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The Henry Halloran Research Trust

Explainer: Rental price and vacancy metrics

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Hot rental markets generated many popular news headlines during 2022.

Australian news consumers have read that "*Renters are getting smashed*" in Melbourne, and that the rental market is "*extremely challenging*" in Sydney, and ever that "*Renters competing 'Hunger Games-style' as number of rental properties dwindles*".[1]

These headlines are certainly very shocking, and no doubt attract clicks.

As well as rental data, vacancy rates of rental property is a metric that is commonly quoted in media reports to provide insights into the economic processes happening in the rental market. "*National vacancy rates hit record low*" was an October 2022 headline.[2]

But like all economic data, reported rental prices and vacancy rates need to be properly interpreted. Understanding what these metrics mean in terms of underlying economics is tricky.

This note explains how several different popular rental price and housing vacancy metrics are created and provides commentary on how they should be interpreted.

A clear explanation of popular rental metrics shows how it can be simultaneously true that the rate of growth of rental prices for new contracts was at record highs in mid-2022, but the average rental price paid across all dwellings was still lower than in 2018.

Often different metrics have similar names but measure different things, and subject to different errors and short-term variation, which means caution is needed to use them to interpret underlying economic processes.

Rental price

Conceptually, the two main types of rental price index measure prices

1. agreed to in new rental contracts during a period, or
2. paid by all tenants over a period.

These can be thought of as a *stock* and *flow*. The price paid across all rental tenancies (the *stock* of rental prices paid) changes only via the price of new and renewed rental contracts

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[1] See Heagney, M. 2022. 'Renters are getting smashed': Melbourne house rents reach record highs. The Sydney Morning Herald. 14 July 2022. **https://www.smh.com.au/property/news/renters-are-getting-smashed-melbourne-house-rents-reach-record-highs-20220712-p5b0yr.html** and Razagi, T. 2022. 'Extremely challenging': Sydney house rents jump 19 per cent since pandemic began. The Sydney Morning Herald. 14 July 2022. **https://www.smh.com.au/property/news/extremely-challenging-sydney-house-rents-jump-19-per-cent-since-pandemic-began-to-reach-record-20220712-p5b0ym.html** and Clure, E. 2022. Renters competing 'Hunger Games-style' as number of rental properties dwindles. ABC News. 2 May 2022. **https://www.abc.net.au/news/2022-05-02/renters-compete-hunger-games-style-as-number-of-rentals-dwindles/101030774**

[2] See Martin, M. 2022. National vacancy rates hit record low. Australian Broker. 11 October 2022. **https://www.brokernews.com.au/news/breaking-news/national-vacancy-rates-hit-record-low-281171.aspx**

(the *flow* of rental housing to new rental contracts), with each dwelling usually having one opportunity per year for a rental price change.

Each year, about 36% of rental households relocate in New South Wales (but less than 5% of owner-occupied dwellings).[3] So a little more than a third of the rental stock each year sees price reset to market, while the remaining rental homes see rental adjustments that are mediated by ongoing landlord-tenant relationships.

Box 1: A stock and flow analogy

The Australian Bureau of Statistics makes the following analogy to help clarify the stock and flow elements of rental price data.[4]

"A useful analogy is to think about a bathtub of water. The water in the tub represents all rents being paid by households, while the water entering the tub from the tap represents new rental agreements. The CPI series is measuring the overall temperature of the bathtub whereas an advertised rents series measures the temperature of the water flowing into the tub. It will take some time for the flow of water to change the overall temperature of the water in the bathtub."

New tenancy rental prices

One *flow* metric of rental prices comes from new rental bonds. In Australia, a maximum rental bond of four weeks rent is held by state agencies in trust on behalf of landlords for new tenancy contracts. As part of their function, state rental bond authorities also collect details about the dwelling and the rental price on the contract.

State rental authorities, run in New South Wales by Fair Trading, for example, are thus a direct source of rental price data for new contracts.[5] Changes in these rental prices reflect the prices paid for new rental contracts in a timely manner.

