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Regional Variation in Rental Price Inflation

Abstract

We constructed estimates of rental price inflation for the 53 urban areas of New Zealand over the past 25 years. Our estimates suggest that rental price inflation in many urban areas has been substantial over the past decade. These findings underscore the need for financial resources to be targeted at improving official statistical measures of housing prices at a more geographically refined resolution so that changes in the costs of living for a broader range of New Zealanders can be effectively communicated to the public, policymakers and researchers.

Keywords rents, housing costs, hedonic price index, regional price variation, quality-adjusted prices, double imputation

Housing costs in New Zealand are among the highest in the developed world. Tenants, in particular, spend a disproportionate amount of their income on housing: about one-quarter of tenanted households spend more than 40% of their disposable income on rent, the second-highest rate in the OECD. Moreover, rental costs disproportionately affect low-income households that are by definition the least well equipped to accommodate high

living costs. More than half of tenants in the bottom fifth of the income distribution spend more than 40% of their disposable income on rent (OECD, 2024).

In addition, the proportion of New Zealand households that are tenants has been increasing over the past three decades. Home ownership has declined from 73.8% in 1991 to 66% in 2023 (Statistics New Zealand, 2020, 2024). Among middle-aged adults the declines are larger. The proportion of people aged 30–34 who lived in an owner-occupied home decreased from 59.1% to 51.1% over this period, while the proportion of those aged 35–40 declined from 68.1% to 59.2%.¹

Rental costs, therefore, matter for a large and growing proportion of New Zealanders. Rental prices are consequently a primary indicator of the welfare of tenants. Statistics New Zealand calculates rental price indexes for the country as a whole and five broad regions (Auckland, Wellington, the rest of the North Island, Canterbury, and the rest of the South Island). However, one drawback of this high-level geographic aggregation is that any heterogeneity in rental prices within the broad regions is obfuscated. There is a

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need for measures of rental price changes at a finer geographic resolution in order to understand whether rental price increases at the broad regional level are informative of rental price increases among the various urban centres that constitute the regions.

This article responds to this need by producing measures of rental price inflation for the functional urban areas (defined below) of New Zealand. The resultant price indexes reveal significant rental price appreciation in many urban areas. Nominal rents in Rotorua, Gisborne, Napier, Whanganui and Invercargill more than doubled over the decade to 2024. Rents in Whangārei, Tauranga, Hastings and Kāpiti Coast increased by between 80% and 100%. Tokoroa experienced a

the construction of the HII is not the driver of the regional heterogeneity.

We then estimate some exploratory reduced-form regressions that correlate variation in nominal rental price growth with a variety of explanatory variables, including population growth, dwelling growth, short-term rental stock, and indicators of changes in rental quality. Coefficients are generally insignificant in the multivariate regression, except for coefficients on changes to the dwelling stock, which are negative and statistically significant under robust regression methods that adjust for outliers. Although this pattern is consistent with the interpretation that urban areas with more responsive housing supply tend to

reports the weekly rent on new tenancies.

We use functional urban areas (FUAs) as the geographic unit in our analysis. FUAs are delineated by Statistics New Zealand based on commuting patterns from census data. They are analogous to commuting zones. Each FUA therefore corresponds to a spatial labour market: a worker residing in a given FUA is within a daily commuting distance of every employment location within that FUA. Neighbourhood housing markets are therefore likely to be highly integrated with the FUA. Conversely, regional administrative units such as territorial authorities often contain several different spatial labour markets, which are consequently likely to be subject to different economic shocks. Rents in the ministry's dataset are reported at a geographic resolution that is sufficiently granular (meshblocks) to allow the rental bond data to be assigned to functional urban areas. The dataset also includes information on the number of bedrooms, property type (house, apartment or flat), and whether the dwelling is private or state-owned. The individual bond data can be accessed in a Statistics New Zealand datalab.

... rents in metropolitan areas such as Auckland, Wellington and Christchurch have increased by between 30% and 60% over the [decade to 2024.]

substantial, 190% increase in its price index. Meanwhile, rents in metropolitan areas such as Auckland, Wellington and Christchurch have increased by between 30% and 60% over the same period. These metropolitan areas are notable for having implemented land use reforms to encourage housing supply over this time frame (Greenaway-McGrevy, 2024, 2026; Maltman & Greenaway-McGrevy, 2025)

Our measure of rental price inflation is based on the Ministry of Business, Innovation and Employment dataset of rental bonds for new tenancies, which also forms the basis for Statistics New Zealand's rental price indexes. From this microdata we produce double-hedonic imputation price indexes for each of the 53 functional urban areas over the period 2000 to 2024. The hedonic imputation index (HII) is a constant-quality measure of price inflation. Measures of rental price inflation based on median or arithmetic average rents exhibit similar (albeit larger) increases to the hedonic rental price index, suggesting that

experience lower rental price growth, it should be viewed as a conditional association rather than causal evidence, given that the explanatory variables are endogenous and jointly determined with the outcome. In the absence of stronger identification, these estimates are best interpreted as suggestive.

