



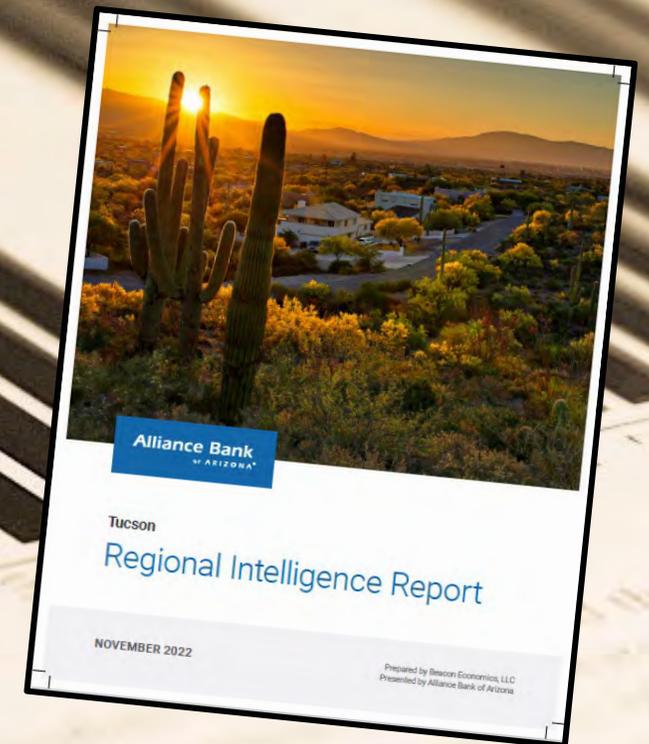
Navigating the Stimulus Hangover *Focus on Tucson, AZ*

November 2022

Christopher Thornberg, PhD

*Founding Partner, Beacon Economics
Director, UCR SoBA Center for Economic Forecasting and
Development*

Alliance Bank
OF ARIZONA®





MarketWatch

Consumer confidence dips on worries over inflation and slowing U.S. economy

A survey of U.S. consumer confidence fell slightly in May to 106.4 from 108.6, reflecting worries about high inflation and a slowdo.

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

FINANCE • HOUSING

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

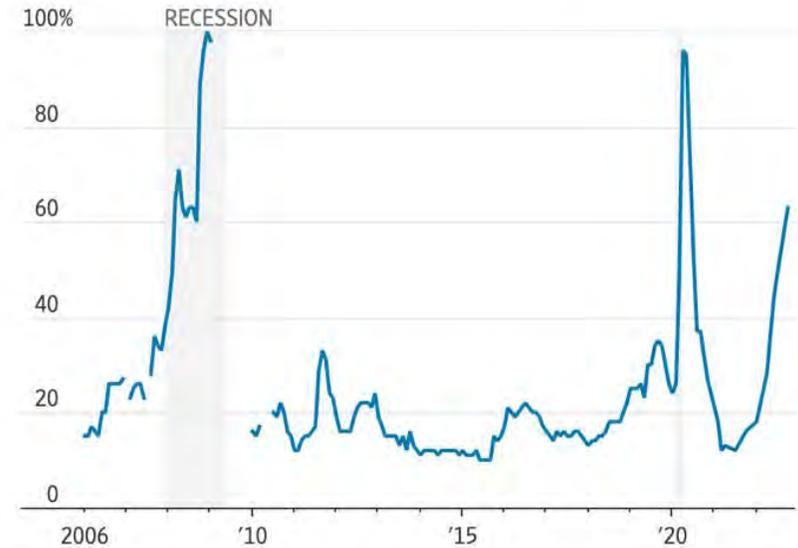
BY [LANCE LAMBERT](#)
May 27, 2022 9:36 AM PDT

BUSINESS

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

May 20, 2022 · 3:40 PM ET

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

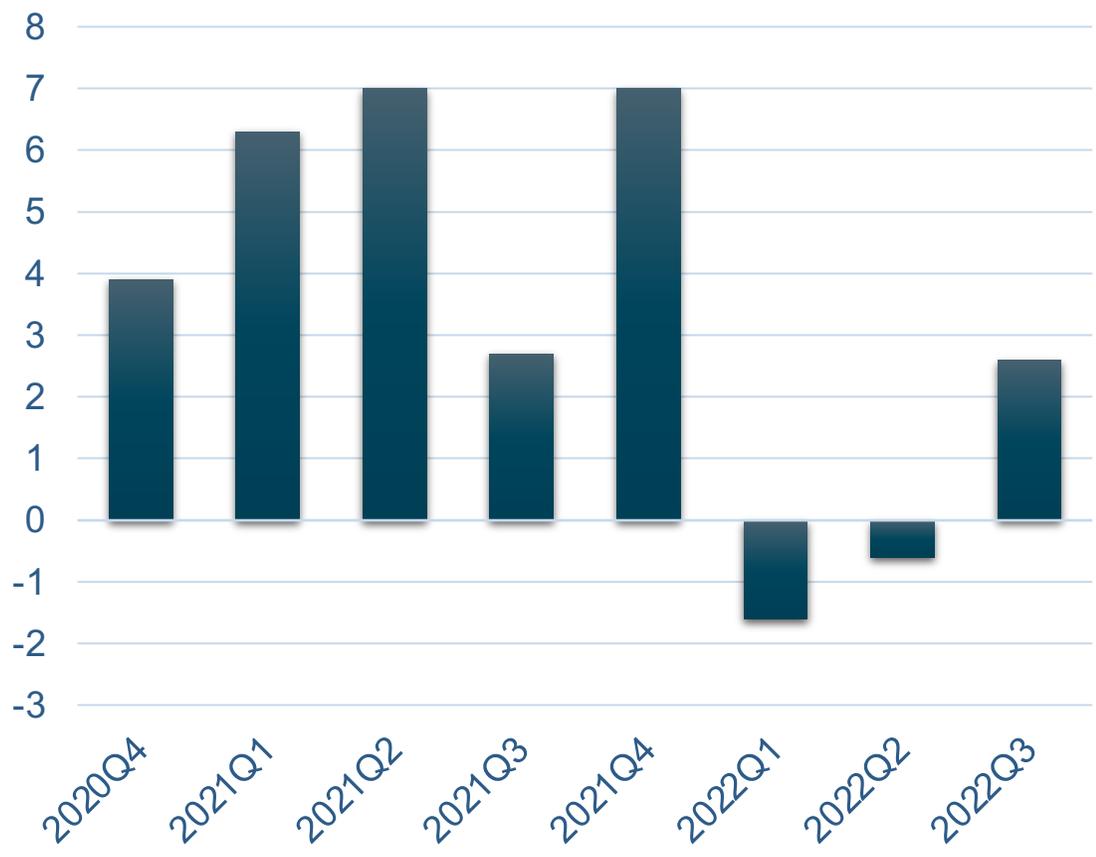
Gas tops \$6 a gallon in California: "How much pain at the pump can consumers take?"

California gas prices hit an average of \$6.00 a gallon. ... for the U.S. economy, given that consumer spending contribu
2 weeks ago

Mixed Economic Signals



Real GDP Growth



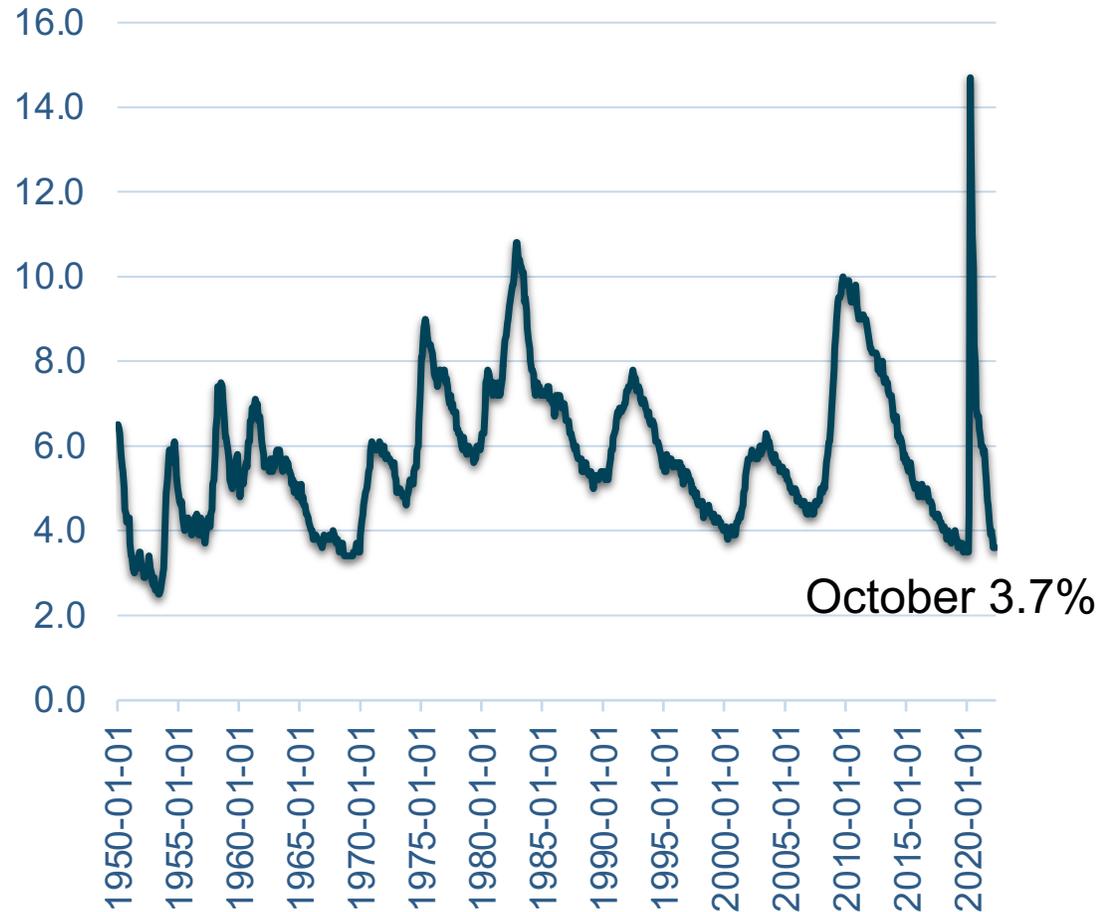
UM Consumer Sentiment



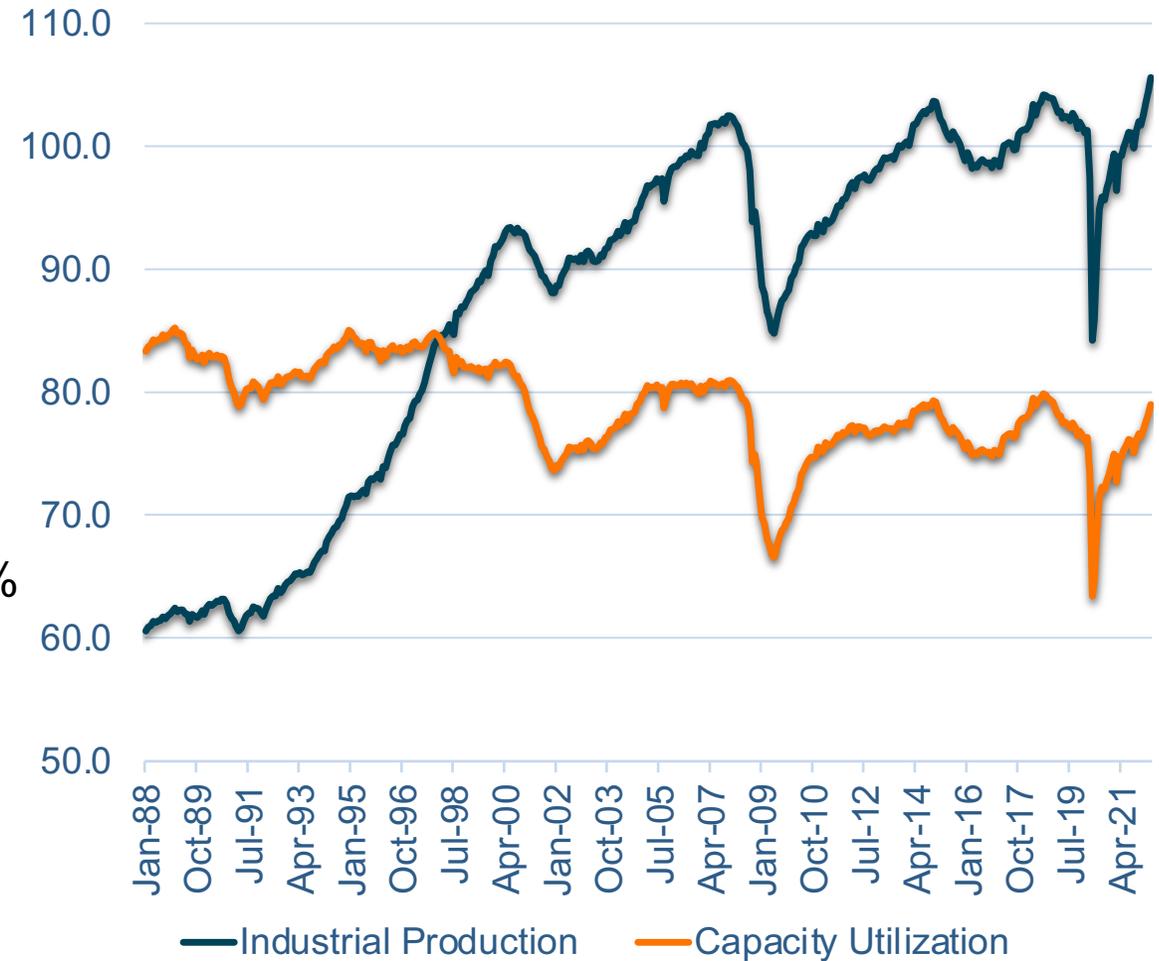
Does this look like a recession?



US Unemployment Rate



Production and Capacity



Remembering the U or V Debate



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

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

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.

JPMorgan now sees economy contracting by 40% in second quarter, and unemployment reaching 20%

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

2019: The Year of the Bear

For the U.S. Economy,
Storm Clouds on the

signals that are



Miserabilism: All fun and games until someone breaks the economy.

the Jury

with a

ision

plan in
cession

"The economy is on the precipice and this would just push us over into the abyss. I don't think we're very far from recession as it is,"
Moody's Analytics chief economist Mark Zandi tells me.

How to solidify
case the trade war spans

Navigating the Miserabilist Narrative



Not every shock is an existential crisis

- Pre-pandemic economy was very healthy
- Congress and the Fed vastly over-reacted to the pandemic
- They are now over-reacting to inflation, but in opposing directions

Gravity still exists

- Asset prices, business investment settling back to earth
- Real Estate: frozen pipe, not popped bubble
- Fundamentals solid, losses minimal

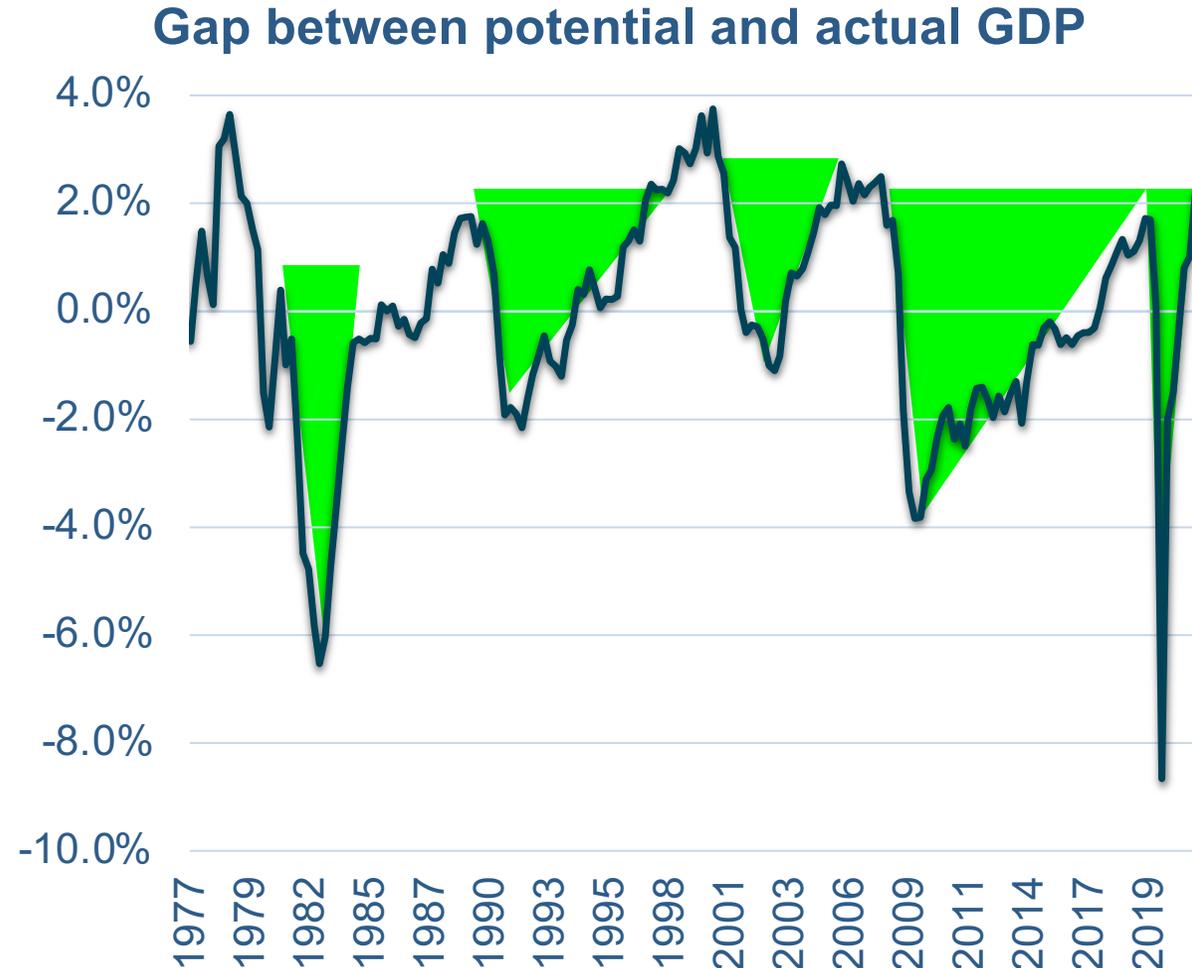
This is not in a recession, nor are we doomed to have one

- Plenty of pent-up consumer demand to drive economy forward
- Supply chains starting to clear
- Inflation will burn out on its own

Things are not fine

- Economy is brittle, Fed continues to pursue quixotic policies
- Long run issue is Federal debt
- The narrative remains disconnected from reality

The Pandemic Mini-Recession



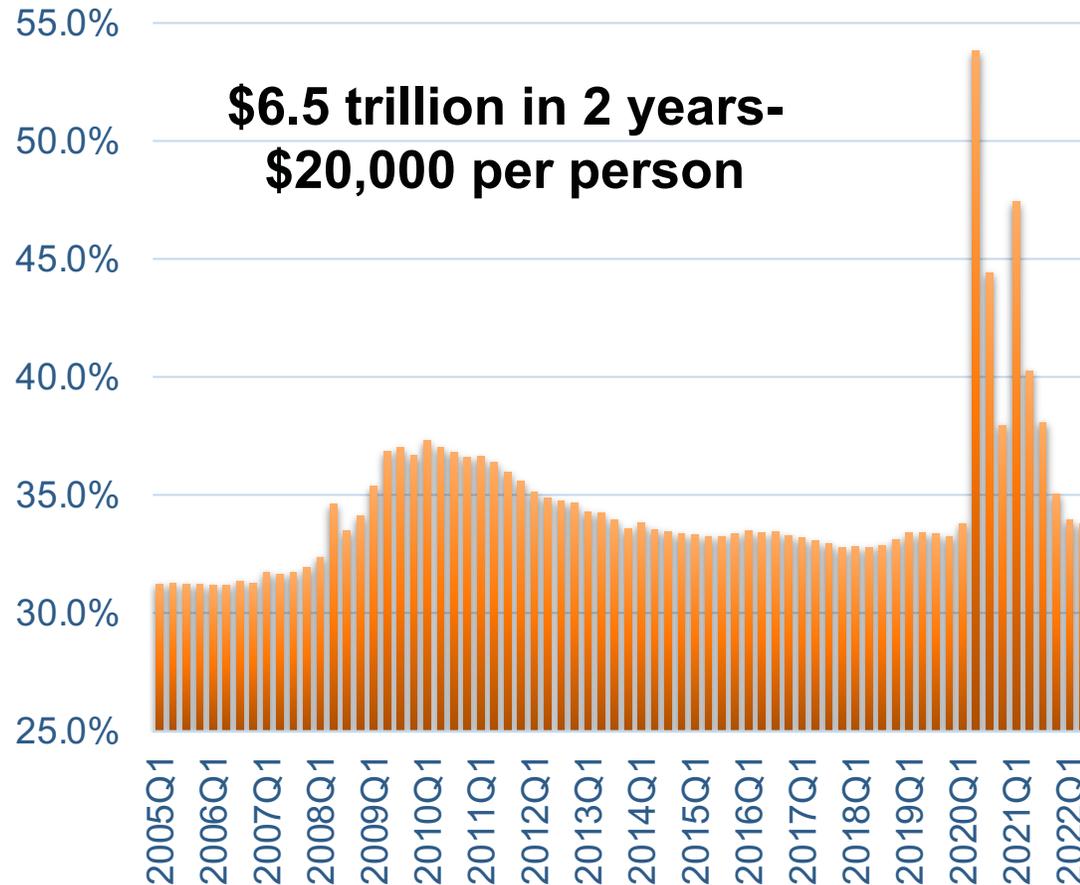
Why the “V”?

- Pre-pandemic economy was healthy and well-balanced
- Supply shock recession, rather than a demand shock
- Pandemic shifted spending over time and across sectors, not canceled

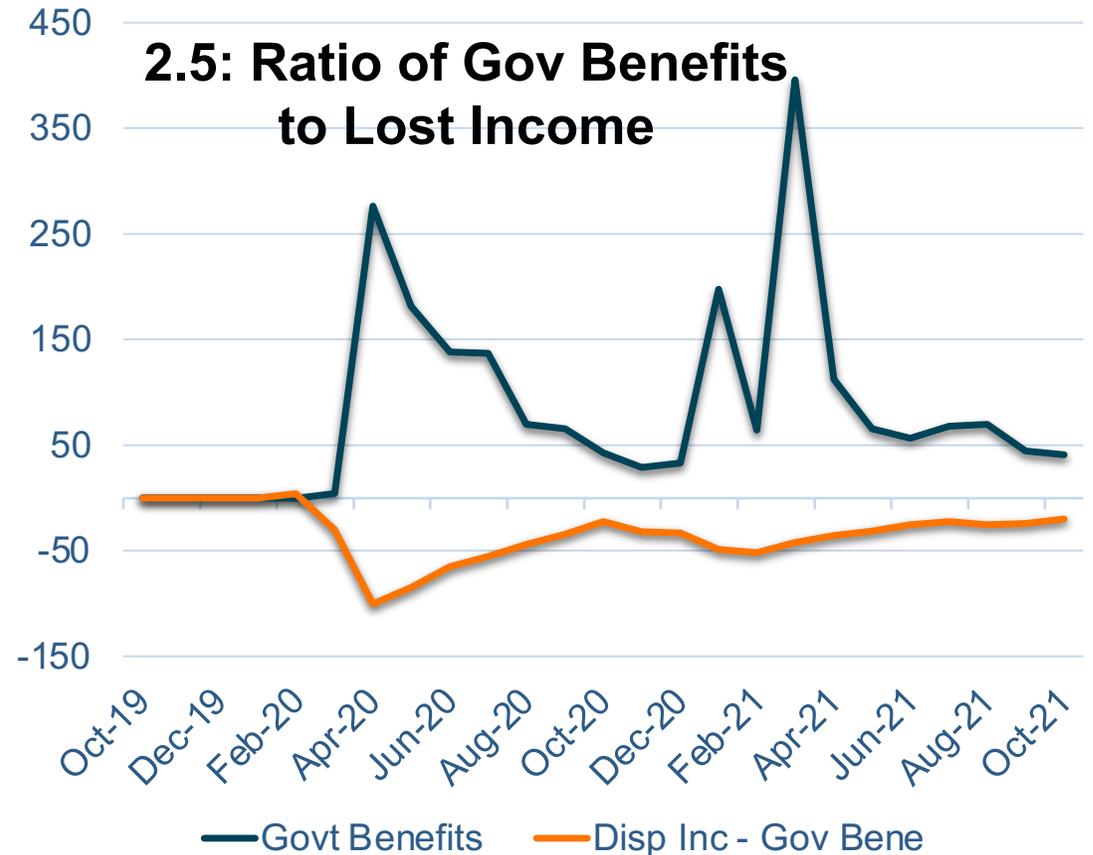
Federal Fiscal (Over)reaction



Federal Expenditures as a Share of GDP



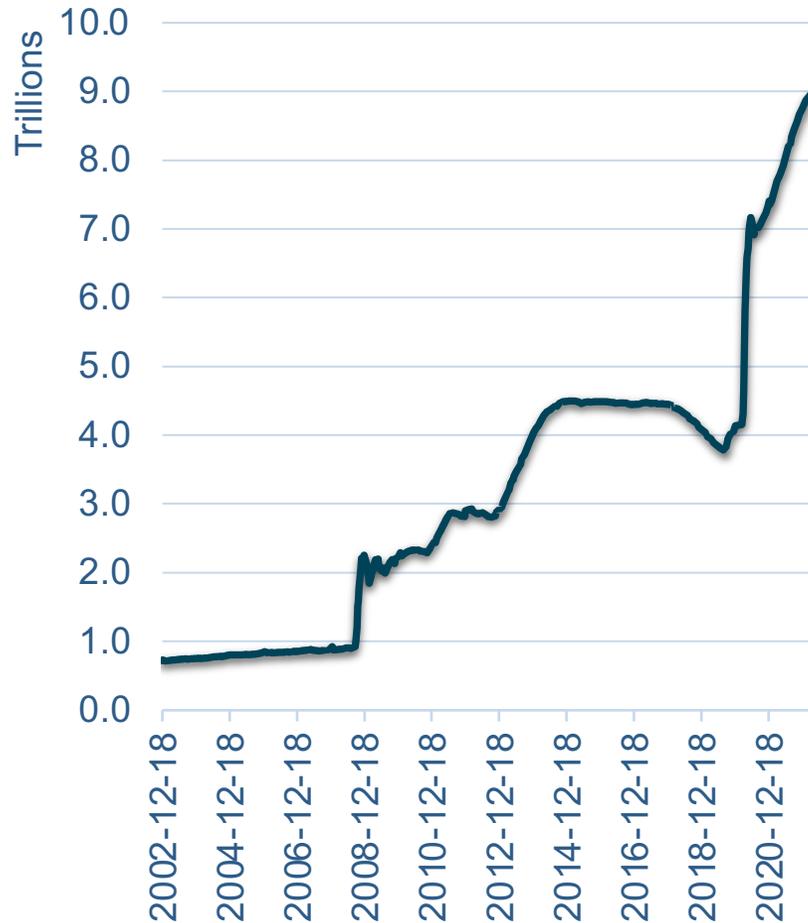
Levels of Personal Income Relative to Pre-Pandemic Trends



