New Zealand’s Housing Bubble Jan’ 2021

INVESTIGATING PROPERTY AS AN ASSET
REAL ESTATE CASE STUDY

FEBRUARY 3

Housing and Real Estate with Ingrid Nappi
Authored by: Mona H & Bekzat M

Executive Summary

1. New Zealand is a very desirable country to live in, boasting an excellent standard of living, beautiful landscapes, safety, and high employment. Additionally, it is considered a climate haven amidst global warming fears.

2. The number of properties available for sale in New Zealand fell YoY by 24.5% and population growth outstripped estimated housing stock growth by 2.1%. Which indicates a high existing take-up level.

3. Both average Hosing prices and Rental prices have been experiencing a rising trend, +20% & up +4.2% respectively. This is because of lower Yields. Rental yields reduced by -6% and Market yields reduced by -20%. The downwards pressures indicate investment market bidding pressure.

4. In NZ, vacancy rates are low sitting at 2.5%. The high relative prices are not pushing people to the market-clearing level. The housing stock is the underlying issue.

5. Restricted efficient development of the land is contributing to housing and space scarcity in desirable areas. At the same time construction is not keeping up with net migrant inflows which have been positive every year since 2002.

6. Construction of residential properties in New Zealand is expensive, with costs of building a new home increasing by 60% post-Global Financial Crisis, this is due to geographical and labour pressures.

7. Government laws and regulations allow for loopholes in the taxing system, which act as an incentive to “Flip” properties for capital gains. Hence this market operates on an unsustainable speculative cycle, exacerbating the New Zealand Housing Bubble.

Market Snapshot

1. Trends of New Zealand Housing History

The housing sector in New Zealand is facing sharply changing trends in the last several years. The analysts and journalists refer to the current situation in New Zealand housing market as a "ticking time bomb". The threat of a property bubble is not anymore the rumours. The statistics underlying these discussions are indeed considerably unstable:

- Prices of houses surged by 20% between October 2019 and October 2020. For the first time, the median cost of the house reached 1 million New Zealand Dollars. (Financial Times, 2021)
- Housing ownership rates have been falling the last 2-3 years reaching 64.5%, which corresponds to the 70-year low minimum. (Financial Times, 2021).
- At the same time, the country government is failing to deliver on promises to tackle this crisis that they made more than three years ago. The waiting list for housing has increased three-fold reaching the level of 21,415. New Zealand is the country with the highest homelessness in the OECD. (Financial Times, 2021)
- What relates to migration statistics, according to the National statistics agency, annual net migration rate as of the end of June 2020 has reached 79,400, increasing by 51.8% in comparison to the last year index.

These trends lead to claiming the insufficient housebuilding, unaffordability of existing houses and high immigration rates being the main long-term reasons for the existing housing crisis in New Zealand. The citizens are set in front of the choice: either to remain homeless in awaiting for the government to take the situation under their control, or to drown in mortgages.

2. Housing as a Scarce Asset

Since the country's colonisation of the mid-19th century, New Zealand's residential sections have always been segmented by generous plots of land, typically 1000sqm/quarter-acre properties. Unlike international markets, many homes in metropolitan areas (excluding the CBD), have remained stand-alone houses, with gardens and white picket fences. Kiwis (demographic label for the citizens of New Zealand) are fixated on keeping their lawn spaces for their summer BBQ's and land policy restrictions due to indigenous rights, have **restricted efficient development of the land, and contributes to the degree of land scarcity in desirable areas.** Naturally,

as the principal cities in New Zealand became increasingly dense, the land median area decreased (graph left above) despite this, between 2002 to 2007, average sizes of new houses increased by about 10 square meters. This signalled an increasing demand in big cities and "sunshine" regions for holiday homes and rental properties in areas with capital gains potential (OECD, 2011). A flow-on effect from the pressures of the GFC ('07/'08), was the shortage of capacity conveyed to the construction industry. The speed at which new housing was being constructed was not adjusting to demand shocks. The supply elasticity determines the degree to which demand shocks materialise into changes in house prices, this drove speculative activity that pushes prices above fundamental levels (Barker, 2008). In 2021 the market is looking more out of reach than ever before.

