



Predicting the future of Real Estate Housing Market

FINTECH PROJECT-01

Motivation & Summary

The real estate industry has long operated according to its own traditions, but the availability of huge volumes of data is revolutionizing the way the industry works. Big data analysis techniques are creating a new real estate market in which both customers and agents are better informed than ever before

Question Being Asked by the Investment Community

- ☐ Is 2021 a good year to buy a house?
- ☐ Where should one buy a house?
- ☐ Will secondary cities that have historically been overlooked but are attractive to dynamic young populations become popular?
- ☐ How will commercial real estate be affected by telecommuting and declining automobile ownership?
- ☐ Will climate change render waterfront property worthless or spur innovations that enable a different relationship to aquatic environments?

US House Price Prediction 2021

	No	X1 transaction date	X2 house age	X3 distance to the nearest MRT station	X4 number of convenience stores	X5 latitude	X6 longitude	Y house price of unit area
0	1	2012.917	32.0	84.87882	10	24.98298	121.54024	37.9
1	2	2012.917	19.5	306.59470	9	24.98034	121.53951	42.2
2	3	2013.583	13.3	561.98450	5	24.98746	121.54391	47.3
3	4	2013.500	13.3	561.98450	5	24.98746	121.54391	54.8
4	5	2012.833	5.0	390.56840	5	24.97937	121.54245	43.1

Initial Data Clean up

Utilized Jupyter lab using python to eliminate unnecessary data.

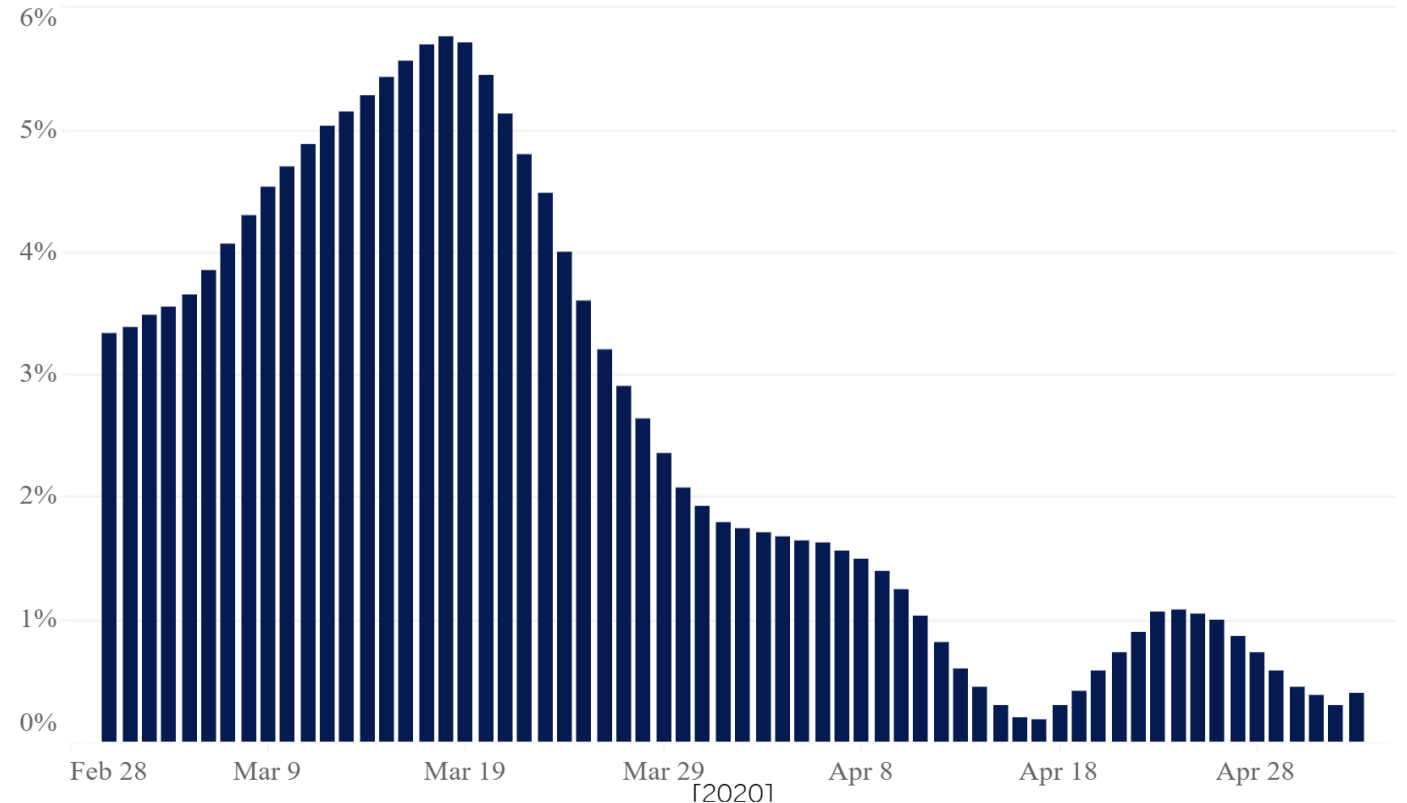
```
<class 'pandas.core.frame.DataFrame'>  
RangeIndex: 9779168 entries, 0 to 9779167
```

