



The Post-Covid New World Order Navigating an Inflationary Economy

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Stats: Pre-Covid to Current



- Real Consumer Spending Growth 2 years: Up 4.5%
 - Spending on goods up 16%
- Disposable personal income up 13%
 - Corporate profits +20%, proprietors incomes +16%
- Unemployment Rate 3.6%
 - Job openings: 11.2 million up from 7.1 million 3 years ago
- Home prices +20% yoy, still incredibly tight inventories
 - Household net worth up \$30 trillion in 2 years (+30%)
- Industrial Production +3% from 2 years ago
 - Inventory to sales ratios still record low

The Big Picture



The Short of it

- The Covid pandemic is a tragic natural disaster, yet history shows that natural disasters have little long-run economic impact. A quicker-than-normal recovery was certain.
- The narrative drove fiscal and monetary policy reactions that have been and *continue to be excessive*. The economy is overheating..
- Cyclical risks now lie primarily in the public sector; in inflation and the Federal budget deficit.
- Geopolitical uncertainty mainly extends the US asset cycle due to the reserve currency status of the US economy

The Long of it

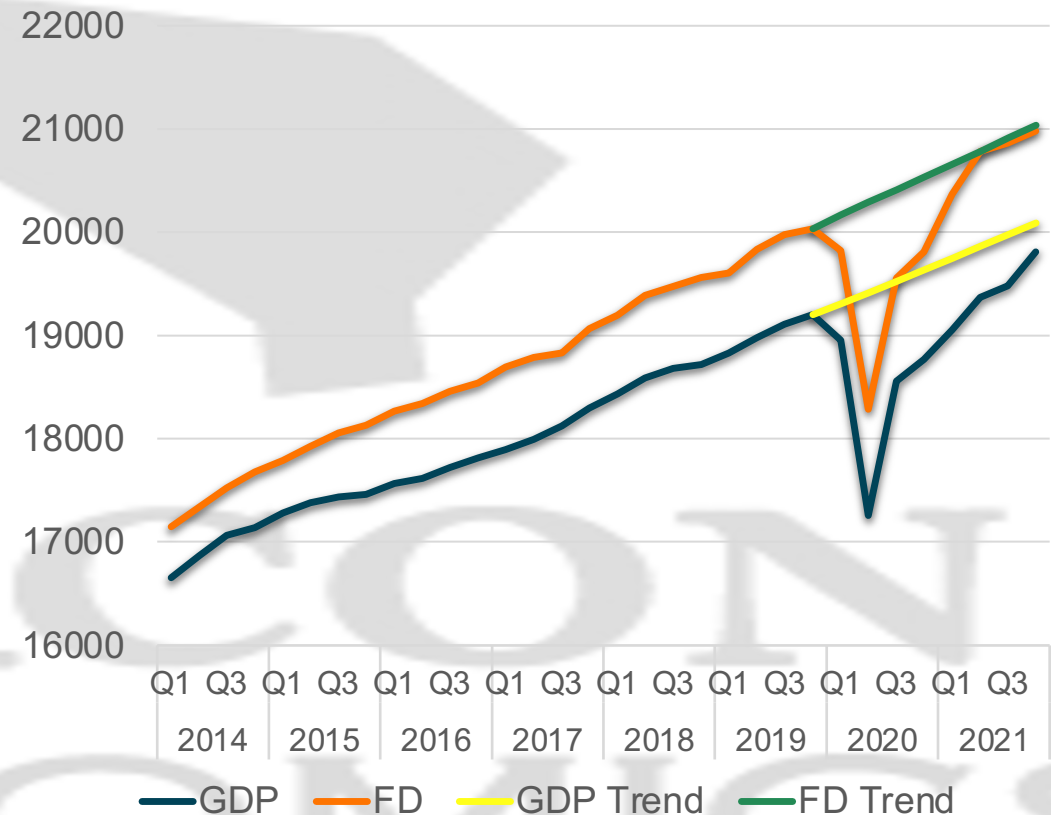
- There are no economic “new-normals” from the pandemic, but it has accelerated underlying trends that were already in place, with implications for land use, retail, housing, and debt.
- Labor markets have flipped, and shortages are here to stay. Local economic development will shift from “jobs jobs jobs” to “workers workers workers”.
- Arizona continues to exceed national trends largely based on strong in-migration trends along with expansion of core driver industries

The U or V Debate...



Real Growth Rates	Q417- Q419	Q419- Q421
Gross domestic product	4.9%	3.2%
Final Demand	5.1%	4.0%
Personal consumption expenditures	4.9%	4.4%
Durable goods	9.9%	21.1%
Nondurable goods	4.8%	13.0%
Services	4.2%	-0.5%
Fixed investment	6.8%	4.9%
Structures	7.7%	-22.3%
Equipment	5.1%	6.0%
Intellectual property products	16.1%	14.7%
Residential	-1.8%	13.7%
Net exports of goods and services	3.8%	58.3%
Exports	0.5%	-6.1%
Imports	1.3%	9.9%
Government	4.2%	1.3%
National defense	9.4%	-1.4%
Nondefense	4.8%	7.2%
State and local	2.2%	0.9%

Real GDP and Final Demand relative to long run trend



The Great Recession vs Today



Then

Now

Recession Driver

Demand shock caused by collapse in wealth, flow-stock issues

Short run supply shock driven by fear and health mandates

The Pre-Recession Economy

Over-heated by sub-prime lending bubble

Slow but steady growth due to labor shortages / trade disruptions

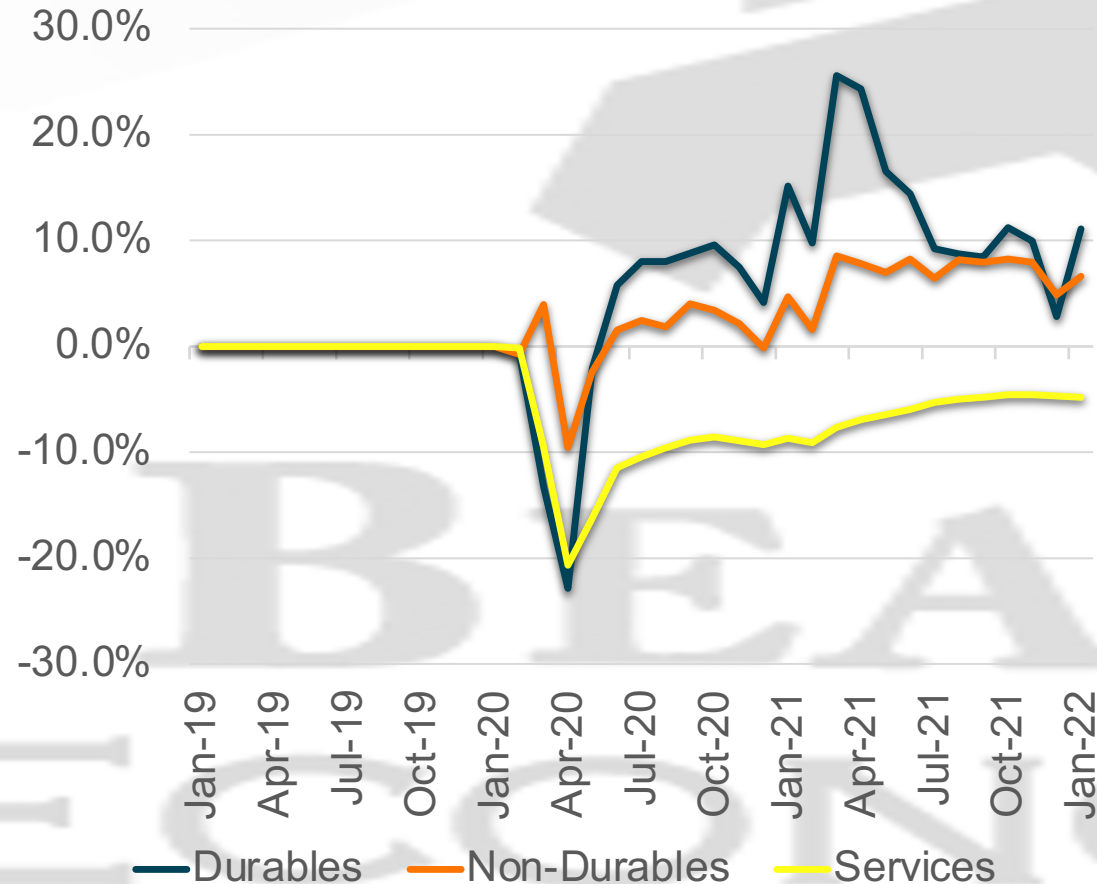
Financial Markets

Meltdown

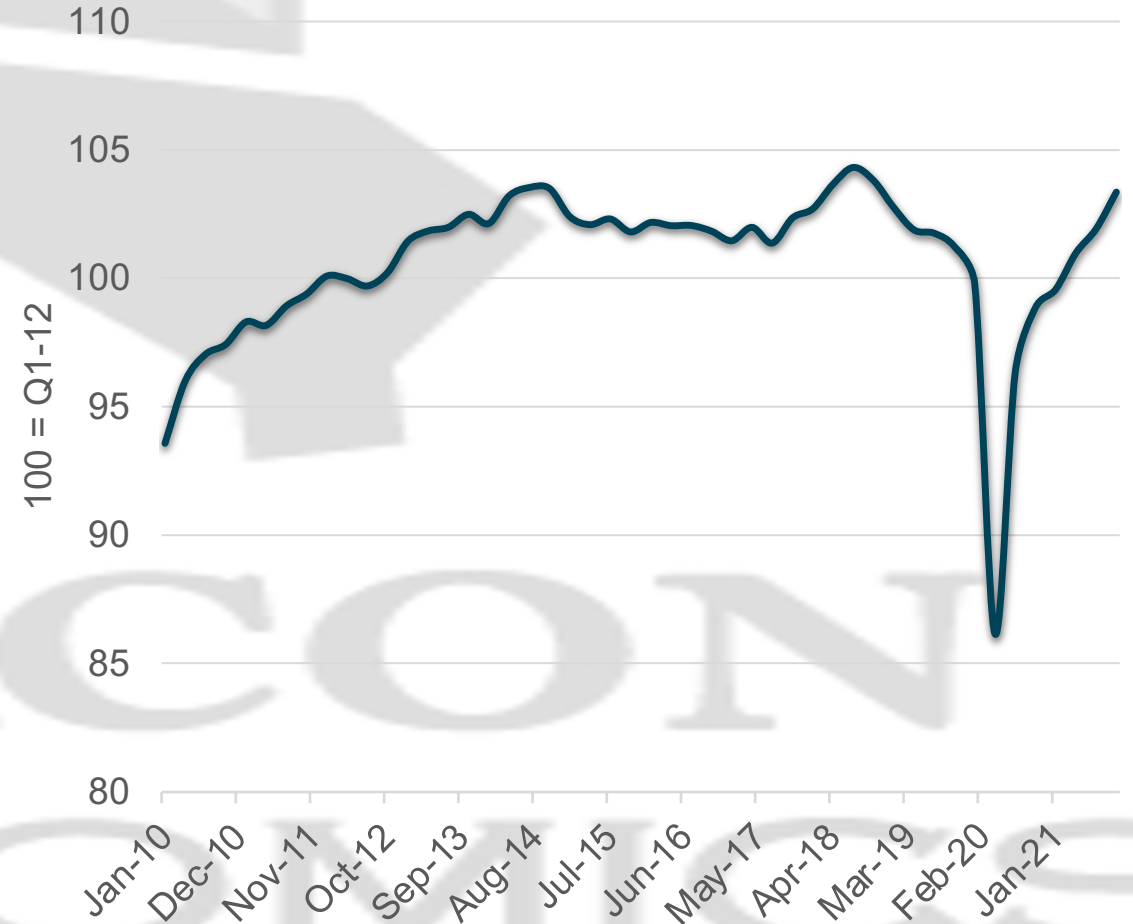
Largely unaffected

An Uneven Recovery

Real Consumer Spending Relative to Pre-Covid Trends

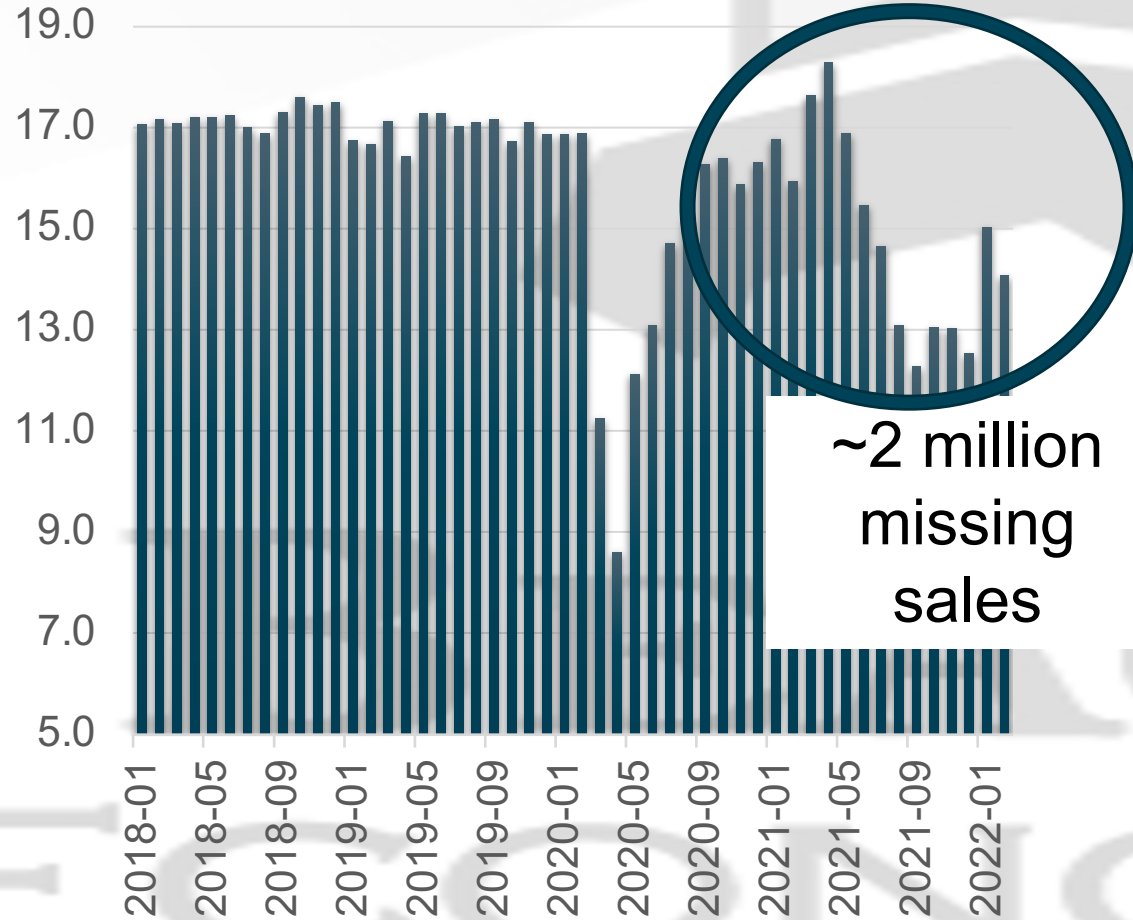


US Manufacturing Production Index

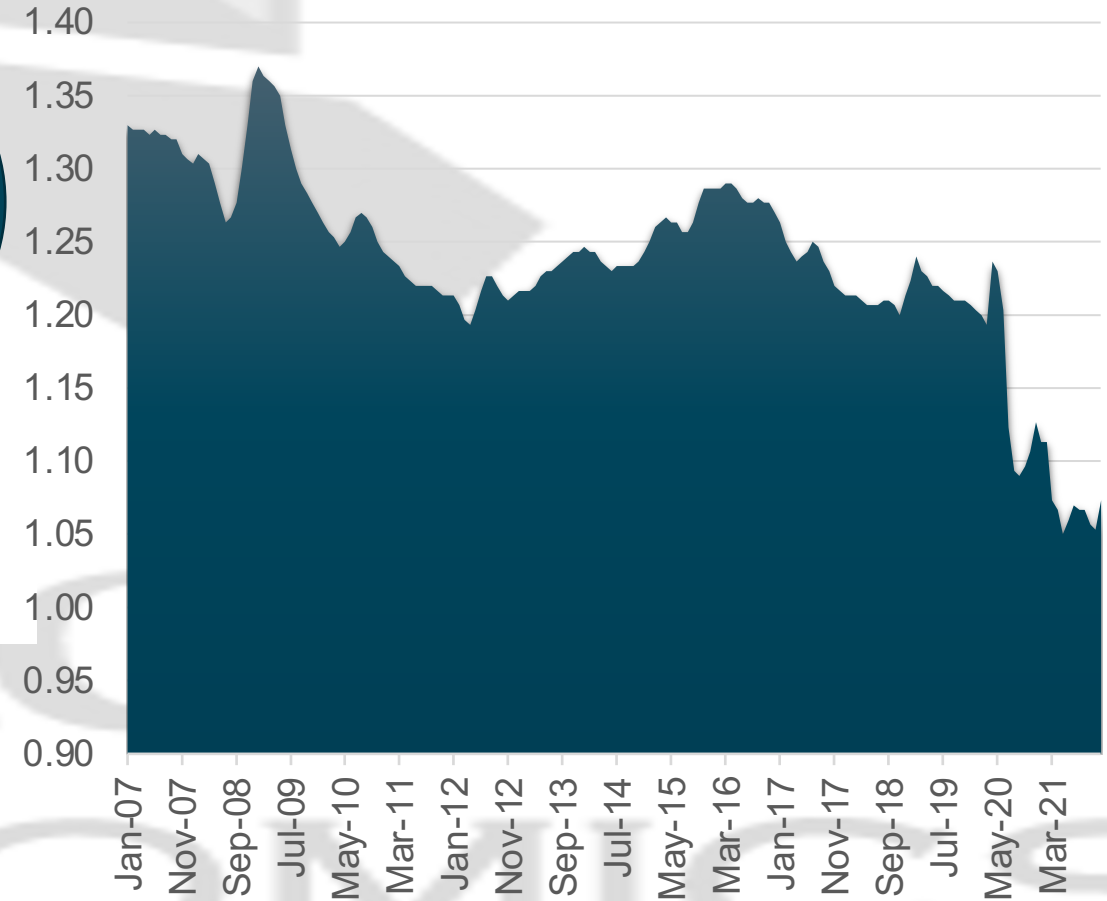


Supply Not Keeping Up With Demand...

US Auto Light Truck Sales SAAR

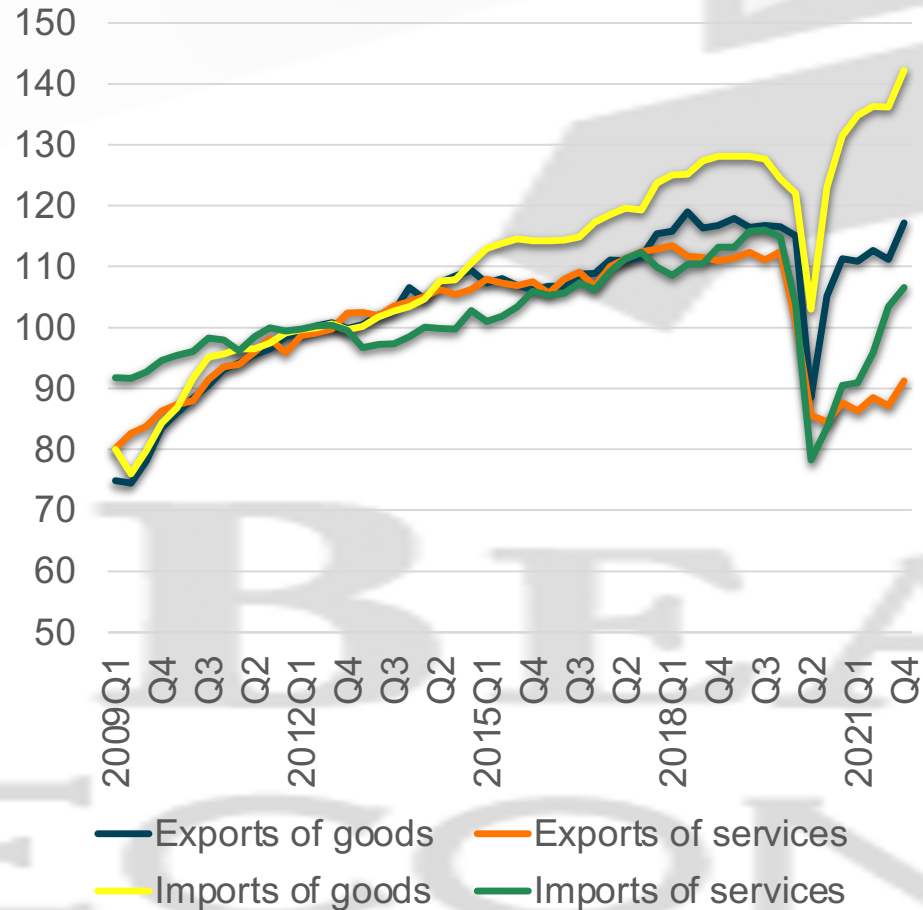


Retail Inventory to Sales Ratio (x auto)

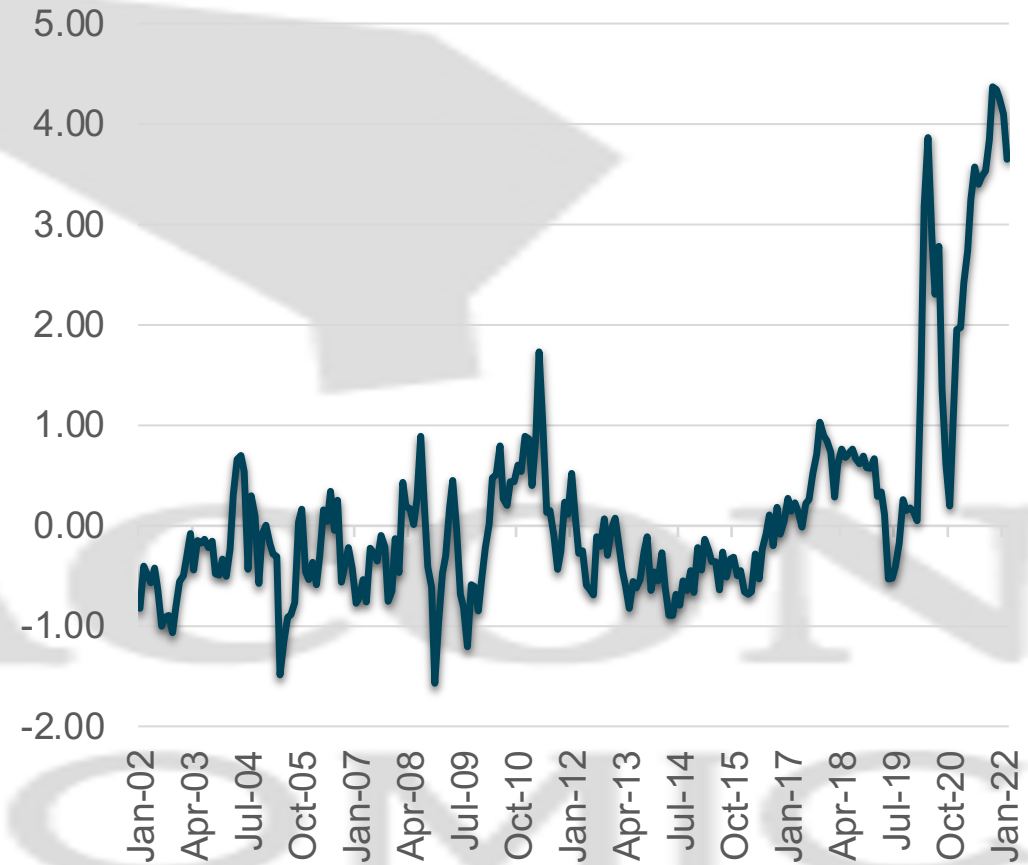


Supply Chain Problems

Indexes of Real Trade Flows



Global Supply Chain Pressure Index (New York Fed)



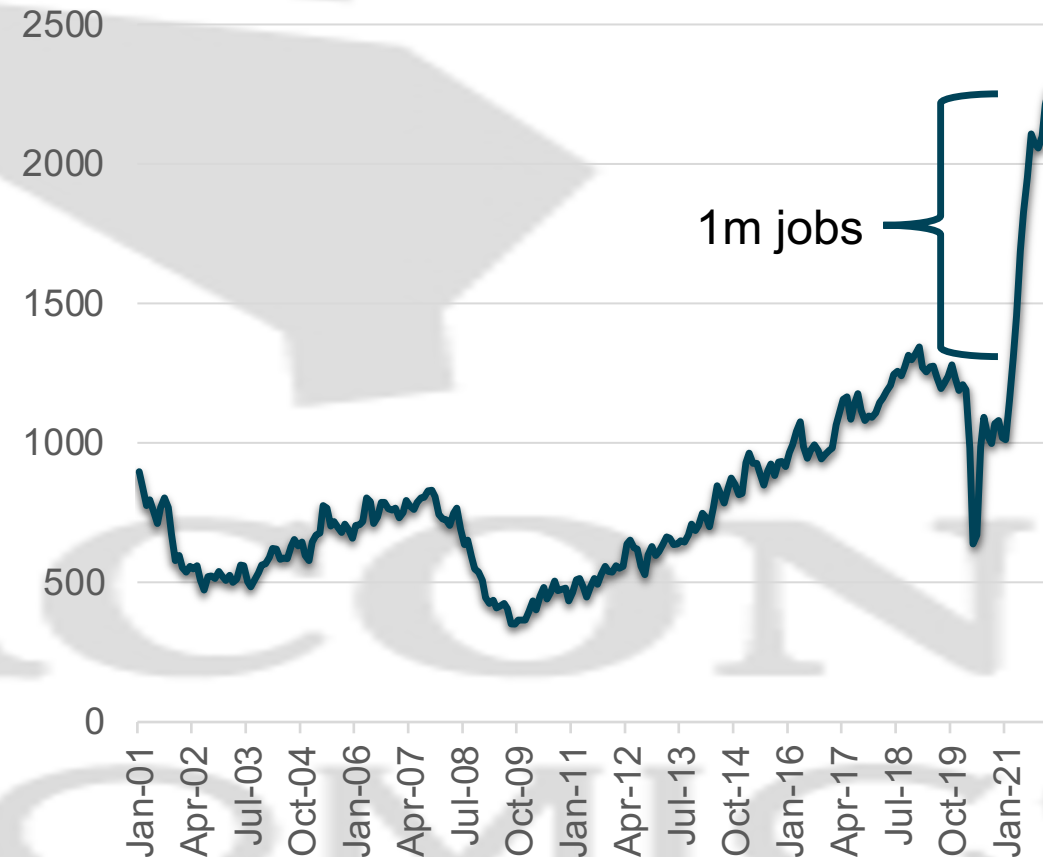
As for the Service Sector...



Real Consumer Spending
Services Q4 19 to Q4 21

	2019 Q4	2021 Q4	
Services	8505.9	8459.4	-0.5%
Financial, insurance	850.9	890.5	4.7%
Housing	2111.8	2155.1	2.1%
Food, accommodations	854.6	856.2	0.2%
Health care	2263.3	2249.7	-0.6%
Other services	1132.6	1104.2	-2.5%
Transportation	461.9	421.2	-8.8%
Recreation	510.2	442.9	-13.2%

Job Openings Leisure, Hospitality and
Other Services

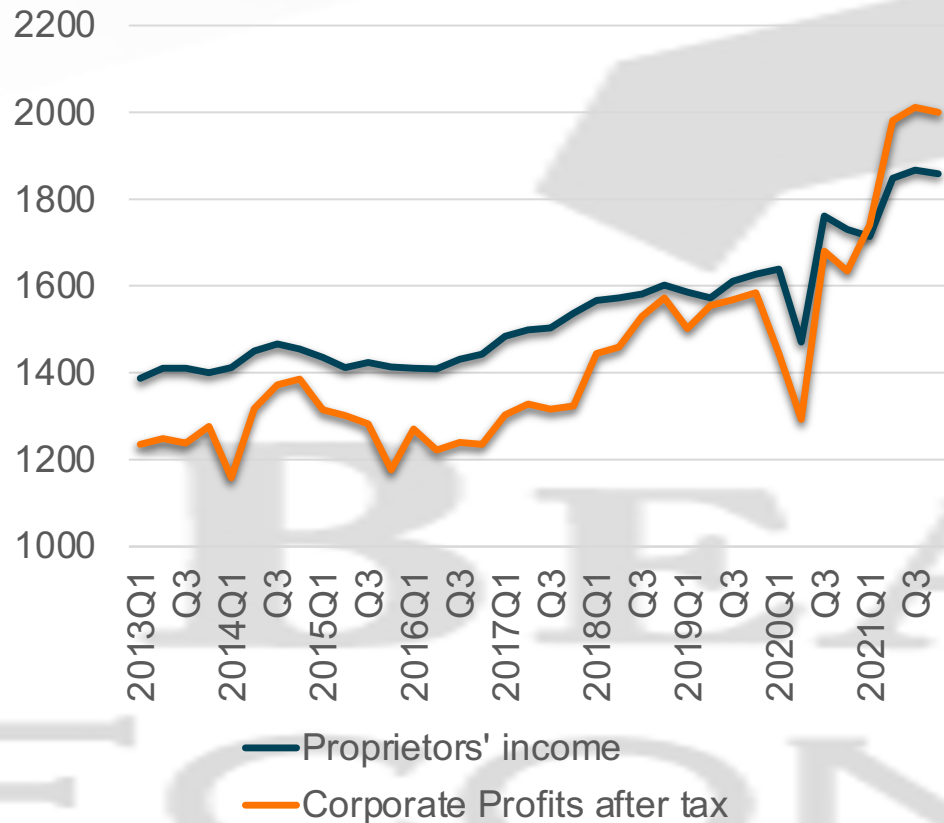


Earnings and Investments



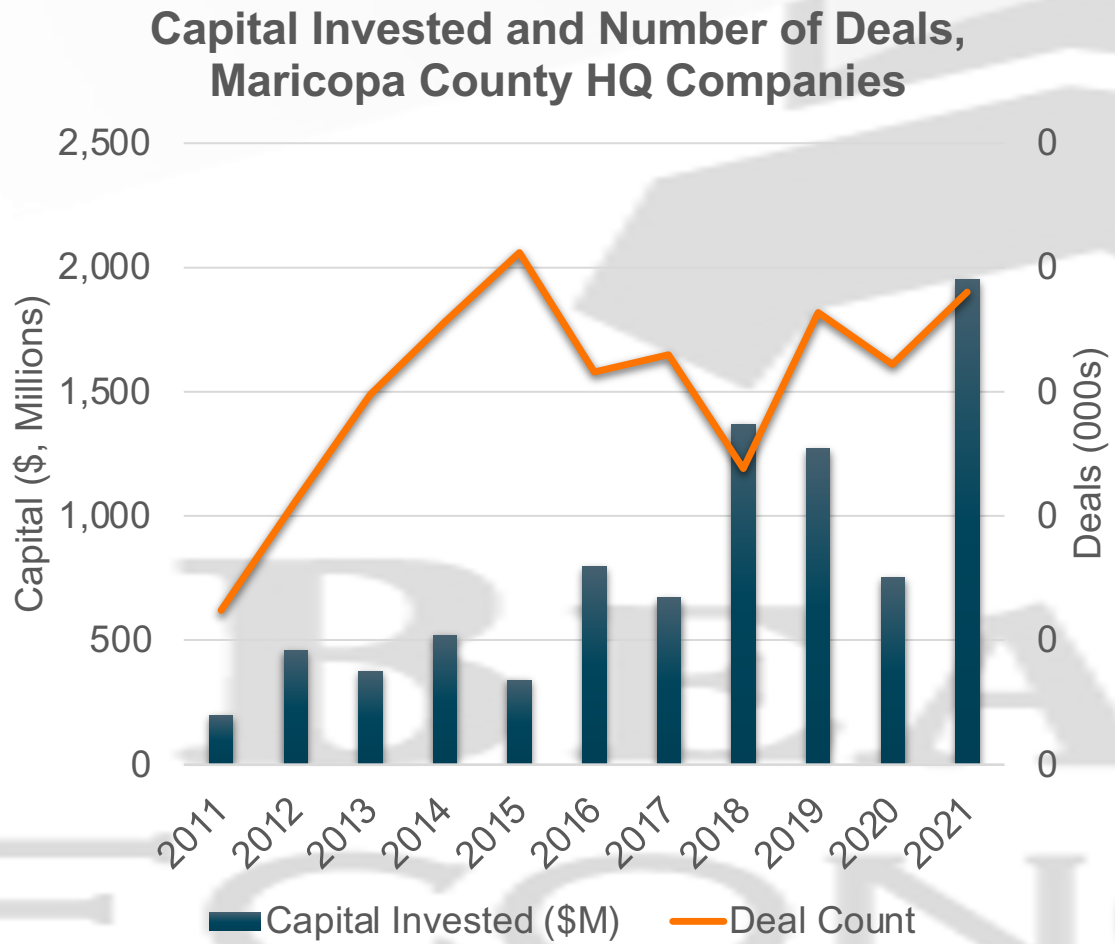
Real Investment

National Income by Ownership
(\$B, SAAR)



	2019Q4	2021Q4	
Private fixed investment	3781.4	4254	12.5%
Structures	685.3	594.8	-13.2%
Power and communication	148.1	118.6	-19.9%
Mining exploration, shafts	115.3	94.9	-17.7%
Manufacturing	77.1	73.7	-4.4%
Commercial and health	212.2	205.9	-3.0%
Equipment	1210.3	1300.6	7.5%
Information processing eq	390.2	488.5	25.2%
Industrial equipment	247.8	310.8	25.4%
Transportation equipment	307.4	203.6	-33.8%
Intellectual property products	1057	1250.2	18.3%
Software	439.1	526.9	20.0%
Research and development	524.3	621.1	18.5%
Entertainment	93.6	102.2	9.2%
Residential	828.8	1108.5	33.7%

