



# Analytical Notes

## Housing as an Investment Asset in New Zealand

**Looking at risk-adjusted portfolio choices.**

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## Key Findings

- Since early 2021 when the Minister of Finance directed the Reserve Bank to have regard to house price sustainability, we have been examining the drivers and sustainability of the rise in house prices over recent years. This *Note* is part of a wider body of research initiated at Te Pūtea Matua to better understand the sustainability of house prices in New Zealand. In this study, we investigate housing as an asset class option from a portfolio investment perspective, particularly focusing on the implications for households' balance sheets.
- Aggregate household wealth has increased in recent years as house prices have increased. The value of the New Zealand housing stock is now relatively high compared to other countries as a share of GDP. This is mainly due to land values increasing, rather than investment of resources into new and improved dwellings. By many accounts, investment into new physical housing stock has been too low relative to demand for housing services.
- With more than half of all household wealth in land and houses, New Zealanders have one very large egg in their wealth *kete* (basket). We investigate if this housing egg is oversized from a risk-return portfolio perspective. In other words, whether the current share of investment in housing can be explained by past investment performance. While investors do not have the benefit of hindsight, by looking at past data and various sensitivities, this exercise gives insights into why housing has been a popular investment asset from an individual investor perspective.
- Our results suggest that, based on historic performance, the current level of investment in housing can be explained given its relatively robust financial returns over the past two decades. These results are underpinned by the ability to leverage investments through mortgages and favourable tax treatments, which both significantly increase the estimated portfolio share on housing.
- Housing is not without risks and past performance is no guarantee of future results. International and domestic experiences show that long upswings can be followed by persistent downturns. In particular, there is an increasing body of evidence currently pointing to unsustainable house prices in New Zealand, and therefore, vulnerable to a potential correction and/or sluggish future growth.

## Introduction<sup>1</sup>

The domestic housing market plays a pivotal role in the New Zealand investment landscape.<sup>2</sup> The aggregate value of land and housing in New Zealand, including rental and owner-occupied properties, is currently around \$1.5 trillion.<sup>3</sup> That is close to five times the size of New Zealand's annual gross domestic product (Figure 1) and over seven times the value of all companies listed in the New Zealand stock exchange.

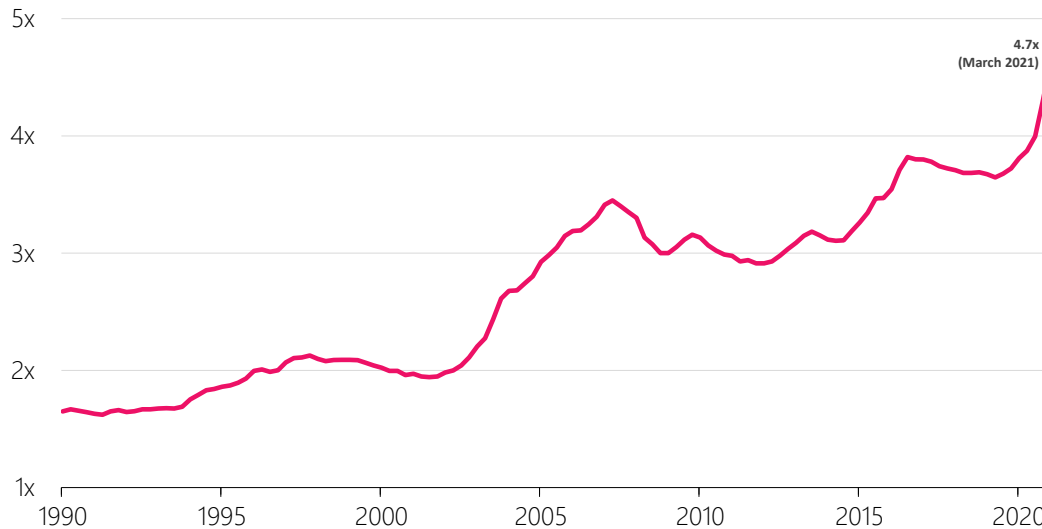
From a balance sheet perspective, housing constitutes over half of all domestic household assets. Likewise, financial institutions too have a significant exposure to housing, with close to two-thirds of all domestic bank lending in the form of mortgage debt.<sup>4</sup>

As *kaitiaki* (guardian) of the financial system, the Reserve Bank of New Zealand – Te Pūtea Matua therefore has a close interest in how the domestic housing market evolves, being an important driver of both price and financial stability.

In short, housing matters.<sup>5</sup>

This Note is part of a wider body of research initiated at the Reserve Bank to better understand the sustainability of house prices in New Zealand.<sup>6</sup> In this study, we investigate housing as an asset class option from a portfolio investment perspective, particularly focusing on the implications for households' balance sheets.

**Figure 1: Housing assets as a multiple of annual GDP**



Sources: RBNZ; Authors' calculations.

