

# The economics of housing supply: Key concepts and issues

Rachel Ong ViforJ, PhD  
Professor of Economics

Chris Leishman, PhD  
Professor of Property and Housing Economics

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## Key points

- Households are facing significant housing affordability challenges. Current policy attention in NSW and Australia is focused on increasing new housing supply to meet increases in demand.
- If new housing supply cannot respond to demand-induced price changes, this can lead to further price increases and a decline in housing affordability.
- Policy discussions tend to treat 'housing supply' as being synonymous with new housing supply. This is flawed because overall market housing supply is usually dominated by dwellings from the existing stock.
- The responsiveness of new housing supply to demand changes varies widely across spatial and sectoral submarkets.
- The planning system is often cited as a key barrier to delivering new housing supply, which raises the price of housing relative to the supply cost. Discussion around planning reform should be accompanied by consideration of the highly localised nature of planning systems, zoned capacities, and other non-planning factors that can raise dwelling prices relative to the supply cost.
- Developers can also affect the rate at which new housing supply flows onto the market. For example, even in the absence of planning controls, developers can pace development projects to slow down the supply of new housing to increase their profits.
- Housing demand has important interactions with housing supply, which can confound the supply-price relationship.
- Downward pressure of new housing supply on prices plays out over very long time periods. In the short-run, new housing development may not respond to an increase in demand to the level needed to avoid an increase in housing prices.

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# 1. Context

## 1.1 Housing affordability challenges in NSW

Housing affordability is typically discussed in terms of the level of housing costs paid by a household relative to the household's income. Housing costs are in turn affected by the available supply of housing.<sup>1</sup> Across Australia, households are facing significant housing affordability challenges. These challenges are often more pronounced in NSW, and statistics from March 2024 show that:<sup>2</sup>

- The ratio of median dwelling price to median income in Sydney and rest of NSW were the highest among all capital cities and regional areas. Between March 2020 and March 2024 this ratio rose from 8.6 to 9.5 in Sydney, and from 6.7 to 8.7 in the rest of NSW.
- The number of years it takes to save a home deposit was also highest in NSW, sitting at 12.6 years in Sydney and 11.6 years in the rest of NSW.
- The share of median income required to service a new mortgage on the median dwelling value was 60% in Sydney, with Adelaide coming second at 52%. The rest of NSW was the only regional area where more than half the median income was required to service a new mortgage. This was estimated at 55%, compared to the rest of Queensland and rest of Tasmania at around 46%.
- The share of median income required to service median rent was 33% in Sydney (second behind Adelaide) and 35% in the rest of NSW (second behind the rest of Queensland).

## 1.2 The policy focus on housing supply

Policy attention in NSW and other Australian jurisdictions has increasingly focused on lifting housing supply to meet demand. The National Housing Accord has an aspirational target of building 1.2 million well-located new homes over the 5 years from mid-2024, and all states and territories are signatories with the Australian Government.<sup>3</sup> Each state and territory now has its own implementation schedule, which includes commitments to deliver their share of affordable homes and expedite planning reform to support delivery of social and affordable housing in well-located areas.<sup>4</sup> This is complemented by NSW's *Housing*

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<sup>1</sup> Productivity Commission, [In need of repair: The National Housing and Homelessness Agreement: Study report](#), Productivity Commission, 2022.

<sup>2</sup> ANZ CoreLogic, [Housing affordability report: '30's' are the new '20's', '40's' are the new '30's', the shift in Australian rent and mortgage costs](#), April 2024.

<sup>3</sup> Australian Government, [National Housing Accord 2022](#), 2022.

<sup>4</sup> Australian Government, [National Housing Accord - Implementation schedules](#), n.d.

2041 strategy. One of the key pillars of the strategy is supply, which aims to deliver housing in the right location at the right time.<sup>5</sup>

### 1.3 Overview

This paper is a guide to the economics of housing supply.

In sections 2 and 3, we explain 3 key housing supply concepts:

1. **Responsiveness of new housing supply to demand:** in theory, when demand for housing increases, prices will rise, which should lead to an increase in new housing supply. However, this does not always happen. We describe the concept of elasticity, which is a measure of the responsiveness of housing supply to demand-induced price changes.
2. **New versus established housing stock:** new housing makes up a relatively small share of the total housing stock compared to established stock. We provide details on how established housing stock meets demand.
3. **Filtering:** this concept describes a process by which dwellings could become more affordable as they age.

Because new housing supply is currently the primary focus of housing policy, in section 4 we set out the key factors influencing how responsive new housing supply is to demand changes.

In section 5 we summarise key conclusions from the preceding sections and explain how housing supply is linked to affordability outcomes.

This paper sets out key findings from the literature. It also draws attention to important topics that are often left out of the housing policy debate in Australia. Omissions of important evidence can impede the effective design of housing supply policies. Therefore, this paper uncovers some commonly overlooked themes to better inform housing supply policymaking:

- It is often assumed that planning regulations significantly hinder new housing supply, but the Australian evidence is actually mixed regarding the extent to which planning has a negative impact on new supply.
- Developer behaviour can affect the flow of new supply on to the market, but this aspect of the production process does not receive much attention in Australia's policy commentary.

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<sup>5</sup> NSW Government, [Housing 2041: NSW Housing Strategy](#), 2021.



- Theoretically, holding all other factors constant, an increase in housing supply should reduce house prices and rents. However, there is insufficient empirical evidence on the extent to which house prices or rents actually respond to changes in housing supply in Australia.
- The policy focus in Australia is on new housing supply, but it is existing housing stock that forms the majority of total housing stock, and therefore existing stock potentially plays a more important role in shaping affordability outcomes than new-build housing.
- A great deal of commentary about housing supply assumes that processes such as downsizing, trading up and filtering work well and in accordance with theory. At present, however, most empirical evidence shows that these processes do not occur smoothly in practice within the Australian context.

The paper's central focus is on housing supply. Hence, we do not delve into demand-side factors that affect the housing market.

#### **1.4 A note on the quality and applicability of evidence to the Australian context**

The housing supply debate in Australia has been informed by a large pool of diverse sources. These include:

- Peer-reviewed studies, peer review being a globally accepted independent evaluation process that ensures the study achieves adequate standards of rigor and reliability
- Discussion (or working) papers that typically provide emerging and tentative findings that offer material for further discussion and development
- Policy-oriented reports that typically highlight high-level descriptive patterns and may summarise findings from a mix of peer-reviewed and other sources
- Media sources.

Policy considerations in Australia often rely heavily on more easily accessible sources including discussion papers, policy-oriented reports and media sources, but are less well-informed by the significant body of relevant peer-reviewed studies that may be less accessible.

As a whole, this wide-ranging pool of sources can often present conflicting evidence on housing supply. In this paper we draw mainly on peer-reviewed studies to inform our key points and conclusions. We do not dismiss non-peer-reviewed studies in the Australian context, as they often offer tentative evidence that is worth further discussion and development, especially where the peer-reviewed Australian literature is thin. However, it is our view that peer-reviewed studies deliver more conclusive evidence that is better suited to informing policy deliberations, given the process of independent peer review is designed

to ensure that the reviewed studies have been adequately evaluated for accuracy and quality.

Having said this, we note that studies from overseas – whether peer-reviewed or otherwise – may not be directly applicable to the Australian context. Throughout this paper, we cite various sources that have highlighted the need to take into account geographical variations when analysing issues related to housing supply.

In summary, we emphasise peer-reviewed research where possible, and preference empirical evidence presented in Australian-specific studies when drawing out key findings and conclusions.

## 2. The responsiveness of housing supply to demand changes

A key policy concern that affects housing affordability is whether or not new-build housing supply can keep up with increases in demand.

Suppose demand increases due to say, strong migration or a decline in interest rates. When demand increases, house prices should rise. In theory, this should prompt an increase in new housing supply.