Advertised rental prices

Another *flow* metric comes from rental advertisements. Private online advertisers and housing data companies use the information supplied by real estate agents doing online rental advertising to create metrics that track the advertised asking prices for rental housing. Popular metrics are SQM Research's rental price index and Domain's median asking rent.

Advertisements are an indirect source of movement in the price of new rental contracts, as actual rents paid can differ from advertised rents, and these differences are usually expected to correlate with movements in the rental prices themselves. Actual rents paid will be a bigger discount on the advertised rents during a price declines, and vice-versa when prices are rising.

Rental prices paid by all tenants

The main *stock* metric for rental prices is created for inflation measurement purposes. The Australian Bureau of Statistics (ABS) estimates changes in the actual rental price paid by all

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[3] This is calculated as the average of the number of refunded and lodged rental bonds in a year divided by the total stock of rental bonds for all rental housing held at December of that year. **https://www.fairtrading.nsw.gov.au/about-fair-trading/rental-bond-data**

[4] ABS. 2022. Monthly Consumer Price Index indicator. Measuring rents in the CPI. Australian Bureau of Statistics. **https://www.abs.gov.au/statistics/economy/price-indexes-and-inflation/monthly-consumer-price-index-indicator/sep-2022**

[5] See **https://www.fairtrading.nsw.gov.au/about-fair-trading/rental-bond-data**

tenants as a component of the Consumer Price Index (CPI). The resulting rental price index makes up 7.1% of the total consumer basket used to calculate the CPI.[6]

The ABS maintains a fixed sample in each capital city (known as the matched model method) to deal with compositional and quality issues that can arise in price indexes. Residential property managers report each quarter the actual rents paid on a representative sample of dwellings, with the sample updated over time to reflect changing dwelling composition.

Because rental prices are usually fixed for each dwelling for a 12-month period, the rental prices paid in this sample depend on the how much rents are changed for existing tenants on renewal and on new tenants where there is turnover.

Comparison of rental price metrics

Figure 1 shows these rental price metrics for Sydney houses and apartments to demonstrate how the *stock* and *flow* metrics provide different information about the rental market.

What we can see here is the following.

1. NSW rental bond data has been showing rising rental prices since mid-2020.
2. Domain's advertised rental price metric tracks new bond data closely but perhaps in advance, as expected.
3. SQM Research's asking rent index shows a great degree of volatility and perhaps some compositional effects that accentuated the 2020 house rent decline in Sydney.
4. The average Sydney dwelling has seen declining rental prices paid from 2018-21 though with a small rise in 2022.

It is therefore simultaneously true that in mid-2022

1. both advertised rents and rental prices of new rental contracts are rising at historically record pace, and
2. the average Sydney renter is paying 5% less rent in mid-2022 (nominal) than they were in mid-2018 for the same dwelling.

A clear understanding of *stock* and *flow* nature of rental data metrics helps to understand how this can be the case.
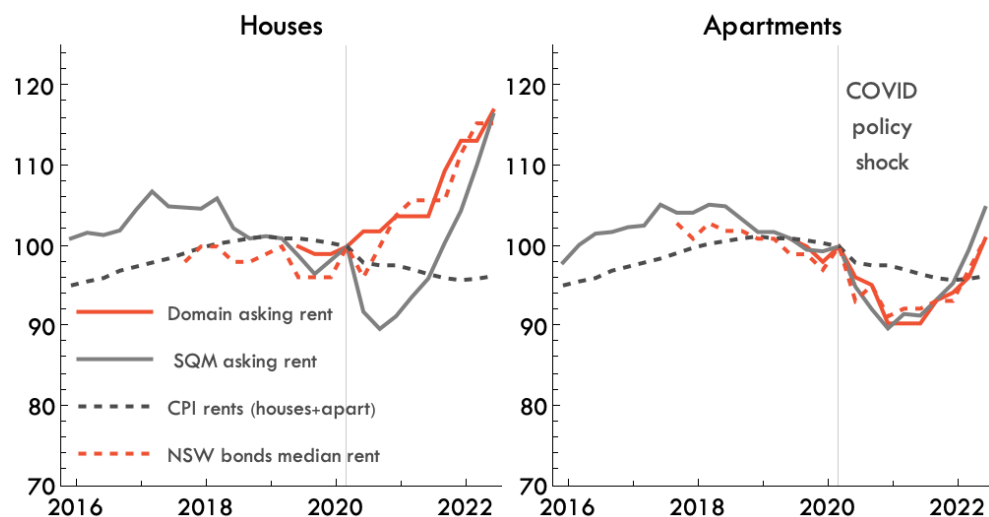

