

Forecasting the Tarrant County Housing Market: Insights for Your DFW ► Investment Strategy

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1/18/2020



Dallas - Ft. Worth Investment Potential

- ▶ Outlook for DFW Real Estate is Strong
- ▶ DFW Metro =
Dallas & Tarrant
counties

NAR Identifies 10 Markets Expected to Outperform Over the Next Three to Five Years



December 11, 2019

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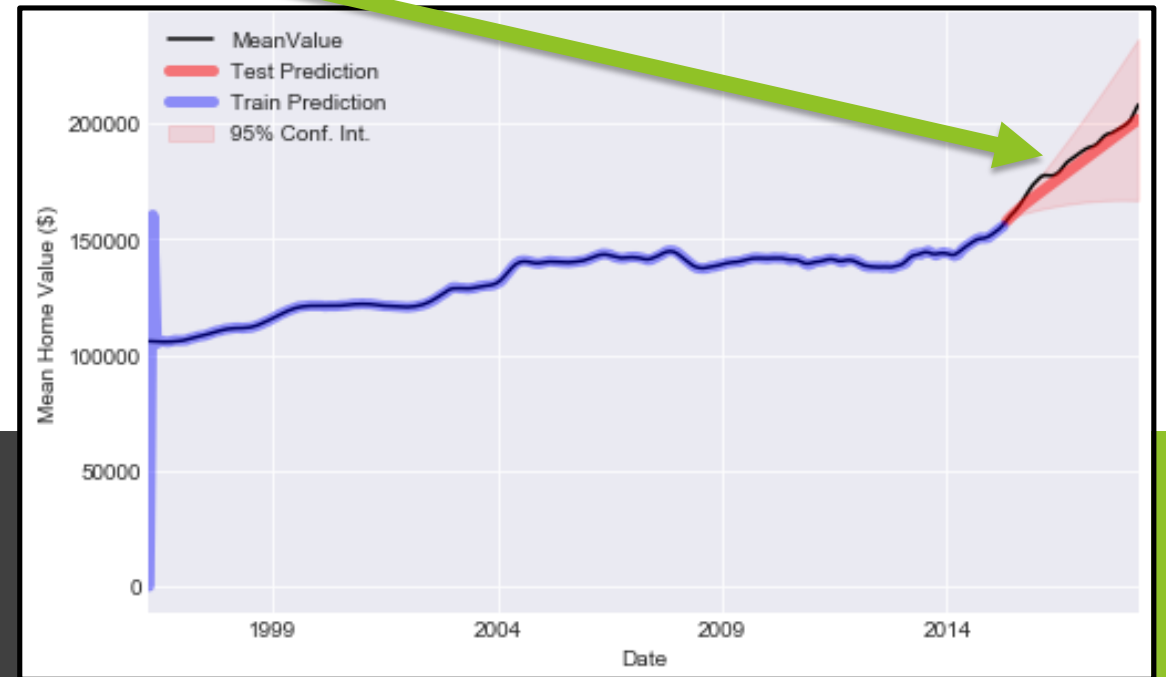
WASHINGTON (December 11, 2019) – The National Association of Realtors® identified 10 markets expected to outperform over the next three to five years. In alphabetical order, the markets are:

- Charleston, South Carolina
- Charlotte, North Carolina
- Colorado Springs, Colorado
- Columbus, Ohio
- **Dallas-Fort Worth, Texas**
- Fort Collins, Colorado
- Las Vegas, Nevada
- Ogden, Utah
- Raleigh-Durham-Chapel Hill, North Carolina
- Tampa-St. Petersburg, Florida

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(National Association of Realtors, Dec. 2019)

- ▶ 1) Fit a model using to historical 'training' data, capturing past patterns
 - ▶ Note: Unique model fit to each zip code in this study - not one model for all
- ▶ 2) Evaluate model quality by predicting known 'test' data
 - ▶ 'Test' data excluded from Step 1
- ▶ 3) Use model to Forecast future values



Time Series Modeling & Forecasting (In a Nutshell)

CHOOSING THE RIGHT AREA FOR INVESTMENT

‘BEST’ ZIP CODES:

- 1) Predictable
- 2) Good Return on Investment (ROI) Forecast
- 3) Lower Uncertainty in ROI Forecast