- 1 The authors acknowledge and thank the insightful feedback from our NZ Super Fund colleagues Mike Frith, Christopher Worthington, and Anne Boniface. In addition, the authors thank RBNZ staff who have generously given their time and expertise to provide comments on earlier roundtables and drafts. The usual caveats apply, as the views expressed in this paper are those of the authors and do not necessarily reflect the views of the Reserve Bank of New Zealand.
- 2 This paper defines housing investment independently of whether a house buyer purchases a residential property with the sole intent to rent out (i.e. a housing investor per se) or to use it as a place to live (i.e. incurring in imputed rent).
- 3 Reserve Bank of New Zealand, Household Balance sheet data (C22). Retrieved from [rbnz.govt.nz/statistics/c22](https://www.rbnz.govt.nz/statistics/c22).
- 4 Reserve Bank of New Zealand (2021, May 5). Financial Stability Report May 2021. Retrieved from [rbnz.govt.nz/financial-stability/financial-stability-report/fsr-may-2021](https://www.rbnz.govt.nz/financial-stability/financial-stability-report/fsr-may-2021)
- 5 Orr, A. (2021), "Housing Matters", Speech delivered to the Property Council of New Zealand Retail Conference 2021, 2 November. Retrieved from [rbnz.govt.nz/news/2021/11/housing-matters-for-financial-stability-risks](https://www.rbnz.govt.nz/news/2021/11/housing-matters-for-financial-stability-risks)
- 6 Brunton (2021) defines the Bank's conceptual framework around assessing house price sustainability. Fitchett and Jacob (2022) study the New Zealand housing market against the backdrop of housing markets in 12 other developed countries over the past three decades. The next two papers provide empirical evidence that confirms that monetary policy has a short-run impact on house prices over the New Zealand business cycle. Chadwick, Dasgupta and Jacob (2022) find that monetary policy tightening induces stronger declines in house prices those regions in New Zealand where housing supply is less responsive. Chadwick and Nahavandi (2022) instead study house prices at the national level and find empirical support in favour of the bank lending channel of monetary policy transmission. Brunton and Jacob (2022) emphasise that the longer-term upward trend in New Zealand house prices is mainly driven by the decline in longer-term interest rates, more influenced by global factors rather than by domestic cyclical factors such as monetary policy.

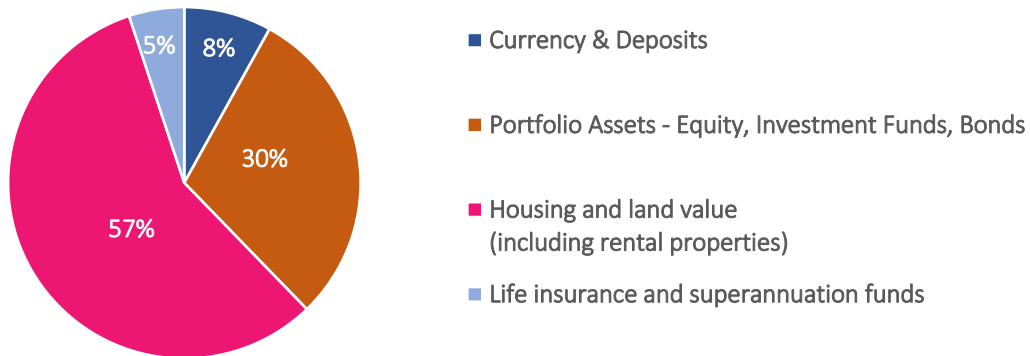
## How Much of New Zealand Household Wealth is Allocated to Housing?

The Reserve Bank has published quarterly estimates of New Zealand household assets, liabilities, and wealth since June 2000 to assist with macro-financial analysis of the household sector.<sup>7</sup>

**Figure 2** shows a snapshot of New Zealand household asset distribution in March 2021. In total, residential properties (housing and land values, including rental properties) account for 57 percent of household assets; followed by investments in equities and bonds, at 30 percent; currency (notes and coins) and deposits, at 8 percent; and life insurance and superannuation funds, at 5 percent.

Of the 57 percent invested in housing, around 2/3 is owner occupied and 1/3 is investor owned. For this exercise, we focus on the aggregate housing share given both owner occupiers and investors are explicitly or implicitly using their house as an investment. One caveat to this analysis is that it does account for the benefits to owner occupiers beyond the financial return.

**Figure 2: Make-up of New Zealand household assets (March 2021)**



Sources: RBNZ *Household balance sheet (C22)*; Authors' calculations.

The valuation share of household assets invested in housing has been slowly increasing since 1999, and is currently at similar levels to the 2016 record. This is not to say that there has been high physical housing investment levels in New Zealand. On the contrary, the stock of houses has consistently lagged rising demand in recent decades. That means past increases in housing shares of household wealth have been largely determined by price growth, particularly driven by the constrained supply of land for residential purposes.<sup>8</sup>

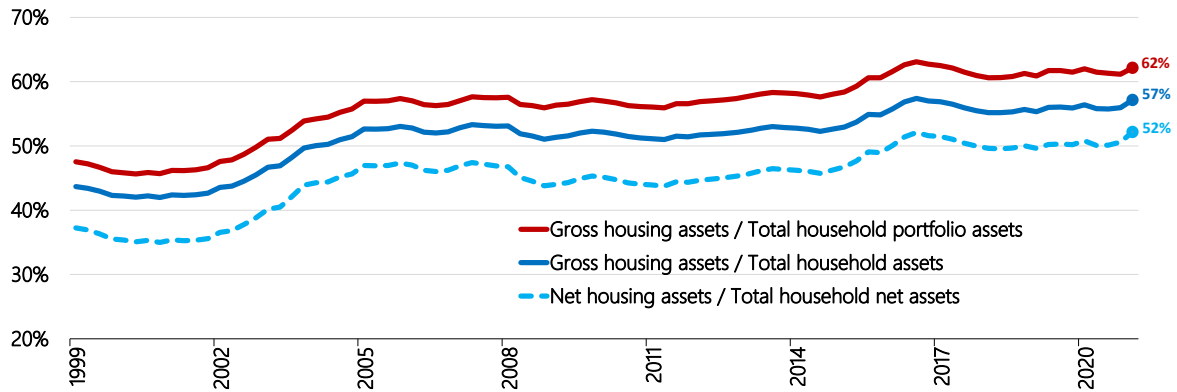
**Figure 3** presents three relevant metrics showing this rising trend on the valuation share of household assets. The solid-blue line is the conventional measure that only considers the asset side of the balance sheet; whereas the dotted-blue line is the net value, calculated by deducting any loans and other liabilities from the asset side. In addition, the red line indicates the percentage of gross housing assets to total portfolio assets (i.e. excluding "risk-free" assets such as currency and deposits). This is a good benchmark to gauge our model results, which by design determine the estimated allocations on portfolio assets from a risk-return perspective.<sup>9</sup> Importantly, despite these different methodologies, all three metrics have broadly moved in tandem (and upwards) since the start of the series.