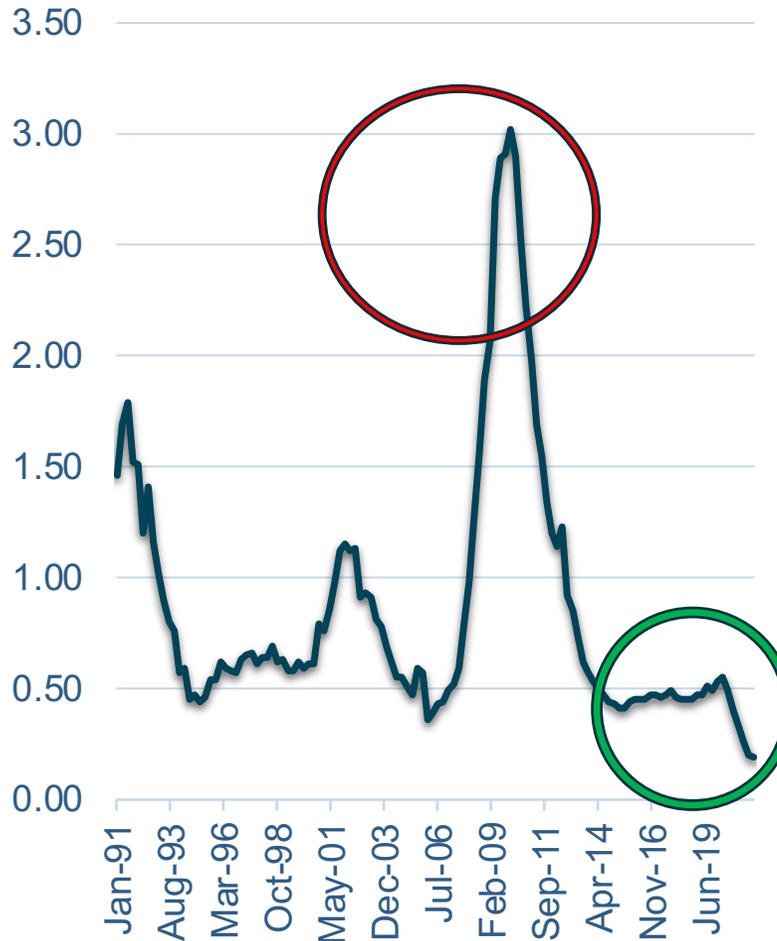
Funding the Deficit



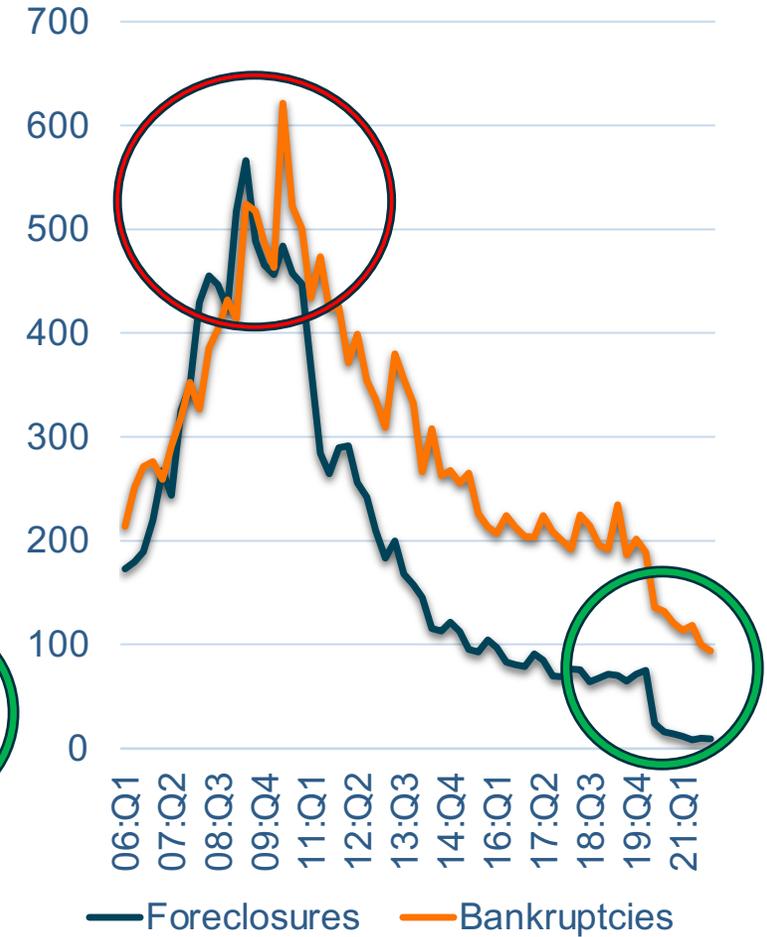
Federal Reserve Balance Sheet



Bank Loan Charge-Off Rate



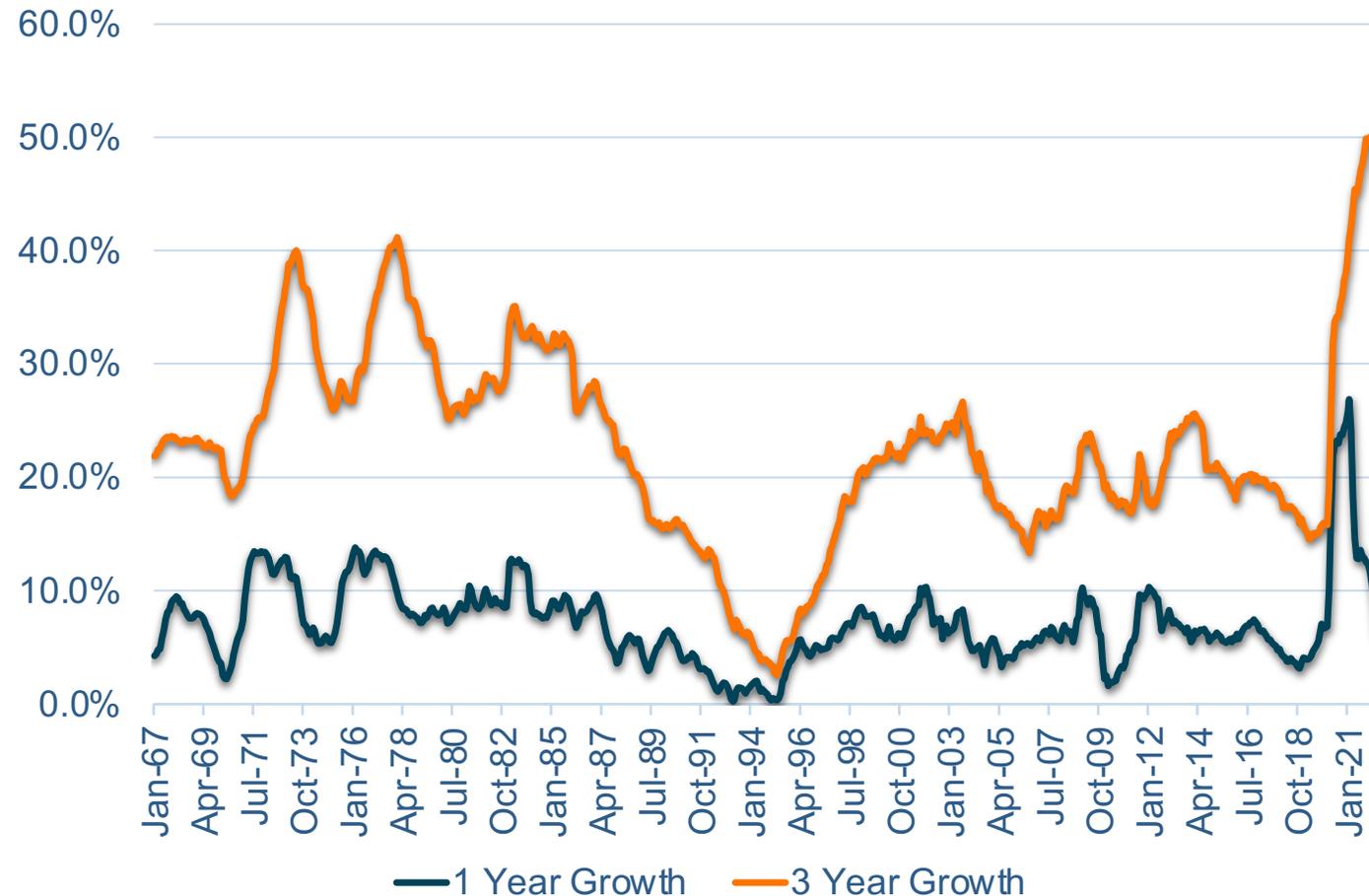
Consumer Finances



QE: Then and Now



Money Supply (M2) Growth Rates



The Problem of Excess Money

Short run: Money illusion

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

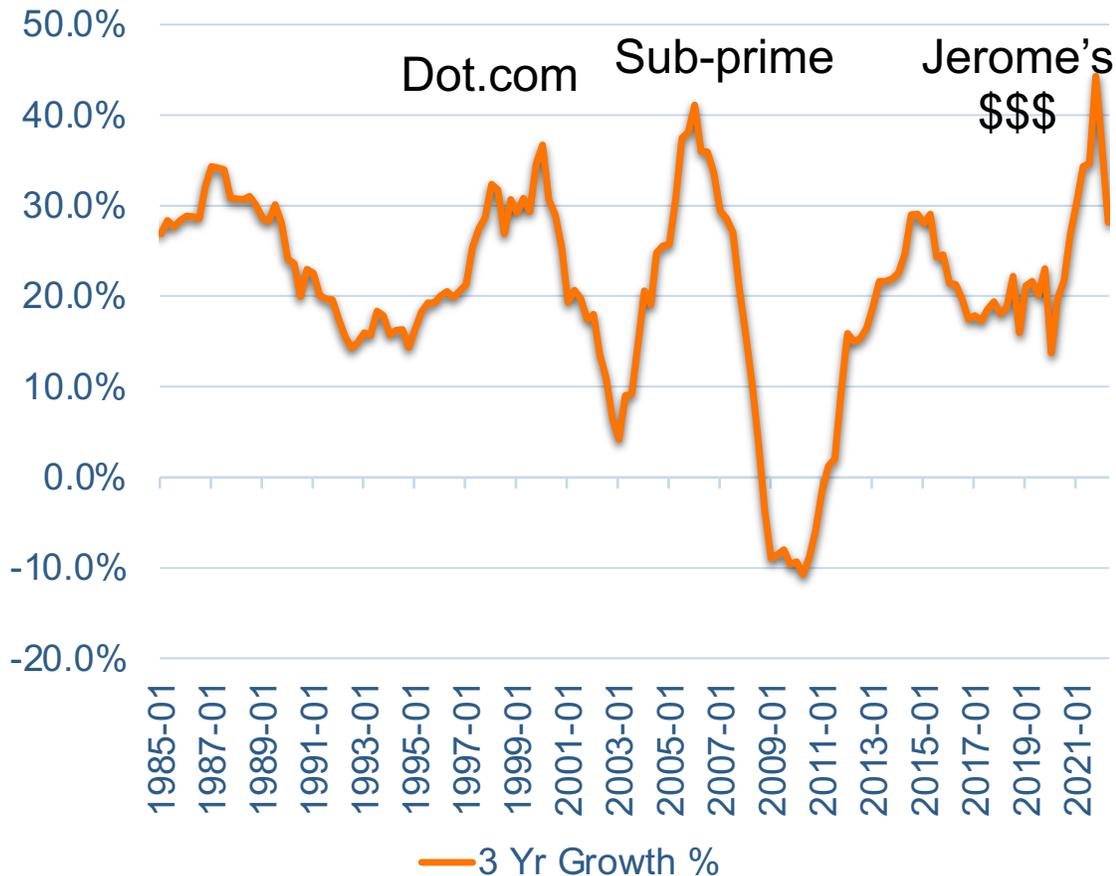
Long run: The Hangover

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

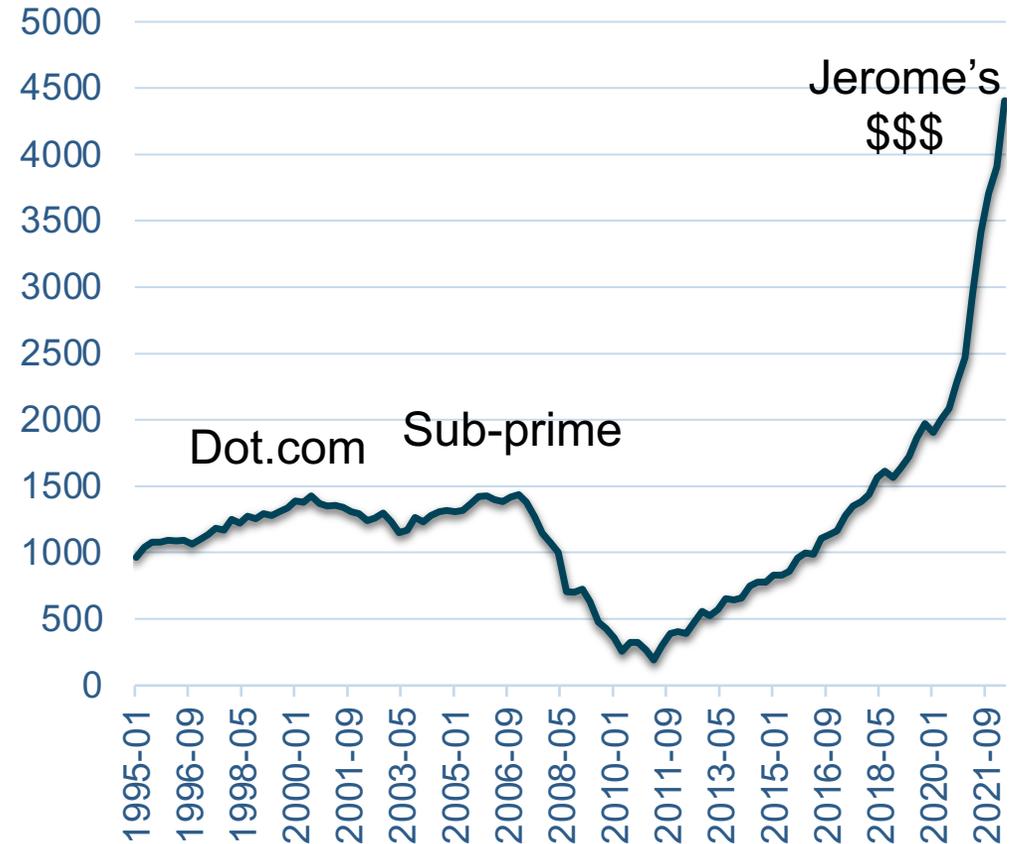
The “wealthiest” generation ever?



US Household Net Worth grew by \$30 trillion from 2020-2022



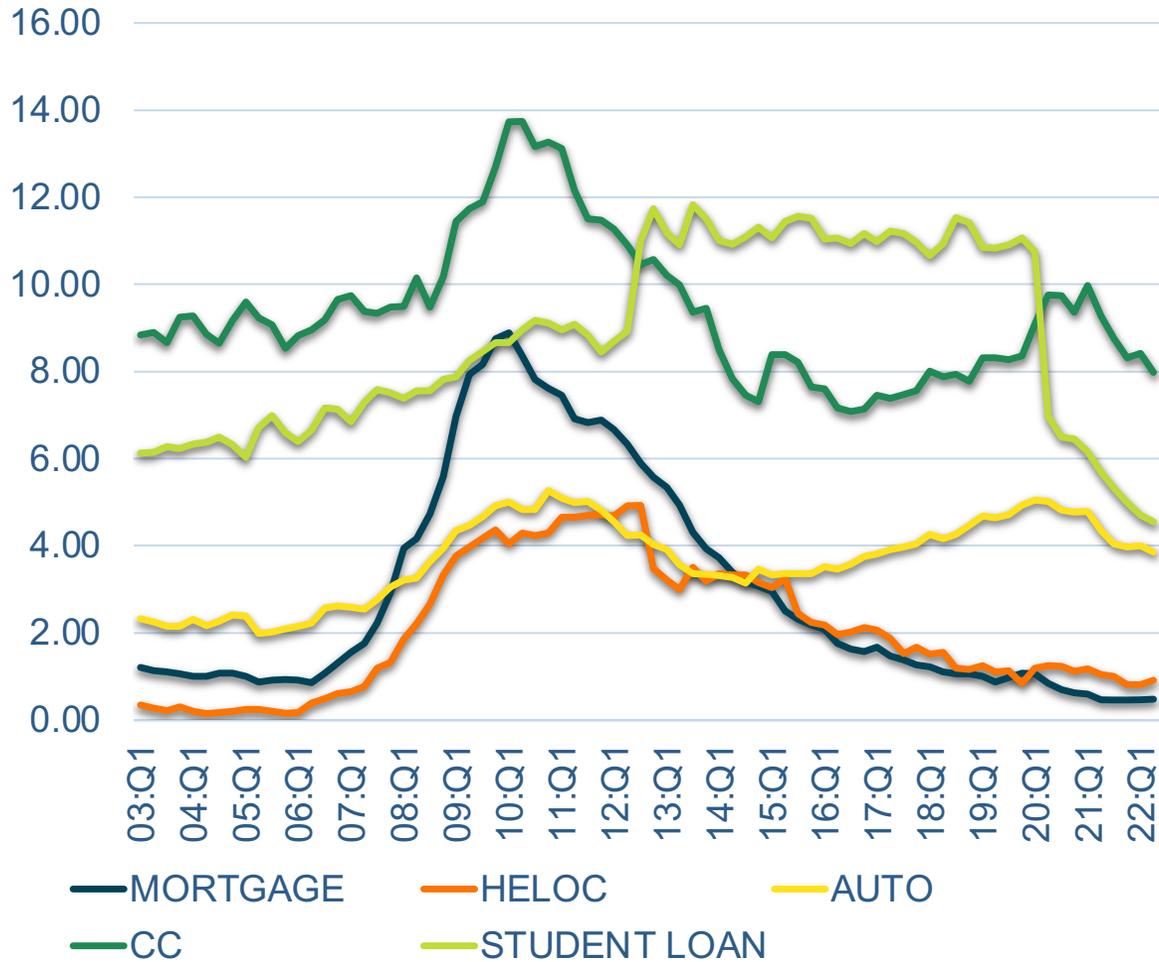
Wealth Level in bottom 50% of Household, \$Billion



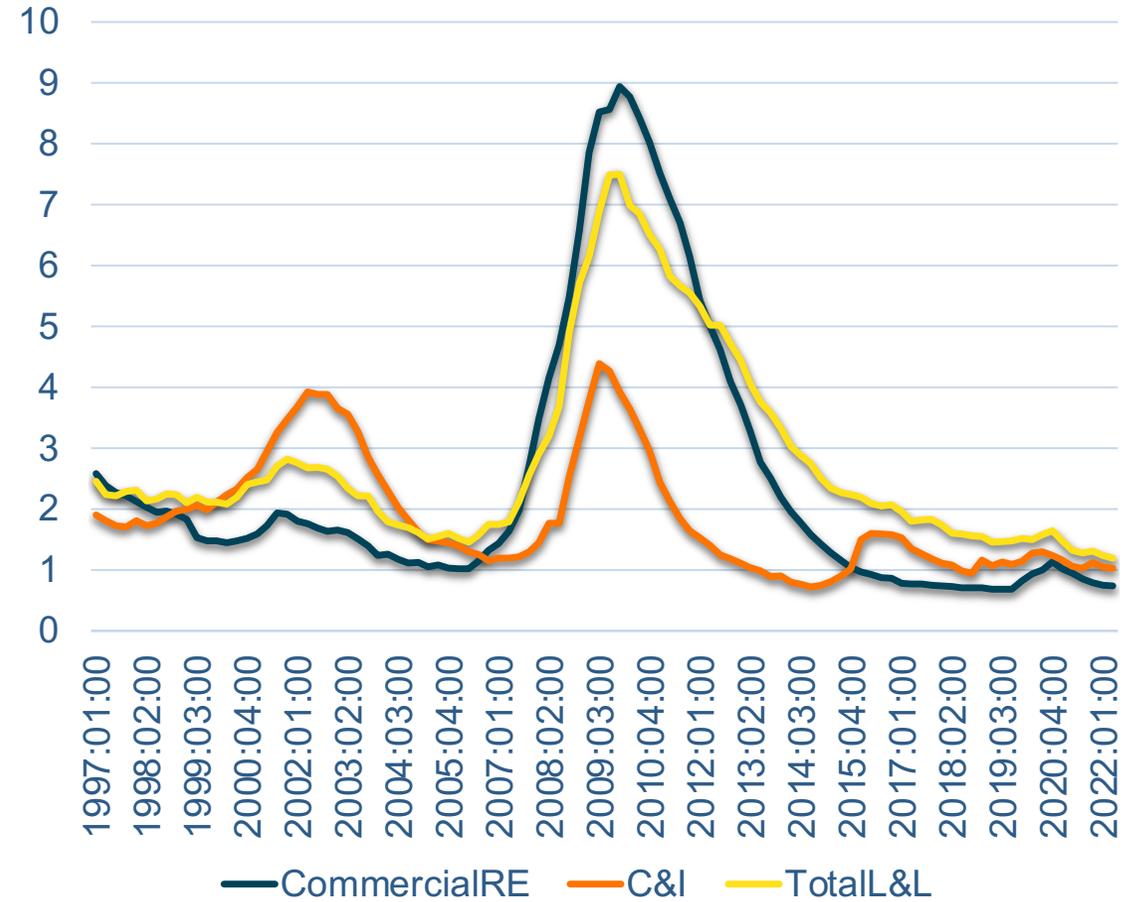
Little Surprise...



Share Consumer Debt 90+ Days Delinquent



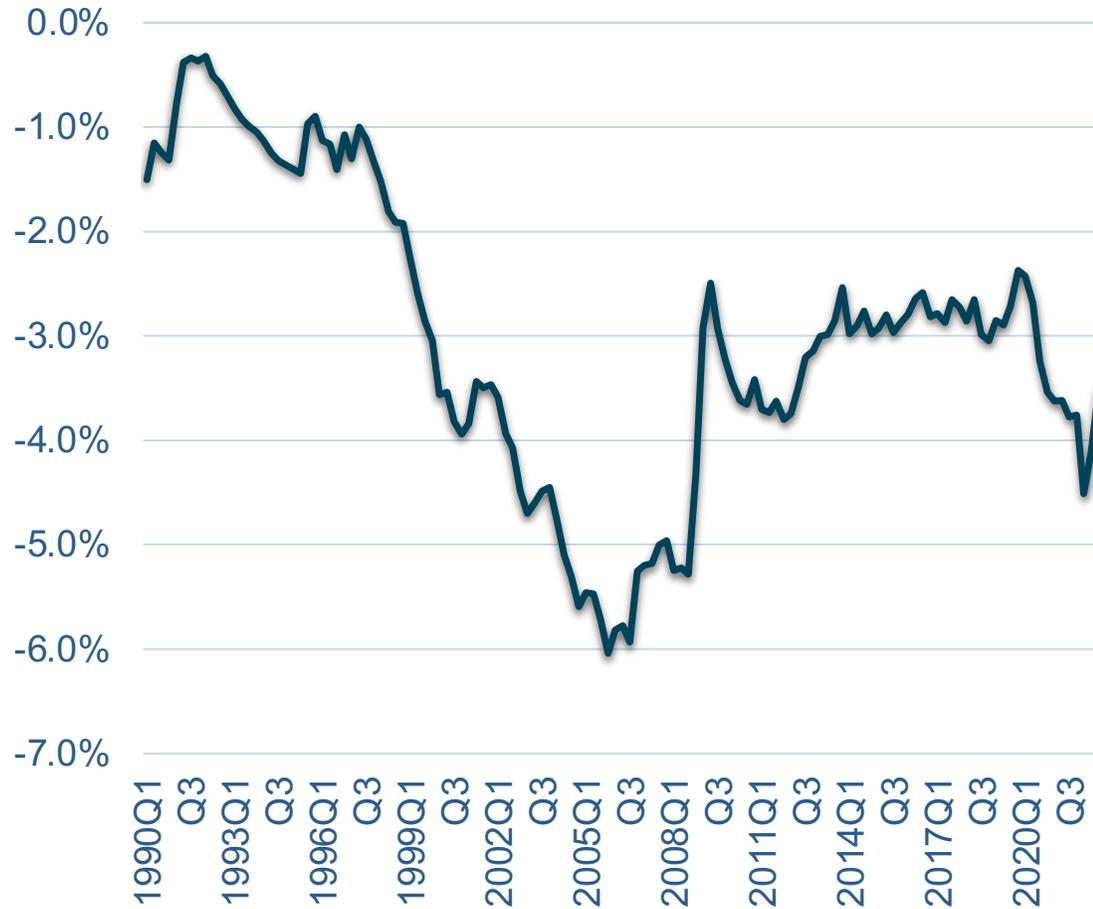
Bank Delinquencies



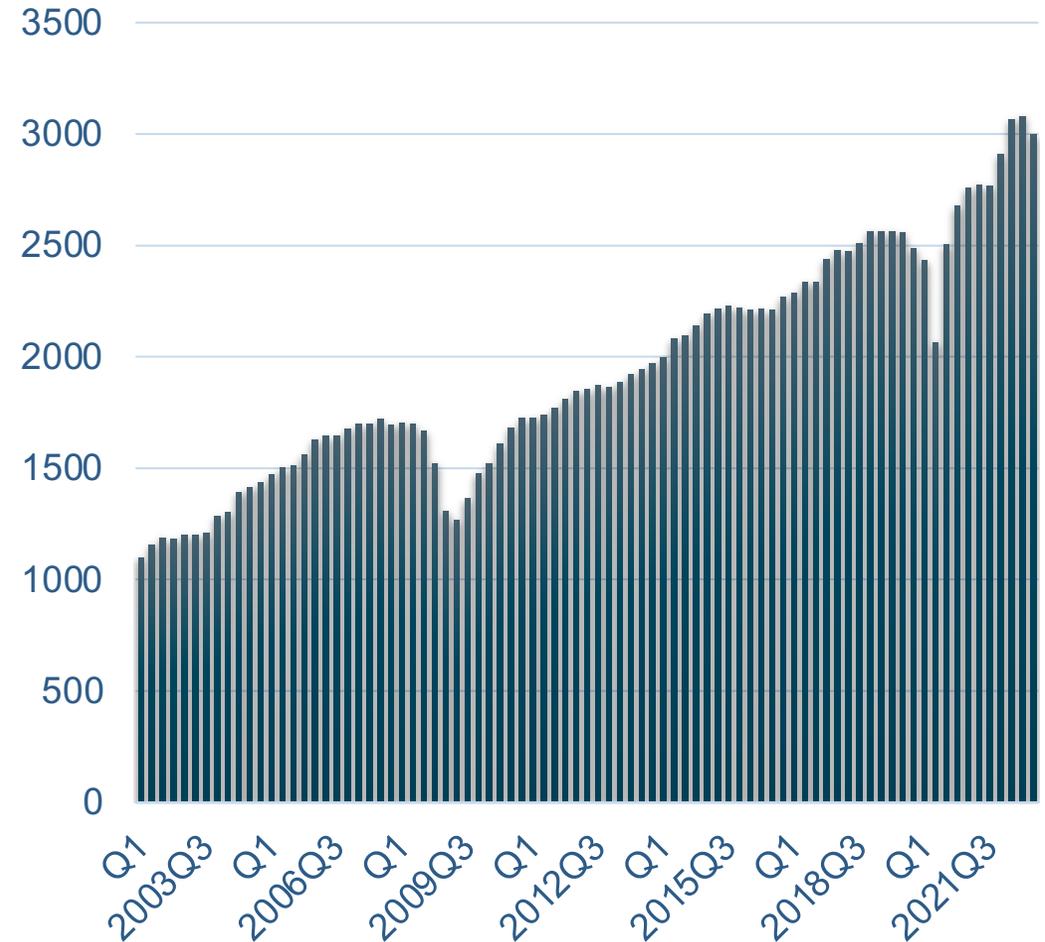
A Binging Economy...



Trade Gap as % of GDP



Real Non-Petroleum Imports



Foreign trade constraints



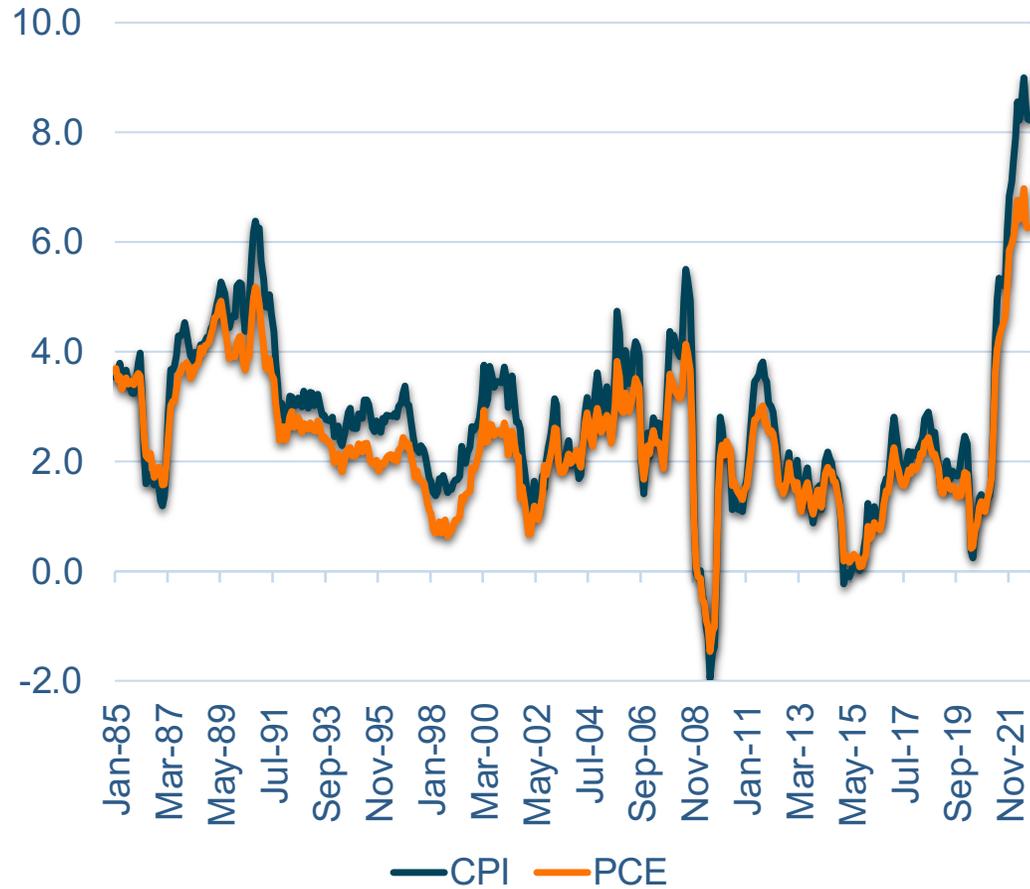
NY Fed Global Supply Chain Pressure Index



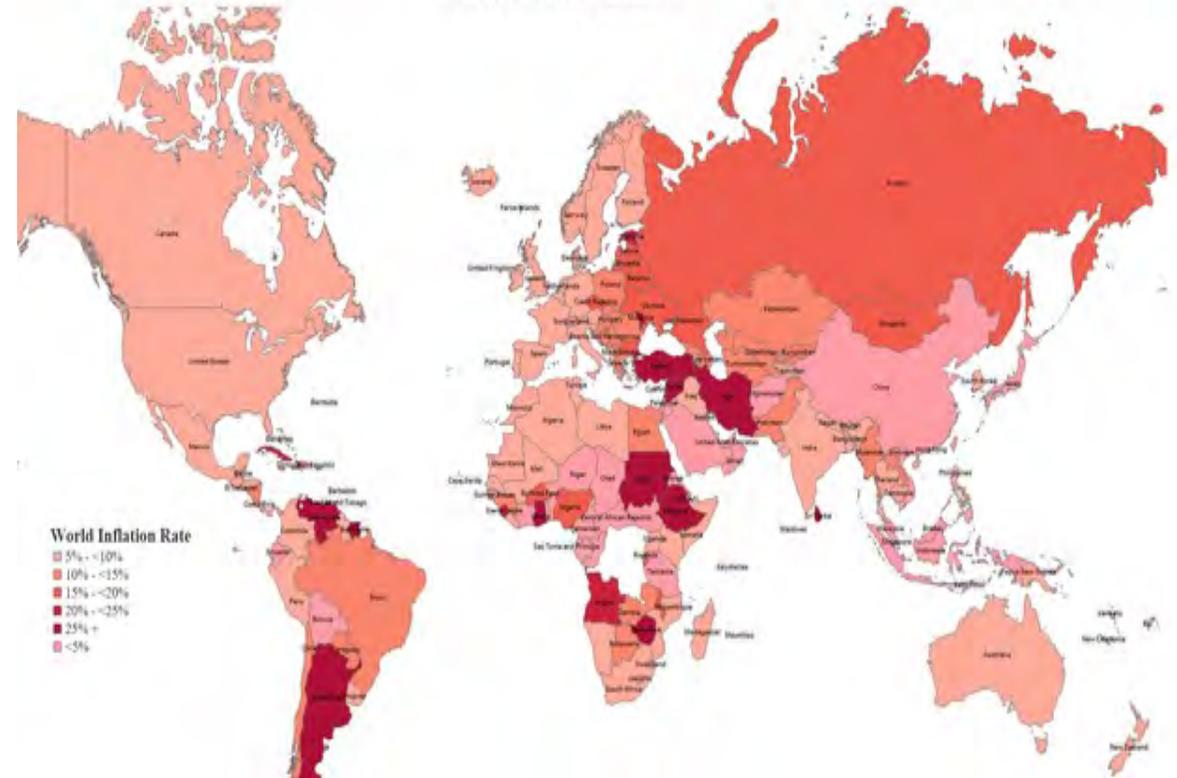
Inflation nation...



US Inflation Rates



World Inflation Rate 2022



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 Rams horrible front line

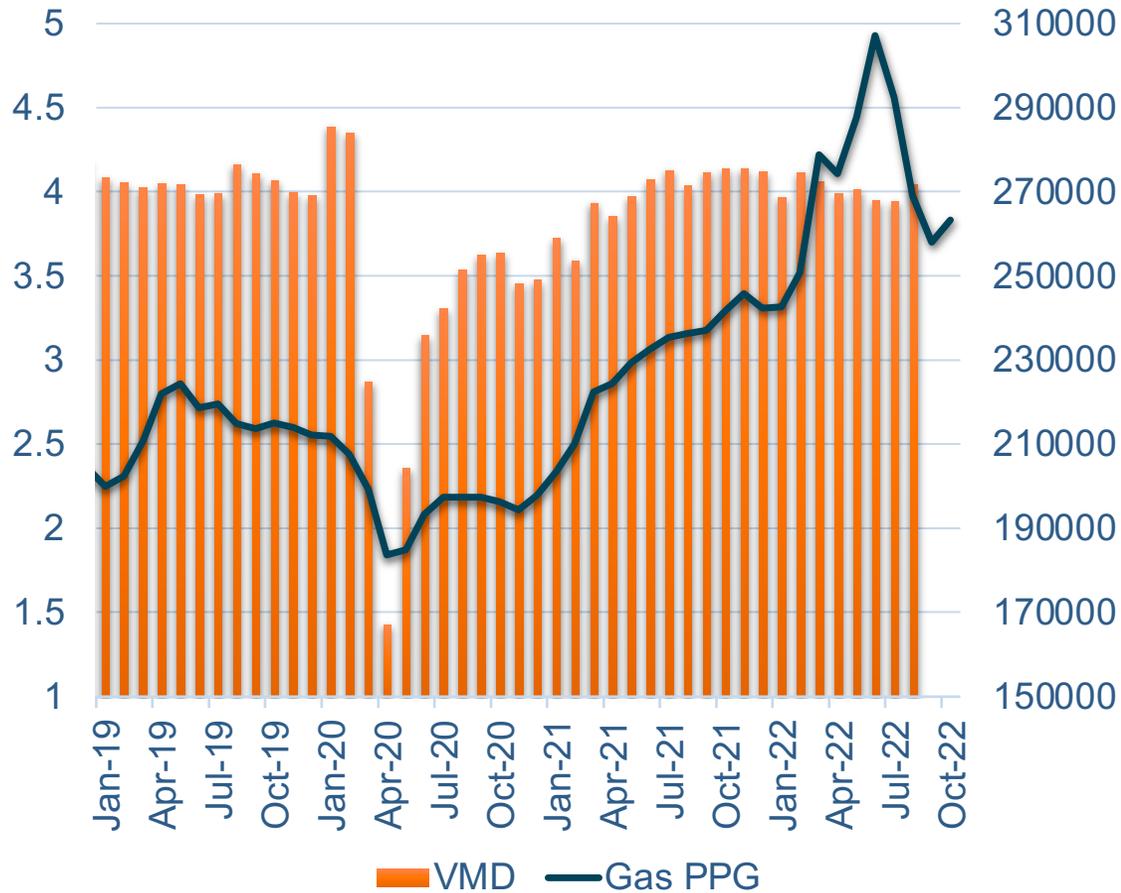
“Inflation is always and everywhere a monetary phenomenon in the sense that it is and can be produced only by a more rapid increase in the quantity of money than in output.”

Milton Friedman

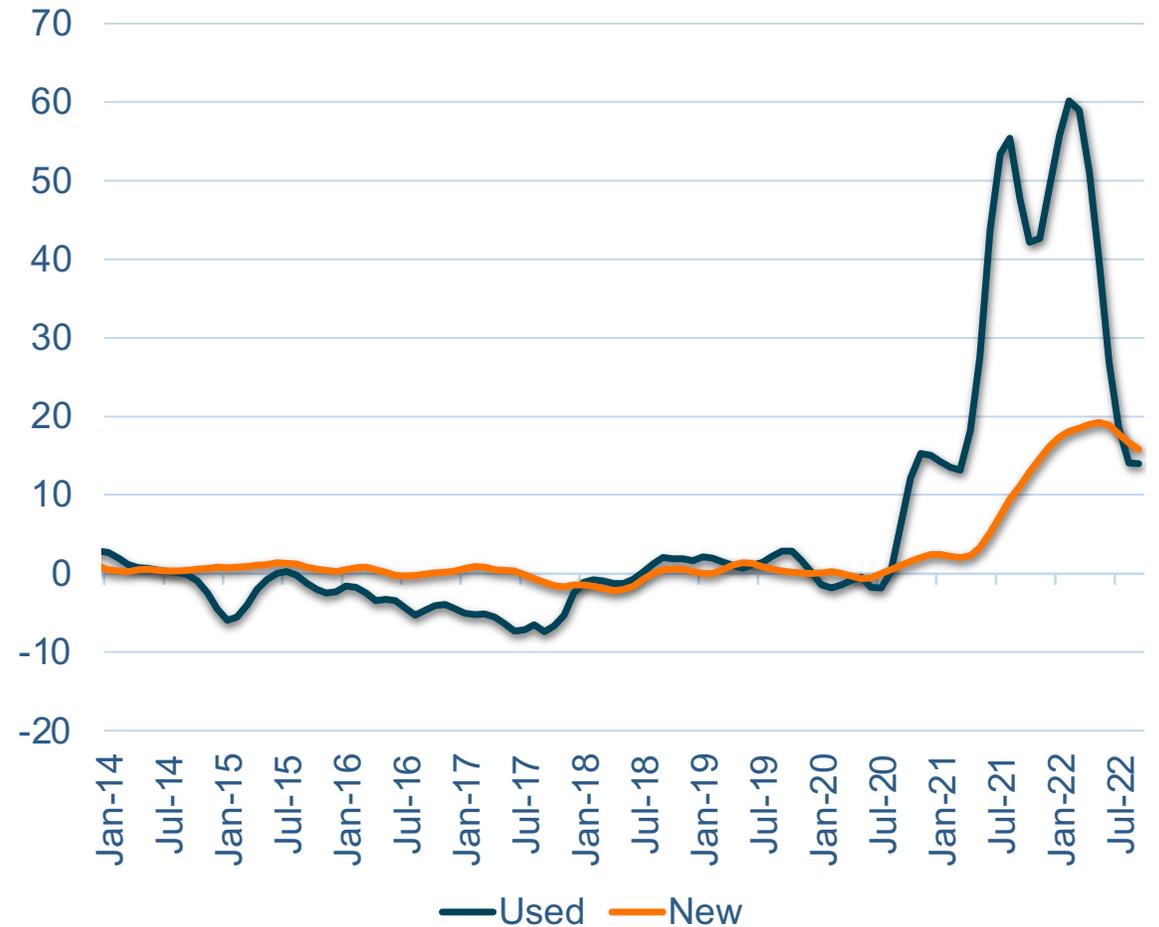
Supply or Demand?

