MOST NEW HOUSING IS NOT HIGH-END HOUSING[1]

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Abstract

This paper analyses the spatial distribution of new housing supply in Australia. We find that most new houses have been built in areas with below-average prices, while most new apartments and townhouses have been built in Sydney and Melbourne, where median prices are higher. Our analysis extends recent Australian research by Ong et al (2017), who conclude that housing supply is concentrated in areas with relatively high prices. Their main finding fails to account for the different populations of local government areas in their approach, resulting in misleading conclusions. This paper updates this earlier research to account for the different sizes of LGAs.

Key words: Housing supply, housing stock, housing affordability, filtering, local government areas, housing affordability.

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INTRODUCTION

Australian housing is becoming increasingly expensive. Australian house prices have more than doubled in real terms since the mid-1990s, far outstripping growth in household incomes. Australian spending on housing has increased from about 10 per cent of total pre-tax household income in 1980 to about 14 per cent today (Daley et al., 2018). Low-income earners' spending on housing as a share of income has increased much more than other households over the past decade. Quality-adjusted rents have grown more slowly than house prices. However, low-income households, particularly those living in capital cities, are spending a greater share of their income on rent, and as a result, more are financially stressed.

Several Australian government, academic and private-sector studies have pointed to slow housing supply, and restrictive zoning in particular, as an important factor in Australia's high and rising housing prices ((Kendall and Tulip, 2018); (Kulish et al., 2011); (Productivity Commission, 2017); (Productivity Commission, 2011); (OECD,

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2010)). A large and growing international literature consistently highlights how land use planning rules have reduced the ability of many housing markets to respond to growing demand, pushing up house prices in major cities in a number of countries ((Glaeser and Gyourko, 2018); (Hilber and Vermeulen, 2015); (Lees, 2017)). Most of those papers that make policy recommendations call for increases in land supply and changes to zoning rules to allow for greater housing density. Our recent report, *Housing affordability: re-imagining the Australian Dream,* makes similar recommendations.

Yet a number of Australian housing researchers are sceptical that increasing housing supply will improve affordability. They argue that most new housing built in Australia is too expensive for low- and middle-income earners. They assert that building more homes won't lower the rents paid by the poorest Australians unless those homes are explicitly built to house them.

In particular, recent research by (Ong et al., 2017) 'Spatial and Temporal Patterns in Housing Supply: A Descriptive Analysis' (hereafter Ong et al) finds that most of the growth in housing supply is concentrated in areas with relatively high prices. They compare the number of new building approvals across price deciles of unweighted Local Government Areas (LGAs). The authors conclude that "housing supply is doing little to directly expand affordable housing opportunities in those price ranges within the reach of low income households" (p.13).

But this conclusion is misleading. Ong et al erroneously create price deciles with an equal number of LGAs, rather than weighting by the number of dwellings (or population) within each LGA. But LGAs are of vastly different populations, so the finding that most new housing is built in expensive LGAs purely reflects that these LGAs are the most populated. Half of all Australians live in the 10 per cent of LGAs with the largest populations — all of which are in or close to our major cities. Just 5 per cent of Australians live in the smallest half of all LGAs.

And claims that more housing doesn't help low-income earners are at odds with international literature showing that market-rent housing remains the largest source of affordable housing for low-income earners.

This debate matters, because affordable housing advocates are using this research to argue that boosting the supply of market-rate housing won't make housing more affordable, and that governments should focus on increasing the subsidies for affordable housing rather than tackling politically difficult planning reforms (for example (Gurran et al., 2018)).

More housing supply isn't the only solution to make housing more affordable for low-income earners. Reforms to reduce demand for housing will make housing more somewhat affordable, but alone are unlikely to solve the problem. More social and affordable housing is needed to help those struggling with high housing costs, but the required subsidies are very large, and even at its peak only housed one third of the poorest 20 per cent of Australians (Daley et al., 2018). Making housing cheaper overall will reduce the amount of public subsidy needed to bridge the gap between the market price of housing and what low-income earners can afford to pay. But more importantly, it would make housing more affordable for the bulk of low-income

earners not in social and affordable housing.

This paper is structured as follows. First, we examine the approach of Ong et al (2017). Second, we undertake our own analysis of the spatial distribution of new housing supply. Our new analysis, which accounts for the different sizes of LGAs, shows that two-thirds of new houses have been built in the cheapest half of all LGAs, while most new units and apartments have been built in Sydney and Melbourne, where median prices are higher. We then review the literature on 'filtering' of market-rate housing, and find that international evidence points to market-rent housing being an important source of affordable housing for low-income earners, which supports our view that increasing the supply of housing will improve housing affordability overall, including for many low-income earners.

PAST RESEARCH ON THE SPATIAL DISTRIBUTION OF NEW HOUSING IN AUSTRALIA

(Ong et al., 2017) seek to answer two main questions in the section of their paper analysing the distribution of new housing: 1) whether new housing supply is concentrated in high-price or low-price market segments, and 2) whether or not new houses and units are being built in areas where labour market opportunities are concentrated. Ong et al analyse Australian housing supply in two financial years: 2005-06 and 2015-16.

This section will explain the approach used by Ong et al to analyse new housing supply in Australia, summarise their key results, and explain the methodological issues which cause the paper's key findings to be misleading. While our technical critiques apply to both topic areas of the Ong et al paper, we will focus on their analysis of the geographical distribution of new housing supply – not job opportunities.

Ong et al analyse the distribution of new housing supply for houses and units across all LGAs in 2005-06 and 2015-16.[2]