‘WORST’ ZIP CODES:

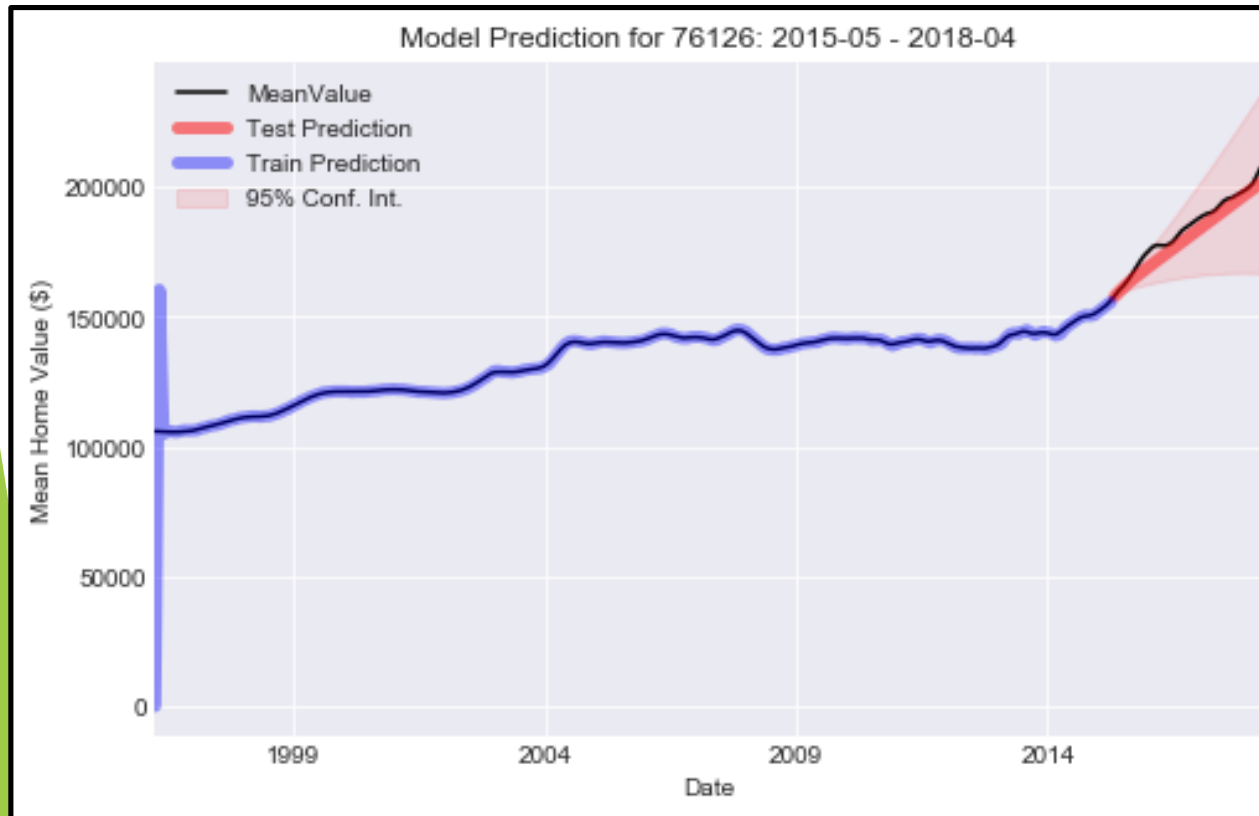
- 1) Unpredictable
- 2) Poor ROI Forecast
- 3) Higher Uncertainty in ROI Forecast

