

Property Wealth Advisory
Business Intelligent Report

MELBOURNE REAL ESTATE MARKET

Group Report



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1 Introduction

Property Wealth Advisory (PWA) is a property consulting firm located in Victoria, Australia. The firm aims to provide useful insight into the Melbourne Real Estate Market (REM) and give predictions to help investment decisions. The firm's main clients are future homeowners looking for potential future home locations and clients looking to diversify their investment portfolio.

The report will be based on the Melbourne REM dataset collected between the period 2018 to the beginning of 2020. The data will be future enhanced through market research from websites such as Real Estate and from industry reports. This report will provide an overview of the Real Estate Market, briefly address the quality of the dataset, the data cleaning process, provide insight, foresight, and predictions from the dataset and lastly, the recommendation to the clients. The median price is used as the parameter to assess the pricing performance of different property types instead of the average price to avoid outliers, which are the overpriced and underpriced properties.

2 Overview of Melbourne Real Estate Market

Due to the ease of restriction in Victoria, Melbourne property prices gained momentum over the 2021 December quarter (Domain, 2022). Melbourne houses and units are at a new record high with an increase of 5.8% and 3.9% over the quarter respectively (Domain 2022). Compared to the rest of the Australian states, Melbourne ranks third in median house prices (\$1,000,000) and second in median unit prices (\$650,000) (Kusher 2022). The Real Estate Institute of Victoria (REIV) reported that the quarterly median sale prices continue to rise, with house prices increasing at a much faster rate compared to units (2021). Australian banks such as ANZ, NAB, CBA and Westpac forecasted that Melbourne house prices will continue to rise by 5 – 8% in 2022 (The Urban Developer 2022).

Increase in rental demand with low vacancy rate is expected as Australia is set for reopening of the international border, return of international students and increase in migrant workers due to skill storage in Australia (Kusher, 2022) (The Urban Developer, 2022). REIV also reported that houses have a median rent price of \$480 per week and \$400 per week for units (2021). Interestingly, houses that have 3 bedrooms have cheaper prices in both sales and rental compared to houses with 2 or 4 bedrooms.

3 Data Quality

This team analyses the data integrity of the given PWA dataset by focusing on the four major data problems that arise when cleaning data: missing data, data errors, format inconsistencies and insufficient data (IBM, 2018). We found that there were 0.07% of data inconsistencies - the most common being the 'Distance from the CBD' followed by 'Land Size', 'Building size', 'Car space', 'Number of rooms', and 'Type of property'. About 8% of the data was deemed too incorrect and removed, the full list is in the appendix. This dataset had a null percentage of 59% (list of Null fields in the appendix). Most null values were existing but unknown, or the value was not entered. In some areas of analysis, this data is viable and used for the visualizations shown in section 5.

4 Analysis of Melbourne Real Estate Market

4.1 The trends of the Real Estate Market (REM)

4.1.1 Trend of the Median Price

As shown in Figure 1, from 2018 to 2020, the median price of all properties fluctuated and spiked in the first quarter of 2019 at \$1M before trending downwards. The graph shows the median price flattening out around \$0.8M at the end of the period. Knowing the median price trend is important to budget investors when looking for a property that may occur capital growth (Gorter & Jacobs, 2020).

Trend of Median Price of all Properties

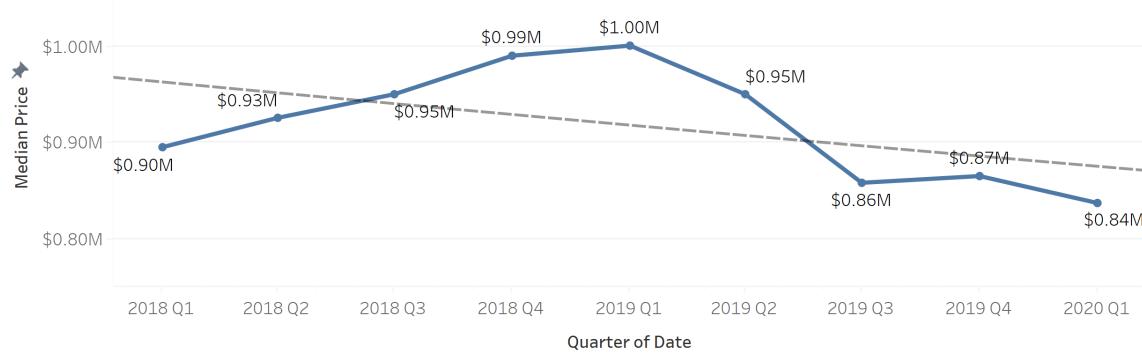


Figure 1: Trend of Median Price

4.1.2 Is there a best time to Buy or Sell?

Figure 2 shows the percentage of properties sold in the months of 2018 and 2019. The Melbourne real estate market was particularly active in Spring and the beginning of Summer (September-November). In both years, September and November held a high percentage of sales, with 14.24% and 17.43% respectively in 2018 and 14.0% and 13.7% in 2019. Overall, fewer properties are sold during summer.

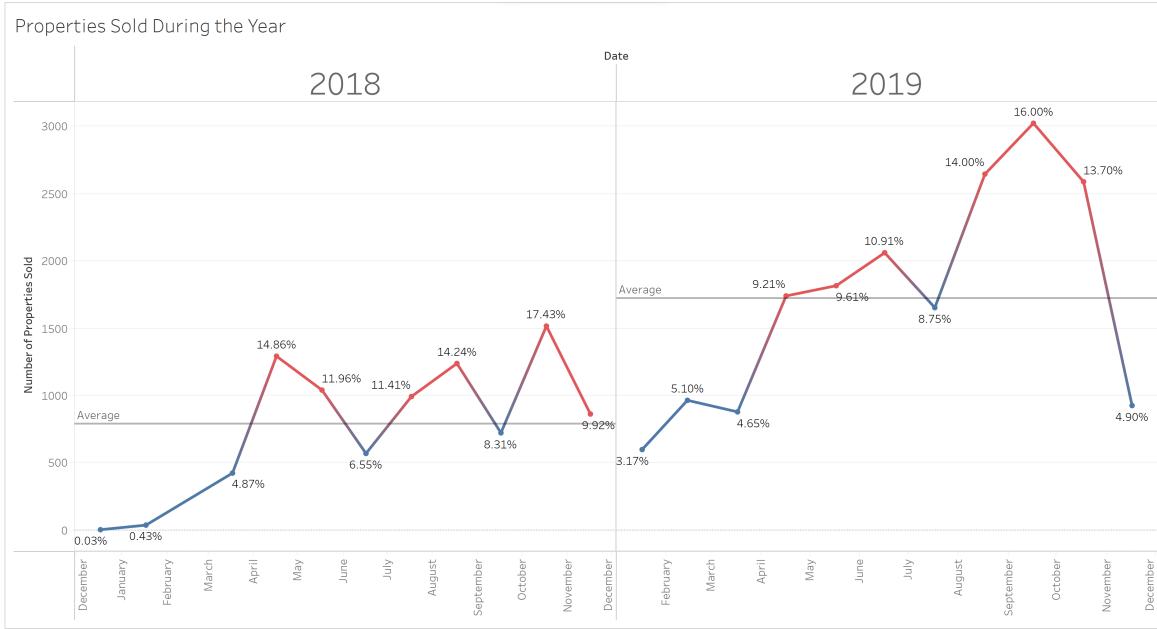


Figure 2: Properties Sold during the Year

Figure 3 shows a small pattern, If the previous year ends with around higher median prices, then the following year will follow the trend and show initial months with higher median prices.

