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Understanding Housing Affordability in Australia*

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Abstract

We evaluate housing affordability in Australia particularly as it relates to the ability of households to purchase a home. An overview of trends in the Australian housing market is provided with a discussion of rising house prices and falling home ownership. We then provide an estimate of the fundamental price of housing at capital-city level based upon the user cost of housing. We also discuss policies that have been used and policies that could be used to improve housing affordability. We conclude with a brief discussion of the long term barriers to housing affordability.

1 Introduction

Houses in Australia are expensive and while house prices have steadily increased, there has been a steady decline in the home ownership rate. While 71.4 percent of households owned or were in the process of purchasing a home in 1994, only 66.2 percent of households owned or were in the process of purchasing a home in 2017-18.[1] Figure 1 reproduces a figure produced by the Australian Institute of Health and Welfare that describes how home ownership for different birth cohorts changes as individuals within these cohorts have aged.[2] Over time, younger individuals have found it increasingly difficult to purchase houses. Therefore, it is not surprising that housing affordability is widely viewed as a concerning issue. According to the ME Quarterly Property Sentiment Report in 2021 Q1, 89 percent of households agreed with the statement: "Housing Affordability is a big issue in Australia". This widespread community concern makes it a big issue for politicians and policymakers as well.

*This paper uses unit record data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey. The HILDA Project was initiated and is funded by the Australian Government Department of Social Services (DSS) and is managed by the Melbourne Institute of Applied Economic and Social Research (Melbourne Institute). The findings and views reported in this paper, however, are those of the author and should not be attributed to either DSS or the Melbourne Institute. This paper also uses house price and rental data provided by CoreLogic. CoreLogic are not responsible for any interpretation we derive from the use of their data. Full details regarding the CoreLogic disclaimer are available at the following link: http://corelogic.com.au/about-us/disclaimer.html

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[1]These data are from the Survey of Income and Housing provided by the ABS.

[2]Data available from https://www.aihw.gov.au/reports/australias-welfare/home-ownership-and-housing-tenure.

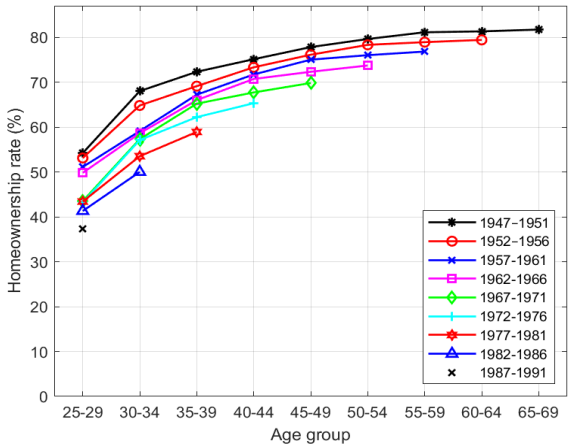


Figure 1: Home ownership rate by birth cohort and age group

Source: Australian Institute of Health and Welfare (AIHW)

In this article, we discuss housing affordability and the ability of households to purchase a home.[3] We begin by discussing why housing affordability and a decline in home ownership is a concern. We then move to the data and discuss how house prices have changed with a focus upon recent decades. According to some commonly used measures, houses are expensive relative to their historic values. We believe that this partly reflects the current economic environment of low interest rates. We describe the concept of the user cost of housing and use this concept to estimate if house prices have deviated away from some measure of fundamental price. To understand housing affordability, we outline an analytical framework to think about the determination of house prices. We then move on to discuss a set of policies designed to alleviate problems associated with housing affordability and conclude with a discussion of the barriers to policy change to improve affordability.

