

King County, WA Housing Affordability Study

March 13, 2020

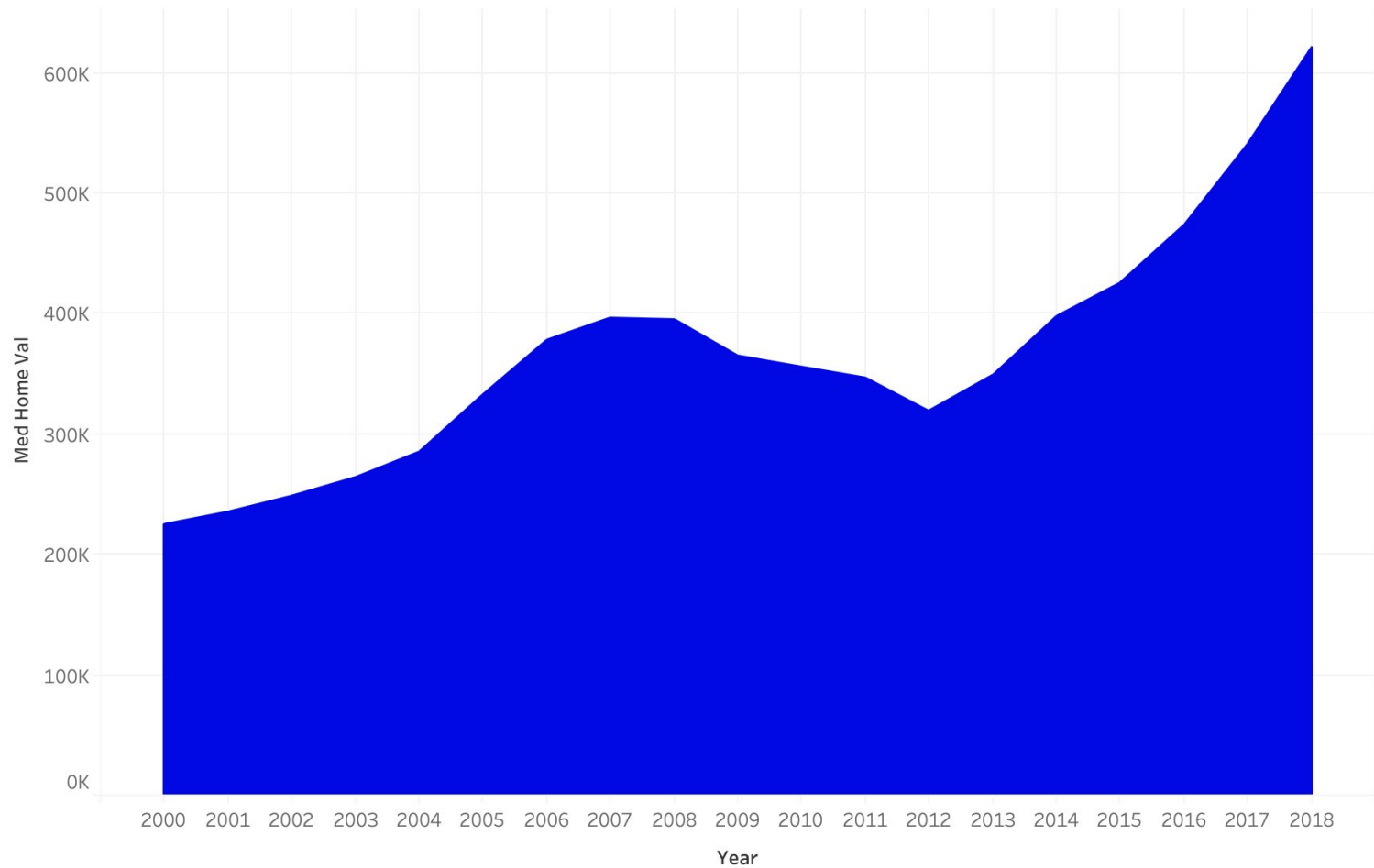


The Problem

From 2000 to 2020, the median home value in King County, WA increased by approximately 189%.