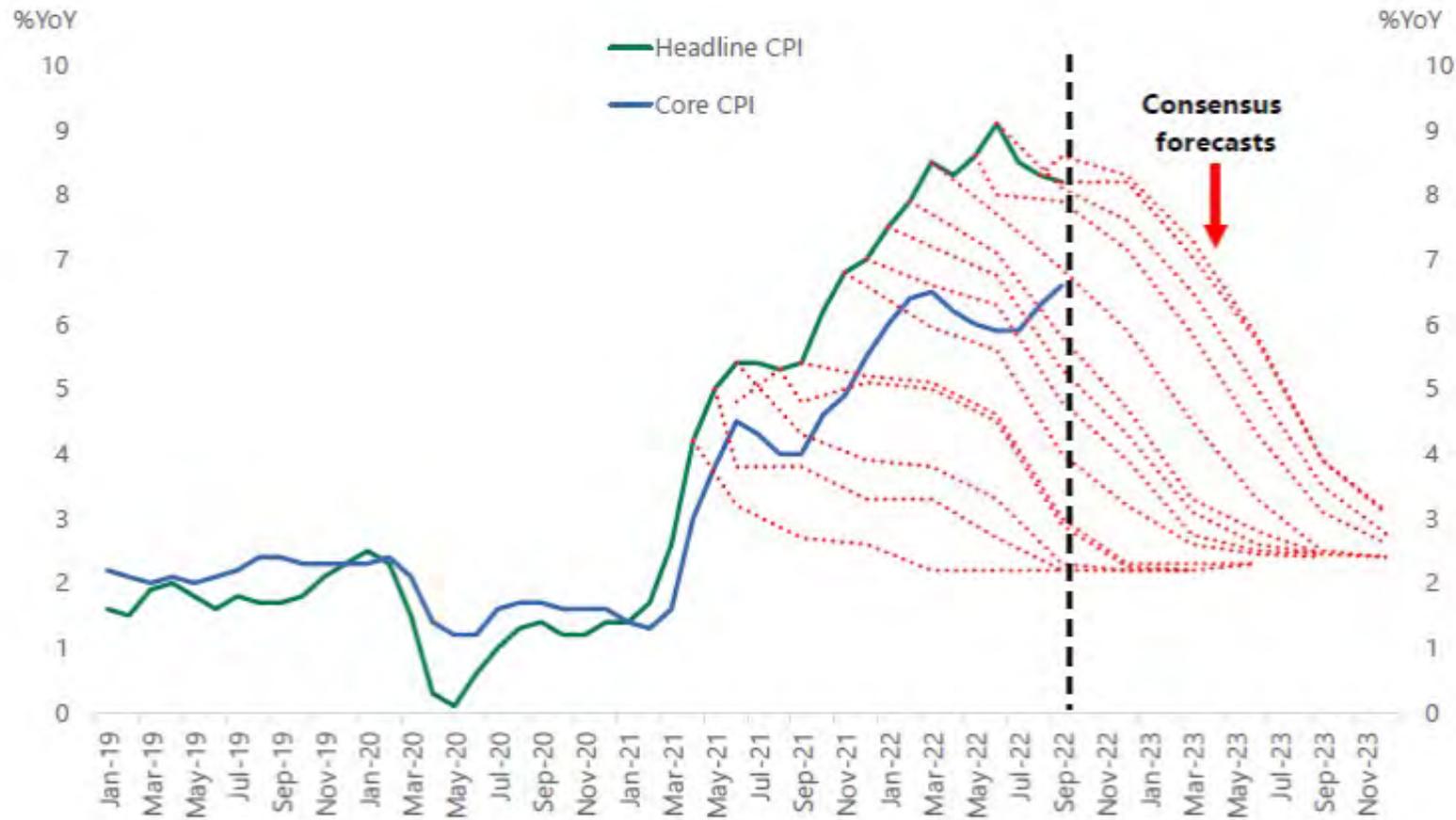


Gas Prices and VMD



Car Price Inflation (YoY)

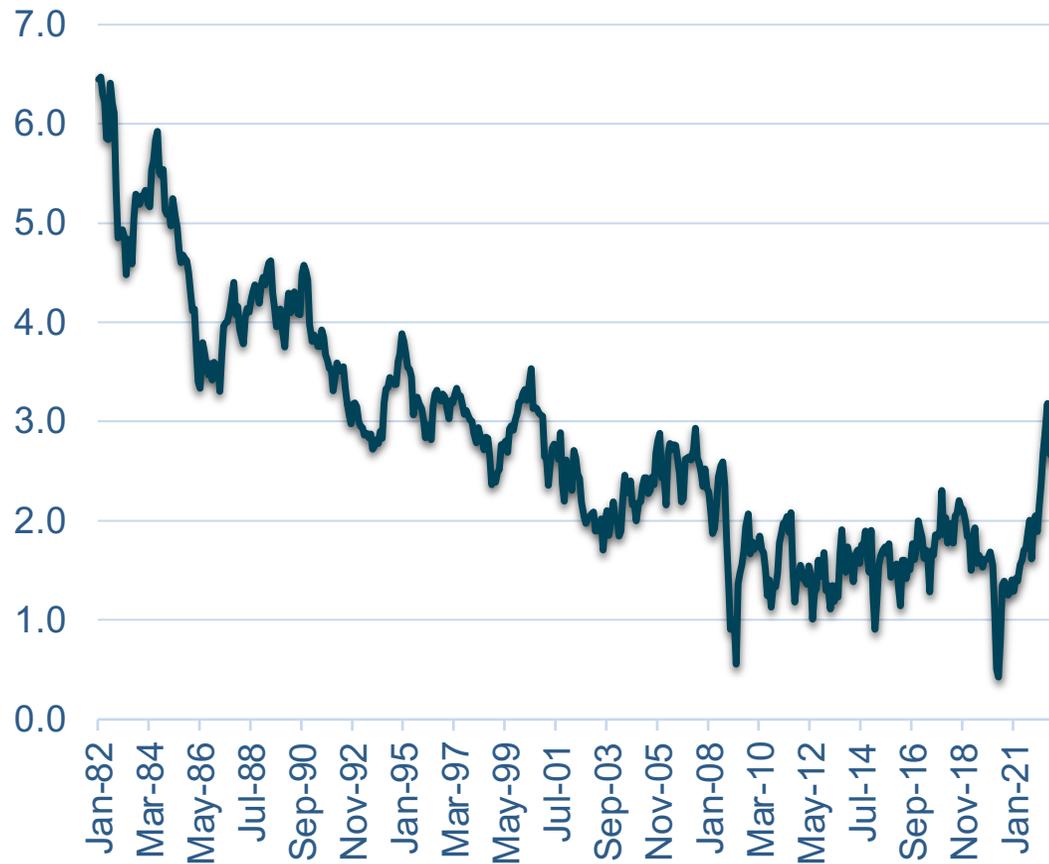




Inflation Expectations



Cleveland Federal Reserve 2 Year Inflation Expectations



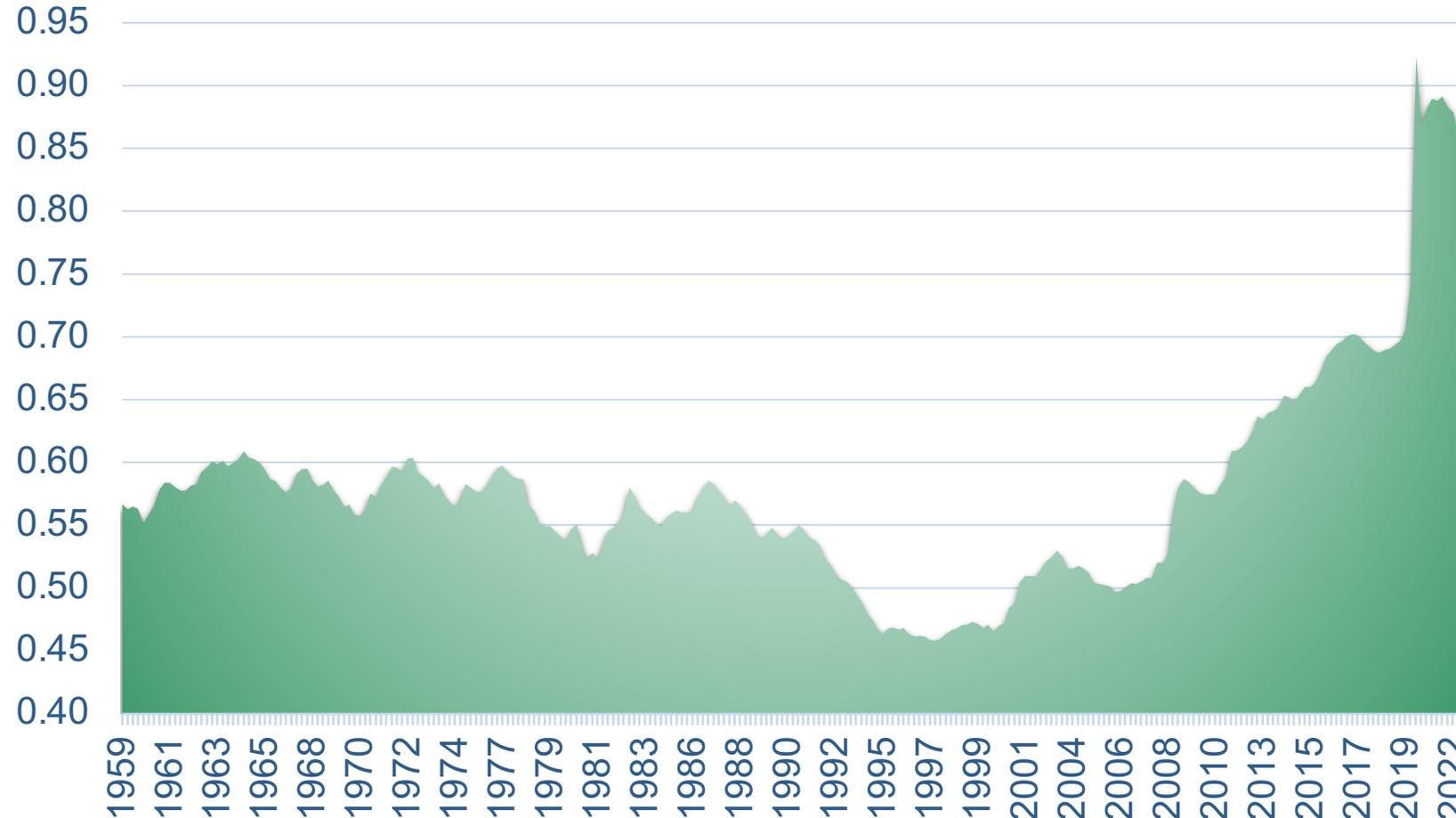
5 Year Breakeven Inflation Rate



How much farther can inflation go?



Unit Money Supply: $M2 / (P * RGDP)$

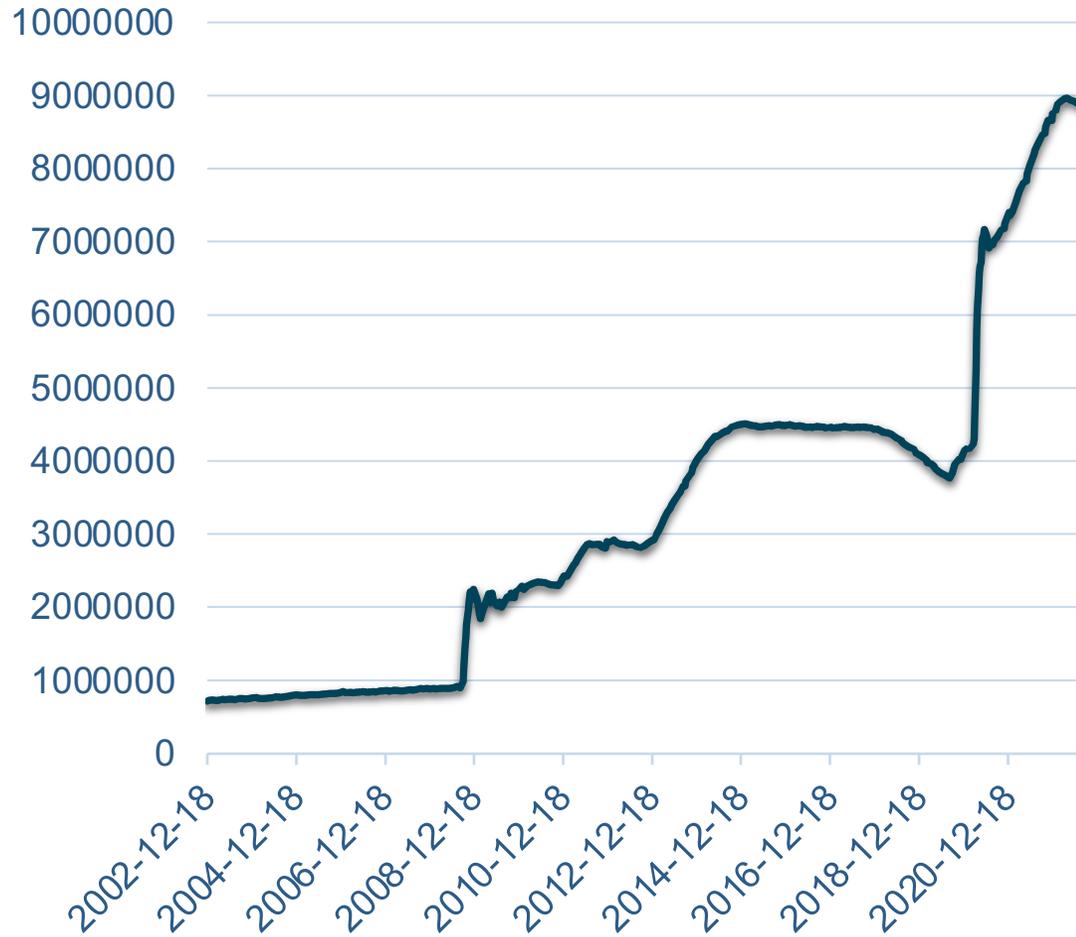


15% to 25% increase in P to offset M2 (with little real growth)

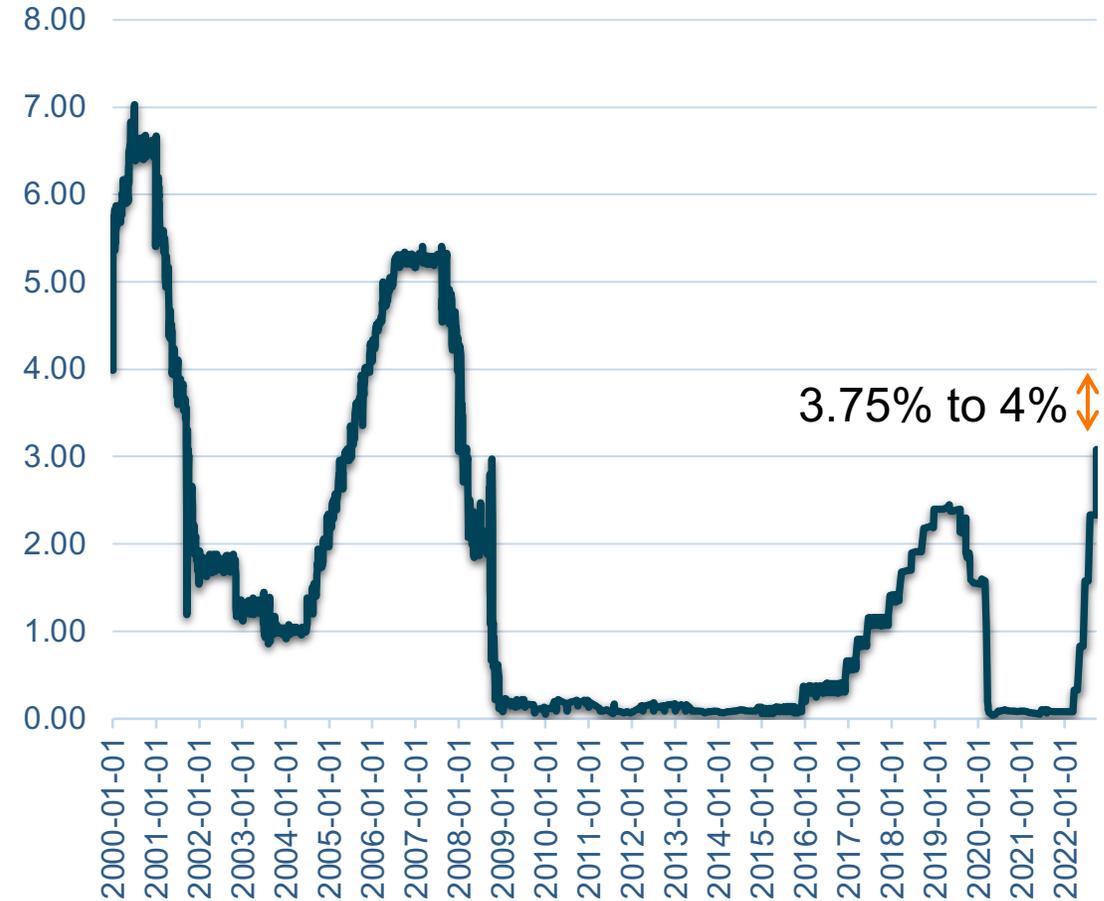
An Odd Fed Inflation Fighting Decision...



Fed Balance Sheet



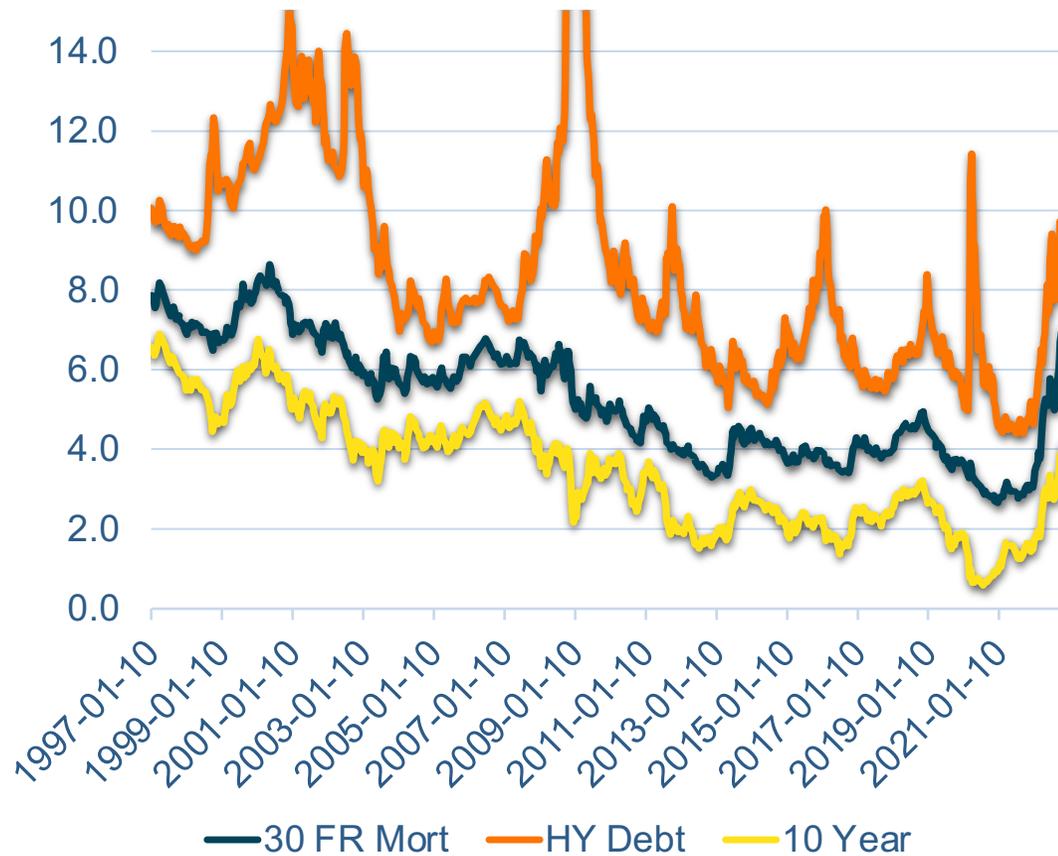
Federal Funds Rate



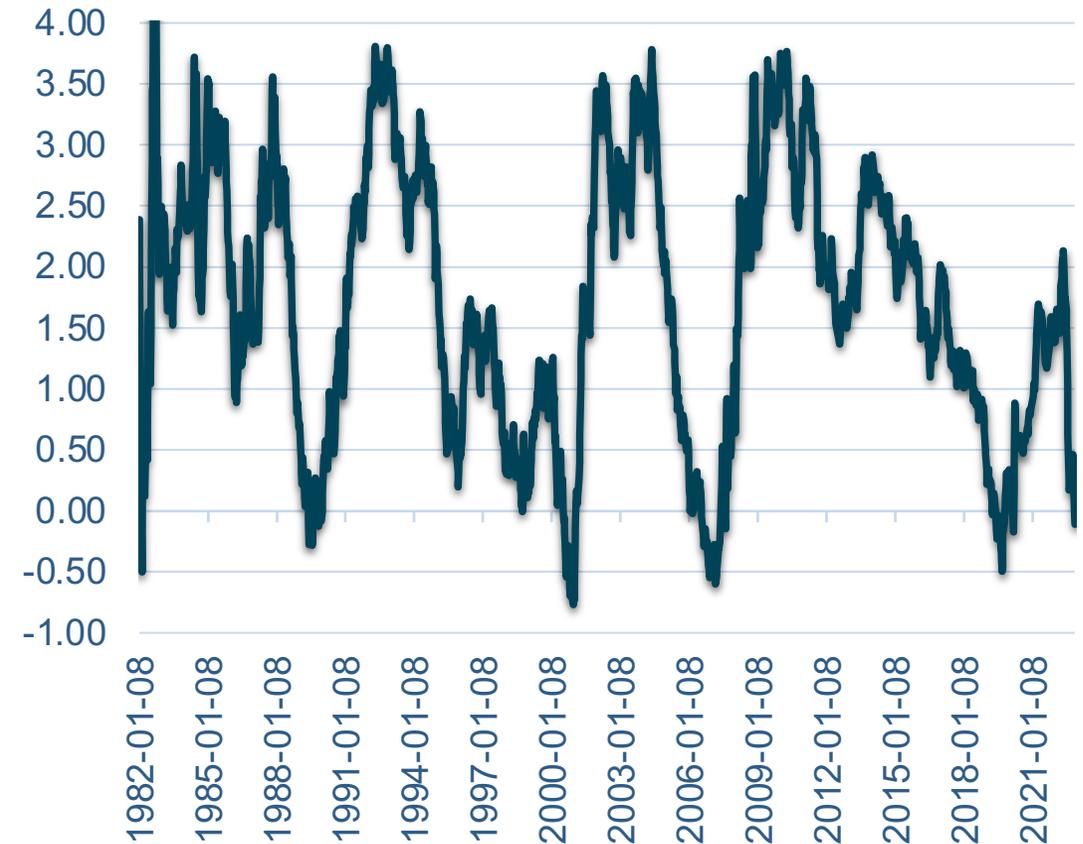
The era of cheap money is ending...



Debt Yields



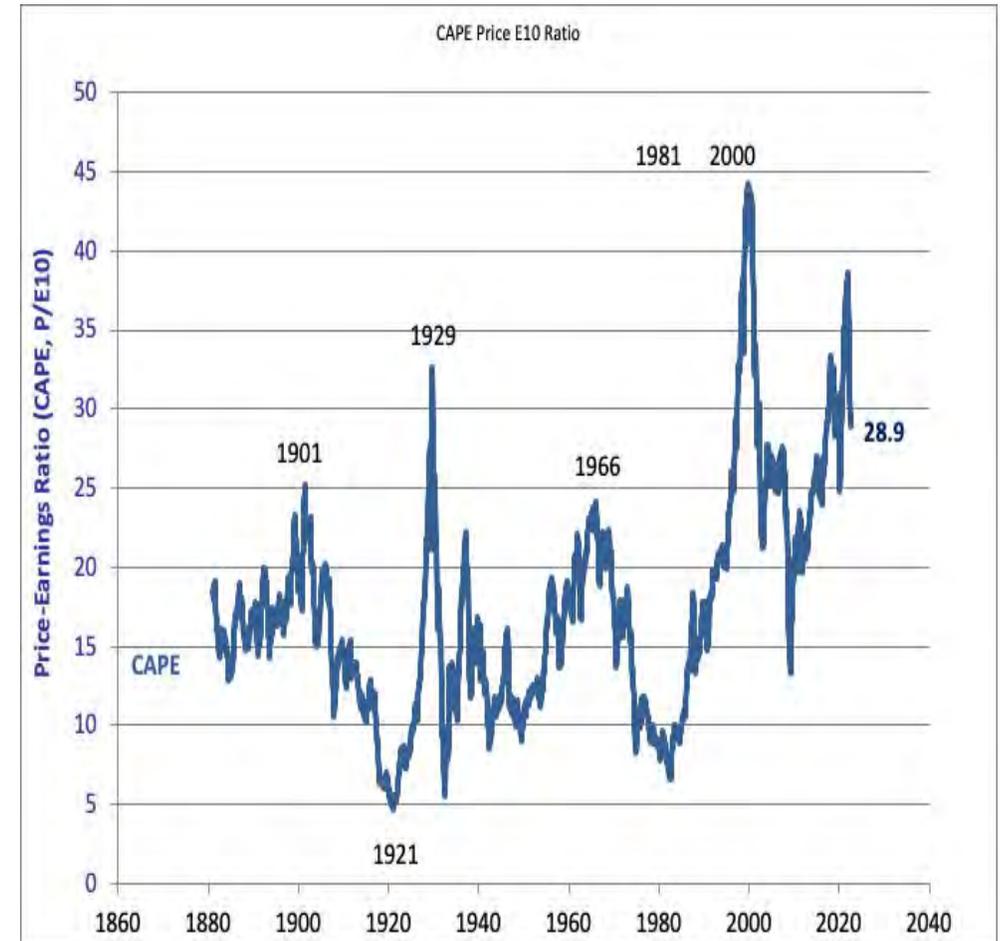
10 Year – 3 Month Spread



Gravity still works...



S&P 500





The Washington Post

Breaking News

Technology Alert

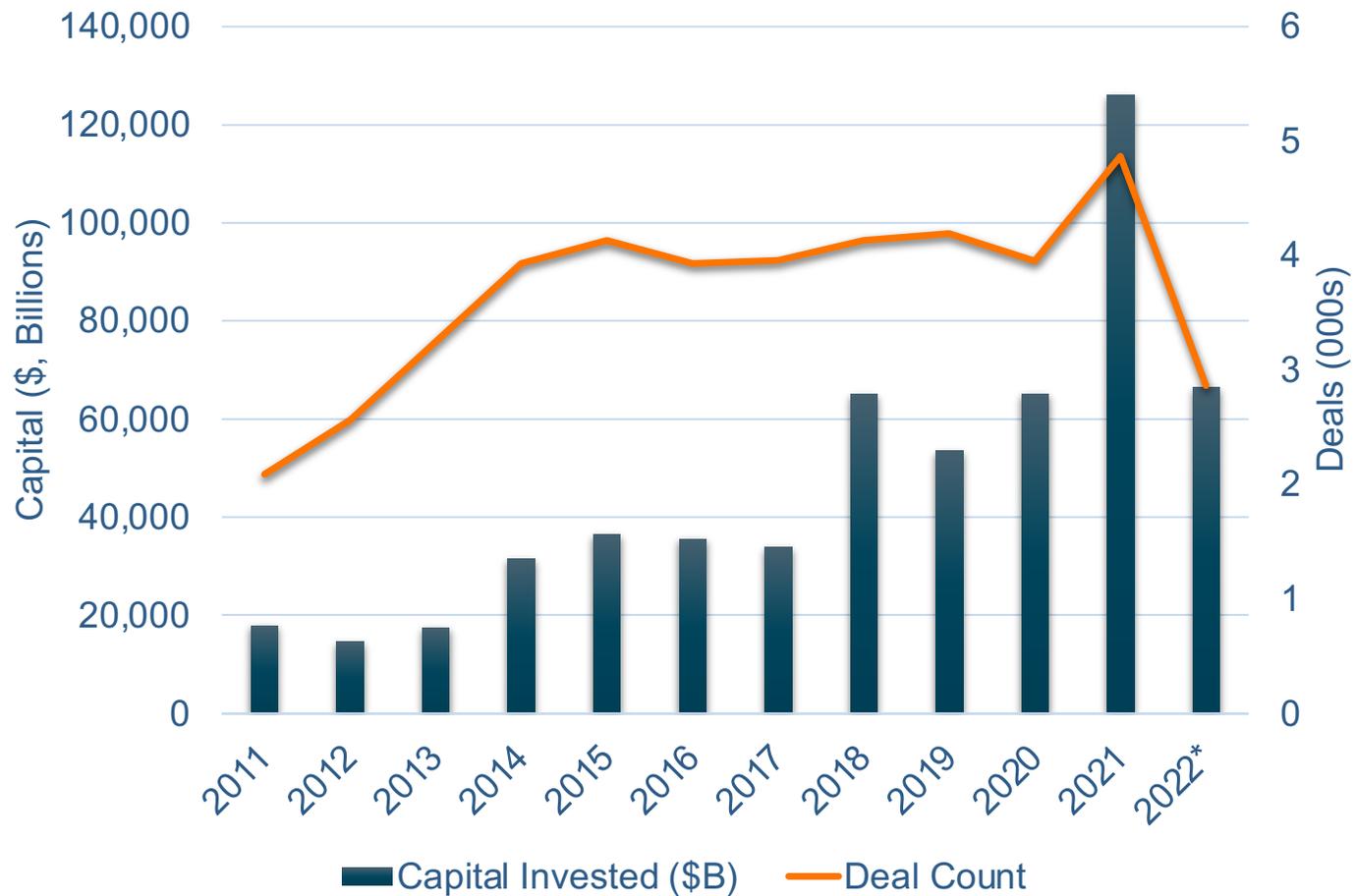
Oct. 26, 10:59 a.m. EDT

Billion-dollar tech funding rounds becoming more rare as layoffs, CEO resignations and belt-tightening take their toll on start-ups

In a shifting economy, Silicon Valley investors minted only 25 companies worth over \$1 billion each in the third quarter of 2022, according to venture capital research firm CB Insights. A year ago, there were more than five times as many new so-called unicorns.



Capital Invested and Number of Deals,





Market Summary > Bitcoin

16,800.00 USD

+ Follow

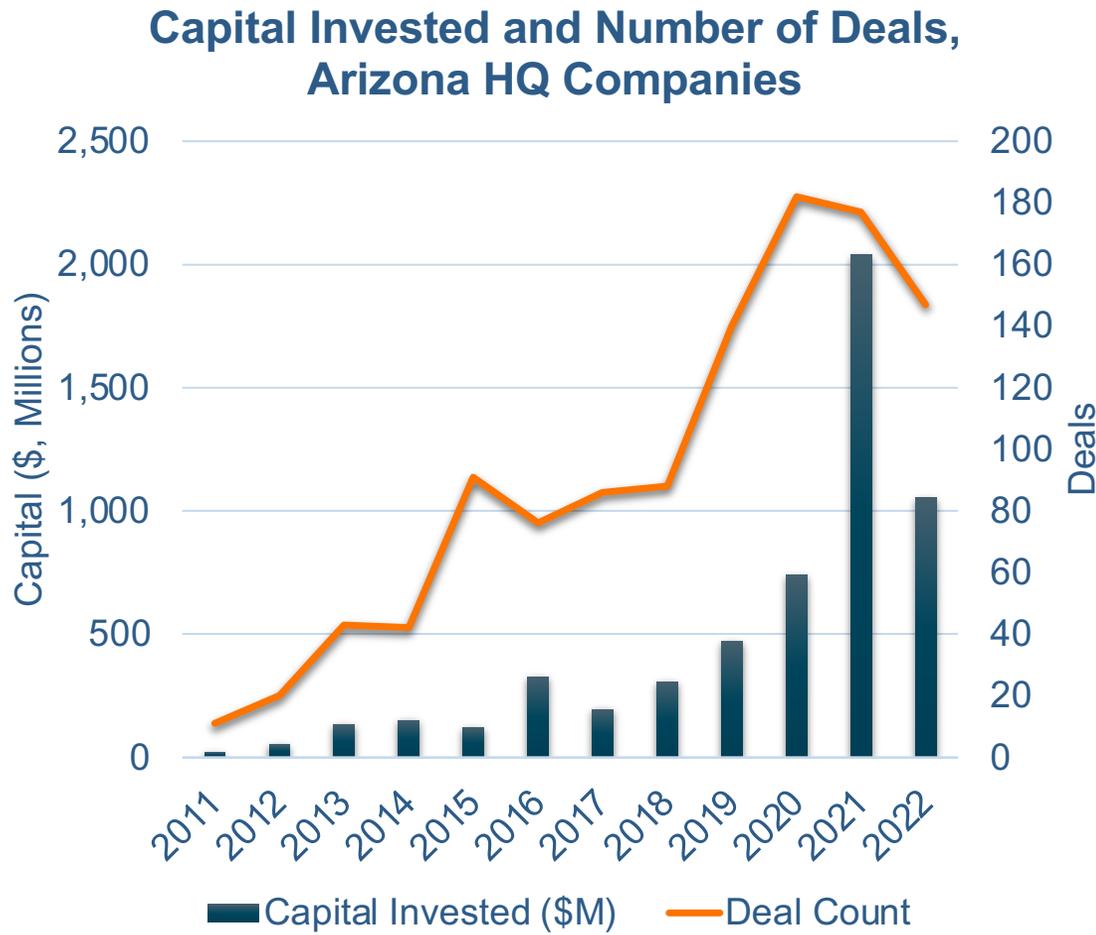
-50,138.00 (74.90%) ↓ past year

Nov 9, 6:10 PM UTC · [Disclaimer](#)

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



Venture Capital – Arizona

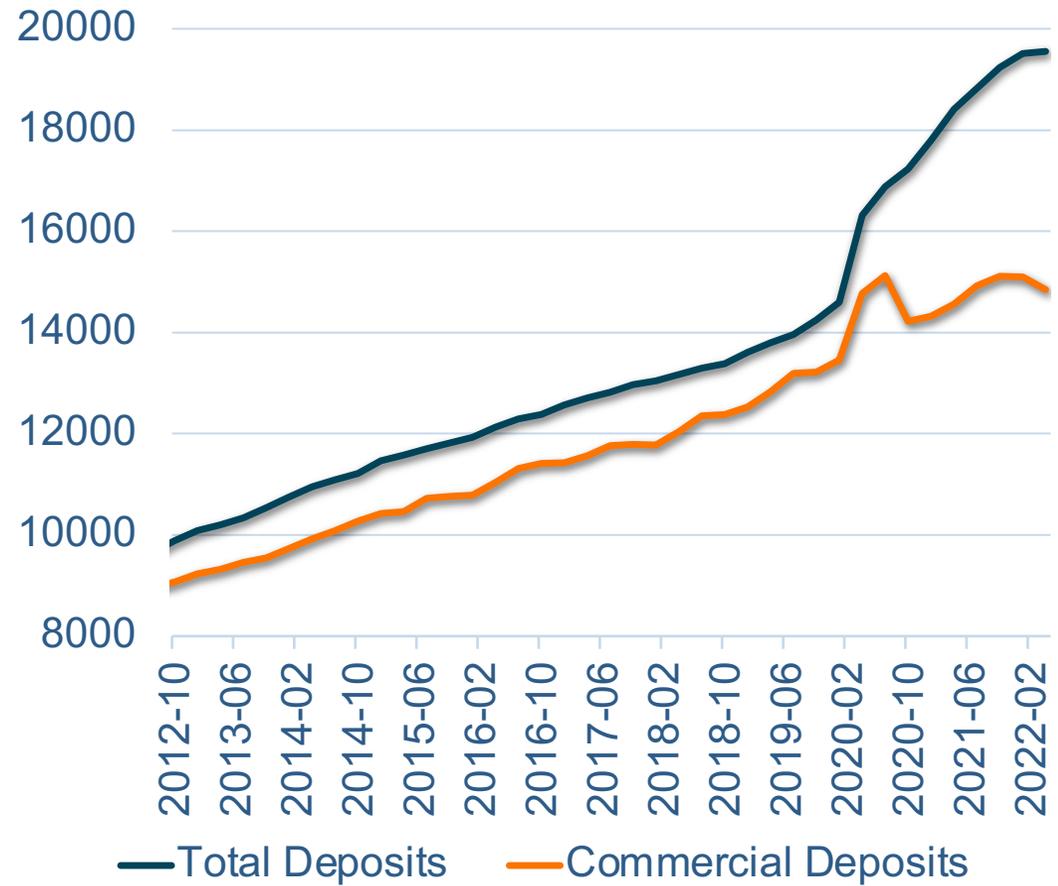


Company (Arizona HQ)	Deal Size (\$, Mil.)	Vertical / Industry
Paradox	303.3	Commercial Services
Nextiva	200.0	Software
Lessen	213.8	Commercial Services
EmergeTech	172.5	Commercial Services
SOURCE	236.8	Energy Equipment
Persefoni	114.5	Software
Postscript	138.1	Software
Bishop Fox	111.6	Software
FlipOS	250.0	Software
OncoMyx Therapeutics	75.0	Pharmaceuticals

