Energy Efficiency Rating of Dwellings – Effects on ACT Sale Prices and Building Stock

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Synopsis

Since the enactment of Energy Efficiency Rating (Sale of Premises) Act 1997[1] in the Australian Capital Territory, Exemplary Energy has been evaluating the perception of "higher EER, higher prices" as a valuation tool underlying the Canberra property market. As a result of the legislation, under section 23 of the Act energy performance improvements specific to the building must also be set out in the pre-sale documents, so market value of the property can be better justified (Lee and Yang, 2010).

The overall benefit of this scheme lies in the expectation that it acts as an incentive for all potential stakeholders to improve the energy efficiency of their properties for higher sale prices. As web marketing supplanted newspaper advertising a decade ago, the market websites have responded by allowing buyers to sort their target dwellings by EER (e.g. Allhomes, ongoing).

Despite well documented successes in demonstrating a robust relationship between EER and sale prices (ABS, 2008 and DECC, 2013)[2], our ongoing study showed that their correlation became weak at best. Over time, we observed an inverse correlation for all dwellings together and this trend has been persistent since late 2014 [Figures 1 and 2].

Methodology

Key reasons for this apparent anomaly were posited to be:

1. The proximity of the worst performing properties to the city centre where properties generally command the highest prices due to higher land values.
2. Apartments, intrinsically the better performing dwelling type, are priced relatively low in the market compared to free-standing houses. Their market share has also grown dramatically in the last decade.
3. To a minor extent, the effects of data analysis and representation, i.e. where mean instead of median dwelling prices have been used, a small number of high value dwellings can skew the aggregated value upwards.

To achieve better representation, a revised methodology was implemented into our analysis:

4. Disaggregation by Dwelling Types into three categories: Houses; Townhouses; Apartments/Units.
5. The use of median prices, in lieu of mean prices[3].

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[1] This legislation, superseded by Civil Law (Sale of Residential Property) Act 2003, requires sellers of residential properties in the Australian Capital Territory to disclose and provide information about their property's EER to potential buyers, including in any advertisements for that sale, since 31 March 1999.

[2] Department of Energy and Climate Change, United Kingdom, superseded by Department for Business, Energy and Industrial Strategy in July 2016

[3] Prices described here refer to web-based advertised/asking dwelling prices such as "Allhomes", "*Domain*" and "*Real Estate*"

Analysis

Refer to the series of graph presentations at the end of this paper.

The understanding brought by the disaggregation is strongly apparent. For the most part, Townhouses show a positive relationship between price and EER.

For example, in general over the period of 10.5 years examined here, Townhouses in Belconnen with a 5-star or higher EER consistently attracted a small premium over Townhouses with lower EERs, but for Townhouses within the lower 0 to 2.5 and 3 to 4.5 EER brackets, prices oscillated, suggesting that something other than the EER influenced prices. This pattern is fairly consistent (with a couple of aberrations) from December 2014 to December 2023, when suddenly prices for Townhouses in the highest EER bracket frequently drop below the cost of Townhouses with lower EERs, and culminates in June 2024 when Townhouses with the *lowest* EERs are suddenly commanding the highest prices! [Figure 3].

By contrast with Belconnen, in Gungahlin prices for Townhouses within the lower 3 to 4.5 EER bracket appear to exceed, sometimes significantly, the prices for Townhouses with 5-star or higher EER during the 6-year period 2017 to 2023, although the 2 years prior and 1 year subsequent to this, Townhouses with the highest EER attracted premium prices [Figure 4].

An examination of Apartments/Units in the Inner North region of the ACT, a particularly desirable area undergoing considerable redevelopment in recent years, reveals a consistent pattern that substantiates the “higher EER, higher price” expectation, with lowest prices paid for Apartments/Units in the 0 to 2.5 EER bracket and highest prices paid for those in the 5-star or higher EER bracket – but with a dramatic anomaly occurring during the years 2021 to 2023 when exceptionally high prices of well over $1.5 million were paid for Apartments/Units in the lower two EER brackets. However, those Apartments/Units within the usual price range for this region, between $600,000 and $750,000, and having the highest EER, did achieve premium prices compared to those with lower EERs ($300,000 to $400,000); furthermore, this still leaves 7.5 years, including the current calendar year, consistent with expectations [Figure 5].

