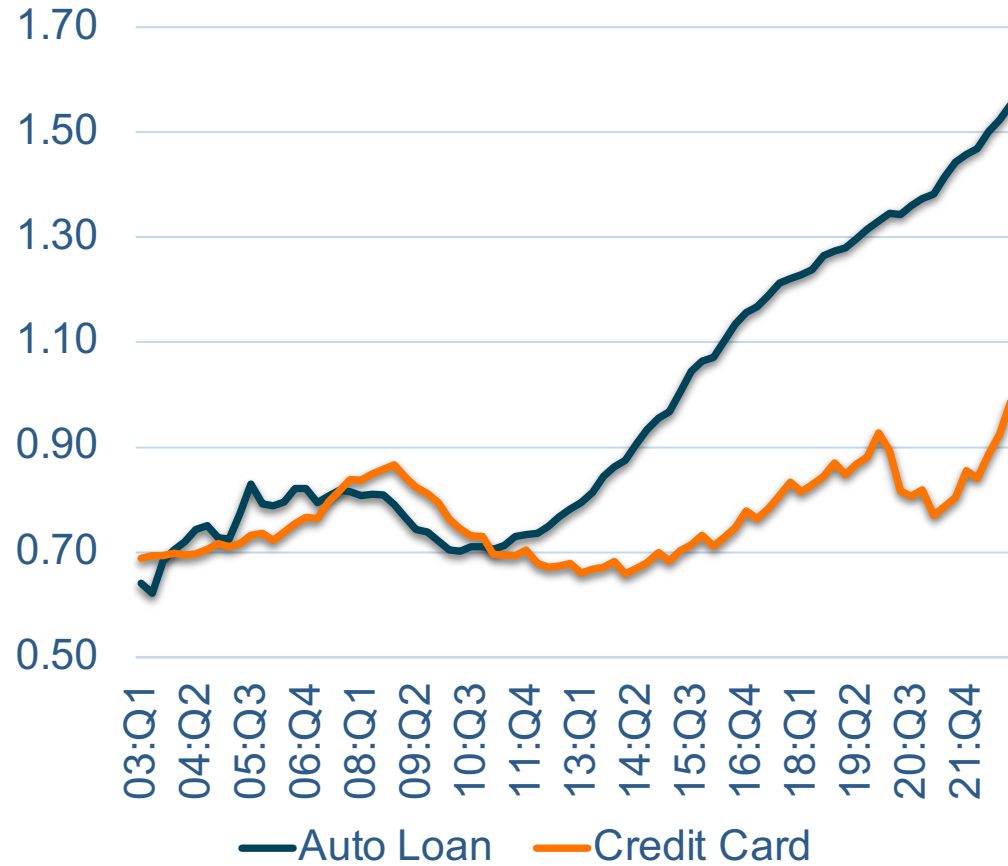
% Population Subprime Credit Score



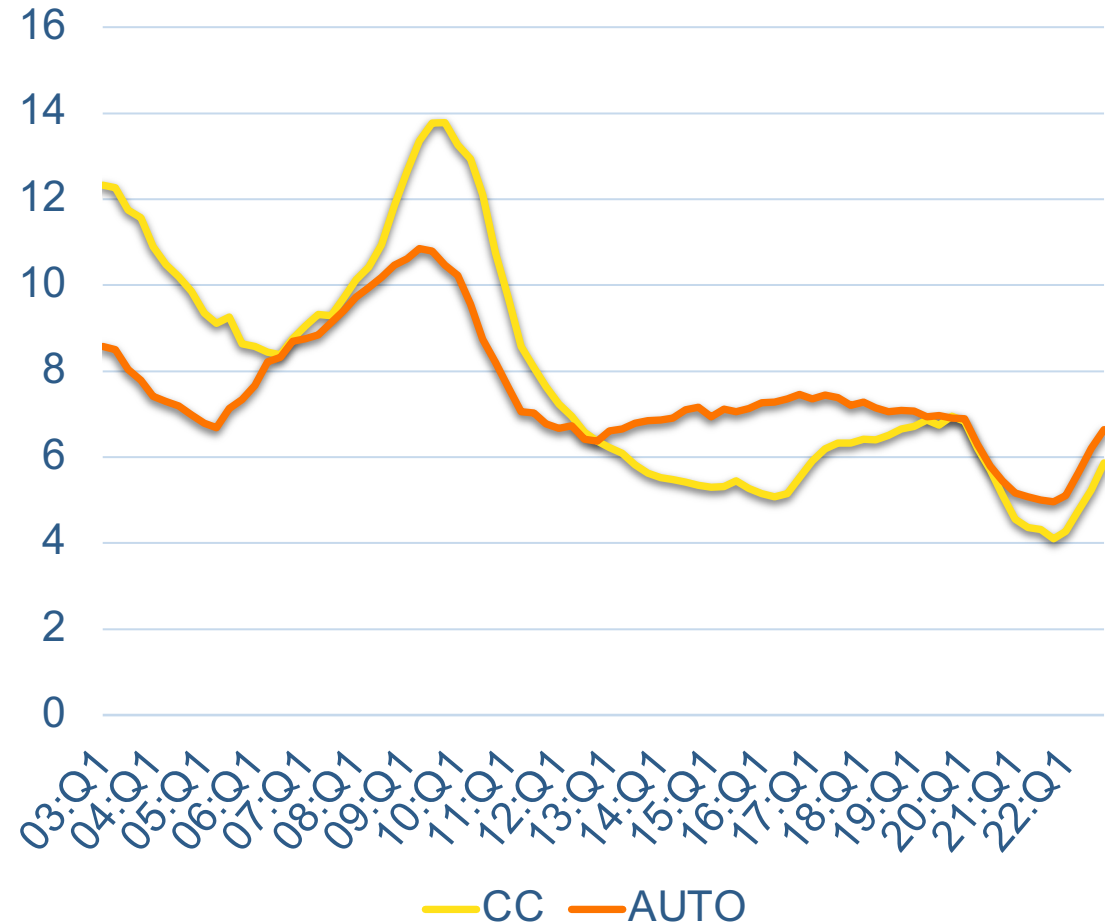
Consumer Credit (NY Fed Panel)



Consumer Credit (Trillions)



Transition to 30+ Dq





How much farther can inflation go?

Unit Money Supply



8% to 13% increase in P to offset M2 (with little real growth)

2 Year Inflation Scenarios

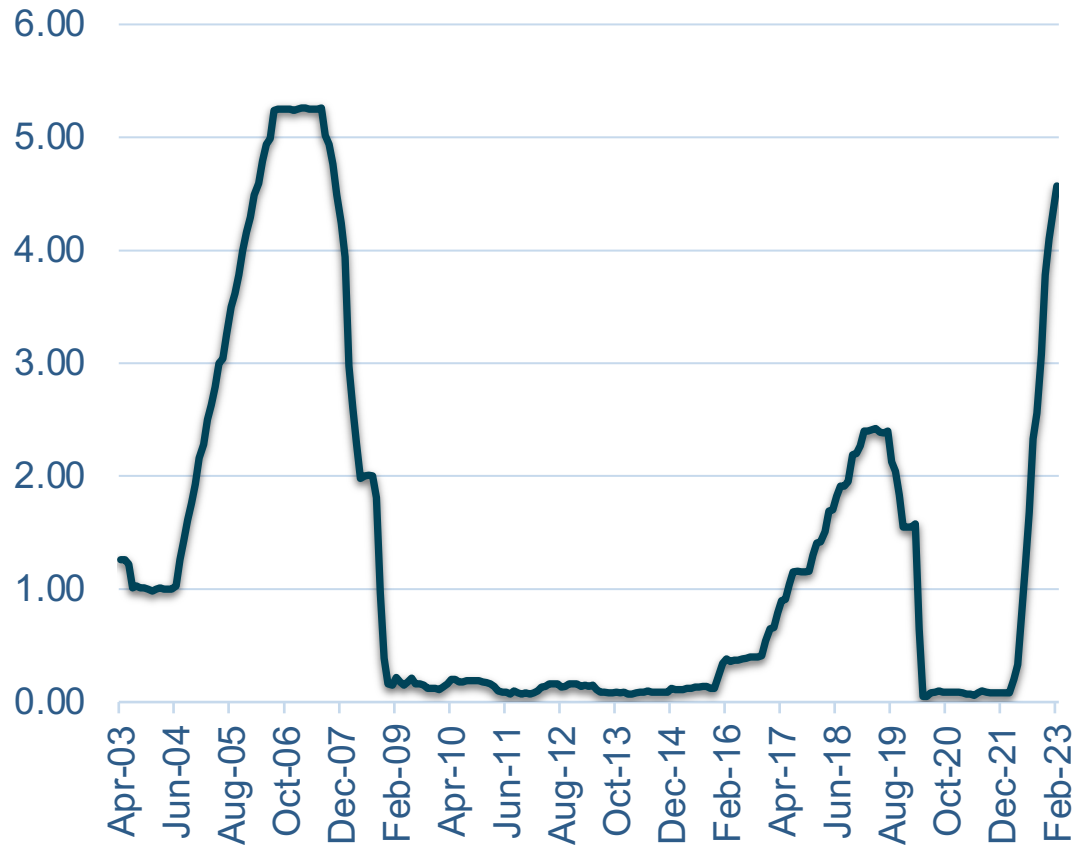
		Target UMS	Weak QT	Strong QT
To Date				
M2	32.5%	0.75	-0.7%	-6.2%
Real Growth	5.0%	0.70	6.2%	1.7%
Inflation	13.6%	0.65	13.7%	8.1%
Remainder	14.0%	0.60	21.1%	16.1%

The Fed Response

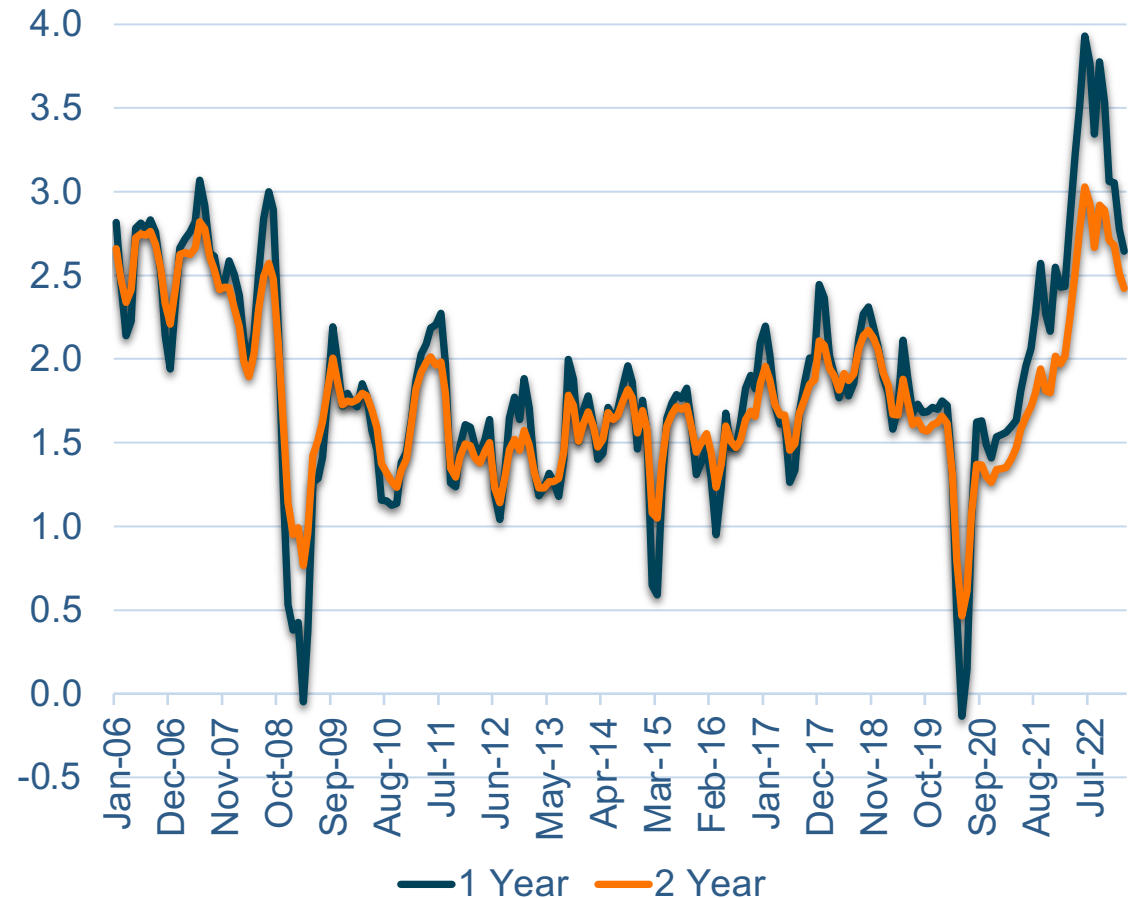
Changing the pace of price adjustment, not the scale of it...



Effective Federal Funds Rate



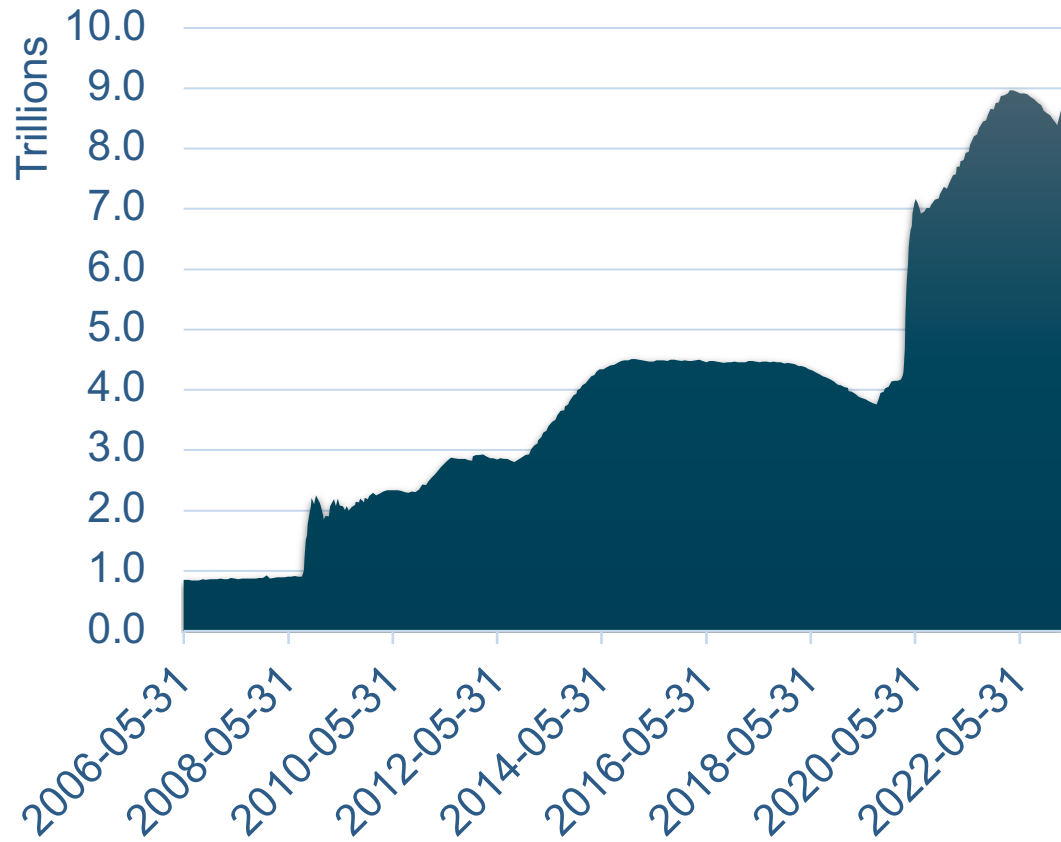
Inflation Expectations



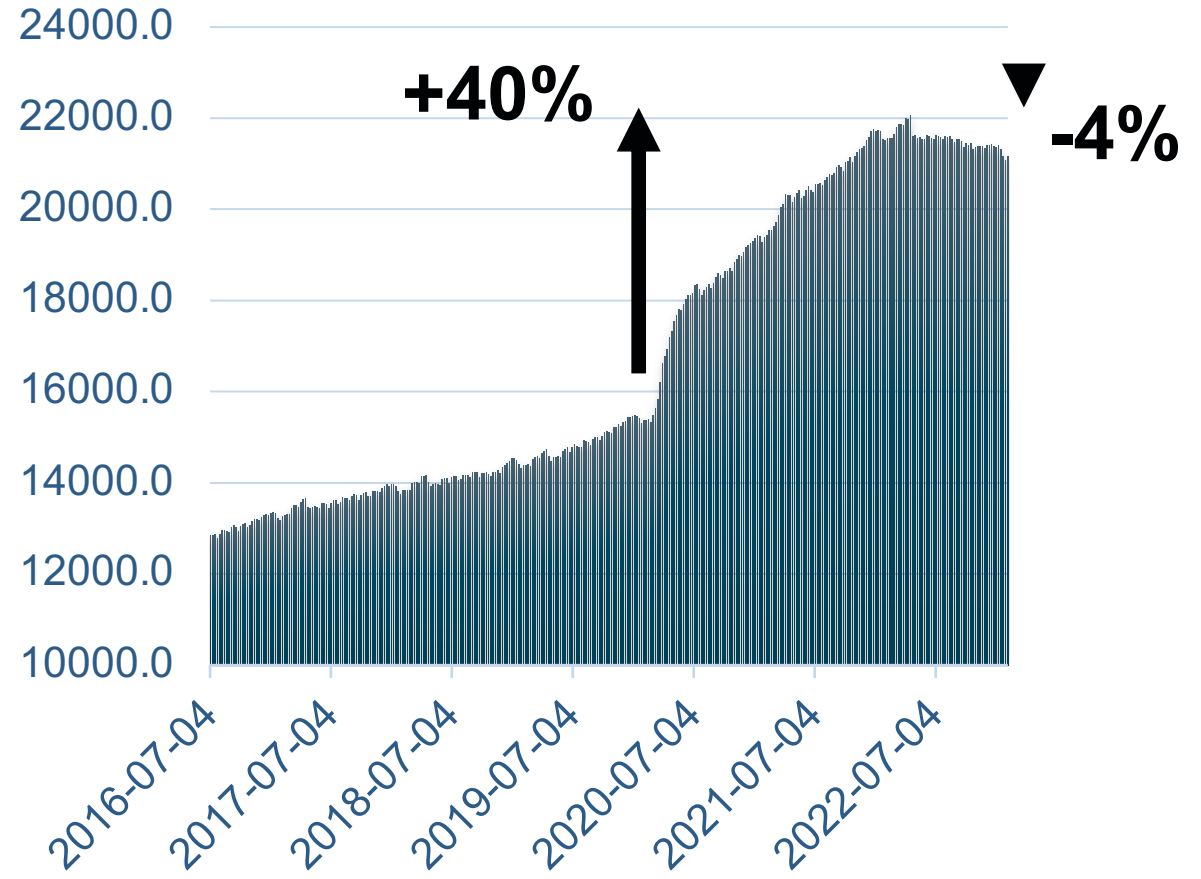
The Fed Response Part 2: QT



Federal Reserve Balance Sheet (Assets)