The authors rank all LGAs according to the median prices of houses and units, from lowest to highest, for 2005-06 and 2015-16.[3] They then divide the ranked LGAs into ten deciles, each containing the same number of LGAs. As a proxy for housing supply, the authors use the number of building approvals in each LGA.[4] They then count the number of building approvals within each LGA in each of these deciles. Figure 1 presents the results of this analysis (from Table 1 in Ong et al).
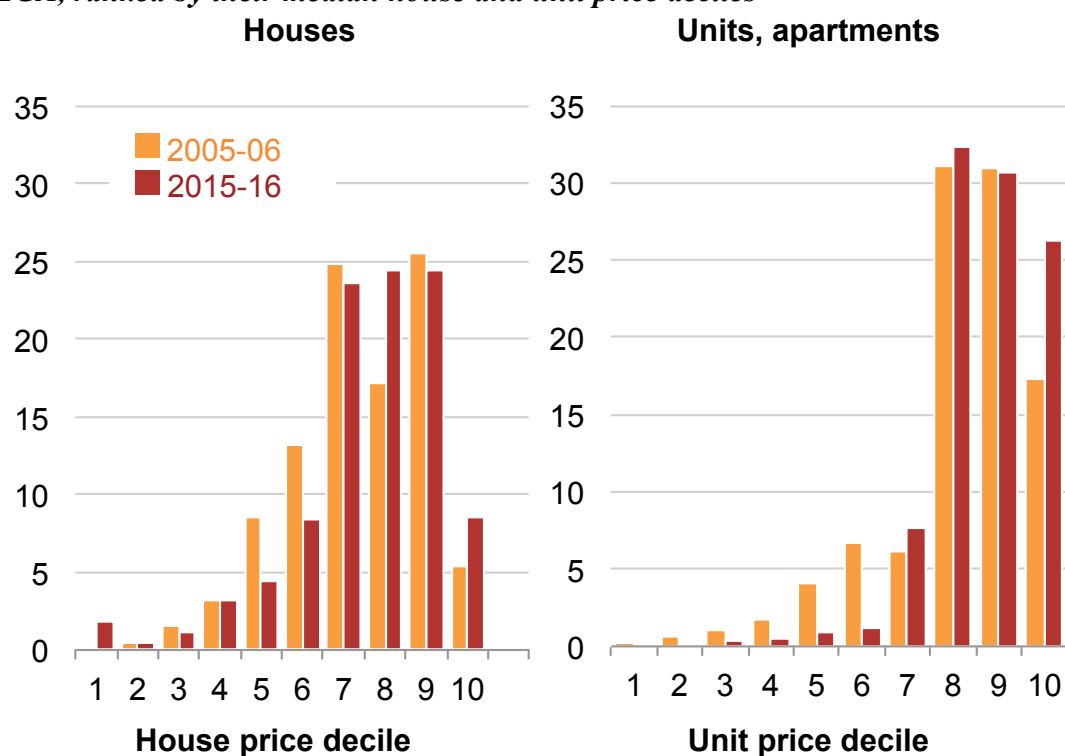
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[2] In Ong et al's analysis, 'houses' comprise separate houses, semi-detached, row or terrace houses, and 'units' comprise flats, units or apartments.
[3] Data for median house and unit prices in each LGA comes from CoreLogic.
[4] From Australian Bureau of Statistics Cat. No. 8731.0 *Building Approvals, Australia*. Ong et al acknowledge that not all building approvals are converted into housing completions that actually impact on the housing supply. However they present international research which shows a high correlation between housing approvals and building commencements – suggesting that approvals are a good proxy for new housing supply HWANG, M. & QUIGLEY, J. 2006. Economic Fundamentals in Local Housing Markets: Evidence from U.S. Metropolitan Regions. *Journal of Regional Science,* 46**,** 425-453.

Figure 1: Ong et al claim that most new homes are targeted at the top end of the market
Share of new housing and unit approvals (per cent) in 2005-06 and 2015-16 in each LGA, ranked by their median house and unit price deciles

Note: Price deciles are calculated on median house and unit prices in each LGA across Australia, unweighted for population size of LGAs.
Source: Ong et al (2017) Spatial and Temporal Patterns in Housing Supply: A Descriptive Analysis, Table 1.

The authors find that in both 2005-06 and 2015-16, most new housing was built in LGAs in the top five price deciles. In 2005-06 more than 86 per cent of house approvals and 92 per cent of unit approvals were built in the most expensive half of all LGAs. By contrast less than 1 per cent of house approvals and around 2 per cent of unit approvals were built in the bottom two price deciles. In 2015-16 the share of new house and unit approvals in the top five deciles increased to around 89 per cent and 98 per cent respectively.

Based on these findings, Ong et al conclude that most new housing has been built in more expensive areas, and that this trend became more pronounced over time.
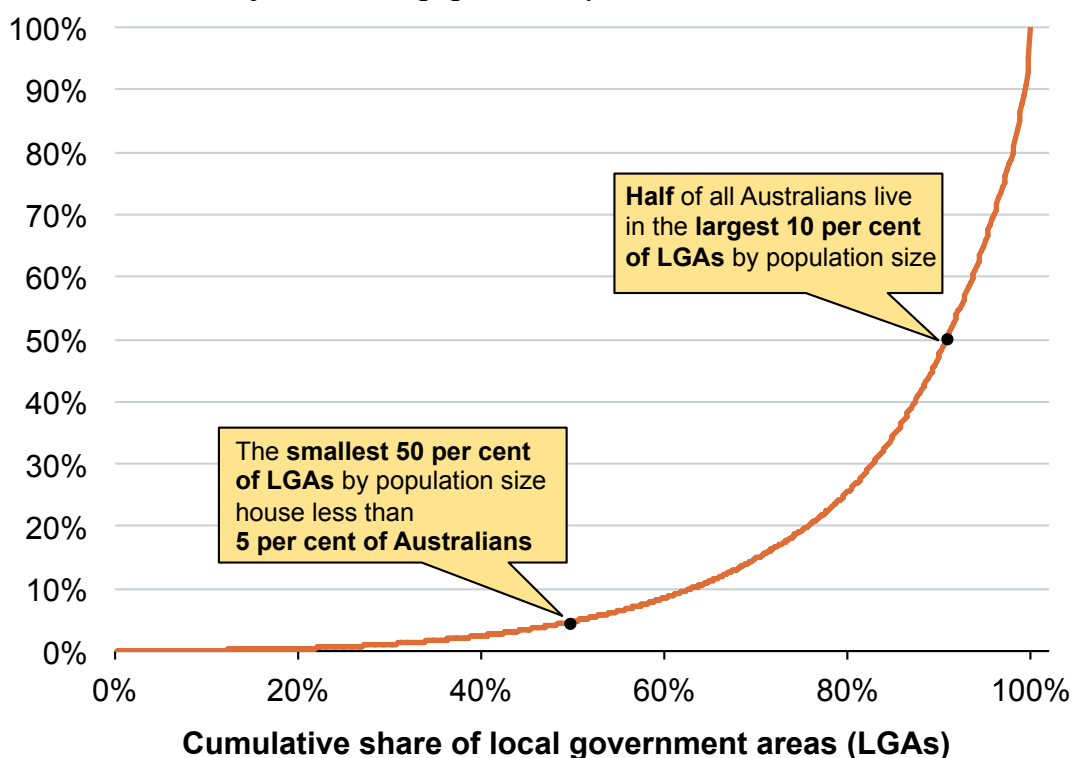
While compelling on face value, Ong et al's main conclusion is flawed because the authors fail to weight the price deciles by the number of existing dwellings in each LGA. While they do consider approvals as a share of the existing unit and house stock within each decile, this is not necessarily representative of the population within an LGA, nor is it given much emphasis in their conclusion.

Not weighting the price deciles by the existing dwelling stock is significant because LGAs have very different populations, ranging from 62 people in Maralinga Tjarutja in far-west South Australia to 1,184,215 in the Brisbane City Council ((ABS, 2016).) Brisbane has 459,227 houses and units, while Maralinga Tjarutja has only 14.