Venture Capital – Phoenix

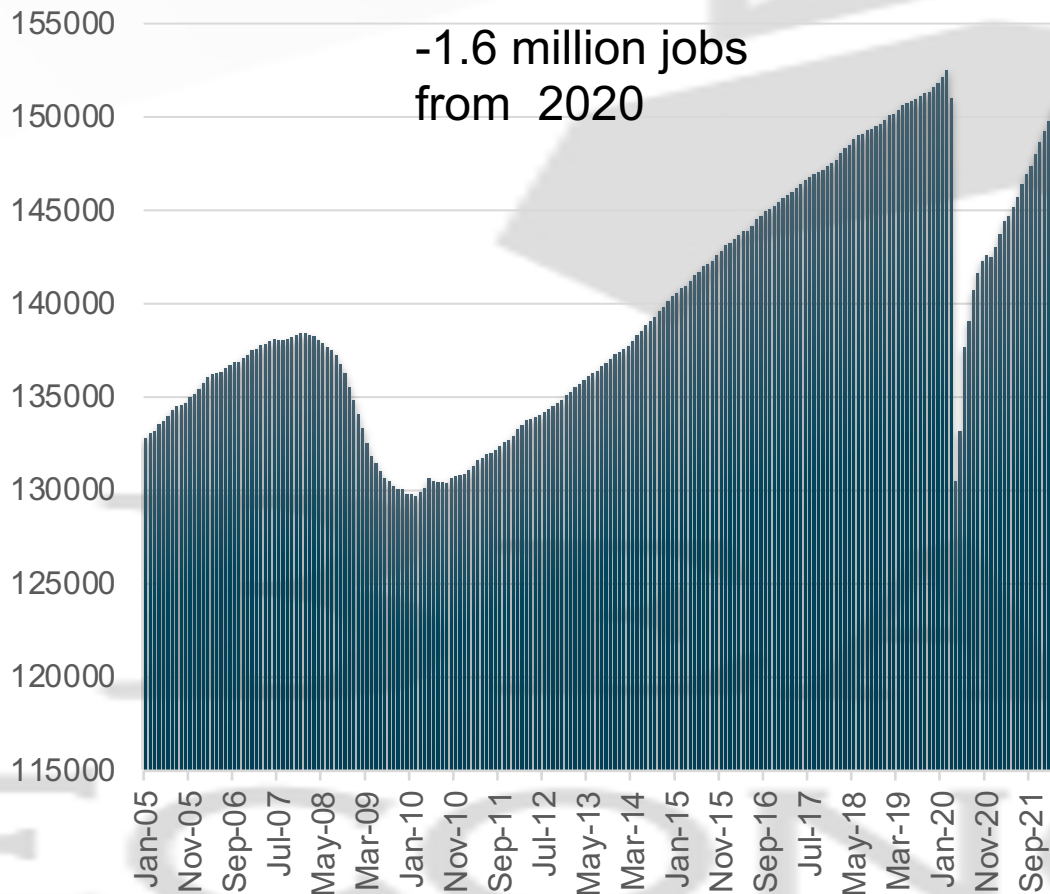


Company (Maricopa Co. HQ)	Deal Size (\$, Mil.)	Vertical / Industry
Opendoor Tech	725.0	Consumer P&S
Opendoor Tech	300.0	Consumer P&S
OfferPad	260.0	Consumer P&S
Nikola	250.0	Business P&S
Paradox	250.0	Business P&S
Nikola	214.0	Business P&S
Opendoor Tech	210.0	Consumer P&S
Nextiva	200.0	Information Technology
LifeLock	200.0	Information Technology
Lessen	170.0	Business P&S
Carvana	160.0	Consumer P&S
OfferPad	150.0	Consumer P&S

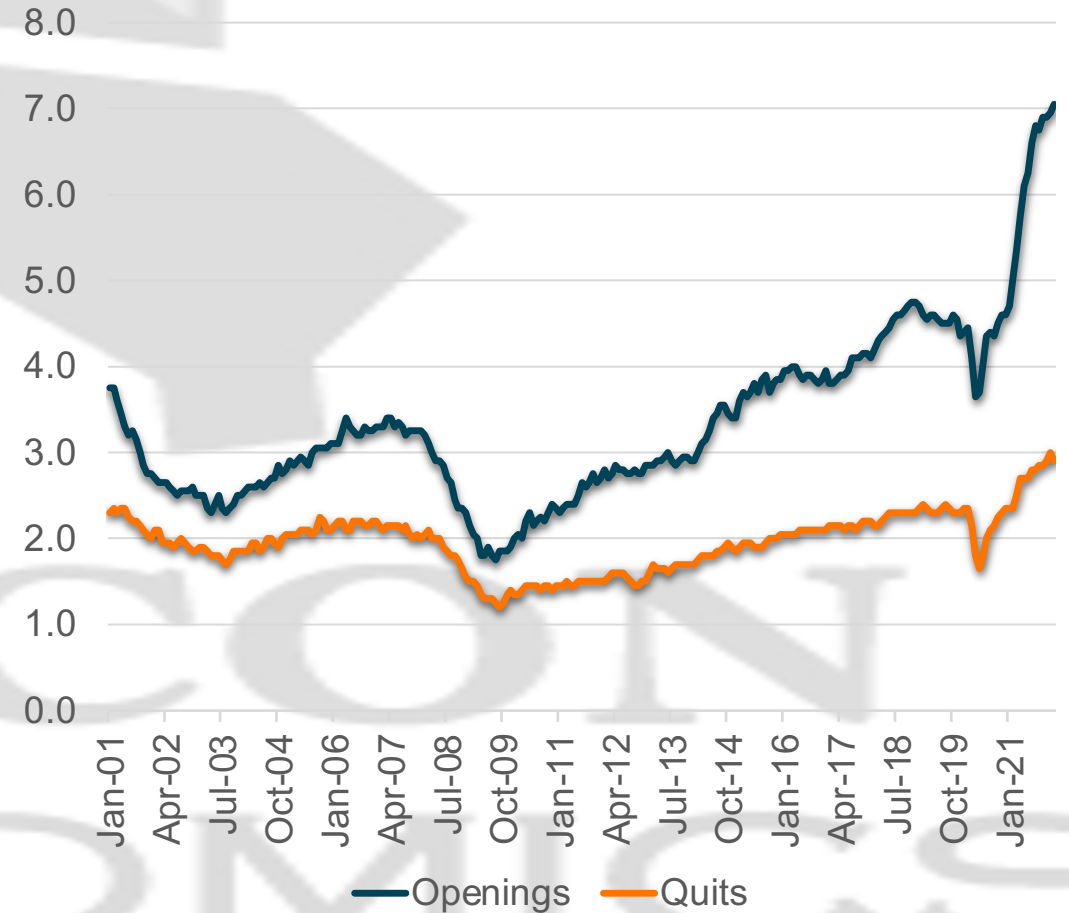
A Labor Market Paradox?



US Payroll Jobs



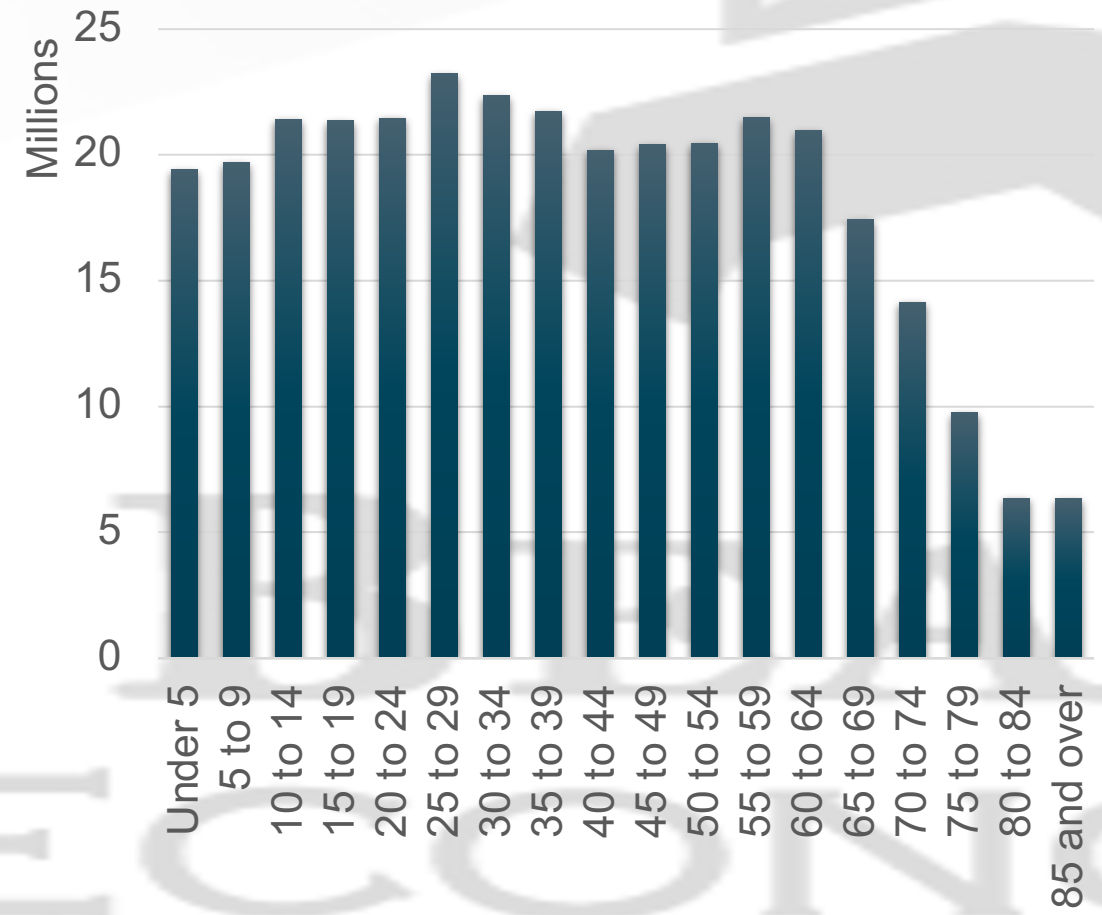
US JOLT Trends



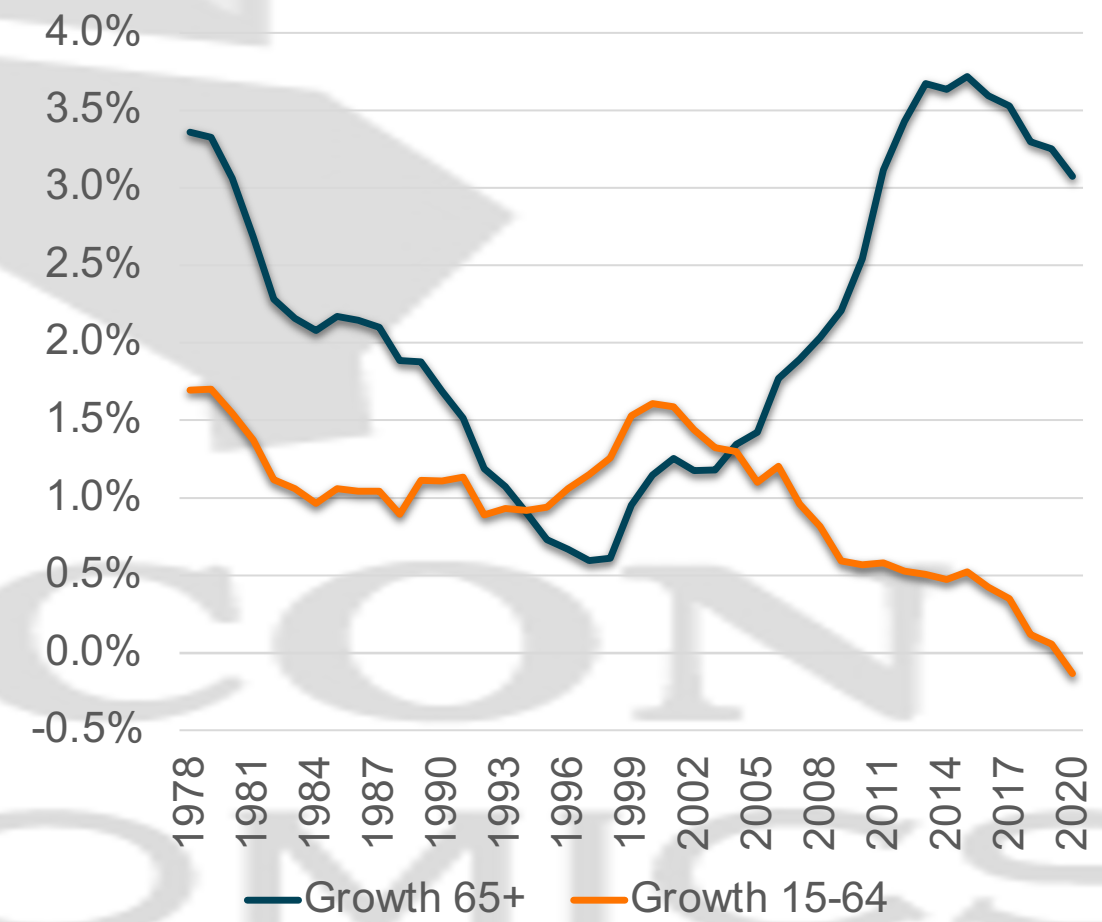
The Long Run Labor Force Issue



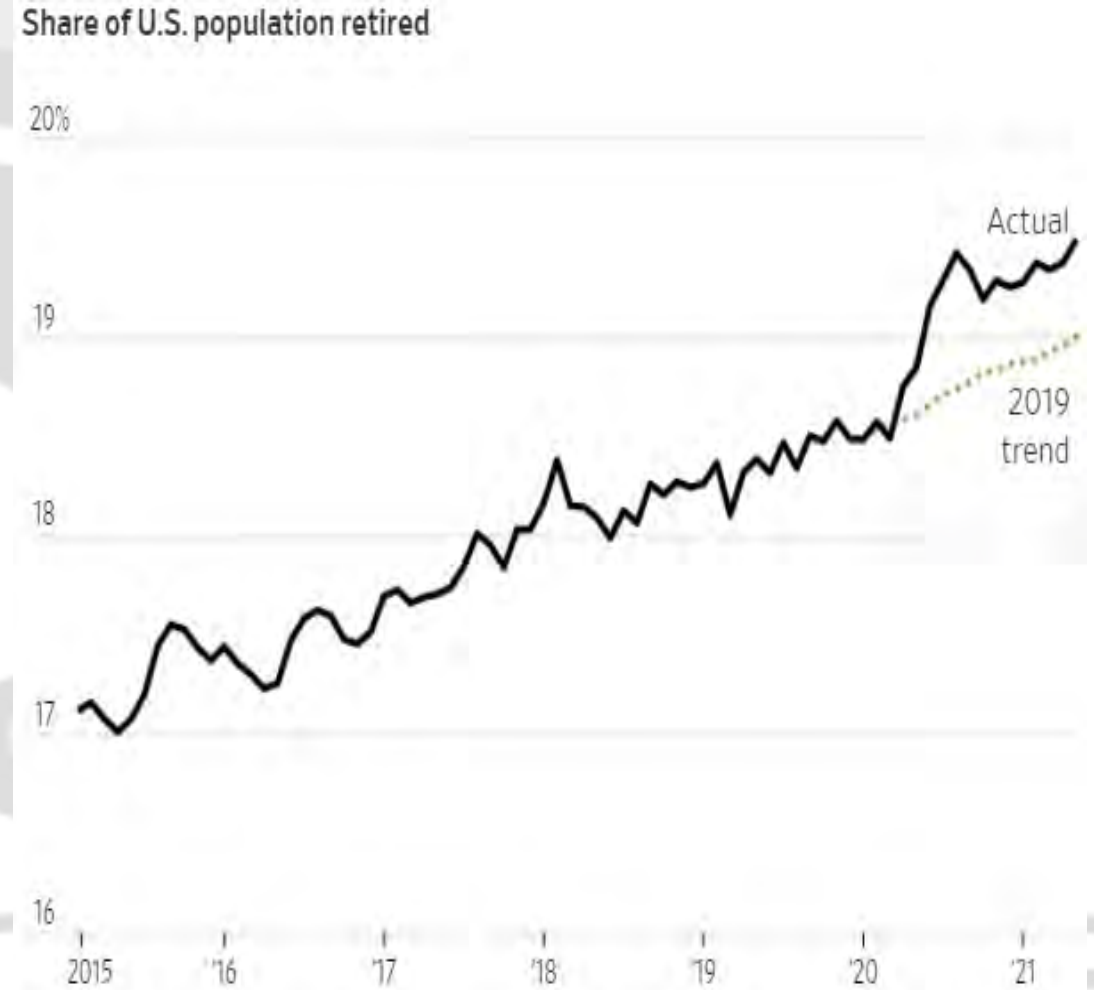
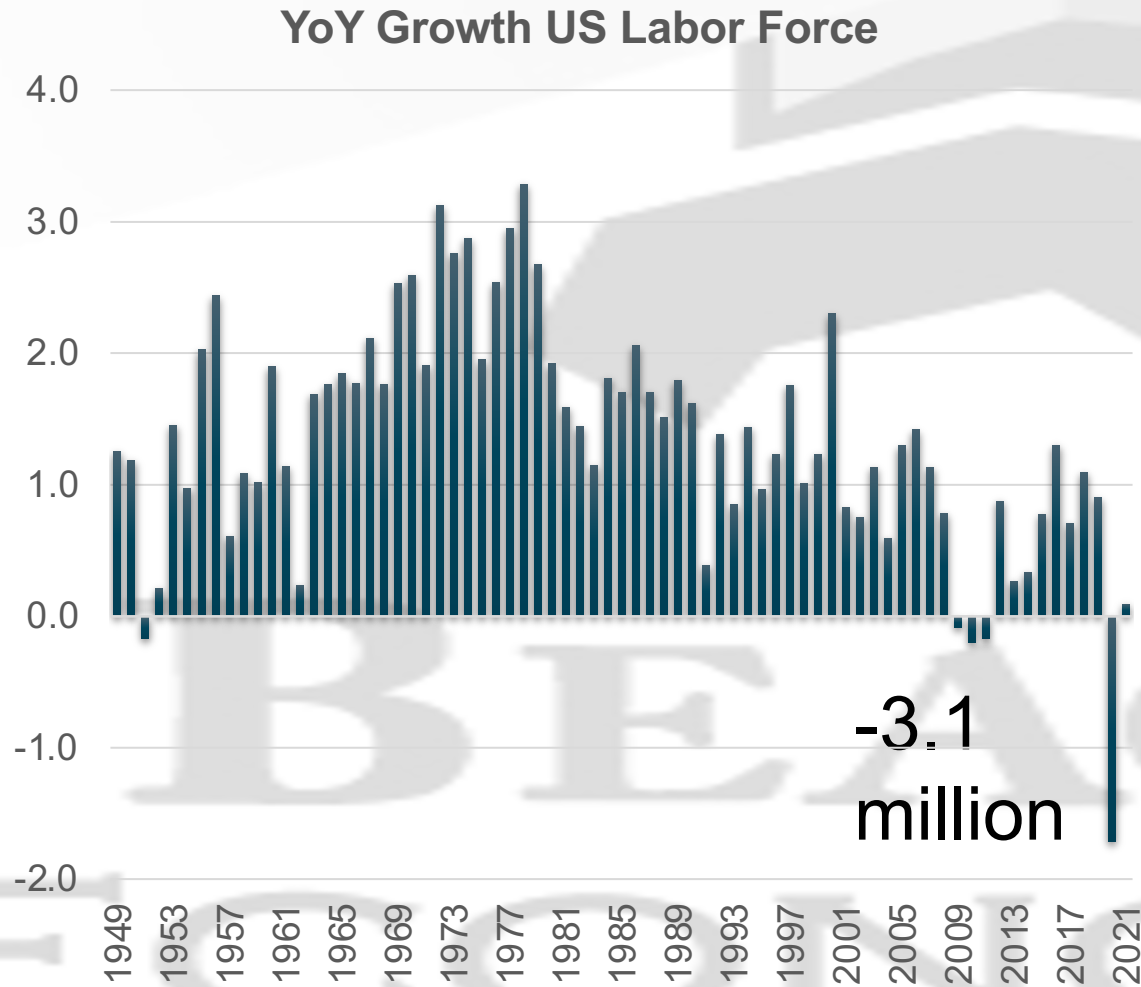
US Population by Age



Population Trends



The Big Retirement

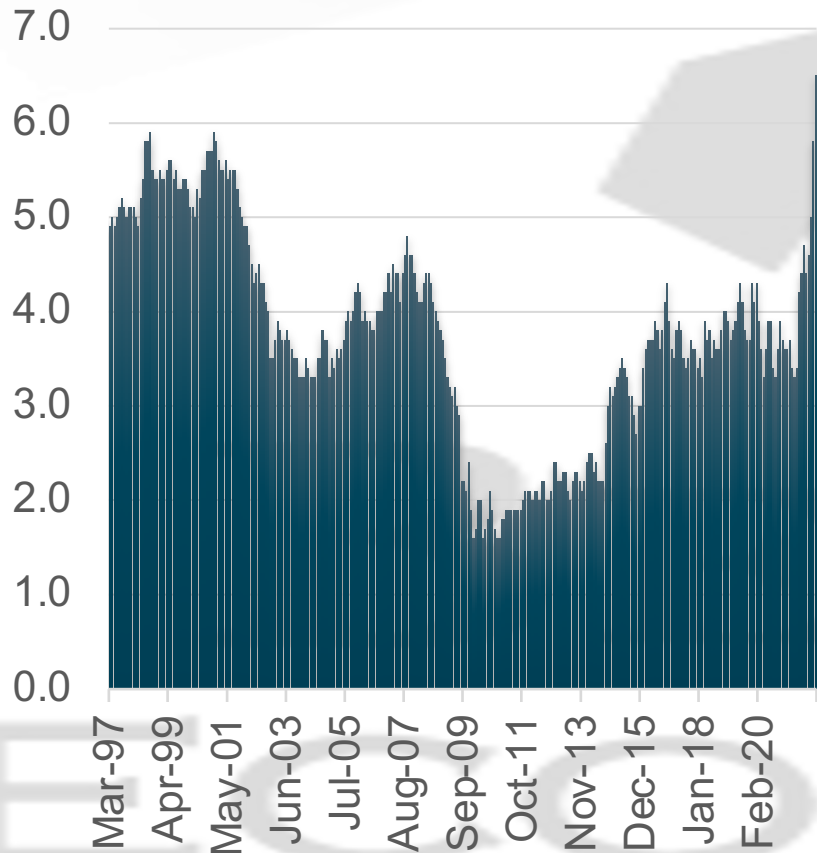


Source: IPUMS-CPS, University of Minnesota via Federal Reserve Bank of Dallas

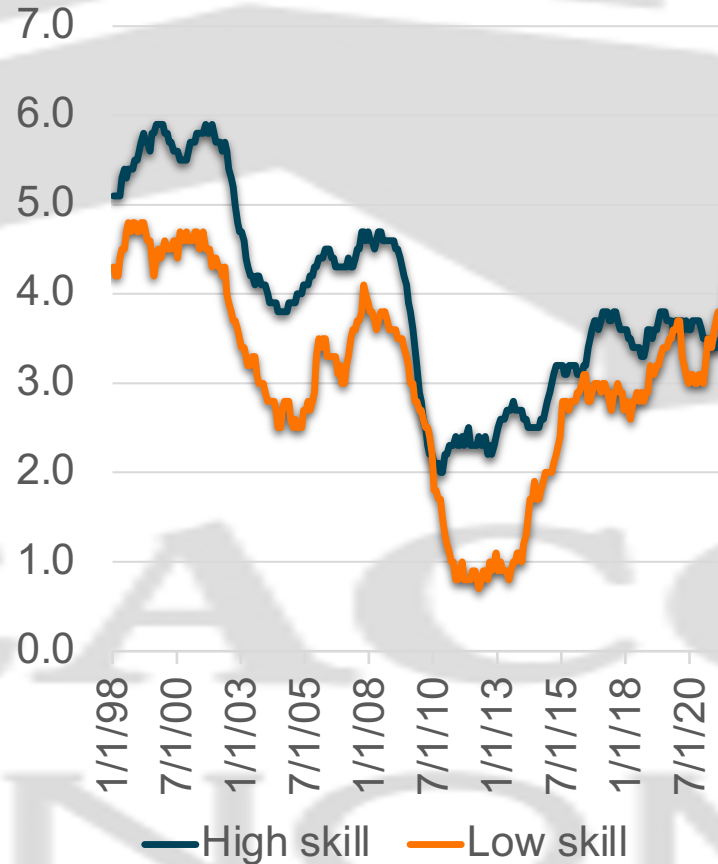
A Sellers' Market in Labor



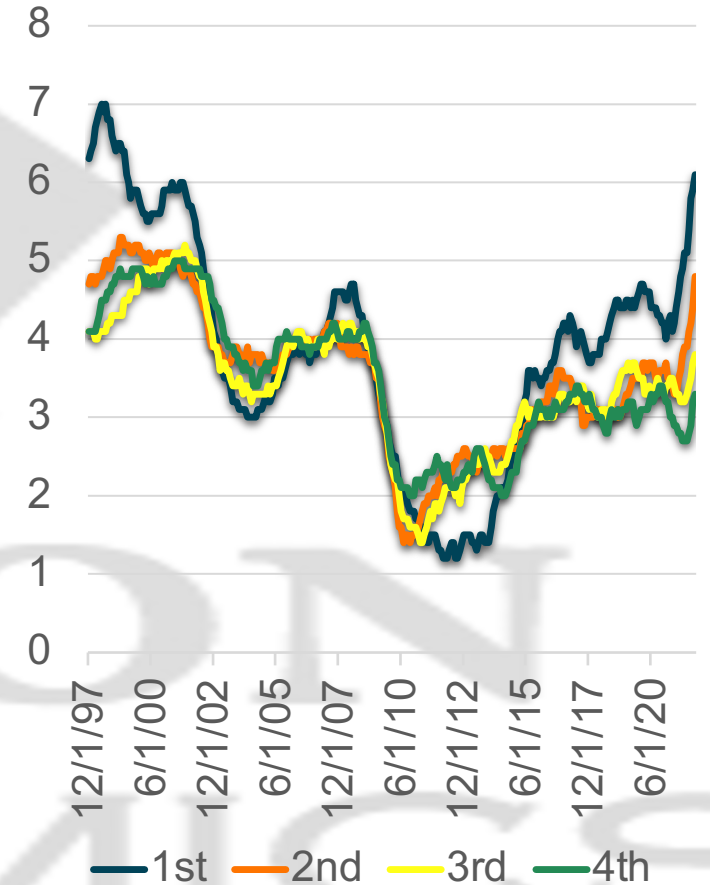
Atlanta Fed: Average Earnings Growth YoY



By Occupational Skill



By Earnings Quartile



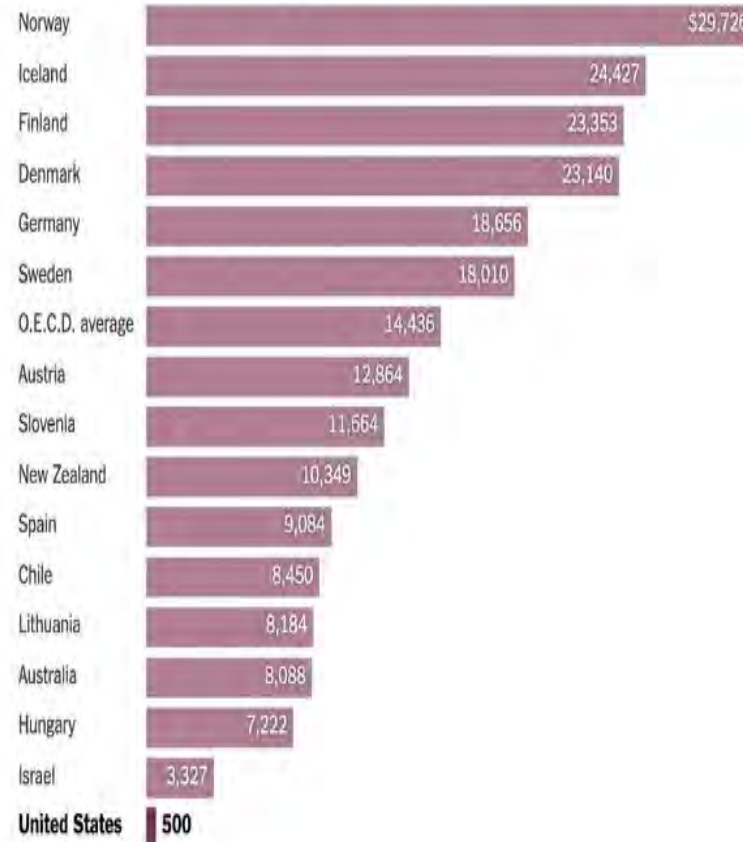
Labor Shortage Solutions



■ 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

Annual public spending per child on early childhood care



Labor force participation rate
Females 25-54

Country	Labor force participation rate Females 25-54
Sweden	88.7
Austria	85.7
Finland	84.9
Canada	83.5
Netherlands	83.3
Germany	83.3
France	83.1
Denmark	82.8
Spain	82.3
United Kingdom	81.5
Belgium	80.3
Japan	80.0
Israel	79.9
Australia	79.3
Poland	79.0
Greece	77.6
United States	76.0
Korea	67.8

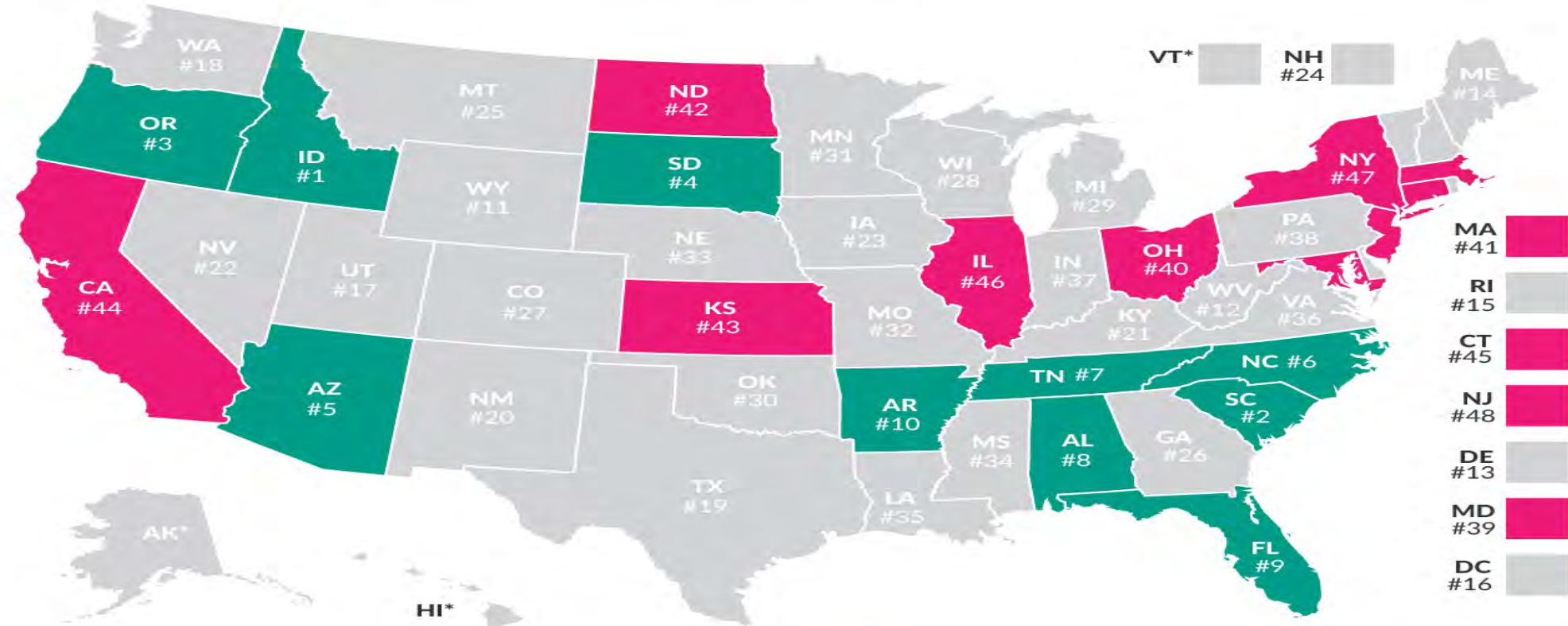
1 pp = 600,000 female workers in US

The Future of Economic Development



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.

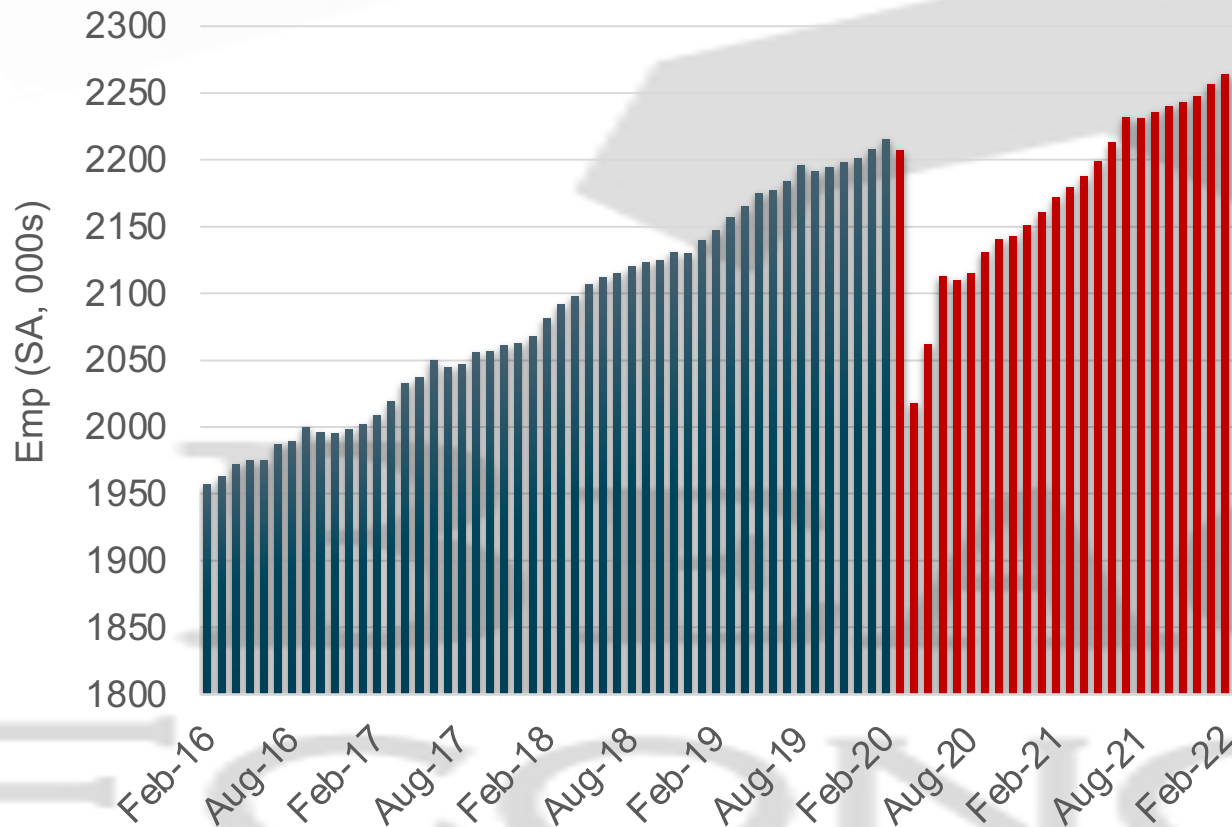
Source: United Van Lines, 2020 National Movers Study.