3. Current Property Laws and Regulation

3.1 – Income Tax Act

The primary loophole that allows people to extract large rents from the New Zealand housing market is the existing Income Tax Act. Within this entails an "intention test", this deals with the acquisition of land to make a profit through resale. These provisions serve as a pseudo capital gain tax by taxing profits realised by property speculators at their personal tax rate (Reid & Tan, 2016). The primary downfall is that it is based on **self-selection and voluntary declaration** whether one intends to make a profit on this. The New Zealand government believes that there are many cases of owners that should be taxed under the current rule, however, it is difficult to detect whether a sale or purchase, is with intention of resale. (The Treasury, 2015, p. 85). Due to essential tax loopholes, property acquisition and re-sale are lucrative investments in New Zealand.

3.2 – "Bright-Line" approach

Interestingly the New Zealand government have decided that rather than applying stricter laws such as a capital gains tax they have opted for a softer "bright-line" approach which is an added section of legislation (namely, CB6A[6]) in 2015. This entails that if a property was sold within 2 years, that it is deemed as a capital gain and hence subject to income tax. In 2018 however, this property sale horizon was extended to 5 years, neither time frames were given any justificative. The introduction of a capital gains tax on property seems like an obvious route, however, it is continually rejected by parliament. Our opinion of the matter is that there is an existing bias within our government, since many government members are multi-homeowners, taxes would not play in their advantage.

3.3– Overseas Investment Act 2005

To mitigate, foreign investment price inflation, in 2018, New Zealand changed its law on the purchase of residential property to make it more difficult for non-New Zealanders to purchase houses in New Zealand. The 'Overseas Investment Act 2005' was amended 13 years after, not only to ban foreigners to invest in NZ but also channel investors into the construction of housing and new facilities such as hotels and rest homes. This was an attempt to increase the affordability of houses for New Zealanders.

3.4 – Construction Legislations

To construct new homes in New Zealand, there are four principles pieces of legislation: The Resource Management Act 1991 (RMA), The Local Government Act 2002 (LGA), Land Transport Management Act 2003 (LTMA), Building Act 2004. (OECD, 2018) The functions of these acts include sustainable management of natural resources, environmental effects, local infrastructure guides, design and construction practices and restrictions for sacred indigenous land. These add a level of complexity and restrictiveness within the development, which constrains housing supply. For example, a central Suburb in Auckland called Devonport is constrained by 'heritage protection' disabling construction of multi-unit homes.

4. Social impact on housing unaffordability

This housing bubble is a crippling national and social issue, with house ownership rates plummeting over the past 20 years with ownership dropping from 74% to 65%. In a recent census, it was shown that 1% of the population was living in extreme housing deprivation. Of this cohort, 71% were living in temporary overcrowded private dwellings and 10% in their cars New Zealand has one of the leading homelessness rates of the OECD (Barrett, J., 2018). In the preceding three years waiting for public housing has doubled, and a report in 2018 found that emergency housing providers were turning away 80-90% of help-seekers. (Cheng D, 2018). The most impactful scar this is leaving on the country is caused by the unequal equity distributions that are arising. The Maori people (indigenous to New Zealand) are the hardest struck, with a culmination of historic injustice, poor-quality affordable construction and income inequalities, has meant that persistent rising prices of affordable homes have marginalised this segment to a further poverty cycle. Between 1986 and 2013, the number of Māori and Pasifika people who owned properties dropped between 20% - 34.8%, while the national rate decreased by 15.3%. On the other hand, the rich are only getting richer, 50 % of the top 45 richest people in New Zealand have made their fortune in property. And finally, the Government also have a stake in the property market through their state housing project under 'Housing New Zealand', due to price appreciation rising by 75% ('12-'17) their stake is worth $21.6Billion, which is 20% of the Crown's net worth, even if they pay tax on it, do the government hold a bias perhaps..?

Public housing waitlist

Source: Ministry for Social Development/Ministry for Housing and Urban Development

Year	Eligible families and individuals waiting for public housing
Sep-14	4,189
Sep-15	3,399
Sep-16	4,602
Sep-17	5,844
Sep-18	9,546
Sep-19	13,966