ZIP RANK INDEX =

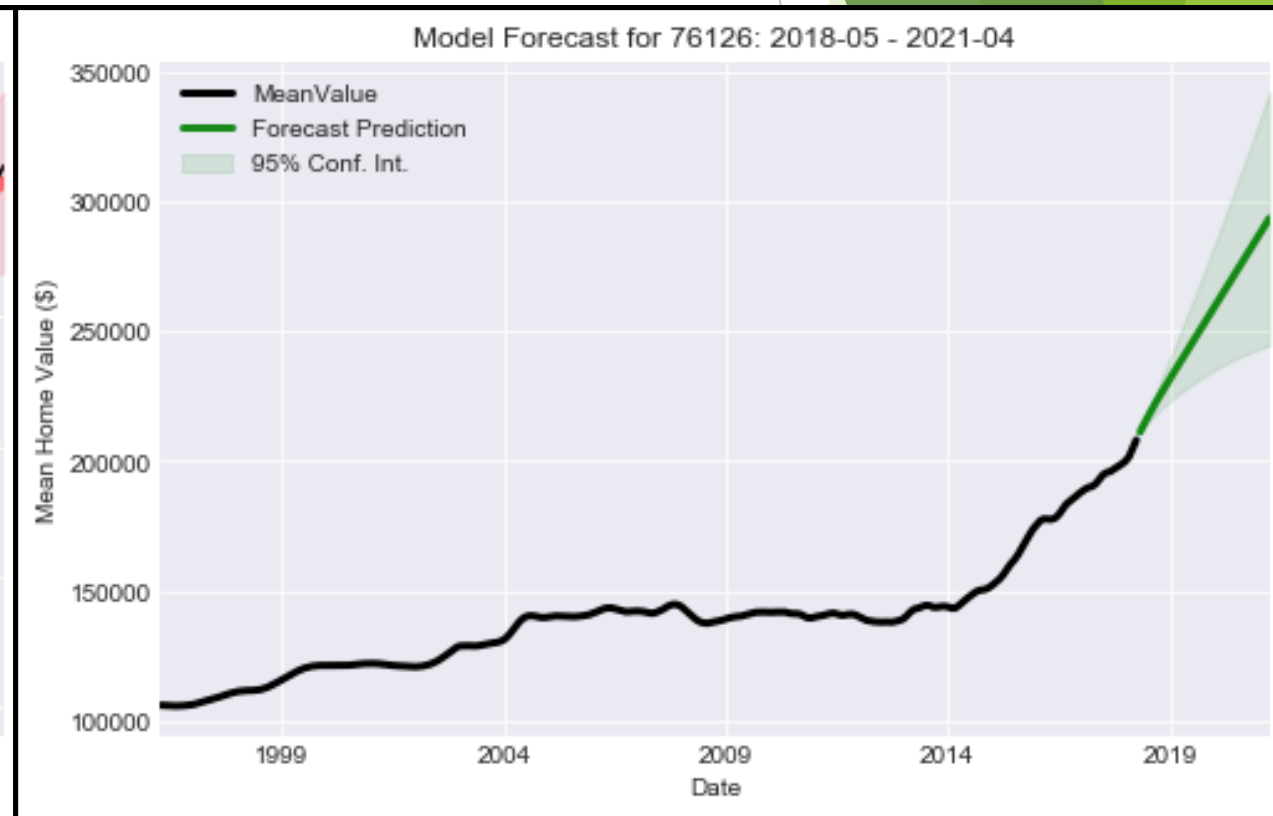
- Predictability Rank +
- ROI Forecast Rank +
- ROI Forecast Uncertainty Rank