Figure 2 shows that the cumulative population distribution across LGAs is exponential. While just 5 per cent of Australians live in the smallest half of all LGAs, half of all Australians live in the 10 per cent of LGAs with the largest populations — all of which are in or close to our major cities (ABS, 2017b). Most LGAs with small populations are in rural and regional areas. With relatively few jobs being created there, these aren't the places where we would expect much new housing (ABS, 2017c).

Figure 2: Most Australians live in only a few LGAs, concentrated in our largest cities
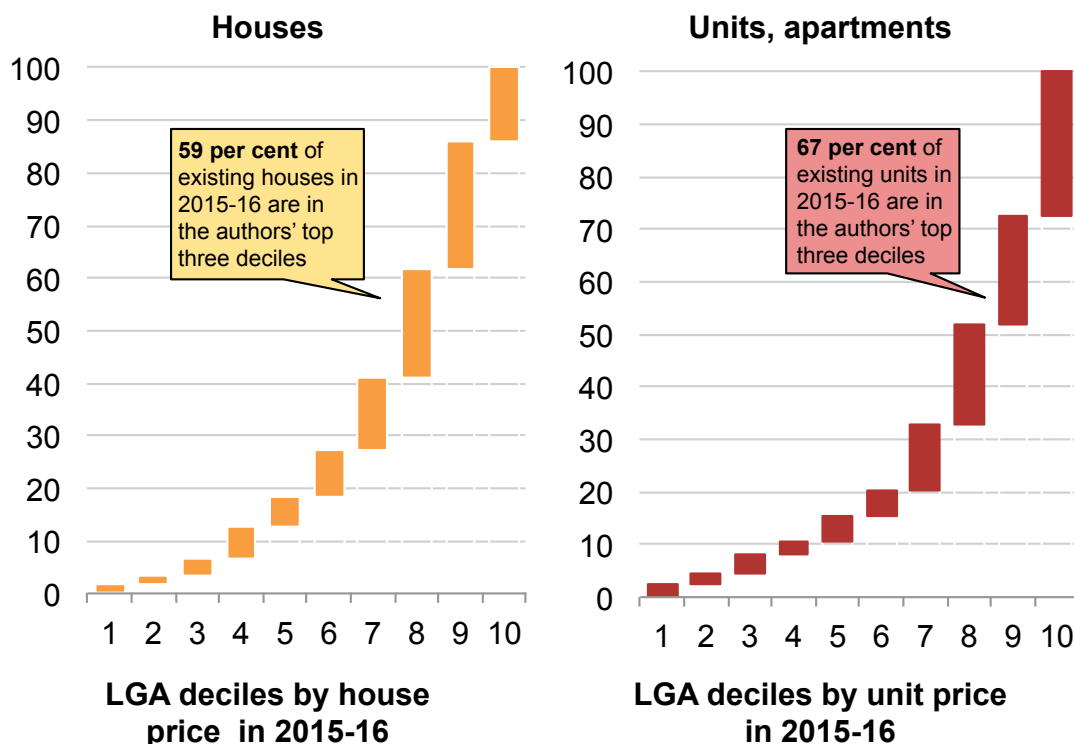*Cumulative share of Australian population by LGAs, 2016*

Note: LGAs are ranked by population size from smallest to largest.
Sources: ABS 3218.0 Regional Population Growth, Australia, 2015-16; Author analysis.

Figure 3 shows that in Ong et al's analysis, LGAs in the bottom six house price deciles contained just 27 per cent of all houses in 2015–16. By contrast, the LGAs in the top three house price deciles account for 59 per cent of the existing housing stock. The distribution of units across LGAs is more uneven than for houses. The top three unit price deciles account for 67 per cent of the unit stock in 2015-16.

Figure 3: Ong et al fail to weight their deciles by dwellings or population when sorting LGAs by price
Cumulative share of existing homes (per cent) in each LGA, 2015-16, by LGA deciles

Houses

59 per cent of existing houses in 2015-16 are in the authors' top three deciles

LGA deciles by house price in 2015-16

Units, apartments

67 per cent of existing units in 2015-16 are in the authors' top three deciles

LGA deciles by unit price in 2015-16

Note: House price deciles are calculated on median house and unit prices in each LGA across Australia, unweighted for population size of LGAs.
Source: Ong et al (2017) Spatial and Temporal Patterns in Housing Supply: A Descriptive Analysis.

It is hardly surprising that most new housing is built in the highest price deciles — they already house most of the population and contain most of the housing stock. These LGAs represent the vast bulk of Australia's major cities, where population and jobs are growing faster than regional areas (Daley, 2016, Daley et al., 2017, Infrastructure Australia, 2018).

The skew in the analysis introduces significant distortions. A suburb with the same median house price as Australia overall ($608,000 for the capital cities in July 2015 (CoreLogic, 2015)) would not fall in the authors' middle LGA decile, as might be expected, but would instead fall in the second-highest price decile. The Australia-wide capital city median unit price, $505,000, would sit in the authors' second-highest unit price decile.[5] In fact, no Australian capital city has a median house price within the bottom half of Ong et al's house price deciles in 2015-16. And only Hobart has a median unit price that falls in the bottom half of LGAs by median unit price (in the fifth decile) (CoreLogic, 2015).

Overall, Ong et al's price deciles are highly unrepresentative of the distribution of housing in Australia, which leads to flawed conclusions about the distribution of new

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[5] According to the Domain Report (December 2015): median house price: $723,163, median unit price: $517,575

housing supply. By not weighting price deciles by the existing population or the existing dwelling stock, it is misleading for Ong et al to conclude that "new housing opportunities are increasingly tilted toward the more expensive end of the housing market".

WEIGHTING PRICE DECILES BY THE EXISTING DWELLING STOCK

In this section, we improve on Ong et al's analysis by weighting price deciles by the existing dwelling stock. We examine new housing supply in 2005-06 and 2016-17 (due to access to newer data we analyse new housing supply in 2016-17 rather than 2015-16). In addition to examining new housing supply on a national basis, we also present results for New South Wales and Victoria, Australia's two largest states.

We use the following data sources in our analysis:

- We follow the approach of Ong et al in using the number of building approvals as a proxy for housing supply. This is obtained from ABS Building Approvals data for both 2005-06 and 2016-17 (ABS, 2018b).[6]

- The dwelling stock within each LGA is obtained from the 2006 Census and the 2016 Census.

- Median house and unit price data by LGA is from CoreLogic.

We use a different definition of 'houses' and 'units' to Ong et al.
Ong et al define 'houses' as comprising separate houses, semi-detached, row, and terrace houses, and townhouses. They define 'units' as comprising flats, units, and apartments. We define units as all non-detached dwellings, which in addition to flats, units, and apartments includes semi-detached, row, and terrace houses, and townhouses. Our definition aligns with the definition of 'houses' and 'other residential' dwellings used by the ABS ((ABS, 2018a); (ABS, 2017a)).[7]

In 2016, separate houses made up 71 per cent of all private dwellings (ABS, 2016). Flats and apartments accounted for 14 per cent of all private dwellings, and semi-detached, row, terrace, and townhouses made up 12 per cent of all private dwellings.