Property Market

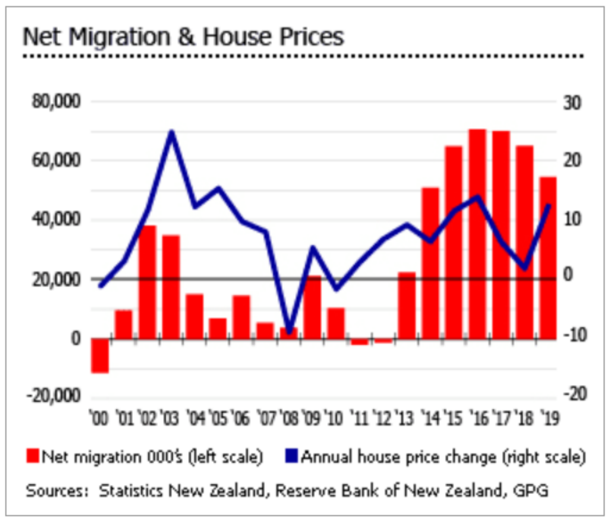
1. Demand Side

1.1 Domestic Residential Demand

Domestic demand is very strong, with NZ residents accounting for 95% of property purchase. Most investors own between one and three rental properties and are relatively unsophisticated "mum and dad" investors (RBNZ, 2015, p. 14). Looking at YoY differences between 2018 & '19, on average 22 more houses were sold each day. Unlike the international landscape where firms, or pension funds, insurance or institution are the core investors, New Zealand has comparatively smaller dispersed players within this landscape. The primary issue is that younger first home buyers cannot get on the property ladder.

1.2 Migrant Demand

A large pressure caused in recent times has been the large and volatile external skilled migration inflows due to international attractability. The net migrant inflows have been positive every year since 2002, that paired with low inflation and mortgage interest rates have led to high residential demand. (OECD, 2011). 70% of the migrant flows are from new immigrants, and unlike other countries, i.e U.S, New Zealand attracts foreigners with higher levels of qualification & income than the general population. This paired with the 30% of New Zealanders previously living abroad, bringing back with them higher levels of income, has led to an appreciation of local housing prices. In fact, **a one percent increase in population from higher inflows of returning Kiwis, is associated with a 6- 9% increase in house prices**. (Mare, D., et al. 2008).



1.2 Off-Shore Demand

People have coined New Zealand as a "Climate haven", due to the lower volatility of seasons, that paired with beauty and security, has drawn international interest. Before 2018, the NZ market was a free-for-all to purchase residential properties, it was considered a "bolt-hole" for wealthy people around the world. **Properties sold to overseas persons in 2016 were almost 6x higher** than in 2015 in places like Auckland and Queenstown, and **5% of the home transfers entered into by people without New Zealand citizenship** or residency (Bao, 2018). Like Vancouver and Melbourne, Chinese speculative buyers were the primary market, pricing locals out of property. The amendment of the foreign purchase policy has cooled down the foreign demand by 80% (stats.NZ, 2019) however exemptions are still in place for Australians and Singaporeans due to free trade deals and foreign buyers are still permitted to buy large new developments. Additionally, loopholes exist whereby foreign residents can purchase property on their family's behalf. So, pricing pressures from foreign investors are still present but done more discreetly. Together with the shortage of infrastructure and new construction, foreign investment in residential properties is believed to have amplified the existing housing unaffordability.