<sup>7</sup> See Household balance sheet (C22) statistics, available at [rbnz.govt.nz/statistics/c22](http://rbnz.govt.nz/statistics/c22). Since July 2021, these statistics have been published quarterly by Stats NZ.

<sup>8</sup> New Zealand Productivity Commission (2017), "Better urban planning: Final report." Retrieved from [productivity.govt.nz/inquiries/better-urban-planning](http://productivity.govt.nz/inquiries/better-urban-planning)

<sup>9</sup> Our model outputs show the investment percentage allocations on (risky) portfolio assets only. These are independent from the investor preferences, which will ultimately guide the portion allocated between risk-free assets and risky assets. See *Technical Appendix* for more on this.

**Figure 3: Relevant metrics in housing share of wealth**

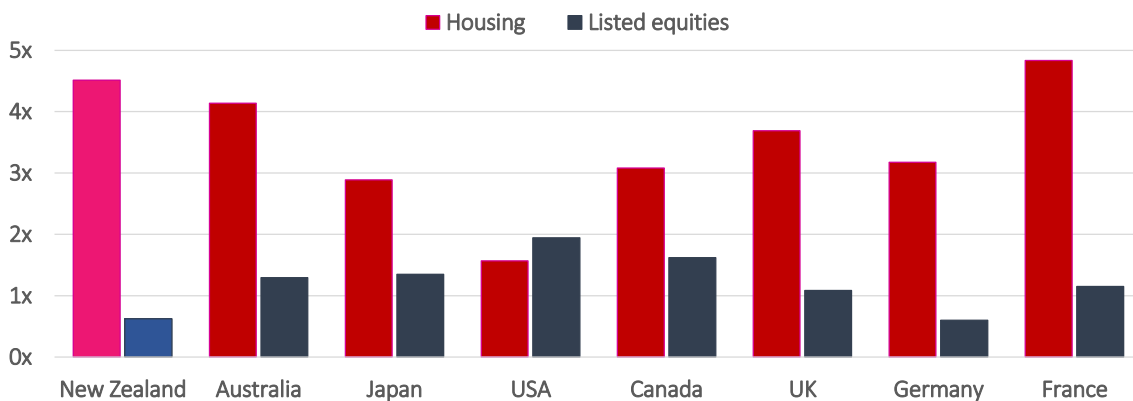


Notes: Housing data include rental properties. Portfolio assets equals total assets minus cash and deposit assets. Net assets equals total assets minus loans and other liabilities.

Sources: RBNZ *Household balance sheet (C22)*; Authors' calculations.

Furthermore, one reason often suggested for the concentration in housing assets is the dearth of other quality investment assets options for domestic investors.<sup>10</sup> However, the introduction of KiwiSaver and other low cost investment platforms may have, to some extent, alleviated these concerns more recently. **Figure 4** contrasts the value of the housing against the total value of listed equities (i.e. market capitalisation) as a multiple of gross domestic product (GDP) for New Zealand and other economies. The relative difference between these national multiples provides some evidence regarding the depth of domestic capital markets. Of note, for this selected sample, New Zealand has the lowest share market capitalisation for listed domestic companies, followed by Germany (which does benefit from the common market to other European share markets that are not included in its market capitalisation multiple metric).

**Figure 4: Value of housing and listed equities as a multiple of GDP for selected economies (2020)**



Notes: Housing stock values are for all residential properties, including land values; Listed equities refer to the market capitalisation as the share price times the number of shares outstanding, including their several classes, for listed domestic companies.

Sources: CoreLogic; Zillow; Savills; Reserve Bank of Australia; Statistics Canada; Banque de France; Japan's Department of National Accounts; World Bank; CEIC; McKinsey Global Institute; RBNZ; Bloomberg; Authors' calculations.

<sup>10</sup> See The Capital Markets 2029 Steering Committee (2019), "The Growing New Zealand's Capital Markets 2029 Report", commissioned by the Financial Markets Authority (FMA) and the New Zealand Exchange (NZX), retrieved from [fma.govt.nz/news-and-resources/reports-and-papers/growing-new-zealands-capital-markets-2029/](https://fma.govt.nz/news-and-resources/reports-and-papers/growing-new-zealands-capital-markets-2029/).

## Estimating Supported Shares of Housing Assets in Household Wealth Portfolios

There are plenty of approaches to determine the best-suited collection of investment assets. Not surprisingly, despite much research and debate, there remains a range of different portfolio strategies adopted by investors. Each investor has a different risk appetite, investment time horizon and other distinctive personal goals. As such, this paper does not claim to uncover the best-possible asset allocation for New Zealand investors. Instead, we use basic principles of asset investment applied to historical data to understand asset portfolio choices.<sup>11</sup>

At its core, and quite importantly, given a pre-set choice of assets, we look at an array of possible combinations to determine a set of *optimal* portfolios (i.e. the efficient investment frontier). By optimal, we mean that there is no other asset portfolio allocation that could provide a higher expected return without taking higher risks; or conversely, there is no other less-risky portfolio that would achieve the same expected return. That is, no matter one's preferences when it comes to asset allocation, there exists the in-principle willingness to be on the efficient investment frontier.

Another desirable feature of this approach rests on the minimalism of data inputs.<sup>12</sup> To determine the efficient investment frontier, our methodological approach looks at three core data features: the *expected* average return (in excess of a benchmark risk-free rate); the *expected* return volatility; and the *expected* correlation among portfolio assets.<sup>13</sup> Ideally, a sought-after asset should bring the promise of high returns, low-volatility (i.e. less risky), and low, or even negative, relationship with other assets (which means providing a higher degree of portfolio diversification, as falls in one asset may be offset by rises in another).<sup>14</sup>

Of course, despite a robust quantitative framework, the search for optimal investment portfolio does not come without challenges. First, there are a range of assets and investment time horizons to choose from. In this paper, we focus on the large asset classes that dominate the retail investor ecosystem: equities, bonds, and residential property.