When new housing supply is responsive to price changes, additional dwellings are produced at the rate required to meet rising demand. However, sometimes new housing supply can be 'unresponsive' and price changes do not lead to the production of sufficient additional dwellings.

New housing supply is affected by a series of processes, including securing planning approvals, development finance and construction. These processes are sequential and interdependent. They also involve a range of actors, including government, developers, landowners and construction industry workers. If there is a delay in one process, it will slow down the next process, causing new housing supply to be unable to meet demand changes. Section 4 provides more details on these processes.

When new housing supply is unresponsive to demand-induced price changes, this can lead to further price increases and a decline in housing affordability.

### 2.1 Elasticity of new housing supply

The elasticity of supply is a measure of the responsiveness of housing supply to an increase in demand or house prices. Technically, this covers both the supply of new-build housing and the supply which occurs from within the established dwelling stock. However, the latter is difficult to observe and has not been subject to much previous research. Housing supply elasticity has therefore become synonymous with new housing supply. It is defined as the percentage change in housing stock that arises due to a 1% change in price. For instance, suppose a rise in demand for housing increases house prices by 1%. If housing supply elasticity is 0.62, it can be expected that the housing supply will expand by 0.62% in response to this 1% increase in price.

Generally speaking:

- An elasticity value **greater than one** is deemed **elastic** as a price increase causes a proportionately larger increase in housing supply
- An elasticity value **less than one** is deemed **inelastic** as a price increase causes a proportionately smaller increase in housing supply.



Elasticity does not directly measure the speed at which new supply can hit the market, but if supply is elastic, it means housing supply can be increased without a significant time delay. On the other hand, if supply is inelastic, it will be harder to increase supply within a short time period unless major costs are incurred. For instance, if supply is inelastic due to a shortage of construction workers, major costs may be incurred to increase wage rates to attract more workers into the industry. This is just one example of a factor which affects supply elasticity. Others might include the responsiveness of construction material supply chains, the predictability of weather conditions, wider economic conditions which affect the relative attractiveness of working in the construction sector versus other employment options, and even developer behaviour. We examine these and other factors in section 4.

Australia's elasticity ( $e$ ) is often estimated at around 0.5, though estimates vary across studies. By OECD standards, Australia's overall housing supply responsiveness is typically considered intermediate, along with New Zealand ( $e=0.7$ ). Estimates from an OECD study indicate that the United States ( $e=2.0$ ) and Sweden ( $e=1.4$ ) are considered highly responsive while countries like the United Kingdom ( $e=0.4$ ), Netherlands ( $e=0.2$ ), Italy ( $e=0.3$ ) and Switzerland ( $e=0.2$ ) have relatively low responsiveness.<sup>6</sup>

## 2.2 Geographical variations in new housing supply responsiveness

Combining housing supply data across a nation does not capture the complexity of housing supply issues at a local level.<sup>7</sup> Housing markets are segmented into cities (such as Sydney), which are in turn segmented into spatial submarkets (such as a local government area within Sydney) and sectoral submarkets (such as houses versus units).<sup>8</sup>

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<sup>6</sup> A Caldera & Å Johansson, [The price responsiveness of housing supply in OECD countries](#), *Journal of Housing Economics*, 2013, 22(3): 231–249; C Cavarelli et al, [How responsive are housing markets in the OECD? National level estimates](#), OECD Economics Department Working Papers No. 1589, 2019; N Geng, [Fundamental drivers of house prices in advanced economies](#), IMF Working Paper, IMF, 2018.

<sup>7</sup> R Ong et al, [Housing supply responsiveness in Australia: Distribution, drivers and institutional settings](#), AHURI, 2017.

<sup>8</sup> G Costello et al, [Drivers of spatial change in urban housing submarkets](#), *The Geographical Journal*, 2019, 185(4): 432–446; A Rae & E Sener, [How website users segment a city: The geography of housing search in London](#), *Cities*, 2016, 52:140–147.

The responsiveness of housing supply varies across cities<sup>9</sup> and local areas. For instance:

- Housing supply elasticity in Sydney was estimated at 0.33 between 1991-2005, compared to the typical reported Australian-average of 0.5,<sup>10</sup> and more recent estimates are even lower (ranging from 0.20 to 0.26)<sup>11</sup>
- The inner ring of Sydney has an estimated supply elasticity of 0.26, compared with 0.43 for the outer ring.<sup>12</sup>

This data is consistent with findings from more recent international studies that the elasticity of housing supply is lowest in highly developed areas close to the city because vacant land is scarcer and more expensive to develop in these areas.<sup>13</sup>

Concepts like spatial and sectoral submarkets are important but easy to ignore. If submarkets did not exist then having high levels of housing supply in one part of a city (such as Parramatta) would suppress price growth everywhere in that market including, for example, in the eastern suburbs. There is no evidence to show that metropolitan markets operate in such an economically efficient manner.<sup>14</sup>

### 2.3 Other variations in new housing supply responsiveness

Within each local area, housing supply elasticity can vary depending on non-geographical factors. For instance:

- Housing supply is usually more elastic for apartments compared to houses. In Sydney, housing supply elasticity has been estimated at 0.8 for apartments and 0.2 for houses<sup>15</sup>

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<sup>9</sup> E Gitelman & G Otto, [Supply elasticity estimates for the Sydney housing market](#), *Australian Economic Review*, 2012, 45(2): 176–190; X Liu & G Otto, [Housing supply elasticity in local government areas of Sydney](#), *Applied Economics*, 2017, 49(53): 5441–5461.

<sup>10</sup> E Gitelman & G Otto, [Supply elasticity estimates for the Sydney housing market](#), *Australian Economic Review*, 2012, 45(2): 176–190.

<sup>11</sup> C Leishman et al, The responsiveness of new housing supply with respect to housing prices: Australian empirical evidence for small areas, forthcoming.

<sup>12</sup> E Gitelman & G Otto, [Supply elasticity estimates for the Sydney housing market](#), *Australian Economic Review*, 2012, 45(2): 176–190.

<sup>13</sup> N Baum-Snow & L Han, [The microgeography of housing supply](#), *Journal of Political Economy*, 2024, 132(6): 1897-1946; S Büchler et al, [The amplifying effect of capitalization rates on housing supply](#), *Journal of Urban Economics*, 2021, 126: 103370.

<sup>14</sup> C Leishman, [Housing supply and suppliers: are the microeconomics of housing developers important?](#), *Housing Studies*, 2015, 30(4): 580-600.

<sup>15</sup> X Liu & G Otto, [Housing supply elasticity in local government areas of Sydney](#), *Applied Economics*, 2017, 49(53): 5441–5461; D Melser et al, [Exploring the many housing elasticities of supply: The case of Australia](#), *Cities*, 2022, 128: 103817.

- Housing supply elasticity estimates can vary depending on whether the data is based on new building approvals, completions or housing stock, or whether the unit of measurement is floor area or number of dwellings<sup>16</sup>
- Housing supply tends to be more elastic in the long-run than the short-run.<sup>17</sup>

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<sup>16</sup> N Baum-Snow, [Constraints on city and neighborhood growth: The central role of housing supply](#), *Journal of Economic Perspectives*, 2023, 37(2): 53–74; Y Liu, [Estimating the elasticity of supply of housing space rather than units](#), *Regional Science and Urban Economics*, 2018, 68: 1–10; R Ong et al, [Housing supply responsiveness in Australia: Distribution, drivers and institutional settings](#), AHURI, 2017.

<sup>17</sup> S Malpezzi & D Maclennan, [The long-run price elasticity of supply of new residential construction in the United States and the United Kingdom](#). *Journal of Housing Economics*, 2001, 10(3): 278-306.

