

The Bowling Green MSA Housing Market: Recent Trends



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Introduction

This report summarizes trends in housing markets covered by the Realtor Association of Southern Kentucky. All residential transactions on the RASK Multiple Listing Service between January 1, 2012 through September 30, 2021 were included in the analysis. This report covers sales price, time on market, and the sales-price-to-list-price ratio and how they vary by region, house size, and house price range. This report complements the analysis provided in the RASK Market Monitor report that is published on the RASK website.

Methods

We accessed the RASK MLS on October 28, 2021 and extracted every listing that had sold, expired, or had been withdrawn. The following analysis is limited to listings that had a sales price recorded.

A few basic data cleaning procedures were used. First, separate variables were generated for the sold year and sold month. Second, the ZIP Code variable was corrected to remove all of the +4 extensions. Third, a new variable was created that assigned all of the sold prices to a price range. Lastly, a new variable was generated that contained the ratio of sales price to list price.

Three outcomes were analyzed: sales price, time on market, and sales-price-to-list-price-ratio. The median of each outcome was estimated monthly from January 2012 through September 2020. We explored differences in each outcome by splitting the sample by price range, bedrooms, square footage, and ZIP Code.

We also used regression analysis to see how observable housing characteristics impact the sales price and time on market for a typical house. Regression allows us to make “apples-to-apples” comparisons that are not possible by simply comparing averages.

Findings

Time on Market

There is wide variation between ZIP codes and within ZIP codes. For illustration purposes, we track the median time on the market for each ZIP code throughout time. Median time on market for the top seven ZIP Codes are shown below in Figure 1.¹ The horizontal axis shows the month when properties are sold. When we average across these seven ZIP codes, we see that in January 2020, the median time on the market was approximately 103 days. As the market started tightening, houses started selling more rapidly, with the average falling to 76 days in January of

¹Only data from 2020-2021 is used for the figure below. The full range of data can be found in the supplemental Excel file.

2021 and was 65 days in September of 2021. Note that while the average decreased, the differences across ZIP codes also diminished. At the beginning of the period, there were wider differences across ZIP codes. The difference between the ZIP code with the longest median time on the market (i.e. 42122) and the one with the lowest median time on the market (i.e. 42276) was approximately 112 days in January, 2020. The difference between the Zip code with the longest and shortest median time on the market was 35 days by September 2021, reflecting an equalization in the market across ZIP codes.

It is worth noting that Zip codes with fewer transactions tend to have less predictable trends. For example, one can see that, overtime, the median days in the market in houses in Zip codes 42122 and 42164 varies a lot. With fewer number of houses sold in these places, one can expect a lot of variation in measures such as medians and/or averages.

Figure 1: Median Time on Market by ZIP Code

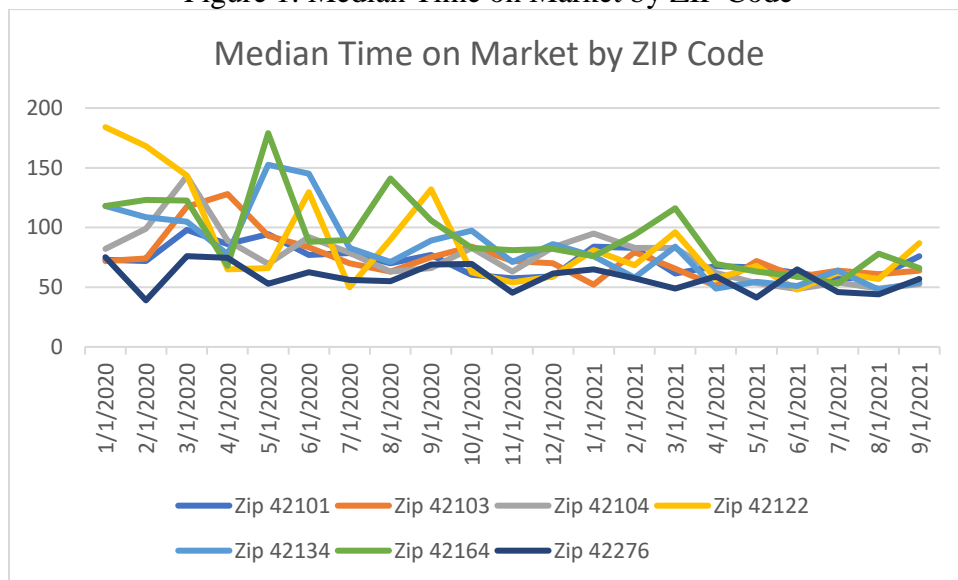
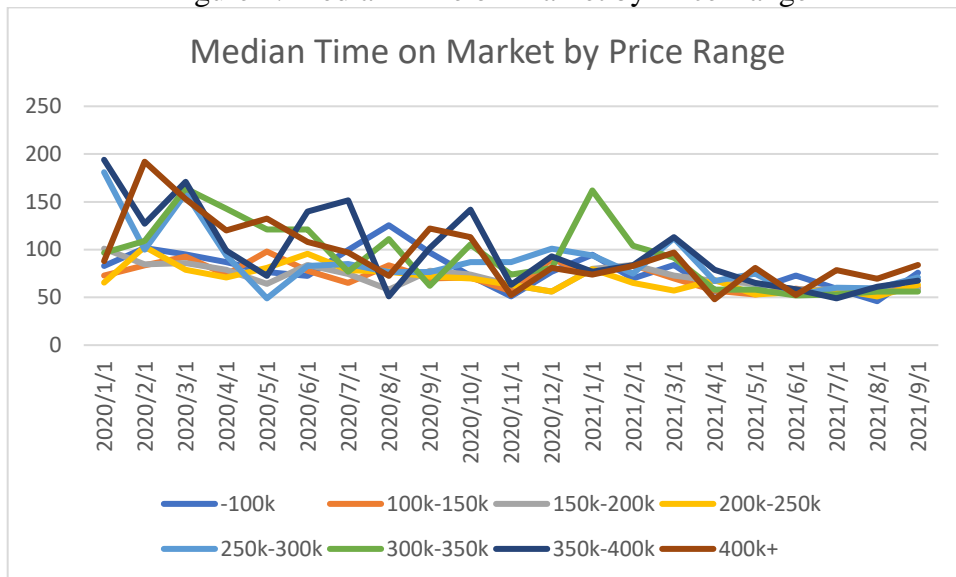


