

House Prices and Wealth Inequality in New Zealand

Abstract

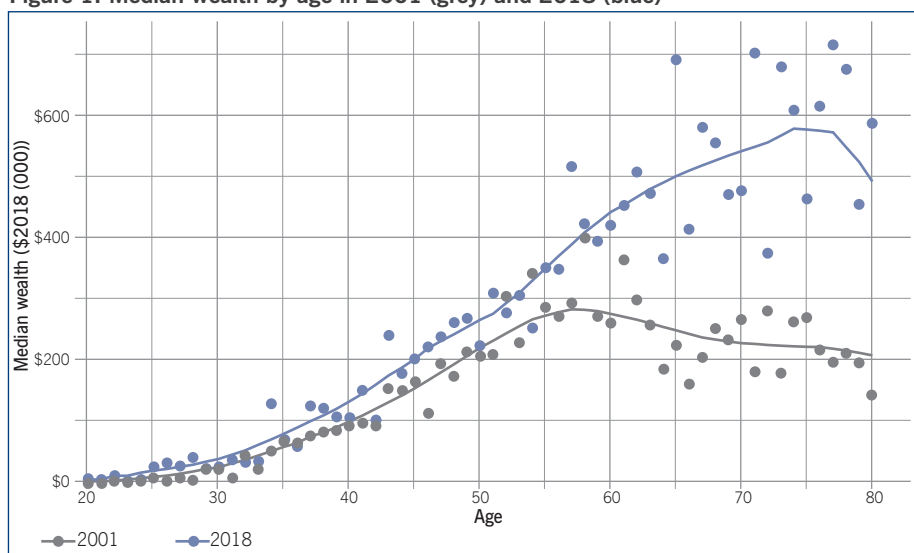
This article discusses the relationship between house prices, the wealth distribution and wealth inequality. It considers long-term changes in overall wealth distribution in New Zealand and the share of wealth that is held in the form of housing. It also explores the potential impact of large increases in house prices using a ‘scenario’ approach – modelling the effect of house price growth scenarios on the 2018 wealth distribution and, in turn, wealth inequality, while holding all else constant. The article shows how looking at headline measures can obscure changes in wealth inequality between groups. It also reinforces the value of complementing such analysis with measures that illustrate other dimensions of wellbeing.

Keywords wealth inequality, house price growth, home ownership rates

For many New Zealanders, buying a house has traditionally been the first rung on the wealth ladder. But there have been questions about how this wealth ladder has changed over time, such as the degree to which home ownership is moving out of reach of first home buyers and people reaching retirement age with little or no housing wealth.

To help investigate these questions, this article considers the relationship between house prices, the wealth distribution and wealth inequality. This involves looking at both the headline Gini coefficient of the whole population and decompositions of this measure for different population groups. It also considers other measures, such as the incidence of material hardship, and data that illustrate the life-cycle pattern of wealth accumulation over the last 15 years.

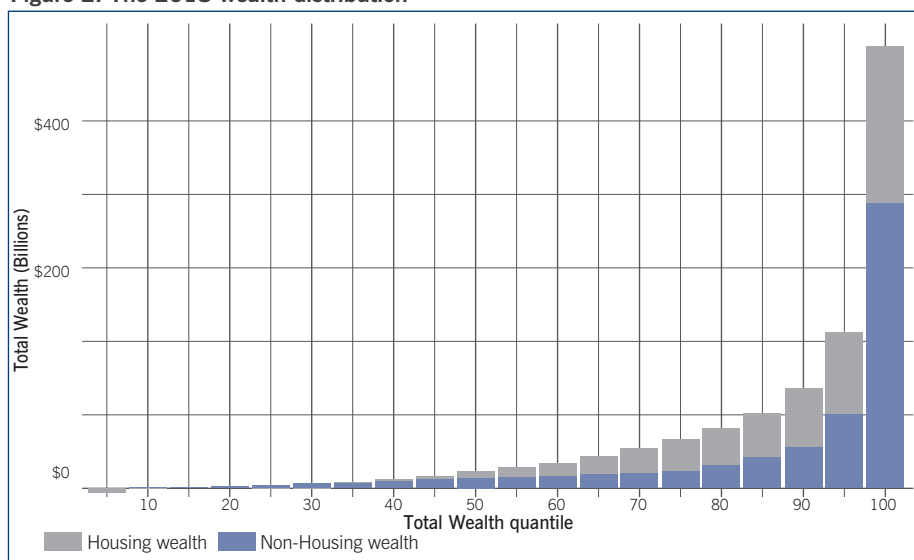
Figure 1: Median wealth by age in 2001 (grey) and 2018 (blue)



Note: Solid lines are smooth fits through the individual data points.