The following section describes the dataset and method for constructing hedonic rental price indexes. We then compare the rental price indexes of different urban areas, before providing our explanatory regressions explaining variation between urban rental prices. We conclude by arguing that additional resourcing be directed to measuring rental price changes at a higher geographic resolution than currently produced.

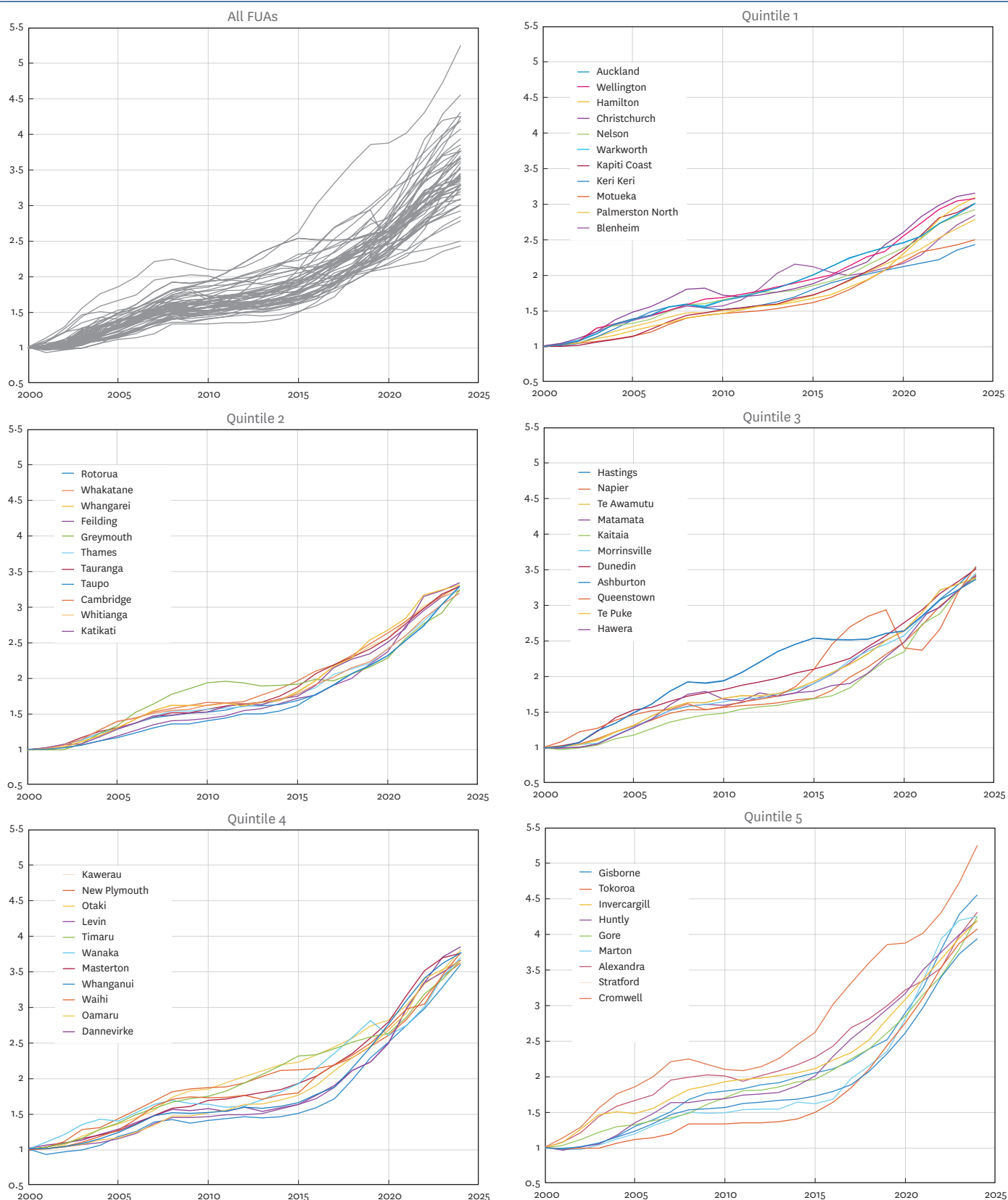
Measuring regional rental price inflation

