Timely Rental Price Indices for thin markets: Revisiting a chained property fixed-effects estimator

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Overview

• Relevance of New Zealand rental prices*
  • Why care about regional rental prices?

• NZ rental price statistics: Overview and opportunities

• Proposed enhancements:
  • New subnational series
  • Revisable flow (new tenancy) index:
    • Smoother
    • Longer-timeseries
    • Stocks in correct time period

*In this paper ‘rentals’ is used as shorthand for ‘actual rentals for housing’
Why **care** about rental prices?

**Figure 2: Rental price pressures in New Zealand**

- **Strong population growth**
  - Resident population (Million persons)
  - **Source:** Stats NZ, Population estimates

- **Period of low house building**
  - New dwellings per 1000 residents
  - **Source:** Stats NZ, Building consents

- **Growing household size**
  - Mean people per household
  - **Source:** Stats NZ, Household Economic Survey

**Tenure**
- **All**
- **Renters**
Why care about regional rental prices?
Two Rental Price Indices (RPIs): stock & flow

Born in 2000

**CPI, rent** (‘actual rentals for housing’ class)

*Postal survey, matched-pairs quality adjustment*

Born in 2019

**Flow, RPI**

*New Tenancies*

**Stock, RPI**

*All Tenancies*

Inherited CPI conventions

Opportunities in 2022:

- Regional?
- Revisable?
- Longer timeseries?

- New method & data source since 2019
- CPI ‘stock’ concept: price change across all tenancies
- Non-revisable
- Limited regional breakdowns

The full story:

Revisions policy revisited

Figure 1: More precise RPI with an open revision policy

New Zealand Rental price index (flow)

Change since November 2006

Annual change

- Open revisions, chained method
- Published series: no data revisions, spliced method
Choice of chain position to create series longer than window length (with no revision constraint)

Benefits of revisable series

1. Less volatility
2. Longer timeseries
3. Shocks in correct time period
Large real-time reporting bias in raw administrative, Tenancy Bond data:

A cautionary tale
Rents soar after Covid-19 freeze ends

Dileepa Fonseka and Kate Newton • 09:03, Jan 27 2021

Average weekly rent, nationwide

The end of the Covid-19 rent freeze signalled a sharp increase in average rents.

Rents shot up around the country when last year’s rent freeze was lifted, including the largest monthly rent increase in recorded history.

Renters have been knocking on the door of advocacy organisations and taking cases to the Tenancy Tribunal in an attempt to fight increases of nearly 40 per cent in some cases after the Government’s Covid-19 rent restrictions were lifted.

Across the country, average rents rose 11 per cent between when rents were unfrozen on September 25 and the end of 2020. The average rent rose 3 per cent in the month immediately after restrictions were lifted, according to Ministry of Business Innovation and Employment (MBIE) rental bond data.

Weekly rent shown is the geometric mean, as calculated by MBIE

Chart Kate Newton • Source: MBIE

Raw average price: Looks like big increase in real time (without treatment)
Substantial revision bias (without treatment)
Little to report after statistical treatment: Price index, with consistent input data

**Geometric mean weekly rental amount**

With RPI (Jan 2018 = $415)

- **Currently published: April 2022**
- **Originally published: January 2021**
- **RPI**

### Annual change to Dec 21

**NZ**
- Raw average, original: 11.8%
- Raw average, revised: 4.2%
- RPI: 1.5%

**Auckland**
- Raw average, original: 13.8%
- Raw average, revised: 3.1%
- RPI: 0.0%
Figure 4: Real-time availability of data

**Bond data availability**
Proportion of data available relative to all available

**Real-time accuracy**
Geometric mean of weekly rental amount

Ratio of estimates using available data relative to estimate using all available data

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Days after reference period: 0, 28, 56
Treatment of real-time bias

Price index methodology controls for most of the bias, BUT ...

Consistent subset of data need for initial month to minimise systematic revisions
Subnational series

• Change to revision policy: Revisable flow RPI maximises number of price observations (reduces volatility)

• Regional data practicalities
  • Additional regional RPIs available after ~6 weeks
  • Small regions (< 15,000 rental properties) to use 3 month rolling data
Practicalities: 3-month rolling data
Supplementary slides

Full research paper at:
https://www.researchgate.net/publication/360555176_Timely_Rental_Price_Indices_for_thin_markets_Revisiting_a_chained_property_fixed-effects_estimator
Pure price change: Value of quality adjustment

Growth in dwellings correlates better with RPI, compared with raw geometric mean.

**Pure price change: RPI**

**Raw geometric mean**

**Implied quality change**
A4: Trends in regional rental prices and mean people per dwelling

Trends in regional rental prices and people per dwelling
Change since June 2006

Auckland
- People per dwelling
- Relative rental price index

Canterbury
- People per dwelling
- Relative rental price index

Gisborne
- People per dwelling
- Relative rental price index

Hawke's Bay
- People per dwelling
- Relative rental price index

Manawatu-Whanganui
- People per dwelling
- Relative rental price index

Bay of Plenty
- People per dwelling
- Relative rental price index