Remote Revolution: Analyzing the Impact of Work-from-Home on Real Estate Dynamics

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Question

Will the rise of remote work transform our cities and neighborhoods? As remote work becomes increasingly prevalent, it's not just about working from home—it could potentially reshape the entire landscape of both commercial real estate and residential properties. But what impact does this shift really have if any?

- Remote work is becoming increasingly popular, thanks in part to the COVID-19 pandemic.
- This trend could potentially decrease the demand for commercial real estate, as fewer people need office space.
- But what does this mean for residential properties? Will we see a shift in housing preferences as more people work from home?

Methods

Calculating of Price Changes:

- Initially, I compute the percent change in residential and commercial prices from one year ago.
- This step facilitates the examination of annual price fluctuations for both sectors.

Estimation of AR(6) Model:

- To account for various business cycle frequencies, I estimate an autoregressive model of order 6 (AR(6)). This model selection is based on the understanding that the average business cycle tends to range between 4 to 6 quarters.
- By incorporating lagged values of the dependent variable up to six periods, I aim to capture the cyclicality inherent in real estate prices.

Standardized Residual Calculation:

- Following the estimation of the AR(6) model, I calculate the standardized residuals for each sector. Standardized residuals are obtained by dividing the raw residuals by their respective standard deviations.
- This step enables me to assess the deviations of actual prices from the model's predictions in a standardized manner.

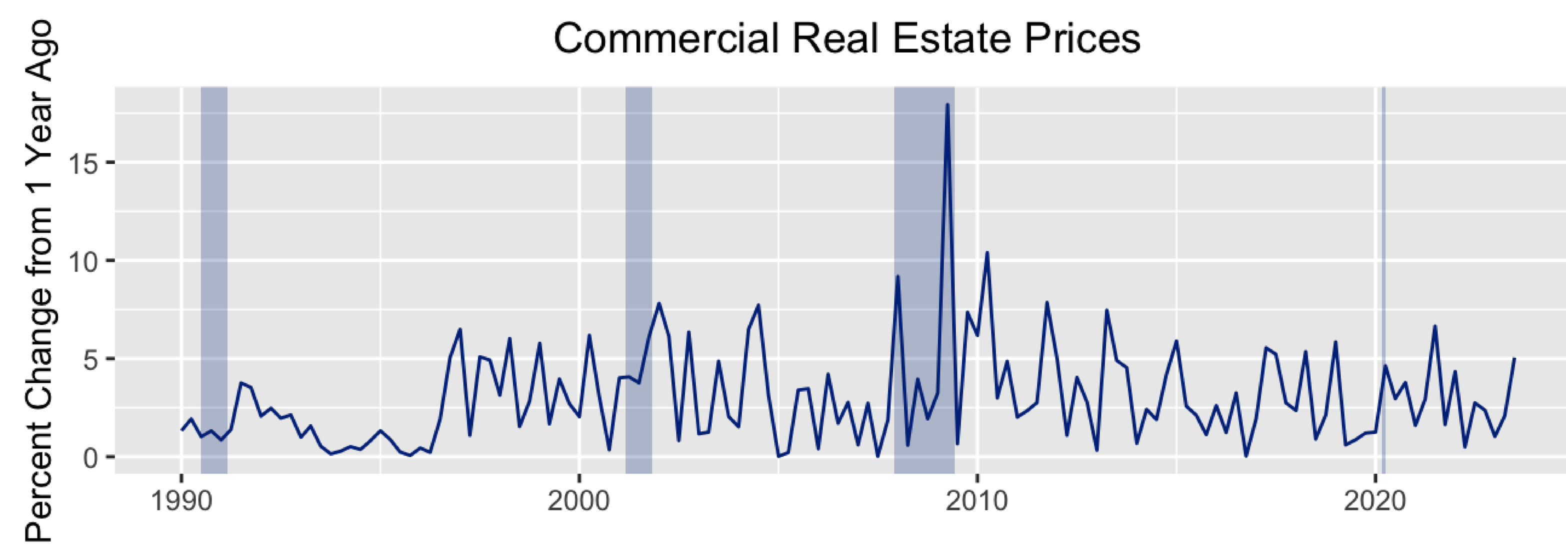
Residual Ratio Plotting:

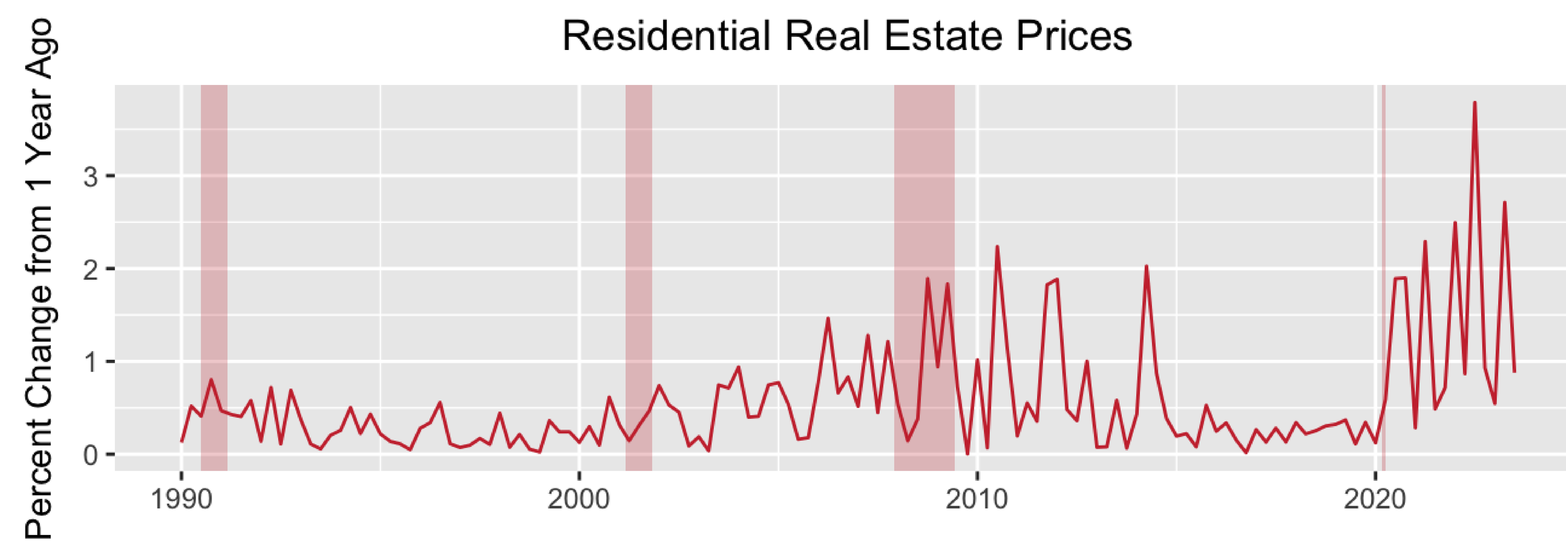
- Subsequently, I plot the ratio of standardized residuals between commercial and residential sectors. This ratio provides insights into the relative magnitude of shocks experienced by each sector.
- Notably, since the ratio is typically greater than one, it suggests that commercial shocks tend to be larger than residential shocks.

Data

The data for this project was obtained from the Federal Reserve Economic Data website. It comprises two primary datasets:

- The Commercial Real Estate Price Index level
- The S&P CoreLogic Case-Shiller U.S. National Home Price Index