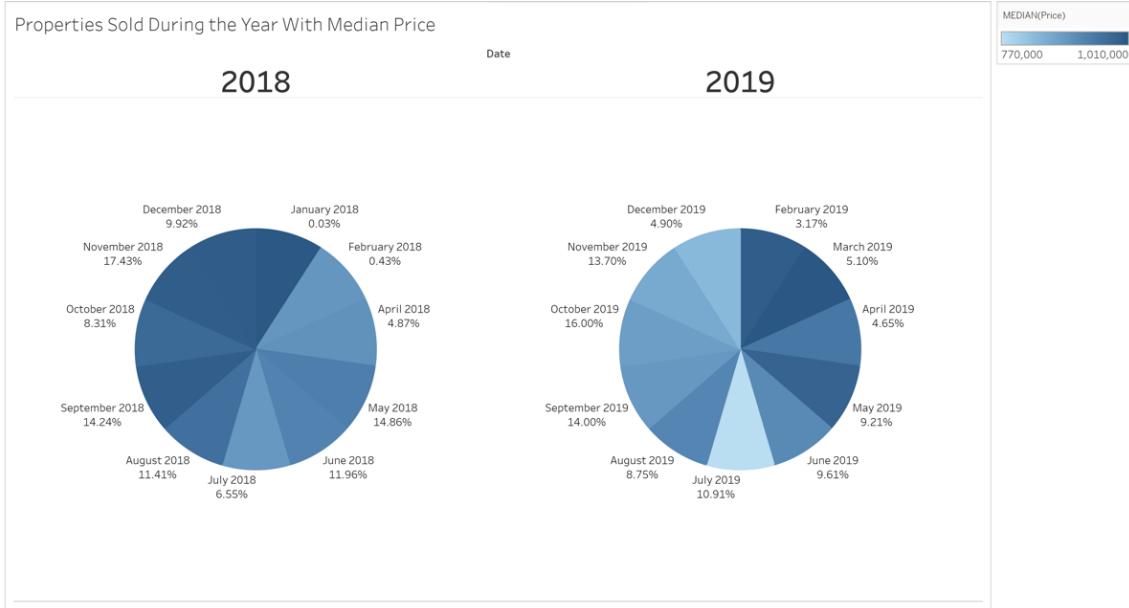


Figure 3: Median Price during the Year

4.1.3 Trends of Property Types in Different Regions

Figure 4 shows the number of properties sold increased from 2018 to 2019, with ‘House’ being the most popular property type. This type was also sold in Eastern, Northern, and Western Victoria, despite not having properties of any type sold prior in 2018. The trends in Figure 5 show that the ratio of houses is decreasing, meaning more Townhouses and Units are being sold across Victoria.

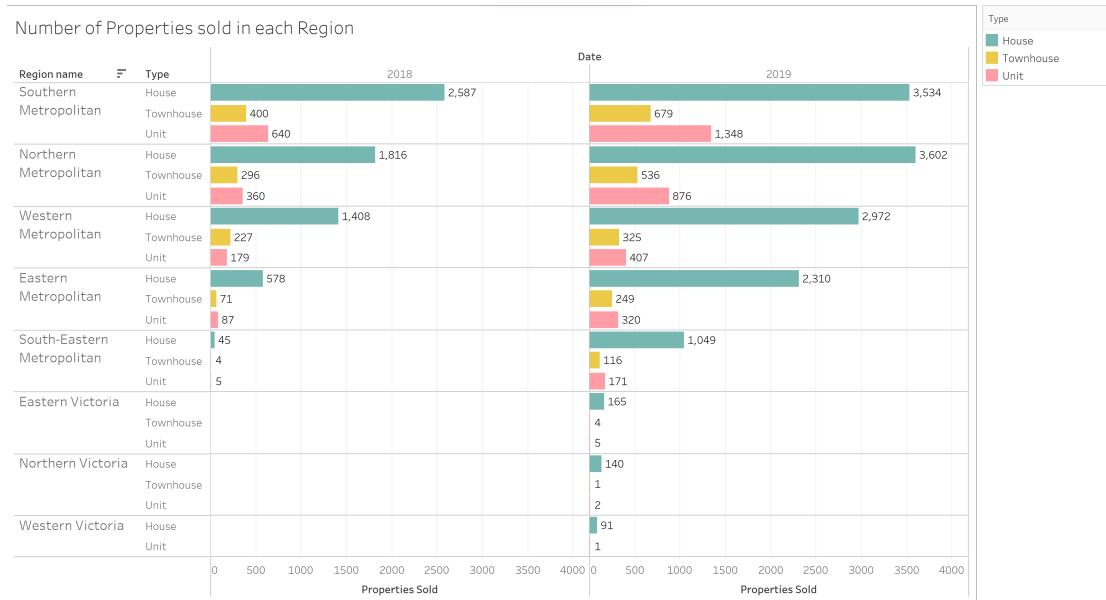


Figure 4: Properties sold across the regions

From Figure 4 above and Figure 5 below, units in Southern, Northern and South-Eastern metropolitan regions have sold more than double in 2019 than 2018. The proportion of ‘Units’ in properties sold also increased. Particularly, Southern Metropolitan regions increased from 17.65% to 24.24% of its properties sold being units.



Figure 5: Percentage of Property Type Sold

4.2 Growth areas and/or opportunities in the Melbourne REM

Figure 6 shows the trend of the median prices in each Melbourne REM quarter by quarter. Southern Metro area outperforms all other region in Melbourne. Eastern Metro shows a downward trend with the median property price; however, it is still above the average and the prices in each quarter remain stable. South-Eastern Metro has a price range similar to the average, however there is a big drop in 2019 quarter 1 which causes the region to perform worse than the overall average. The price in South-Eastern remains unstable, therefore consideration should be taken before investing in property in this area. Eastern Victoria, Northern Victoria and Western Australia all shown an upward trend in the median property price. However, these three regions are still performing under the average. Data enrichment can be used for these regions to help creating a better insight and a prediction on whether the trend will continue to trend upward and if it will ever go above the average line.

It is recommended for investors to invest in properties in a location that outperform the average (Yardney 2022). The regions that show strong growth and can bring potential benefit to investors in the future are South Metro and Eastern Metro region.

