



# **Low-risk, high-payout real estate investments in Colorado**

By Valentina Fontiveros

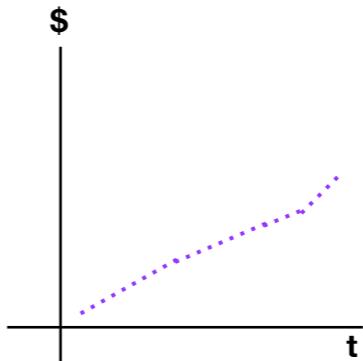
Hello, my name is Valentina and I am going to show you the results of a data model which aims to find the best investment opportunity in the US real estate as of mid 2018.

# Introduction

Prismapi partners are seeking to invest in US real estate.

## Requirements:

- Positive value trend over last 20 years
- Recent value growth acceleration
- Low volatility long term.



Our partners at Prismapi Industries are seeking to find 5 real estate markets in the US with the following characteristics:

- Home values have increased steadily over the last 20 years
- There's been recent value growth acceleration
- And there's been relatively low volatility historically.

# Business value

Study will identify opportunities  
likely to **sustain value growth**  
with **limited risk**.



The point of this exercise is to use data science tools to identify opportunities to sustain value growth with limited risk over the short term (the next 4 years)

# Methodology

- Data source: Zillow home values (1994 - 2018)
- 3 stages of filtering using proprietary techniques.
- Create a time series model using ARIMA method.
- Forecast future values.



To start, data for the past 22 years was downloaded using the Zillow API. This dataset contains mean home values for each zip code for every month between April 1994 and April 2018.

We developed three unique filters to identify markets that meet our investment criteria.

Out of the top 5 zip codes in our final list, we created a time series model using the ARIMA method. The aim was to forecast future values for the next 4 years.

# Results

Using our filtering criteria, the top zip codes found are all in the state of Colorado.

**Let's take a look at each of them.**



Using our criteria, the top 5 zip codes found were all in the Greater Denver area.

Let's take a look at the ROI forecasts for each of them.

# Denver - 80210

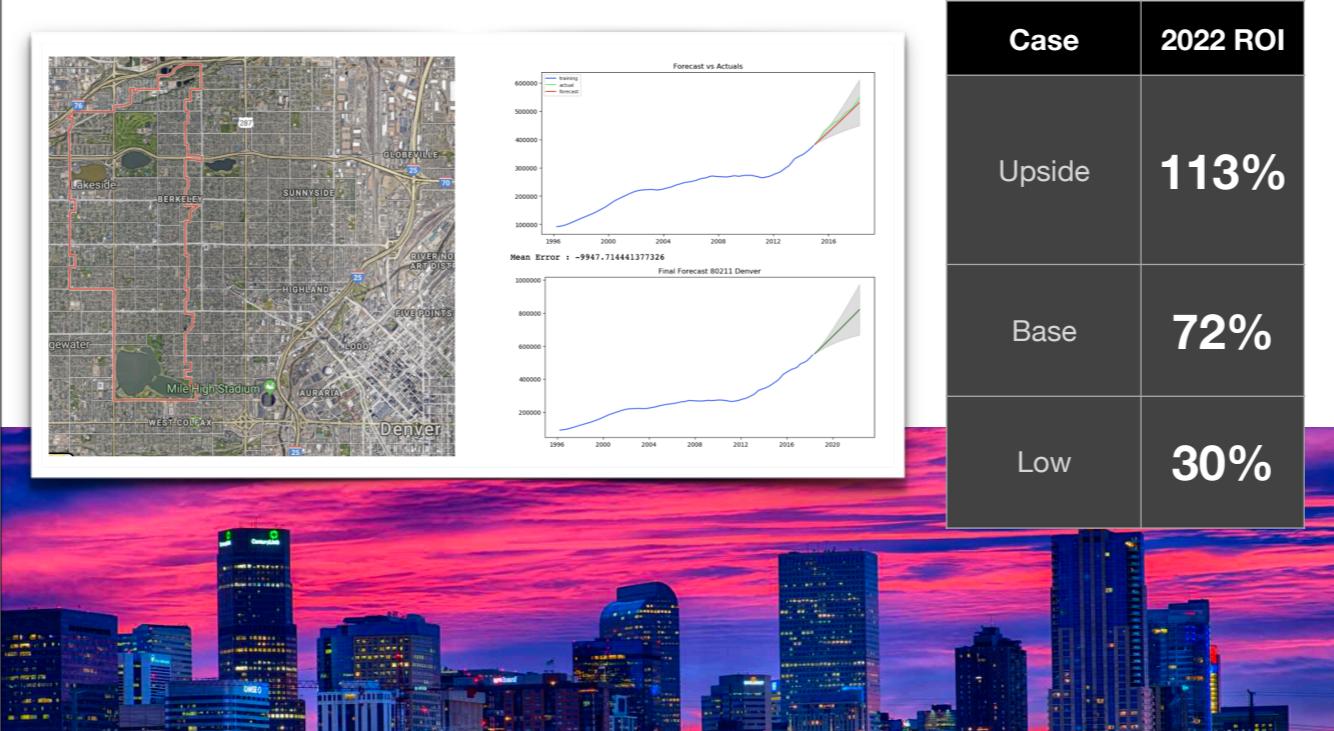
Excellent fidelity model. Forecast has high upside and base case.  
Low return for conservative case.



