

ZILLOW HOUSING INVESTMENT ANALYSIS

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Bringing it all together.

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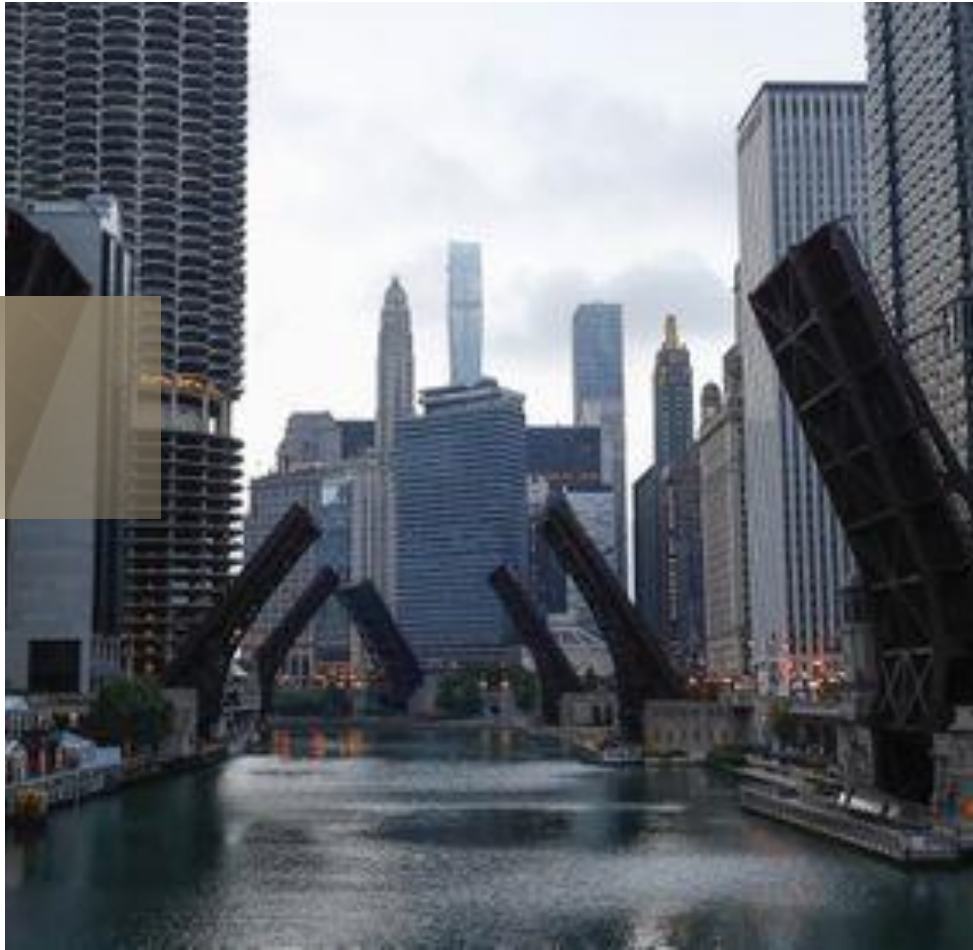
FUTURE WORK AND WRAP UP

Where I would like this project to go in the future.



PROJECT DEBRIEF

01



OBJECTIVE AND MOTIVATION

Predict the **top 5 zip codes** from Zillow's extensive range of data on home values throughout the United States using **time series analysis**.

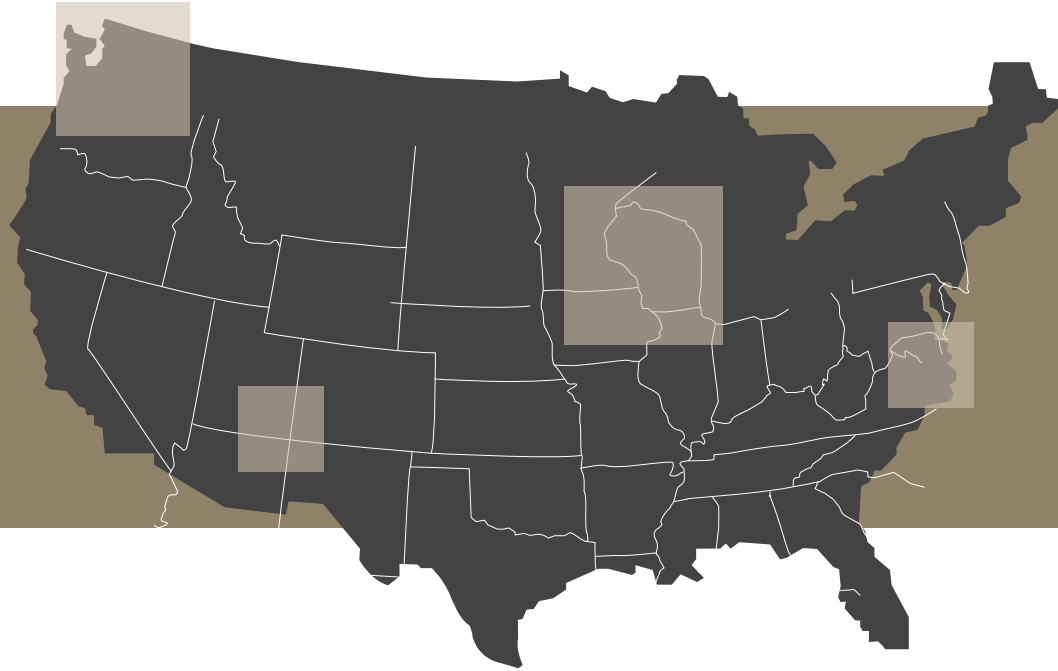




TOPIC ANALYSIS

02

THE DATA



Numerical:

**Home Values for
zip codes across
the United States
for every month
from 1997 - 2018**

Categorical:

**Zip Codes,
Counties, State,
Size Rank**

ZIP CODE PREREQUISITES

URBANIZATION

LARGE POPULATION DENSITY
PEDESTRIAN FRIENDLY
PUBLIC TRANSPORTATION

FOOD AND CULTURE

LARGE VARIETY OF
RESTAURANTS AND A RICH
CULTURE

CLIMATE FRIENDLY

HIGH POPULATION
DENSITY = LOW CARBON
EMISSIONS

GROWTH/POPULATION

HIGH CONTINUOUS GROWTH
ABOVE NATIONAL MEDIAN
AVERAGE

CHICAGO, IL

8,124

Restaurants, bars and coffee shops

Residents can walk to an average of 5
within 5 minutes

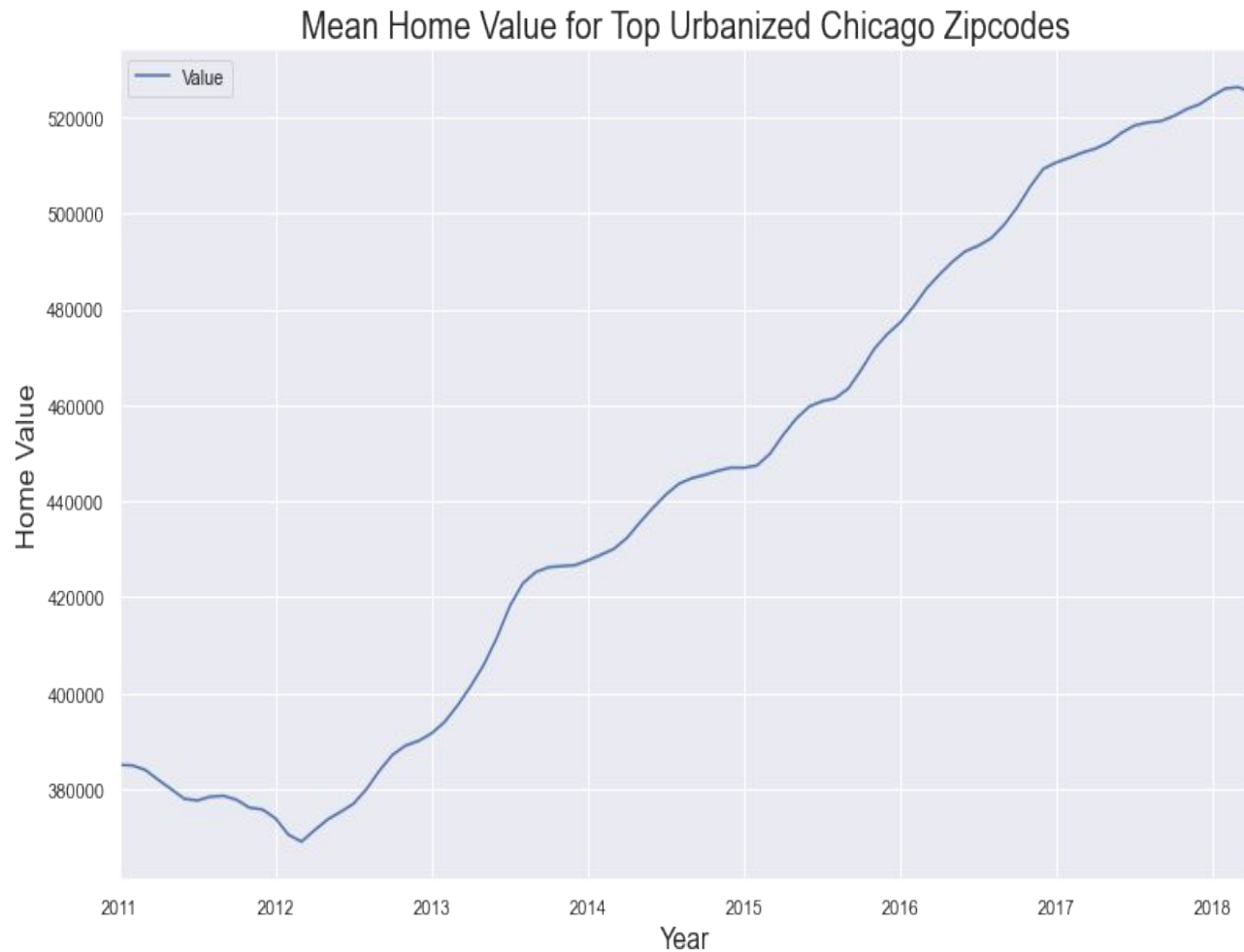
Walk Score
77

Transit Score
65

Bike Score
73

SIDE NOTE: REAL PICTURE TAKEN BY ME!

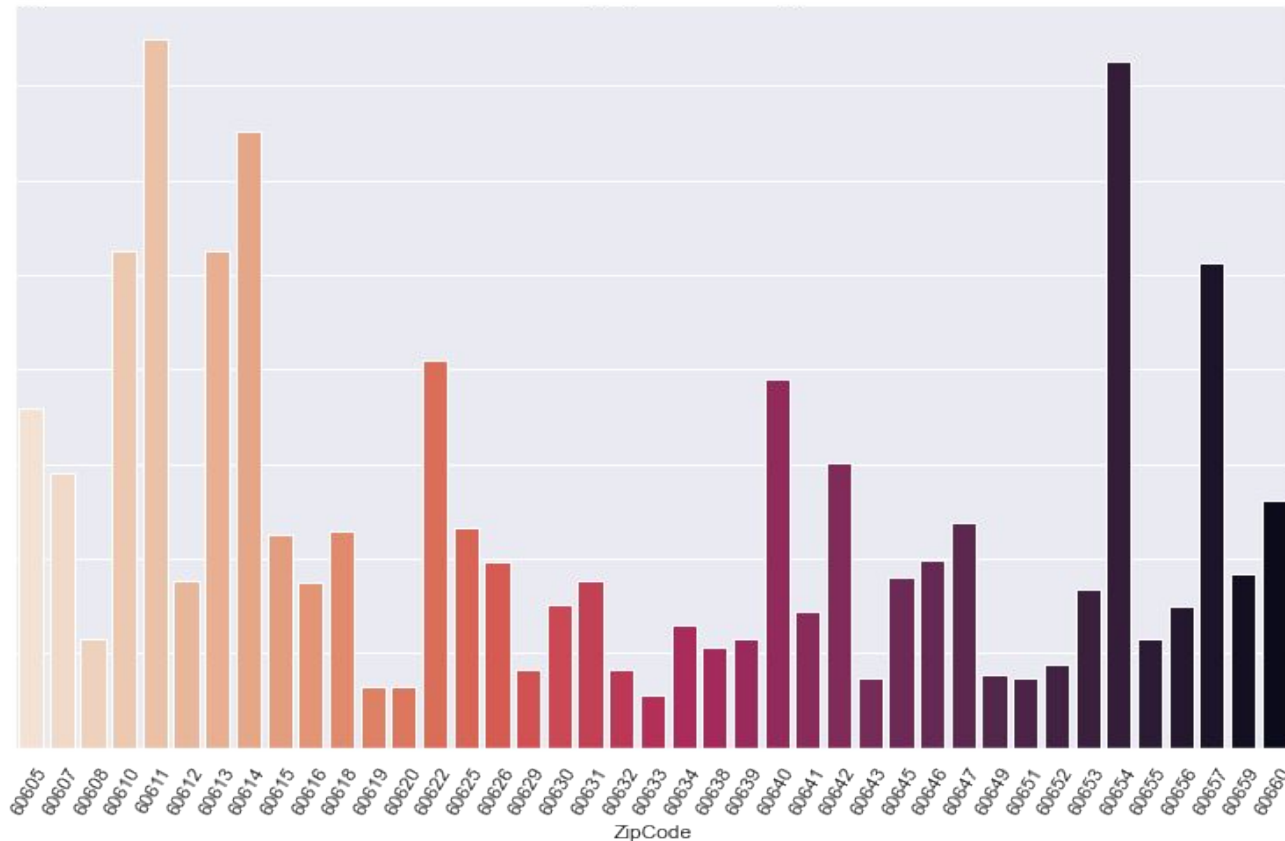
**What does Chicago's
home value growth
look like?**