## 3. Housing supply concepts

### 3.1 New versus existing housing supply

There is a widespread view that a housing shortfall in Australia has built up over several decades, so that there is now a significant shortage of housing stock relative to demand.<sup>18</sup> However, this view has been contested. A recent Productivity Commission report discussed the concept of a housing shortage and pointed out that some studies have found that there is an ongoing housing shortage while others have shown that there have been significant periods of a housing surplus in the last 2 decades. The Productivity Commission notes that estimates of a housing shortage can vary widely depending on the modelling assumptions used and whether supply is conceptualised as a stock measure or a measure of new flows of housing.<sup>19</sup>

New housing supply is a flow, and it adds to the existing stock of housing. For dwelling stock per capita to increase over time, new dwellings have to be completed at a rate that surpasses the population growth rate.

Discussions in policy debates, media and academic literature frequently treat the concept of 'housing supply' as being synonymous with new housing supply. This is flawed because housing is supplied to the market from both new supply and existing stock, with the majority being dwellings from existing stock offered for sale. This is an important point both conceptually and in terms of understanding housing market modelling results.

The confusion between new and existing housing supply in policy discussion is illustrated in Figures 1 and 2.

Figure 1 shows that Australia has one of the lowest ratios of dwellings per 1,000 persons in the OECD. Because the ratio is derived from the level of housing stock, it is a stock measure that captures both new and established dwellings at a point in time. In fact, total housing stock (and therefore the 'stock' ratio) is dominated by established dwellings as new supply only adds to total housing stock a little at a time.

On the other hand, Figure 2 refers to new dwellings supplied. It is therefore a flow measure. This figure shows that in both 2011 and 2022, Australia surpassed the OECD average in terms of new dwellings supplied as a share of the total housing stock. The housing chapter of the 2024-25 Commonwealth Budget Paper No. 1 also shows that there was strong

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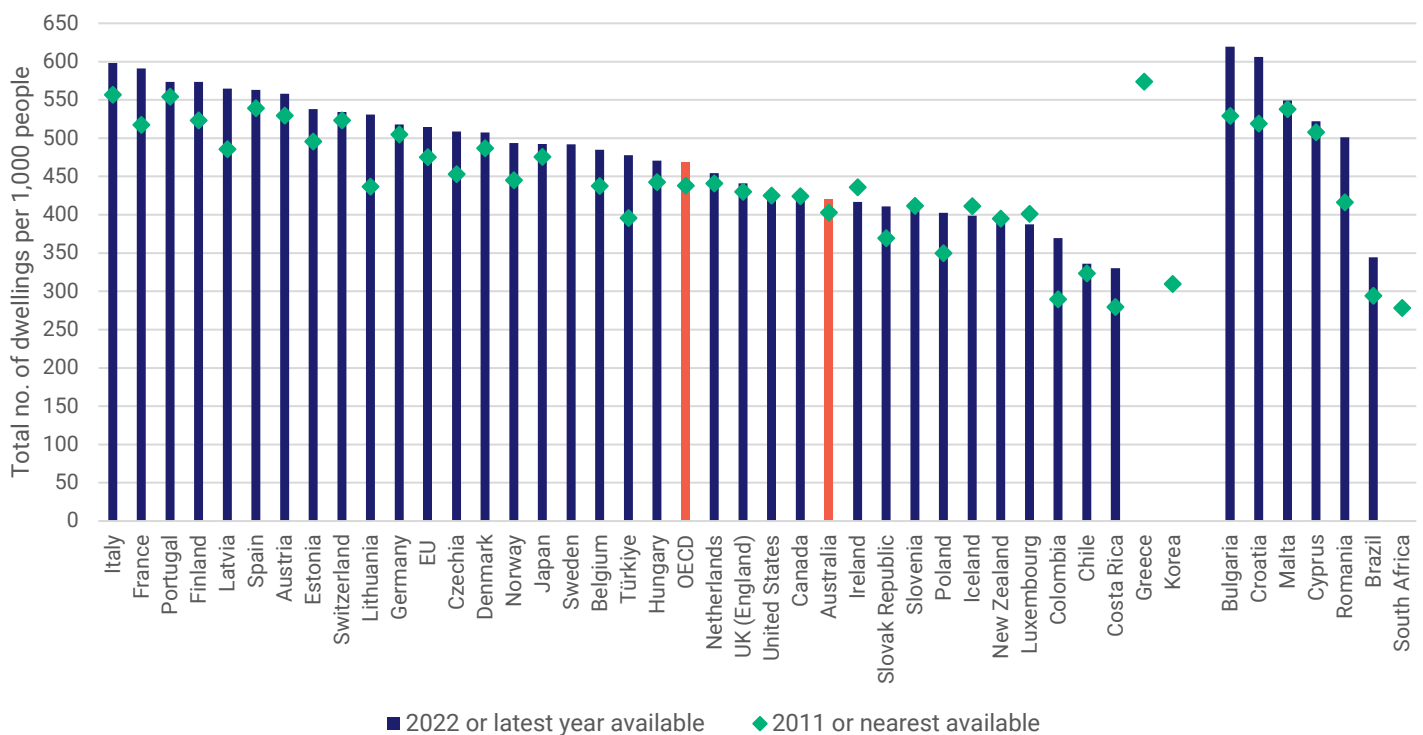
<sup>18</sup> NSW Productivity Commission, [Building more homes where people want to live](#), NSW Productivity Commission, 2023; NSW Productivity Commission, [Productivity Commission White Paper 2021: Rebooting the economy](#), NSW Productivity Commission, 2021.

<sup>19</sup> Productivity Commission, [In need of repair: The National Housing and Homelessness Agreement: Study report](#), Productivity Commission, 2022.

growth in new dwelling completions from 2012-13 onwards, peaking during 2017-18 before declining during and after the COVID-19 pandemic.<sup>20</sup>

There is a seeming discrepancy between the 2 figures, where Australia lags behind the OECD average in the stock measure (dwellings per 1,000 persons) but surpasses the OECD average in the flow measure (new dwelling completions as a share of total stock). In fact, while there have been periods of undersupply of new dwellings relative to population growth, there have also been periods of adequate supply when new housing supply has kept up with population growth.<sup>21</sup> This suggests that problems within overall housing supply do not only stem from an inadequate flow of new supply, as is commonly assumed in policy discussions. Housing supply problems can also arise due to inefficiencies in the utilisation of the existing housing stock.

