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ISSUE BRIEF

Southwest Florida Housing Affordability

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Introduction

During the past few years, in a period of low interest rates and increasing demand for homes, the U.S housing market has seen record high prices that are increasing at a faster rate than wages. Now that the U.S has entered a restrictive monetary policy period, high prices together with high interest rates have significantly decreased housing affordability. According to the National Association of Realtors, housing affordability ended 2022 with double digit declines from a year ago in all four regions of the country (Hyman, 2022). Moreover, there is a housing shortage which has reached crisis proportions at the same time as millennials are reaching the age when they are beginning to consider buying a home, which is likely to keep prices high (Trapasso, 2022).

Considering that housing represents a significant portion of disposable income, changes in housing prices affect households. If households must spend more on housing, and their income doesn't increase proportionately, they will spend less in other areas, ultimately affecting the broader economy.

To get some insight into the housing affordability of the Southwest Florida region, we created a Housing Affordability Index (HAI) for each of the Southwest Florida coastal counties in the region, particularly Lee, Collier, and Charlotte County. The indices were calculated following the methodology of the Texas Housing Affordability Index (THAI) which was developed by the Texas A&M University, and it reflects the relationship between the median family income in a location and the amount required to purchase a median-priced home.

We first introduce the methodology for calculating the index and then provide an analysis of the results for the three Southwest Florida coastal counties, which is done for different property categories. Then we discuss how the affordability of homes sold differs from the affordability of homes listed for sale, and finally we analyze the main determinants of housing affordability, which are median family income, median sale prices, and mortgage rates.

Methodology

The HAI index reflects the relationship between the median family income (MFI) in a location and the median price of a home in that same area. The index is calculated as follows:

$$HAI = \frac{Median\ Family\ Income}{\text{Required Income to qualify for a mortgage}}$$

Where;

$$Required\ income\ = \frac{Required\ monthly\ mortgage\ payment\ x\ 12}{Qualifying\ ratio}$$

The qualifying ratio was set to be 28 percent following the 28/36 rule[1]. The required monthly mortgage payment was computed using an 0.80 loan-to-value ratio of the quarterly median sale price for a house in each county, which was calculated using sales data from each county's property appraisal. After subtracting the 20 percent down payment, we then calculated the monthly mortgage payments using the quarterly 30-year fixed rate mortgage rate[2] for the U.S which was obtained from Freddie Mac. The median family income as obtained from the Federal Financial Institutions Examination Council's[3] website.

Following the THAI methodology, for first time home buyers' some assumptions differ. In this case, we assumed a 0.90 loan-to-value ratio and a 0.5 percent increase in the mortgage rate due to the lower down payment. In addition, the income for a first-time homebuyer was assumed to be 65 percent of the median family income, and the home price was assumed to be 70 percent of the median price for a home.

Then the results can be interpreted as follows:

- HAI = 1, means the MFI is just enough to buy a median-priced home in that location.
- HAI > 1, means the MFI is greater than the income required to buy a median-priced home.
- HAI < 1, means the MFI is not enough to buy a median-priced home.

If the HAI is 1.10, it can be interpreted as if the MFI is 10 percent higher than the required income to buy a median priced home. But, if the HAI is 0.90, it suggests that the MFI is 10 percent lower than the required income to buy a median priced home.

