

Zillow Data Analysis & Recommendations

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Redwood Real Estate*

The background features a series of concentric circles in light gray, some solid and some dashed. A large, solid orange oval is positioned in the center-right of the frame. A thick, dark gray curved line sweeps from the bottom left towards the orange oval.

Problem Statement

Identify the 5 **best** zip codes where
Redwood Real Estate should invest.

Business Values



**IDENTIFY NEW *METRO*
AREAS FOR EXPANSION**



**STEADY GROWTH TO
ROI OVER NEXT 4 YEARS**



MINIMIZED RISK

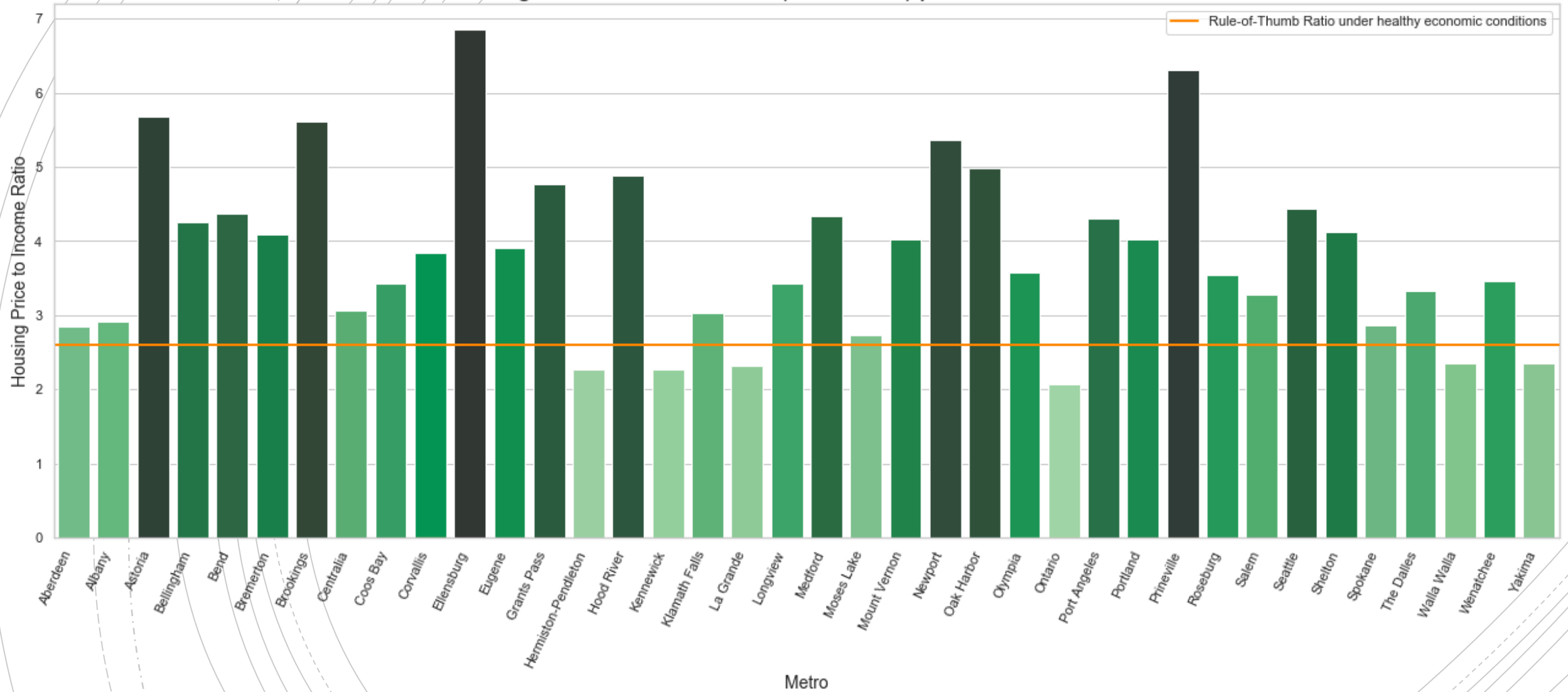


**AVOID HOUSING PRICE
SURGES AND GROWING
INEQUALITY**

Methodology

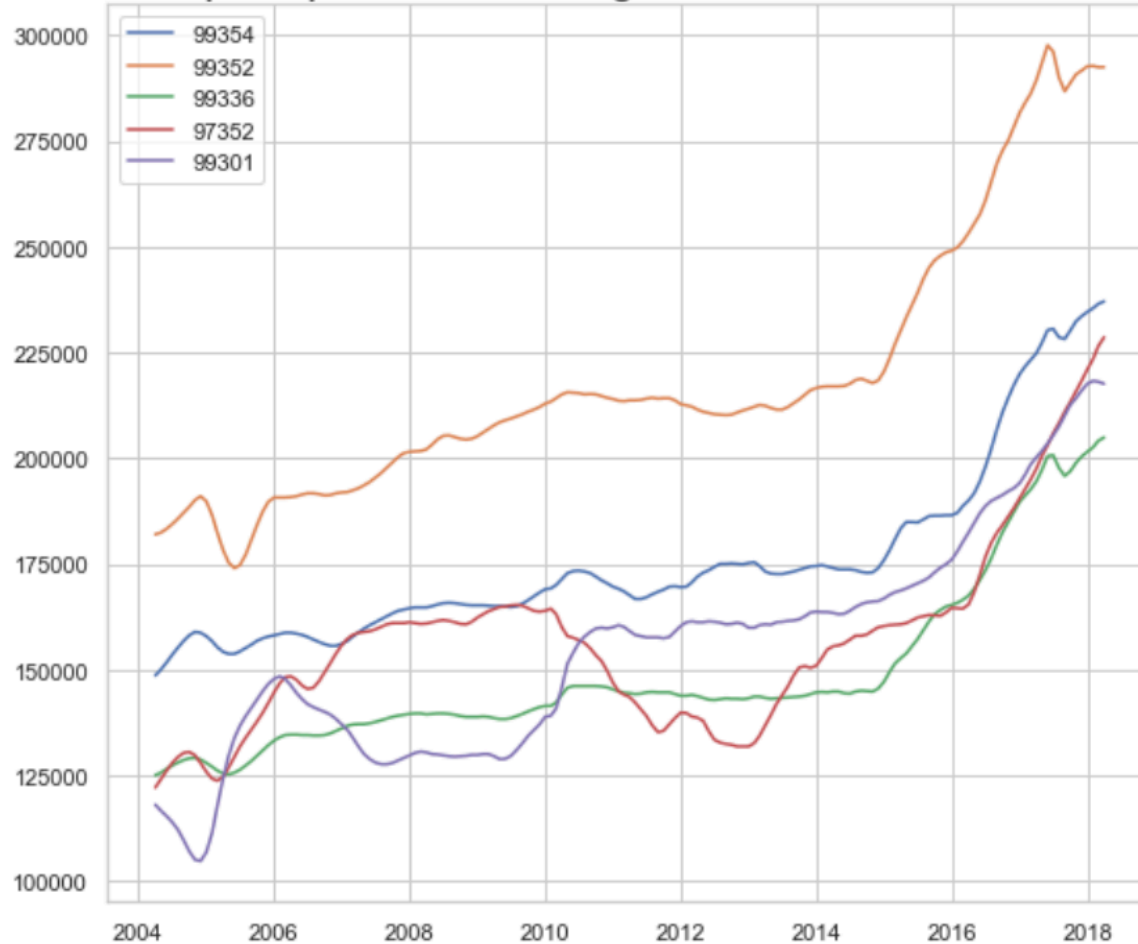
- CRISP-DM framework
 - Subset data based on Business Values
- Time Series Analysis
 - Stationarity checks (rolling statistics and augmented Dickey-Fuller Test)
 - Seasonal Decomposition
 - SARIMAX and ARIMA Modeling
 - Model evaluation techniques (AIC, MSE, model summaries, and model diagnostics)

