

Housing prices and transport policy in Canberra

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Abstract

Housing affordability has been a major social issue for some time and the recent soaring prices of housing has intensified attention on housing problems. This paper is concerned with the extent to which urban transport costs and transport improvement projects can influence housing prices and affordability. It compares housing prices in different years with transport costs and the impact on housing prices made by transport projects.

1. Introduction

This paper provides some information about housing prices in Canberra and their relationship to travel prices in order to provide some indication about the effect that urban transport planning might have in helping to resolve the issues of housing affordability.

It also attempts to establish the extent to which two different large transport projects in Canberra changed the value of houses affected by their implementation noting that any net increase in the total value of housing induced by a transport project should be considered a benefit to the project.

The research supporting this paper assembled the listed prices of over 850 houses of different sizes, in different suburbs of Canberra in 2003, in 2008 and again in 2021. The houses in the three years are not the same house but just houses of the same size (number of bedrooms) in each suburb in each year. The prices are those advertised for sale, not actual sale prices.

Travel costs are measured from the strategic transport model of Canberra and are the peak hour 'perceived' travel cost which includes the value of time spent travelling as well as parking charges and vehicle operating costs.

2. Housing prices and travel costs in Canberra

Conventional wisdom asserts that houses in suburbs with lower travel costs should have greater value. If a causal relationship holds, then reducing transport costs should increase housing values.

Figure 1 shows the relationship between the offered-for-sale prices of different size houses and the simulated average peak hour travel costs for their suburb in Canberra in 2008.

Figure 1 - Housing prices and average travel costs

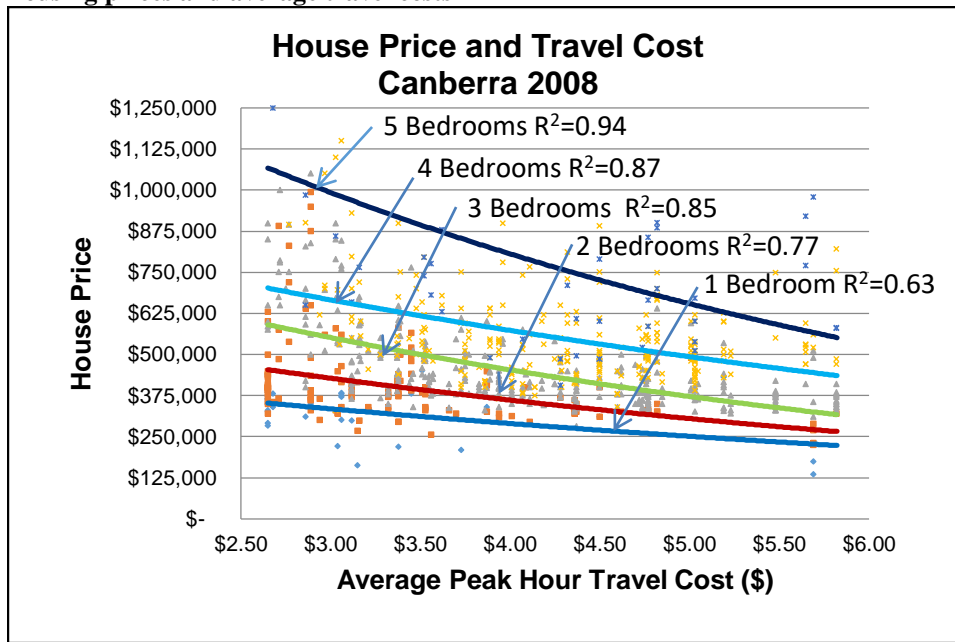


Figure 1 confirms that houses with lower average peak hour transport costs have greater value. The **question is whether a causal relationship exists** such that changes in transport prices will affect housing prices.

If so, and based on these relationships, it is possible to assess the degree to which housing prices might increase due to any particular overall change in travel prices.

The estimated change in housing value based on a 5% reduction in peak hour average travel costs are set out in Table 1.

