Factors Influencing Real Estate Prices

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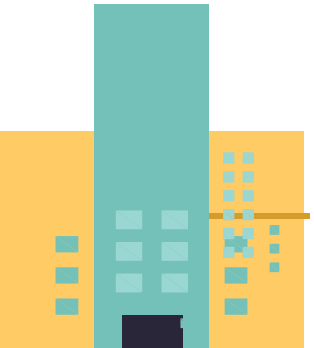
Overview

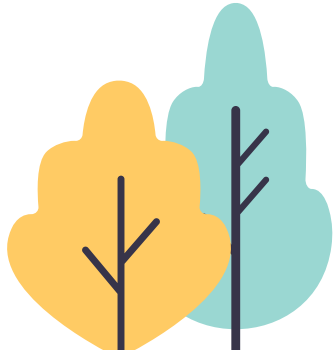


Background

The factors researched are if high average income, population and its density, and the technological improvement of a state all indicate a higher real estate price. It is useful:

a) For predicting the future trends of real estate prices, especially during the Covid-19;

b)For deciding where to buy a house.



Research Question

What factors impact real estate prices in the United States?

Data

Independent Variables:

- Population Density in 2010
- Population Estimate in 2010
- Average Income in 2010
- Technological Index Score in 2014

Dependent Variable

- Real Estate Price in 2010

Descriptive Statistics

	Average Income	Technology Scores	Population Density	Population Estimate	Real Estate Prices
Mean	29801.5	52.9963	194.962	12,325,628.16	6,563,802.46
Median	38,374	52.81	98.75	8,872,739	5,430,279.5
Mode	N/A	N/A	153.9	N/A	N/A
Standard Deviation	6,376.574	14.603	261.091	13,696,436.64	4,692,938.519
Count	50	50	50	50	50

Regression Analysis

First Run

Summary		
Adjusted R Square	0.473	
Significance F	1.00E-06	
	P-value	Coefficients
Average Income	0.429	-80.76
Population Density	0.182	-3264.08
Population Estimate	7.15E-07	0.22
Tech Scores	0.085	74242.8

Dropped Average Income

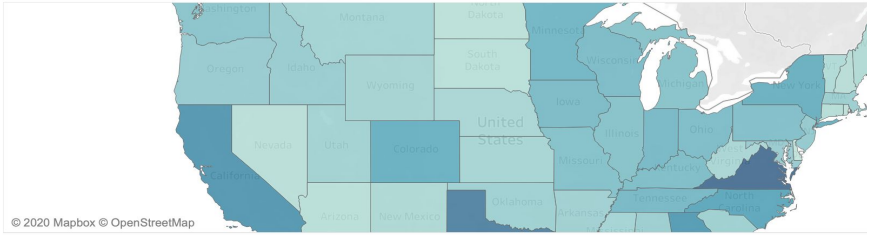
Second Run

Summary		
Adjusted R Square	0.478	
Significance F	3.07E-07	
	P-value	Coefficients
Population Density	0.053	-4184.75
Population Estimate	4.02E-07	0.22
Tech Scores	0.117	63087.16

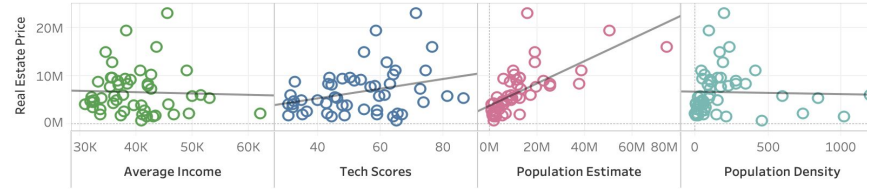
Using the analysis we proved that our model is useful and also improved it by dropping the average income column as it was insignificant

