Predicting Prices with Zillow Data

Time Series Forecasting and Analysis: Data Science

Orlando Vilar, Feb 2023

Introduction

Introduction
Overview & Business Understanding

- Inflation hedge;

  - Assessment of investment opportunities;

- **Solution**: ranking and predictive pricing framework;

- **Relevance**:

  - Public and investors' decision-making process.

Data & Analysis

Data Understanding
Sources of Information

- Databases:

  - Zillow dataset;
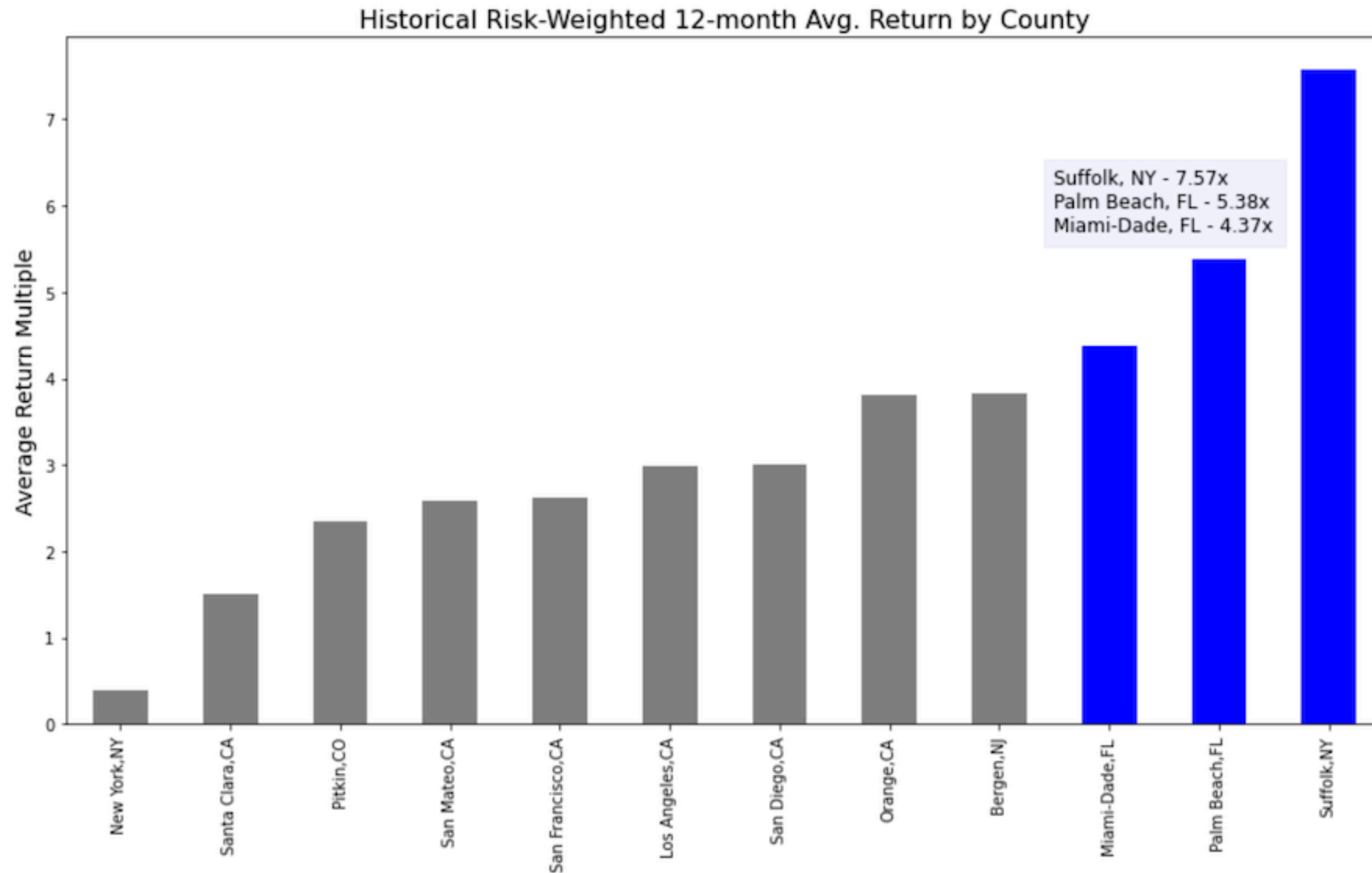
    - 12.5 thousand locations, 1996 - 2018.