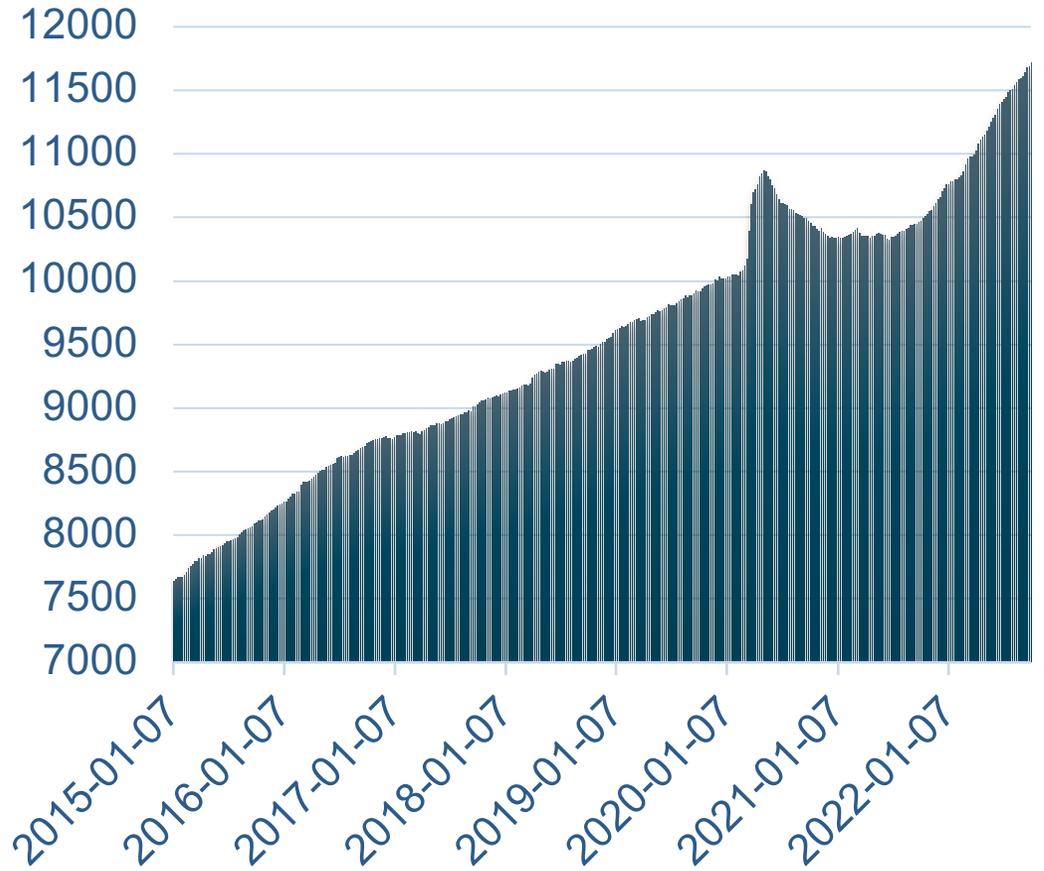
The Banking Climate



Bank Deposits (CU's and CB's)



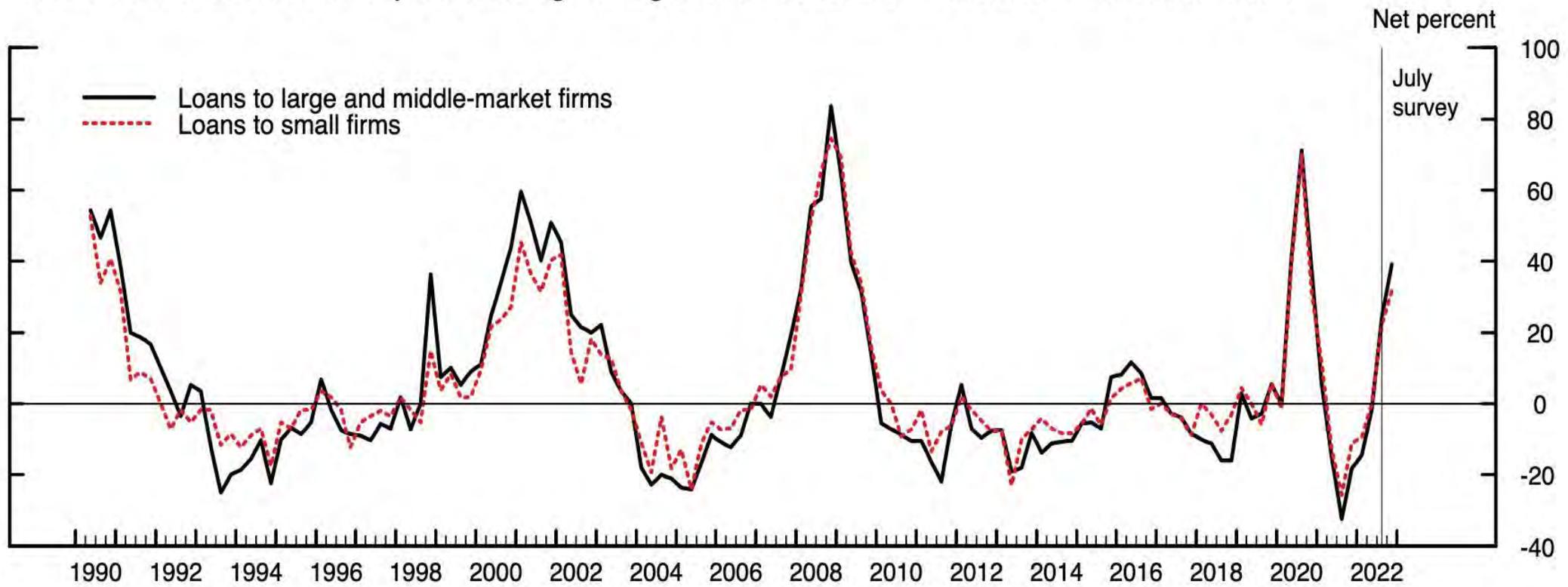
Bank Loans and Leases



Lending Climate

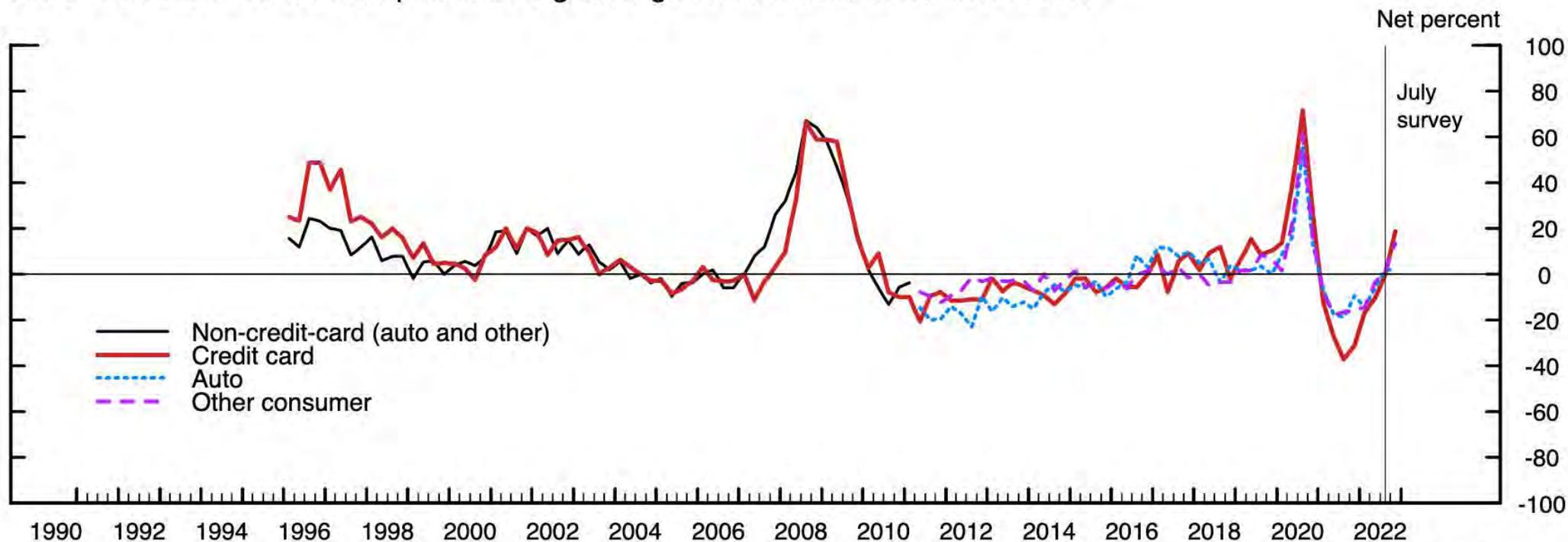


Net Percent of Domestic Respondents Tightening Standards for Commercial and Industrial Loans





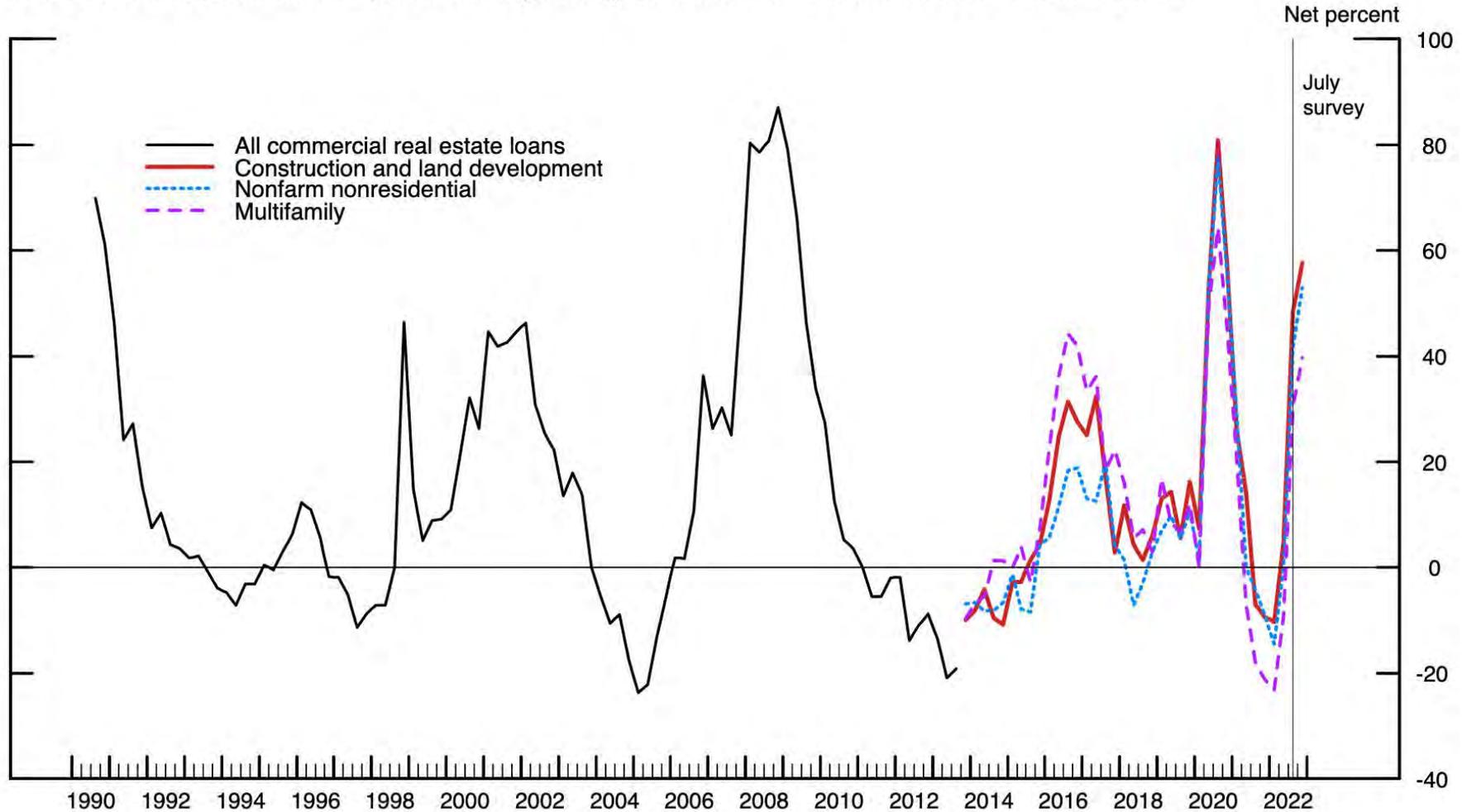
Net Percent of Domestic Respondents Tightening Standards for Consumer Loans



Note: For data starting in 2011:Q2, changes in standards for auto loans and consumer loans excluding credit card and auto loans are reported separately. In 2011:Q2 only, new and used auto loans are reported separately and equally weighted to calculate the auto loans series.



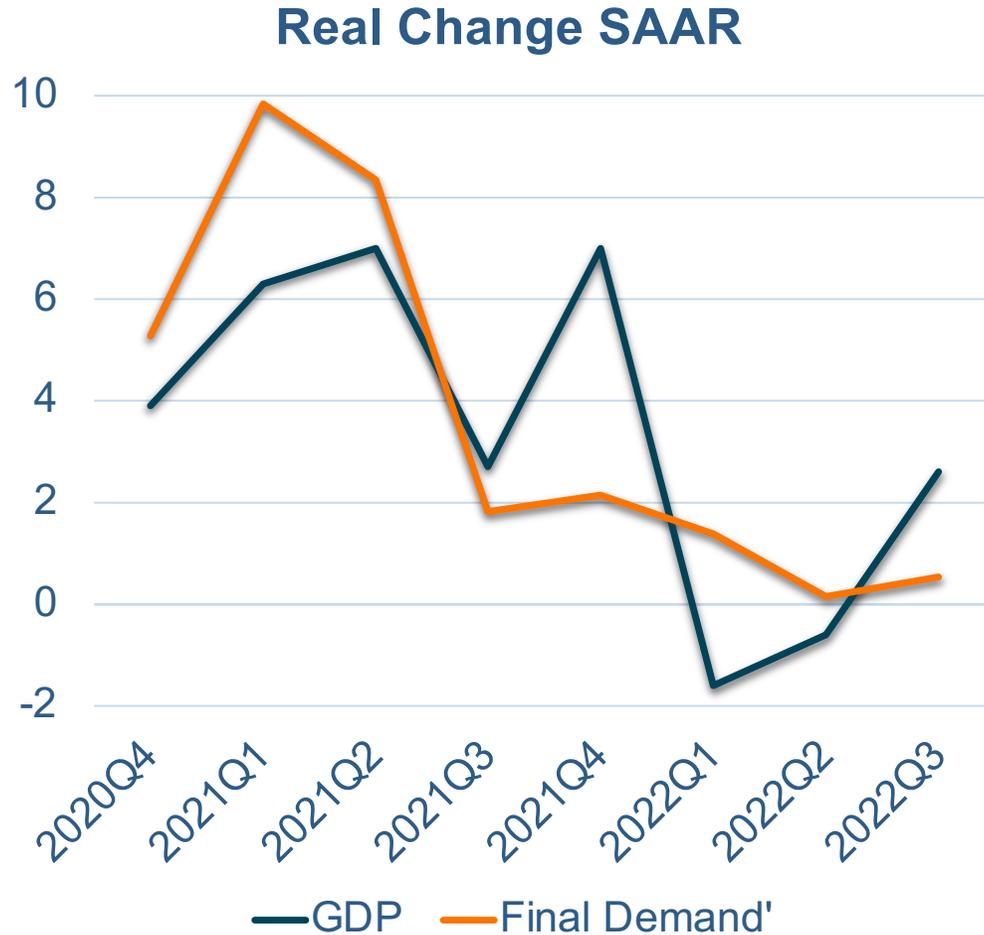
Net Percent of Domestic Respondents Tightening Standards for Commercial Real Estate Loans



Recent Real GDP Growth



Contributions to Real GDP Growth



	2019	2020	2021	2022
Gross domestic product	2.58	1.18	5.75	0.13
Final Demand	2.56	1.18	5.54	0.69
Personal consumption	1.45	0.39	4.74	1.09
Durable goods	0.40	1.40	0.59	0.11
Nondurable goods	0.32	0.81	1.04	-0.41
Services	0.74	-1.82	3.11	1.39
Fixed investment	0.42	0.51	0.67	-0.33
Structures	0.20	-0.50	-0.14	-0.29
Equipment	-0.18	0.06	0.28	0.33
Intellectual property	0.33	0.22	0.56	0.45
Residential	0.08	0.74	-0.02	-0.82
Change inventories	-0.38	0.79	0.93	-0.82
Net exports	0.40	-0.79	-0.72	0.27
Exports	0.11	-0.83	0.70	0.87
Imports	0.29	0.03	-1.41	-0.60
Government	0.69	0.29	0.12	-0.09

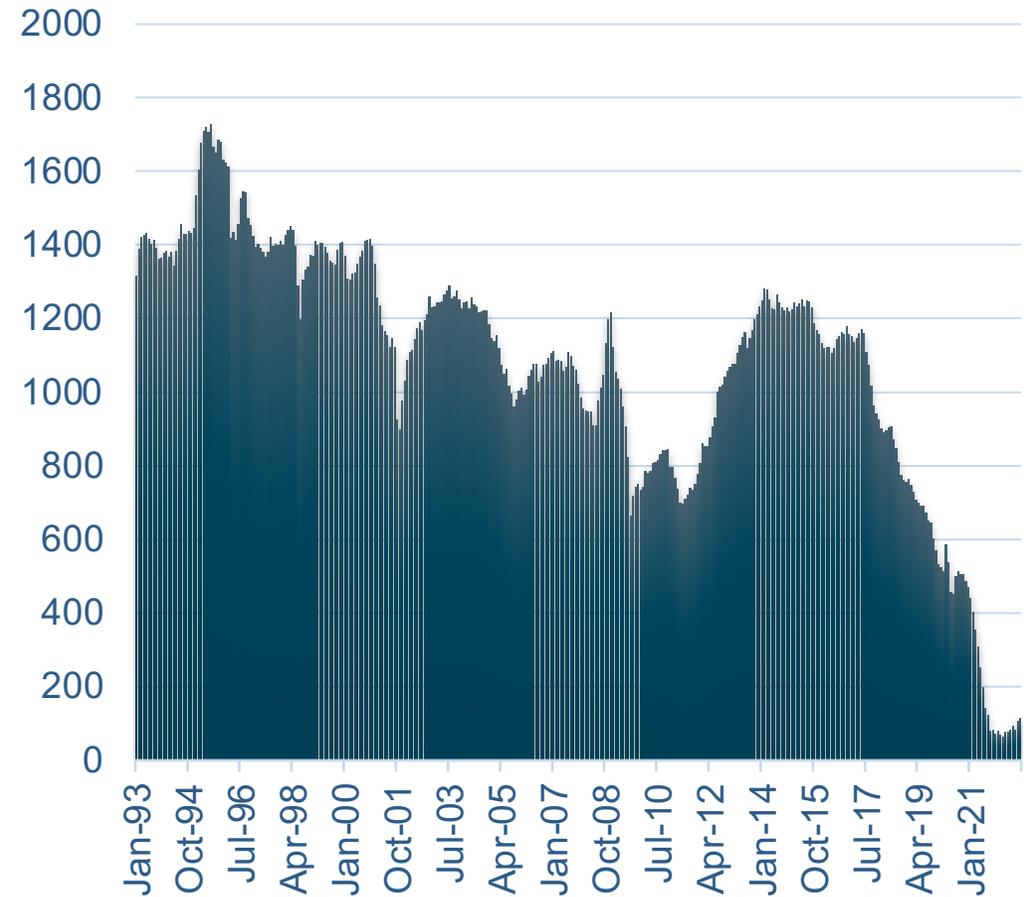
Still Pent-Up Consumer Demand



New Auto Sales SAAR (Mil Units)



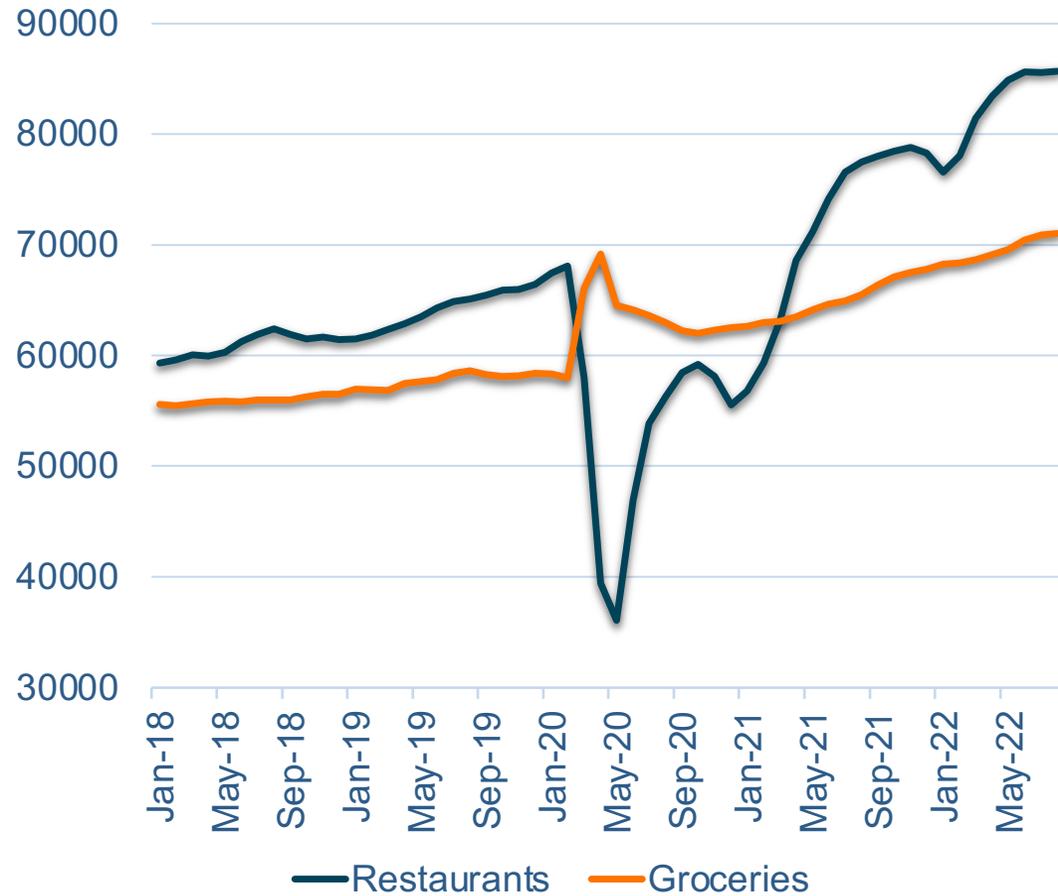
Inventories of Autos for Sale US



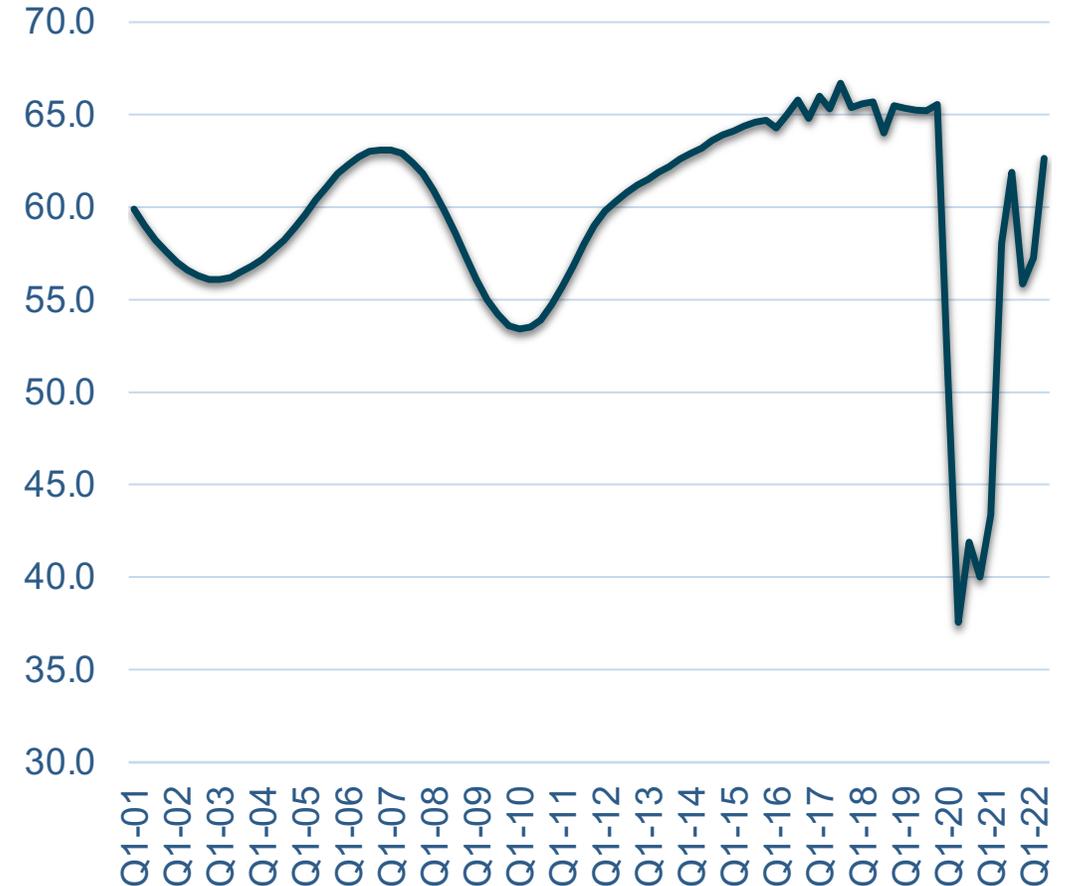
A shift in spending back to services...



Retail Sales on Food



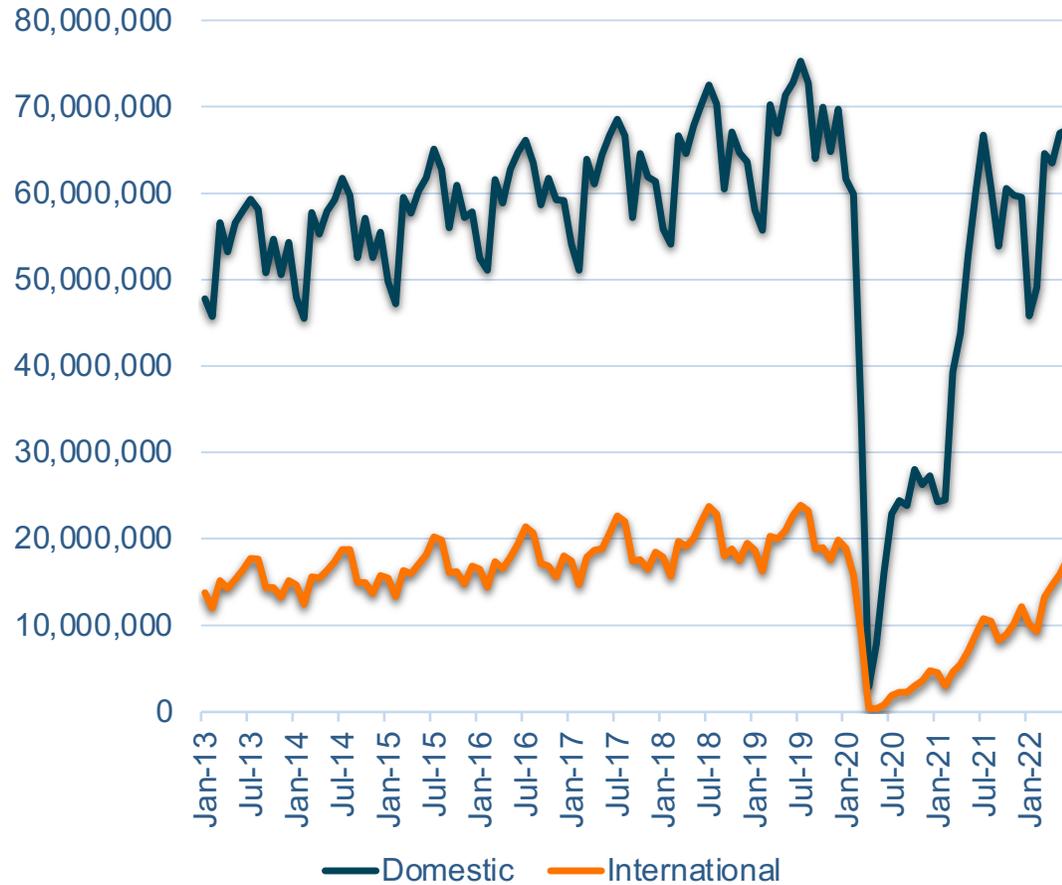
National Occupancy Rates



Travel Trends



Enplanements



Hotel Occupancy

Occupancy Rate	Q2-19	Q2-22	
Las Vegas	44.2	62.4	18.2
Tucson	66.9	74.6	7.7
Phoenix	71.1	75.4	4.3
Reno	67.5	66.3	-1.2
Inland Empire	75.1	71.8	-3.3
San Diego	77.7	73.6	-4.1
Orange County (MD)	77.2	72.3	-4.9
Los Angeles (MD)	80.6	73.1	-7.5
Sacramento	75.1	66.3	-8.8
Oakland (MD)	76.1	65.7	-10.4
San Jose	74.2	63.2	-11.0
San Francisco (MD)	81.0	66.4	-14.6
Seattle	73.6	58.5	-15.1

What happens in Vegas...



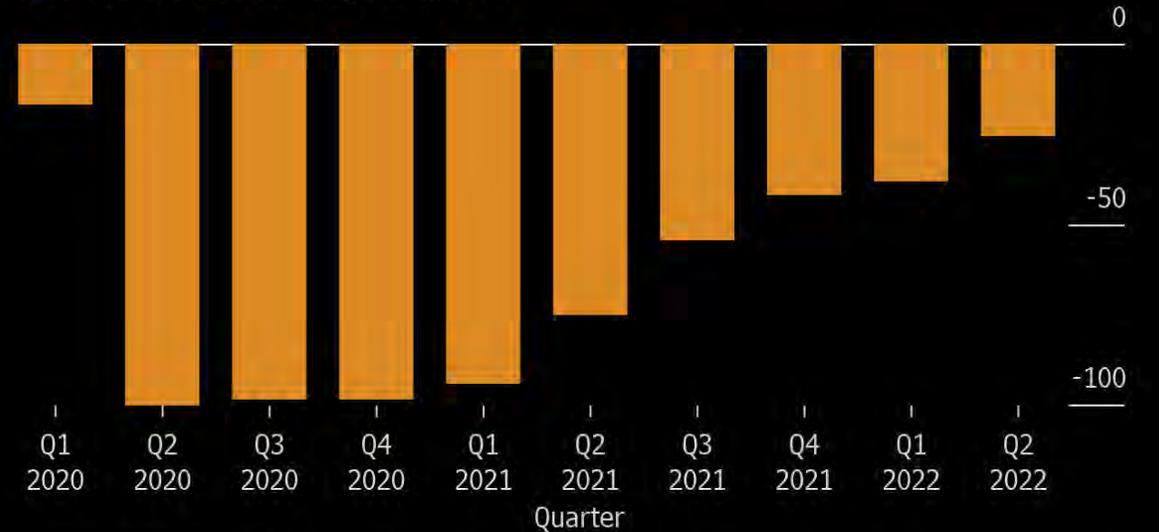
Visitors and Gross Gaming Revenue – Las Vegas



Conventions Rebounding

Second quarter activity down 25.5% from 2019, vs 38% in 1Q

Total index percent change from 2019



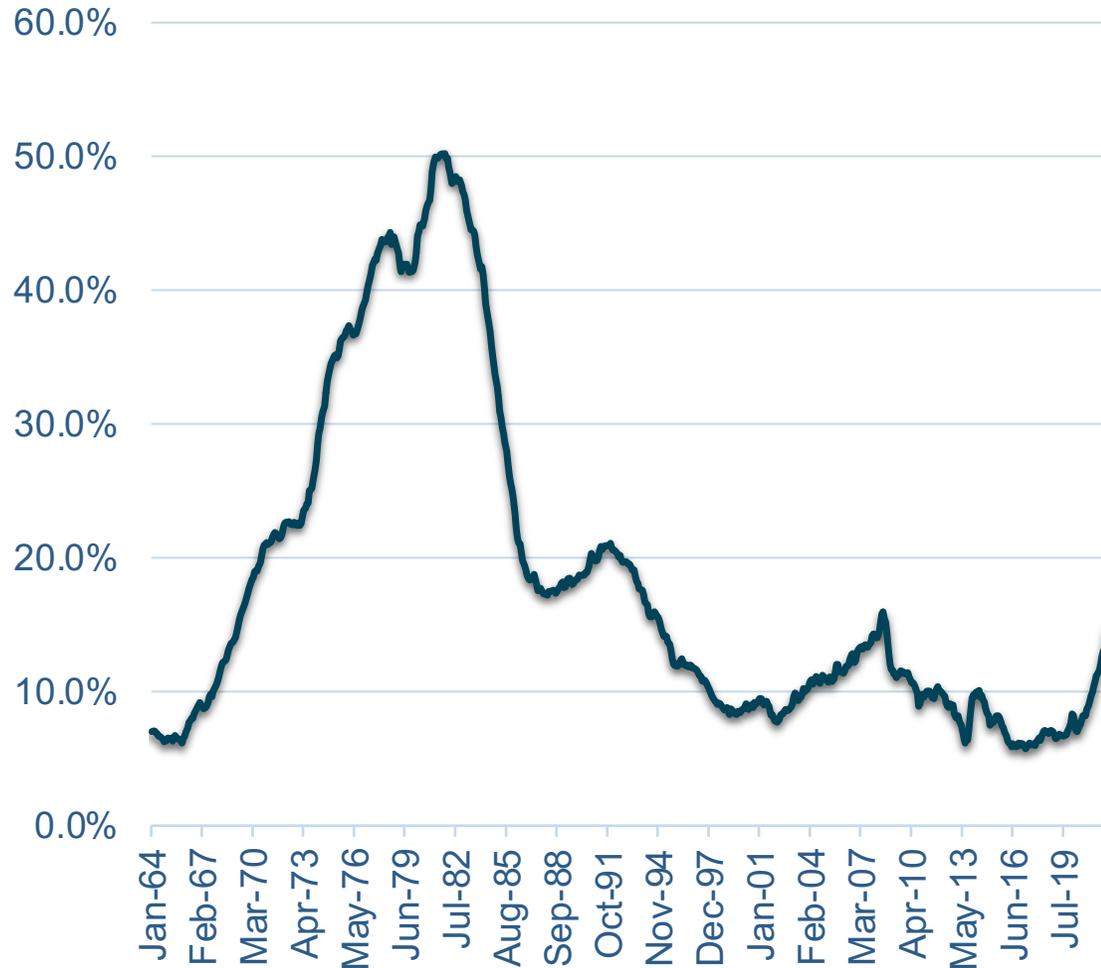
Source: Center for Exhibition Industry Research

Bloomberg

Can the consumer survive? Context...