- Top 10 States for Inbound Migration
- Top 10 States for Outbound Migration

Employment Situation - Phoenix



Total Nonfarm Employment
Phoenix MSA

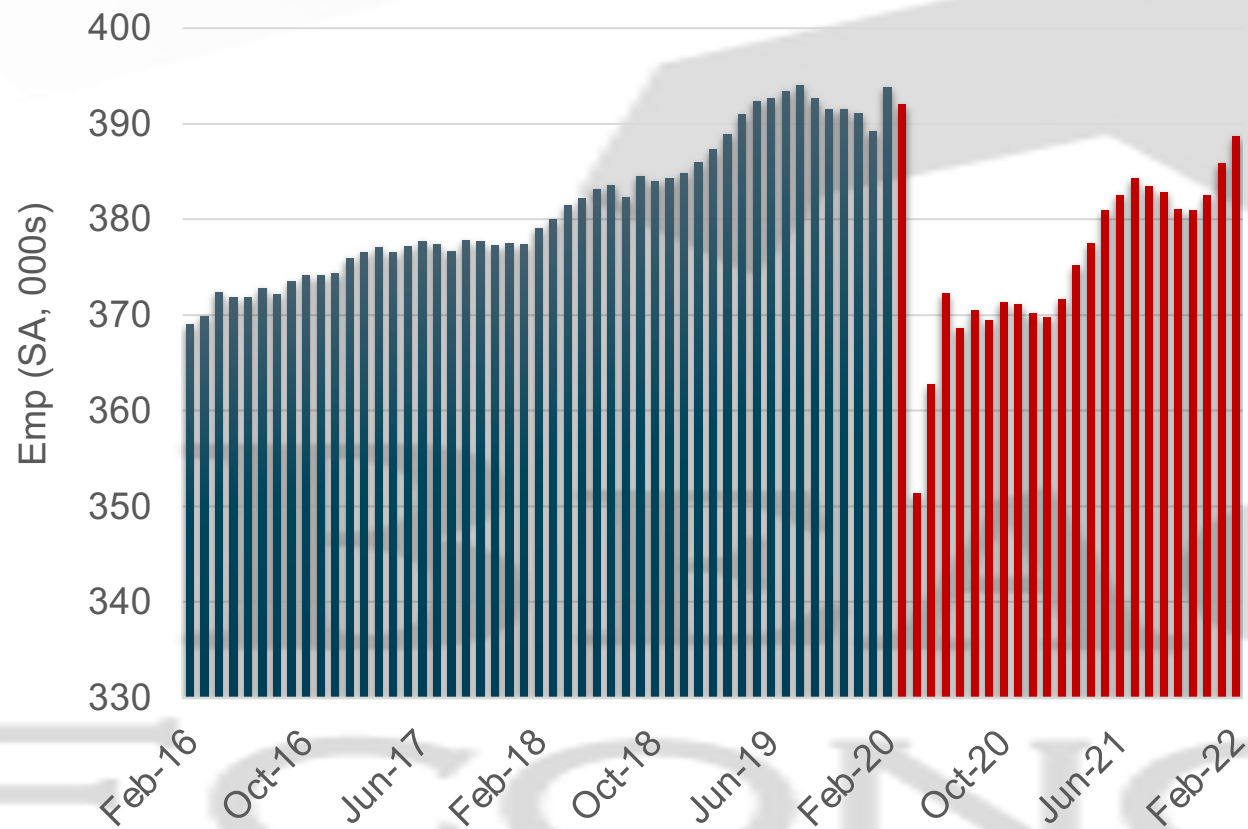


Industry	Feb. 2022 Emp (000s)	2-Yr.% Growth	
		Phoenix	Arizona
Total Nonfarm	2269.3	2.6	1.3
Logistics	108.9	23.1	25.2
Prof, Sci and Tech.	145.5	11.0	9.3
Retail Trade	254.3	7.4	7.1
Financial Activities	215.1	4.9	4.7
Management	32.6	4.7	6.5
Manufacturing	141.2	4.2	2.9
Wholesale Trade	86.0	3.1	3.2
Construction	140.7	2.3	3.2
Education/Health	351.5	0.8	-0.9
Information	40.6	0.5	-4.0
Utilities	8.1	-1.1	-3.4
Government	242.9	-1.5	-4.8
Hospitality	226.1	-4.4	-4.3
Admin Support	198.0	-19.7	-5.5

Employment Situation - Tucson

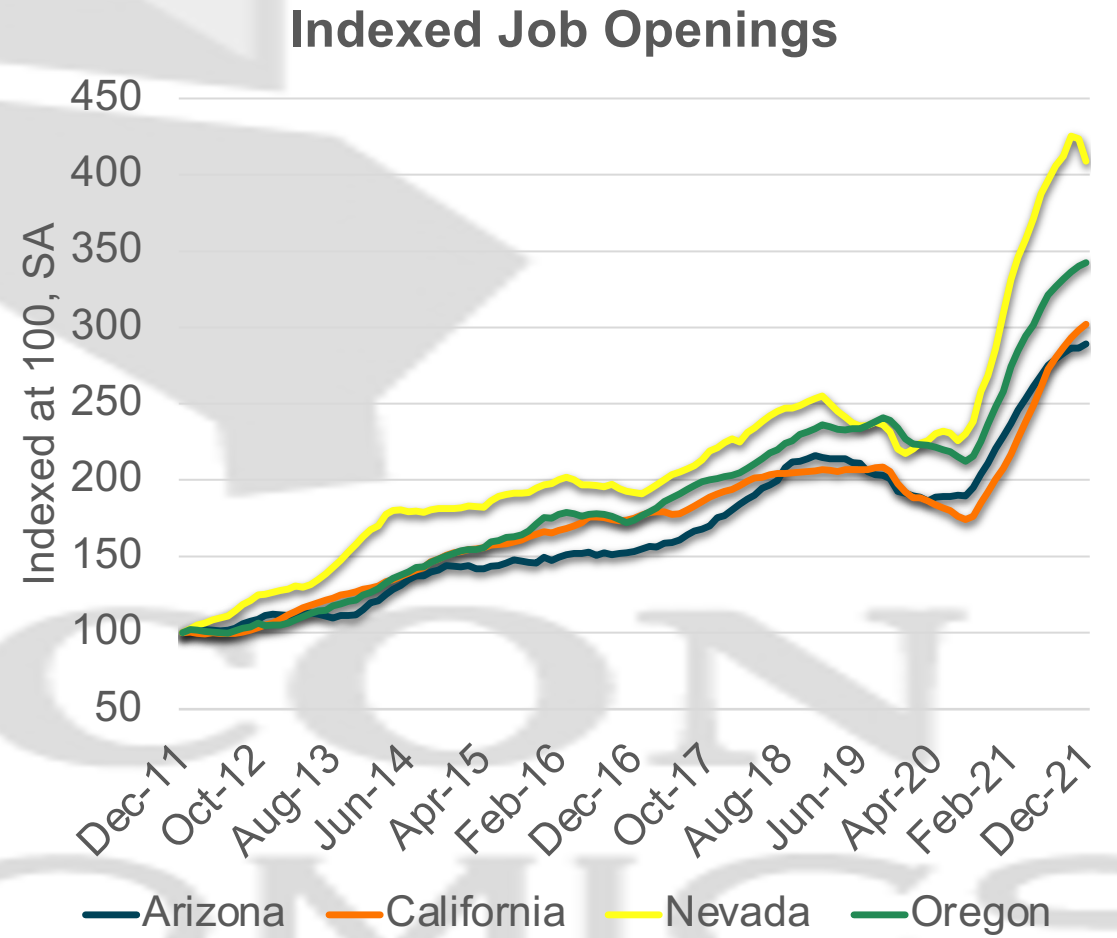
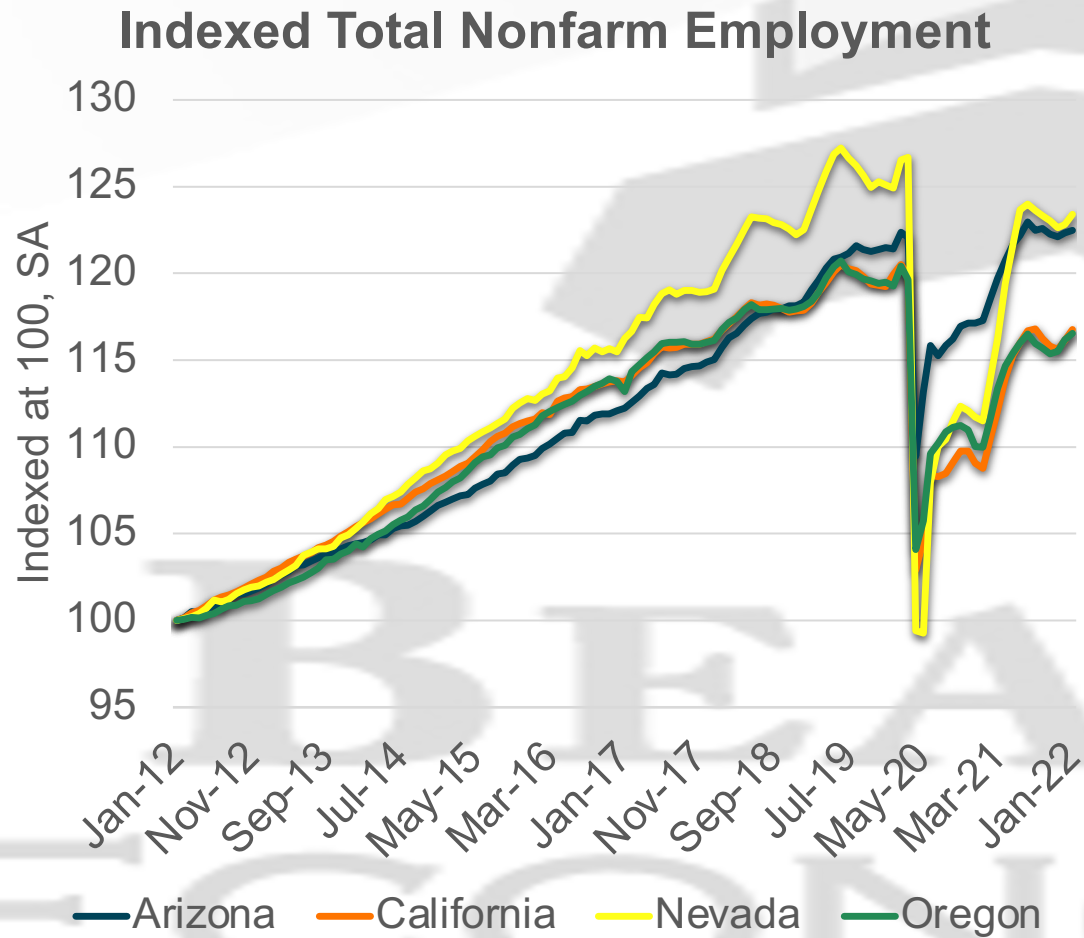


**Total Nonfarm Employment
Tucson MSA**



Industry	Feb. 2022 Emp (000s)	2-Yr.% Growth	
		Tucson	Arizona
Total Nonfarm	388.7	-1.4	1.3
Financial Activities	18.9	6.4	4.7
Wholesale Trade	7.5	3.9	3.2
Retail Trade	42.6	3.3	7.1
Prof Sci and Tech.	19.1	2.3	9.3
NR/Mining	1.8	0.5	-3.9
Manufacturing	27.9	0.4	2.9
Education/Health	69.4	-1.1	-0.9
Construction	18.2	-1.1	3.2
Hospitality	43.0	-3.8	-4.3
Government	74.9	-5.5	-4.8
Information	5.0	-14.6	-4.0
Admin Support	23.0	-23.8	-5.5

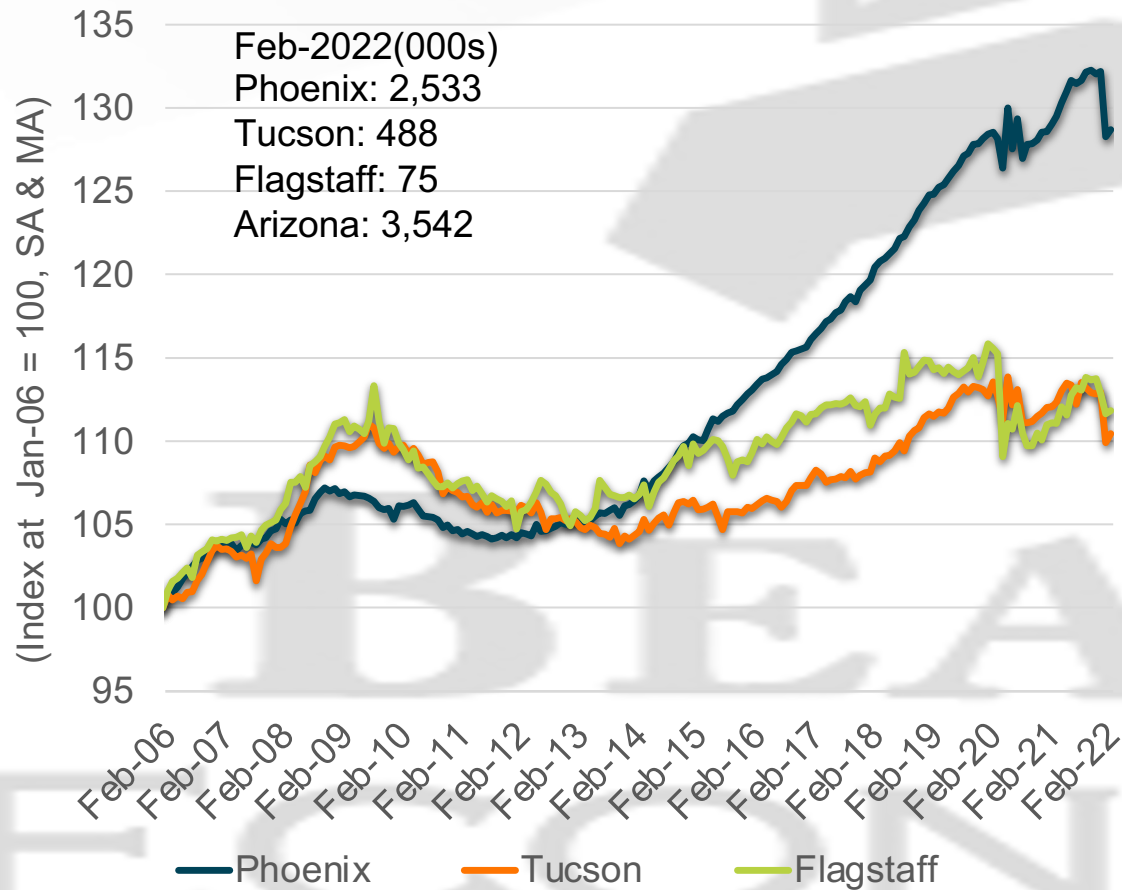
Regional Labor Markets



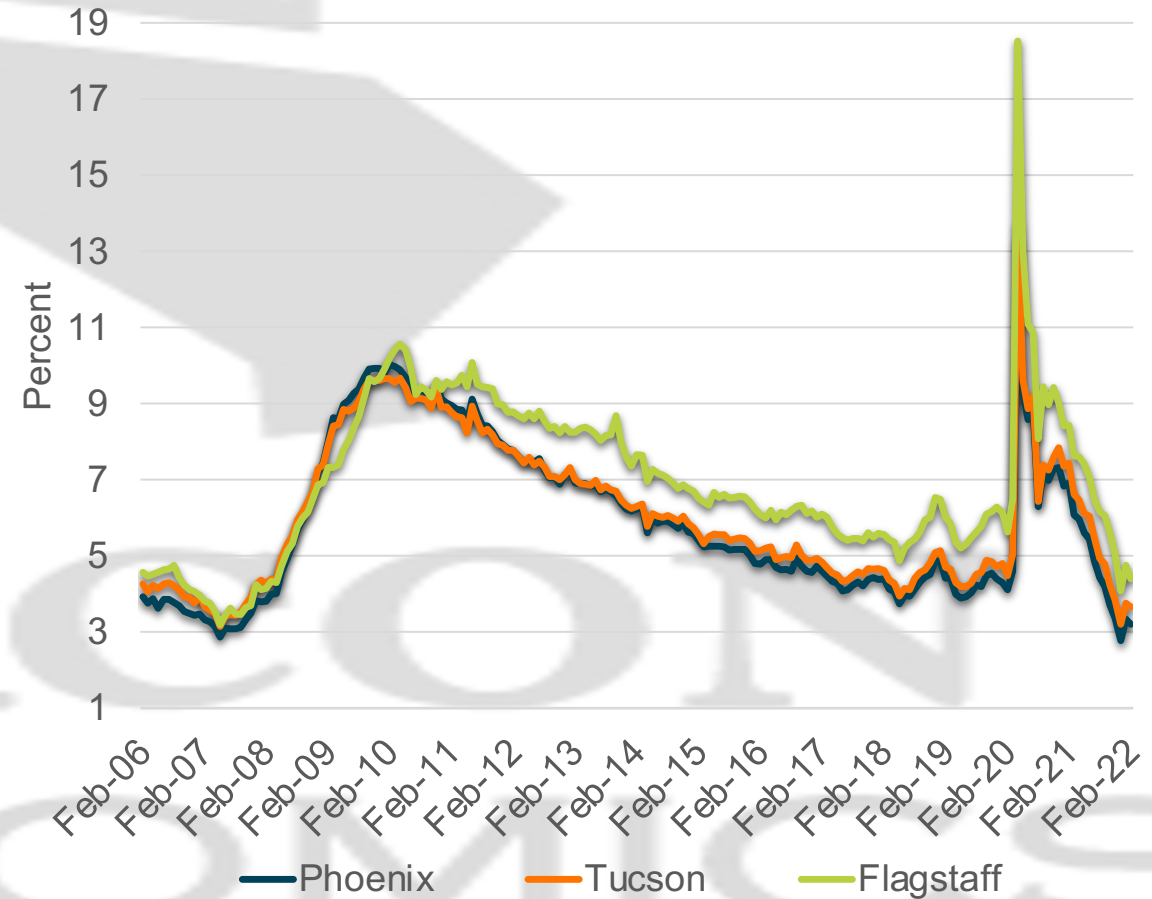
Labor Market



Labor Force



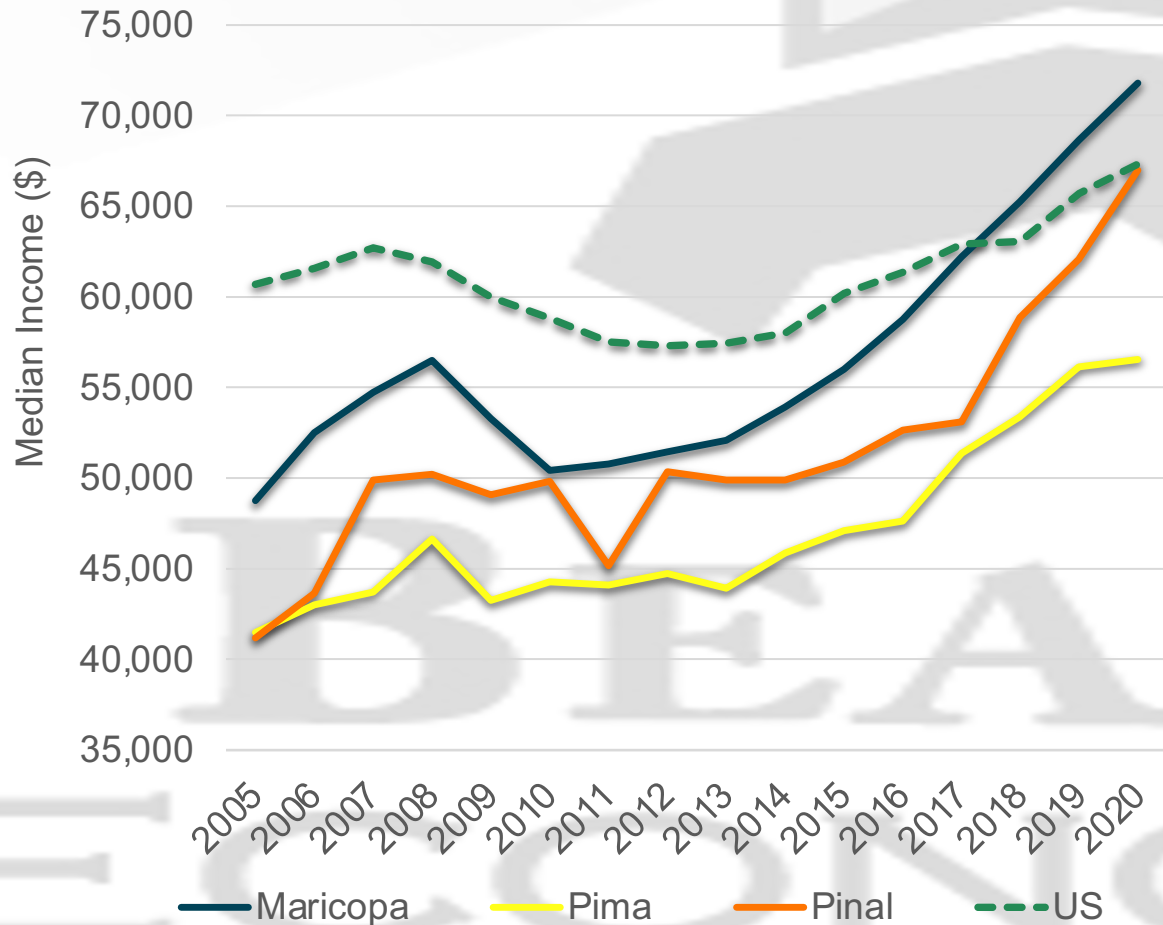
Unemployment Rate



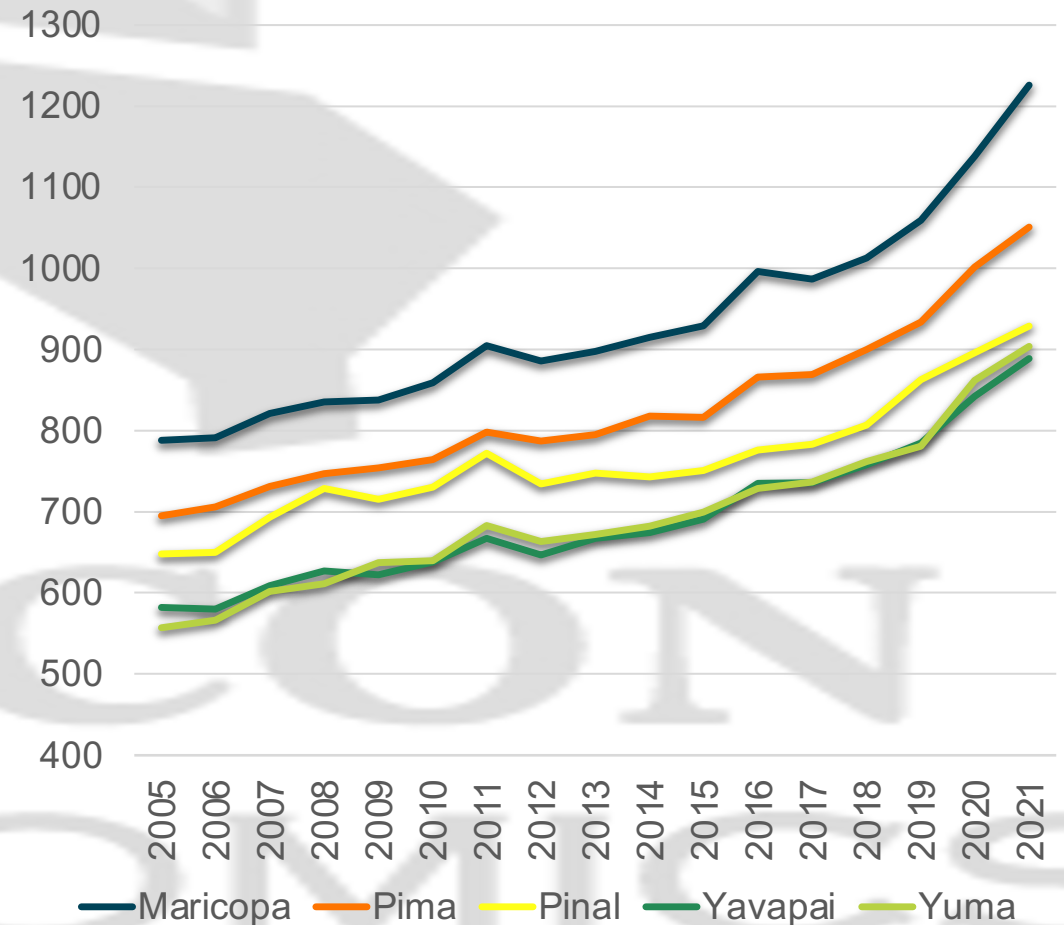
Arizona Incomes



Median HH Income



Average Weekly Earnings



HH Incomes by AZ Region



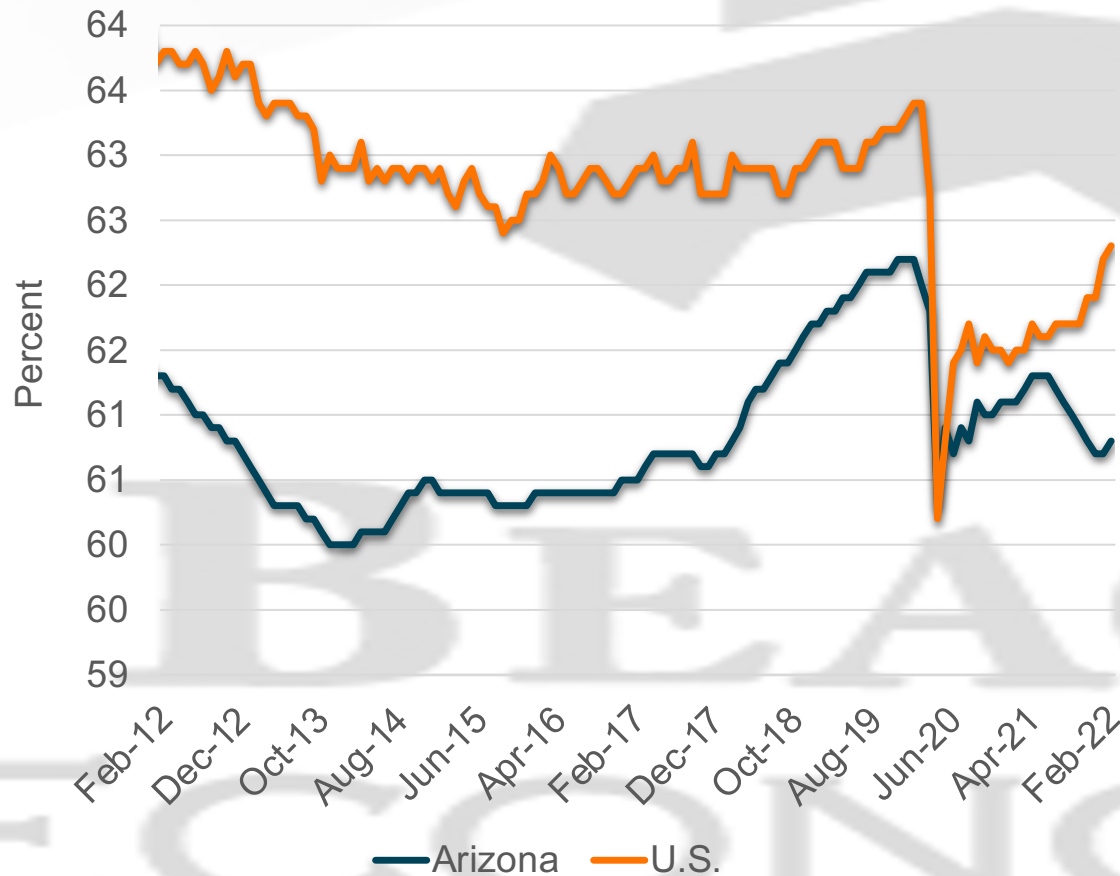
HH Income by Income Group(2012– 2019)

	Phoenix		Tucson		Flagstaff	
	2,574,568		528,079		81,793	
<35K	546,710	(62,976)	117,922	(12,389)	13,743	(1,100)
35-75K	770,429	16,635	126,597	3,314	18,456	883
75-150K	180,598	73,561	32,486	15,486	4,610	511
150k+	262,743	59,892	38,488	6,632	4,948	812
Median	\$47,295	15.3%	\$41,975	12.1%	\$45,306	10.3%
Mean	\$63,461	14.9%	\$58,842	11.1%	\$57,004	8.1%

Employment Growth



Participation Rates



Location	Population Change (000s)	Net Migration (000s)	
		International	Domestic
U.S.	714.0	244.2	--
Arizona	98.4	9.2	93.0
Colorado	27.7	3.1	13.0
Nevada	29.8	4.5	25.3
California	-261.9	-27.0	-203.4

Migration, State Comparisons



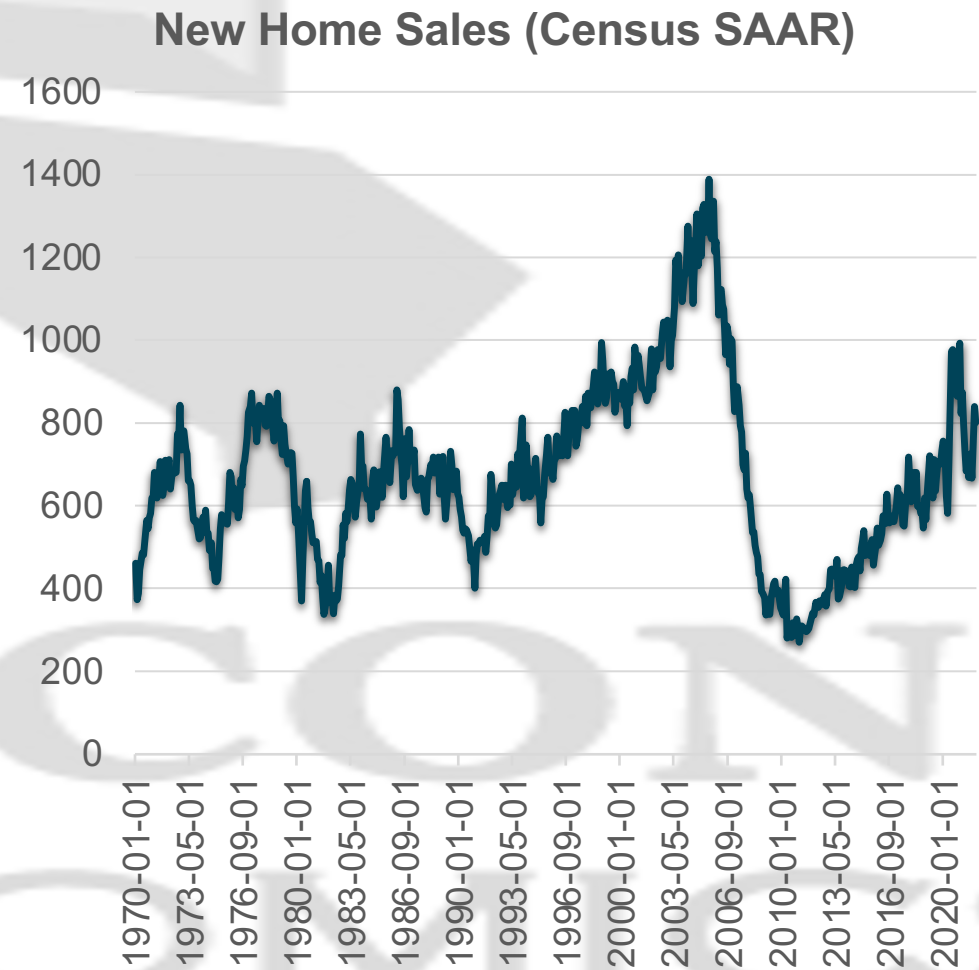
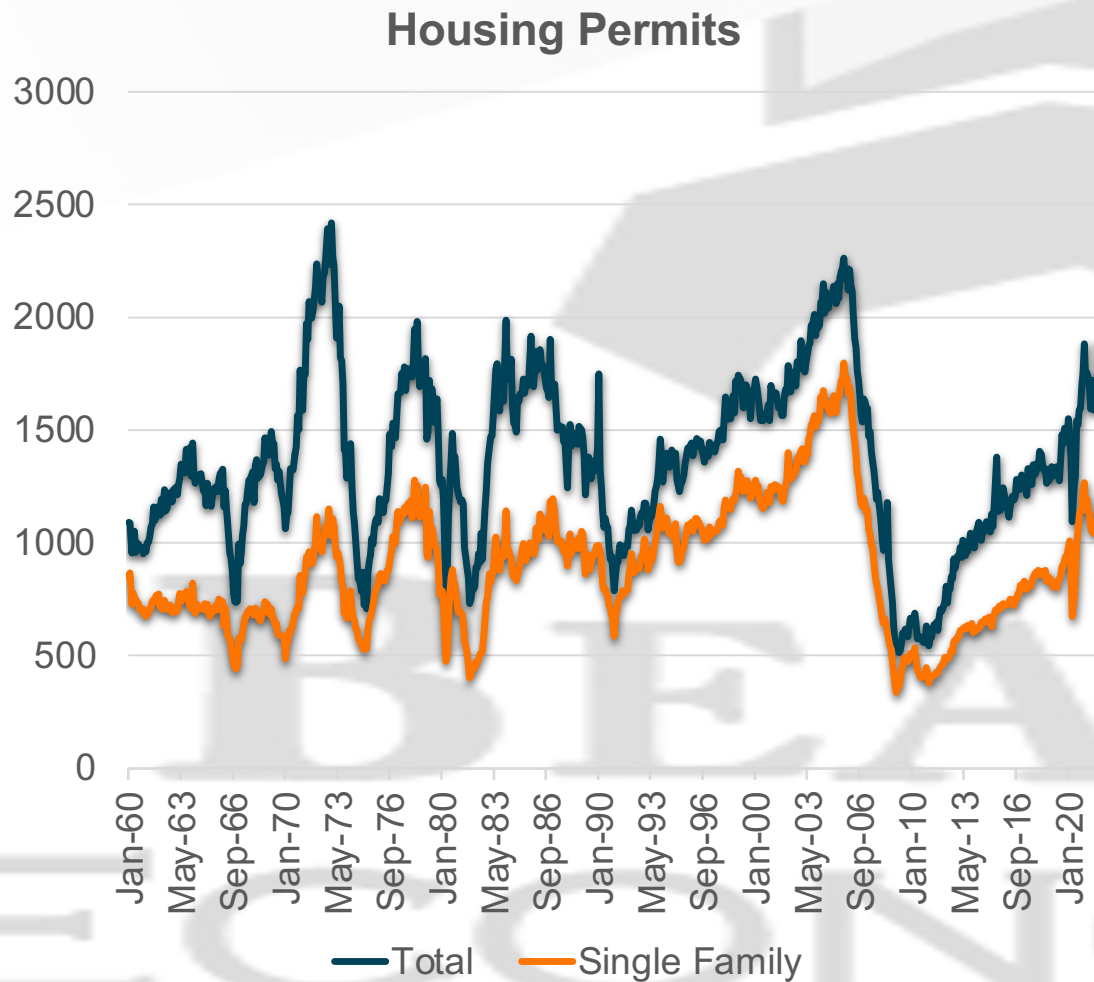
**Net Migration by Educational Attainment,
Population over 25 (Total from 2020)**

Education	Arizona		Nevada	
	Count	%	Count	%
	150,874		65,920	
Less Than HS	32,145	21.3%	10,421	15.8%
HS Grad	31,432	20.8%	11,839	18.0%
Some College	36,005	23.9%	18,544	28.1%
BA	35,235	23.4%	13,478	20.4%
Grad	16,057	10.6%	11,638	17.7%

Net Migration by Age (Total from 2020)

Age	Arizona		Nevada	
	Count	%	Count	%
	152,327		65,846	
Under 18	26,980	17.7%	6,773	10.3%
18 to 25	30,115	19.8%	343	0.5%
26 to 40	30,259	19.9%	20,290	30.8%
41 to 50	12,829	8.4%	14,443	21.9%
51 to 65	20,722	13.6%	12,853	19.5%
Over 65	31,422	20.6%	11,144	16.9%

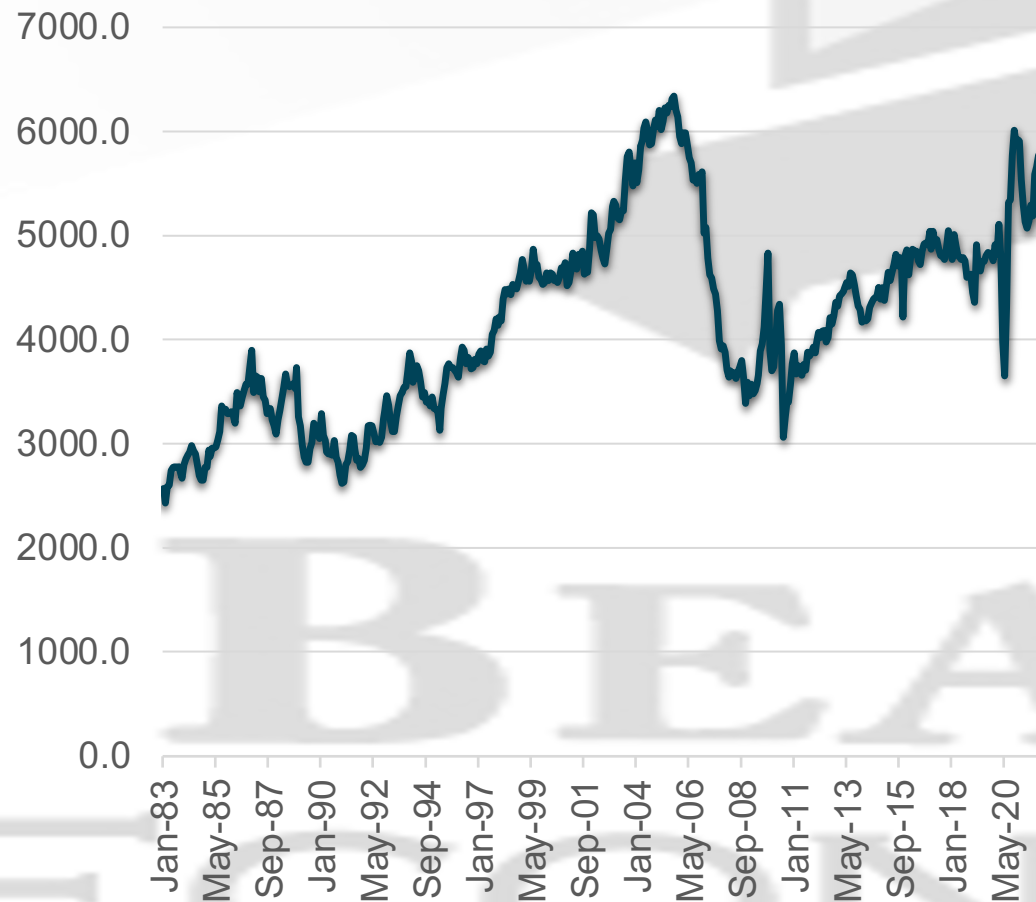
Housing – U.S.