The dataset of new rental bonds administered by the Ministry of Business, Innovation and Employment provides the basis for our measures of rents. The dataset

Average rents (including medians and arithmetic or geometric means) can easily be constructed for each FUA. While straightforward and transparent, averages are known to provide poor measures of price inflation due to compositional shifts in the cross section of rental properties over each time period. Changes in average rental prices might therefore reflect changes in the characteristics of the rental properties in the sampled cross section in addition to average changes in rental prices of the housing stock over time.

We therefore construct price indexes that measure rental price changes on a quality-adjusted basis. Statistics New Zealand produces monthly rental price indexes using a time dummy hedonic model that is fitted to individual rental bond data over an eight-year sample window (Bentley, 2022). Because the model includes individual dwelling fixed effects, rental price changes are inferred from repeated tenancies within the sample window.² The method is consequently data-hungry: dwellings with a single tenancy in an eight-year period do not contribute to estimated inflationary

Figure 1: Double imputation hedonic rental price indexes by functional urban area, 2000–24



Source: authors' calculations using MBIE tenancy bond data
 Quintiles based on index appreciation between 2000 and 2024. Fifth quintile is highest appreciation.

effects. This limits the method’s applicability at more granular geographic resolutions. As previously observed, Statistics New Zealand reports rental price indexes at the broad regional level: Auckland, Wellington, the rest

of the North Island, Canterbury, and the rest of the South Island. The low geographic resolution masks much of the heterogeneity in rental price trends that we document here.³

As explained, we use the double-imputation hedonic price index (or HII) to track quality-adjusted changes in rents. This method is often used to measure house price inflation and is preferred by

Regional Variation in Rental Price Inflation

Table 1: Percentage changes in rental price measures by functional urban area, 2000–2024

FUA	Hedonic imputation index	Median price	Mean price
Auckland	143.1	172.0	169.4
Hamilton	178.8	213.5	208.9
Tauranga	228.7	252.6	252.8
Wellington	149.9	182.6	176.8
Christchurch	184.8	211.1	214.2
Dunedin	251.6	268.8	267.7
Whangārei	223.1	262.5	253.4
Rotorua	215.8	245.5	242.8
Gisborne	294.3	320.0	312.4
Hastings	237.2	275.0	273.3
Napier	238.2	265.7	265.2
New Plymouth	263.1	296.7	288.6
Whanganui	276.8	292.0	286.6
Palmerston North	209.2	222.9	218.7
Kāpiti Coast	200.9	217.5	213.1
Nelson	192.3	222.2	217.1
Invercargill	319.2	331.8	328.9
Cambridge	230.4	271.4	269.4
Te Awamutu	239.1	268.8	259.7
Tokoroa	308.2	316.7	313.2
Taupō	229.8	242.9	248.3
Whakatāne	220.1	268.8	251.2
Feilding	224.0	267.7	258.9
Levin	267.3	278.6	285.4
Masterton	276.5	307.7	296.0
Blenheim	214.6	254.8	254.0
Greymouth	225.3	213.7	238.8
Ashburton	253.7	269.2	275.3
Timaru	267.6	260.0	274.7
Oamaru	281.8	273.9	264.7
Queenstown	255.2	300.0	319.2
Kaitaia	244.3	253.3	265.3
Kerikeri	207.4	230.6	246.0
Warkworth	200.0	220.0	218.9
Whitianga	231.4	273.3	254.9
Thames	227.3	250.0	238.5
Waihi	277.6	292.9	287.0
Huntly	319.8	303.8	326.8
Morrinsville	245.3	266.7	267.0
Matamata	241.4	280.0	263.1
Katikati	234.2	263.6	262.6
Te Puke	257.1	282.4	274.1
Kawerau	261.4	269.2	279.4
Stratford	356.0	358.3	366.8
Hawera	257.9	292.6	292.1
Marton	325.6	316.7	332.3
Dannevirke	285.5	291.3	304.4
Ōtaki	264.9	260.0	263.0
Motueka	207.8	212.5	224.1
Cromwell	425.2	450.0	436.8
Alexandra	331.8	345.8	358.3
Wanaka	270.7	344.4	293.1
Gore	325.5	350.0	340.6

statistical agencies such as Eurostat (Eurostat, 2013). The approach fits a predictive model of prices to the cross section of prices for each time period using the characteristics of the property as predictors. The fitted model can then be used to predict (or impute) unobserved prices in the period prior to observed prices, thereby generating repeated price observations on transacted prices. Under the double-imputation method, predicted prices also replace observed prices in the period of sale in order to reduce bias in the index. We provide more details on the method in the Appendix.