We make some adjustments to our data to match up the ABS Census and building approvals data and the CoreLogic dwelling price data. For the 2005-06 analysis, adjustments are needed to account for changes to LGA boundaries made by the Queensland Government in 2008 (Queensland Government, 2010). The Census and building approvals data use the LGAs prior to the 2008 amalgamations, whereas the CoreLogic price data had LGAs as they were after the 2008 LGA amalgamations. The 2006 LGA structure is kept, with median prices of the larger post-2008 amalgamated LGAs assigned to the smaller LGAs that were amalgamated. For example, the

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[6] For 2005-06, approvals in each Statistical Local Area (SLA) were converted to approvals by LGA using ABS Concordances (ABS 2005. 1216.0.15.002 - Australian Standard Geographical Classification (ASGC) Concordances, 2005 Australian Bureau of Statistics.). For example, in 2005-06, the Ballarat LGA was composed of four separate SLAs: Ballarat - Central, Ballarat - Inner North, Ballarat - North, and Ballarat - South.
[7] Our approach is also consistent with the definitions of houses and units used by CoreLogic in their price data.

Blackall-Tambo LGA was created from the merger of the Blackall and Tambo councils. The CoreLogic median house and unit price data for the Blackall-Tambo LGA is assigned to the separate councils Blackall and Tambo that existed before 2008.

For the 2016-17 analysis, adjustments are needed to account for the NSW Government's 2016 changes to LGA boundaries. The CoreLogic data uses LGA boundaries as they were before the LGA amalgamations. To match how these LGAs were recorded in the 2016 Census, which used the post-amalgamation LGA boundaries, the median unit and house prices of LGAs that were amalgamated were averaged. For example, the new LGA of Central Coast was formed from the merger of Gosford and Wyong LGAs. The average of the median prices for Gosford and Wyong is used as the median price for the Central Coast LGA.

CoreLogic does nothave house or unit price for some regional LGAs (for example Bland (NSW) and Golden Plains (Victoria) in 2005-06 and Bourke (NSW) and Carpentaria (QLD) in 2016-17). Where there is no price data available, these LGAs were excluded from the analysis. Exclusions were more common when analysing the supply of units, as fewer regional LGAs had unit price data (as there was likely none or few unit sales in these regional areas). Since these LGAs also tend to have lower dwelling prices than average, excluding them from the analysis adds an upwards bias to our calculation of the new housing supply distribution. However, this effect is small given these LGAs' generally small dwelling stock had few building approvals.[8]

We then calculate the distribution of house and unit approvals in 2005-06 and 2016-17. Importantly, unlike Ong et al, we calculate *weighted* price deciles for each LGA for houses and units, using the total dwelling stock within each LGA as the weights. Weighting price deciles by the population of LGAs would produce very similar results. LGAs without price data for a particular year were excluded. The result from weighing price deciles is that each decile for houses and units contains approximately the same number of dwellings (see Table 1). The weighted price deciles don't contain exactly 10 per cent of the dwelling stock because each LGA has to be allocated to one decile. For example, for houses in 2005-06, the share of the dwelling stock in each weighted price decile varies between 9.4 per cent and 10.8 per cent (Table 1). As explained earlier, some LGAs are much larger than others. Hence, when grouping together deciles it is impossible to attain a perfectly even distribution.

To find the housing supply in each weighted price decile, we sum the total number of the house and unit approvals from each LGA within each decile. The percentage of approvals within each weighted price decile is then calculated, along with the price bands for each decile (Table 1). We perform this analysis for Australia as a whole, for NSW, and for Victoria (with the weighted price deciles re-calculated each time).

A limitation of our approach, and earlier work by Ong et al, is that we can't observe whether new houses and units are cheaper, or more expensive, than existing types of each home in each LGA. On the one hand, new homes should be more expensive than the average for an LGA since they are new and have therefore not depreciated.

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[8] Excluding smaller LGAs due to missing data would have a bigger effect on the distribution of housing approvals if deciles were not weighted, in the Ong et al analysis.

Table 1: House and unit approvals by weighted price decile in Australia

Houses - Weighted price decile	2005-06			2016-17		
	Price band ($)	% of dwelling stock	% of approvals	Price band ($)	% of dwelling stock	% of approvals
1	22,191 - 248,272	9.9	9.5	42,333 - 279,833	9.8	5.4
2	249,896 - 303,445	10.0	14.5	279,870 - 342,417	10.1	11.1
3	304,315 - 333,085	9.7	19.9	342,750 - 404,292	9.9	11.3
4	333,194 - 383,950	10.3	17.3	404,917 - 468,979	10.1	21.8
5	388,412 - 424,423	9.4	8.7	475,125 - 540,833	10.1	14.6
6	424,478 - 476,371	10.2	6.7	545,979 - 605,062	9.8	8.6
7	476,792 - 495,142	10.3	8.1	605,979 - 653,250	9.8	6.6
8	495,444 - 545,953	9.7	9.1	668,483 - 867,917	10.5	12.1
9	566,681 - 760,380	9.7	3.5	875,500 - 1,297,500	9.6	5.6
10	770,205 - 2,825,477	10.8	2.8	1,332,330 - 3,551,210	10.4	2.8

Units Weighted price decile	2005-06			2016-17		
	Price band ($)	% of dwelling stock	% of approvals	Price band ($)	% of dwelling stock	% of approvals
1	68,887 - 219,383	9.9	4.5	95,125 - 230,000	9.9	0.7
2	219,541 - 250,989	9.9	4.8	230,875 - 265,125	9.9	2.1
3	251,099 - 285,118	10.1	7.3	265,927 - 318,729	9.1	2.3
4	285,337 - 306,231	9.8	6.9	319,125 - 352,425	10.8	5.2
5	306,790 - 332,565	9.9	8.7	353,446 - 394,750	9.9	6.6
6	334,443 - 375,128	10.0	7.6	397,635 - 442,184	10.2	11.4
7	376,347 - 393,057	10.1	15.9	443,917 - 470,479	9.9	13.7
8	393,792 - 425,397	9.6	17.6	470,520 - 532,873	9.9	17.5
9	426,174 - 484,656	10.2	15.3	534,392 - 670,529	10.3	19.2
10	494,240 - 816,851	10.5	11.5	681,792 - 1,173,750	10.1	21.3

Note: price bands in $2016-17.
Sources: Author analysis based on CoreLogic data; ABS Census 2006 and 2016; ABS 8731.0 Building Approvals.