Housing Price to Income Ratio (2006-2010) per Metro Area in PNW



Findings: 5 Best Zip Codes

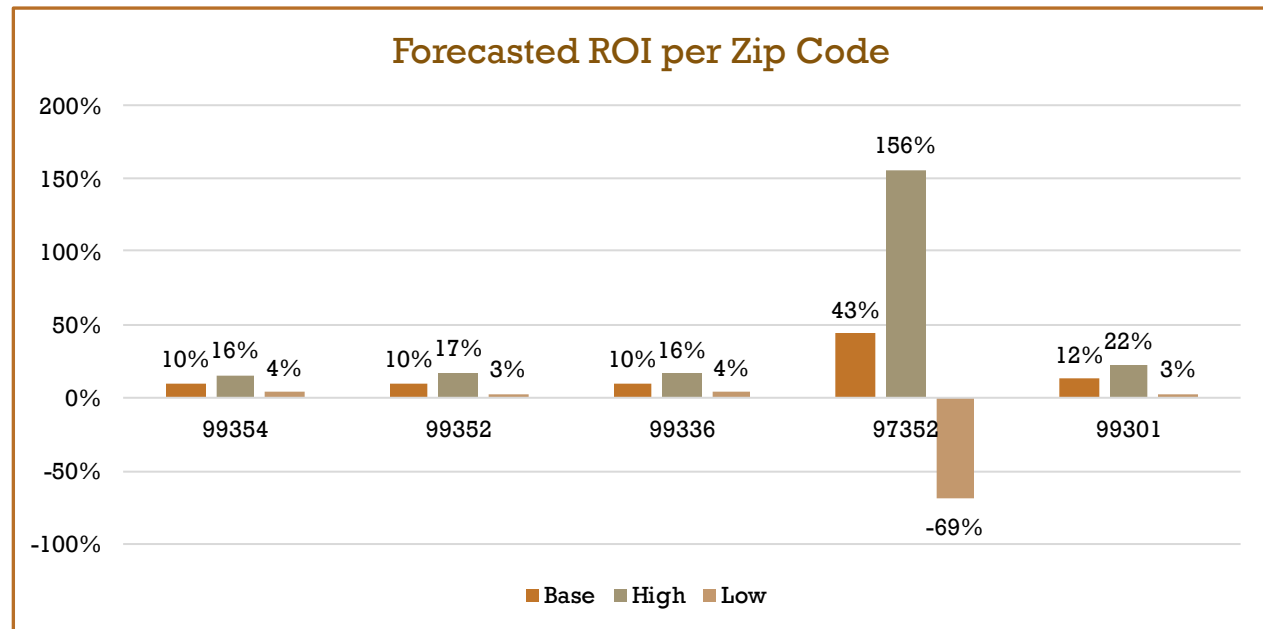
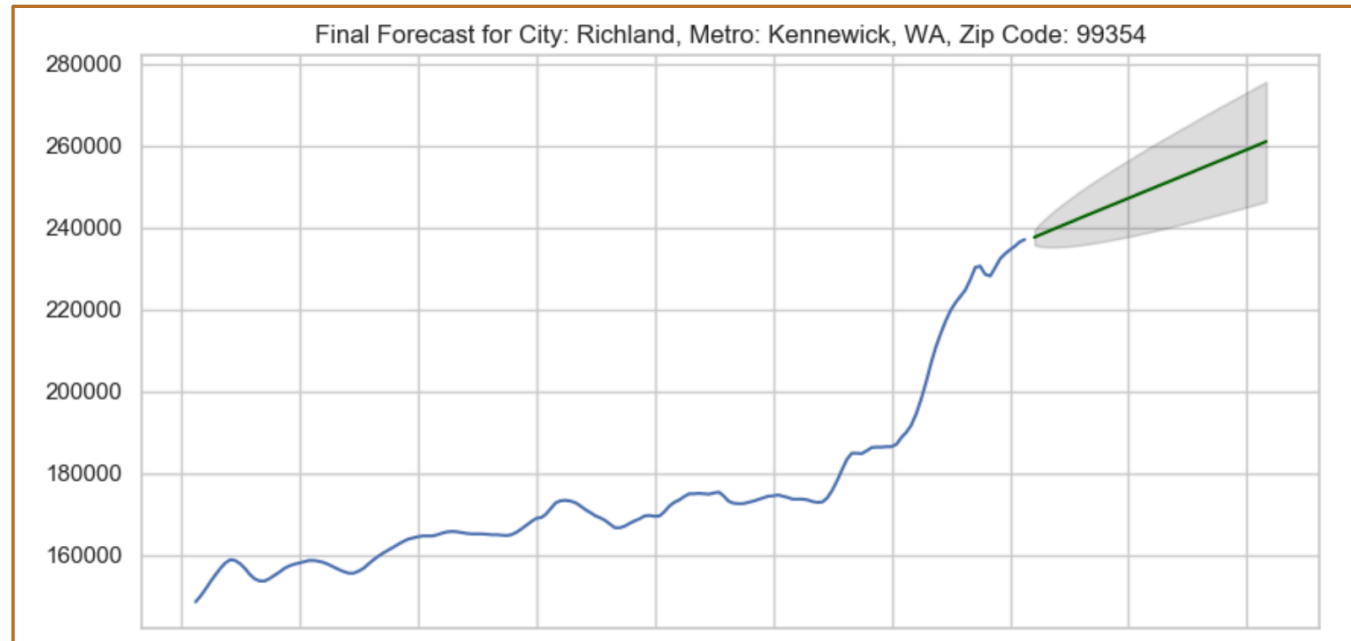
Top 5 Zip Codes: Housing Prices from 2004 to 2018



