



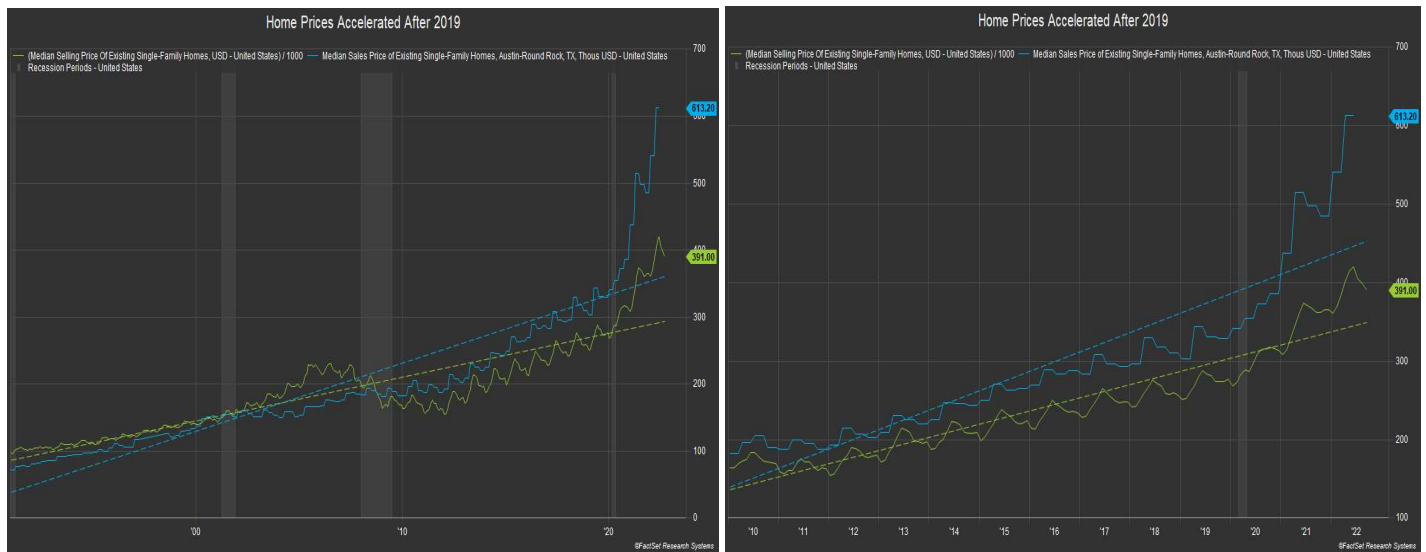
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Food for Thought on US & Austin Residential Real Estate

US residential real estate has proven to be a wealth builder over time. Since the beginning of 1980 through 2021, US stocks have typically grown faster than residential real estate and fixed income. Longer dated fixed income has often generated the second highest returns. US residential real estate returns have often outpaced short term fixed income. US stocks and residential real estate have grown at an accelerated pace since 2010.

	US Large Cap Stocks	US Small Cap Stocks	US 20 Year Corporate Bonds	US 20 Year Govt. Bonds	US 5 Year Govt. Bonds	US 30 Day T-Bills	US Inflation	US Median Home Sales Price Increase	Freddie Mac Austin Home Price Increase
Since The Beginning of 1980									
Average Annual Returns	12.34%	12.66%	9.09%	8.72%	6.82%	4.03%	3.12%	4.54%	5.53%
Real Returns	9.22%	9.54%	5.97%	5.60%	3.70%	0.91%		1.42%	2.41%
Since The Beginning of 1990									
Average Annual Returns	10.76%	11.69%	7.89%	7.53%	5.28%	2.56%	2.51%	4.29%	6.64%
Real Returns	8.25%	9.18%	5.38%	5.02%	2.77%	0.05%		1.78%	4.13%
Since The Beginning of 2000									
Average Annual Returns	7.53%	10.18%	7.67%	6.97%	4.41%	1.51%	2.32%	4.40%	6.78%
Real Returns	5.21%	7.86%	5.35%	4.65%	2.09%	-0.81%		2.07%	4.45%
Since The Beginning of 2010									
Average Annual Returns	15.15%	13.52%	7.70%	6.37%	2.97%	0.48%	2.15%	6.60%	9.05%
Real Returns	13.00%	11.37%	5.54%	4.22%	0.82%	-1.67%		4.45%	6.90%
Source: Ibbotson and FactSet									