Dashboard

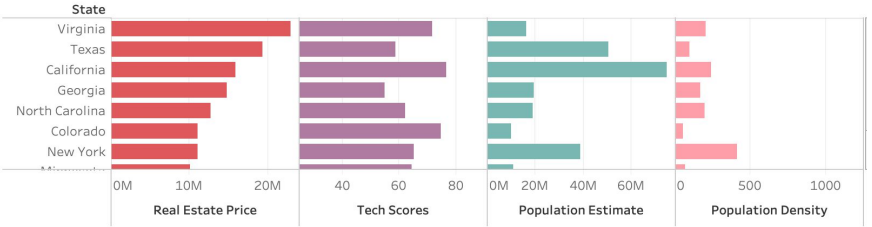
Map Distribution of Real Estate Prices



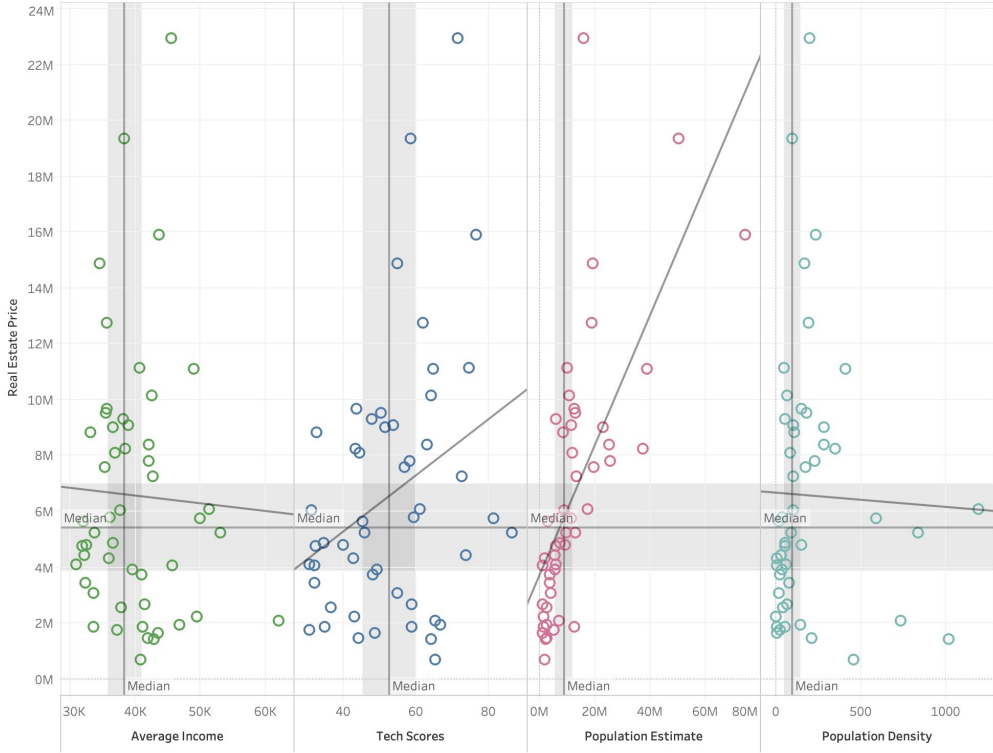
Scatter Independent Variables vs. Real Estate Prices



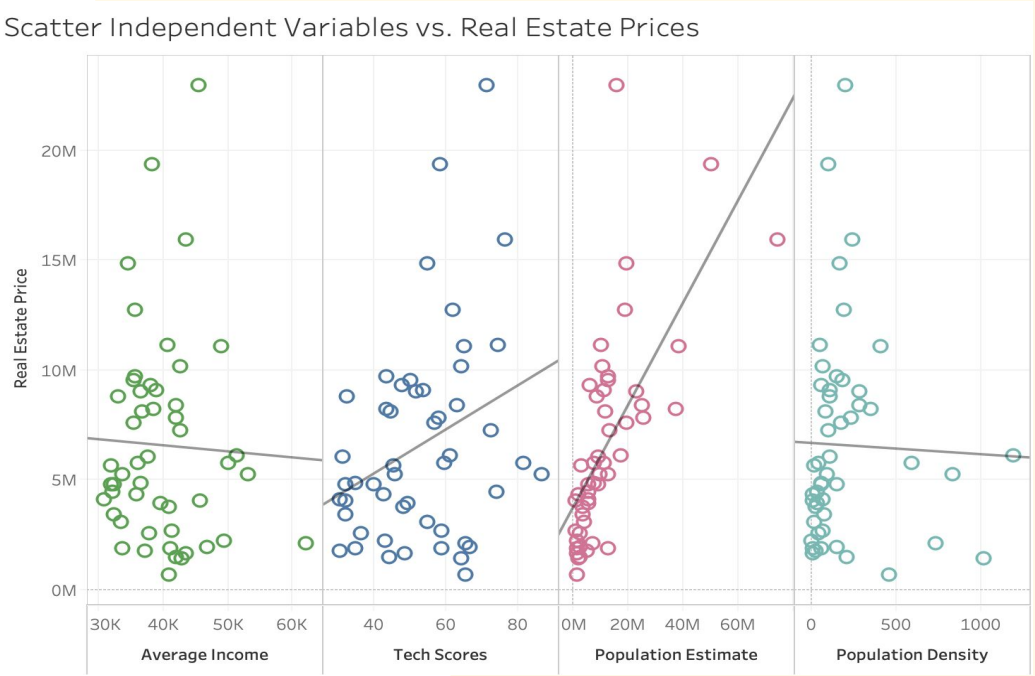
Bar Graph Comparing Values Between States