One drawback of the rental bond data is that there are few characteristics to condition on. We use the available observable attributes of the tenancies: the number of bedrooms, dummies for the housing type, and dummies for neighbourhood. We believe this approach yields the best method subject to the limitations of the dataset and the geographic resolution of our analysis. We use the statistical area two (SA2) unit of the dwelling as its neighborhood. Following Statistics New Zealand, we use only privately owned dwellings to compute rental price indexes.

Time period

The Ministry of Business, Innovation and Employment rental bond data is available from 2000 onwards. At the time of writing, the last available full year was 2024. Our price indexes therefore span 2000–24. However, much of our analysis will focus on the past decade (2015–24). This is for two reasons. First, it is the period where heterogeneity in rental price inflation becomes most apparent. Second, this period is mostly after Auckland and Lower Hutt enacted widespread zoning changes to enable increased housing supply, offering some variation in dwelling stock growth between different FUAs which aids identification of factors contributing to the significant regional rental price divergence that we document below. Lower Hutt constitutes parts of the Wellington FUA.

Regional trends in rental prices

In this section we present the constructed price indexes over the period 2000–24. Figure 1 exhibits the indexes. To illustrate regional heterogeneity, we depict indexes

by quintiles based on appreciation between 2000 and 2024. Several interesting patterns emerge.

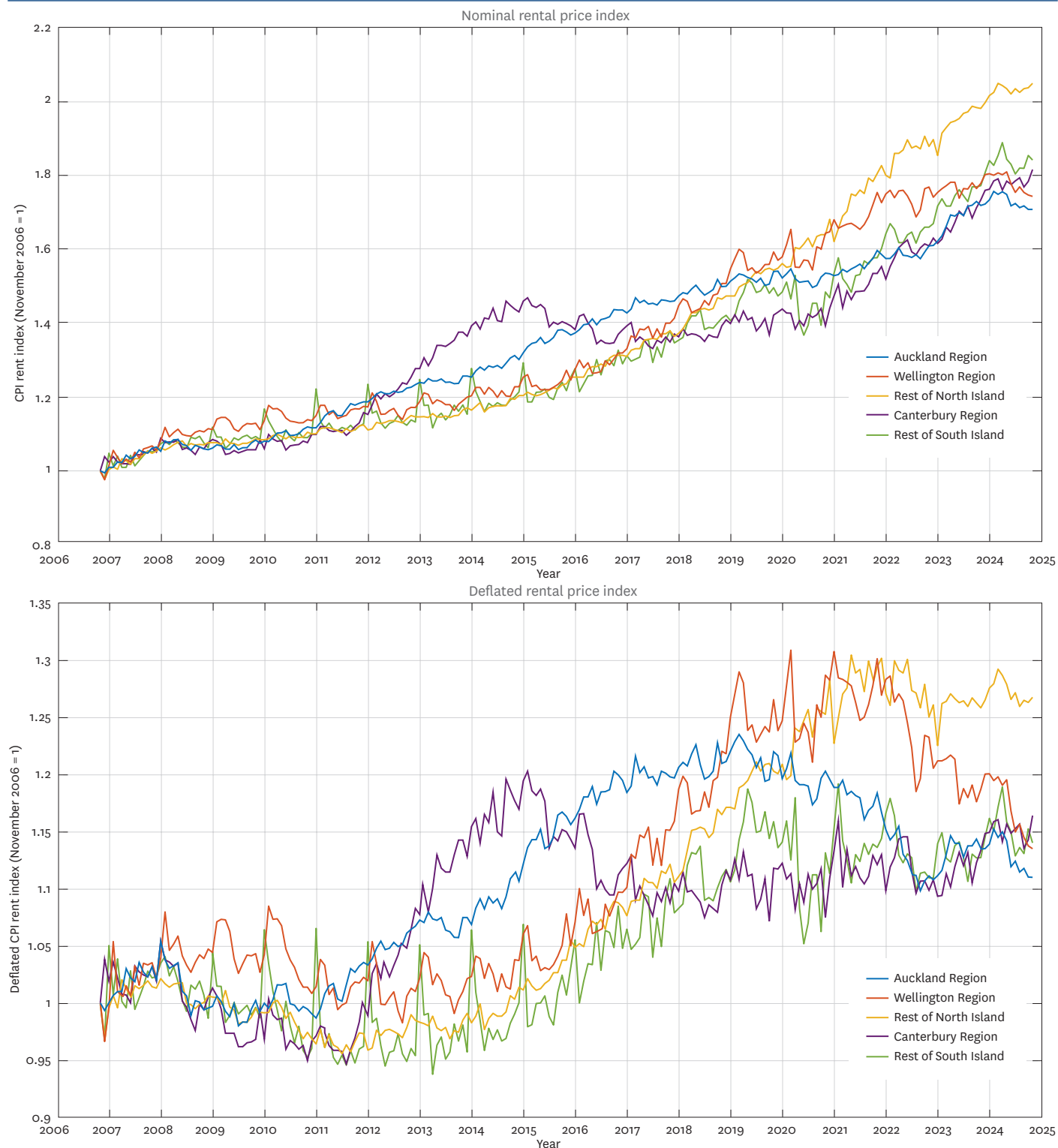
First, there is significant heterogeneity in rental price appreciation rates over the period. At the lower end of the distribution, nominal rents in Auckland increased by 143% over the 25-year period. At the higher end, nominal rates increased by 425% in

