

A Report to Evaluate
The Real Estate Sales in Central Okanagan

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Summary

Our company is profited by re-selling homes; any volatility in the housing market will affect our profit. This report is a project evaluation of housing investment in the Central Okanagan Region as a support for the company managers to make the decision. The data comes from the Okanagan Mainline Real Estate website with the housing selling information about the Central Okanagan Region from January 2017 to February 2020. The predict values estimate from the past data by the formula below. The housing market in Central Okanagan Region had a recession period in the past two years, and started to recover in the third quarter of 2019, the real estate market will boom in 2020 in my expectation. For the four significant kinds of housing (i.e. condo apartment, condo townhouse, lots and residential housing), residential housing had the predominant place in units sold, and the price always was very high in past years. The trade for land lots was unfavourable with a low price and long liquidated time. Clients exhibited a high demand for condo apartments, condo townhouses and residential housing. Overall, the Central Okanagan region should be a new marketplace for our company.

Introduction

Our company is making a profit by purchasing homes and then re-selling them. Management always hopes to widen our company's investments in different regions in British Columbia Province. The real estate sales in the Central Okanagan Region are declining in the past few years. According to CENTURY 21 Canada, Vernon's housing price experienced a 20 percent decrease in the first half of 2019 and the price in Kelowna dropped 13 percent (Wadhwani, 2019). Purchasing houses these days will reduce the basic costs, therefore, we still need to think about if this investment will make a profit at the same time. However, there are many buyers from Vancouver who show an interest in purchasing houses in inland like Kelowna due to the cheap living cost (Potenteau, 2019). Since our company is profited by re-selling homes, any volatility in the housing market will affect our profit. If a significant number of houses are unsold when the market experiences a depression, our company will show a massive financial gap. The longer the houses unsold, the higher the loss will cause because of maintenance costs. Over the long term, the selling prices will grow up since the expenses increase, our company will experience a massive deficit if the market does not recover. Here I would conduct data analysis to support management to make a decision whether or not purchasing more homes in Central Okanagan Region. In this report, we will talk about:

- The trends of the total sales volume, the total average price and the units sold in past three years
- The trends of the sales volume and the average price for four major types of housing in past three years compared with total sales volume and the total average price
- The trends of the days to sell for four major types of housing in past three years
- The expectations of the total sales volume, the total average price and the units sold in 2020

Methodology and Analysis

This report involves a project evaluation of housing investment in the Central Okanagan Region as a support for the company managers to make the decision. The data I used below comes from the Okanagan Mainline Real Estate website with the housing selling information about the Central Okanagan Region from January 2017 to February 2020. The project began on March 4, 2020, and an analysis report will complete along with some statistical software like R, Excel and Tableau. There is no extra cost required because they are open source software or have a free trial. Past data will be used to analyze the trend and predict the housing market of the Central Okanagan Region in 2020. The predict values estimate from the past data by the formula:

$$\theta_{2020}^{(m)} = \frac{1}{3} \sum_y \frac{1}{2} \theta_y^{(m)} \left(\frac{\theta_{2020}^{(1)}}{\theta_y^{(1)}} + \frac{\theta_{2020}^{(2)}}{\theta_y^{(2)}} \right)$$

$$m \in \{3,4,5,\dots,12\} \quad y \in \{2017,2018,2019\}$$

The above formula is used to estimate the number of aggregate housing sale volume, the average housing price and the total units on a specific month in 2020. The letter m represents a specific month, which can be chosen from March to December and letter y symbolizes for the past 3 years.

Definition

Condo apartment: The whole apartment building is managed by a Homeowners' Association, but each condo can have different owners (Gregory, 2018).

Condo townhouse: The condo corporation owns and maintains the exterior of the townhouse, where the inside is owned by the landlord ("Freehold vs Condo Townhouse: Which is Right for You?", 2020).

