

# Minnesota Home Value Time Series Analysis

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# Outline

- Business Problem
- Data
- Methods
- Results
- Conclusions

# Business Problem

- Real estate investment firm wants to invest in property in Minnesota
- Needs to know in which locations to invest
- Wants to identify the best 5 zip codes for investment

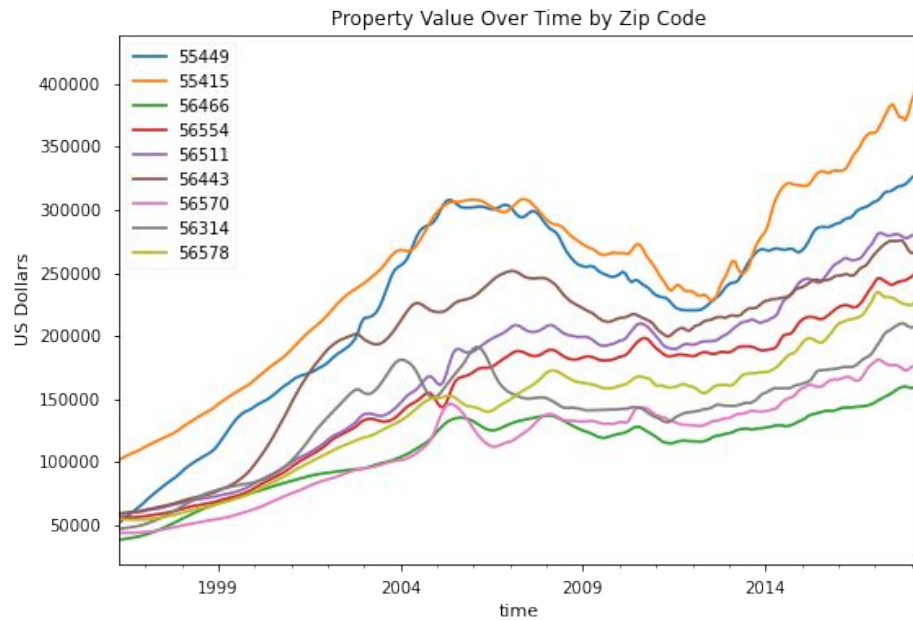
# Data

- Data sourced from Zillow Research
- Dataset contains time series data of home values, and 6 variables describing home location
- Dataset encompassed 14,723 entries from 1996-2018



# Methods

- Created SARIMA time series models to forecast future home values
- Evaluated best zip codes for investment by calculating the future potential ROI of property in that location



# Results

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# Conclusions

**The firm should invest in the following zip codes in Minnesota due to their high ROI percentages:**

- Zip Code 55415: forecasted ROI of 45.8% after three years
- Zip Code 56314: forecasted ROI of 29.5% after three years
- Zip Code 56570: forecasted ROI of 23.4% after three years
- Zip Code 56578: forecasted ROI of 21.7% after three years
- Zip Code 55449: forecasted ROI of 21.4% after three years

# Next Steps

- The model and analysis are not complete solutions
- Time series struggle to perfectly meet the assumption of stationarity
- More accurate forecasts could be produced by further transforming data, and using more powerful models, such as recurrent neural networks, Prophet, or Greykite



# Thank You!

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