Table 1 - Estimated change in house prices due to decreases in travel costs

House Size	Average House Value	Peak Hr Travel Cost	5% reduction in Annual Travel Cost	Housing Value Increase due to 5% reduction in Travel Cost	% Value Increase
5 Bed	\$836,647	\$5.37	\$709	\$58,164	6.5%
4 Beds	\$577,556	\$3.54	\$468	\$21,117	3.5%
3 Beds	\$461,223	\$4.11	\$543	\$21,573	4.5%
2 Beds	\$417,930	\$3.41	\$450	\$12,811	3.0%
1 Bed	\$336,082	\$3.18	\$420	\$4,907	1.4%

Table 1 shows that, if a causal relationship holds, then a 5% reduction in travel costs could lead to significant increases in housing value, although the effect diminishes for smaller homes. For those trying to pay off a mortgage, the change should improve their position as, by reducing their travel costs, it should make payments easier and by increasing their housing equity. It also appears that the reduced travel costs would benefit those in larger houses, presumably the more wealthy, so is not equitable.

It is also of interest to test if the **rate at which housing prices increase** is related to travel prices. House price increases are a comparison between house prices listed in 2003 against those of the same size in the same suburb in Canberra in 2008. They are not the same house but just houses with the same number of bedrooms in the same suburb. Figure 2 shows the results of this test.

Figure 2 - Housing price increases and travel costs

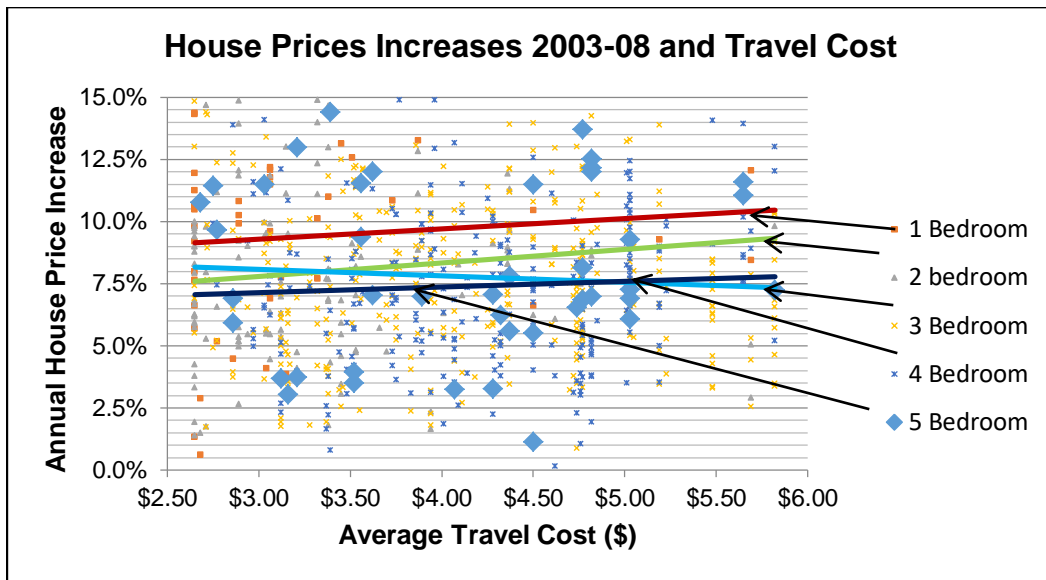


Figure 2 seems to show that travel costs may have had a slight effect on the rate at which housing prices increased between 2003 and 2008 but it is strange to think that housing prices increase faster in areas of higher transport costs.

In this test the relative change in the pattern of travel prices was assumed to be constant throughout Canberra. However, one major transport project was implemented between those two years which may have changed this pattern. This change is investigated in the first case study below.

3. The impact of projects on housing prices

As the objectives of transport projects includes reducing transport prices, then it could be assumed, based on the above, that there would be consequent increases in housing prices at least for those properties adjacent to, or directly served by, the transport project.