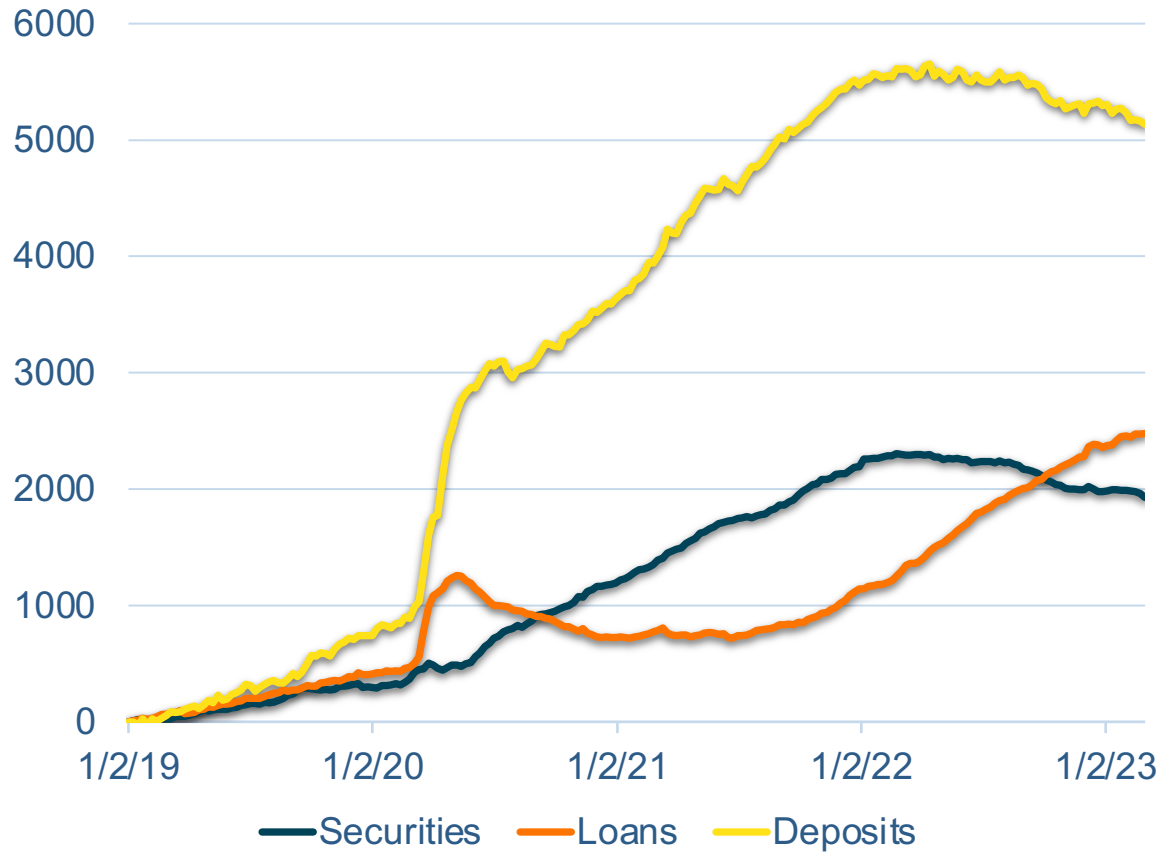
M2 (Weekly)



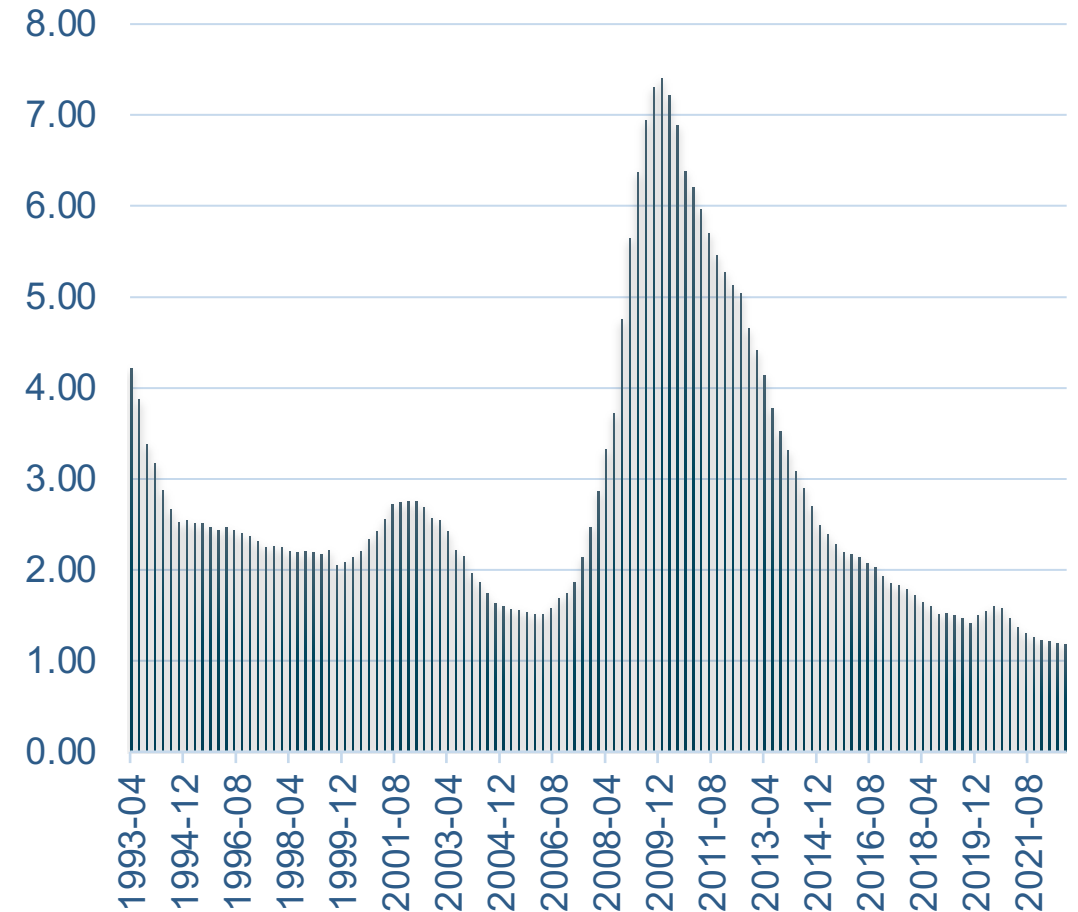
The impact on banking...



Bank Assets and Liabilities (\$Billions, Change from Jan 2019)



Delinquency Rate: Commercial Banks





	2/19/20	Rate	7/27/22	Rate
	7/27/22		2/22/23	
Deposits	4,682,704	35.0%	(420,663)	-2.3%
Securities	1,900,520	49.2%	(278,847)	-4.8%
Loans	1,441,191	14.3%	572,938	5.0%

Fed Policy



- *Conducting the nation's monetary policy by influencing money and credit conditions in the economy in pursuit of full employment and stable prices.*
- *Supervising and regulating banks and other important financial institutions to ensure the safety and soundness of the nation's banking and financial system and to protect the credit rights of consumers.*

Error #1: Panic over full employment has negatively impacted price stability

Error #2: Panic over price stability has negatively impacted the banking system



Breaking.Live
@BreakingLive_



FED'S BULLARD: THE MONETARY AND FISCAL ASSISTANCE PROVIDED IN RESPONSE TO THE PANDEMIC MAY HAVE BEEN EXCESSIVE.

12:05 PM · Jan 12, 2022 · financialjuice

160 Retweets **191** Quote Tweets **928** Likes



Darragh Griffin @dgriff1 · Jan 12
Replying to @BreakingLive_
No shit!





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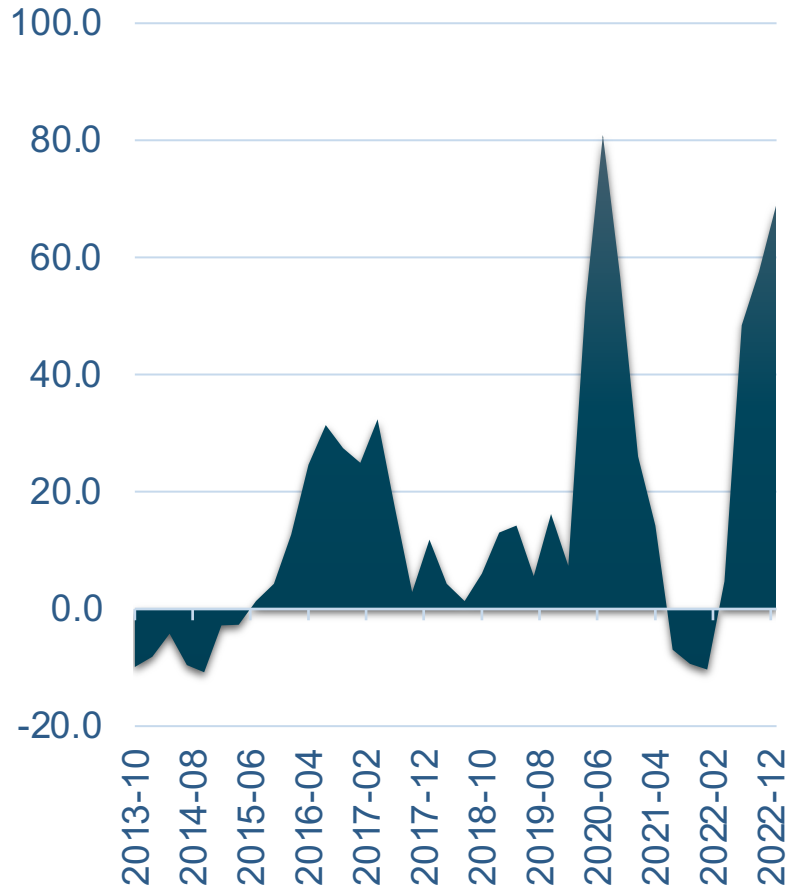
Fed's Barr Calls Silicon Valley Bank a 'Textbook Case of Mismanagement'

Top bank regulator to testify Tuesday alongside other officials

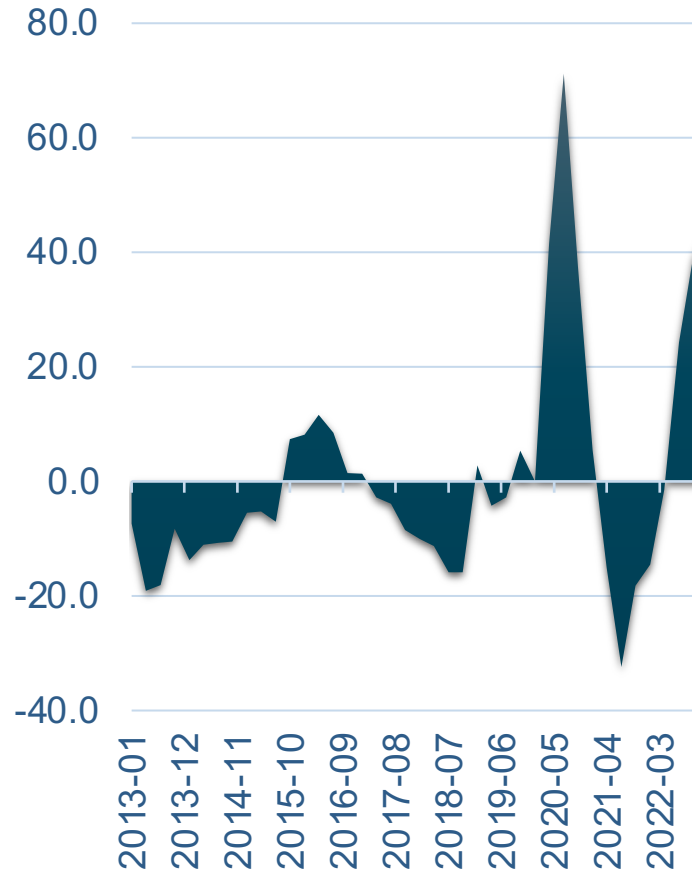
The impact on commercial banking...



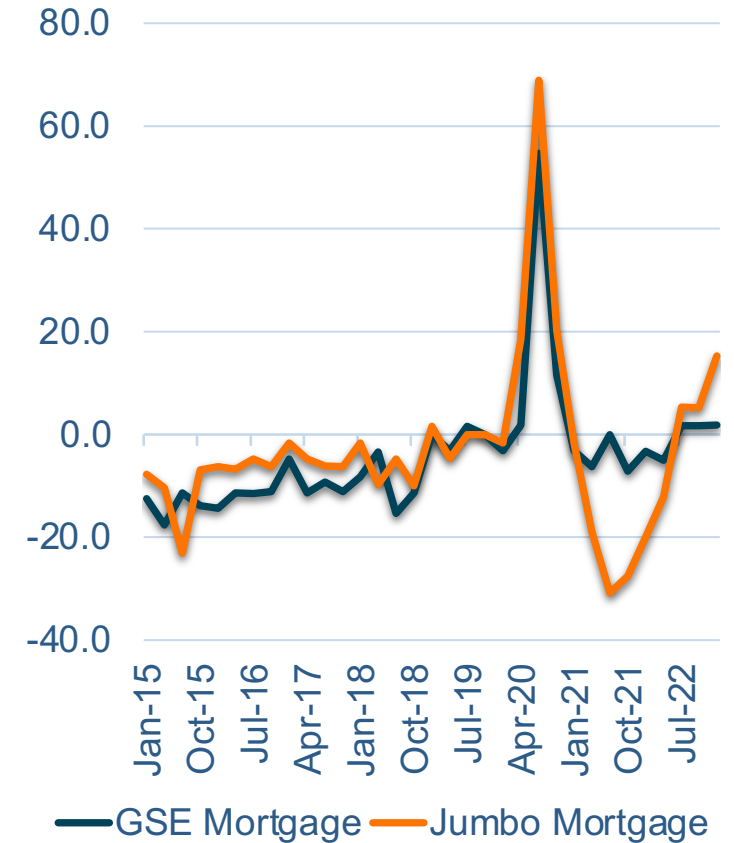
Increasing Standards on Commercial RE Loans



Increasing Standards on C&I Loans



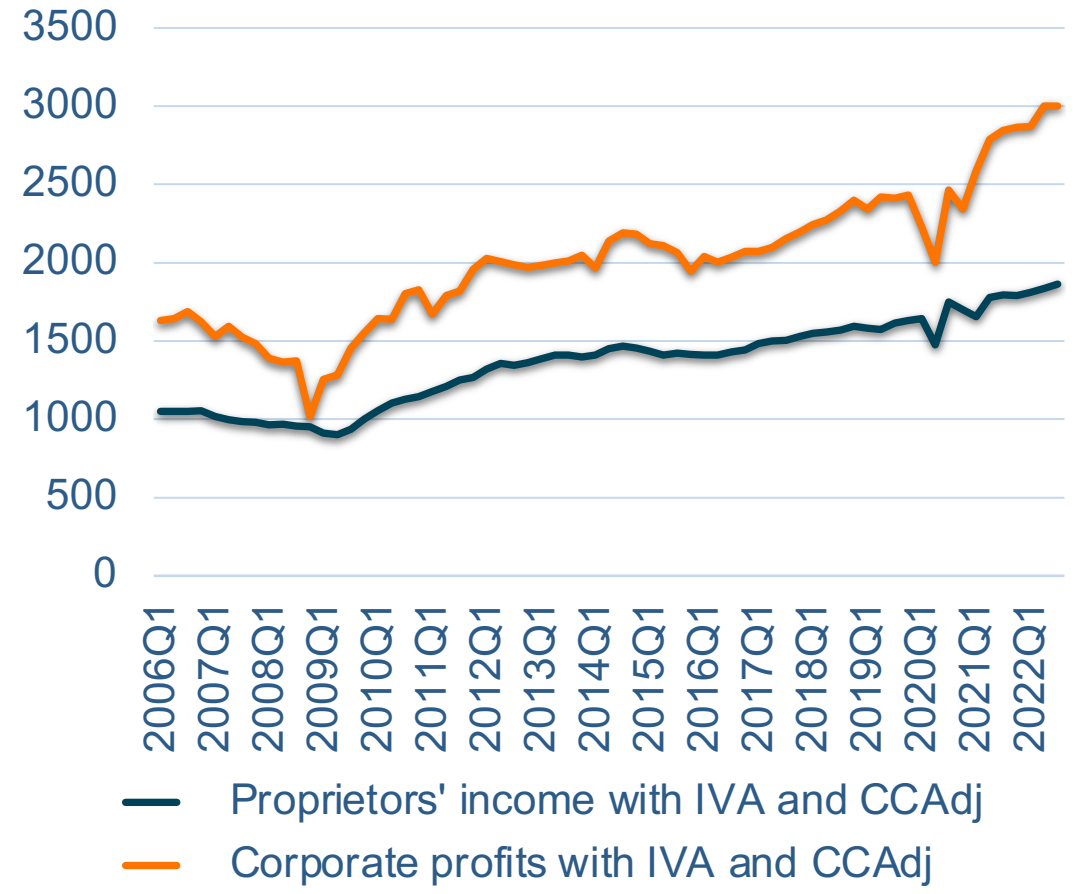
Increasing Standards on Mortgage Loans



Business is managing...



Business Profits



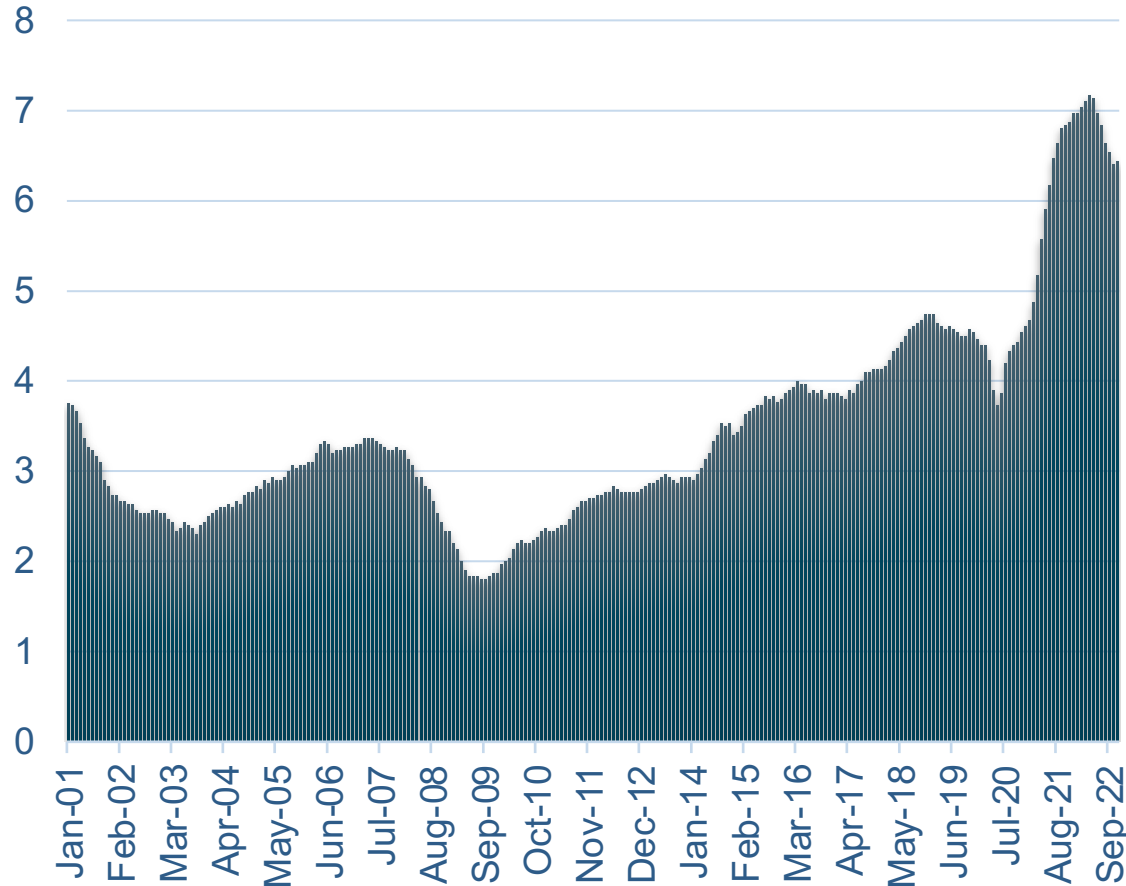
Arizona Business License Applications



Business's real issue...