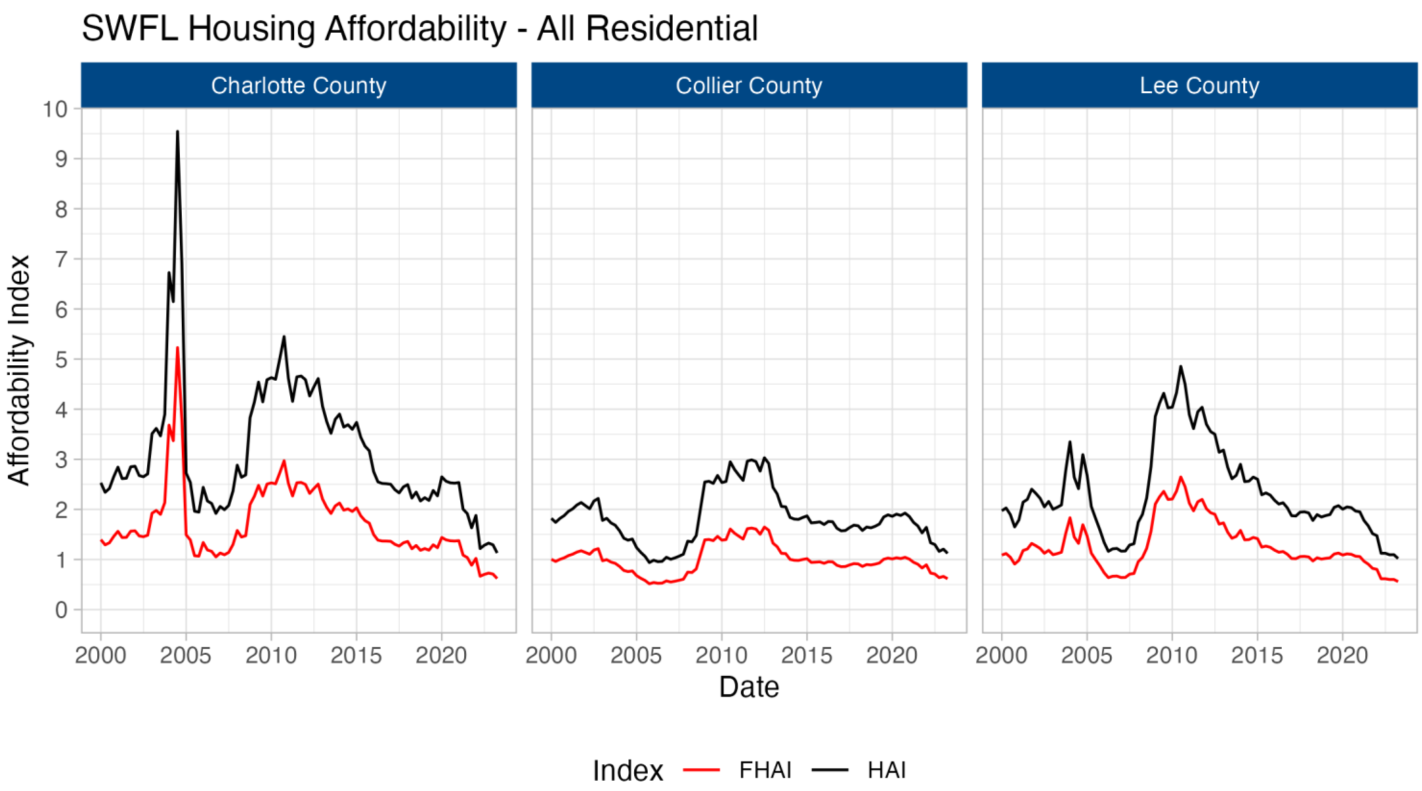
[1] Lenders consider that housing costs should not exceed 28 percent of a household's gross monthly income and that their total debt payments should not exceed 36 percent.

[2] Freddie Mac provides weekly 30-years fixed rate mortgage rates in their Primary Mortgage Market Survey, so we calculated the average for the entire quarter.

[3] The estimated median family income was available up to the year 2022, so for 2023 we considered the same MFI as 2022.

Results

Figure 1. *SWFL Housing Affordability for All Residential properties*



Source: RERI Analysis of data obtained from each County's property appraisal, Freddie Mac, and the Federal Financial Institutions Examination Council. FHAI refers to first time home buyers while HAI is a general index.