**Figure 1: Dwellings per 1,000 people, Australia and OECD average**

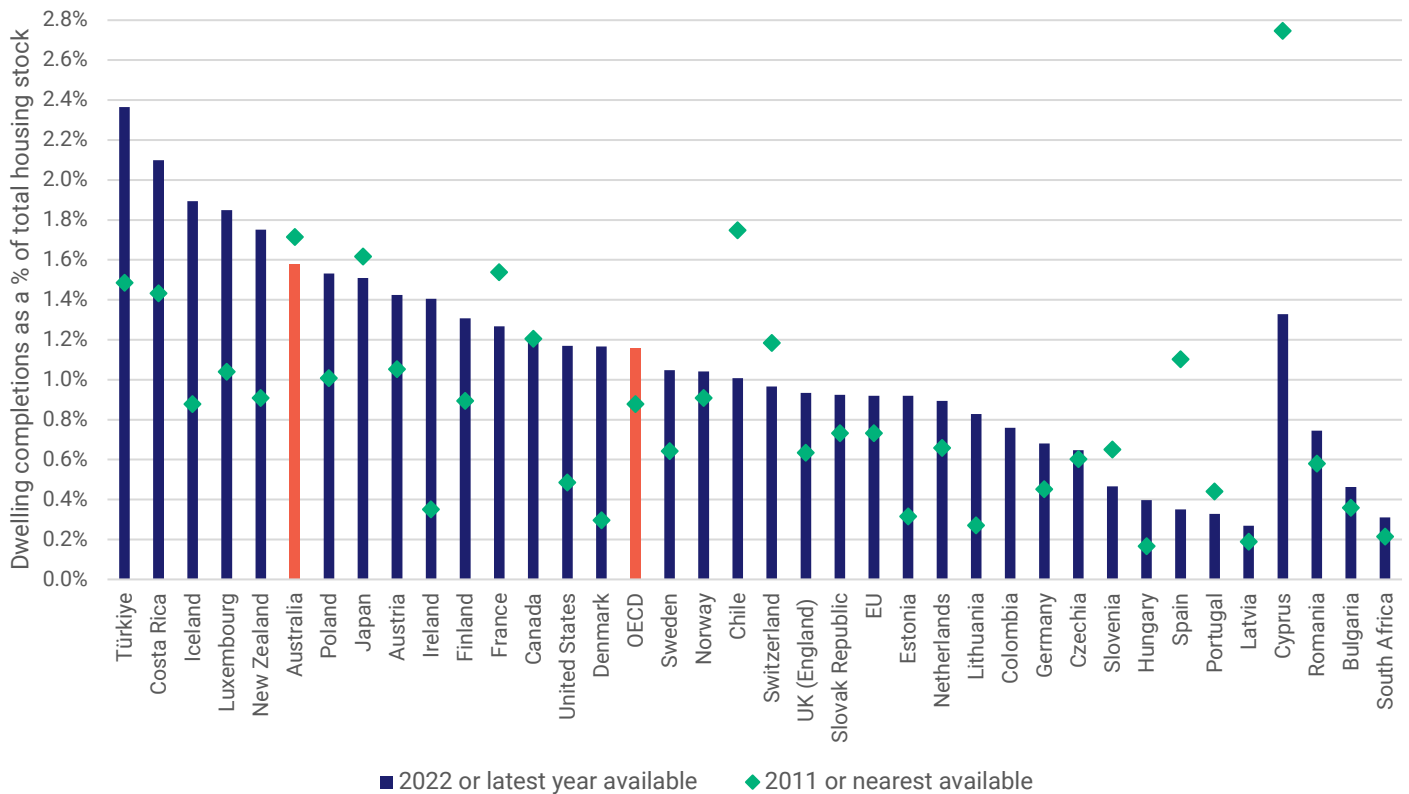


Source: Adapted from OECD, [OECD Affordable Housing Database](#) – indicator HM1.1 - Housing stock and construction, 2024. Note: Countries from the left axis to Korea are OECD countries; the others are non-OECD countries that have been added for comparative purposes.

<sup>20</sup> Australian Government, [Budget 2024-25: Budget strategy and outlook](#), Budget paper no. 1, Commonwealth of Australia, 2024.

<sup>21</sup> CK Murray, [The Australian housing supply myth](#), *Australian Planner*, 2021, 57(1): 1–12.

Figure 2: Dwelling completions in the year as a share (%) of total housing stock



Source: Adapted from OECD, [OECD Affordable Housing Database](#) – indicator HM1.1 - Housing stock and construction, 2024.

### 3.2 New housing supply

The supply of new housing is distinct from the supply of existing housing because of the key role of the development process, which is highly specific to local and national context. Housing development involves the interaction of at least 3 different markets:

- The **land market**, which is highly varied and includes small plots, small urban infill plots, major urban renewal sites and greenfield land releases
- The **construction market**, which is the market for procuring buildings, and involves labour, plant and machinery and construction materials
- The **housing market**, which involves the pre- or post-construction sale of dwellings to end users, who could be owner occupiers or investors.



In Australia, land development is generally undertaken separately from home building and sale.<sup>22</sup> Australian land development markets are highly concentrated given the substantial resources needed to open up greenfield land at scale, but the construction market is fragmented and very competitive. Developers often compete with each other to acquire land, and they also face competition from established supply when selling their finished product. This increases the price they pay for land but limits their control over the pricing of finished dwellings.<sup>23</sup>

The range of factors across the 3 markets which influence the supply of new-build housing is explored in detail in section 4.

### 3.3 Existing housing supply

While new housing needs to be built, at any given time established dwellings make up most of the total housing stock. There is a need to better understand the supply from existing housing stock, including how the level, distribution and nature of this supply is shaped by demographic change, building activities related to established dwellings and household utilisation of housing space.

#### 3.3.1 Demographic change

There are multiple channels through which demographic changes can affect housing supply from the existing housing stock. For example:

- The death of the final remaining adult member of a household will create a net addition to housing supply from the existing stock, without a corresponding increase in demand<sup>24</sup>
- A household trading down (downsizing) will supply an existing dwelling to the market that offers a larger bundle of housing services (such as bedrooms and living space) than the new dwelling they are demanding. A household trading up will have the opposite effect on net existing supply<sup>25</sup>
- Changes in household size can influence availability of existing dwellings. Household size declined from 2.9 on average in the mid-1980s to around 2.5 since the 2000s.<sup>26</sup> Factors that may contribute to this change include population ageing,

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<sup>22</sup> T Burke, [The Australian residential housing market: institutions and actors](#), in Tomlinson R (ed) *Australia's Unintended Cities: The Impact of Housing on Urban Development*. CSIRO Publishing, 2012.

<sup>23</sup> C Leishman, [Housing supply and suppliers: are the microeconomics of housing developers important?](#), *Housing Studies*, 2015, 30(4): 580-600.

<sup>24</sup> C Leishman, Understanding the role of new housing supply through macro, micro and behavioural perspectives, in Gibb K et al (eds), [The Routledge Handbook of Housing Economics](#), Routledge, 2024.

<sup>25</sup> C Leishman, Understanding the role of new housing supply through macro, micro and behavioural perspectives, in K Gibb et al (eds), [The Routledge Handbook of Housing Economics](#), Routledge, 2024.

<sup>26</sup> N Agarwal et al, [A new measure of average household size](#), *Reserve Bank of Australia Bulletin*, 16 March 2023.

and smaller family size. During the COVID-19 pandemic lockdowns, the population's preference for living in smaller households also grew<sup>27</sup>

- Population ageing necessitates adapting existing homes (as well as building new homes) to meet the needs of older Australians.<sup>28</sup>

### 3.3.2 Utilisation of housing space

There is an important policy question around whether existing housing stock is being used efficiently to meet the needs of the population. If it is not being used efficiently, some households will have excess space in their dwellings while others will live in overcrowded conditions.

The Census shows that more than 200,000 dwellings in NSW had spare bedrooms in 2021, which points to under-utilisation of the existing housing stock. On the other hand, households in nearly 130,000 dwellings needed extra bedrooms, suggesting overcrowding concerns. Overall, these reflect a mismatch between the space needs of households and the dwellings they occupy.<sup>29</sup>

While older people who trade down can free up larger homes in the existing stock for younger growing families to trade up to, this exchange process is often not smooth. A lack of suitable and affordable housing in the local area and the need to pay stamp duties when trading up or down can hinder this exchange process.<sup>30</sup>

Another aspect of housing under-utilisation can be reflected in the number of vacant dwellings at any point in time. Over one million homes (10.1%) were empty on Census night 2021. However, not all empty homes are vacant on a long-term basis. For instance, some homes are empty because they were awaiting sale or transfer, which means they would soon be occupied.<sup>31</sup> Experimental ABS data found that 1.3% of all dwellings in Australia were inactive in 2021, not being used as either a primary or non-primary residence.<sup>32</sup> Holiday homes and short-term rental properties may also be vacant for periods of time. Concerns have been raised that the growth of Airbnb properties are leading to under-utilisation of the available housing stock. This can have a negative impact on the

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<sup>27</sup> National Housing Supply and Affordability Council, *State of the Housing System 2024*, May 2024.

<sup>28</sup> P Carnemolla & C Bridge, *A scoping review of home modification interventions – Mapping the evidence base*, *Indoor and Built Environment*, 2020, 29(3): 299–310.

<sup>29</sup> National Housing Supply and Affordability Council, *State of the Housing System 2024*, May 2024.

<sup>30</sup> Y Cho et al, *Stamping out stamp duty: Housing mismatch and welfare*, *Quantitative Economics*, 2024, 15(2): 381-426; T Jefferson et al, *Housing equity withdrawal: Perceptions of obstacles among older Australian home owners and associated service providers*, *Journal of Social Policy*, 2017, 46(3), 623–642.