Cromwell. Table 1 provides percentage changes in the indexes between 2000 and 2024.

Heterogeneity is present within the urban areas that constitute Statistics New Zealand broad regions, suggesting that these low-resolution geographic units can obfuscate substantial divergence in housing costs over time. For example, Gisborne and

Tokoroa appear in the fifth quintile (appreciating by 294% and 308%), while Hamilton and Palmerston North appear in the first quintile (appreciating by 179% and 209%). However, all four urban areas are part of the 'rest of the North Island' region. The rental index for the broad region is unlikely to reflect changes in rental prices for any of these cities.

Figure 2: Statistics New Zealand rental price indexes by broad region, November 2006–November 2024



Source: Statistics New Zealand
 Notes: Data begin in November 2006. Statistics New Zealand rent CPI is the flow-based measure. Regional CPI used to deflate rental price indexes.

Table 2: Percentage changes in Statistics New Zealand rental flow CPIs

Area	Stats NZ rent CPI % change		HII % change	
	Nov 2006– Nov 2024	Nov 2014–Nov 2024	2006–24	2014–24
Auckland region	70.6	29.9	-	-
Wellington region	74.1	41.6	-	-
Canterbury region	81.7	26.4	-	-
Auckland FUA	-	-	93.1	43.4
Wellington FUA	-	-	107.7	58.6
Christchurch FUA	-	-	100	32.1

Notes: Statistics New Zealand rent CPI is the flow-based measure; HII denotes hedonic imputation index.

Second, four of the six FUAs classified as ‘metropolitan’ by Statistics New Zealand (Auckland, Wellington, Hamilton and Christchurch) are in the bottom quintile. Cities within these urban areas implemented land use reforms to encourage housing supply. Auckland upzoned three-quarters of residential land under the Auckland Unitary Plan in 2016 (Greenaway-McGrevy & Jones, 2025), while Lower Hutt implemented a sequence of planning changes to encourage medium- and high-density housing from 2017 (Maltman & Greenaway-McGrevy, 2025). Christchurch City, Selwyn and Waimakiriri also made land use changes to encourage home-building after the 2010–11 Canterbury earthquakes. Tauranga and Dunedin, the two remaining metropolitan FUAs, appear in the second and third quintiles respectively.

Third, some of the urban areas exhibit substantial idiosyncratic variation. Christchurch rents exhibit substantial idiosyncratic variation from approximately 2011 onwards that is almost certainly due to the Canterbury earthquakes, which damaged 100,000 homes (approximately half the housing stock) and rendered approximately 7,000 dwellings uninhabitable (Paton & McClure, 2013). Subsequent land use reforms under the Land Use Recovery Plan 2013 enabled replacement through construction in geographic locations more resilient to earthquake risk. This idiosyncratic variation dominates the Canterbury region due to the size of Christchurch, making the price indexes unsuitable for smaller Canterbury towns. The effect of the Covid-19 pandemic is noticeable in Queenstown, with rents there rapidly declining between 2019 and 2022, before recovering: this pattern is almost certainly driven by Covid-19 and the closure of the border during the pandemic. The region is highly dependent on tourism and

foreign workers.⁴ The ‘rest of the South Island’ is unlikely to reflect this variation as Queenstown constitutes only a small proportion of the broad region.