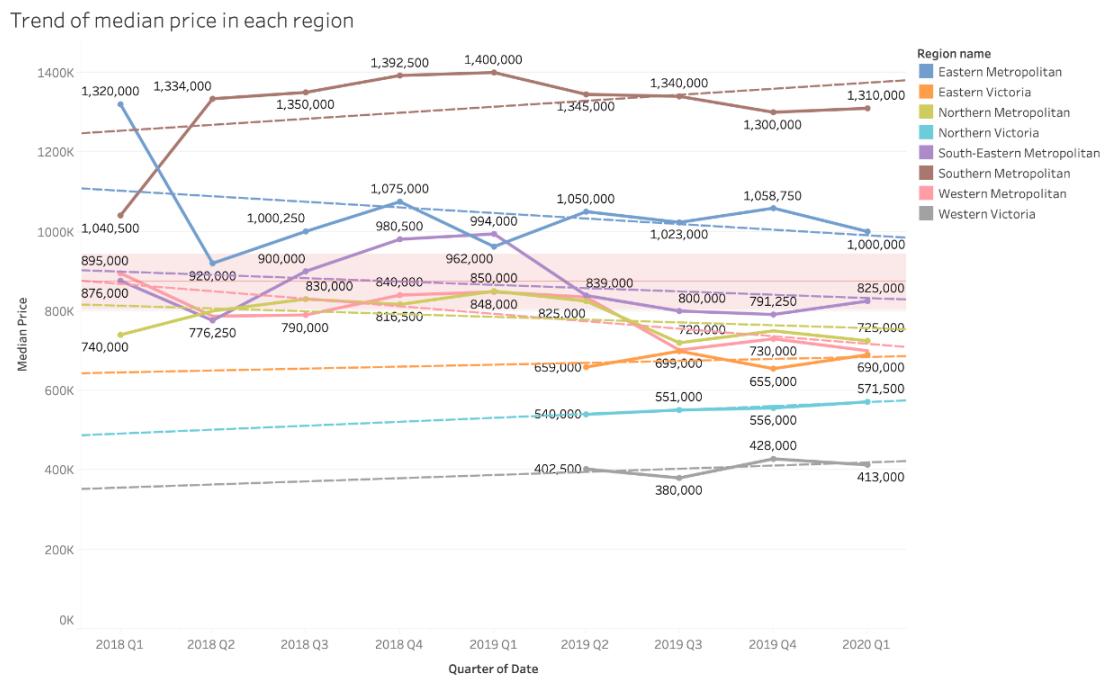


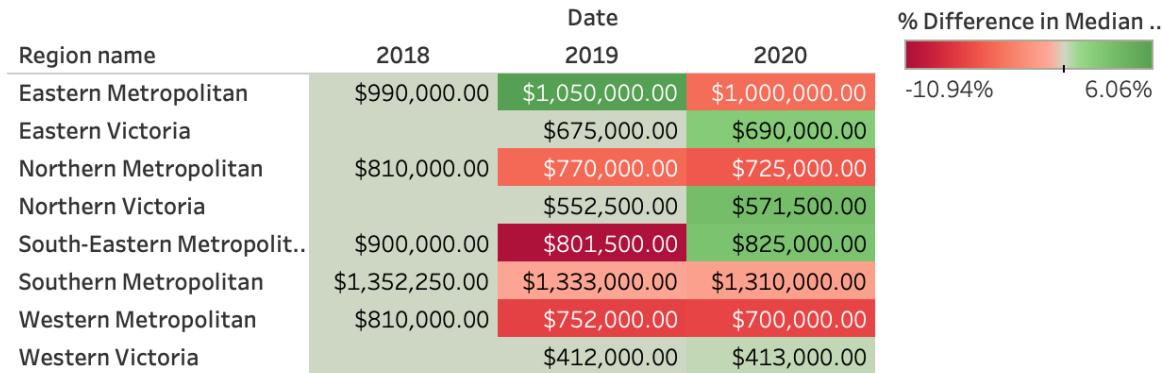
Figure 6: Median Prices in Melbourne

Figure 7 shows the growth of property prices in each Melbourne region over 2018-2020. The two outperforming regions, Eastern and Southern Metro shows a decrease in growth from the year 2019 to 2020. This happened because only the first quarter of 2020 is recorded. Looking closer to the two regions, Eastern Metro region can be said to be having a greater growth compared to Southern Metropolitan

region. From 2018–2019, where data is fully recorded, Eastern Metro had the greatest growth of 6.06%, while Southern Metro region had a negative growth percentage of 1.42%.

Another interesting insight is that even though South-Eastern Metro region experienced the greatest decline in median price of 10.94%, it improves in the first quarter of 2020 with a percentage of 2.93%. This shows that South-Eastern Metro region have a potential to have a greater growth in the future.

Growth of median property price in each Melbourne Region



Median of Price broken down by Date Year vs. Region name. Color shows % Difference in Median Price. The marks are labeled by median of Price. The view is filtered on Region name, which excludes Null.

Figure 7: Growth of Median Property Price

4.3 If the REM bubble going to burst vs further growth is anticipated

The real estate market (REM) bubble is a phenomenon classically recognized by the global financial crisis (GFC) event in 2008, where the REM declined in value dramatically once the bubble was ‘popped’. (Brzezicka & Wiśniewski, 2014) Smith and Smith (2006) summarise that the REM bubble is a situation where the market value of an asset grows significantly greater than the expected growth of the asset, predicted from its current value in reflection of the financial flow in the economy.

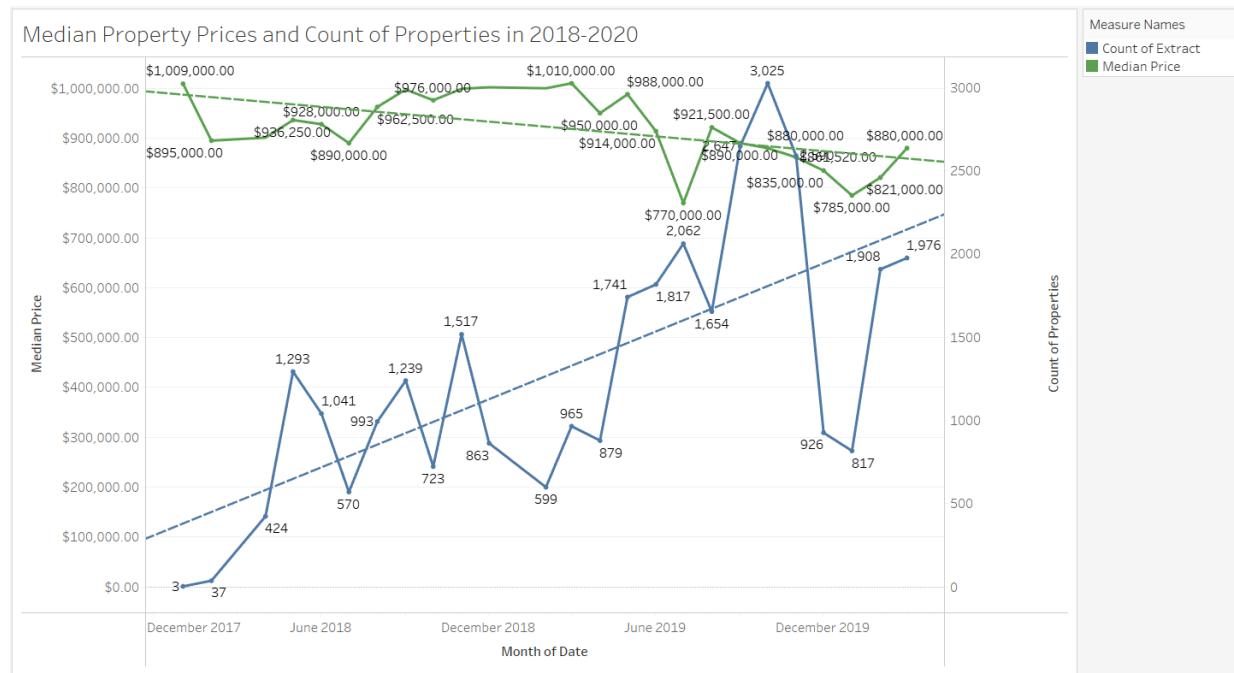
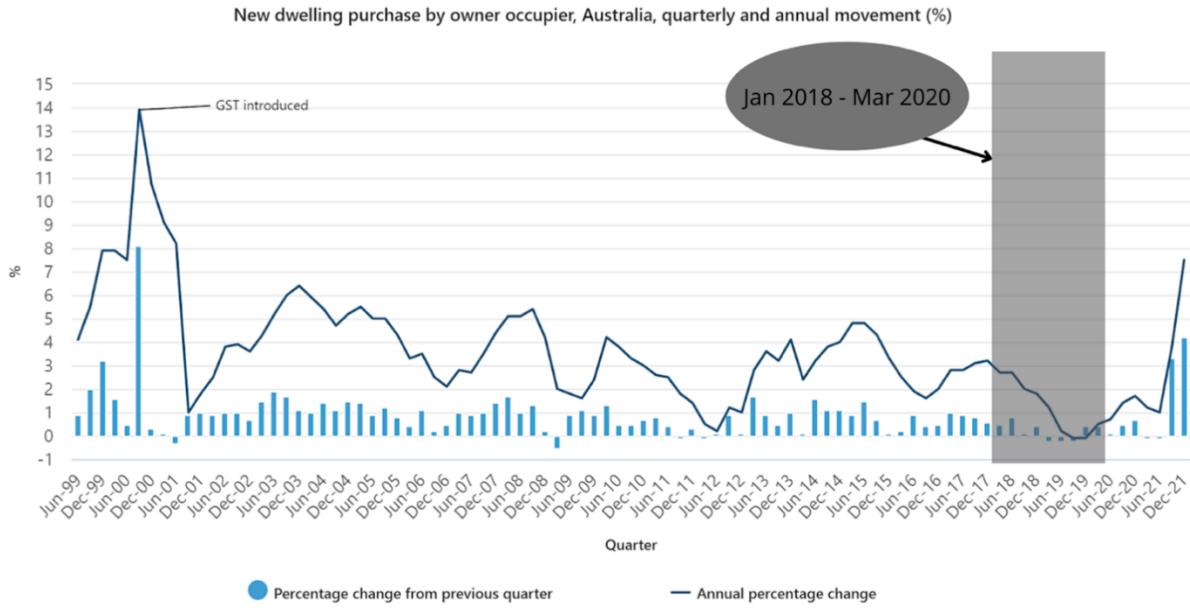


Figure 8: Trend of Median Price and Volume of Properties

Over the 2018-20 period, the REM faced a downward trend in the median house prices as well as an upward trend in the number of properties in Melbourne (Figure 8).