Yet new houses, and apartments in particular, are likely to be smaller than the existing stock, and therefore cheaper.
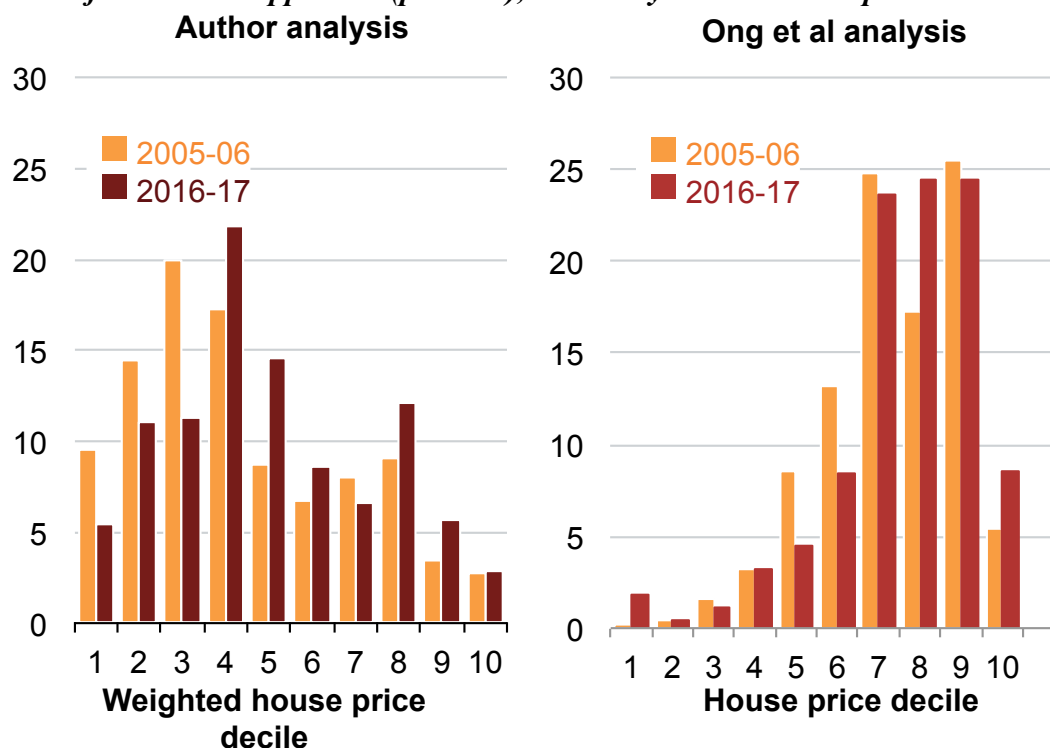
Another limitation of our analysis on the state level is that we find that the share of housing stock contained within each decile varies more than when doing the analysis for Australia. For example, for houses in Victoria in 2005-06, the share of the dwelling stock in each weighted price decile varies between 7.4 per cent and 11.9 per cent.

THE DISTRIBUTION OF NEW HOUSE APPROVALS

Our new analysis using weighted price deciles shows that most new homes have been built in cheaper suburbs, and not at the top end. This pattern holds on both a national level, and in each of NSW and Victoria.

Figure 4 compares our calculations of new house supply by weighted price deciles, and updated to 2016-17, compared to Ong et al's calculation of new house supply by unweighted price deciles.

Figure 4: Most new houses are actually being built in cheaper LGAs
Share of new house approvals (per cent), ranked by median house price deciles

Note: Price deciles are calculated on median house prices in each LGA across Australia.
Sources: Author analysis based on CoreLogic data; ABS Census 2006 and 2016; ABS 8731.0 Building Approvals; Ong et al (2017) Spatial and Temporal Patterns in Housing Supply: A Descriptive Analysis.

By using weighted price deciles, we draw much different conclusions about where new houses have been built. Our results show a distribution that is centred on the third, fourth, and fifth deciles. House approvals peaked at the third and fourth weighted house price deciles in 2005-06 and 2016-17 respectively. This is a noticeably different distribution to Ong et al, who find new house approvals
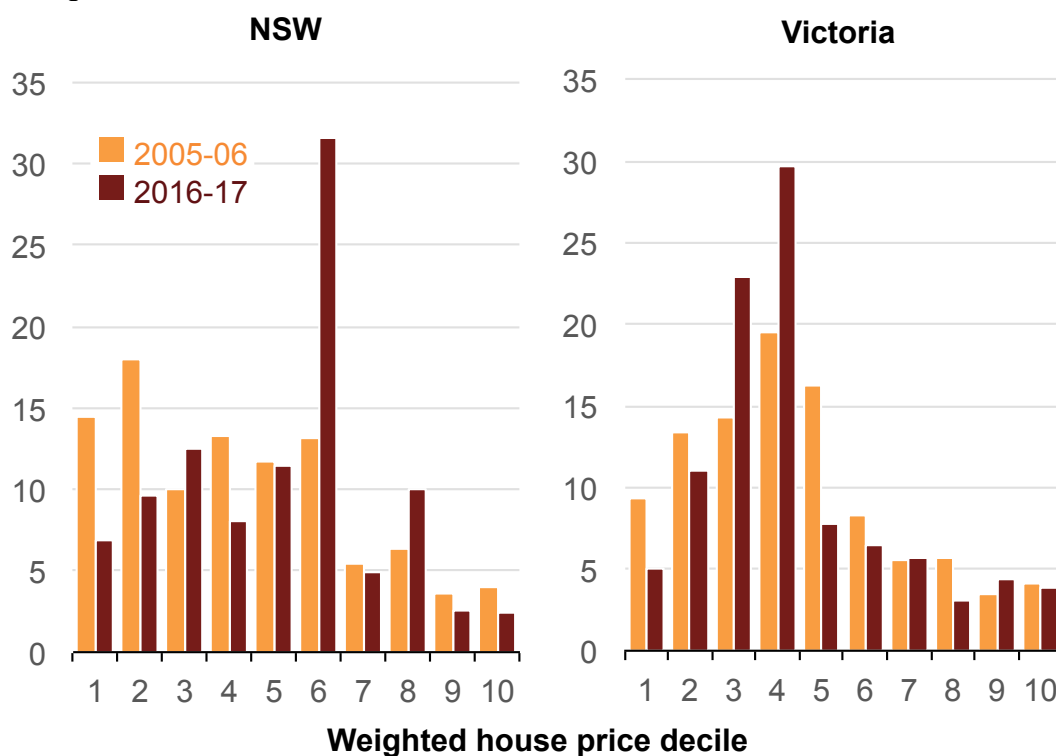
concentrated in the higher price deciles. As explained earlier, this largely results from Ong et al using unweighted house price deciles, which results in the higher price deciles including a disproportionately large percentage of the housing stock.

Whereas Ong et al claim that only 11 per cent of new houses in 2015-16 were built in the lower half of price deciles, we find that figure to be much higher in 2016-17, at 64 per cent. In 2016-17, almost half of the new houses were built in the third, fourth and fifth price deciles, where the median price range is from $342,750 to $540,833 (see Table). This is a typical price for a new house and land package in greenfield areas on the edges of our major cities (Realestate.com.au, 2018b, Realestate.com.au, 2018c, Realestate.com.au, 2018a), and includes LGAs such as Casey, Wyndham and Melton in Victoria, Moreton Bay and Redlands in Queensland, and Swan and Wanneroo in Western Australia.