Scatter Independent Variables vs. Real Estate Prices With Median and Trend Line

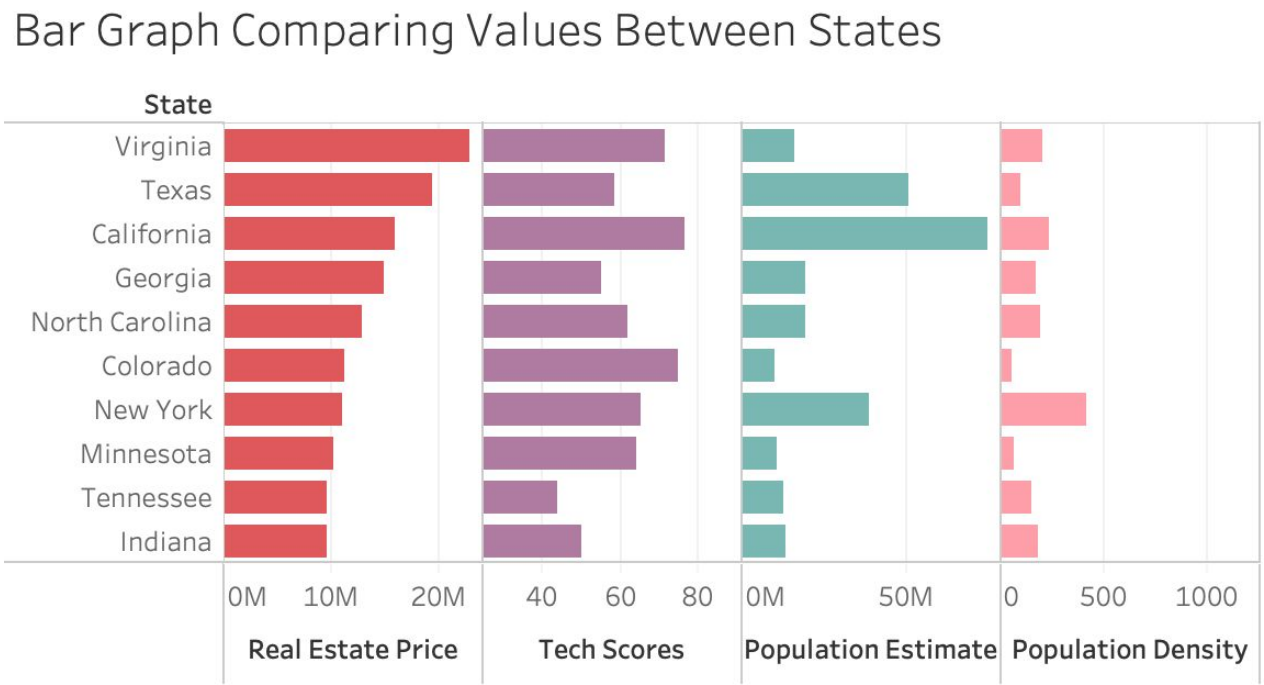


Visualizations



The population estimates' linear regression is the steepest compared to the others, representing the stronger relationship between population estimate and real estate prices than with real estate price and the other independent variables.

Visualizations



Virginia, Texas, and California has the highest real estate prices compared to the rest of the states.

CONCLUSION

- Real estate prices are impacted by **population and its density, technological improvement**, and average income of the region
- Average income is not statistically significant in the model
- Both average income and the population density are negatively correlated with the house prices, thus assumed not very useful
- The best factors to look at when investing into real estate are:
    - Technological improvement: useful to look at the amount of good tech institutes in the area, and IPOs launched
    - Population: driven mainly by birth and immigration rates.

Thank You!