When we analysed free-standing house prices, we found detached houses, especially in inner regions such as Inner North, are prone to obscuration of $/EER trends by virtue of old, inefficient housing occupying very valuable sites. In the extreme, they are being bought with the intention of demolishing the house so that its EER is irrelevant to the purchase decision. Additionally, houses in the 3 to 4.5 EER bracket appear to be more appealing and list at a higher price as compared to other star band groups regardless of location. Houses in Gungahlin demonstrated a similar incongruity [Figures 6 and 7].

In the Belconnen region, house prices for detached houses with the highest EERs of 5+ stars generally exceeded prices for houses with the lowest EERs, although during the 2 years of Covid lock-down there appears to be a price spike for detached houses in the lower and lowest 0 to 4.5 EER brackets [Figure 8].

Conclusion

Our observation into the refined dataset using disaggregation by dwelling types corroborates the intent of the legislation by revealing (and perhaps generating) a significant price margin of high EER dwellings over their low EER competition, confirming the conventional wisdom of “higher EER, higher prices”. This observation is most stark in the Apartments/Units category. In most suburb regions in the ACT, an apartment with a higher EER would almost certainly attract a price premium. Townhouses and houses also demonstrate similar trends in all suburb regions except the Inner North and Inner South regions, where demolish-rebuild is most common.

Our study also suggests that the price discounts and premiums progression may not be linear, especially when listing prices are above $1,000,000. This is reflective of the property prices in Inner North and South so the observed correlation may be as much geographic as it is price-determined. However, this price relativity observation also appears to agree with the findings of Hyland and Lyons (2013) and Fuerst and Warren-Myers (2018), whereby the second-highest rated property attracted a higher premium than the highest rated property. Fuerst and Warren-Myers (2018) posited that this trend may be due to 'satisficing', a course of action that will satisfy the minimum requirements necessary to achieve a particular goal (Simon, 1972) as the difficulties of pursuing higher ratings is bounded by uncertainty, lack of information and details of proven benefits and outcomes.

Additionally, recent analysis by EnergyFit (Thompson, 2024) has shown that the slow improvement of the pre-1999 stock of dwellings (a time when apartments were a very small part of the housing market), which the mandatory disclosure of a dwelling's EER was meant to incentivise, has not occurred in any discernible way (see Figures 1 and 2). These plot the mean EER in suburbs fully constructed by the time the law came into effect in 1999. Despite the slow but statistically reliable alterations and additions in these suburbs, the only discernible improvement was in the 2008-2010 subsidisation of added roof/ceiling insulation, now misleadingly known by its derogatory name "The Pink Batts affair/debacle" (Pears, 2024).

The Future of Energy Efficiency Ratings

This study is part of a growing body of research on the sentiments of property owners, tenants, real estate agents and building industry participants alike, to improve energy efficiency of their properties for higher sale/rental price (e.g. Daly et al 2019). The Labor/Greens Agreement (2016) for the 9th ACT Legislative Assembly resolved that the Government would "Conduct a review of the effectiveness of the Energy Efficiency Rating Scheme." That undertaking was not implemented before the election in October 2020 and the commitment was quietly dropped from the subsequent agreement for the 10th Assembly despite the Minister for Sustainable Building and Construction (along with three other portfolios) being a Greens member of the Legislative Assembly (MLA). Despite the many foibles of the scheme as it now operates, no indication had emerged of an intention to address these issues until the report *Review of the ACT Energy Efficiency Rating Disclosure Scheme* suddenly appeared (Common Capital, 2023). This review was undertaken without contacting (or citing) the work of Hurst et. al., Lee et. al. or Warren-Myers et. al. nor the Australian Institute of Architects (AIA). These omissions cast doubt over the credibility of this report: opening as it does with the amazing claim: "This report covers the findings of the first major evaluation of the ACT Energy Efficiency Rating Disclosure Scheme, since its implementation in 1999." This ignores the report to the Australian Greenhouse Office (AGO) (Artcraft et. al. 2005), and again three years later (ABS, 2008) never mind the international equivalents once the European Union adopted the concept through its Directive in 2008 e.g. (DECC, 2013).