2. Supply Side

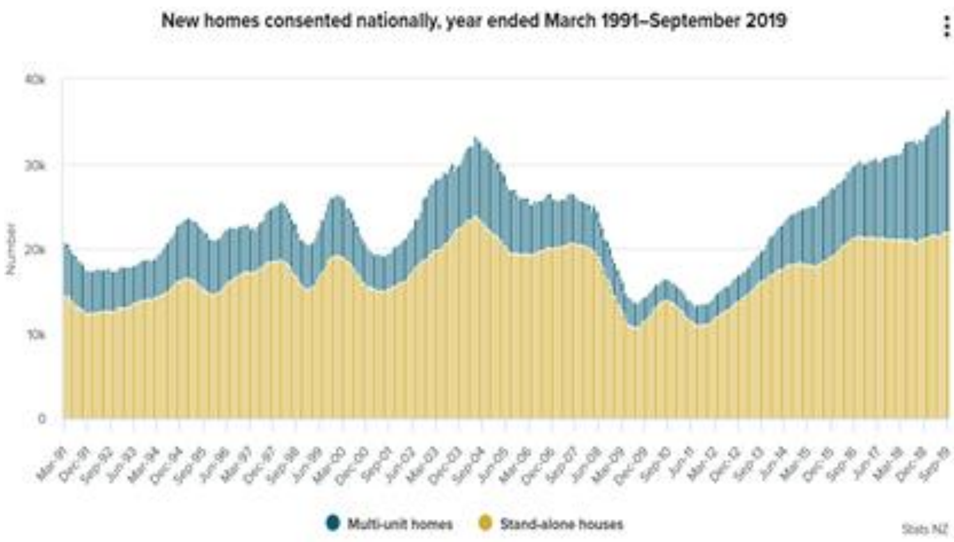
2.1 Existing/Second-hand Home Market

There are 1.9million private dwellings in New Zealand, which provides housing for 4.9million people, with occupancy rates of three people per dwelling. **The number of properties available for sale in New Zealand fell YoY by 24.5% to 18,230 units in December 2019**. This is the lowest level of inventory since records began, however dwelling construction consent rose by 13% YoY (34,628 units) (Global Property Guide, 2020). **Between 2012 and 2017 population estimated growth outstripped estimated housing stock growth by 2.1%.** (Govt.nz, 2018). Due to limited stock, the majority of house sales are from second-hand/ existing property. In 1936 a major construction project went underway by the Labour government to created State housing, these were suburban housing built by the government and rented to poorer families. This housing stock was very well built using high-quality materials; however, a lot of these properties fell into the hands of private investors (arph, 2019). Many investors bought these homes at low prices and after renovating them, released them back in the market at a higher cost, disadvantaging the entry-level second-hand housing stock. With increasing density, many old office blocks and church buildings are now also being converted into residential properties. Therefor, the second-hand market is the target for investors, looking to squeeze the market for gains, after menial renovations and minimal development. Interestingly, since capital gains from the sale of a house is not taxed in New Zealand, but Rental incomes is, it is more lucrative to view the property as an asset than to involve it in the letting market.

2.1 New builds

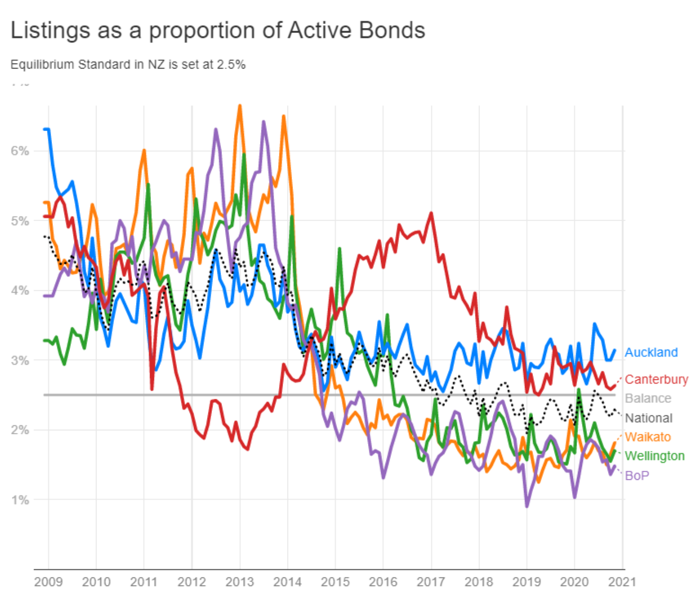
The flow-on effect from the pressures of the GFC ('07/'08), were conveyed to the construction industry, who were working at full capacity, had a significant shortage of materials and a shortage of skilled engineers. This resulted in the cost of building an 'average house' increasing by 60% (from '02-'08) (govt.nz, 2018). When comparing input and output PPI (Producer Price Indices) against the residential construction sector CPI (Consumer Price Index), there are significant cost pressures with Output PPI increasing by 24% i.e goods and services sold abroad, and an 11% increase in input PPI i.e raw materials and intermediary goods. Exemplifying the high costs of construction in New Zealand. The graph below showcases the dip in new construction permits during the GFC from '08-'12. The slowdown caused a major bottleneck, further putting pressure on housing stock which could no longer support demand.

In Auckland over the past decade, 30% of new consents have been granted, however growth levels were nearing 47% (govt.nz, 2018). To mitigate this, multi-unit homes are becoming progressively more popular. In 2019, 40% of new consented builds were apartment units (NZ stats, 2019). This is one way that the capacity of land available is being maximised to support high take-up level. **However, the slow rate of new construction has dampened available stock** and hence the traditional model of building more expensive homes for owner-occupiers, and older housing stock being passed down to the rental market has been disrupted.