Second, the emphasis on "expected" returns, volatility and correlations should not be understated, and are rarely agreed upon. In this paper, we focus on understanding the past, which although helps to inform about our policy questions, it does not necessarily translate to future portfolio performance. That is, our paper points to how a retail investor *expecting* the underlying portfolio statistics *actually observed* over the past 20 years would have picked their asset allocations back in the year 2000. Alternatively, one could also think of our thought experiment as how a present retail investor would allocate their portfolio, if their expectations for the coming years is based on what happened in the 2000-2020 period (for which we have reliable quality data).

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<sup>11</sup> For a more detailed description of our methodology, please refer to our *Technical Appendix*.

<sup>12</sup> The optimal risk-adjusted asset portfolio methodology was first developed by Harry Max Markowitz, an American economist who received for the 1990 Nobel Memorial Prize in Economic Sciences for his pioneering work in modern portfolio theory.

<sup>13</sup> For a previous discussion on this, see Elizabeth Watson (2012), "Risk, return, and beyond: A conceptual analysis of some factors influencing New Zealanders' investment decisions", RBNZ Analytical Note 2012/07, October.

<sup>14</sup> A diversified portfolio means that assets within the portfolio are not all strongly positively correlated, such that when a portfolio asset return goes sour during a particular period, returns on other assets are uncompromised (neutral relationship) or higher (negatively correlated relationship).

**Table 1** describes relevant sample data statistics, highlighting key features of the New Zealand housing market: superior average returns (10.9 percent), relative low return variation (implying a high 1.5 average risk-adjusted return), and moderate correlation with other assets (providing portfolio diversification benefits). Of note, this paper defines housing investment independently of whether a house buyer purchases a residential property with the sole intent to rent out (i.e. a housing investor *per se*) or to use it as a place to live (i.e. incurring in imputed rent).

Furthermore, there are many less visible but equally important methodological choices that must be tackled in any optimal portfolio research. For instance, in determining the core statistics explained above, should one use annual, quarterly, monthly or even (intra) daily intervals? Our approach is to focus on annual intervals: We aim to represent the views of retail investors with longer-term investment horizons (i.e. 10 years or more), who should not be too much concerned with daily asset price movements. Having said that, we do perform robustness tests using quarterly intervals and subsample periods, as well as different sets of asset representations (e.g. international vs. domestic portfolios), to vet our results. Importantly, although differences in housing allocation levels are estimated as a result, the *direction of change* in asset portfolio shares and the *relevance of housing portfolio allocation weights* in all these sensitivities are consistent with our key findings.

**Table 1: Selected sample data statistics**

	Average Return	Standard Deviation	Risk-Adjusted Returns	Correlation with Housing Total Return
Global Equities, NZD prices	8.5%	15.8%	0.5	0.59
Global Bonds, NZD prices	7.4%	2.7%	2.7	-0.10
60-40 (Global Equities & Bonds)	8.1%	9.2%	0.9	0.60
20-80 (Global Equities & Bonds)	7.6%	3.3%	2.3	0.50
OECD House Prices	3.8%	2.9%	1.3	0.59
<b>New Zealand Stock Exchange</b>	5.9%	13.9%	0.4	0.57
KiwiSaver Balanced Funds*	5.3%	3.8%	1.4	-0.32
KiwiSaver Growth Funds*	6.3%	5.8%	1.1	-0.34
<b>NZ 90-day bank bill rate</b>	4.3%	2.2%	1.9	0.00
<b>NZ 2-year average mortgage rates</b>	6.5%	1.4%	4.5	-0.09
<b>Housing Total Return</b>	10.9%	7.1%	1.5	<i>n.a.</i>
- REINZ House Prices	7.6%	7.2%	1.0	1.00
- Net Rental Yield	3.3%	0.7%	4.7	-0.14

Notes: Before-tax statistics based on the annual end-of-period data between 2000 and 2020. Risk-adjusted returns are the ratio between average returns (numerator) and standard deviation (denominator). \*KiwiSaver annual end-of-period data are the average among the eight default providers, net of fund fees, for the period between 2011 and 2020.

Sources: MSCI ACWI Index, NZD prices (Global Equities, including net dividends); Hedged Bloomberg Barclays Global-Aggregate Bond Total Return Index, NZD prices (Global Bonds); Organisation for Economic Co-operation and Development (OECD); Financial Markets Authority New Zealand (KiwiSaver data); Bloomberg, S&P/NZX All Index (New Zealand Stock Exchange—NZSE); Real Estate Institute of New Zealand (REINZ House Prices); Reserve Bank of New Zealand (net rental yield estimates); Authors' calculations.

## Our Main Findings

### #1. From a risk-return portfolio perspective, the New Zealand housing share is no international outlier and in line with historical investment return data

Robust returns with comparatively low-volatility since 2000 have made housing an attractive asset class in New Zealand. **Figure 5** depicts New Zealand estimated asset allocations under different portfolios. These before-tax estimations indicate supported housing portfolio shares ranging from 21 percent (against an unconstrained international portfolio)<sup>15</sup> to 50 percent (against a domestic portfolio including average KiwiSaver default funds and the domestic stock market), or higher when constraining international investments to maintain 20-80 or 60-40 benchmark splits between global equities and global bonds. Of note, these allocations would be even higher for leveraged house buyers and quickly reach corner solutions (i.e. 100 percent investment allocation in housing) once standard tax arrangements are taken into account, including for the unconstrained international portfolio (see *Finding #2*).

**Figure 5: Estimated asset class allocations under different portfolios for a New Zealand retail investor**



Notes: For the unconstrained international portfolio, results show Markowitz model estimations using before-tax returns (in excess of the benchmark savings rate) on global equities (MSCI), local equities (New Zealand Stock Exchange—NZSE), housing (capital gains plus net rental yield) and global bonds (GB); The “conservative” international portfolio means that, for every dollar invested in overseas assets, there is a fixed proportion for every dollar invested overseas of 20 percent in global equities and 80 percent in global bonds, while the “growth” international portfolio similarly impose a fixed proportion constraint of 60 percent in global equities and 40 percent in global bonds. The domestic portfolio represents the asset class choices between local equities, housing (capital gains plus net rental yield) and KiwiSaver investments. Sample based on the annual end-of-period data between 2000 and 2020 for the international portfolios and between 2011 and 2020 for the domestic portfolio.