Figure 2 presents similar results but categorize by price range, instead of Zip code. The averages across price ranges are very similar as those shown in Figure 1, which is natural since it presumably captures most of the houses sold in the area.² While all groups saw a decrease in time on market, the largest declines were seen in the \$250k-\$300k and \$350-\$400k price ranges. Interestingly, there is also a convergence across the different groups. By the end of the period, houses in all price ranges tended to be sitting on the market approximately the same amount of time.

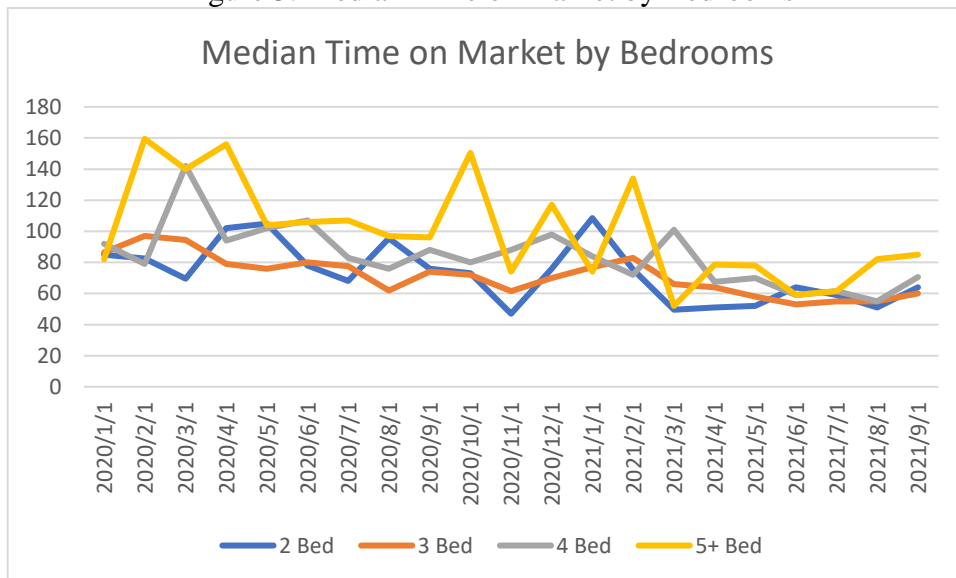
² Some of the differences may be because not all Zip codes are included in Figure 1.