2.2 Rental Market Take-up & Vacancy Rates

More than 64.5% of New Zealand dwellings are owner-occupied while 32% are rented. Rental growth across New Zealand is alarmingly high, especially over peak summer seasons and is only estimated to continue growing, **YoY demand has grown by +17%, while properties available to rent have been flat** (Global Property Guide, 2020). The communities that have seen the highest growth in property rentals are the Maori/Pacific Islanders, who saw an uplift from 27% to 57%, this shift has primarily been due to declines in state housing stock, making affordable homeownership out of reach for this demographic (govt.nz, 2018). The reason why available property to rent has been flat despite a steady continuation of new builds has been due to high house sales for owner occupation. In the last two years, 36% of rental tenants moved because the house was being sold. **This trend indicates that investors prefer to sell for owner-occupation due to high market prices** (+25% overvalue), however. If they are to rent, **rental houses located in suburbs dominate dwelling stock over flat and apartments**, due to demand for family capacity (Massey University, 2018).



There are several reasons why renting and owning are far from perfect substitutes, particularly if distortions exist in rental markets (Girouard et al., 2006). In general, this is to do with different population segments, one targeting affordability and one higher-income segments, it comes down to perceived unsustainability for changes in the user cost of housing. Signs of stress within this market include rents rising faster than wages, and also low tenancy turnover, as people want to avoid risking being without a home. **New Zealand's rental vacancy rate is about 2.5%,** which is under the international market balance rate of 3%, which means take-up is higher than immediate supply. However, Auckland's Vacancy is sitting closer to 3.5%, due to the unaffordability (Jonett, 2020). The graph above left showcases **downturn in Vacancy rates over the past 10 years, which are signs of the tightening rental market.**

Investment Market

1. Investment Value

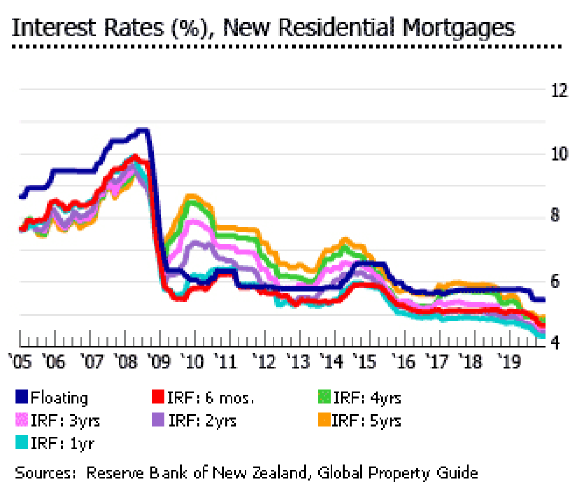
1.1 Investment Value Relative to HHI

According to the Deutsche Bank, New Zealand House prices have been overvalued by 30% relative to income and 82% overpriced relative to rents. And according to the Economist's global house price index, NZ house prices were 57% overvalued relative to income and 113% overvalued according to rents (Global Property Guide, 2020). This is an exemplar proof that real estate differs from financial assets, and there is a gap between the financial world vs real world.

1.2 Mortgage Interest Rates & Investment Yield

New Zealand's mortgage market has boosted to 88.4% of GDP in 2019, up from just 51.4% of GDP in 1998. (Global Property Guide, 2020).

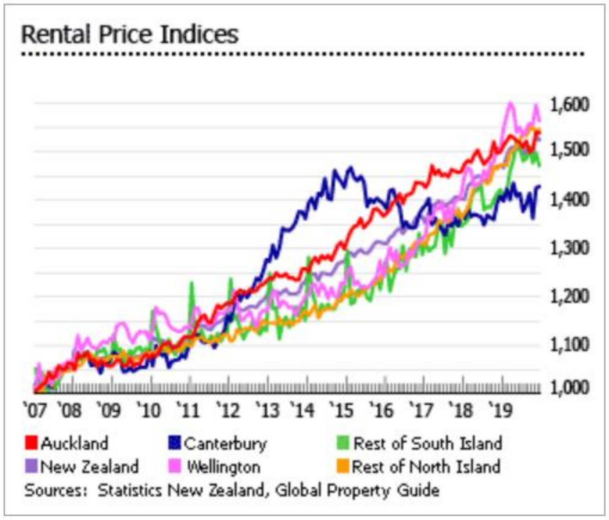
The falling interest rate trends started in 2015. At the beginning of 2021, the four biggest banks of New Zealand started the year by decreasing their one-year fixed-term mortgage rates to 2.29%. This is following from a 20% decrease from the previous values of rates and it corresponds to the record-low level.