Data columns (total 31 columns):

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wsid  int64  
wsnm  object  
elvt  float64  
lat   float64  
lon   float64  
inme  object  
city  object  
prov  object  
mdct  object  
date  object  
yr     int64  
mo     int64 float64
```

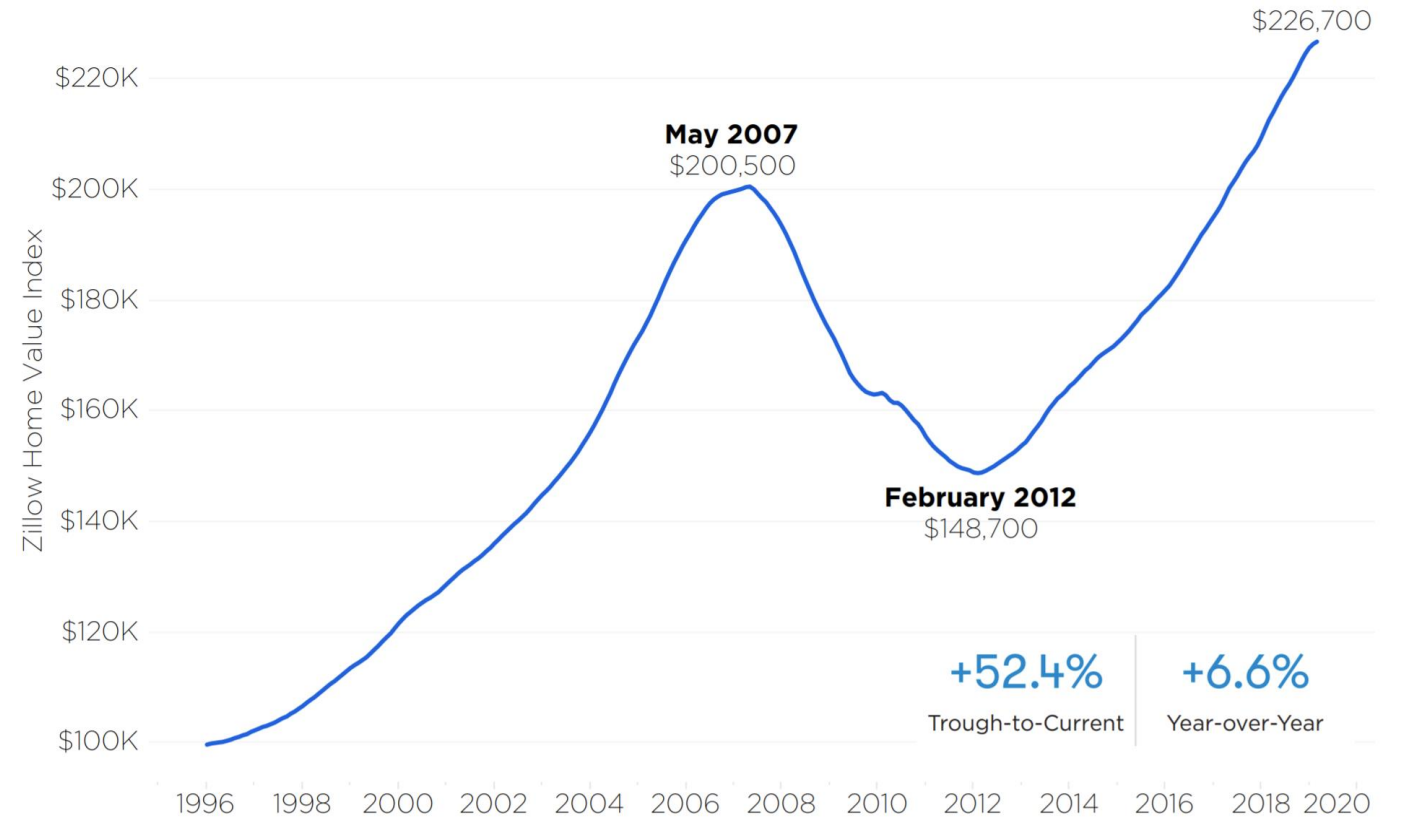
Most Affordable Housing In the US

Determining in 2020 the kind of homes being listed offered some early clues as to the