<sup>15</sup> The strong performance of global bonds since 2000 dominates the *before-tax* estimated allocations for the unconstrained international portfolio, at 73 percent.

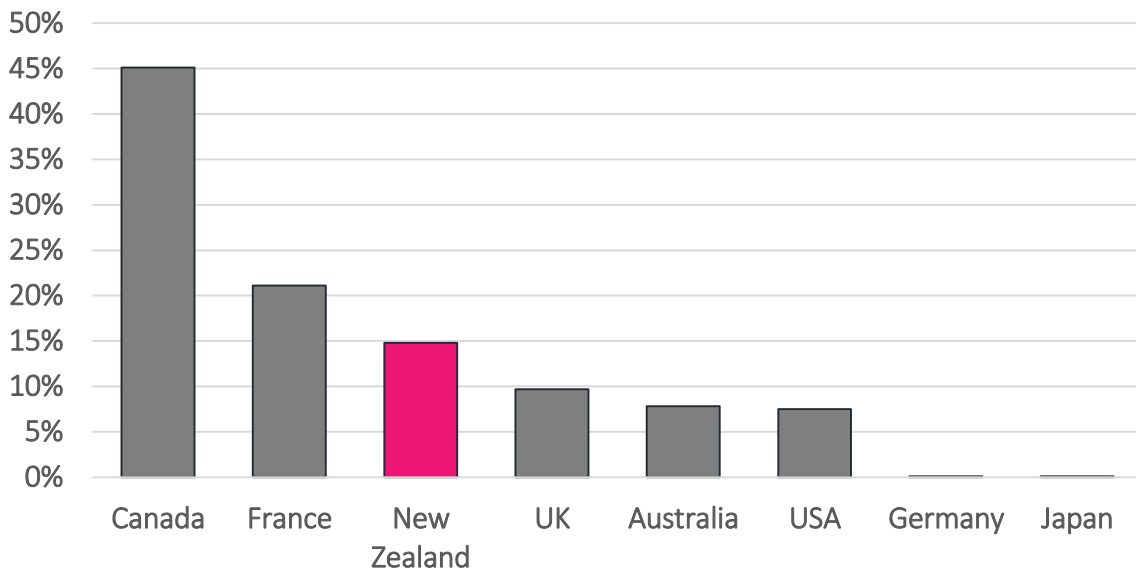


Sources: MSCI ACWI Index, local prices (Global Equities, including net dividends); Hedged Bloomberg Barclays Global-Aggregate Bond Total Return Index, local prices (Global Bonds); Financial Markets Authority New Zealand (KiwiSaver data); Bloomberg, S&P/NZX All Index (New Zealand Stock Exchange—NZSE); Real Estate Institute of New Zealand (REINZ House Prices); Reserve Bank of New Zealand (net rental yield estimates, short-term wholesale rates); Authors' calculations.

Further, when comparing historical house price gains across major economies against returns on global equity and global bond indexes, as well as the ability to invest in local stock exchange markets, we note that New Zealand portfolio allocations are in line with other international peers.<sup>16</sup>

**Figure 6** shows housing estimated shares across selected economies using before-tax annual data on asset capital gains for the 2000-2020 period.<sup>17</sup> The chart pictures New Zealand estimated housing allocation in line with other English-speaking countries such as the United Kingdom, Australia and the United States. In addition, Canada's high house price growth with low-volatility makes its estimated housing allocation stand out; with the opposite occurring in Germany (high volatility, modest house capital gains) and Japan (negative average house price return in the period).

**Figure 6: Estimated housing allocation weight under a capital-gains-only international portfolio for selected economies**



Notes: Markowitz model estimations using before-tax returns (in excess of the benchmark savings rate) on global equities, local equities, house price return only (no net rental yield), and global bonds. Sample based on the annual end-of-period data between 2000 and 2020.

Sources: MSCI ACWI Index, local prices (Global Equities); Hedged Bloomberg Barclays Global-Aggregate Bond Total Return Index, local prices (Global Bonds); Organisation for Economic Co-operation and Development (OECD house prices); Bloomberg (local stock exchange markets, local short-term wholesale rates); Authors' calculations.

<sup>16</sup> For an extensive analysis on how the New Zealand housing market compares internationally, see Fitchett, H. and Jacob, P. (2022). 'How do we stack up? The New Zealand housing market in the international context.' Reserve Bank of New Zealand Analytical Note. Work in progress.

<sup>17</sup> The implications of tax policy in portfolio allocations across international jurisdictions are outside the scope of this paper.

## #2. The ability to leverage and a favourable tax treatment support housing investment attractiveness across a range of portfolios

A key feature of credit markets for the retail investor is the difference between saving and borrowing rates. Put simply, the rate you get depositing a dollar in a bank is, as a general rule, significantly lower than the one borrowing that dollar at the same institution. As a result, from a risk-return portfolio allocation perspective, the borrowing premium implies that for house buyers with a mortgage, the attractiveness of low excess return assets such as fixed-income bonds is diminished, whereas historically high excess returns of housing become more rewarding.<sup>18</sup>

For instance, the total excess return averages for New Zealand housing in the last twenty years were 6.5 percent and 4.4 percent after deducting the (short-term bank bill) savings rate versus the (mortgage) borrowing rate, respectively; whereas average excess return on global bonds has reduced to a little less than a third, from 3.1 percent to 1.0 percent.