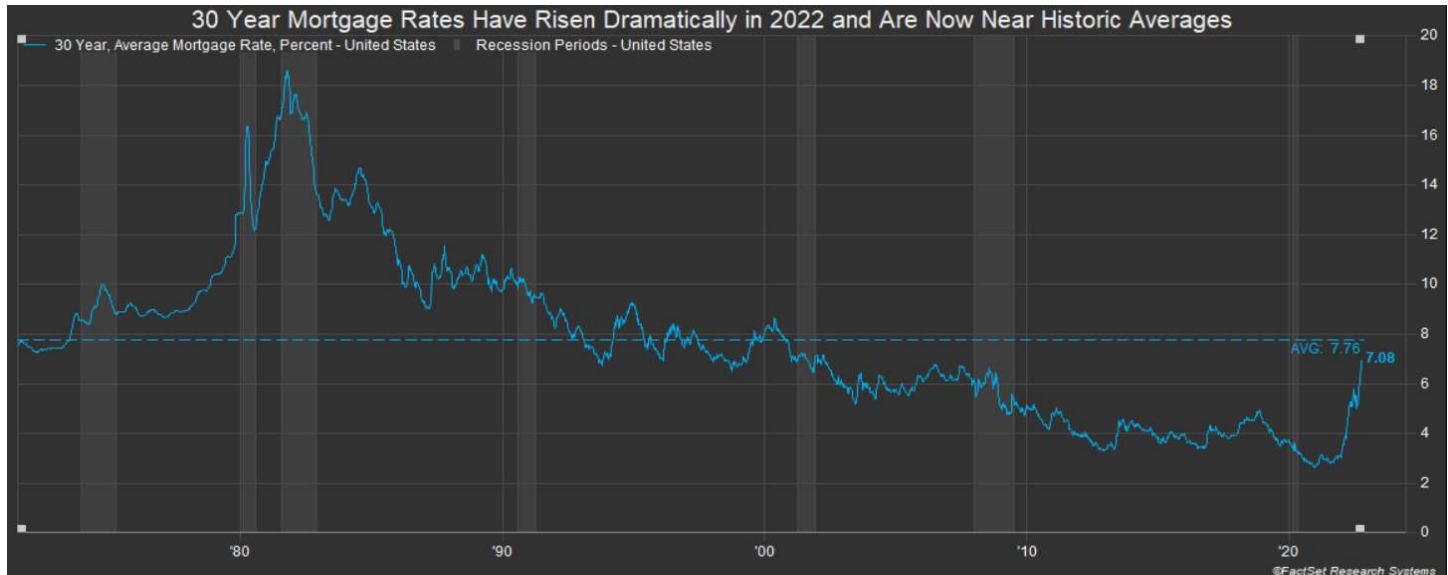
US real estate prices have benefitted from US fiscal stimulus and low interest rates particularly since 2020. See below. The dotted lines represent trendline home prices since 1991 (left chart) and since 2010 (right chart).





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The graph below highlights mortgage rates approached record lows in 2020 and 2021 and have increased rapidly in 2022 and are now near historic averages.



Investors naturally wonder what happened to housing prices the last time mortgage rates rose rapidly. The answer can be found in reviewing the mid 1977 to late 1981 period when mortgage rates grew from about 9% to 18%. During this period the US existing median home price rose 51% and inflation grew 59%. To buy the same priced home in late 1981 as compared to mid 1977, the mortgage payment increased by 88%. The moral of the 1977-1981 period is home prices can still rise as mortgage rates rise although house price appreciation may lag rapid overall inflation.

