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The supply of affordable private rental housing in Australian cities: short-term and longer-term changes

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Acronyms and abbreviations used in this report

ABS	Australian Bureau of Statistics
ACOSS	Australian Council of Social Services
ACT	Australian Capital Territory
AHURI	Australian Housing and Urban Research Institute Limited
AIHW	Australian Institute of Health and Welfare
AHWG	Affordable Housing Working Group
ANZSCO	Australian and New Zealand Standard Classification of Occupations
CPI	Consumer Price Index
DSS	Department of Social Services
GFC	Global Financial Crisis
HILDA	Household Income and Labour Dynamics of Australia
NHFIC	National Housing Finance and Investment Corporation
NHHA	National Housing and Homelessness Agreement
NILF	Not in labour force
NOM	Net Overseas Migration
NRAS	National Rental Affordability Scheme
NSW	New South Wales
PRS	Private rental sector
QLD	Queensland
RA	Rent Assistance
RBA	Reserve Bank of Australia
RQ	Research question
SA2	ABS Statistical Area Level 2
SA3	ABS Statistical Area Level 3
SCITC	Standing Committee on Infrastructure, Transport and Cities
SSD	ABS Statistical Subdivision

Glossary

A list of definitions for terms commonly used by AHURI is available on the AHURI website www.ahuri.edu.au/research/glossary.

Executive summary

Key points

- The private rental sector (PRS) is the fastest growing part of the Australian housing system, increasing by 17 per cent 2011–2016, more than twice the rate of household growth (7 per cent), continuing a trend observed since 2001.
- There is longer-term structural change in the private rental market, notably an increased concentration of supply at mid-market levels and more middle and higher income private renter households.
- The research found an acute, and increasing, national shortage of private rental dwellings for Q1 households (lowest quintile household incomes): 212,000 dwellings in 2016. This shortage increased to 305,000 affordable and available dwellings as many affordable dwellings are occupied by households on higher incomes (Q2–Q5).
- There was a large surplus of 491,000 affordable dwellings nationally for Q2 (second lowest income quintile) households in 2016. However, when adjusting for availability due to occupation by middle and higher income households (and some very low-income ones), the surplus became a shortage of 173,000 affordable and available dwellings in 2016.
- Sydney had an absolute shortage of affordable rentals for Q2 households (2016), which is the first time this has occurred anywhere over the project series (1996–2016). Elsewhere, affordable private rental stock for Q2 households was increasingly in the outer suburbs of capital cities, and in satellite cities.
- Gold Coast and Sunshine Coast (Queensland) and Newcastle and Wollongong (NSW) had the greatest shortages of affordable and available supply for Q1 and Q2 households among large regional (satellite) cities in 2016.
- Eighty per cent of Q1 private renter households were paying unaffordable rents (89 per cent in metropolitan areas); 36 per cent of Q2 households (and 46 per cent in metropolitan areas) are living in unaffordable rentals (in 2016).
- Younger households, households with children and group households had a disproportionate share of the 29 per cent of Q1 households in 2016 paying severely unaffordable rents (over 50 per cent of income).
- There is some evidence of Q2 households trading off rental affordability for access to jobs, by renting in higher housing-cost areas where access to a variety of jobs, industries and urban amenities may be better.
- The proportion of jobs-rich Q2 households in unaffordable rental is relatively high in inner (62 per cent) and middle (55 per cent) areas of Sydney compared to

outer (45 per cent) parts of Sydney and satellite cities (approximately 45 per cent). A similar pattern is evident for Melbourne.

The study

This research is the latest in a series of projects that have charted changes in the supply of affordable—and affordable *and* available—private rental housing for lower income households every five years since 1996. These were initiated in response to policy debates in the mid-1990s about the adequacy of the supply of affordable private rental housing for lower income households in light of the changing emphasis of policy from supply-side to demand-side subsidies. A key question raised by this policy shift of several decades ago is whether the private market could provide an adequate supply of affordable rental housing to meet the needs of lower income households, including those in receipt of Rent Assistance (demand-side subsidies). The primary aim of these projects has been to determine the extent to which the supply of private rental housing for lower income households has filled, or failed to fill, the gap left by a static social housing sector, and to provide an indication of the shortfall that needs to be addressed by whatever policy means is appropriate.

The research is based on analysis of customised data from the ABS Census of Population and Housing (the Census), using a method employed in all previous projects that enables comparison of results across the Census years—that is, 1996, 2001, 2006, 2011 and 2016. It provides detailed analysis of changes in affordable rental housing supply for lower income households, nationally, in metropolitan and non-metropolitan Australia, and in capital cities, satellite cities and other major regional cities.

Each project in the series has enhanced the scope of analysis, responding to the evolution of policy concerns over time. This project makes two additional contributions to understanding the extent, and implications, of changes to private rental supply:

1. It updates the series with analysis of 2016 Census data, enabling a longer-term view of whether changes in affordable private rental supply are short-run and cyclical, or longer term and structural, and;
2. It extends the analysis to investigate employment participation by lower income households living in affordable and unaffordable rental housing in selected capital and satellite cities in 2016.

The key concept in the research design is whether lower income households can access housing that is:

1. *affordable*, based on a weekly rent of no more than 30 per cent of gross household income, and
2. *available*, referring to the extent to which affordable dwellings are occupied by lower income households.

Affordable and affordable/available housing for lower income households is calculated for some 88 spatial units (national, state, metropolitan, non-metropolitan, capital cities and their broad zones, as well as for 22 regional cities, including 10 satellite cities surrounding major capital cities).

An additional and exploratory component of the project is investigation of the employment status of adults in low- and moderate-income households living in affordable and unaffordable private rental housing in selected capital cities and surrounding satellite cities. The project explored this issue conceptually and analysed empirically the distribution of a continuum of

household employment focussing specifically on the inner, middle and outer regions of Sydney and Melbourne and their satellite cities: Wollongong, Newcastle and Geelong.

The research project is one of four that contribute to an AHURI Inquiry into 'Urban productivity and affordable rental housing supply in Australian cities and regions', led by Professor Nicole Gurran of the University of Sydney.

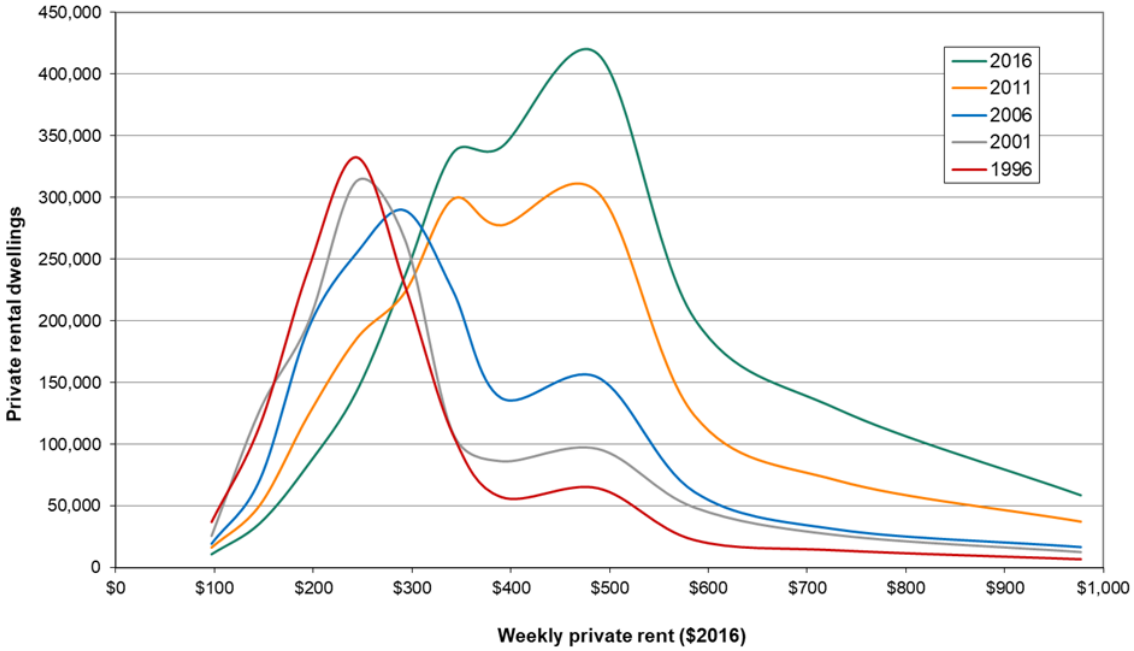
Key findings

Change in size and structure of the private rental sector

The Australian PRS grew by 17 per cent in the five years 2011–2016, more than twice the rate of growth of all households (7 per cent), continuing a trend observed since 2001.

The projects in this series have tracked changes in the distribution of real rents (inflation-adjusted) nationally every five years since 1996, enabling an assessment of long-term structural changes in private rental supply, as well as short-term cyclical changes. Updating the Census series to 2016 confirms that the concentration of rental at mid-market levels, observed for 2006–2011 as a major change, continued 2011–2016 (figure below). In 1996 and 2001, rents were concentrated at the lower-rent end of the market but from 2006 onwards, as the sector increased in size, lower-rent properties have declined in both absolute and relative terms.

Distributions of private rental dwellings by weekly rent paid, Australia: 1996, 2001, 2006, 2011 and 2016



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Note: Derived from 12 rent categories established for the 1996–2001 analysis and which have been updated to 2016 dollars enabling real changes in the profile of rents paid to be evident.

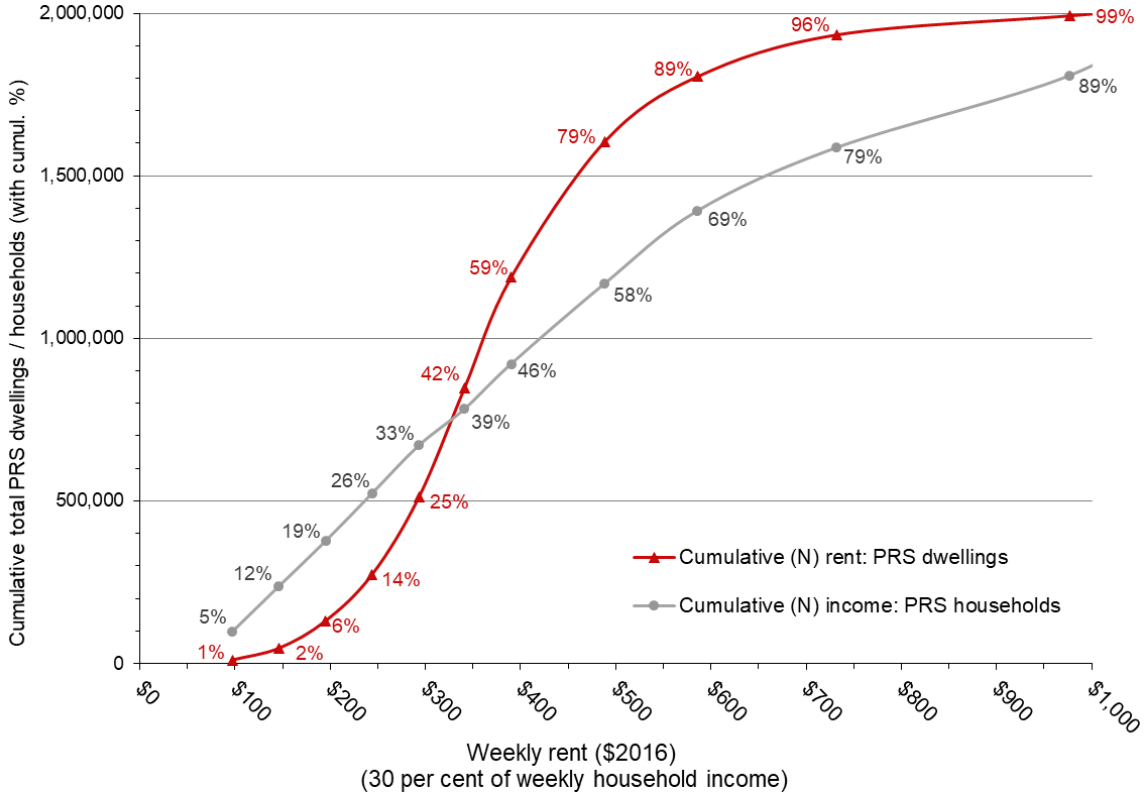
Source: Authors.

Over the decade 2006–2016, there has been a disproportionate increase in private renter households with middle and higher incomes. Households with gross incomes of (2016) $1,628 per week and above (roughly $85,000 per annum and above) comprised 42 per cent of all private renter households in 2016, whereas only 33 per cent of private renter households had

incomes in this range in 2006 (in equivalent $2016). While the share of renter (as with all) households with real incomes below this level fell commensurately, the total number of households in the PRS with incomes too low to afford higher rents remained relatively unchanged between 1996 and 2016. At the same time, as shown in the figure above, there was a fall in the total number of rental dwellings that were affordable for low-income households. See Section 3.3.

By examining the distributions of PRS household incomes and rents together (figure below), a mismatch is evident: an absolute shortage of rental housing at rents below about $350 per week, or at rent levels affordable for households with incomes of up to $1,200 per week (in $2016)—which is more than one-third of all private renter households. Broadly, the differing trends in the numbers of lower income households and low-rent dwellings in the PRS have resulted in a shortage of affordable rental stock.

Cumulative distributions of weekly rents and private renter household incomes by rent/income segment, Australia 2016



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Source: Authors.

Shortages of affordable and available private rental supply for lower income households

The research estimates these supply shortages for lower income households using household income quintiles. Whether supply is *affordable* is calculated by rents at or below 30 per cent of gross household income for very low-income households (Q1) and low-income households (Q2). We also estimate *affordable and available* supply for Q1 and Q2 households by deducting dwellings not accessible to lower income households as they are occupied by middle and higher income households.

There was an acute and growing shortage of affordable—and affordable/available—private dwellings for Q1 households nationally in 2016, particularly in metropolitan areas.

- The national shortage of affordable supply for Q1 households in 2016 was 212,000 dwellings, up from 187,000 in 2011.
- The national shortage of affordable and available stock for Q1 households in 2016 increased to 305,000, up from 271,000 in 2011.
- Four in five (80 per cent) of Q1 renters nationally paid unaffordable rents, consistent with the previous decade (2006–2016); this applied more in metropolitan regions (89 per cent) than in non-metropolitan regions (66 per cent).

In theory, there was a substantial national surplus for Q2 households of 491,000 affordable private rental dwellings (slightly down from the 521,000 surplus in 2011). However, the following points need to be considered:

- This surplus becomes a shortage of *affordable and available* supply of 173,000 dwellings in 2016 (up from 122,000 in 2011), due mainly to occupation of affordable stock by middle and higher income households (and also, to a lesser extent, by Q1 households). Shortages have increased in both metropolitan and non-metropolitan regions.
- There was an increasing trend in Q2 renters nationally paying unaffordable rents: this rose from 24 per cent in 2006 to 36 per cent in 2016. The trend was stronger in metropolitan regions (up from 29 per cent in 2006 to 46 per cent in 2016), than in non-metropolitan regions (up from 17 per cent to 20 per cent) over the decade.

Urban restructuring and shortages of affordable and available rental housing supply for lower income households

Restructuring of Australian cities in the period 1996–2016 has seen agglomeration of economic activity, particularly knowledge-sector jobs, particularly in inner urban areas, and substantially steeper house price/rent gradients—that is, higher prices/rents in inner and many middle suburbs compared to outer suburbs and satellite cities.

All six state capitals have experienced increased shortages of affordable—and affordable and available—rental stock for Q1 renters in the period 1996–2016, accelerating in the decade 2006–2016. As a result, in 2016:

- extremely high percentages of Q1 households were paying unaffordable rents in capital cities (notably 92 per cent in Sydney).
- large regional cities also had significant shortages for Q1 households, notably Gold Coast and Sunshine Coast (Queensland) and Newcastle and Wollongong (NSW).

Shortages of supply for Q2 households vary much more between capital cities.

- For the first time anywhere in this series of projects (1996–2016), there was an absolute shortage of private rentals affordable for Q2 households in Sydney in 2016. Melbourne and Brisbane had a better supply of rentals for Q2 households.
- As a result, the percentage of Q2 households living in unaffordable housing in Sydney (71 per cent) was substantially more than in Melbourne (36 per cent) or in Brisbane (41 per cent).
- Shortages of affordable and available housing for Q2 households increased notably in the inner and middle suburbs, indicating a spatial restructuring of rental housing markets, with more affordable rental housing in outer suburbs and satellite cities.

Employment participation and affordable housing supply

The research examined whether increased shortages of supply—and availability—of affordable rental housing results in a spatial mismatch that disadvantages lower (and even moderate-income households) if lowering their rent burden means living too far away from concentrations of employment. Alternatively, it explores whether lower income households adapt by trading off rental affordability for locations that provide good access to employment. The research findings, for one year only (2016), suggest the following:

- Q2 households tend to concentrate in higher housing-cost areas where there is access to a variety of jobs, industries and urban amenities. The proportion of jobs-rich, low- and moderate-income households in unaffordable rental is therefore high in inner (62 percent) and middle (55 per cent) areas of Sydney, compared to outer (45 per cent) Sydney and satellite cities (approximately 45 per cent). This trend is also found across inner (58 per cent), middle (54 per cent) and outer (50 per cent) Melbourne and Geelong (49 per cent), but the trend is less marked.
- Q2 households who want to find affordable housing must increasingly move to outer suburbs, where public transport is often limited. The concentration of Q2 households in inner and middle parts of capital cities therefore suggests that many households trade off affordability for access to jobs and urban amenities.
- It is also the case that many jobs are dispersed, so that middle—and to some extent outer—suburbs continue to provide access, albeit to a more limited range of jobs. Affordable locations may thus still provide access to dispersed jobs that may provide a good skills match, but many of these have high rates of part-time work and lower wages. Households must make trade-offs that suit their circumstances.
- Q3 households typically access affordable rentals across inner, middle and outer parts of capital and satellite cities. The exception here is inner Sydney, where Q3 households may also trade off affordability for access to jobs and locations rich in urban amenities.

Policy development options

Policy development is urgently required to address the growing shortage of affordable rental housing for Q1 households across the nation—that is, with rents at or below (2016) $202 per week—as the private rental market has not supplied dwellings at these rent levels. It is also essential that rents be kept at affordable levels for these households, many of which will be long-term or lifelong renters. This requires substantial capital investment in new social housing supply with appropriate financing and management models to enable maintenance of affordable rents and allocation to very low-income households or significant increases in Rent Assistance payments for very low-income households.

- Our research suggests that at least 200,000 additional dwellings of a mix of types are needed (based on 2016 figures), requiring a minimum capital program of 20,000 new units a year for 10 years, with a priority given to capital cities and large regional cities with demonstrated shortages.

This figure is conservative, as the shortage estimates include only those households that were living in private rental housing in 2016 and excludes discouraged Q1 households that have had to move into a variety of informal arrangements, or postponed household establishment as children stay with parents for longer.

The problem facing Q2 households is primarily one of availability: policy development is required to ensure access to affordable dwellings by Q2 renter households who can afford rents up to $355 per week.

- This is the market for new types of affordable housing and could include a variety of not-for-profit (housing associations, community housing providers) and for-profit models (such as Build to Rent), but rents must be no more than (2016) $355 a week.
- Reimagining schemes such as a revamped National Rental Affordability Scheme (NRAS) could add much-needed supply of affordable rental—especially for Q2 households—via the community housing sector and through public private partnerships. This is essential to a strategy of increasing the overall stock of affordable rentals.