Figure 2: Median Time on Market by Price Range



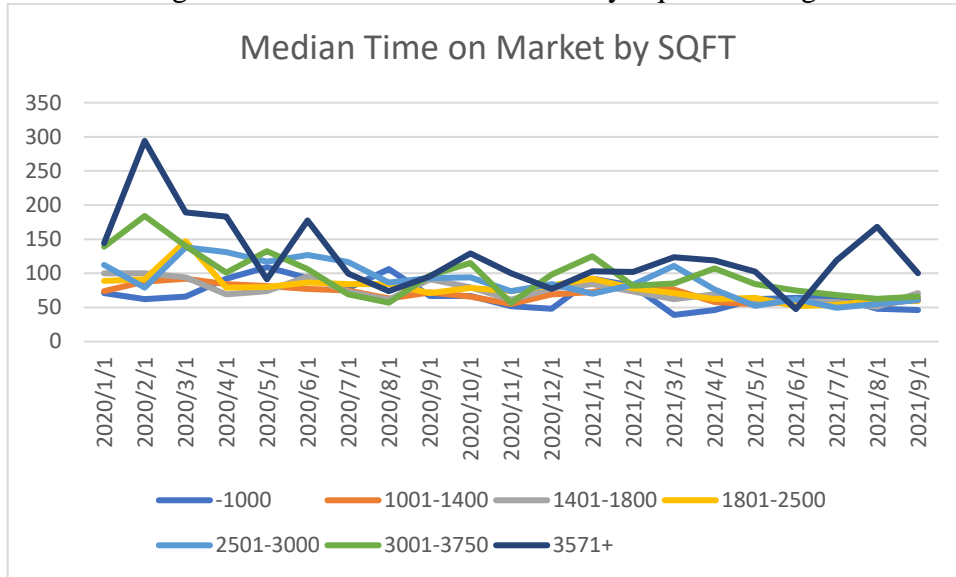
A similar trend in time on market was also found when disaggregating by bedrooms (Figure 3). Again, the wild month variation we see for 5-bedroom homes is partly due to the small number of those homes sold at any given month during the time period. As expected, time on market decreased over the time frame, and in general the decrease appears proportional for all home types. Taken altogether, this suggests that although there was greater variation across Zip codes overtime, if we compared similar houses across the region, we saw similar number of days on the market. Three-bedroom houses saw the steadiest decline, without any major fluctuations.

Figure 3: Median Time on market by Bedrooms



Median time on market by house square footage is presented in Figure 4. Once again, the largest variance is found in the larger homes due to sample size, but time on market was approximately the same in the beginning and ending time periods. The largest decreases in time on market were found in the 2501-3000 and 3001-3750 square foot categories.

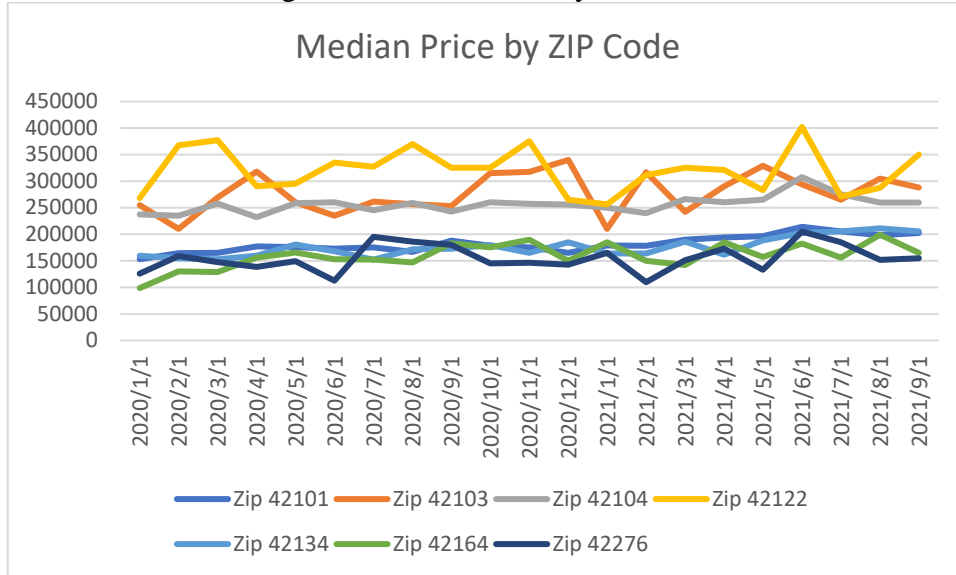
Figure 4: Median Time on Market by Square Footage



We have also plotted trends in sales price by ZIP Code, bedrooms, and square footage. Median sales price by ZIP Code is presented in Figure 5. ZIP Codes 42103, 42104, and 42122 consistently recorded the highest median sales prices.

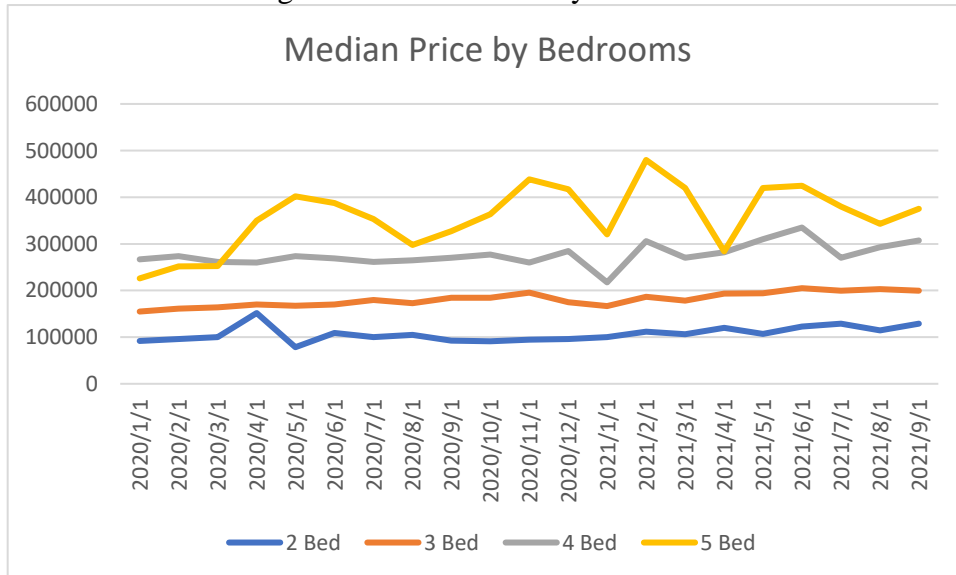
The largest increase over this period was in the 42164 ZIP Code. The median price increased from 98,500 in January 2020 to 165,000 in September of 2021 (67%). The smallest increase was in the 42104 ZIP Code that saw an increase of 9.3% over this period.