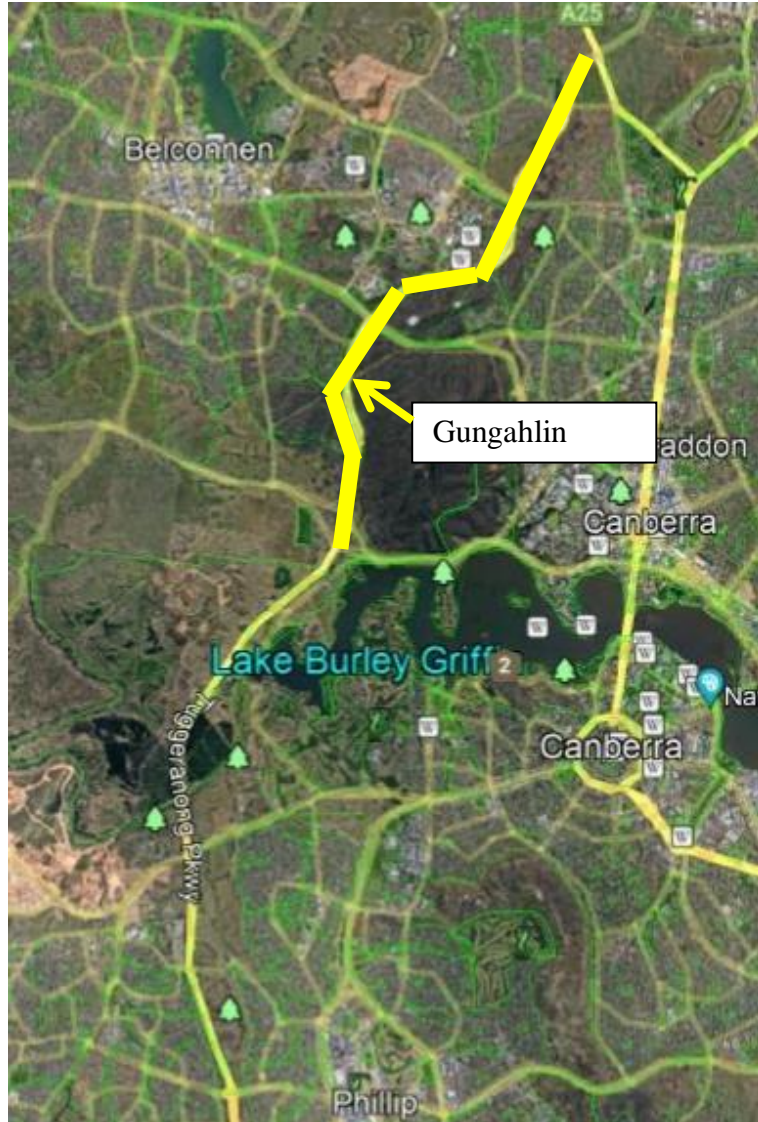
It is usually quite difficult to assemble data to test the extent to which transport projects have historically affected housing prices. This is because not many projects are sufficiently large, or located in appropriate routes, that the assembly of sufficient before-and-after housing price data seems worthwhile.

Nevertheless two case studies are presented to test this supposition. The first consists of a major freeway extension in Canberra and the second, the introduction of a major Light Rail project.

4. Case study 1 – Gungahlin Drive

Gungahlin Drive was constructed in 2007 as a freeway extension to Tuggeranong Parkway, thus providing a freeway bypass of central Canberra linking Woden Township with the newly emerging suburbs in Gungahlin shown in Figure 3.

Figure 3 - The new freeway



As the above sample of housing prices straddled the construction period, it was thus possible to compare the average price increases for those properties considered to be adjacent to, or directly served by, the project with the average price increases for all Canberra houses. The results are shown in Table 2.

Table 2 - Relative housing price changes for properties affected by the freeway project

House size	All homes in Canberra			Those affected by Freeway		
	Av Price		% annual Increase	Av Price		% annual Increase
	2003	2008		2003	2008	
2 Bedroom	\$282,800	\$417,930	8.1%	\$260,000	366,667	7.1%
3 Bedroom	\$315,803	\$460,822	7.9%	\$281,543	\$402,380	7.4%
4 Bedroom	\$399,373	\$575,621	7.6%	\$425,247	\$615,966	7.7%
5 Bedroom	\$543,464	\$848,762	9.3%	\$417,500	\$648,738	9.2%

Note: The sample size of 1 and 6 bedroom affected homes was too small to be included

The results of this case study suggest that, if this project affected housing prices at all, the effect was very slight. As a corollary it appears to support the result shown in Figure 2 that overall travel costs had little effect on the rate at which housing prices increased between 2003 and 2008. However a freeway project is likely to create some adverse environmental impacts on adjacent housing which may tend to reduce their prices even though it reduces their travel costs. A further test was conducted to establish whether the houses adjacent to the freeway were affected differently than those which the freeway served directly. The results are shown in Table 3.