5 Year Increase in Consumer Prices



US Real Interest Rate (2 Yr T-Bill – PCE Inflation)



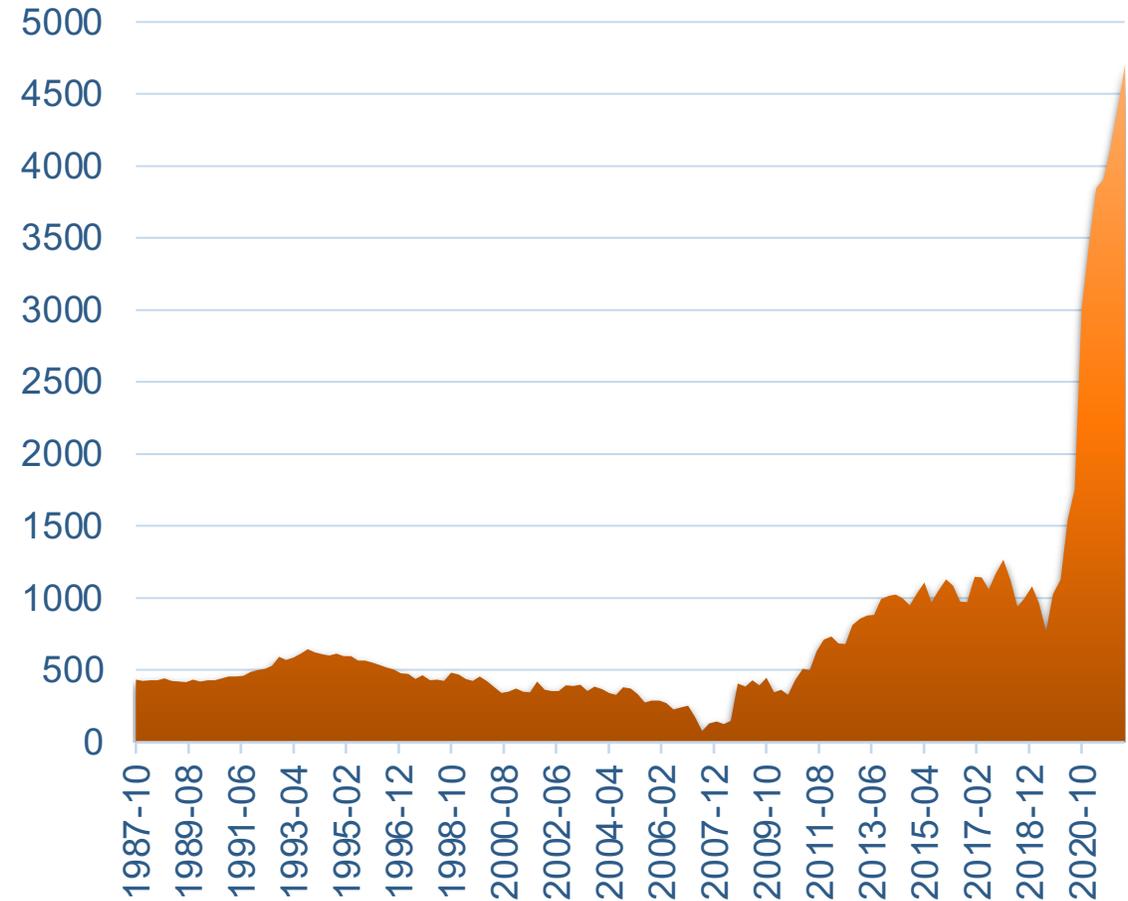
Cash Balances



US Financial Obligations Ratio

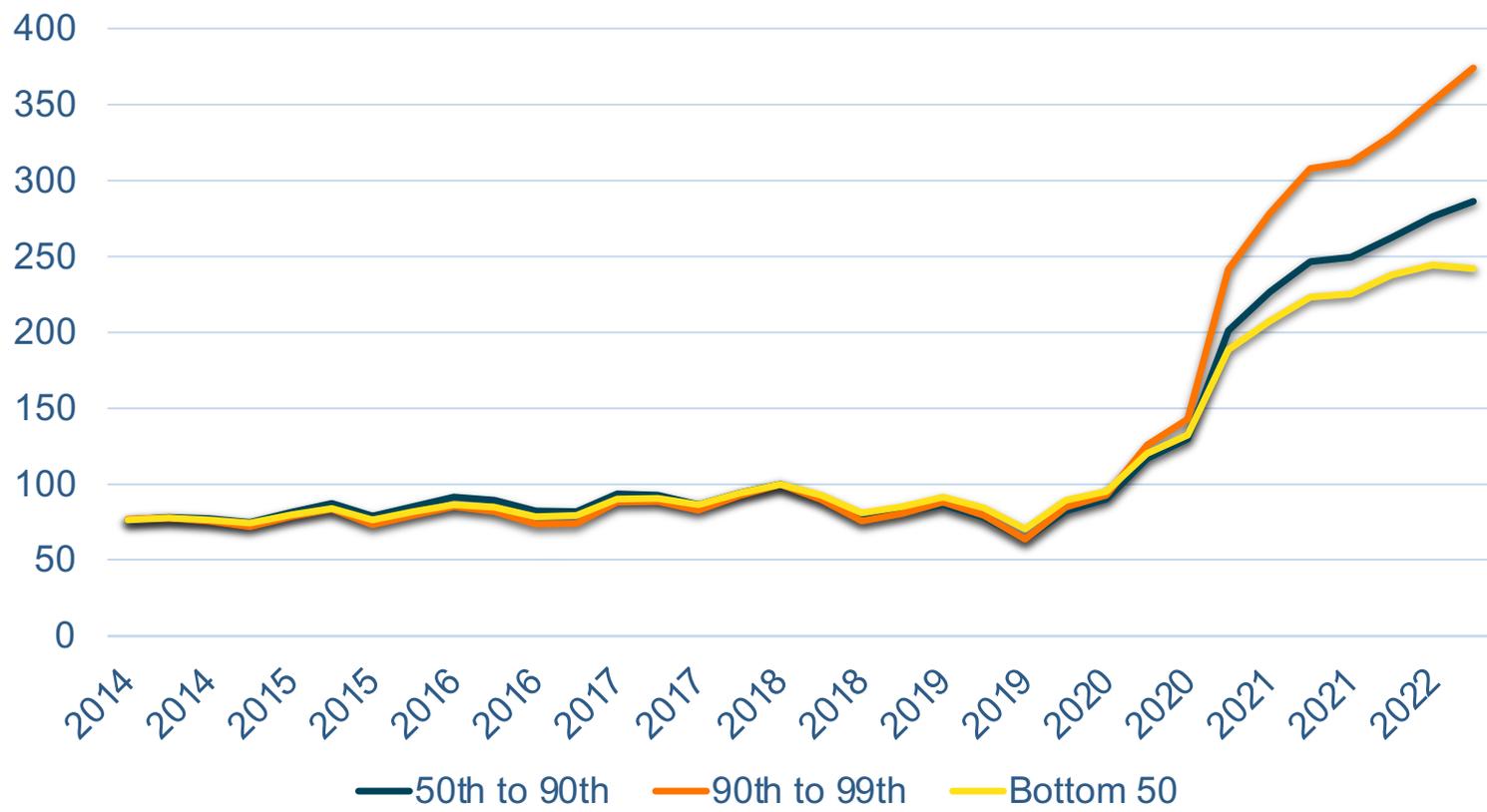


US Household Cash Balances (\$Bil)





Indexed Balance of Checkable Deposits and Currency by Income Level



Clean Credit Markets



Share Mortgage Debt > 720 FICO



Share Auto Debt > 720 FICO



Credit Card Debt as % of Limit



Contradictory Efforts

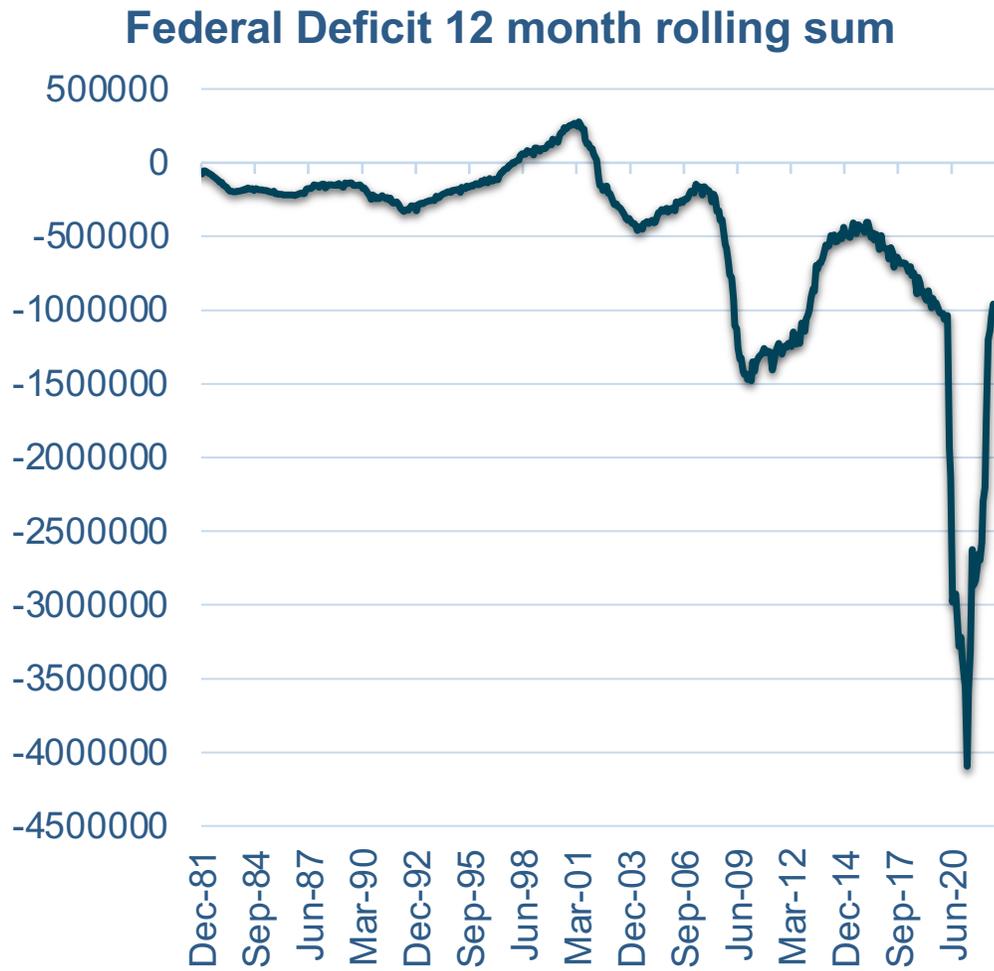
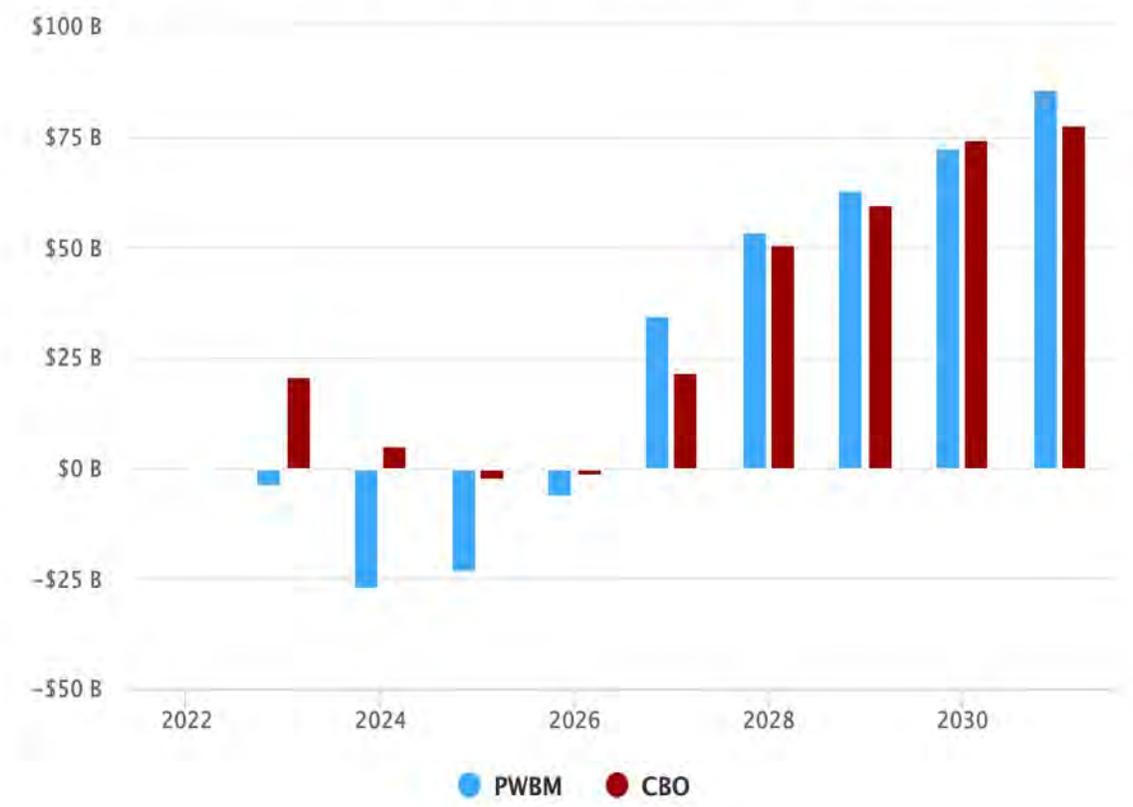


Figure 1. Budgetary Effects of the Inflation Reduction Act of 2022

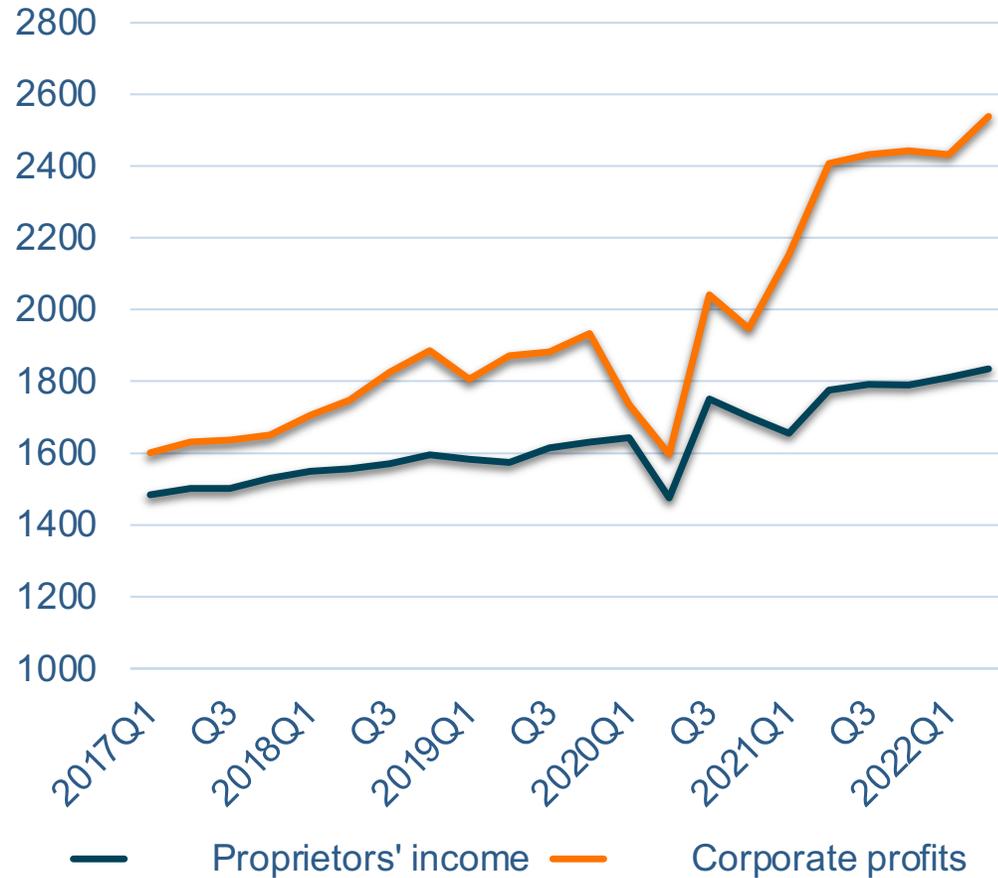
Net deficit reduction (+) or increase (-) from spending and revenues



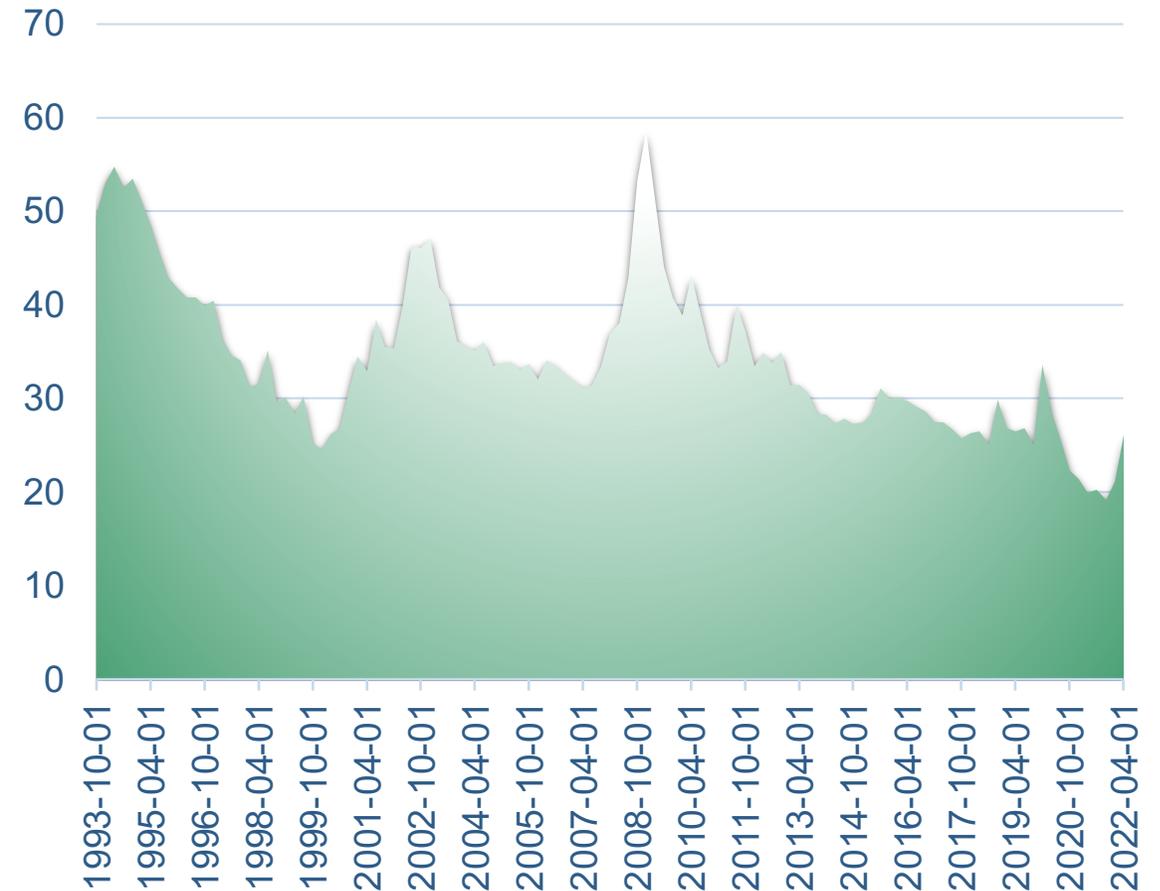
Business is managing...



Business Earnings



Non-Financial Corporate Debt to Equity



Business Investment



New Orders IT Equipment



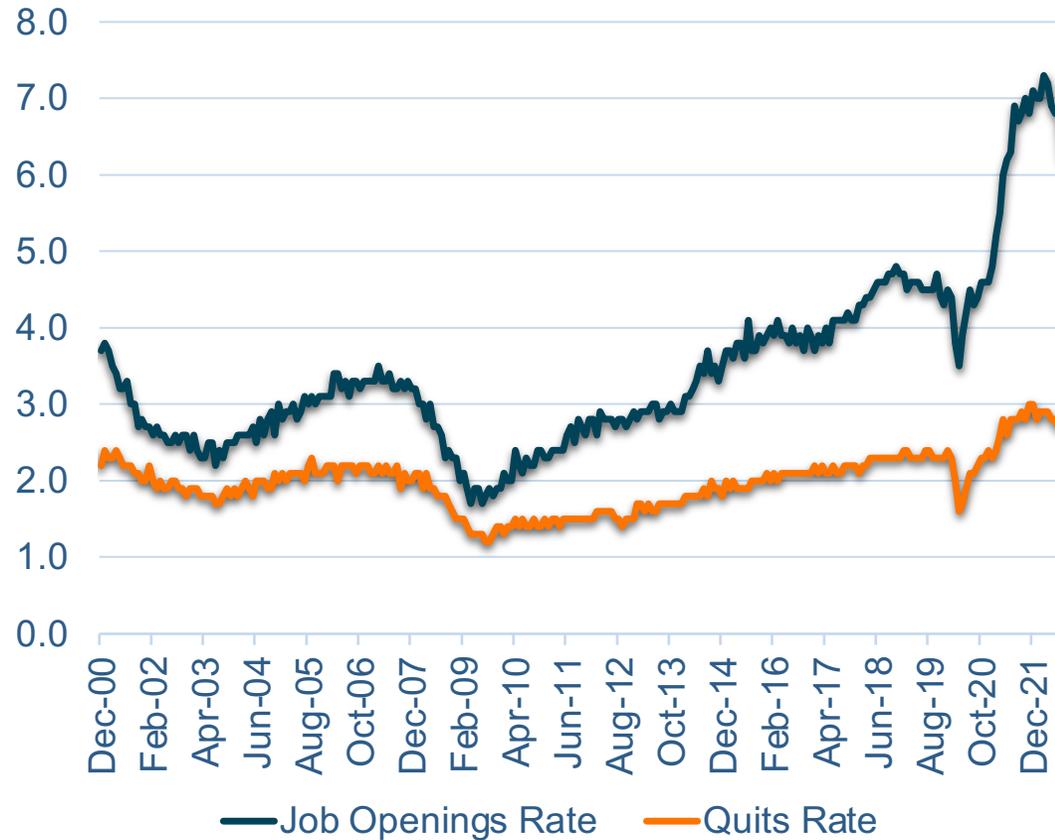
New Orders Non-Defense Capital Goods



Business's real issue...



US Employment Demand and Turnover

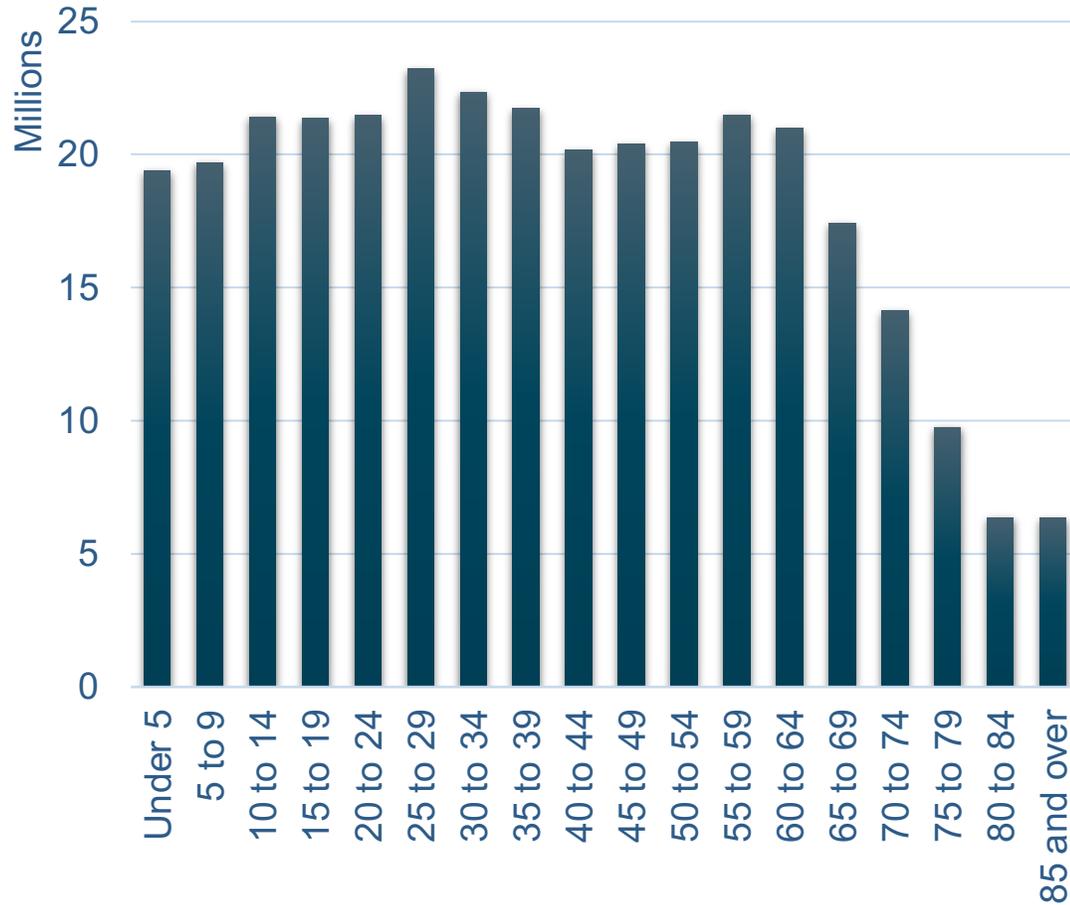


<u>Job Openings Rate by Sector</u>	<u>Jul-19</u>	<u>Jul-22</u>
Total private	4.2	7.7
Health care	2.8	9.3
Leisure hospitality	6.7	9.3
Professional	5.4	9.0
Logistics	3.9	8.0
Other services	3.7	7.5
Financial activities	2.6	7.0
Information	3.9	7.0
Retail trade	4.9	6.5
Manufacturing	2.5	6.2
Education	2.6	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

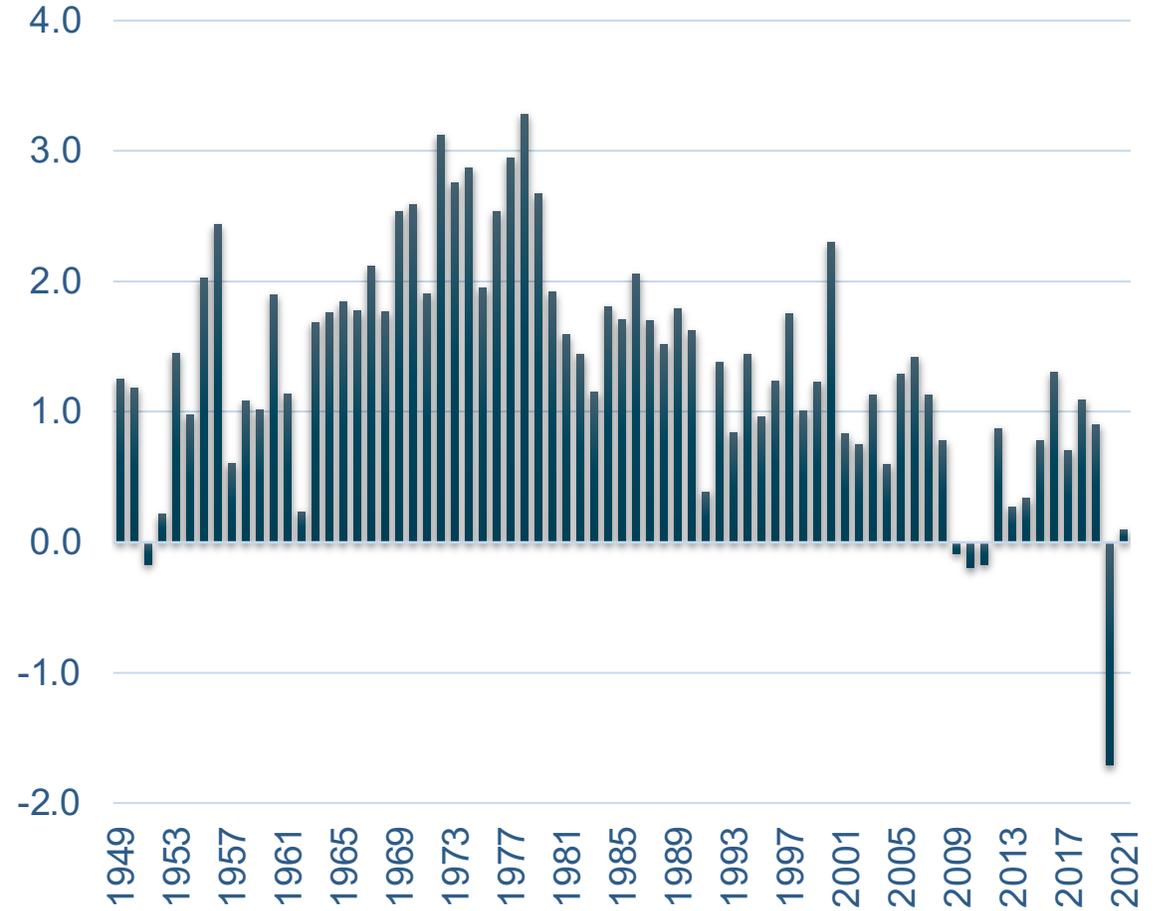
Where are the workers?



US Population by Age



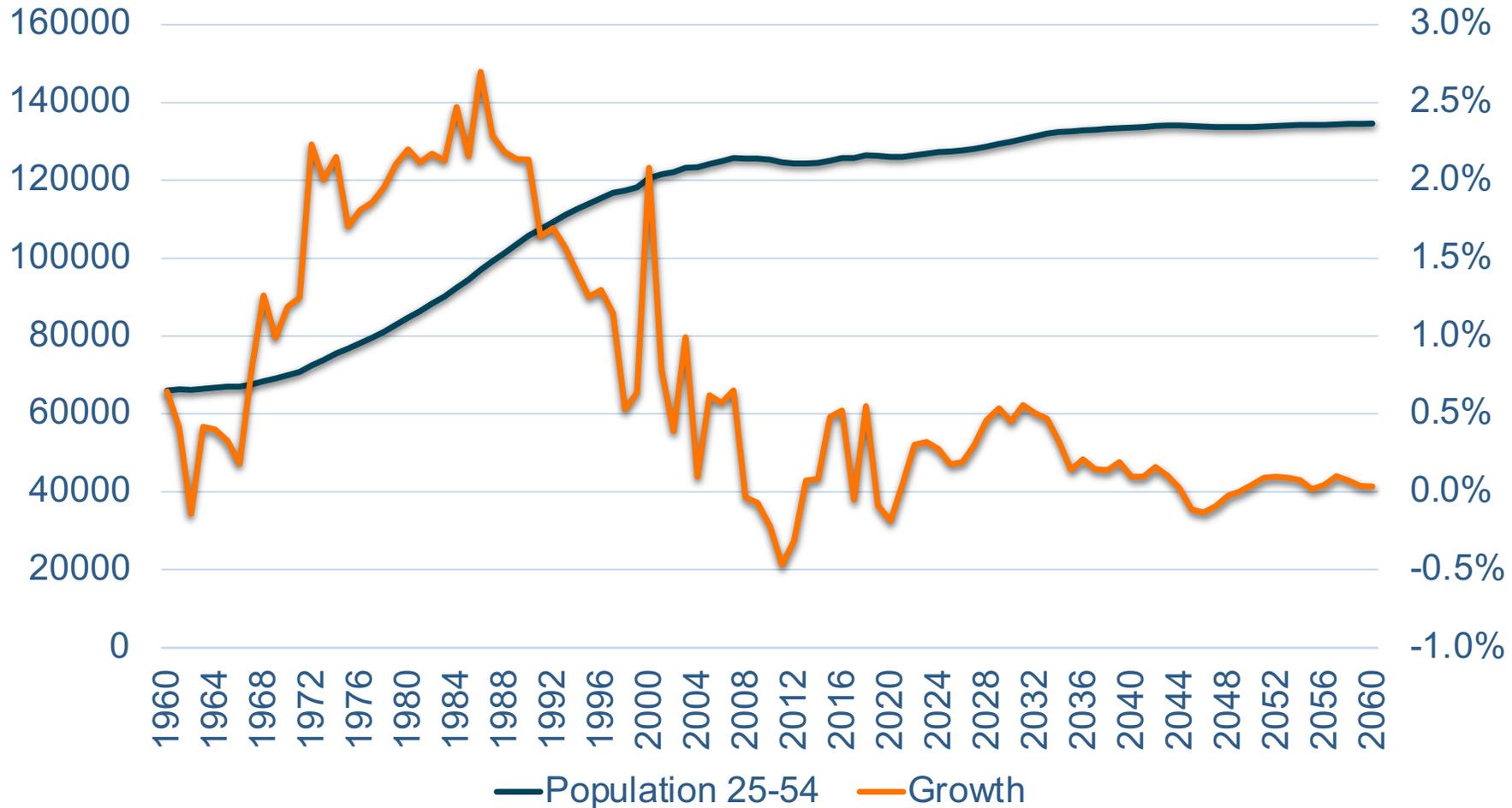
YoY Growth US Labor Force



The Era of Labor Shortages is Here



Prime Working Years Population Growth (Census)



Silver Lining?



