

# NY Real Estate Investment

Presented by,

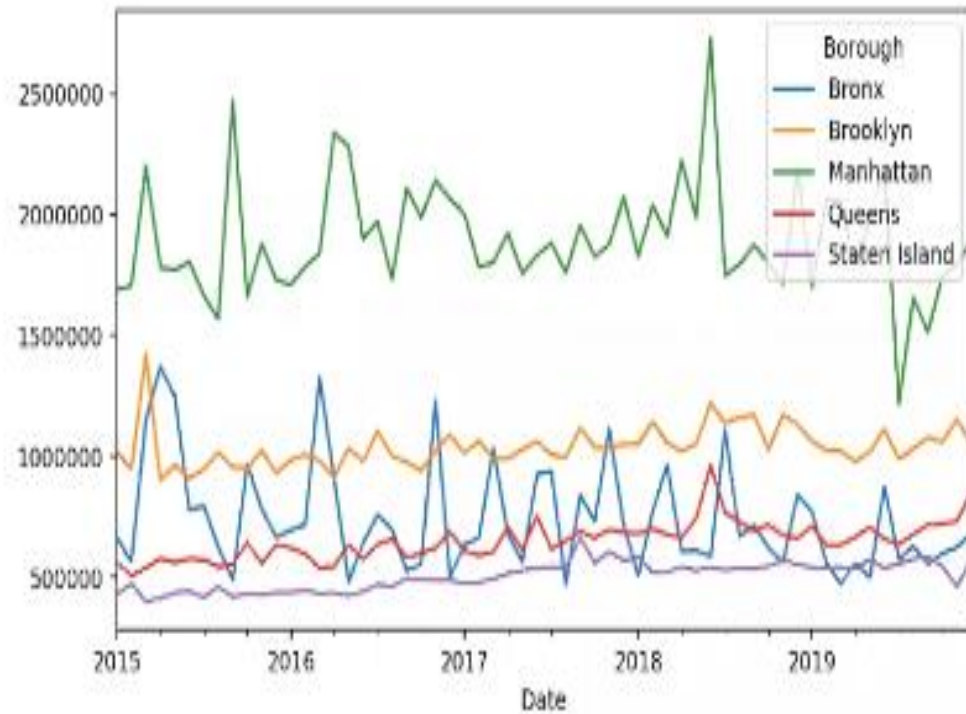
Shelly Shtauber, Shubhra Bhatnagar, Rachel Solomon, Kevin Lacap

# NYC Real Estate

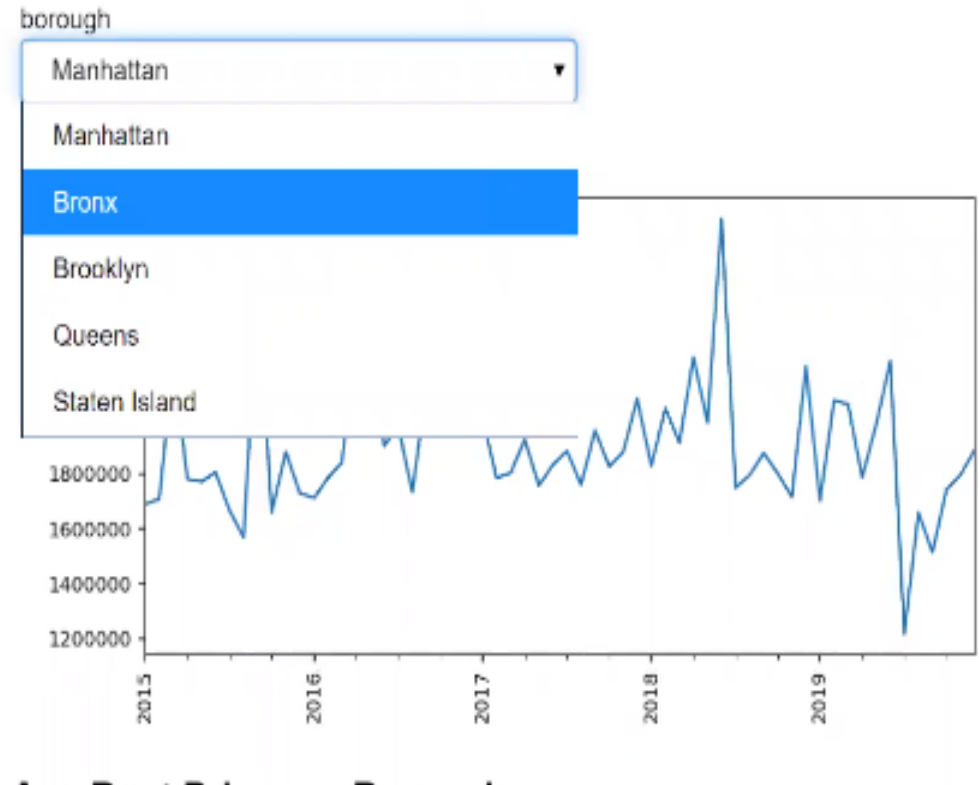
- Objective - Investing in Real Estate in NYC Boroughs as an investment strategy for both Rental and Sales properties for potential investors
- Manhattan, Brooklyn, Queens, Bronx, Staten Island
- Data Source
  - Attom API - Historical Sales Data
  - NYC Open Source - Data - GeoMapping, Zip to Neighborhood Mapping
  - [www.health.ny.gov](http://www.health.ny.gov) - ZIP Code Definitions of New York City Neighborhoods
  - Zillow - Historical Rent Data
- [https://github.com/ShakedRj/project\\_01\\_fintech](https://github.com/ShakedRj/project_01_fintech)

