

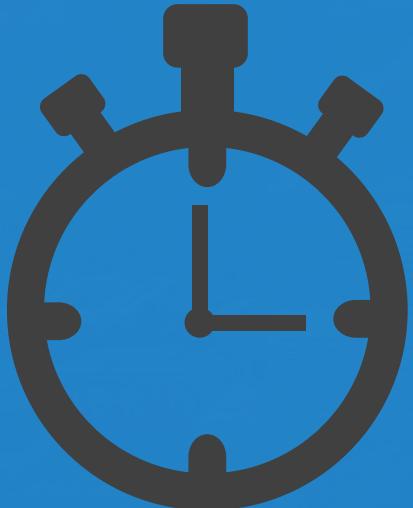
A large, two-story house with light-colored siding and white trim. A prominent white 'FOR RENT' sign is positioned in the foreground on the left side of the frame. The sky is blue with scattered white clouds.

# Time Series Analysis

Recommended Zip Codes to Develop New Rental Properties

Presented by: Fernando Aguilar Islas

# Agenda



## Zip Code Selection

Zip codes were filtered according to median home price, historical return on investment to date, and urbanization.

## Time Series Analysis

Calculate monthly returns from the historical median home prices and build a time series model to forecast 10-year returns.

## Recommendations

Recommendations are issued according to forecasts derived from the predictive models.

# Zip code selection

1. Urbanization  
(Top 20% Size Rank)
2. Median Price Level  
(35 - 60 percentile)
3. Risk Profile  
(1 decile above median COV)
4. Historical ROI  
(Top 5 ROI)

RegionName	ROI	CV
1784	70808	2.258519
1877	29461	2.061224
2213	3820	1.988142
1375	52722	1.948396
2931	70809	0.239323

Zipcode : 70808  
Location: Baton Rouge, LA

Zipcode : 29461  
Location: Moncks Corner, SC

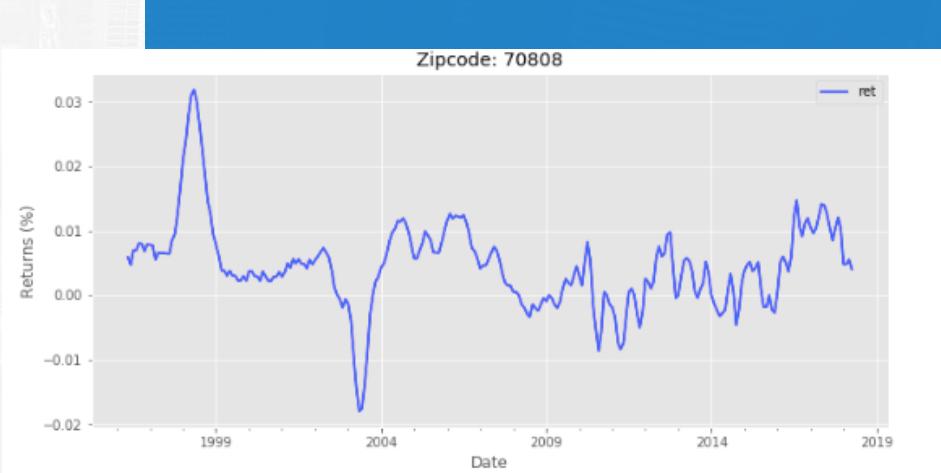
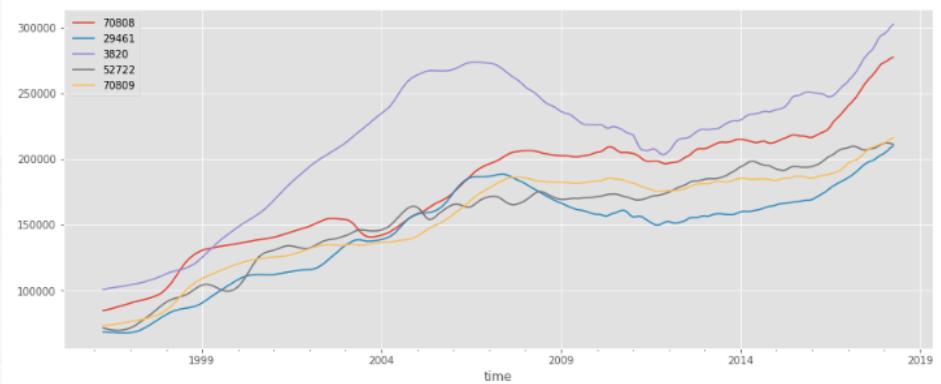
Zipcode : 3820  
Location: Dover, NH