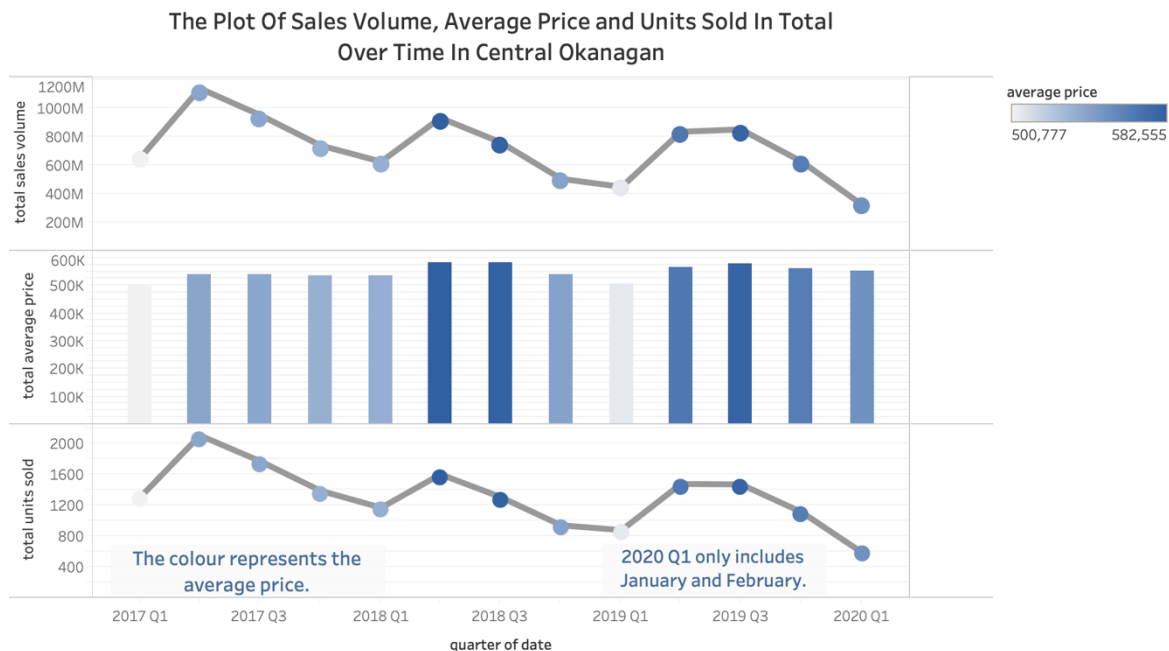
Land lot: It is a piece of land owned by some people or some companies ("Land Lot", 2019).

Residential housing: It is a permanent or temporary accommodation for one person or a family ("Residential Housing", 2020).

Results

a. the total sales volume, the total average price and the units sold in past three years

The plot below is a group of general time series plots from the first quarter in 2017 to the first quarter in 2020, which include the total housing sale volume, the average housing price and the total units sold per quarter. The deepness of the colour of the points and bars reflects the value for the accommodation.