## HISTORICAL TRENDS OF SALES AND RENT OF NYC BOROUGH

### Avg Sale Price per Borough



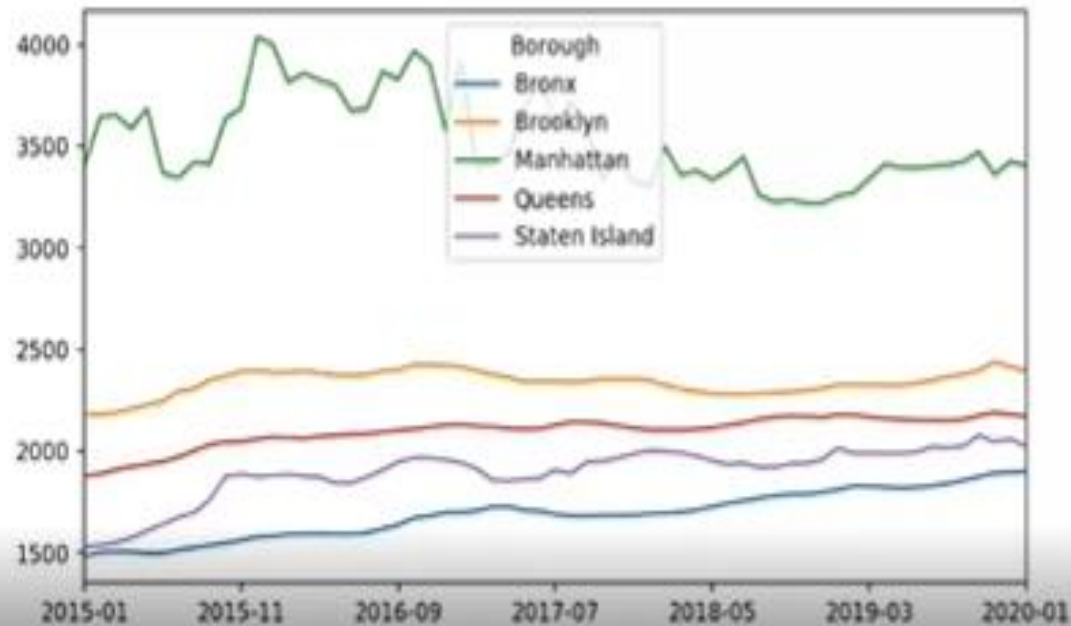
### Avg Sale Price per Borough



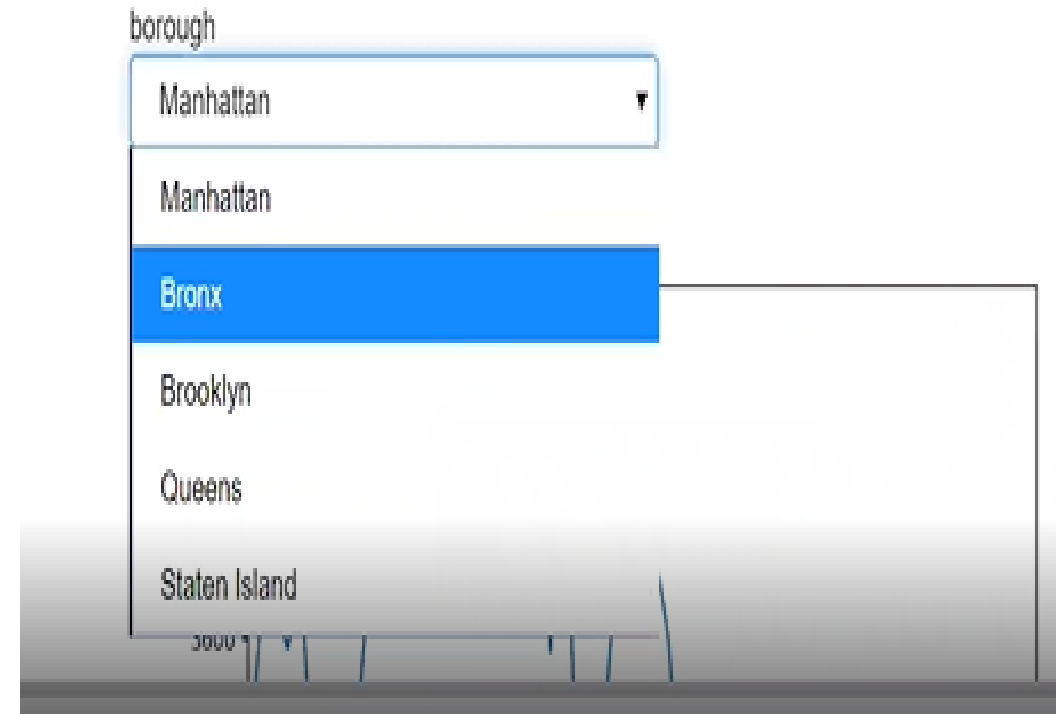
This graph shows investors what price range each borough falls into in terms of average sale price

## HISTORICAL TRENDS OF SALES AND RENT OF NYC BOROUGH

Avg Rent Price per Borough



Avg Rent Price per Borough



- Looking at this the investor can see where they might get the best returns. Manhattan dominates the rental price market

## Sales Heat Map

Sale prices in Manhattan are negatively correlated to sale prices in the Bronx and Staten Island. Sale prices in Queens and Staten Island are highly correlated.



This data helps the investor understand if there is a correlation between the property prices of two boroughs so that if they want to invest in multiple properties they can divest their current property and get another asset which might be weakly or negatively correlated properties

## Rent Heat Map

Rent prices in Manhattan are negatively correlated with rent prices in the Bronx, Queens and Staten Island. Rent prices in the Bronx, Queens and Staten Island are highly correlated. Manhattan rent prices are weakly correlated to Brooklyn rent prices



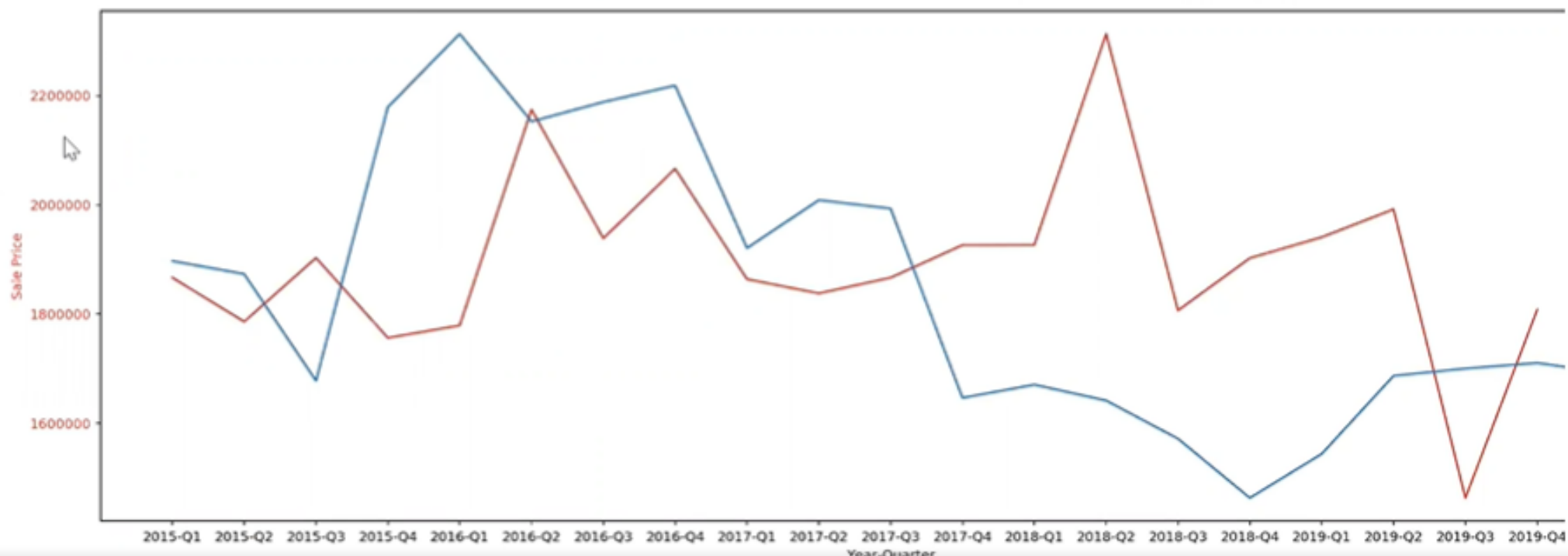
This data helps the investor understand if there is a correlation between the property prices of two boroughs so that if they want to invest in multiple properties they can divest their current property and get another asset which might be weakly or negatively correlated properties