Figure 5: Median Price by ZIP Code



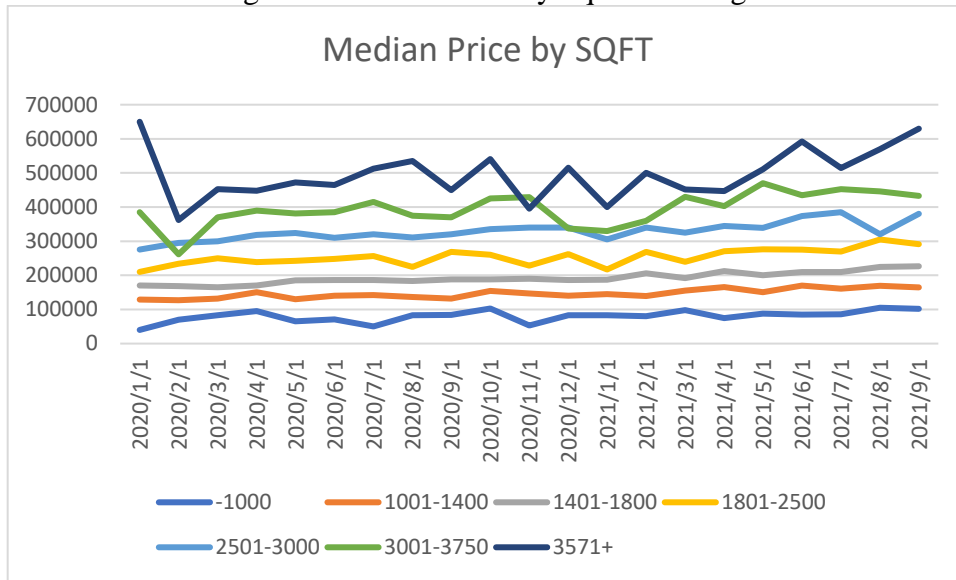
Homes in each bedroom category also saw an increase over this time period (Figure 6). The largest increase was found in the 5+ bedroom group (65%). The smallest increase was found in homes with 4 bedrooms (15%).

Figure 6: Median Price by Bedrooms



Median price by square footage is presented in Figure 7. Except for the largest houses, the median sales price increased across every group. Homes in the 1801-2500 and 2501-3000 square foot ranges saw the largest increases of approximately 38%. Homes in the 3001-3750 square foot range saw the smallest increase of just over 12%.

Figure 7: Median Price by Square Footage



Figures 8 through 11 display the sales-price-to-list-price ratio over time by ZIP Code, price range, bedrooms, and square footage. Figure 8 shows the trend by ZIP Code. Sales price is between 95% and 98% of list price in January of 2020. By September of 2021, this ratio was almost always 100% across all ZIP Codes, with a few exceptions for Zip code 42164; highlighting the tightening of the market.