Housing – U.S.



Existing Homes Sales (NAR SAAR)

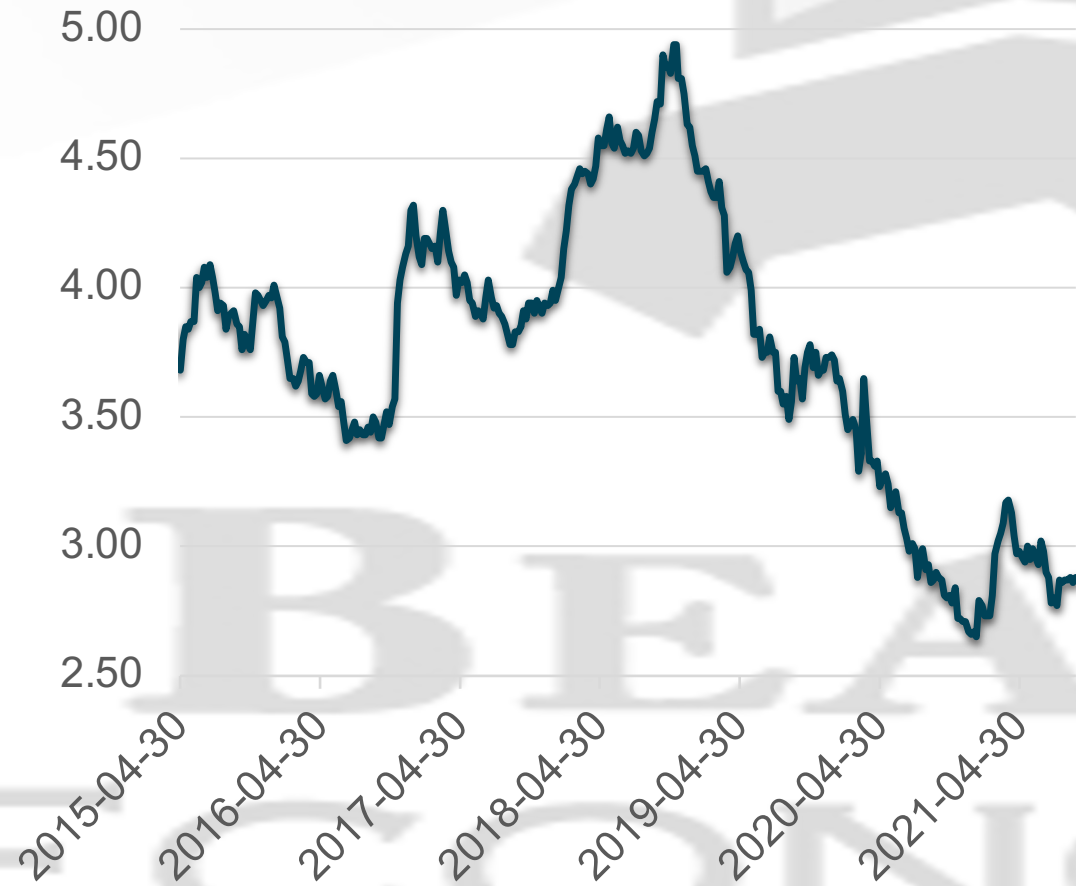


	Prev 15 Month	Last 15 Months	Acc
US	5.7%	24.2%	18.5%
Pho	10.8%	39.2%	28.4%
Tam	6.7%	33.1%	26.4%
Mia	4.4%	30.4%	26.0%
Dal	3.9%	29.6%	25.7%
Las	4.1%	29.6%	25.5%
SD	7.2%	31.7%	24.5%
Sea	8.2%	30.5%	22.2%
SF	3.2%	24.1%	20.8%
Atl	5.5%	25.3%	19.9%
Cha	7.4%	27.2%	19.8%
Den	5.1%	24.7%	19.6%
NY	2.4%	20.1%	17.7%
LA	5.7%	23.3%	17.6%
Por	6.1%	22.9%	16.8%
Bos	5.6%	21.2%	15.5%
Chi	1.7%	15.7%	14.0%
Det	5.3%	19.0%	13.7%
Cle	6.6%	18.6%	12.0%
DC	5.1%	16.6%	11.4%
Min	6.8%	15.6%	8.8%

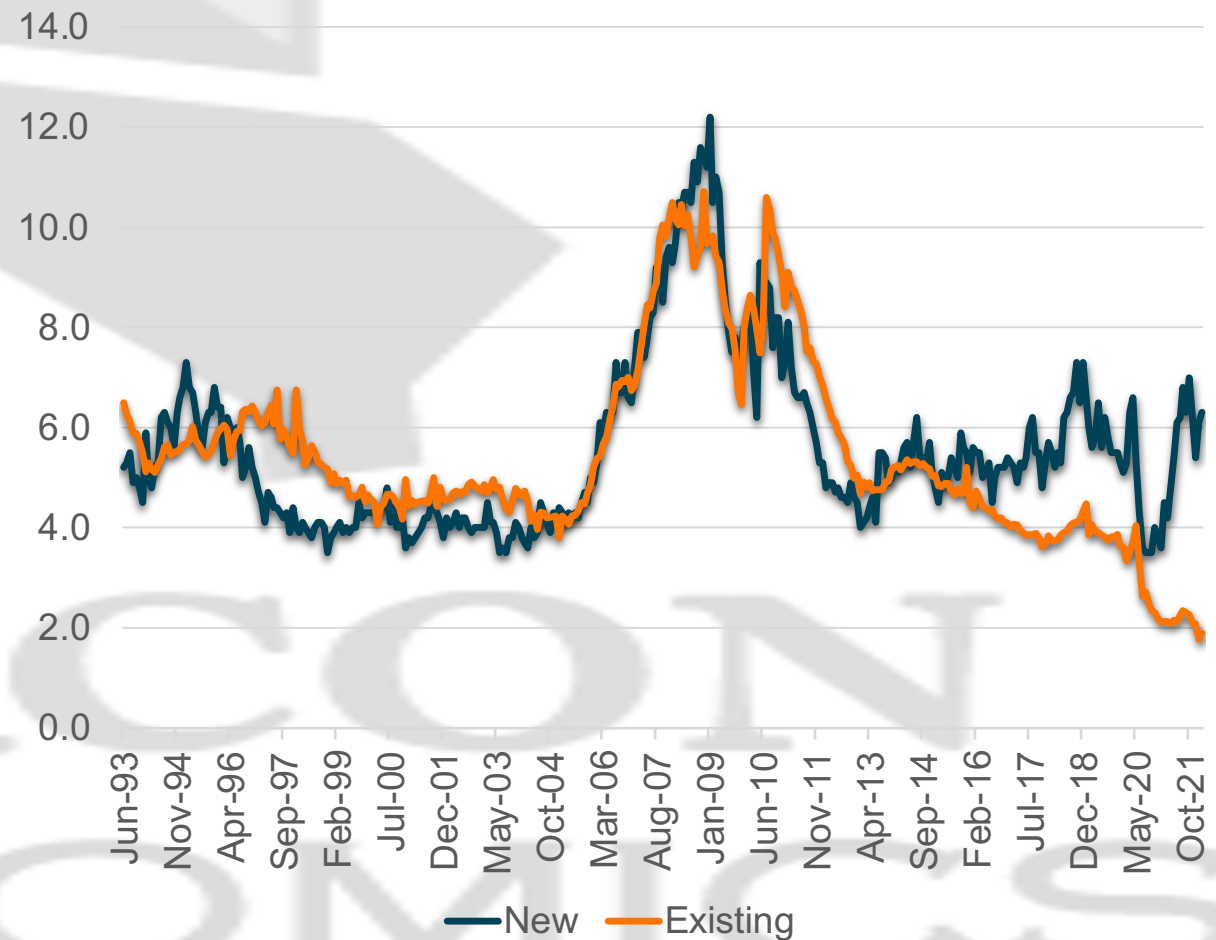
Drivers of the Boom



Mortgage Rates (30 Yr Fixed)



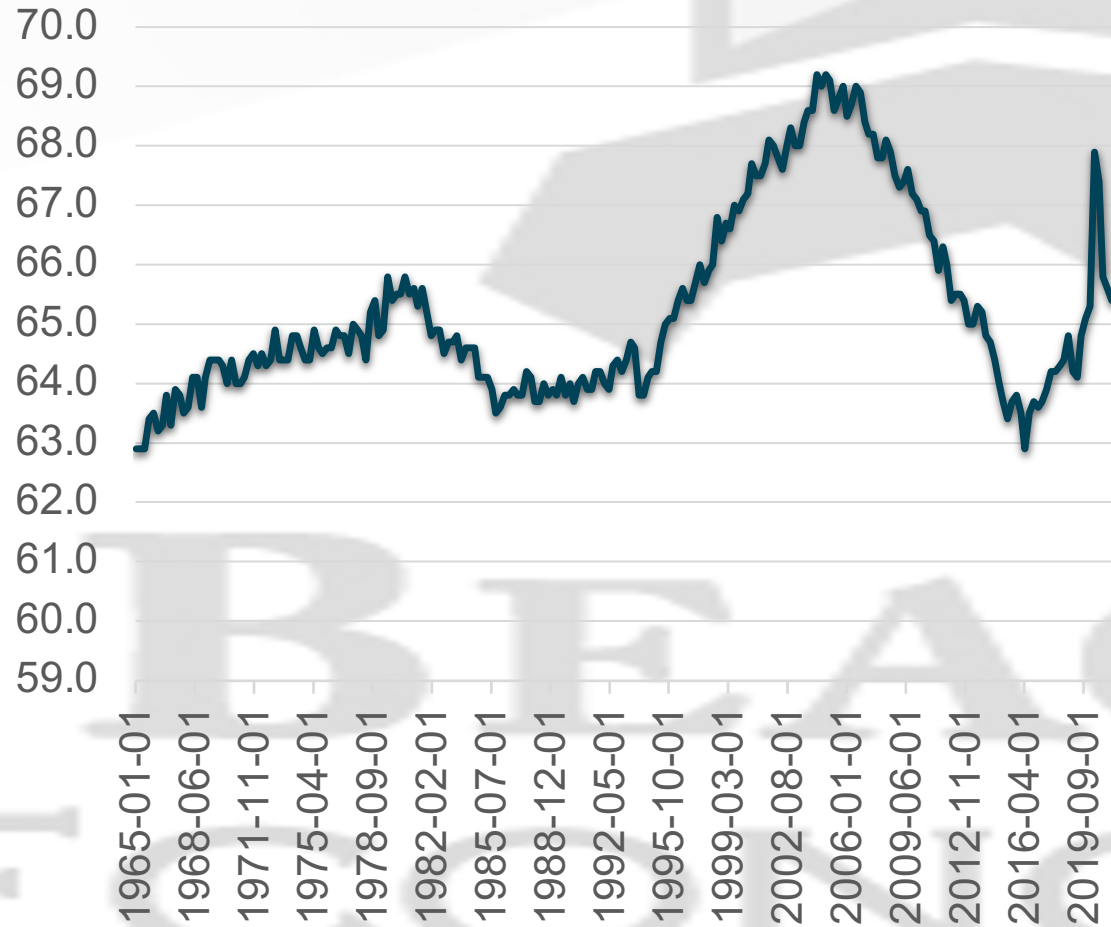
Months Supply of Homes for Sale



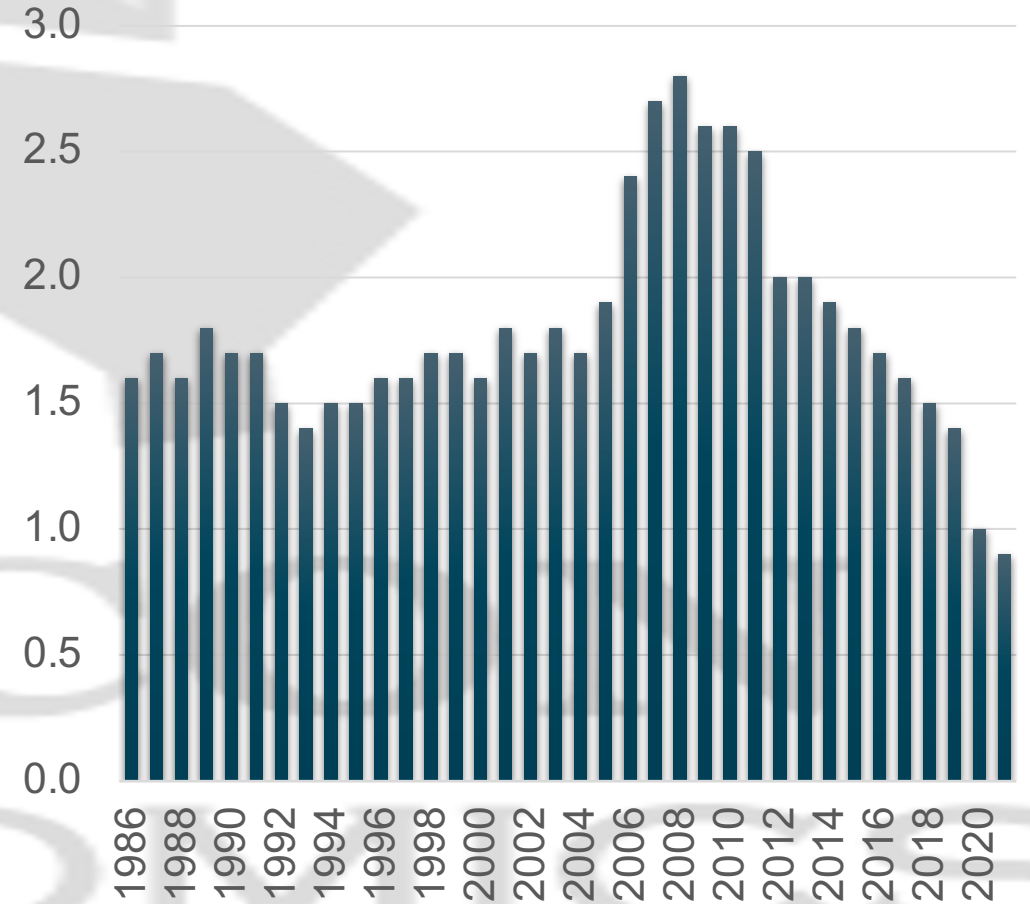
Market Dynamics



US Homeownership Rate



US Housing Vacancy Rate



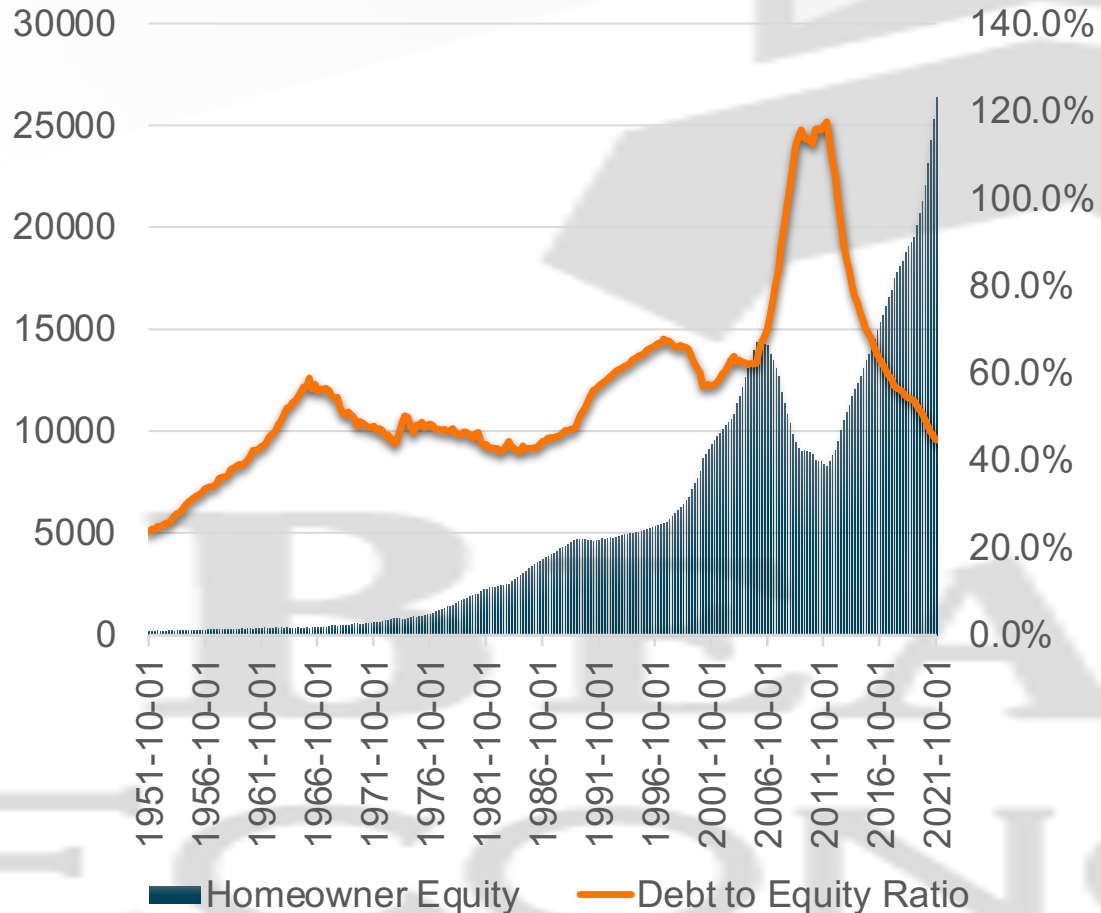
Bubble Alert? Not Yet...



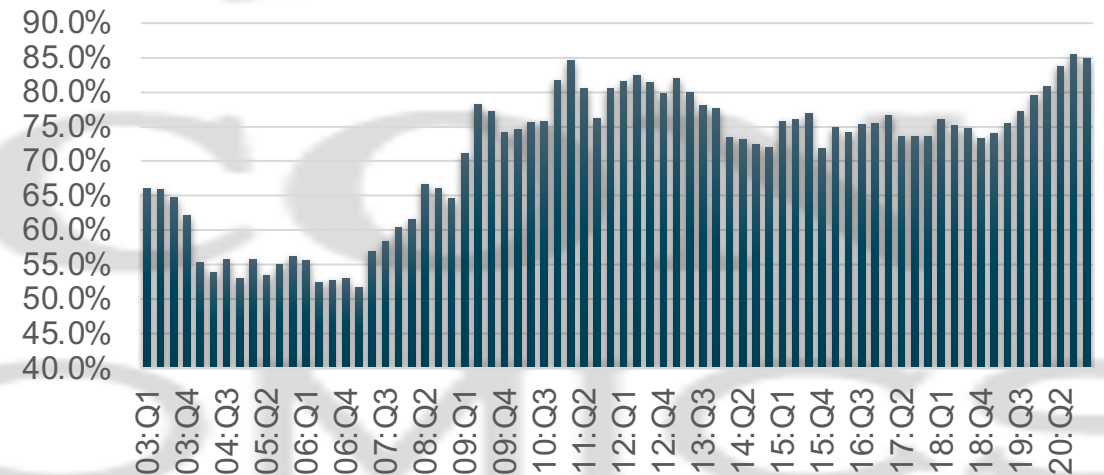
Share Owners Housing Cost Constrained

		2011	2019
		35.0 percent or more	
US	49,049,732	28.1%	19.9%
Arizona	1,023,943	30.5%	19.3%
California	5,064,795	38.6%	28.5%
Colorado	948,904	26.1%	20.7%
Nevada	403,792	33.4%	21.0%
Utah	446,690	24.9%	16.9%

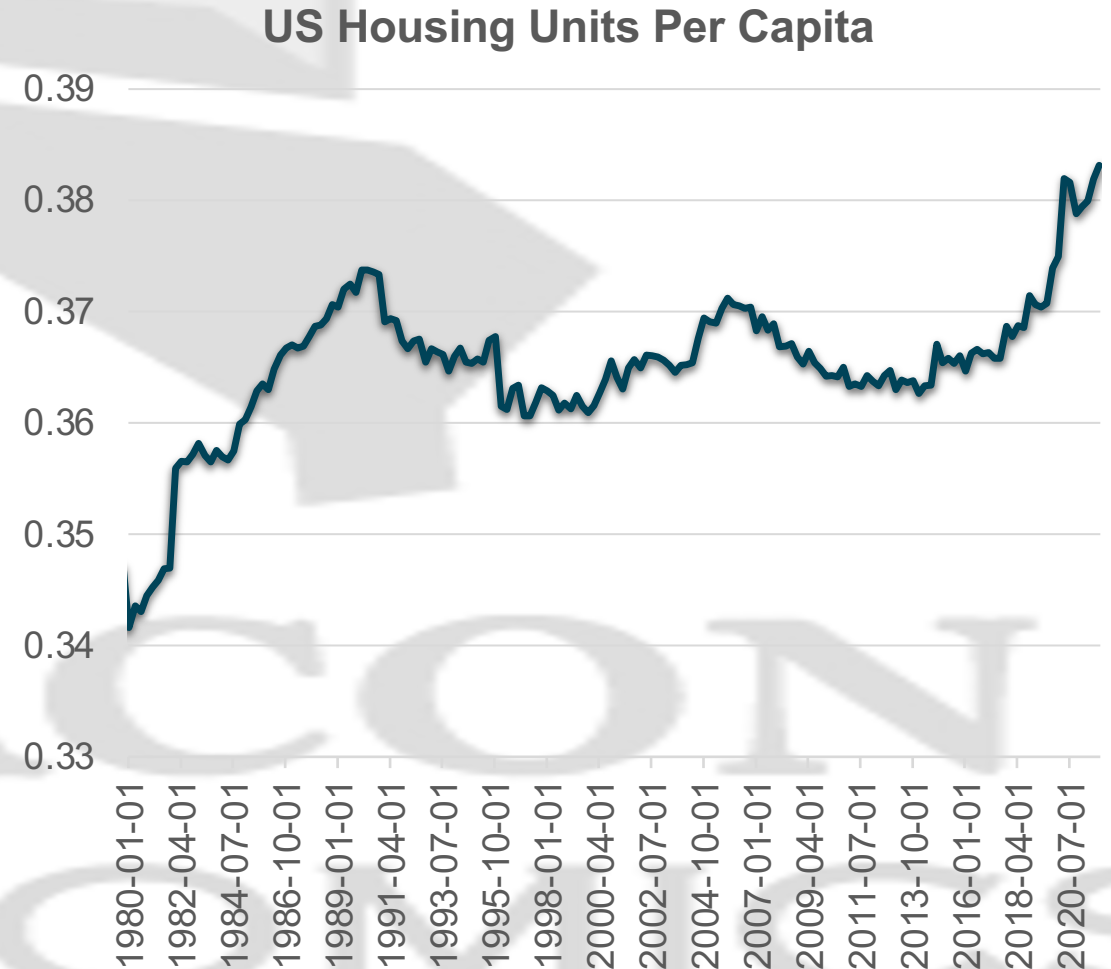
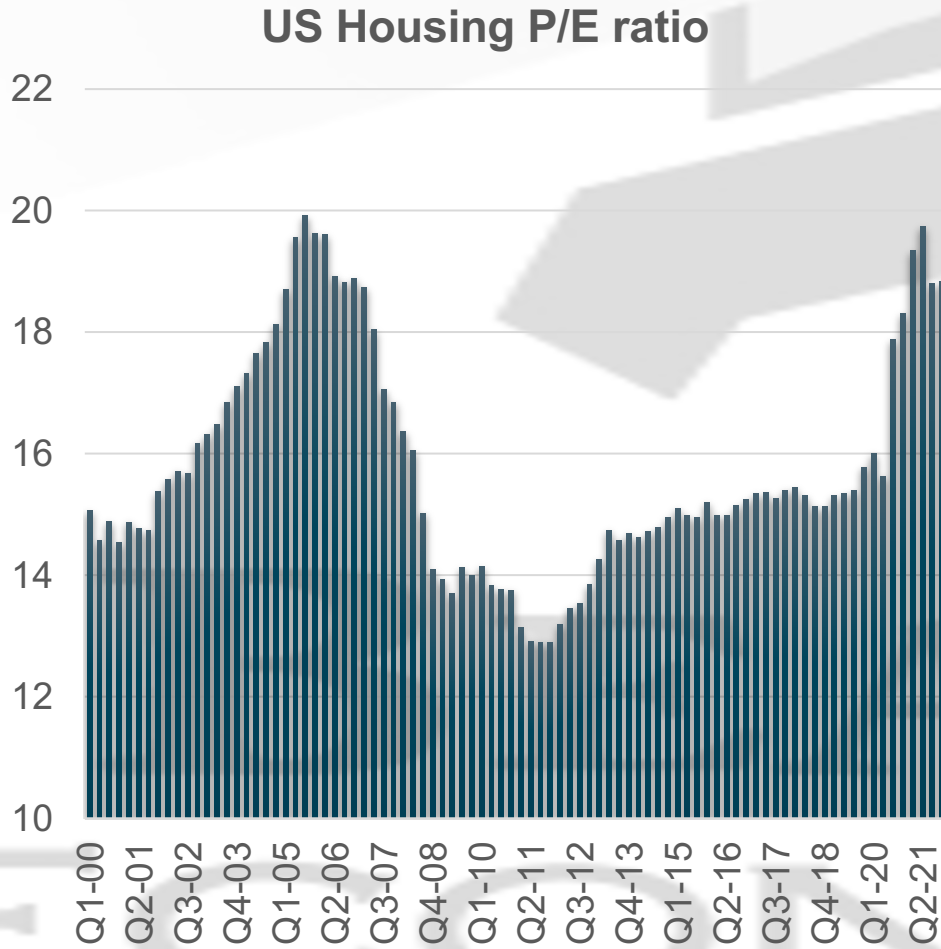
Housing Fundamentals



Share Mortgage Originations > 720 Fico



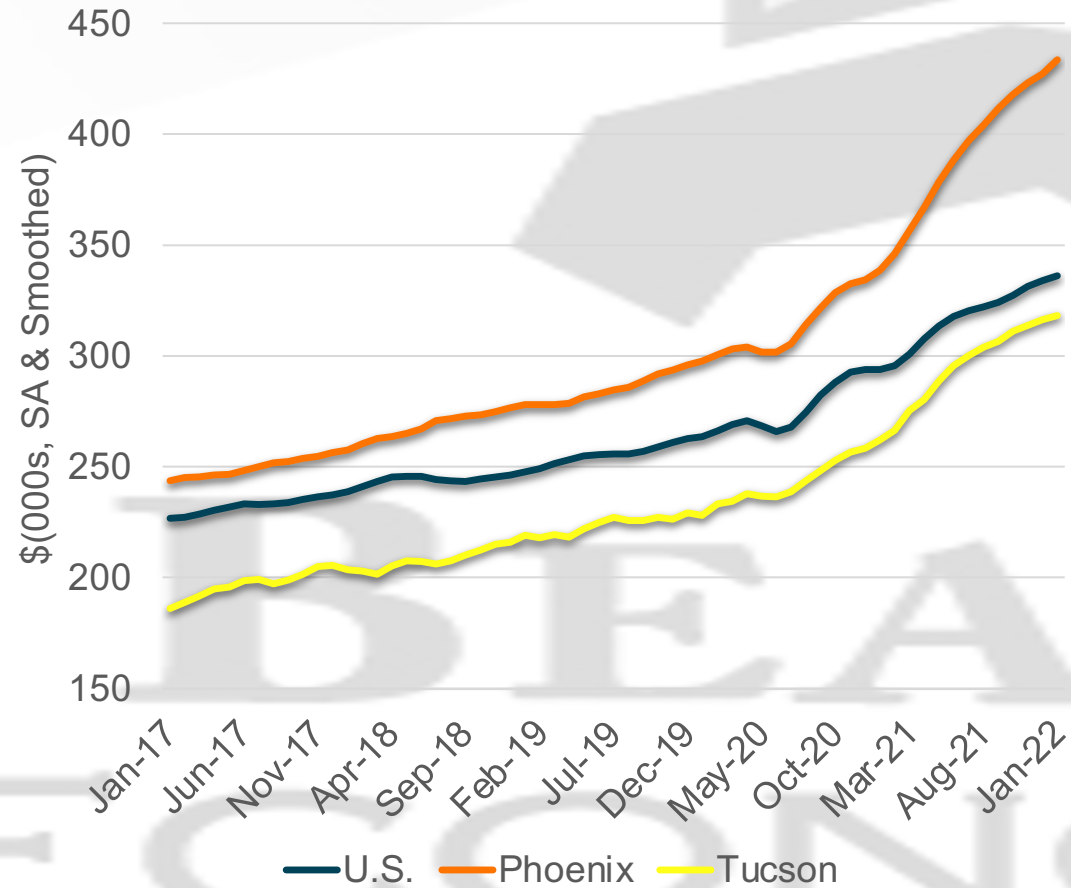
Any Signs of Froth?