Earnings Growth by Quartile
(Atlanta Fed Wage Tracker)



Average Weekly Earnings

	Aug-22	Ch 16-19	Ch 19-22
Salt Lake City	1137	5.3%	13.9%
Phoenix-Mesa	1126	9.8%	13.9%
Logan	1043	28.3%	18.3%
Reno	1016	25.0%	2.5%
Las Vegas-Henderson	978	9.3%	19.6%
Ogden-Clearfield	952	9.4%	13.2%
Provo-Orem	935	22.1%	-5.4%
Tucson	931	-3.8%	28.9%
Albany	915	2.8%	15.4%
Lake Havasu City	905	0.1%	28.5%
Yuma	891	6.5%	27.0%
Carson City	865	8.3%	19.3%
Prescott	837	11.5%	21.1%
Flagstaff	792	0.8%	39.9%
St. George	731	12.5%	6.3%
Sierra Vista-Douglas	719	14.3%	5.4%

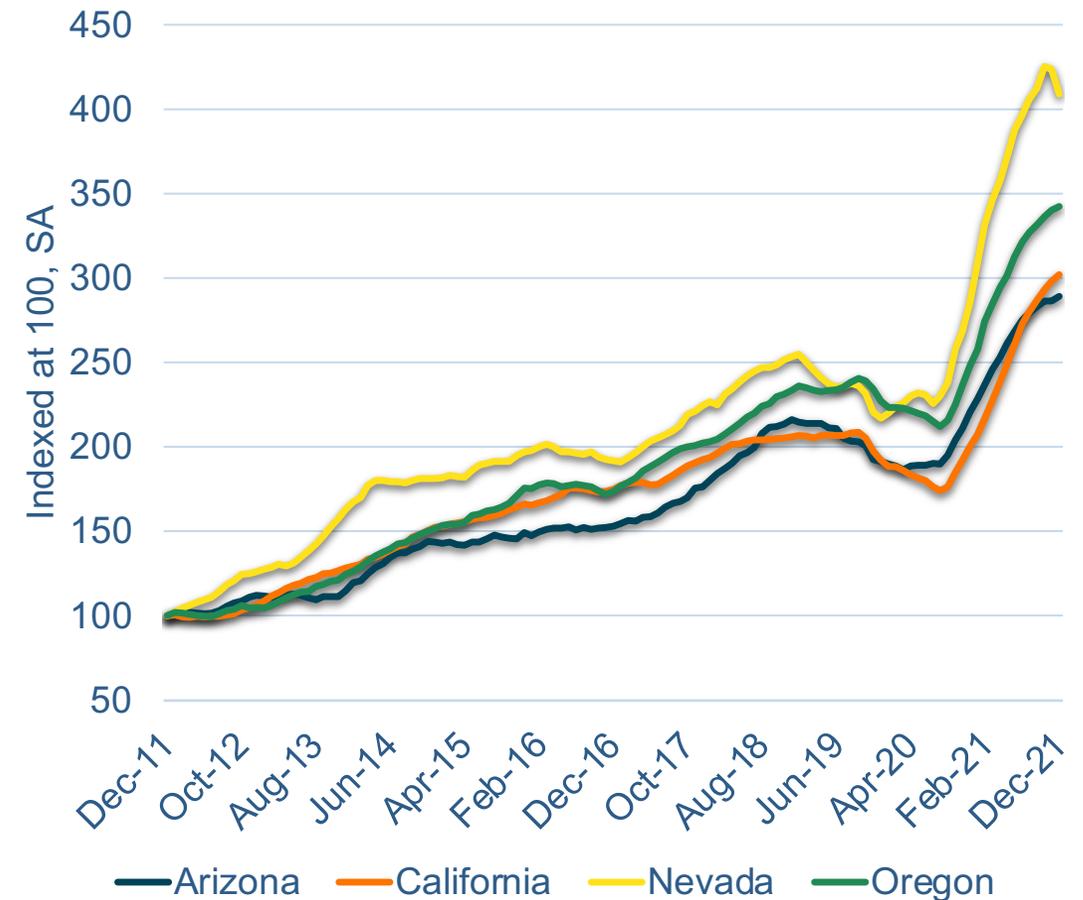
Regional Outcomes



Payroll Job Gains 14 to 22

		Payrolls	Gr 14-22	Gr 19-22
1	Idaho	825.4	26.1%	8.2%
2	Utah	1676.3	26.0%	7.3%
3	Florida	9460.5	20.4%	5.3%
4	Arizona	3088.7	20.0%	4.6%
5	Nevada	1462.0	19.7%	3.0%
6	Texas	13539.1	16.3%	5.3%
7	Colorado	2874.2	16.2%	2.6%
8	North Carolina	4804.3	15.8%	4.6%
9	Georgia	4821.8	15.8%	4.2%
10	Washington	3522.5	14.8%	1.3%
11	Tennessee	3247.0	14.6%	3.8%
12	South Carolina	2238.7	14.5%	1.9%
13	Oregon	1974.7	14.0%	0.8%
14	California	17650.9	13.0%	1.1%
15	Montana	506.0	11.2%	4.1%

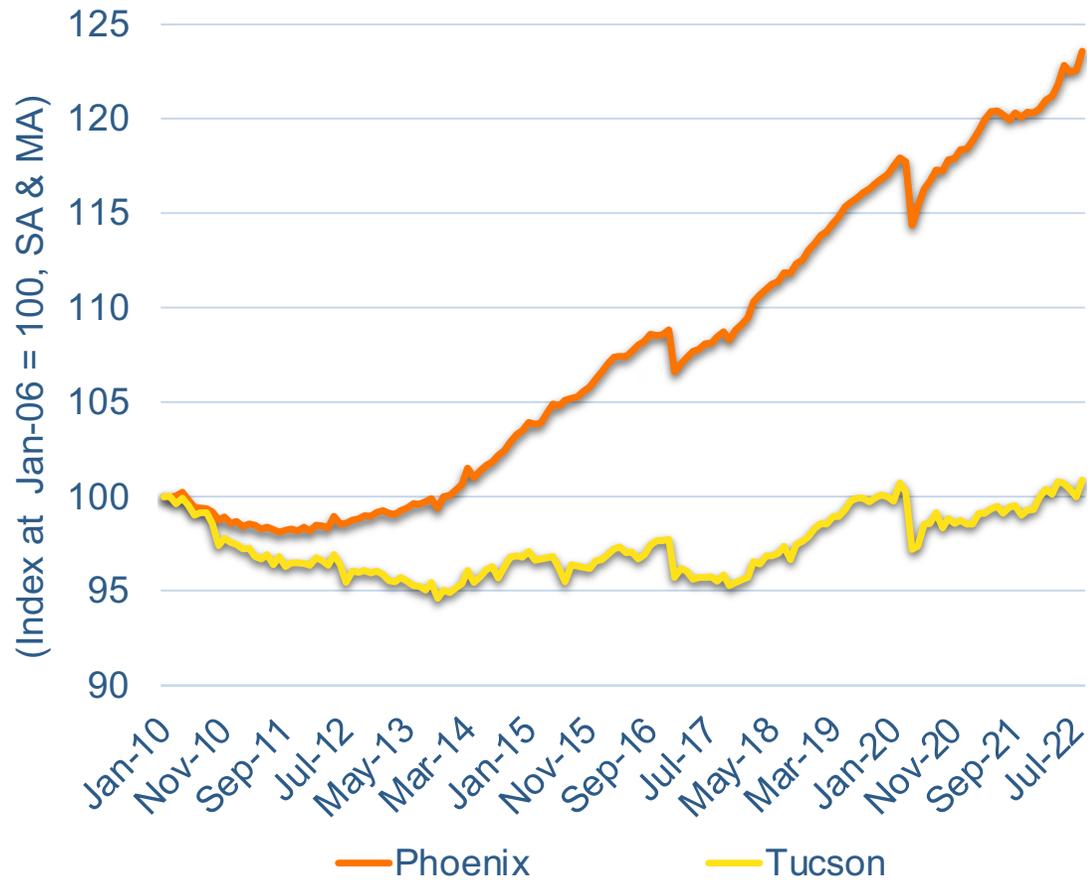
Indexed Job Openings



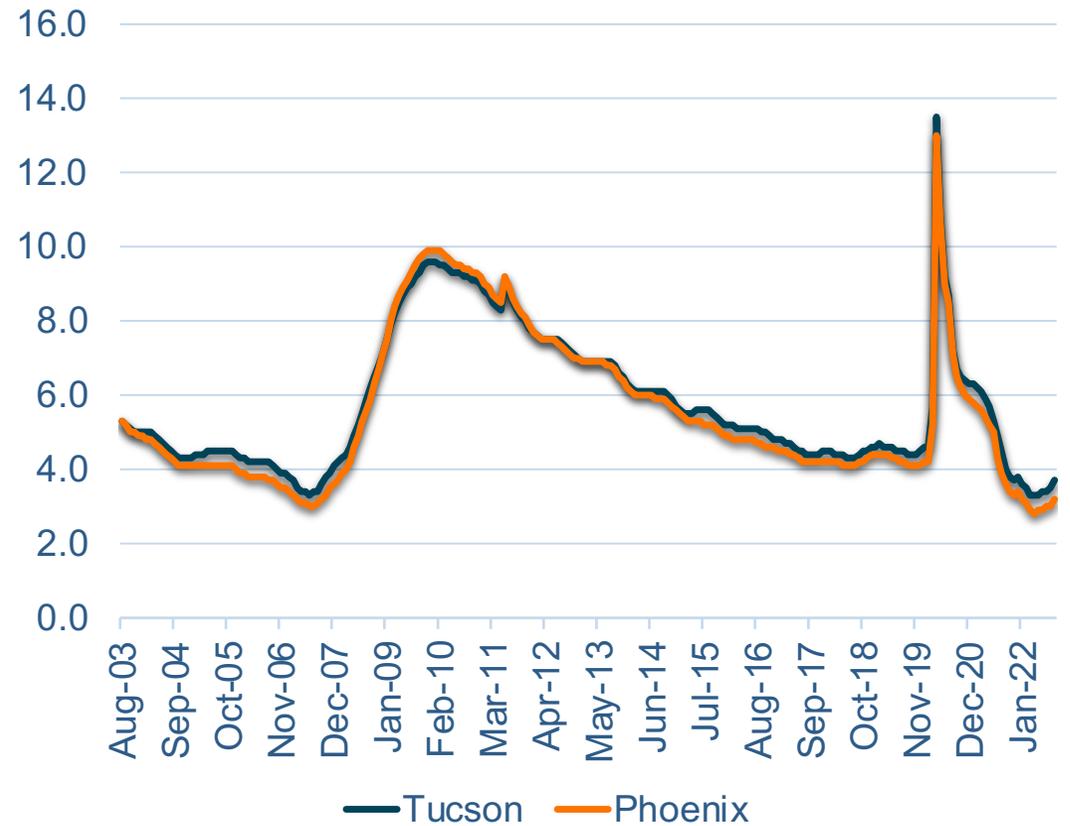
Local Labor Market



Indexed Labor Force



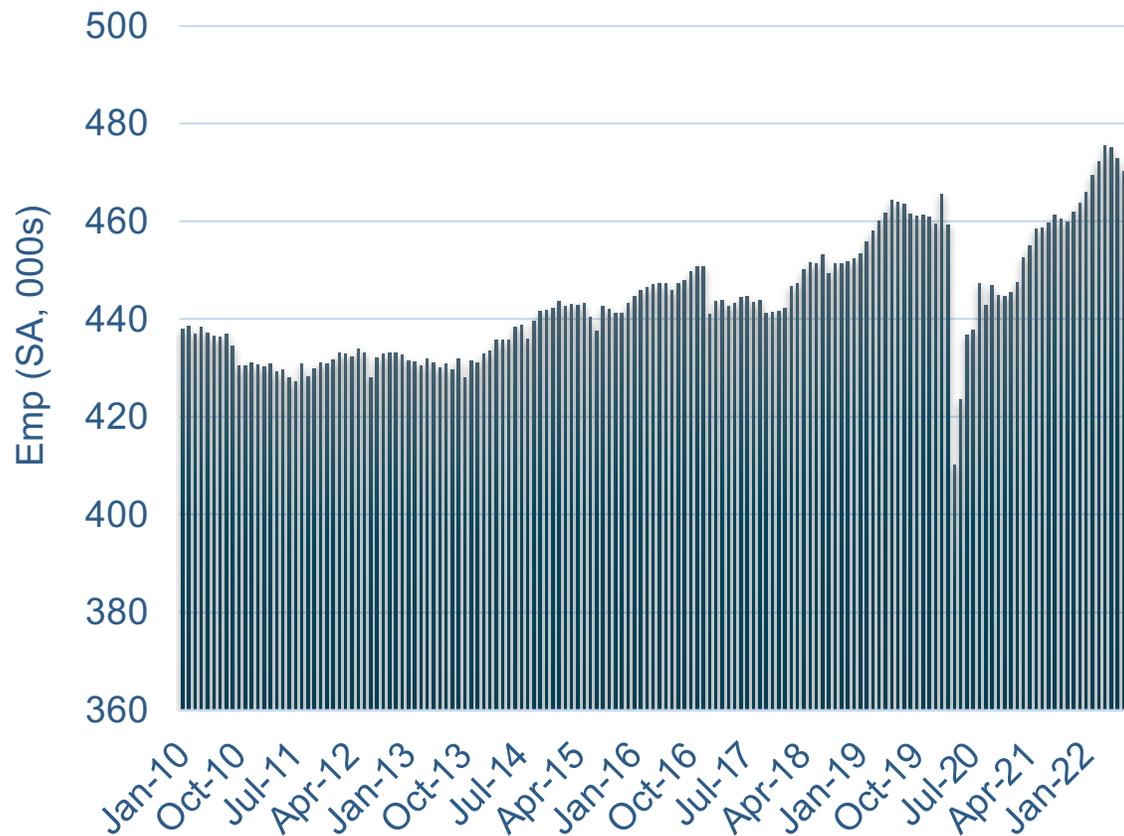
Unemployment Rate



Employment Situation - Tucson



**Total Nonfarm Employment
Tucson MSA**

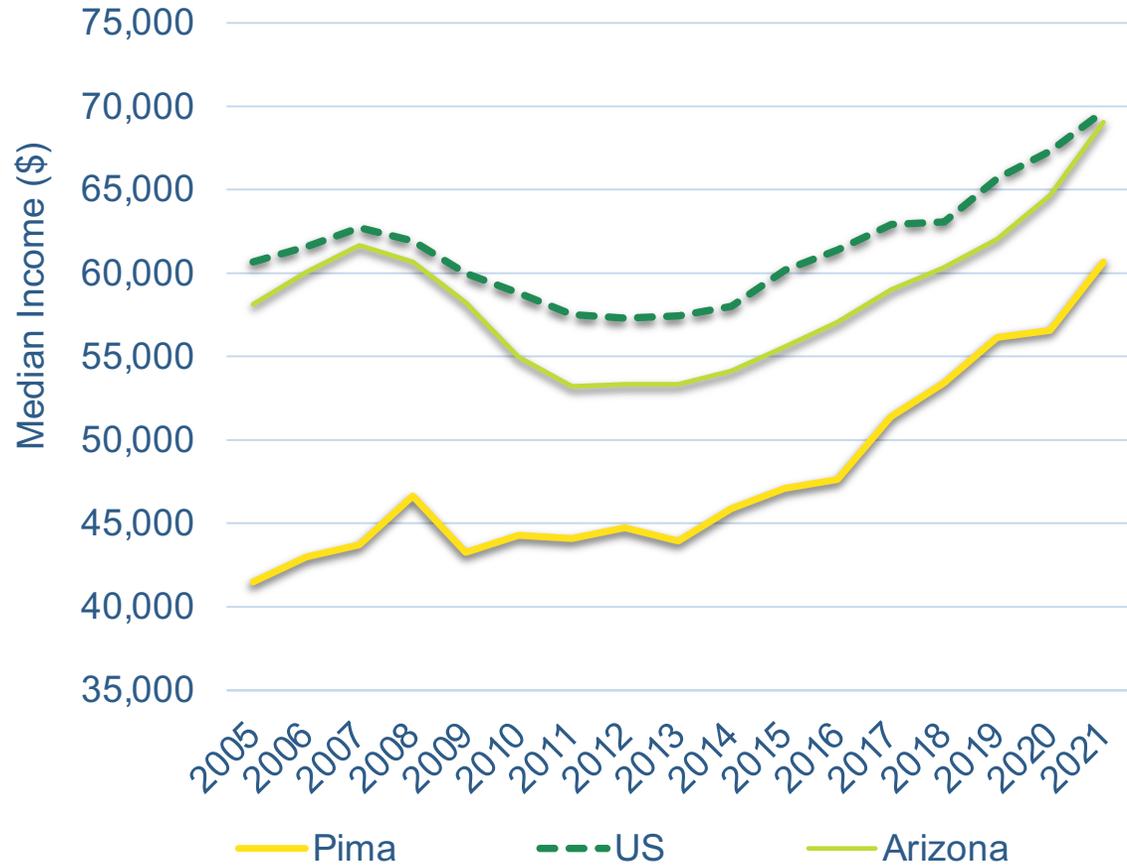


Industry	Aug-22 (000s)	Chg. Since Aug-21 (%)	Chg. Since Aug-21 (000s)
Total Nonfarm	391.1	3.1	11.7
Leisure and Hospitality	44.2	12.7	5.0
Education/Health	70.0	5.0	3.3
Wholesale Trade	7.6	4.6	0.3
Trade, Transport, Util.	71.0	4.0	2.8
Manufacturing	28.5	3.4	0.9
Information	5.1	3.2	0.2
Prof Sci and Tech	19.5	2.0	0.4
Government	75.4	1.8	1.3
Retail Trade	42.1	1.0	0.4
Construction	18.2	1.0	0.2
Financial Activities	18.4	-2.0	-0.4
Admin Support	23.2	-11.4	-3.0

Signs of Local Prosperity



Median HH Income

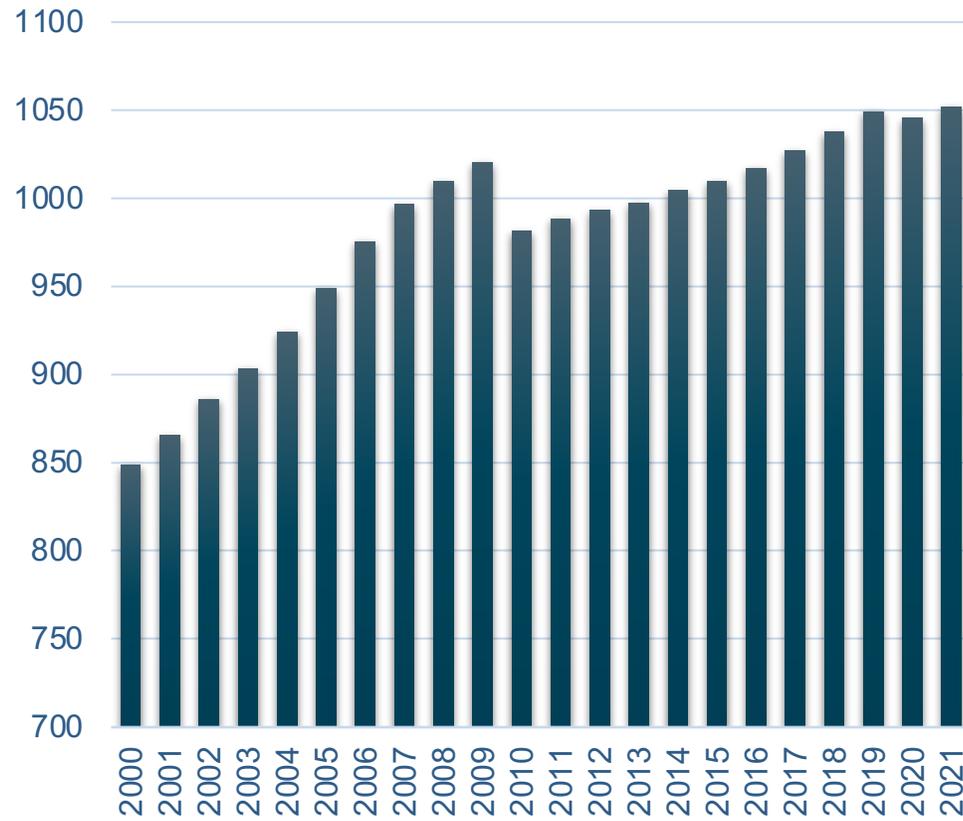


	2021 Est.	Growth 17-21	US Ch 17-21
Pop with earnings	525,899	4.4%	1.0%
Median earnings	34,235	19.1%	19.7%
Median earnings for full-time	48,714	19.3%	14.9%
Earnings by Education			
Less than high school	28,248	37.0%	21.9%
High school grad	31,595	28.6%	14.4%
Some college or associate's	37,021	15.4%	13.1%
Bachelor's degree	47,947	8.6%	16.4%
Graduate or professional	70,719	14.4%	12.6%

Population



Tucson Population



Population by Age

	US	AZ	Tucson
< 5	5.6%	5.5%	5.0%
10 Yr Ch	-0.8%	-1.4%	-1.3%
5-14	12.6%	12.7%	11.6%
10 Yr Ch	-0.6%	-1.3%	-0.9%
15-17	3.9%	4.0%	3.6%
10 Yr Ch	-0.2%	-0.2%	-0.3%
18-24	9.1%	9.4%	11.4%
10 Yr Ch	-0.9%	-0.6%	0.5%
25-59	47.0%	46.7%	43.7%
10 Yr Ch	-0.3%	1.7%	-0.5%
60+	23.4%	24.6%	27.2%
10 Yr Ch	4.4%	4.7%	5.0%

Labor Shortage Solutions

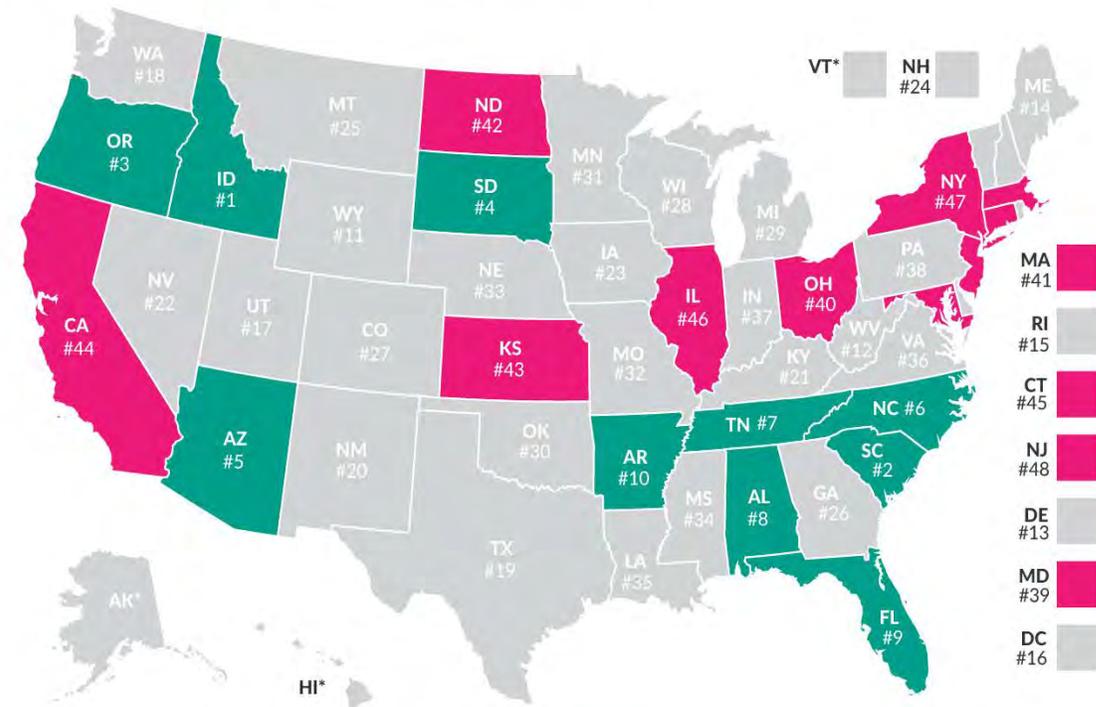


■ Solutions

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

Where Did Americans Move in 2020?

State Migration Patterns, from Most Inbound to Most Outbound, 2020



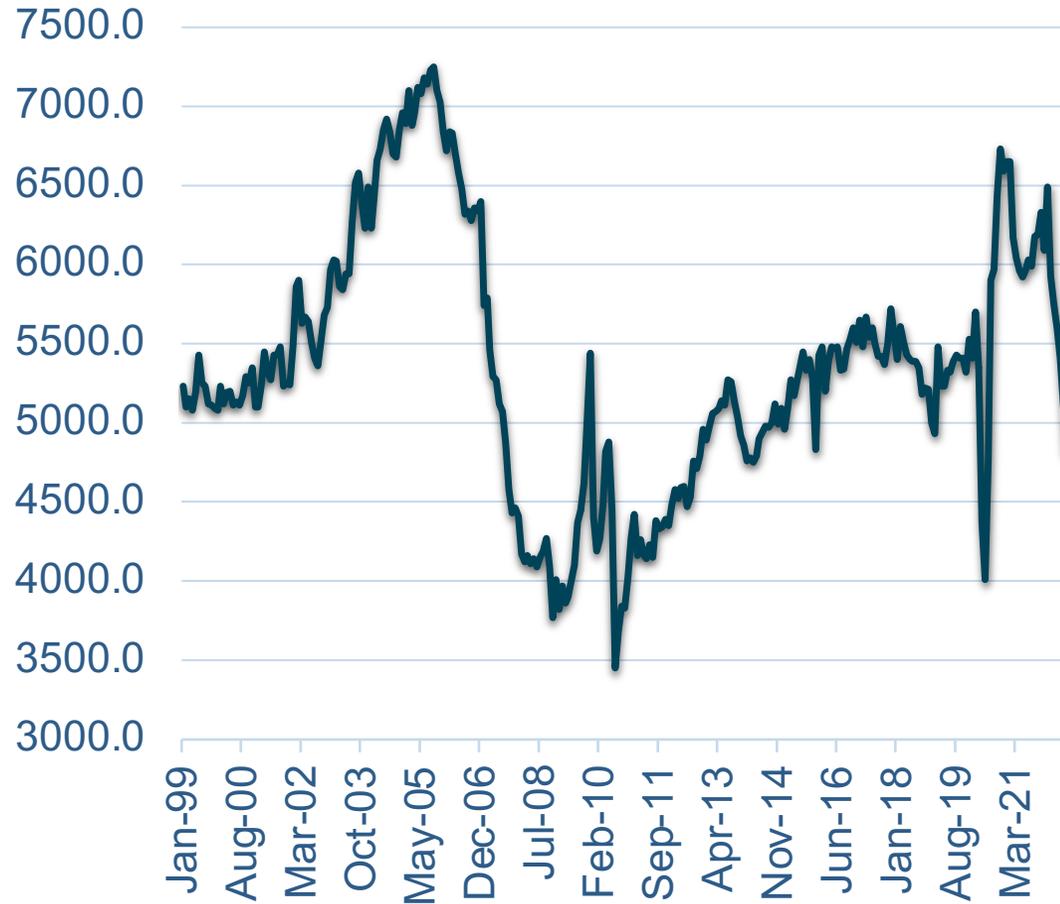
Note: Rankings are determined based on the number of inbound moves as a percentage of total moves in a state. DC is included in state rankings while Vermont is excluded because of its small sample size. Alaska and Hawaii are not included in the study.
Source: United Van Lines, 2020 National Movers Study.

■ Top 10 States for Inbound Migration
■ Top 10 States for Outbound Migration

Residential Markets



Existing Home Sales



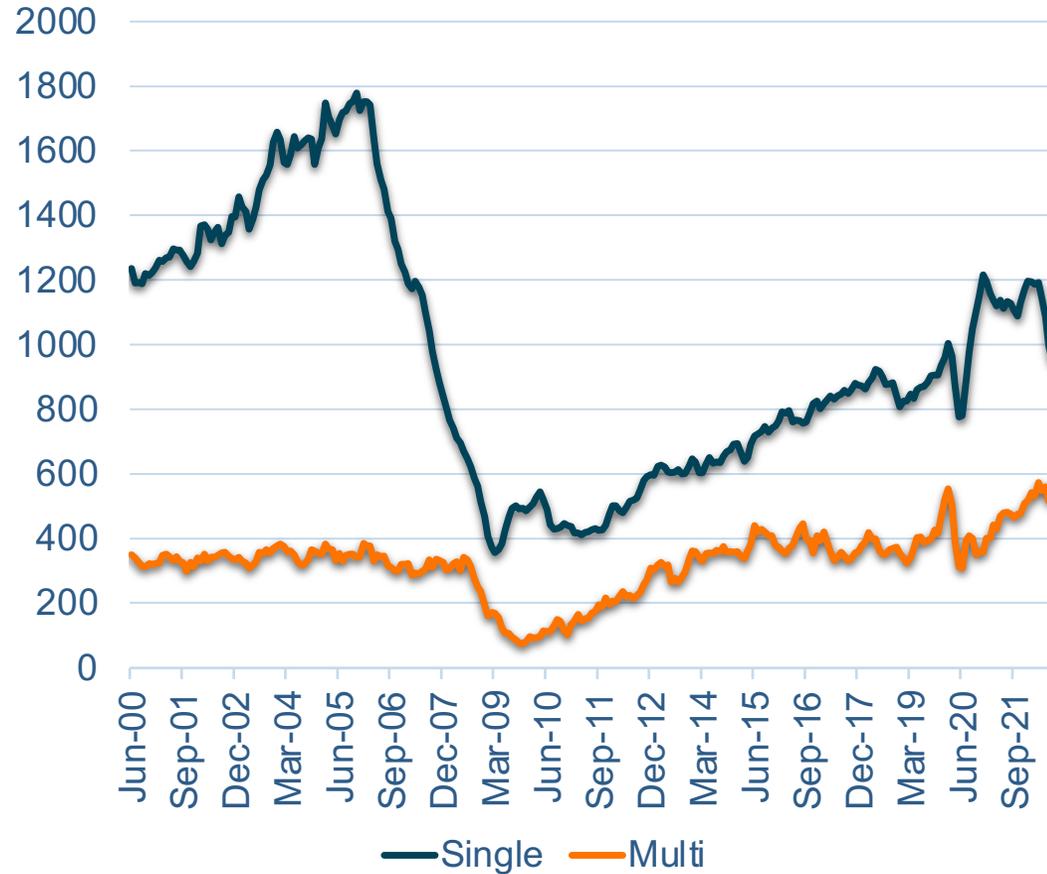
Case Shiller Home Price Change Monthly



New Construction (Smoothed)



Housing Starts



Months Supply New Homes for Sale (Smoothed)



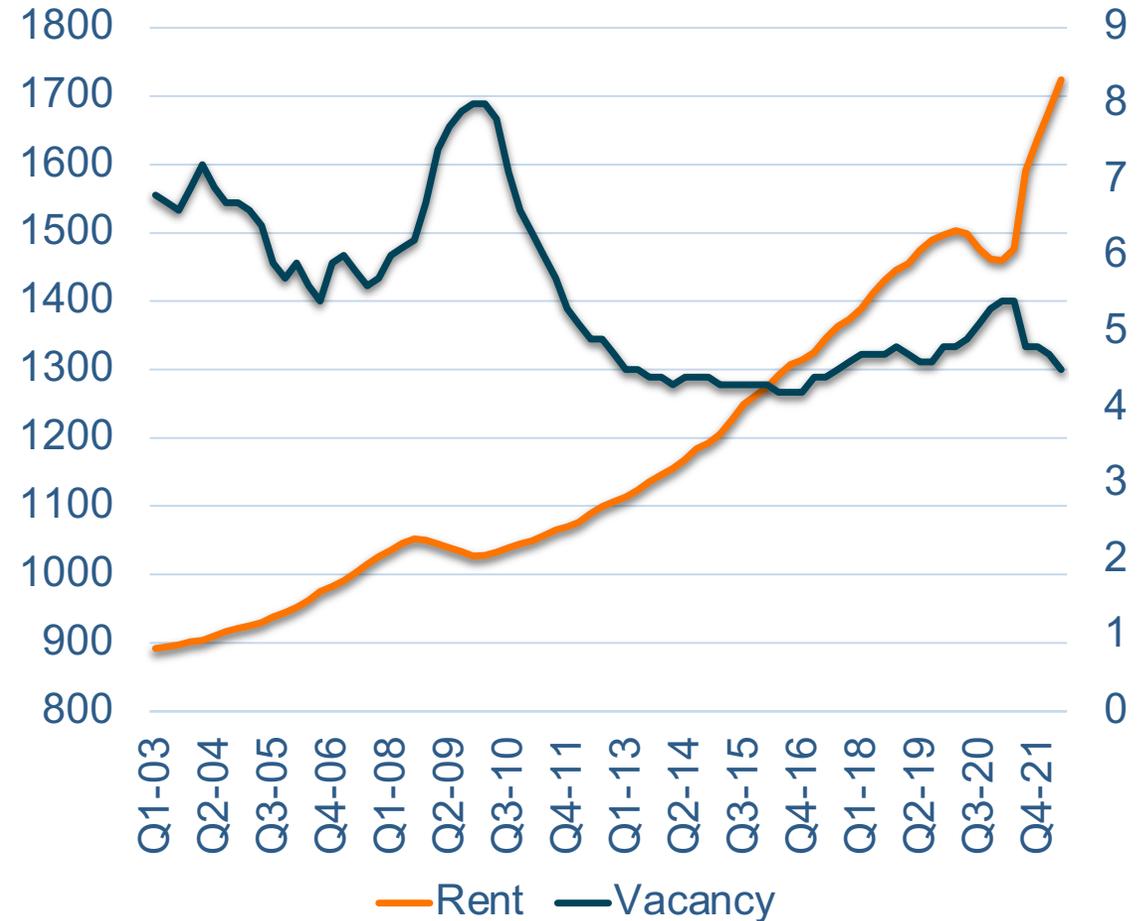
Sticker Shock, Not Housing Demand



New Home Cost (Annual payment 100% LTV)



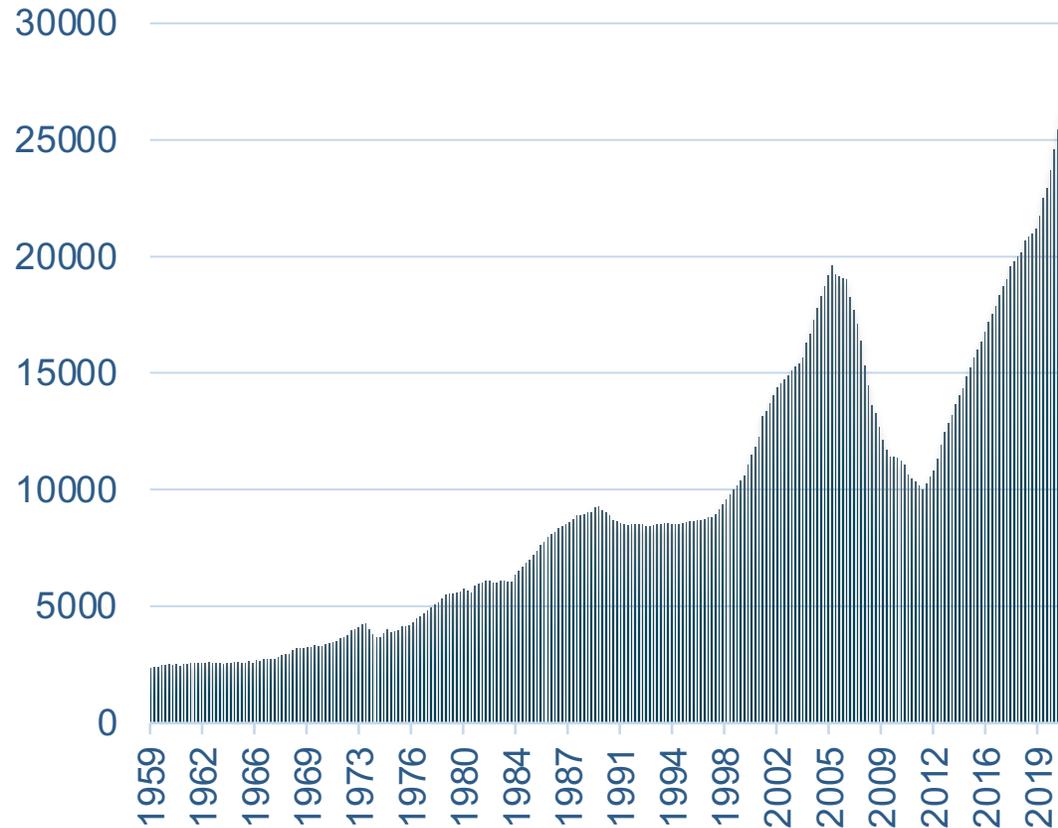
US Apartment Markets



Market Collapse? Not a chance...