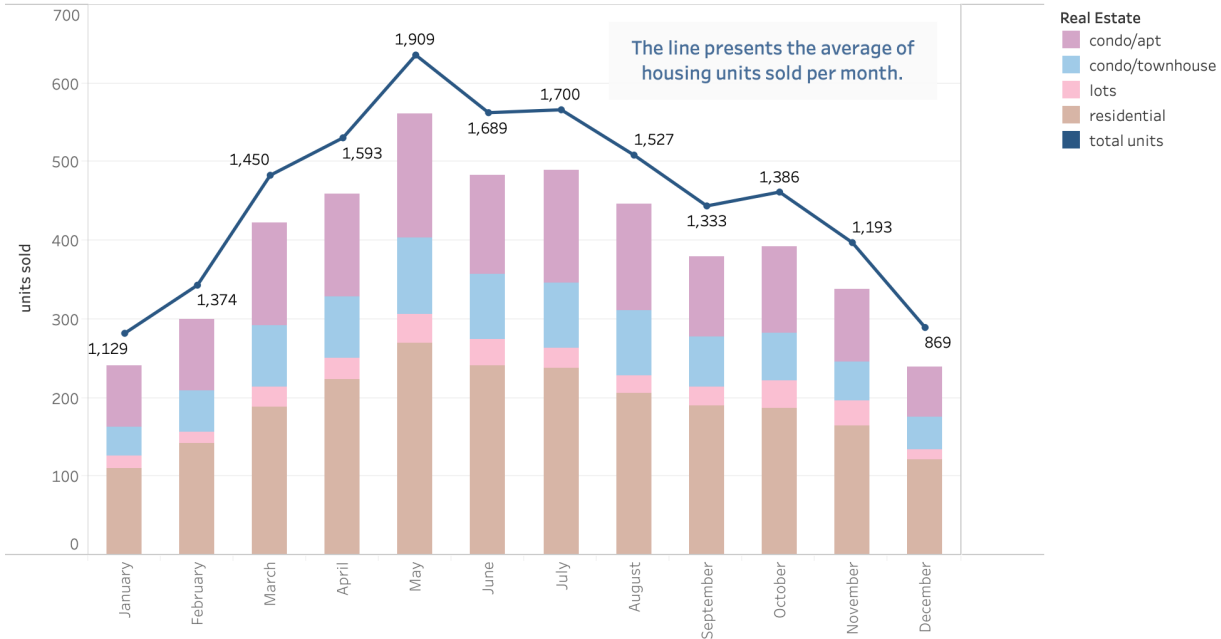


The time series line plot of aggregate sales volume displays an obvious characteristic for the past three years that it follows the same trend in each year. The amount went up from the first quarter, and it started to decrease until next year after hitting a peak in the middle of the year. On the contrary, the highest quarterly total sales volume per year decreased from 1.1 billion CAD in 2017 to 0.8 billion CAD in 2019. However, the Central Okanagan housing market started to recover in the third quarter of 2019. The aggregate sales volumes in the third and fourth quarter of 2019 were higher compared with the same time last year. The line in the plot of the total units sold gives the same shape as it in the total sales volume plot. Based on these two line charts, we can figure out that the housing sales in the Central Okanagan Region slumped in 2018, but it recovered in 2019. Whereas, the average price for real estate exhibited the opposite trend. Although the total sales volume reached the peak in 2017 Q2, the average price was lower than it in 2018 Q2 and 2019 Q2. The highest price happened in 2018 Q2, but after an extremely high price in the middle of 2018, the price jumped down until 2019 Q2. We may conclude that housing sales turned down because the price increased in 2018 and the market adjusted to the balance between the price and demand in the second half of 2019.

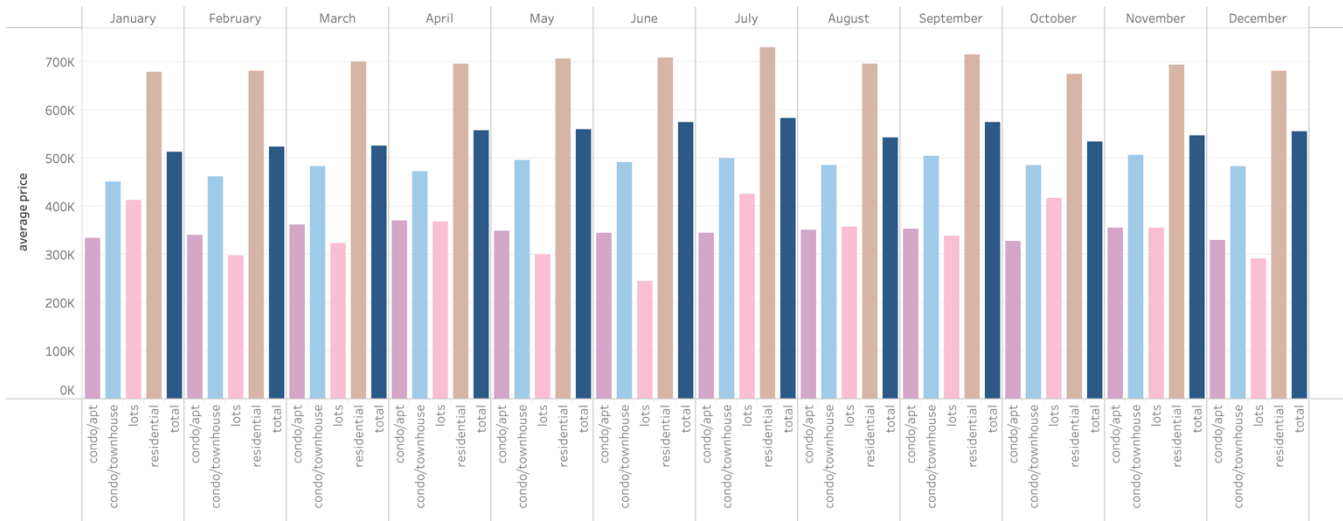
b. sales volume and the average price for four major types of housing in past three years

After understanding the situation about the entire housing market, let us focus on the major types of real estate. The bar plots below exhibit the average sold units and average prices for four kinds of real estate (i.e. condo apartment, condo townhouse, lots and residential housing) per month. The five colours represent the four major types and the total.