Figure 7 illustrates the increase in New Zealand estimated housing allocations for unleveraged versus leveraged (i.e. with a mortgage) house buyers under different portfolios. Using our before-tax baseline unconstrained international asset set, estimated housing portfolio shares surge from 21 percent (unleveraged investor) to 32 percent (mortgage-led purchase). Similar results are observed against a domestic pool of asset choices, with before-tax housing estimated allocations rising from 50 percent to 62 percent. In addition, using mortgage rates as the underlying opportunity cost, that notably implies a 100 percent allocation in housing, when constraining international investments to maintain 20-80 or 60-40 benchmark splits between global equities and global bonds.

**Figure 7: Estimated asset class allocations under different portfolios for a New Zealand retail investor — unleveraged versus leveraged**



Notes: For the unconstrained international portfolio, results show Markowitz model estimations using before-tax returns (in excess of the benchmark savings rate for the unleveraged investor or in excess of the mortgage rate for the leveraged investor) on global equities (MSCI), local equities (New Zealand Stock Exchange—NZSE), housing (capital gains plus net rental yield) and global bonds (GB); The “conservative” international portfolio means that, for every dollar invested in overseas assets, there is a fixed proportion for every dollar invested overseas of 20 percent in global equities and 80 percent in global bonds, while the “growth” international portfolio similarly impose a fixed proportion constraint of 60

<sup>18</sup> See *Technical Appendix* for more information on the impact of the mortgage premium on the model results.

percent in global equities and 40 percent in global bonds. The domestic portfolio represents the asset class choices between local equities, housing (capital gains plus net rental yield) and KiwiSaver investments. Sample based on the annual end-of-period data between 2000 and 2020 for the international portfolios and between 2011 and 2020 for the domestic portfolio.

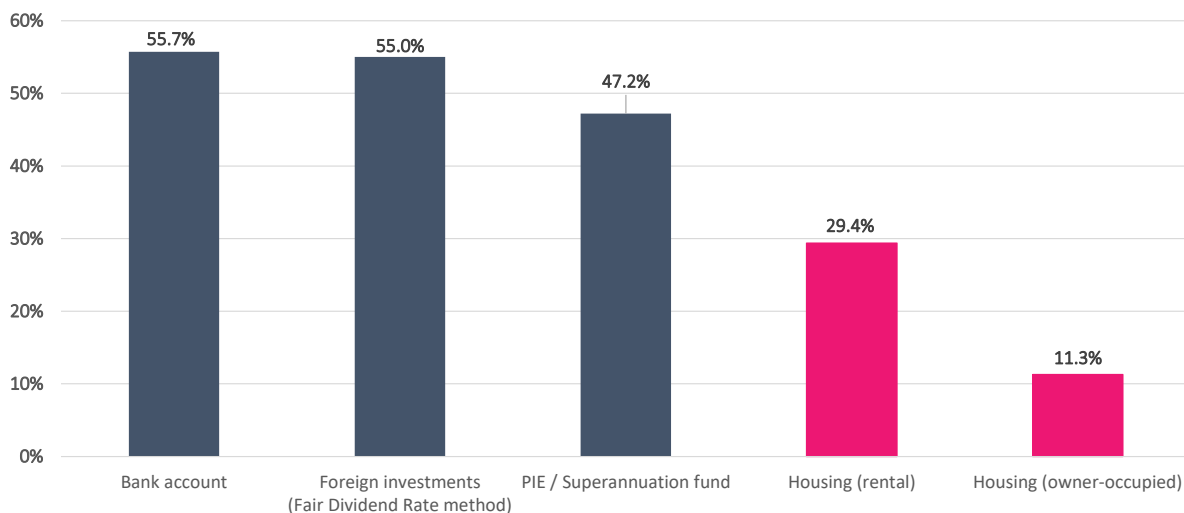
Sources: MSCI ACWI Index, local prices (Global Equities, including net dividends); Hedged Bloomberg Barclays Global-Aggregate Bond Total Return Index, local prices (Global Bonds); Financial Markets Authority New Zealand (KiwiSaver data); Bloomberg, S&P/NZX All Index (New Zealand Stock Exchange—NZSE); Real Estate Institute of New Zealand (REINZ House Prices); Reserve Bank of New Zealand (net rental yield estimates, average mortgage rates and short-term wholesale rates); Authors' calculations.

Moreover, a key feature determining housing investments regards their favourable tax treatment in the New Zealand context.<sup>19</sup> Work by the Treasury and the Inland Revenue Department shows that for a representative investor, housing marginal effective tax rates can be close to five times lower than other investment strategies such as foreign shares and domestic superannuation funds (Figure 8).<sup>20</sup>

Importantly, once these marginal effective tax rates are taken into account, our model results suggest that, from a strict risk-return portfolio perspective, investors could have allocated all of their portfolio investments into housing in past decades. Therefore, one could argue that actual housing allocations in New Zealand household balance sheets could have been even higher than already-large present levels.

However, there are some features of housing investment not captured in our modelling exercise that could explain why this has not occurred: the prevalence of credit constraints (which may have reduced the number of aspirant borrowers who could obtain mortgage approvals), the discrete nature of home ownership (i.e. the nature of the housing asset being lumpy, whereas stock market shares can be bought in smaller value fractions), and other potential motivations for portfolio investment other than a risk-return framework (e.g. rental-property investors vs. homeowners). All of which would be a prominent addition to the current modelling work in future research streams.

**Figure 8: New Zealand marginal effective tax rates on investments**



Source: Treasury/IRD analysis.

<sup>19</sup> For an introductory discussion on the impact of tax policy on house prices, see David Hargreaves (2008), "The tax system and housing demand in New Zealand", RBNZ Discussion Paper 2008/06, February.

<sup>20</sup> See Tax Working Group Secretariat (2018), "Further information on Marginal Effective Tax Rates: Information paper for the Tax Working Group". Retrieved from [taxworkinggroup.govt.nz/resources/twg-bq-3963758-further-information-on-marginal-effective-tax-rates](https://taxworkinggroup.govt.nz/resources/twg-bq-3963758-further-information-on-marginal-effective-tax-rates).