The lack of demand for housing was apparent throughout Australia, where quarterly growth in house purchases were very low or negative in 2018-2020. (Figure 9)



Source: Australian Bureau of Statistics, Consumer Price Index, Australia December 2021

Figure 9: Houses Sold by First-Home Buyers in Australia (Quarterly and Annual)

The economy was facing consistently low gross domestic product (GDP) and inflation (Figure 10) levels in 2018-2020, with more people choosing to save rather than invest. (Australian National Accounts, 2021)

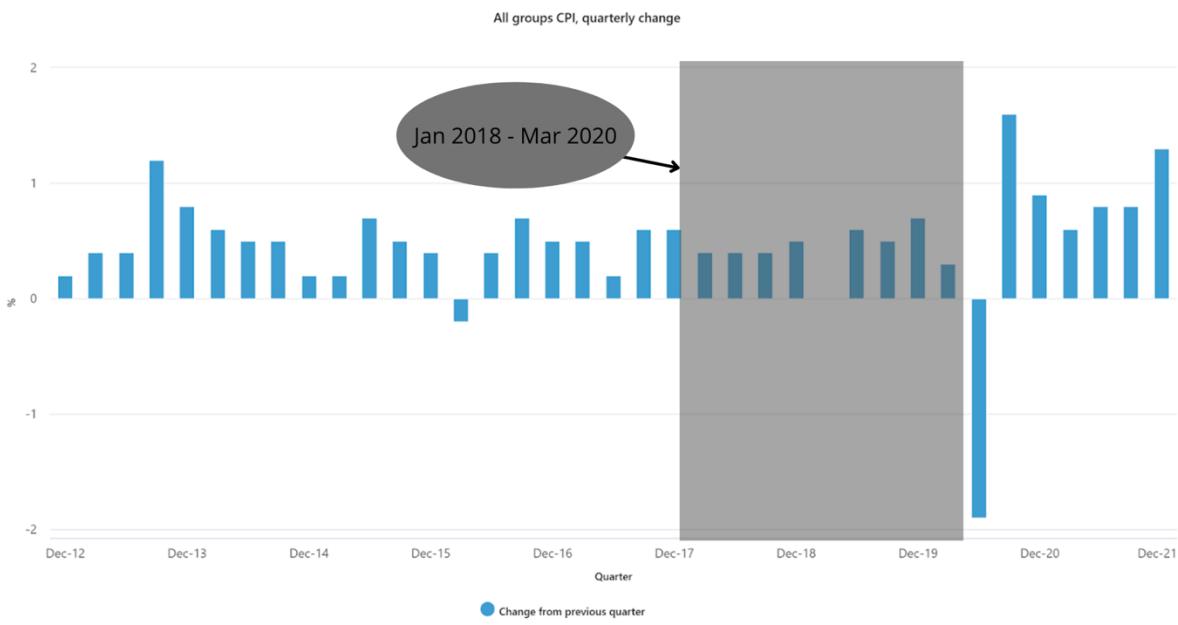


Figure 10: Inflation Rate in Australia

This trend is inconsistent with the economic characteristics of a market Bubble, as there is currently an oversupply of houses and lower demand. This leads to the overall slower growth of property prices in Melbourne. In contrast to the GFC, the Reserve Bank of Australia (RBA) counteracted the degrowth by rapidly lowering interest rates from 1.5% to 0.25% as an incentive for homebuyers.

The following graph (figure 11) is using average house prices, which is impacted by the outliers with extreme prices. However, it was necessary to provide the forecast ability in Tableau Software and predict future prices. In efforts to make more accurate analysis, the median house prices were involved in the tooltip.

Figure 11 displays a flexible upwards trend of growth for house prices for the remainder of 2020 and 2021, signaling an eventual increase in demand at 90% accuracy. The trendlines and predicted forecasting show no trace of price peaks.

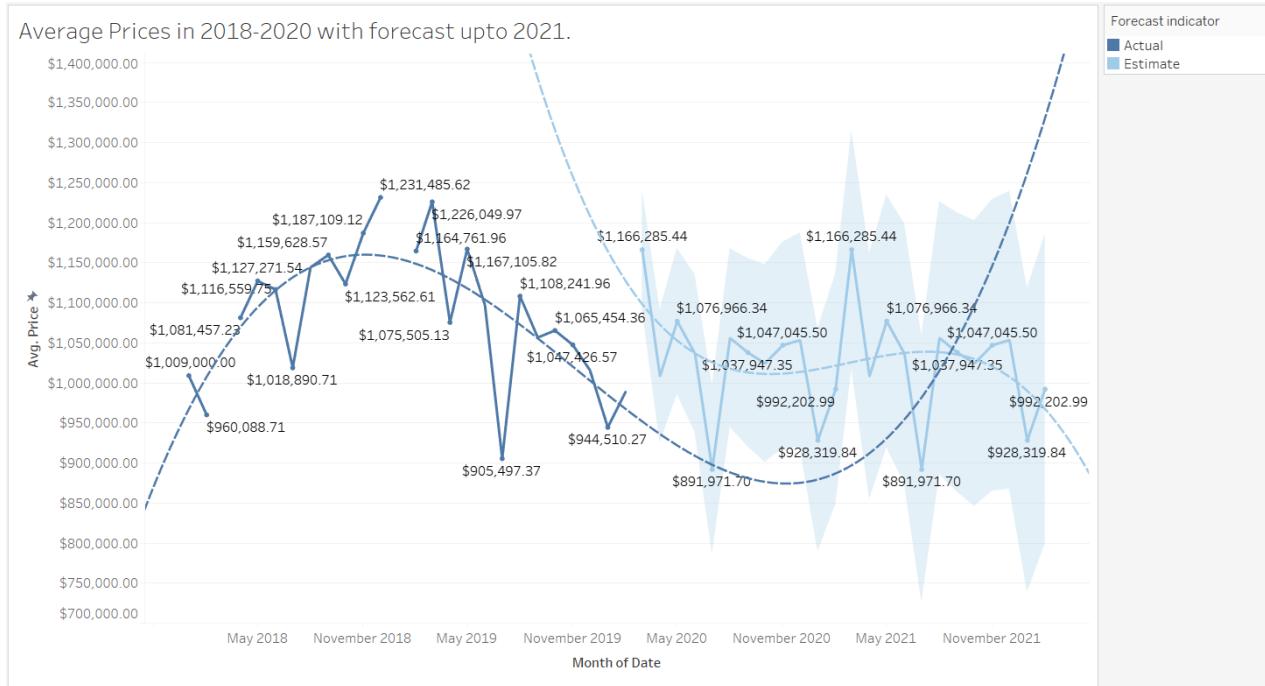


Figure 11: Forecast of the Average Price

Hence investors would benefit from purchasing properties in areas of higher growth in median property prices, which we see as Northern and Eastern Victoria (Figure 7).