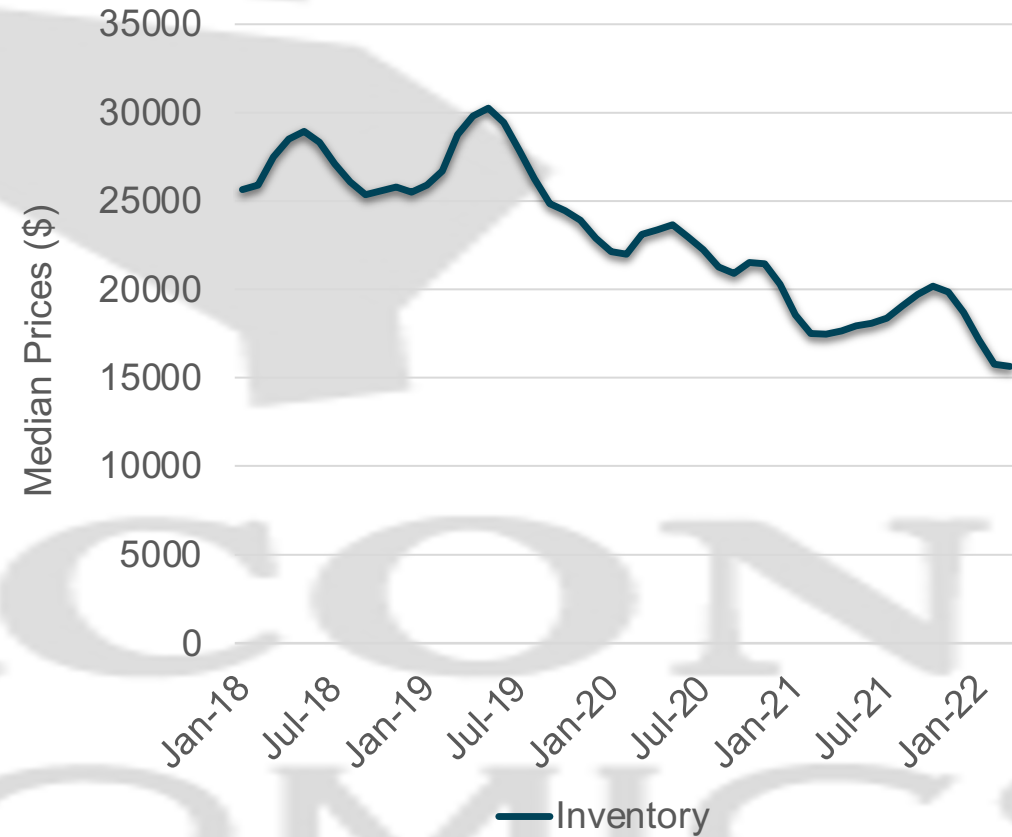
Residential Real Estate



Median Home Prices



Real Estate Phoenix MSA



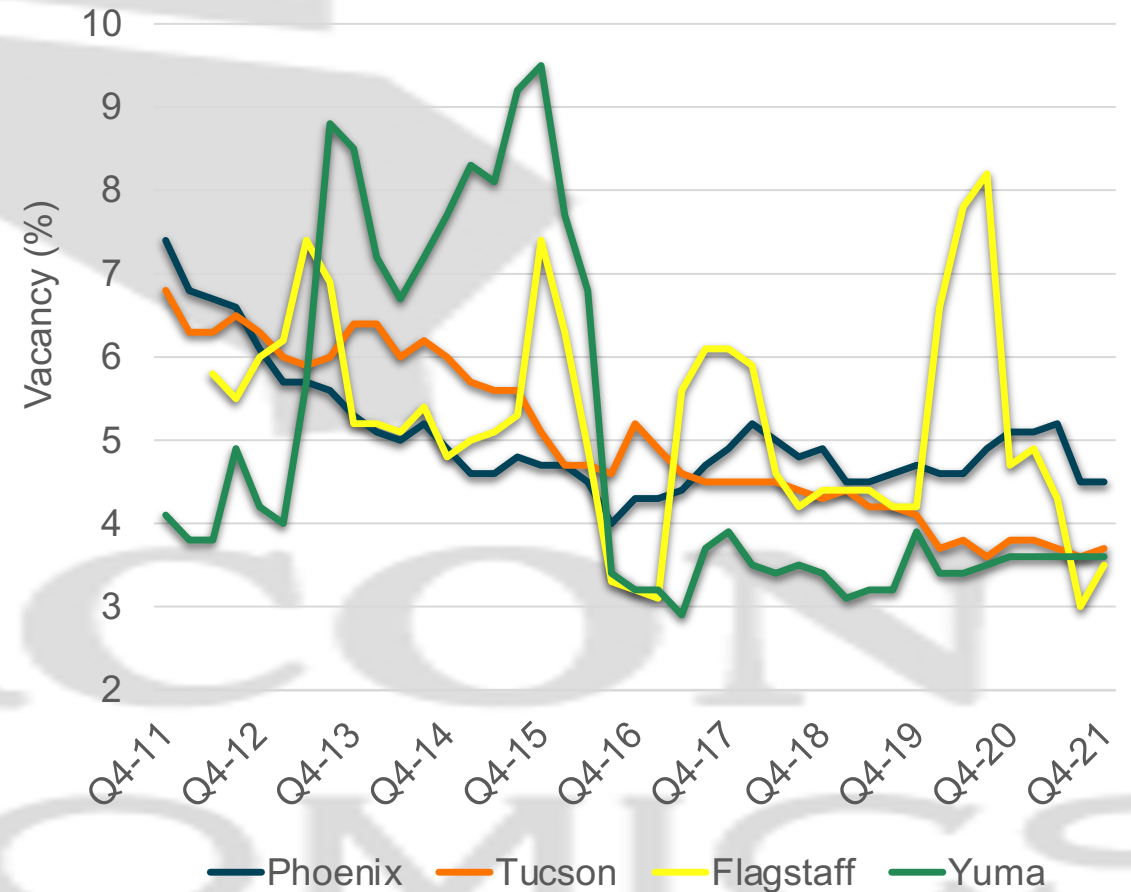
Apartment Market – Arizona MSAs

Figure 1: Households behind on rent have decreased since April 2020

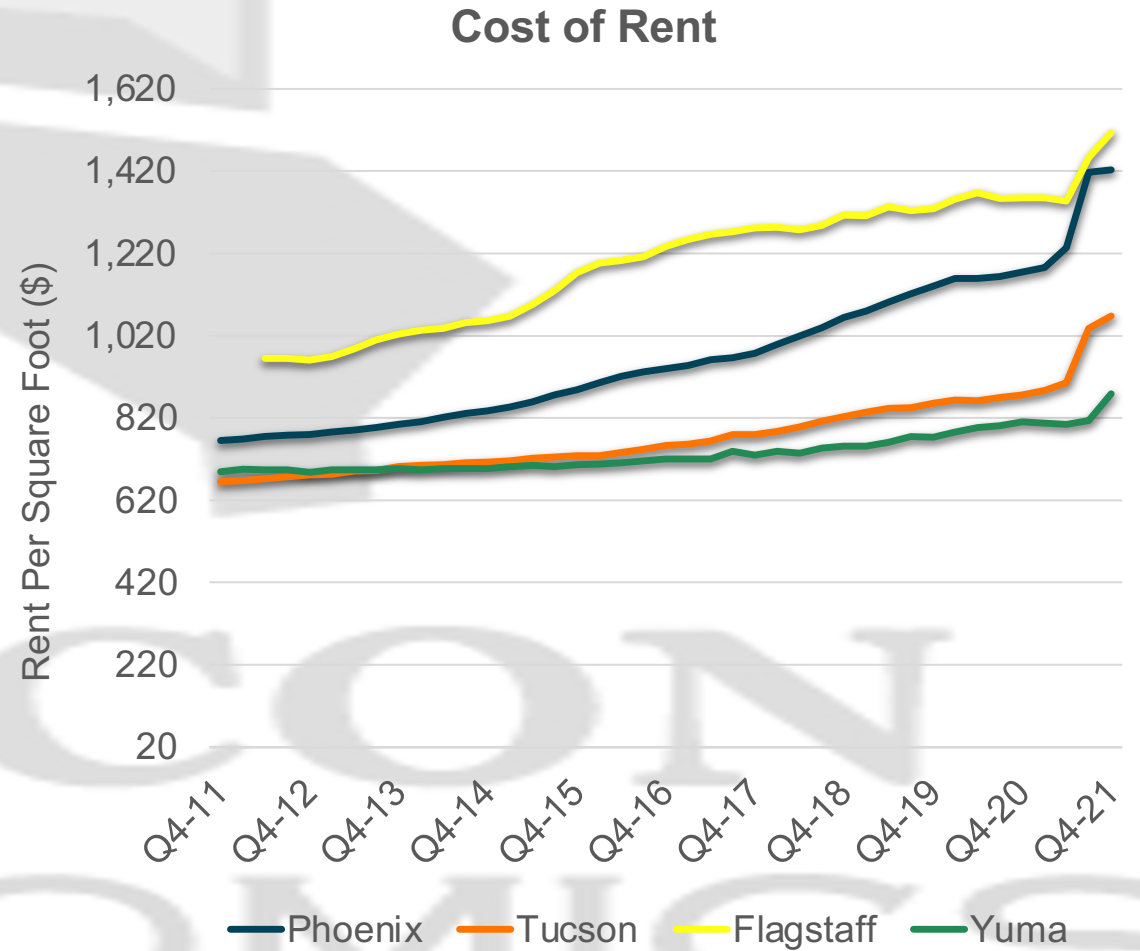
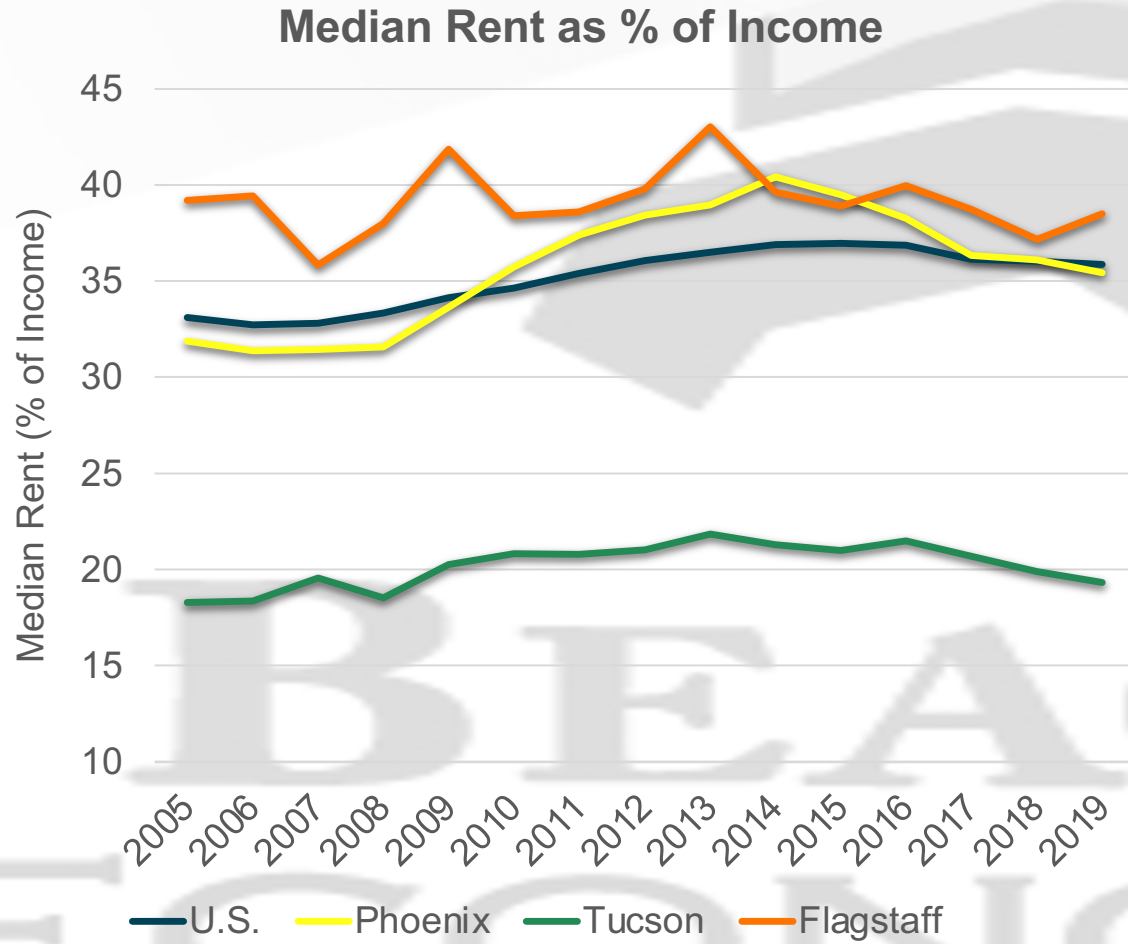


Source: U.S. Census Bureau, ACS, BLS; Analysis by Beacon Economics

Vacancy Rate



Housing Affordability Trends



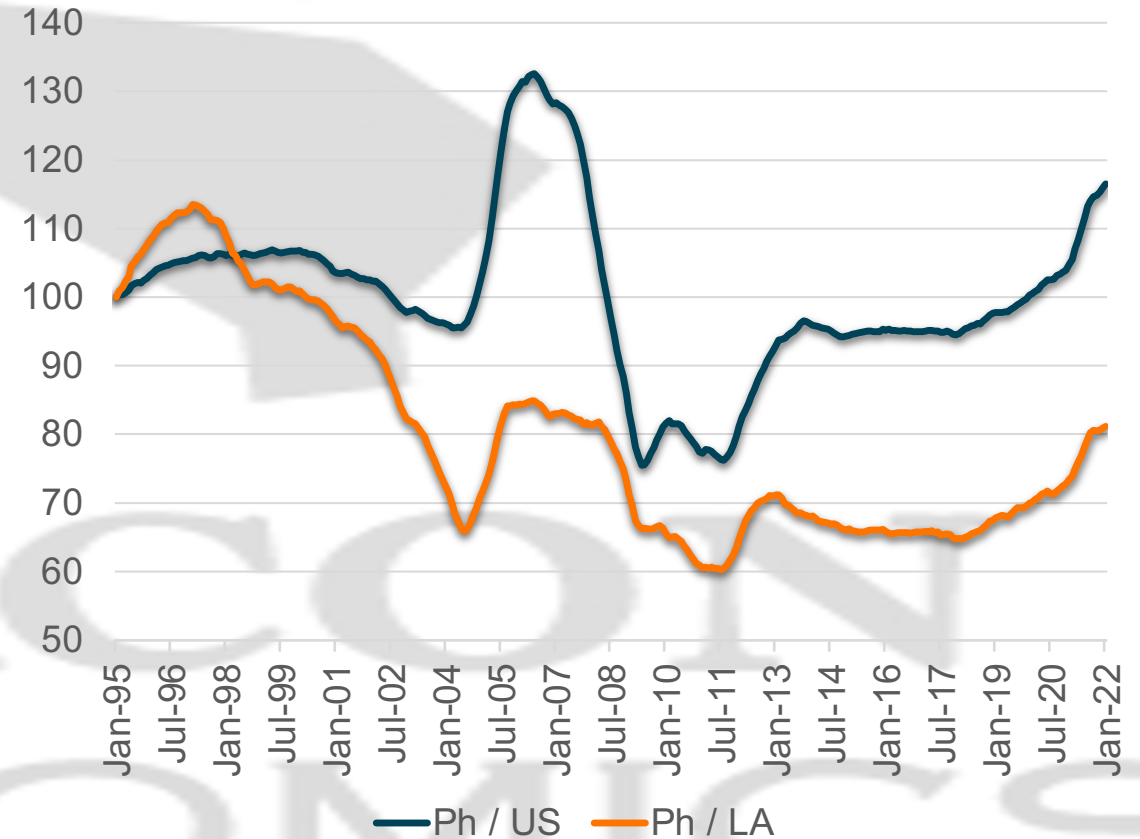
Residential Real Estate



Share Households > 35% Housing Cost to Income

Owners	US	Az	Phoenix	Tucson
35%+ 19	19.9%	19.3%	18.4%	18.7%
Sh 14-19	-3.5%	-3.2%	-2.9%	-4.6%
% Ch 14-19	-12.3%	-2.6%	1.1%	-13.6%
Renters	US	Az	Phoenix	Tucson
35%+ 19	39.4%	36.6%	37.1%	38.1%
Sh 14-19	-3.2%	-4.2%	-3.2%	-6.3%
% Ch 14-19	-5.1%	-10.5%	-7.9%	-18.2%

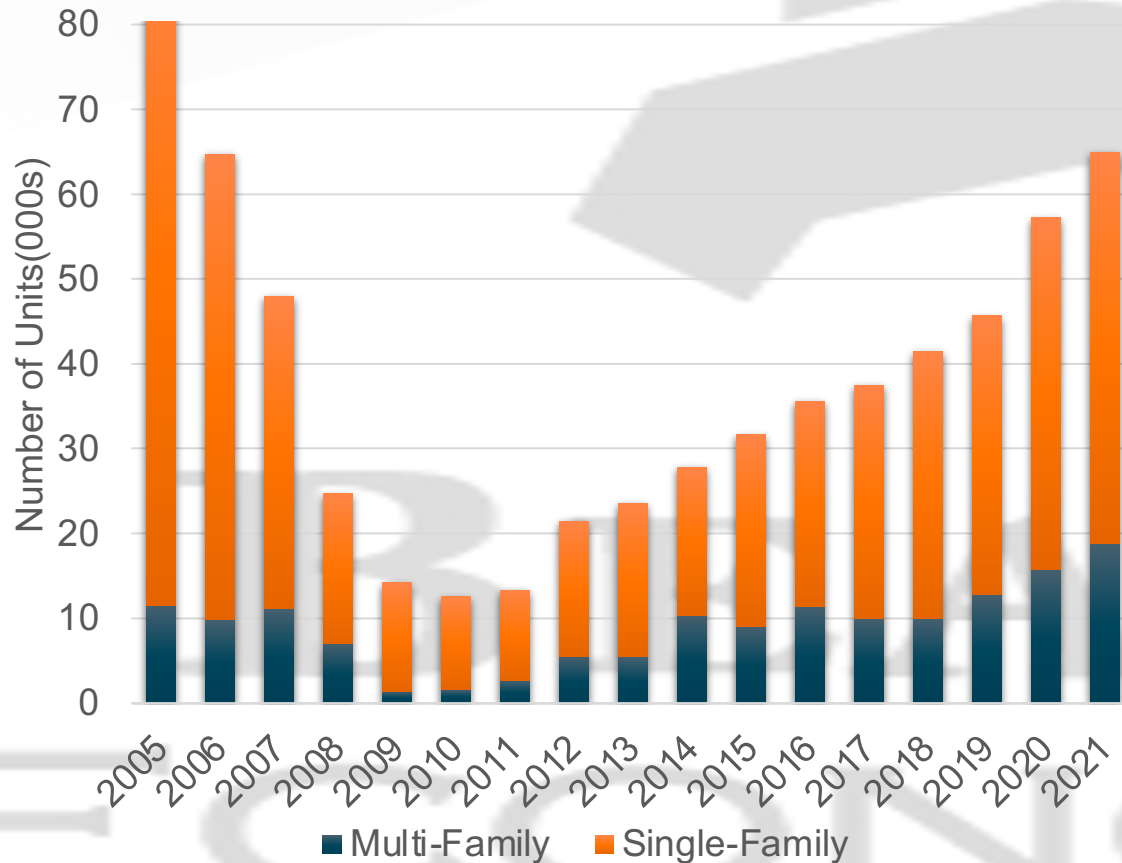
Relative Home Price Trends (1995 = 100)



Residential Construction Activity



Residential Permits(AZ)



Metro	Single-family		Multifamily	
	2021	5-Yr Change	2021	5-Yr Change
Arizona	46,129	21,885	18,795	7,419
Phoenix	34,507	16,127	16,627	6,777
Tucson	5,116	2,898	959	538

Nonresidential Rents & Vacancy



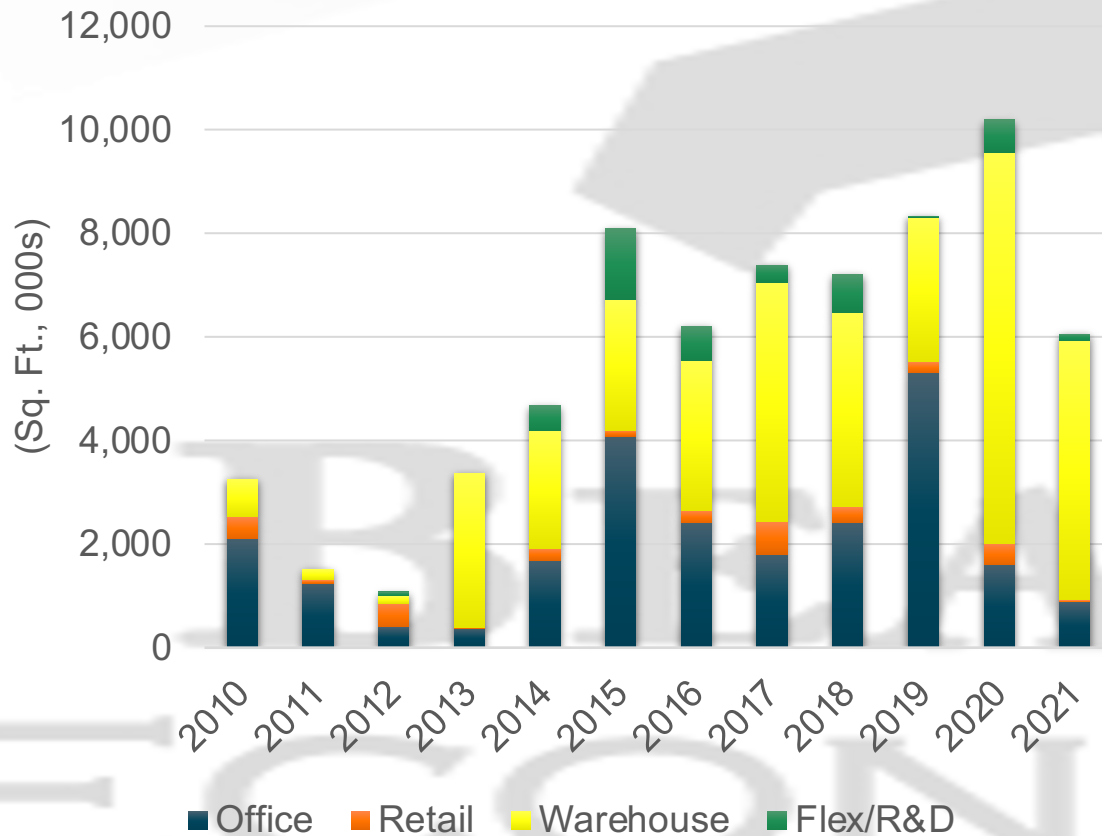
Property	Phoenix		Reno		Tucson		Las Vegas	
	Rent (\$) Q4-21	2-Yr % Growth	Rent (\$) Q4-21	2-Yr % Growth	Rent (\$) Q4-21	2-Yr % Growth	Rent (\$) Q4-21	2-Yr % Growth
Flex	11.8	5.4	--	--	--	--	--	--
Office	27.6	2.5	21.0	-0.7	22.9	2.4	25.6	0.5
Retail	20.7	-1.3	20.3	-1.1	18.2	-0.6	22.7	-0.4
Warehouse	6.6	8.1	4.9	6.1	5.9	5.9	7.5	8.1

Property	Phoenix		Reno		Tucson		Las Vegas	
	Vacancy (%) Q4-21	2-Yr Change	Vacancy (%) Q4-21	2-Yr Change	Vacancy (%) Q4-21	2-Yr Change	Vacancy (%) Q4-21	2-Yr Change
Flex	8.8	-6.3	--	--	--	--	--	--
Office	21.2	-0.9	21.3	-0.3	22.5	1.0	22.6	-0.5
Retail	9.6	0.0	13.9	0.0	9.6	-0.4	12.7	-0.3
Warehouse	8.5	-5.5	7.6	-3.6	10.3	-5.4	3.6	-3.2

Nonresidential Construction- Phoenix



Nonresidential Completions
Phoenix MSA

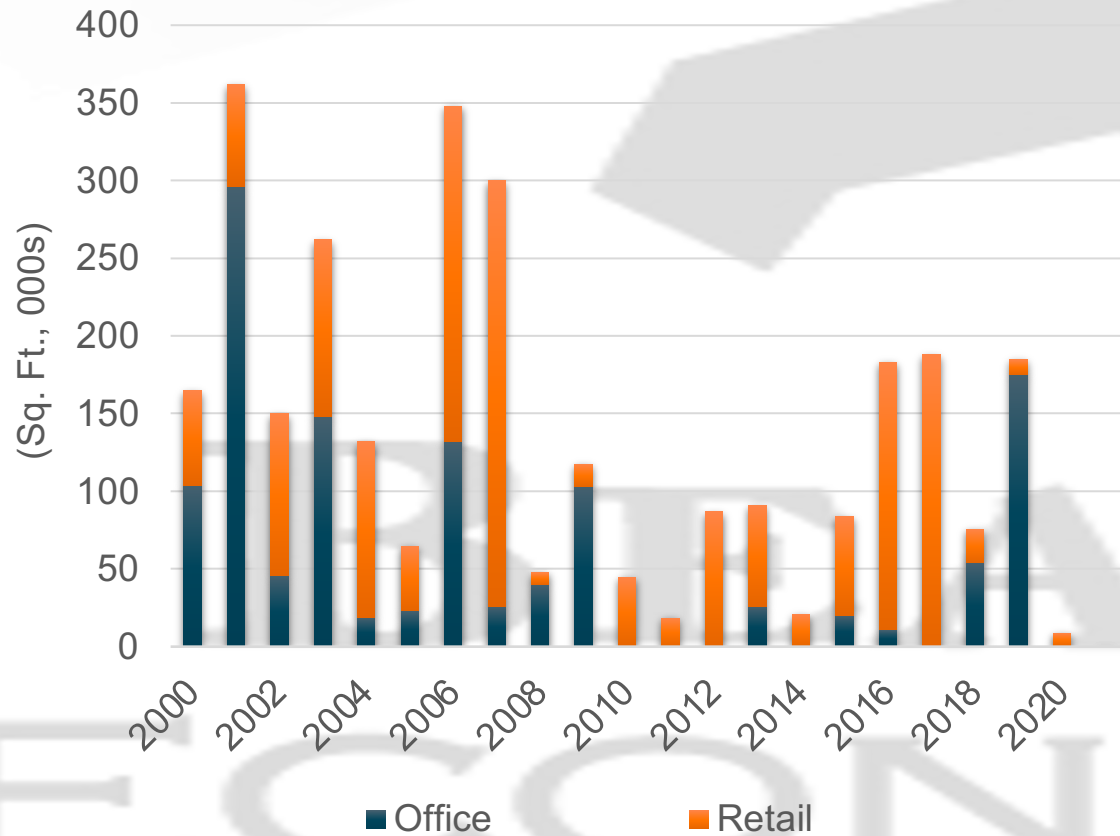


Property Type	Completions (Sq. Ft., 000s)		Net Absorption (Sq. Ft., 000s)	
	2021	5-Yr Change	2021	5-Yr Change
Warehouse	5,007	2,105	14,965	10,718
Office	882	-1,526	1,800	-678
Flex/R&D	144	-519	1,546	33
Retail	39	-203	223	-622

Nonresidential Construction-Tucson



Nonresidential Completions
Tucson MSA

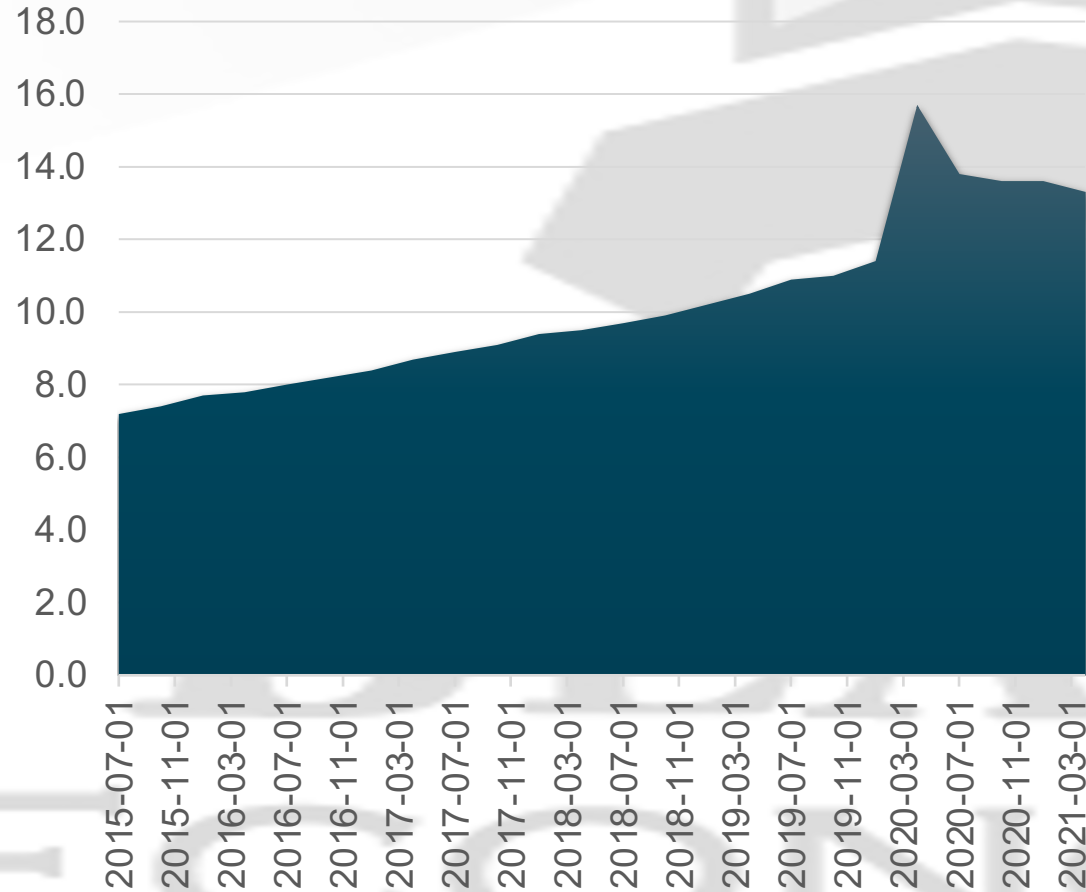


Property Type	Completions (Sq. Ft., 000s)		Net Absorption (Sq. Ft., 000s)	
	2020	5-Yr Change	2021	5-Yr Change
Warehouse	--	--	535	431
Office	0	-20	148	123
Retail	9	-55	80	-15