To address the equity issue arising from the supply and availability of affordable private rental, policies are needed that balance access to jobs and housing with social justice, while recognising that residential land use in capital cities competes with land for several other uses. Specifically, it is important that affordable dwellings for lower income private renter households are in areas where there is good access to jobs as well as to transport, facilities and services. Location matters if there is to be no undue locational barrier to these households increasing employment participation (such as more hours and higher wage rates) if they wish, and are able, to do so:

- Policy development is required in view of these trends to boost affordable rental supply for Q2 households, particularly in middle regions of major capitals, so that these workers are not disadvantaged by having to move to outer suburbs to access affordable housing.
- Planning for affordable housing should be linked with employment participation initiatives, so that a variety of locations provide access to employment in a range of industries and occupations requiring different skill levels, and are not be restricted to dispersed employment in sectors characterised by part-time work with low pay and casual conditions—unless this suits households' other commitments.
- It has been a longstanding policy ambition to decentralise population growth in capital cities to relieve infrastructure pressure and congestion costs—negative externalities—in capital cities. The aggregate statistics in this report are, on average, suggestive of satellite cities providing no better outcome for inner- and middle-suburb private renters than outer capital city locations. Therefore, policies to facilitate the development of satellite cities (and other Australian cities) need to be approached from a point of developing these cities in their own right, rather than as overspill locations for Sydney and Melbourne.

1 The research: changes in the supply of affordable private rental housing and employment participation

- Housing policy in Australia relies on an adequate supply of private rental housing that is affordable and available to lower income households in view of:

— a slow decline in the rate of home ownership; and

— limited opportunities to access social housing except for those with the most urgent and complex needs.

- The research updates and extends past analyses of Census data that identify changes in the supply of private rental housing that is affordable, and available, to lower income households in different types of housing markets around Australia.
- It analyses short-term changes in the supply of affordable rental housing for lower income households (2011–2016) and longer changes over 10 and 20 years.
- The research explores the interaction between affordable/available private rental supply for lower income households and patterns of household employment participation in selected capital and satellite cities in 2016.

1.1 Introduction

This is the Final Report of a research project on changes in the supply of affordable private rental housing[1] in Australia, with a focus on capital and major regional cities. It is the latest in a series of projects that have charted changes in the supply of affordable private rental housing for lower income households[2] every five years since 1996. The primary aim of these projects has been to determine the extent to which the supply of private rental housing has failed to fill the gap left by a static social housing sector and to provide an indication of the shortfall that needs to be addressed by whatever policy means is appropriate. This report updates this series of projects based on analysis of customised data from the Australian Bureau of Statistics (ABS) 2016 Census of Population and Housing (the Census), using a method that enables direct comparison with past reports based on data from previous Census years—that is, 1996, 2001, 2006 and 2011. It provides detailed analysis of changes in affordable rental housing supply nationally, in metropolitan and non-metropolitan Australia, as well as in capital and major regional cities, between 2011 and 2016 and, where relevant, over 10 and 20 years. The analysis distinguishes between two groups of lower income private renter households:

- Very low-income households: those in the lowest 20 per cent of all Australian gross household incomes—hereafter Q1 households, and;

[1] Private rental housing refers to private dwellings in which the occupant pays rent to a real estate agent or private landlord (not living in the premises); occupants paying rent to public housing authorities, community housing organisations and employers are excluded from this definition.

[2] Defined here as households with gross incomes in the lowest 40 per cent of all Australian gross household incomes.

- Low-income households: those with incomes between 21 and 40 per cent of all Australian gross household incomes—hereafter Q2 households.

All projects in the series are concerned with the supply of housing affordable for Q1 and Q2 households. However, each project in the series enhances the scope of analysis, responding to the evolution of policy concerns over time. For example, analysis using 2006 Census data provides an enhanced profile of the types of households that experience problems due to lack of affordable supply (Wulff et al. 2009; Wulff et al. 2011). The project based on 2011 Census data had a greater focus on geography, differentiating between inner, middle and outer areas of major capital cities, as well as substantially increasing the number of larger regional centres to 22 (Hulse et al. 2014; Hulse et al. 2015). This project makes two additional contributions to understanding the extent, and implications, of changes to private rental supply:

1 It updates the series with analysis of 2016 Census data enabling a longer-term view of whether changes in affordable private rental supply are short-run and cyclical or longer term and structural, and;

2 It extends the analysis to investigate employment participation by lower income households living in affordable and unaffordable rental housing in selected capital and satellite cities[3] in 2016.

This Report addresses three research questions (RQs):

- RQ1: How has the supply of affordable and available private rental housing changed for Q1 and Q2 households nationally, metropolitan/non-metropolitan, capital cities and selected satellite cities and regional centres, 2011–2016?
- RQ2: What are the characteristics of Q1 and Q2 households living in affordable and unaffordable private rental housing in 2016?
- RQ3: What is the employment status of Q2 households living in i) affordable and ii) unaffordable private rental housing in areas of selected capital cities and their satellite towns in 2016?

RQs 1 and 2 update the analysis of the previous projects, providing additional analysis of change in capital and satellite cities 2011–2016 (and longer periods). RQ3 is exploratory and examines the link between affordable housing and the employment participation status of households in 2016.

The research project is one of four that contribute to an AHURI Inquiry into 'Urban productivity and affordable rental housing supply in Australian cities and regions' (led by Professor Nicole Gurran of the University of Sydney).[4]

1.2 The housing policy context

This series of projects was initiated in response to policy debates in the mid-1990s about whether there is an adequate supply of affordable private rental housing for lower income households. This question was increasingly important, as the primary form of housing

[3] Satellite cities are large cities/towns located in proximity to major metropolitan centres; they are physically separate (i.e. not contiguous within a metropolitan boundary) and have their own economic base and infrastructure but are connected economically to major metropolitan centres.

[4] This research also complements a Productivity Commission report on vulnerable renters, released after this report was completed, by focussing on the contribution made by the supply-side of the private rental market to their vulnerability (Productivity Commission 2019a).

assistance in Australia shifted from direct provision of social housing[5] to financial assistance to lower income private renters, reflecting a change from supply to demand subsidies—which can also be observed in other similar countries (see Kemp 2007). A key question was: could the market provide an adequate supply of affordable private rental housing to meet the needs of lower income households that received this financial assistance?

For those on moderate and higher incomes, private renting may be a choice that—compared to home ownership—enables greater flexibility and mobility to adapt to life events, employment and other changes (Hulse, Pawson et al. 2019). However, for those on lower incomes, the PRS is often the only viable option, as increasing house prices since the late 1990s, escalating in the period 2011–2016, have largely priced them out of home ownership in large cities (Parkinson, Rowley et al. 2019). The only other option is social rental housing, but this is tightly rationed and houses only those in the most extreme and urgent need; only 4 per cent of all Australian households live in social housing (Productivity Commission 2019b: Table GA.16).

Policy settings for lower income private renter households have changed relatively little since 1996, which was the base year for this series of projects. The main type of assistance is the federal government's Rent Assistance[6] scheme, which provides additional financial payments to more than 1.3m private renters who are in receipt of primary income support payments (such as the Age Pension and the Disability Pension) and family tax benefits. While it provides much-needed financial assistance to these groups, it is not available to other lower income households on similar incomes. Singles and couples without dependent children in low-wage work or precarious work (Campbell, Parkinson et al. 2014; Stone, Parkinson et al. 2016) may not be eligible for this scheme or seek Rent Assistance when their incomes fluctuate. Further, although the payment is indexed twice yearly by the Consumer Price Index (CPI), there have been increasing concerns about the adequacy of Rent Assistance payment levels in view of substantial real increases in rents in the 2000s (ACOSS 2019; Colic-Peisker et al. 2010).

In contrast, policy settings on private rental supply fall within the domain of federal taxation policy, and have been highly contested. Taxation concessions for landlords of private rental properties comprise a 50 per cent discount on nominal capital gains after 12-months property ownership, and so-called 'negative gearing' of losses against rental properties against general income with the effect of reducing taxable income.[7] The combined cost of these two measures in 2013–14 was estimated at $11 billion (Daley and Wood 2016), or some 3 per cent of total Commonwealth tax revenue (ABS 2014). These policies were debated during the run-up to the Australian federal election of May 2019, with the (returned) Coalition Government arguing that current taxation settings play an important role in providing supply of private rental housing.

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[5] Social housing refers to direct provision of housing to eligible groups by public housing authorities and not-for-profit housing agencies outside of market processes—that is, rents are set at levels below market and intended to be affordable for very low-income households, and access is via administrative allocations.

[6] Rent Assistance was paid to 1,311,187 'income units' as at June 2018 at an annual cost 2017–2018 of $4.4 billion (DSS 2018: 85). State and territory governments have supplementary private rental assistance schemes, which assisted 128,027 households in 2016–17 at an annual cost of $132 million, mainly with loans to pay private bonds and various types of rental grants, subsidies and relief (AIHW 2018: Tables Financial 6 and Table S1 Financial).

[7] Ahead of the 2016 election, the Labor Party in Opposition announced some proposed changes to taxation incentives for investor landlords that proposed reducing the capital gains discount and limiting negative gearing for investors in established dwellings (but not new dwellings). This policy position was carried forward to the 2019 Federal Election (May 2019). While Labor was not elected, their proposed policies may have affected investor behaviour post-2016.

The new National Housing and Homelessness Agreement[8] (NHHA), effective from July 2018, implicitly includes the PRS via two of six agreed 'aspirational, overarching national outcomes' for the new Agreement:

- 'affordable housing options for people on low-to-moderate incomes' (Clause 15b); and
- 'a well-functioning housing market that responds to local conditions' (Clause 15e).

The new NHHA is mainly concerned with social housing and homelessness, and contains no agreed outputs that measure progress in providing affordable private rental housing supply. However, one of the national housing policy priority areas is 'tenancy reform that encourages security of tenure in the private rental market',[9] which is the responsibility of the states and territories rather than the federal government. Reform of state and territory laws to improve security and housing conditions for private renters is typically contested, and a lengthy and incremental process (Martin 2018). However, security of tenure does not in itself address issues of supply.

Finally, it is important to note the establishment of the National Housing Finance and Investment Corporation (NHFIC), whose mandate is to be an affordable housing bond aggregator to provide cheaper and longer-term private finance for the community housing sector to supply affordable rental housing.[10] While it is early days, this measure is intended to raise private finance in larger tranches and at cheaper rates than is possible for individual community housing organisations, which will then select tenants and manage the properties. This supply will be part of the social housing sector, but may take some of the pressure off the lower end of the private rental market if supplied in large numbers.

1.3 Existing research

Australia is not alone in experiencing an increase in the PRS: sector growth has been observed internationally, particularly in the Anglophone countries (Australia, New Zealand, the UK, Ireland, Canada and the US) (Carliner and Marya 2016; Crook and Kemp 2014; Hulse and Yates 2017; Martin et al. 2018; Whitehead, Monk et al. 2012). Internationally, PRS growth has increased notably since the Global Financial Crisis (GFC) of 2008–09 (Forrest and Hirayama 2015; Kemp 2015; Martin, Hulse et al. 2018).

Some of the main themes in the international literature about increase in supply of private rental are outlined below:

- Small-scale investor-landlords are responsible for much of the increase in rental housing even in countries where there are also institutional landlords (Crook and Kemp 2014; Hulse, Reynolds et al. 2019; Martin et al. 2018; Ronald and Kadi 2018). There appears to be some growth in more purposive and financially savvy small-scale investor landlordism (Crook and Kemp 2014; Ronald et al. 2017; Soaita et al. 2016).

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[8] The new NHHA replaces the National Affordable Housing Agreement 2009 and the National Partnership Agreement on Homelessness. The NHHA is a series of bilateral agreements and continues funding to the states and territories for social housing and home ownership assistance ($1.5 billion), with some additional funds ($375m over three years to improve frontline homelessness services). The new arrangements are intended to give greater accountability to the states and territories for supply targets, planning and zoning reforms, and renewal of public housing stock, while also supporting the delivery of frontline homelessness services.

[9] National Housing and Homelessness Agreement
http://www.federalfinancialrelations.gov.au/content/npa/other/other/NHHA_Final.pdf

[10] Australian Treasury, Budget 2017 Fact Sheet 1.1 A Comprehensive Plan to Address Housing Affordability, https://www.budget.gov.au/2017-18/content/glossies/factsheets/html/HA_11.htm

- There are many challenges in getting larger-scale institutional investment into private rental housing (for example Lawson et al. 2018; Milligan et al. 2013; Oxley et al. 2010). However, there are clear signs of new types of institutional investment in some countries, including large-scale corporate landlords operating at a transnational scale. This type of investment is evident in larger-scale apartment buildings—both new and repurposed—but also includes portfolios of single-family properties, particularly in the US (Beswick et al. 2016; Fields 2018; Fields and Uffer 2016; Martin, Hulse et al. 2018; Wijburg and Aalbers 2017).
- Lending for residential property investment has increased in the context of historically low interest rates—particularly since the GFC—as well as financial products that are designed for investor-landlords (Kemp 2015; Martin, Hulse et al. 2018).
- Changes in regulation, in particular (partial) deregulation of rents and tenancy terms, have occurred in a number of countries and in sub-national contexts (for example TENLAW 2015), although comparative research suggest that there is not a direct relationship between regulation and the size and composition of the PRS (Whitehead, Monk et al. 2012).

In Australia, these changes have occurred in the context of substantial spatial restructuring of urban labour and housing markets since the mid-1990s.

- Knowledge-based firms and industries have progressively concentrated in and around the CBDs of capital cities (for example Ellis 2014; Kelly and Donegan 2014) in a process of agglomeration, while manufacturing in suburban and regional areas has declined. Whereas manufacturing requires large tracts of land (extensive land utilisation), knowledge-based jobs entail more intensive land utilisation, which increases the price of inner urban land. The consequence has been progressive steepening of the land/house price gradients in major cities (Ellis 2014), with high prices/rents in or near the CBD and progressively lower prices/rents towards the outer suburbs.
- A rise in contract and casual work—particularly on a part-time basis—has contributed to uneven distribution of employment between households (Borland et al. 2001; Gregg and Wadsworth 1994). This plays out spatially with jobs-rich households able to afford increased prices/rents in inner and middle urban areas and jobs-poor households—which are often female-headed—only able to afford housing (to buy and rent) in outer urban areas and regional centres.

The PRS plays an important role in providing greater flexibility than either home ownership or social rental, as it enables a match between housing and jobs because of ease of mobility and lower transaction costs (for example Whelan and Parkinson 2017). However, prior studies in this series have demonstrated that an increase in overall supply of private rental housing has not led to an increase in supply affordable to those on lower incomes in jobs-rich locations, particularly in the inner and middle suburbs of large cities (Hulse, Reynolds et al. 2014; Wulff, Dharmalingam et al. 2009). An overview of the recent Australian literature (for example Chung and van der Lippe 2018; Houghton, Foth et al. 2018; Yu, Burke et al. 2019) suggests that households respond to changes in housing and labour markets in different ways including:

- moving to (or remaining in) apparently unaffordable rental housing to be near work, transport, services and facilities
- moving to (or remaining in) more affordable rental housing further from the concentration of jobs, with a possible ‘spatial mismatch’ (Kain 1968) between housing and employment.

There is also an option of moving to satellite cities around large capital cities, as well as other possible household adaptations—including using digital technology to reduce the need to travel between home and work.

The linkages between changes in the private rental market and employment participation at the household level remain relatively underdeveloped. This project investigates the geography of changes in affordable private rental supply for Q1 and Q2 households, and explores potential linkages between living in un/affordable private rental housing and patterns of workforce participation at a household level rather than an individual level.

1.4 Research methods

1.4.1 Specification of customised Census data

As a key part of this project is to update analysis in four previous studies,[11] it is essential to use the same research approach[12] and methods to ensure validity and reliability through consistent definitions, measures and spatial units.[13]

The research method starts with the application of a sophisticated imputation method developed with the ABS for the 2001 project (see Appendix 1 for details). This addresses the problem of 'not stated' information for key variables in the Census data (household incomes and rents) and converts household incomes recorded in the Census on a pre-defined categorical basis to point estimates so that the 2016 Census data can be regrouped into new, user-defined income ranges.

Two sets of user-defined household income and affordable rent categories are specified for derivation of customised data for the project:

- Twelve weekly household income and affordable rent categories originally defined for analysis of 1996 and 2001 data and used in subsequent projects, are updated by the CPI. The upper value of the 12 affordable rent categories corresponds with 30 per cent of the upper value of the household income category. We use these 12 segments to provide a more nuanced account of real change—that is, taking inflation out of the picture—in the supply of affordable private rentals for lower income households over time presented in Chapter 3 (and for figures 10a–c in Chapter 5).
- Household income[14] quintiles are derived by the ABS in consultation with the research team from the distribution of all Australian household incomes (regardless of tenure). Private rent categories that correspond to 30 per cent of the quintile value (the upper value of the household income range) are then calculated. Quintiles are a relative measure and are used for the analysis of shortages and surpluses in affordable and available private rental housing supply, and in the analysis of household employment participation in chapters 4–7.

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[11] Seven reports cover the results from the four previous projects in this series: Wulff and Yates 2001; Yates, Wulff et al. 2004a; Yates, Wulff et al. 2004b; Wulff, Dharmalingam et al. 2009; Wulff , Reynolds et al. 2011; Hulse, Reynolds et al. 2014; Hulse, Reynolds et al. 2015.

[12] The research approach is based on one employed by the US Department of Housing and Urban Development (HUD) in the 1990s (Nelson 1994), and which was further developed in the 2000s (Vandenbroucke 2007). Wulff et al. (2001) adapted this approach for use in Australia.

[13] An in-depth review of the research approach is included as Appendix 1 in Wulff et al. (2011). Topics covered include a review of international methodologies for measuring supply and demand in the PRS (in Anglophone countries); and a discussion of issues relating to measures of affordability, use of Census data, gross or disposable income and equivalised (adjusted for household size and composition) or non-equivalised income.

[14] Household income includes Rent Assistance in definition of income in the Census. Note: Gross income is employed because the Census does not collect information on disposable income, and a simple ratio measure is employed to assess the affordability of rental stock in the absence of any information on household characteristics—such as size/composition or expenditure needs—ahead of that stock being occupied.

Household income quintiles and corresponding affordable rent ranges for 2016 using this method are shown in Table 1.

Table 1: Gross unequivalised household income quintiles and corresponding affordable rent categories, Australia, 2016

	Gross household income segment $2016		Affordable private rent segment $2016	
	Weekly	Annual		Weekly
Quintile 1 (Q1)	$0–$673	$34,996 or less	Rent 1 (R1)	$1–$202
Quintile 2 (Q2)	$674–$1,182	$34,997–$61,464	Rent 2 (R2)	$203–$355
Quintile 3 (Q3)	$1,183–$1,867	$61,465–$97,084	Rent 3 (R3)	$356–$560
Quintile 4 (Q4)	$1,868–$2,879	$97,085–$149,708	Rent 4 (R4)	$561–$864
Quintile 5 (Q5)	$2,880+	$149,709 & above	Rent 5 (R5)	$865+

Note 1: Household income refers to gross, unequivalised—that is, not adjusted for household size or composition—income ranges (weekly) that represent the sum of the individual incomes reported by all household members aged 15 years and over.
Note 2: The affordable rent segments were defined by calculating 30 per cent of the upper value of the income quintile range—for example, $673 x 0.3 = $202.

Source: Categories calculated by the ABS, using method defined by authors, using imputed unit record data (held by the ABS).

1.4.2 Detailed analysis of changes in affordable and available private rental supply

Conceptually, the project assumes that housing can be assigned to households on the basis of affordability to identify shortages or surpluses of rental units that are affordable to Q1 and Q2 households. We then assess whether affordable units are available to lower income households or occupied by middle and higher income households. Although this project focusses on supply, we also provide analysis of affordability outcomes of any shortages—that is, Q1 and Q2 households living in affordable, unaffordable and severely unaffordable private rental housing. This provides three key indicators that enable assessment of change 2011–2016 and, where relevant, over longer periods (2006–2016 and 1996–2016). These indicators are:

- **shortage/surplus of affordable dwellings;**
- **shortage/surplus of affordable and available dwellings, and;**
- **the percentage of lower income households paying unaffordable rents.**

These indicators are used to update past analyses of rental housing affordable, and affordable and available, to Q1 and Q2 households, and affordability outcomes at some 88 spatial units (national, state, metropolitan and non-metropolitan, broad zones of major capital cities and for 22 regional centres including 10 satellite cities surrounding major capital cities).