Figure 1: Comparison of Sydney rental price metrics

[6] ABS. 2018. Consumer Price Index: Concepts, Sources and Methods. **https://www.abs.gov.au/statistics/detailed-methodology-information/concepts-sources-methods/consumer-price-index-concepts-sources-and-methods/2018**

Rental vacancy

Two different economic concepts commonly get called the rental vacancy rate.

1. The number rental advertisements in a period.
2. The number of unoccupied dwellings in a period.

Confusion sometimes arises because in the United States the term *housing inventory* is commonly used to describe the first vacancy concept and the term *rental vacancy* is used to describe the second concept.[7]

In Australia, the first concept is widely known as the *rental vacancy*, and the second concept is more commonly known as *unoccupied dwellings*.

An analogy to the labour market is that vacancy is akin to the unemployment rate while unoccupied dwellings is akin to those outside the labour force. Just like it is possible in the labour market for the unemployment rate to fall while the number of people outside the labour force rises, the housing market can see a fall in advertised vacancies at the same time as an increase in unoccupied dwellings (and vice-versa).

Box 2: A note on rental housing churn

In a world with a fixed stock of renter households and a fixed stock of rental dwellings, the number of rental advertisements would simply reflect the number of renter households relocate at the same time. Each renter household would be both vacating a property and renting a different property. There would always be a one-to-one relationship between renter households looking for a new home and vacant rental dwellings. The size of this flow would be seasonal, depending on when renters typically look to relocate.

Trends in rental vacancy (advertisements) that are more than seasonal therefore reflect either
a) the process of repricing rental markets, because when rents are rising the need to advertising diminishes and vice-versa, or
b) a relative change in the total number of households relative to rental stock, such as from a reduction in household size,[8] or
c) a combination of both factors.

It is important to be clear that non-seasonal changes in rental vacancy are the mechanism by which prices adjust and don't necessarily contain additional information about supply-side factors related to the physical stock of dwellings.

One interesting pattern is that higher turnover in rental markets is associated with falling rents. Unlike housing assets, where higher turnover is associated with rising prices.[9] This is perhaps due to renter households choosing to stay at the end of their lease to avoid paying rising market rents but relocating when rents are falling to find better value accommodation options.

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[7] The main source of rental vacancy in the United States is the Census Bureau's Housing Vacancies and Homeownership (CPS/HVS) report. **https://www.census.gov/housing/hvs/index.html**

[8] See Ellis, L. 2022. Housing in the Endemic Phase. Speech – 25 May 2022. Reserve Bank of Australia. **https://www.rba.gov.au/speeches/2022/sp-ag-2022-05-25.html**. This data shows a major reduction in household size for shared group households.

[9] "…real price growth and turnover are highly correlated". In Peterson, B.M., 2009. Fooled by search: Housing prices, turnover and bubbles. p iii. **https://www.econstor.eu/bitstream/10419/80729/1/68508096X.pdf** /
See also Bloxham, P., McGregor, D. and Rankin, E., 2010. Housing turnover and first-home buyers. Change, 4(8). **https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.395.5413&rep=rep1&type=pdf**

Rental advertisements

One popular Australian rental vacancy metric is SQM Research's *Residential Vacancy Rates* measure of online rental advertising. They explain their methodology as follows.