US Job Opening Rate

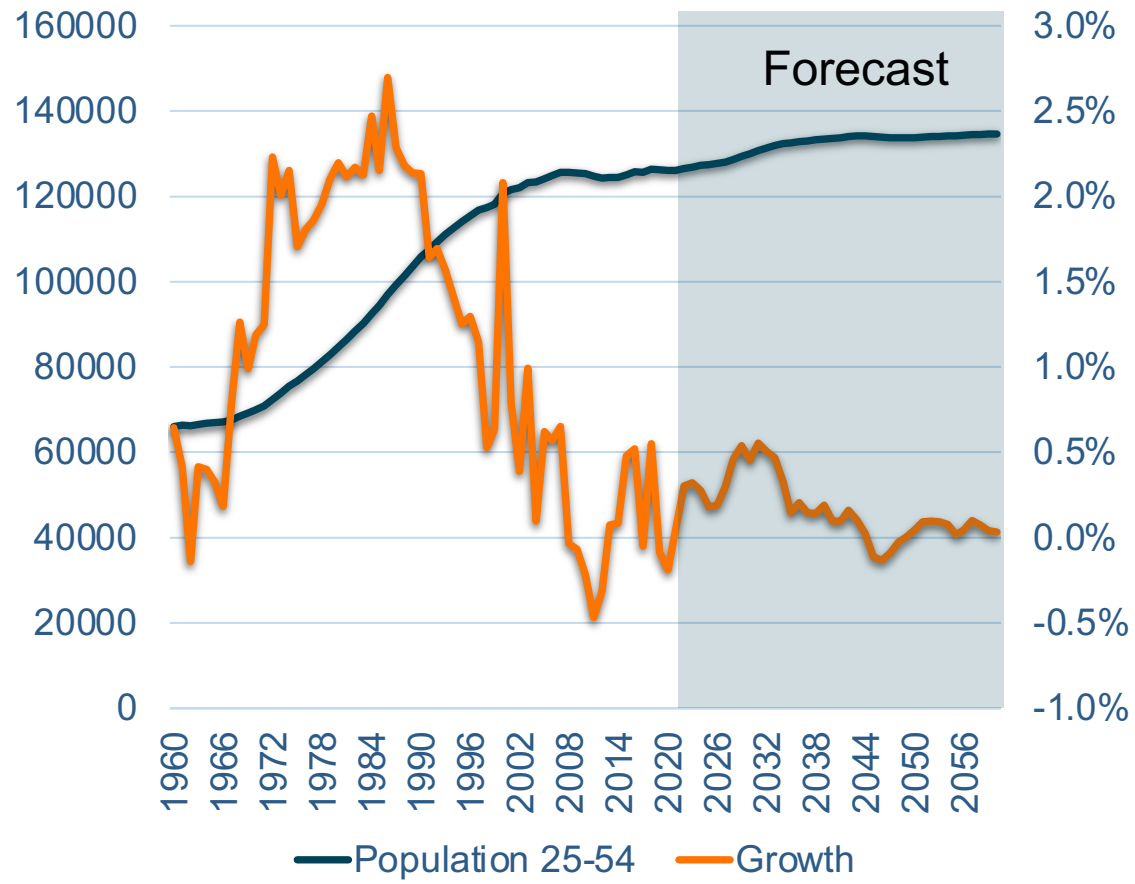


Job Openings Rate by Sector	Jul-19	Jul-22
Total private	4.2	7.7
Health care	2.8	9.3
Leisure hospitality	6.7	9.3
Professional	5.4	9.0
Logistics	3.9	8.0
Other services	3.7	7.5
Financial activities	2.6	7.0
Information	3.9	7.0
Retail trade	4.9	6.5
Manufacturing	2.5	6.2
Education	2.6	6.0
Mining and logging	3.7	5.7
Government	1.5	5.2
Wholesale trade	2.8	4.9
Local education	1.6	4.7
Construction	5.1	4.7

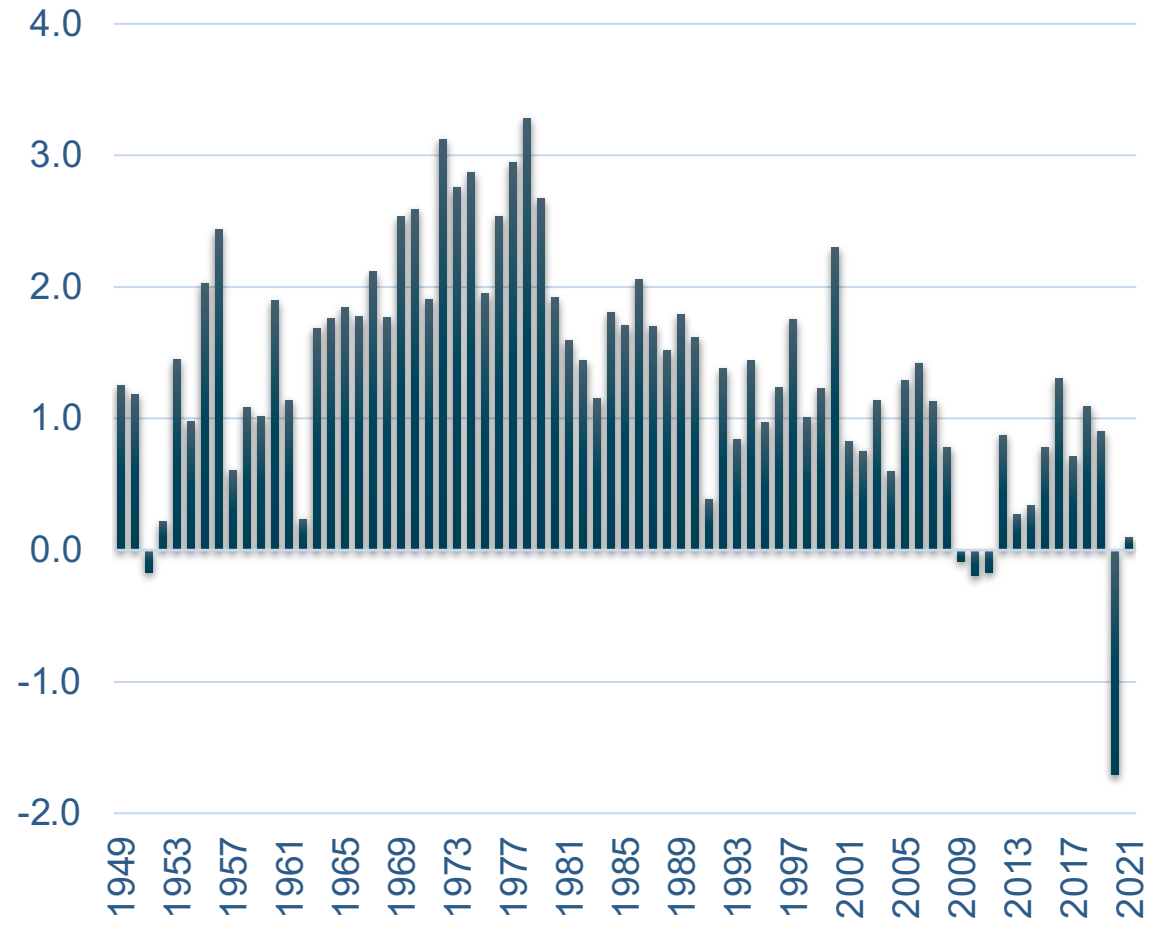
The Era of Labor Shortages is Here



Prime Working Years Population Growth (Census Forecasts)



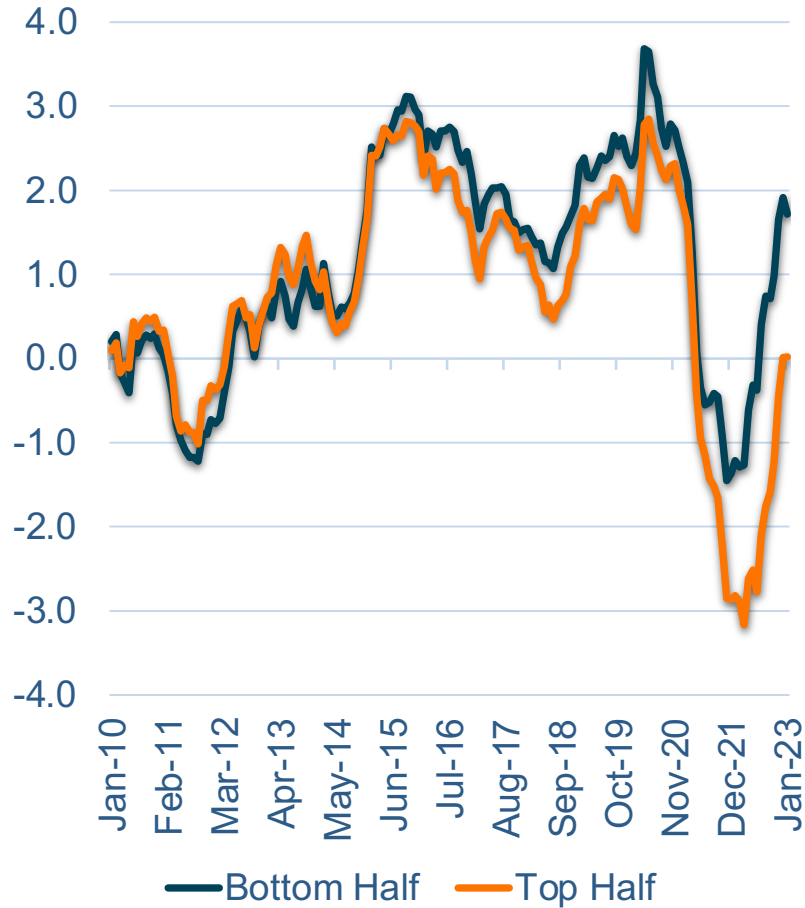
YoY Growth US Labor Force



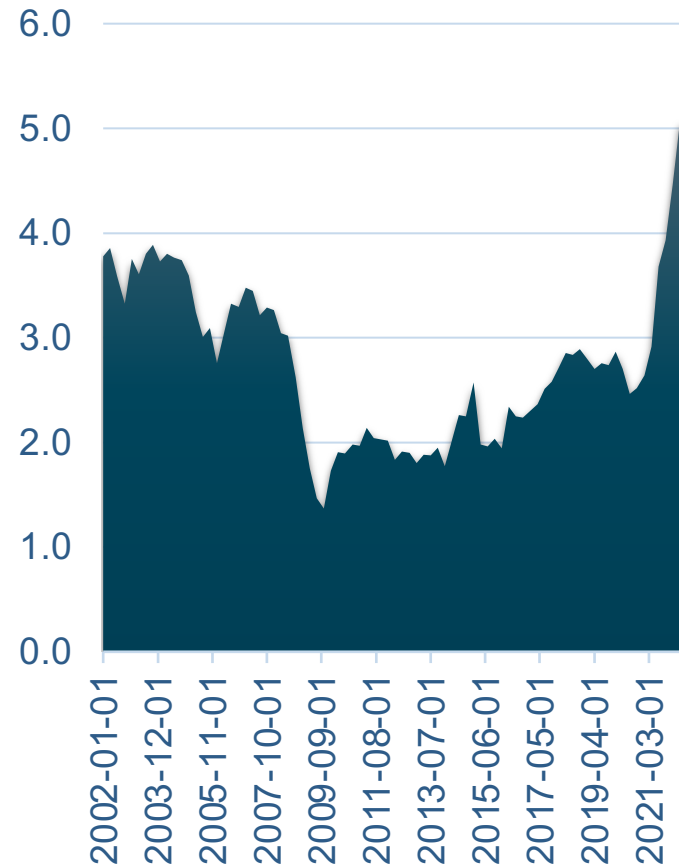
A 2-edged sword...



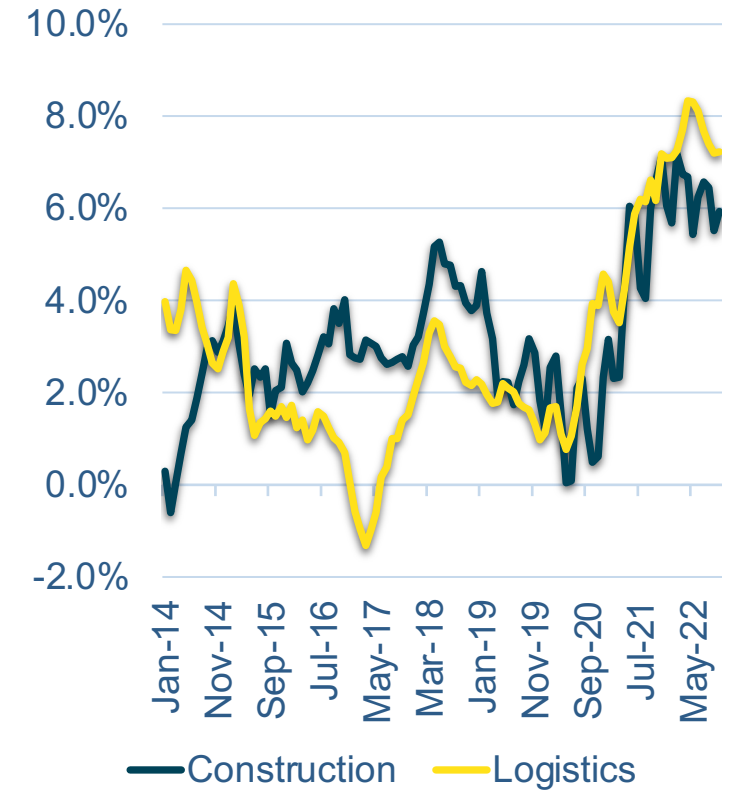
Worker Real Earnings Growth



Business Compensation Cost Index



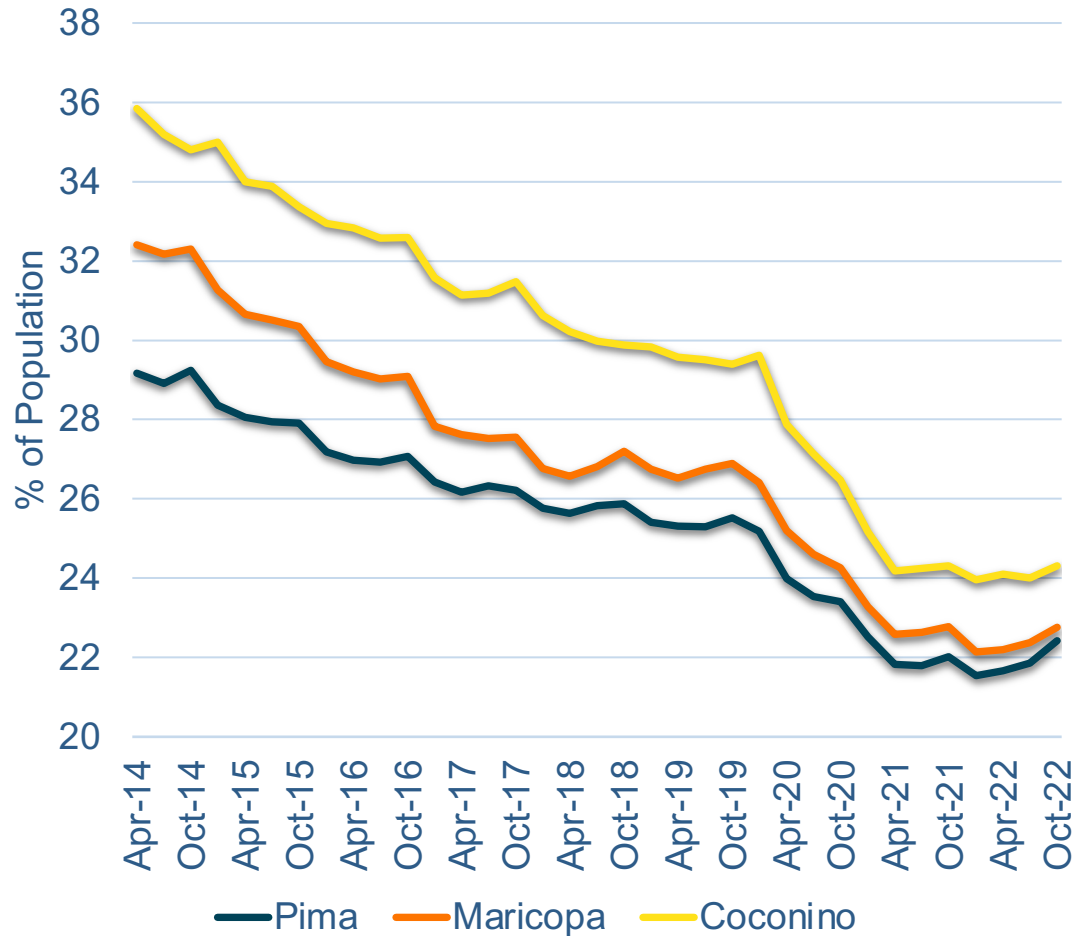
YoY Growth Weekly Earnings for Non-Supervisory Workers



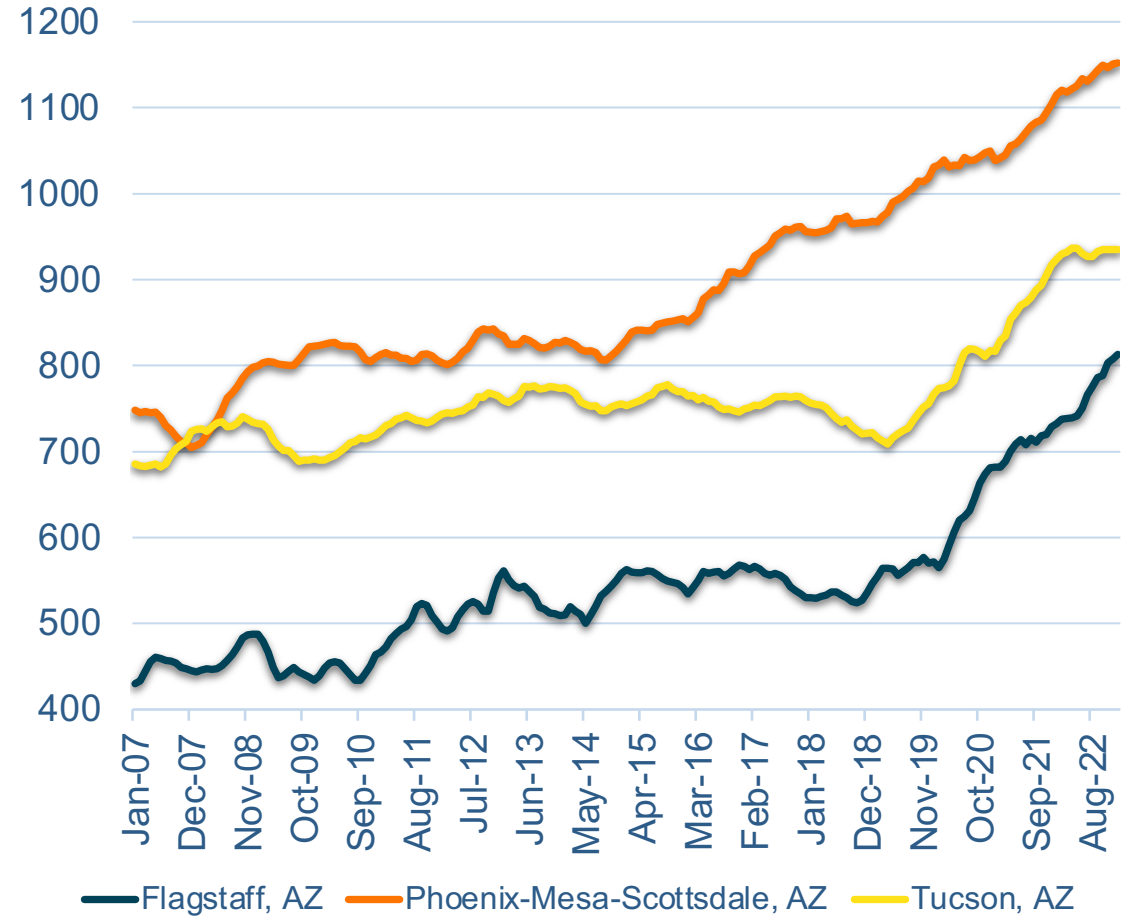
Personal Finances



Equifax Subprime Credit Pop.