1e6

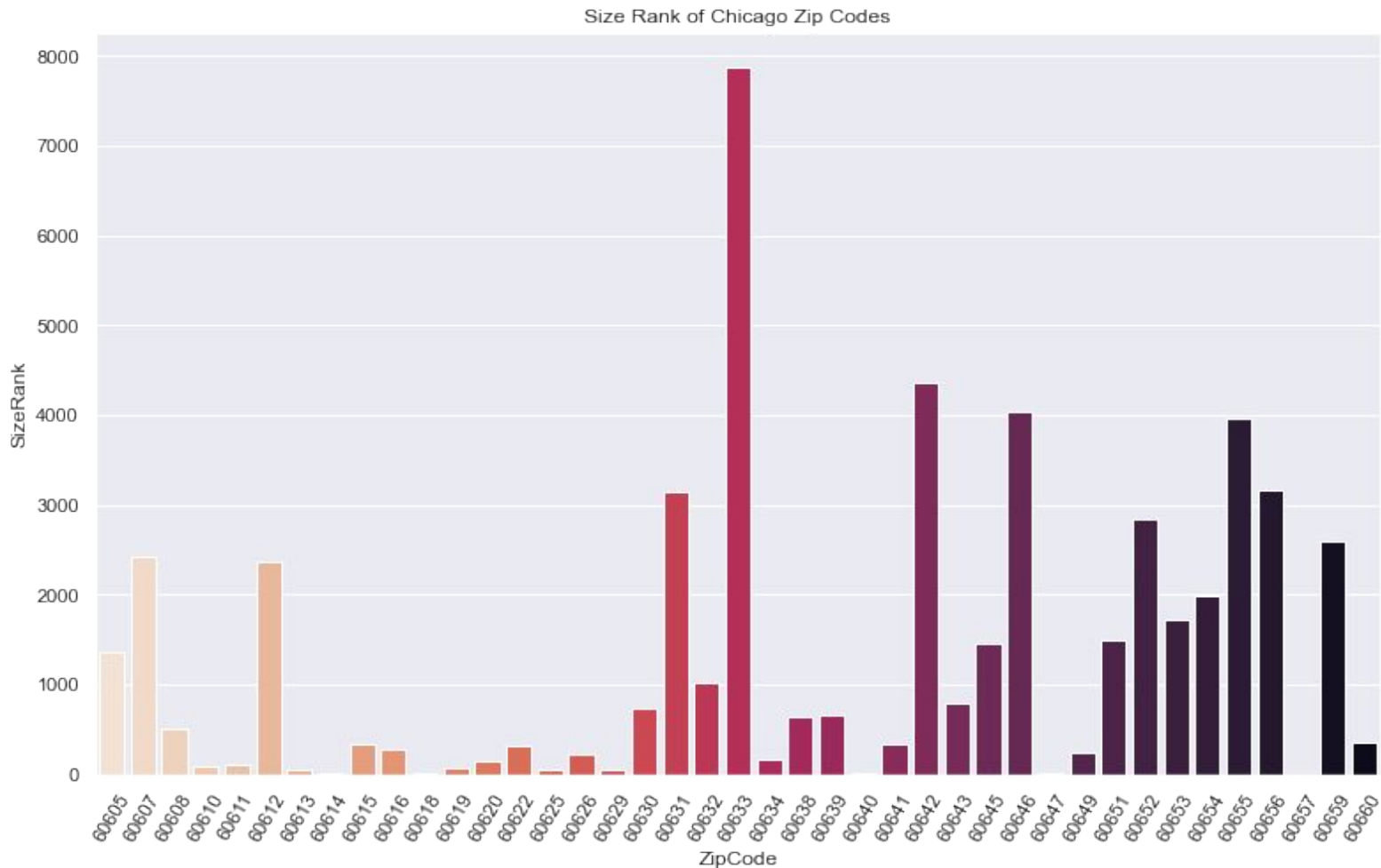
Home Values by Zip Code in January, 2018