As there are now 20 years of data and analysis from this series of projects, we are able to explore some of the key changes in the last intercensal period 2011–2016, and identify from the period covered by this series of projects (1996–2016), those changes that appear to be cyclical and relatively short term from those that appear to be structural and longer term. We provide detailed appendices for readers who want to follow the Census series over time at different spatial levels.

1.4.3 Exploration of rental market restructuring and household employment status

An additional and exploratory component of the project is investigation of the combined employment status of adults in lower income (Q1/Q2) and Q3 households living in affordable and unaffordable private rental housing in selected capital cities and surrounding satellite cities. This assumes that decision-making on combinations of housing and employment involves collective decision-making at a household level. The project explored this issue conceptually and empirically.

Conceptually, although labour market analysis typically focusses on the labour supply and characteristics of individuals, there is an additional literature that seeks to understand the collective labour supply and decision-making in households around job search and the household division of labour (for example Jenkins 2004; Molina, Giménez et al. 2018). For this part of the project, we analyse the distribution of household employment focussing specifically on the inner, middle and outer regions of Sydney and Melbourne, and their satellite cities Wollongong, Newcastle and Geelong.

The project draws on well-established concepts of household employment including jobs-rich and jobs-poor households to provide insight into how aggregate labour supply within and between household groups aligns with the changing spatial distribution of affordable rental supply. This is important in view of the growth of female participation in the workforce, which has been a major driver of increased employment participation, and has also contributed to the growing necessity of a dual or multi-earning household income to access and afford both private rental and purchased housing (Watson and Buchanan 2001; Yates 2002). The method focusses on the employment composition of partnered couple and single-headed household private renters in which assumptions of income pooling and collective labour supply decisions are most likely to apply. We do not examine the employment of group, shared or multi-family renter households where we have no basis for making this assumption.

Additional customised Census data were specified from the ABS that used the imputed data and household income quintiles and affordable rent segments, as described above, along with a range of additional employment variables.[15] The analysis sought to provide an empirical evidence-base on the spatial distribution of jobs-rich to jobs-poor households, operationalised as a continuum. Table 2 shows the employment continuum developed for the project. The analysis is conducted for 2016, as there are no data to enable comparison with 2011 and prior Census years.

[15] It was determined in consultation with the ABS that, due to data quality considerations, all required variables could not be included in one data file and the ABS consultant determined that four files were needed.

Table 2: Employment continuum from jobs-rich to jobs-poor households

	Employment status: meta groups	Employment status: detailed groups
Jobs-rich	Dual full-time	Two earners full-time employed
	Dual full-time or part-time	One earner full-time, one part-time Two part-time earners
	Single full-time	One earner full-time, one NILF One earner full-time
	Single part-time	One earner part-time, one NILF One earner part-time
	Jobs-seeking	One earner full-time, one jobs-seeking One earner part-time, one jobs-seeking One jobs-seeking, one NILF
Jobs-poor	All NILF	No members in the labour force (NILF)

Notes: Excludes group households and households with non-dependent children living at home. In both of these cases additional income pooling may be present. Also excludes households where labour-force status of one or both partners (if partnered) was not stated or recorded as away from work. NILF = not in labour force.

Source: Categories defined by the authors from ABS Census of Population and Housing data (2016).

1.5 Structure of this report

The rest of this report is structured as follows.

- Chapter 2 provides key market context for the analysis of changes in the supply of, and demand for, private rental housing between 2011 and 2016, a period of rapidly escalating house prices and high levels of debt-financed investment in private rental housing.
- Chapter 3 starts to present the findings of our analysis, providing a national overview of short- and longer-term changes in the size and structure of the private rental market.
- Chapter 4 continues this analysis with estimates of the shortages of affordable and available private rental housing for Q1 and Q2 households nationally and for metropolitan and non-metropolitan areas.
- Chapter 5 provides a more detailed spatial analysis examining changes in affordable private rental supply for Q1 and Q2 households in capital cities, within capital cities and in selected satellite cities.
- Chapter 6 presents a brief profile of households who are living in affordable and unaffordable private rental housing, to flesh out which types of households are affected by changes in affordable and available supply.
- Chapter 7 presents the results of our exploratory analysis of household employment participation for those living in affordable and unaffordable private rental housing in selected capital and satellite cities.
- Chapter 8 concludes the report and considers the implications of the findings for policy development.

2 Short- and longer-term context for changes in the private rental market

- 2011–2016 was marked by some resetting of the economy following the ending of the resources boom in 2012, when governments looked to the construction industry to create economic activity and jobs.
- Population growth was still strong due to historically high levels of net overseas migration; much of this growth was channelled into Sydney and Melbourne, adding to demand pressures on the PRS.
- Incomes for Q1–Q3 households remained relatively flat, while incomes for Q4 and particularly Q5 households increased in real terms.
- Australia-wide, house prices rose strongly to 2016 particularly in Sydney and Melbourne, rather than the capitals of resource-rich states (Brisbane and Perth)—unlike the previous intercensal period.
- A contributor to increasing house prices was an increase in the volume of lending to investor-landlords 2011–2016, as well as lending for home ownership.
- The rate of increase in real rents, which had been high 2006–2011, stabilised, and then declined; rents still increased but the increases were smaller.

2.1 Introduction

This chapter examines some market drivers of changes in affordable and available private rental supply for lower income households. The first report of the previous project in this series (Hulse et al. 2014, Chapter 2) outlined the importance of significant demographic and economic shocks in Australia 2006–2011, which affected the private rental market. These were very high rates of migration to Australia before the GFC because of the resources boom (from 2006 onwards), and the economic effects of the GFC after 2009 which, relative to other countries, were mitigated in Australia by the resources boom. The key changes for 2011–2016 discussed in this chapter are framed by the end of the resources boom in 2011 and a refocussing of the economy on investment in housing and construction, with flow-on effects for private rental supply. Where possible, we examine changes 2011–2016 within the context of longer-term trends. This chapter draws primarily on long-term trend data series from the ABS, supplemented by other secondary data.

2.2 Population growth

Between 2011 and 2016, the Australian population grew by 8.8 per cent to reach 23.4m people (up from 21.5m people in 2011). In 2016, most of the population (80 per cent) lived in the mainland eastern states of New South Wales, Victoria and Queensland, as well as the Australian Capital Territory (ABS 2017a). The population is highly urbanised: Australia's eight

capital cities[16] accommodated more than 15 million people or more than two-thirds (67 per cent) of the national population in 2016. Two in five people live in just two cities, Sydney and Melbourne, which have a combined population of 9.3m people—and which are growing rapidly[17] (ABS 2017b). This pattern of urban settlement is important, as most population growth, and most in-migration, is focussed on a few large state capitals, adding additional demand for private rental housing in key metropolitan areas—particularly Sydney and Melbourne.

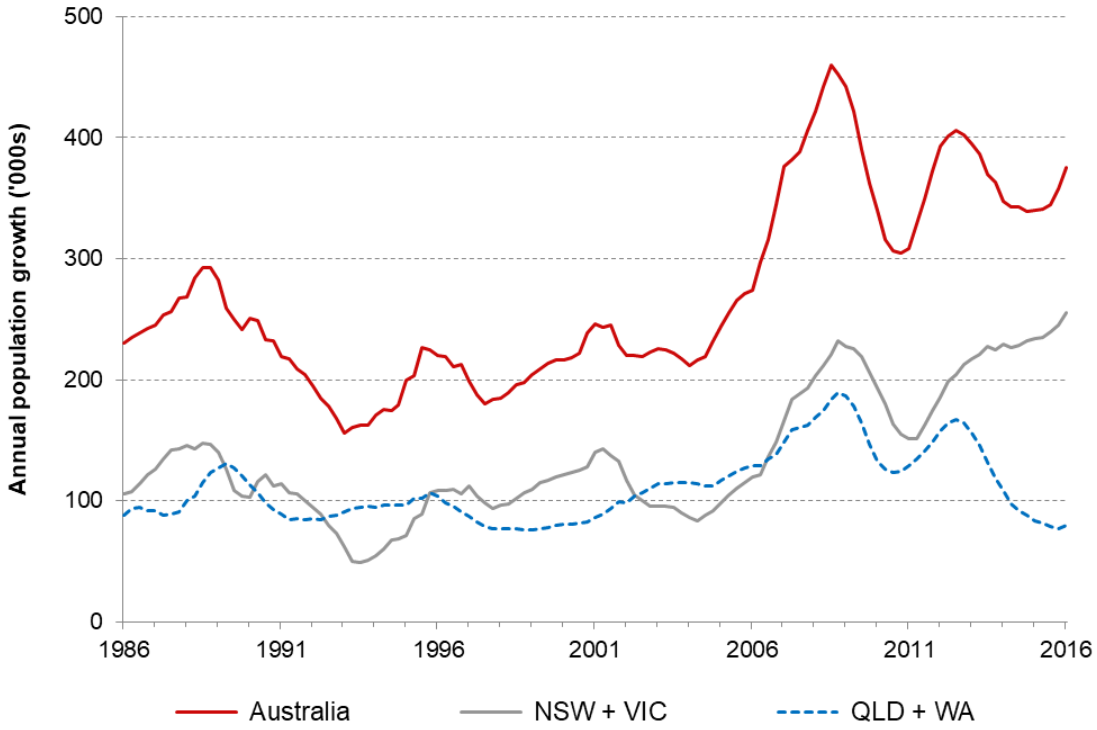
Three main trends in net overseas migration 2011–2016 have implications for the private rental market.

- Firstly, although there was some natural increase in population (with more births than deaths), net overseas migration (NOM: in-migration minus out-migration) has constituted an increasing share of Australia's population growth (Krockenberger 2015). Between 2011 and 2016, NOM totalled more than 1 million people (or 212,308 people per annum), slightly down on NOM in the previous intercensal period 2006–2011, when average annual NOM was 236,980. However, these figures are historically very high, and compare with an average of 79,000 per annum 1990–1999 (Phillips and Simon-Davies 2017). Most humanitarian entrants and migrants in the skilled visa category rent privately on arrival. In contrast, family visa migrants are more evenly spread across private renting, buying with a mortgage and living rent free with family and friends (Australian Survey Research 2011: 36).
- Secondly, throughout the 2000s and accelerating in the 2010s, the composition of migrants changed from one long dominated by permanent migration to temporary migration, especially students and those on temporary work visas (Philips and Simon-Davis 2017). The number of temporary visa holders increased each year 2011–2016, while the NOM for those on permanent visas remained relatively stable. These compositional changes are important. Although many permanent migrants rent privately initially, many move into home ownership over time. However, temporary visa holders are unlikely to want—or be able to—buy homes in Australia and add to demand in the rental market, particularly near universities and areas with a concentration of high-skills jobs.
- Thirdly, there is a clear spatial element to population increase driven by NOM. During the resource boom (2006–2012), there was an increase in international (and interstate) migration to Western Australia and Queensland, but since the boom ended annual population growth has been concentrated in New South Wales and Victoria (see Figure 1). Most of this growth in NOM is in Sydney and Melbourne, where there is a concentration of education, jobs and services, amplifying the economic agglomeration effects discussed in Chapter 1. This change could be expected to dampen demand for private rental housing in Western Australia and Queensland (including some regional towns) by moderating rents, while adding to demand in Sydney and Melbourne with consequent upward pressure on private rent levels.

[16] The eight capital cities comprise six state capitals (Sydney, Melbourne, Brisbane, Perth, Adelaide and Hobart), the nation's capital Canberra (Australian Capital Territory) and Darwin (Northern Territory). The population of capital cities grew 10.5 per cent 2011–2016, nearly double the rate found in other areas (5.7 per cent) (ABS 2017b: 2016 Census: National Capital Cities, https://www.abs.gov.au/ausstats/abs@.nsf/lookup/Media%20Release10)

[17] Sydney's population grew by 9.8 per cent 2011–2016 to reach 4,823,991 usual residents, and Melbourne's population grew by 12.1 per cent to reach 4,485,211 usual residents (ABS 2017b: 2016 Census: National Capital Cities, https://www.abs.gov.au/ausstats/abs@.nsf/lookup/Media%20Release10)

Figure 1: Annual population growth, Australia and selected states, 1986–2016



Source: Derived from ABS (2019a) *Australian Demographic Statistics*, cat. no 3101.0, March 2019: Table 1 *Population change summary—Australia* and Table 2 *Population change, components—states and territories*.

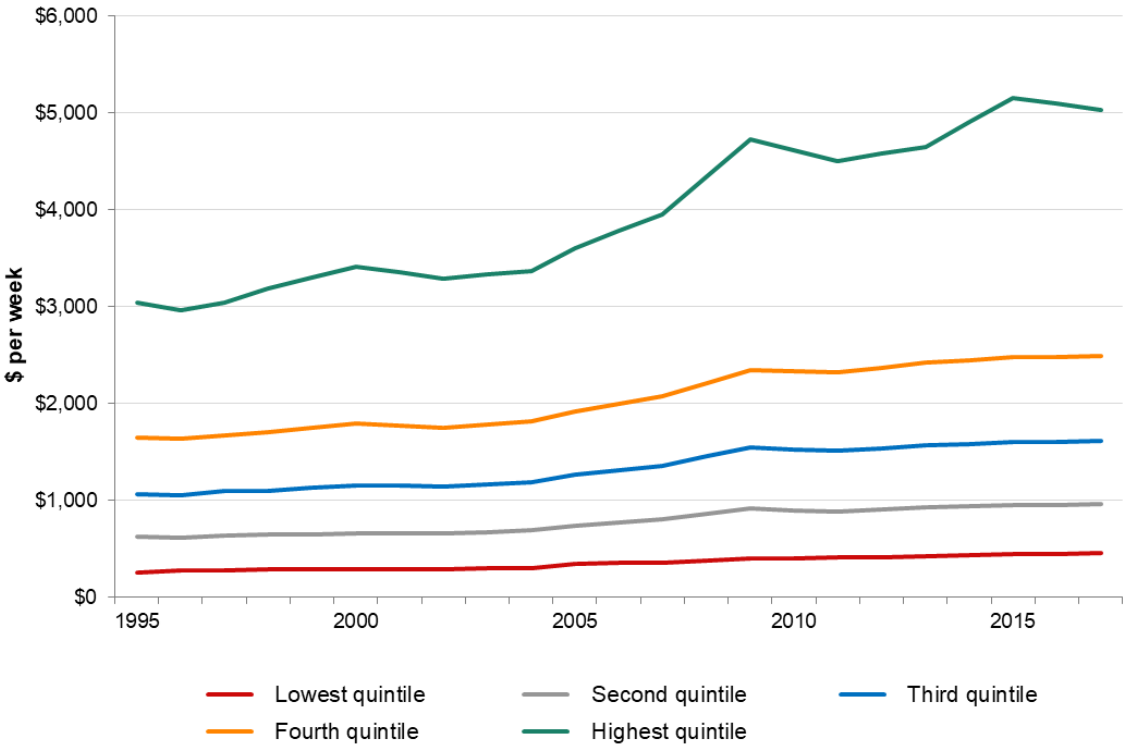
2.3 Household incomes and employment

Household incomes affect the capacity of households to rent (or buy) housing. In the last intercensal period (2011–2016) real gross household incomes were relatively flat except for highest quintile household incomes, which showed an increase. Viewed in the longer term (1996–2016), all household incomes have risen in real terms, but Q4 and particularly Q5 incomes have increased to a greater extent since 2003–04 (Figure 2).[18] In other words, the real gains in income made by Q5 households, and to a lesser extent Q4 households, in the run-up to the GFC of 2008–09 have been retained.[19]

[18] The Productivity Commission (2018: 40) has noted that the trend to income inequality is contested mainly because of changing definitions of income in ABS surveys https://www.pc.gov.au/research/completed/rising-inequality/rising-inequality.pdf. On the other hand, Whiteford (2019) suggests these changes do not explain all of the inequality growth since the mid-1990s or earlier.

[19] We use gross household income as this is a key part of the calculation of affordable housing supply in this project. The overall trends for net equivalised household income by quintile are similar, although the difference between Q5 and other quintiles is not as great when the taxation and equivalisation of income for household type/size are taken into account (not illustrated).

Figure 2: Gross household income by quintile, Australia, 1994–95 to 2015–16



Note: Mean gross household incomes per week calculated by the ABS and expressed in 2015–16 dollars, adjusted using the CPI.

Source: ABS (2018) Household Income and Wealth, Australia: summary of results, 2015-16, cat. no. 6523.0, Table 1.2.

There is also some evidence that inequality in full-time weekly *earnings* by individuals, both men and women, has increased since 2000, by 7 and 9 per cent respectively (Wilkins 2017). Earnings inequality has also increased moderately for both men and women for weekly earnings from *all* jobs, a measure of total waged earnings. Income and earnings (along with wealth) are important determinants of access to quantity and quality of housing (Meen 2001).

Increases in household incomes are important, because they tend to translate into changes in property prices of a similar or greater magnitude—or income elasticity of demand (Abelson, Joyeux et al. 2005; Liu 2019),[20] particularly in capital cities (Liu 2019). A widening income and/or earnings distribution, driven by disproportionately greater increases in the growth of incomes in the top quintile, poses a risk that higher income earners increasingly determine property prices with flow-on effects to areas that are no longer affordable to lower income earners. The effects are, importantly, affected by the responsiveness of housing supply to changes in demand (Matlack and Vigdor 2008). Saiz (2010) and Gyourko et al. (2013) show that where land is scarce, an increasing number of high-income households results in a widening gap between typical and highest-priced locations both between and within metropolitan areas. This crowds out lower income households from high-cost cities or from high-cost regions within cities. Since households in principle can substitute between purchasing and

[20] Time-series estimates in Abelson et al. (2005) find a long-run income elasticity of real house prices of 1.7. A 1% increase in disposable income would raise property prices by 1.7%. Panel data estimates for NSW in Liu (2019) find a somewhat lower elasticity (1.07), but also regional variation within NSW with a higher price responsiveness to income changes in Sydney relative to the remainder of NSW.

renting properties, increases in property prices are expected to also bring about increases in rents (Meen 2001; Saunders and Tulip 2019).[21]

A further factor affecting income inequality in Australia is the long-term increase in part-time employment.

- More than half of part-time workers are casually employed (Cassidy and Parsons 2017). The drivers behind part-time and casualised work are complex. They include continued growth in service-type employment where hours of work are likely to be more varied—for example, hospitality and retail—and labour market reforms that enable firms to adjust more flexibly (hours worked and jobs tenure) to variation in demand for goods and services. The incidence of part-time employment is greater in jobs with below-average pay (Cassidy and Parsons 2017) and those occupied by women.
- Rates of underemployment (wanting to work more hours) are highest among young people aged 15–24 years[22] and at all ages are higher for women than for men.[23] Women and young people are thus the key to increasing household employment participation, particularly among lower income households.

The growth in part-time work, casual employment and underemployment is also a likely driver behind increased aggregate demand for rental accommodation, with access to (and cost of) mortgages often a function of stable and predictable earnings (Campbell, Parkinson et al. 2014; Parkinson, Rowley et al. 2019).