For comparative purposes, Figure 2 presents Statistics New Zealand flow rental price indexes for the broad regions. Table 2 compares the percentage increase in the Statistics New Zealand indexes over the period available (2006–24) for Auckland, Wellington and Canterbury with that of the HIIs for the Auckland, Wellington and Christchurch FUAs. The HIIs generally exhibit a higher average rate of inflation. This is consistent with rents in urban areas growing faster than those in rural areas, as the broad regions encompass both urban and rural locations.

Potential causes of regional divergence in rental price inflation

In this section we discuss plausible mechanisms generating the divergence in house price appreciation since 2016.

Inelastic housing supply

Over the first two decades of the 21st century, New Zealand experienced a rapid increase in population without a commensurate increase in housing. Between the 2001 and 2018 censuses, the country’s usually resident adult-aged population (persons aged 20 and over) increased by 32.4%, while the dwelling stock increased by only 24.5% – a shortfall of approximately 8 percentage points.⁵ The undersupply of housing was most acute in the metropolitan centres. In Auckland, the nation’s largest city, the adult-aged population increased by 42.2% compared with a 28.8% increase in dwellings, representing a shortfall of almost 14 percentage points. The ratio of adults to dwellings increased from 1.91 to 2.11, implying that one out of every five occupied dwellings had an additional adult living in it, on average.

As already noted, within the past decade, Auckland and Lower Hutt have enacted widespread zoning reforms to enable housing supply to respond to the increase in demand. In 2016, the Auckland Unitary Plan was made operative, which upzoned approximately three-quarters of residential land (Greenaway-McGrevy & Jones, 2025). Beginning in 2017, Lower Hutt enacted a series of zoning reforms to abolish parking minimums and enable medium- and high-density housing that culminated in nearly all residential-zoned land being upzoned. Both cities subsequently experienced a construction boom that has been attributed to these reforms (Greenaway-McGrevy, 2026; Maltman & Greenaway-McGrevy, 2025).

Notably, Auckland experiences lower rental inflation than other cities from 2016 until 2024, which has been attributed in part to its supply-side reform (Greenaway-McGrevy & So, 2024). Similarly, Wellington experiences lower inflation from 2018 onwards, which can be partially attributed to the Lower Hutt upzoning (Maltman & Greenaway-McGrevy, 2025). Thus, supply reforms can explain some of the regional variation in rental price changes over the past decade.

Housing supply elasticity also helps us understand how demand-side policies affect housing outcomes. Policies that stimulate demand are more likely to generate increases in rental prices when supply is inelastic. For example, Grimes and Aitken (2010) show that demand shocks have a larger impact on house prices in supply-constrained regions.

Rental housing policies

The sixth Labour government (2017–23) implemented several legislative changes that may have had an impact on rents over the past decade. Beginning in 2018, it introduced a series of bills to protect and enhance renters’ rights, including the prohibition of letting fees and bidding for tenancies; limit tenant liabilities; restrict rent price increases (to every 12 months); and restrict cause to terminate tenancies.⁶

Legislation to enhance minimum health and safety standards was passed in July 2019.⁷ Tax treatment of property investment also changed. From 1 April 2019, landlords could no longer offset property investment losses against other

sources of income when calculating their income tax liability (known as ‘ring-fencing’), and their ability to claim mortgage interest as an expense on the rental property was phased out from October 2021, although this was subsequently reversed under the current National-led government. The Labour government also increased the accommodation supplement for low-income households in 2018, which may have increased rents, given the general inelasticity of housing supply in many urban areas. Hyslop and Rea (2019) show that increases in the accommodation supplement in central Auckland were partially passed through into higher rents.

Notably, these changes affected rental housing across the whole country. However, the policies may have generated the observed regional heterogeneity if they had a disproportionate impact on urban areas.

Airbnb

It is possible that the advent of Airbnb led to long-term rental housing stock being converted to short-term holiday accommodation. This reduction in rental housing supply would generate price increases in locations where housing supply could not expand to meet demand for rental accommodation. Note, however,

that online holiday rental accommodation predates Airbnb. Bookabach started in 2000 and Bachcare was founded in 2003. Both Queenstown and Wanaka have a very high proportion of their housing stock in Airbnb listings.