### #3. Going forward, there are reasons the portfolio share in housing should decrease

Favourable tax arrangements, strong migration intakes, declining neutral interest rates, and binding zoning restrictions have all been documented as forces behind the observed rise in house prices over an extended period.<sup>21</sup> However, there are many caveats leaning against these factors going forward.

First, tax arrangements and regulatory constraints can, and do, change. The elimination of interest deductibility and extension of the bright-line property rules may dampen future returns for housing investors. On the regulatory front, for instance, new intensification rules will enable greater supply of housing in urban areas.<sup>22</sup>

Second, several indicators already point to unsustainable house price levels in New Zealand, potentially leading to years of subpar price growth or to a sudden correction in New Zealand's housing market.<sup>23</sup> This includes the approaching limits to a decades-long trend of declining global interest rates, which has supported a high degree of international synchronisation in house price growth.<sup>24</sup>

Third, the retail investor must accept the fact that a house price index, although an important proxy measure, does not capture idiosyncratic risks inherent to buying a *particular* house. Put simply, in the face of random events negatively impacting a low percentage of houses, national house price indices do not necessarily reflect the risks that individual investors face once they realise their housing assets are depreciated by, say, bad tenants, unexpected leaks, earthquakes, or floods — particularly as climate change risks increasingly exposes parts of the New Zealand housing market in coming decades.<sup>25</sup>

**Figure 9** compares how our historical baseline for the estimated New Zealand housing allocation changes under enhanced idiosyncratic risks or depressed total housing returns (i.e. capital gains plus net rental yields). Results show, for instance, that housing allocations could reduce by a third if we expect that one in twenty-five houses suddenly suffers a 50 percent annual loss at any point in a 20-year investment horizon. Similarly, housing portfolio allocations would quickly approach zero should average capital gains and net rental yield fall to more sustainable levels.<sup>26</sup>

21 Reserve Bank of New Zealand (2020), "Monetary Policy Statement November 2020", November 11, retrieved from [rbnz.govt.nz/monetary-policy/monetary-policy-statement/mps-november-2020](https://www.rbnz.govt.nz/monetary-policy/monetary-policy-statement/mps-november-2020); New Zealand Productivity Commission (2017), "Better urban planning: Final report", retrieved from [productivity.govt.nz/inquiries/better-urban-planning](https://www.productivity.govt.nz/inquiries/better-urban-planning); Tax Working Group Secretariat (2018), "Further information on Marginal Effective Tax Rates: Information paper for the Tax Working Group", retrieved from [taxworkinggroup.govt.nz/resources/twg-bg-3963758-further-information-on-marginal-effective-tax-rates](https://www.taxworkinggroup.govt.nz/resources/twg-bg-3963758-further-information-on-marginal-effective-tax-rates)

22 Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill. Retrieved from [parliament.nz/en/pb/bills-and-laws/bills-proposed-laws/document/BILL\\_116288/resource-management-enabling-housing-supply-and-other](https://www.parliament.nz/en/pb/bills-and-laws/bills-proposed-laws/document/BILL_116288/resource-management-enabling-housing-supply-and-other)

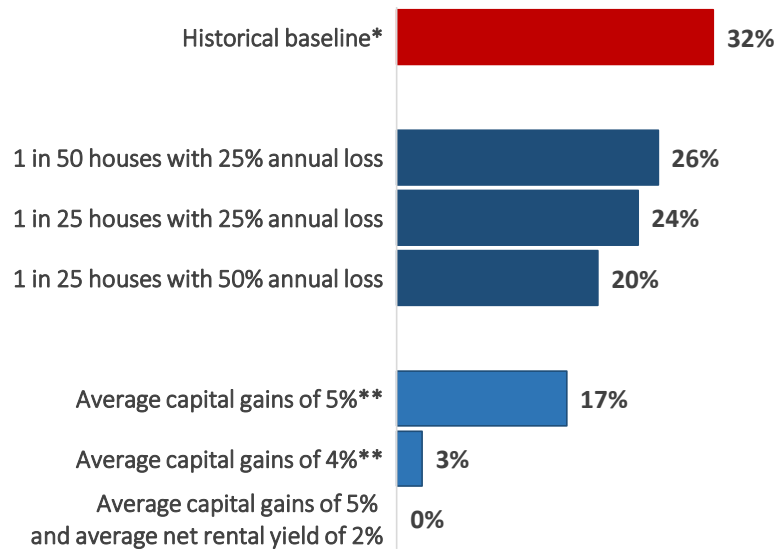
23 Brunton, M. (2021), "Measures for Assessing the sustainability of house prices in New Zealand", RBNZ, AN2021/08. Retrieved from [rbnz.govt.nz/research-and-publications/analytical-notes/2021/an2021-08](https://www.rbnz.govt.nz/research-and-publications/analytical-notes/2021/an2021-08)

24 Rachel, Lukasz and Lawrence H. Summers (2019), "On Falling Neutral Real Rates, Fiscal Policy, and the Risk of Secular Stagnation", Brookings Papers on Economic Activity, Spring, pp. 1–76, retrieved from [tinyurl.com/y44z49t5](https://www.tinyurl.com/y44z49t5); Reserve Bank of New Zealand (2019), "Financial Stability Report November 2019", November 11, retrieved from [rbnz.govt.nz/financial-stability/financial-stability-report/fsr-november-2019](https://www.rbnz.govt.nz/financial-stability/financial-stability-report/fsr-november-2019); Bank for International Settlements (2022), Global Economy Meeting, January 14.