2.4 House prices and rents

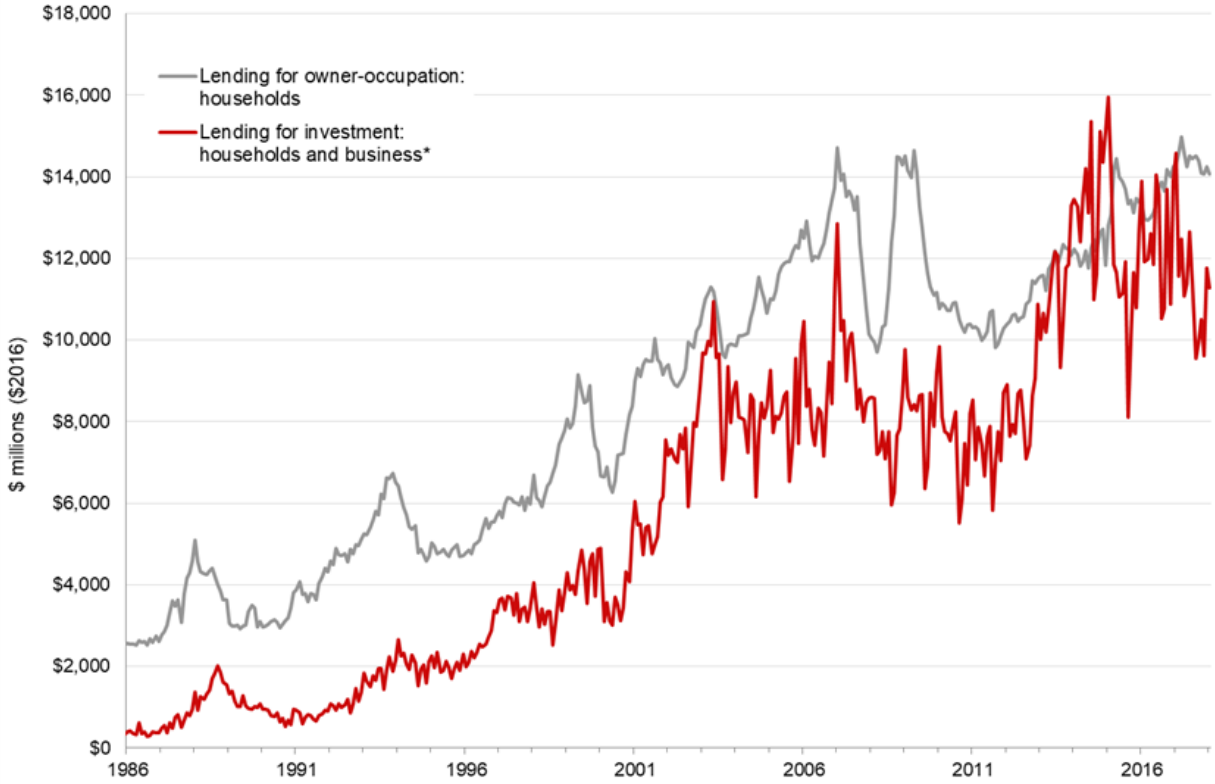
In addition to growth in population and real household incomes discussed earlier, other factors contributing to real housing price and rent increases include interest rates and the responsiveness of new supply to increased demand. Examining the first of these, the Reserve Bank of Australia (RBA) cash rate continued to decline from 4.75 per cent to 1.5 per cent between the end of 2010 and the end of 2016, enabling property purchasers to take out large loan sizes for home ownership and, increasingly, for investment purposes. Figure 3 shows an increase in the volume of lending for both of these purposes. As most of this lending was for the purchase of established homes, high levels of lending for investment is likely to have added to the pressure on house prices, given that investor-landlords have higher levels of income and wealth and receive tax advantages that are not available to home purchasers (Hulse, Martin et al. 2019).

[21] However, this arbitrage relationship does not imply a fixed ratio between house prices and rents. Nor does it imply a proportional change in the cost of owning or renting in the short-run.

[22] Underemployment rates for men aged 15–24 years increased from 11.0 per cent in July 2011 to 15.8 per cent in June 2016, and for women of this age from 15.0 per cent in July 2011 to 20.3 per cent in June 2016 (ABS 2019b cat. no 6202 Table 22).

[23] Underemployment rates for men aged 25 and over hovered around 5 per cent 2011–2016, but for women were 8–10 per cent in this period, depending on age.

Figure 3: Lending for owner occupation and investment dwellings, Australia, 1986–2018



*Notes: Both series are based on monthly figures, CPI-adjusted to $2016. Lending for owner occupation is 'seasonally adjusted' 1986 to 2018. *Figures for investment lending to business and households are 'original' 1986–2018, as from 2002 investment lending to business is not available 'seasonally adjusted'. Investor finance includes refinancing by households across the time period.*

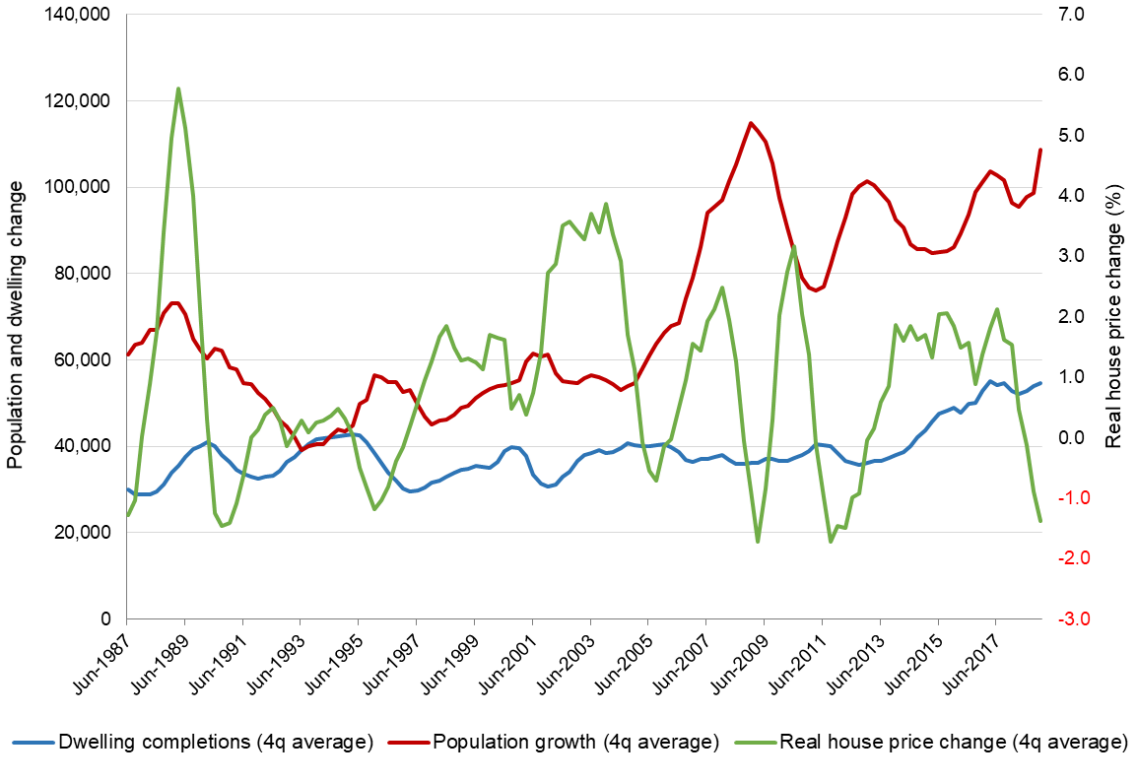
Source: ABS (2019c) *Lending to households and businesses*, Australia, cat. no. 5601.0, Table 2 and ABS (2019d) *Housing Finance, Australia*, cat. no. 5609.0, Table 11 (before 2002).

Given the increases in population and house prices, one might perhaps expect new supply to increase in response. However, from 1989 to 2014 quarterly dwelling completions fluctuated around 39,000 dwellings per quarter, showing little sign of responding strongly either to changes in prices or to population growth rates, though dwelling completions increased somewhat after 2014 (Figure 4). In terms of responsiveness of housing supply to changes in prices, Ball, Meen et al. (2010) find that the overall Australian price elasticity of supply is low. Recent AHURI research find a somewhat higher short-run building approval responsiveness to price changes but concludes that these translate into very low levels of stock expansion (Ong, Dalton et al. 2017: 2). Relatively inelastic housing supply means that demand shocks—from household income and population growth—tend to be capitalised in property prices and rents, rather than in additional dwelling supply.

However, there is some evidence that the responsiveness of non-detached dwellings (multi-family units) to price changes is marginally higher than that of single-family homes (McLaughlin 2012), and this is reflected in some increase in completed dwellings from 2014 onwards. While Figure 4 shows an increase in the rate of dwelling completions from 2014, in a longer perspective, however, dwelling completions as a proportion of population growth declined from the 1990s and only picked up again after 2014. This longer trend masks a substantial increase in the proportion of townhouses, units and apartments, which increased from approximately 33 per cent of new supply in December 2010 to 44 per cent in December 2018 (ABS 2019e: Table 37).

It is not only the quantity of housing supply that is important but also the location of new supply. House price/rent growth and affordability concerns are particularly concentrated in inner and middle suburbs of capital cities that are closer to a greater number and variety of jobs. However, other factors are in play in these suburbs, where existing residents often oppose further housing development of greater density, which contributes to inelastic supply in locations where people desire to live and work. Lack of supply contributes not only to higher prices but also flows through to higher rents in these areas.

Figure 4: Dwelling completions, house price changes and population growth, 1987–2018

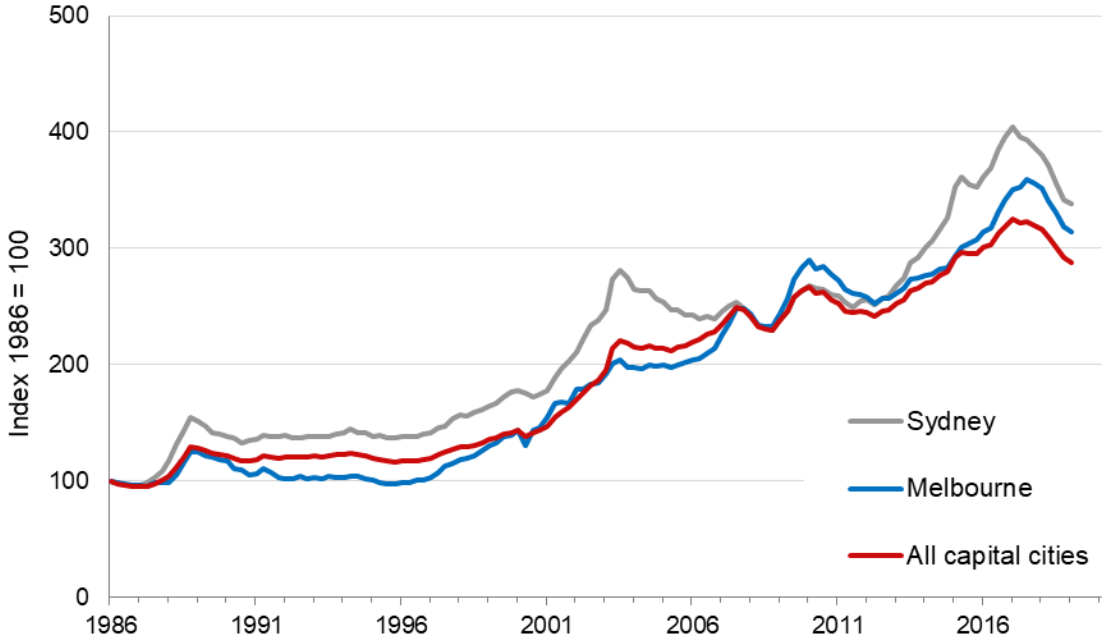


Source: ABS (2019e) *Building Activity*, cat. no. 8752.0 (Table 37); ABS (2019a) *Australian Demographic Statistics*, cat. no 3101.0 (Table 4); ABS (2019f) *Residential property indexes: eight capital cities*, cat. no 6416.0 Table 2, 2005–2018 and Table 8, 1986–2005.

Finally, while higher investor-landlord activity may have exerted an upward pressure on house prices, it may also have taken some pressure off rents, although probably not in the segment of the market that is affordable to lower income households. The high rate of rent increases, which had been a feature of the period 2006–2011, started to moderate from 2016, even in capital cities—including Sydney and Melbourne. Real house prices and rents over the past decades are shown in Figure 5a and Figure 5b.

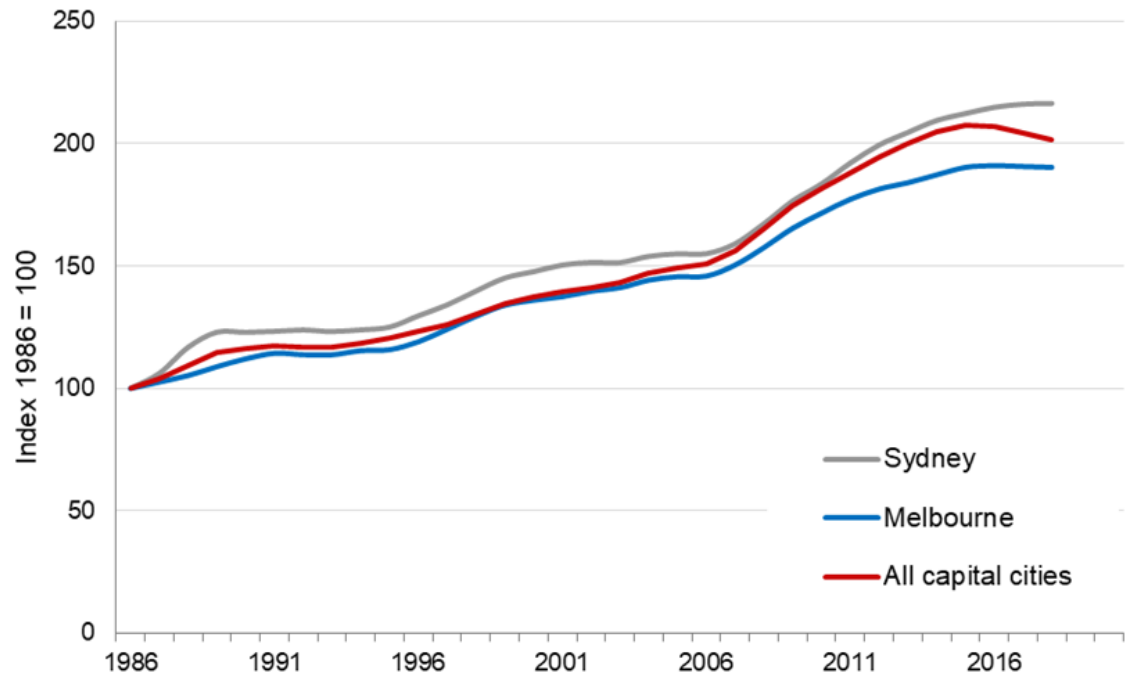
Figure 5: Real dwelling price and rent indexes: 1986–2016

a Prices



Source: ABS (2019f) cat. no 6416.01 Table 1 merged with ABS (2019g) cat. no. 6401.01 Table 1.

b Rents



Note: Capital city rents have been benchmarked to five-yearly Household Expenditure Survey data and interpolated using the rent component of the CPI for intervening years. Data are deflated by household final consumption deflator.

Source: Stapledon (2016; supplementary tables), updated by authors using CPI rent data from ABS (2019g) cat. no 6401.07.

2.5 Summary

The period 2011–2016 was marked by recovery from the GFC and some resetting of the economy following the ending of the resources boom in 2012, when governments looked to the construction industry to create economic activity and jobs.

- Population growth was still strong due to historically high levels of NOM; much of this growth was channelled into Sydney and Melbourne adding to demand pressures on the PRS; the increase in temporary migration rather than permanent migration amplified this effect.
- The economy was still growing, although at a lower rate than prior to the GFC, with some increase in incomes for Q4 and Q5 households. Incomes for Q1–Q3 households remained relatively flat. Rates of underemployment were highest among young people aged 15–24 and women across all working-age groups.
- Australia-wide, house prices rose strongly to 2016, particularly in Sydney and Melbourne rather than the capitals of resource-rich states—Brisbane and Perth—unlike the previous intercensal period.
- A contributor to increasing house prices was a surge in the volume of lending to investor-landlords 2011–2016, as well as lending for home ownership.
- The rate of increase in real rents, which had been high 2006–2011, stabilised and then declined; rents still increased but increases were smaller.
- There was some increase in new housing in response to additional demand, particularly in the multi-unit residential sector in capital cities. Many of these units entered the private rental market, although this appears to be a short-term effect against a long-term trend of decreasing completions relative to population growth.

3 A national-level view of short- and longer-term changes in the size and structure of the private rental market

- The PRS grew nationally at more than twice the rate of all household growth 2011–2016, continuing a trend observed since 2001.
- Growth in the PRS does not mean more of the same; there is evidence of longer-term, structural changes in the sector and the Australian housing system.
- There are proportionately more middle and higher income private renter households at each Census year 1996–2016.
- The PRS continues to house many lower income households (more than in all types of social housing), providing an essential accommodation option for these households.
- The analysis shows a declining stock of private rental dwellings affordable to lower income households nationally 1996–2016, as rents are increasingly concentrated at mid-market levels.

3.1 Introduction

In this chapter, we examine longer-term structural changes in the size and composition of the Australian PRS, which put changes over the intercensal period (2011–2016) in a longer-term context of either 10 or 20 years, as appropriate.

The chapter draws on analysis using the 12 household income and corresponding affordable rent categories developed for previous projects in the series, as outlined in Chapter 1. This approach enables real changes in rents and household incomes to be observed over a 20-year period.

3.2 Private rental sector: size

Nationally, there is continuing and accelerating growth in the absolute and relative size of the PRS.

- The Australian PRS grew by 17 per cent in the five years 2011–2016, more than twice the rate of growth of all households (7 per cent), continuing a trend observed since 2001.
- In 2016, there were 2.02m private renter households or 24 per cent of all Australian households,[24] which is a two percentage point increase in the five years 2011–2016. The percentage shares of home purchasers (34 per cent) and outright owners (31 per cent) each declined slightly (one percentage point) over the same period. Only 4 per cent of

[24] In this series of reports, 'private renter households' exclude those households paying $0 rent—around 36,600 households in 2016. As a result, the proportion of all Australian households renting privately is slightly lower than might be reported elsewhere.

households lived in social housing in 2016, a sector that has not kept pace with household growth from 1996 onwards.

In brief, PRS growth is an important contributor to the restructuring of the Australian housing system. Compared to 20 years ago (1996–2016), private rental and home purchase have increased, whereas social rental and outright ownership have declined, indicating a greater proportion of households who are exposed to market changes in rents and mortgage lending criteria/interest rates, respectively. For the first time in this series (that is, since 1996), intercensal growth 2011–2016 in home purchaser households (5 per cent) was less than the rate of all household growth (7 per cent). The social rental sector declined 2011–2016 after a brief upturn 2006–2011, attributable to the public housing stimulus program following the GFC.

Table A3 in Appendix 2 provides further details of changes in occupied private dwellings in Australia by tenure type for each of the last five Census years (1996, 2001, 2006, 2011 and 2016).

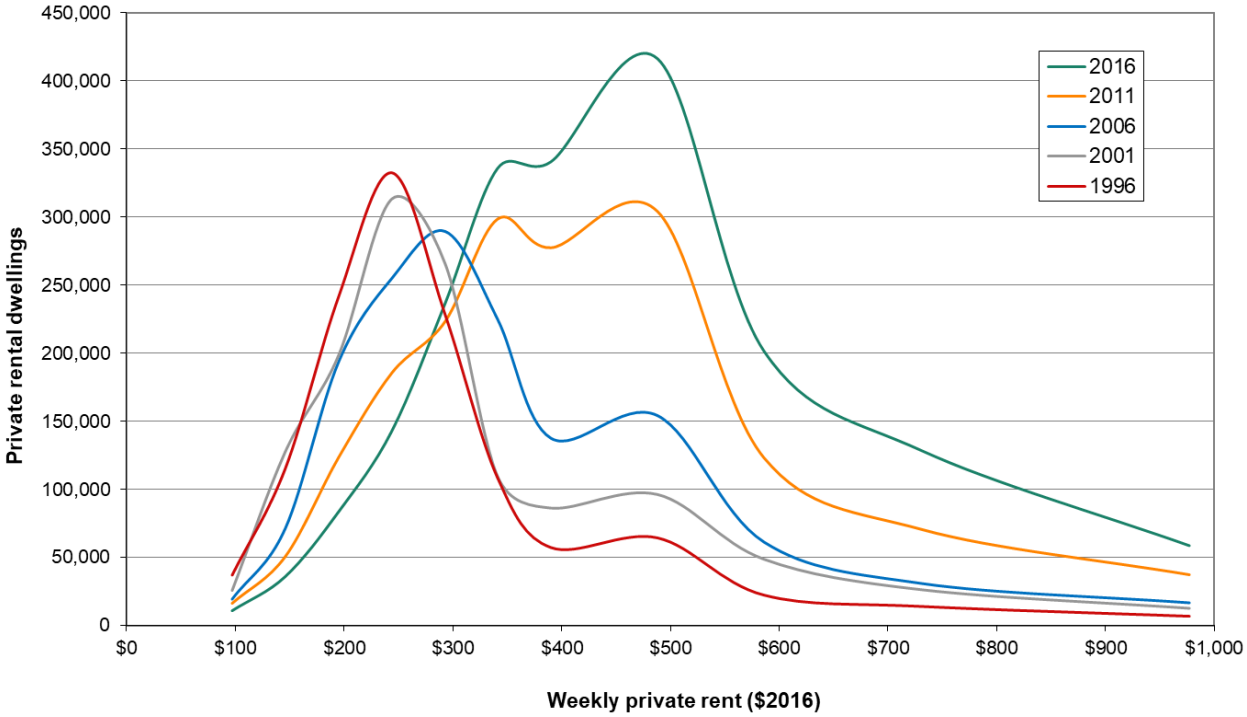
3.3 Private rental sector: structure

3.3.1 Changes in the distribution of real weekly rents

The projects in this series have tracked changes in the distribution of real rents (adjusted for inflation) nationally since 1996, enabling an assessment of long-term structural and short-term cyclical changes in the structure of private rental supply. Updating the Census series over time to 2016 confirms that the concentration of rental at mid-market levels, observed in 2011 as a major change, continued in 2016, as shown in Figure 6. In 2016, rents were strongly clustered between $300 and $480 per week. Conversely, the supply of lower-rent dwellings below (2016) $300 declined further between 2011 and 2016, building on a marked change in the structure of rents between 2006 and 2011.