2018-01

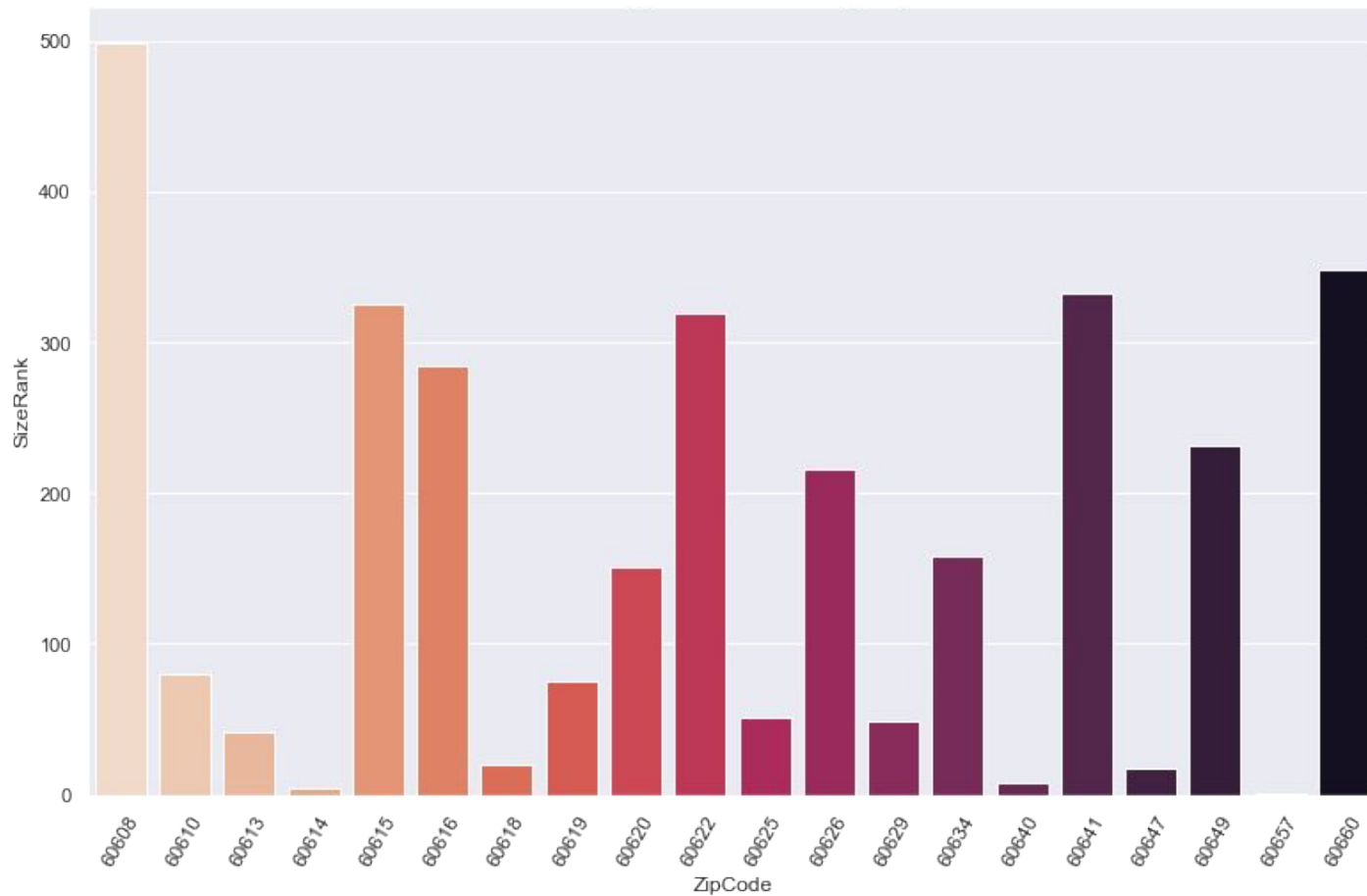


ROGERS PARK
 CHICAGO LAWN
 GOLD COAST
 LOGAN SQUARE
 UKRAINIAN VILLAGE
 WEST LOOP
 UPTOWN
 WICKER PARK
 RAVENSWOOD
 LOGAN SQUARE
 BOYSTOWN
 LINCOLN SQUARE
 SOUTH LOOP
 UPTOWN
 HUMBOLDT PARK
 ANDERSONVILLE

HOW SHOULD WE CHOOSE ZIP CODES?



Size Rank of Highest Urbanized Chicago Zip Codes



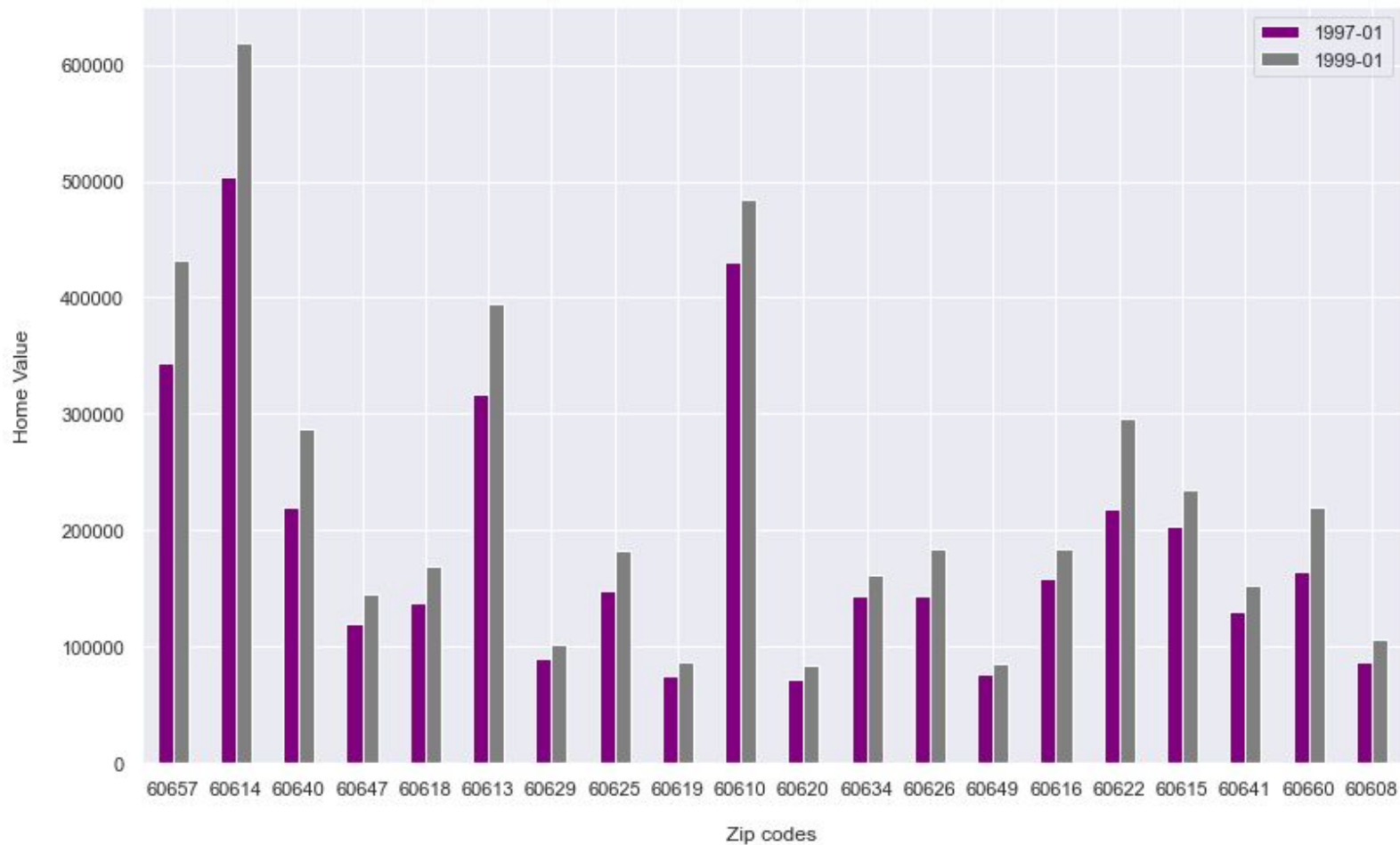
**TOP 20 ZIP CODES BY
POPULATION DENSITY**