Zipcode : 52722  
Location: Bettendorf, IA

Zipcode : 70809  
Location: Baton Rouge, LA

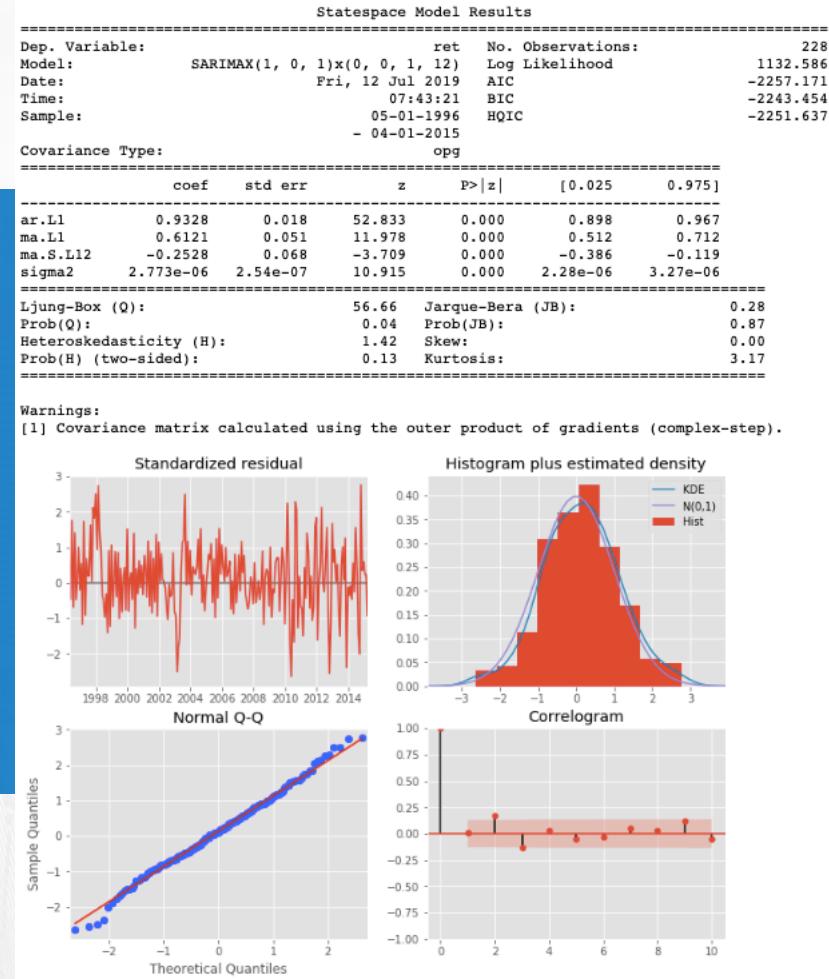
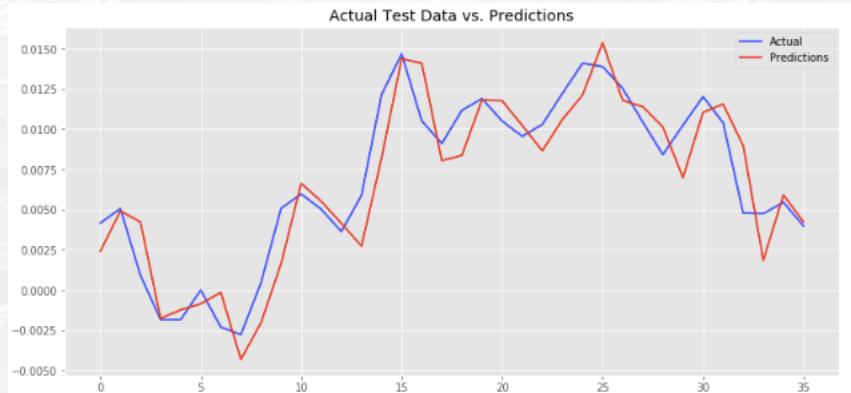
# Time Series Analysis

- Time series data was transformed into monthly returns.
- Monthly returns are a better feature to rank zip codes.



# SARIMA Model

- Estimated the best SARIMA parameters for each zip code to capture most of the data's signal.