Average Weekly Earnings



Business Investment



Real Business Investment	2019 Q3	2022 Q3	
Private fixed investment	3437.0	3550.5	3.3%
Software	471.3	653.5	38.7%
Information processing eq	486.6	582.3	19.7%
Research and development	459.5	540.3	17.6%
Entertainment, literary	85.0	94.8	11.5%
Industrial equipment	248.7	258.9	4.1%
Manufacturing	63.3	59.8	-5.5%
Transportation equipment	270.8	249.1	-8.0%
Commercial and health care	172.0	136.5	-20.6%
Mining exploration	132.0	100.2	-24.1%
Power and communication	123.2	79.9	-35.1%

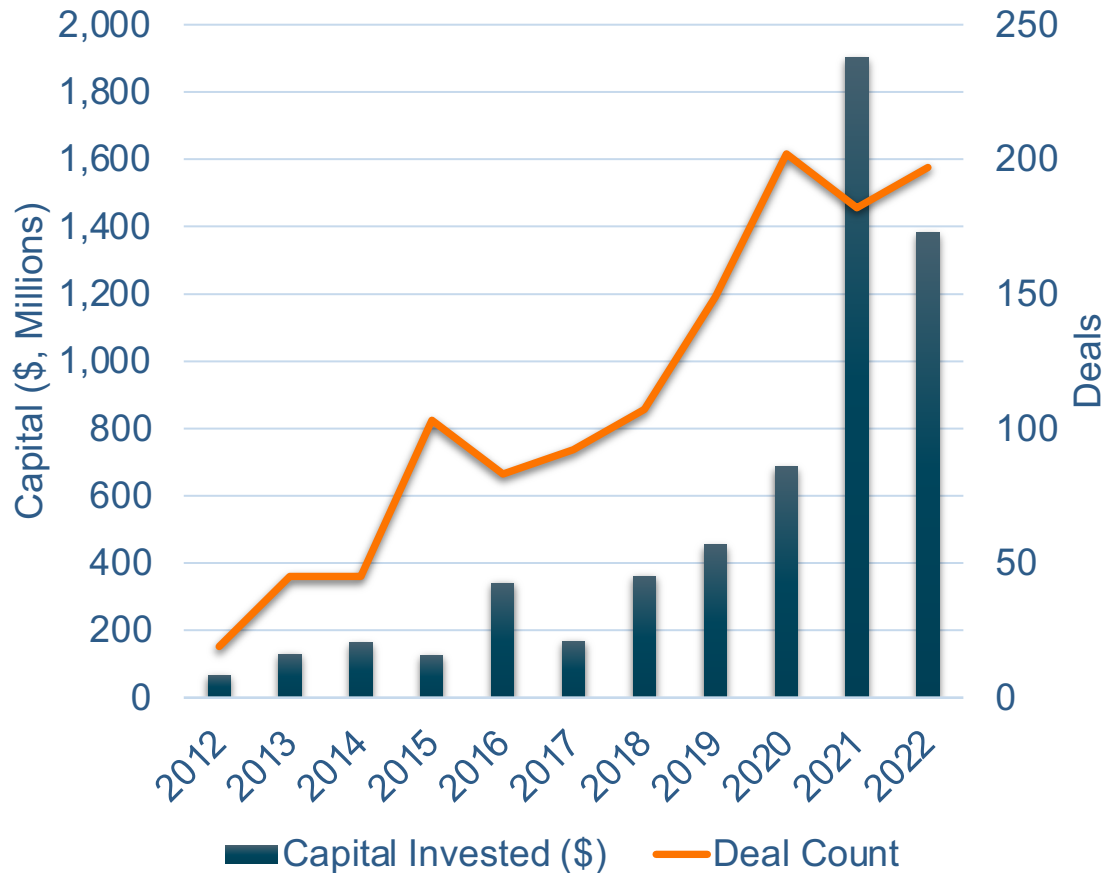
New Orders Non-Defense Capital Goods



Venture Capital



AZ Capital Invested and Number of Deals



Company Name (AZ HQ)	Deal Size (\$, Mil.)	Industry	Location
World View	350.0	Aerospace	Tucson
Paradox	250.0	Business Software	Scottsdale
Nextiva	200.0	Comms Software	Scottsdale
Lessen	170.0	Information Services	Scottsdale
FlipOS	136.0	Financial Software	Tempe
Arkos Health	130.0	Enterprise Systems	Mesa
Emerge	130.0	Business Software	Scottsdale
SOURCE	130.0	Other Hardware	Scottsdale

Regionally? Who is Ahead? Behind?



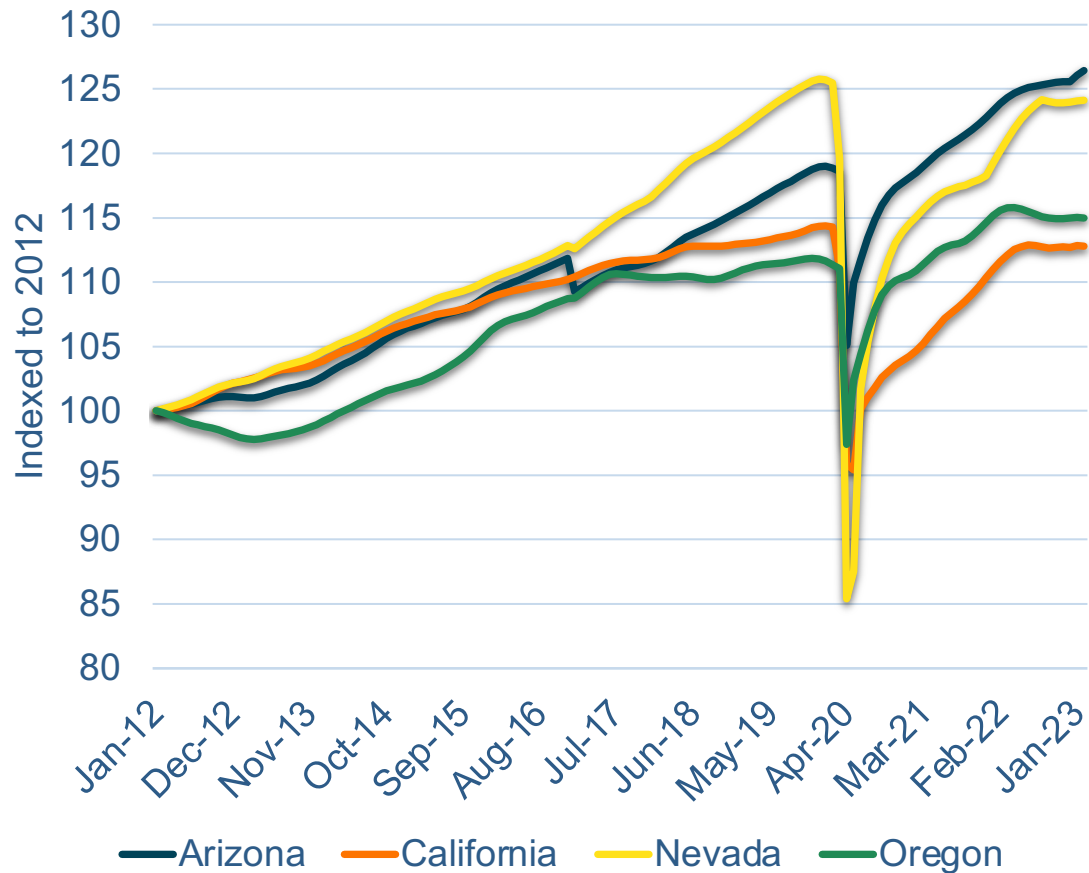
Current State Job Opening Rate, with change 19-22

Alaska	10.1	4.1	South Carolina	7.4	2.5	Nebraska	6.6	1.9
Kentucky	7.9	3.4	Iowa	6.9	2.4	Arizona	7.1	1.7
Georgia	7.9	3.1	Oklahoma	7.2	2.4	Wisconsin	6.7	1.7
Tennessee	7.6	2.9	Maine	7.0	2.4	Pennsylvania	5.9	1.6
Illinois	6.9	2.9	Hawaii	7.1	2.4	Florida	6.2	1.6
Massachusetts	7.2	2.8	Alabama	6.8	2.3	Utah	6.4	1.5
Delaware	7.3	2.8	Vermont	7.4	2.3	Indiana	6.5	1.5
Mississippi	7.3	2.7	Michigan	6.9	2.3	Arkansas	6.7	1.5
Montana	8.3	2.7	California	6.5	2.2	North Dakota	7.0	1.5
Louisiana	7.5	2.7	New Hampshire	6.7	2.2	New Jersey	5.7	1.4
Wyoming	8.4	2.7	Rhode Island	6.9	2.2	Kansas	6.4	1.4
Connecticut	6.5	2.7	South Dakota	7.1	2.1	New Mexico	7.4	1.3
Virginia	7.9	2.7	Maryland	7.0	2.1	Missouri	6.4	1.3
Minnesota	7.1	2.6	Colorado	7.4	2.1	Oregon	6.5	1.3
Texas	7.2	2.6	Ohio	6.8	2.1	New York	5.4	1.2
Nevada	6.8	2.6	Idaho	7.2	2.0	Washington	6.1	1.2
West Virginia	8.3	2.6	District of Columbia	5.9	1.9	North Carolina	7.0	1.1

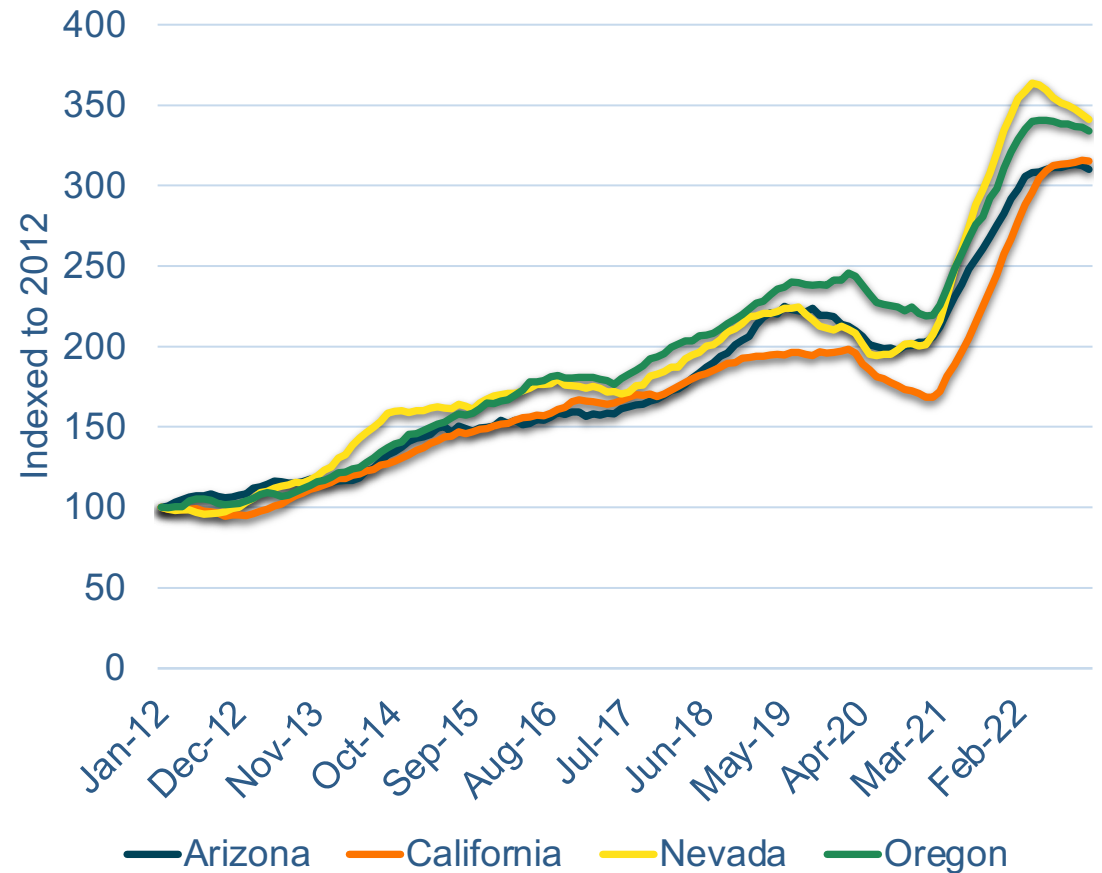
Regional Labor Markets



Indexed Payroll Jobs



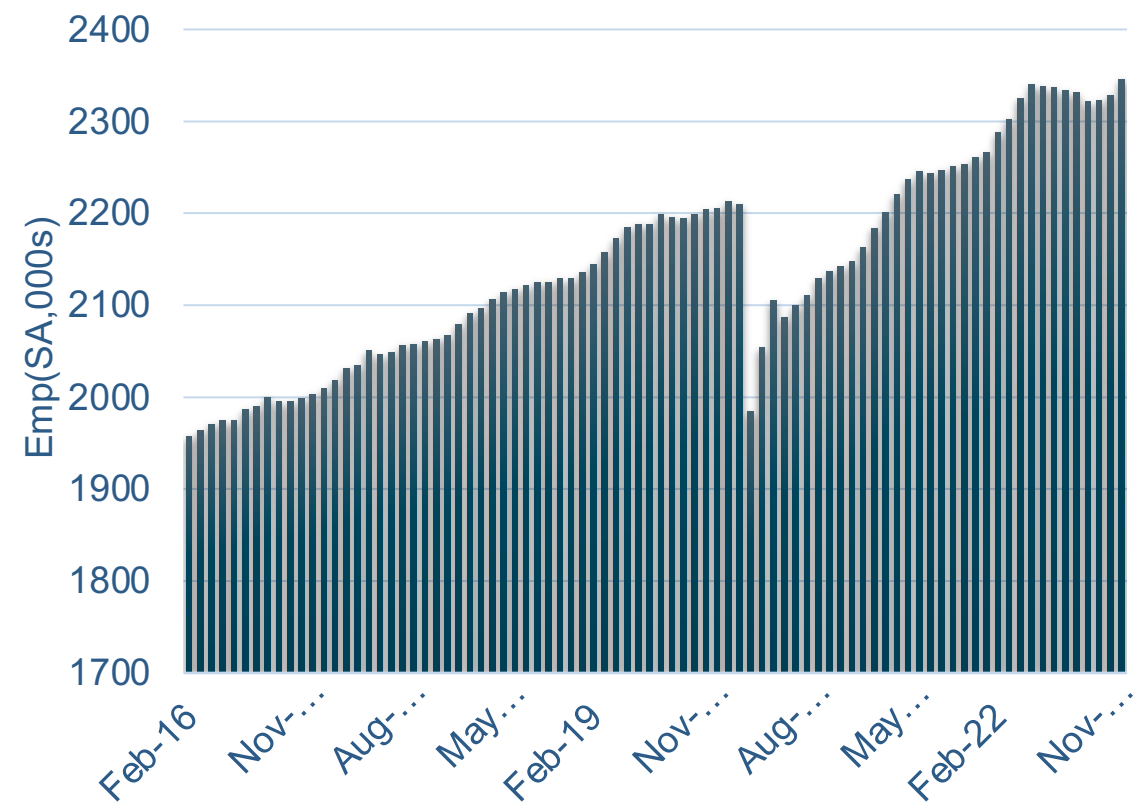
Job Openings



Employment Situation - Phoenix



**Total Nonfarm Employment
Phoenix MSA**

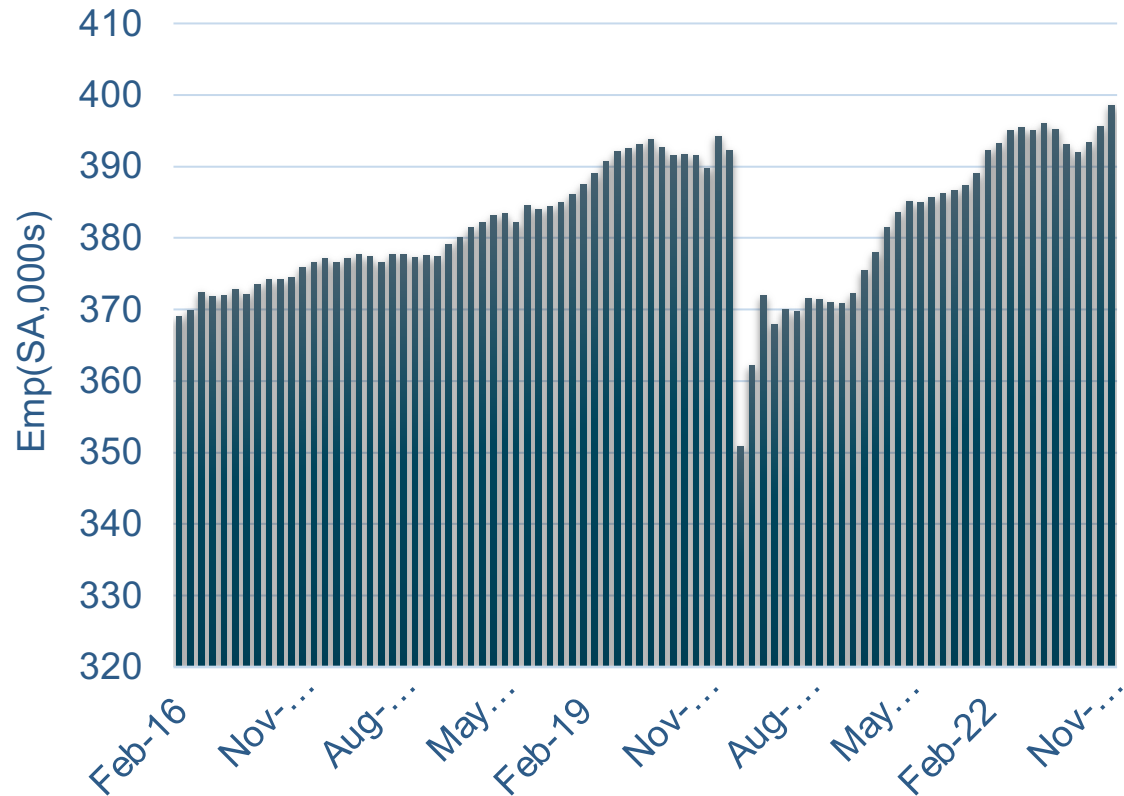


Industry	Jan. 2023 Emp (000s)	3-Yr.% Growth	
		Phoenix	Arizona
Total Nonfarm	2,345.0	6.7	5.8
Prof Sci and Tech	152.0	16.4	13.8
Wholesale Trade	96.0	15.8	15.3
Construction	154.0	13.5	11.1
Manufacturing	150.0	10.5	9.0
Trade, Transport, Util.	450.0	8.6	9.9
Financial Activities	221.0	8.3	9.4
Information	43.0	4.2	2.6
Leisure and Hospitality	237.0	2.5	3.0
Retail Trade	238.0	0.9	4.0
Government	240.0	-1.8	-2.1
Admin Support	208.0	-2.2	-1.1