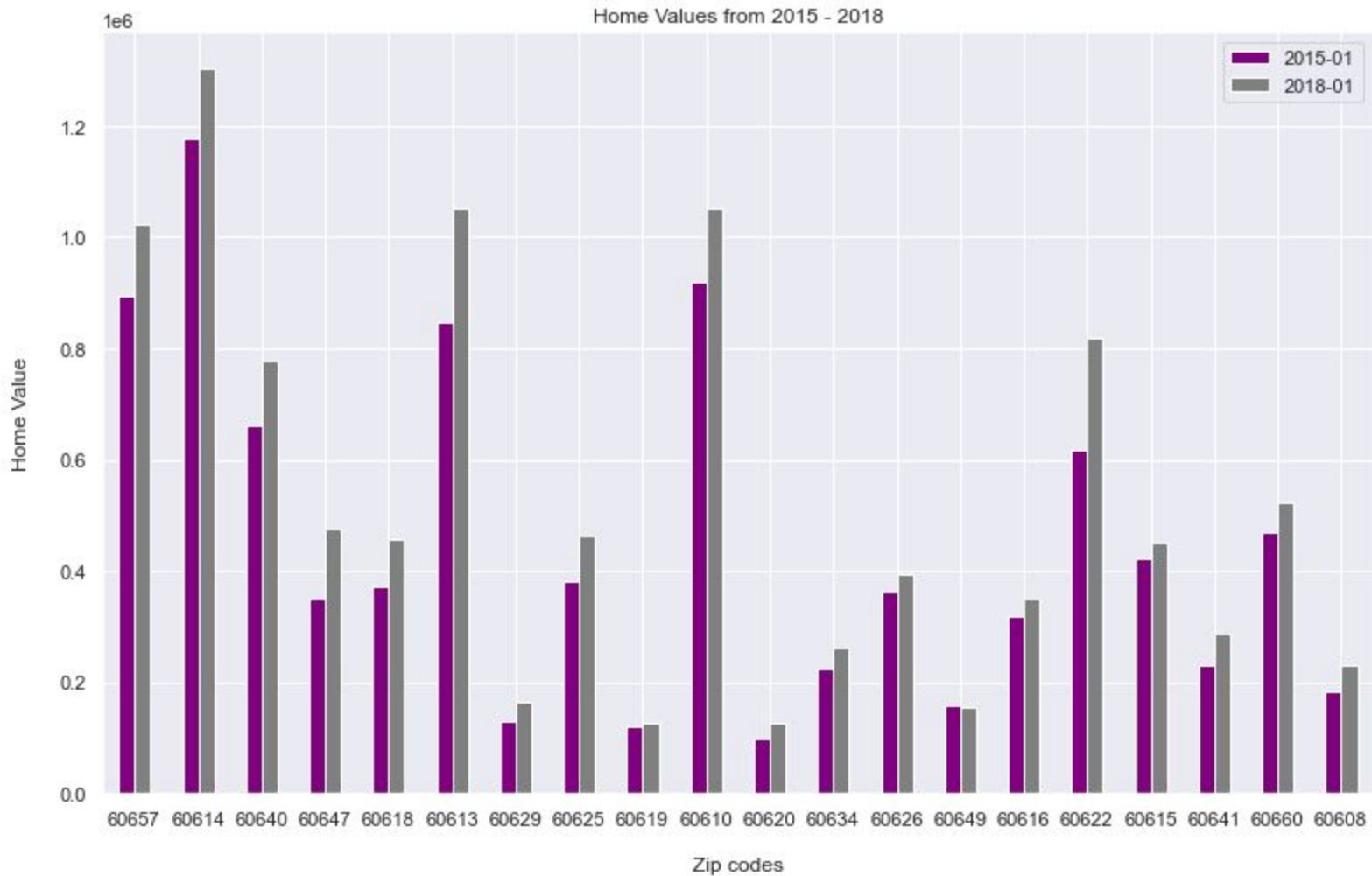
DATA ANALYSIS

03

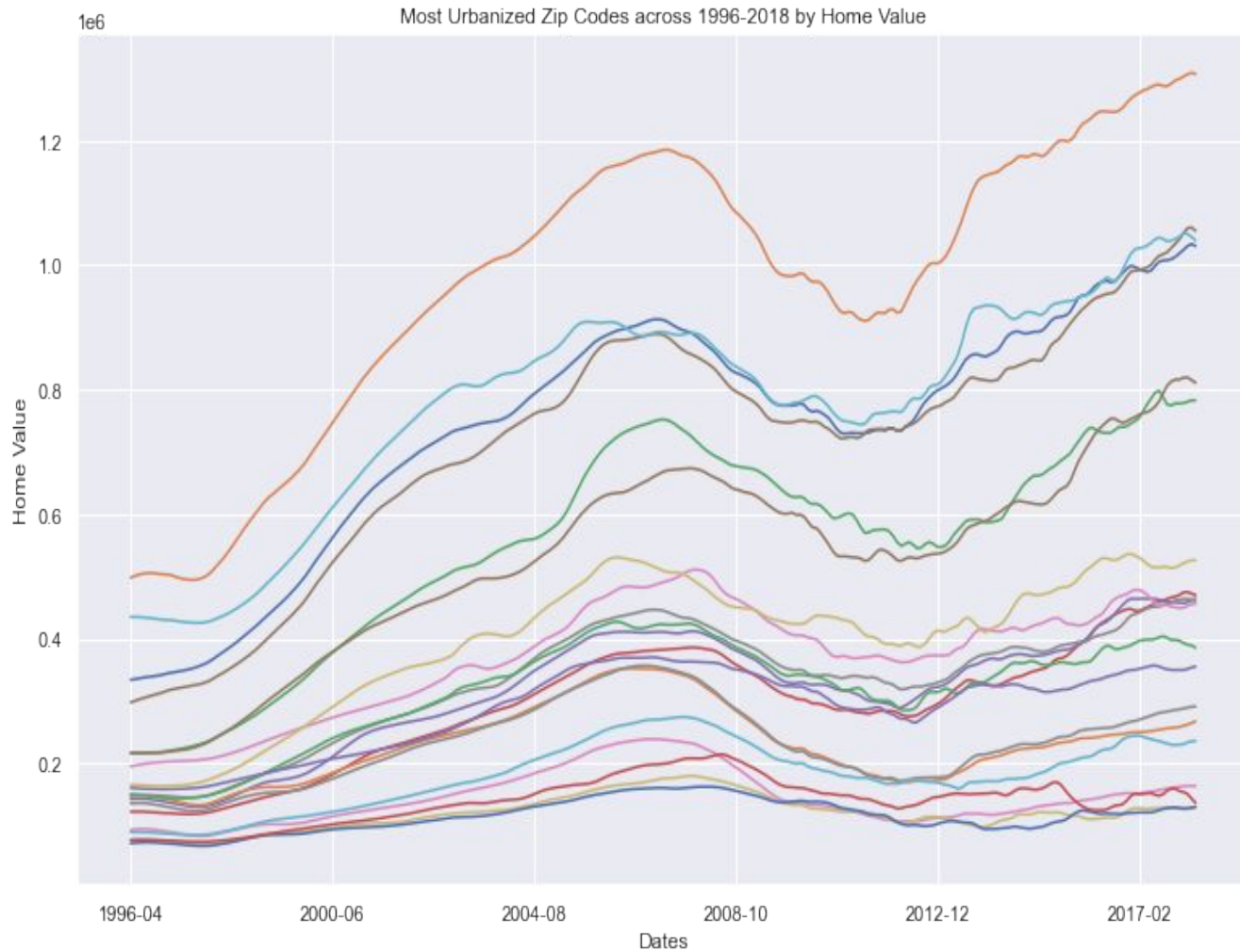
Home Values from 1997 - 1999



TIME SPAN VALUES
COMPARISON



TIME SPAN VALUES
COMPARISON



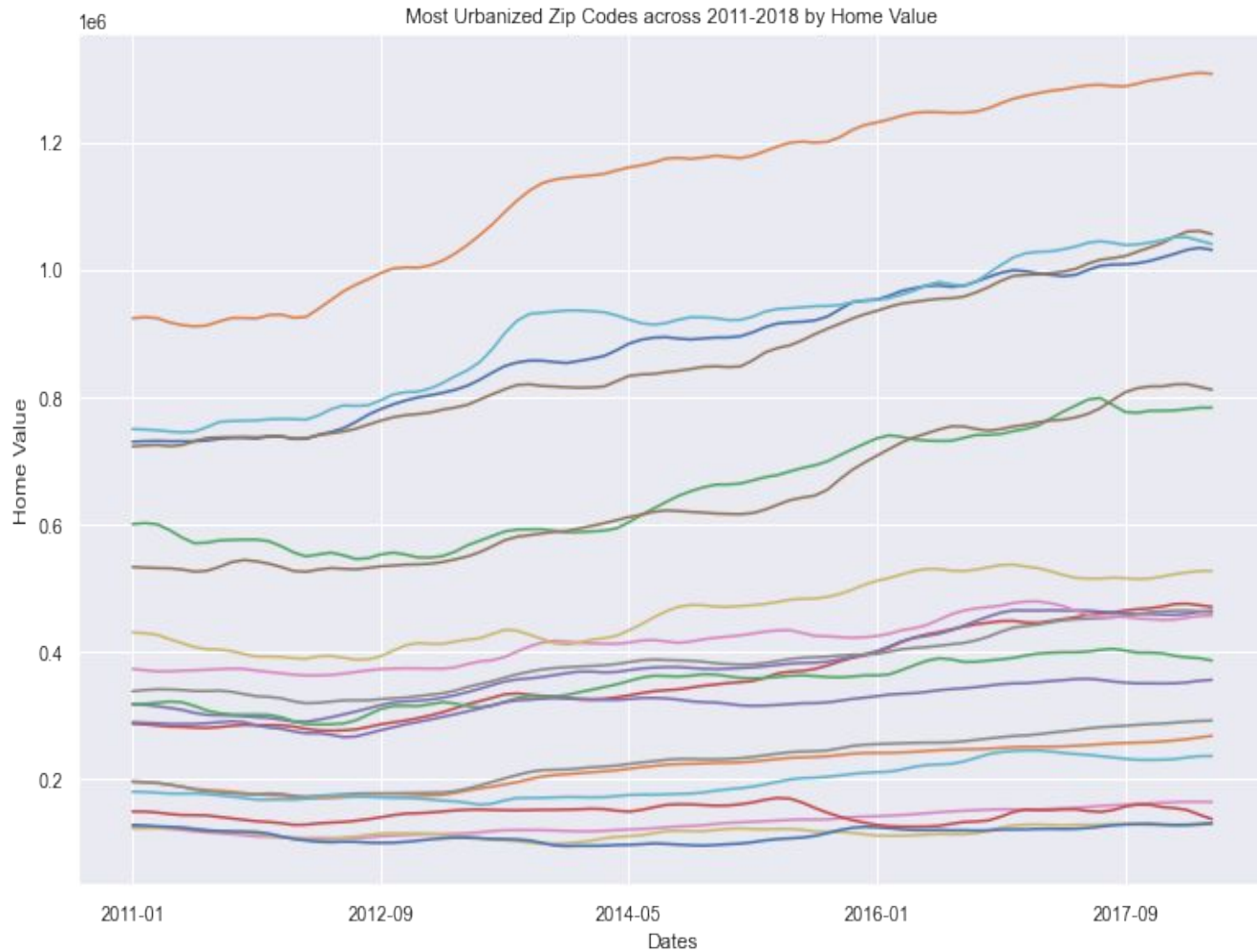
TIME SPAN

MILLENNIAL HOME BUYERS

**WAITING FOR
THE NEXT RECESSION**

imgflip.com

**ECONOMIC CRASH
ANOMALY**



TIME SPAN



MODEL AND PREDICTIONS

04

THE CRITERIA

CHICAGO

LOCATION

TOP 50%

HIGHLY URBANIZED
ZIP CODES