We view that there are several important concerns associated with a decline in housing affordability. First, the decline in housing affordability may result in an increasing number of households being permanently excluded from ownership in the housing market. Housing policy in Australia, among many other countries, has at least in part been built on the idea of the social benefits of home ownership. This view of the world argues that home ownership may provide external benefits to society that are not realised by the homeowner. For example, owners may maintain their properties at a higher standard than landlords and well-maintained properties may provide an external benefit to neighbours. Ownership may also induce a greater sense of attachment to a community and lead to the provision of public goods. DiPasquale and Glaeser (1999) for example, find a positive relationship between home ownership and social capital and provide some evidence

[3] Although we focus upon the ability of households to purchase a home, we acknowledge that there are other dimensions of housing affordability that are important and indeed related to purchasing a home. These dimensions include the affordability of rental housing and issues associated with homelessness. We do not focus upon these issues not because they are unimportant but rather due to limitations of space.

that this is a causal relationship with ownership increasing the provision of social capital. Overall, the public good value associated with home ownership is difficult to quantify but there are certainly perceptions that it is important and sizable enough for a high home ownership rate to be a policy goal in Australia.

The second concern associated with housing affordability is that the high level of house prices in Australia may reflect a deviation from some 'fundamental' price. This deviation from a fundamental price may be of concern for at least a couple of reasons. If households have borrowed to purchase housing at inflated prices with insufficient collateral, then a decline in the price of housing could lead to mortgage default for many homeowners and potential instability in the financial sector. Commentators point to Australia's relatively high level of household debt to GDP when compared to other OECD countries as an area of concern.[4] The potential consequences of financial instability upon macroeconomic outcomes are well known. An added concern with house prices deviating from some fundamental value is that they may lead to a more general misallocation of resources within the economy. If house prices are excessively high for a period, then it may lead to excessive investment in the housing sector when in fact resources could be better devoted to other areas of the economy.

2 House Prices in Australia

To begin, we start by looking at the changes in prices and home ownership rate over time in Australia. Figure 2 shows the increase in house prices over time and the decline in the home ownership rate is depicted in Figure 3. It is common to present house prices scaled by either rental prices or income. The ratio of house price to rental rate is (inversely) related to the rate of return on investment housing and ratio of house prices to income provides a measure of the price of housing relative to the purchasing power that is available to households. Both methods help account for the fact that part of the increase over time in house prices is due to an increase in the general price level which will also affect rental prices and incomes. Figure 4 shows the price-rent ratios for various capital cities.[5] While for many capital cities, the price-rent ratio has remained roughly constant over the last decade, for Melbourne and Sydney, and to a lesser extent Canberra, there has been an increase in the price-rental ratio which is often viewed as suggestive that house prices are excessively high.

The weakness of using historical price-rent ratios to diagnose overvaluation in the housing market is that they ignore changes in economic conditions beyond rental returns that may alter the fundamental value of

[4] Australia, with a household debt to net disposable income ratio of 210 percent in 2019, is one of the few countries in the OECD with household debt to income ratios in excess of 200 percent. For comparison, the UK and New Zealand have debt to income ratios of 142 and 126 percent, respectively.

[5] Our data comes from CoreLogic. The CoreLogic, Market Trends, GCCSA, Jan 1980 – Feb 2021, dataset was accessed via the AURIN Portal on 3 July, 2021.

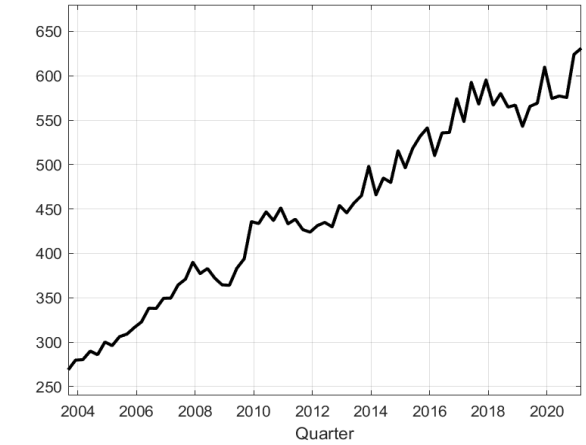


Figure 2: House prices over time (in thousand AUD)

Notes: These aggregate house prices are computed using the median house price for each capital city and state, weighted by the number of transactions in a given year.
Source: Australian Bureau of Statistics (ABS), Cat No. 641604.