Figure 8: Sales Price to List Price Ratio by ZIP Code

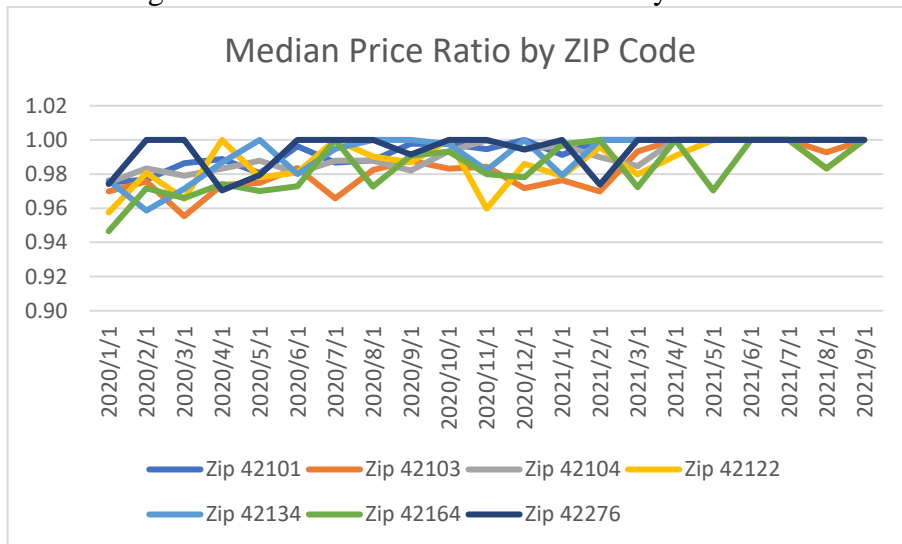
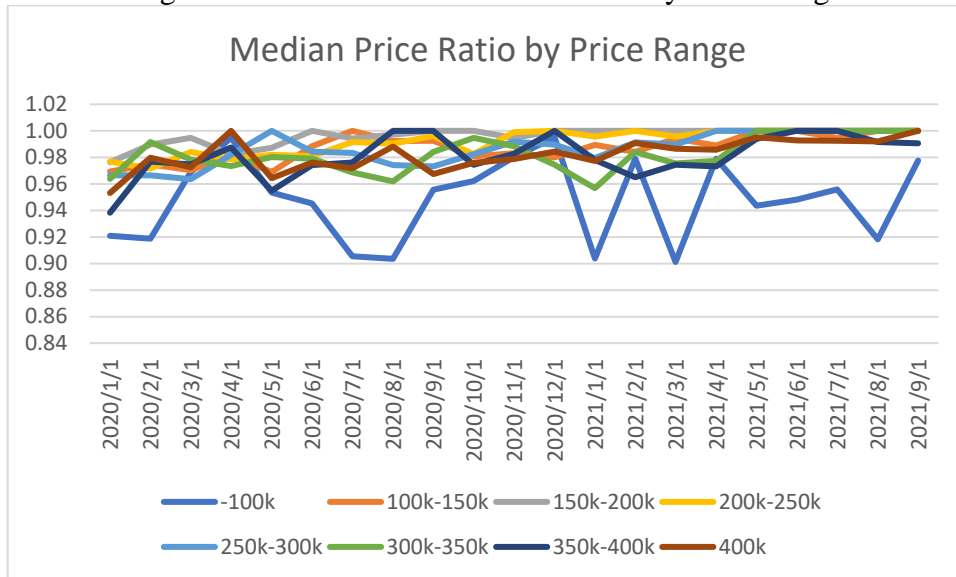


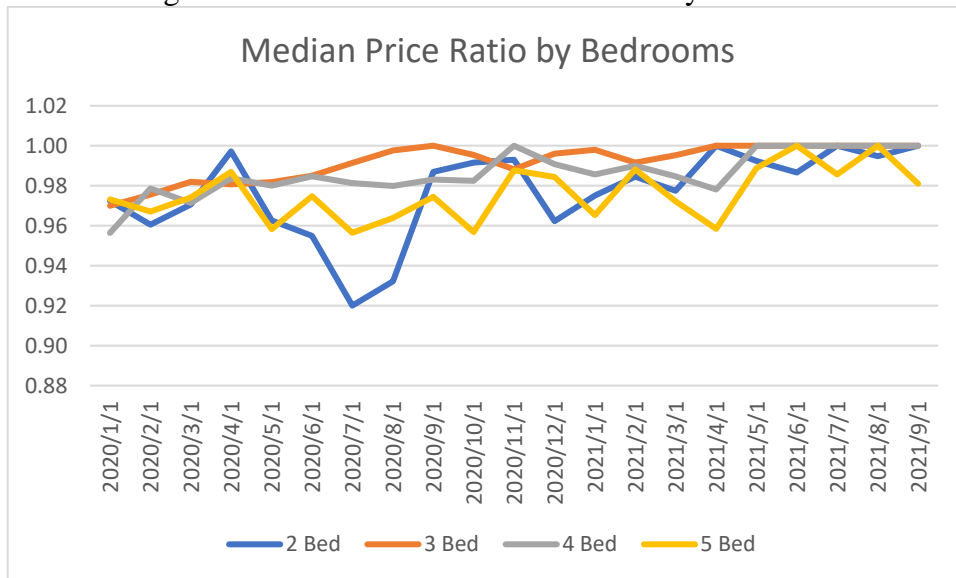
Figure 9 presents the trend by price range. The sales price ranged from 92% of list price in the <1,000 SQFT range to 98% in the \$150k-\$250k range in January of 2020. By September 2021, homes were selling at 100% of list price in the \$100k-\$350k and \$400k+ ranges. Homes under 1,000 SQFT were selling for 98% of list price and those in the \$350k-\$400k were selling for 99% of list price by September 2020. Although most categories saw an improvement, the cheaper homes did experience a rocky ride.