4.4 Price performance on different types of properties

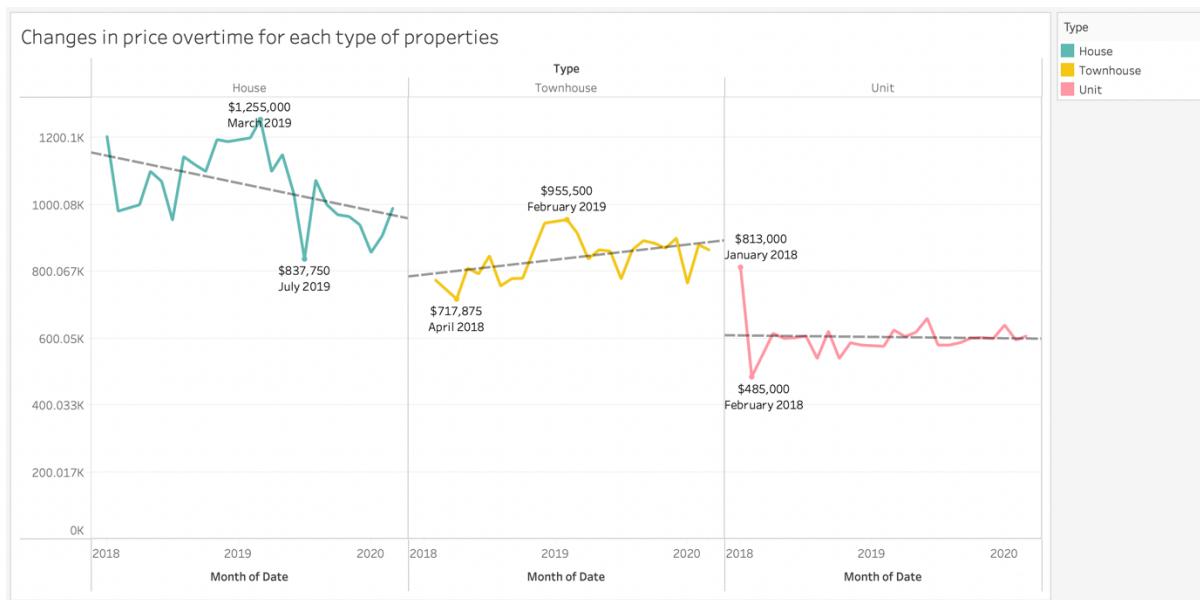


Figure 12: Changes in the median price of each type of property from 2018 to 2020

In general, the price over time performed differently across three types of properties, as shown in Figure 12. Houses had a downward trend, while townhouse prices slightly increased. Units experienced a stable price level in this period. Meanwhile, houses showed more variation in the median price than townhouses and units. For instance, the median price's house at peak in March 2019 steadily dropped to the lowest median price in July 2019.

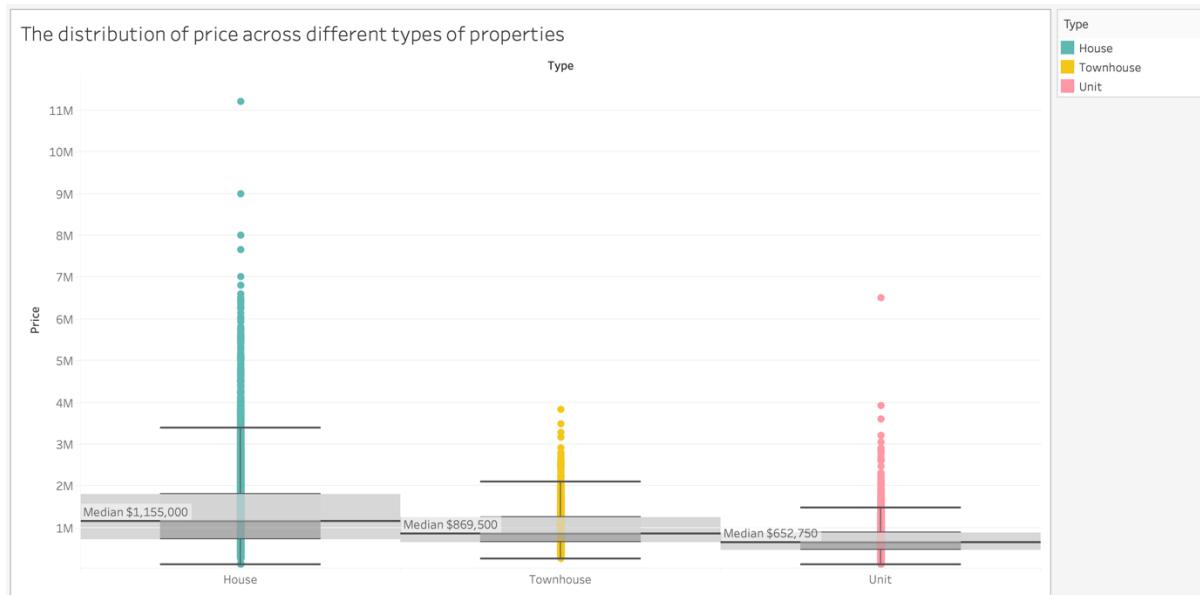


Figure 13: The distribution of price across different regions

Figure 13 displays the boxplot graphs showing the price distribution for each type of property. Based on this graph, investors can understand which type of property is more suitable for their budget. Houses have the highest median price, followed by townhouses and lastly units. On the contrary, houses had the most variation in price, yet townhouses had the least variated price in the market, thus more stable. As there were extreme outliers in house and unit prices, these types of properties would potentially be overpriced.



Figure 14: The median property price by region

Moreover, according to Figure 14, the Southern and Eastern Melbourne properties had higher median prices than the other regions for both houses, townhouses, and units. In comparison, the regional areas had the lowest median property prices. These regions are interpreted further through Figure 15.

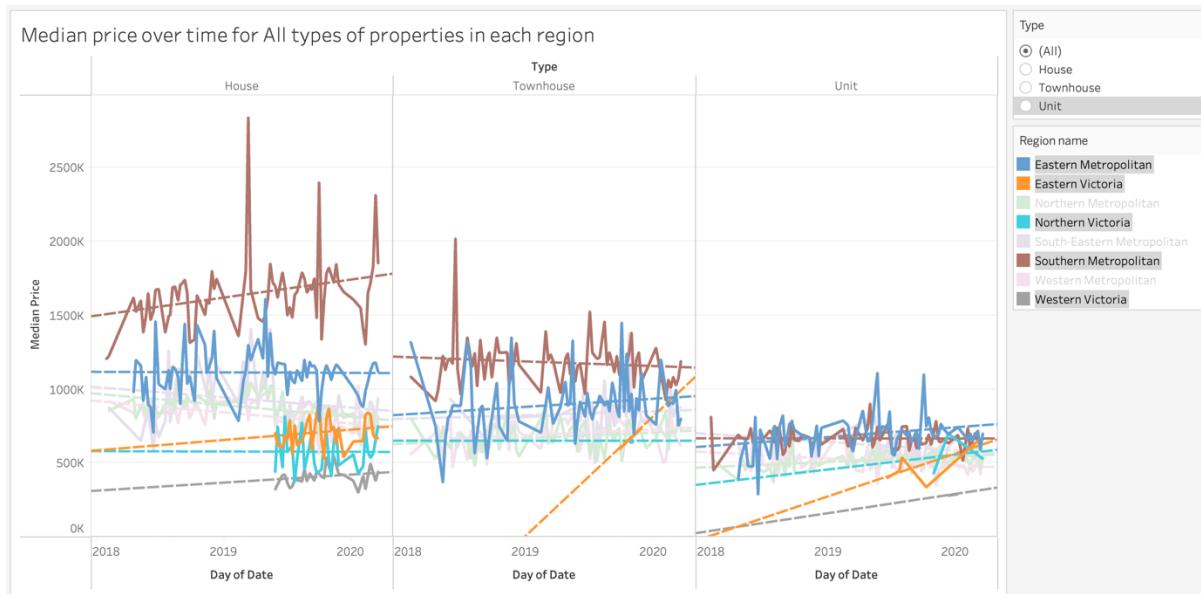


Figure 15: The median price performance over time for Eastern Metropolitan, Southern Metropolitan, Eastern Victoria, Northern Victoria and Western Victoria regions for each type of property