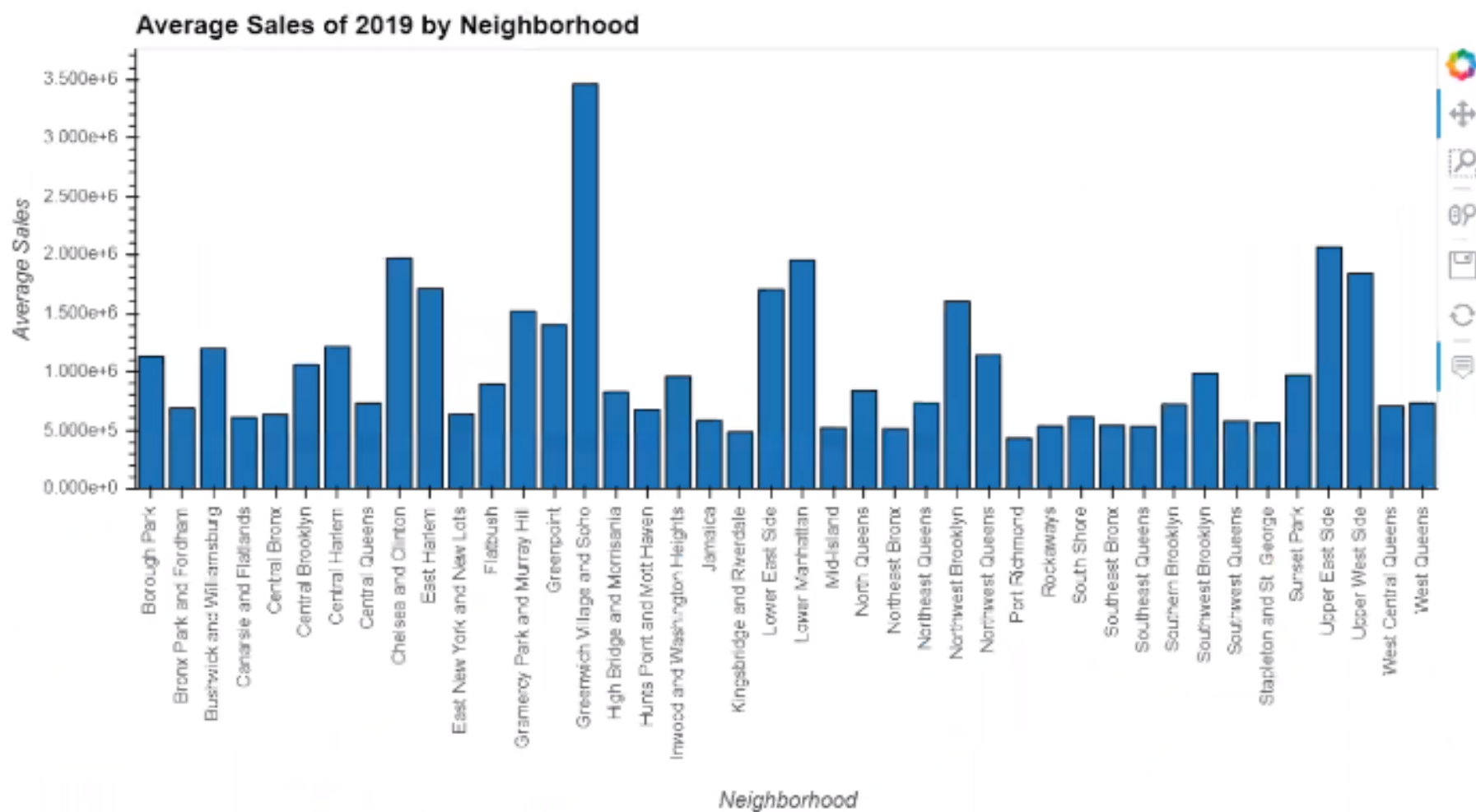
## Rent / Sales Prices Correlation

- Rent and sales prices in Manhattan have move in tandem until 2017 where we see sales prices start to skyrocket.
- Rent and sales prices in the Bronx are less correlated with rent prices increasing relative to sales prices since 2016.
- Rent and sales prices in Brooklyn are negatively correlated across the past 5 years.
- Queens rent and sales prices are correlated and have been increasing for the past 5 years with rent prices remaining consistently high relative to sales prices.
- Rent and sales prices in Staten Island are correlated and have also been increasing for the past 5 years with sales prices spiking in 2017.

