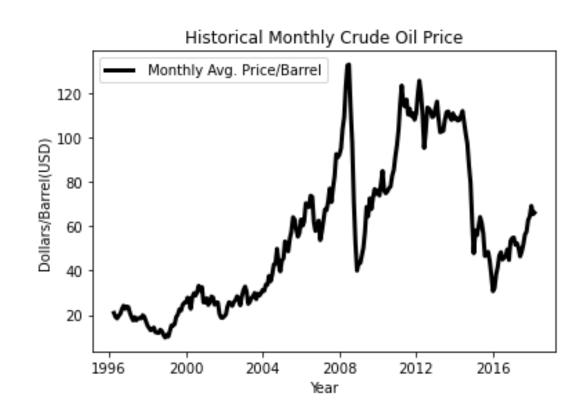
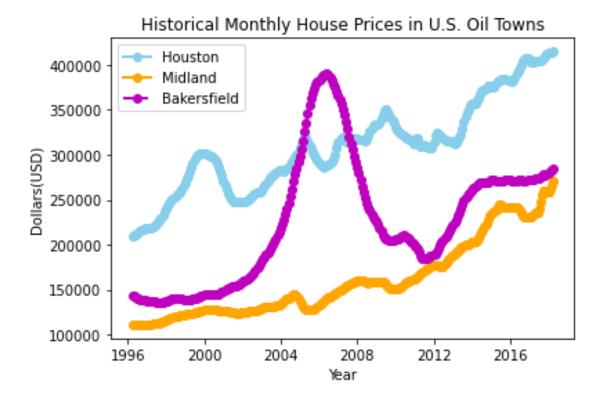
# Do Fluctuating Oil Prices Mean Fluctuating Home Prices?





## Data Cleaning and EDA

- Filter zipcodes
- Data shape

Filtering and transforming

#### Multiple Data Sets

- Original data
- Log transform data

- Plot time series
- Boxplots

Visualization/EDA

## Modeling with Prophet

- Start with full date range
- Use transformed and non transformed data

**Baseline Modeling** 

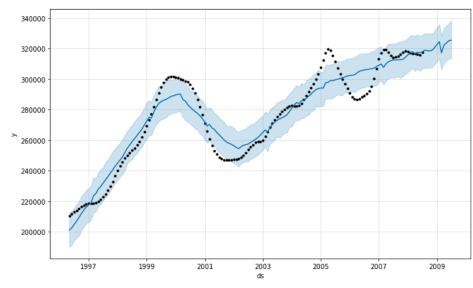
Observe results and modify as needed

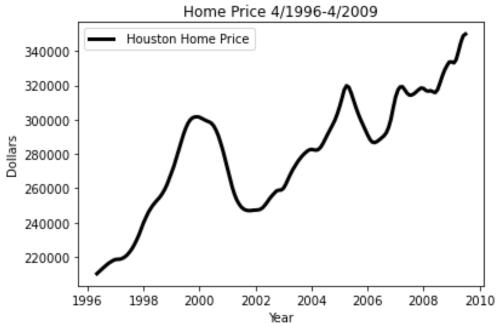
• Alter date range

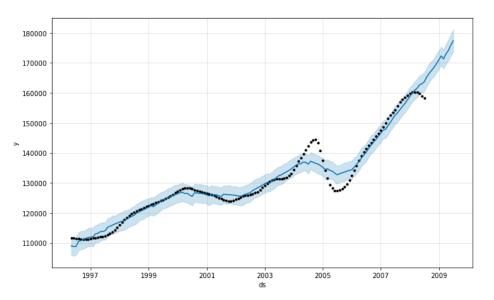
- Forecast 12 months out
- Compare to actual data

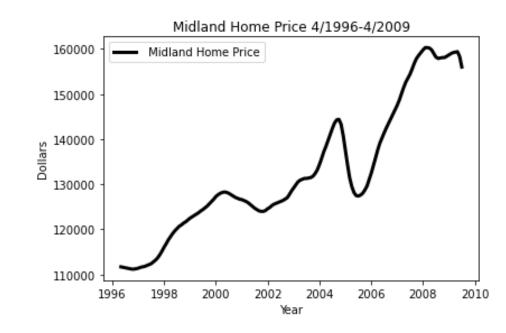
**Final Forecast** 

## Facebook Prophet Performance









### Conclusions and Future Work

#### Conclusions

- Prophet was used to see if house prices could predict a crash in oil prices
- While cities like Houston faired well, less diverse cities like Midland did not do so well when it came to model performance
- While oil prices may be an indicator of house prices at a given time, using them to predict house prices does not work well for cities that rely on oil as the only industry

#### Future Work

- Attempt to use multiple algorithms and compare performance
- Select different time ranges, some oil crashes were worse than others