Rodrigo Ivan Rodriguez

DSC 540 WINTER

Final Project

**Housing Market Analysis – Summary Output**

**Introduction**

This project involved gaining data on the different housing markets across three different data sources. The sources for this project included:

* Zillow Research – Median Sale Price by MSA by Month (2019 – 2023)
* Bureau of Economic Analysis – Per Capital Personal Income and Purchasing Power by MSA
* House Canary Market Research – Gross Average Rental Income Yield by MSA

The data was used to conduct statistical analysis on various MSAs to determine which MSAs would be considered favorable for Rental Home Investors. The analysis should provide recommendations and insights for investors to determine which MSAs would be beneficial for rental home investments.

**Visualizations**

A graph with blue dots

Description automatically generated***Figure 1***

**Figure 1**. Shows a correlation coefficient of -0.44 which suggests there is a moderate negative relationship between the median sale price and the purchasing power of 1.00 dollar. As the median sale price increases, there tends to be a decrease in the purchasing power of 1.00 dollar. However, this correlation is not very strong.

This visualization can be useful for stakeholders looking to understand the economic dynamics of different regions. The negative correlation might imply that areas with higher cost of living (indicated by higher median sale prices) could be associated with a lower purchasing power of the dollar.

A graph of different colored lines

Description automatically generated***Figure 2***

**Figure 2**. Shows the increase in Median Sale Price across all MSAs. In general, most MSAs are seeing increases in median sale price YoY. This appears to be in line with expectations since inflation rises each year.

A graph with a red line

Description automatically generated***Figure 3***

**Figure 3**. Shows how purchasing power and rental income yield differs between MSAs. Based on the observed MSAs, an increased purchasing power tends to lead to higher rental income yields.

Using contextual assumptions, one can infer that MSAs with higher cost of living will have higher priced homes, which will in turn make it more difficult for an investor to make a decent return on their investment. A rental investor in an MSA with lower purchasing power will have to charge more for rent to recoup their investment, all while in an economic market that makes it difficult for individuals to pay higher rents.

A graph with text on it

Description automatically generated***Figure 4***

**Figure 4**. Shows the increase in median sale price over 2019 to 2023 across MSAs. There is a higher jump in median sale price increase consistently across the top 25 MSAs than in the bottom 25, where the gap is consistently smaller.

A graph of a graph with a red line

Description automatically generated with medium confidence***Figure 5***

**Figure 5**. Shows the Per Capital Personal Income of individuals within an MSA against the Home Median Sale Price. This graph is useful to highlight the MSAs where personal income can be considered low when compared to the cost of living (with regards to home prices).

Anywhere where the red dot of Adjusted PCPI is within the blue bar of Median Sale Price can be considered places of high cost of living. This includes many MSAs in California but also some less known MSAs like Glenwood Springs, CO and Orlando, FL.

Inversely, MSAs with large gaps between Median Sale Price and Adjusted PCPI can be considered markets with stable economies and favorable individual purchasing power.

**Comprehensive Insight**

* We know that Market Areas with lower purchasing power tend to have higher home prices.
* Home prices have historically gone up from 2019 to 2023 in all Market Areas.
* Rental Home Investors looking for monthly rental income as a source of net profit should avoid Market Areas with low purchasing power. Homes in these markets will be more expensive, and Landlords will have to charge more for rent to recoup their investments, all while in an economic market that makes it difficult for individuals to pay higher rents.
* Markets that have seen sharp increases in median sale price from 2019 – 2023 are considered areas with high cost of living and are difficult for Rental Home Investors to recoup their investment with monthly rental income alone.
* Markets on the lower 25 spots of Figure 4 are considered to have stable housing markets and higher average rental income yields closer to 10% a year. While Markets on the upper 25 spots of Figure 4 are considered to have booming or high-cost housing markets and lower average rental income yields closer to 6% a year.
* Homes with large gaps between Median Sale Price and PCPI in Figure 5 can be considered markets with stable economies and favorable individual purchasing power. These markets are favorable for Rental Home Investors seeking monthly rental incomes to yield higher percent returns.

**Recommendations**

My recommendation for a Rental Home Investor interested primarily in maximizing the percent yield of their rental home investments is to stick to Markets with a stable cost of living and higher purchasing power. These areas will result in higher rental income yields and lower home prices. These markets are easier for newer investors to enter and begin to recoup their investments with monthly rental income alone.

* On average it will take a high purchasing power market roughly 10 years to recoup an investment on a rental property with monthly rental income alone.
* While it will on average take a low purchasing power market roughly 17 years to recoup an investment on a rental property with monthly rental income alone.

Additionally, if an individual is looking to buy a property for long term purposes, such as a primary home, it is recommended to buy this home sooner rather than later since all markets see increases in home prices year over year, especially in markets with lower purchasing power.