Sources: Treasury, 2021, which used data from the Household Savings Survey 2001 and the Household Economic Survey 2014/15 and 2017/18. Differences in survey sampling methodology were accounted for, but differences in survey questions and definitions may explain some of the remaining differences.

Figure 2: The 2018 wealth distribution



Source: Household Economic Survey 2017/18.

Method and data

Method

This article considers changes in wealth inequality as measured by the Gini coefficient (a more detailed explanation of the method can be found in Symes, 2021). The Gini coefficient is commonly used to measure relative wealth inequality and is unchanged if everyone’s wealth increases by the same percentage amount.

The most recent available data on the wealth distribution are from the Household Economic Survey (HES) in 2017/18, so it is not yet possible to directly measure the impact of recent changes in house prices. (The HES 2021 wealth data were not available at the time of writing.) The article thus instead models a housing price shock

that inflates all housing assets by the same percentage increase, while keeping all other components of wealth unchanged. Comparing the Gini coefficient of the baseline distribution with the inflated distribution can then give an estimate of the effect of house price increases on wealth inequality.

This is a highly stylised exercise, and changes in the return on other assets (such as financial assets) will also have an important effect on inequality. It is thus useful to consider the findings of this work alongside other relevant research, such as Reserve Bank of New Zealand work on the household cash flow effects of low interest rates (Nolan, 2021).

Using a single number to measure wealth inequality across a whole population hides the complexity of who gains and who loses from changes in wealth. To better understand how a change in house prices affects different groups, the population can be split into homeowners and non-owners. This article thus decomposes the total Gini coefficient into within-group inequality and between-group inequality to better understand the implications of one group increasing their wealth more than another group. The article also compares these groups by share of population, share of wealth, housing costs and material hardship status, to provide context for why wealth inequality might be concerning.

Data

The wealth data used, from the 2017/18 HES, include detailed breakdowns into various components of wealth (e.g., property, financial, and physical assets and liabilities), including wealth from household-related trusts and businesses. The HES has unit-record data at the individual, family and household level for approximately 3,000 representative households. This wealth data can be linked to Treasury’s TAWA (Tax and Welfare Analysis) model to include various components of income and linked with material wellbeing data from HES 2017/18.

Changes in the wealth distribution over the last two decades

The Treasury’s recent long-term fiscal statement (Treasury, 2021) showed how the wealth distribution has been changing over the last two decades. Important aspects of wealth include how it is distributed by age, as people generally accumulate wealth over their working life, and homeownership, as housing is a major component of wealth in New Zealand.

Total wealth increased between 2001 and 2018, and older people gained relatively more than younger people (Figure 1). Indeed, the number of people aged 65 and older in the top wealth quintile increased from around 30% to about 50%. This will have had multiple causes, including changes to the housing market (e.g., house prices and interest rates), capital gains accruing to certain cohorts more than others, and changes in the labour market.

The role of housing

The wealth distribution in New Zealand is unequal (Rashbrooke, Rashbrooke and Molano, 2017). Part of this is due to life-stage effects, which have a big impact on what assets and liabilities people own. A certain level of wealth inequality might be expected between young people and old people, as – as already noted – people generally accumulate wealth over their working life, and particularly by becoming homeowners. Younger people are more likely to be renters and in the bottom half of the household wealth distribution, whereas older people are more likely to be homeowners and in the top half.

