Group 1 Project Proposal

Team Members: Tennille Franklin, Richard Willet, Ellen Grant, Sarah Racine, Natalie Raver-Goldsby.

Project Proposal: Comparing real estate prices and mortgage rates over the last 20 years in the Nashville metro area.

1) What is the strongest correlation of real estate prices? - Richard (?)

2) Does the strength of these effects differ for different types of real estate/different listings (1br vs 3br, single family homes, condos, etc) - Sarah

3) How do different types of real estate (e.g., residential, commercial) respond to changes in mortgage rates? - Ellen

4) What role do other economic indicators (unemployment rates, income levels, and inflation) play in this relationship? - Natalie (?)

5) How do mortgage rate changes impact different segments of the population? - Tennille

Datasets we plan to use:

Census Data

https://www.kaggle.com/datasets/joshhaber/us-real-estate-and-interest-rates-census-and-fred

https://www.kaggle.com/datasets/joshhaber/us-real-estate-incomepriceregion-census-data

https://www.kaggle.com/datasets/utkarshx27/real-estate-sales-2001-2021-gl

\*double check the columns in these datasets and choose the best one

Expected outcome:

Define a trend of expected real estate prices vs what the market/mortgage rate prices are. Expecting a negative relationship, as mortgage rates increase, we expect real estate prices to decrease.

1) We expect mortgage rates to be the strongest determining factor of real estate prices.

2) We expect the strength of this relationship to differ for different types of homes. The effects on a 1br will be less strong than the effects on a 3br?.

3) Residential real estate prices will vary more than commercial real estate prices in response to mortgage rate changes.

4) Unemployment rates, income levels, and inflation will have a negative, positive, and positive relationship with real estate prices respectively. As unemployment rises, real estate prices will decrease? Likewise when income levels in an area increase, real estate prices will increase. And as inflation rises, real estate prices will also inflate?

5) Mortgage rate increases will affect lower income populations more so than higher income populations.

Steps

* Clean Zillow Data
  + Exclude anything other than Nashville TN
  + Shape so that it will be easier to add mortgage and census data later
  + Merge the sfr and all median sales prices
  + Find rates of change
  + Plot data
  + Prove that sfr and all are statistically significantly the same
* Clean Mortgage Data
* Clean Census Data