In 1996 and 2001, rents were concentrated at the lower-rent end of the market, but from 2006 and beyond, as the sector increased in size, lower-rent properties have declined in both absolute and relative terms.

Figure 6: Distributions of private rental dwellings by weekly rent paid, Australia: 1996, 2001, 2006, 2011 and 2016



Note: Derived from 12 rent categories established for the 1996–2001 analysis, and which have been updated to 2016 dollars enabling real changes in the profile of rents paid to be evident.

Source: ABS customised matrices derived from the Australian Census of Population and Housing 1996, 2001, 2006, 2011 and 2016.

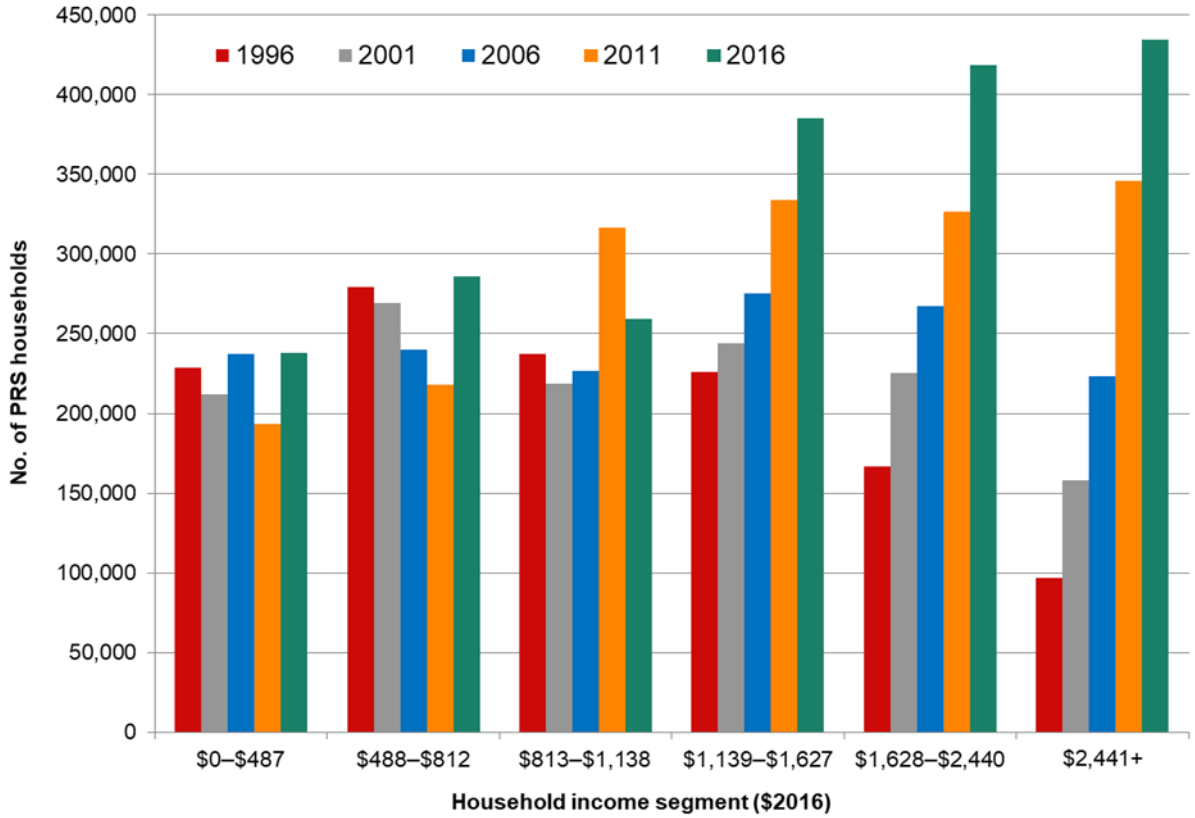
Figure A1 in Appendix 2 illustrates this change in another way, by showing the cumulative number of private rental dwellings by weekly rent segment and the figures are tabulated in Table A4 in Appendix 2. Figure A1 more clearly highlights the *growth* in the size of this stock from 1996 to 2016 rather than its *distribution*, but also highlights that this growth has been at the mid- to high-value of rent stock, and not in that affordable for lower income households.

Figure 6 reveals that the considerable increase in the aggregate supply of private rental dwellings, notably in the decade since 2006, has not resulted in a commensurate increase in lower-rent (affordable) private rental dwellings, but an increased concentration of rentals at mid-market levels. It appears that current policy settings have facilitated an increase in the overall supply of private rental dwellings but demonstrably not at the lower-rent end of the market.

3.3.2 Changes in the household income profile of private renter households

Increases in rent may not matter if the household incomes of private renters also increased. Continuing the broad national picture, it is evident that there has been a disproportionate increase in households with middle and higher incomes who rent privately, particularly over the last 10 years, as shown in Figure 7. Households with gross incomes of (2016) $1,628 per week and above (roughly $85,000 per annum and above) now comprise 42 per cent of all private renter households. In 2006, only 33 per cent of private renter households had income in this range. See Table A5 in Appendix 2 for the tabulated distributions of 1996–2016 PRS household incomes.

Figure 7: Distributions of private renter household incomes, Australia: 1996, 2001, 2006, 2011 and 2016



Note: Based on 12 household income segments (real $) that have been aggregated into six categories to enable easier communication of the main trends. These are not quantiles of any description (e.g. quintiles or quartiles).

Source: ABS customised matrices derived from the Australian Census of Population and Housing 1996, 2001, 2006, 2011 and 2016.

Figure 7 also shows that the *number* of lower income PRS households using this method has remained about the same over 20 years, at about 500,000 households (incomes up to $812/week or $42,000 per annum [$2016]). In 1996, this group comprised about 40 per cent of all PRS households but in 2016, only 25 per cent of PRS households had such incomes because of the growth in the number of households in higher income groups. In other words, the *number* of lower income private renters has remained relatively constant, but the *proportion* has declined because of the growth in private renter households with higher incomes.

The number of private renter households with incomes at the bottom of the scale (up to $487/week or $25,324 per annum) is much the same as it was 20 years ago, despite considerable sector and household growth. This is an income range which, in 2016, included the single rate of major income support payments such as the Age Pension and Disability Support Pension. An interpretation of this finding is that households in this income range cannot find affordable private rental housing and have moved into the informal sector (rooming houses, residential caravan parks, and other types of non-private accommodation) or, in the case of younger people, are remaining within the parental home (Parkinson, James et al. 2018; Parkinson, Rowley et al. 2019).

- Only a quarter of private renter households now have gross household incomes less than $812 per week (or $42,000 per annum [$2016]) compared with nearly a third (32 per cent) on equivalent household income (adjusted for inflation) in 2006 (see Table A5 in Appendix 2).

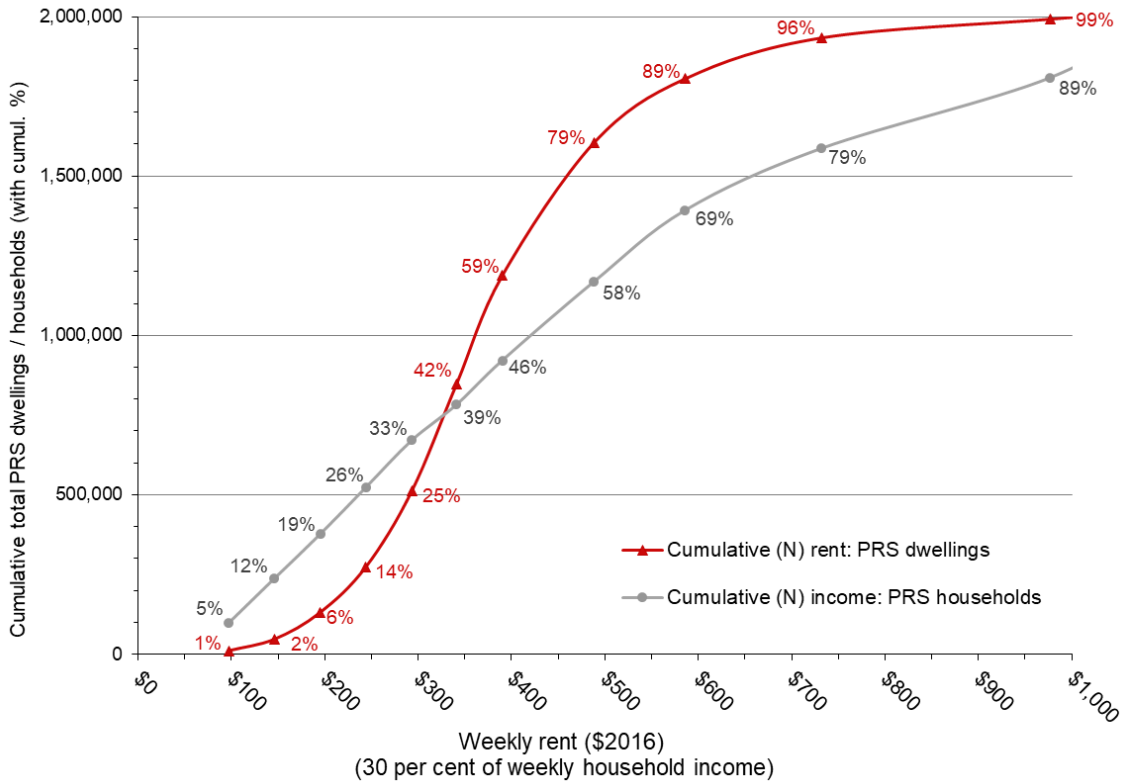
Figure A2 in Appendix 2 illustrates changes in private renter household incomes 1996–2016 in another way, by showing the cumulative distribution of households in the 12 income categories. The graph displays the growth in PRS households 1996–2016, and also the consistent volume of PRS households at the lower end of the income distribution.

3.3.3 Comparing weekly rent and household income distributions

Differences in the cumulative distributions of rental stock according to rent levels (Figure A1 in Appendix 2) and that of the incomes of private renter households (Figure A2 in Appendix 2) can be used to illustrate the extent to which changes in incomes have kept pace with changes in rents in the private rental stock. In 2016, for example, 19 per cent of renter households (377,000 households) had an income of $650 or less, however, only 6 per cent of PRS dwellings (131,000 dwellings) were affordable to them. In 2006, 24 per cent of renter households (356,000 households) had a comparative real income level, but 19 per cent of PRS dwellings (285,000 dwellings) were affordable to them (see Tables A4 and A5 in Appendix 2; also see Figure 8 for the 2016 figures).

The cumulative distributions of PRS household incomes and rents for 2016 are shown together in Figure 8. The graph illustrates the mismatch between the distributions of private renter household incomes and weekly rents. It shows there was an absolute shortage of rental housing in 2016 at rents below about $350 per week, or at rent levels affordable for households with incomes of up to $1,200 per week (in $2016) on the assumption of a 30 per cent affordability rule. This implies that, in 2016, more than one-third of all private renters would not have had access to affordable rental housing even if all the lower-rent stock was made available to them. In other words, this absolute shortage estimate assumes that the stock that is affordable for lower income households is actually made available to them.

Figure 8: Cumulative distributions of weekly rents and private renter household incomes by rent/income segment, Australia, 2016



Source: ABS customised matrix (12 real income and corresponding affordable rent categories) derived from the Australian Census of Population and Housing 2016.

In Chapter 4, shortage estimates are derived in a two-stage process. The first step (the shortage of affordable housing as shown in Figure 8) simply compares the distributions of rental stock with the income distribution of households in the private rental market. The second step (shortage of affordable and available stock) recognises that much of the so-called affordable stock is not actually available to lower income households because it is occupied by higher income households who, in principle at least, could afford the higher rental stock of which there is an adequate supply.

3.4 Policy development implications

The national-level overview shows that the PRS has been growing at twice the rate of all households since 2001, and at an accelerating rate in the last 10 years (2006–2016). However, growth does not mean more of the same. Analysis over the longer term provides strong evidence of what appears to be structural rather than cyclical change in the PRS, namely:

- an increase in privately rented dwellings with mid-market rents, and;
- an increase in private renter households at middle and higher income levels.

These changes have implications for lower income private households (see also Hulse and Yates 2017). The market is not supplying sufficient rental properties for those with household incomes under about $60,000 per annum (about $1200 per week gross) if they are to pay no more than 30 per cent of their income in rent. The challenge is to develop settings that can elicit a greater supply of lower-rent housing—and this challenge has become more urgent in view of our findings.

To this point, we have provided a broad national picture of real changes in rents and household incomes. In reality, of course, these factors play out differently in different spatial contexts and households—particularly those on middle and higher incomes—have some choice as to how much they want to pay in rent.

In Chapter 4, we start to tease out these factors to estimate shortages and surpluses in the supply of affordable housing nationally, and in metropolitan and non-metropolitan regions, and examine the extent to which affordable housing is available to households on Q1 and Q2 incomes.

4 Estimates of shortages of affordable rental housing: national, metropolitan, non-metropolitan

- The big increase in private rental supply nationally 2011–2016 (and 2006–2016) has been in mid-market rentals that are affordable by Q3–Q5 households.
- Q1 households face an acute shortage of affordable supply nationally of 212,000 dwellings (up from 187,000 in 2011).
- This shortage for Q1 households increases to 305,000 (up from 271,000 in 2011) when occupation of the limited affordable stock by higher income Q2–Q5 households is taken into account.
- Most Q1 households are living in unaffordable rental housing: 80 per cent nationally in 2016 and 89 per cent in metropolitan areas in 2016.
- Q2 households have a large surplus of affordable rentals nationally of 491,000 dwellings (down from 521,000 in 2011).
- This surplus becomes a national shortage of 173,000 affordable and available dwellings when occupation of affordable rentals by middle and higher income households—and some very low-income households—is taken into account (up from 122,000 in 2011).
- Affordability for Q2 private renter households worsened 2011–2016 with 36 per cent of Q2 households living in unaffordable housing in 2016, 46 per cent in metropolitan areas.

4.1 Introduction

This chapter estimates shortages of affordable and available private rental housing for lower income households, updating past analyses of Census data (presented previously in Hulse et al. 2014; Wulff and Yates 2001; Wulff et al. 2009; Yates et al. 2004). We provide these estimates nationally, and for metropolitan and non-metropolitan areas, updated for changes in the latest intercensal period 2011–2016. We also include comparison over longer time periods as relevant, notably 2006–2016, when the largest increases in private rental occurred (as discussed earlier). In this chapter, the analysis is based on Australian household income quintiles (Q1–Q5) and corresponding affordable rental segments (R1–R5), which are relative measures, rather than the 12 real household income and rent segments used in Chapter 3.

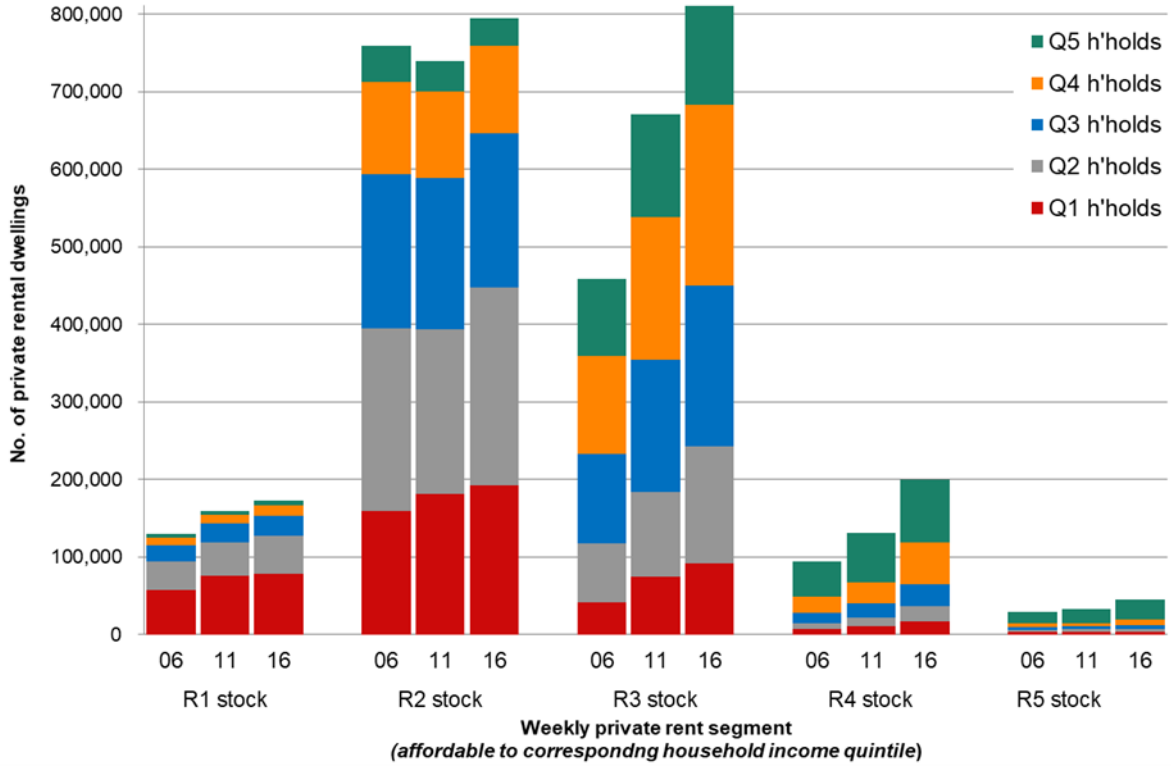
4.2 Market matching: occupation of private rental dwellings by households on different income levels

Before presenting the estimates of shortages and surpluses of private rental housing for Q1 and Q2 households, it is important to consider changes in the supply of dwellings affordable to these lower income households, together with the occupation of these dwellings by households in different income quintiles. Considering household income quintiles and affordable rental

segments together enables us to examine not only supply price points, as in Chapter 3, but also the incomes of households occupying R1, R2, R3, R4 and R5 stock.

The overall national picture on supply is quite clear, as Figure 9 shows. Most PRS dwellings have rents at R2 and R3 levels but the big increase from 2011–2016 (and 2006–2016) was in R3 dwellings with rents between $356 and $560 a week ($2016), which are affordable by Q3–Q5 households.[25]

Figure 9: Income of households (quintile) occupying private rental stock affordable to Q1–Q5 households



Source: ABS customised matrices derived from the Australian Census of Population and Housing 2006, 2011 and 2016.