We identified three zip codes in Denver proper. Zip 80210 is where University of Denver is located. Our model had high fidelity when tested against historical values. The forecast for 2022 has a wide span of possible values. The upside case predicts that appreciation will reach 81%. The base case predicts an ROI of near 42%. The low case predicts an anemic ROI of 3%, but this is of course the worse case scenario. Let's look at other zips.

# Denver - 80212

Excellent fidelity model. Forecast has high upside and base case.  
Positive return for conservative case.



Zip code 80212 looks better. This area is near Denver downtown and has various parks and natural areas. The predicted upside suggests that home values could double with an ROI of 113% in the next 4 years! The base case is highly encouraging as well with 72%. The low case is also encouraging with an ROI of 30%.

# Denver - 80211

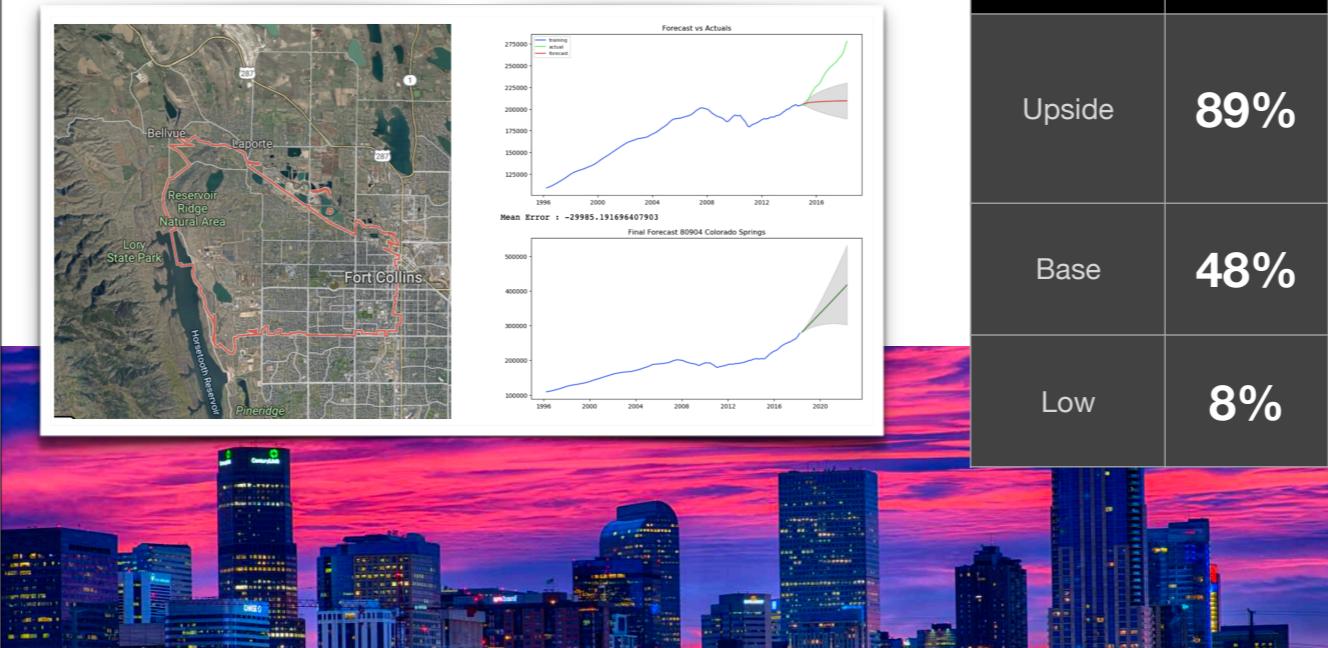
Good fidelity model. Forecast has high upside and base case.  
Good return also for conservative case.



