

# Predicting Prices with Zillow Data

Time Series Forecasting and Analysis: Data Science

Orlando Vilar, Feb 2023

# Introduction

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## 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.

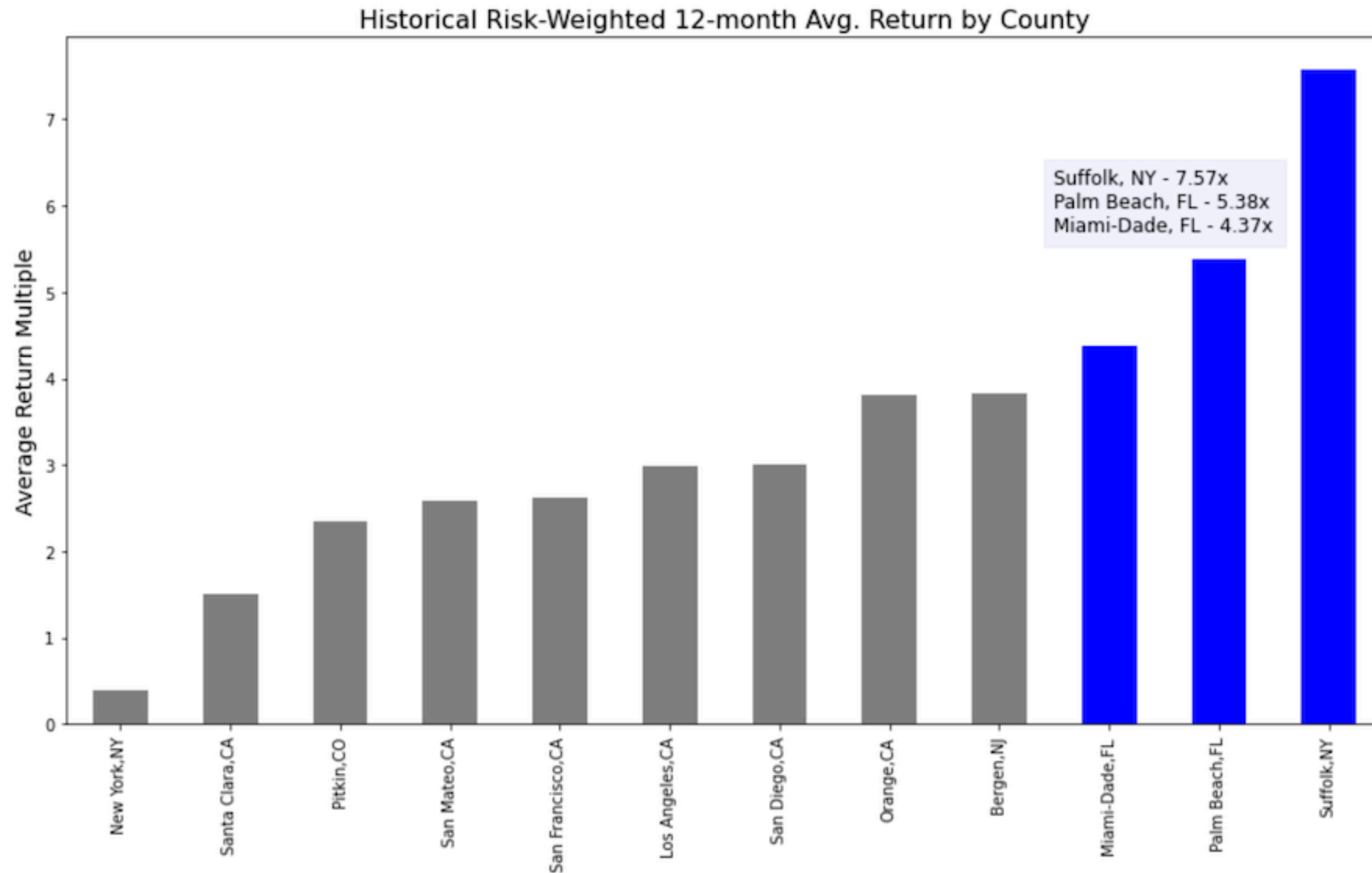
# Data Understanding

## Sources of Information

- Variables:
  - Prices, Region, City, State, County and Size Rank;
- Additional feature:
  - Matching of latitude and longitude.