And where Ong et al claim that only 2 per cent of new homes were built in the cheapest 20 per cent of LGAs in 2015-16, we find that 16 per cent of new houses in 2016-17 were in the cheapest LGAs.

Figure 5 shows the results of our analysis for NSW and Victoria. Compared to Australia, the supply of new housing in NSW has a flatter distribution, especially in the lower price deciles (the fifth decile has an upper bound price of $707,417).

Figure 5: Most new houses are being built in cheap and mid-priced LGAs in Sydney and Melbourne
Share of new house approvals (per cent) in 2005-06 and 2016-17, ranked by median house price deciles within each state

Note: Price deciles are calculated on median house prices in each LGA within each state.
Sources: Author analysis based on CoreLogic data; ABS Census 2006 and 2016; ABS 8731.0 Building Approvals.

The share of approvals in the more expensive LGAs increased between 2005-06 and 2016-17: the upper five deciles made up 32 per cent of housing supply in 2005-06, compared to 52 per cent in 2016-17. However, this was almost exclusively caused by an increase in the number of housing approvals in the sixth decile. The sixth price decile in 2016-17 has a price range of $709,083 to $814,375. Approvals in this decile mostly occurred in the Blacktown, Camden, and Liverpool LGAs. It is not surprising that new housing is being built in these outer-suburban LGAs. Planning rules and restrictions have made it easier to build new housing on city fringes, rather than in the inner and middle-ring suburbs (Daley et al., 2018).

Analysis of Victorian data also suggests a different conclusion to the one presented by Ong et al.

The distribution of Victorian housing supply largely resembles Australia as a whole. Most new supply in 2005-06 (72 per cent of new approvals) was concentrated in the lower five deciles. In 2016-17 the percentage of new houses built in cheaper LGAs increased slightly, to 76 per cent.

The biggest changes in Victoria were in the third and fourth deciles. From 2005-06 to 2016-17 the share of total house approvals in these two deciles increased from 34 per cent to 52 per cent. In these deciles, the LGAs with the most approvals were Wyndham, Greater Geelong, Casey, Hume and Melton, all on the edge of Greater Melbourne. Land in these greenfield areas has been substantially cheaper than comparable greenfield areas in Sydney. In 2016 greenfield land in Sydney sold for around $1,200 per square metre, compared to about $600 per square metre in Melbourne (UDIA, 2017). Slow land release and geographical constraints in Sydney contributed to this price difference (UDIA, 2017). Cheap land on Melbourne's fringe, relative to Sydney, has made Melbourne a destination for interstate and overseas migrants, which has contributed to strong population growth (Daley et al., 2018). From 2006 to 2016 the population of Wyndham increased by 98 per cent and the total housing stock increased by 84 per cent (ABS, 2017c, ABS, 2018b).

Our analysis using weighted price deciles shows that most new houses have been built in low- and mid-priced LGAs, not in high-priced LGAs as suggested by Ong et al's analysis. Between 2005-06 and 2016-17 the supply of new houses shifted slightly upwards into higher weighted price deciles.

THE DISTRIBUTION OF NEW UNIT APPROVALS

We now present the results of our national and state-level analysis of the spatial distribution of new units.[9]

Units, apartments, semi-detached, row and terrace houses, and townhouses accounted for 49 per cent of all building approvals in 2016, up from 32 per cent in 2005. As Australian cities grow in size and land has become more expensive, Australians are increasingly favouring high- and medium-density housing over detached houses. Previous Grattan Institute research found that after accounting for trade-offs in price,
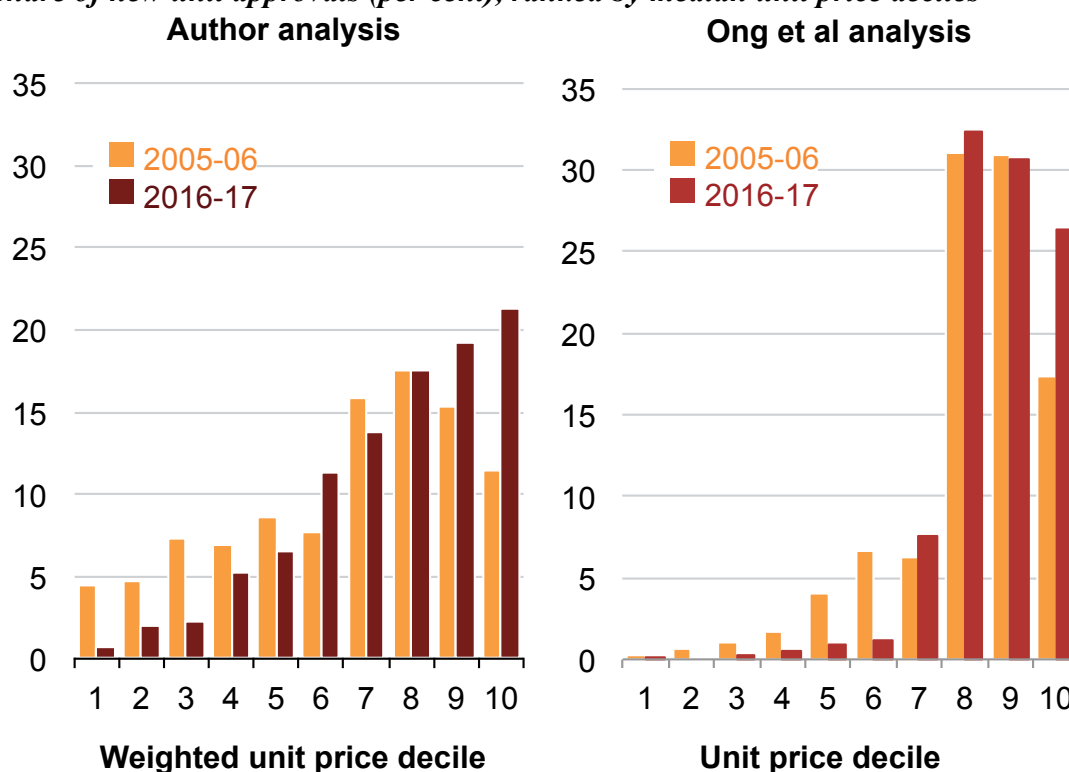
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[9] As described in the research methodology section, our definition of units includes units, apartments, semi-detached, row and terrace houses, and townhouses.

location, and size, many people would prefer a townhouse, semi-detached dwelling, or apartment in a middle or outer suburb over a house on the city fringe (Daley et al., 2018, Kelly et al., 2011).