The Plot Of Average Major Types of Housing Units Sold By Month in Central Okanagan



The Plot Of Average Prices For Major Types of Housing By Month in Central Okanagan



In the first plot, the whole tendency exhibits as a mountain shape. The highest monthly housing sold units in total and the most upper monthly house sold units for four types both happened in May, and the lowest ones occurred in December. The residential units sold were most predominant in each month, followed by the condo apartment units, and then the condo townhouse units. The number of lot units sold always be the lowermost one each month.

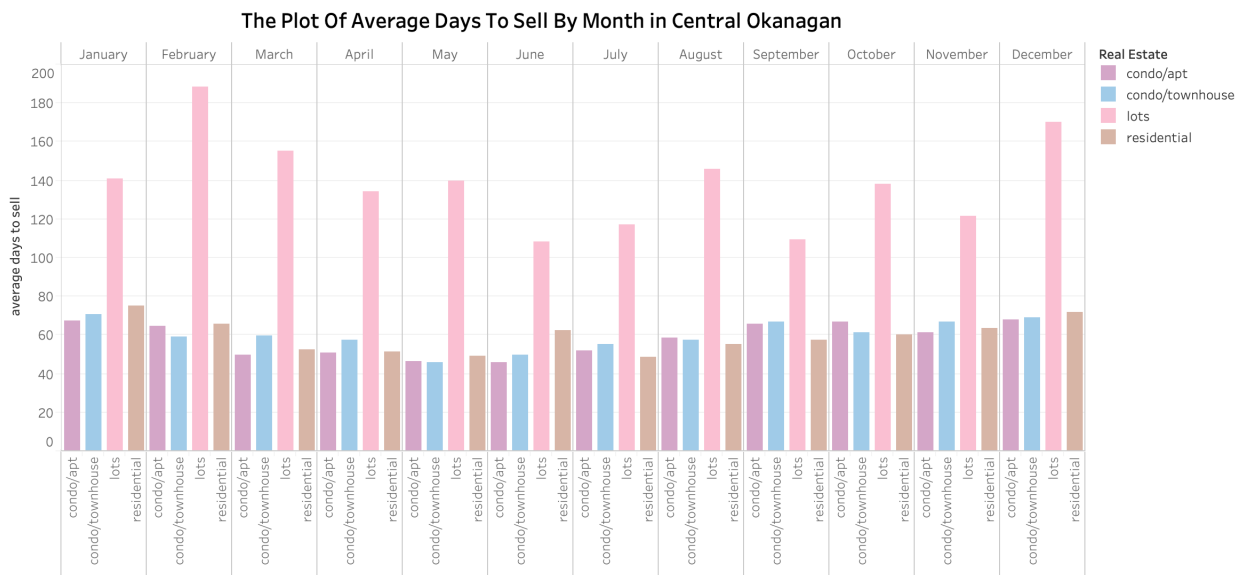
The second graph presents the average prices for these four kinds of housing compared with the average prices for all types of accommodation. The average price for all classes showed a small floating between 0.5 million and 0.6 million. The residential housing was the most expensive in which the price was higher than the average price for

all types in the whole period with the peak that appeared in July. The amounts for both a condo townhouse and a condo apartment did not have a significant difference in each month. In contrast, the lot unit was relatively expensive in January, July and October, the price reached the bottom in June when the other types unit had moderate amounts.

Consider two plots together, we can think about selling all categories of real estate except the land lot in May, June and July. For the land lot, I recommend to sell them in January, July and October, but purchasing in June is the right choice. The suitable time for buying other kinds of estate is January and December.

c. the days to sell for four major types of housing in past three years

After thinking about the price and selling of different categories, how long for different classes realty will be sold after listing online is also an important aspect to think about for investment. The days to sell reflects the speed of assets realization, which will impact our corporation fund chain.