When occupation of rental properties in different supply segments (R1–R5) by household incomes (Q1–Q5) is taken into account, the nature and extent of market matching can be assessed.

- Of the very few R1 dwellings that are affordable by Q1 households, about half are occupied by Q2 and above households,[26] who could in theory afford to pay more but may want cheaper rentals for a variety of reasons.
- Only around one-third of the large number of R2 dwellings are occupied by Q2 households. A further quarter are occupied by Q1 households (who cannot access R1 rentals), leaving around 43 per cent of the stock occupied by Q3–Q5 households. An interpretation is that

[25] This analysis by quintile corresponds with the findings in Chapter 3 based on the more detailed 12-category household/income rent series.

[26] Figure A3 in Appendix 2 shows the percentage share of each rent segment occupied by the five household income quintiles. However, unlike Figure 9, the graph in Figure A3 does not show the vast difference in the number of dwellings in each segment.

middle- and higher income households can find adequate accommodation at this rent level or they want to save money on rent—for example, to save for a deposit so that they can buy a house.

- Most of the occupants of the big growth segment (R3 stock) are Q3 and Q4 households, but there are also increasing numbers of Q1 and Q2 households who are in very unaffordable housing (discussed further in Chapter 6).
- Supply of R4 and R5 stock remains small and occupied mainly by higher income Q4 and Q5 households.

Understanding this type of market matching enables us to interpret how surpluses and shortages of affordable supply for Q1 and Q2 households are affected by availability once occupation by middle and higher income households is taken into account.

4.3 Estimates of shortages of affordable and available private rental housing: national, metropolitan and non-metropolitan regions

4.3.1 Estimating shortage for very low-income (Q1) households: national, metropolitan and non-metropolitan regions

The situation for Q1 households has continued to deteriorate (2011–2016) as there are increased shortages in the supply of R1 dwellings that they can afford. Estimates of shortages for the last three Census years are given in Table 3.

Table 3: Estimates of shortage or surplus of affordable and available stock and affordability outcomes for Q1 private renter households, Australia, 2006, 2011, 2016

	Shortage/surplus of affordable stock			Shortage of affordable and available stock			Total number of Q1 households and % of these paying unaffordable rents		
	2006	2011	2016	2006	2011	2016	2006	2011	2016
Australia	–138,000	–187,000	–212,000	–211,000	–271,000	–305,000	268,000 79%	347,000 78%	384,000 80%
Metro regions	–107,000	–143,000	–165,000	–134,000	–171,000	–197,000	155,000 87%	196,000 88%	221,000 89%
Non-metro regions	–31,000	-44,000	–46,000	–76,000	–100,000	–108,000	113,000 68%	153,000 66%	163,000 66%

Note: Table A6 in Appendix 2 shows the steps required to calculate the above 2016 Q1 shortage figures.

Source: ABS customised matrices derived from the Australian Census of Population and Housing 2006, 2011 and 2016.

The headline findings of this analysis are:

- The absolute shortage of R1 dwellings affordable for Q1 households continues to increase—in 2016, this shortage was 212,000 dwellings nationally.

- Much of this shortage (78 per cent) is in metropolitan regions, where there was a shortage of 165,000 dwellings for Q1 households.
- The shortage in non-metropolitan regions has also increased slightly to 46,000 dwellings affordable to Q1 households.

As highlighted in Figure 9, it is also important to consider occupation of affordable rental housing by middle-and higher income households. When stock availability is taken into account in this way:

- There was a national shortage in 2016 of 305,000 dwellings that are affordable and available for very low-income households—an increased shortage of 34,000 dwellings since 2011.
- Approximately two-thirds of this shortage of affordable and available housing is in metropolitan regions and one-third in non-metropolitan areas.

The affordability outcomes for lower income households are clear. Nationwide, four in five of the 384,000 Q1 private renter households in 2016 are living in unaffordable rental housing, and the situation is worse in metropolitan regions where almost nine in ten Q1 private renter households live in unaffordable housing. These figures do not take into account discouraged renters who have moved into the informal sector or have returned to, or are remaining in, the parental home (Parkinson, James et al. 2018; Parkinson, Rowley et al. 2019). Figure A4 in Appendix 2 charts the key figures in the (national) shortage estimates for 2006, 2011 and 2016, and clearly displays the key affordability issue for Q1 PRS households: an acute shortage of affordable supply.

4.3.2 Estimating shortages for low-income (Q2) households: national, metropolitan and non-metropolitan regions

The situation facing Q2 households has also deteriorated but the problem is a different one: it is about availability rather than affordable supply, as shown in Table 4.

Table 4: Estimates of shortage or surplus of affordable and available stock and affordability outcomes for Q2 private renter households, Australia, 2006, 2011, 2016

	Shortage/surplus of affordable stock			Shortage of affordable and available stock			Total number of Q2 households and % of these paying unaffordable rents		
	2006	2011	2016	2006	2011	2016	2006	2011	2016
Australia	+528,000	+521,000	+491,000	–87,000	–122,000	–173,000	360,000 24%	378,000 32%	476,000 36%
Metro regions	+303,000	+255,000	+216,000	–63,000	–94,000	–136,000	220,000 29%	228,000 41%	296,000 46%
Non-metro regions	+224,000	+266,000	+275,000	–24,000	–28,000	–37,000	141,000 17%	150,000 19%	180,000 20%

Note: Table A7 in Appendix 2 shows the steps required to calculate the above 2016 Q2 shortage figures.

Source: ABS customised matrices derived from the Australian Census of Population and Housing 2006, 2011 and 2016.

There is a substantial surplus of PRS dwellings affordable to Q2 households—that is, R1 and R2 dwellings—although the surplus is declining somewhat nationally as the national supply of R2 dwellings appears to have plateaued (unlike the large increase in R3 dwellings). This surplus occurs in both metropolitan and non-metropolitan regions although, while the surplus has been increasing in non-metropolitan areas, it has decreased substantially in metropolitan regions.

The problem facing Q2 households is not supply, but availability. Figure 9 shows that much of the key R2 housing stock (affordable to Q2 households) is occupied by households on middle and higher incomes (Q3–Q5), a demographic that has been increasing—as discussed in Chapter 3—but also some Q1 households for whom there is insufficient supply of affordable R1 accommodation.

As a result, the gross surplus for Q2 households becomes a national shortage of affordable and available rental housing when occupation by other income groups is taken into account.

- Although nationally there remains a large surplus of 491,000 PRS dwellings for Q2 households, when availability is taken into account, this becomes a shortage of 173,000 PRS dwellings affordable and available for Q2 households nationwide.
- The shortage of affordable and available dwellings for Q2 households is mainly in metropolitan regions (136,000 dwellings), but the shortage in non-metropolitan regions, while not as large (37,000) has also been increasing.

The outcome of these changes is that higher percentages of Q2 households are living in unaffordable housing compared with five or 10 years ago.

- More than a third of the 476,000 Q2 private renter households across Australia are now living in unaffordable housing, up from just under one-quarter 10 years ago.
- The problem is more acute in metropolitan regions, where 46 per cent of Q2 households (136,000 households) have affordability problems compared to 20 per cent (37,000 households) in non-metropolitan regions.

Figure A5 in Appendix 2 charts the key figures in the national shortage estimates for Q2 PRS households in 2006, 2011 and 2016. That the problem faced by Q2 households is one of availability, rather than supply, is highlighted by the clear surplus of affordable (R1+R2) dwellings. Chapter 6 investigates which types of Q1 and Q2 households are living in unaffordable rentals, the severity of their affordability outcomes, and provides a more nuanced spatial analysis of where these outcomes are concentrated.

4.4 Policy development implications

There are increasing shortages of affordable, and affordable and available, housing for Q1 and Q2 households nationally, and in metropolitan and non-metropolitan regions.

- There is an acute shortage of rental housing that is affordable to Q1 households, and this situation is exacerbated by the occupation of some affordable R1 stock by households on Q2–Q5 incomes. The main problem is one of supply.
- The shortage of affordable and available private rentals for Q2 households increased 2011–2016, intensifying a trend observed 2006–2011. Put simply, the problems have moved further up the household income scale. The problem facing Q2 households is a different one to that facing Q1 households; it is primarily one of availability, since much of the considerable stock that Q2 households can afford is occupied by middle and higher income households (and some Q1 households).

Policy development must differentiate between these different issues.

- There is an urgent need to develop additional rental housing affordable by Q1 households—that is, below 2016 $202 per week—as the private rental market does not generate rentals at this level even when there is an overall increase in supply. It is also essential that rents be kept at affordable levels for the Q1 households. The only practical means of doing this appears to be a substantial capital investment in new social housing supply with appropriate management models for allocation to households and to retain affordable rents. Our research suggests that at least 200,000 additional units are currently needed, requiring a minimum program of 20,000 new units a year for 10 years.
- Policy development is required to improve the increasing problems of availability of affordable dwellings for Q2 renter households who can afford rents up to $355 per week. This would appear to be the market for new types of affordable housing and could include a variety of not-for-profit models (such as housing associations, community housing providers) and for-profit models (such as Build to Rent).

5 Affordable private rental supply in capital cities, sub-city areas, and selected satellite cities

- There is a growing shortage in supply of affordable private rental dwellings for Q1 households across all capital cities, city sub-regions and satellite cities. Availability exacerbates this, but is not the main reason for the shortages.
- Sydney had an absolute shortage of affordable rentals for Q2 households in 2016—the first time this has ever occurred anywhere in the period covered by past analyses in this series (1996–2016). Affordable supply for Q2 households decreased across inner, middle and outer suburbs.
- The other capitals had a surplus of supply affordable to Q2 households and the problem was primarily one of availability. Melbourne and Brisbane had an increasing supply of private rental dwellings affordable to Q2 households 2011–2016, particularly in the outer suburbs.
- The situation for Q2 households in satellite cities varies, with Gold Coast and Sunshine Coast (Brisbane, QLD) and Newcastle and Wollongong (Sydney, NSW) having the greatest shortages of affordable and available supply.

5.1 Introduction

To this point, we have presented the national picture of shortages of affordable private rental housing, with some consideration of metropolitan and non-metropolitan regions in the calculation of shortages of affordable and affordable/available supply for lower income households. Clearly, geography matters, and private rental housing markets differ spatially, which affects the supply of affordable and available private rental dwellings for lower income households. In this section, we examine changes in the supply of affordable and available housing in capital cities, capital city sub-regions, and satellite cities for Q1 and Q2 households.

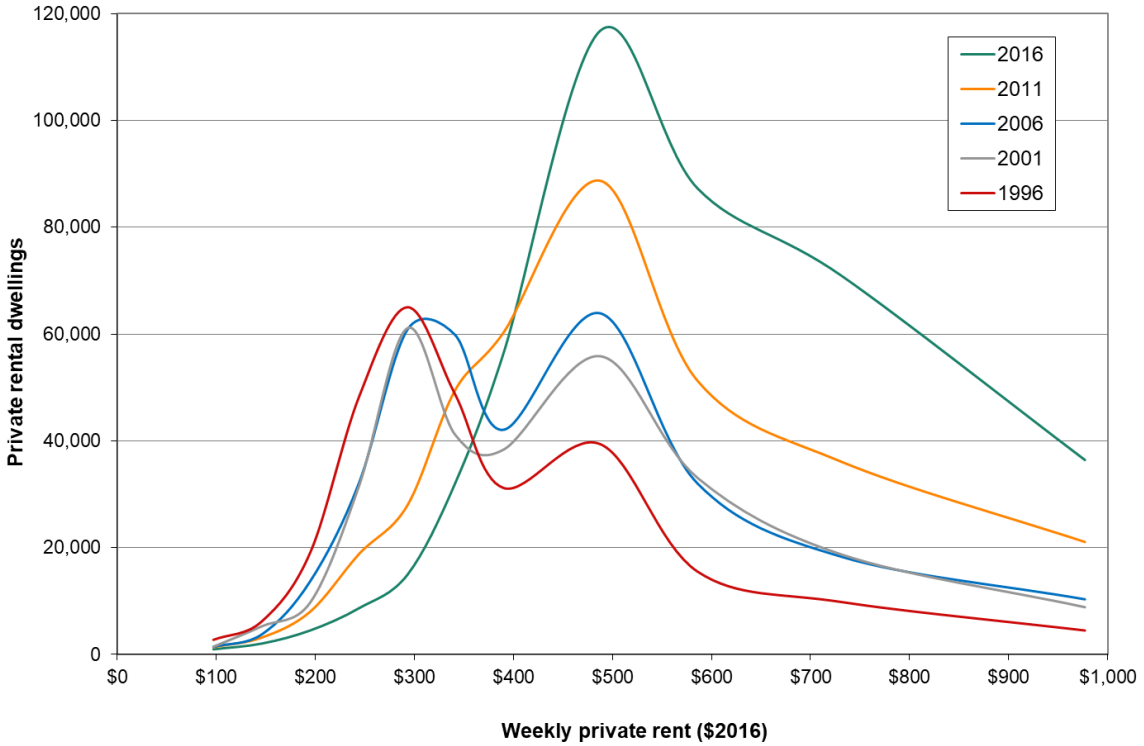
5.2 Capital cities

We saw in Chapter 3 and Chapter 4 that affordable and available private rental housing supply for lower income households has decreased in metropolitan regions. In this section, we examine some commonalities and also some differences in the way in which the private rental market operates in Australia's capital cities.

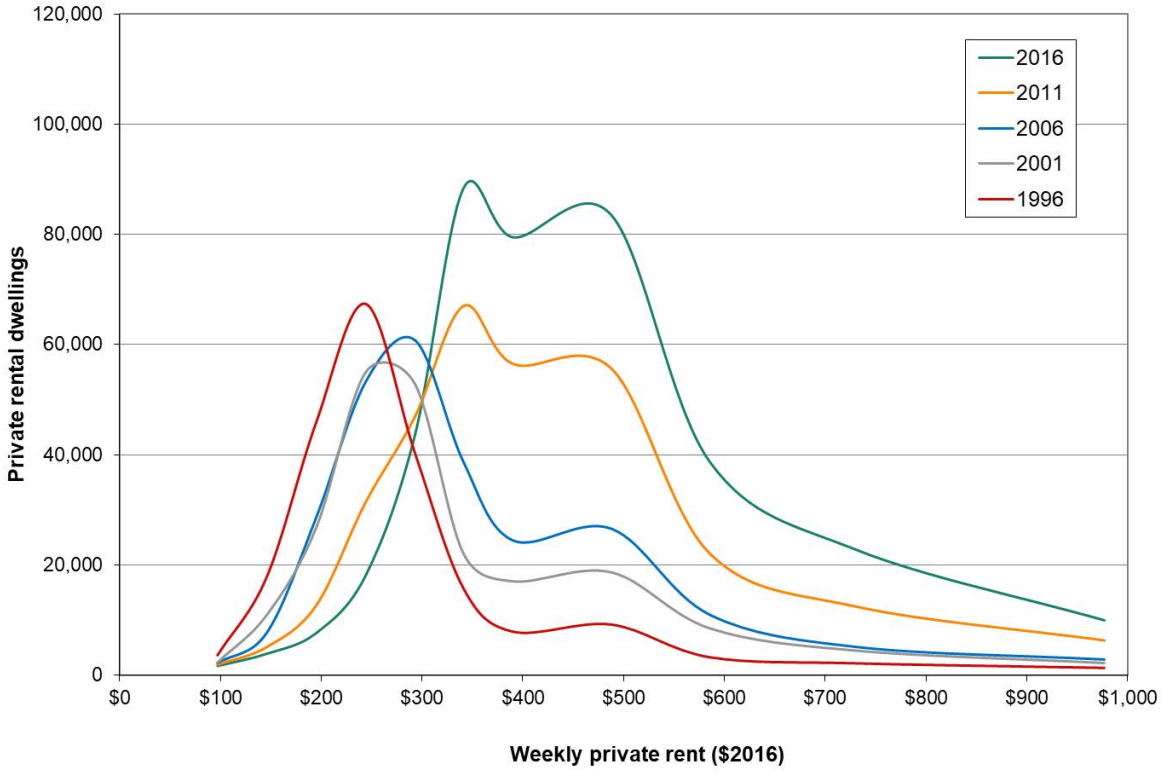
To put this into context, Figure 10 a–c shows changes in the distribution of rents in Australia's three largest cities, Sydney, Melbourne and Brisbane, using the 12 affordable rent categories that were used in Chapter 3 (Figure 6).

Figure 10: Distributions of private rental dwellings by weekly rent paid, Sydney, Melbourne and Brisbane: 1996, 2001, 2006, 2011 and 2016

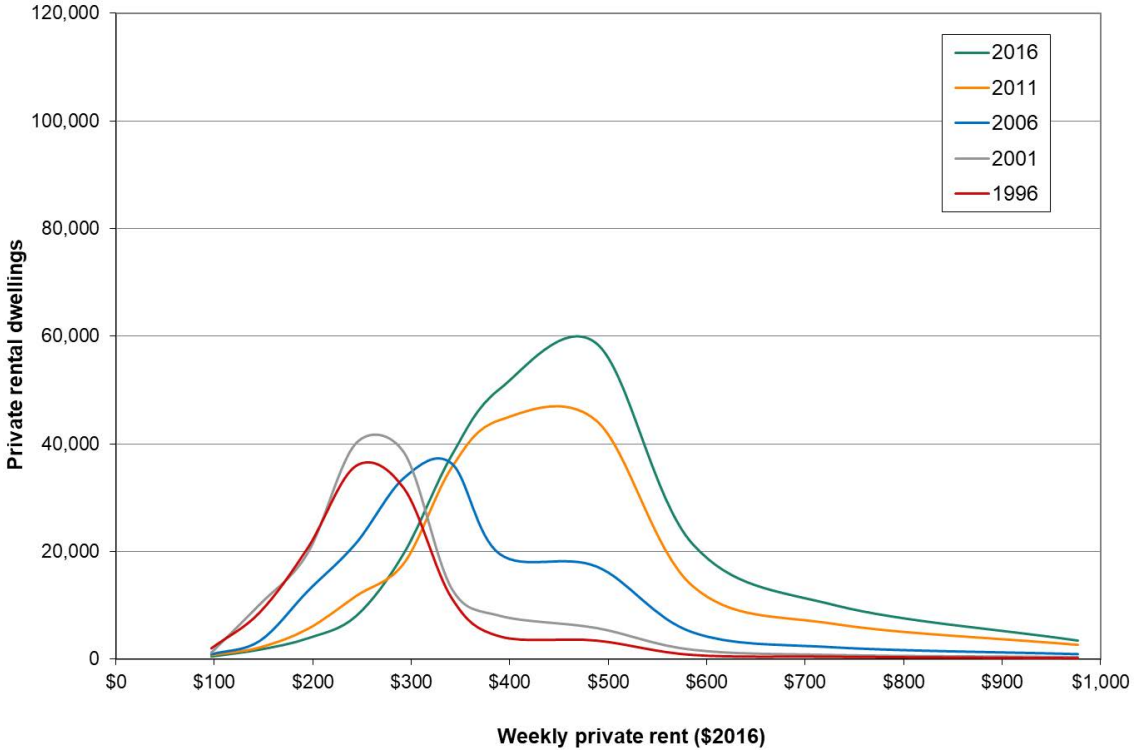
a Sydney



b Melbourne



c Brisbane



Source: ABS customised matrices derived from the Australian Census of Population and Housing 1996, 2001, 2006, 2011 and 2016.

Figure 10 enables an assessment of changes in the longer-term structure of the private rental market in these three cities and some of the differences between them.[27] It is about changes in affordable supply; we will consider availability later in this chapter.

- Most striking is the changing profile of the rental market in Sydney, where the supply of affordable rentals declined dramatically 2011–2016 (and 2006–2016), with a large increase in private rental dwellings affordable to middle- and higher income households.
- The profile in Melbourne is roughly akin to the national profile presented in Chapter 3 (Figure 6)—that is, with a decrease in rental dwellings affordable to lower income households—but not to the extent evident in Sydney.
- The Brisbane private rental market saw a decrease in affordable rents particularly 2006–2011, but this decrease slowed somewhat 2011–2016.