**Real Equity in US Real Estate
(Households, \$Bil 1-4 family)**



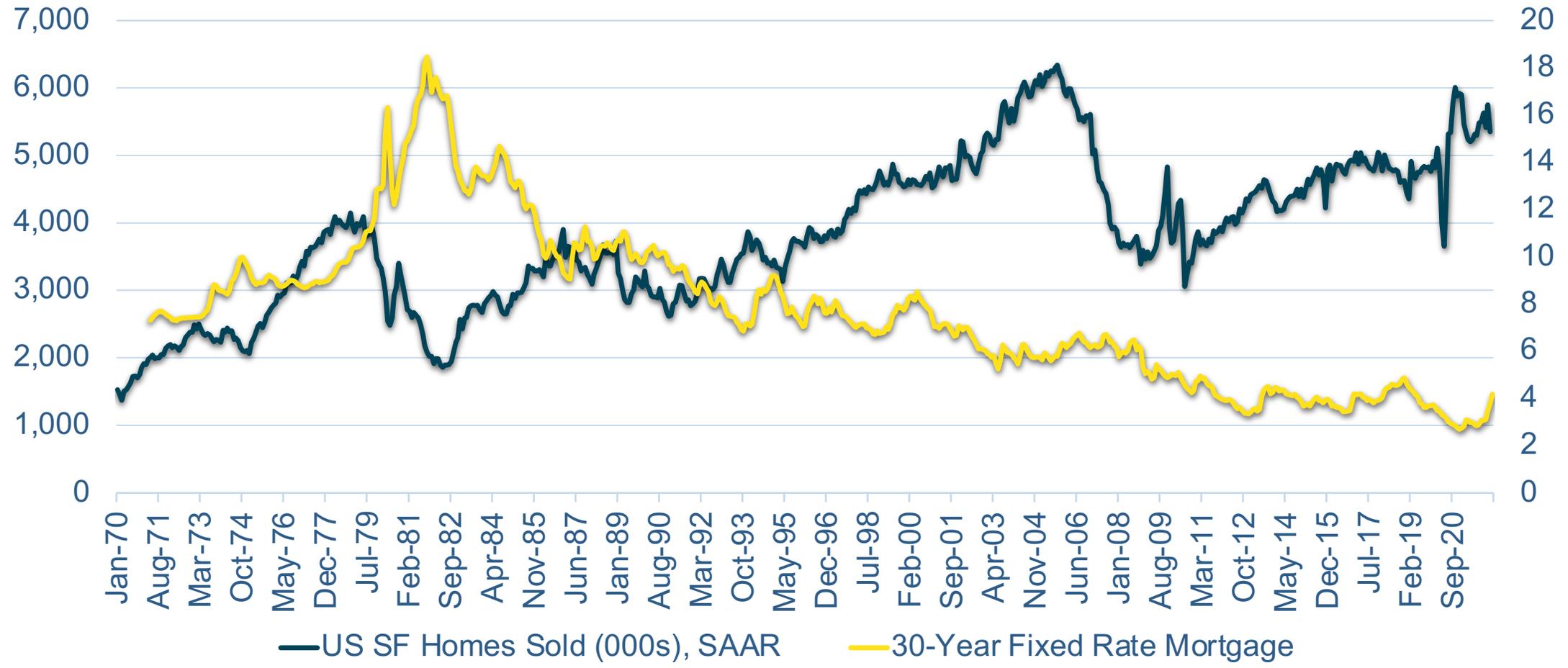
Overall Housing Vacancy

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

Long Run Res Real Estate



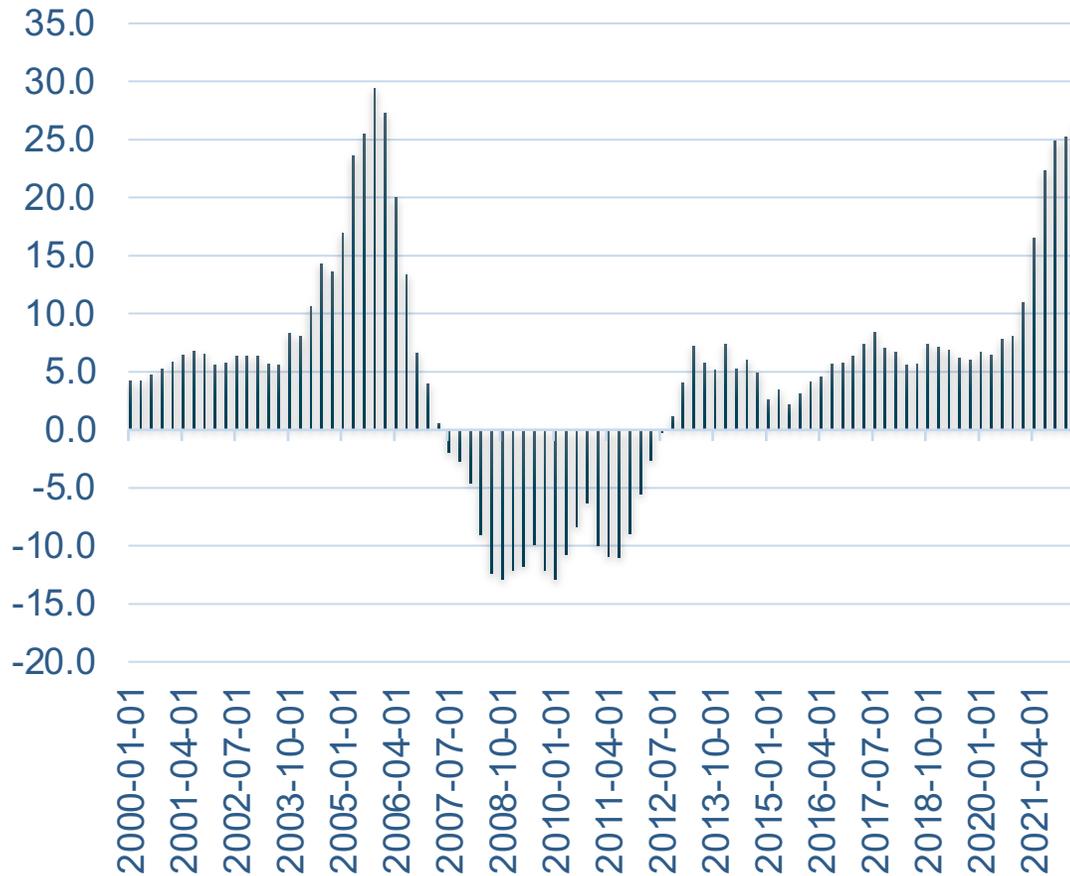
Home Sales (000s, SAAR) and Rates



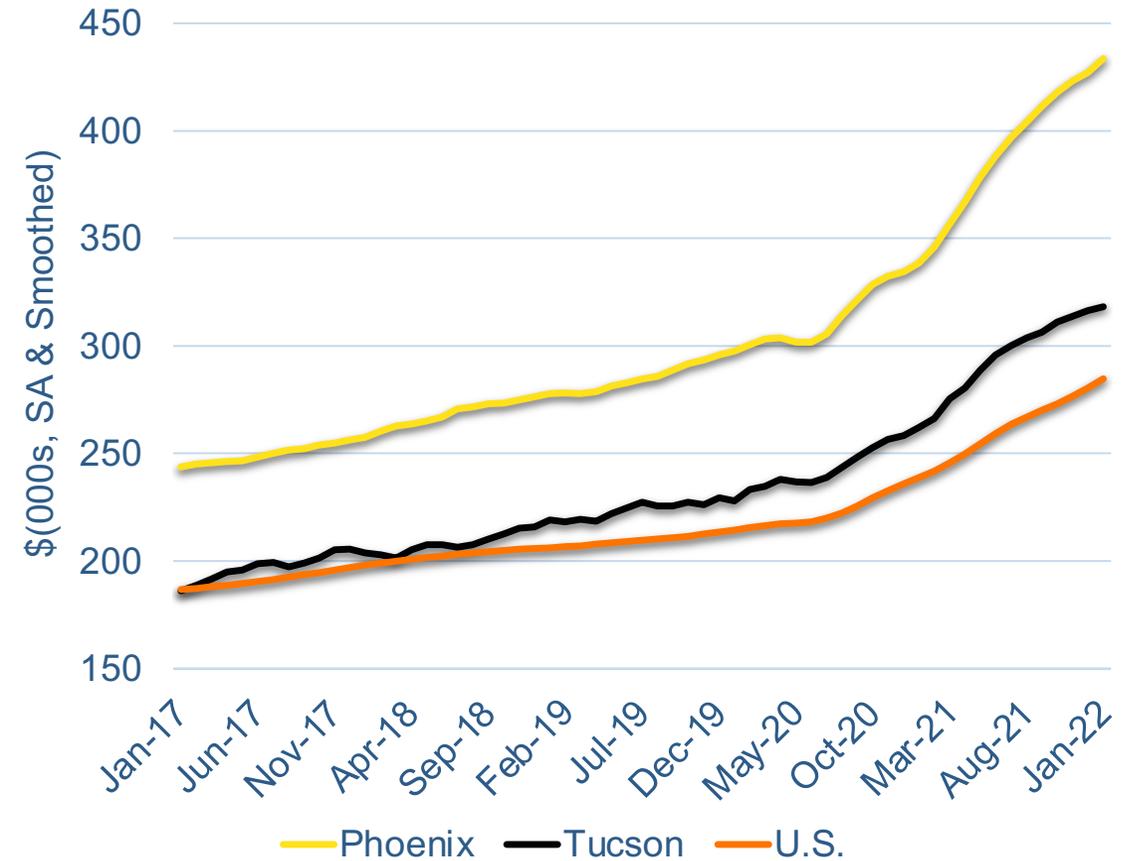
Residential Real Estate



Y-o-Y Growth Tucson Home Prices



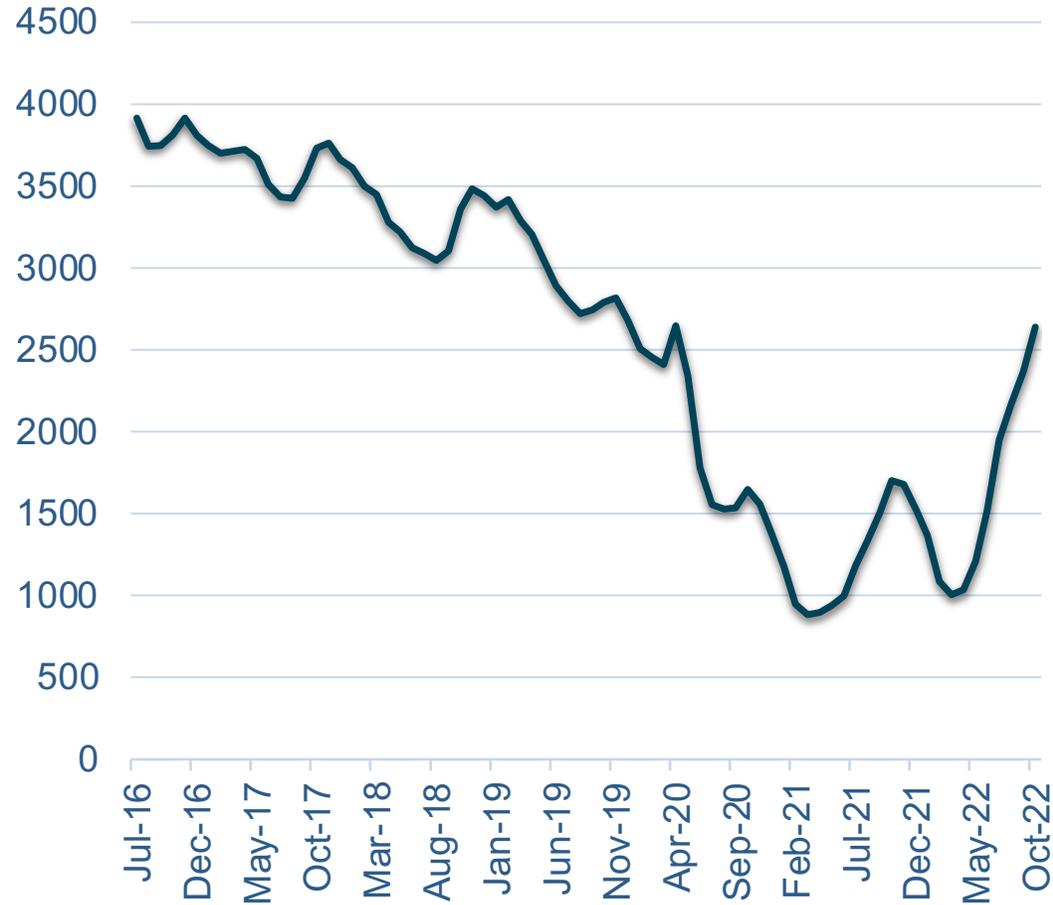
Median Home Values



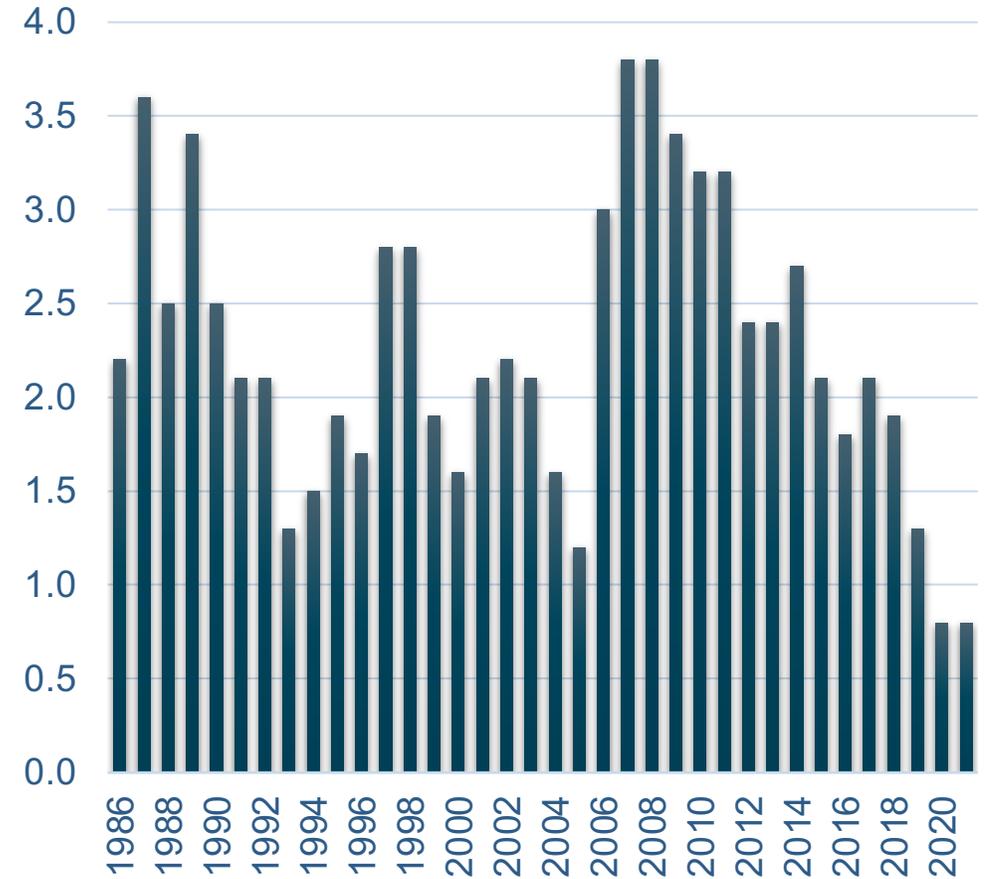
Recent Trends



Active Listings Tucson



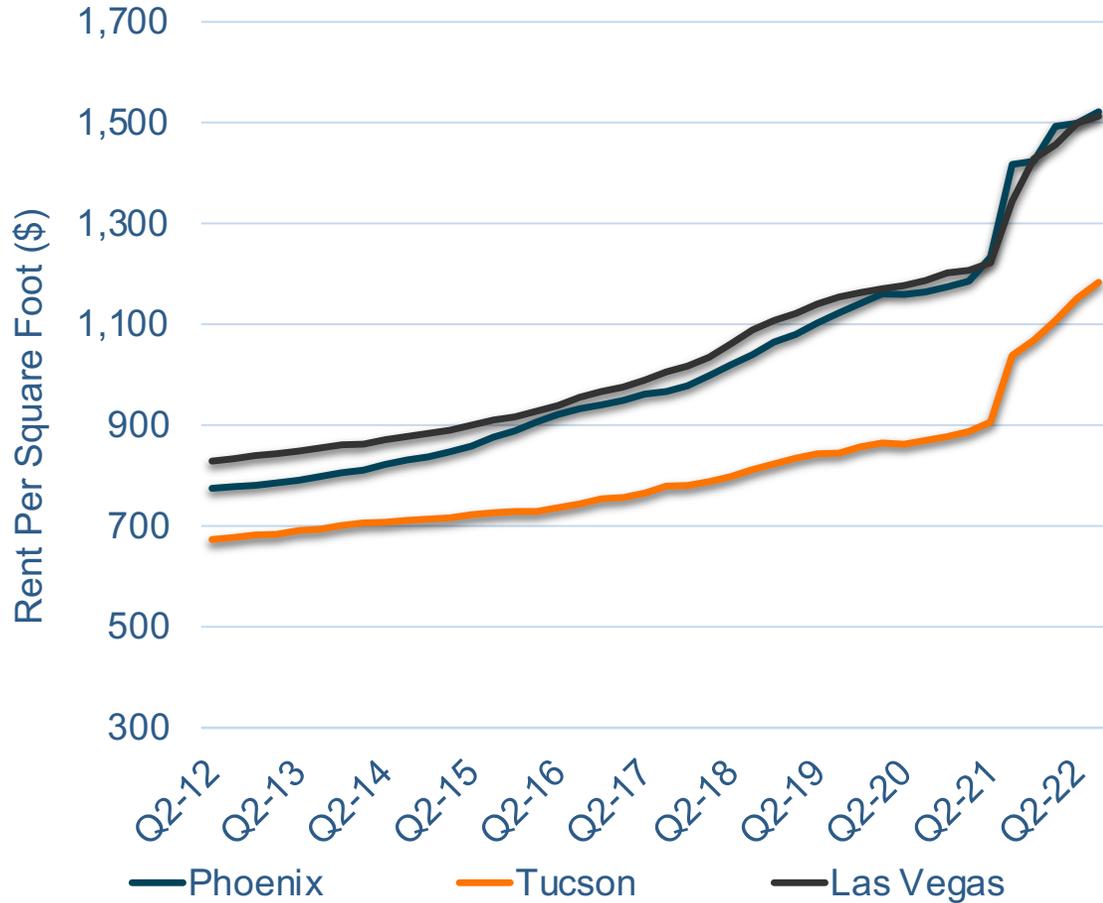
Arizona Housing Vacancy



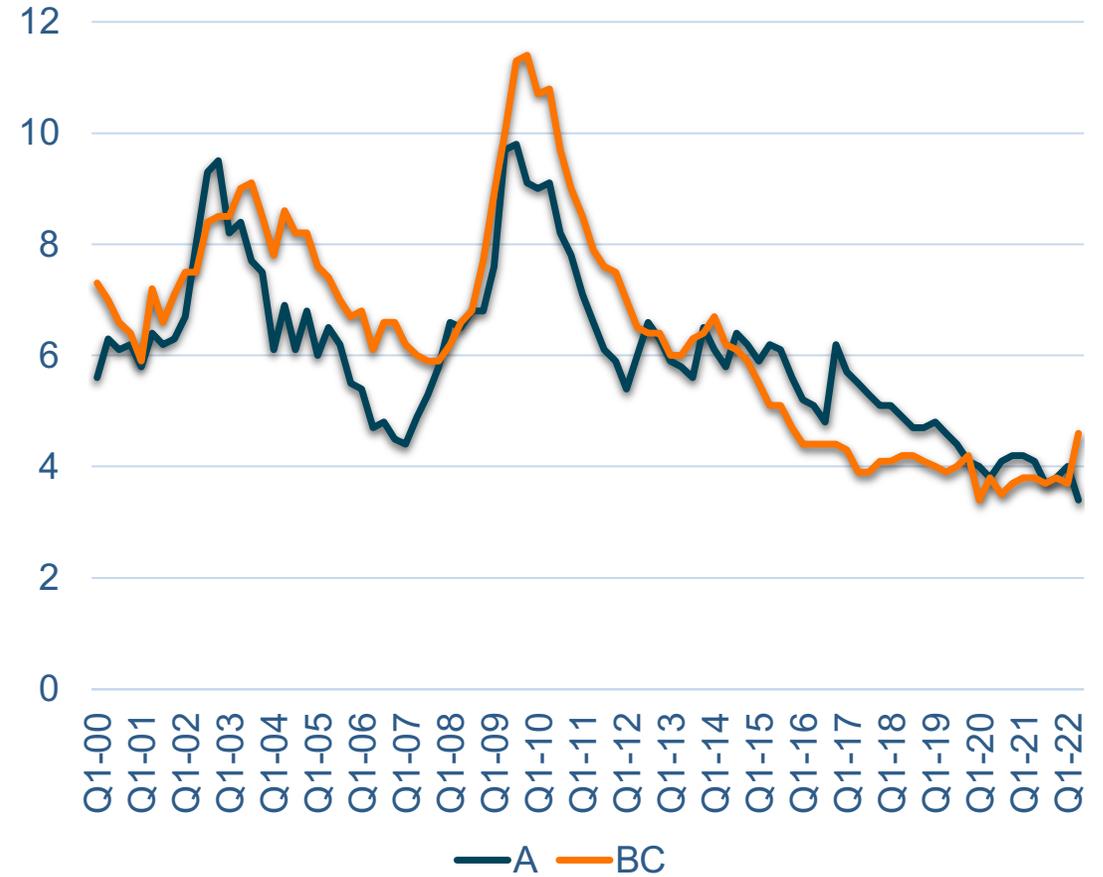
Rental Markets



Cost of Rent



Tucson Apartment Vacancies by Class



Housing Affordability Trends

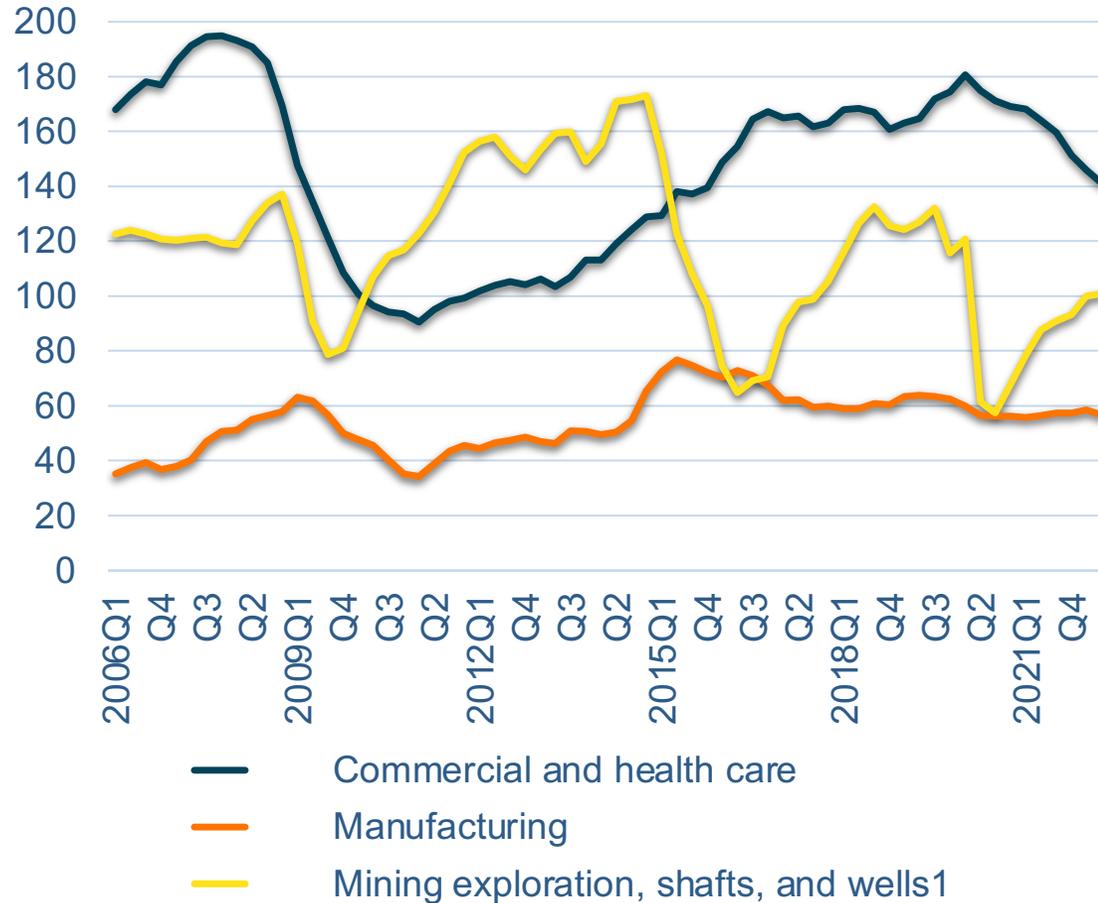


	Vacant housing units	Share > 35.0 Owner	Share > 35.0 Renter
2017			
US	12.6%	20.7%	40.4%
AZ	14.9%	21.2%	39.9%
Tucson	12.2%	20.9%	45.5%
20121			
US	10.3%	21.0%	41.9%
AZ	10.2%	19.9%	42.5%
Tucson	8.8%	21.5%	42.5%

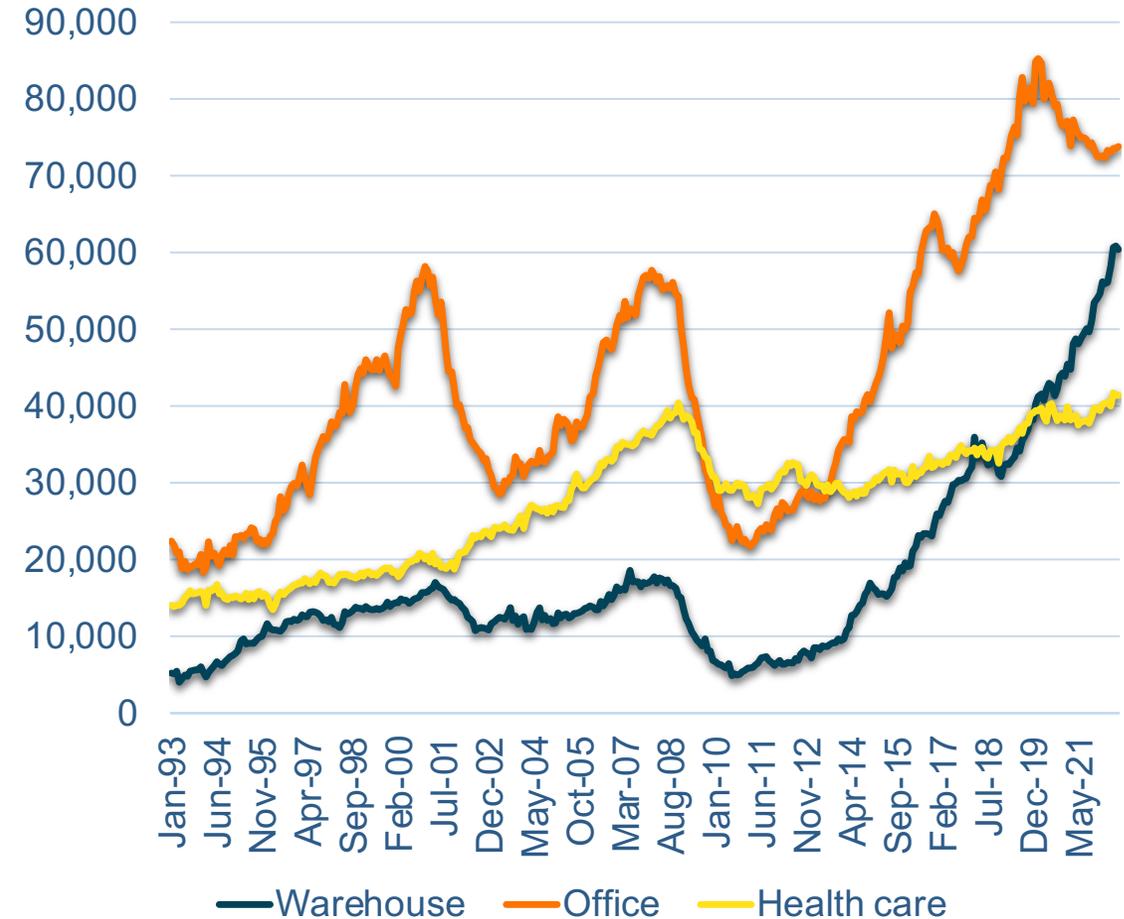
Non-Residential Markets



Real Construction by Type



Construction Spending



Non-Res Markets?



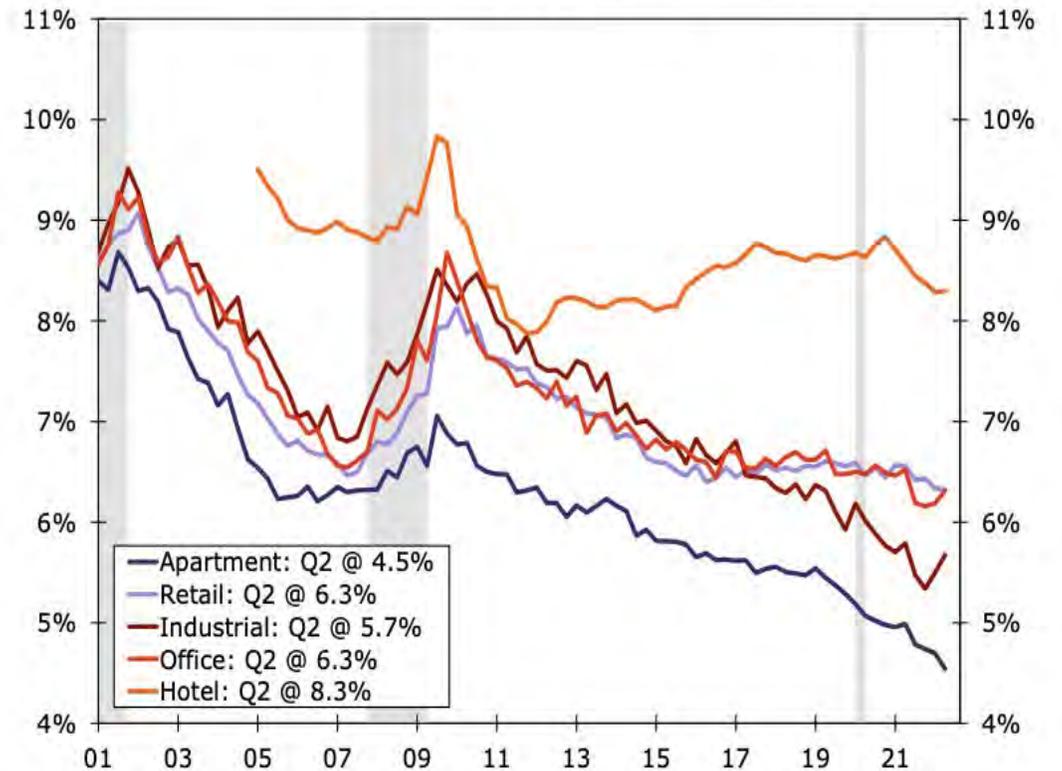
Commercial Property Price Index

Year-over-Year Percent Change



Source: Real Capital Analytics and Wells Fargo Economics

CRE Cap Rates by Property Type

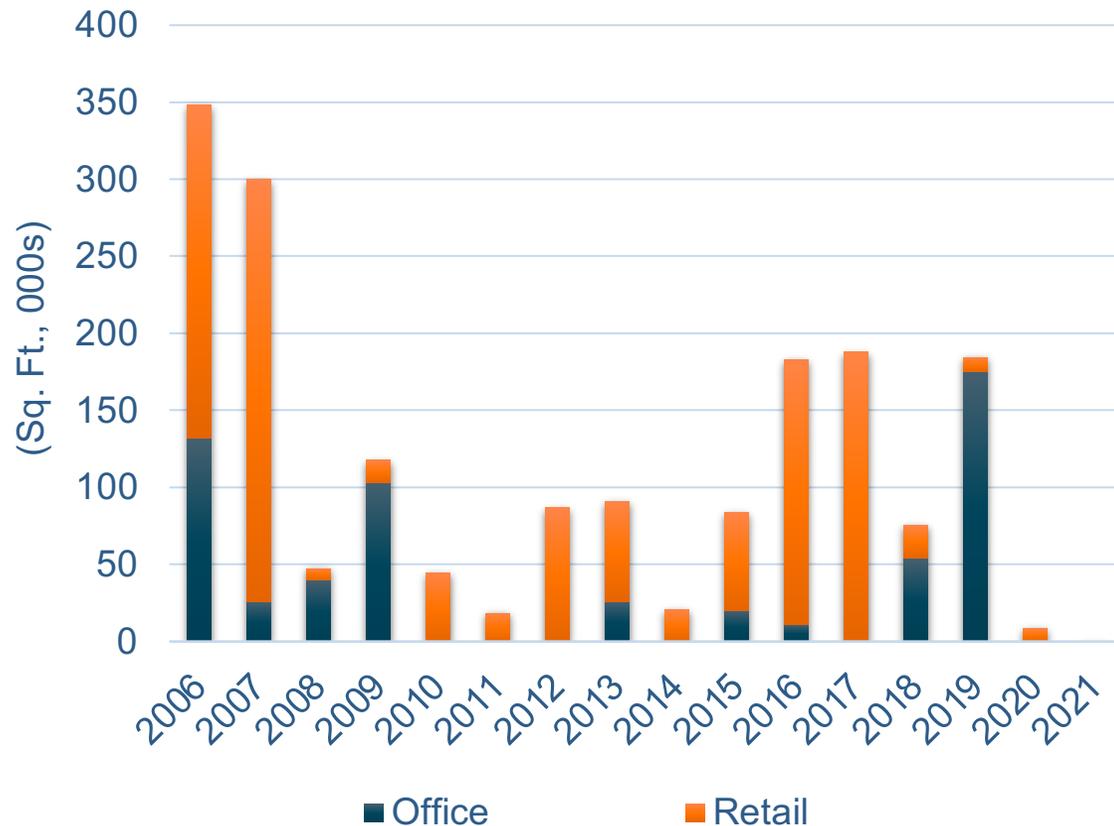


Source: Real Capital Analytics and Wells Fargo Economics

Nonresidential Construction-Tucson



**Nonresidential Completions
Tucson MSA**

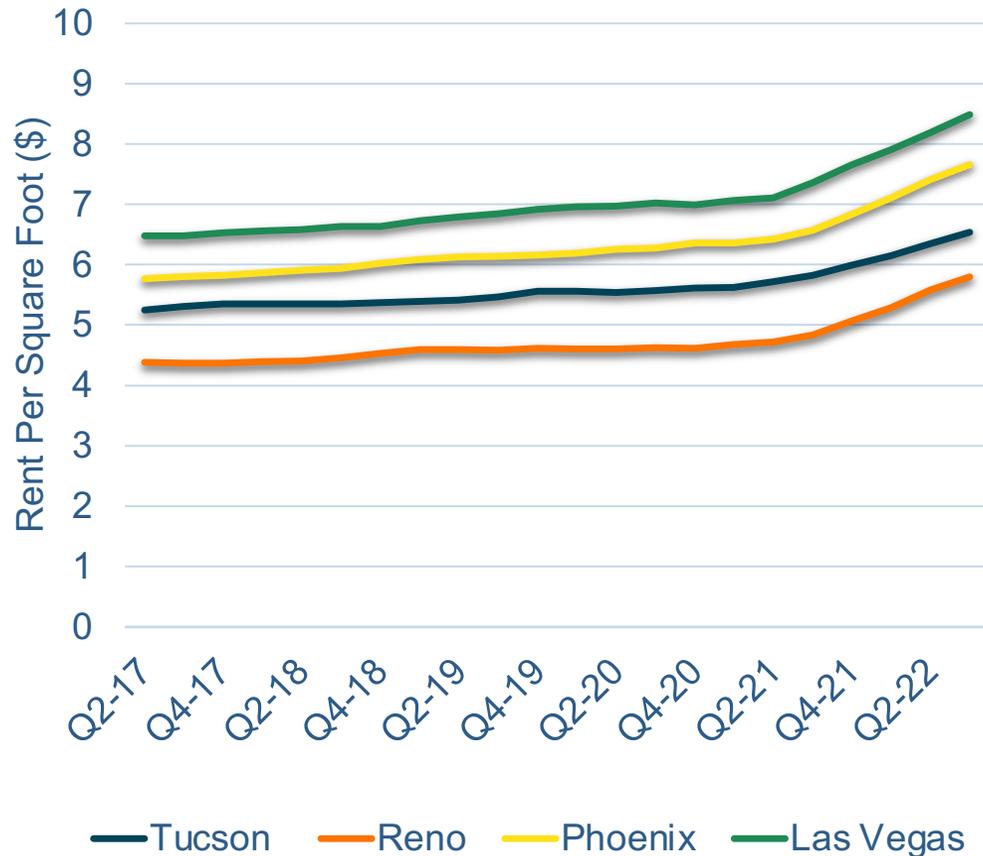


Property Type	Completions (Sq. Ft., 000s)		Net Absorption (Sq. Ft., 000s)	
	2020	5-Yr Change	2021	5-Yr Change
Warehouse	--	--	535	431
Office	0	-20	148	123
Retail	9	-55	80	-15