resilience of the market and any potential future impacts on home prices as the enduring impacts of the coronavirus crisis unfold. The early difference emerging show that sellers were balancing their decision to sell different at different price points.



Home Value Index

US home values surpassed pre-recession highs.

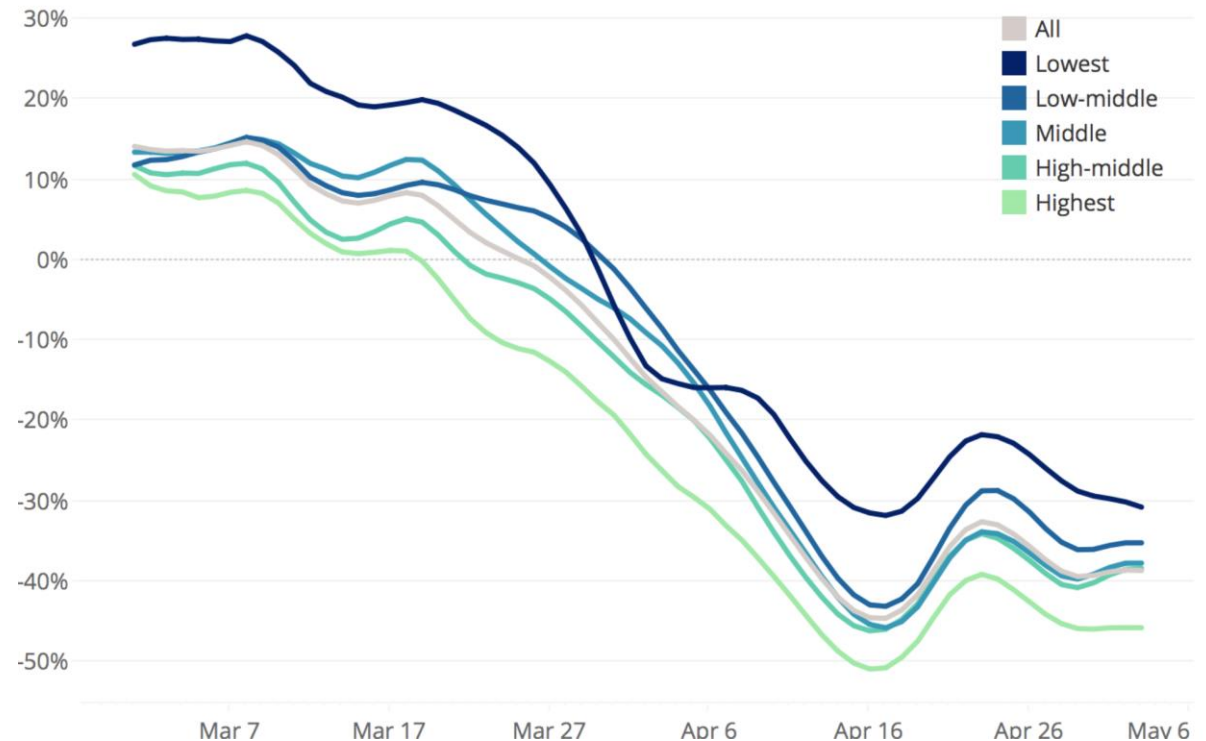


Fewer expensive listings