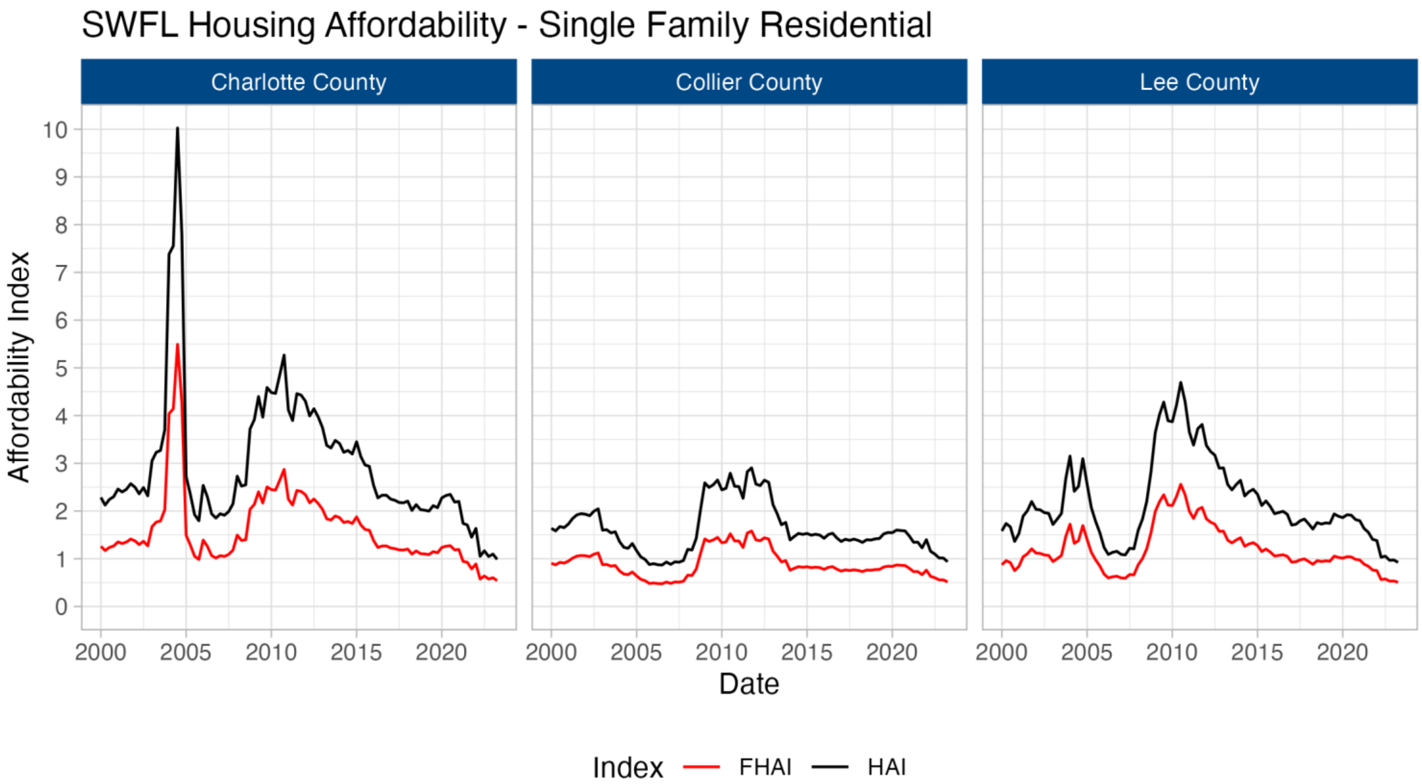
Figure 1 shows the housing affordability index for all residential properties in Southwest Florida coastal counties. The black line represents the general Housing Affordability Index (HAI), and the red line represents the first-time home buyers Housing Affordability Index (FHAI). For Charlotte and Lee County, affordability has reached its lowest levels since 2000, and in Collier County affordability is at the lowest level since 2005.

In Q1 2023 Lee County had the lowest HAI and FHAI reaching 1.10 and 0.60 respectively. The MFI of $83,200, is 10 percent higher than the required income to purchase a median priced residential property of $355,000 at the prevailing 6.37 percent mortgage rate. However, for a first-time home buyer a median priced residential property is currently unaffordable with an MFI that is 40 percent lower than the required income to purchase a median priced residential property. The FHAI has been below 1 since Q2 2021.

Collier County had a HAI and FHAI of 1.21 and 0.66 respectively. The MFI of $98,600 is 21 percent higher than the required income to purchase a median priced residential property of $382,300 at the current mortgage rate. However, for a first-time homebuyer, the MFI is 33 percent lower than the required income to purchase a median priced residential property. In Collier County, the FHAI has been below 1 since Q1 2021.

For Charlotte County, the HAI and FHAI were 1.29 and 0.70 in Q1 2023. The MFI of $76,000 is 29 percent higher than the required income to purchase a median priced residential property of $275,000 at the prevailing 6.37 percent mortgage rate. Similar as with the other counties, a first-time homebuyer would not be able to afford a median priced residential property in Charlotte County, with an MFI that is 30 percent less than the required income to purchase a median priced residential property. The FHAI has been below 1 since Q4 2021.

Figure 2. *SWFL Housing Affordability for Single Family Residential properties*



Source: RERI Analysis of data obtained from each County's property appraisal, Freddie Mac, and the Federal Financial Institutions Examination Council. FHAI refers to first time home buyers while HAI is a general index.