2011 - 2018

HOME VALUE SPAN

SARIMAX MODEL

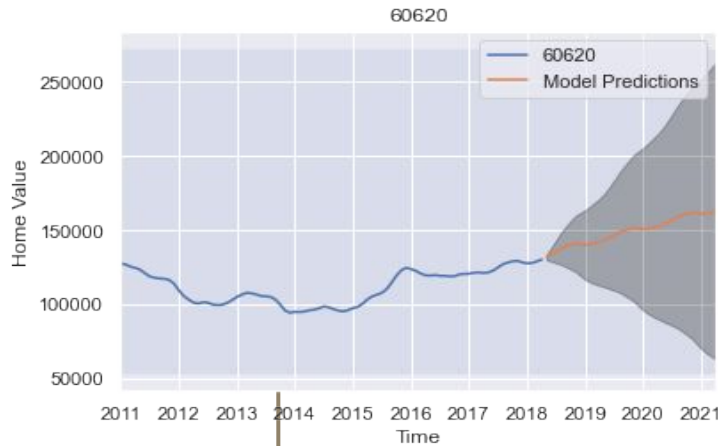


- **Decomposable time series model that accounts for trends, seasonality.**



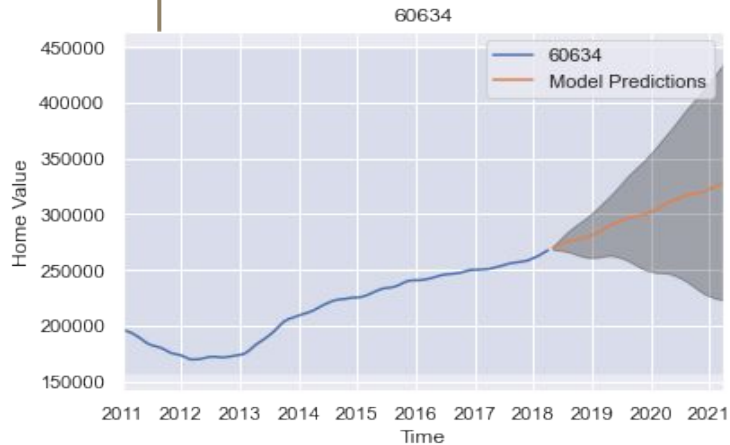
3 YEAR PREDICTED RETURNS AND HOME VALUES

	<u>AUBURN GRESHEM 60620</u>	<u>DUNNING 60634</u>	<u>CHATHAM 60619</u>	<u>CHICAGO LAWN 60629</u>	<u>BOYSTOWN / LAKEVIEW 60613</u>
3 Year ROI	25.1%	23.1%	21.97%	12.94%	12.73%
5 Year ROI	40.9%	38.4%	35.4%	22.05%	21.55%