Employment Situation -Tucson



**Total Nonfarm Employment
Tucson MSA**

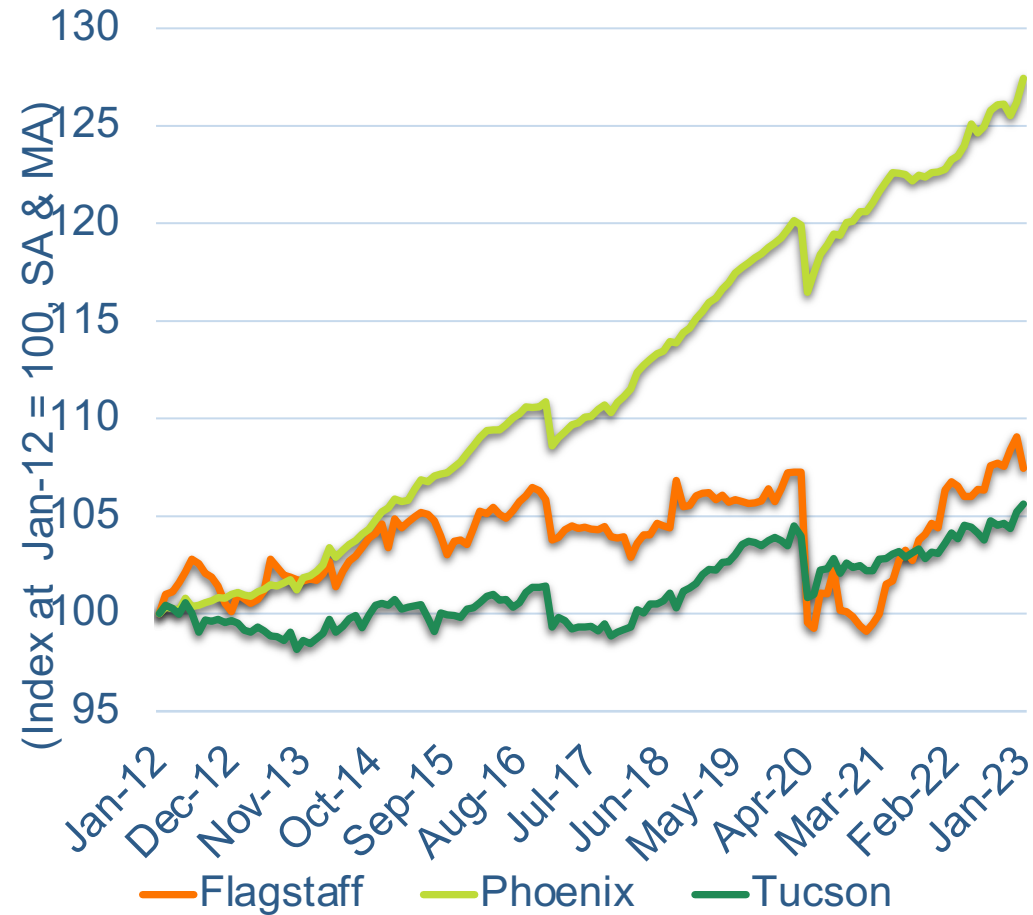


Industry	Jan. 2023 Emp (000s)	3-Yr.% Growth	
		Tucson	Arizona
Total Nonfarm	399.0	1.7	5.8
Financial Activities	20.0	14.1	9.4
Trade ,Transport, Util.	70.0	8.9	9.9
Wholesale Trade	8.0	8.3	15.3
Construction	20.0	5.9	11.1
Manufacturing	29.0	5.5	9.0
Prof Sci and Tech	19.0	3.7	13.8
Leisure and Hospitality	45.0	0.4	3.0
Retail Trade	42.0	-0.2	4.0
Government	76.0	-4.0	-2.1
Admin Support	27.0	-11.7	-1.1
Information	5.0	-15.2	2.6

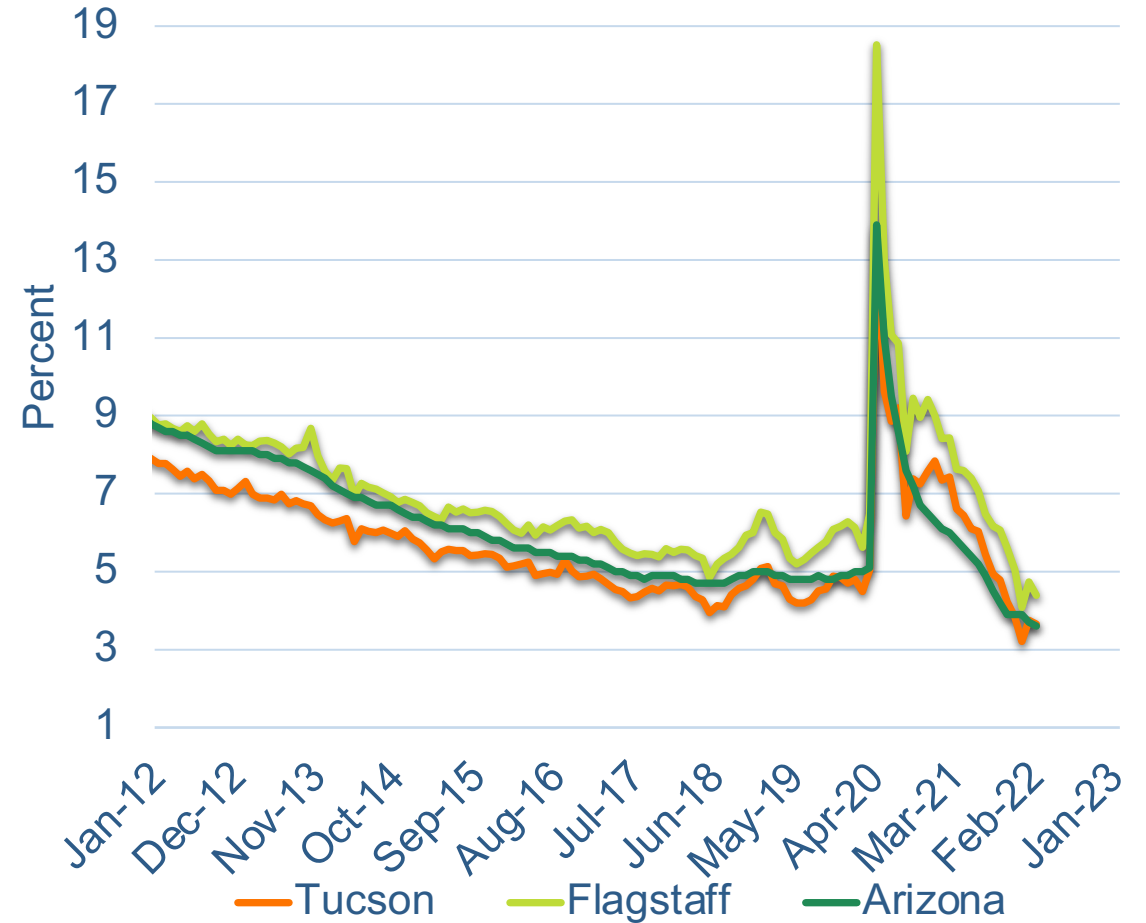
Labor Market



Labor Force



Unemployment Rate



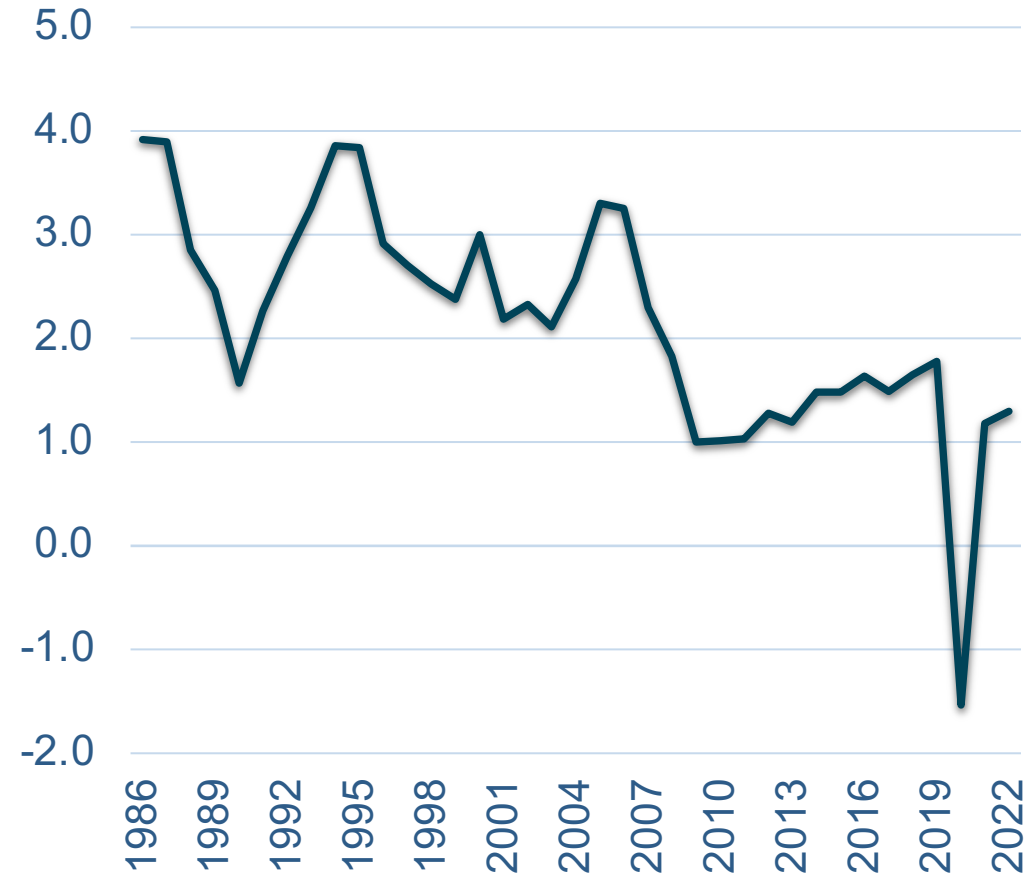
Policy and Labor Supply Constraints



■ Solutions

- Extensive: Increasing labor force through immigration (SR) or birthrates (LR)
- Intensive: Raising participation rates among the existing population
- Productivity enhancements: capital investments
- Productivity enhancements: worker skill training

Arizona Pop Growth



The Housing Market



Existing Home Sales SAAR (NAR)



Case Shiller Monthly Price Change



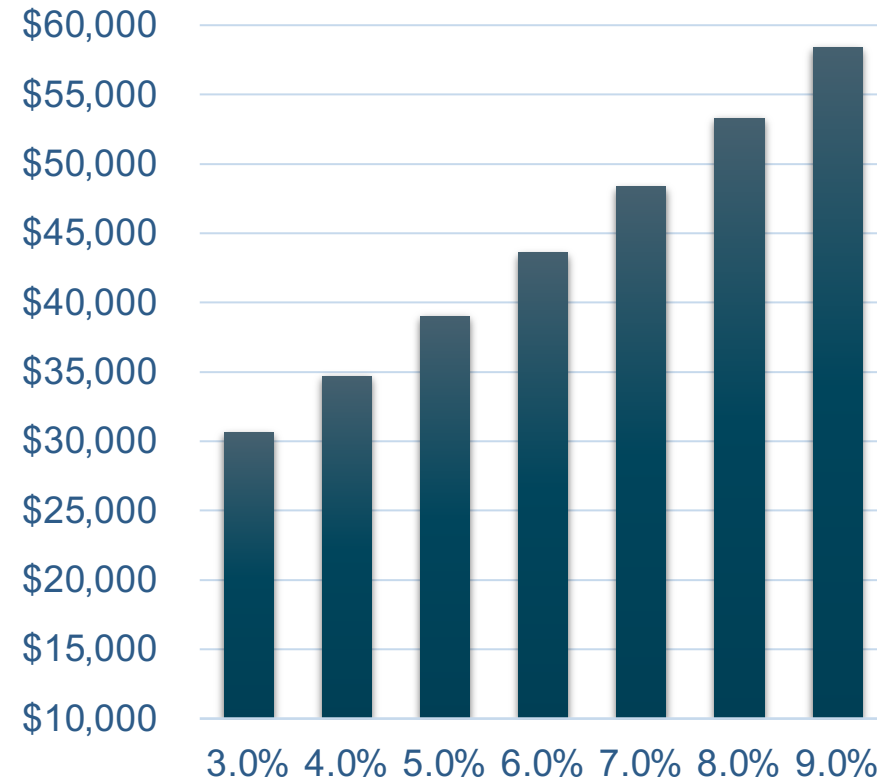
A Rate Driven Sticker Shock



Case Shiller HPA
July 20 – July 22

Tampa	64.0%	Los Angeles	37.9%
Phoenix	62.0%	SF	35.1%
Miami	61.4%	New York	34.9%
Dallas	54.2%	Boston	34.6%
Charlotte	49.5%	Portland	33.6%
LV	49.2%	Cleveland	30.9%
SD	49.1%	Detroit	29.4%
Atlanta	45.8%	Chicago	27.4%
Seattle	43.9%	DC	26.0%
Denver	40.3%	Minneapolis	24.6%

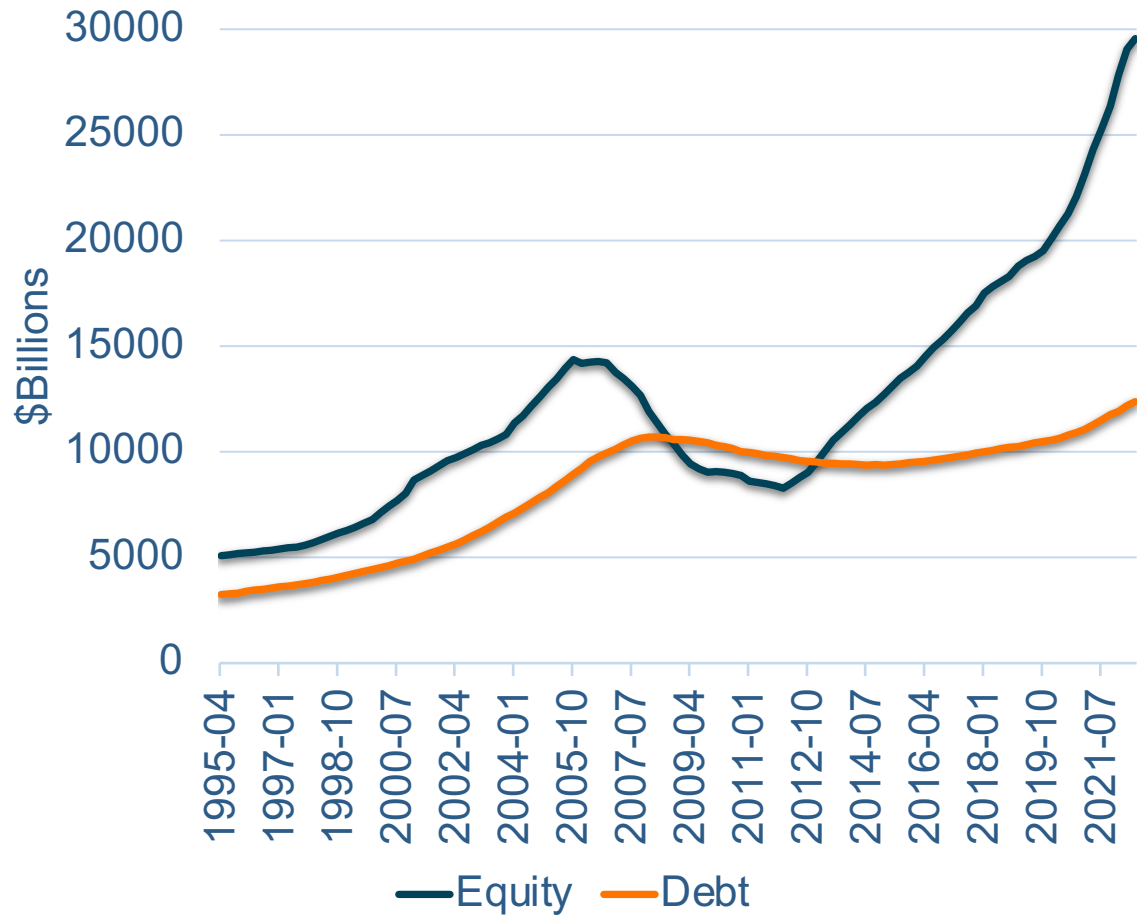
Annual Payment on a \$600,000
Mortgage



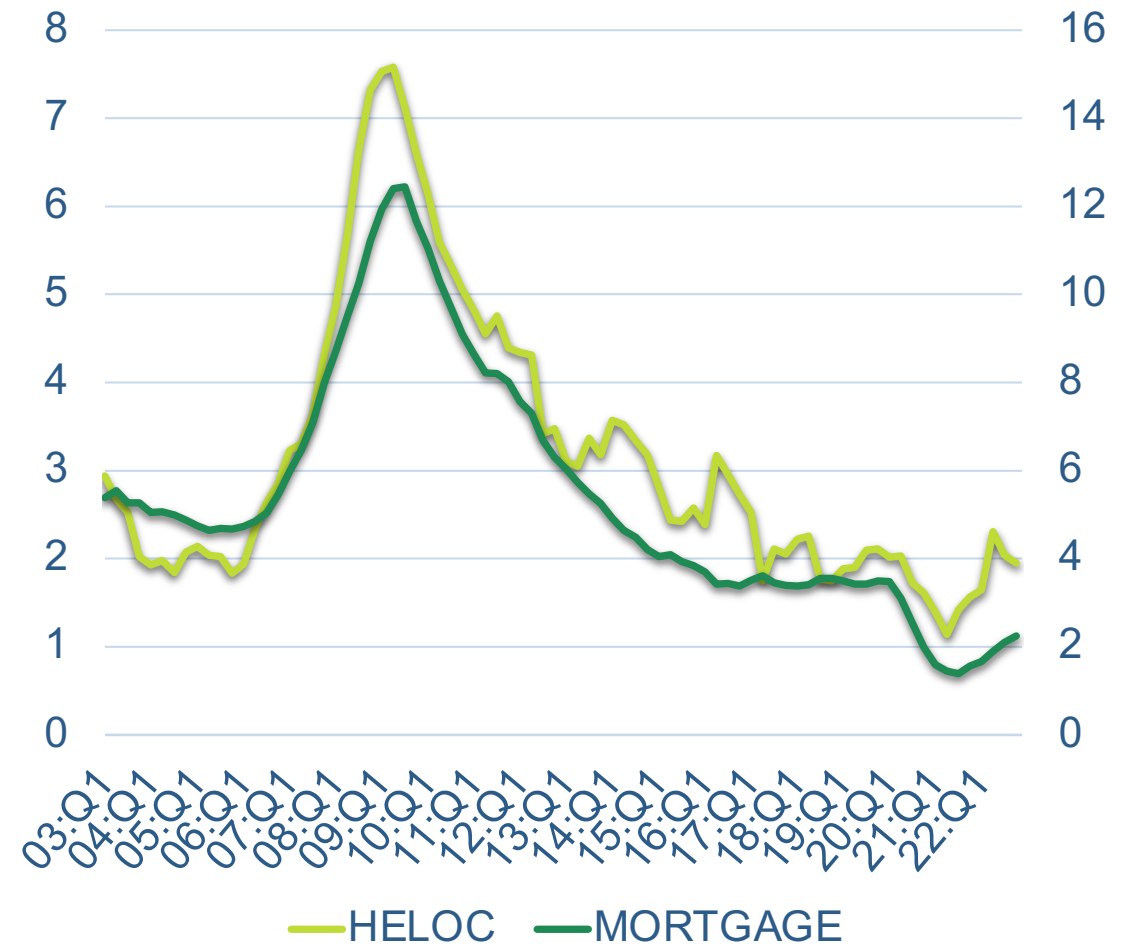
Market Collapse? Not a chance...