Reduced-form regression

We estimated cross-sectional regressions of rental price growth between 2018 and 2023 on a variety of explanatory variables related to the potential causes listed below (Table 3). We choose these two years because they coincide with census years, the census being the source of most of our explanatory variables. Our explanatory variables are:⁸

- population growth: this is the log difference of FUA population between 2018 and 2023;
- dwelling growth: this is the log difference of dwelling growth between 2018 and 2023;
- the ratio of Airbnb separate dwellings to dwelling stock in the 2023 census;
- the change in the proportion of renting households reporting any dampness between the 2018 and 2023 censuses.

Before proceeding, we emphasise that these regressions are reduced-form and should be interpreted as descriptive. Rental price growth, population growth, dwelling

growth, rental quality and short-term rental activity are jointly determined outcomes, and are therefore subject to simultaneity and omitted variable concerns. As such, the estimates cannot be given a causal interpretation and are only informative of conditional correlations.

We began with pairwise regressions between rental price growth and each explanatory variable, followed by specifications that include all covariates jointly. In the pairwise regressions, population growth, dwelling growth and Airbnb proportion are all negatively correlated with rental price growth. These unconditional correlations are consistent with multiple, jointly determined causal channels and therefore do not separately identify the underlying structural relationships. For instance, the negative relationship between rental price growth and population growth is consistent with higher rents discouraging in-migration, while the negative relationship between rental price growth and dwelling growth is consistent with supply expansions placing downward pressure on rents.

We next estimated multivariate specifications that include all explanatory variables jointly. Including these covariates allows us to estimate partial correlations between each explanatory variable and

Table 3: Regression results

Regressor	Non-robust regression					Robust regression				
Constant	0.387*	0.389*	0.442*	0.437*	0.433*	0.384*	0.384*	0.433*	0.431*	0.414*
	(0.022)	(0.015)	(0.025)	(0.022)	(0.035)	(0.022)	(0.016)	(0.026)	(0.022)	(0.035)
	[17.5]	[25.6]	[17.6]	[20.0]	[12.4]	[17.7]	[24.6]	[16.6]	[19.2]	[11.8]
Quality change	1.061				1.127	1.166				0.492
	(1.022)				(0.951)	(1.006)				(0.951)
	[1.039]				[1.184]	[1.159]				[0.517]
Airbnb proportion		-0.557*			-0.403		-0.541*			-0.007
		(0.185)			(0.316)		(0.190)			(0.316)
		[-3.017]			[-1.273]		[-2.849]			[-0.021]
Population growth			-0.639*		0.321			-0.590*		0.758
			(0.189)		(0.568)			(0.196)		(0.568)
			[-3.379]		[0.564]			[-3.002]		[1.335]
Dwelling growth				-0.923*	-0.933				-0.853*	-1.602*
				(0.241)	(0.581)				(0.248)	(0.581)
				[-3.830]	[-1.604]				[-3.444]	[-2.757]
Observations	53	53	53	53	53	53	53	53	53	53
R ²	0.021	0.151	0.183	0.223	0.265	0.028	0.139	0.151	0.189	0.217
Adjusted R ²	0.002	0.135	0.167	0.208	0.204	0.009	0.122	0.134	0.173	0.152

Notes: Standard errors in parentheses. * p<0.01, + p<0.05, # p<0.10. Robust regression implemented with RobustOpts in the fitlm MATLAB function, which down-weights observations with large outlier residuals. Dependent variable is the change in log rents between 2018 and 2023.

rental price growth, conditional on observed covariates, although it does not address the simultaneity concerns discussed above. In these specifications, the coefficient on dwelling growth remains negative and statistically significant under robust estimation, which down-weights the influence of outliers, while the coefficients on the other variables are insignificant. This pattern is consistent with the interpretation that, holding observed factors constant, FUs with more responsive housing supply tend to experience lower rental price growth. However, given the joint determination of rents and housing supply, this result should be interpreted as a conditional association rather than evidence of a causal effect. Without stronger identification, these estimates should be interpreted as suggestive rather than causal.

Conclusion

There is a pressing need for rents to be measured at a finer geographic resolution than the broad regions currently offered

by Statistics New Zealand. How can this be achieved? The hedonic rental price indexes proposed herein could be further developed to include additional explanatory variables if the Ministry of Business, Innovation and Employment rental bond data was matched to local council records on individual dwellings. This would enable the hedonic regression to incorporate a wider array of dwelling characteristics, potentially increasing the accuracy of the fitted rents that form the basis of the HII. Matching would entail further coordination between local councils and Statistics New Zealand to source the required datasets. Matching datasets may require recognition of different administrative practices in recording address information, perhaps requiring the application of fuzzy matching algorithms.