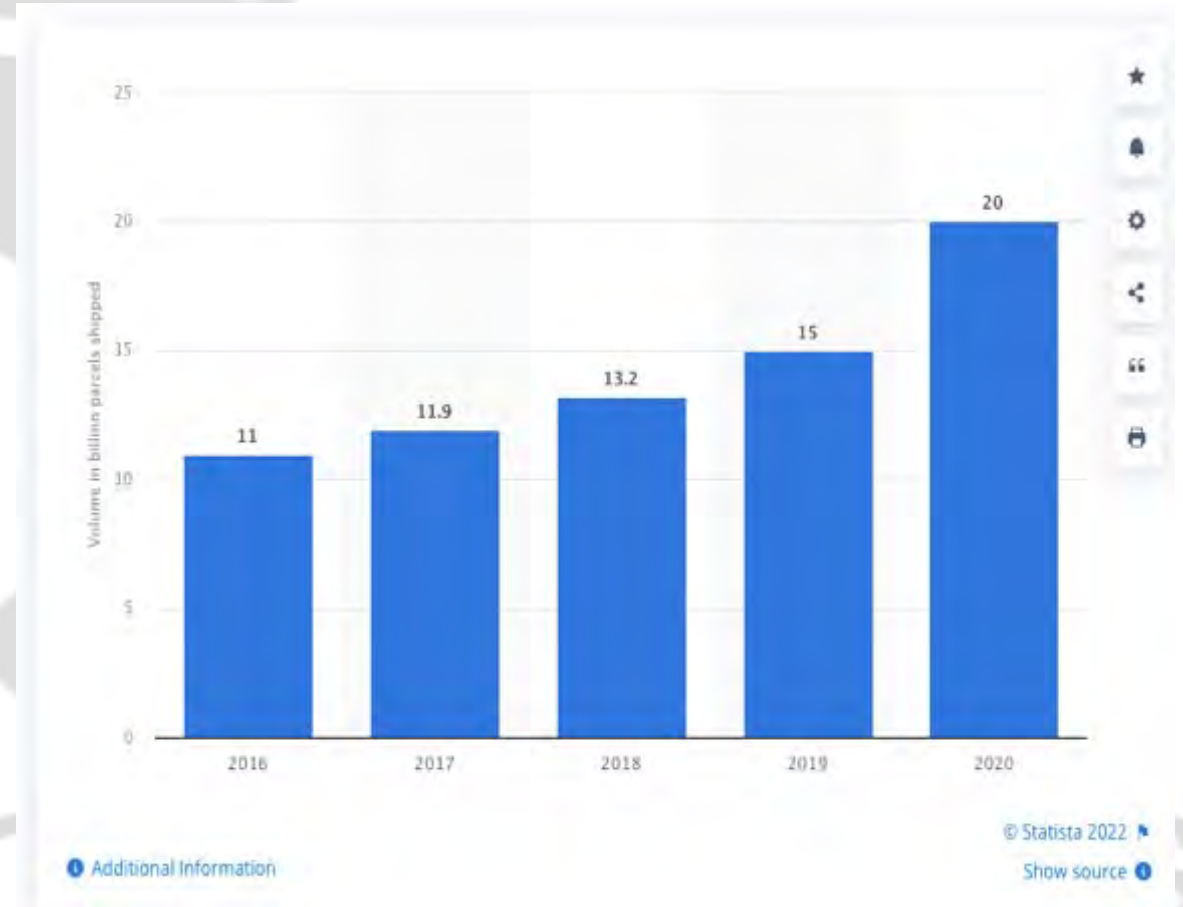
Retail / Industrial Supply Chains



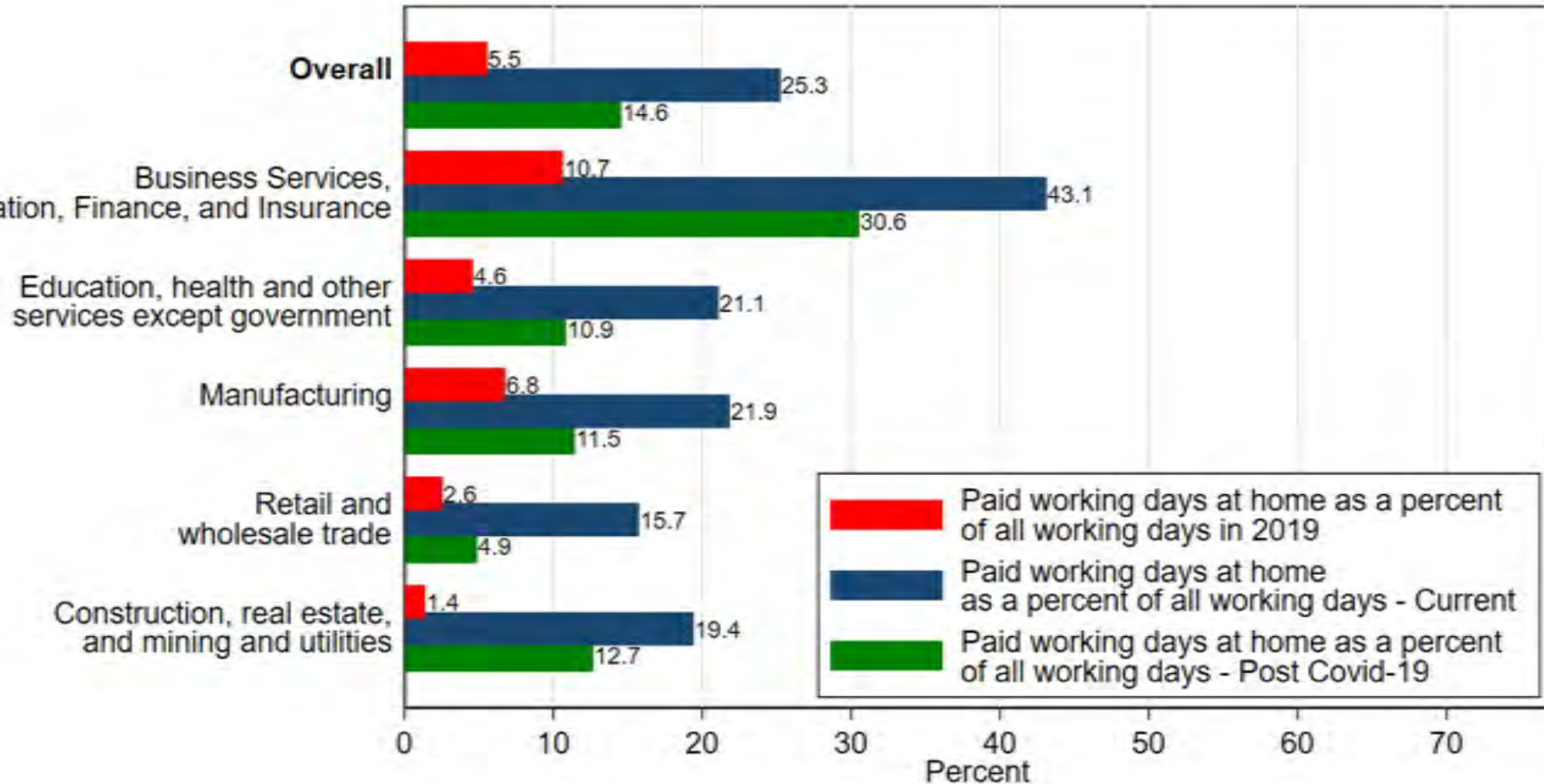
E-Commerce Share of Retail



Pitney Bowes US Package Delivery



WFH Before, During, and After COVID



The Future of Downtowns

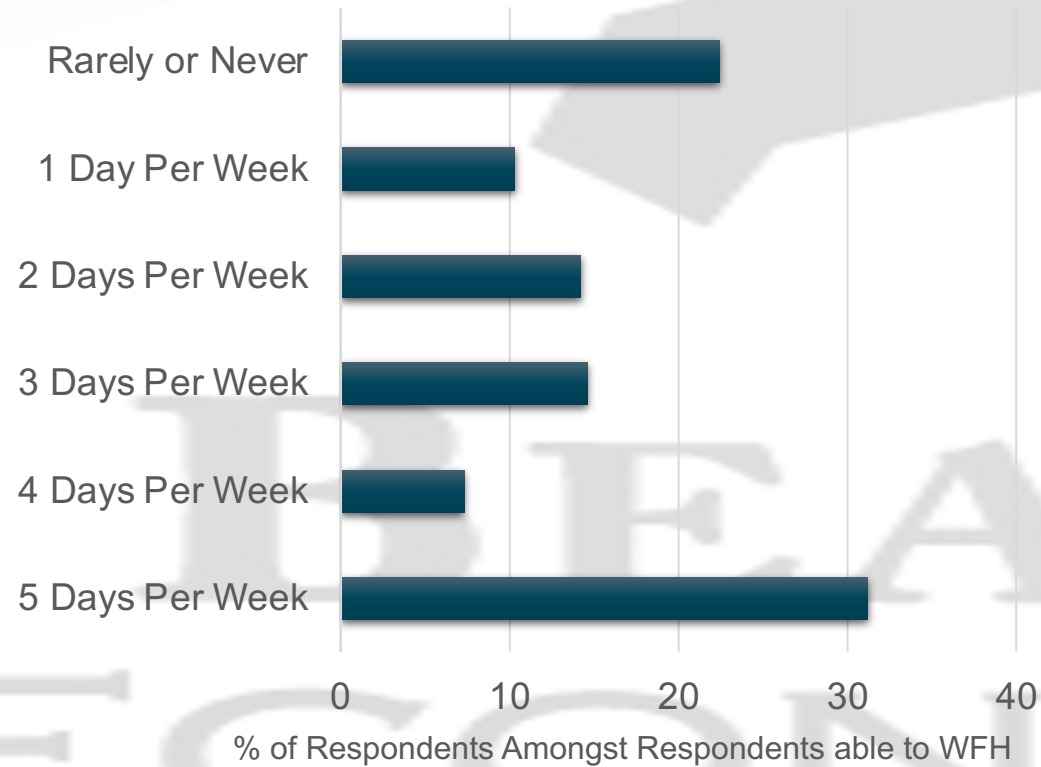
More Jobs Fewer People



Wages and Job Density



Workers' desired amount of post-COVID WFH days



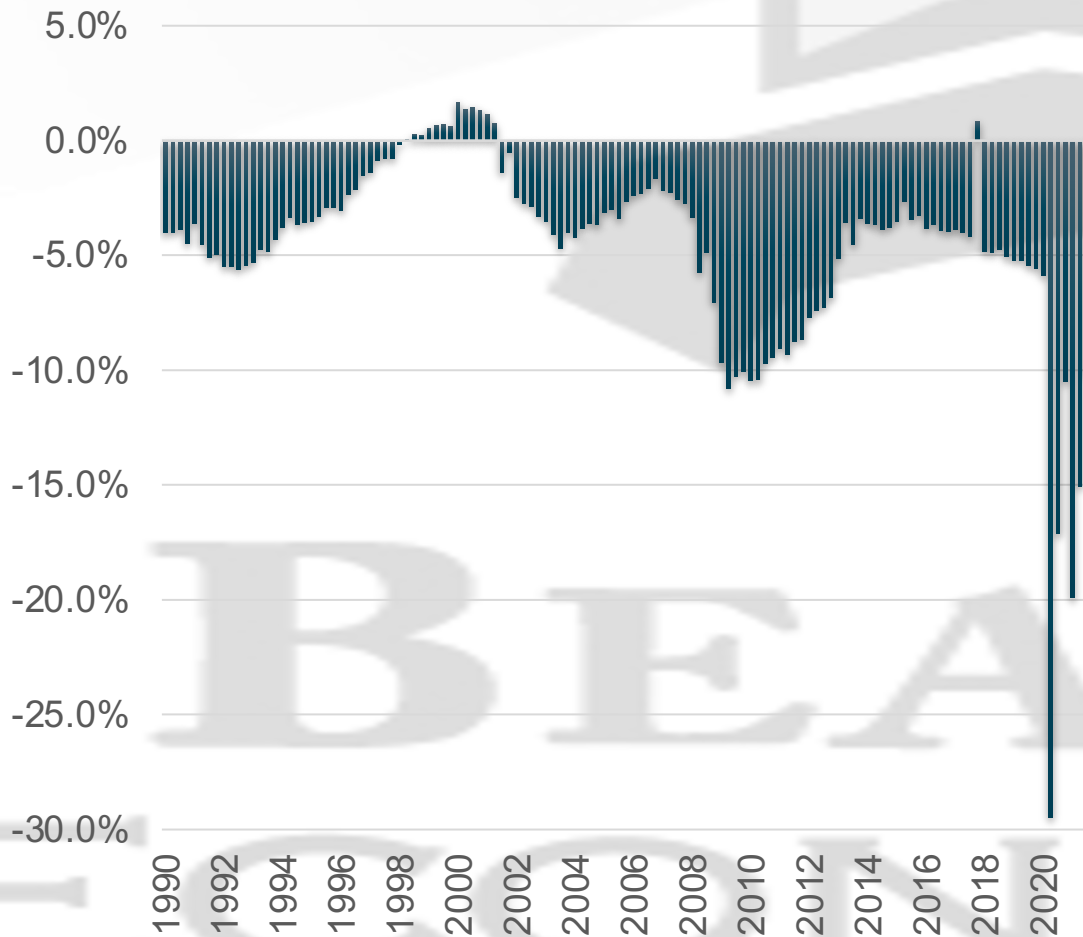
Where do you want to live?

- Accessibility to Income
- Quality of Life
- Affordability

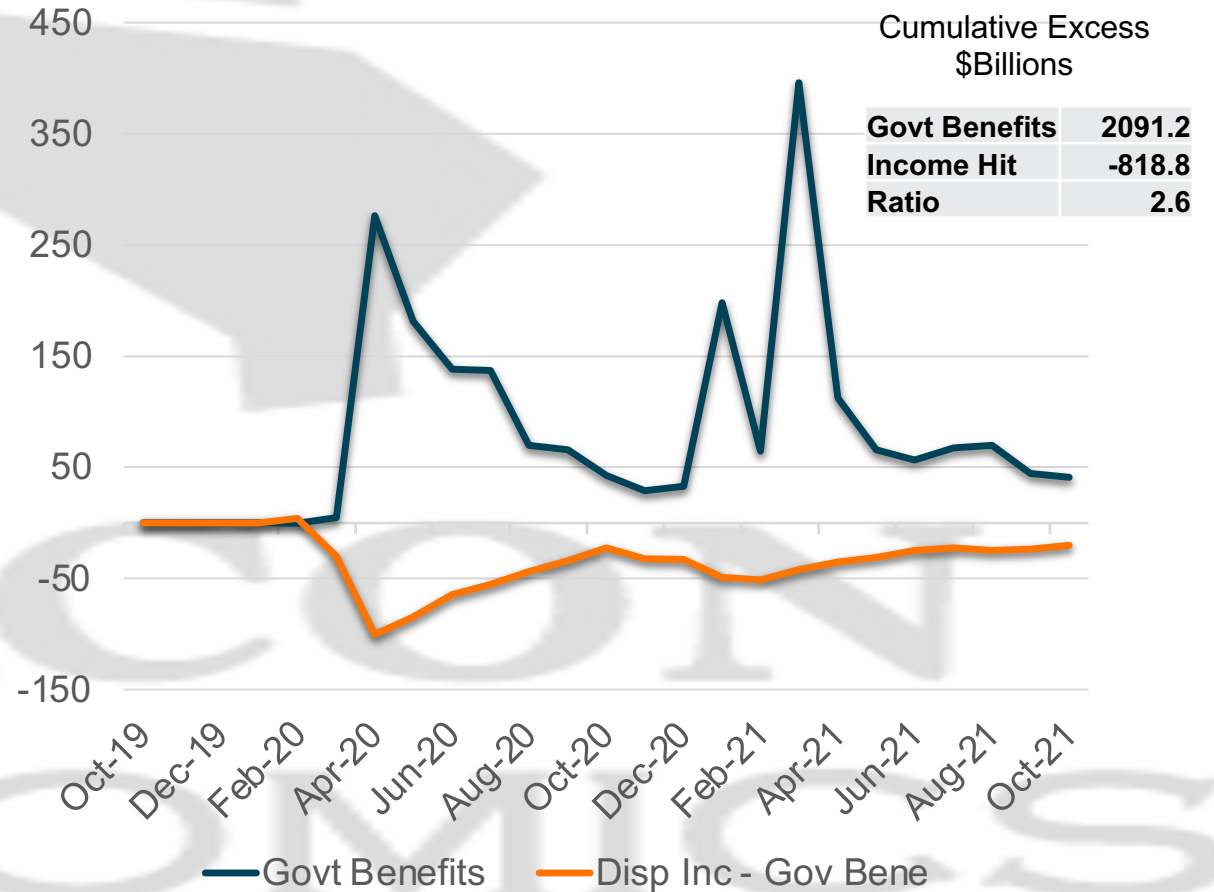
Federal Fiscal (Over)reaction



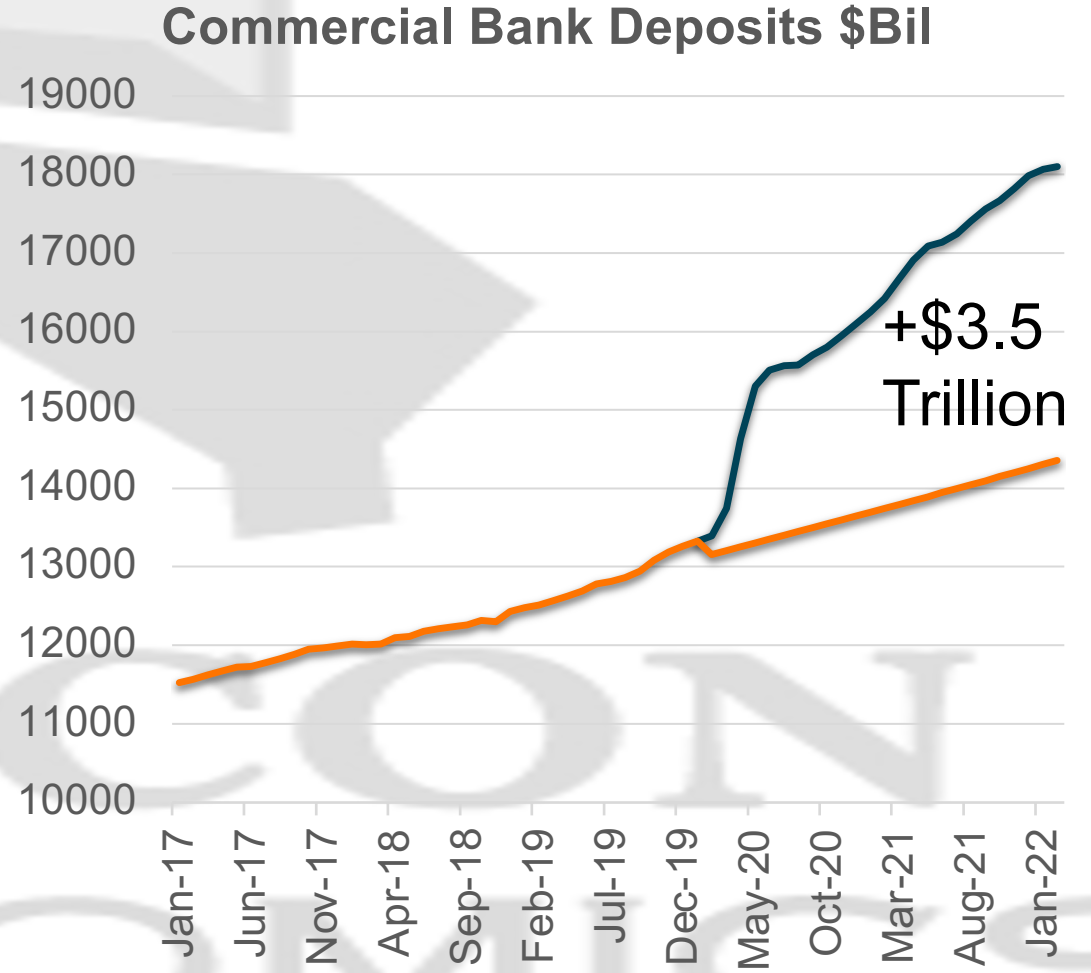
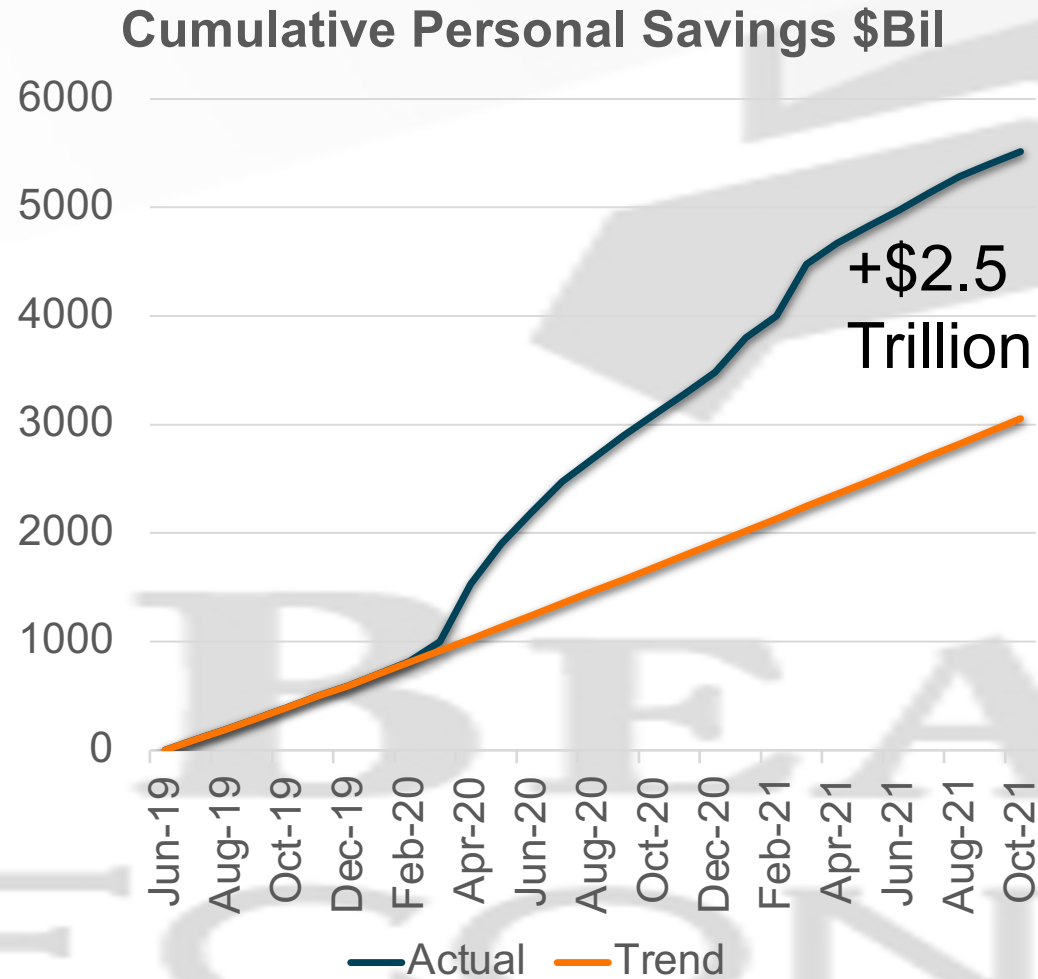
Net Federal Borrowing as % GDP



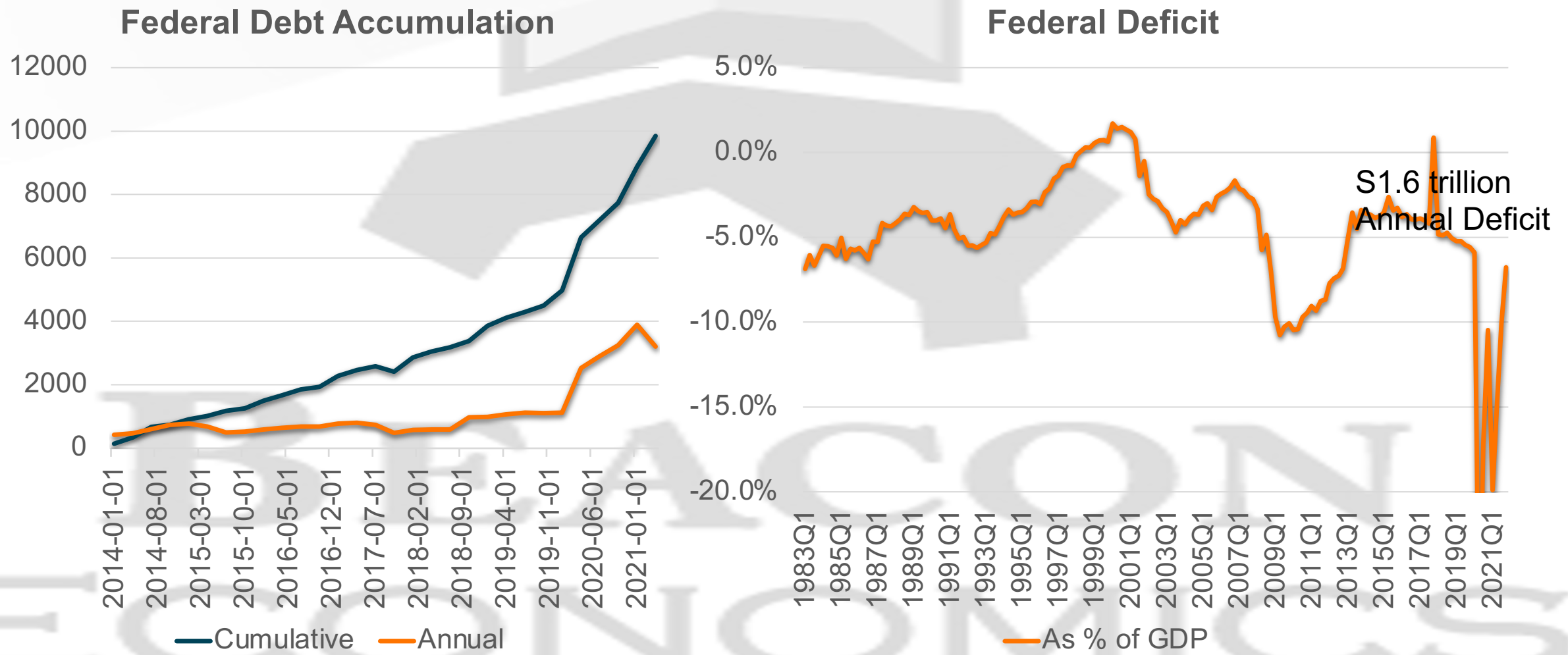
Levels of Personal Income Relative to Pre-Pandemic Trends



The Covid Boondoggle



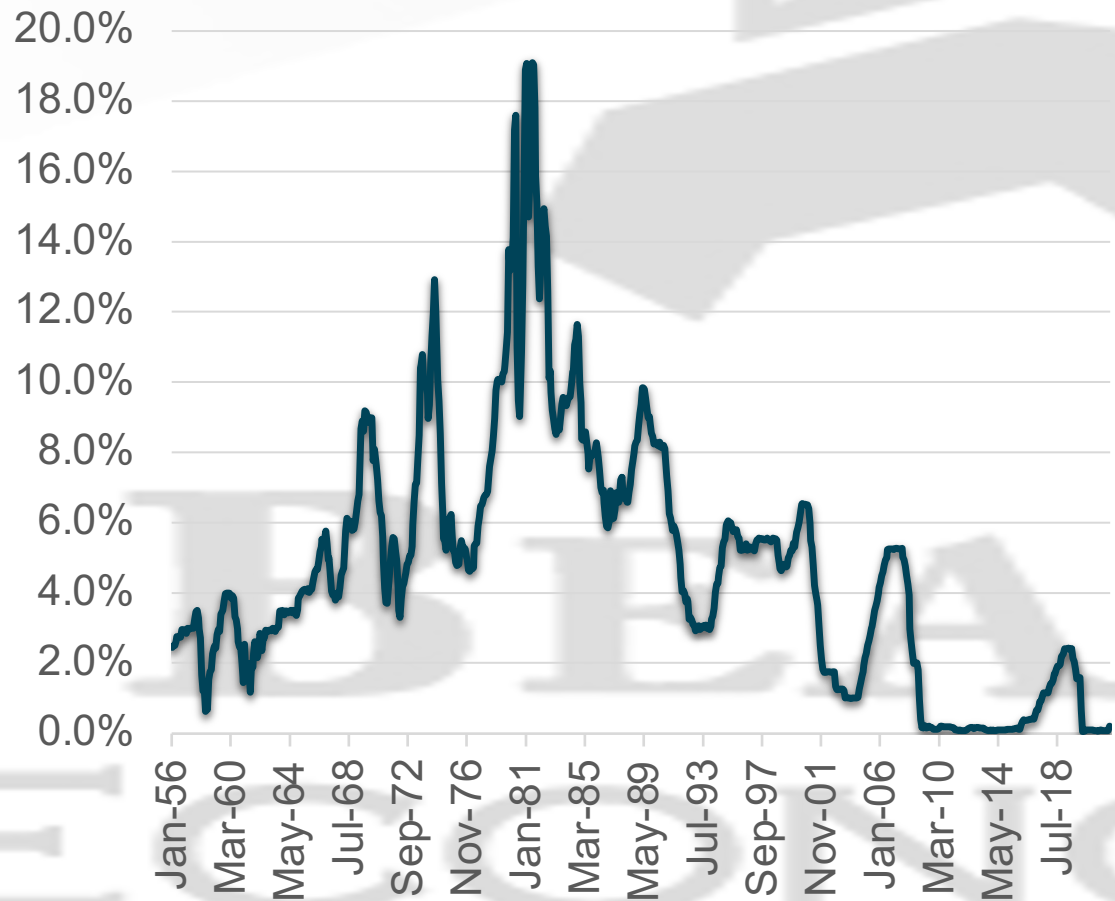
No Such Thing As a Free Lunch...