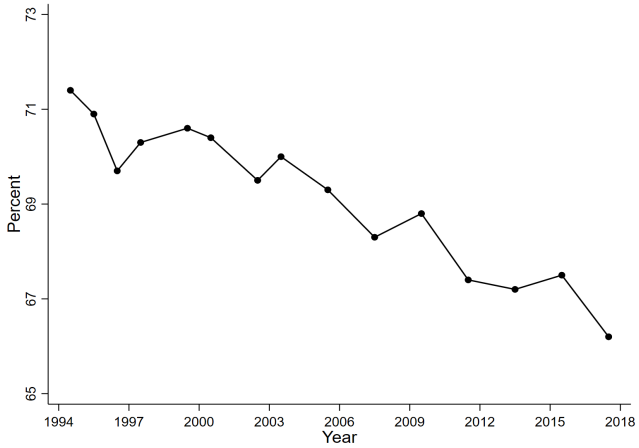


Figure 3: Home ownership rate over time

Source: Australian Bureau of Statistics (ABS), Survey of Income and Housing (SIH).

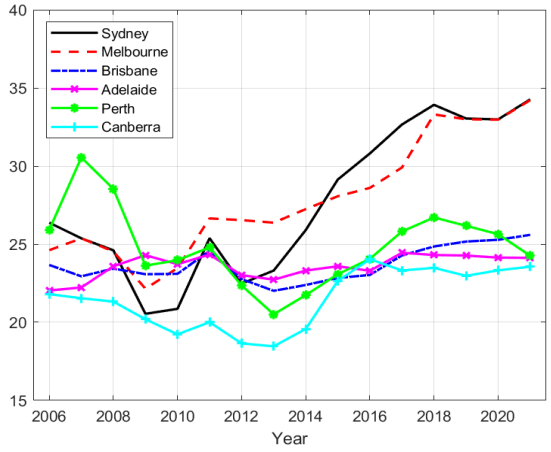


Figure 4: Ratio of median house price to rental cost

Source: Corelogic Australia.

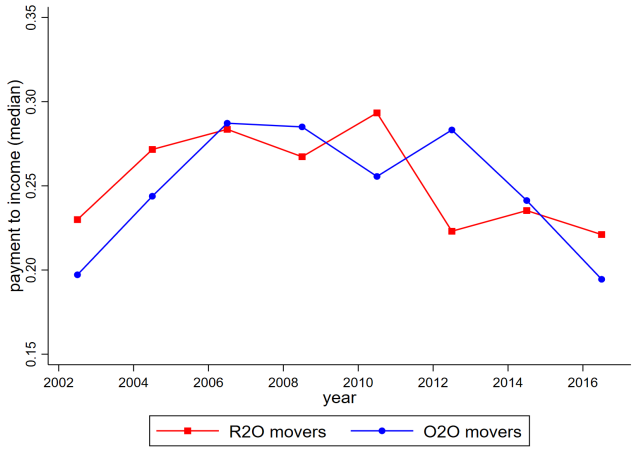


Figure 5: Repayment to income ratio for new homeowners

Notes: R2O movers refer to new owners who were previously renters while O2O movers refer to new owners who previously owned a home.
Source: HILDA.

housing. Perhaps, first and foremost has been the decline in interest rates. Typically, the purchase of a house requires a downpayment at the time of purchase and repayments occurring over time. As interest rates have declined, the size of repayment for a given level of mortgage debt has declined. Consequently, households have been able to borrow larger amounts, and this has had an impact upon the price of housing. To demonstrate this, we use HILDA data to calculate the proportion of income that new homeowners spend on housing repayments and how this has changed over time. The results are shown in Figure 5. In general, although house prices have increased dramatically since the early 2000s, the ratio of repayments to income has remained relatively stable. This partly reflects growth in income over time but more importantly there has been a significant decline in nominal interest rate. It also suggests that one of the main challenge homeowners face in entering the housing market is the requirement that they save enough for an initial deposit and for the payment of transaction costs such as stamp duty. A mechanism that may confound this result is that perhaps there have been composition changes among the set of people purchasing houses and in particular, a shift towards high-income households who may naturally have lower repayment-income ratios.