Reviewing housing conditions today, higher mortgage rates are raising buyer affordability and demand concerns. We say this because the effective cost to purchase a home when you include the impact of higher interest rates has increased by 58% since the beginning of the year.

Home Purchase Price	\$ 600,000	\$ 600,000	\$ 1,000,000	\$ 1,000,000
Down payment %	5.0%	5.0%	5.0%	5.0%
Down payment \$	\$ 30,000	\$ 30,000	\$ 50,000	\$ 50,000
Mortgage	\$ 570,000	\$ 570,000	\$ 950,000	\$ 950,000
Mortgage Rate	3.00%	7.00%	3.00%	7.00%
Mortgage Term In Years	30	30	30	30
Mortgage Payments	360	360	360	360
Monthly Mortgage Payment	\$ 2,403	\$ 3,792	\$ 4,005	\$ 6,320
Increase		57.8%		57.8%
Annual Mortgage Payments	\$ 28,838	\$ 45,507	\$ 48,063	\$ 75,844
Total Payments over Life Of Loan	\$ 865,131	\$ 1,365,201	\$ 1,441,886	\$ 2,275,335
Increase		57.8%		57.8%

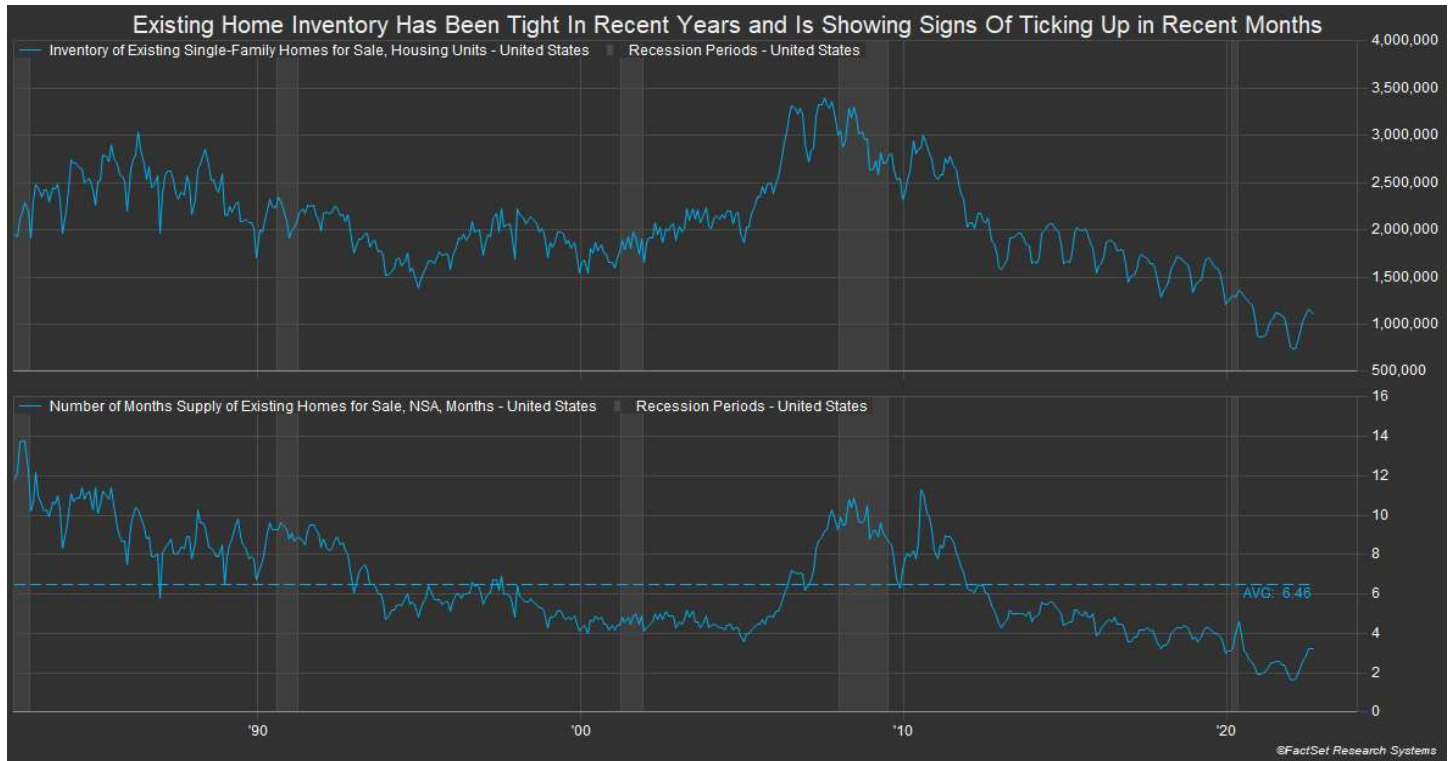


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How have real estate, stocks and fixed income performed during recessions? History reveals stocks fared the worst, residential real estate fared in between, and fixed income shined. Home price appreciation typically flattened out and has at times gone slightly negative during recessions.

Recession Start	Recession End	US Large Cap Stocks	US Small Cap Stocks	US 20 Year Corporate Bonds	US 20 Year Govt. Bonds	US 5 Year Govt. Bonds	US 30 Day T-Bills	Inflation	US Existing Home Median Price	Austin MSA Freddie Mac House Price Index	Austin MSA FHFA Home Price Index