Data Understanding

Sources of Information

- Variables:

  - Prices, Region, City, State, County and Size Rank;

- Additional feature:

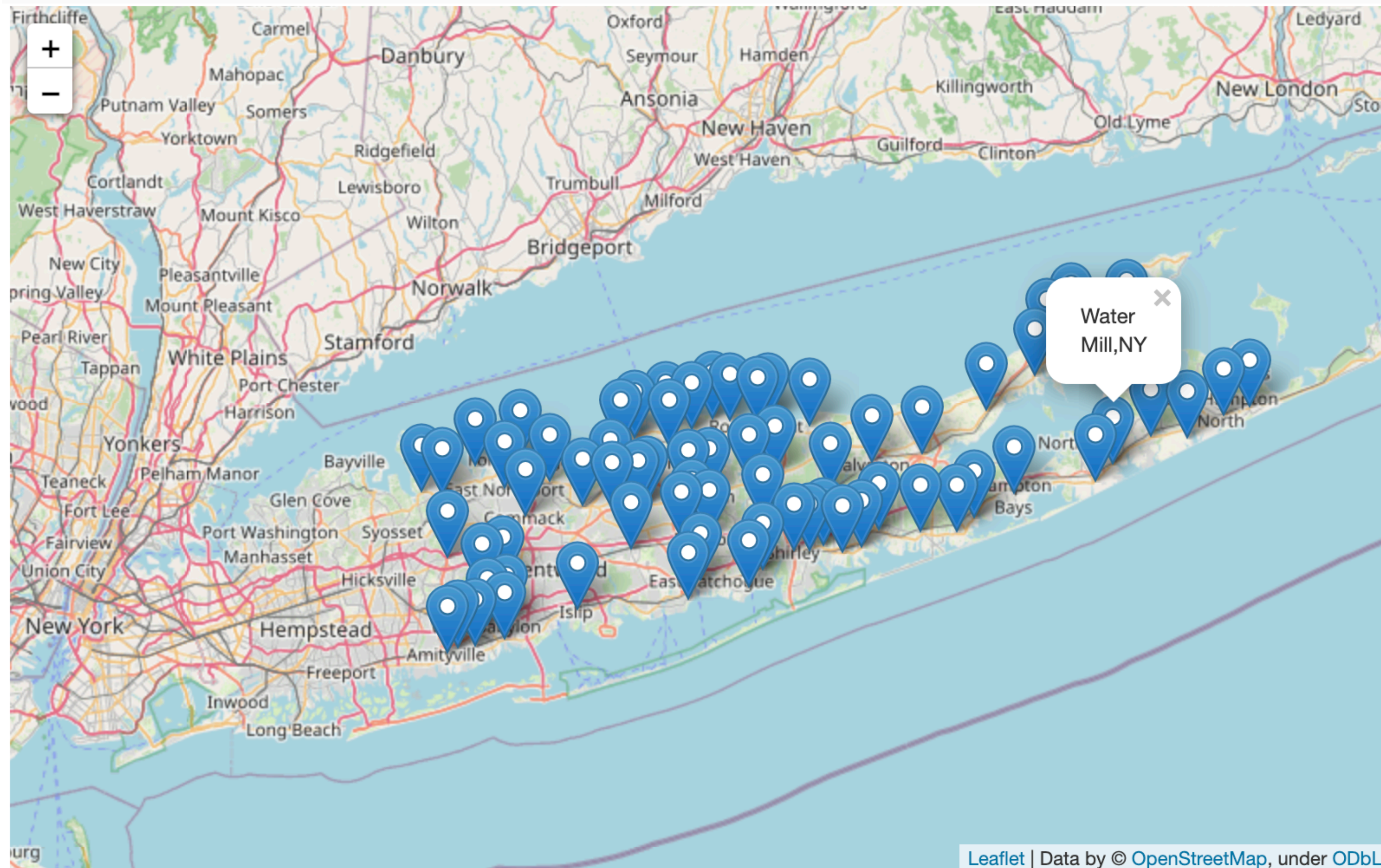 - Matching of latitude and longitude.

Counties by Risk-Weighted Return
The 'best bang for the buck'

Historical Risk-Weighted 12-month Avg. Return by County

Suffolk, NY - 7.57x
Palm Beach, FL - 5.38x
Miami-Dade, FL - 4.37x

Location by Median House Values
Locations within the Suffolk, NY

Closing Remarks

Strategies

Three key insights

- **Divide and Conquer:** invest at top locations;

- **Rays of the Sun:** choosing one location;

- **Alternative**: established counties;

- Price prediction over a 24-months period.

Limitations
Further analysis

- Adding demographic data about each specific area;

- Drilling down into one specific area for over/underpriced analysis;

- Modern Portfolio Theory framework.

Thank you!

https://github.com/ovilar