# Forecasts and Recommendations

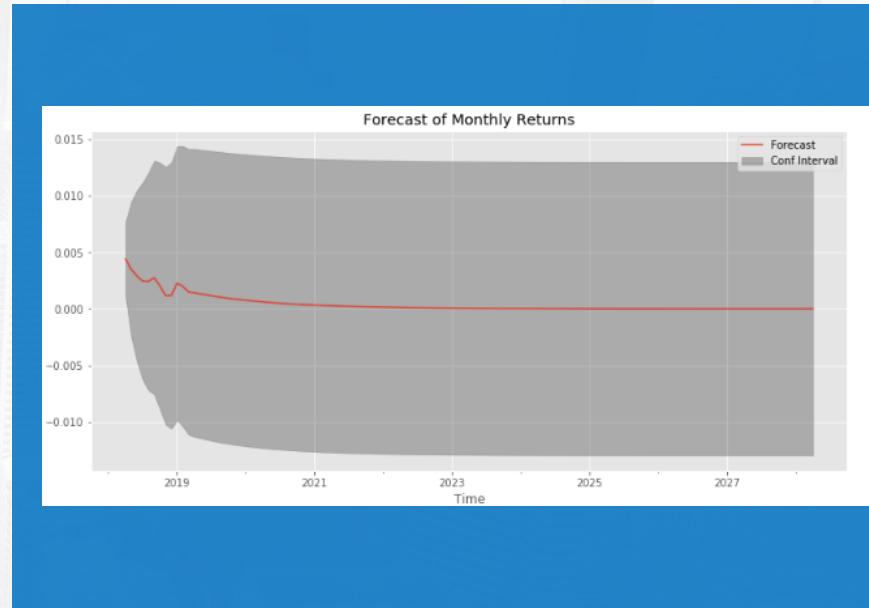
Invest in:

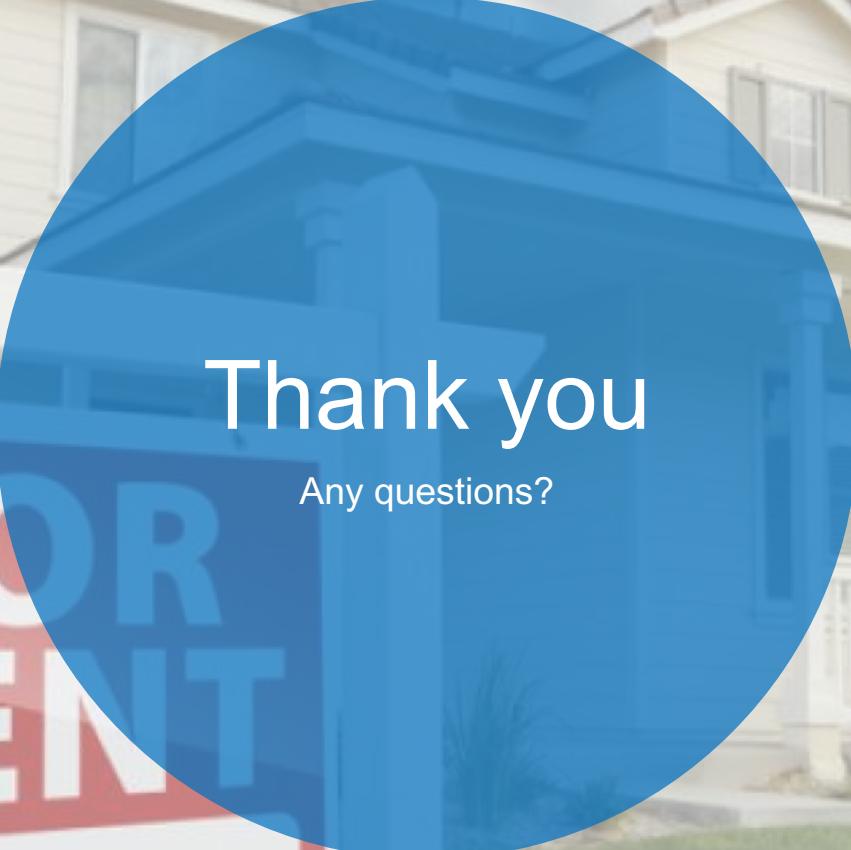
1. 3820: Dover, NH (216.85% 10-year total return)
2. 29461: Moncks Corner, SC (216.44% 10-year total return)
3. 70809: Baton Rouge, LA (184.64% 10-year total return)

Zip_code	1-year	3-year	5-year	10-year
1 3820	0.122443	0.410584	0.772693	2.168510
0 29461	0.120976	0.408744	0.770388	2.164421
4 70809	0.110548	0.366282	0.680905	1.846428
3 70808	0.028761	0.046214	0.049410	0.050111
2 52722	-0.034092	-0.032255	-0.032249	-0.032249

# Further Work

- Forecasts are solely based on historic monthly returns, and past performance does not necessarily predict future results. To improve the models and ultimately the quality of the forecasts, other external factors should be taken into account.





Thank you

Any questions?