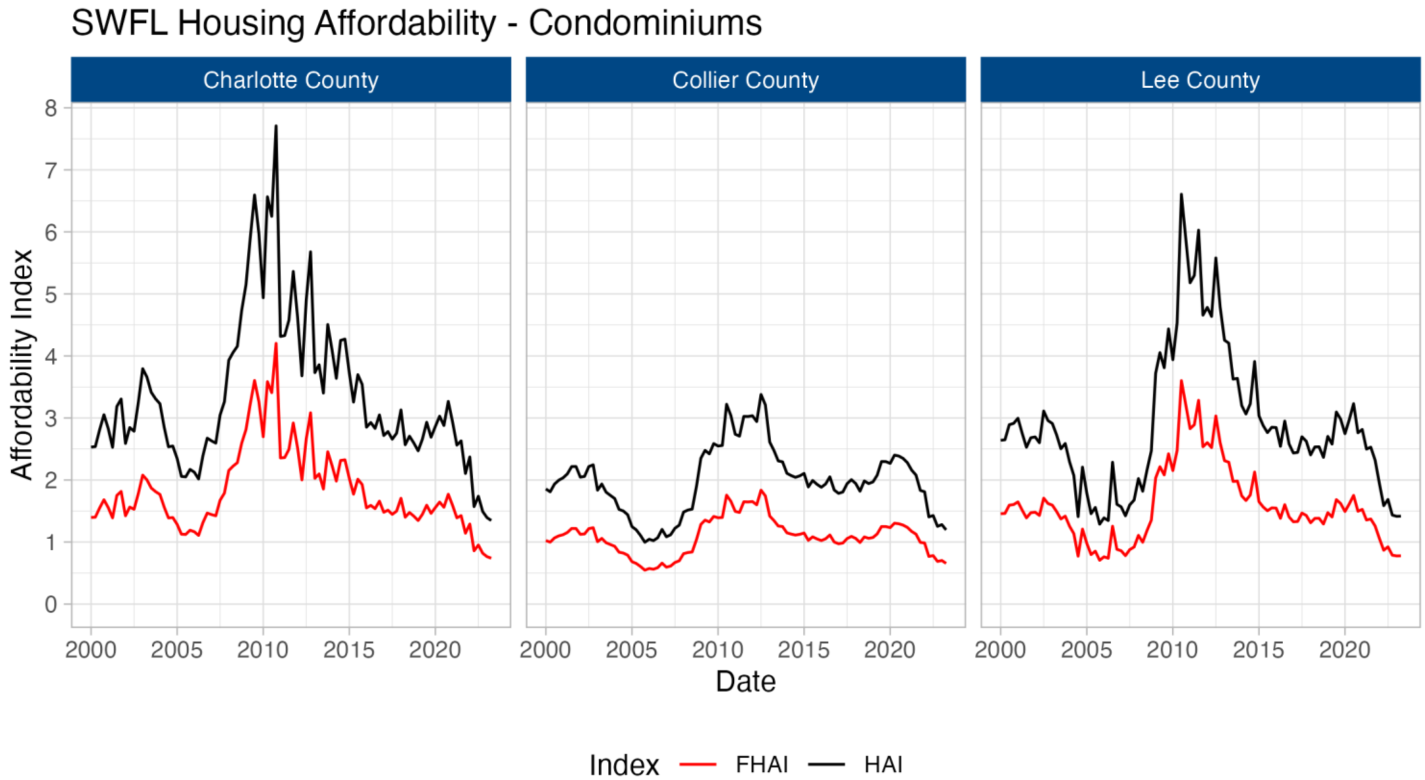
Figure 2 illustrates the housing affordability index for single-family homes in SWFL coastal counties. For Charlotte and Lee County, affordability has reached its lowest levels since 2000, and in Collier County affordability is at the lowest level since 2006.

In Q1 2023 Lee County had the lowest HAI and FHAI for single-family homes, reaching 0.97 and 0.53 respectively. The MFI of $83,200, is 3 percent lower than the required income to purchase a median priced single-family home property of $400,000 at the prevailing 6.37 percent mortgage rate. For a first-time homebuyer, the MFI is 47 percent lower than the required income to purchase a median priced single-family home. For both a repeat home buyer and a first-time home buyer, a median priced single-family home is currently unaffordable, and this has been the case since Q4 2022 for a repeat homebuyer and since Q4 2020 for a first-time homebuyer.