The housing market is currently stressed under low-interest rates and a shortage of housing stock. The banks' economist expects "a few more cuts to come to mortgages,". The forecast is that these low-interest rates will hold for at least a year to ensure competitiveness in the lending space. (STUFF, 2020). Mortgage rates can also be interpreted as Investment Yields, low yields suggest lower risk and proof of housing being a safe/ resilient core plus investment. **The downwards pressure in investor yield indicates investment market bidding pressure.**

1.3 Rental Yield - Letting Market

Cash-on-cash return is referred to as "rental yield" in New Zealand, it is the ratio of annual net operating income to the amount of equity invested and is regularly applied to evaluate cash flow yields generated from income-producing assets (Yang, Y., Zhou, M., & Rehm, M. 2020).



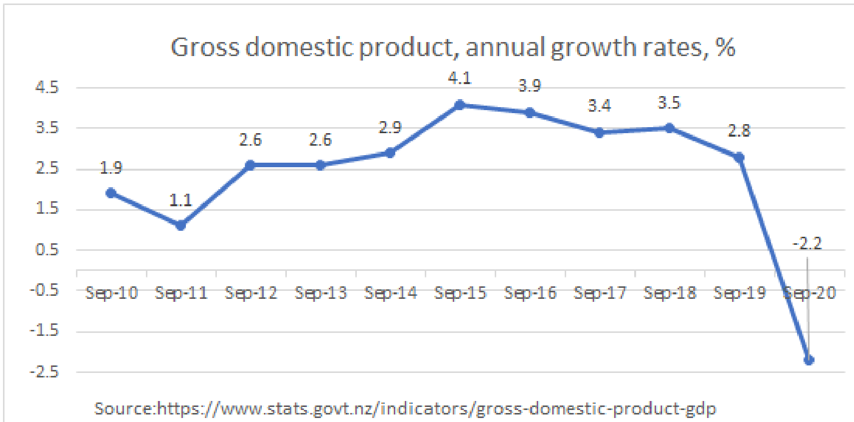
Converting second housing from owner-occupied to rentals provides more attractive returns then returns from apartments, because houses have a land component, which doesn't depreciate and can offer development options. In Auckland, rental yields on apartments range from 6.09% to 7.18%. Wellington has now moved ahead of Auckland, with rental yields ranging from 6.88% to 8.43%. Nationwide, the average rent for private residences reached $500 NZD (US$ 330) per week during the YTD 2019 – **up by 4.2%. Even if prices are up, over the past 2 years we have seen a decline in gross rental Yields of -8%** (June '18- June '20) (Ninness, 2020). In the real estate industry, it is known that when rental Yields decreases, prices increase, the price is determined by the market, but behind the price is the underlying value, this is made up by income produced through the building, this income is relative to space, which is determined by the letting market. Full circle.

1.4 Capital Gains - Investment Returns on House Price

Net operating income on the price of a house is called capital gains and sometimes coined as income yield, it is the profit derived from selling an asset for more than its cost, generally expressed as an annual percentage growth rate. In October 2020, national median house price increased by 19.8%, to reach $725,000 NZ, and Auckland hit an average house price of $1Million NZD, over the next year it is forecasted that a 16% (NZ.Herald, 2021). For a residential property investor, looking to make capital gains faster, they will invest in **lower-yielding centres such as Auckland**, because properties with high-yield tend to increase values less quickly. Over the past years, capital gains in New Zealand have increased by 2.8%. Auckland has experienced gains between 3.5% and -1.9%, and Wellington has seen the highest income yield at 6%. When analyzing markets, we must also look at the Market bond rates, as it is a measure of relative risk. In other words, "the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks" (Villadsen et al., 2017). Since property is low risk, it is comparative to the government bond market, when there is a huge demand, we often see a downward pressure, and when income yields, fall below bond prices (market Yield) this signals we are in a bubble. Currently, the New Zealand Government Bond has a 1.041% yield (Worldgovtbonds, 2021), as mentioned above, Auckland is flirting in this danger zone, insinuating bubble tendencies.