5.2.1 Estimating shortages for Q1 households in capital cities

The growing shortages of private rented dwellings which are i) affordable and ii) affordable and available for Q1 households in each capital city are presented in Table 5.

[27] This is the first time in this series of projects that analysis of real changes in affordable rent categories over time has been presented at the capital city scale.

Table 5: Shortage of affordable and available stock for Q1 private renter households, capital cities, 2006, 2011 and 2016

	Shortage/surplus of affordable stock			Shortage of affordable and available stock			Proportion (%) of low-income (Q1) households paying unaffordable rents		
	2006	2011	2016	2006	2011	2016	2006	2011	2016
Sydney	–40,400	–47,000	–49,700	–44,500	–52,600	–56,000	93	92	92
Melbourne	–31,700	–43,200	–52,600	–40,200	–51,800	–62,800	87	88	90
Brisbane	–15,400	–22,500	–24,900	–19,100	–26,300	–29,600	87	89	89
Adelaide	–7,800	–12,000	–16,800	–11,900	–16,300	–21,100	79	80	84
Perth	–9,900	–14,700	–16,700	–15,300	–18,600	–20,700	79	87	89
Hobart^	–1,000	–2,000	–2,500	–2,100	–3,000	–3,700	68	71	72
Darwin^	–300	–500	–400	–600	–700	–700	81	86	88
Canberra^	–800	–1,300	–2,000	–1,200	–1,700	–2,700	89	90	90

^ *Very low counts in these cities: caution should be exercised when interpreting these figures. Table A6 in Appendix 2 includes the count of Q1 households for each capital city for 2016.*

Source: ABS customised matrices derived from the Australian Census of Population and Housing 2006, 2011 and 2016.

Uniformly across these cities, shortages for Q1 households increased on each of these indicators 2011–2016, building on increases in the previous intercensal period (2006–2011).

- The main contributor to shortages in each capital city is lack of affordable supply, not occupation by households on higher incomes, which serves only to exacerbate a supply problem.
- Not surprisingly, the greatest numerical shortages in 2016 were in the two largest capitals (Sydney and Melbourne), but shortages have increased in some of the smaller capitals including Adelaide and Perth.
- Affordability outcomes for Q1 households are very poor across all the capitals, indicating widespread housing affordability problems.

5.2.2 Estimating shortages for Q2 households in capital cities

In contrast, the supply of housing affordable to Q2 households—that is, R1 and R2 dwellings—in capital cities shows some interesting variations, as shown in Table 6.

- There was an absolute shortage of affordable housing supply for Q2 households of 5,900 dwellings in Sydney in 2016, which was a turnaround from a surplus of 35,800 affordable dwellings for these households in 2011. This is the first time in this series of projects—that is, since 1996—that an absolute shortage of dwellings affordable to Q2 households has been identified anywhere.
- Melbourne recorded the largest surplus of stock for Q2 private renter households at 96,900, a slight decrease on the surplus of 101,800 recorded in 2011.
- Other capitals generally had a reduced surplus; the exception was Perth, where the surplus was about the same as in 2011, reflecting an easing of the rental market in that city after the end of the resources boom.

When occupation of the stock that is affordable to Q2 households (R1 and R2 stock) by higher Q3–Q5 households (and some very low-income Q1 households) is considered, in all capital cities, surpluses become shortages and those shortages have increased 2011–2016 except for Darwin (see Table 6).

Table 6: Shortage of affordable and available stock for Q2 private renter households, capital cities, 2006, 2011 and 2016

	Shortage/surplus of affordable stock			Shortage of affordable and available stock			Proportion (%) of lower income (Q2) households paying unaffordable rents		
	2006	2011	2016	2006	2011	2016	2006	2011	2016
Sydney	57,800	35,800	–5,900	–30,300	–40,500	–60,000	44	55	71
Melbourne	103,600	101,800	96,900	–13,000	–20,400	–34,300	22	32	36
Brisbane	45,000	37,100	41,200	–11,200	–15,900	–20,500	31	43	41
Adelaide	35,100	41,700	41,900	–2,500	–3,500	–5,300	12	16	18
Perth	51,200	28,500	29,100	–3,700	–10,500	–11,100	14	43	47
Hobart	6,200	7,500	8,300	–600	–600	–800	15	16	14
Darwin^	2,400	900	1,700	–500	–900	–700	31	59	59
Canberra^	2,000	1,300	2,500	–1,700	–2,100	–3,300	60	70	58

^ *Low counts in these cities: caution should be exercised when interpreting these figures. Table A7 in Appendix 2 includes the count of Q2 households for each capital city for 2016.*

Source: ABS customised matrices derived from the Australian Census of Population and Housing 2006, 2011 and 2016.

- Sydney has the greatest shortage of affordable and available stock at 60,000 dwellings, up from 40,500 in 2011.
- Melbourne, Brisbane and Perth also had significant shortages in 2016 that were greater than in 2011.
- Shortages of affordable and available housing for Q2 households in Perth were much the same as in 2011.
- Although the numbers are not as large, reflecting their small populations, shortages of affordable and available private rentals for Q2 households have also increased in Adelaide, Canberra and Hobart.

Not surprisingly, therefore, the affordability outcomes for Q2 households living in capital cities have generally declined since 2011.

- In Sydney, 71 per cent of Q2 private renter households did not live in affordable housing in 2016 (up markedly from 55 per cent in 2011). This contrasts with Melbourne where the proportion of Q2 renters living in unaffordable housing was on the national average in 2016 at 36 per cent.
- In Canberra and Darwin, a majority of Q2 renter households were also in unaffordable housing in 2016.
- The proportion of Q2 households living in unaffordable rentals in Perth and Brisbane in 2016 remained the same as in 2011.

The results indicate that Sydney now has an absolute shortage of dwellings affordable to Q2 households, exacerbated by an availability problem—with the result that 70 per cent of Sydney Q2 private renter households are not living in affordable rental housing. The other capitals have a considerable surplus of dwellings affordable to Q2 households—although this is declining—but there is a problem of availability, as much of this accommodation is occupied by middle and higher income households (and some very low-income households). As a result, affordability outcomes have generally deteriorated across capital cities.

5.3 Changes in the supply of affordable housing in sub-regions of major capitals

In addition to variations between cities in the supply of affordable housing for Q1 and Q2 households, there is also considerable variation within cities, which we consider in this section.

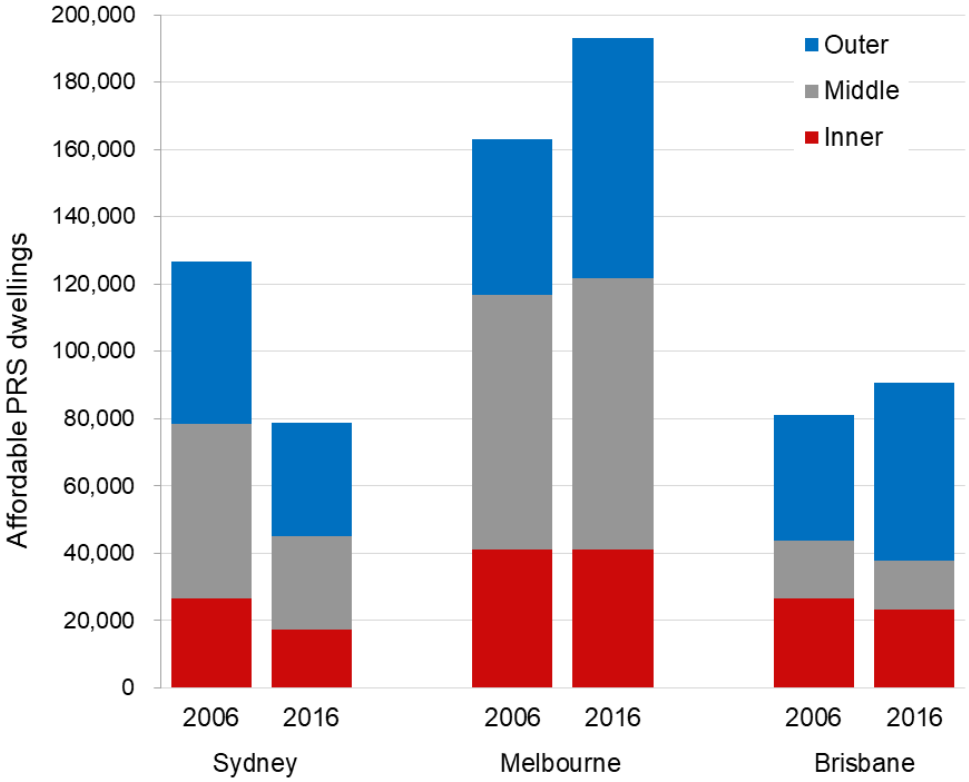
5.3.1 Changes in the supply of affordable private rental dwellings, 2006–2016: Sydney, Melbourne and Brisbane, inner, middle and outer areas

We have seen earlier that there is very little supply of R1 rental properties (affordable for Q1 households) anywhere in Australia's largest cities. Details are provided in column 2 of Table A6 in Appendix 2.

In this section, we explore further the spatial dimensions of stock affordable to Q2 households—that is, R1 plus R2 rentals—within the biggest capital cities: the inner, middle and outer areas of Sydney, Melbourne and Brisbane.[28] The results are provided in Figure 11 and show some interesting differences both between and within these cities.

[28] Figures for other major capitals are not available according to an inner/middle/outer split due to ABS boundaries.

Figure 11: Changes in the spatial distribution of affordable private rental dwellings (R1 plus R2) for Q2 households, selected capital cities, 2006 and 2016



Note: Refers only to affordable supply, without taking availability into account.

Source: ABS customised matrices derived from the Australian Census of Population and Housing 2006 and 2016.

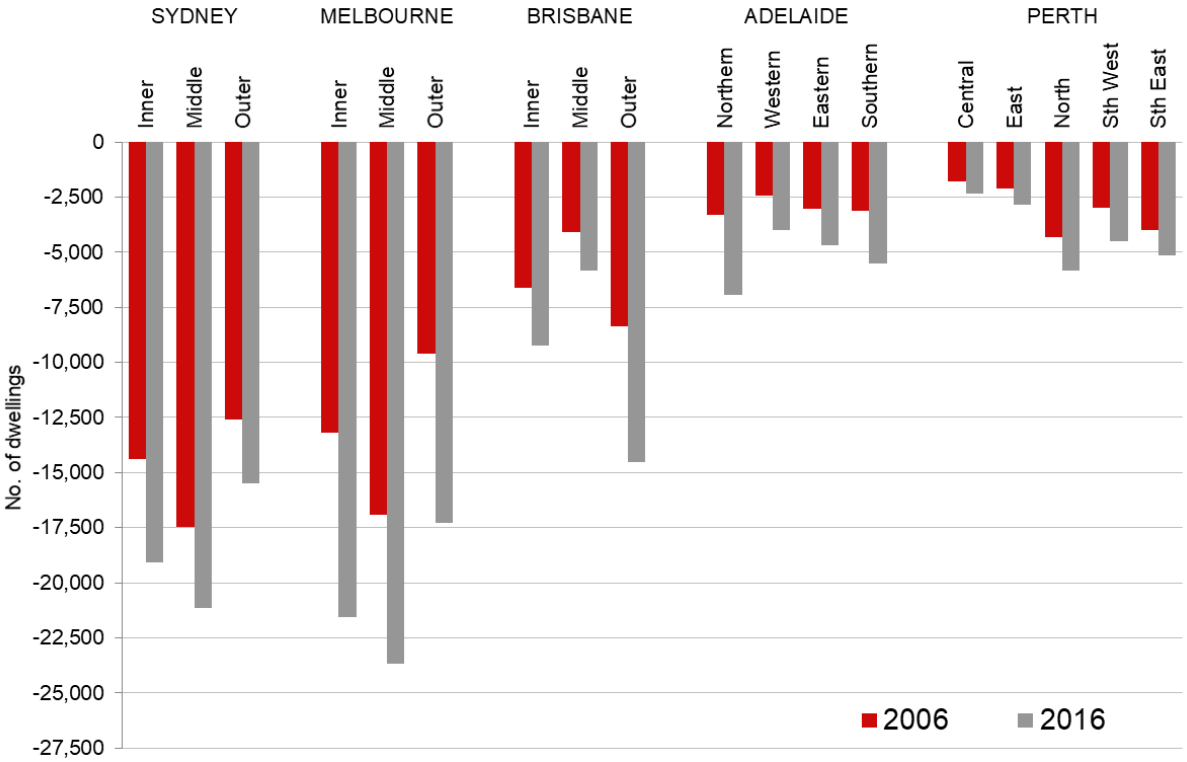
The situation in Sydney contrasts with that of Melbourne, and to a lesser extent Brisbane, where there have been some increases in R1 plus R2 supply. There is very little supply affordable to Q2 households in Sydney's inner and middle suburbs, and supply in outer suburbs has also declined. In contrast, there has been an increase in the supply of dwellings affordable to Q2 households in Melbourne in middle suburbs and, increasingly, in outer suburbs—a pattern that is also evident in Brisbane.

5.3.2 Changes in the supply of affordable and available private rental housing for Q1 and Q2 private renter households, major capital cities, 2006–2016

When availability is taken into account, the analysis shows increased shortages for Q1 households across all capitals, with decreases in affordable and available supply evident across sub-regions of major cities[29] over the ten years 2006–2016, as indicated in Figure 12. This is particularly evident in Sydney and Melbourne, but there are also increasing shortages across all types of sub-regions in Brisbane, Adelaide and Perth. Table A6 in Appendix 2 tabulates the Q1 2016 results.

[29] Note that we follow ABS Statistical Subdivisions (SSDs) from 2006, which do not enable aggregation to inner, middle and outer sub-regions in Perth and Adelaide. Numbers are insufficient in Hobart, Canberra and Darwin to do this analysis.

Figure 12: Shortage of affordable and available dwellings for Q1 private renter households, sub-regions of five capital cities, 2006 and 2016



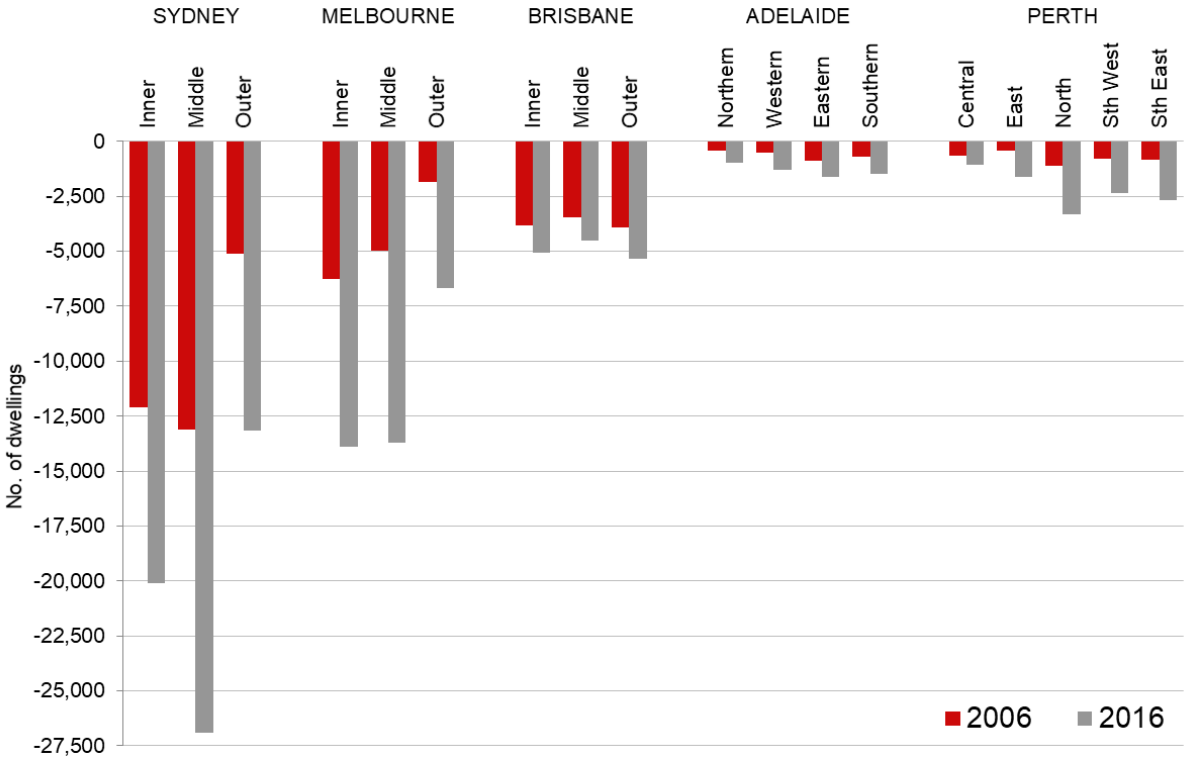
Source: ABS customised matrices derived from the Australian Census of Population and Housing 2006 and 2016.

When we examine changes in affordable and available supply for Q2 households, a different picture emerges (Figure 13):

- Between 2011 and 2016, there was a hollowing out of affordable and available supply for Q2 households in the middle suburbs of Sydney, following decreases in the inner suburbs 2006–2011.
- In Melbourne, decline in affordable and available supply for Q2 households is considerably less than for Sydney and more evenly spread across sub-regions, as is the case with Brisbane.

In Perth and Adelaide, the shortage of affordable and available supply for Q2 households is lower numerically (commensurate with lower populations), but also appears to be more evenly spread between city sub-regions. Table A7 in Appendix 2 tabulates the Q2 2016 results.

Figure 13: Shortage of affordable and available dwellings for Q2 private renter households, sub-regions of five capital cities, 2006 and 2016



Source: ABS customised matrices derived from the Australian Census of Population and Housing 2006 and 2016.

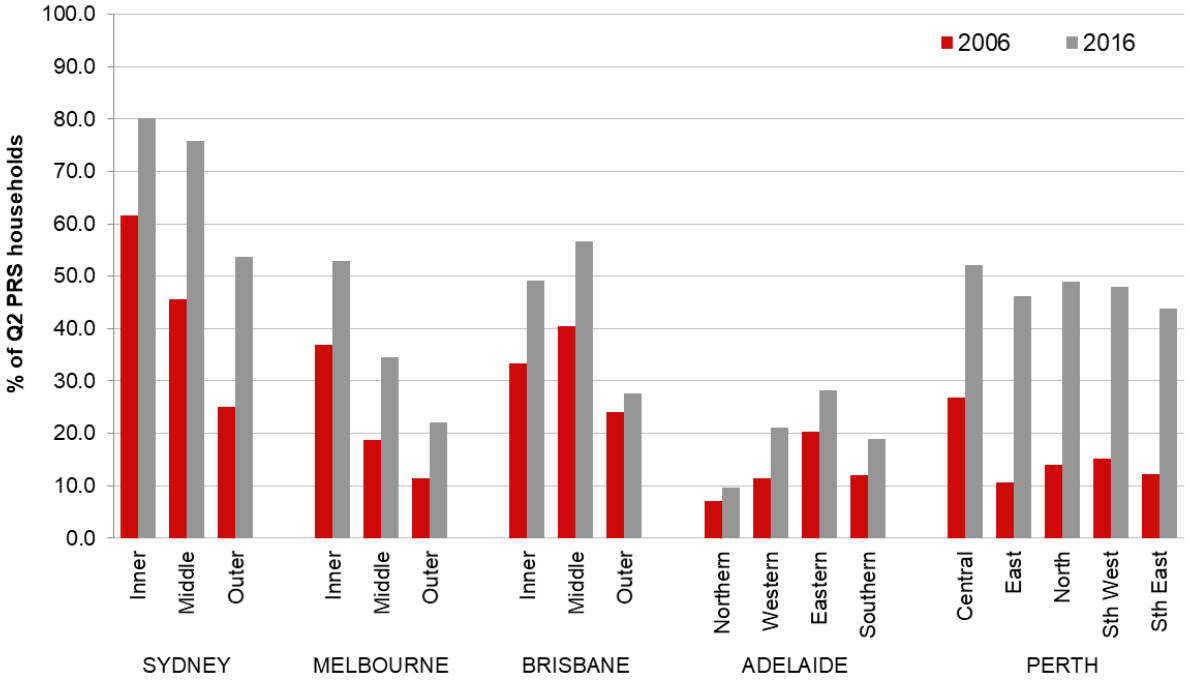
5.3.3 Affordability outcomes for lower income private renters in major capital cities, 2006–2016

Very high percentages of Q1 renters in major capital cities are living in unaffordable housing irrespective of area of the city (see Table A6 and Figure A6 in Appendix 2).