Collier County had a HAI and FHAI of 1.01 and 0.56 respectively. The MFI of $98,600 is 1 percent higher than the required income to purchase a median priced single-family home of $455,000 at the current mortgage rate. However, for a first-time homebuyer, the MFI is 44 percent lower than the required income to purchase a median priced single-family home. In Collier County the FHAI has been below 1 since Q3 2013.

For Charlotte County, the HAI and FHAI were 1.10 and 0.60 in Q1 2023. The MFI of $76,000 is 29 percent higher than the required income to purchase a median priced single-family home of $324,000 at the prevailing 6.37 percent mortgage rate. Similar as with the other counties, a First-time homebuyer would not be able to afford a median priced single-family home in Charlotte County, with an MFI that is 40 percent less than the required income to purchase a median priced single-family home. The FHAI has been below 1.0 since Q2 2021.

Figure 3. *SWFL Housing Affordability for Condominiums*



Source: RERI Analysis of data obtained from each County's property appraisal, Freddie Mac, and the Federal Financial Institutions Examination Council. FHAI refers to first time home buyers while HAI is a general index.

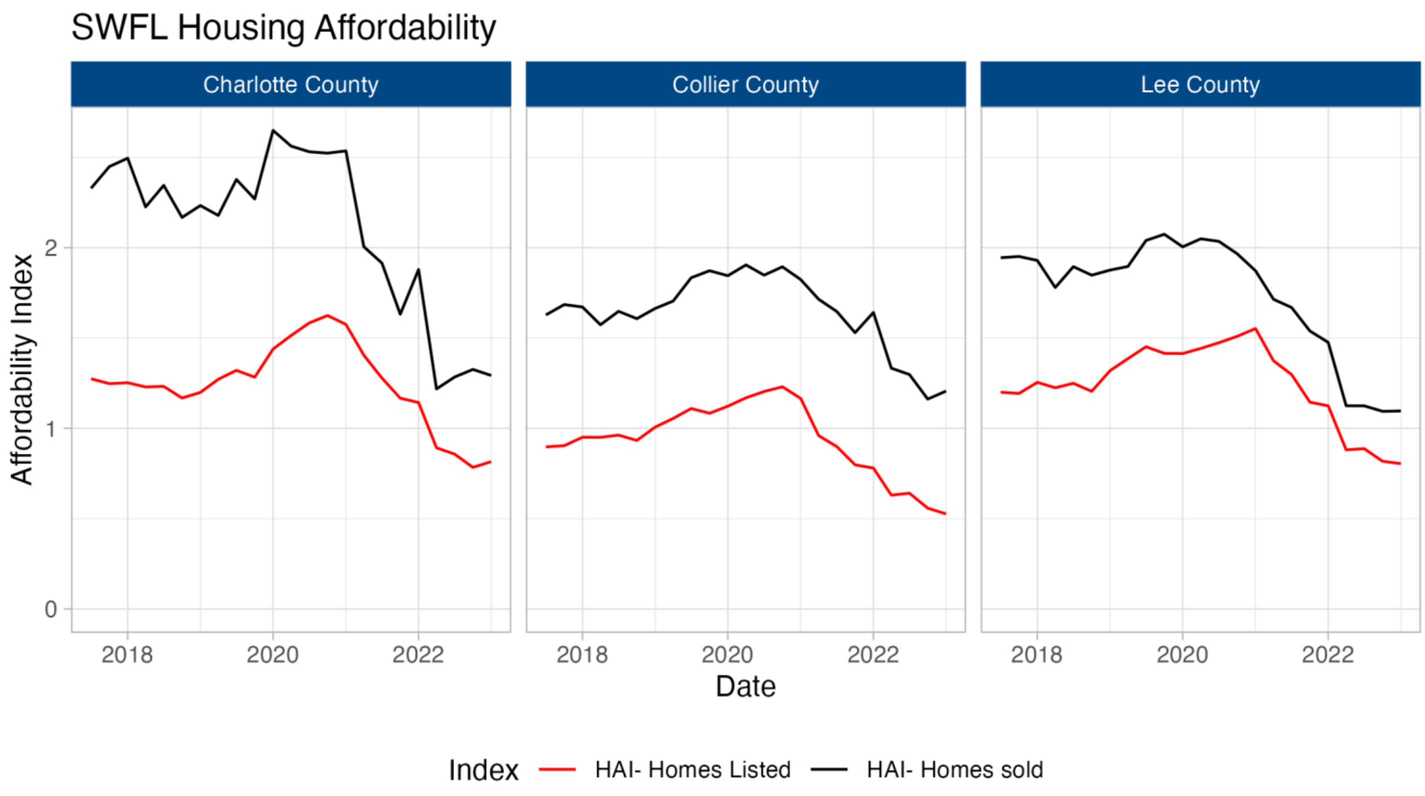
Figure 3 shows the housing affordability index for condominiums in SWFL coastal counties. For Lee County, affordability has reached its lowest level since 2006, for Collier County affordability is at the lowest level since 2004, and for Charlotte County affordability has reached the lowest level since 2000.