A useful way to think about the role of interest rates on housing prices is to calculate the annual user cost of housing which is a measure of the opportunity cost of owning a home for one year. The annual user cost of housing can then be compared to the rental price of housing, which is the price associated with having the right to use a home for a one-year period. Himmelberg et al. (2005) set out the rationale for estimating a fundamental housing price by estimating the user cost of housing and comparing this to the rental price. Fox and Tulip (2014) study this in the Australian context. We update their results and expand them to study regional variation to provide a more recent view as to whether prices in Australia have deviated from a fundamental price. The basic idea behind these calculations is that the purchase price of a home does not reflect the annual cost of owning the home. The annual cost of owning a home is given by the following formula:

$$P(r + \delta + \tau - g)$$

where P is the purchase price of the home, r is the interest rate, δ is the rate of depreciation, τ is the annual cost associated with taxes (property taxes plus the value of stamp duty attributed over the lifetime of ownership), and g is the expected rate of house price growth. Instead of owning the home, a person could receive the same benefits of living in the home if she was willing to pay the rental price, r_h. This suggests we can evaluate the fundamental price of a home by setting:

$$P^*(r + \delta + \tau - g) = r_h \tag{1}$$

and then infer the fundamental price as $P^* = r_h/(r + \delta + \tau - g)$. This is essentially the approach adopted by Fox and Tulip (2014).

One complication associated with this calculation is that when owning a home, the imputed rental income is not taxed. This point is elaborated upon by Chatterjee (1996). Suppose an individual had $1,000,000

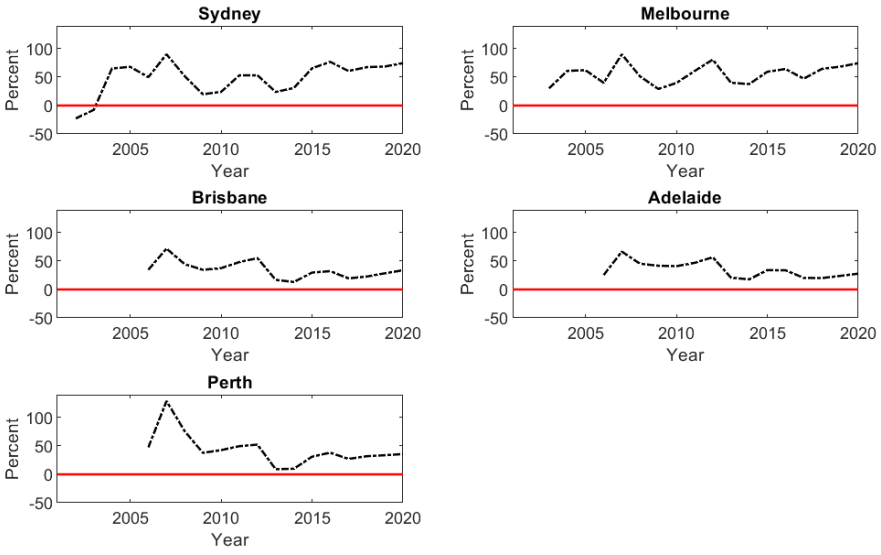
in assets and considered purchasing a $1,000,000 home in Sydney or renting the same property at a rental price of $34,000 on an annual basis. If this individual rented the house, she would have to pay $34,000 in rent but would be able to partially pay for that rent using capital income from her assets. Suppose that the interest rate on her investment was four percent. In this case, her capital income would be $40,000. If this income was taxed at a marginal tax rate of 37 percent, then her after-tax capital income would equal $25,200. She could use this capital income to pay the bulk of the rental costs and contribute $8,800 from other sources to cover the remainder. Alternatively, she may decide to purchase the home outright. In that case, she sells her asset and uses the $1,000,000 proceeds to purchase the home. She, in essence, earns an imputed rental income but this imputed rental income is untaxed. She would live in the house and enjoy the benefits associated with renting the house (valued at $34,000).