Jan-80	Jul-80	9.6%	8.7%	10.3%	9.4%	9.5%	5.4%	6.3%	10.7%	3.9%	3.8%
Jul-81	Nov-82	14.2%	17.7%	49.0%	48.0%	40.6%	16.2%	7.0%	0.3%	0.7%	5.9%
Jul-90	Mar-91	8.0%	3.2%	7.8%	7.0%	7.2%	4.6%	3.5%	0.3%	3.2%	3.1%
Mar-01	Nov-01	-0.9%	14.2%	6.7%	4.4%	5.5%	2.3%	0.7%	2.2%	-0.6%	1.7%
Dec-07	Jun-09	-35.0%	-33.8%	3.1%	8.7%	8.3%	1.7%	2.7%	-11.3%	-0.4%	1.3%
Feb-20	Apr-20	-1.1%	-13.0%	-0.2%	7.1%	3.1%	0.1%	-0.9%	5.8%	2.2%	1.5%
Average Since 1980		-0.9%	-0.5%	12.8%	14.1%	12.4%	5.1%	3.2%	1.3%	1.5%	2.9%
Memo:											
Nov-73	Mar-75	-7.8%	11.5%	0.6%	4.4%	7.6%	10.3%	14.8%	15.2%	#N/A	#N/A
Source: Ibbotson and FactSet											

Current home inventory, housing starts, and consumer credit statistics may buffer today's housing market. US existing home inventories and number of months' supply of existing homes, while they have ticked up recently, remain historically low.





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Population growth has supported housing demand in some areas of the US.

Fastest growing metros 2010-2019 50 largest metros

	2019 population	Numeric change		Percent change	
		Number	Rank	%	Rank
Austin MSA	2,227,083	510,760	8	29.8%	1
Raleigh MSA	1,390,785	260,292	23	23.0	2
Orlando MSA	2,608,147	473,748	9	22.2	3
Houston MSA	7,066,141	1,145,654	2	19.4	4
San Antonio MSA	2,550,960	408,440	13	19.1	5
Dallas MSA	7,573,136	1,206,599	1	19.0	6
Phoenix MSA	4,948,203	755,074	3	18.0	7
Charlotte MSA	2,636,883	392,920	15	17.5	8
Nashville MSA	1,934,317	288,134	21	17.5	9
Denver MSA	2,967,239	423,631	11	16.7	10

Source: U.S. Census Bureau, Population Estimates.