At the time of writing, the final make-up of the 25 MLAs is just known after the election on 19 October 2024 and the new Labor/Greens coalition agreement for the 11th Assembly is still being worked out; but it is known that there will have to be a new Minister for Sustainable Building and Construction.

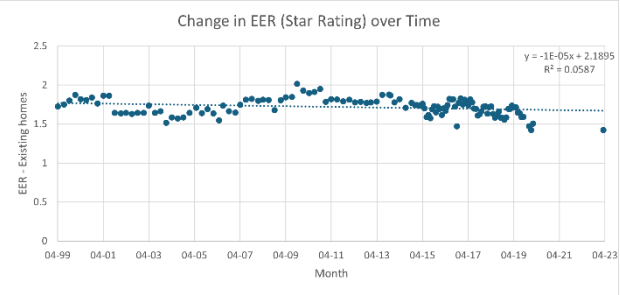

Figure 1: Change in Energy Efficiency Rating for dwellings in the ACT over 24 years from from 1999 to April 2023

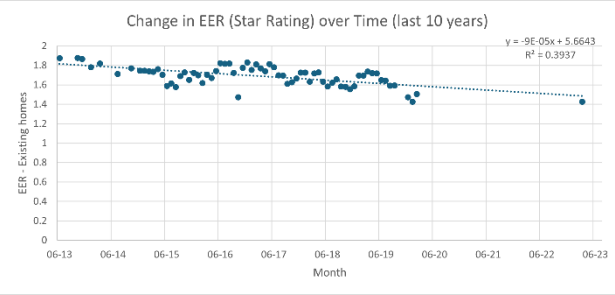

Figure 2: Change in Energy Efficiency Rating for dwellings in the ACT over 10 years from June 2013 to June 2023

Note the downward trend in both Figures 1 and 2, and that in Figure 2 (representing the last 10 years) both the downward trend and the R^2, are 7 times stronger than in Figure 1.

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Appendix

Selected Graphs showing Price and EER Trends over almost 10 years, from December 2014 to August 2024

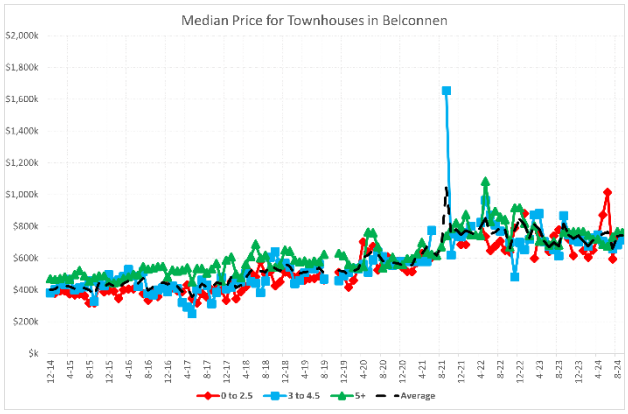

Figure 3: Median Price for Townhouses in. Belconnen, December 2014 to August 2024.