King County, WA Median Home Values



The plot of sum of Med Home Val for Year.

Aren't high home values good?

Yes:

- Higher tax revenue for the city
- Good investment for homeowners as they age
- Landlords more likely to remodel units

And no:

- Approximately 12,500 people are homeless per night in King County
- Middle and lower income residents are priced out
- Higher percentage of income goes to housing



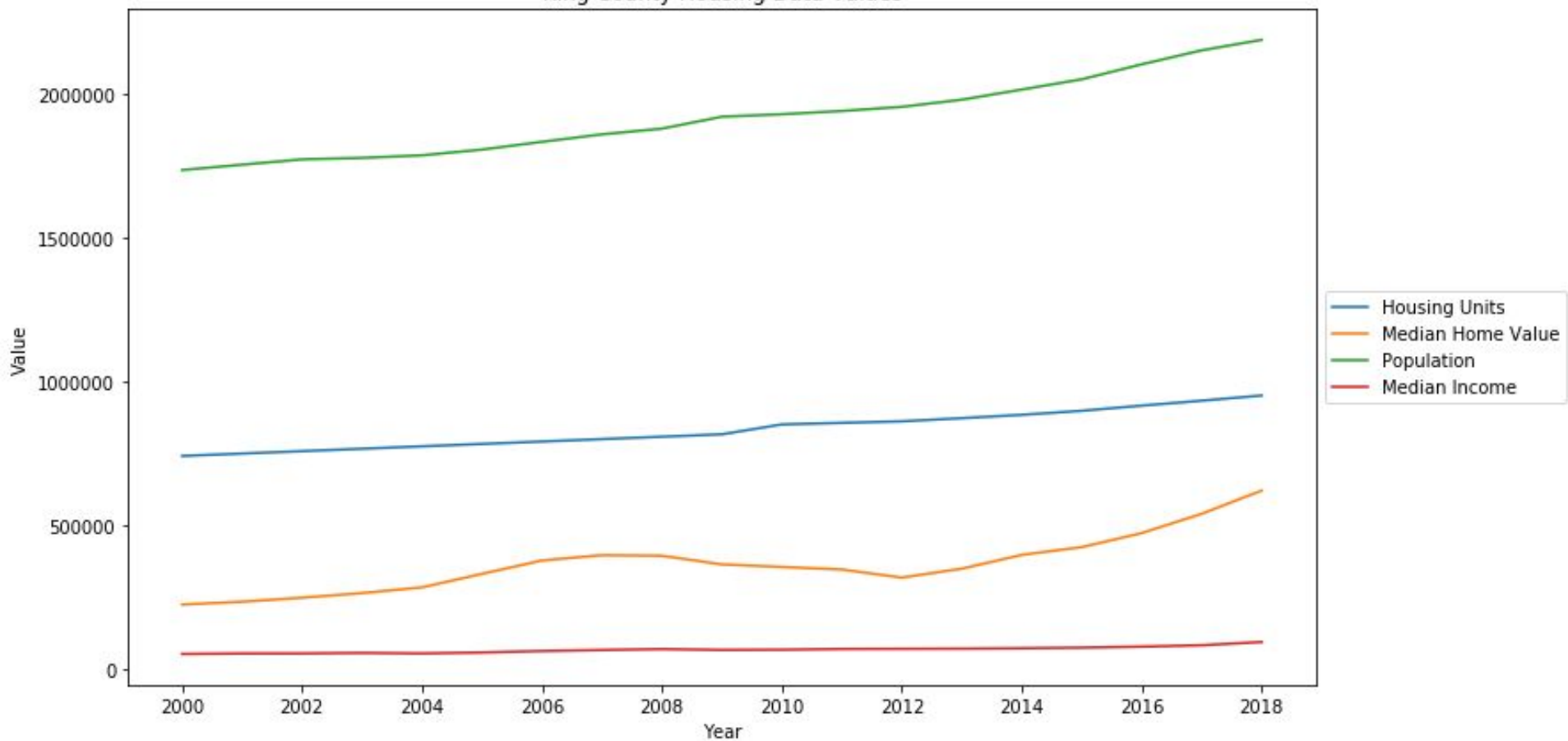
What's the Cause?