# Counties by Risk-Weighted Return

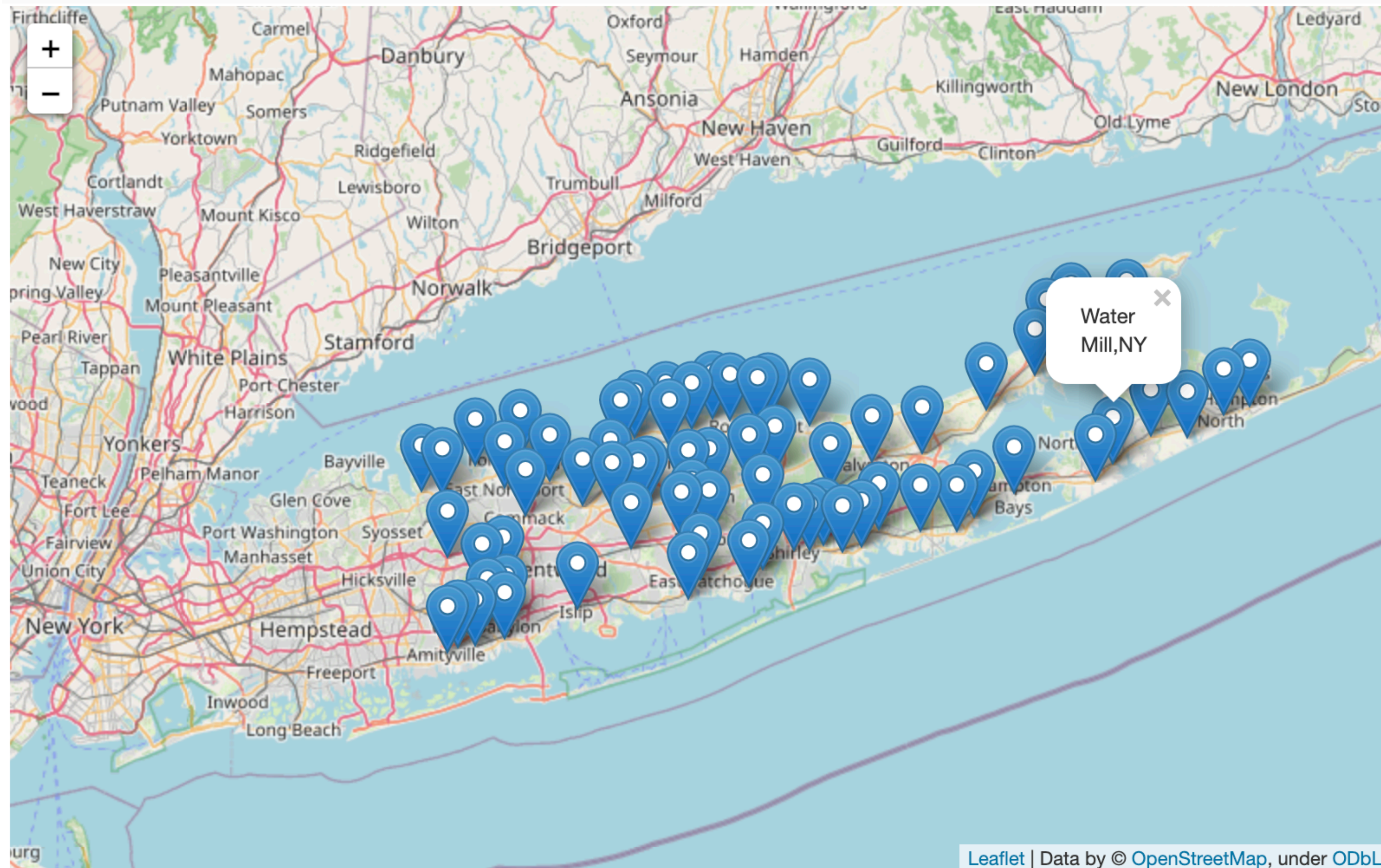
The ‘best bang for the buck’





# Location by Median House Values

## Locations within 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

- Demographic data;
- Over/underpriced analysis;
- Modern Portfolio Theory framework.

# Thank you!

<https://github.com/ovilar>