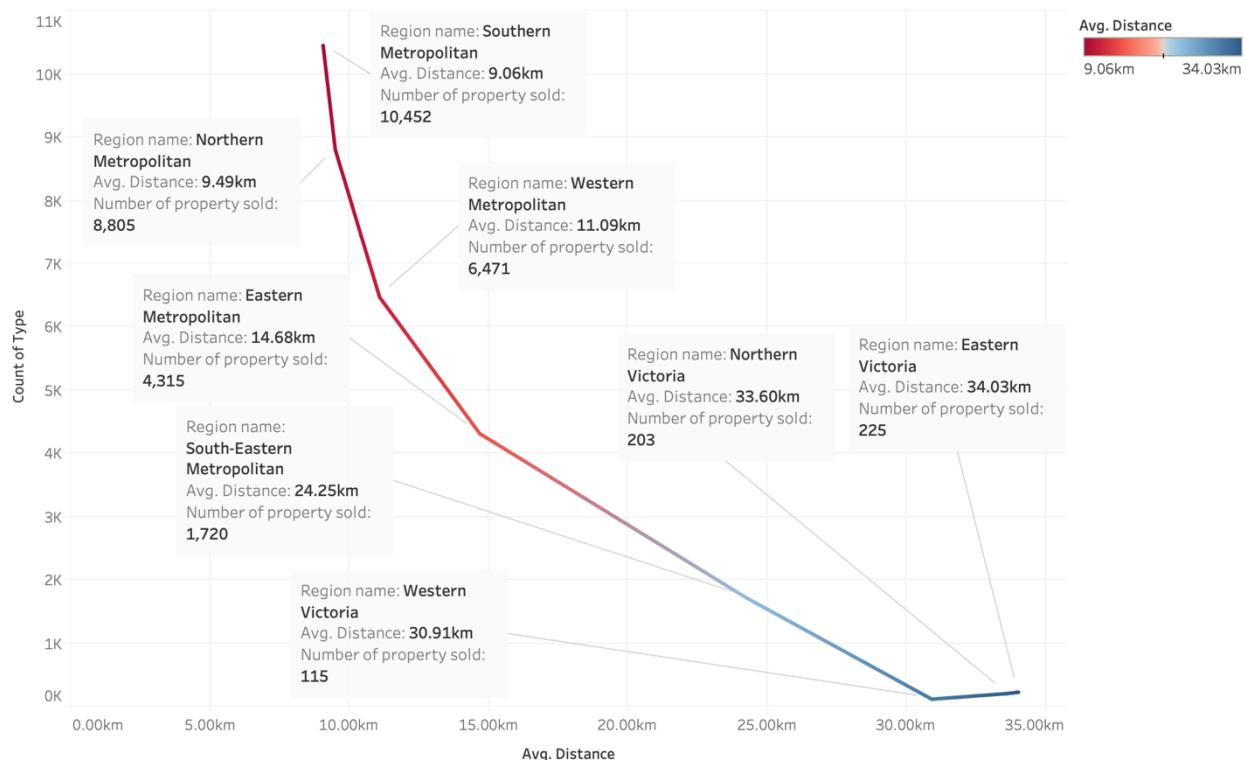
For houses, even though the Southern Metropolitan region had the highest property prices compared to the other regions, the house prices in this region were growing steadily. For townhouses, the Southern Metropolitan region's property price was decreasing, despite having the highest prices among the regions. Finally, for units, the Eastern Metropolitan region's price show a medium growth.

Besides having low prices, the properties in regional Melbourne were recently developed and sold in the middle of 2019, as indicated in Figure 15. House prices in the Eastern and Western Victoria areas gradually increased from 2018 to 2020; thus, investors should consider buying regional houses. Although there are price trends for townhouses and units in the regional areas, we have insufficient information to indicate that these trends are significant, as there are only several records.

4.5 Properties being closer to or away from the CBD

The figures below highlight the significance of the distance from the CBD on the volume of properties and median price. Figure 16 shows the number of properties sold significantly decreases further away from the CBD the region is in.

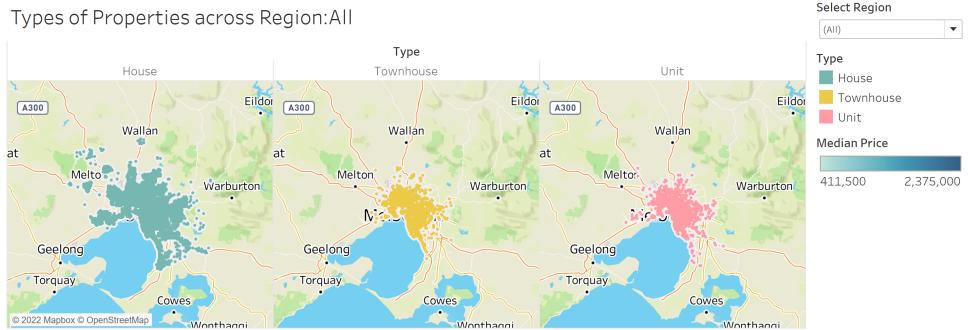
Number of property sold in each region and it's distance from the CBD



Average of Distance vs. count of Type. Color shows average of Distance. Details are shown for Region name. The view is filtered on Region name, which keeps 8 of 8 members.

Figure 16: Number of Properties sold compared to Distance from CBD

The Bottom map in Figure 17 highlights that the Melbourne Metropolitan region has high median prices, showing the value of being near the CBD, while the top map is the location highlights the distribution of property types. Once filtering this map, (Figure 18) it shows that there are significantly fewer properties in Eastern Victoria than near the CBD.



Median Price across the different Postcodes within the Region: All

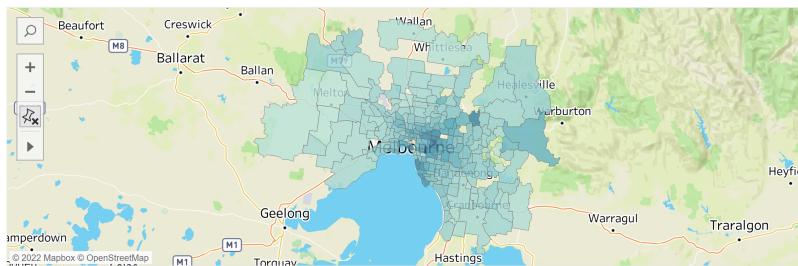


Figure 17: All Regions around the CBD



Median Price across the different Postcodes within the Region: Eastern Victoria

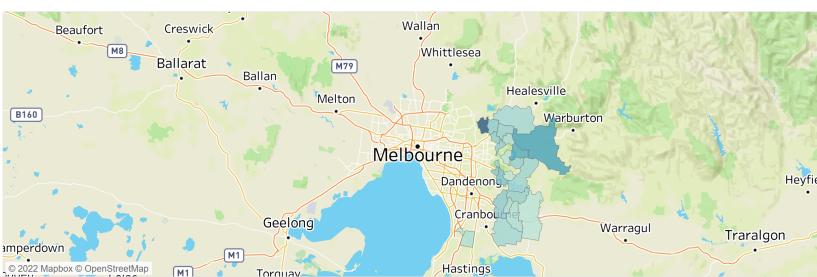
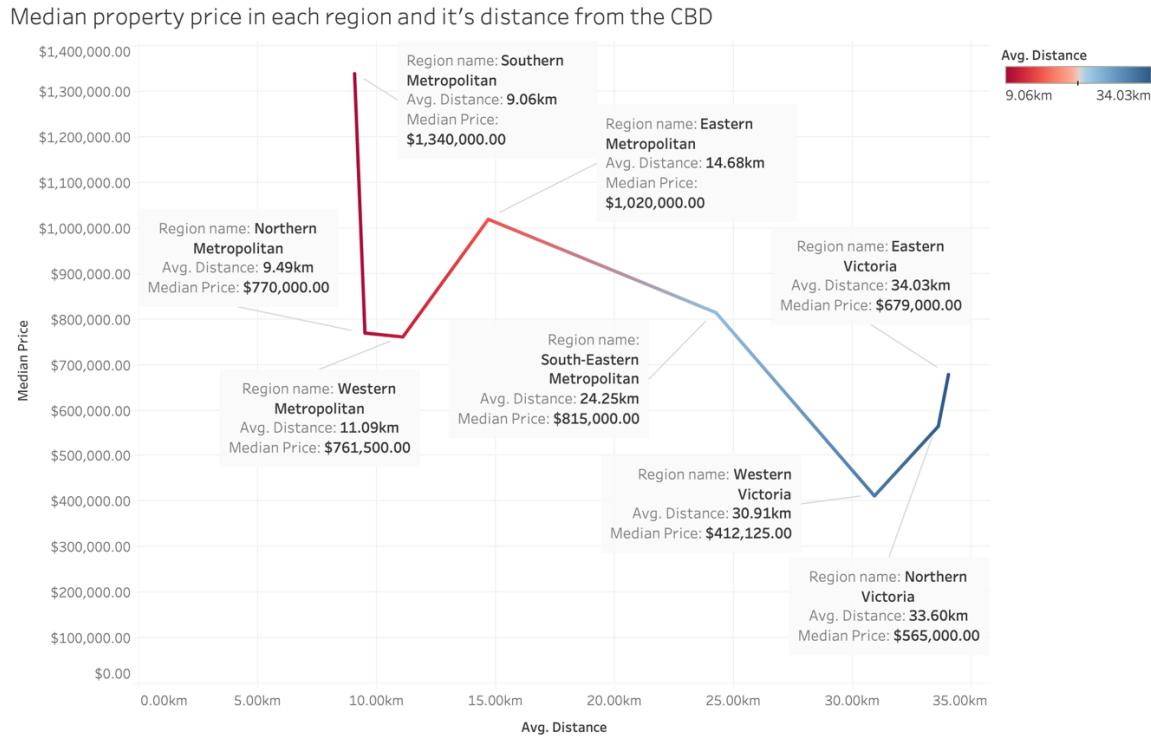