This study focused on the following factors:

- Population
- Number of Housing Units
- Median Household Income



King County Housing Data Values

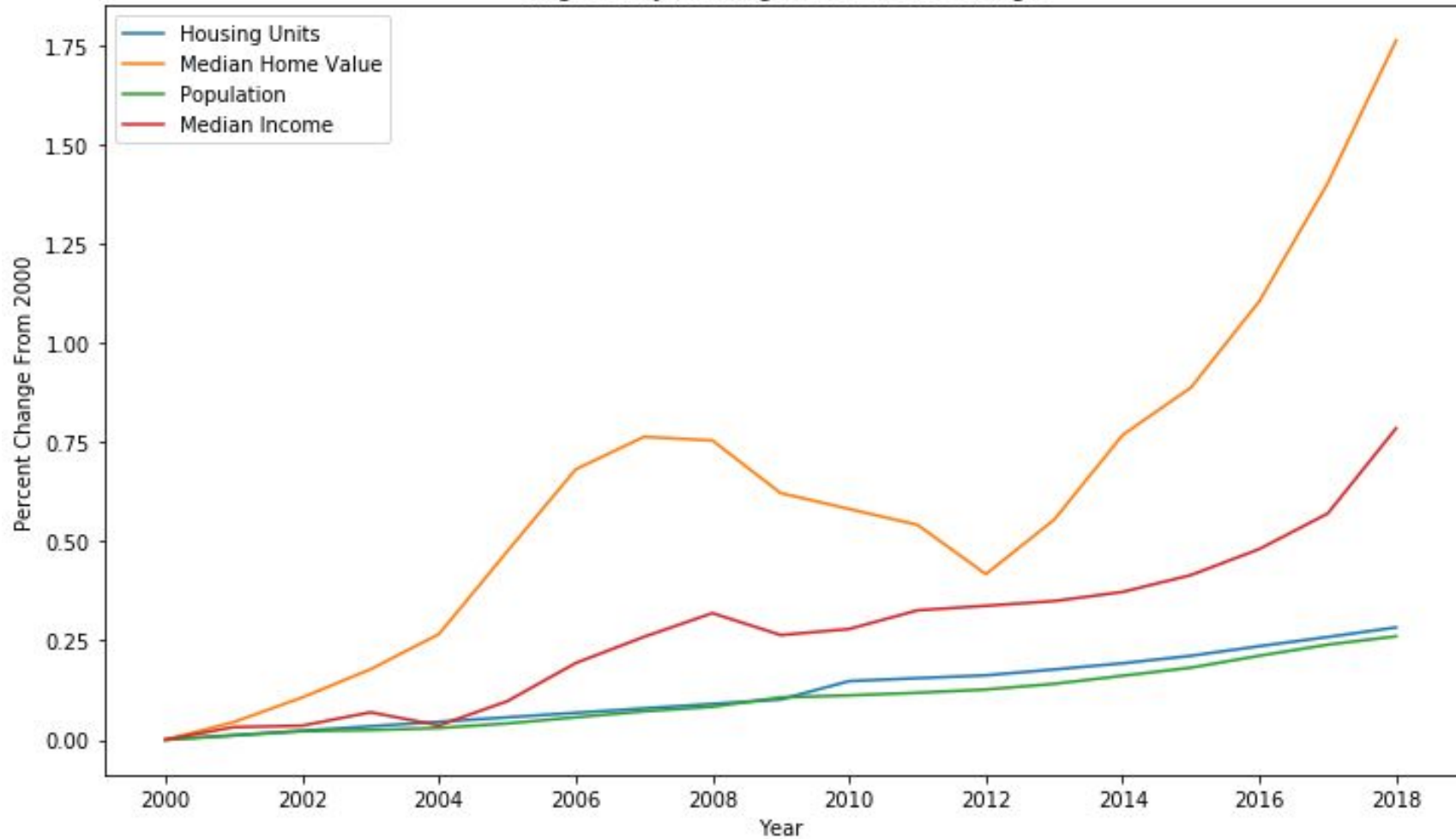


What's the Cause?

- Raw numbers show large increases in median home value similar to population
- There is a somewhat constant increase in housing units.
- Median Household Income doesn't seem to bump as much as other values