borough

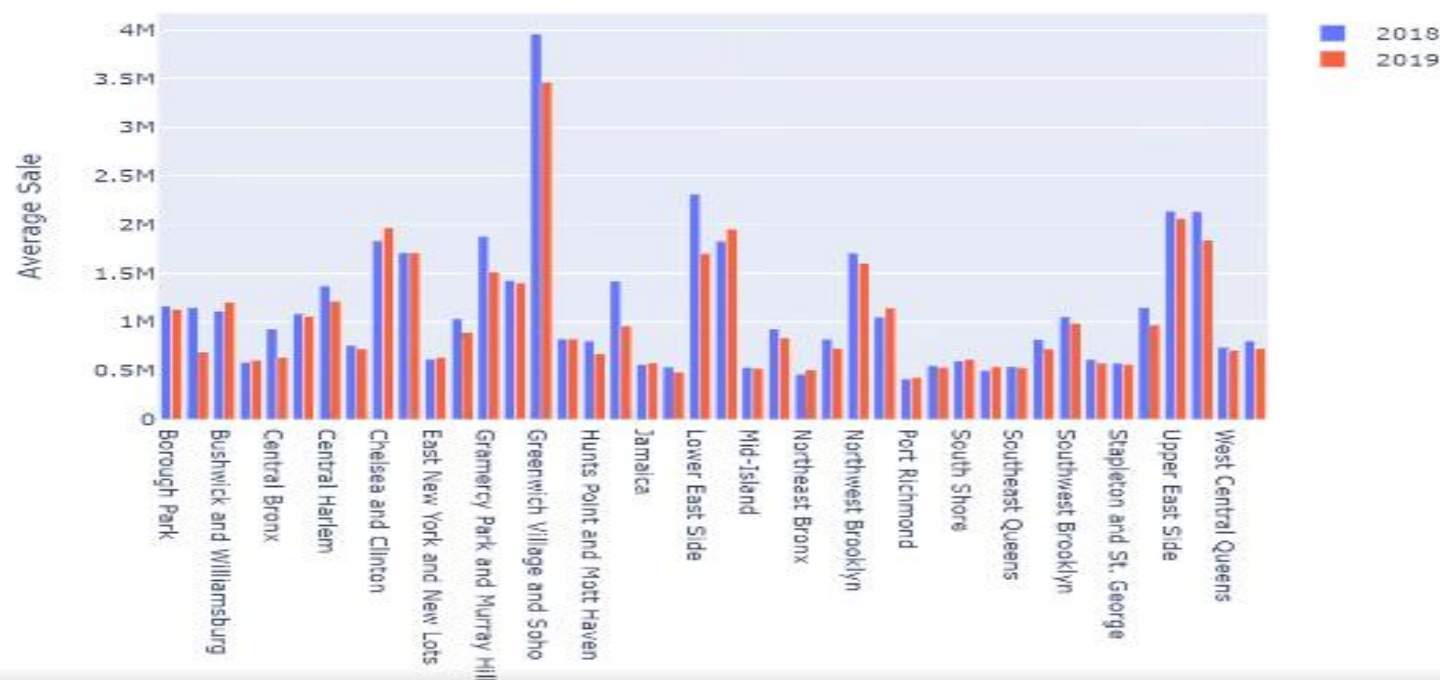
Brooklyn





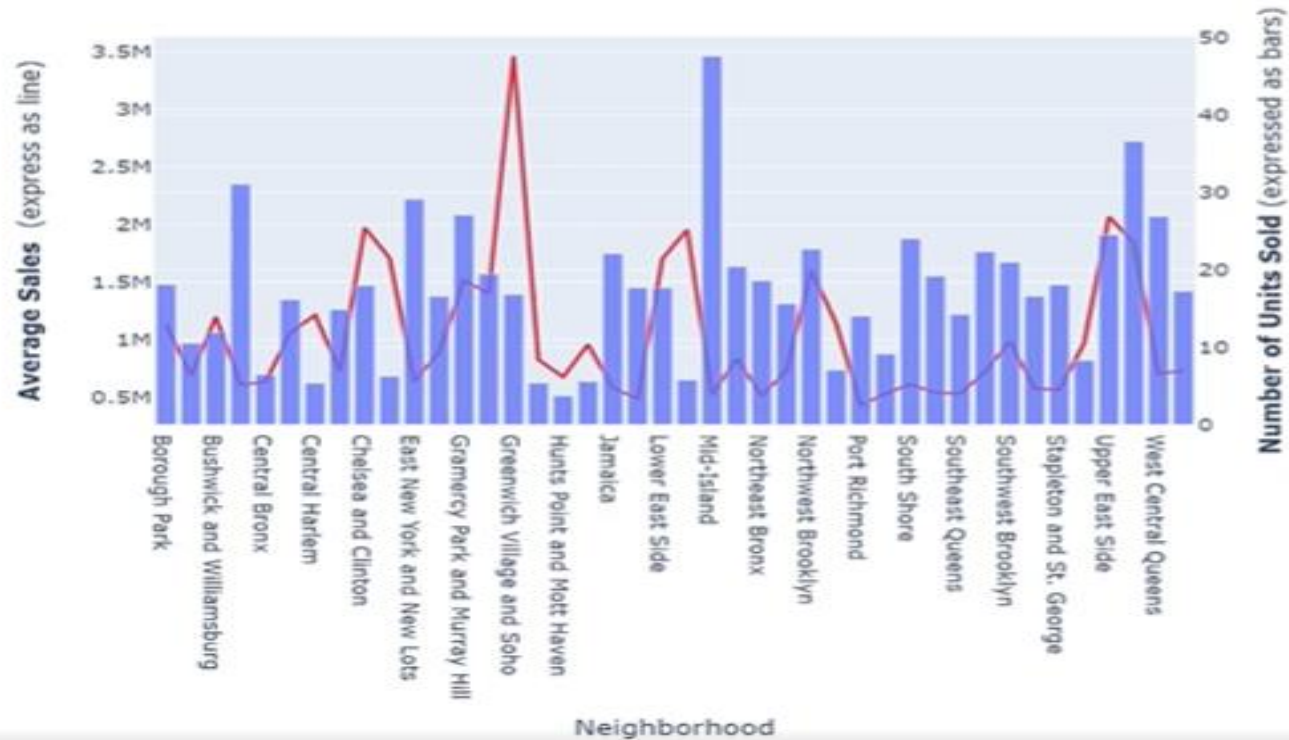


**Shows the Housing Price change compared to the year before**



This graph shows the investor the changes in property prices compared to last year (2018 vs 2019) per neighborhood. So that get a sense of shifting trend