The 2018 wealth distribution

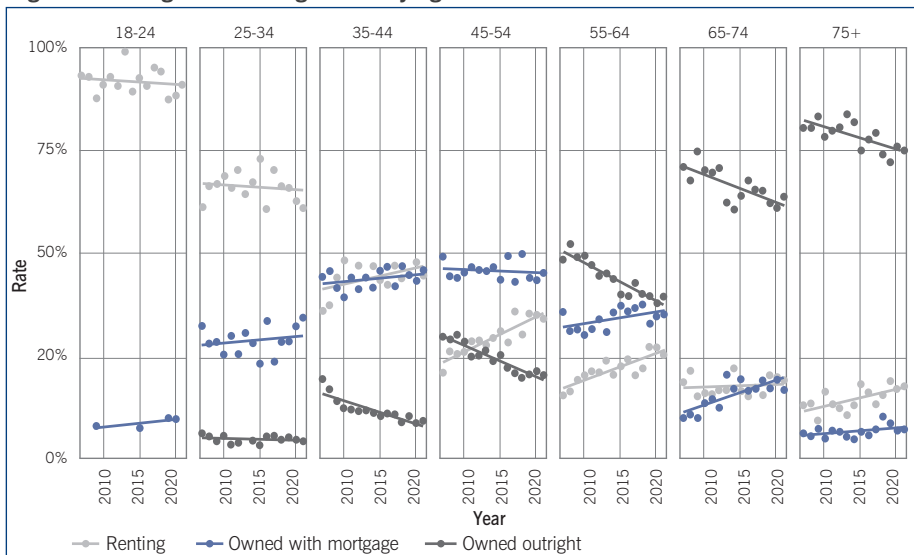
Housing wealth is the largest and most widely held type of wealth in New Zealand, as shown in Figure 2. Housing wealth is valued using house prices, and these have been rising quickly for several years. REINZ figures show that, although house prices have fallen recently, between June 2018 and June 2021 the median house price in New Zealand had annual growth of 4.5%, 8.9% and 27.9%, leading to a total increase of 46%. Over the last two decades, the house price index (which incorporates market activity) had average growth of 7.2% each year.

The wealth of the richest New Zealanders is a special case, as, along with housing and property, they own much of New Zealand's business and financial wealth. Non-housing assets are the main component of their wealth, including shares in the stock market. Between June 2018 and June 2021, the S&P/NZX 50 index increased annually by 15.2%, 9.1% and 12.9%, leading to a total increase of 45%. While total growth in shares is similar to total growth in median house prices over the last three years, the stock market has been more stable year to year.

Wealth and the life cycle

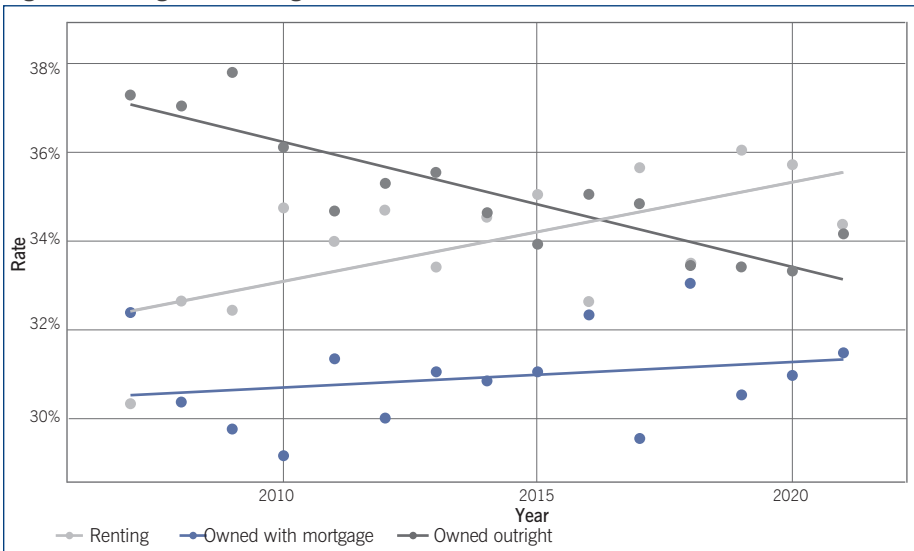
At the aggregate level, there is often a pattern where people start as renters, take their first step onto the wealth ladder to become homeowners paying mortgages, then eventually pay off their mortgages and own their homes outright. Figure 3 illustrates this life-cycle pattern by showing tenure rates for different age bands.

Figure 3: Changes in housing tenure by age over time



Source: Author's calculations based on HES 06/07 through to 20/21, i.e. 15 years. Straight lines are indicative linear fits. Rates of each type of tenure are for households grouped into age bands based on the oldest person in the household.

Figure 4: Changes in housing tenure rates over time



Source: Author's calculations based on HES 2006/07–2020/21, i.e. 15 years. Straight lines are indicative linear fits. Rates of each type of tenure are the average for all households.

However, this pattern appears to have been slowly shifting over the last 15 years. In total, the proportion of households who rent appears to have been growing, while outright homeownership rates have been falling (Figure 4). Figure 3 shows that this trend is strongest in the 45–54 and 55–64 age bands.