King County Housing Data Percent Change

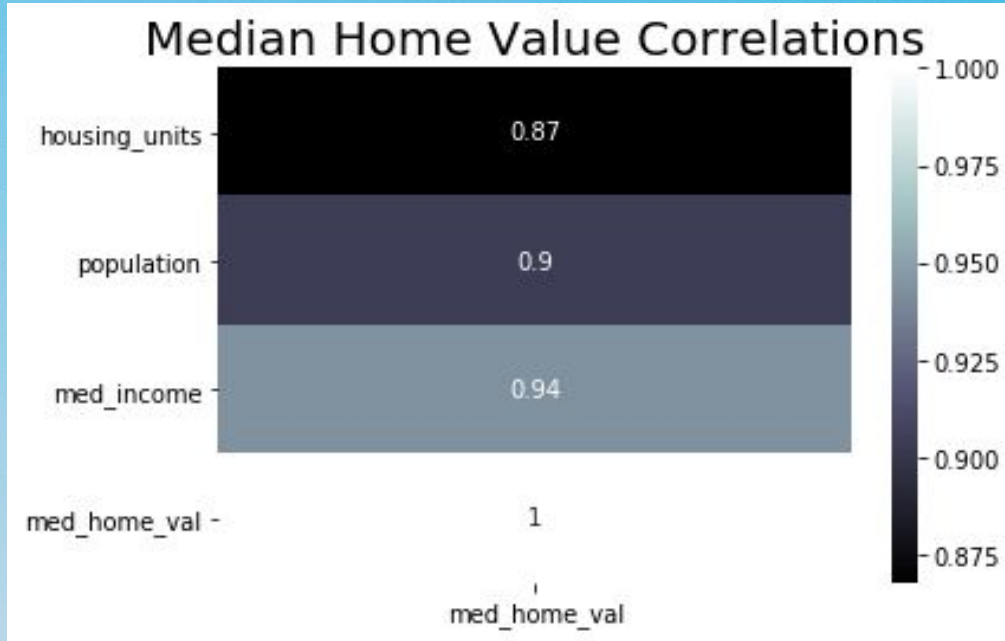


Percent Change Shows a Different Story

- Median household income correlates much more closely with median house value when comparing percent change from 2000
- Housing units have actually slightly outpaced population growth as a percentage increase from 2000, though it's catching up in later years



What do we believe?