Example: 'Good' Zip Code - 76126

Zip Rank Index = 20.5



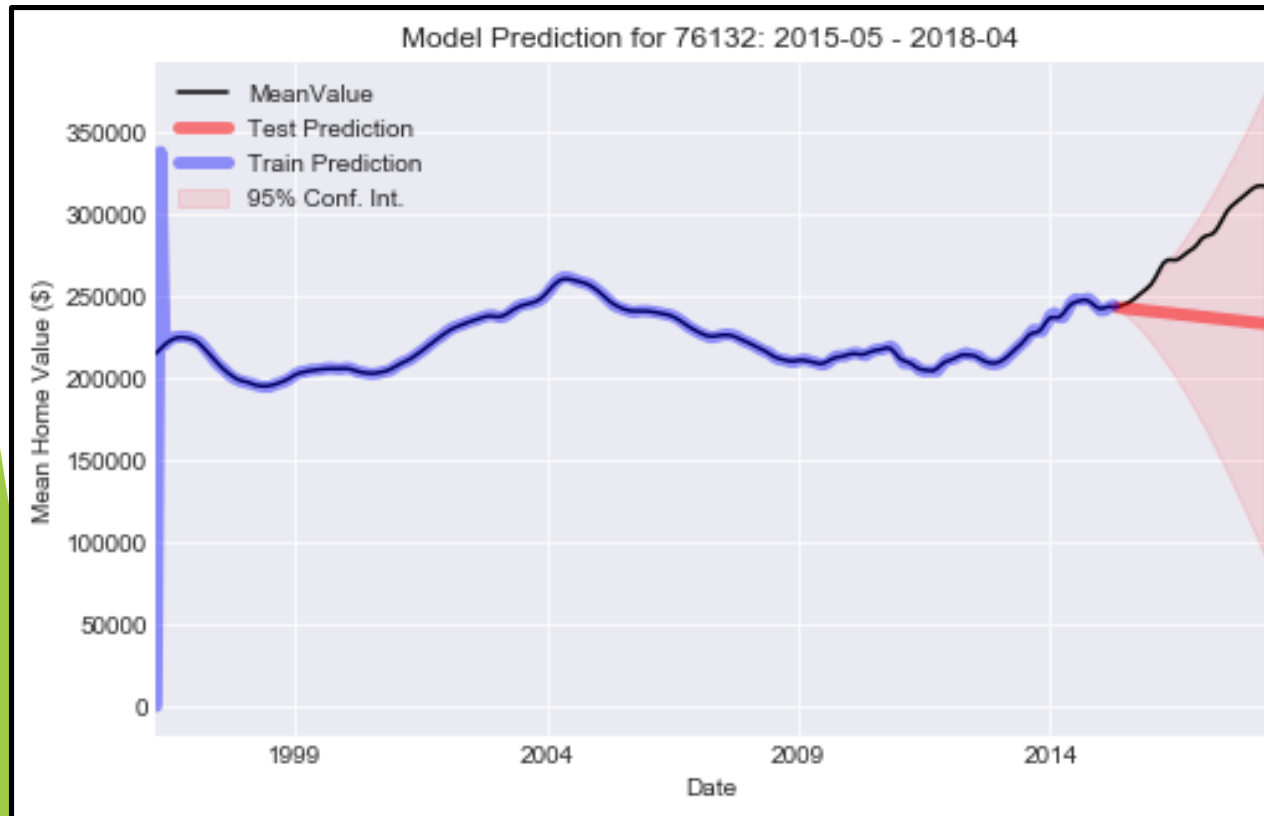
High Predictability



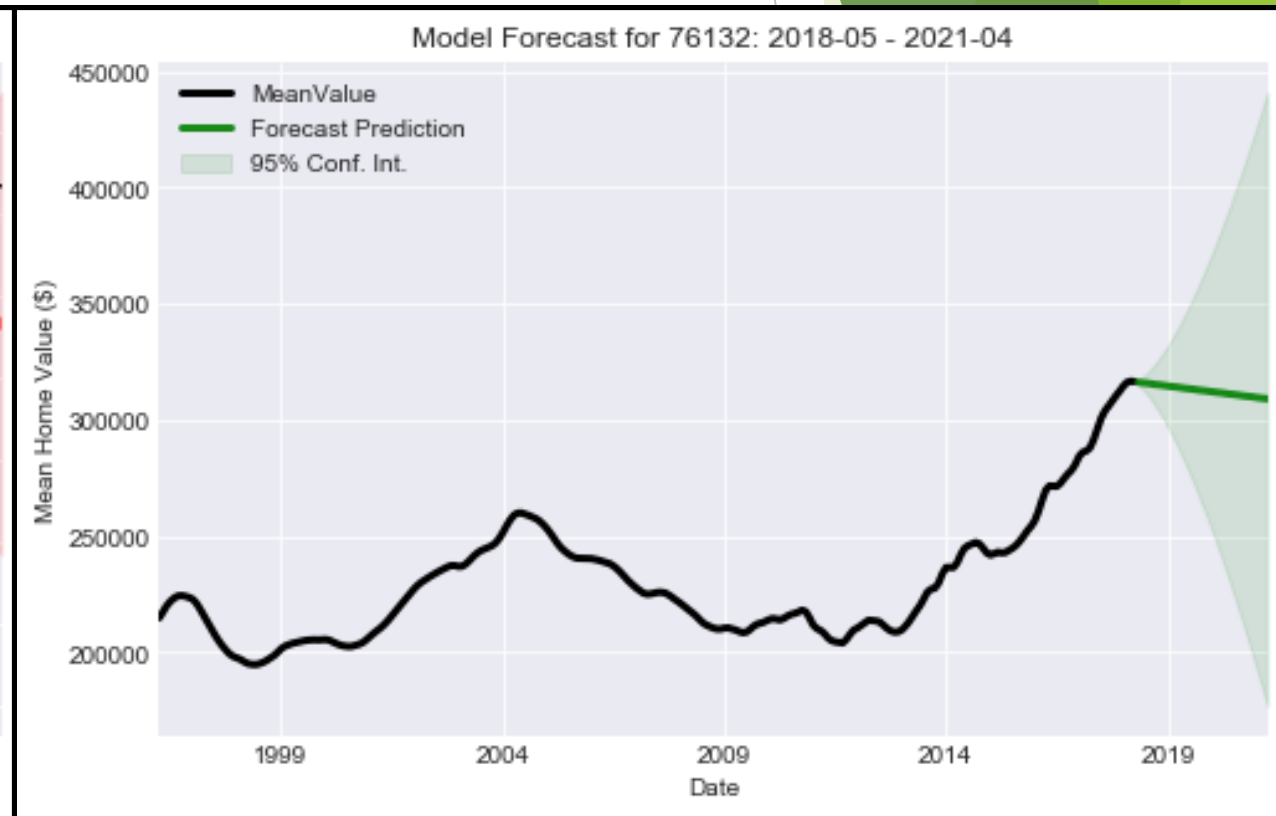
Good 3 Year Forecasted R.O.I.
Low Forecast Uncertainty