These results suggest a potential shift in the housing life cycle between cohorts, with older generations achieving higher outright homeownership rates than younger ones who are renting for longer. This is reinforced by Figure 5, which shows that average housing costs for renters and mortgage-payers have been growing, while outright owners' housing costs have remained relatively stable.

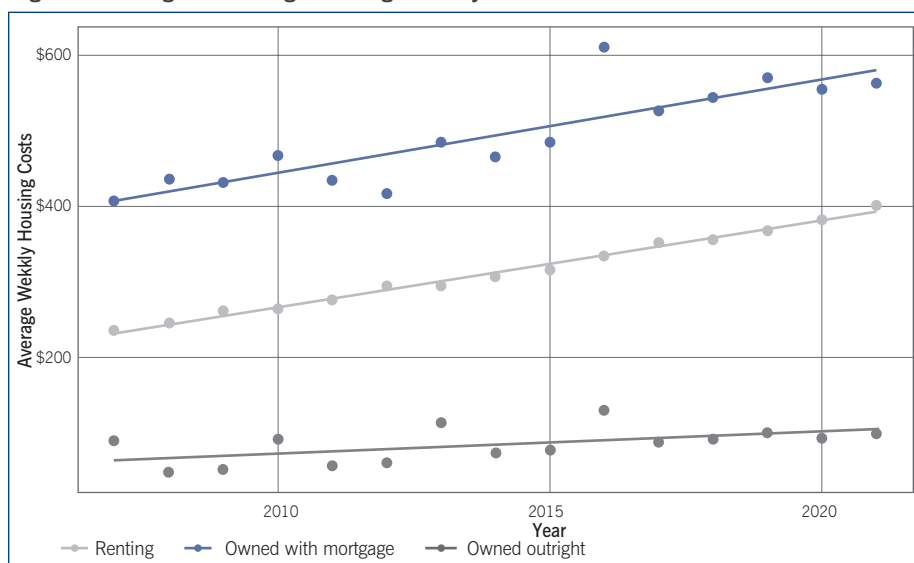
Implications for wealth inequality

How evenly is current wealth distributed?

One way to measure how evenly wealth is distributed is to calculate the Gini coefficient. The Gini is just one potential measure of inequality, but has the advantage that it is widely used and understood. It is a measure of relative inequality, which is high when a small number of households hold a large percentage of total wealth. An increase in the Gini suggests an increase in inequality.

Symes (2021) estimates a baseline Gini coefficient for the wealth of all households in 2018 of 70.8% ± 1.8%. Housing wealth, with a Gini coefficient of 73.7% ± 1.7%, is slightly more evenly distributed across all households than non-housing wealth,

Figure 5: Changes in average housing costs by tenure over time



Source: author's calculations based on HES 2006/07–2020/21, i.e. 15 years. Straight lines are indicative linear fits. Rates of each type of tenure are the average for all households.

Table 1: Effect of a 10% increase in house prices on the Gini coefficient

	Total Population	Within Owners	Within Non-owners	Between Owners and Non-owners
Baseline Gini	70.8% ± 1.8%	59.5% ± 2.2%	82.5% ± 4.2%	86.4% ± 1.3%
Inflated Gini	70.1% ± 1.8%	58.3% ± 2.3%	82.5% ± 4.2%	86.7% ± 1.3%
Change	-0.7% ± 0.1%	-1.3% ± 0.1%	0.0% ± 0.0%	0.3% ± 0.1%

Source: author's calculations based on HES 2017/18

Table 2: Population shares of house owners and non-owners

Populations	Population Share	Wealth Share
Owners	64% ± 1%	92% ± 2%
Non-owners	36% ± 1%	8% ± 2%

Source: author's calculations based on HES 2017/18

which has a Gini coefficient of 76.0% ± 1.6%. Housing and non-housing wealth are both more unequal than total wealth, due to households not all holding similar proportions of each type of wealth.³

Over the last couple of decades, total housing wealth has increased much more than non-housing wealth. Between 2000 and 2013, housing's share of total wealth increased from 38% to 57%, while the proportion of households owning houses fell slightly from around 67% to around 65% (Irwin and Irwin, 2018).

Measuring wealth inequality poses challenges (Crampton, 2019), but previous studies have found broadly similar values for the Gini coefficient of adult wealth, with most studies measuring between 65% and 75%. Initially, the adult wealth Gini coefficient appears to have increased slightly (becoming more unequal) from

2004 to 2006 (Le, Gibson and Stillman, 2012). However, in the last decade it appears to have been slowly decreasing (becoming more equal), trending down by an average 0.5 percentage points per year since 2010 (author's calculations based on Credit Suisse global wealth reports).