The model fit has a higher error for this zip code compared to the two previous ones. Yet, the ROI predictions are encouraging as well. Upside: 76%, Base: 49%, Low: 21%

# Colorado Springs - 80904

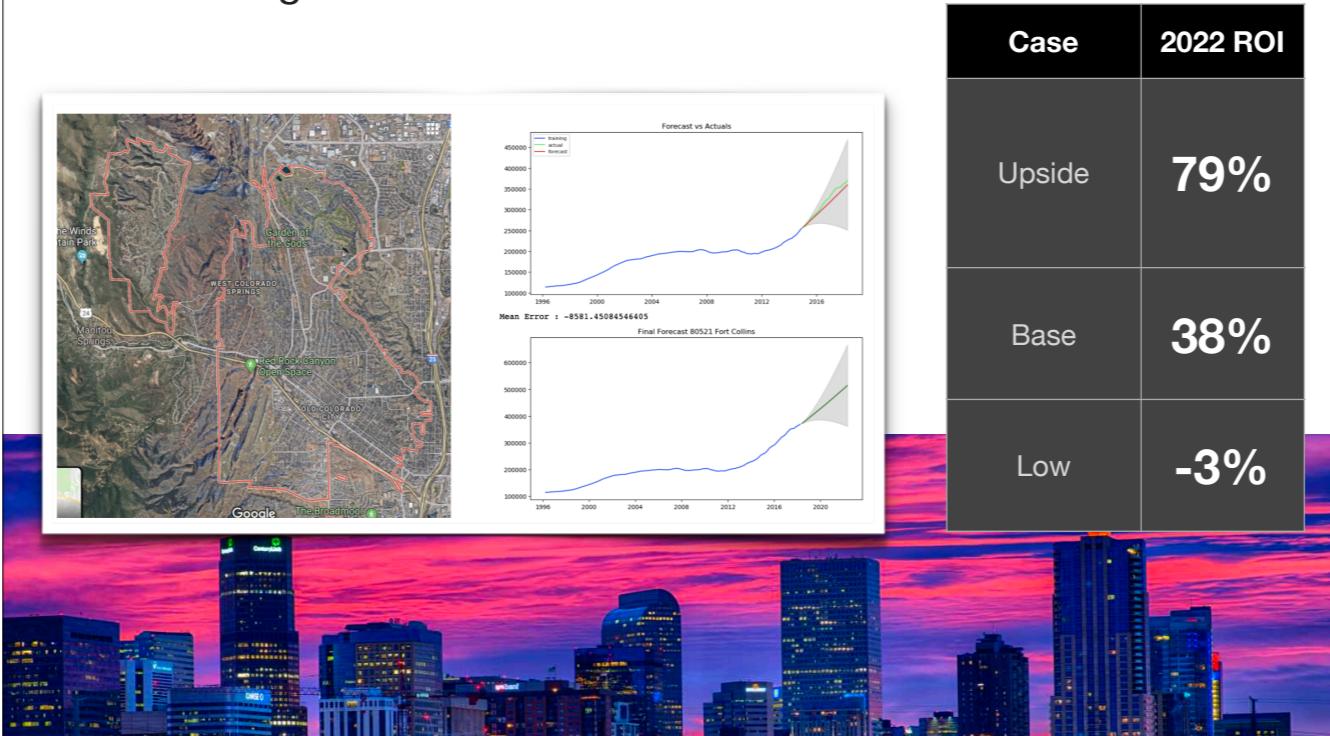
Lower fidelity model. Market outperformed our historical forecast. Future forecast suggest potential for high growth In base and upside case.



Let's talk now about Colorado Springs. It looks like the 2009 recession had a higher impact here than in Denver. Our model had a lower fidelity - but the good news is that the market outperformed our model considerably. For this zip code, expect an upside of 89%, a base of 48%, and a low case of 8%. Not bad, but please take into account the lower fidelity of the model.

# Fort Collins - 80521

Excellent fidelity model. Forecast has high upside and base case.  
Possible negative return for conservative case.



In the Fort Collins model we have an excellent fit. The upside case resulted in a ROI of 79%, the base case 38%, low case -3%. So this is the only model that shows a risk for losses.

# Conclusions & Future Work

Zip codes identified have high growth potential and less risk over the short term.

Future work: add data for rest of 2018 and 2019, check models.



Filtering criteria was successful at identifying markets with high potential for sustained growth with limited exposure to risk.

**Thank you!**

**Any questions?**