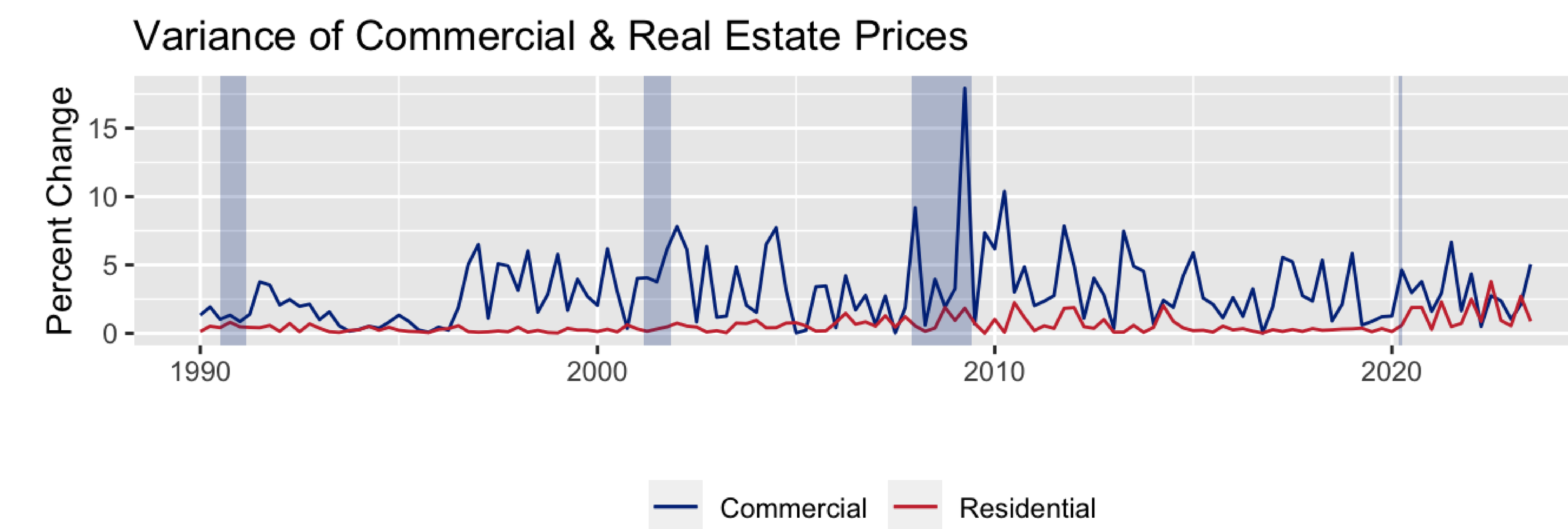


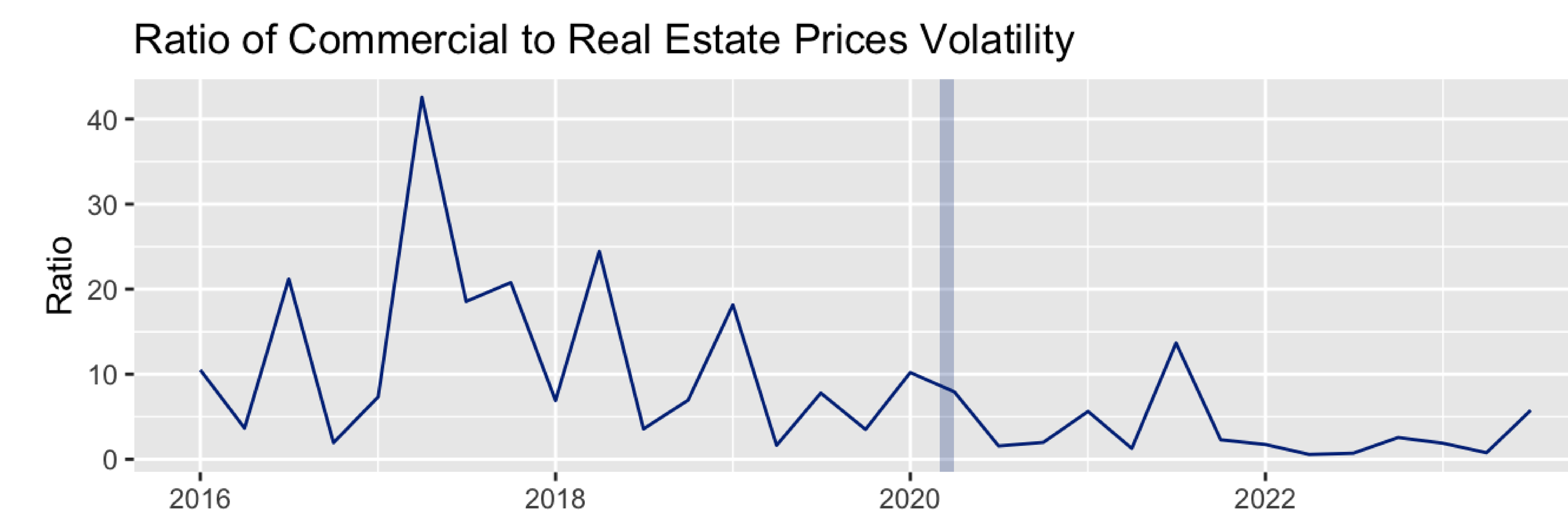


Results

I found that the variance of residential real estate prices increased notably post-COVID, suggesting increased volatility in this market segment.

- Interestingly, commercial real estate exhibited even greater volatility than both residential real estate post-COVID and either segment during the Great Recession.
- This observation contradicts the notion that work-from-home trends are the primary driver of commercial real estate price dynamics.
- Thus, it's reasonable to conclude that other factors beyond remote work play significant roles in shaping the dynamics of commercial real estate prices.
- Using this data, I aim to illustrate the variance disparity between the two indices, as shown in Figure 3.
- Along with the ratio of volatility between commercial and residential real estate, as shown in Figure 4.





Conclusion

The analysis highlights significant disparities in the variance of residential and commercial real estate prices:

- Post-COVID, residential prices demonstrated notable volatility, while commercial real estate exhibited even greater fluctuations, particularly during the Great Recession.
- These findings challenge the notion that work-from-home trends alone dictate commercial real estate dynamics, suggesting the influence of other factors.
- These observations underscore the complexity of real estate dynamics and emphasize the need to consider various factors beyond remote work trends.
- Navigating the evolving landscape of real estate presents both challenges and opportunities for deeper understanding. Exploring these complexities provides valuable insights for anticipating market trends and shaping future strategies.

References

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