2 Metros – Kennewick & Salem

- **99354:**
City: Richland, Metro: Kennewick, WA
- **99352:**
City: Richland, Metro: Kennewick, WA
- **99336:**
City: Kennewick, Metro: Kennewick, WA
- **97352:**
City: Jefferson, Metro: Salem, OR
- **99301:**
City: Pasco, Metro: Kennewick, WA

Forecast for next Four Years



Invest in Pasco! (Zip Code: 99301)

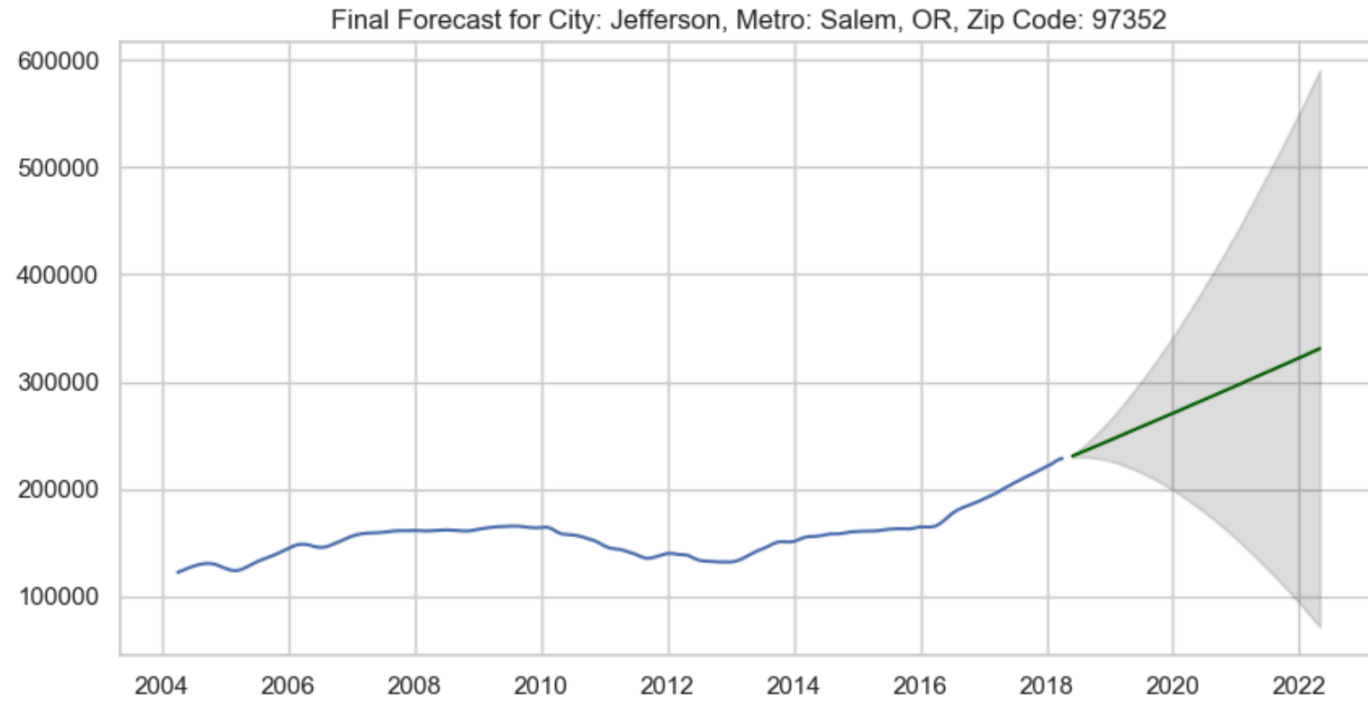
**Kennewick is
King**

Zip Codes in Kennewick Metro
(WA) show steady growth and
low risk in forecast

Best Case ROI: **22%**

Forecast Base Case ROI: **12%**

Low Case ROI: **3%**



Best 156% ROI

FC Base 43% ROI

Low -69% ROI

Forecast unclear in Salem
high risk, high reward



Future Considerations

- Consider additional data on:
 - Income Projections
 - Demographic time series data (population growth)
 - Quality of life data (pollution rates, traffic, education, access to green space)
 - Local tax policies & home ownership subsidies

- Further investigation into residuals
- Improved parameter tuning

Future
Considerations

Thank you

Flatiron Online Self-Paced Data Science Program

Module 4 Project Executive Summary