<sup>31</sup> AHURI, *Are there 1 million empty homes and 13 million unused bedrooms?*, 13 September 2022, accessed 30 June 2024.

<sup>32</sup> Australian Bureau of Statistics, *Administrative data snapshot of housing: An experimental snapshot of Australia's housing using administrative data*, 30 June 2021, accessed 17 July 2024.

availability of long-term rental properties in high-demand popular tourist areas in inner suburbs like Darlinghurst and Manly in Sydney, and in coastal areas.<sup>33</sup>

### 3.3.3 Building activities related to established dwellings

The following building activities can also affect the level and nature of the existing stock, but are not well covered in the literature:<sup>34</sup>

- Conversion of a building from non-residential to residential use (often referred to as 'adaptive re-use') can increase the level of housing supply for households' use
- Renovations of existing dwellings can result in an increase in housing supply if it creates additional dwelling space
- Demolitions can reduce the amount of existing housing stock if buildings that are demolished are not replaced with construction of at least the same number of new dwellings.

## 3.4 Filtering

New houses eventually become old houses. Based on evidence from the United States,<sup>35</sup> some academics propose that as new dwellings age, they add to the supply of more affordable housing by a process known as filtering.

Filtering is the process by which the supply of new dwellings for high-income households leads to additional supply of dwellings for lower-income households. As high-income households purchase new supply and trade out of the dwellings they previously occupied, lower-income households move into these dwellings. According to the theory, properties become cheaper over time as they age, filtering down through successively lower market segments to eventually become affordable housing for low-income households. Given that filtering occurs as a consequence of new housing supply, it follows that filtering is unlikely to occur in places with low elasticity.<sup>36</sup>

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<sup>33</sup> L Crommelin et al, [Technological disruption in private housing markets: the case of Airbnb](#), AHURI, 2018; N Gurrán & D Redmond, [Introduction to the special issue: Short-term rentals and the housing market](#), *Critical Housing Analysis*, 2021, 8(1): 101–106; N Gurrán et al, ['Pop-up' tourism or 'invasion'? Airbnb in coastal Australia](#), 2020, *Annals of Tourism Research*, 81, 102845.

<sup>34</sup> R Ong et al, [Spatial and temporal patterns in housing supply: A descriptive analysis](#), *Urban Policy and Research*, 2017, 36(3), 287-303.

<sup>35</sup> SS Rosenthal, [Are private markets and filtering a viable source of low-income housing? Estimates from a "repeat income" model](#). *American Economic Review*, 2014, 104(2), 687-706; E Mast, [JUE Insight: The effect of new market-rate housing construction on the low-income housing market](#), *Journal of Urban Economics*, 2023, 133, 103383.

<sup>36</sup> C Nygaard et al, [Filtering as a source of low-income housing in Australia: Conceptualisation and testing](#), AHURI, 2022; Productivity Commission, [In need of repair: The National Housing and Homelessness Agreement: Study report](#), Productivity Commission, 2022.

Overall, the empirical evidence on filtering in Australia is limited and relatively weak.<sup>37</sup> Recent peer-reviewed Australian work that empirically analysed filtering found minimal evidence to support the idea that filtering occurs in Australian housing markets.<sup>38</sup> What it did find is that the income profile of many neighbourhoods remains approximately constant over time, and that supply elasticity is almost zero at small spatial scales. The study also found that the effects of dwelling ageing are effectively negated by other factors, such as proximity to CBDs.

While some studies overseas have found empirical evidence of filtering, there are several limitations to the applicability of such evidence to Australia.

First, the theory and empirical evidence are from a different geographic context. Some studies from the United States have presented empirical findings which show that filtering rates vary by location across the United States.<sup>39</sup> These studies suggest a need to investigate geographical variations in filtering within the Australian context before concluding that filtering applies to all Australian jurisdictions in practice.

Second, Australia has high rates of demolition and replacement<sup>40</sup> – an issue that was not relevant at the time of the early contributors to the filtering theory. Indeed, in Australia older housing on well-located land can be seen as a redevelopment opportunity more easily than an opportunity for lower-income households.

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<sup>37</sup> Productivity Commission, *In need of repair: The National Housing and Homelessness Agreement: Study report*, Productivity Commission, 2022.

<sup>38</sup> C Nygaard et al, *Filtering as a source of low-income housing in Australia: Conceptualisation and testing*, AHURI, 2022.

<sup>39</sup> L Liu et al, *Geographic and temporal variation in housing filtering rates*, *Regional Science and Urban Economics*, 2022, 93, 103758; J Spader, *Has housing filtering stalled? Heterogeneous outcomes in the American Housing Survey, 1985–2021*, *Housing Policy Debate*, 2024, 1–23.

<sup>40</sup> I Wiesel et al, *Owner-driven suburban renewal: Motivations, risks and strategies in 'knockdown and rebuild' processes in Sydney, Australia*, *Housing Studies*, 2013, 28(5), 701-719.

## 4. Factors affecting new housing supply

The current focus of housing policy is on increasing new housing supply, so in this section we focus on explaining the range of factors that affect the delivery of new dwellings. As explained in the previous section, supplying new housing involves land development, construction and sale. This can be affected by a combination of the regulatory context (particularly planning), developer and landowner behaviour, and the costs of development.

This section highlights 2 key issues in the land development market that are usually omitted from policy debates. First, it is often assumed that planning regulations hinder new housing supply, but the evidence on this is actually mixed and it is important to understand the diverse evidence that relates to Australia on this topic. Second, developer behaviour can affect the flow of new supply on to the market in important ways that are not always recognised.

### 4.1 Planning system

Planning is regularly suggested as being a key barrier to increasing housing supply, which causes prices to rise. The planning system in NSW (and other states) has been described as too complex, prescriptive, slow and inflexible to changing needs.<sup>41</sup>

The planning system can be broadly divided into:

- Strategic planning for the allocation and development of land
- Zoning that prescribes acceptable and unacceptable residential, industrial and commercial uses within each zone
- A development assessment process.

Planning reform directions often revolve around aligning plans at different government levels, reducing land use restrictions, promoting upzoning (an increase in the permitted residential density that can be built in an area), and improving the efficiency of the development assessment process.<sup>42</sup>

State and territory governments have actively implemented planning reform in recent years. In NSW, reforms have been introduced to clarify the hierarchy of state, regional and local

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<sup>41</sup> NSW Productivity Commission, [Productivity Commission Green Paper: Continuing the productivity conversation](#), NSW Productivity Commission, 2020; Productivity Commission, [Performance benchmarking of Australian business regulation: Planning, zoning and development assessments](#), Research Report, Productivity Commission, 2011.

<sup>42</sup> Productivity Commission, [Performance benchmarking of Australian business regulation: Planning, zoning and development assessments](#), Research Report, Productivity Commission, 2011; E Sims & J Hermans, [Planning deregulation: What if land markets are monopolies?](#), *Australian Economic Papers*, 2024, 1-14.

plans for Greater Sydney. All jurisdictions have sought to streamline development assessment processes such as through greater use of expert panels.<sup>43</sup> Planning reform is also a key plank of the National Housing Accord.<sup>44</sup>

The international literature is full of studies that have modelled the impact of planning on housing supply. Recent debate among economists on planning as a barrier to new housing supply has emphasised the zoning system. We therefore focus on zoning studies in this section. While the pool of Australian studies has grown in recent years, the evidence is mixed and hotly contested.<sup>45</sup> We refer to opposing sets of evidence in the following sections and explain why studies do not agree on the impact of zoning on supply.

#### **4.1.1 Theory and evidence that planning is a key barrier to new housing supply**

Many studies showing that planning hinders housing supply are based on the concept of a regulatory tax or zoning tax. They view planning regulations as a form of zoning tax that raises the price that buyers have to pay for a dwelling above the cost of supplying it.