Models

First model: Linear Regression

Scaled and Unscaled returned essentially identical results

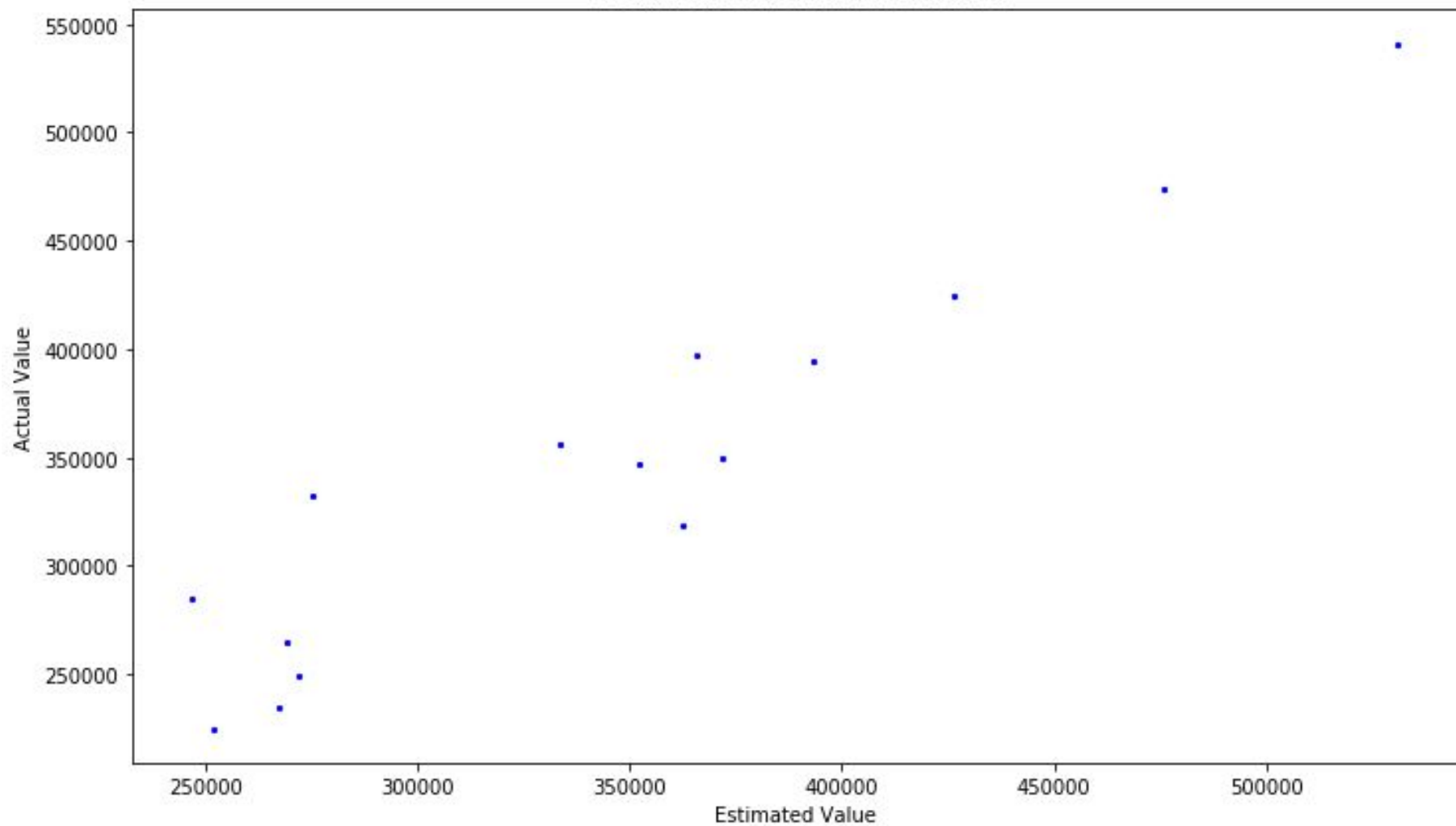
Results:

Train: .95

Test: .83



Actual Values Vs Estimated Values



Models

Second model: Random Forest

Scaled data, created gridsearch

Results:

Train: .98

Test: .7



Results

Linear Regression was the best model

Relatively small sample size (18 years)

Increase in median household income is the biggest driver
in increasing house values



What Now?

Decrease median household income?

Decrease population?

Increase housing units?

-WA short by 225k homes over last 15 years



Conclusion

Increase housing supply to get ahead of demand and ultimately increase affordability.

More research to include rental rates

Attempt to discern home ownership rates vs rental rates throughout King County