HH Debt and Equity in 1-4 Family



Transition to 30+ Dq



Collapse of Filtering, not Fundamentals



Months Supply Existing Homes



Vacant For Sale Units (000s)



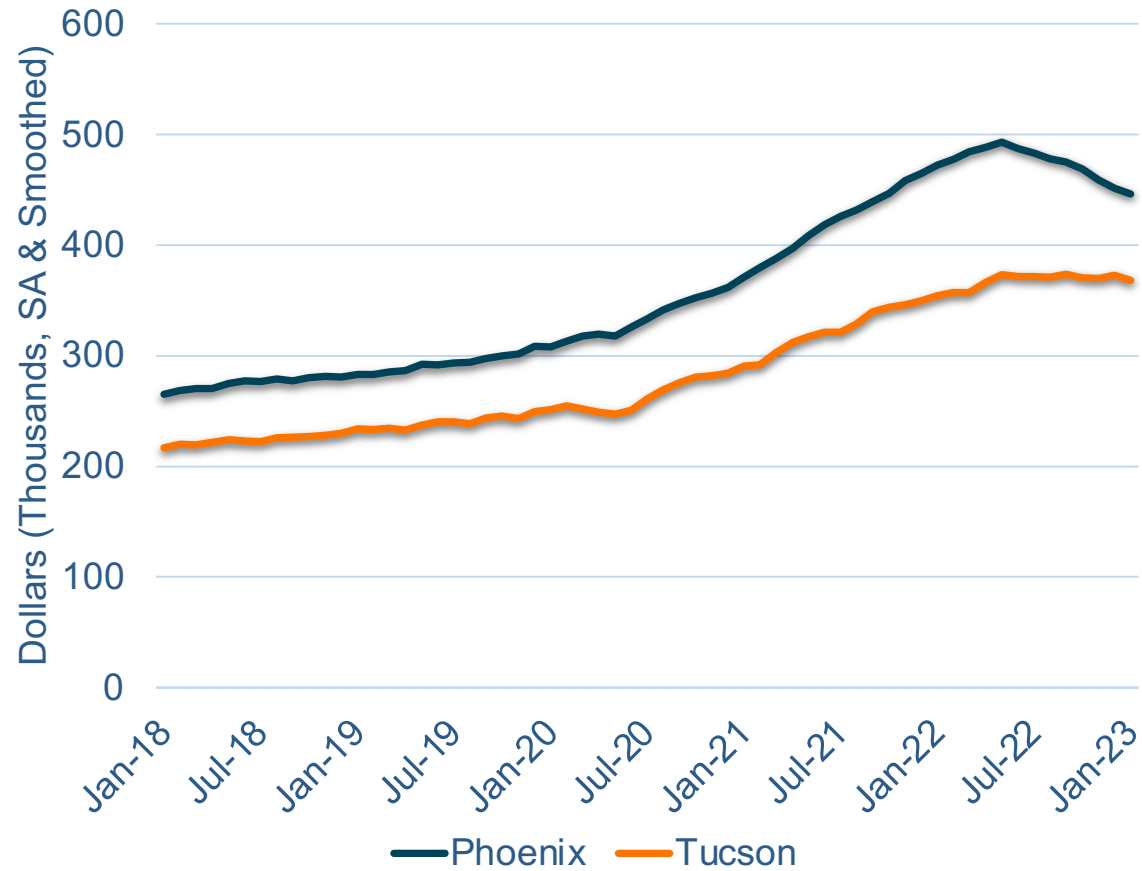
Overall Housing Vacancy

	Northeast	Midwest	South	West
Vacant Year Round 2022	7.6%	7.4%	9.6%	6.6%
For Sale / Rent	2.0%	2.4%	2.7%	2.0%
Vacant Year Round 2012	8.9%	9.9%	12.6%	9.0%
For Sale / Rent	3.3%	4.0%	4.7%	3.5%
Vacant Year Round 2008	8.6%	9.8%	12.3%	8.4%
For Sale / Rent	3.6%	4.9%	5.3%	3.6%