In the last two years Austin's population has grown at the second highest rate (3.57%) of the top 25 cities. The Austin area is now the eleventh largest in the US.

rank	name	state	pop2022	pop2020	growth
1	New York City	NY	8,930,002	8,804,190	1.43%
2	Los Angeles	CA	3,919,973	3,898,747	0.54%
3	Chicago	IL	2,756,546	2,746,388	0.37%
4	Houston	TX	2,345,606	2,304,580	1.78%
5	Phoenix	AZ	1,640,641	1,608,139	2.02%
6	Philadelphia	PA	1,619,355	1,603,797	0.97%
7	San Antonio	TX	1,456,069	1,434,625	1.49%
8	San Diego	CA	1,402,838	1,386,932	1.15%
9	Dallas	TX	1,325,691	1,304,379	1.63%
10	San Jose	CA	1,026,700	1,013,240	1.33%
11	Austin	TX	996,147	961,855	3.57%
12	Jacksonville	FL	975,177	949,611	2.69%
13	Fort Worth	TX	954,457	918,915	3.87%
14	Columbus	OH	929,492	905,748	2.62%
15	Charlotte	NC	903,211	874,579	3.27%
16	Indianapolis	IN	901,082	887,642	1.51%
17	San Francisco	CA	887,711	873,965	1.57%
18	Seattle	WA	762,687	737,015	3.48%
19	Denver	CO	738,594	715,522	3.22%
20	Washington	DC	707,109	689,545	2.55%
21	Nashville	TN	707,091	689,447	2.56%
22	Oklahoma City	OK	701,266	681,054	2.97%
23	Boston	MA	687,257	675,647	1.72%
24	El Paso	TX	684,753	678,815	0.87%
25	Portland	OR	666,249	652,503	2.11%

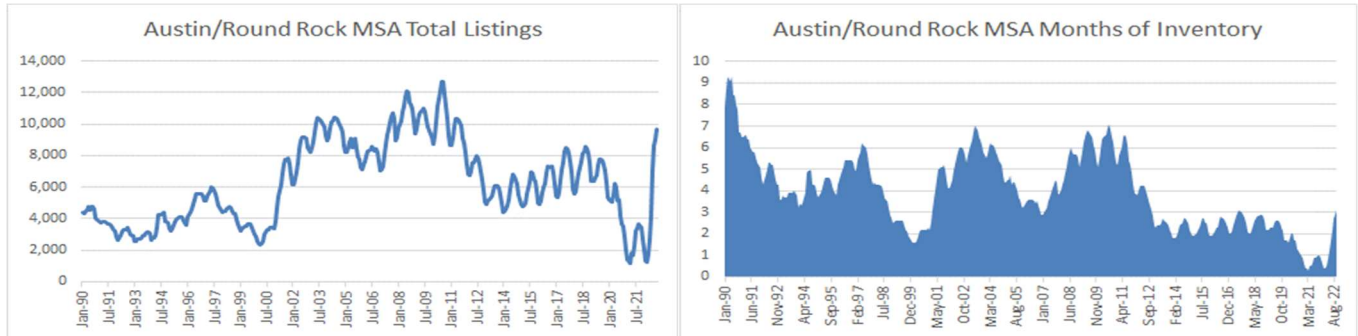
Source: [The 200 Largest Cities in the United States by Population 2022 \(worldpopulationreview.com\)](https://www.worldpopulationreview.com/cities-rankings/the-200-largest-cities-in-the-united-states-by-population-2022)



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Austin home listings have dramatically picked up since June 2022. Housing inventory relative to sales was low from 2014-2019 and very tight from 2020 through April 2022. The housing market is now cooling.