The regulatory tax or zoning tax approach was popularised by American economists Glaeser and Gyourko<sup>46</sup> and has since been applied to other countries including Australia and New Zealand.<sup>47</sup> The essential aspect of the Glaeser and Gyourko argument is that in the absence of a zoning system, speculators would be able to assemble small, unviable parcels of land together for sale. This would involve paying low sums of money (marginal land costs per square foot) for the small parcels, and then realising larger sale prices when selling viable land plots (at the average land cost).<sup>48</sup> The zoning tax approach argues that if this process does not happen then it suggests that planning or zoning is impeding the process and causing higher land prices. However, peer-reviewed studies from Australian researchers have questioned the validity of this argument (see 4.1.2).

Studies that have used the zoning tax approach typically compare the price of purchasing an additional unit of new dwelling to the cost of supplying the additional unit of dwelling, that is, its marginal cost. They often find huge gaps between the purchase price and

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<sup>43</sup> Productivity Commission, [Plan to identify planning and zoning reforms](#), Information Paper, Productivity Commission, 2021.

<sup>44</sup> Australian Government, [National Housing Accord 2022](#), 2022.

<sup>45</sup> E Sims & J Hermans, [Planning deregulation: What if land markets are monopolies?](#), *Australian Economic Papers*, 2024, 1-14.

<sup>46</sup> E Glaeser & J Gyourko, [The impact of building restrictions on housing affordability](#), *Federal Reserve Bank of New York Economic Policy Review*, 2003, 9(2): 21–39.

<sup>47</sup> R Kendall & P Tulip, [The effect of zoning on housing prices](#), Research Discussion Paper, Reserve Bank of Australia, 2018; K Lees, [Quantifying the costs of land use regulation: Evidence from New Zealand](#), *New Zealand Economic Papers*, 2019, 53(3): 245–269.

<sup>48</sup> E Glaeser & J Gyourko, [The impact of building restrictions on housing affordability](#), *Federal Reserve Bank of New York Economic Policy Review*, 2003, 9(2): 21–39.



marginal cost of supply in cities like Sydney, and attribute the gap to planning restrictions.<sup>49</sup> In Australia, such findings have been well-publicised through discussion or working papers. One study estimated that on average, the price buyers pay to purchase a new apartment in Sydney was 68% higher than the cost of supplying the new apartment, with this premium being just 20% in Melbourne and 2% in Brisbane. The study attributed this price premium to planning restrictions.<sup>50</sup> Another study estimated that zoning restrictions raised the average price of houses in Sydney 73% above the cost of supplying a new house, compared to 69% in Melbourne and 42% in Brisbane.<sup>51</sup> These are just a few studies within the wider international literature that have used a zoning tax approach to argue that planning hinders housing supply.<sup>52</sup> Studies that have applied this approach typically advocate for a relaxation of planning or zoning regulations, arguing that this can reduce dwelling prices by enabling higher-density construction.<sup>53</sup>

#### 4.1.2 Critique and evidence why planning may not be the key barrier to new housing supply

There exists another growing bank of peer-reviewed studies, many of which are from Australia, that have cast doubt on whether planning regulations in fact raise the economic cost of land significantly.<sup>54</sup> We set out below the issues raised by these studies and evidence that explains these contradictory findings:

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<sup>49</sup> NSW Productivity Commission, [Building more homes where people want to live](#), NSW Productivity Commission, 2023.

<sup>50</sup> K Jenner & P Tulip, [The apartment shortage](#), Research Discussion Paper, Reserve Bank of Australia, 2020.

<sup>51</sup> R Kendall & P Tulip, [The effect of zoning on housing prices](#), Research Discussion Paper, Reserve Bank of Australia, 2018.

<sup>52</sup> E Glaeser & J Gyourko, [The impact of building restrictions on housing affordability](#), *Federal Reserve Bank of New York Economic Policy Review*, 2003, 9(2): 21–39; E Glaeser & J Gyourko, [The economic implications of housing supply](#), *Journal of Economic Perspectives*, 2018, 32(1): 3–30; J Gyourko & R Molloy, [Regulation and housing supply](#), *Handbook of Regional and Urban Economics*, 2015, 5: 1289–1337; CAL Hilber & W Vermeulen, [The impact of supply constraints on house prices in England](#), *The Economic Journal*, 2014, 126(591): 358–405; K Lees, [Quantifying the costs of land use regulation: Evidence from New Zealand](#), *New Zealand Economic Papers*, 2019, 53(3): 245–269.

<sup>53</sup> R Greenaway-McGrevy et al, [The effect of upzoning on house prices and redevelopment premiums in Auckland, New Zealand](#), *Urban Studies*, 2021, 58(5): 959–976; R Greenaway-McGrevy & PCB Phillips, [The impact of upzoning on housing construction in Auckland](#), *Journal of Urban Economics*, 2023, 136, 103555; J Gyourko & R Molloy, [Regulation and housing supply](#), *Handbook of Regional and Urban Economics*, 2015, 5: 1289–1337.

<sup>54</sup> CK Murray, [Marginal and average prices of land lots should not be equal: A critique of Glaeser and Gyourko's method for identifying residential price effects of town planning regulations](#), *Environment and Planning A: Economy and Space*, 2021, 53(1): 191–209; C Murray & M Limb, [We zoned for density and got higher house prices: Supply and price effects of upzoning over 20 years](#), *Urban Policy and Research*, 2023, 41(2): 129–147; C Murray & P Phibbs, [Evidence-lite zone: The weak evidence behind the economic case against planning regulation](#), *Town Planning Review*, 2023, 94(6): 597–610; P Phibbs & N Gurrán, [The role and significance of planning in the determination of housing prices in Australia: Recent policy debates](#), *Environment and Planning A: Economy and Space*, 2021, 53(3): 457–479.

- The theoretical basis of the zoning tax approach has been criticised for a lack of relevance to housing, because it is impossible to trade or combine disparate small marginal pieces of land.<sup>55</sup>
- While studies using the zoning tax approach typically ascribe the gap between purchase price and supply cost to planning barriers, they often ignore the effects of other important factors that can raise the property's purchase price relative to the cost of supplying it. Examples include interest rates, capital growth expectations, taxes and the amenity value of a location.<sup>56</sup> In fact, Gyourko, a proponent of the zoning tax approach, acknowledges that the 'difficulty with identifying the effects of regulation is that many unobservable variables, such as the amenity value of a location, could be correlated with housing supply regulation and have independent effects on house prices and quantities.'<sup>57</sup>
- Findings from each jurisdiction cannot be universally applied. Planning systems are highly localised and vary substantially between jurisdictions. It is therefore not advisable to export findings from one jurisdiction to the next.<sup>58</sup>
- The zoning tax approach has been tested and published in peer-reviewed outlets in both the United States and New Zealand. To date, there are no peer-reviewed Australian studies of this approach.
- Some sites have large zoned capacity, but remain undeveloped. Zoned capacity refers to the additional dwellings that can be built under current planning regulations without reforming the planning system. In areas where zoned capacity is large, the planning system is not a binding constraint on new supply. For example, one study analysed areas in Brisbane that were zoned for increased density and found that only 2% of the zoned capacity was used in any 5-year period, with 78% of sites with zoned capacity remaining undeveloped over a 20-year period.<sup>59</sup>

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<sup>55</sup> CK Murray, [Marginal and average prices of land lots should not be equal: A critique of Glaeser and Gyourko's method for identifying residential price effects of town planning regulations](#), *Environment and Planning A: Economy and Space*, 2021, 53(1): 191–209.

<sup>56</sup> C Murray & P Phibbs, [Evidence-lite zone: The weak evidence behind the economic case against planning regulation](#), *Town Planning Review*, 2023, 94(6): 597–610.

<sup>57</sup> J Gyourko & R Molloy, [Regulation and housing supply](#), *Handbook of Regional and Urban Economics*, 2015, 5: 1289–1337, p1316.