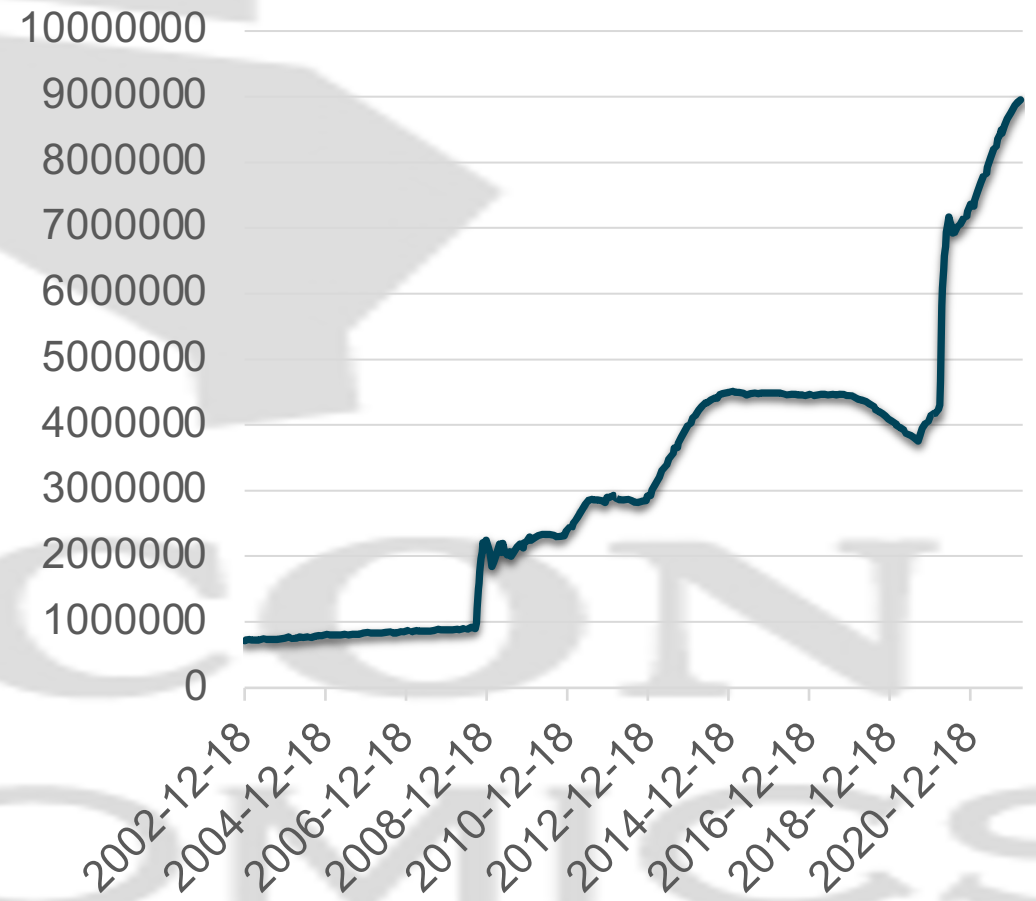
Mr. Powell's War



Federal Funds Rate



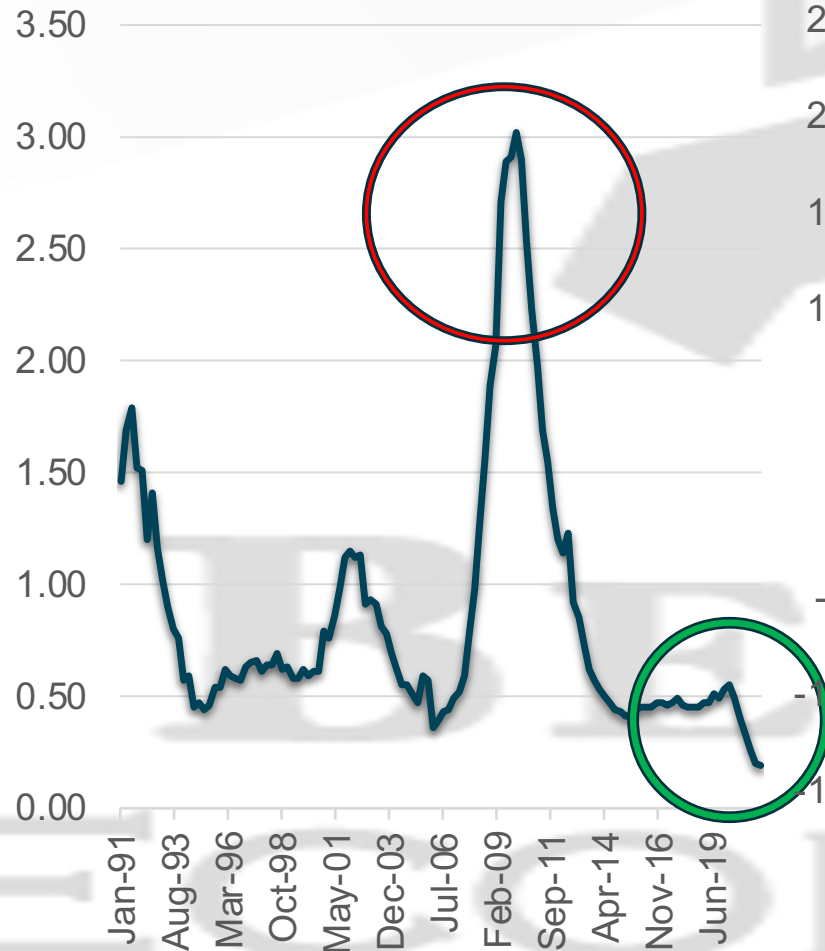
Federal Reserve Balance Sheet



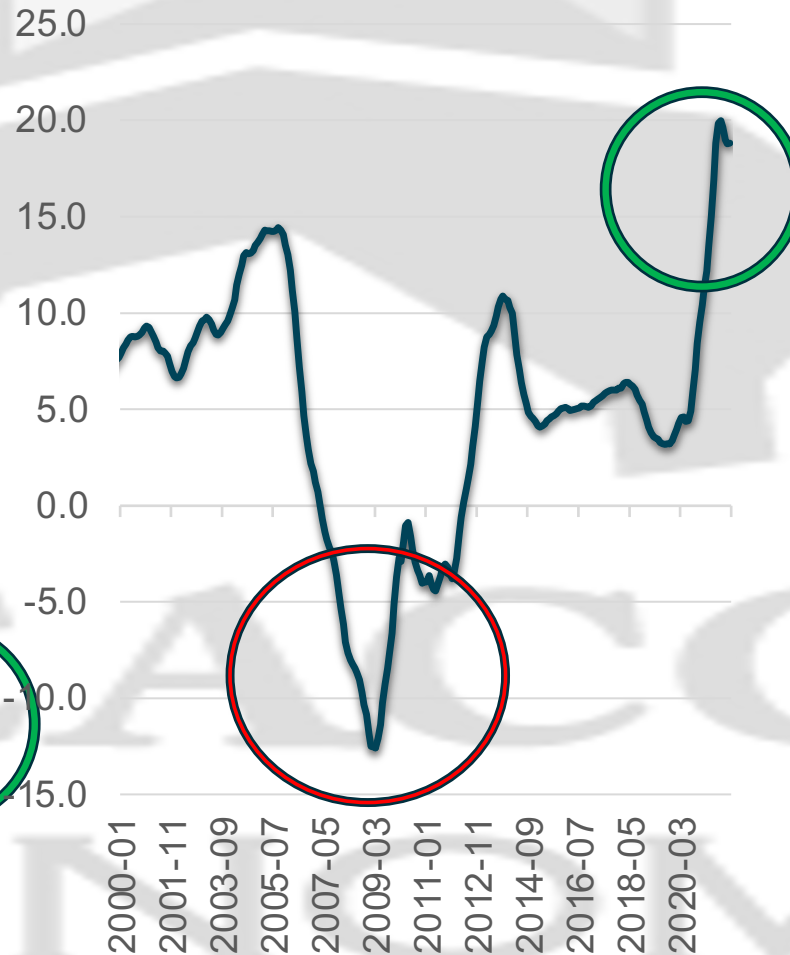
Mr. Powell's War



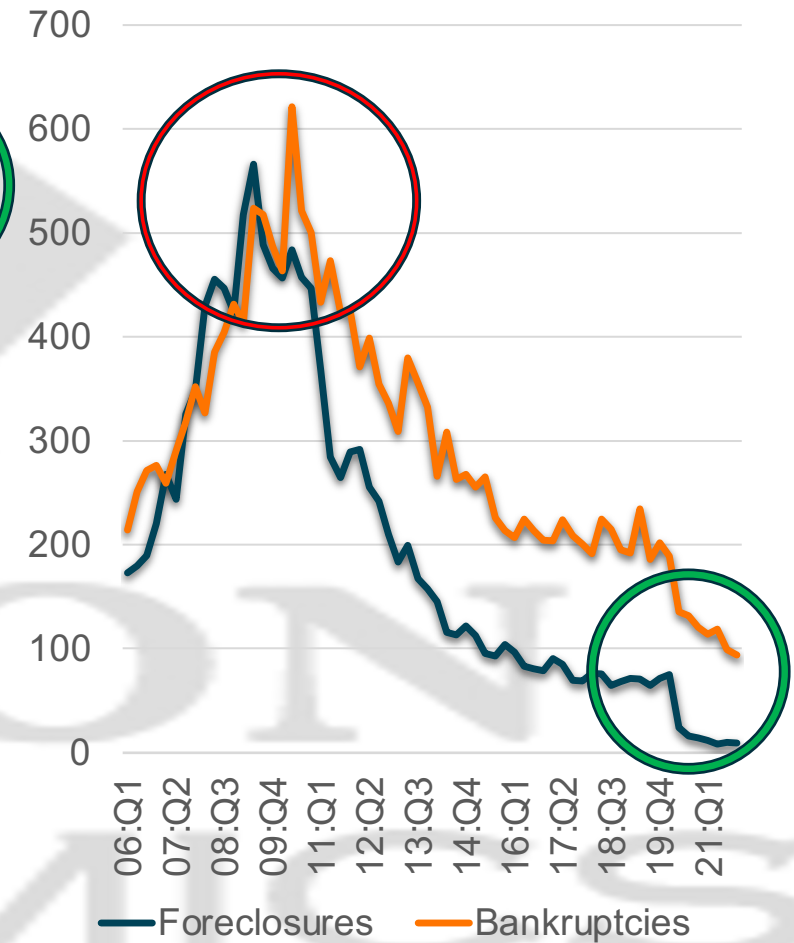
Bank Loan Charge-Off Rate



Case Shiller HPA YoY



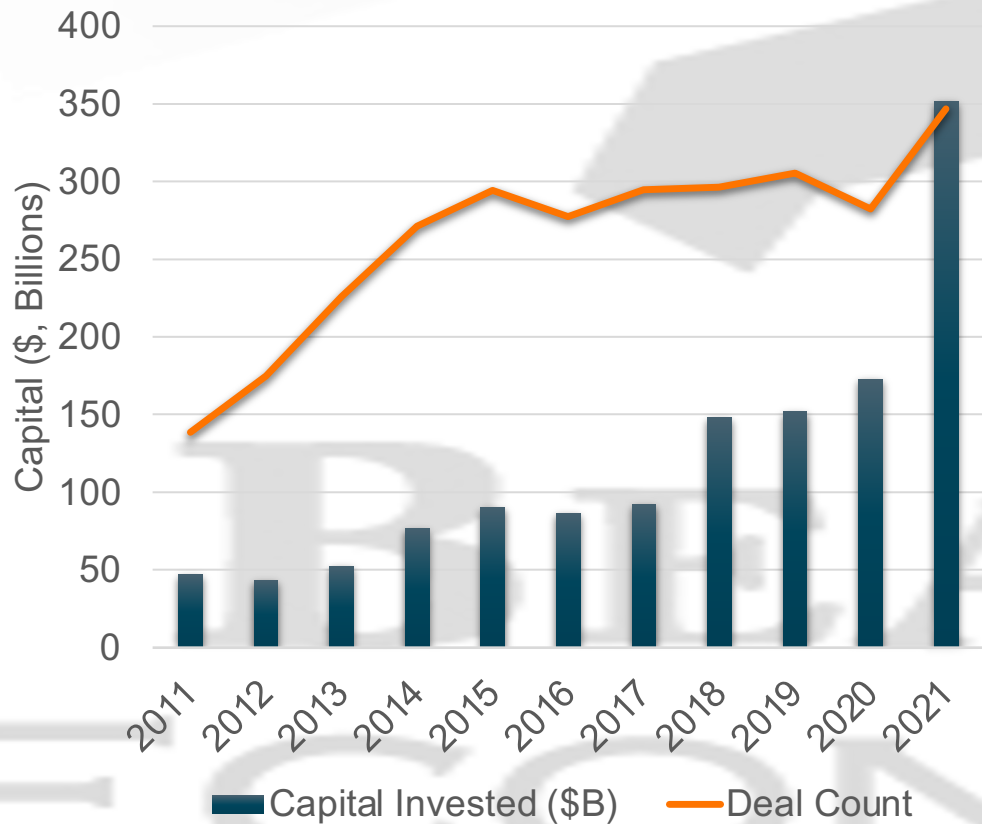
Consumer Finances



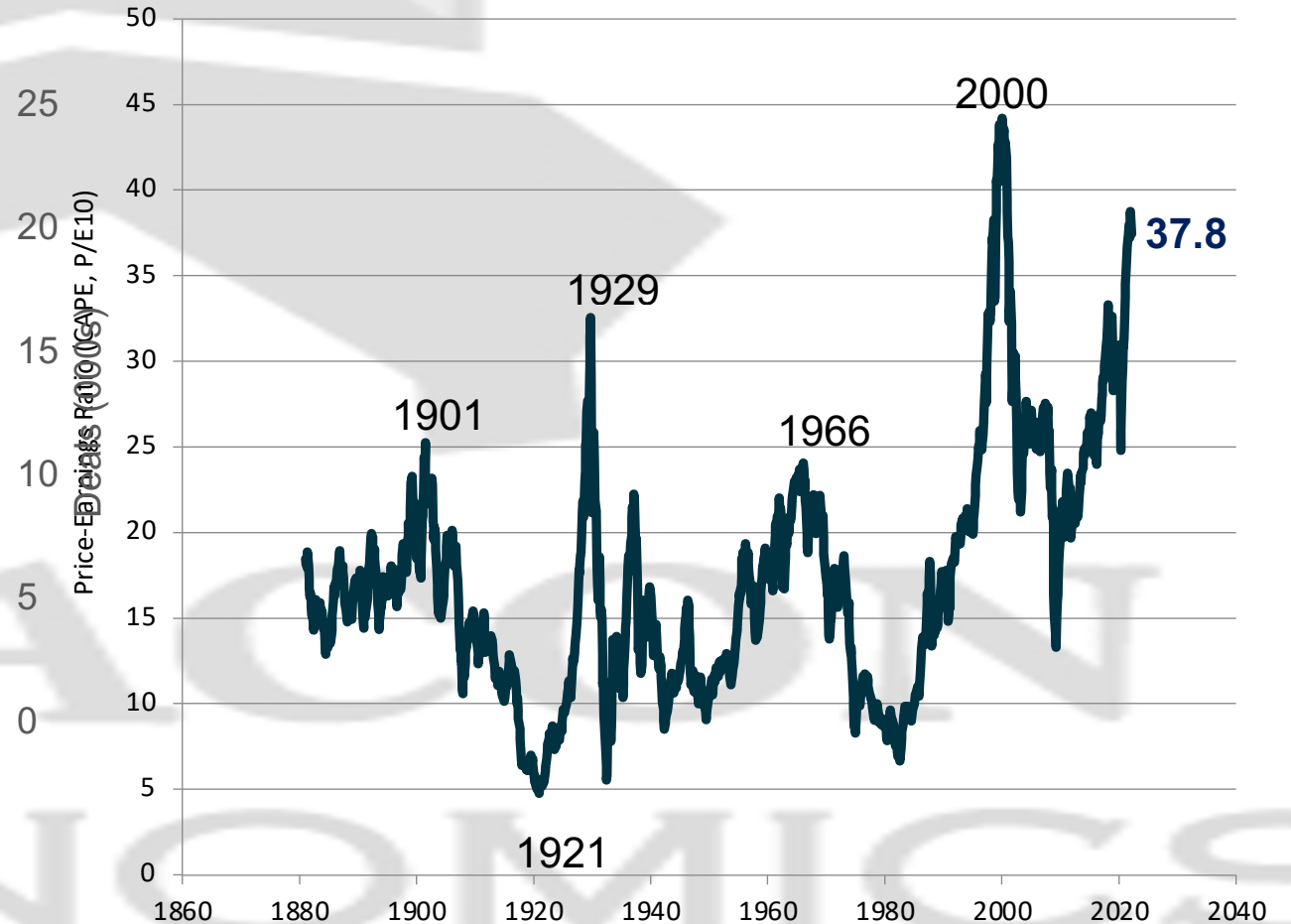
Speculation Planet



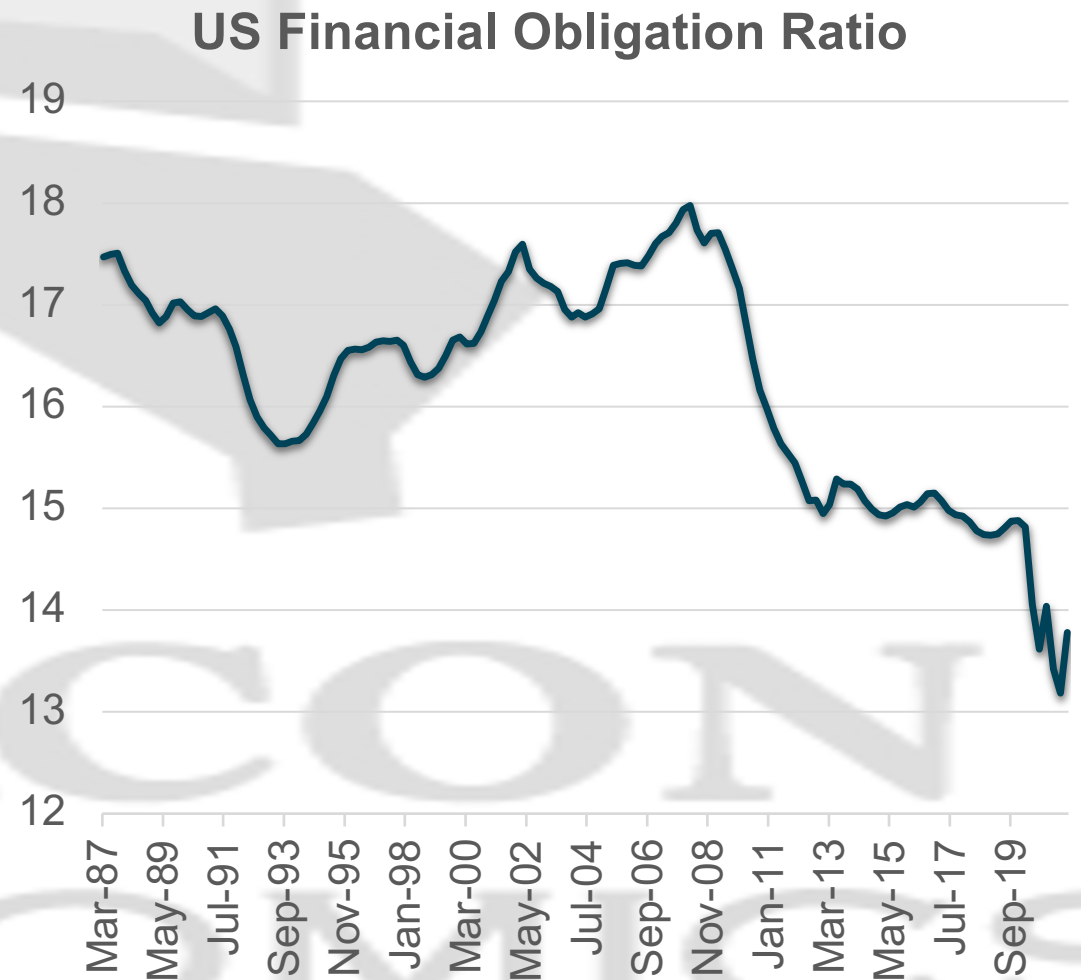
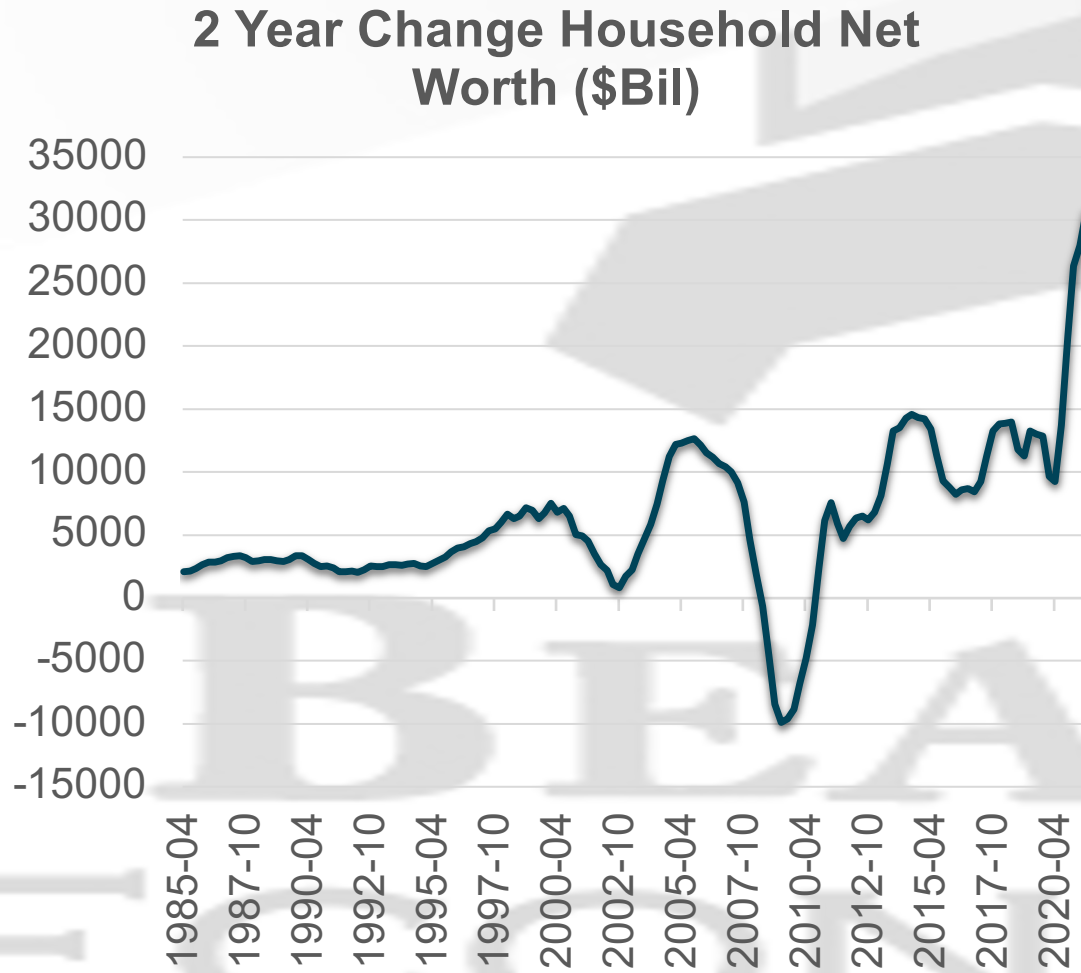
Capital Invested and Number of Deals, US HQ Companies



CAPE Price E10 Ratio



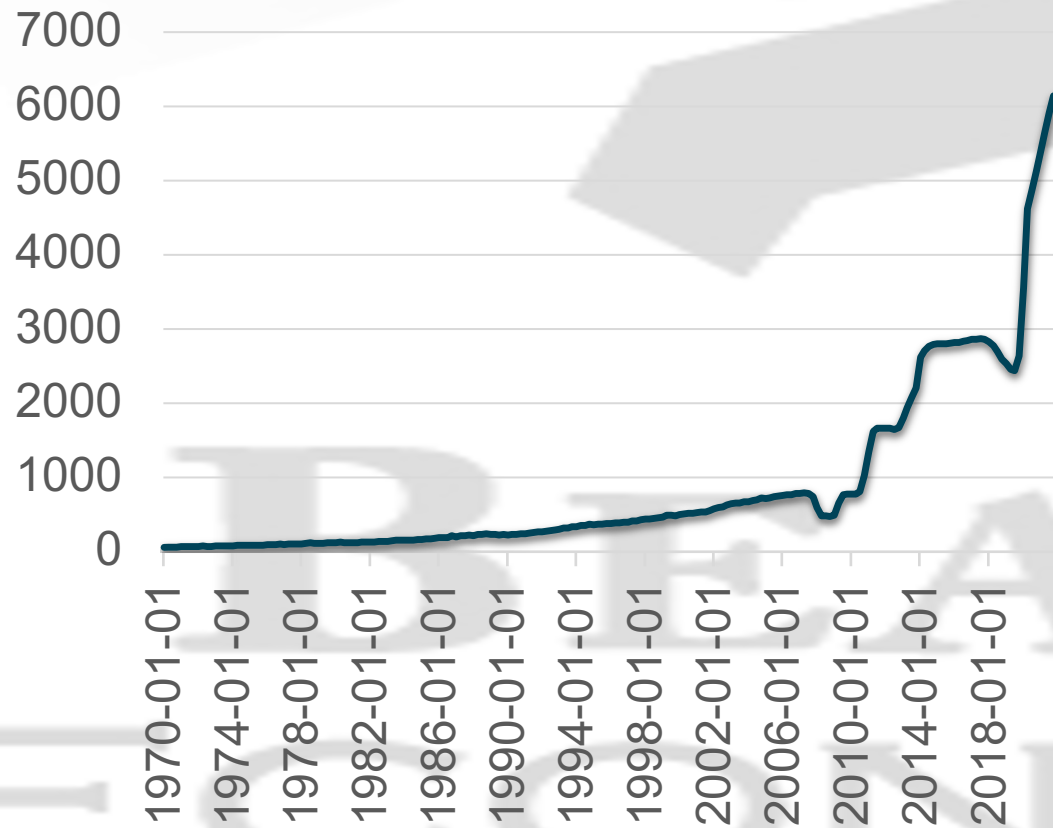
The “Wealthiest” Generation



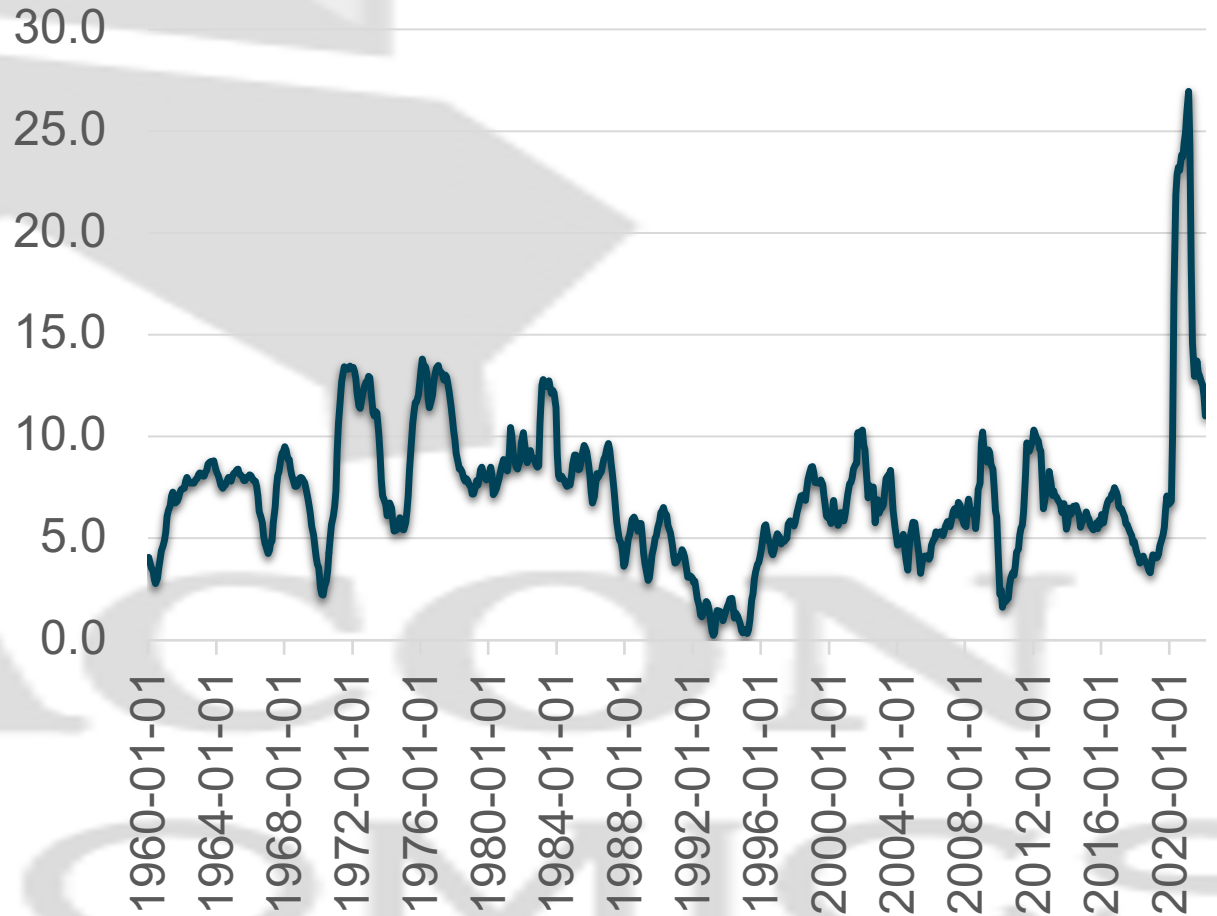
QE: Then and Now



Federal Reserve Holdings of Federal Debt



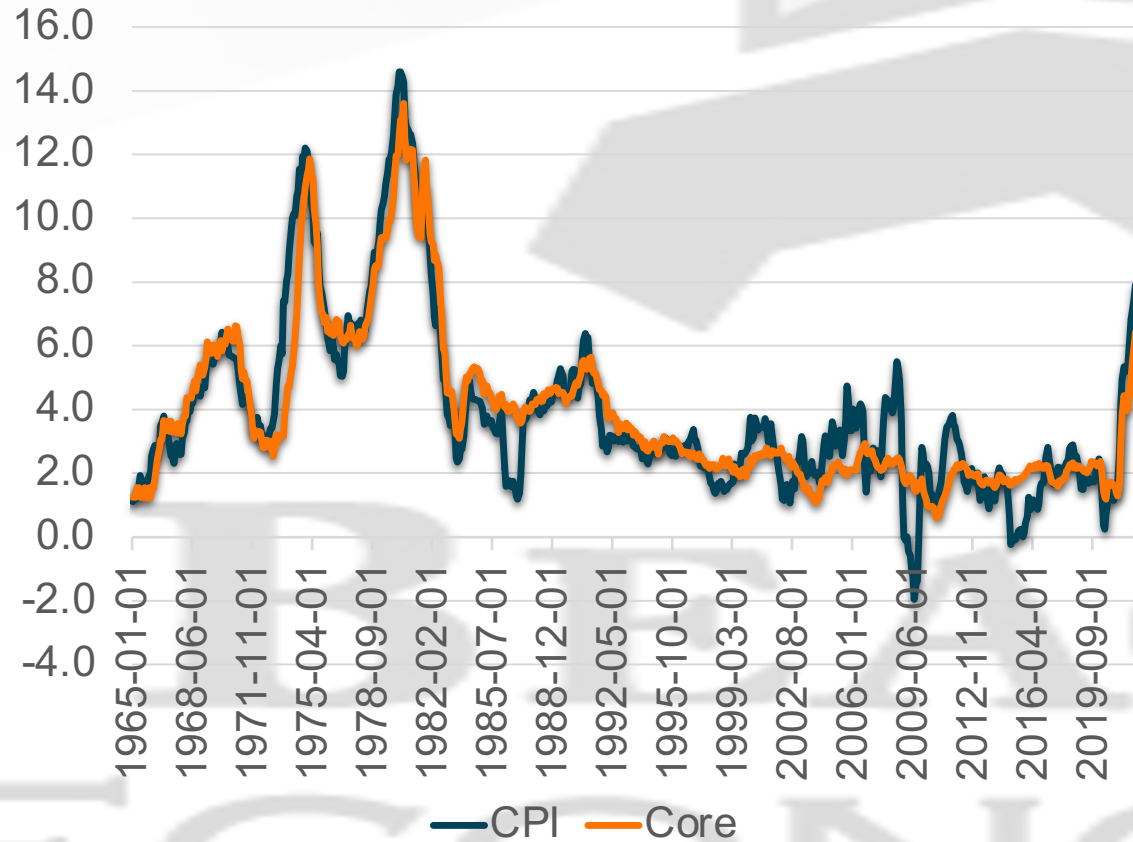
M2 Growth YoY



Inflation Nation...



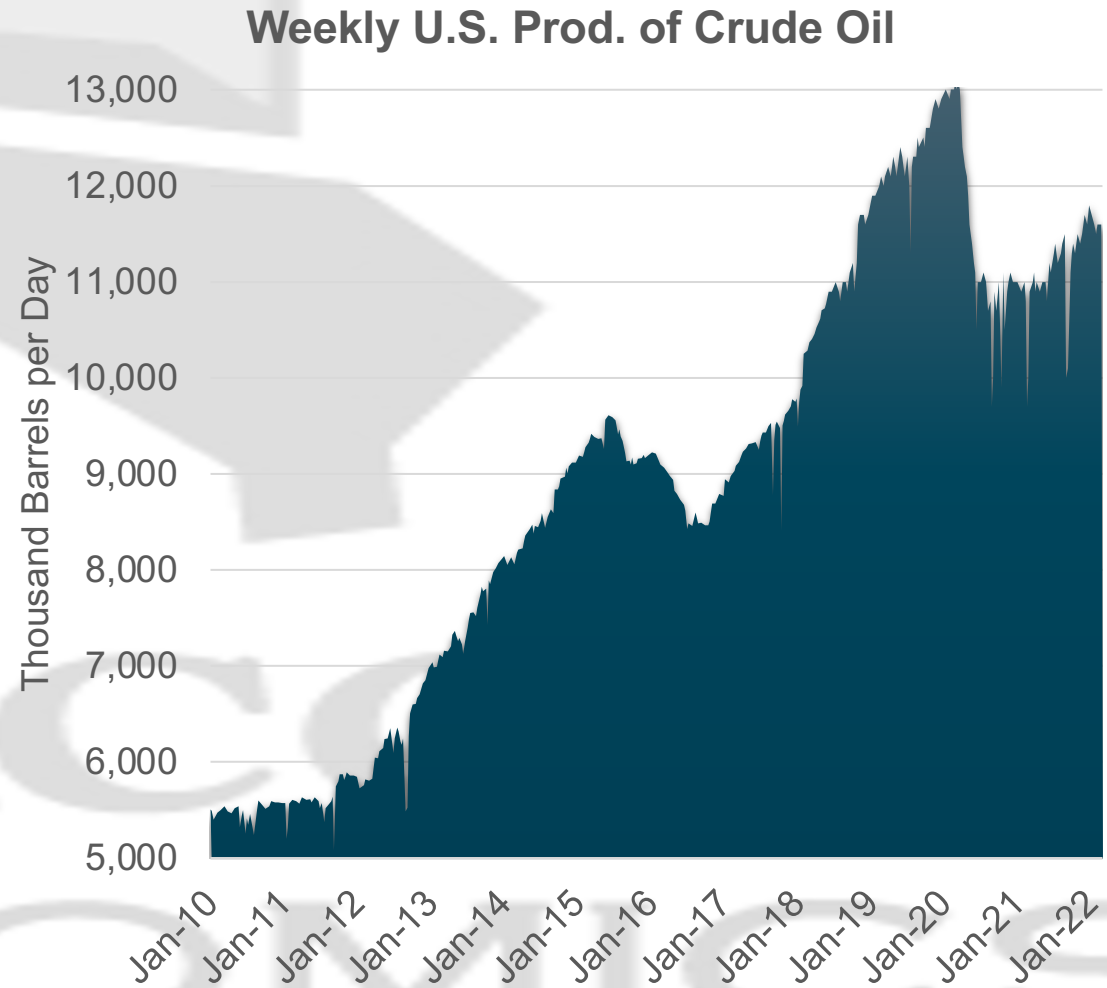
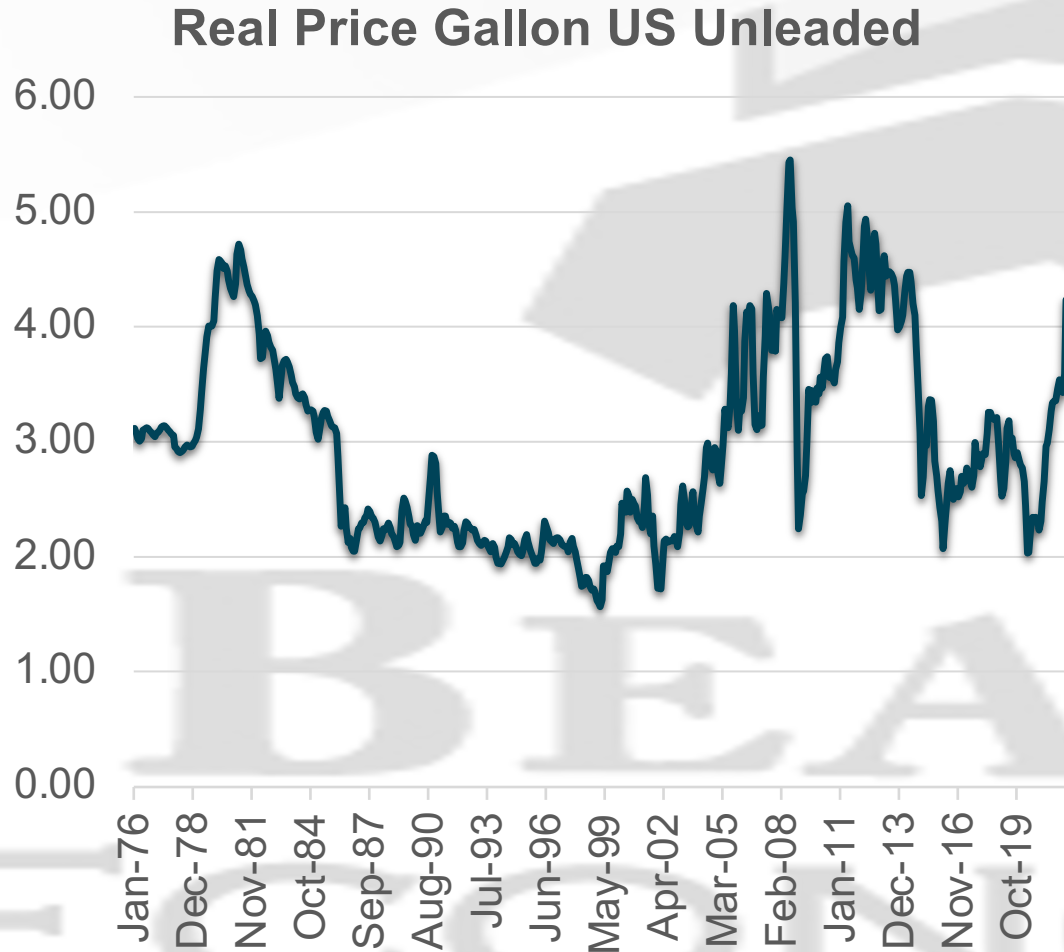
Consumer Prices



Inflation Expectations



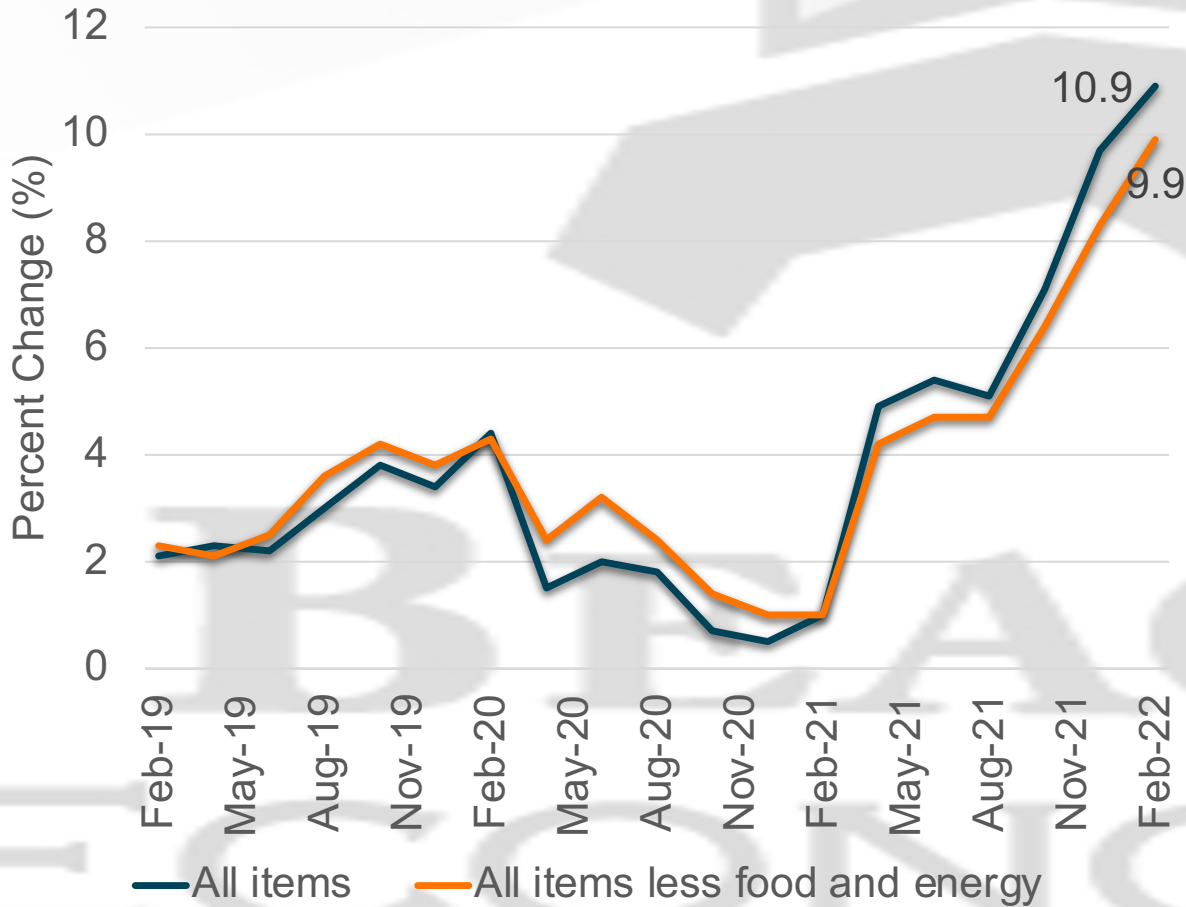
The Energy Situation



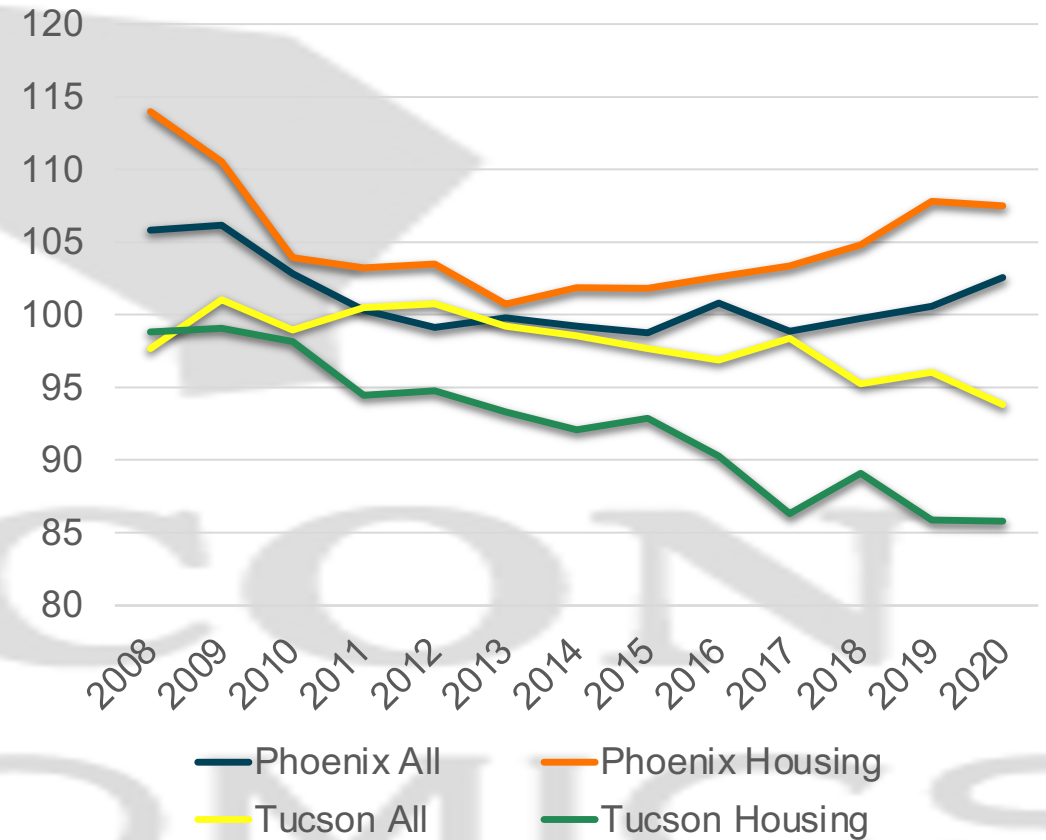
Local Prices



AZ CPI-U



Local Cost of Living Relative to US (100 = parity)



The Inflation Conversation



Excuses for inflation

- Supply chain issues
- The federal deficit
- Greedy corporations and profiteering
- Not enough manufacturing jobs in the US
- Biden's bad green energy policies
- It's Mr. Putin's fault!
- Saturn isn't aligned with Jupiter
- Disco is making a comeback
- Its that new host on *Jeopardy!*

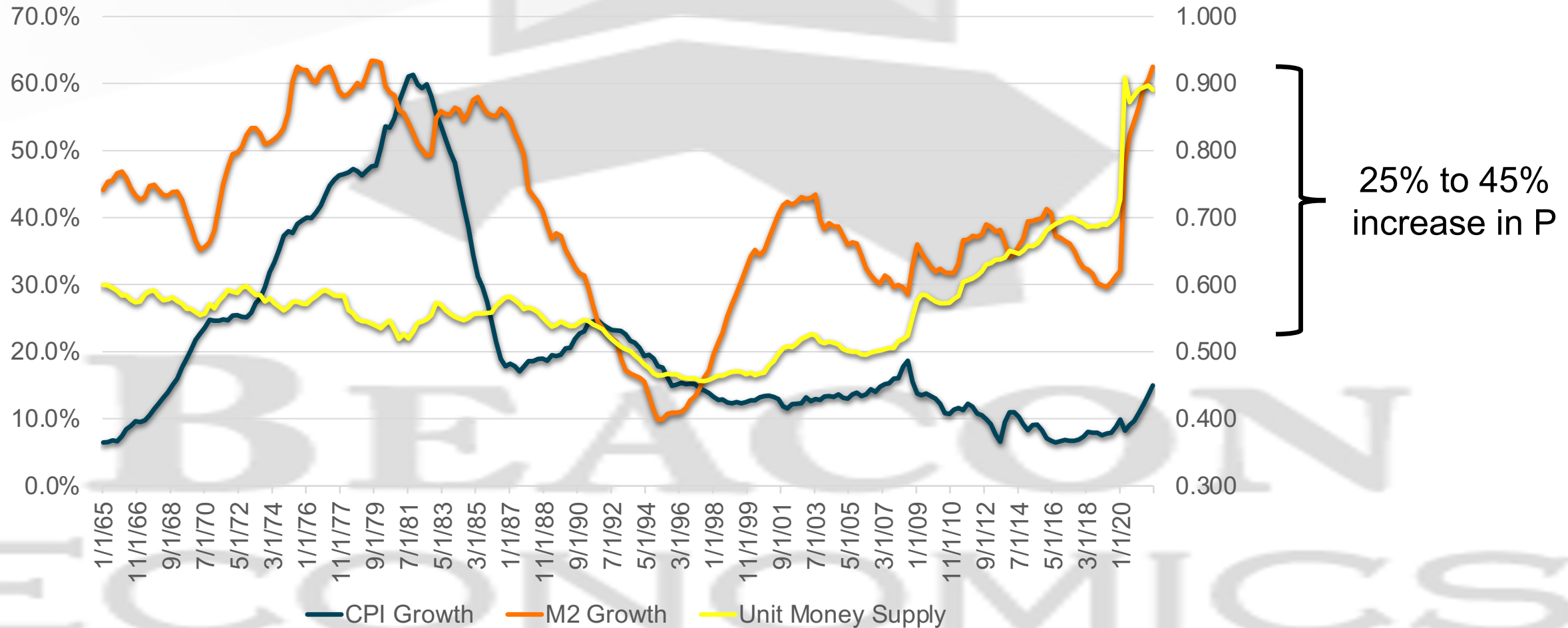
“Inflation is always and everywhere a monetary phenomenon in the sense that it is and can be produced only by a more rapid increase in the quantity of money than in output.”