Table 3 – Annual housin price changes for houses beside or at the end of the freeway

House size	Canberra	Those beside the Freeway		Those at ends of Freeway			
	% Increase	Av Price		% Increase	Av Price		% Increase
		2003	2008		2003	2008	
2 Bedroom	8.1%	\$274,000	\$380,200	6.8%	190,000	\$299,000	9.5%
3 Bedroom	7.9%	\$278,604	\$394,215	7.2%	\$303,290	\$462,800	8.8%
4 Bedroom	7.6%	\$438,333	\$630,625	7.5%	\$385,988	\$571,988	8.2%
5 Bedroom	9.3%	\$350,000	\$489,950	7.0%	\$440,000	\$701,667	9.8%

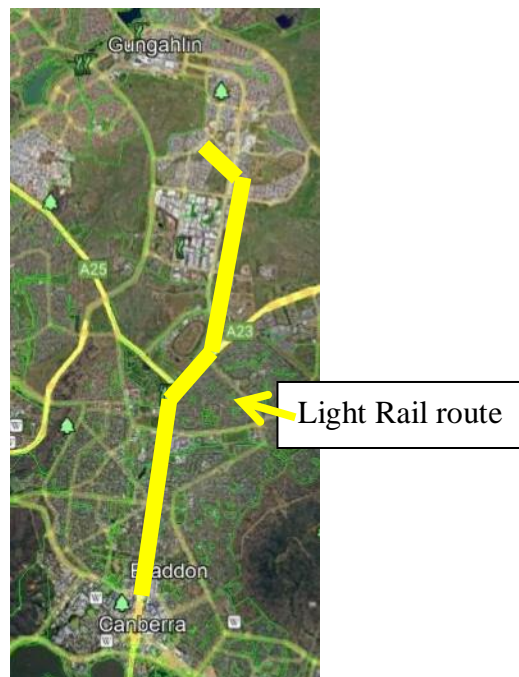
Note: The sample size of 1 and 6 bedroom affected homes was too small to be included

Although the sample sizes were quite small (44 beside and 23 at end) the results indicate that the freeway project reduced prices for those properties located beside the freeway but increased the value of properties it directly served. It showed there may be a causal relationship between transport costs and housing prices.

5. Case study 2 – The Light Rail project

A second case study was conducted, which involved a Light Rail project which, presumably, would not produce these adverse environmental effects. This refers to the impact of Canberra’s Light Rail project which connects Gungahlin to the Central Business District and was operational in 2020.

Figure 4 - The Light Rail route



The results are shown in Table 4.

Table 4 - Relative housing price changes for properties affected by the Light Rail project

House size	All homes in Canberra			Those affected by Light Rail		
	Av Price		% Increase	Av Price		% Increase
	2008	2021		2008	2021	
1 Bedroom	\$ 336,082	\$ 419,148	1.71%	\$324,538	\$ 417,618	1.96%
2 Bedroom	\$ 417,930	\$ 639,024	3.32%	\$412,148	\$ 598,965	2.92%
3 Bedroom	\$ 460,822	\$1,070,791	6.70%	\$506,000	\$ 1,078,950	6.00%
4 Bedroom	\$ 575,621	\$1,345,650	6.75%	\$565,000	\$ 869,500	3.37%
5 Bedroom	\$ 848,762	\$1,628,769	5.14%	\$665,429	\$ 945,430	2.74%