<sup>58</sup> C Murray & P Phibbs, [Evidence-lite zone: The weak evidence behind the economic case against planning regulation](#), *Town Planning Review*, 2023, 94(6): 597–610.

<sup>59</sup> C Murray & M Limb, [We zoned for density and got higher house prices: Supply and price effects of upzoning over 20 years](#), *Urban Policy and Research*, 2023, 41(2): 129–147.

- Even if the planning system is abolished, developers can delay development till market prices rise so that they can maximise their returns.<sup>60</sup> This is explained further in the next section.

## 4.2 Developer and landowner behaviour

Standard economic approaches to explaining price determination and market behaviour rest on many assumptions, including that key market actors are rational and make predictable business decisions. Assumed objectives include profit maximisation, sales revenue maximisation or the pursuit of market share. The latter is a strategy that prioritises future over current period profitability.

Standard economic analysis of markets also often assumes that markets are highly competitive and transparent. Such analyses are well suited to explaining outcomes in manufactured goods markets. However, for over 4 decades, international housing economists have raised doubts that standard supply and demand analysis are fully applicable to housing and land markets, citing the characteristics of houses as ‘complex’, ‘durable’, ‘locationally fixed’, ‘purchased and consumed jointly with the neighbourhood characteristics that surround them’, and inherently ‘different from simple goods, such as the apples and widgets beloved of mainstream economic models.’<sup>61</sup> In recent years, this has given rise to a number of studies with a focus on ‘behavioural’ factors governing these markets. Both landowner and developer behaviour have been examined.<sup>62</sup>

### 4.2.1 Landowners

There are a number of ways in which landowner behaviour can affect land supply, and hence housing supply:

- Some studies<sup>63</sup> have classified landowners as ‘active’ or ‘passive’. Active landowners are proactive and have an interest in bringing their land to the market and facilitating development. Passive landowners can include companies whose core business is not housing (such as manufacturing or logistics). Because owning land is incidental to the core business, there may be little appetite or urgency in bringing forward land for development.

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<sup>60</sup> CK Murray, [Time is money: How landbanking constrains housing supply](#), *Journal of Housing Economics*, 2020, 49, 101708; CK Murray, [A housing supply absorption rate equation](#), *The Journal of Real Estate Finance and Economics*, 2022, 64(2): 228–246.

<sup>61</sup> D MacLennan, [Understanding housing markets: Real progress or stalled agendas?](#), in DF Clapham et al (eds) *The SAGE Handbook of Housing Studies*, SAGE, 2012.

<sup>62</sup> C Leishman, Understanding the role of new housing supply through macro, micro and behavioural perspectives, in Gibb K et al (eds), *The Routledge Handbook of Housing Economics*, Routledge, 2024.

<sup>63</sup> CD Adams & HG May, [Active and passive behaviour in land ownership](#), *Urban Studies*, 1991, 28(5): 687-705; D Adams et al, [Urban redevelopment: contextual influences and landowner behaviour](#), *Journal of Property Research*, 2001, 18(3): 217-234; D Adams et al, [Vacant urban land: exploring ownership strategies and actions](#), *Town Planning Review*, 2002, 73(4): 395-416.

- Some landowners, particularly in greenfield locations, may have a sentimental attachment (known as consumer surplus or psychic income<sup>64</sup>) to owning land. For example, it may have been family-owned farmland for generations.
- Volatile or highly uncertain markets increase the future value (known as a real option value) of land. Paradoxically, option value increases during booming conditions, which slows down rather than speeds up land supply.<sup>65</sup> This happens because rising prices imply even higher future values and this creates an incentive to wait for longer before developing. Option pricing models also predict a reverse effect or the idea that supply can increase when markets show signs of slowing down. This is because the slowdown increases the attractiveness of a current development outcome compared to the declining value of a future development outcome.

#### 4.2.2 Developers

Developer behaviour can affect both land and housing supply in different ways.

Many developers secure access to land in advance of need for a number of reasons, but the principal one is to ensure a smoother, more continuous pipeline of work. Infrastructure development and gaining planning approvals do not necessarily follow predictable timelines, so can vary from site to site<sup>66</sup>. Holding a variety of sites in a land bank allows developers to smooth out these delays. Internationally, literature on land banking largely focuses on public sector contexts.<sup>67</sup> While land banking has been the subject of public debate for a long time, little evidence has been gathered to establish whether or not it is a significant phenomenon in Australia.<sup>68</sup> An exception is a study of land banking in Queensland which found extensive land banking and concluded that there is no relationship between the volume of zoned land and the level of new housing supply.<sup>69</sup>

Developers are more likely to adjust asking prices than they are to adjust build rates.<sup>70</sup> This reflects the difficulty and expense in deviating from construction project management

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<sup>64</sup> The seminal work is generally attributed to DG Wiltshaw, [The supply of land](#), *Urban Studies*, 1985, 22(1): 49-56; AW Evans, [The supply of land: a pedagogic comment](#), *Urban Studies*, 1986, 23(6): 527-530; M Neutze, [The supply of land for a particular use](#), *Urban Studies*, 1987, 24(5): 379-388.

<sup>65</sup> See SR Grenadier, [The strategic exercise of options: Development cascades and overbuilding in real estate markets](#), *The Journal of Finance*, 1996, 51(5): 1653-1679, but the seminal work can be attributed to S Titman, [Urban land prices under uncertainty](#), *The American Economic Review*, 1985, 75(3): 505-514.

<sup>66</sup> N Gurrán, N & G Bramley, [Housing, property politics and planning in Australia](#), in N Gurrán & G Bramley (eds), *Urban Planning and the Housing Market: International Perspectives for Policy and Practice*, Springer, 2017.

<sup>67</sup> Sasu A et al, [Land banking and land markets: A literature review](#), *Habitat International*, 2022, 130: 102698.

<sup>68</sup> Productivity Commission, [In need of repair: The National Housing and Homelessness Agreement: Study report](#), Productivity Commission, 2022.

<sup>69</sup> Murray CK, [Time is money: How landbanking constrains housing supply](#), *Journal of Housing Economics*, Vol. 49, 2020, 101708

<sup>70</sup> D Adams et al, [Why not build faster? Explaining the speed at which British house-builders develop new homes for owner-occupation](#), *The Town Planning Review*, 2009, 80(3): 291-314.

plans. For this reason, developers may appear to react unexpectedly when faced with strong market conditions – they do not speed up construction, but instead increase asking prices. Developers’ build rates can also be slowed down by the amount of competition that exists in land markets. For example, when developers bid up the price of land then they may need to build slowly to let rising house prices deliver the profit margins they require.<sup>71</sup>

#### 4.3 Development costs and finance

Development costs relate to the cost of securing land, material and labour to generate new housing supply. If these costs are high, they will push up the cost of housing supply or reduce the responsiveness of new housing supply to demand increases.

These costs usually vary according to the following:

- **Workforce capacity:** when there are labour shortages in the construction industry, it will reduce the capacity of the industry to generate new supply quickly in response to demand increases
- **Workforce unionisation:** labour costs tend to be higher when the construction workforce is highly unionised<sup>72</sup>
- **Building regulations:** construction costs rise when energy efficiency and environmental sustainability regulations are stringent<sup>73</sup>
- **Location:** construction costs are heightened in remote areas at considerable distances from service centres, resulting in difficulty sourcing qualified tradespeople and materials, and travel costs<sup>74</sup>
- **Construction technology:** innovative construction technologies can increase efficiencies<sup>75</sup>
- **Weather and topography geography:** more extreme temperatures, higher rainfall and difficult geography such as steep gradients can add extra construction costs.<sup>76</sup>

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<sup>71</sup> D Adams et al, [Why not build faster? Explaining the speed at which British house-builders develop new homes for owner-occupation](#), *The Town Planning Review*, 2009, 80(3): 291-314; CK Murray, [Time is money: How landbanking constrains housing supply](#), *Journal of Housing Economics*, 2020, 49, 101708.