Milton Friedman

How Much Farther Can Inflation Go??



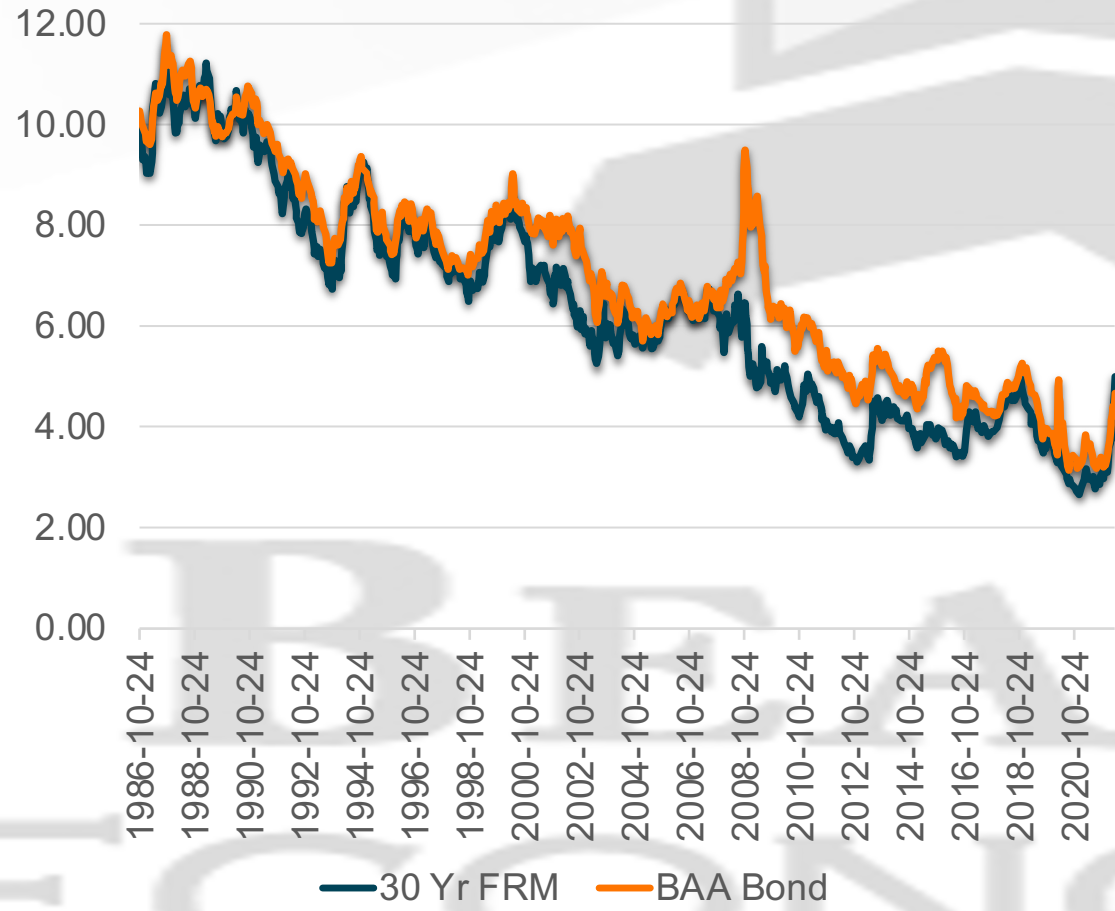
5 Year Cumulative Growth Rates



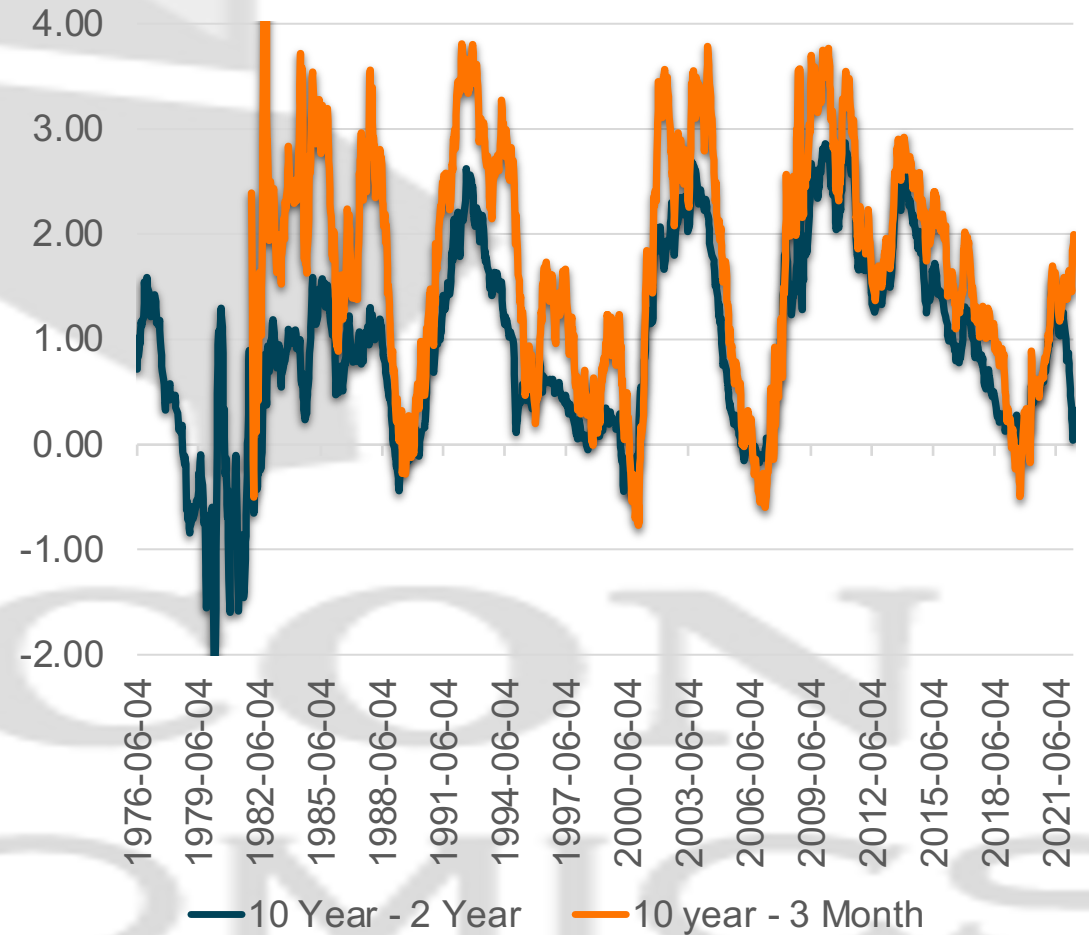
First Rumbblings



Interest Rates



US Yield Spreads



There is No 'Soft Landing' ...

Problem of inflation

- Short run: Money illusion causes lower interest rates, asset bubbles forming, consumer spending binge
- Long run: slow stagnation, rising real interest rates, investments become difficult to cost out, uncertainty hurts markets

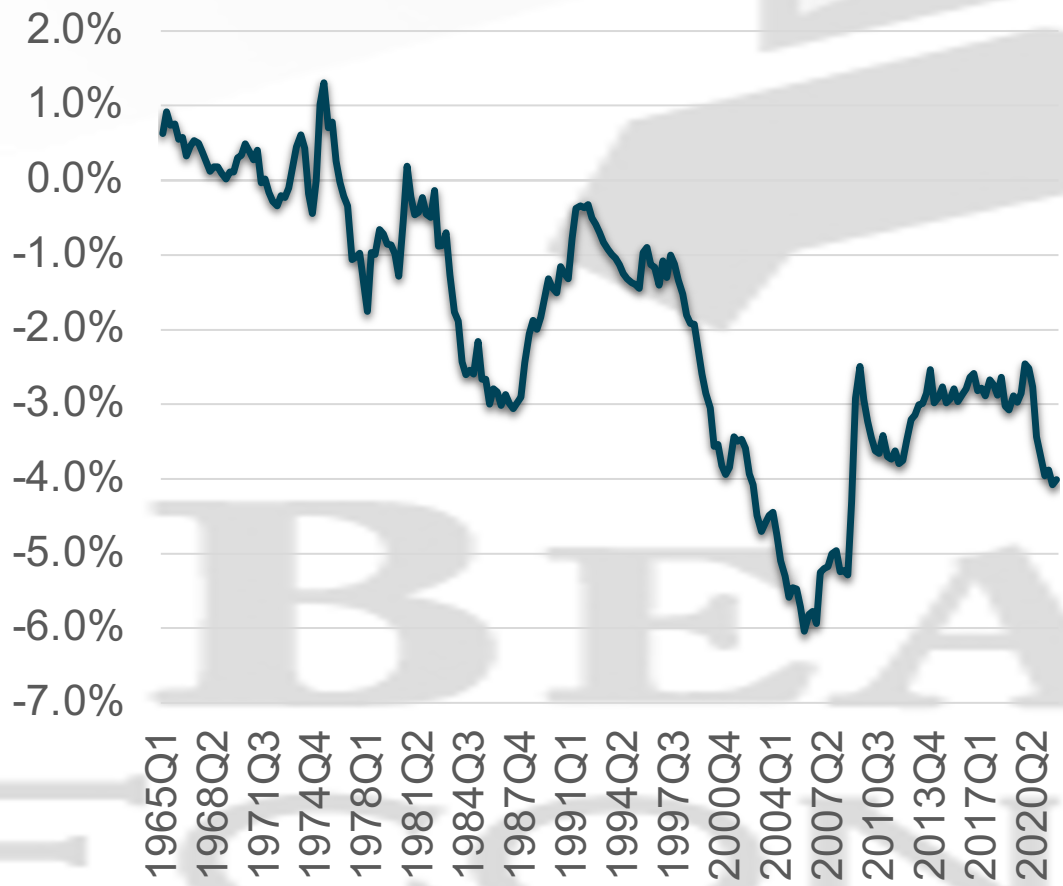
The Cure for inflation

- Quantitative tightening, sure to drive up LR rates very quickly in the short run
- The choice: pain now or worse pain later

Reliance on Foreign Capital



US Net Trade as % of GDP

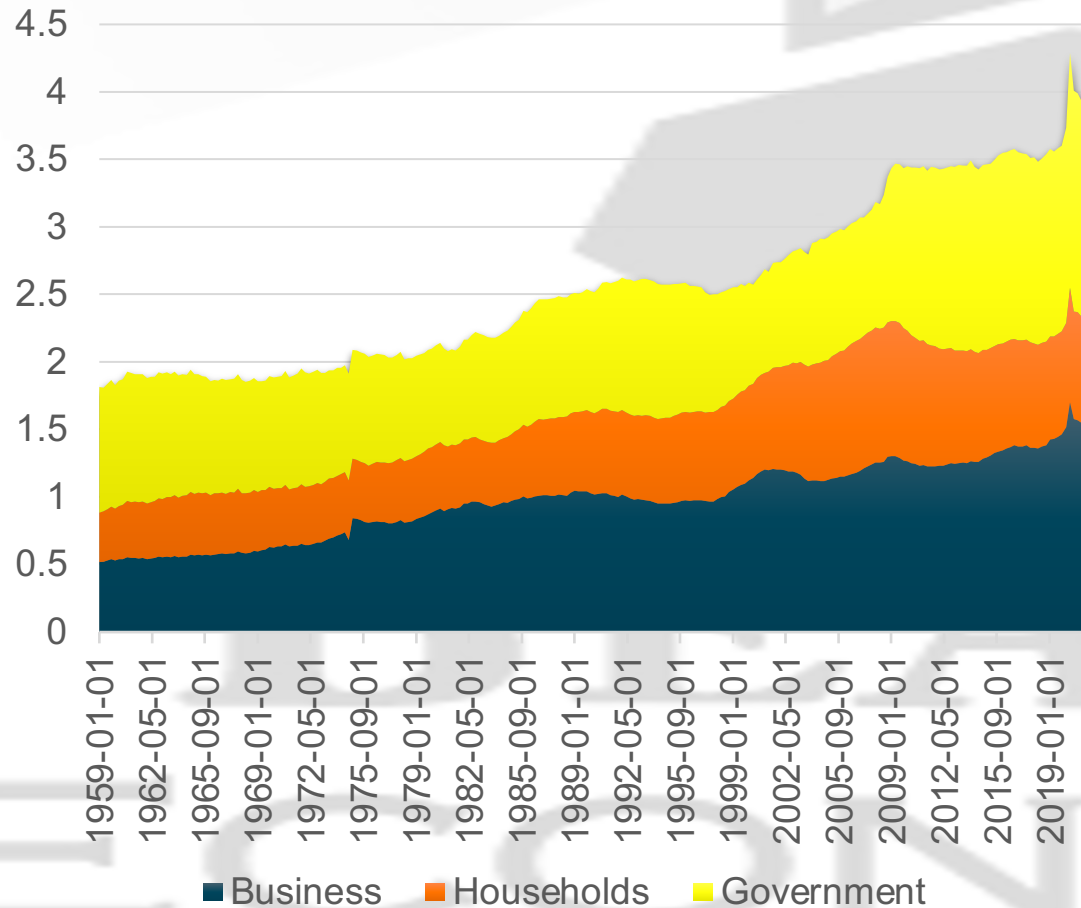


\$US Broad Index (Nominal)

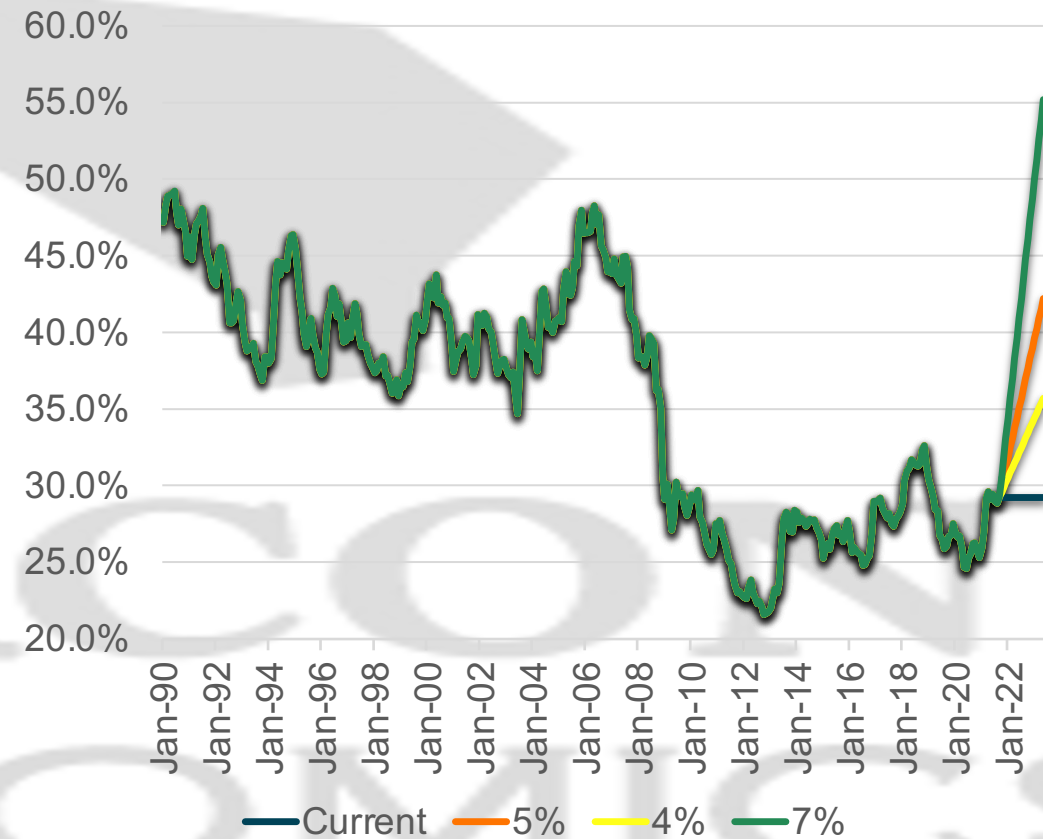


Impact of an Interest Rate Shock

US Liability to GDP Ratio



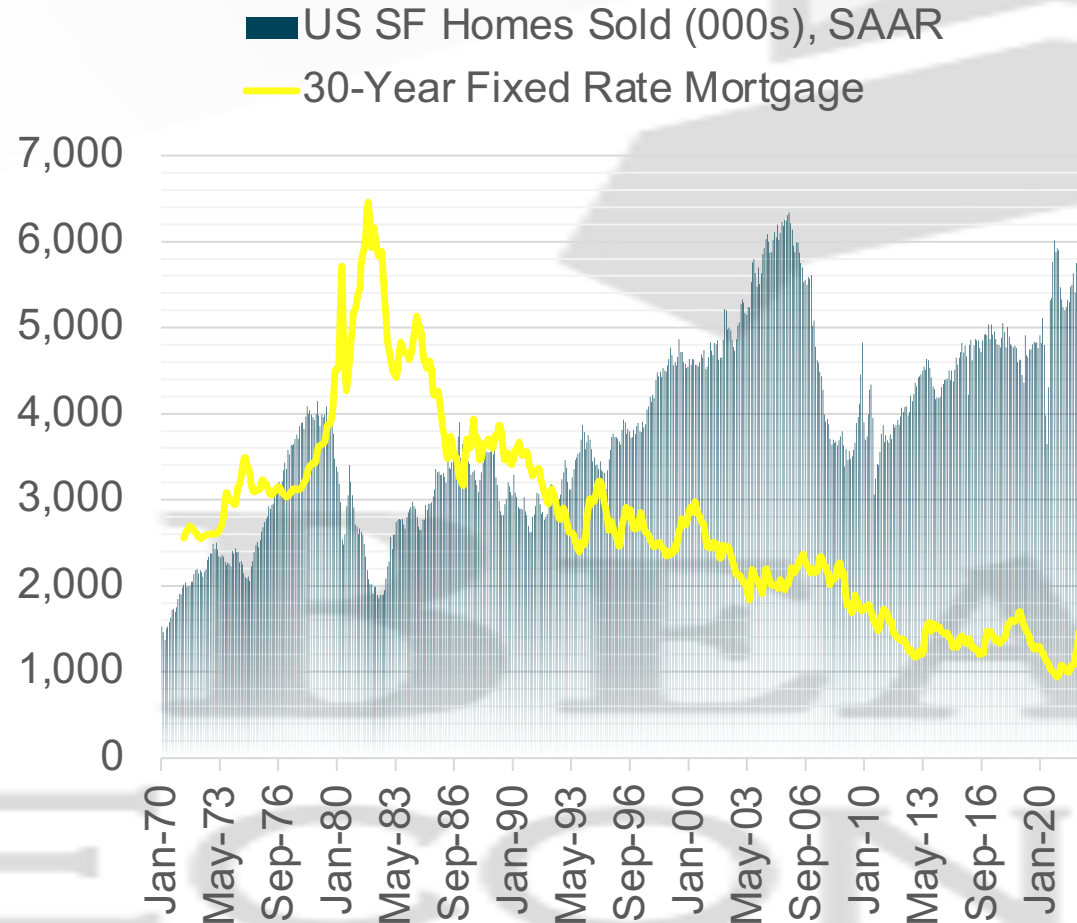
% Annual Income to Support Mortgage and Taxes



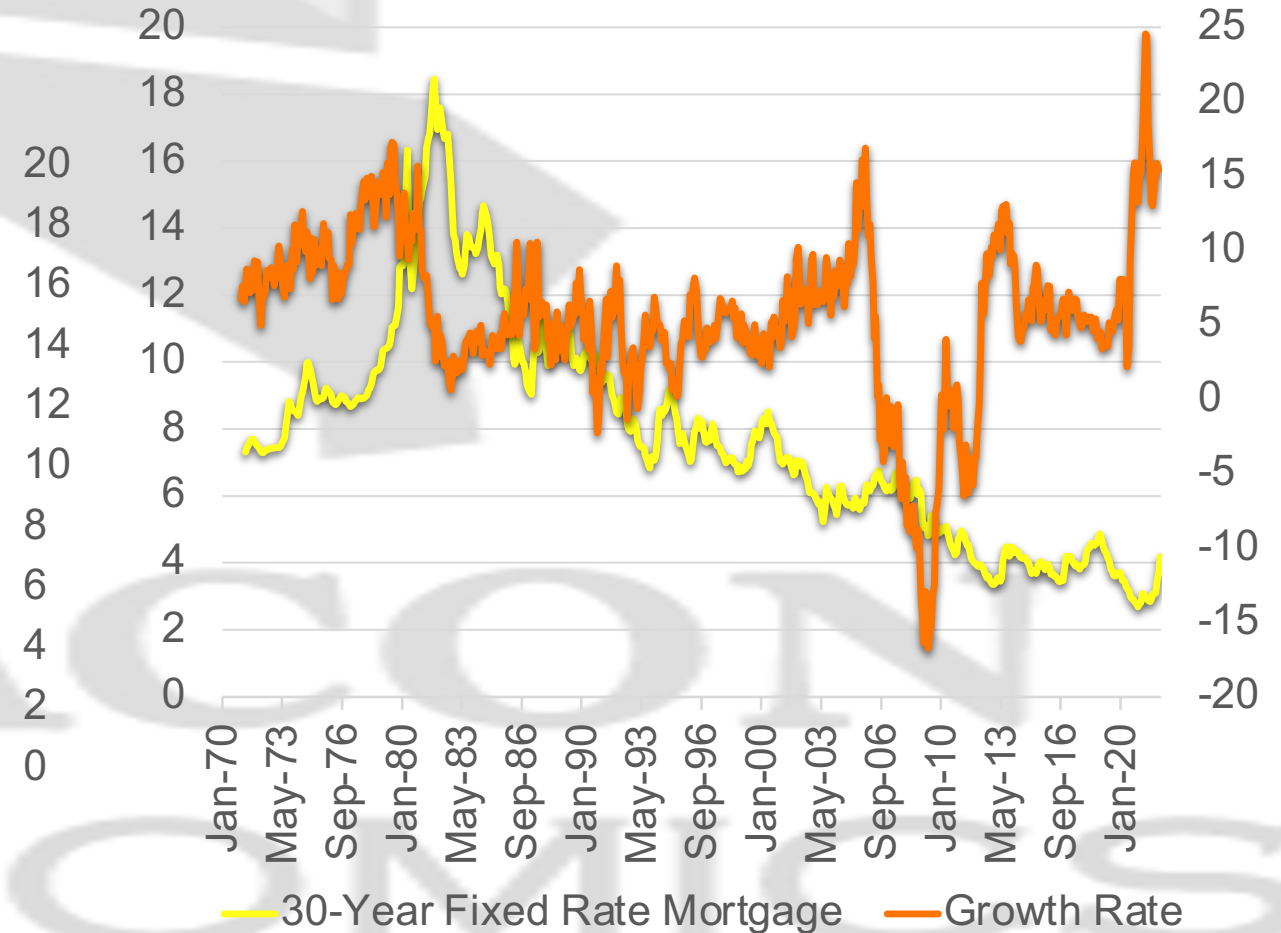
Residential Real Estate



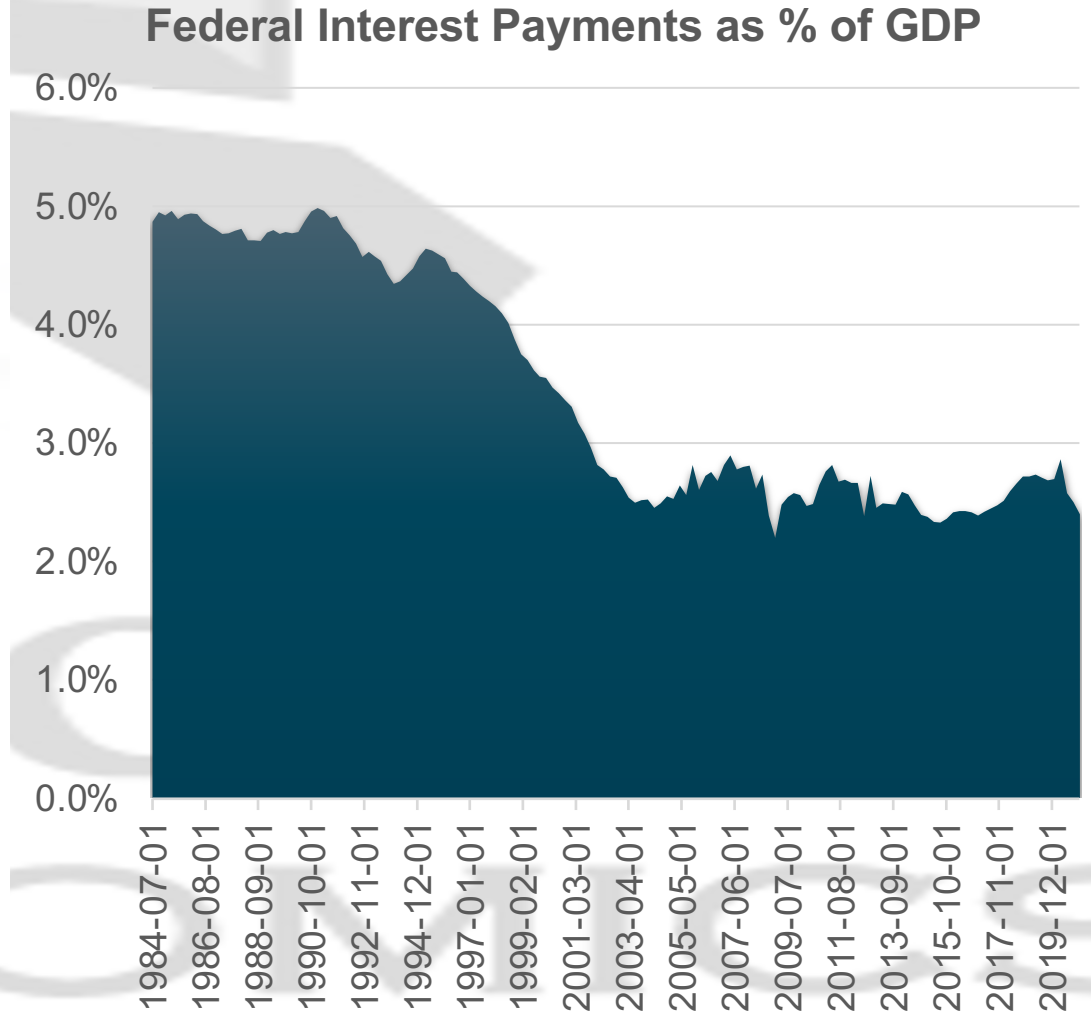
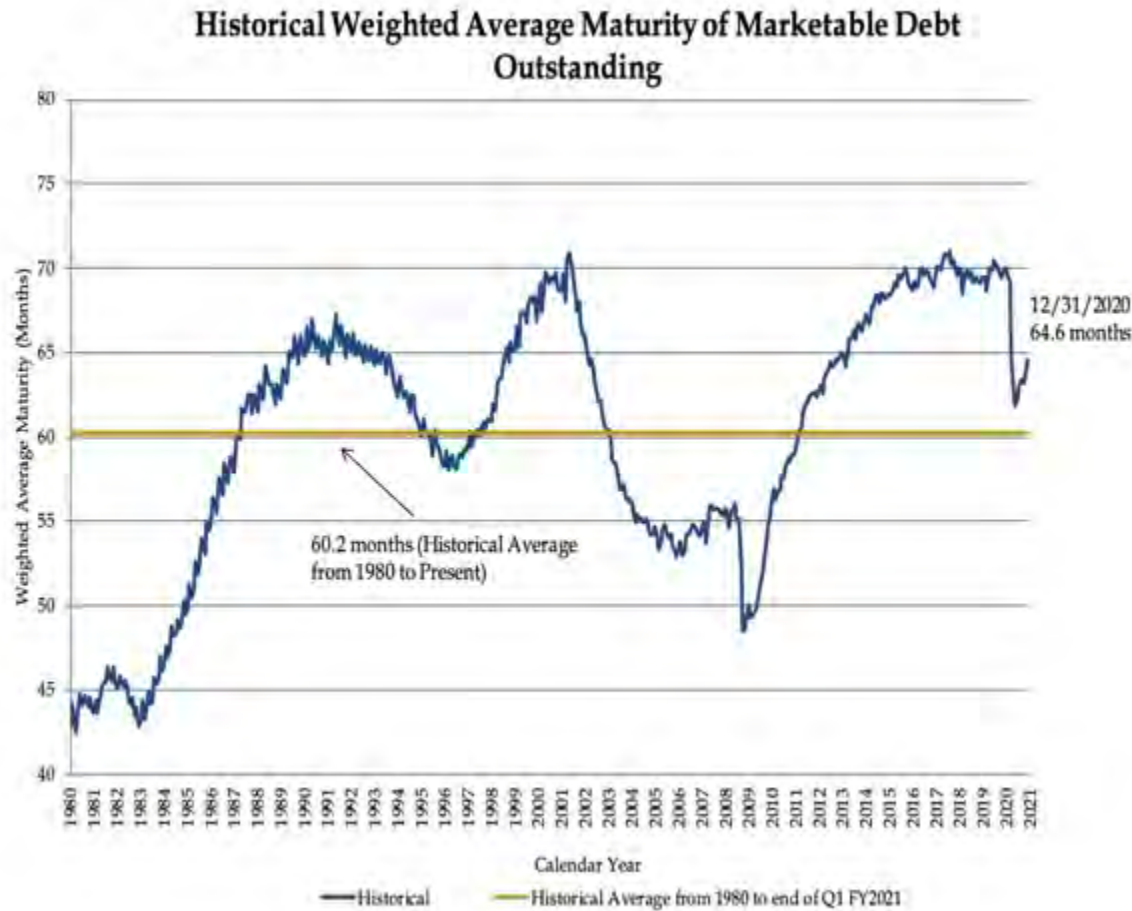
Home Sales (000s, SAAR) and Rates



Median Sales HPA (yoy%) and Rates



Interaction of Monetary and Fiscal Problems



The Long Run Still Matters



- **The Economy is back..**

- The “V” was the only logical outcome
- Recovery hampered not by lack of demand but by lack of supply
- Consumers are pushing inflation, not being hurt by it
- Global geopolitics are mainly a dangerous distraction

- **Labor Supply Shortages**

- Good for low skilled workers, reduces inequality
- ED: No longer Jobs Jobs Jobs, but Workers Workers Workers
- Immigration, programs to encourage senior and female employment, capital investments

- **The Outlook: Hot until Not**

- US economy will remain heated for the next year, unemployment to 3.4% by year end
- Inflation will continue to be hot, unclear when rates will reflect reality
- Expect a sugar crash to come, combination of tight federal budget and inflation.
- Goods spend will convert back to services

- **Potential Scenarios**

- 1: Dramatic Fed action turns the tide before things get out of control
- 2: Consumer Spending drives the economy until a moderately painful crash
- 3: Investment / debt fueled boom drives the economy even farther with a more painful crash

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