This illustrates a key tax advantage of home ownership. An individual does not pay tax on the equity of her home that is implicitly earning rental income if she is an owner-occupier. It also suggests that the user cost of housing will vary across individuals and depend upon their economic situation, and in particular, upon the amount of equity in their house and on the marginal income tax rate that they face. Equity in the home is important since unlike countries such as the USA, mortgage interest expenses are not deductible from income in the tax system. This suggests the alternative formula to describe the relationship between the purchase and rental price:

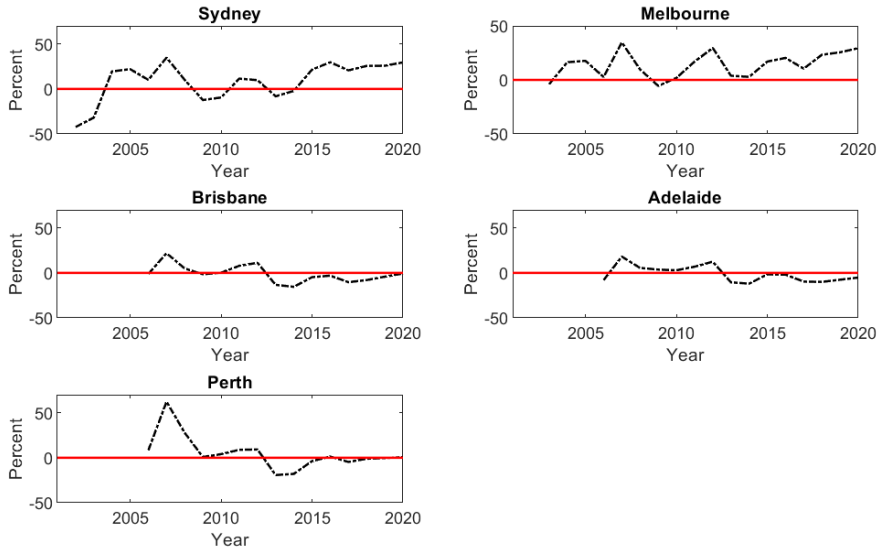
$$P^* = \frac{r_h}{(1-\tau_y)r + \delta + \tau - g} \tag{2}$$

where τ_y reflects the marginal income tax rate that applied to capital income for the household.

We calculate a measure of the fundamental price using both the method of Fox and Tulip (2014) that does not incorporate income taxes on imputed rents and our alternative method that does. We collect prices and rents from several of Australia's major cities and Figure 6 presents the percentage by which the observed price deviates from the fundamental value when income tax on imputed rents are not taken into account (panel (a)) or taken into account (panel (b)). In constructing these figures we follow Fox and Tulip (2014) and set $\delta = 0.026, g = 0.017$, and for an interest rate we use the lending rates applied to housing loans for owner-occupied purposes sourced from the Reserve Bank of Australia. We turn the nominal interest rate into the real rate by subtracting the inflation rate implied by the Consumer Price Index. Our results show that using the method of Fox and Tulip (2014), the estimated fundamental prices are low such that house prices in all Australian cities are significantly overvalued. When incorporating that imputed rental income of a homeowner is not taxed, we find that in several cities (Perth, Brisbane and Adelaide), prices are close to a fundamental level or equate the user cost of owning a home with the rental price. On the other hand, in Sydney and Melbourne we find that house prices have been overvalued in the majority of years over the last two decades. That amount of overvaluation has increased in recent years and is now approximately 30 percent.



(a) Not accounting for income tax



(b) Accounting for income tax

Figure 6: Deviation of house price from fundamental

Source: Corelogic Australia, Reserve Bank of Australia.

An important difference between our study and that of Fox and Tulip (2014) is that they use individual property data that matches rents and house prices at an individual level while we focus upon aggregate (capital city) level median price data supplied by CoreLogic. This could be important if there are compositional differences between homes that are purchased and homes that are made available for rent. For example, it could be the case that houses that are made available to rent are of lesser quality than those that are used by owner-occupiers. In such a case, we would underestimate the fundamental price and overestimate the degree to which houses are overvalued. If these differences are constant over time, we would expect that this bias would be constant over time. If there is a change in the composition over time, then this could introduce a bias in the trend of whether houses are over- or undervalued relative to fundamentals.