<sup>72</sup> J Gyourko & R Molloy, [Regulation and housing supply](#), *Handbook of Regional and Urban Economics*, 2015, 5: 1289–1337; M Hinkel & D Belman, [Should prevailing wages prevail? Re-examining the effect of prevailing wage laws on affordable housing construction costs](#), *British Journal of Industrial Relations*, 2022, 60(4): 761–783.

<sup>73</sup> OECD, [Brick by brick: Building better housing policies](#), OECD, 2021.

<sup>74</sup> T Lea et al, [Sustainable Indigenous housing in regional and remote Australia](#), AHURI, 2021.

<sup>75</sup> W Ferdous et al, [Construction industry transformation through modular methods](#), in SH Ghaffar et al (eds) *Innovation in Construction*, Springer, 2022; S Rowley et al, [Understanding how policy settings affect developer decisions](#), AHURI, 2022.

<sup>76</sup> R Ong et al, [Housing supply responsiveness in Australia: Distribution, drivers and institutional settings](#), AHURI, 2017; A Saiz, [The geographic determinants of housing supply](#), *Quarterly Journal of Economics*, 2010, 125(3): 1253–1296.

Developers typically seek access to finance to help fund development costs. Development finance is often seen by lenders as relatively risky. This is mainly because key factors such as construction cost inflation, interest rates, weather conditions, labour market conditions and required design changes are subject to change during the development process and can alter development viability. Finance tends to be more easily accessible by large development companies than medium-sized or small developers who borrow on a project-specific basis.<sup>77</sup>

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<sup>77</sup> S Rowley et al, [The financing of residential development in Australia](#), AHURI, 2014; S Rowley et al, [Understanding how policy settings affect developer decisions](#), AHURI, 2022.



## 5. Key housing supply issues and implications for housing affordability

In this section, we reflect on the basic principles of economics and the previous sections to draw out key issues pertaining to the complexity of new housing production in Australia. In drawing out these issues, we do not dismiss tentative Australian evidence from non-peer-reviewed sources, but lean more heavily on studies that typically deliver more conclusive evidence through a peer review process.

We then make some observations regarding the potential impacts of increasing housing supply on affordability. Theoretically, holding all other factors constant, an increase in housing supply should reduce house prices and rents. However, further research is needed to ascertain the extent to which house prices or rents actually respond to changes in housing supply in Australia.

Finally, we close with some policy reflections.

### 5.1 Complexities of new housing production

Basic economics principles state that an increase in demand for a good or service leads to an increase in price, and an increase in supply leads to a decrease in price. However, these principles are subject to a critical condition universally taught to economics students – *ceteris paribus*, which means holding all other factors constant. Applying the concept of *ceteris paribus* to housing markets, when the supply of housing increases, its price should fall.

In practice however, all other factors are never constant in the housing market, and there are many components that interact, a critical one being housing demand. While outside the scope of this paper, housing demand has important interactions with housing supply, which can confound the supply-price relationship.<sup>78</sup> For instance, suppose an increase in new housing supply is accompanied by a rapid increase in demand through say a surge in population growth associated with increased migration or fertility. Or an increase in new housing supply leads to an increase in demand for investment properties by existing property owners. Such demand changes can prevent an increase in supply from achieving affordability gains if the demand changes are large relative to the supply changes.

Equally important is the fact that simple textbook approaches to explaining the price mechanism are usually described by, and best suited to, markets for simple goods like

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<sup>78</sup> E Anenberg & E Kung, [Can more housing supply solve the affordability crisis? Evidence from a neighborhood choice model](#), *Regional Science and Urban Economics*, 2020, 80, 103363; D MacLennan, [Understanding housing markets: Real progress or stalled agendas?](#), in DF Clapham et al (eds) *The SAGE Handbook of Housing Studies*, SAGE, 2012.

apples or widgets. Faced with an increase in demand for widgets, producers can step up production of goods in factories and in supply chains and ensure a greater volume of products make it to market. The housing production process is much more complex and often bears little resemblance to markets that deal with the production and transportation of simpler manufactured goods.<sup>79</sup>

Given this, a comprehensive understanding of the dynamics of housing supply (and demand) cannot be achieved without building on basic supply and demand analysis to account for the specific complexities of the housing market. Several of these issues have been highlighted earlier in this paper and include:

- The spatial and sectoral nature of housing submarkets, resulting in significant variations in the responsiveness of new housing supply to demand changes across locations and dwelling types
- The highly localised nature of planning systems, meaning that the impact of planning on new housing supply in one jurisdiction cannot be universally applied to other jurisdictions and that different areas have different zoned capacities
- Developer behaviour, which can result in activities such as land banking to maximise profits and/or smooth development pipelines
- The riskiness of development finance due to potential changes in project costs and viability during the development process which affects responsiveness of developers.

## **5.2 Short and long-run perspectives on housing supply and affordability**

Another important question, which has not been adequately addressed through robust analysis, is how much housing supply is needed to moderate price or rent growth.

In principle, new housing supply helps to moderate price increase in 2 different ways.

First, new supply is a measure of how many dwellings are constructed in a certain period of time – normally one year. Higher levels of new supply meet a greater proportion of the new demand for housing *within that same time period*.

Second, new supply adds to the total housing stock, and a larger housing stock in turn has a greater impact on limiting price rises. However, the extent to which the amount of new-build produced in a year affects long-run affordability is a more complicated phenomenon that likely plays out over a longer time period.

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<sup>79</sup> D MacLennan, [Understanding housing markets: Real progress or stalled agendas?](#), in DF Clapham et al (eds) *The SAGE Handbook of Housing Studies*, SAGE, 2012.

There is currently a lack of relevant peer-reviewed evidence about this issue in Australia and internationally. The 2004 UK Barker Review of Housing Supply provides a case study, although we note it is not an Australian study. Following the review, economic analyses showed that very large increases in housing construction would be needed to reduce UK price trends to the European average. Under certain assumptions, some studies found that the flow of housing supply from new construction would need to be doubled to reduce the long-run real house price trend by 1.5%, and that this effect would play out over very long time periods.<sup>80</sup> One Australian peer-reviewed study has found that every 1% increase in the number of dwellings driven by an increase in housing supply lowers the cost of housing by 2.5%. This study is therefore consistent with findings from the UK literature that new housing supply would need to be greatly increased for a long time to exert significant downward pressure on price growth. However, in its conclusion, the study acknowledges that its findings reveal less about how the quantity of housing affect prices, than how prices affect the quantity of housing.<sup>81</sup>

### 5.3 Housing supply policy reflections

The evidence summarised in this section does not imply that policymakers should abandon attempts to increase new housing supply. However, it does suggest that for housing supply policies to have a meaningful impact on affordability the following broad principles should be considered:

- The complexities of the entire housing production process (including but not limited to planning and developer behaviour) need to be understood and factored into policy design
- The spatial and sectoral nature of housing submarkets means that a one-size-fits-all housing supply policy is unlikely to be effective
- While it is necessary to ensure new housing supply flows are sufficient to meet demands from population growth, it is likely the case that the impact of the new supply on prices and rents will not emerge in the short-run. Hence, alongside supply policies, other measures that address short-run affordability concerns for low-income households are important
- Supply policies need to be expanded beyond new-builds to implementation of measures that improve the utilisation and exchange of existing dwellings, which make up the majority of the total housing stock.

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<sup>80</sup> G Meen, [On the economics of the Barker Review of Housing Supply](#), *Housing Studies*, 2005, 20(6): 949–971; ‘A Long-Run Model of Housing Affordability’, *Housing Studies*, vol. 26, no. 7–8, 2011, pp. 1081–1103.

<sup>81</sup> T Saunders & P Tulip, [A model of the Australian housing market](#), *Economic Record*, 2020, 96(S1): 1–25.

**The economics of housing supply: Key concepts and issues**

Rachel Ong ViforJ and Chris Leishman

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