Figure 9: Sales Price to List Price Ratio by Price Range



This ratio has a similar trend across bedrooms. Figure 10 shows that homes were selling between 96% and 97% of list price in January 2022. By September 2021, homes with 2-4 bedroom were selling at 100% of list price. Homes with 5 or more bedrooms were selling for 98% of list price.

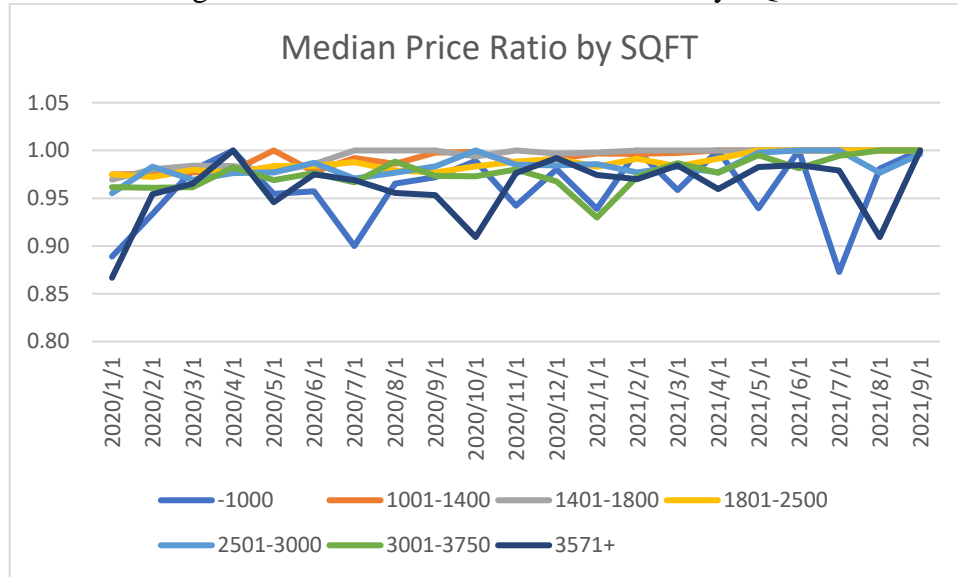
Figure 10: Sales Price to List Price Ratio by Bedrooms



Lastly, Figure 11 presents the sales-price-to-list-price ratio by square footage. The smallest and largest homes in the sample display a much larger variance compared to homes in the 1001-3750 square foot ranges. Homes in the 1001-3750 square foot range sold between 96% and 97% of list price in January 2020 while the largest and smallest homes were selling at less than 90% of list

price. In September 2020, homes were selling at 100% of list price across all ranges, although this was not always true for the preceding months. The houses that were selling closest to listing price throughout the period were those between 1400 and 1800 square feet. All others saw periods where, at the median, they were selling at a slight discount.

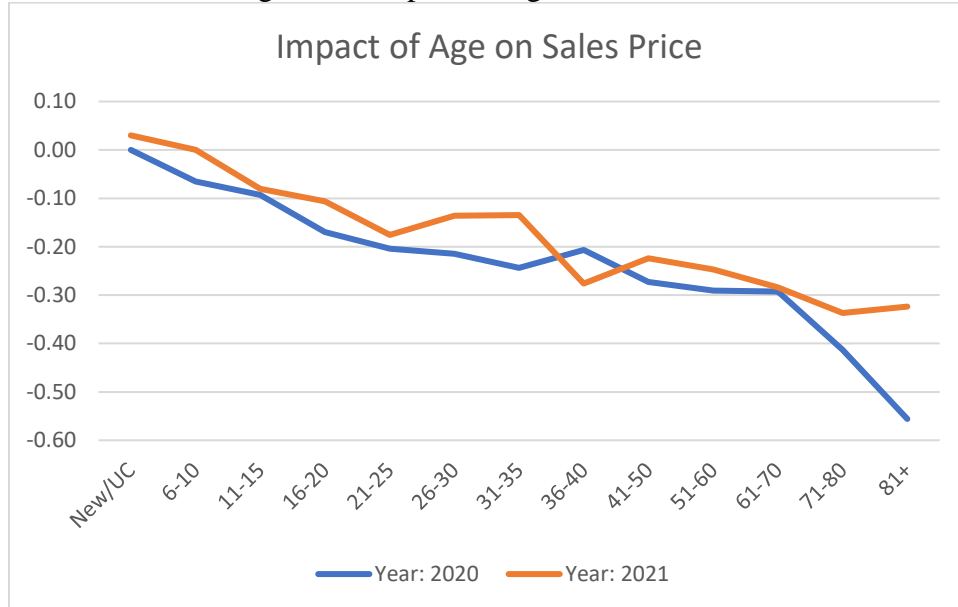
Figure 11: Sales Price to List Price Ratio by SQFT



Next, we use regression analysis to analyze the impact of housing characteristics on sales price. Regression is a powerful statistical tool that makes “all else equal” comparisons possible. For example, if we simply compare the average sales price of three- and four-bedroom homes, the average price for homes with four bedrooms will be larger than the average price for homes with three-bedroom homes. This is expected since the extra bedroom also adds to the square footage of the home. If we want to know the price difference in three- and four-bedroom homes that have the same square footage, a simple comparison of means will not work. Regression allows us to estimate the impact of a single housing attribute while holding all of the other housing features constant.