House price growth and the Gini coefficient

Given that so many households have housing wealth, it may not seem immediately obvious how increasing house prices might affect total wealth inequality. One way to estimate the effect of house prices on wealth inequality is to think about what would happen if the value of all housing assets went up by the same percentage overnight with no changes in ownership, while all other assets and liabilities stayed the same.⁴ This article presents a simulation of this thought

experiment using wealth data from HES 2017/18.

Table 1 shows the changes in the Gini (and confidence intervals) for the population as a whole and for key population subgroups. Across the whole population, the results show that a 10% increase in house prices causes an estimated 0.6–0.8 percentage point drop in the Gini coefficient (from 70.8% to 70.1%).

This may seem surprising. How can it be that there is a fall in wealth inequality for the total population when house prices grow? Partly, this is because the people at the top of the wealth distribution have so much of their wealth in businesses and investments. A general increase in housing wealth lets the less-wealthy middle class catch up with them, lowering the relative inequality within homeowners. The Gini for homeowners falls from 59.5% to 58.3%, and this effect dominates because a large share of the population own homes. In 2018, homeowners made up 64% of the total population and owned 92% of total wealth (Table 2).

Inequality between homeowners and renters

But the relative gap between homeowners and renters increases when housing wealth increases, from 86.4% to 86.7% (Table 1). Renters, who are predominantly younger and poorer, become relatively less wealthy. Homeowners, who are predominantly older and richer, become relatively wealthier. This increase in wealth inequality is hidden when looking at the combined total population, because there are more homeowners than non-homeowners.

The results look similar in direction when simulating larger house price increases, but the inequalities begin to approach limiting values as housing assets become the dominant component of wealth. The wealth inequality among homeowners trends towards a minimum of 46.5% ± 2.5%, equal to the Gini coefficient of homeowner housing assets. The wealth Gini coefficient of the total population moves towards a lower bound of 66.4% ± 1.9%, set by the distribution of housing assets and the relative population of owners and non-owners. Meanwhile, inequality between homeowners and nonowners moves slowly towards 100%, as

housing assets start to overshadow non-owner wealth.

Our results are similar if housing and shares are increased at the same time, or if commercial property is included with housing. In each case, the results show that the relative gap between asset owners and non-owners widens.

Comparison with data on material hardship and housing costs

The measures of wealth inequality above do not tell us about the potential flow-on impacts of house price increases. For example, this article does not consider how an increase in the relative wealth of homeowners compared with non-owners might affect household spending or saving. However, understanding how ownership or non-ownership of housing is already associated with being in difficult life circumstances provides background on why one might be concerned about a widening gap.

This article focuses on households who were in material hardship (DEP-17) or who had high housing costs (greater than 40% of disposable income) as two key indicators of wellbeing. Comparing homeowners and non-owners shows that the existing wealth disparity between these two groups correlates with households being in these unfavourable circumstances.

The results show that around 6% of households were non-owners who were experiencing material hardship. These households had approximately zero wealth, and they were clustered near the bottom of the wealth distribution (see Table 3). Only 1% of households were owners and in material hardship, and they were clustered around the middle of the wealth distribution. This shows that there is a strong correlation between non-ownership of housing and being in material hardship.