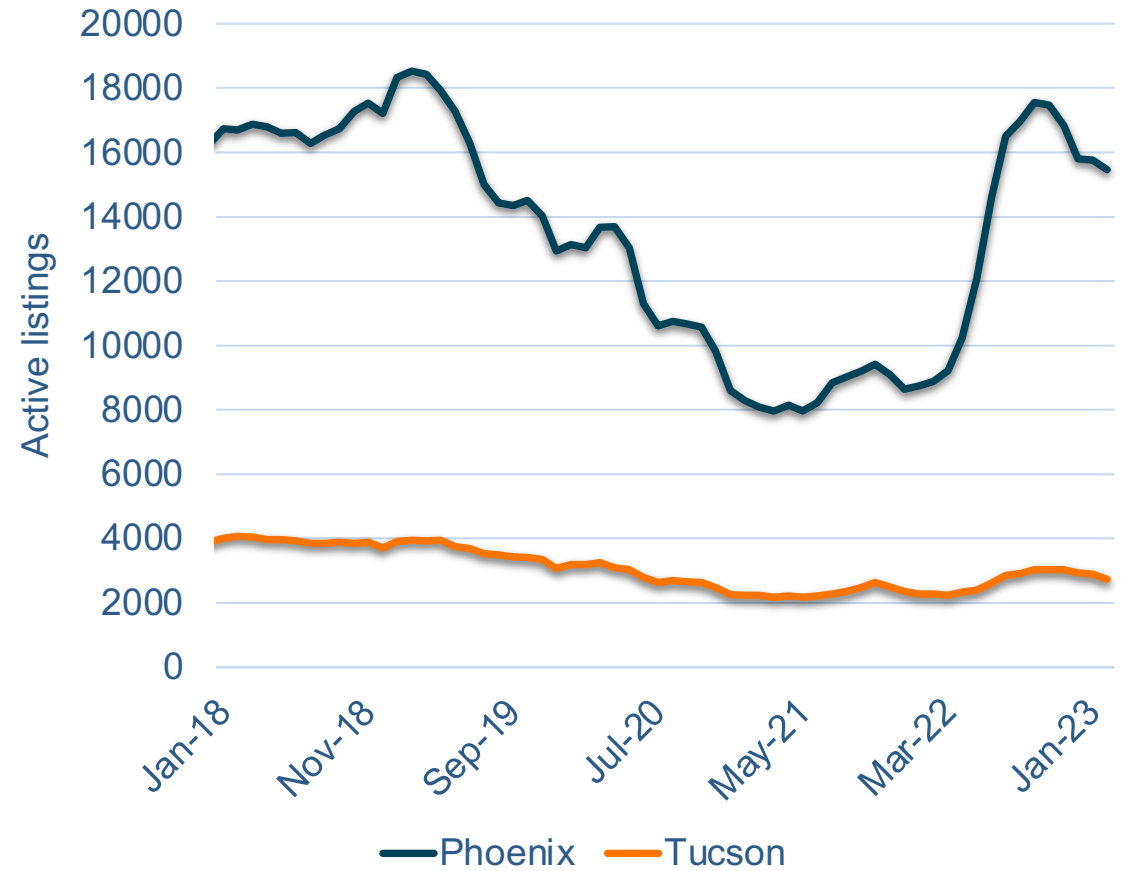
Residential Market



Median Home Prices



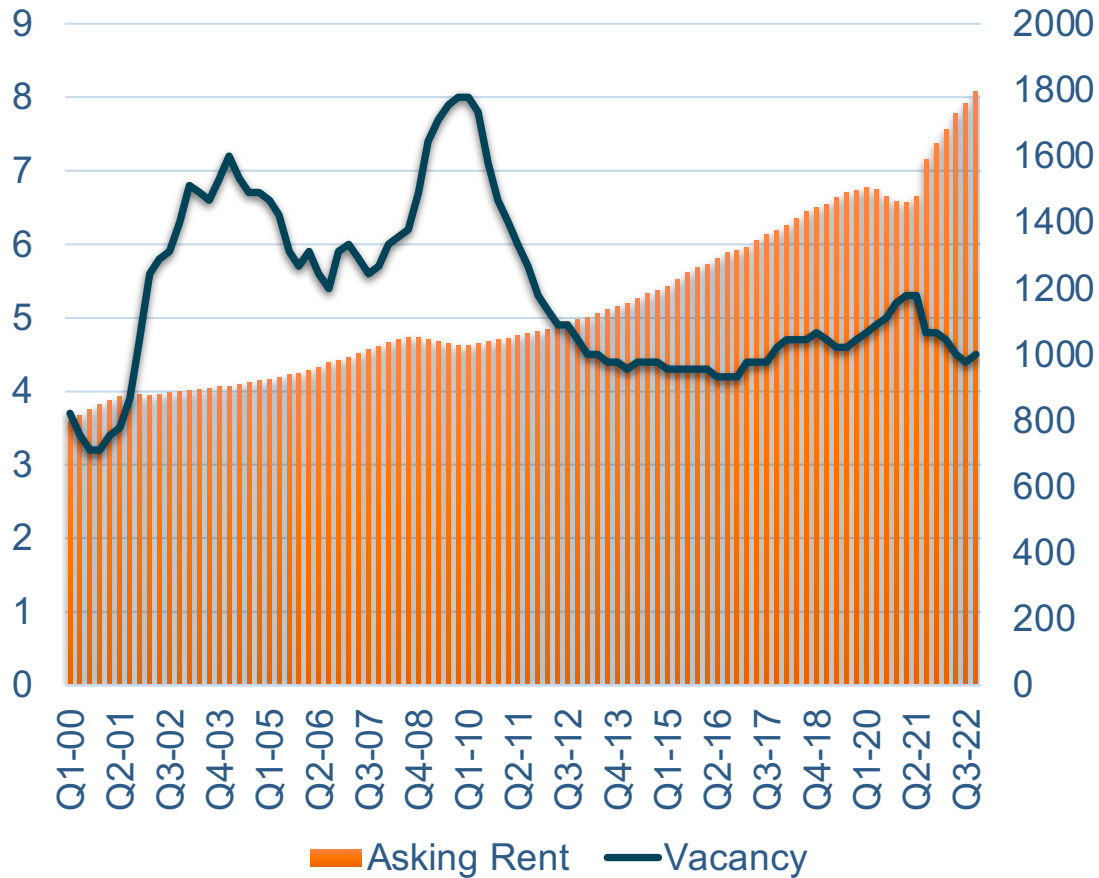
SF Home Inventory



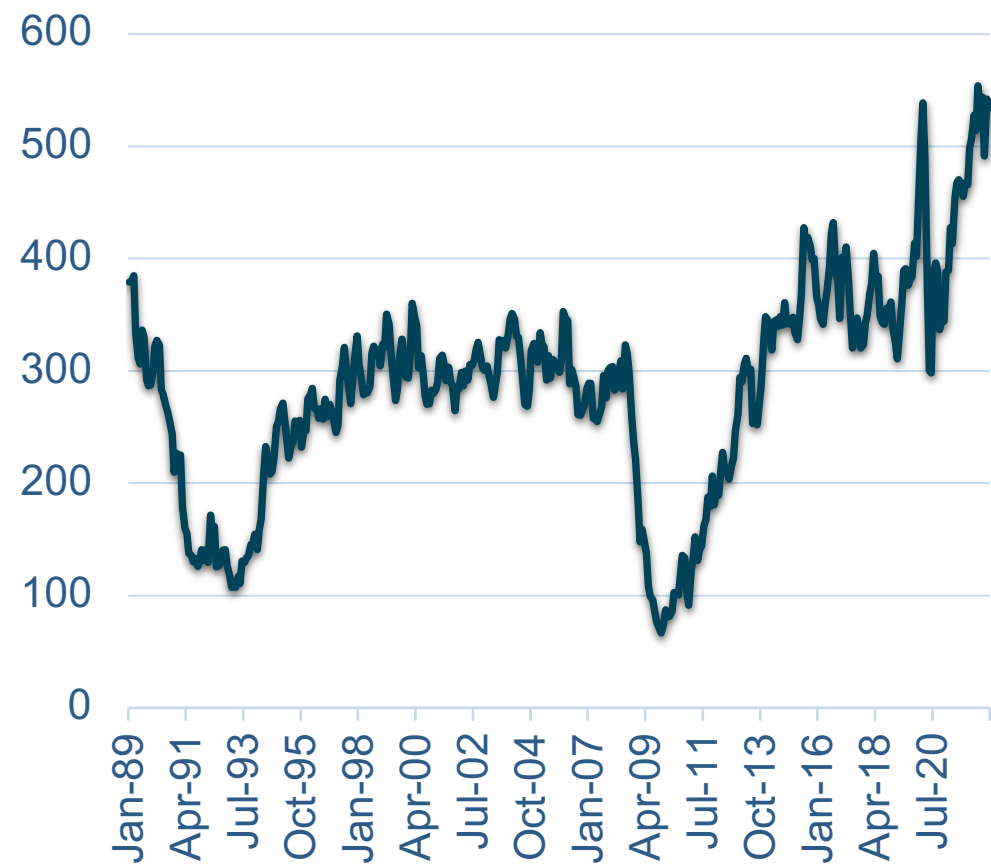
Strength in Rental Markets



US Apartment Market



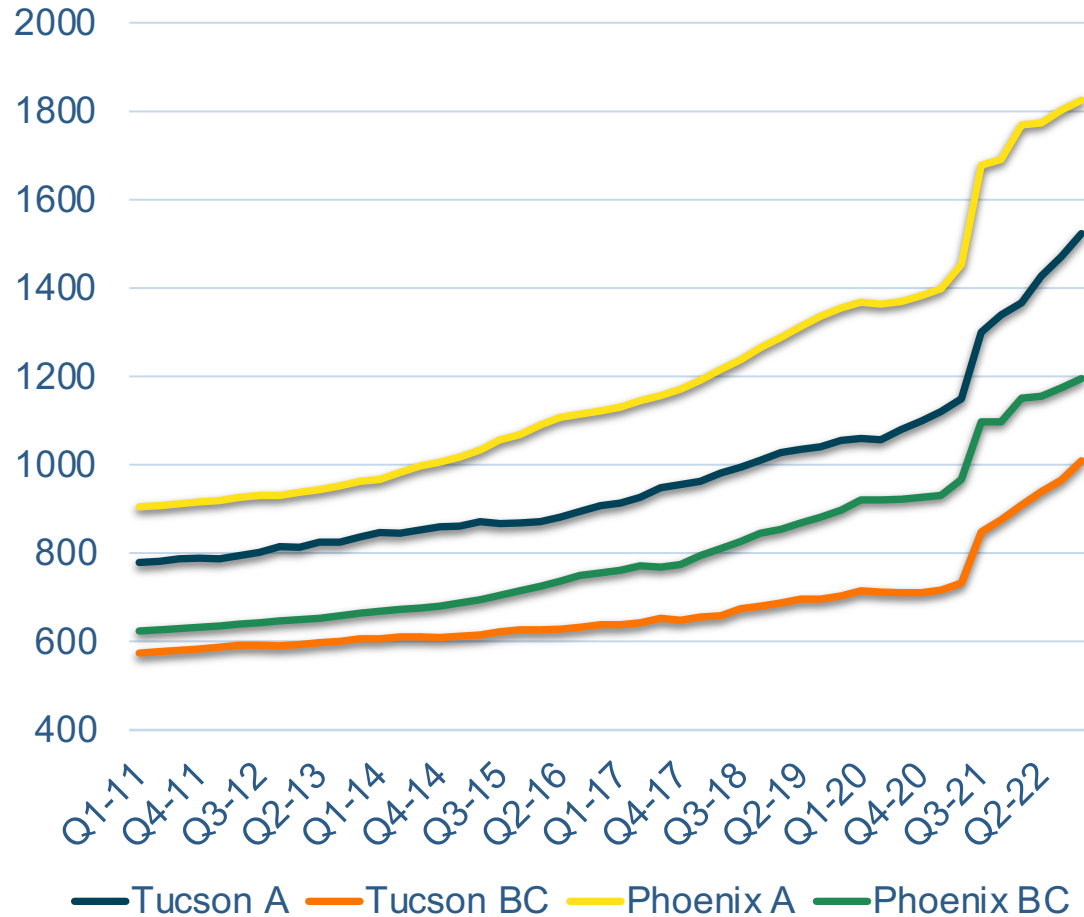
Starts 5+ Unit Buildings



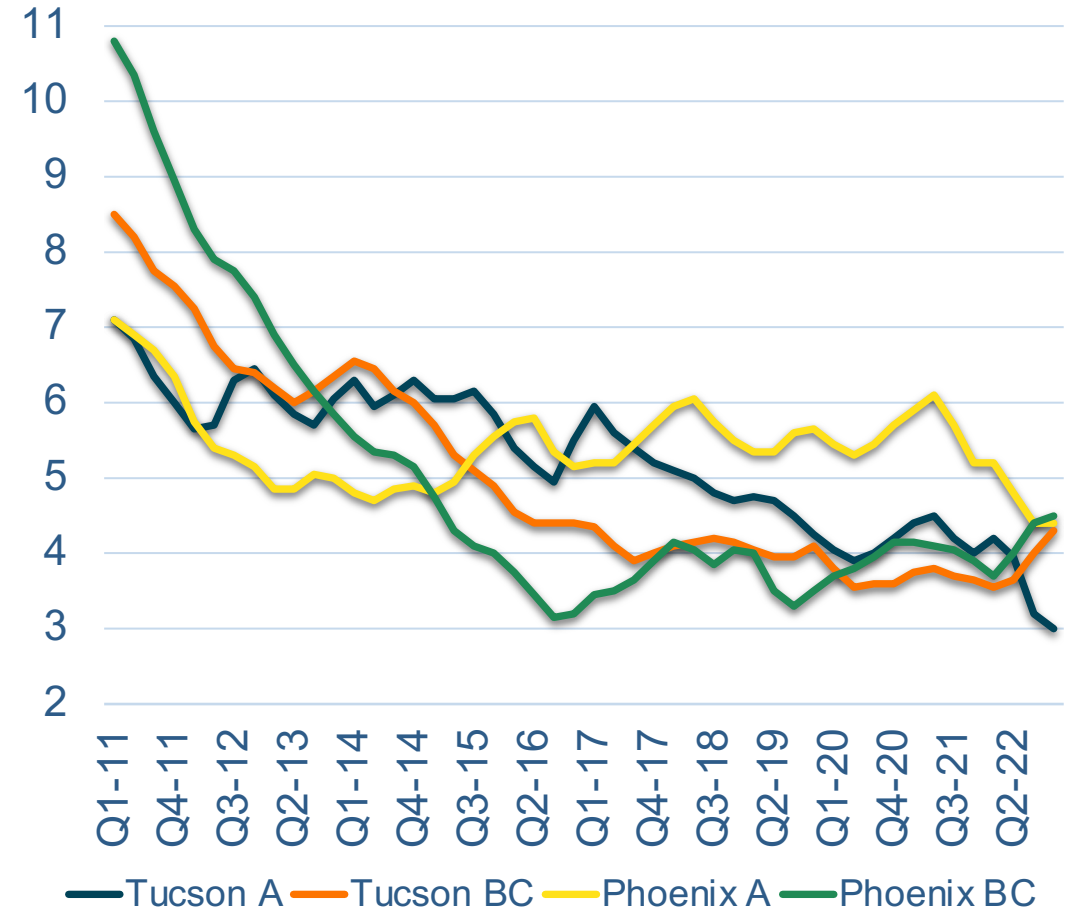
Apartment Market – Arizona MSAs



Asking Rent



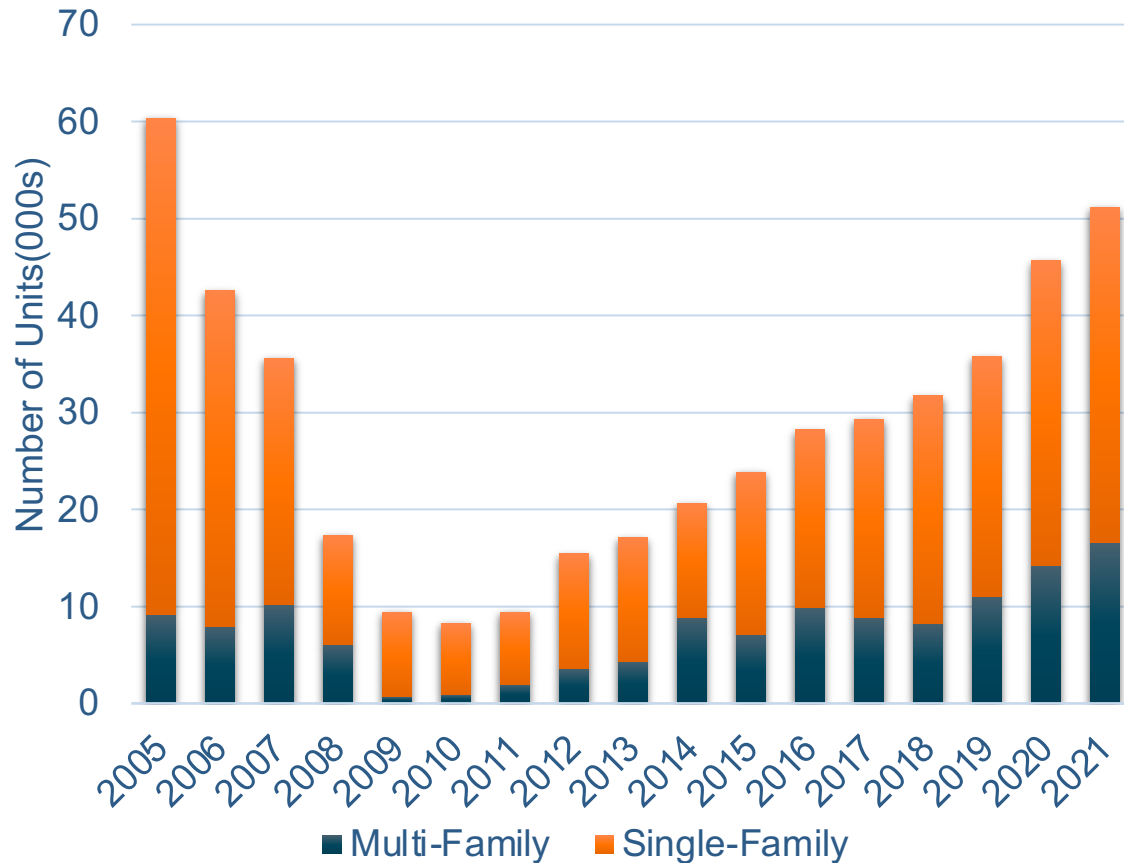
Vacancy Rates



Residential Construction Activity

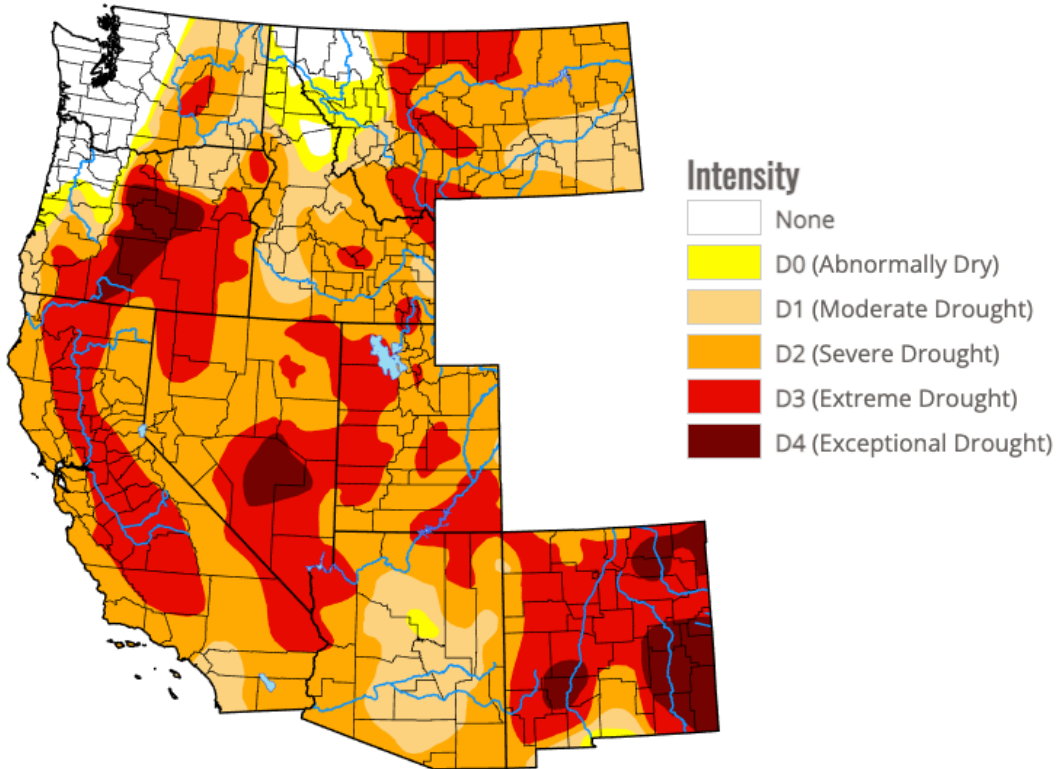


Residential Permits(Phoenix)

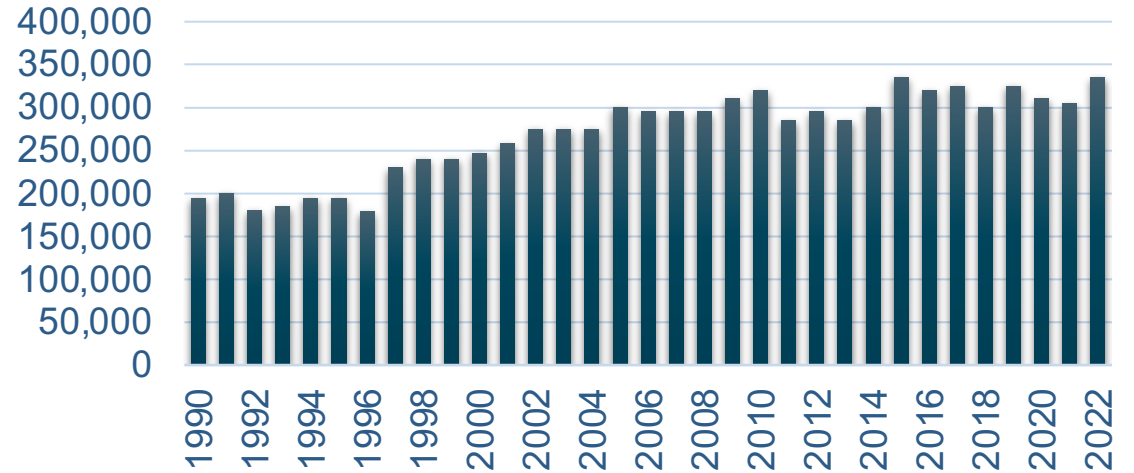


Metro	Single-family		Multifamily	
	2022	5-Yr Change	2022	5-Yr Change
AZ Total	37,404	9,938	23,321	13,305
Phoenix	26,829	11,223	20,110	6,374
Tucson	918	199	962	878

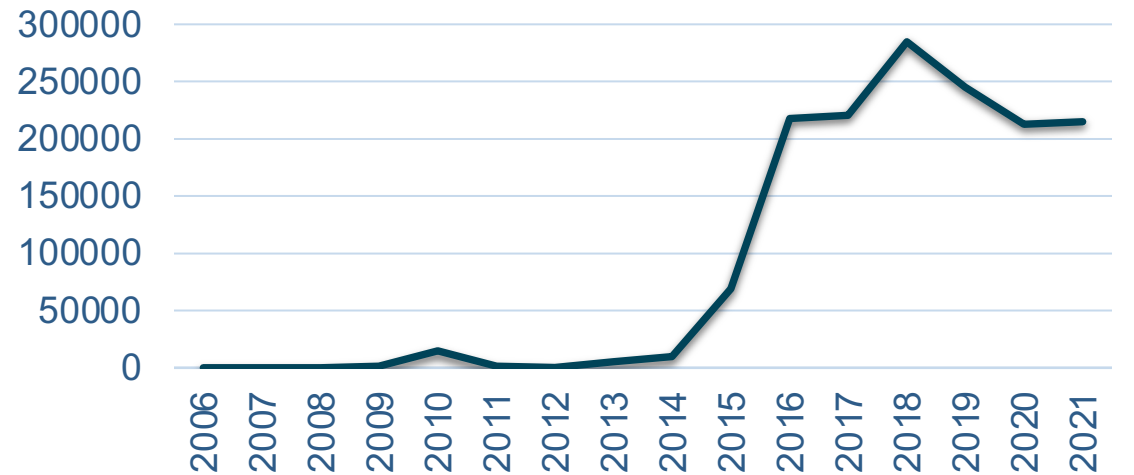
The Drought



AZ Hay Production



AZ Exports of Hay, Clover & Forage (mt)





WATER

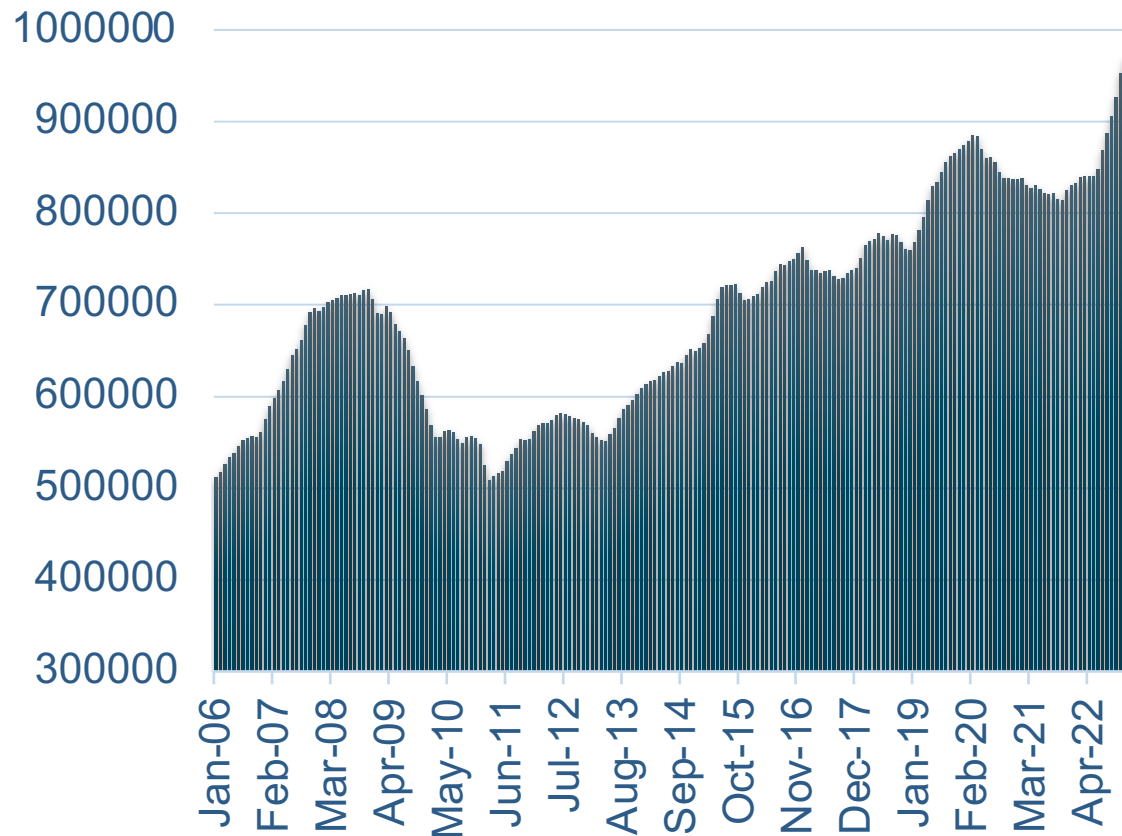
Colorado River Basin reservoirs still face grim outlook despite healthy snowpack

Winter snow accumulation offers water officials a breather
as they face the basin's long-term drought

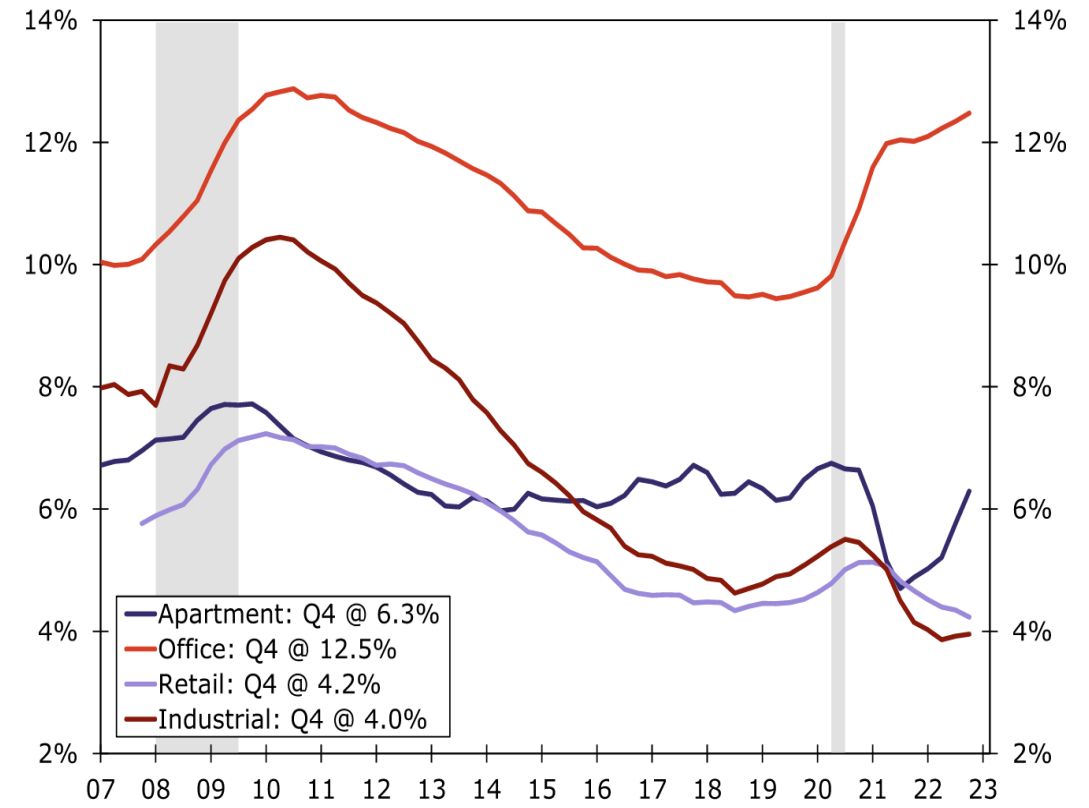
Non-Res Construction Trends



National Non-Res Construction Spending



CRE Vacancy Rates

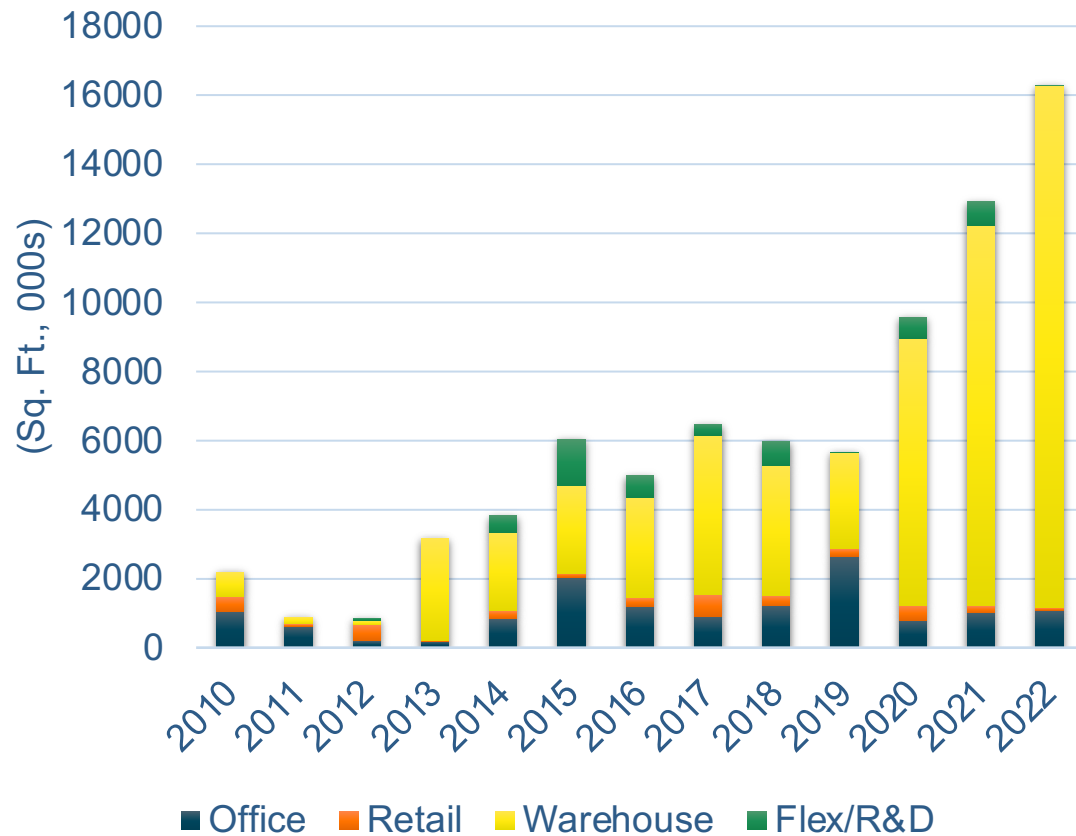


Source: CoStar Inc. and Wells Fargo Economics

Nonresidential Construction- Phoenix



Nonresidential Completions
Phoenix MSA



Property Type	Completions (Sq. Ft., 000s)		Net Absorption (Sq. Ft., 000s)	
	2022	5-Yr Change	2022	5-Yr Change
Warehouse	15,111	10,492	22,001	16,775
Office	1,087	183	1,098	298
Flex/R&D	30	-317	36	-545
Retail	76	-557	391	-148