There are a few points to note from this analysis. First, it is primarily a partial equilibrium analysis that uses rental prices to infer a reasonable purchase price for a home, taking into account interest rates, price appreciation and the tax system. A more general framework of accounting for a fundamental price would take into account that some of these variables (in particular rental prices) may also be determined in equilibrium. Second, in undertaking this analysis we had to make assumptions on the key parameters in the equations (1) and (2) and our results can be highly sensitive to these assumptions. Perhaps most controversial is a choice of the expected house price growth, g, for which we do not have direct evidence. Third, we have two measures of the fundamental price since the user cost of housing is going to vary across individuals as their marginal income tax rates vary and have an impact upon the benefit of imputed rental income. Fourth, as the interest rate becomes lower, the impact that changes in any of our variables has upon the fundamental price become magnified. This, in turn, implies that mismeasurement of variables on the right hand side of equation (2) can have a large impact upon the estimate of P^*. Furthermore, with monetary policy interest rates near zero, there is limited ability for mortgage home interest rates to decline further. To the extent that the rise in house prices has been caused by declines in interest rates, this phenomenon is unlikely to continue into the future. Finally, our analysis ends at the beginning of 2021 due to restrictions on data. In the first half of 2021 there has been strong growth in house prices in many regions of Australia that are not incorporated into our current measures.

In addition to changes in interest rates, there are other factors that are often discussed as contributing to increases in house prices. The role of population growth, in particular, has been emphasised. In 1980, Australia's population was 14,923,300 in 1981. Today, it is estimated to be 25,788,119. An important factor behind the increase in population size has been the high levels of immigration that were sustained throughout the last few decades until the recent pandemic. With a large increase in the number of people, there needs to be a concomitant increase in housing supply for the price of houses to remain constant. Related to this are debates about the extent to which the supply of housing is constrained by government regulation that limit the release or development of land. Other demographic factors may also have played a role in the increase

in house prices such as changes in the labour force participation rate and changes in household formation. The labour force participation rate of females has increased from 52 in 1990 to 61 percent today. Potentially, this change could raise household income and increase equilibrium house prices.

3 Theoretical Considerations

In this Section, we discuss elements of a model that help us think about how the housing market operates. This view of the world, then informs us of why housing prices have changed over time and helps us understand how government policies will affect the housing market and housing affordability.

How should we think about house prices? Well, house prices are determined by supply and demand. But there are several unique or at least very special characteristics that distinguish the housing market from the market for iron ore and many other commodities. First, there is a market to purchase houses and there is a concurrent rental market for housing. Households can purchase housing services from either market and changes in the rental market can affect the housing market and vice versa. Also, individuals can purchase houses for investment purposes which impacts on both the rental market and housing market.

When selecting between renting and purchasing a house, households make decisions in environments in which credit constraints are pervasive. Uncertainty makes it impossible for a household to know their future lifetime income. And asymmetric information makes it difficult for financial intermediaries to safely lend to households. As a result, households are typically constrained in the amount of credit that they can access. These credit constraints are a source of market failure which will distort the market away from an optimal allocation that would exist in the absence of asymmetric information. Coincidentally, we view this as one of the reasons for why high house prices are a concern. As house prices increase, the downpayment and stamp duty required to purchase a house also increases and as a result the potential for misallocation due to credit constraints becomes more severe.

A second key feature of the housing market is that heterogeneity is pervasive. Houses differ in their characteristics. Namely their size, the number of bedrooms, and perhaps most importantly, location. Furthermore, households differ in the qualities that they desire in a house, depending on their age, income, family structure, workplace, life style, and so on. The standard framework for thinking about markets with heterogeneity is outlined in Rosen's famous model of equalizing differences. In Rosen's model, and in reality, prices will adjust to compensate for the differing qualities of houses. The market will naturally sort houses and households so that households that place the greatest value of specific qualities (size, location, etc) will typically end up purchasing a house that are abundantly supplied with these qualities. A key issue here is that housing decisions are often taken with an eye to work responsibilities and employment prospects are more lucrative

in the major urban centres of Australia. As a result, prices in the main capital cities are significantly higher than in regional areas of the country.