In 2020 seems fewer expensive listings seems to be helping to push down median list price within the US

In the wake of the coronavirus outbreak, listings of the most-affordable homes fell later and by less than listings of the most-expensive homes

United States year-over-year change in new inventory, by price tier

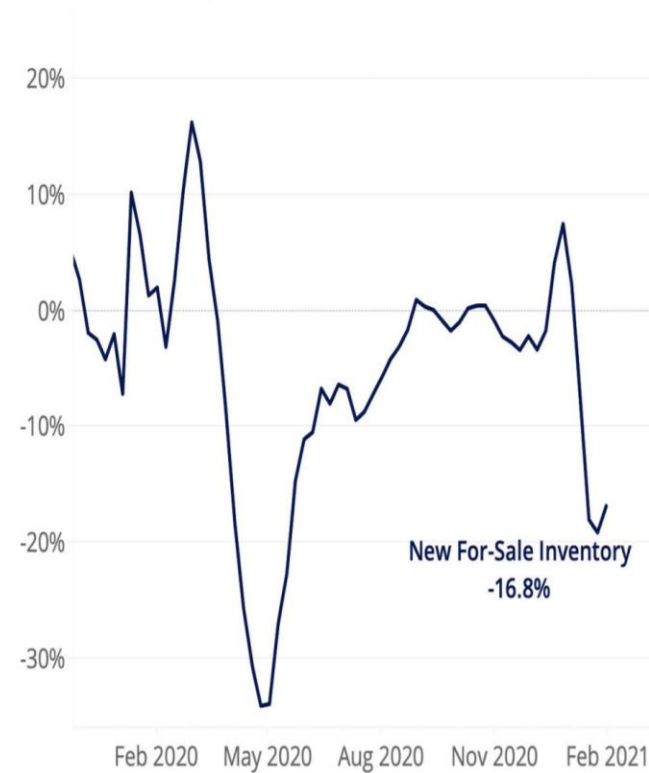


2020 Market

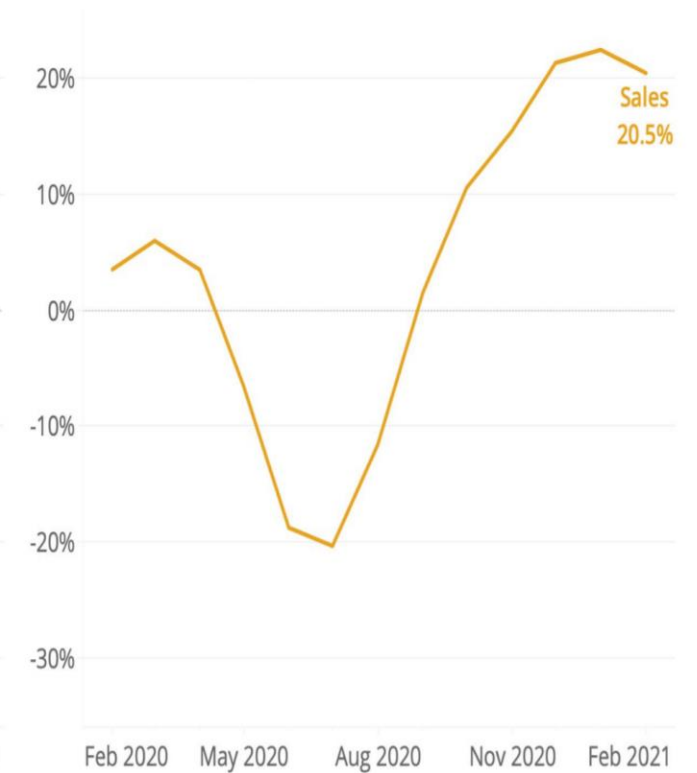
In 2020 the market came to a halt and then rebounded.