60620 - AUBURN GRESHEM

- Potential Risk
- Long-term investment



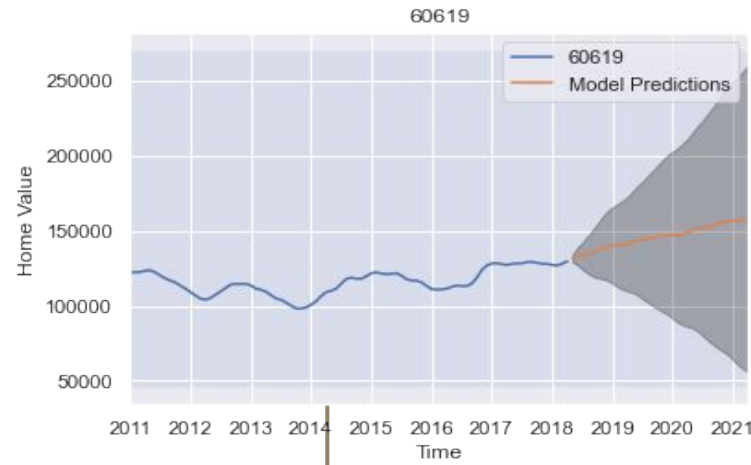
60634 - DUNNING

- Slight risk
- Long-term or short-term investment

RECOMMENDATIONS

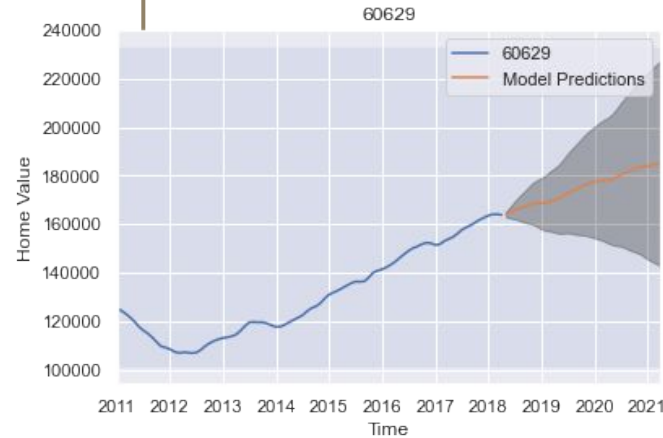
RECOMMENDATIONS

60619 - CHATHAM



- Potential Risk
- Long-term investment

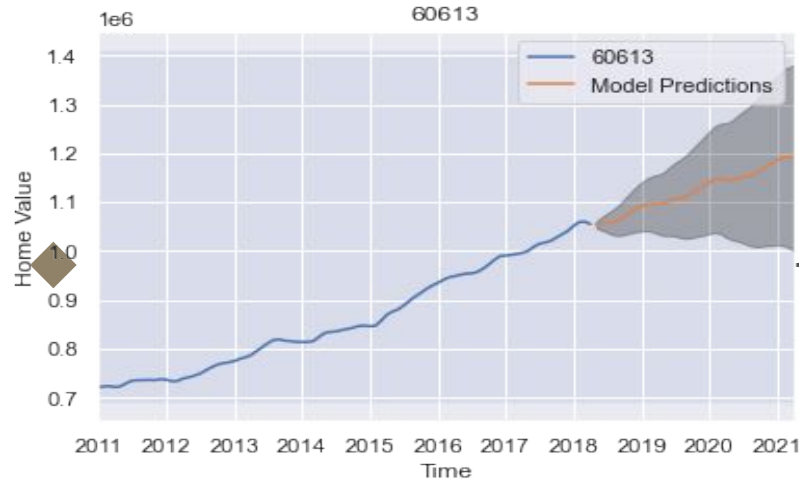
60629 - CHICAGO LAWN



- Slight risk
- Long-term or short-term investment

60613 - BOYSTOWN / LAKEVIEW