> *The Rental Vacancies component is based on all monitored and unique online listings for the period of a calendar month. The series starts off in January 2005.*
>
> *All listings are taken from online monitoring of major listings sites. Only those properties with unique addresses or a unique listing id are used. Those advertisements with no addresses are excluded from the series. Any addresses repeated between sites are de-duped. Only those listings that have been advertised for three weeks or more are used.*
>
> *For years 2001, 2006 and 2011 we use the number of total established Dwellings (as a base) by postcode as determined by the ABS census, and multiply this by the percentage of renters for each postcode also provided in the census. With the 2016 census update we have used the number of renters as counted plus a proportion of renters multiplied by occupant not stated nor applicable. Years and months in between census points are interpolated. This provides an estimated available total stock for rent. The numerator is then divided into the denominator, which provides a vacancy rate percentage.[10]*

They also make further adjustments to account for online rental advertisements that are quickly withdrawn or without a listed address.

Online real estate advertiser Domain also publishes a monthly vacancy rate metric using a similar methodology of counting online advertisements and dividing by the estimated amount of rental stock in an area based on census estimates and forecasts of stock changes.

> *This is derived by dividing the number of estimated vacant rental properties by the total number of estimated rental properties. An estimate of the rental stock across the geographical areas has been derived from census data and a forecast calculated to bring volume to current levels, to provide an estimate of current rental stock. A vacant rental property is defined as a property on the market for longer than 21 days.[11]*

These rental advertising metrics are useful in terms of understanding the conditions in the active rental market and the pace of the turnover in that market. However, in terms of the broader long-term economic relevance concerning the stock of physical dwellings and household formation, they provide limited information. Unfortunately, these metrics are often referred to in support of claims about the longer-term economics of new housing construction, tenancy laws, and tax treatment of housing.

Property owners choose whether to advertise a vacancy and when to do it. For example, new projects are released into the rental market in stages, and many landlords try and have leases expire in seasonally opportune times when many people are relocating, such as in January, leading to large seasonal spikes in these metrics in December.

If the growth of the rental stock in a region is underestimated, this will lead to downward bias in these metrics, and vice-versa for an overestimate of the growth in the rental stock. If online advertising strategies in the rental market change, this can affect these metrics without a change in the underlying market conditions.

The value of these rental advertisement metrics is to understand the conditions facing new renters at a specific time. Low advertised rental vacancy reflects the process by which prices adjust, hence there is a strong negative correlation with advertised rental price metrics. The

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[10] SQM Research. 2022. Residential vacancy rates: Sydney.
https://sqmresearch.com.au/graph_vacancy.php?region=nsw%3A%3ASydney&type=c&t=1#terms

[11] Domain. 2022. Vacancy rates: July 2022. Report. **https://www.domain.com.au/research/vacancy-rates-july-2022-1156411/#methodology**

limited additional information from this metric is why they are not common in the United States, where advertised rental prices are regarded as sufficient to capture rental market conditions.

Unoccupied homes

The best source of information about unoccupied dwellings in Australia comes from the census. But this includes all dwellings unoccupied on the night of the census survey. There are many reasons for this, including international travel. It is also the case the some of the occupied dwellings in census night were not occupied by the usual residents. Whether the unoccupied homes measured here are owner-occupied dwellings or dwellings usually in the rental market is also not known.

Since being first recorded in the 1996 census, this metric has hovered between 9% and 11% of all private dwellings being unoccupied on census night.

In contrast, the United States Census Bureau conducts a quarterly Current Population Survey/Housing Vacancy Survey (CPS/HVS) that samples around 72,000 dwellings to determine whether a dwelling was occupied or not during the relevant reference week of the survey.[12] Their rental vacancy metric specifically excludes vacant dwellings that have been rented but the new tenants have not yet moved in. This measure of unoccupied homes that would normally be rented as a share of the total rental stock has fluctuated from a peak of 11% in 2009, down to 5.6% in 2022.