Note: The sample size of 6 bedroom affected homes was too small to be included

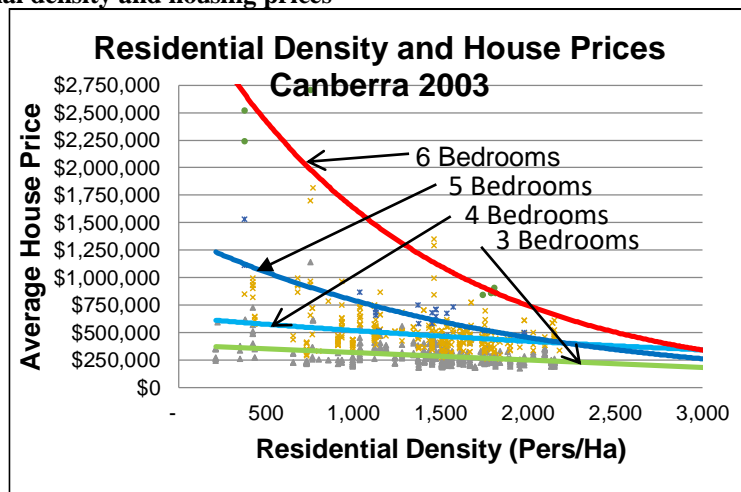
Table 4, rather surprisingly, suggests that the effect of the Light Rail project was to reduce the rate at which housing prices increased between 2008 and 2021 except for 1-bedroom apartments.

This is possibly explained by the fact that many higher density developments were built adjacent to the Light Rail project, some of them 1-bedroom, and this may have had a greater reducing effect on the residual housing prices than the expected increase from the project, particularly for larger dwellings.

6. Density and housing prices

Increasing residential densities is also an active issue in urban planning and its effect on housing prices should also be of interest. The relationship between residential density and housing prices is shown in Figure 5 which shows that housing prices for the same size dwelling are lower in higher density suburbs in Canberra.

Figure 5 - Residential density and housing prices



Note: Residential density is for the whole zone defined in the strategic model

Increased residential density along a transit route not only provides public transport service with more potential walk-in patrons, if located appropriately, but it has also been shown that it also somewhat increases their preference to travel by public transport rather than by car.

However, a substantial increase in residential density along a transit route also adds potential car-users and therefore **may be self-defeating by increasing traffic volumes and therefore route congestion** if not planned to the right extent in the right locations.

If mode choice and congestion both increase due to the increased residential density, then, as transit travel prices are usually higher than car travel,¹ it should be expected that travel prices will increase substantially. This will offset the expected reduction in housing prices to some extent. Increases in housing density, therefore, needs careful planning to have the desired effect.

Assuming a causal relationship holds, then those who complain, that building high density units in their suburb will reduce the value of their homes, might well have grounds to support their complaint. But then this is the intention – to make homes more affordable. If a causal relationship does exist, then the policy of increasing density should work quite well in improving housing affordability.

Increasing residential density usually means accelerating the supply of strata-titled one- or two-bedroom apartment blocks in inner areas. The policy is aimed at both easing the rental market and also increasing the supply of more affordable housing units, so it is worthwhile examining the relationship between residential density and housing prices. These higher density units are more likely to be rented or purchased by singles, couples without children or retirees downgrading their accommodation. They are likely to be of 3 bedrooms or less.

7. Conclusions

The paper concludes that policies to reduce travel costs will give some assistance to those trying to buy, or paying off, a home but that, in Canberra, overall travel costs have little to do with the rate at which housing prices increase annually. It does however show that there is a probable causal relationship between travel cost reductions due to transport projects and increasing house prices for those properties it directly serves. This is a frequently debated issue in transport economics, some economists asserting that increased values should not be included in the list of transport project benefits.

However, if the transport project is accompanied by a policy to increase density along the route, then the expected price improvements may not eventuate.

Increasing urban residential densities by infill policies, provided that this does not increase congestion, should work quite well in supporting a policy of improving housing affordability. However increases in housing density needs careful planning to avoid street congestion so as to have this desired effect.

The housing prices in this paper reflected a period of rapid increase in Canberra and it is unlikely that the actual figures reported will be sustained in future or will depict conditions in any other city. In addition, the statistical significance of the statements in this paper is low but the trends are obvious and, given the coarse approach, are nevertheless worth considering for policy guidance.

¹ See R J Nairn, “Efficiency, sustainability and equity in transport services in Canberra”, Engineers Australia, ACT Division, 1998.

References

R J Nairn, "Efficiency, sustainability and equity in transport services in Canberra", Engineers Australia, ACT Division, 1998.