We find that units have largely been supplied in the LGAs that sit within high-weighted unit price deciles. But this pattern is not as stark as the results presented in Ong et al's paper. Figure 7 shows the differences between our analysis for Australia and the analysis in Ong et al.

Figure 7: Most new units are being built in more expensive LGAs in Sydney and Melbourne
Share of new unit approvals (per cent), ranked by median unit price deciles

Notes: Price deciles are calculated on median unit prices in each LGA across Australia. Semi-detached, row and terrace houses, and townhouses are included within 'Units' in the Author analysis, but not in the Ong et al analysis.
Sources: Author analysis based on CoreLogic data; ABS Census 2006 and 2016; ABS 8731.0 Building Approvals; Ong et al (2017) Spatial and Temporal Patterns in Housing Supply: A Descriptive Analysis.

Our analysis suggests that the supply of new units is very different to the supply of new houses. Most unit approvals occur in LGAs in the middle- and higher-price weighted price deciles, whereas for houses more approvals occur in LGAs in the lower and middle deciles.

Our results still differ markedly from those of Ong et al, which finds that new units construction is heavily weighted towards the top three unit price deciles. In Ong et al's analysis, in 2015-16 the top three deciles accounted for roughly 90 percent of all new unit supply. We find that the top three deciles only accounted for 58 per cent of new unit supply in 2016-17. And while supply was low in the bottom half of deciles, it still contributed to 17 per cent of all new units constructed.

Even more so than with houses, unit approvals tend to be concentrated in a smaller number of LGAs with a large housing stock, such as Brisbane City Council, City of Gold Coast, Canterbury-Bankstown and the City of Sydney. So failing to weight unit price deciles by the existing housing stock, as in the Ong et al paper, results in the misleading conclusion that unit approvals are highly concentrated in the most expensive LGAs.

According to our analysis using weighted price deciles, the supply of new units has changed over time. In 2016-17, a larger share of new units were approved in LGAs in the 9th and 10th weighted price deciles compared to 2005-06, while fewer units were approved in the lowest price deciles.

Figure 8 shows the distribution of the supply of new units in NSW and Victoria.
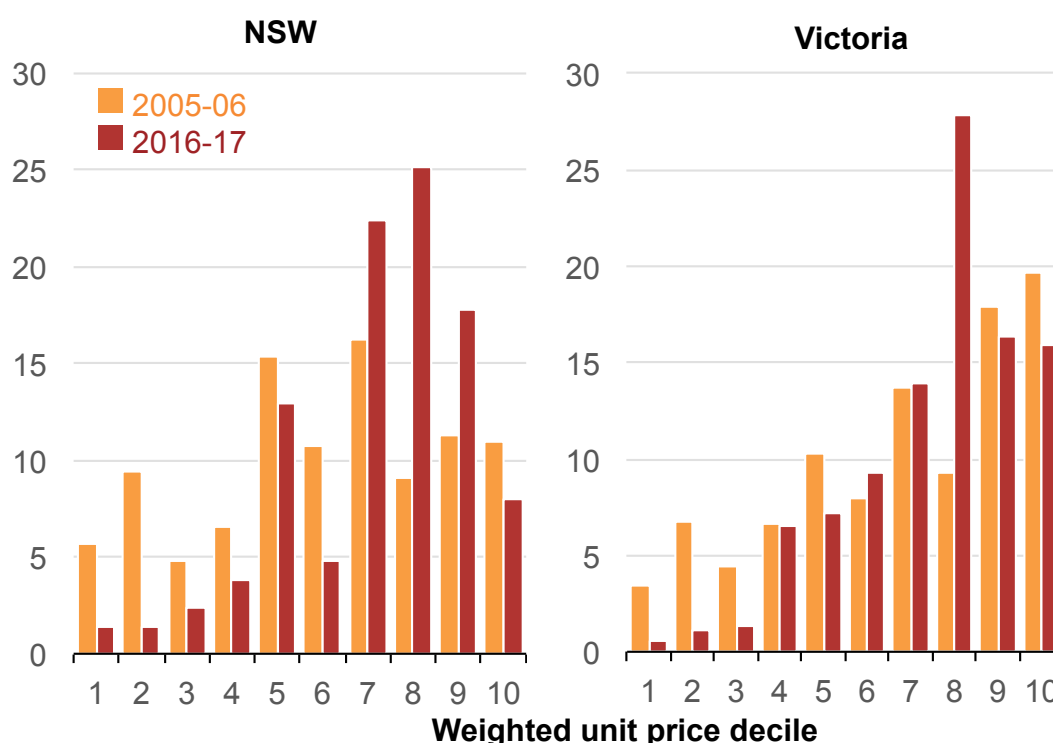
Within NSW, the distribution of unit approvals differs noticeably from house approvals, a contrast similar to the one seen in Australia as a whole. Most unit approvals in NSW in 2016-17 were within LGAs in the seventh and eighth weighted price deciles (a price range of $580,604 to $780,792). Within the top four price deciles, the LGAs with the most unit approvals in 2016-17 were Sydney and Parramatta. Other key development areas were Sutherland Shire, The Hills Shire and Canterbury-Bankstown. There was a noticeable shift towards more unit approvals in higher price deciles between 2005-06 and 2016-17. The top four deciles only made up 47 per cent of approvals in 2005-06; this increased to 73 per cent by 2016-17.

It is no surprise that new units and apartments tend to be built in more expensive LGAs. New units have been approved in LGAs closer to (and including) the Sydney CBD. These areas are more desirable because they are closer to higher-paying jobs and better transport options. Hence the median prices are highest. This aligns with Charter Keck Cramer data which show that there has been an apartment construction boom in Sydney's middle ring in the past few years (Daley et al., 2018). That boom has been driven by a number of factors, including: the higher cost of greenfield land making infill development more attractive; greater use of independent panels to assess development applications by local councils; restrictions on residential development in the Sydney CBD; and the creation of 'priority precincts' around transport corridors (Kent and Phibbs, 2017, Daley et al., 2018).

The distribution of new units is different to the distribution of new houses, where the key areas of new supply were mostly in the outer-suburban LGAs.

Figure 8: Most new units are being built in more expensive LGAs in Sydney and Melbourne
Share of new unit approvals (per cent) in 2005-06 and 2016-17, ranked by median unit price deciles within each state

Note: Price deciles are calculated on median unit prices in each LGA within each state
Sources: Author analysis based on CoreLogic data; ABS Census 2006 and 2016; ABS 8731.0 Building Approvals.