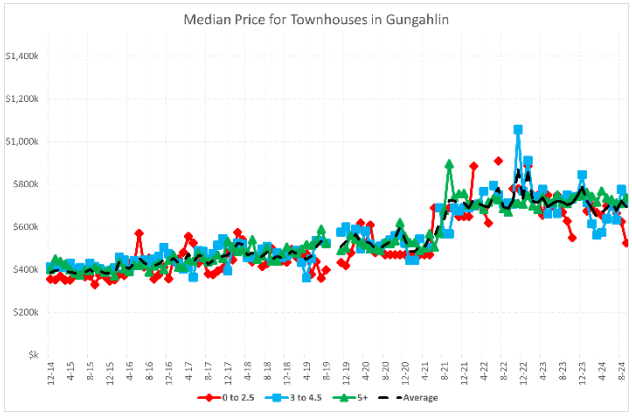

Figure 4: Median Price for Townhouses in Gungahlin, December 2014 to August 2024

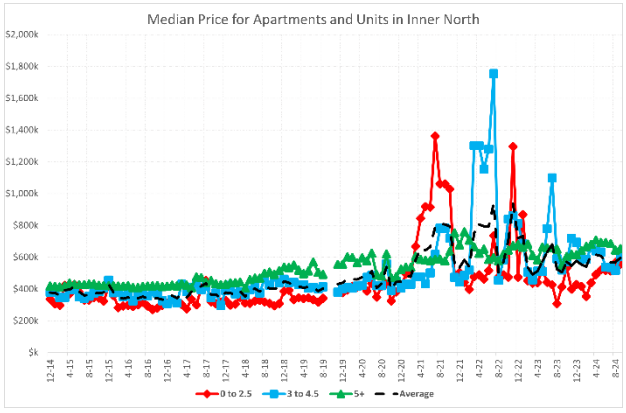

Figure 5: Median Price for Apartments/Units in. Inner North, December 2014 to August 2024.

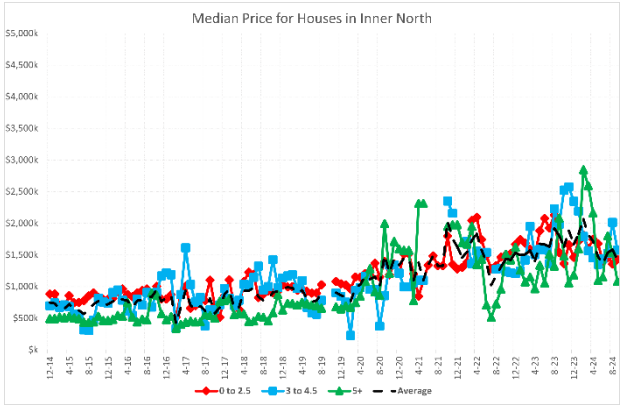

Figure 6: Median Price for Houses in Inner North, December 2014 to August 2024

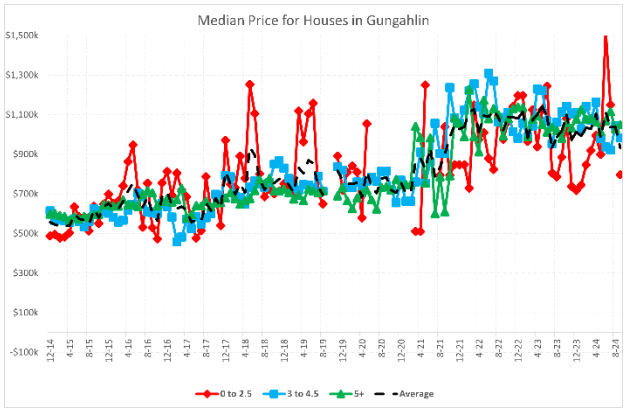

Figure 7: Median Price for Houses in Gungahlin, December 2014 to August 2024.