Figure 18: Eastern Victoria Property Price and Type

According to Figure 19, the median price is decreasing as the distance from CBD is further away. Areas to notice occur when the median prices increase at 11-14km and 30-35km away from the CBD.



Average of Distance vs. median of Price. Color shows average of Distance. Details are shown for Region name. The view is filtered on Region name, which excludes Null.

Figure 19: Median Price compared to Distance from CBD

4.6 Useful Predictions and Forecasting

4.6.1 Median Price Increasing?

Shown in Figure 20 Eastern Metropolitan is trending upwards while shows the other regions are trending downwards. The South-Eastern metropolitan and Western Metropolitan are forecasted to have the steepest decline in median price.

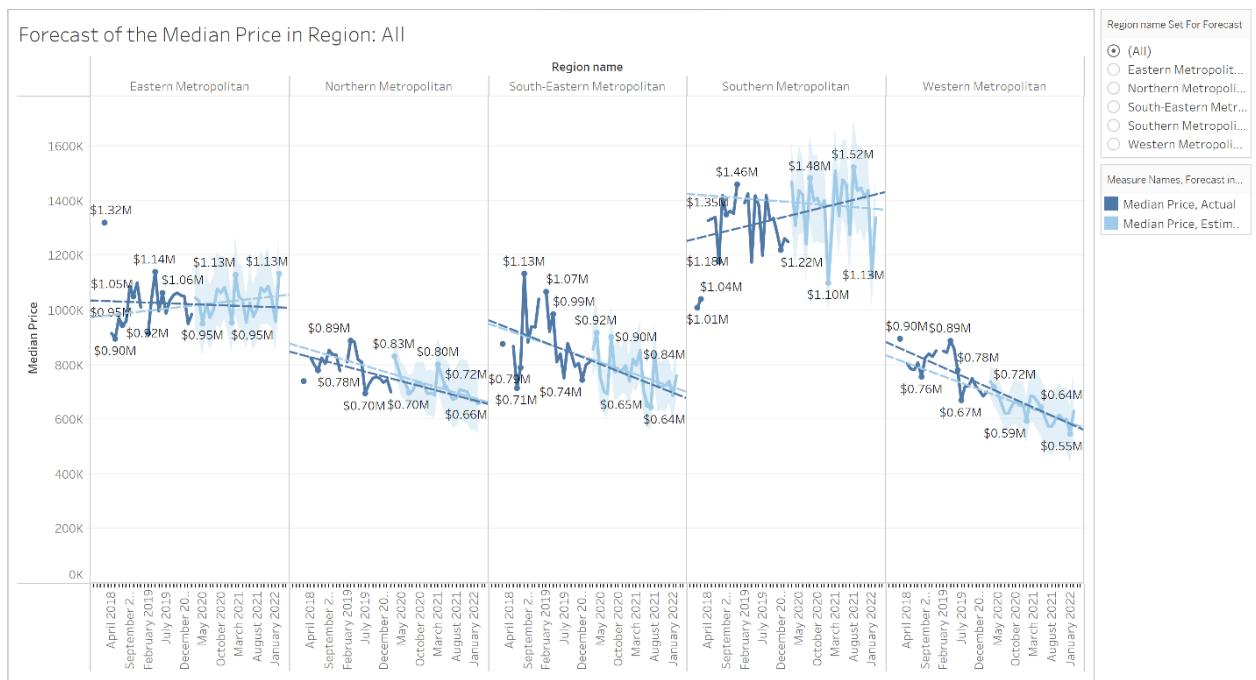


Figure 20: Forecasting Median Price in Different regions

4.6.2 Predicting growing price chance for houses and townhouses for particular regions.

Based on the Melbourne Real Estate data set, the forecasting trend is identified for particular property types and regions. Figure 21 indicates that the median price for houses in Southern Metropolitan are predicted to slightly increase while experiencing some fluctuations.

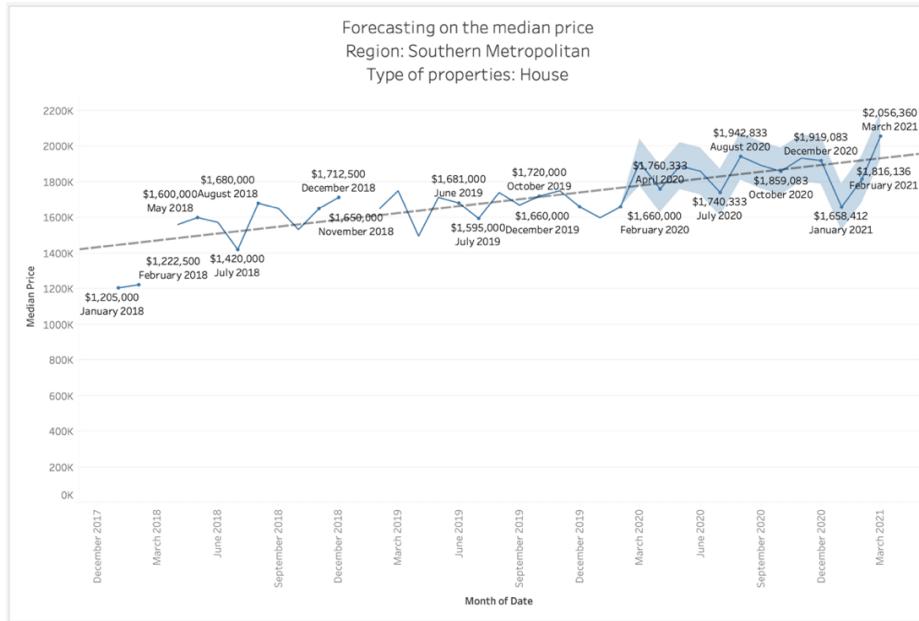


Figure 211: The forecasting trend on median price for houses in the Southern Metropolitan area

In the Western Metropolitan area, the predicted median price for townhouses gradually increases, indicating an increasing trend in price after 2020, as shown in Figure 22.