These metrics help show the economic utilisation of all existing dwellings over longer time periods. However, the economic interpretation of these metrics is not clear cut. The high number of unoccupied dwellings in the United States in 2009 was associated with declining prices and rents. This is good for renters and buyers, and bad for landlords. However, those empty dwellings are also a wasted economic resource.

A direct approach to determining unoccupied dwellings over a longer time period is used by Prosper Australia. They use water meter data from Melbourne dwellings to determine totally vacant dwellings over a 12-month period.

> *Water usage data provided to Prosper covers 92.13% of total residential property across 237 postcodes for Greater Melbourne over a 12 month period.*
>
> *Water consumption was chosen as the most effective form of vacancy detection because:*
> * *Nobody can survive without water for 12 months*
> * *Property owners cannot change water retailer mid-reporting cycle*
> * *Data at suburb level involves minimal invasion of privacy.*
>
> *We provide measures of vacancy at two thresholds:*
> * *Absolute vacancy - 0 litres per day (LpD) on average for 12months; and*
> * *Speculative vacancy - <50LpD on average over 12 months.*
>
> *Speculative vacancies reflect underutilisation, such as an intermittently inhabited dwellings.[13]*

Like the other unoccupied dwelling metrics, this metric helps to highlight potential underutilisation of the total housing stock. However, caution is needed in the interpretation. The suburbs with the highest shares of unoccupied dwellings are sometimes those with the fastest rate of new housing construction, with a share of newly completed dwellings remaining unoccupied for more than a year after construction. Sometimes areas have many dwellings

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[12] U.S. Census Bureau. 2022. Housing Vacancies and Homeownership (CPS/HVS) Methodology. **https://www.census.gov/housing/hvs/methodology/index.html**

[13] Fitzgerald, K. 2019. Speculative Vacancies 10. A Persistent Puzzle: The study of Melbourne's vacant land and housing. Report. p7 **https://www.prosper.org.au/wp-content/uploads/2021/01/Prosper_SpeculativeVacancies_FINAL_web23.pdf**

held vacant while awaiting redevelopment of those sites. Thus, the economic interpretation of this metric is not clear cut.

The top 20 suburbs have between 3.3% and 6.3% of all dwellings with no water use for 12-months, while the average across the Melbourne area fluctuates between 0.9% and 1.6% of all dwellings vacant for a 12-month period.