In Q1 2023 Collier County had the lowest HAI and FHAI for condominiums, reaching 1.28 and 0.56 respectively. The MFI of $98,600 is 28 percent higher than the required income to purchase a median priced condominium of $400,000 at the prevailing 6.37 percent mortgage rate. However, for a first-time home buyer a median priced condominium is currently unaffordable with an MFI that is 30 percent lower than the required income to purchase a median priced condominium. The FHAI has been below 1 since Q4 of 2021.

For Charlotte County, the HAI and FHAI were 1.39 and 0.76 in Q1 2023. The MFI of $76,000 is 39 percent higher than the required income to purchase a median priced condominium of $255,000 at the prevailing 6.37 percent mortgage rate. Similar as with the other counties, a first-time homebuyer would not be able to afford a median priced condominium in Charlotte County, with an MFI that is 24 percent less than the required income to purchase a median priced condominium. The FHAI has been below 1.0 since Q3 2022.

Lee County had a HAI and FHAI of 1.41 and 0.78 respectively. The MFI of $83,200 is 41 percent higher than the required income to purchase a median priced condominium of $275,000 at the current mortgage rate. However, for a first-time homebuyer, the MFI is 22 percent lower than the required income to purchase a median priced condominium. In Lee County the FHAI has been below 1 since Q2 2022.

Figure 4. *SWFL Housing Affordability for Homes Sold vs Homes listed for Sale.*



Source: RERI Analysis of data obtained from each County's property appraisal, Realtors, Freddie Mac, and the Federal Financial Institutions Examination Council.

Using median home listing prices by county provided by Realtors.com, we contrasted the affordability of homes listed for sale versus the affordability of homes sold (all residential properties). As can be observed, the affordability of homes listed is significantly lower than the affordability of homes sold, currently falling below 1 for all Southwest Florida coastal counties. There is a strong positive correlation between the HAI of homes listed for sale and the HAI of homes sold, being 0.85 for Charlotte County, 0.96 for Collier County, and 0.87 for Lee County. The lower correlation between indexes for Charlotte and Lee is likely associated with the trends for HAI using sold prices that decreased at a faster rate than the HAI for listed prices, while in Collier County the gap between indexes remained constant over time. This helps illustrate the Southwest Florida residential market post-Covid – bid wars, cash offers, etc.

In Q1 2023, Lee County had a HAI for homes listed for sale of 0.81, while the HAI for homes sold was 1.10. In Collier County, the HAI for homes listed for sale was 0.53, while the HAI for homes sold was 1.21. For Charlotte County, the HAI for homes listed for sale was 0.82, while the HAI for homes sold was 1.29. This indicates that homes listed for sale are unaffordable in all the three coastal counties while homes sold were affordable. Considering the decrease in home sales and that properties are spending more days on the market; results suggest that affordable homes are being sold while homes on the market are unaffordable.

Analysis

Figure 5. *Housing Affordability fixed effect model*

Dependent Variable:	affordability_index		
Model:	(1)	(2)	(3)
Variables			
Constant	-11.15***	-25.39***	0.3970
	(1.674)	(3.468)	(1.006)
log(median_sale_price)	-2.592***	-3.761***	-1.791***
	(0.0548)	(0.1022)	(0.0399)
log(frm_30_years)	-0.9621***	-1.024***	-0.9202***
	(0.0701)	(0.1462)	(0.0431)
log(est_income)	3.771***	6.311***	1.851***
	(0.1946)	(0.4067)	(0.1070)
Fit statistics			
Observations	94	94	94
R^2	0.96752	0.94670	0.96244
Adjusted R^2	0.96643	0.94492	0.96119

IID standard-errors in parentheses
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Source: RERI Analysis of data obtained from each County's property appraisal, Freddie Mac, and the Federal Financial Institutions Examination Council.