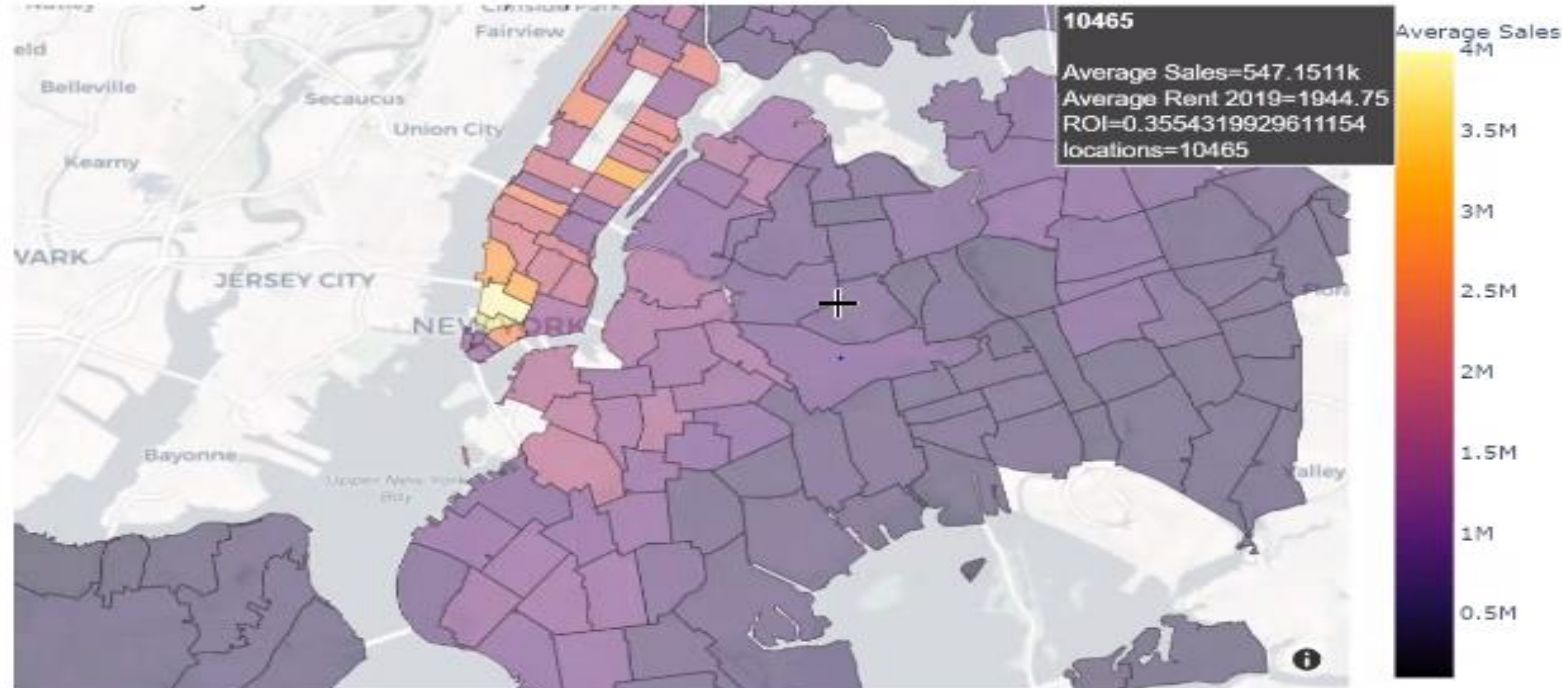
### 2019 Snapshot of Average Sales and Average Num of Units Sold in NYC Neighborhoods



☞ This graph shows the investor the Average Sale vs Num Units sold in each neighborhood. It can help investor identify some trends such as large num units sold and low prices, could give an indication either people are leaving or coming into the neighborhood at a higher rate than other Neighborhood and could be an opportunity to buy property or sell properties! Want to invest where the number of units is high and the sale price is low and people are moving in instead of moving out. As an investor this data can give you an idea of the type of demand for the neighborhood you are interested in investing in

## Avg Sale, Avg Rent & ROI per Zip Code

\*\* In this project we didn't have to time to pull all the expenses so the ROI is just a demonstration of what we could do given more time.

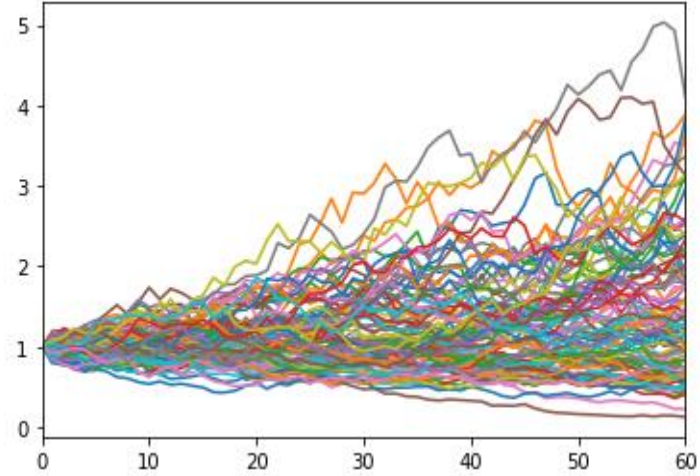


This graph shows the investor the current years snapshot of Sales, Rent and ROI per zipcode

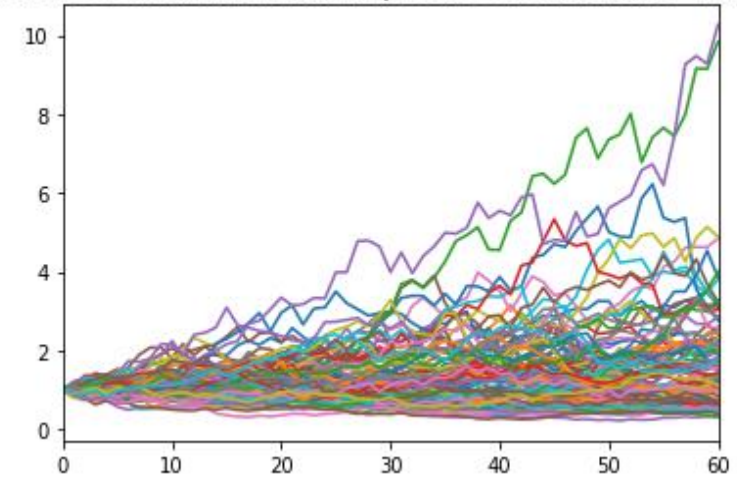
- Capitalization rate, also known as cap rate or ROI, refers to a property's net income as a percentage of its market value. For the purposes of this calculation, the purchase price of the property is often used as its market value, especially if it was acquired within the past few years.
- Cap rate can be useful for a few reasons. For starters, it could be an apples-to-apples way to compare potential rental properties that may have different financing structures, since it doesn't take debt repayment into account.