Example: 'Unpredictable' Zip Code - 76132

Zip Rank Index = 150



Low Predictability



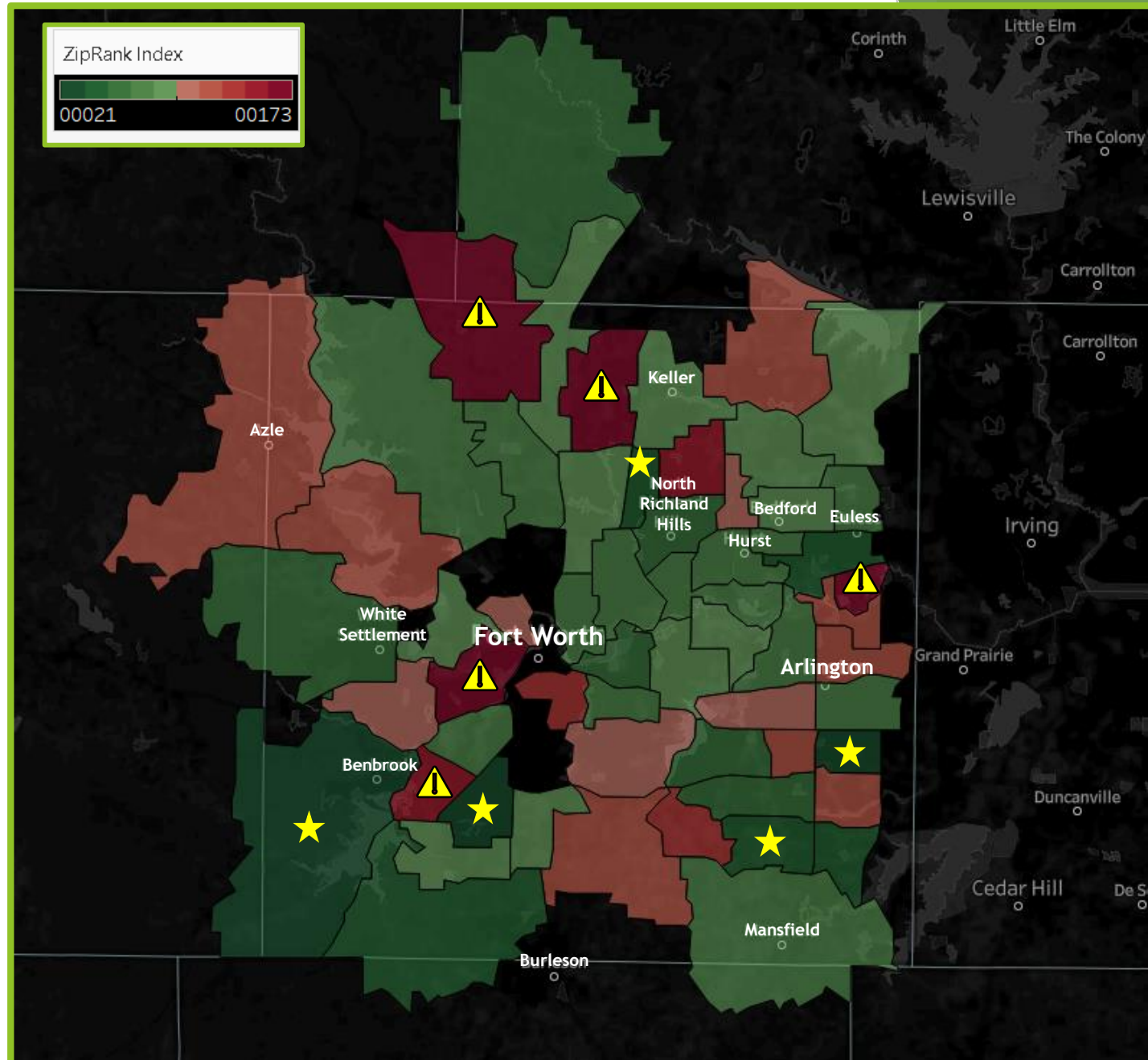
Poor 3-Year Forecasted R.O.I.
High Forecast Uncertainty