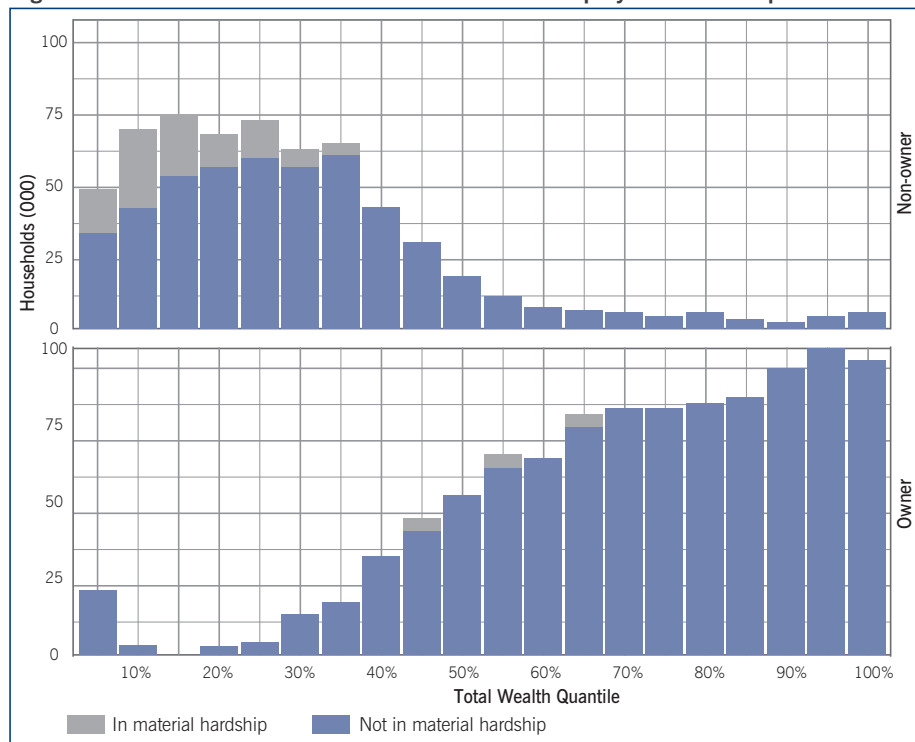
Material hardship is a multidimensional and qualitative indicator, which makes it hard to say how it might be affected by an increase in house prices. There are outstanding questions regarding the drivers of material hardship, including the potential links with high housing costs and low incomes, which would help to understand how people might move into or out of material hardship.

Table 3: Incidence of hardship

Populations in Hardship	Population Share	Wealth Share
Owners	1% ± 0%	1% ± 0%
Non-owners	6% ± 1%	0% ± 0%

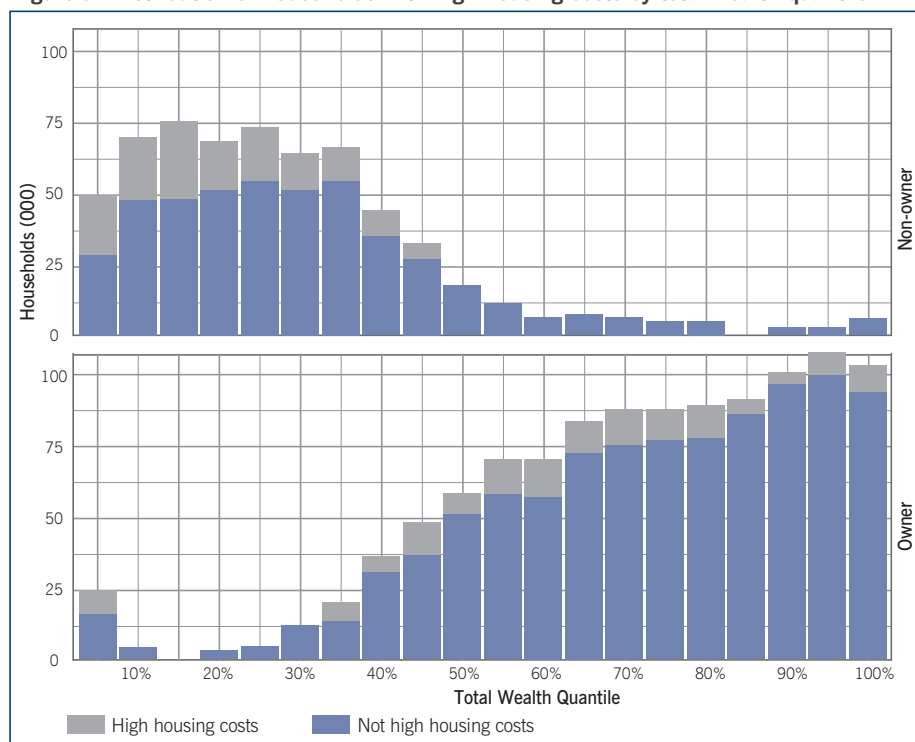
Source: Author's calculations based on HES 17/18

Figure 6: Distributions of households in material hardship by total wealth quantile



Source: Author's calculations based on HES 17/18.

Figure 7: Distribution of households with high housing costs by total wealth quantile



Source: Author's calculations based on HES 17/18

Focusing on household housing costs shows that non-owners were almost twice as likely as owners to have high housing costs; that is, housing costs that were greater than 40% of disposable income. Non-owner households with high housing

Table 4: Incidence of high housing costs

Housing Costs	Populations	Population Share	Wealth Share
Low	Owners	57% ± 1%	82% ± 3%
	Non-owners	28% ± 1%	7% ± 2%
High	Owners	8% ± 1%	10% ± 3%
	Non-owners	8% ± 1%	1% ± 0%

Source: Author's calculations based on HES 17/18

costs also had very low wealth, as shown in Table 4 and Figure 7. While the drivers of owners' and renters' high housing costs may differ (for example, in some cases owners may choose to have high housing costs to pay down their mortgage faster), this suggests that there is a relationship between non-ownership of housing, high rental costs and living in material hardship, which is relevant to any discussion on how increasing house prices may be making it harder for non-owners to get onto the first rung of the wealth ladder in New Zealand.