Nonresidential Rents and Vacancies

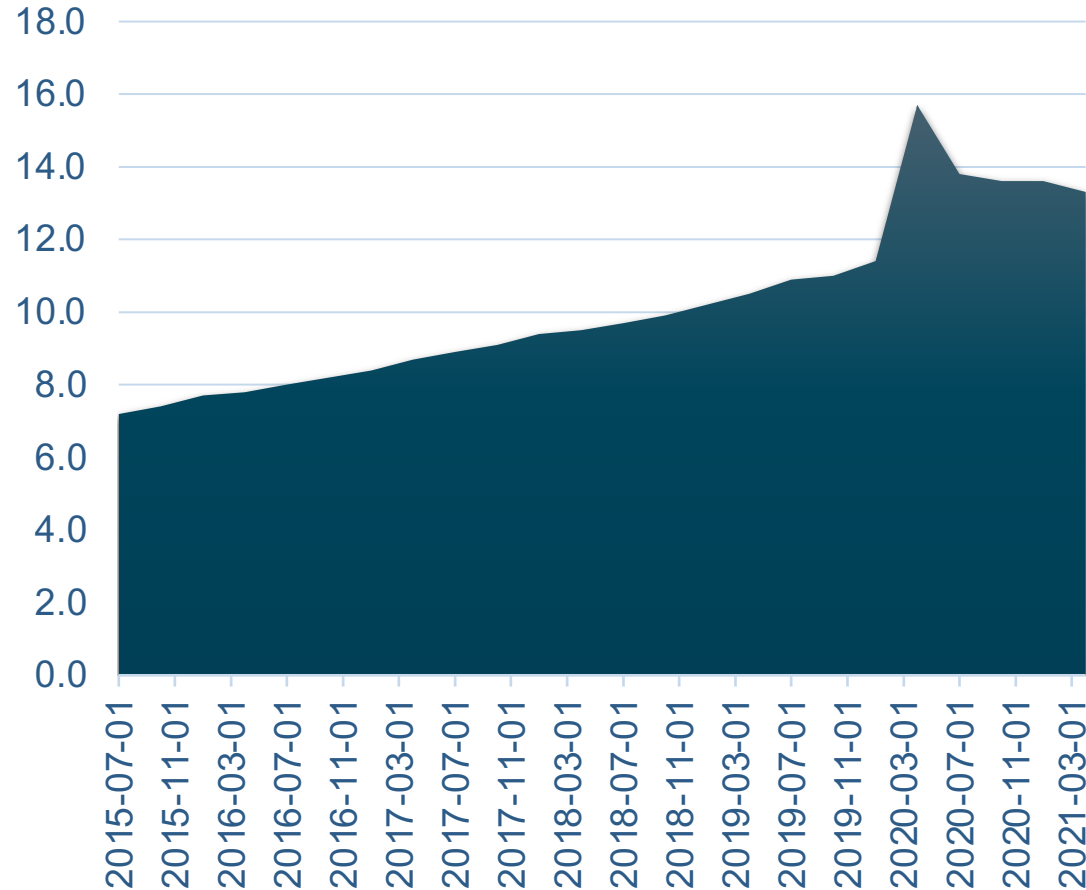


Office	Cost of Rent		Vacancy Rate	
	Q4-22 (\$)	1-Yr % Growth	Q4-22 (%)	1-Yr Change
Las Vegas	26.8	2.7	23.3	0.9
Phoenix	27.5	2.5	22.3	-0.1
Reno	21.5	2.3	19.3	-1.2
Tucson	22.3	0.6	19.4	-3.5
Retail				
Las Vegas	22.6	0.3	13.8	0.9
Phoenix	21.0	0.9	8.9	-0.4
Reno	20.5	0.6	13.9	0.0
Tucson	18.3	0.8	9.3	-0.3
Warehouse/Distribution				
Las Vegas	9.3	12.9	2.2	-3.3
Phoenix	8.1	13.7	3.9	-4.3
Reno	6.2	16.1	4.3	-3.7
Tucson	6.5	13.2	4.0	-5.8

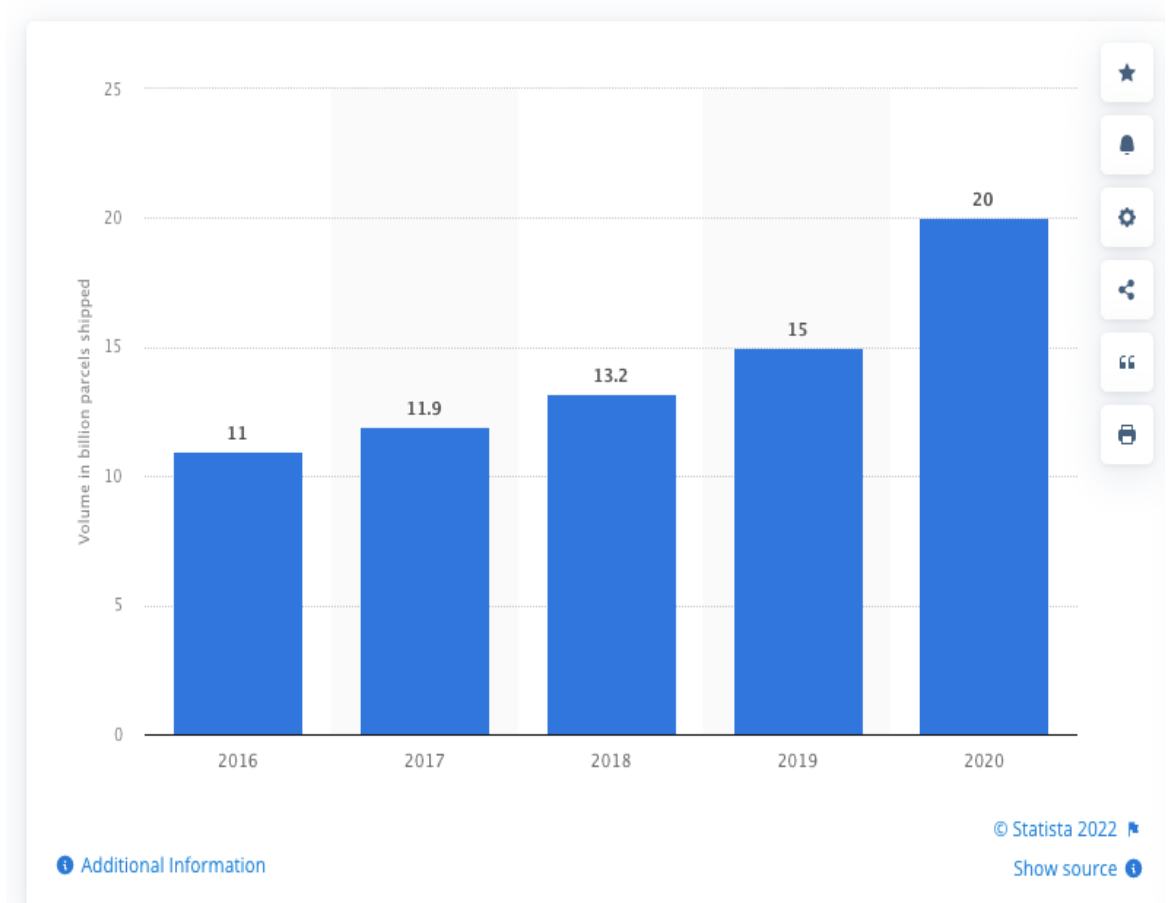
Retail / Industrial Supply Chains

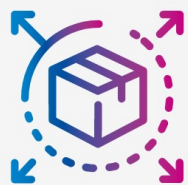


E-Commerce Share of Retail



Pitney Bowes US Package Delivery





US

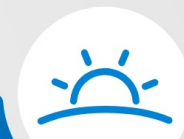
21.6bn parcels
in 2021



- Up from **20bn** in 2020
- Up **7%** year over year



683
parcels per second



59m
parcels per day

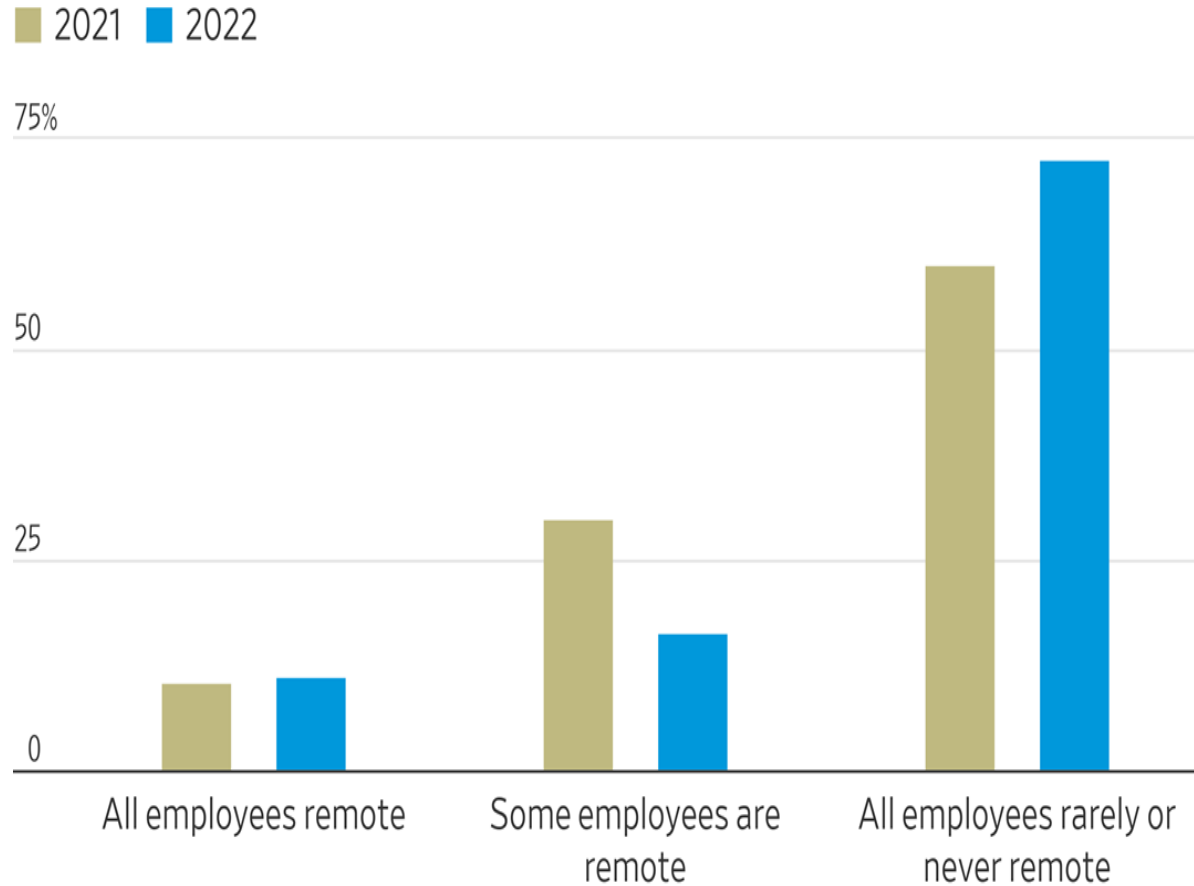


65
parcels per person
166 parcels per household

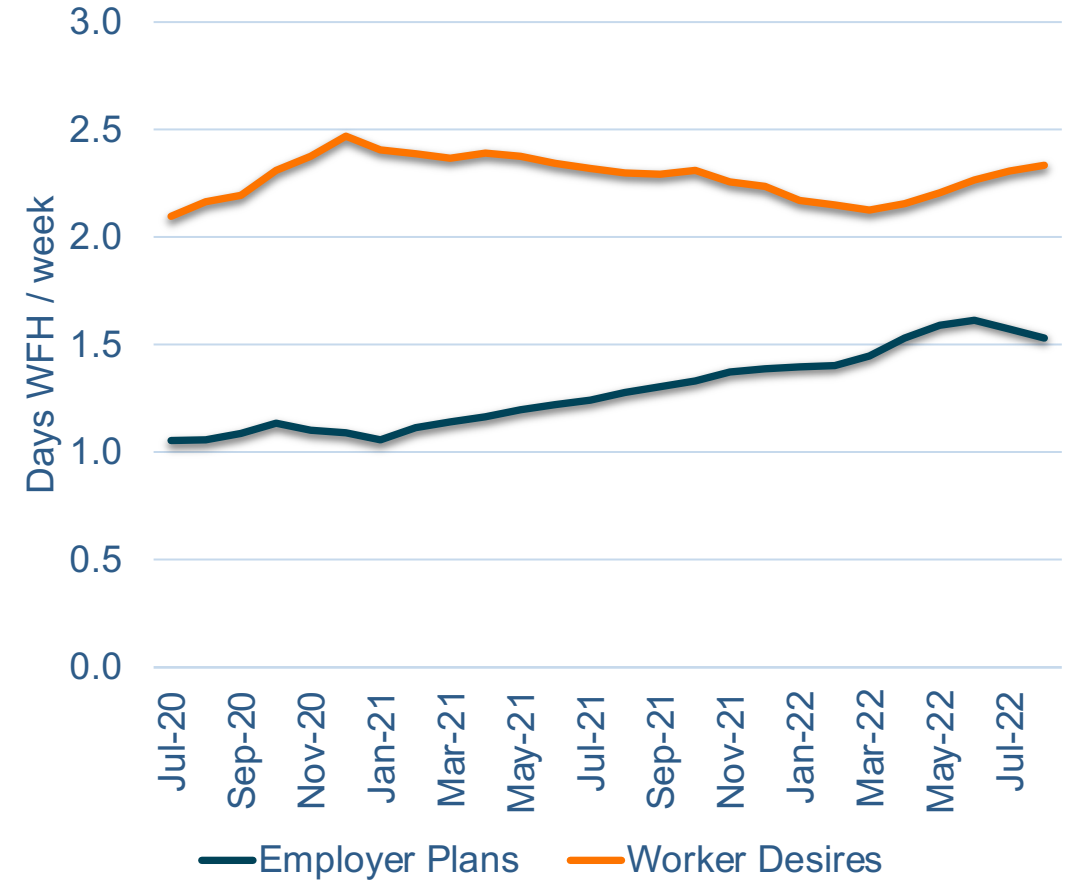
Office Blues?



Share of private-sector establishments with employees working remotely



WFH: Employer Plans vs Worker Desires



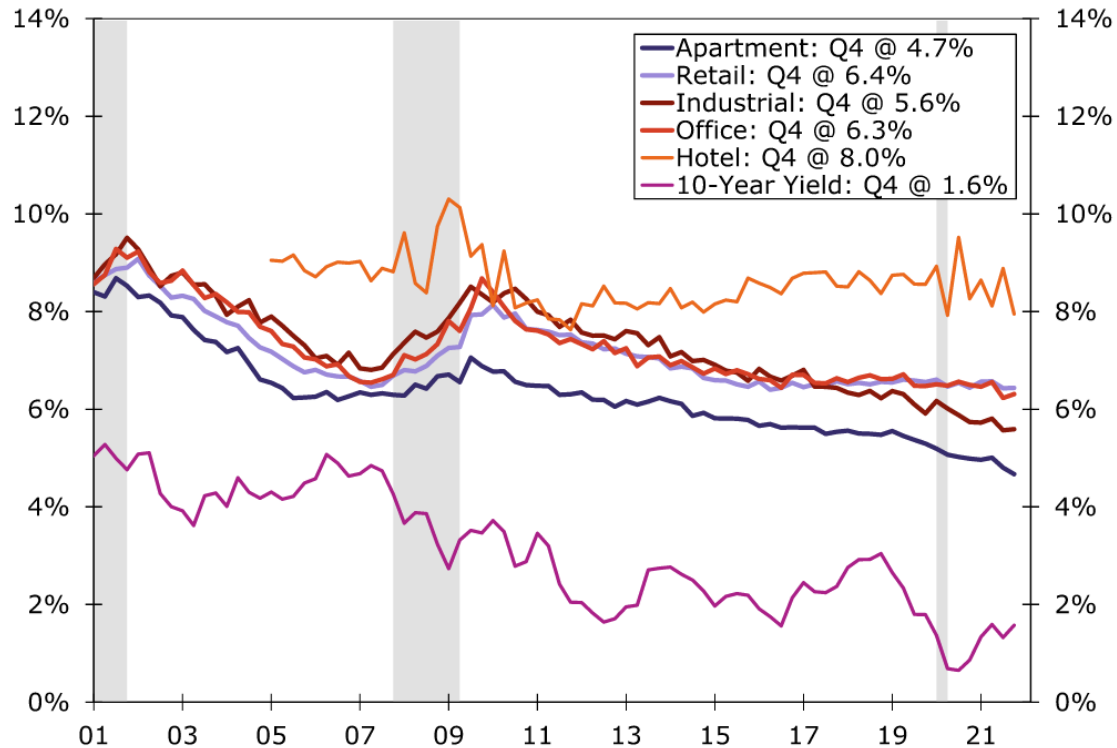
Source: Labor Department

QTD

A Pricing Issue



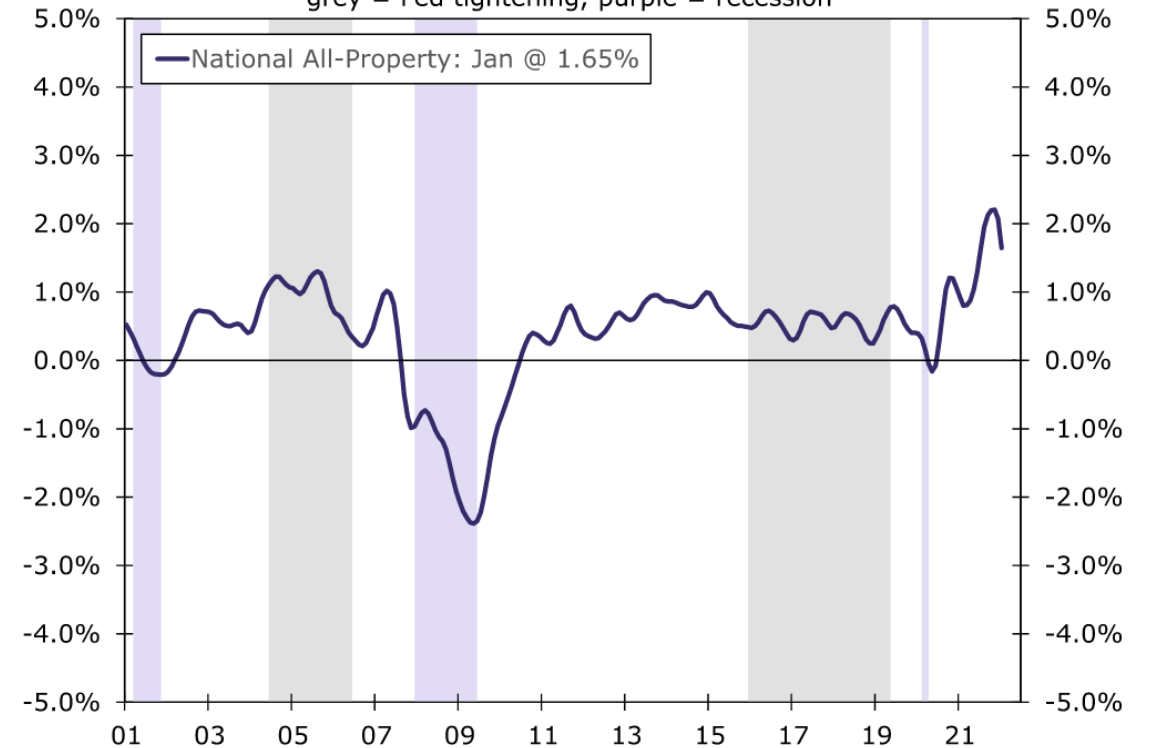
Cap Rates vs. 10-Year Treasury Yield



Source: CoStar Inc. and Wells Fargo Economics

Property Prices

Month-over-Month Percent Change
grey = Fed tightening, purple = recession



Source: Real Capital Analytics and Wells Fargo Economics



Brookfield defaults on \$784M on loans connected to DTLA office towers

Brookfield has defaulted on \$784 million worth of loans connected to two of its trophy office towers in Downtown L.A.

The firm defaulted on a \$465 million loan package connected to the Gas Company Tower at 555 West 5th Street and \$319 million in loans connected to 777 South Figueroa Street, according to an SEC filing on Friday.



Finance & economics | The next shoe to drop

Commercial-property losses will add to banks' woes

Real-estate investors see a hellish-perfect-dumpster-fire-storm

Reality vs Narrative



- **The Economy is fine, it's the narrative that is broken**
 - Fundamentals of consumer demand can balance rate shock
 - Asset values still too high, yet fundamentals should remain high
 - Arizona / Phoenix continues to lead by in-migration
- **Looking Ahead**
 - Fed tradeoff choices will dictate future path of banking / growth
 - Loan demand will be fine—its supply that will bind
 - Labor shortages to continue to trouble business
 - Fiscal tightness / global uncertainties – be aware
- **The gap between narrative and reality remains wide...**
 - Don't blame politics... social media, ubiquitous data, the meme generation
 - We all need to proactively tell the true story to be able to influence policy

The Problem of Narratives...



The great enemy of the truth is very often not the lie -- deliberate, contrived, and dishonest -- but the myth -- persistent, persuasive, and unrealistic.

— John F. Kennedy



Thank You

- Economic Outlooks
- Revenue Forecasts
- Cost Projections
- Regional Development
- Housing Studies



- Impact Reports
- CEDS Analysis
- Policy Studies
- Industry Studies
- Labor Markets