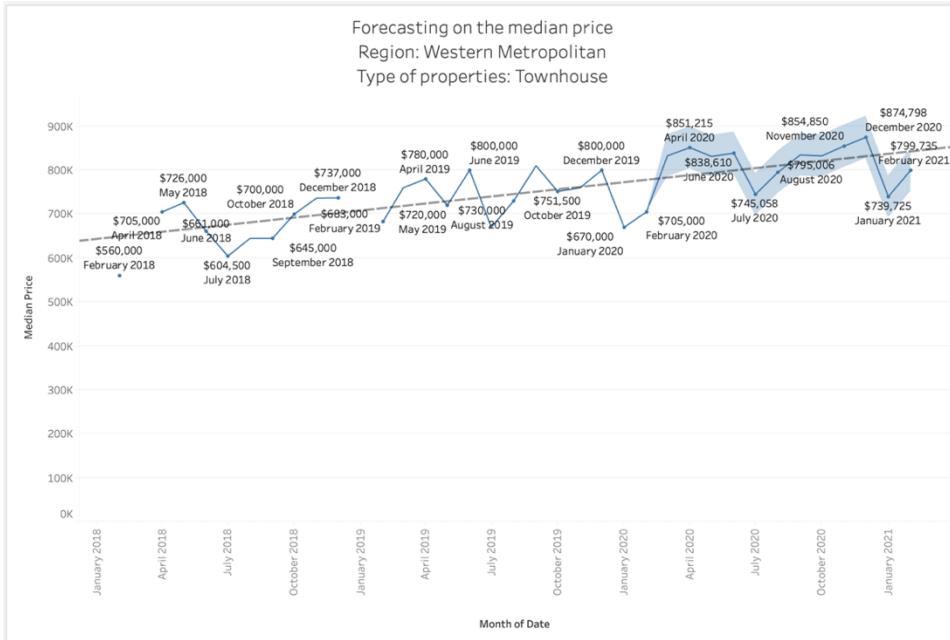
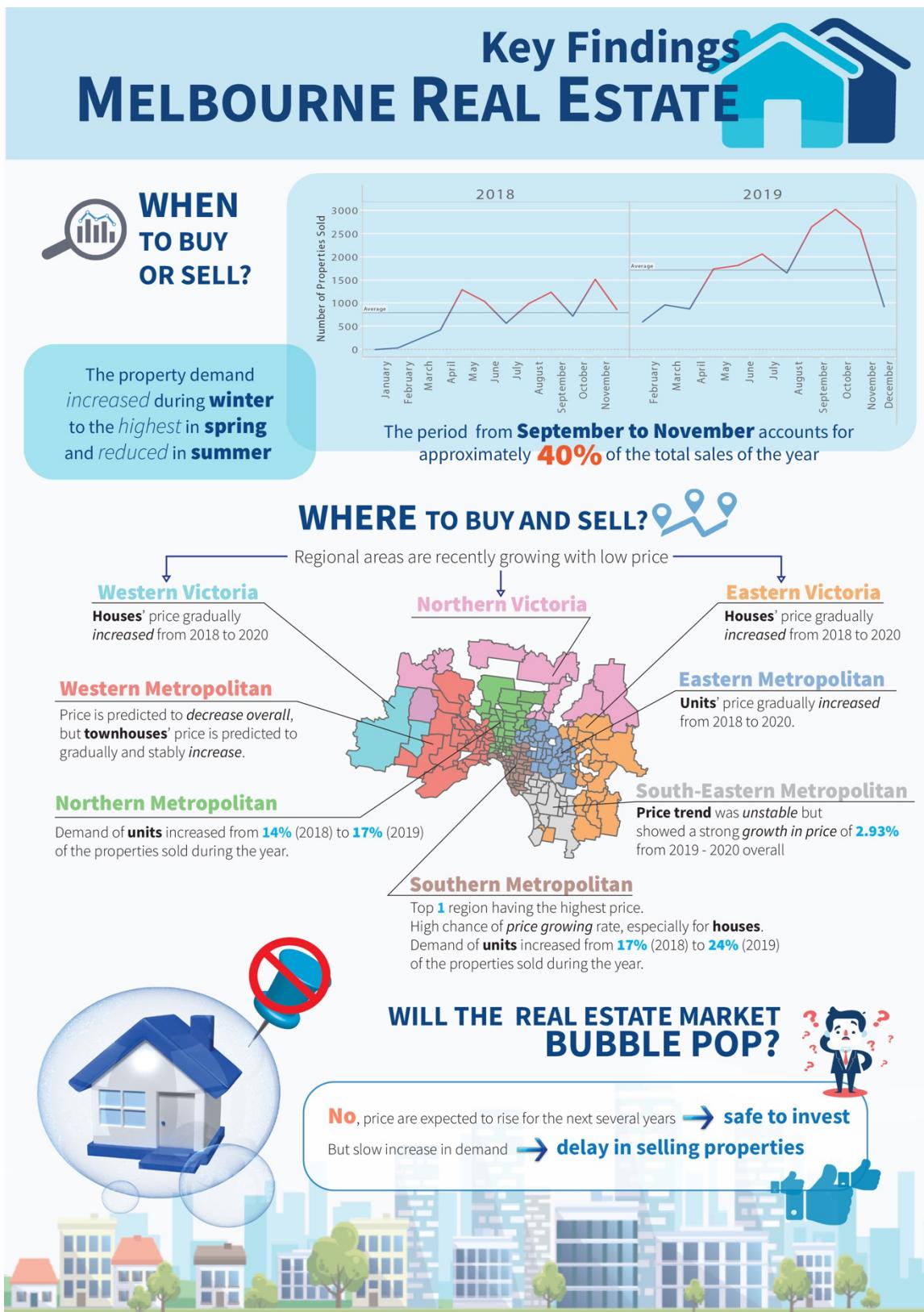


Figure 2222: The forecasting trend on median price for townhouses in the Western Metropolitan area

5 Infographic



6 Overall Recommendations

6.1 Distance from CBD for Investors on a Budget

For investors on a budget, it is recommended to buy further out from the CBD, as buying any type of property in Northern, Eastern or Western Victoria may be cheaper and a worthwhile investment, as they did not have any properties sold in 2018, few 100 in 2019 and a good start to 2020.

Considerably, as the clear upward trends in price of houses in Eastern Victoria are shown (refer to section 4.4), it is safe to invest in this type of properties in these two regional areas.

6.2 Units in CBD Regions

The demand for Units in South and North Metropolitan regions was more than doubled from 2018 to 2019, so looking into buying a unit in those regions could be a solid investment for future years.

6.3 When to Sell or Buy

The spring months including September, October, and November hold about 30%-45% of the properties sales in both 2018 and 2019. It is recommended that when trying to sell an investment property it is best to do so in those months as well as checking the median price trend (increasing or decreasing).

6.4 Region to Avoid

As shown in section 4.6.1 it would be recommend not buying in the North Metropolitan region as its prices are trending downwards. Also, townhouses in the Western Metropolitan are predicted to decrease in prices, thus should be avoided.

6.5 REM Bubble

The REM bubble is not expected to pop as prices are expected to grow for the next several years until its peak. Thus, investors are safe to invest in areas of high growth but are advised to expect small delays in selling properties due to having less buyers in the market. Northern and Eastern Victoria have been showing consistent growth in 2018-20, hence would make worthwhile investments with safer returns. (Figure 7)

6.6 Regions that are worth investing in

Concluding from section 4.2, the regions Eastern Metro and Southern Metro are worth investing, as they have potential in creating future opportunities based on their growth in median property price. The region South-Eastern Metro are expected to grow further in the future considering the improvement of 2.93% in property price in just one quarter of 2020.

7 Conclusion

The real estate market is currently facing various levels of growth in multiple different sectors of the market. Hence the analysis of market data is the decisive factor in obtaining successful capital gains. PWA offers our clients a variety of options for first-home buyers and diverse portfolio investors at alternative price points. We provided answers to who, what, when, where, why and how our clients from diverse perspectives should approach investments going forward. It was decided that high budget investors should investigate unit properties closer to the CBD in South Metropolitan, whereas low budget investors should search Eastern and Northern Victoria for stable growth.

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9 Appendix

Reason for Removal	Number of Rows
Land Size was Zero	2437
Building Area was Zero	77
Bedroom was Zero	12
Bathroom was Zero	18
Too Inconsistent	3
Year Built in the Future	1
TOTAL	2548

Table 1: Records Removed

Has Null Values	Number of Rows	Percentage of Nulls
Price	7093	22%
Distance From CBD	1	0%
Postcode	1	0%
Number of Bedroom	8217	25%
Number of Bathroom	8226	25%
Car Space	8726	27%
Land Size	11790	36%
Building Area	19979	61%
Council Area	3	0%
Latitude/Longitude	7971	24%
Year Built	18445	57%
Region	3	0%
Property Count	3	0%

Table 2: Null Fields