## Monte Carlo – Sales Next 5yrs

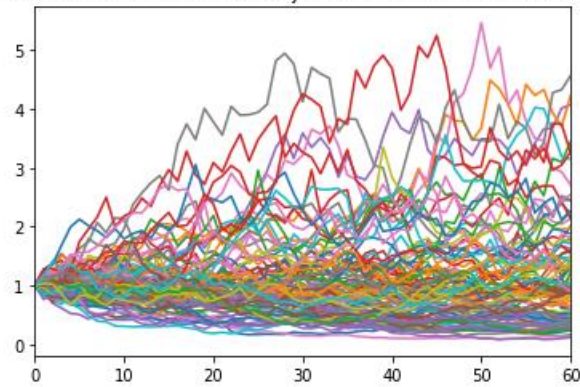
100 Simulations of Cumulative Return Trajectories Over the Next 5 Years for Staten Island



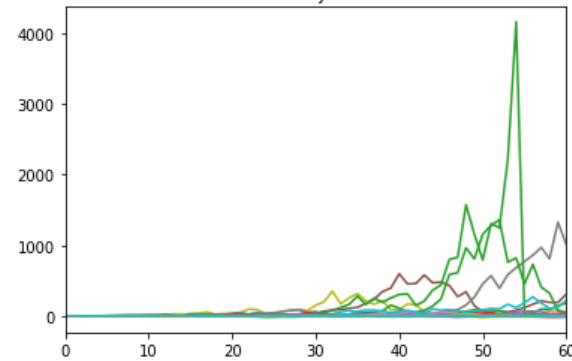
100 Simulations of Cumulative Return Trajectories Over the Next 5 Years for Queens



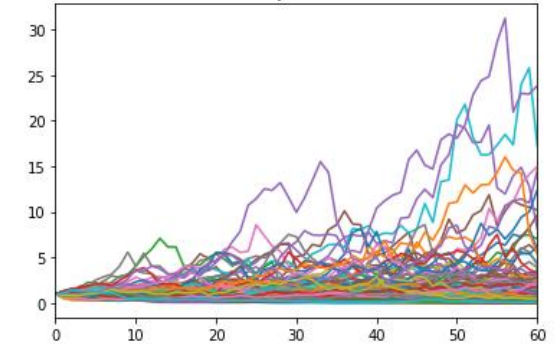
100 Simulations of Cumulative Return Trajectories Over the Next 5 Years for Brooklyn



100 Simulations of Cumulative Return Trajectories Over the Next 5 Years for Bronx



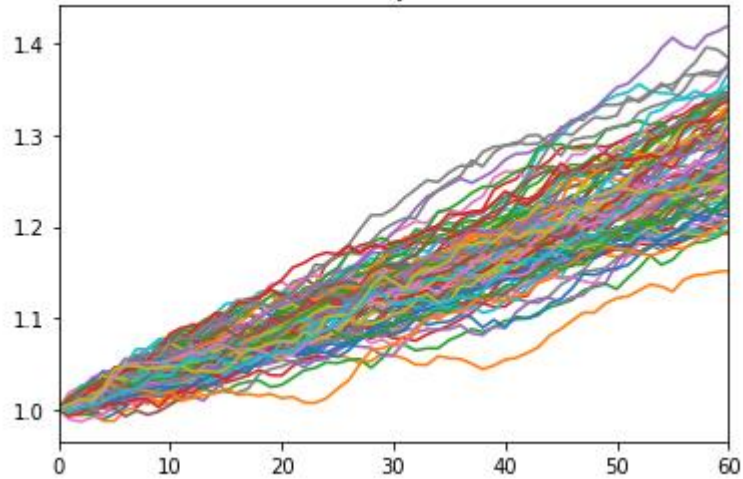
100 Simulations of Cumulative Return Trajectories Over the Next 5 Years for Manhattan



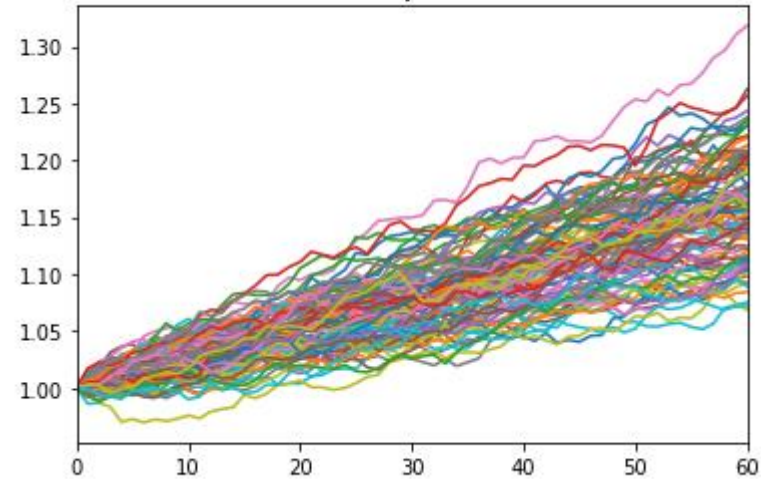


# Monte Carlo – Rental Next 5yrs

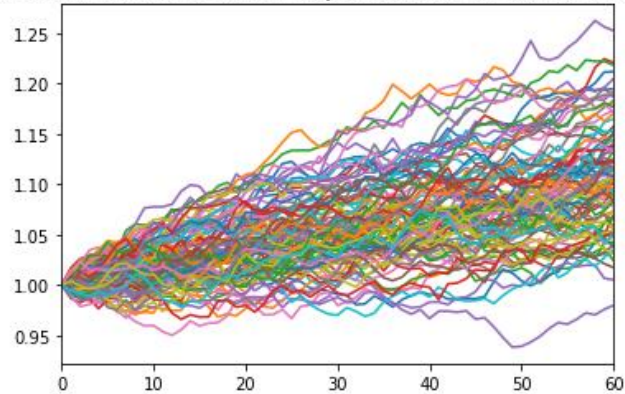
100 Simulations of Cumulative Return Trajectories Over the Next 5 Years for Bronx



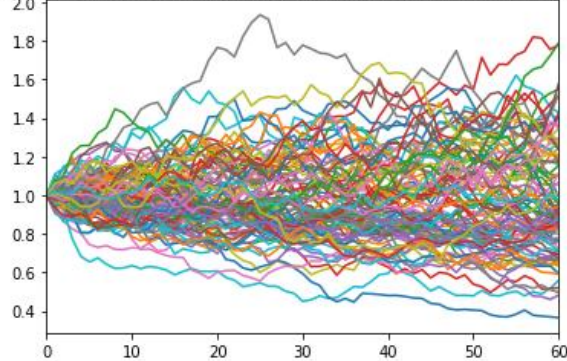
100 Simulations of Cumulative Return Trajectories Over the Next 5 Years for Queens