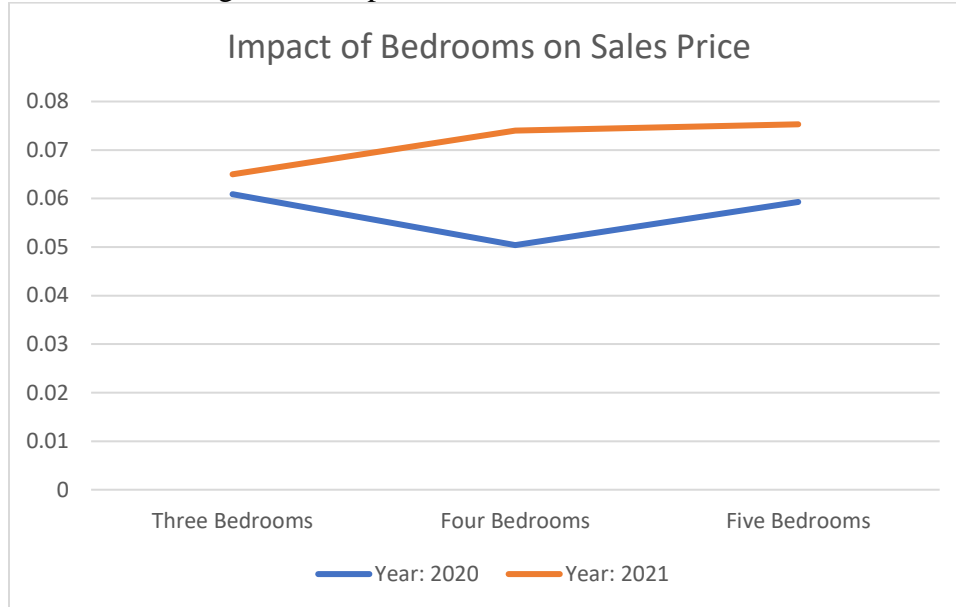
Figure 12 plots the impact of house age on sales price while holding square footage, bedrooms, bathrooms, exterior materials, house style, garage capacity, roof construction, sewer, lot size, and location constant. The number on the vertical axis indicate the percent difference in sales price relative to a “newer” house (one that is five years old or slightly newer). According to the regression estimates, if we compared two houses with the similar square footage, same number of bedrooms, bathrooms, similar exterior materials, same house style, similar roof, sewer, same lot size and similar location, one that is “new or under construction” sold for 1.8-3% more than one that is within 5 years of being built. As expected, the average sales price declines with age, holding all the other characteristics constant.

Figure 12: Impact of Age on Sales Price



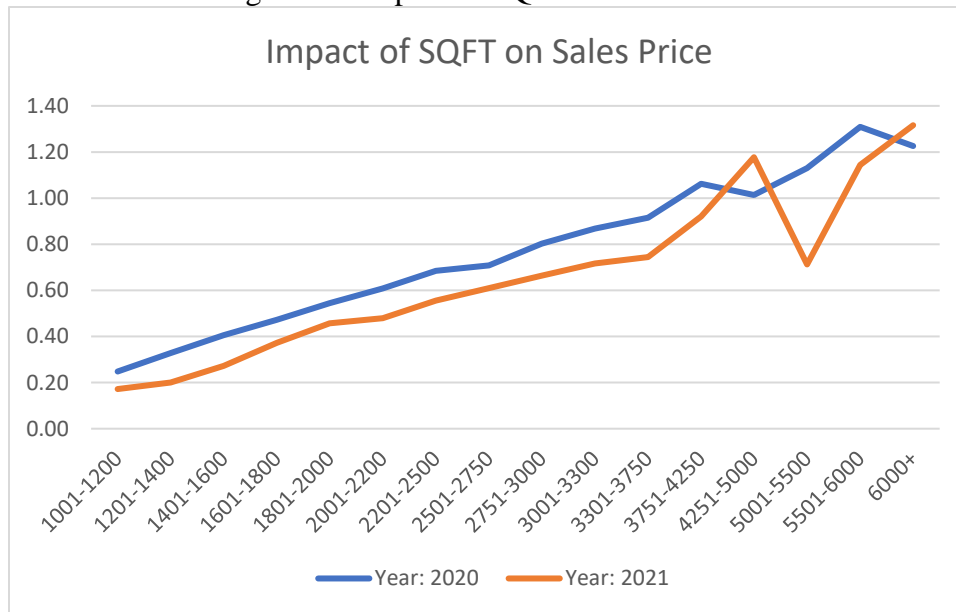
Estimates for the number of bedrooms are presented in Figure 13. In 2020 and 2021, three-bedroom homes sold for about 6% more than two-bedroom homes with similar features, including lot size and square footage being the same, suggesting that more space is not always valued equally. Again, the nice thing of these results is that one can quantify these differences, even when they are intuitively expected. In 2020, the average four-bedroom home sold for 5% more than a two-bedroom home and a five-bedroom home sold for about 6% more. While this result seems odd at first, remember that we are holding all of the other housing characteristics constant. If homes are the same size but have more bedrooms, those bedrooms must be smaller. If smaller bedrooms are not desirable, we would not see a significant premium as we move from three to five bedrooms. In 2021 a four-bedroom home sold for 7.4% more than a two-bedroom home, on average. Five-bedroom homes sold for 7.5% more, on average.