As with NSW, in Victoria most new units have been built in more expensive areas. Between 2005-06 and 2016-17 the share of unit approvals in the top five weighted price deciles increased from 69 per cent to 83 per cent. However, unlike NSW where the supply of apartments was distributed across multiple LGAs, in Victoria the changes in supply were almost solely driven by more unit approvals in the City of Melbourne, which sits in the eighth weighted price decile. Between 2005-06 and 2016-17 the number of unit approvals in Melbourne increased from 140 to 5921 (ABS, 2018b). The boom in Melbourne CBD apartments was driven by a number of factors. On the demand side, the growth reflects changing housing preferences, as well as strong CBD employment and increasing land prices making apartments (where the land component of the price is lower than for a detached house) relatively more attractive (Daley et al., 2018). However it also resulted from planning changes which gave the Victorian Planning Minister the discretion to approve high-rise inner-city developments more readily than housing in the suburbs, where planning decisions are made by local councils (Shoory, 2016).

HOUSING SUPPLY AND FILTERING

Overall, our analysis shows that the supply of houses has occurred within low- and mid-priced LGAs, while most new units have been approved in higher-priced LGAs. These patterns generally hold at the national and within NSW and Victoria.
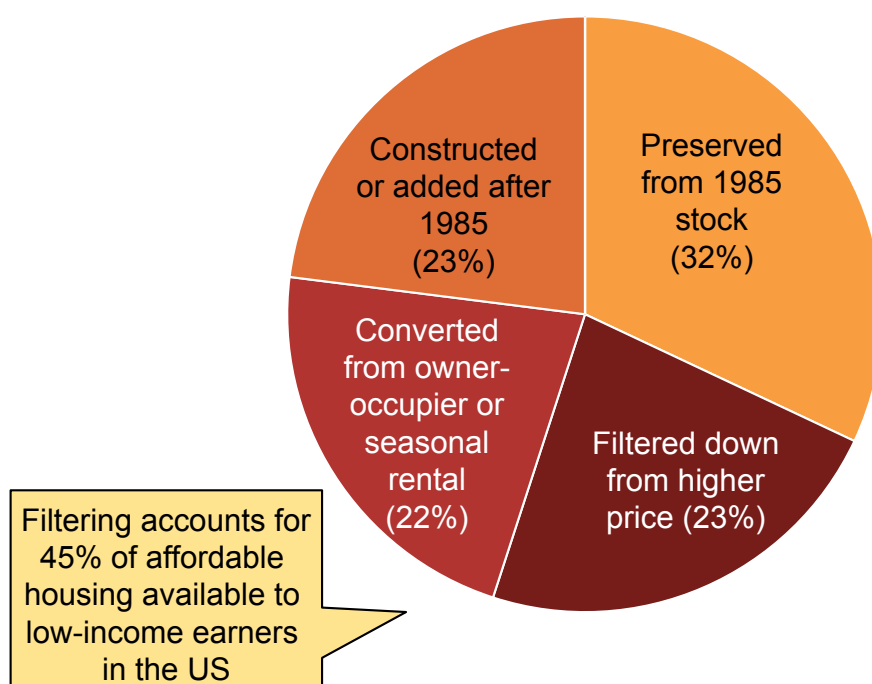
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But even though a lot of new housing is being built in cheaper areas, new housing needn't be targeted at lower price points to improve overall housing affordability. While building new social or affordable housing does directly help the lower-income households who get access to these homes, more housing supply — even at the top end — should ultimately "filter" down and free up less expensive housing stock.

The people who move into newly constructed, more expensive housing are either existing residents who move out of less expensive housing, or new residents who would otherwise have added to the demand and pushed up the price for existing housing. Irrespective of its cost, each additional dwelling adds to total supply, which ultimately affects affordability for all homebuyers.

There is good international evidence to suggest that "filtering" does occur in practice. (Rosenthal, 2014) finds that the U.S. housing stock "filters down at a rate of roughly 1.9 per cent per year in real terms. At that rate the real income of an arriving occupant in a 50-year-old home would be 60 per cent less than income of an occupant in a newly built home".

Figure 9: Filtering is an important source of affordable housing for low-income earners
US affordable rental housing stock in 2013 by source

Notes: Affordable housing is defined as costing no more than 30 per cent of income for households with very low incomes (earning less than 50 per cent of area median). Units added include rentals that were temporarily out of the stock in that year.
Source: Weicher, Eggers and Moumen (2016), The Long-Term Dynamics of Affordable Rental Housing.

Figure 9 shows that 45 per cent of homes that were affordable to very low-income earners in the US in 2013 had filtered down from owner-occupier or higher rent categories in 1985 (Weicher et al., 2017). Expensive homes gradually became cheaper as they aged, and were sold or rented to people with more modest incomes. Without those extra homes, far less affordable housing would have been available to low-income earners.

Additional studies from the California Legislative Analyst's Office and the Federal Reserve Bank of New York reach similar conclusions about the effectiveness of filtering in the US (Taylor, 2016, Somerville and Mayer, 2003).

Unfortunately, there is little Australian literature on filtering. Australia lacks an equivalent to the American Housing Survey.[10] The last dedicated survey of the Australian housing stock was conducted almost two decades ago. Nor do we know what happens to particular homes over time. But it's likely that market-rent housing is an important source of affordable housing here, as it is in the US.

Of course, new expensive housing might not improve the balance between supply and demand if it merely induces additional demand, presumably from overseas purchasers. But there is little evidence that overseas purchasers are increasing demand in Australia by much more than they increase supply (Daley et al., 2018) (Wokker and Swieringa, 2016). There is clear evidence that they are not the only purchasers of more expensive housing. And while gentrification can push up prices in a particular area, the construction of more housing in total should lead to prices lower than otherwise.

However filtering may be slower if house prices rise rapidly and overall housing supply is restricted (Somerville and Mayer, 2003).[11]

The findings from the international literature underscore the importance of more housing supply to keep housing affordable for low-income earners — even if much of the new housing is too expensive for them. Australian research on filtering would also be welcome.

CONCLUSION

Our research shows that most new housing supply is not targeted at the top end of the market. By using price deciles weighted by the existing housing stock, and thereby correcting a flaw in Ong et al's analysis, we show that most new houses are being built in cheaper suburbs on the fringes on our major cities, and most new units are being built in the inner and middle rings of Sydney and Melbourne. Our findings on new house approvals, and to a lesser extent the supply of new units, rebut Ong et al's conclusion that "[h]ouse and unit supply is concentrated in LGAs that have relatively high prices".

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[10] The American Housing Survey has tracked a consistent set of homes, and the characteristics of those who live in them, every two years since 1985.
[11] "Restrictions on the supply of new units lower the supply of affordable units. This occurs because increases in the demand for higher-quality units raise the returns to maintenance, repairs, and renovations of lower-quality units, as landlords have a stronger incentive to upgrade them to a higher-quality, higher-return housing submarket."

We also review the international evidence on filtering and conclude that filtering is an important source of housing for low-income households in the US. Impediments to new housing supply slow the filtering process.

Our findings add to the growing evidence that new housing supply will improve housing affordability, including for low-income earners. Housing supply isn't the only solution to make housing more affordable for low-income earners. Larger subsidies are needed to help low-income earners cope with rising housing costs. But without more supply for everyone, housing won't become much more affordable.

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