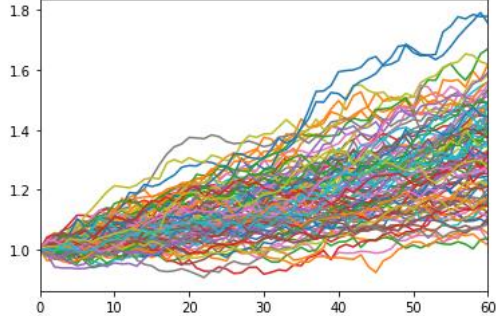
100 Simulations of Cumulative Return Trajectories Over the Next 5 Years for Brooklyn



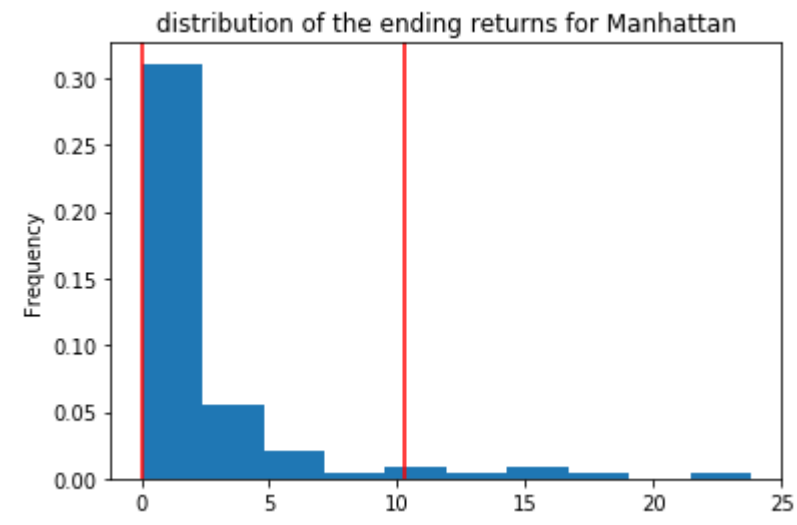
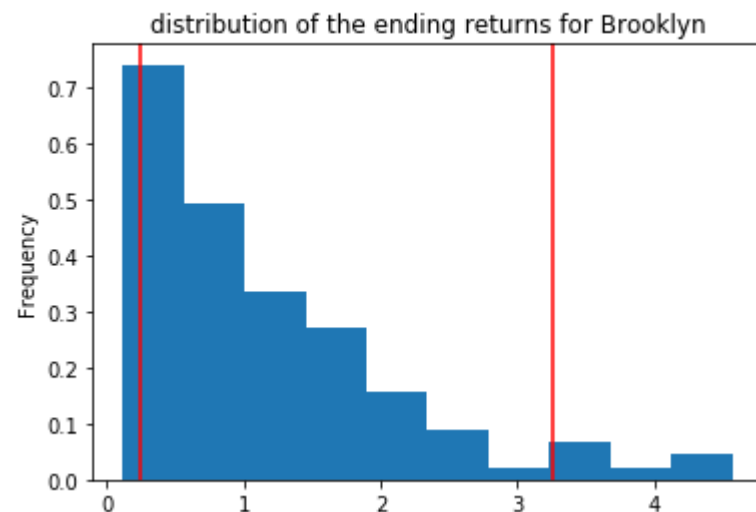
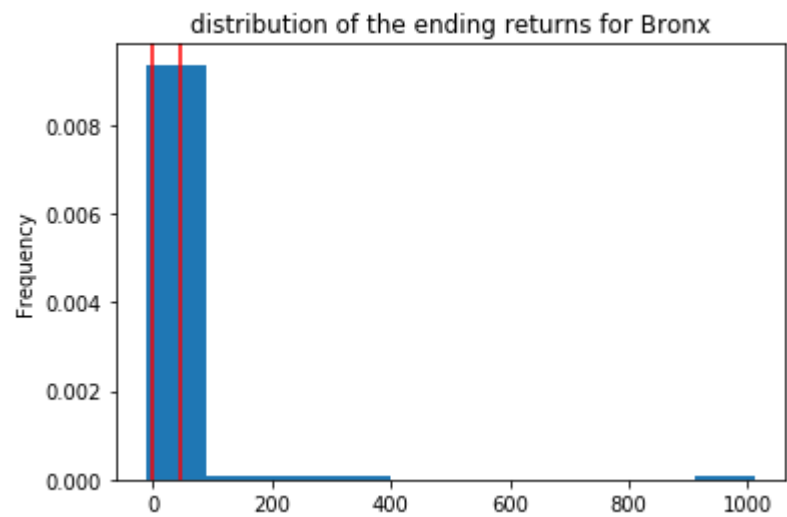
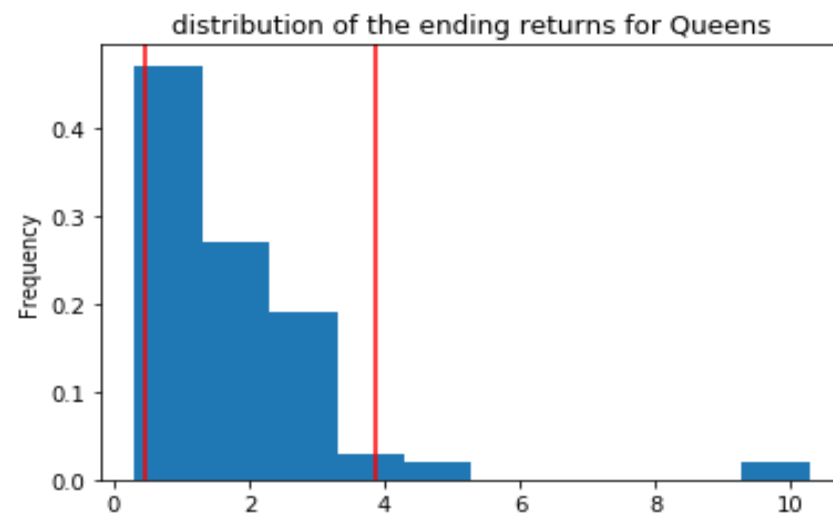
100 Simulations of Cumulative Return Trajectories Over the Next 5 Years for Manhatta