In any market, a key mechanism to reduce prices and increase affordability would be to increase supply. In housing markets, there are two natural ways in which the supply can be expanded in our major metropolitan cities. First, houses with a significant amount of land can be built in the outer suburbs of these cities. The key restriction here is that these new houses are located on the periphery of the city and large costs would be associated with commuting to some of the work hubs. The second way to increase the supply of housing in major metropolitan cities would be to increase the density of cities by replacing low density housing with higher density apartments. Rosen's model of hedonic pricing has some immediate implications. If consumers place a high value on inner city houses with a substantial amount of land and are reluctant to substitute towards different forms of housing, then increasing the supply of high-density housing in the urban center or low-density housing in the suburban fringe may only have a limited impact upon house prices.

4 Policy: What Has Been Done and What Can Be Done?

4.1 Demand Side Policies

A range of policies have been implemented with the aim of improving housing affordability, particularly for first home buyers. The First Home Owners Grant (FHOG) is administered at the state level so the details vary across regions. These FHOGs typically provide a payment to first home buyers that satisfy a set of restrictions. The First Home Loan Deposit Scheme and the Family Home Guarantee don't provide cash payments to first home buyers, but rather they allow first home buyers to purchase a house without saving for the usual 20 percent deposit. Another related policy is the First Home Super Saver Scheme which allows households to save up for a deposit using contributions into a superannuation fund to help pay for a home. Again, this policy plays some role in relaxing credit constraints by increasing the rate at which a first home buyer can accumulate a deposit. These policies favour first home buyers, and as such should help some potential buyers to enter the marketplace for the first time, but they do so by operating on the demand side of housing. As a result, these policies are also likely to raise rather than to lower house prices even if they are successful in raising the home ownership rate in Australia.

Furthermore, policies that reduce the downpayment requirement of households have the potential to increase financial instability. It inherently makes the position of the households that use these schemes to purchase houses more vulnerable to economic shocks. These mortgages are implicitly insured by the Federal Government so the inherent risk of these loans is borne by the taxpayer.

4.2 Supply Side Policies

Policies more likely to reduce house prices would be focused upon increasing the supply of housing. A good example is the HomeBuilder policy that was implemented in response to the Covid-19 pandemic. The policy allowed households that met certain restrictions to receive a grant of $15,000 or $25,000 if they were to either build or substantially renovate an existing home. Standard economic theory suggests that by increasing the supply of available homes this policy would tend to reduce prices and it has the added benefit of mitigating credit constraints for those eligible households. The primary stated purpose of the HomeBuilder program was to support the construction sector through the pandemic. But such a policy could be modified to boost home ownership. To do so, this policy could be targeted at first home buyers.

There is also an important debate on how zoning regulations place constraints on housing supply and lead to artificially high prices. See Kulish et al. (2012) for a formal economic model discussing some of these issues. Zoning regulations are designed to balance the demands of the current homeowners within a particular area that often desire limits on the amount of development against the demands of future homeowners that would like to move into that area but are prevented by the lack of available housing. Careful empirical analysis of the social costs and benefits associated with zoning regulations is hard to come by and often divergent in their views.[6]

4.3 Tax Policies

Tax policies also have an impact on housing affordability. In our own work, we have studied the quantitative effect of both negative gearing in Cho et al. (2021a) and stamp duty in Cho et al. (2021b), on economic outcomes, using a micro-founded model of housing demand over the life cycle that features household heterogeneity and credit constraints. Negative gearing is a tax concession for landlords; it allows landlords to deduct net rental losses from other sources of income when calculating their taxable income. Negative gearing has been a policy of major debate in Australia. We find that removing negative gearing would raise the home ownership rate in the long run significantly. It does so by reducing the incentive to provide rental accommodation and hence altering the relative price between renting and purchasing a home. In the policy debate, one worry is that removing negative gearing might lead to a surge in rental costs and hence worsen affordability for renters. Our preliminary results show that the rises in rents are modest, both in the short run and long run, despite the persistent and substantial drops in rental supply. This is because rental demand falls as well, as renters choose to become homeowners.