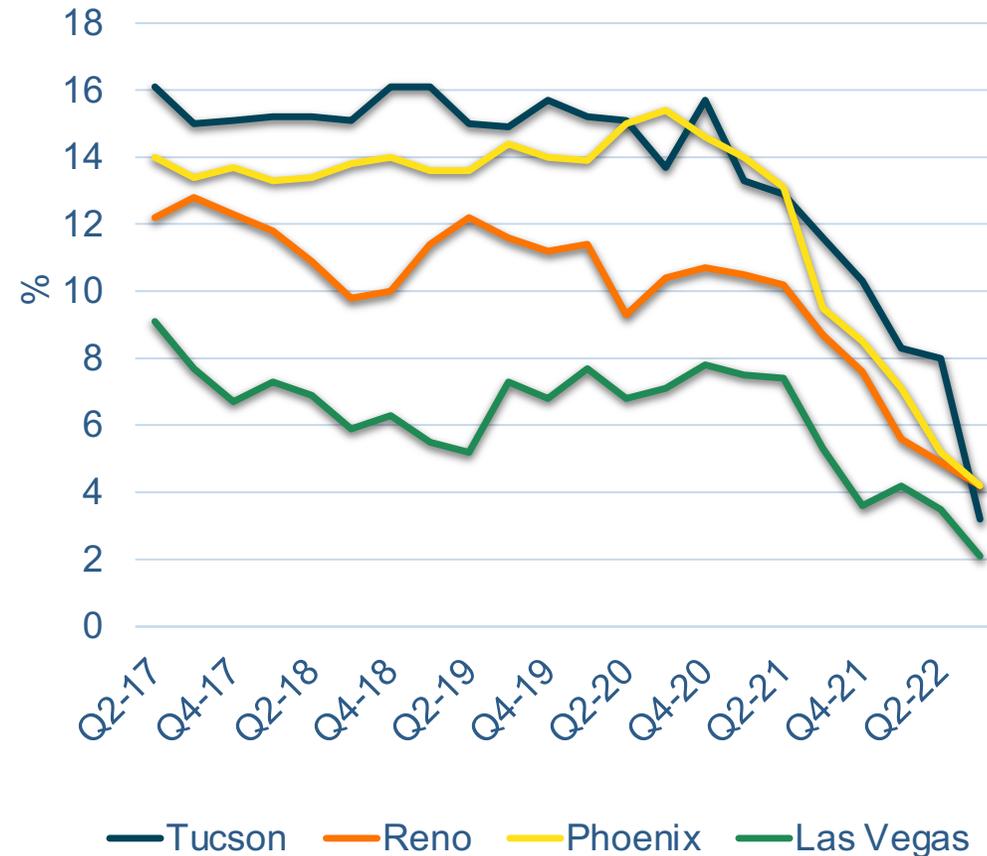
Warehouse – West Regions



Cost of Rent



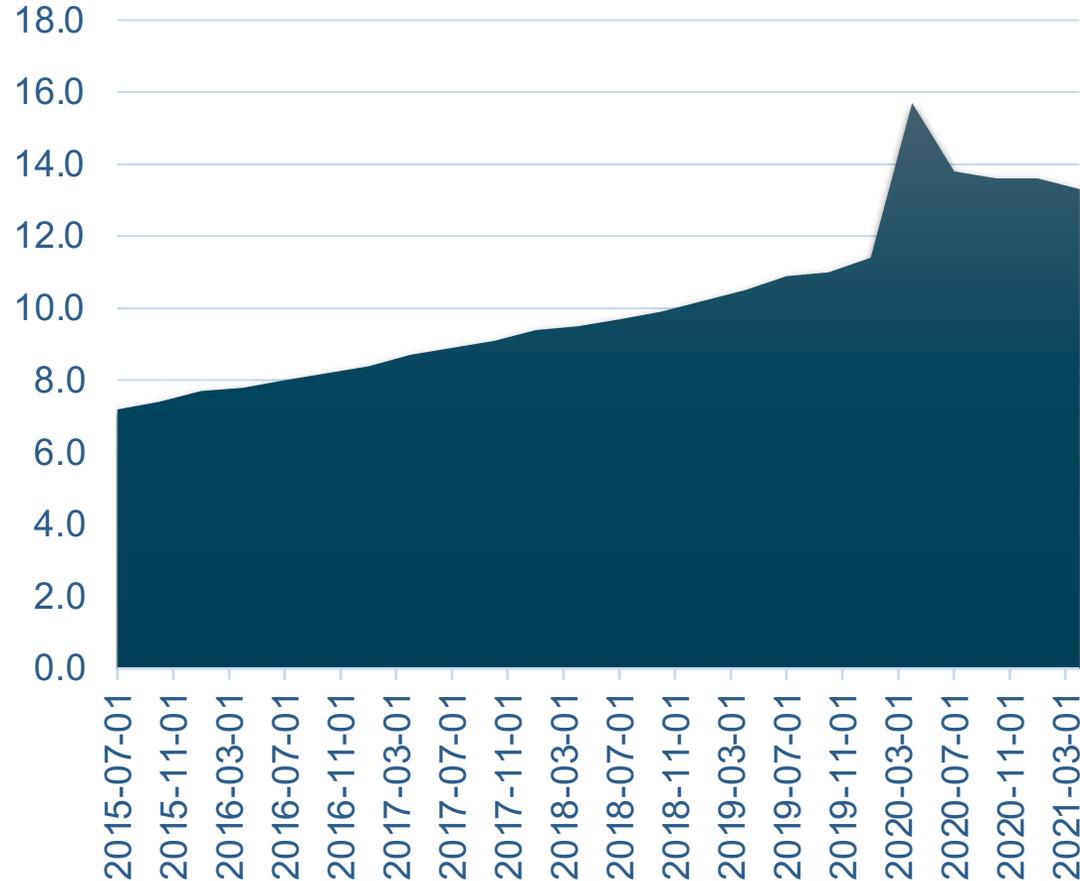
Vacancy Rates



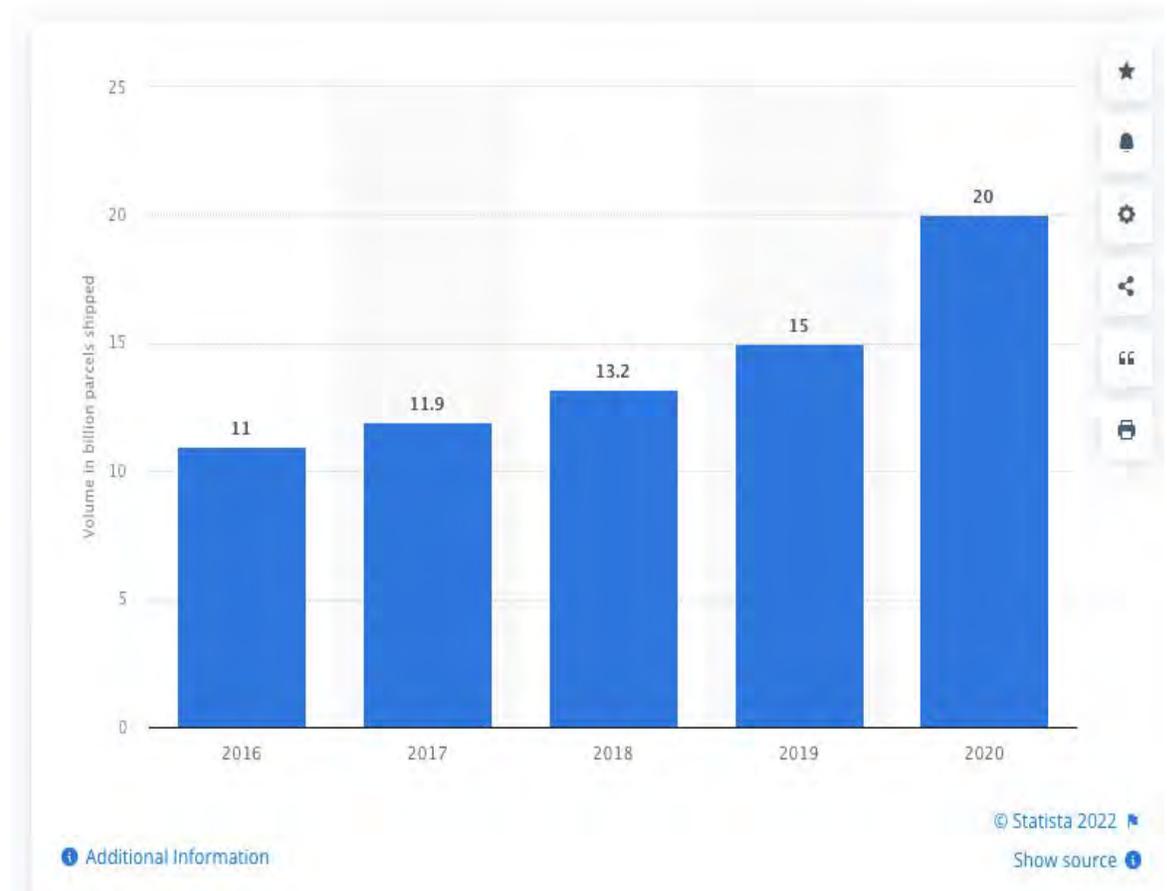
Retail / Industrial Supply Chains



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

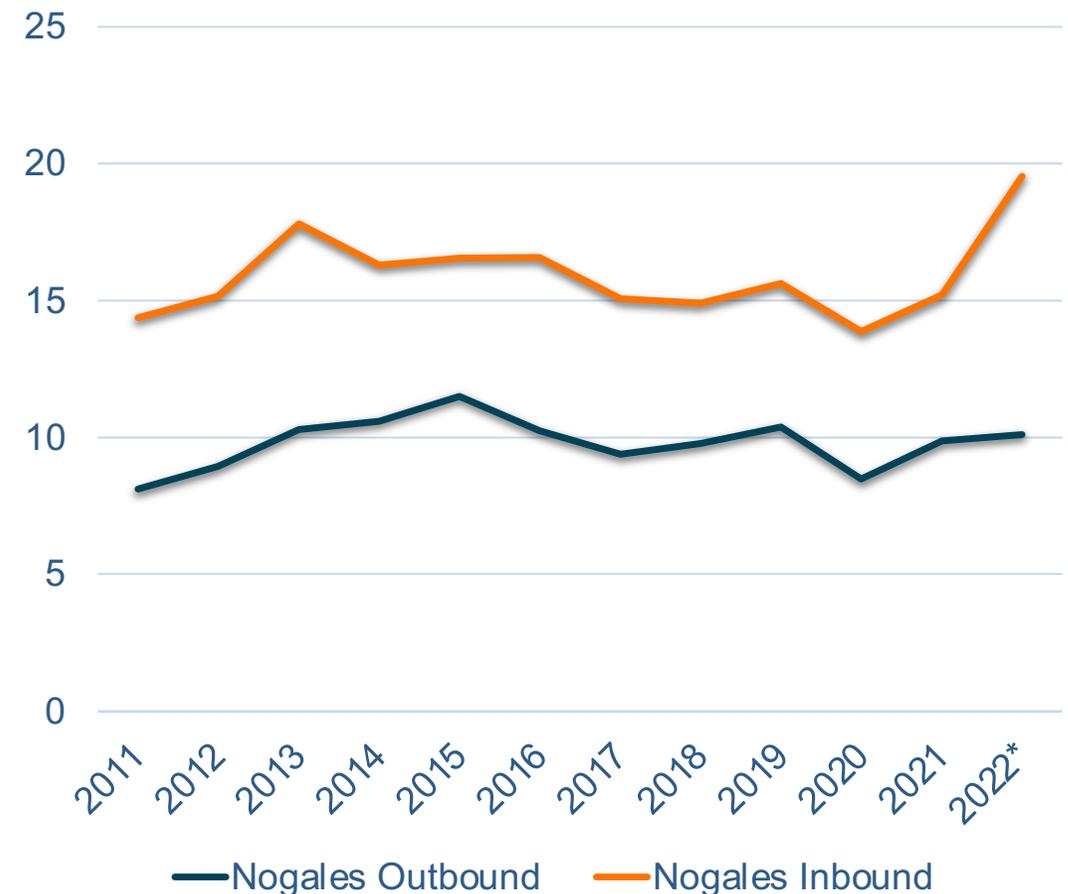
AZ Trade Trends



State Produced Exports and Growth 17-22

TOTAL ALL COMMODITIES	\$13,441	8.0%
Electric Machinery Etc; Sound Equip; Tv Equip; Pts	\$2,885	-9.8%
Ores, Slag And Ash	\$1,663	56.5%
Industrial Machinery, Including Computers	\$1,269	8.8%
Aircraft, Spacecraft, And Parts Thereof	\$1,158	103.2%
Plastics And Articles Thereof	\$1,001	8.4%
Optic, Photo Etc, Medic Or Surgical Instrments Etc	\$555	41.6%
Mineral Fuel, Oil Etc.; Bitumin Subst; Mineral Wax	\$400	41.4%
Edible Fruit & Nuts; Citrus Fruit Or Melon Peel	\$397	-1.8%
Paper & Paperboard & Articles (Inc Papr Pulp Artl)	\$381	4.6%
Vehicles	\$365	-65.2%
Food Industry Residues & Waste; Prep Animal Feed	\$308	288.0%
Copper And Articles Thereof	\$273	83.9%
Articles Of Iron Or Steel	\$240	-6.0%
Iron And Steel	\$198	31.7%
Miscellaneous Articles Of Base Metal	\$180	29.8%
Cereals	\$158	548.9%

Trade through Nogales (\$Bil Value)





State Route 189 improvement project nears completion in Nogales

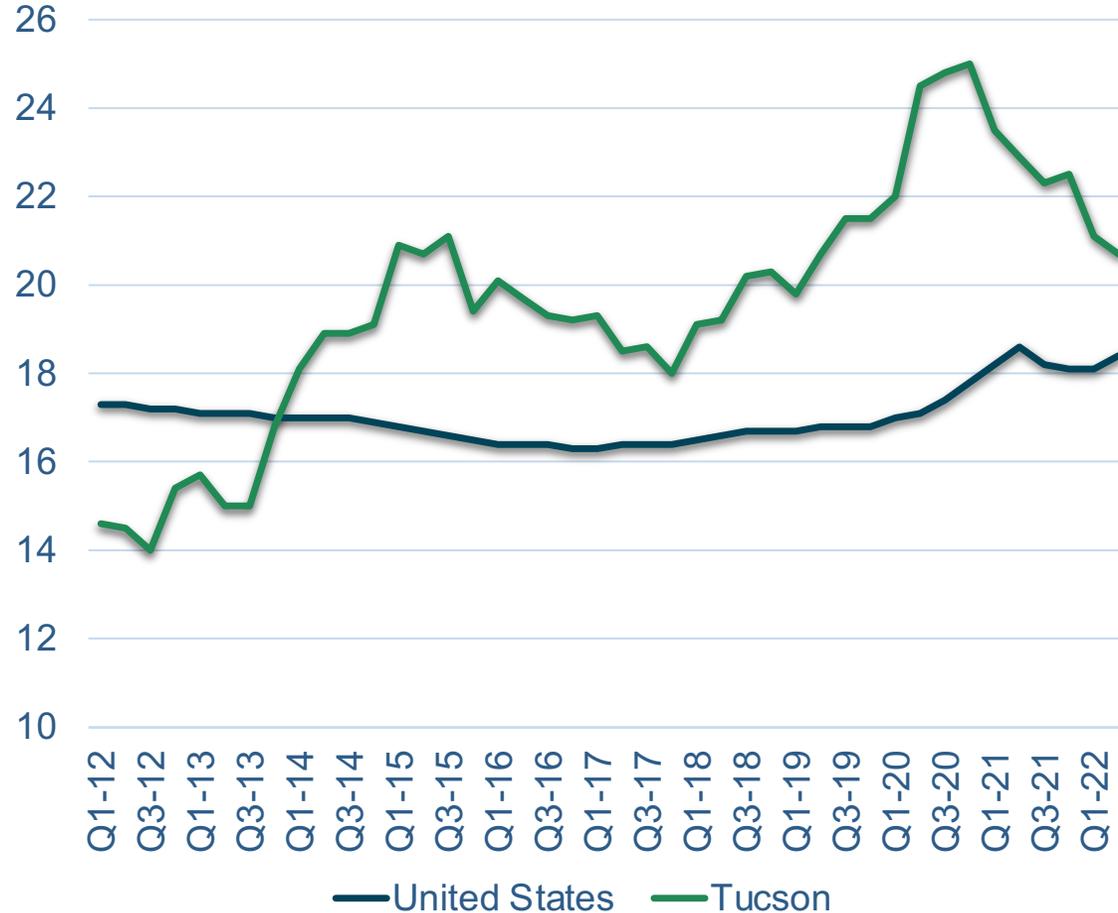
ADOT's \$134 million project to boost economy and safety

March 9, 2022

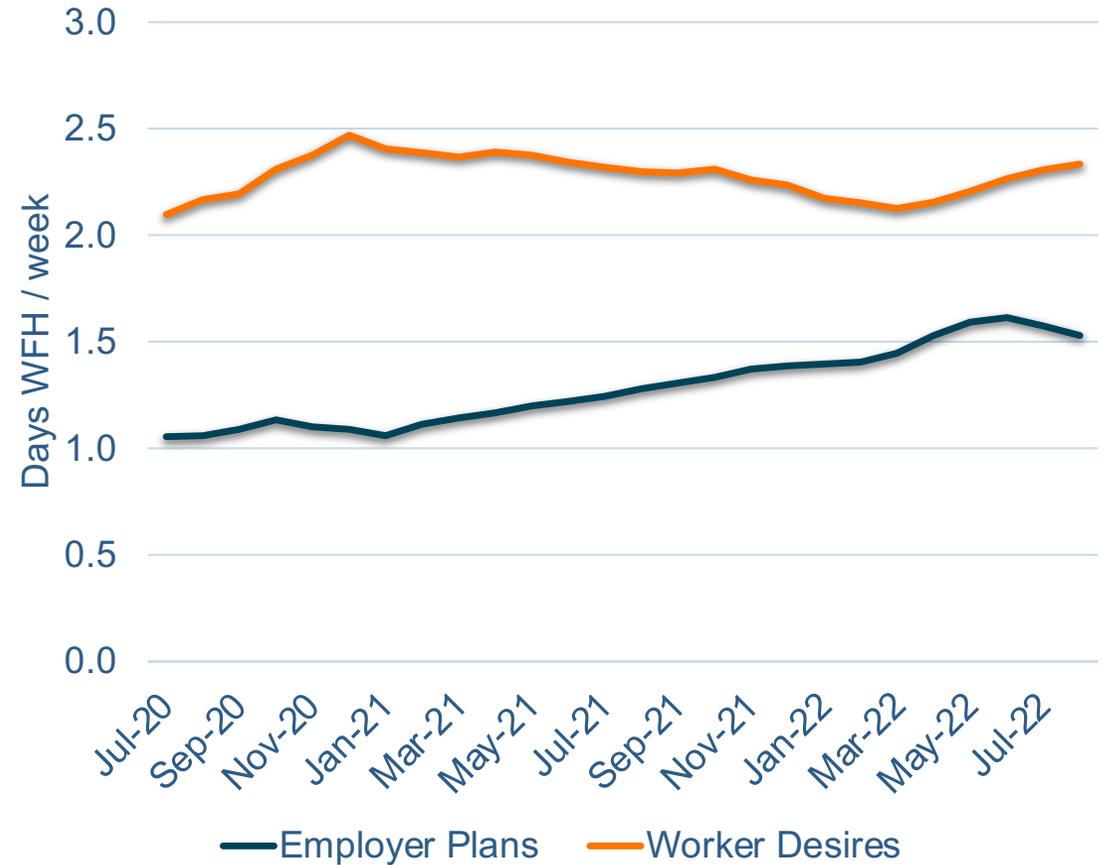
Office Space



Office Vacancy Rate



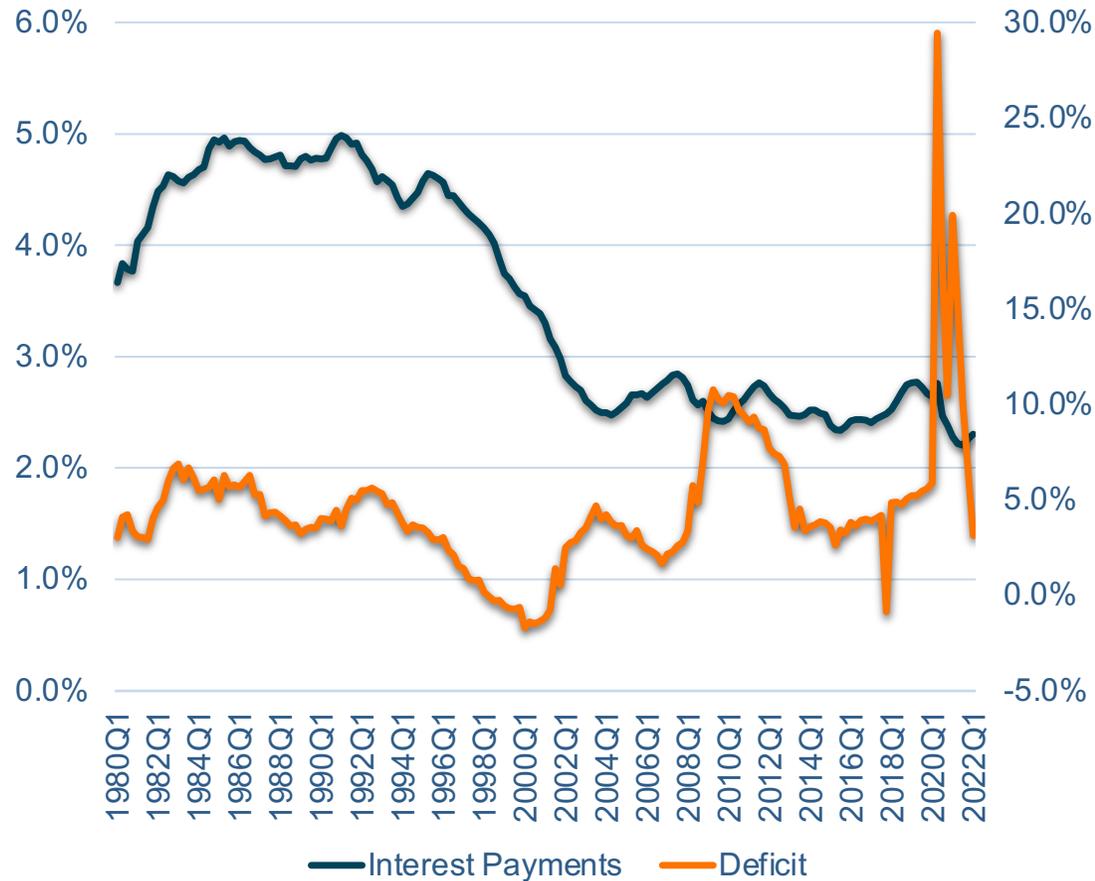
WFH: Employer Plans vs Worker Desires



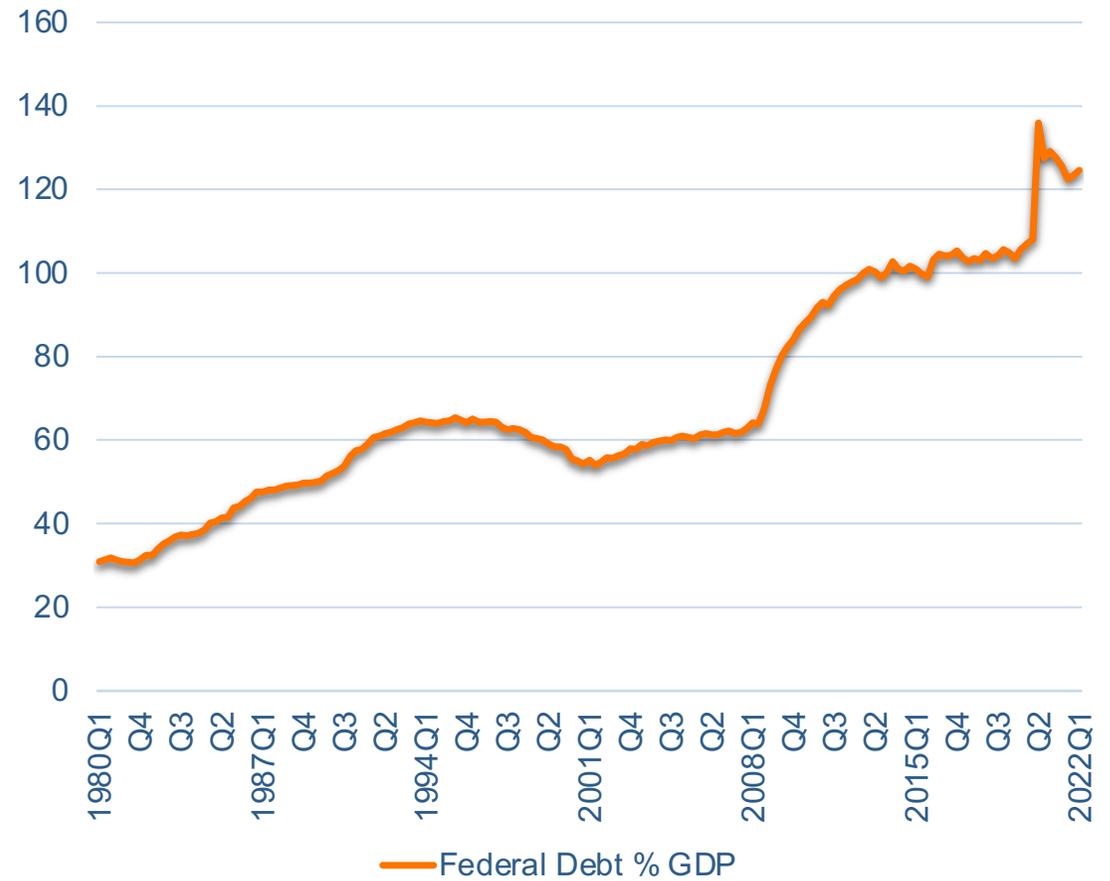
The Fiscal Problem



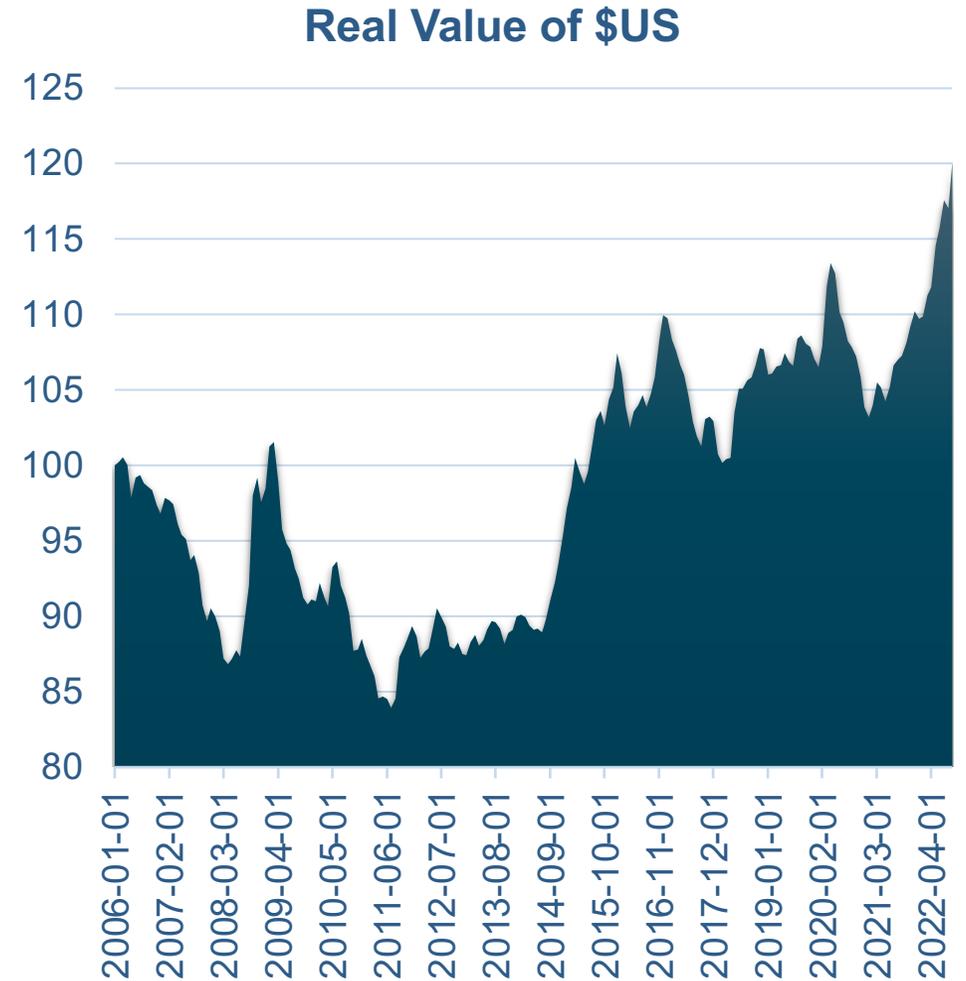
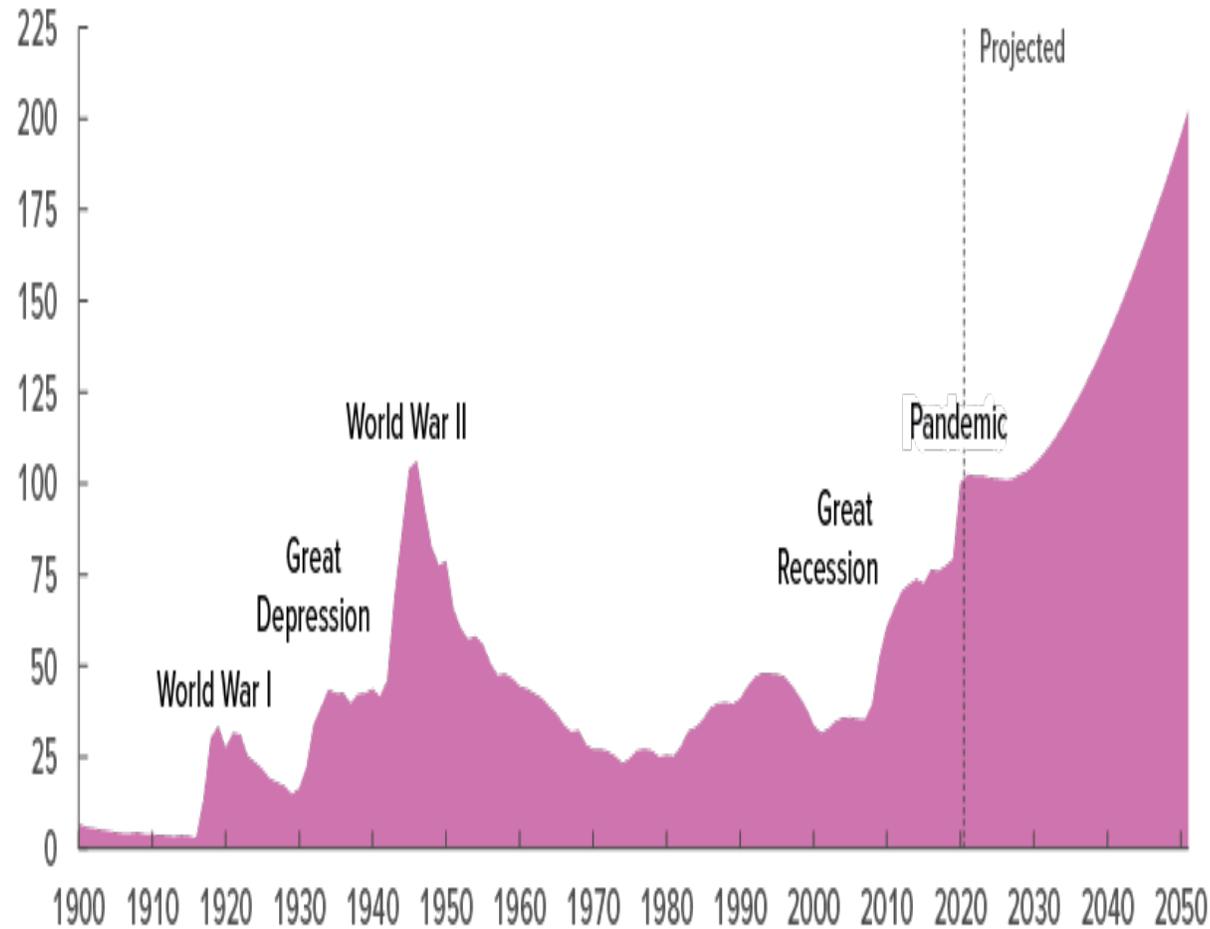
Federal Flows % GDP



Federal Debt % GDP



The Long Run Fiscal Problem



A bumpy path ahead...



- **The Outlook: Expansion to Continue**

- Wealth and income will drive consumer spending
- Construction to go into deep freeze
- Inflation will continue to be hot
- Economy is brittle—small shocks can have big consequences

- **Real Estate: Chilly yet hot**

- Asset values to fall, liquidity drying up
- Lender profits squeezed from spread collapse
- Underlying asset quality to remain strong
- Rents to rise in the meantime

- **Potential Scenarios**

- What will the Fed do?
- Wild cards: Long run fiscal situation, US terms of trade
- Global situation: China is swooning
- Gap between economic reality and political narratives still dangerously wide



Thank You



Chris@BeaconEcon.com | beaconecon.com