Conclusion

This article finds that housing wealth is the largest and most widely held type of wealth in New Zealand, and that, partly reflecting house price growth, wealth has been increasing over time. Although a certain level of wealth inequality is expected, as people accumulate wealth over their working life, particularly by becoming homeowners, these results suggest that older generations are achieving higher outright homeownership rates than younger generations.

Overall, a scenario approach suggests that wealth inequality slightly decreases when housing wealth increases, all else equal. But this does not tell the complete story. This article also finds that house price growth leads to increases in wealth inequality between those already on the wealth ladder and those not on it. Households who have not made it onto the wealth ladder are also more likely to be living in material hardship or to have high housing costs.

The importance of these findings is reinforced by data on the life-cycle pattern of wealth accumulation, which appears to have been slowly shifting over the last 15 years. An increasing proportion of households, including in the 45–54 and 55–64 age bands, rent. In this context there

is real value in not only using headline measures of inequality, but also considering changes in wealth inequality between those who are on the housing ladder and those who are not.

1 The views, opinions, findings and conclusions or recommendations expressed in this article are strictly those of the author. They do not necessarily reflect the views of the Treasury or the New Zealand government. The Treasury and the New Zealand government take no responsibility for any errors or omissions in, or for the correctness of, the information contained in this article. The article is presented not as policy, but with a view to inform and stimulate wider debate.

2 The results in this article are not official statistics. They have been created for research purposes from the Integrated Data Infrastructure (IDI), which is carefully managed by Statistics New Zealand. The IDI is a large research database which contains administrative data about people and households. These data come from government agencies and non-government organisations: for example, income and tax records from Inland Revenue and social benefit records from the Ministry of Social Development. For more information about the IDI please visit <https://www.stats.govt.nz/integrated-data/>. The results are based in part on tax data supplied by Inland Revenue to Statistics New Zealand under the Tax Administration Act 1994 for statistical purposes. Any discussion of data limitations or weaknesses is in the context of using the IDI for statistical purposes and is not related to the data's ability to support Inland Revenue's core operational requirements. Access to the survey data used in this study was provided by Statistics New Zealand under conditions designed to give effect to the security and confidentiality provisions of the Statistics Act 1975. The results presented in this study are the work of the author, not Statistics New Zealand or individual data suppliers.

3 For example, two households may have equal total wealth ranking, but one household might have all their wealth in housing (increasing the housing Gini coefficient) while the other has more non-housing wealth (increasing the non-housing Gini coefficient).

4 This is an important assumption, as there are many possible flow-on effects from an increase in gross housing wealth: e.g., rents, mortgages, other asset prices, and behaviours may all change over time as a result. But as a first approximation we consider wealth inequality at a single point in time before any flow-on impacts have occurred.

Summary of results

An increase in house prices causes a slight decrease in total wealth inequality, as measured by the Gini coefficient. A 10% increase in house prices causes a 0.7 percentage point drop in the household wealth Gini coefficient of the whole population.

It seems strange that increasing the wealth of housing owners, but not the wealth of non-owners, leads to a decrease in relative wealth inequality. To help understand this the total population is split into owners and non-owners of housing. This gives us three wealth Gini coefficients, which measure inequality of owners, inequality of non-owners, and inequality between owners and non-owners.

For owners, inequality drops. A 10% increase in house prices causes a 1.3 percentage point drop in the wealth Gini coefficient of owners. About 64% of all households are homeowners. The wealth of the wealthiest owners is mostly in non-housing assets, which we hold constant, but most owners have their wealth

in housing assets, which we inflate. This reduces the relative gap between the wealthiest owners and all other owners.

Inequality increases between owners and non-owners. A 10% increase in house prices causes a 0.3 percentage point increase in the wealth Gini coefficient between owners and non-owners. The wealth of owners is increased, while the wealth of non-owners is kept constant. This widens the relative wealth gap between owners and non-owners. About 36% of all households are non-owners. Compared with owners, they are generally much poorer, have higher housing costs and are more likely to be in material hardship.