100 Simulations of Cumulative Return Trajectories Over the Next 5 Years for Staten Island

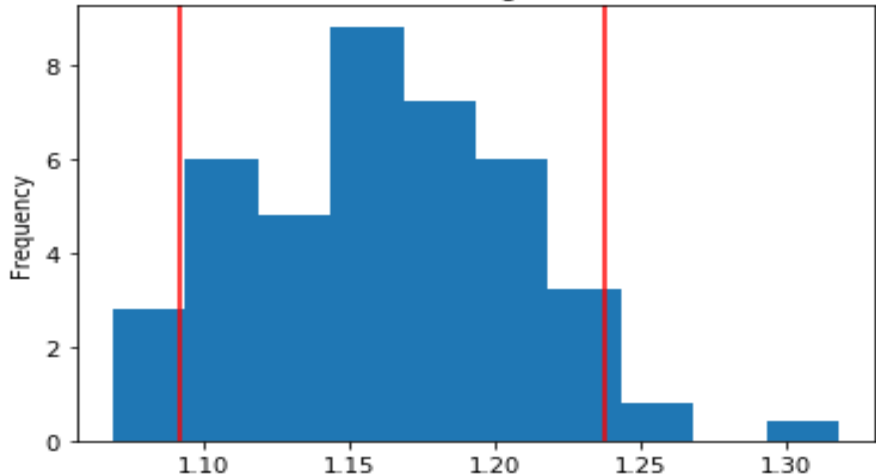


## Confidence Interval for Sales

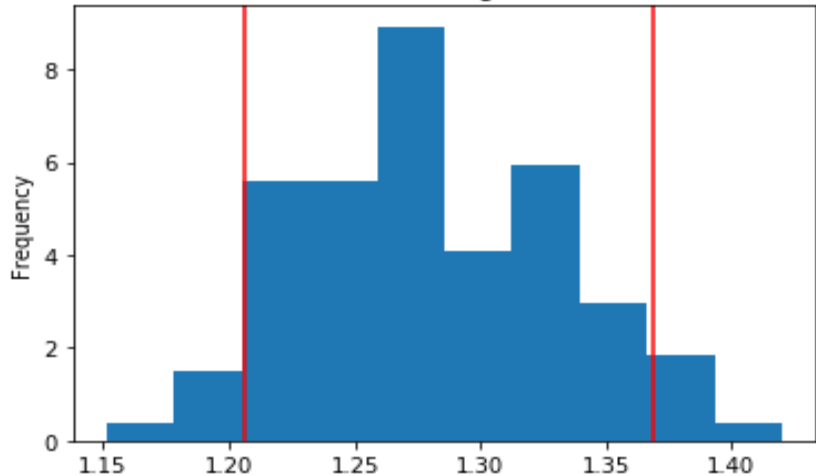


# Confidence Interval for Rental

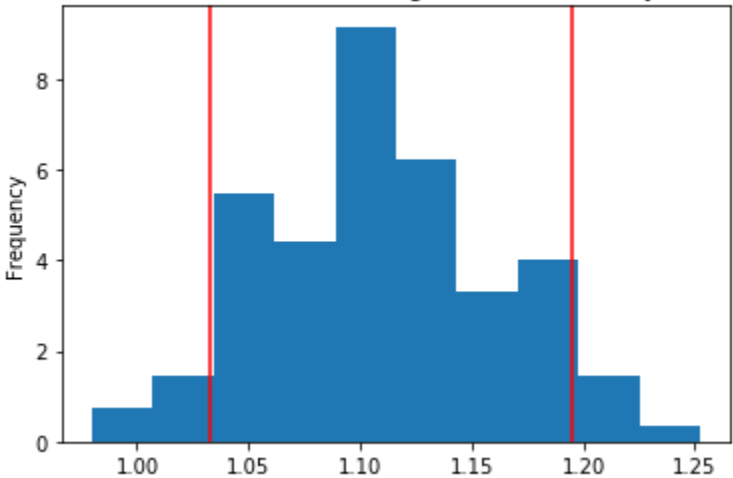
distribution of the ending returns for Queens



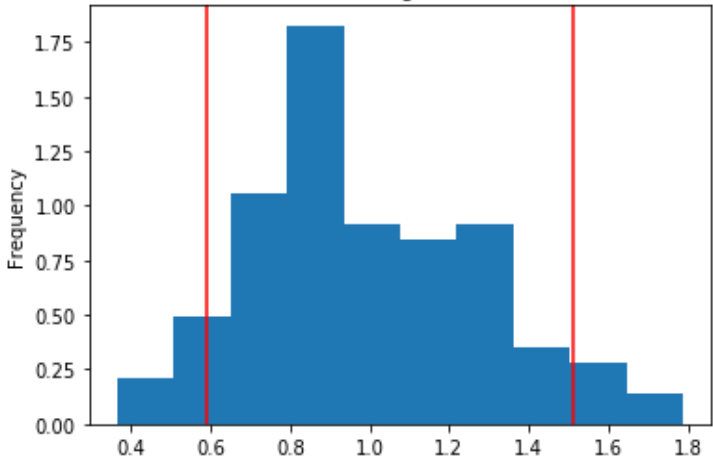
distribution of the ending returns for Bronx



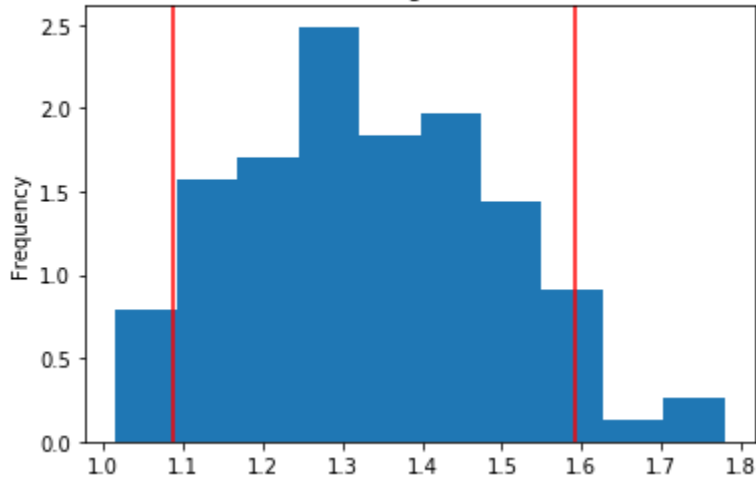
distribution of the ending returns for Brooklyn



distribution of the ending returns for Manhattan



distribution of the ending returns for Staten Island



# Conclusion

Almost everyone buys or rents homes however, its surprising how little is available to make the best decision except for some listing sites...This project will make people make the best decision and has a lot of potential especially when incorporate all the crime, demographics, school and pandemic data... If we had two more weeks we would have added additional inputs that investors typically use when modeling a real estate deal - Crime, school, demographics trend, transportation data etc...



Q&A