2. Economic Health

2.1 Robust Grow Path Amid COVID-19



A lot of New Zealand's economy is founded on the lucrative returns of the housing market, and growth in property is associated in rising GDP, with estimates to have expanded by 2.5% in 2019 (IMF, 2019). According to the National statistics agency, up until the COVID-19 crisis in the first half of 2020, New Zealand was facing continuous annual growth in GDP per capita since 2010. For the last six years, the economy's performance has been robust, with the growth of 2.8% in 2018, 2.6% in 2017, 4.2% in 2016, 4% in 2015 and 3.1% in 2014. For the economy to stay buoyant during the COVID-19, The Reserve Bank has liberalised the market for property investors, since by scrapping loan-to-value ratio restrictions, the central bank has given the green light for banks to lend more money to landlords, further fanning the flames of the market. Yet there are fears New Zealand's housing-led economy is highly vulnerable to a correction that could arrive as the government turns off COVID-19 life support.

3. Investors vs Speculators

On face value, it is difficult to distinguish between housing speculation from property investment, especially at a transaction level. It is agreed in the literature however that 'holding period' is the most telling signal, in the real-estate world, when a house is a speculative purchase, it is called "flipping". Coined by Depken et al. (2009) it occurs when "the purchase of an asset with the intent of quickly reselling the asset at a higher price". The primary practice of flipping houses comes from identifying an undervalued property and making improvements to add value to them and sell it at a higher price. The fundamental difficulty in detecting who the "flippers" are, is understanding the intentions of people upon acquisition. Additionally, speculation on a house price is actually a long-term strategy rather than short term, so flipping is not easily observable as one would assume.

As best said by Xiao (2010, p. 1727)***" .. in practice, it is difficult to distinguish an investor (fundamentalist) from a speculator. Even a long-term investor – who buys and holds an asset for decades – may be classified as a speculator. If he [or she] is primarily motivated by the hope of eventually selling the asset for a good profit".*** Through an academic study it was identified that only 8 per cent of 2012 rental purchases where non-speculative leaving 92 per cent of purchases involving varying degrees of speculation on future capital.The reason why this market shows speculative behaviours over opportunistic is because, it is being driven by thrills of chasing fast wins in the current market landscape, or riding in a "Bull Market". However, the worries of following the crowds, is that the market's upswings may be founded on shaky grounds and speculators manipulate the market to over inflate value more, rather than a more diligent approach observed in opportunistic behaviour trends.

Protecting Value of Property asset

1. Risk Mitigation Proposal

1.1 Preventing the housing crisis

The guidelines on how to deal with the real estate crisis usually start with the first step, which is to try to prevent and avoid it. The World Economic Forum (2015) suggests avoiding boom-bust cycles, by taking the main variables like **housing prices and mortgage interest rates under control**. Several researchers had created their own "checklists" of the bubble indicators. New Zealand is an interesting case, due to specific nuances. We have highlighted these below to showcase the uniqueness of the New Zealand bubble and how prevention is more challenging.

1. Housing prices increase and the individuals expect this growth to continue for a long time. As a result, there is a growing interest of the public in housing as an investment asset. - **Aligned**
2. Housing supply may generally increase as a result of this increase in the prices, causing a rise of vacancy rates. This results in speculative behaviour of the households, rushing to sell. Another effect of oversupply is the decrease in the lending standards. - **Misaligne**d – *In NZ, housing stock is the underlying issue, an increase in prices, is not pushing people out at the expected market-clearing rate to the high take-up level and price inelasticity.*
3. Increase of inequality between the households demanding and owning the housing. This is an indicator of growing distress in society that may be reflected by media. - **Aligned**
4. Fluctuating changes in financial indicators: interest rates, ratios (debt coverage, loan to value, etc.). **Somewhat aligned** – despite fluctuations in New Zealand we are seeing consistent rising trends of market pressures instead of volatility.

1.2 Government intervention

The situation on the New Zealand Housing market came to the current state not without interference or absence of sufficient interference from the government. In 2017 in her election campaign, Elizabeth Ardern, the New Zealand prime minister, promised to address the housing issues if elected. The statistics show that since then the situation worsened. Out of promised 100,000 affordable houses to be constructed, only 602 were delivered by August 2020 (Financial Times, 2021). The new solution has not yet been undertaken.

At the end of last year, the government of New Zealand attempted to resolve this issue with the help of the Central Bank (Reserve Bank of New Zealand or RBNZ) by proposing to add the housing costs to the monetary policy remit. RBNZ has warned the government about potential negative effects. Their fears were related to potential weakening of monetary policy and the overall financial market efficiency. Namely, according to RBNZ, reconsidering the interest rates, which already have reached its historical minimum, would lead to the macroeconomic risks, like the increase of unemployment and fall of inflation below target.