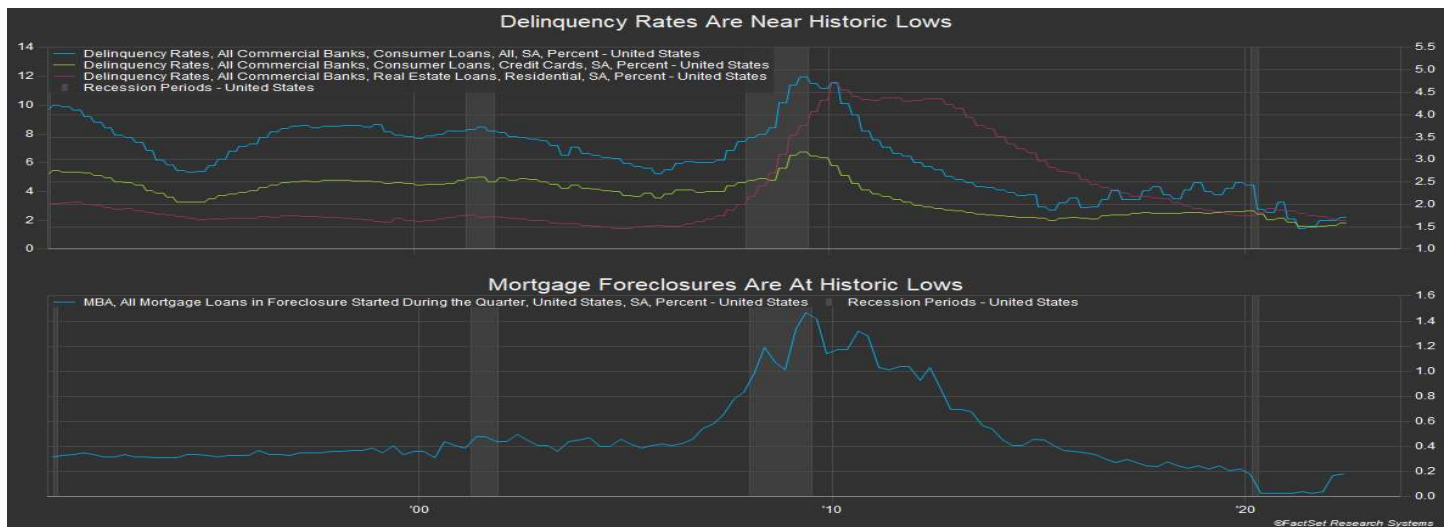


Source: Texas A&M Real Estate Research Center

Is excess home building over the last few years a concern? Our analysis suggests not. US housing starts were very low from 2010-2012 and have rebounded to historic averages in recent years.



Lastly, will home prices fall because consumers will no longer be able to pay their mortgages? We suspect this will be a growing issue during a recession. Fortunately, delinquency and foreclosure trends are at historic lows today.





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Conclusion

US residential real estate has proven to be a wealth builder over the long run. Government fiscal and monetary stimulus and low mortgage rates caused house prices to get ahead of long-term trends in 2020 and 2021. With this house price rise backdrop and mortgage rates rising significantly in 2022, housing affordability has become an issue for home demand.

History suggests that residential real estate prices hold up relatively well during recessions and rate rises. Looking regionally, Austin has enjoyed population migration that has contributed to home price appreciation being above national averages.

Some current data points are supportive of the housing market. Existing home inventory levels are just rising from historic lows. US housing starts were not excessive during the recent housing boom. Lastly, US consumer and real estate credit statistics have remained healthy to date.

To sum up, we see a scenario where home prices are relatively flat to modestly falling if/when we experience a mild recession. A longer and deeper recession would most likely cause home prices to fall more significantly. Over the next five to ten years, we would not be surprised to see home prices grow at a slower rate than recent history.

Please let us know if you have questions or comments,

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