While regional price indexes tell us about differences in inflation rates between regions, they do not tell us about differences in price levels between regions. Price indexes tailored to measuring regional

differences in rents and price levels more generally would be useful for understanding differences in the cost of living between locations.⁹ This could be achieved as part of a broader programmatic focus on regional measurement of housing costs.

- 1 Disclaimer: These results 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. For more information about the IDI please visit <https://www.stats.govt.nz/integrated-data/>.
- 2 Different window sizes result in substantial differences in measured inflation over the long run (see Bentley, 2022).
- 3 That said, the indexes are broadly reflective of the trends we document using other price index measurement methods. Rents in the 'rest of the North Island' have grown by about 50% over the past ten years.
- 4 47.7% of Queenstown's population was recorded as foreign-born in the 2018 census, compared with 27.4% for the country.
- 5 Authors' calculations based on census data obtained from <https://www.stats.govt.nz/assets/Uploads/2018-Census-population-and-dwelling-counts/Download-data/2018-census-population-and-dwelling-counts-amended-5-3-2020.xlsx> and <https://nzdotstat.stats.govt.nz>.
- 6 Residential Tenancies (Prohibiting Letting Fees) Amendment Act 2018, Residential Tenancies Amendment Act 2019 and Residential Tenancies Amendment Act 2020. [accessed 26 Feb 2026].
- 7 Residential Tenancies (Healthy Homes Standards) Regulations 2019. [accessed 26 Feb 2026].
- 8 See Greenaway-McGrevy & So, 2024 for more detailed information on the data sources.
- 9 Price indexes can measure differences in prices either between locations or over time (Biggeri & Ferrari, 2010). They cannot measure differences across both dimensions due to changes in the consumption basket of the representative household over time and space.

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Appendix Hedonic imputation index construction

The hedonic indexes are the same as employed by Greenaway-McGrevy and So (2024). The sample of rental bonds consists of apartments, houses and flats. Let $p_{i(t),t}$ denote the logged weekly rent of dwelling $i(t)$ in period t , and let $X_{i(t),t}$ be a vector of characteristics. The hedonic regression is

$$p_{i(t),t} = X_{i(t),t}'\beta_t + \varepsilon_{i(t),t} \quad (1)$$

where $t = 1, \dots, T$ indexes time periods (years), and $i(t) = 1(t), \dots, n(t)$ indexes the cross sections observed in period t . We include the following observable characteristics in $X_{i(t),t}$: number of bedrooms, a dummy

for apartment, a dummy for flat, and locational dummies (specifically, SA2 dummies). For each FUA, we fit **1** to the cross section of rents for $t = 1, \dots, T$, obtaining $\{\hat{\beta}_t\}_{t=1}^T$. For each observation $i(t)$ in period t , we use the estimated hedonic function to impute rents in period t as $\hat{p}_{i(t),t} = X_{i(t),t}'\hat{\beta}_t$ and $t - 1$ as $\hat{p}_{i(t),t-1} = X_{i(t),t}'\hat{\beta}_{t-1}$. We then run the following regression

$$\hat{p}_{i(t),t} - \hat{p}_{i(t),t-1} = \delta_t + u_{i(t),t}, \quad t = 2, \dots, T$$

The sequence $\{\delta_t\}_{t=1}^T$ yields the hedonic imputation price index, where $\delta_1 = 0$.

Save the Dates

Master of Public Policy (MPP) 50th Anniversary 26-27 August 2026 in Wellington

This year marks the 50th Anniversary of the Master of Public Policy at the School of Government, Te Herenga Waka—Victoria University of Wellington. Please join us in celebrating this achievement with a series of events this August.

Wednesday 26 August The celebrations will begin with the annual lecture by the Sir Frank Holmes Fellow in Public Policy on Wednesday evening.

Thursday 27 August There will be a one-day symposium on ‘The Future of Public Policy’. The day will feature four themed sessions: Climate and Resilience; the Digital State – AI and Public Services; Social Equity, Wellbeing and Inclusivity, and Democracy Under Pressure, Trust, Polarisation and Public Leadership. The celebrations will close

with an evening event at Parliament featuring short speeches and the opportunity to socialise.

All alumni will have the option of joining for part, or all, of the celebrations.

More information will be available in due course.

If you have any queries, please email:

wellingtonschoolofbusinessandgovernment@vuw.ac.nz



Te Kura Kāwanatanga
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