Market came to a halt - then rebounded

New For-Sale Inventory YoY

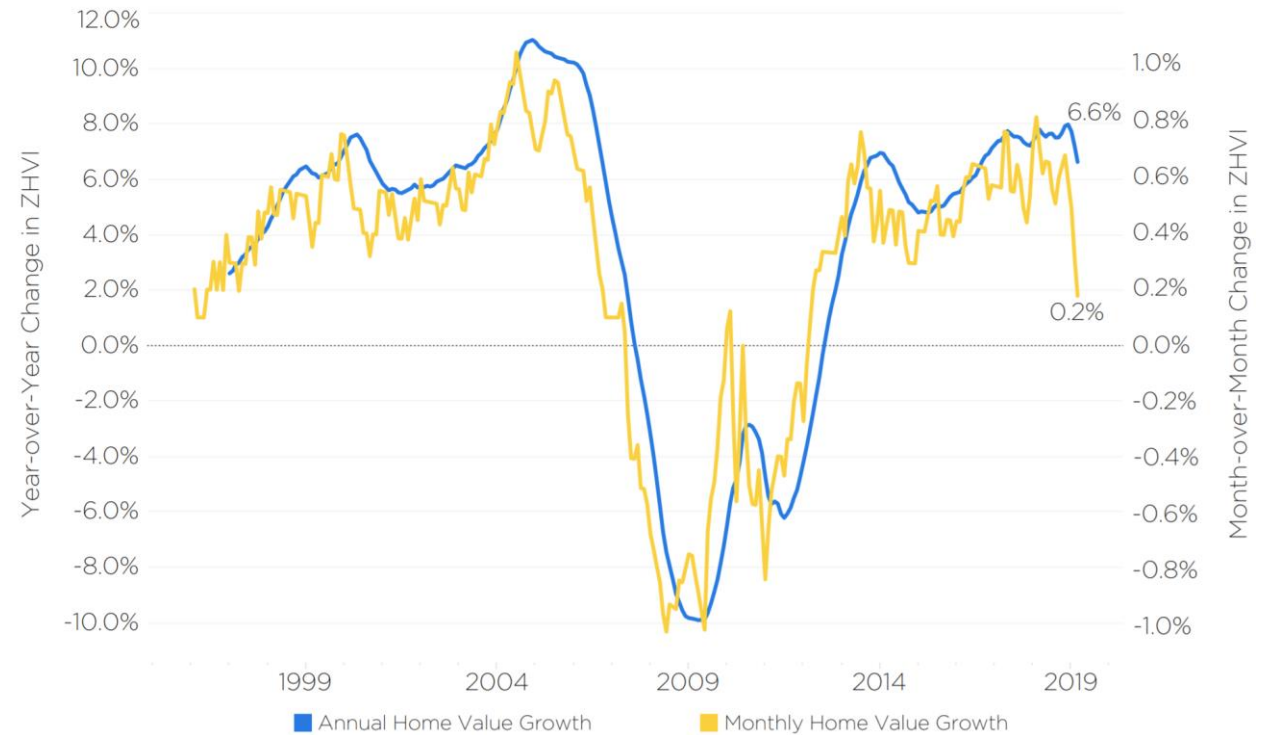


Sales YoY



2020 Market

In 2020 the market came to a halt and then rebounded.

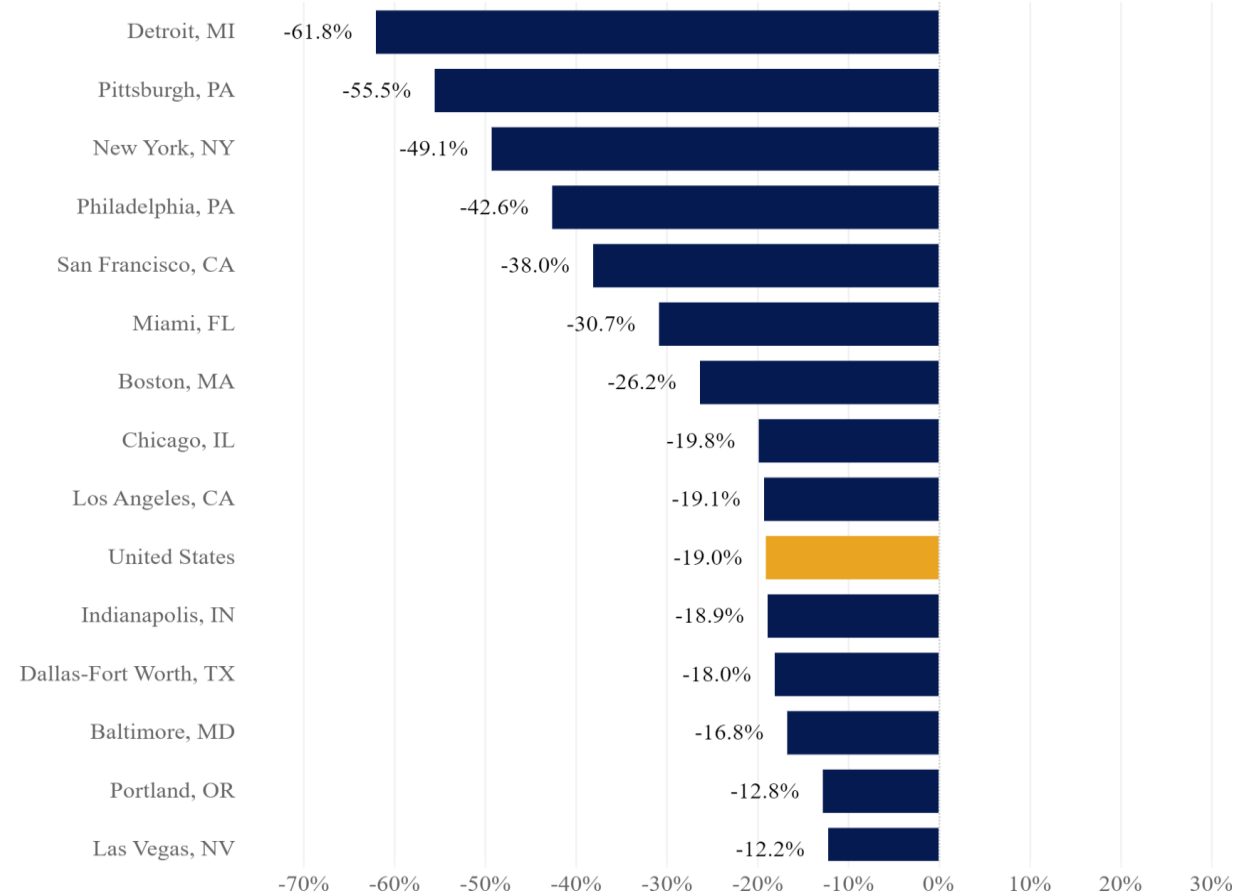


New Listings

In Spring 2020 new listings

New listings have dried up this spring

% change in new listings since March 1, 2020



Conclusion

U.S. home values are growing at a steady pace, and have surpassed prerecession highs nationally and in a number of large markets. Driven largely by limited inventory and high demand, home values are growing fastest at the bottom end of the market.

- ❑ Regionally, markets in the Midwest and Southeast are outperforming markets along the east and west coasts
- ❑ Growth in U.S. rents has slowed considerably over the past couple of years and has largely stabilized. Markets in the Southwest are leading national rent growth