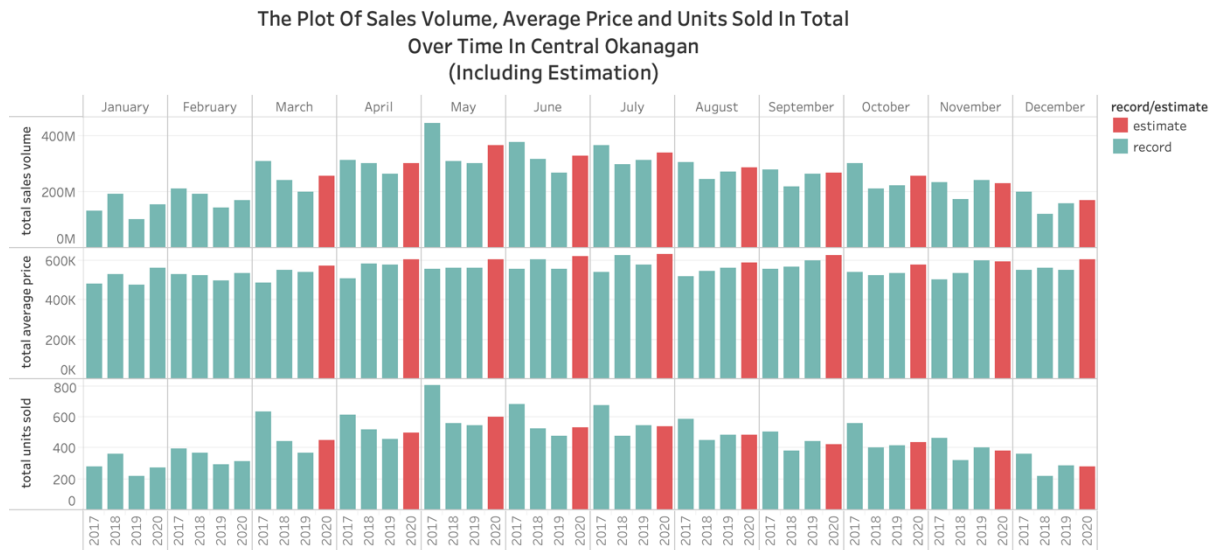


The bar plot above presents the monthly days to sell on average in Central Okanagan. The four colours represent the four major categories in real estate. An interesting point that the price of land lots always be the lowest among the four classes, but they had the longest time to sell and almost doubled to one of the others, and the shortest time happened in June. It is reasonable because the land lot had the lowest price in June. The speeds of selling condo apartments, condo townhouses and residential housing always were the relatively fast each month. That might explain why the prices for condo apartments, condo townhouses and residential housing did not change much. The Central Okanagan housing market had high demand in condo apartments, condo townhouses and residential housing. Purchasing condo apartments, condo townhouses

and residential housing will not be a big problem in the realization of the assets for our company.

d. The expectations of the total sales volume, the total average price and the units sold in 2020

The plot below is a group of charts that reflect estimated values in 2020, according to the past three years of data. The red bars present the estimated values.



We already figure out the housing sales in the Central Okanagan Region are recovering from the third quarter in 2019. In the first bar chart, it displays that the aggregate sales volume in January and February 2020 are all higher than the one at the same time in last year. The monthly total sales volume in 2020 will grow up until May and then will drop slowly to the end of the year.

From the second chart, the total average price for 2020 in each month will be the highest invariably compared with that of the past three years. The price will reach a record high in July, which will rise 0.98 percent year-over-year to around 630 thousand CAD.

The total units sold will not be as satisfactory as in 2017 according to the third graph, but it will be better than in 2018 and 2019. The peak will appear in May, with about 600 housing will be sold. In general, the housing selling market for Central Okanagan will be more prosperous than the last two years.

Conclusion

The real estate market in the Central Okanagan Region will boom in 2020, after a recession stage in the past two years. The aggregate sale volume, average price and units sold in January and February already appeared symptom. Condo apartments, condo townhouses and residential housing exhibit a high demand here that we do not need to worry about the realization of the assets. Our corporation should quickly expand the marketplace in Central Okanagan Region, otherwise, we will lose competitiveness to against other companies. Moreover, in the next project, analysts should make some more

in-depth predictions on the total amount of investment and investment ratio for different types of housing. Furthermore, since the unexpected coronavirus disease outbreak in March 2020 inside British Columbia Province, we do not know the effect on the housing market in Central Okanagan Region. For more precision on expectation, I hope to recalculate the estimation by adding the information about selling in March at the beginning of April.

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