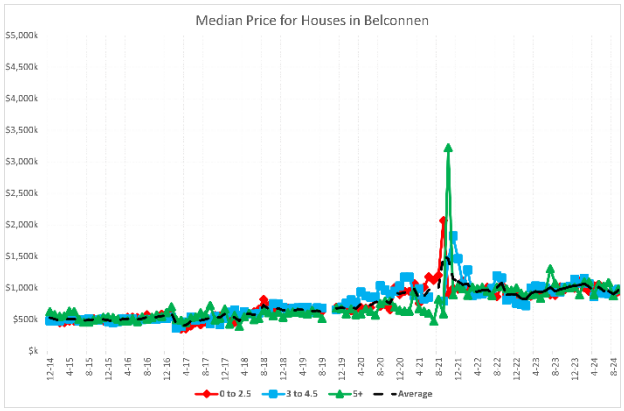

Figure 8: Median Price for Houses in Belconnen, December 2014 to August 2024

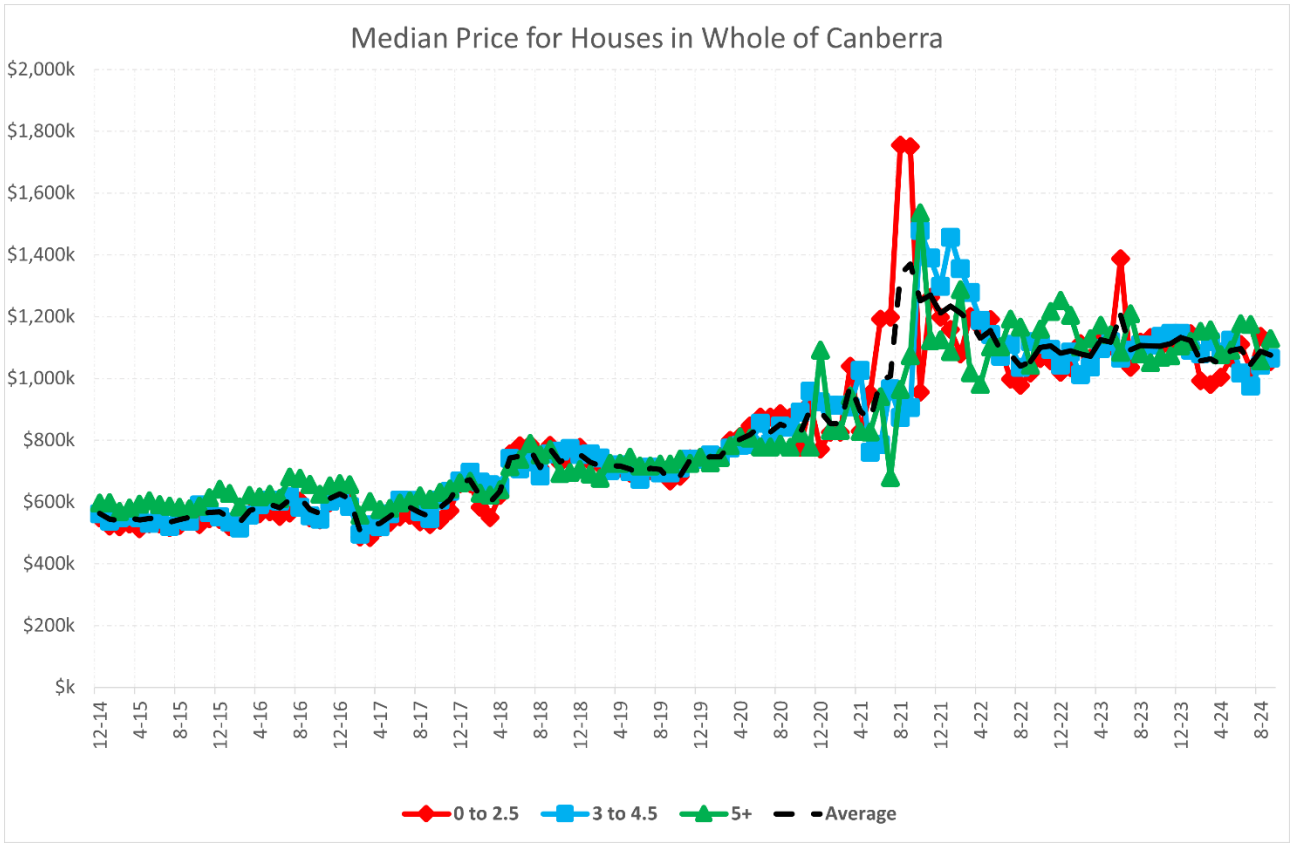

Figure 9: Median Price for Houses across the whole of the ACT, December 2014 to August 2024

Note the unusual price spike in 2021, Figure 9 (above) and Figure 3 (Townhouses in Belconnen). This could be due to a few exceptionally high-priced properties skewing the median price, or due to errors in data sources.