25 Reserve Bank of New Zealand (2021), "Climate Changed 2021 & Beyond – The Reserve Bank Climate Change Report", 26 October. Retrieved from [rbnz.govt.nz/financial-stability/climate-change/climate-change-report](https://www.rbnz.govt.nz/financial-stability/climate-change/climate-change-report); Storey, B., Owen, S., Noy, I. & Zammit, C. (2020), "Insurance Retreat: Sea level rise and the withdrawal of residential insurance in Aotearoa New Zealand. Report for the Deep South National Science Challenge", December 2020. Retrieved from [deepsouthchallenge.co.nz/wp-content/uploads/2021/01/Insurance-Retreat-December-2020-Final-Report.pdf](https://www.deepsouthchallenge.co.nz/wp-content/uploads/2021/01/Insurance-Retreat-December-2020-Final-Report.pdf)

26 Of note, current net rental yields hover around 2.0 percent, which is significantly lower than the 3.3 percent average during the 2000-2020 period. Likewise, the average capital gain growth could be expected to move in tandem with household disposable income, given the already historically high house price-to-income ratio in New Zealand.

**Figure 9: New Zealand housing estimated weight allocations for leveraged investors in an international asset class portfolio under different simulation scenarios**



Notes: Markowitz model estimations using before-tax returns (in excess of the mortgage rate) on global equities, local equities (New Zealand Stock Exchange), housing (capital gains plus net rental yield) and global bonds. Sample based on the annual end-of-period data between 2000 and 2020. \*Historical baseline features housing allocations for leveraged investors with no idiosyncratic risks, average annual capital gains of 7.6 percent, and average annual net rental yield of 3.3 percent. \*\*Includes the historical average rental yield of 3.3 percent.

Sources: MSCI ACWI Index, local prices (Global Equities, including net dividends); Hedged Bloomberg Barclays Global-Aggregate Bond Total Return Index, local prices (Global Bonds); Bloomberg, S&P/NZX All Index (New Zealand Stock Exchange); Real Estate Institute of New Zealand (REINZ House Prices); Reserve Bank of New Zealand (net rental yield estimates, average mortgage rates); Authors' calculations.

## Concluding Remarks

This Note explains the rationale behind New Zealanders' preferences for investing in housing. In hindsight, high returns (in a favourable tax environment), low volatility, and minimal correlation with other major asset groups have made housing an attract investment option to date.

Importantly, our results do not validate house price growth path in the past two decades as sustainable or rational, as the modelling exercise purely takes past asset price changes as given in order to estimate portfolio allocation shares.

Past performance is no guarantee of future results. There is no surety that future housing returns will keep up with past rates. If anything, there are plenty of emerging factors pointing to the opposite direction. That includes tax and regulatory changes, approaching limits to the decades-long decline in global interest rates, as well as already stretched housing sustainability measures.

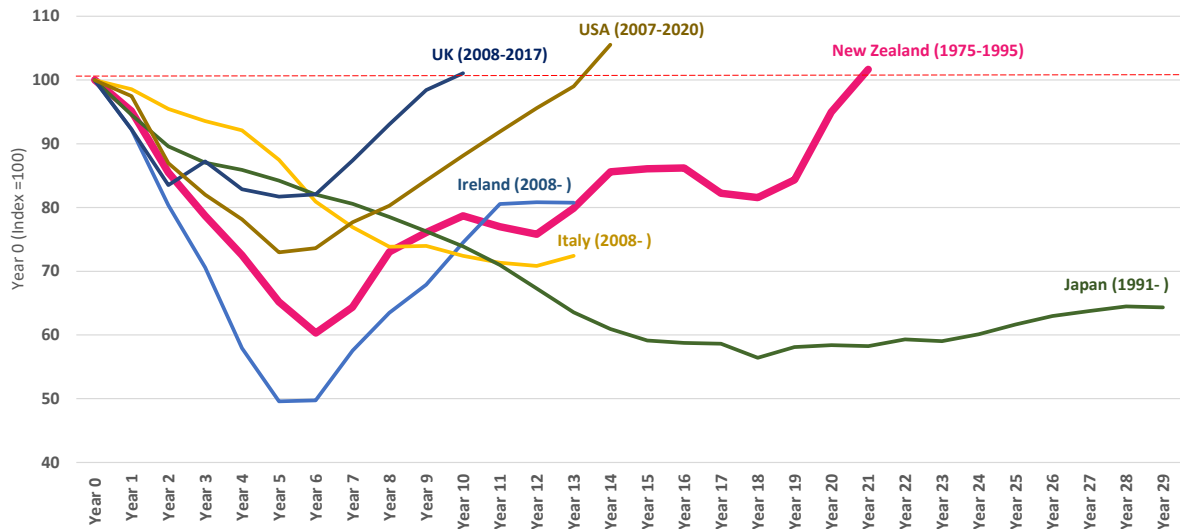
As such, retail investors in New Zealand should beware of placing their bets on seemingly "forever rising" house prices. Housing may be a valid asset class to invest in, but it is not without risks and needs to be considered as part of a broader, diversified and well-informed wealth portfolio strategy.

The large role of residential property investment has come at the expense of diversification in household's balance sheets. For many New Zealand families, housing is the largest — if not the sole — investment asset. That intensifies the exposure to both individual property and housing market risks of unfavourable events eroding the value of lifetime savings.

In addition, such a prominence of New Zealand's housing market comes with unintended risks and costs. That includes the wider social costs of the potential financial stability risk from having such a very large investment egg in our national wealth *kete*. Housing downturns can have a severe and prolonged impact not just on individual portfolios, but also feature wider social costs in terms of aggregate financial stability risks, particularly the impact of housing demand on the likelihood and severity of macroeconomic boom-bust cycles.<sup>27</sup>

For the seasoned retail investor, international and domestic experiences provide a cautionary tale. **Figure 10** depicts how many years it took for housing markets in selected economies to recover — or are still falling short of previous house price peaks. Of note, the New Zealand house price levels took twenty years to recover following a downturn in early 1970s.

**Figure 10: Housing downturns (years to recover, selected economies, real prices)**



Sources: OECD real house price levels, end-of-period annual data; Authors' calculations.

<sup>27</sup> See Piers Ovenden (2019), "Macroprudential policy framework: Mitigating the likelihood and severity of boom-bust cycles", RBNZ, May.

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