[6] See for example, Murray (2020) and Kendall and Tulip (2018) for conflicting views on the role of zoning regulations in affecting house prices.

Stamp duties are taxes levied on buyers of properties at the time of transaction, which are generally not recouped when properties are sold. We examine the effect of removing stamp duty in a revenue neutral fashion, by imposing a recurrent property tax or consumption tax. By reducing transaction costs, the removal of stamp duty could increase housing mobility among all segments of the population and could potentially make older homeowners more likely to downsize and provide opportunities for younger individuals to enter the housing market. Furthermore, stamp duty adds to the burden of the initial payment associated with purchasing a home so the removal of stamp duty could also loosen credit constraints. Our work suggests that the removal of stamp duty would tend to increase the efficiency of the housing market and raise welfare. Moves to eliminate stamp duty are already in motion. The ACT is the most advanced with a gradual 20-year plan of tax reform to reduce stamp duty and increase land taxes. NSW also has a promising proposal that would allow new purchasers to select either stamp duty or a land tax. Once an owner opted for the land tax, all future owners of this property would also be subject to this tax. These proposals of gradual transition from stamp duty to a land tax will improve economic efficiency in the long run but would not penalise current owners with additional taxes.

Capital gains is another area of the tax system that has an impact upon house prices. A housing investor that realises a capital gain from the sale of an investor property is liable to pay tax on the proceeds of the sale. The current tax system provides a 50 percent discount on properties (or assets, more generally) that have been held for longer than one year. Although we have not studied this aspect of the tax system formally, we believe that it also encourages investment in housing that lowers the rental price but raises the purchase price. Similar to negative gearing, the removal of this policy would, in our view, tend to increase home ownership.

4.4 Other Policies

Moving beyond policies that directly affect the housing market, one area of potential reform is to improve transport infrastructure to make it easier for people to move between their home and their workplace. If governments can provide services that make it easier or less costly for workers on urban fringes to travel to work, then household may be more willing to substitute away from expensive inner-city areas and towards less expensive outer suburban locales. Similarly, some state governments have policies designed to increase job opportunities in regional areas. An example would be the development by the Victorian government of GovHubs that shift public service jobs from Melbourne to regional areas. If this transition can make regional areas more productive and appealing locations to live, then this type of policy could lead to faster population growth in regional areas that are typically more affordable and slow growth in less affordable urban areas.

Another area which deserves study, could be to change the nature of contracts between tenants and landlords

in the rental market. An advantage of owning relative to renting in Australia is that it provides a degree of stability and confidence that a household will be able to remain in a particular location for a prolonged period. On the other hand, rental agreements are usually short term in nature. Furthermore, they provide landlords with a lot of flexibility to end rental agreements and place restrictions on the types of activities that renters are able to undertake. However, in other countries, rental agreements provide more rights to renters and allow for longer duration contracts. A shift in legislation to provide renters with more rights in housing contracts would impact upon prices in both the rental and the housing market. It remains an open question as to whether the net effect of price movements and changes in regulation in the rental market would generate net benefits to the Australian society.

5 Long Term Barriers to Affordability

We conclude with some comments regarding barriers to affordability. We know enough to know that there are no easy solutions to the housing affordability problem in Australia. To the extent that high house prices are driven by low interest rates, it becomes difficult for policy makers to address this problem. Interest rates are in the long run determined by aggregate saving and investment and in a global economy these are driven not just by domestic factors but also by international factors. Hence, they are to a large extent beyond the control of regular policy instruments. Reinforcing this observation is that the decline in interest rates that has been observed in Australia is a global phenomenon; it has occurred and has been accompanied by rising house prices in many different parts of the world.

A second problem with dealing with high housing prices is one of political economy. A sizable proportion of Australian households own or are in the process of purchasing housing. It is hard to see policy actions that reduce house prices by a significant amount will capture a large share of support among the general population. Furthermore, Australian politicians are avid investors in housing (at least relative to the general population), and it is hard to imagine that the political willpower exists to take policy actions that will dramatically lower house prices in a meaningful manner.

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