RECOMMENDATIONS



- Very low risk
- Long-term or short-term investment



Low Risk

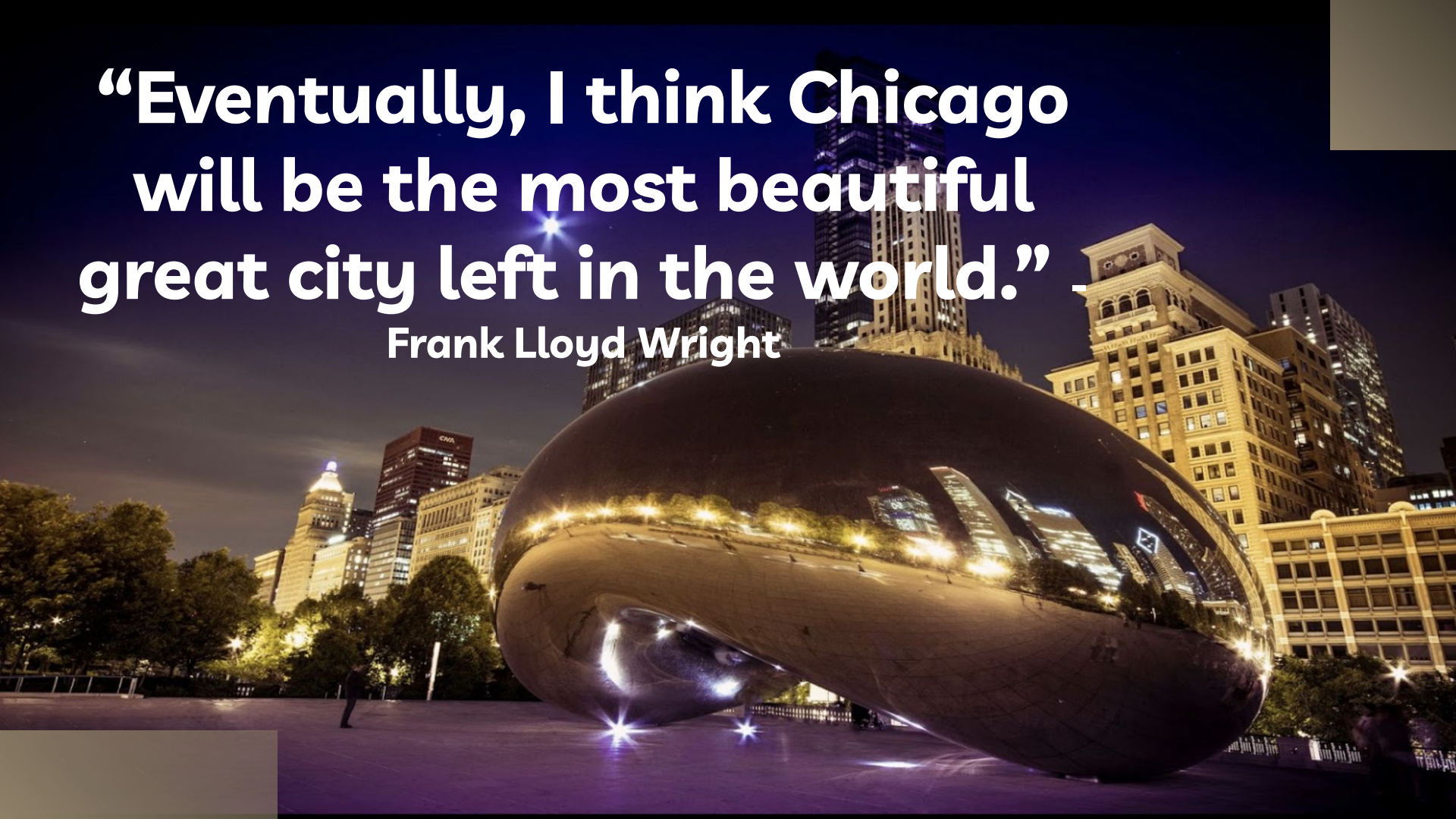
- 60613 - Boystown / Lakeview
- 60634 - Dunning
- 60629 - Chicago Lawn

Potential Risk

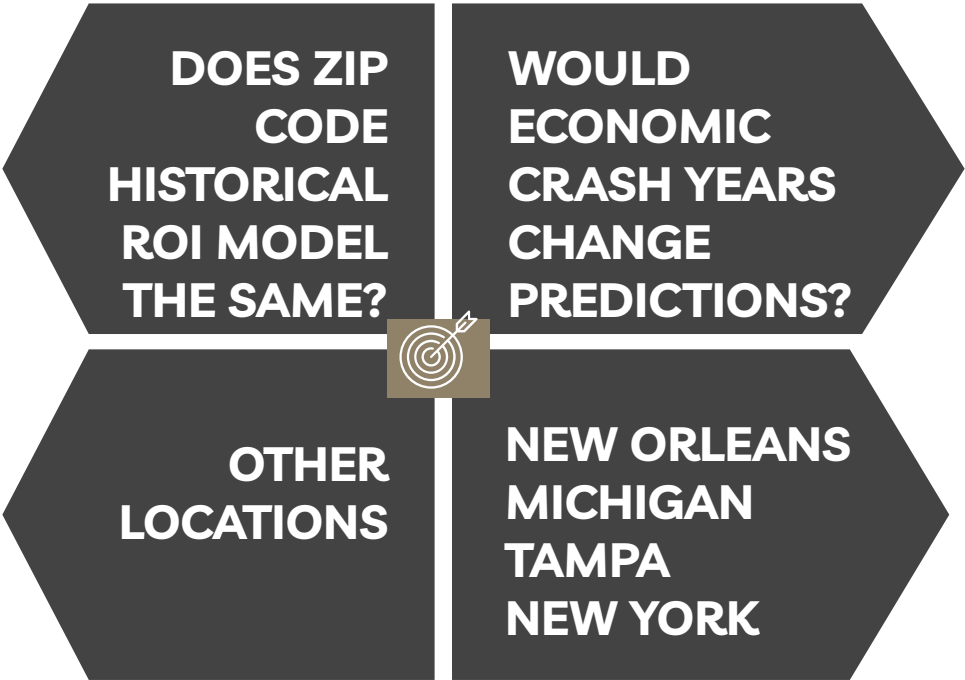
- 60620 - Auburn Gresham
- 60619 - Chatham

**“Eventually, I think Chicago
will be the most beautiful
great city left in the world.”**

Frank Lloyd Wright



FUTURE PROJECTS





OUR TEAM THANKS YOU!