The life-cycle pattern of wealth accumulation appears to have been slowly shifting over the last 15 years. In total, the proportion of households who rent appears to have been growing, while outright homeownership rates have been falling. This trend is strongest in the 45–54 and 55–64 age bands.

References

- Crampton, E. (2019) 'Wealth is complicated', *Newsroom*, 29 January, <https://www.newsroom.co.nz/pro/wealth-is-complicate>
- Creeedy, J. (2021) *Comparing Income Distributions Using Atkinson's Measure of Inequality*, working paper in public finance, Wellington: Victoria Business School
- Dagum, C. (1998) 'A new approach to the decomposition of the Gini income inequality ratio', in *Income Inequality, Poverty, and Economic Welfare*, Physica-Verlag HD
- Gastwirth, J.L. (2017) 'Is the Gini index of inequality overly sensitive to changes in the middle of the income distribution?', *Statistics and Public Policy*, 4 (1), pp.1–11
- Irwin, T and R.J. Irwin (2018) 'The housing haves and have-nots: the house price boom and inequality of wealth in New Zealand', *Policy Quarterly*, 14 (3), pp.81–5
- Kuypers, S., F. Figari and G. Verbist (2021) *Redistribution from a Joint Income–Wealth Perspective: results from 16 European OECD countries*, Social, Employment and Migration working paper 257, Paris: OECD Publishing
- Larraz, B. (2015) 'Decomposing the Gini inequality index: an expanded solution with survey data applied to analyze gender income inequality', *Sociological Methods and Research*, 44 (3), pp.508–33
- Le, T., J. Gibson and S. Stillman (2012) 'Wealth and saving in New Zealand: evidence from the longitudinal survey of family, income and employment', *New Zealand Economic Papers*, 46 (2), pp.93–118
- Nolan, G. (2021) 'The household effects of low interest rates in New Zealand', Analytical Note AN2021/6, Reserve Bank of New Zealand
- OECD (2013) *OECD Framework for Statistics on the Distribution of Household Income, Consumption and Wealth*, Paris: OECD Publishing
- Palomino, J., G. Marrero, B. Nolan and J. Rodríguez (2020) *Wealth inequality, intergenerational transfers and family background*, INET Oxford working paper 2020–15
- Raffinetti, E., E. Siletti and A. Vernizzi (2015) 'On the Gini coefficient normalization when attributes with negative values are considered', *Statistical Methods and Applications*, 24 (3), pp.507–21
- Raffinetti, E., E. Siletti and A. Vernizzi (2017) 'Analyzing the effects of negative and non-negative values on income inequality: evidence from the survey of household income and wealth of the Bank of Italy (2012)', *Social Indicators Research*, 133, pp.185–207
- Rashbrooke, G., M. Rashbrooke and W. Molano (2017) *Wealth Disparities in New Zealand*, working paper 17 (02), Wellington: Institute for Governance and Policy Studies
- Symes, L. (2021) 'The wealth ladder: house prices and wealth inequality in New Zealand', Treasury Analytical Note, <https://www.treasury.govt.nz/sites/default/files/2021-11/an-21-01.pdf>
- Thon, D. (1982) 'An axiomatization of the Gini coefficient', *Mathematical Social Sciences*, 2 (2), pp.131–43
- Treasury (2021) *He Tirohanga Mokopuna 2021: statement on the long term fiscal position*, Wellington: Treasury

High quality professional development courses for the public sector:

INFORMATION ARCHITECTURE FUNDAMENTALS

-> Mon 8 & Tue 9 August, 9am-430pm

ENGAGING EFFECTIVELY WITH YOUR STAKEHOLDERS

-> Wed 17 August am-430pm

CROWN MAORI RELATIONS: TREATY AND MORE

-> Thu 29 & Fri 30 September, 9am-1pm



Kāpuhipuhi
Wellington Uni
Professional

PUBLIC POLICY FUNDAMENTALS

-> Wed 23 November, 9am-430pm

INFORMATION ARCHITECTURE FUNDAMENTALS

-> Mon 8 & Tue 9 August, 9am-430pm

CYBERSECURITY ESSENTIALS MICRO CREDENTIAL

-> Fully online Mon 5 September - Sun 23 October

We can deliver courses in-house, customise or design new programmes to suit your requirements at our Wellington and Auckland teaching spaces.

For information and to enrol visit: www.wellingtonuni-professional.ac.nz or call us on 04-463 6556.