Instead, the Central Bank proposed to take over the role in setting the debt-to-income limits on mortgage lending. This new RBNZ's role could soften the prices for private investors but could create obstacles for first-time buyers. So far, neither of the proposed solutions was put into action. However, the media notices that the Ministry of Finance has a right of changing the monetary policy remit without consulting with the Central Bank (Reuters, 2020; Bloomberg, 2020; Financial Times, 2021).

In Real Estate, it is too often forgotten that housing is more than an **asset**, it's a multi-dimensional concept, involving the concept of **Activit**y, through the construction sector and most fundamentally, it encompasses the concept of **Space** sq/m for humans to live. When speculators, only see a monetary gain from homes, what they are doing is driving prices up, disadvantaging lower-income first-home buyers. To conclude: Low vacancy rates, high take-up levels, low yields, low-interest rates, high rental and property purchase prices, with a capital gain dipping near Government Bond levels, are indicators that this bubble is close to collapse.

Bibliography

1. Barrett, Jonathan (May 20, 2018). "Left behind: why boomtown New Zealand has a homelessness crisis". Reuters.
2. Yang, Y., Zhou, M., & Rehm, M. (2020). Housing prices and expectations: A study of Auckland. International Journal of Housing Markets and Analysis, 13(4), 601-616. Doi:10.1108/ijhma-12-2019-0122
3. Derek Cheng is a political reporter for the New Zealand Herald (2018-02-11). "Homeless crisis: 80 per cent to 90 per cent of homeless people turned away from emergency housing". ISSN 1170-0777.
4. Part 2: Māori housing needs and history, and current government programmes. (2004.). Retrieved January 24, 2021, from https://oag.parliament.nz/2011/housing-on-maori-land/part2.htm
5. Stillman, Steven and Maré, David C., Housing Markets and Migration: Evidence from New Zealand (May 2008). Available at SSRN: https://ssrn.com/abstract=1146724 or http://dx.doi.org/10.2139/ssrn.1146724
6. Policies to Rebalance Housing Markets in New Zealand. (2011). OECD Economics Department Working Papers. Doi:10.1787/5kg8gj13xxf5-en
7. High-density housing on the rise: Stats NZ. (2019). Retrieved January 25, 2021, from https://www.stats.govt.nz/news/high-density-housing-on-the-rise
8. Tran Bao Cao (2019) Foreign Investment In New Zealand Residential Property. (2019) 25 Cljp/Jdcp
9. Global Property Guide. (2020). New Zealand's amazing house price boom. Https://www.globalpropertyguide.com/Pacific/New-Zealand/Price-History#:%7E:text=In%20Q3%202019%2C%20the%20total,billion)%20from%20a%20year%20earlier.
10. A Stocktake of New Zealand Housing (2018, February). The Beehive. Https://www.beehive.govt.nz/
11. Massey University, New Zealand. (2018). Massey University of New Zealand - Te Kunenga Ki Pūrehuroa - Massey University. New Zealand Residential Market Report June. Https://www.massey.ac.nz/
12. Jonette.Regions Rental Listings Compared. (2020, November). Rental Market Stats. Https://jonette.co.nz/listings/listings-on-trademe/percentage-of-rentals-adver.html
13. New Zealand Government Bonds - Yields Curve. (2021). New Zealand Government Bonds - Yields Curve. Http://www.worldgovernmentbonds.com/country/new-zealand/
14. Mayer, C., 2011. "Housing bubbles: a survey", Annual Review of Economics, Vol. 3, pp. 559-577.
15. Global Property Guide, February 11, 2020. "New Zealand's amazing house price boom"
16. World Economic Forum, January 8, 2015. "3 steps to preventing housing bubbles"
17. Charalambos Pitros, Yusuf Arayici, 2016. "How to identify housing bubbles? A decision support model" (DOI: 10.1108/IJHMA-01-2015-0002)
18. Reuters, December 11, 2020. "NZ central bank says monetary policy not best way to cool housing market"
19. Ninness, G. (2020, August 5). *Residential rental yields have remained steady this year, although*. Interest.Co.Nz. https://www.interest.co.nz/property/106266/residential-rental-yields-have-remained-steady-year-although-falling-interest-rates
20. Bloomberg, December 11, 2020. "Orr Rebuffs Robertson on Adding House Prices to RBNZ Goals"
21. Auckland Regional Public Health Service (2019) retrieved from https://www.arphs.health.nz/

Thank You.