Many believe that the spike in mortgage rates from almost 3 percent to over 6 percent has caused housing affordability to deteriorate. And that "the surge in interest rates has depressed home affordability to the lowest level since the eve of the last housing crisis in 2006" (JP Morgan, 2023). However, in SWFL coastal counties housing affordability started decreasing in Q4 2020 when interest rates were at a historical low level of around 2.76 percent and the MFI was increasing; interest rates did not start to increase until March of 2022. To understand what truly drives housing affordability, we used a fixed effect model to analyze the effect that median sale prices (median_sale_price), mortgage rates (frm_30_years), and median family income (est_income) have on affordability. Figure 5 shows the results[4] of the regression in which the coefficient of each of the explanatory variables is logged. This was done to get semi-elasticities that can be interpreted as follows:

- Model 1: For Lee County a 100 percent increase in the median sale price for homes will lead to a decrease of 2.59 points in affordability, a 100 percent increase on mortgage rates will cause the HAI to drop by 0.96, and a 100 percent increase on income will increase the HAI by 3.77 points.
- Model 2: For Charlotte County a 100 percent increase in the median sale price for homes will lead to a decrease of 3.76 points in affordability, a 100 percent increase on mortgage rates will cause the HAI to drop by 1.02, and a 100 percent increase on income will increase the HAI by 6.31 points.
- Model 3: For Collier County a 100 percent increase in the median sale price for homes will lead to a decrease on affordability of 1.79 points, a 100 percent increase on mortgage rates will cause the HAI to drop by 0.92, and a 100 percent increase on income will increase the HAI by 1.85 points.

All models show that in SWFL Coastal Counties, housing affordability is more income and price elastic and less mortgage rate elastic. Meaning that income has the biggest impact on housing affordability, median sale prices have the second biggest impact, and mortgage rates have the lowest impact. Considering the above, and that housing affordability started to decrease in a period of low interest rates and increasing median family income, it can be inferred that the skyrocketing home prices in the region have been the major factor decreasing housing affordability.

[4] *All variables are significant at the 99 percent confidence interval.*

Conclusion

The availability of affordable housing is a major concern in SWFL, where skyrocketing home prices have brought housing affordability to its lowest levels in more than a decade. For first time homebuyers, any type of median priced residential property in the region is unaffordable according to the HAI metrics. Whereas for repeat buyers, median priced single-family homes are not affordable in Lee County and the MFI is just enough to afford a single-family home in Collier County.

Decreasing housing affordability is a major concern. As households spend more on housing, and their income doesn't increase proportionately, they will spend less in other areas, ultimately affecting the broader economy. Even though our analysis suggests that income has the biggest impact on household affordability, increasing wages alone would not solve the housing affordability issue in the short term since housing prices over the last 3 years have increased at a faster rate than income (52 percent vs 20 percent increase respectively).

The most important factor to target in order to increase housing affordability is therefore decreasing home prices. The current market and economic landscape also add upward price pressure. Higher interest rates keep buyers out of the market and keep some current owners also out of the market as costs for moving are significantly higher, helping with lower inventories. In addition, while new residential constructions that are finishing now help mitigate some of this issue, there won't be a long-term solution. Capital costs have been preventing new residential constructions to take place. Finally, SWFL was severely affected by Hurricane Ian that added even more constraints and shortages to the current housing market.

One limitation of our current analysis is that we do not account for property tax nor insurance costs which have been big drivers of housing affordability in Southwest Florida. This remains a topic for future research.

References

Galler, T. (2023, March 2). *The impact of higher interest rates on housing and consumers*. Retrieved from JP Morgan: https://am.jpmorgan.com/se/en/asset-management/per/insights/market-insights/market-updates/on-the-minds-of-investors/impact-of-interest-rates-on-house-prices/

Hyman, M. (2022, December 15). *Housing Affordability Conditions Decrease in October 2022 as Mortgage Rates Touch 7%*. Retrieved March 24, 2023

Texas Real Estate Research Center at Texas A&M University. (2022). *Texas Housing Affordability Index (THAI) .* Retrieved from https://assets.recenter.tamu.edu/documents/data_mls/thai_FTHAI.pdf

Trapasso, C. (2022, May 24). *The Housing Market Is Showing Signs of a Correction: What This Means for Buyers and Sellers.* Retrieved from Realtor.com: https://www.realtor.com/news/trends/housing-market-showing-signs-of-correction-what-buyers-sellers-need-to-know/