Comparison of vacancy metrics

Figure 2 shows vacancy metrics in terms of rental advertisements (top row) and unoccupied dwellings (bottom row). There is a close match between the two rental advertisement metrics across cities, as expected. Looking at just Sydney (grey line) the inverse relationship with advertised rental price can also be seen, with rising vacancy from 2018 to 2020 associated with falling rents.
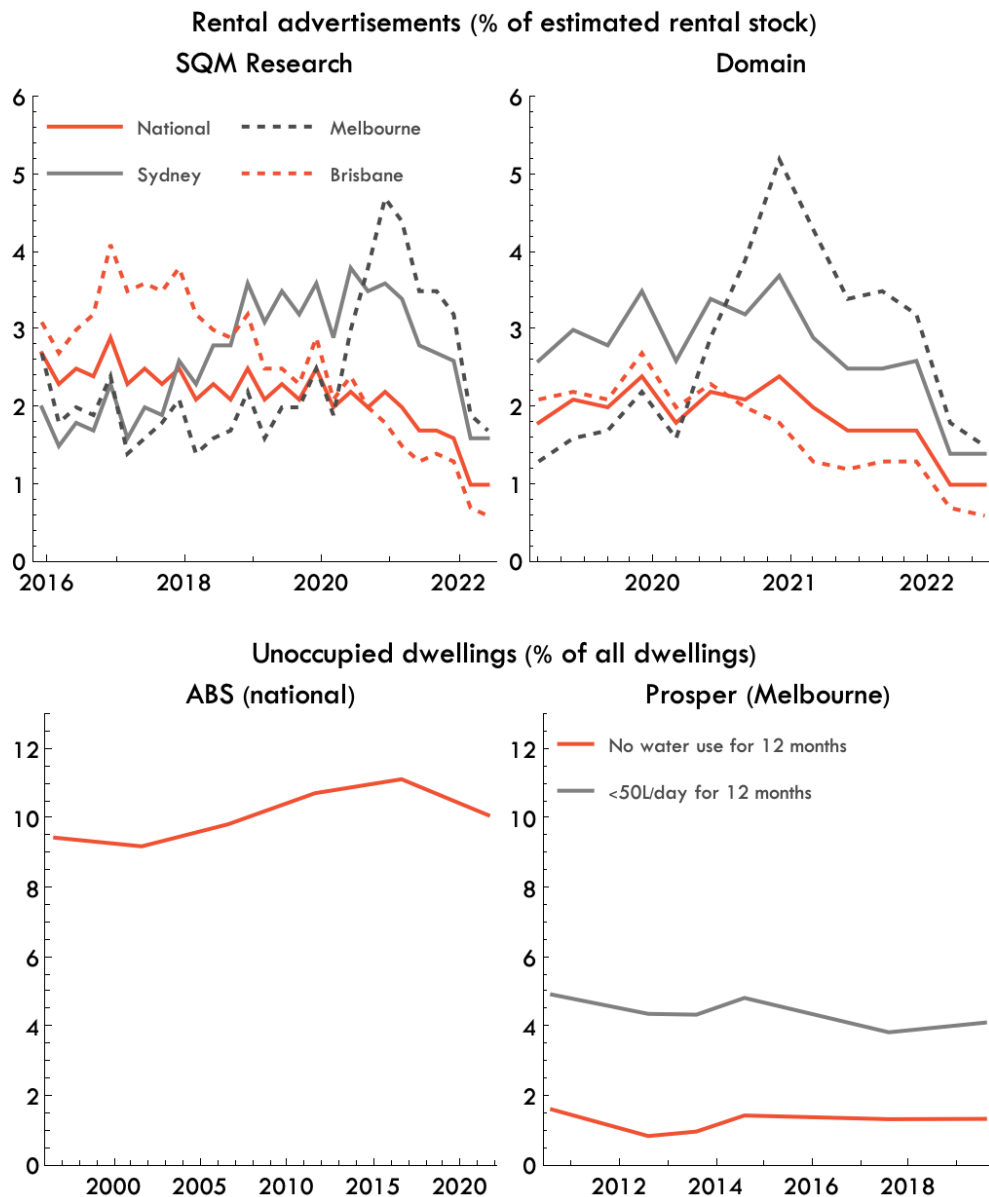

Figure 2: Comparison of vacancy metrics

Note that although the rental advertisements as a proportion of estimated rental stock fall in the range of 1% to 5%, the overall number of physically unoccupied dwellings is likely to be

higher. Around 10% unoccupied on census night and Prosper 12-month data showing 0.9% to 1.6% completely vacant, and up to 6% mostly vacant.

Understanding different vacancy metrics can help clarify why there appears to be both many empty dwellings when looking at the physical stock, but few in the rental market when looking at the short-term actions of landlords and renters.

Final remarks

The widespread media interest in Australia's housing market means that rental price and vacancy metrics are frequently reported, but often with little context. This note has looked in detail at the various data sources, explaining how to interpret these metrics consistently.

In general, rental price metrics based on *flows* of new rental contracts or advertisements are a leading indicator of the rents likely to be paid by all renters, though with additional volatility. Rental vacancy rates suffer a different problem of representing not unoccupied dwellings, which are relatively stable over the long term, but advertised rental properties as a share of the estimated rental stock vary with market conditions at the margin. Such *flow* metrics of rental vacancy can simply reflect the process of rental price change, without providing much information about the overall utilisation of the housing stock, which changes only slowly and is stable over recent decades.