Figure 13: Impact of Bedrooms on Sales Price



Estimates of the impact of square footage on sales price is show in Figure 14. As expected, larger homes sold for more than smaller homes. On average, homes with 1001-1200 square feet sold for approximately 17-25% more than homes with less than 1000 square feet. Homes with 2501-2750 square feet sold for 61-71% more. The strange estimates for larger homes in 2021 is due to the small number of transactions for homes in those size ranges.

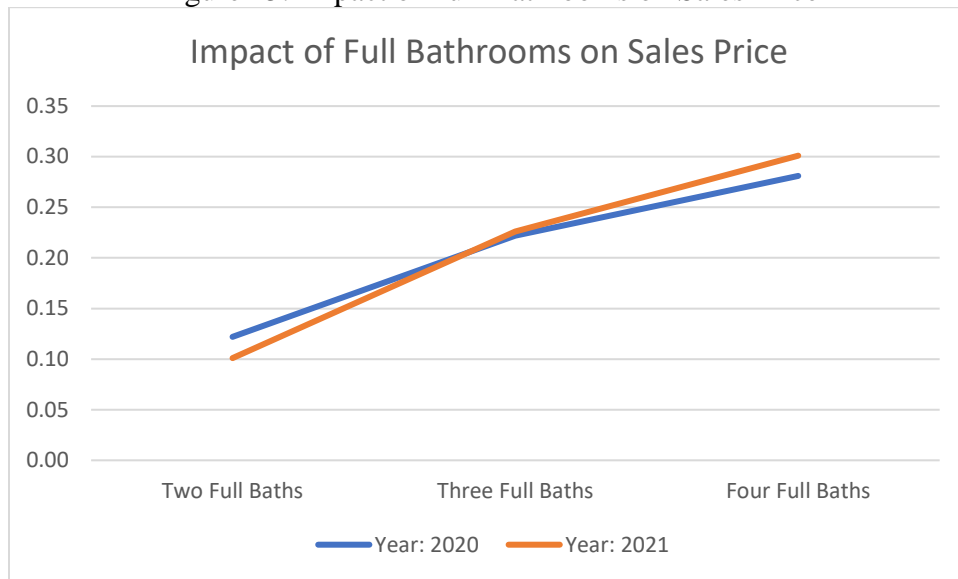
Figure 14: Impact of SQFT on Sales Price



Lastly, we estimated the impact of additional full bathrooms on sales price. These results are shown in Figure 15. On average, homes with two full bathrooms sold for 10-12% more than

similar homes with only one full bathroom. Homes with three full bathrooms sold for approximately 22% more and homes with four full bathrooms sold 28-30% more.

Figure 15: Impact of Full Bathrooms on Sales Price



Concluding Remarks

This report has summarized trends in housing markets in the RASK service areas. Median sales price, time on market, and the ratio of sales price to list price analyzed. Variation in these trends were explored by disaggregating each outcome by location and housing attributes. We also estimated two regression to see how each housing characteristic impacted sales price in 2020 and 2021.

Median time on market has decreased across nearly all ZIP Codes, price ranges, and house sizes between January 2020 and September 2021. Median sales price has also increased over this time period across all ZIP Codes and house sizes. By September 2020 the median sales-price-to-list-price ratio had reached 100% in each of the seven most active ZIP Codes. Homes in nearly every price range were selling for almost 100% of list price by September 2021.

Estimates from two regressions show sales price decreasing with the age of the home and increasing in square footage and the number of full bathrooms. Relative to homes with two bedrooms, three-, four-, and five-bedrooms homes sold for more. Small increases in price were found as we increased bedrooms from three to four to five.

Limitations

We encountered a few limitations while conducting the analysis. First, we were unable to observe the actual square footage for most properties. We were able to observe a range that contained the square footage of the property but this limited our ability to analyze price per square foot and how it varies by size, price range, and location. Second, there were a number of properties that had non-standard addresses. This limited our ability to assign coordinates to each

house and include a more precise spatial control in our regression. Future reports will incorporate additional factors that describe agent experience and firm-level attributes.