‘Best’ Zip Codes

- ★ 76126 - Benbrook
- ★ 76133 - SW Fort Worth
- ★ 76014 - E Arlington
- ★ 76001 - SW Arlington
- ★ 76148 - Watauga

‘Worst’ Zip Codes

- ⚠ 76132 - E Benbrook
- ⚠ 76005 - NE Arlington
- ⚠ 76052 - Haslet
- ⚠ 76244 - W Keller
- ⚠ 76017 - W Fort Worth



‘Best’ Zip Codes - Overall

Zip Code	Zip Rank Index	Forecasted ROI (%)	Average Investment Cost per Home	Average Projected Home Value (3-Year Forecast)
76126	20.5	41.1	\$ 208,100	\$ 293,550
76133	22	38.9	\$ 164,900	\$ 229,070
76014	27.5	32.4	\$ 153,500	\$ 203,210
76001	37	22.2	\$ 217,200	\$ 265,390
76148	41.5	50.7	\$ 164,400	\$ 247,690

Recommendations for Housing Investment in Tarrant County

- ▶ Strongly consider the zip codes with predictable behavior, good forecasted R.O.I., and low forecast uncertainty
- ▶ Think twice about zip codes that are difficult to predict, have poor forecasted R.O.I., and high forecast uncertainty
- ▶ Time series models just one piece of the puzzle
 - ▶ Often useful - rarely exactly correct
 - ▶ Forecasts may be inaccurate if systems experience rapid/dramatic change
 - ▶ Economic boom/recession
 - ▶ Natural disasters
 - ▶ Government policies, etc.



Recommendations by Category

Predictability Only

Zip Code	Rank	Mean Absolute Percentage Error (MAPE) (%)
76001	1	1.1
76177	2	1.2
76247	3.5	1.9
76126	3.5	1.9
76040	5	2.0

3 Year Forecasted ROI Only

Zip Code	Rank	Forecasted ROI (%)
76114	1	73.9
76148	2	50.7
76111	3	48.4
76164	4	43.7
76103	5	42.3

Uncertainty of 3 Year Forecasted ROI Only

Zip Code	Rank	ROI 95% Confidence Interval (%)
76014	1	11.6 - 53.1
76179	2	-4.6 - 38.1
76001	3	0.6 - 43.8
76017	4	-1.0 - 42.8
76133	5	16.8 - 61.0

Future Work

- ▶ Use additional data to try to improve time series predictions
 - ▶ Population growth / decline
 - ▶ Per capita income changes
 - ▶ Economic growth / decline
 - ▶ Demographics
- ▶ Assess 3-year forecasts made in this study when all data are available
 - ▶ ... how well did these forecasts hold up ?

The background features a dark blue-grey field on the left, transitioning into a series of overlapping, semi-transparent green triangles and polygons on the right. These shapes vary in shades from a vibrant lime green to a deep forest green. A thin, light-colored line runs diagonally across the lower right portion of the image.

Thank you!