For Q2 private renters, there are some differences in affordability outcomes between and within cities. Figure 14 shows how outcomes for Q2 private renter households have deteriorated in the period 2006–2016, particularly in Sydney, but also in other major capital cities.

Chapter 6 provides additional analysis of changes to affordability outcomes for Q1 and Q2 households.

Figure 14: Affordable and available private rental stock for low-income (Q2) households: share (%) of Q2 households paying unaffordable rents by capital city sub-region, 2006 and 2016



Source: ABS customised matrices derived from the Australian Census of Population and Housing 2006 and 2016.

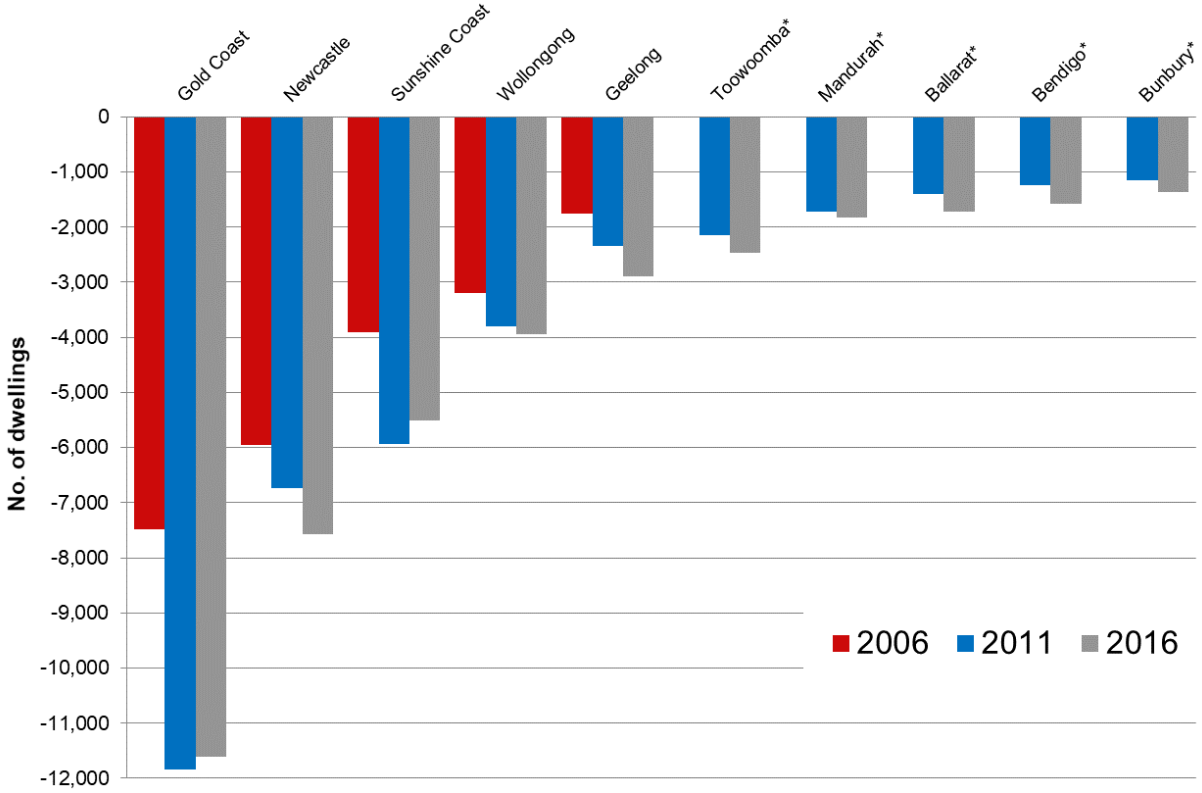
5.4 Satellite cities

The purpose of investigating changes in affordable and available private rental supply in satellite cities is to explore whether some of the shortages that have been documented in this report for major capital cities have spread to satellite cities. We selected 10 satellite cities with their own economic base, but in reasonable proximity to capital cities, for further analysis.[30] We also provide detailed analysis for a further 11 regional cities in Appendix 2; see tables A8 and A9, and figures A7 and A8.

The results for Q1 households are presented in Figure 15. They show mixed results with the greatest numerical shortages in satellite cities around Brisbane (Gold Coast and Sunshine Coast) and Sydney (Newcastle and Wollongong). Shortages in Gold Coast and Sunshine Coast increased markedly 2006–2011 but appear to have stabilised 2011–2016. In contrast, shortages in the satellite cities around Sydney (Newcastle and Wollongong) increased 2011–2016.

[30] There is no definitive definition of a satellite city. Due to patterns of settlement in Australia, many of those selected are at some distance from the capital city. For example, Gold Coast is 78 km from Brisbane, Sunshine Coast is 105 km distant and Toowoomba 129 km away.

Figure 15: Shortage of affordable and available dwellings for Q1 private renter households, selected satellite cities, 2006, 2011 and 2016

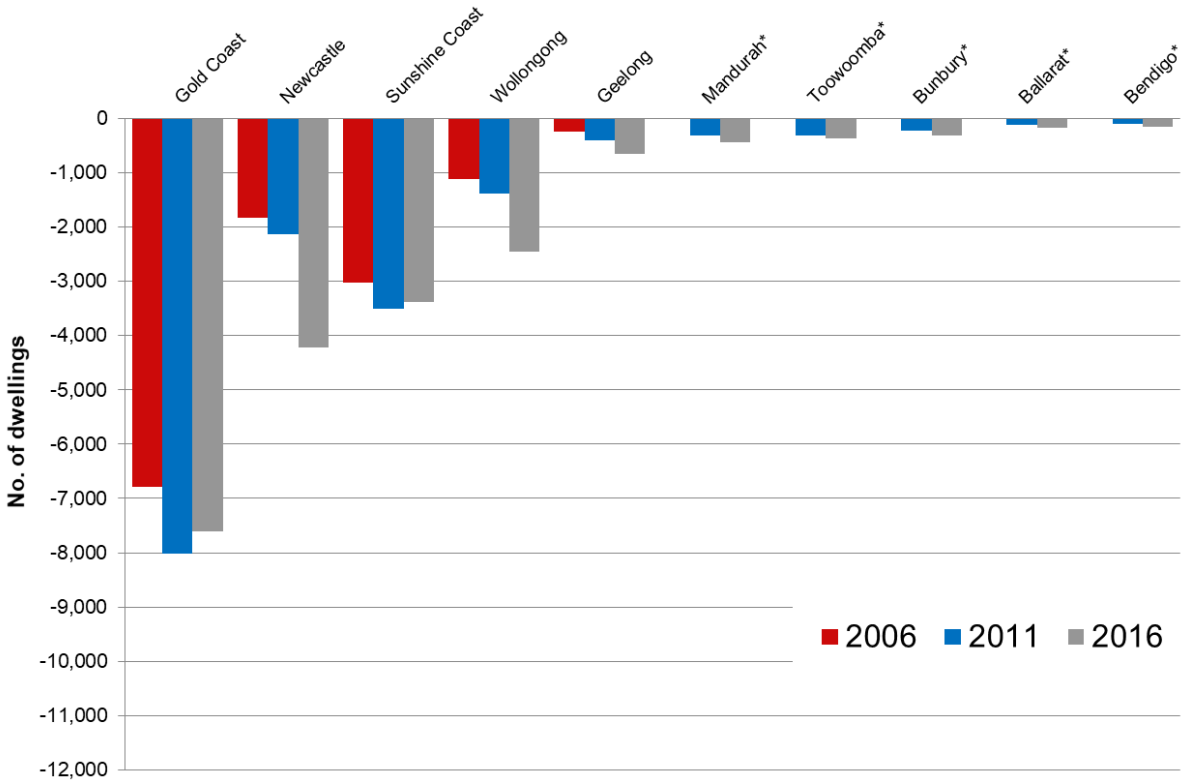


**These regional centres were analysed for the first time in 2011; 2006 data are not available.*

Source: ABS customised matrices derived from the Australian Census of Population and Housing 2006, 2011 and 2016.

When we examine dwellings affordable and available to Q2 households—that is, R1 plus R2 dwellings—in the same satellite cities, a similar pattern emerges, although the extent of the shortage is not as great as for Q1 households (see Figure 16). For Q2 households, we find that the shortage in Newcastle and Wollongong deteriorated most 2011–2016, perhaps reflecting a spillover of the extreme shortages in the Sydney market during this period that we have discussed earlier. Nevertheless, in 2016, Gold Coast still had the greatest shortage of affordable and available rentals for Q2 households. In Victoria, it appears that Q2 private renter households have an increasing supply of affordable housing in the outer suburbs of Melbourne so the spillover to Geelong in terms of private rental appears minimal (although this may not be the case for home purchase).

Figure 16: Shortage of affordable and available dwellings for Q2 private renter households, selected satellite cities, 2006, 2011 and 2016



**These regional centres were analysed for the first time in 2011; 2006 data are not available.*

Source: ABS customised matrices derived from the Australian Census of Population and Housing 2006, 2011 and 2016.

5.5 Policy development implications

The findings presented in this chapter indicate that the supply problems facing Q1 households identified in 2006 and 2011 have intensified and occur across all capital cities.

Problems of supply of affordable and available housing are moving up the income scale to encompass Q2 households—a critical group in terms of potential increases in employment participation, as will be discussed in Chapter 7. For this group, there appear to be different challenges facing housing policy makers in Sydney, Melbourne and Brisbane:

- The absolute shortage of dwellings affordable for Q2 households in Sydney is a remarkable change 2011–2016. The number of affordable dwellings for such households has fallen across the board in Sydney, but particularly in the key middle sub-region of Sydney—which provides good access to employment. Shortages of affordable and available private rental housing have also increased notably in the two satellite cities nearest to Sydney—Wollongong and Newcastle—perhaps indicating some spread of the lack of affordable supply in Sydney to these cities, or increased demand such as from international students and households relocating from Sydney. Customised policy development is required in view of these trends to boost affordable rental supply for Q2 households in Sydney (and perhaps also Wollongong and Newcastle) such that Q2 households can continue to participate in the Sydney (and Wollongong and Newcastle) employment markets.
- There is a substantial surplus of rental housing for Q2 households in Melbourne, including supply in the middle sub-region. There has been no apparent spillover of shortages for Q2 households to the satellite city of Geelong (or Ballarat and Bendigo). Nevertheless, there

are some warning signs in Melbourne: the growth in private rental housing affordable to Q2 households is in growing outer suburbs from which access to jobs in inner and some middle suburbs is more difficult because of the configuration of public transport, as well as commuting times and costs.

- The supply of affordable private rentals for Q2 households in Brisbane is mainly in the outer suburbs (and shrinking elsewhere), which poses problems for those seeking employment in inner and potentially middle-ring suburbs. The acute shortage of dwellings affordable to Q2 households in the Brisbane satellite cities of Gold Coast (in particular) and Sunshine Coast is apparent, although appears not to have worsened (or improved) between 2011 and 2016.

6 Lower income private renter households paying affordable and unaffordable rents: who are they and where do they live?

- Q1 private renter households comprise single person households of various ages (52 per cent) and single parents with children (22 per cent); relatively low percentages are couples (with or without children) or group households.
- Q2 households include more singles/couples with children (34 per cent) and more couple households (32 per cent); a third of Q2 households (32 per cent) live alone at various ages.
- In 2016, 29 per cent of Q1 households were paying severely unaffordable rents (over 50 per cent of income), a 10 percentage point increase in 10 years (2006–2016); younger households, households with children and group households had a disproportionate share of households in this situation.
- 32 per cent of Q2 households paid unaffordable rents (over 30 per cent of income) in 2016 (up from 21 per cent in 2006); singles/couples with children and group households were disproportionately represented in this group.
- Widespread rental affordability problems for Q1 households in capital cities have become more intense, particularly in inner and middle suburbs, as a result of rental market restructuring; notably in Sydney, where 63 per cent of Q1 households are paying severely unaffordable rents (over 50 per cent of income).
- Lower income households in large regional cities around Sydney and Brisbane have increasing problems of rental affordability, notably in Wollongong, Newcastle, Gold Coast and Sunshine Coast.

6.1 Introduction

This chapter addresses RQ2 which asks: 'What are the characteristics of Q1 and Q2 households living in affordable and unaffordable private rental housing in 2016?' The chapter investigates which types of households live in affordable and unaffordable private rental housing, in view of the market changes outlined in Chapters 3–5, and examines key changes from 2006 in the numbers paying unaffordable and *severely* unaffordable rents. The analysis is based on customised Census data from the ABS and presents data for Q1 and Q2 households separately.

6.2 A profile of lower income private renter households in 2016

Selected socio-demographic characteristics are presented for each quintile (Q1, Q2, Q3 and Q4/Q5) and all private renter households and, by way of comparison, for all Australian households (Table 7). The equivalent information for 2006 is included in Table A10 in Appendix 2.

Table 7: Socio-demographic characteristics of PRS households and all households, Australia, 2016

Characteristics	Private renter households					All h'holds
	Q1	Q2	Q3	Q4+Q5	Total	
	%	%	%	%	%	%
Total No.	354,000	443,000	433,000	649,000	1,879,000	7,991,000
Age (years)^						
15–24	15	11	11	7	10	4
25–34	20	28	35	39	32	16
35–44	18	23	25	28	24	19
45–54	15	17	17	17	17	20
55–64	13	11	9	8	10	17
65+	19	10	4	2	7	25
Total %	100	100	100	100	100	100
Household type*						
Younger couple, no children	4	8	16	26	16	8
Mid-life couple, no children	2	3	4	5	4	9
Older couple, no children	2	4	2	1	2	11
Couple families with children	9	17	31	36	25	32
Single parent families	22	22	14	6	15	10
Group household/other	9	10	14	17	13	7
Younger person living alone	18	19	12	5	12	6
Mid-life person living alone	18	12	6	3	9	8
Older person living alone	16	3	1	0	4	10
Total %	100	100	100	100	100	100
Period of arrival						
Before 2011	23	24	25	27	25	28
2011 or after	12	8	10	14	11	4
Born in Australia (or NS)	65	68	65	60	64	69
Total %	100	100	100	100	100	100
Dwelling type						
Detached house	49	53	55	51	52	74
Semi-det/row/terr/town-hse	20	19	18	18	18	12
Flat, unit apartment	31	28	27	31	29	13
Other dwelling	1	1	0	0	1	1
Total %	100	100	100	100	100	100

*Notes: ^Age of household reference person; *'Younger' is household reference person <45years; 'mid-life' is aged 45 to 64 years; 'older' is aged 65 years or more; numbers may not sum exactly due to rounding. NS = not stated.*

Source: Customised ABS matrix based on Australian Census of Population and Housing data, 2016.

Compared to all households, private renter households tend to be younger, and are more likely to be single adult households and more likely to be migrants who arrived in Australia less than five years ago. They are, however, equally likely to have children (40 per cent of private renter and 42 per cent of all households), with more single parent households and more group households. Just over half (52 per cent) of private renter households live in single detached houses (compared to 74 per cent of all households).

Table 7 also shows how the socio-demographic characteristics of Q1 and Q2 private renter households differ from each other (and from middle- to higher income private renter households):

- Q1 households have a wider spread of ages (including younger and older) than Q2–Q5 private renters, suggesting considerable diversity. The biggest groups of Q1 private renter households are single person households of various ages (52 per cent) or single parents with children (22 per cent); relatively low percentages live as a couple (with or without children) or as a group household.
- Q2 private renter households have more households of prime working age (25–54 years) (68 per cent) compared to 53 per cent of Q1 households, and there are fewer younger (15–24) and older (55 years plus) households. There are more couple households (32 per cent) and more singles/couples with children (39 per cent), including the same percentage of single parent households as for Q1 private renters (22 per cent). About one third of Q2 households (34 per cent) live alone at various ages.

As outlined in Chapter 1 (Table 1), Q1 private renter households had incomes up to $673 gross per week in 2016. This household income band includes single pensioners and allowees and single parents with one child on income support payments,[31] as well as those on part-time and up to full-time minimum wage rates.[32] Q2 private renter households had incomes between $674 and $1,182 per week in 2016 (see Chapter 1, Table 1), which includes couples on income support payments (couple pensioners and couples with one or two children) and anyone on a full-time minimum wage with additional income such as a family tax benefit or overtime payments, as well as those with higher than minimum wage rates.

6.3 Which lower income households were in unaffordable private rental housing in 2016?

This section examines in more detail:

1 the extent and severity of unaffordable housing outcomes for lower income households

2 a detailed socio-demographic profile of households paying un/affordable rents.

This rest of this section distinguishes between Q1 and Q2 households paying:

- affordable rents (under 30 per cent of household income)

[31] In September 2016 (the nearest date to the Census in August 2016), income support payments including Rent Assistance in Q1 were: single pensioner, single allowees, couple allowees and single parents with one child, and refers to gross unequivalised income (Melbourne Institute of Applied Economic and Social Research, 2016, *Poverty Lines: Australia*, Sept quarter).

[32] The minimum wage in September 2016 was $672.70 per week (or $17.70 per hour) for a 38-hour week (Fair Work Commission, minimum wage rates July 2019 https://www.fwc.gov.au/documents/sites/wagereview2016/decisions/c20161-order.pdf). Any additional income, such as overtime and family tax benefits, and any income from another household member, would take income into the Q2 range.

- unaffordable rents (30–50 per cent of household income)
- severely unaffordable rents (over 50 per cent or more of household income).

Providing more nuanced information about affordability outcomes for lower income private renter households will inform policy debates about which lower income households are affected by rental market restructuring 2006–2011 and the severity of the problems they face.

Table 8 outlines the national situation for Q1 and Q2 households, showing rental affordability outcomes in 2006, 2011 and 2016.

Table 8: Affordability outcomes for Q1 and Q2 private renter households, Australia: 2006, 2011 and 2016

	Q1 private renter households						Q2 private renter households					
	2006		2011		2016		2006		2011		2016	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Paying affordable rent	57,000	21	76,000	22	79,000	20	273,000	76	256,000	68	304,000	64
Paying unaffordable rent	159,000	59	181,000	52	192,000	50	76,000	21	109,000	29	150,000	32
Paying severely unaffordable rent	51,000	19	90,000	26	113,000	29	10,000	3	13,000	4	22,000	5
Total	268,000	100	347,000	100	384,000	100	360,000	100	378,000	100	476,000	100

Source: ABS customised matrices derived from the Australian Census of Population and Housing 2006, 2011 and 2016.

Key findings are:

- The major change for Q1 households is greater intensity and severity of rental affordability problems, indicated by the increase in those paying severely unaffordable rents. In 2016, 29 per cent of Q1 households were paying severely unaffordable rents, a 10 percentage point increase in 10 years (2006–2016).
- For Q2 households, the major change is an increase in the proportion of those paying unaffordable rents: 32 per cent in 2016 (up from 21 per cent in 2006). The proportion paying severely unaffordable rents remains relatively low (5 per cent).

In all, 477,000 lower income households in Australia (305,000 Q1 and 172,000 Q2 households) are paying unaffordable rents (more than 30 per cent of household incomes) in the PRS in 2016. Of concern is that 135,000 (113,000 Q1 and 22,000 Q2) households are paying more than half of their gross income in rent (up from 61,000 in 2006), suggesting acute after-housing poverty for these households—which are mainly Q1 households.

The research investigated the socioeconomic characteristics of those paying affordable, unaffordable and severely unaffordable rents, noting that 80 per cent of Q1 households pay unaffordable or severely unaffordable rentals. Table 9 shows that:

- among Q1 households paying severely unaffordable rentals, there is a disproportionate share of younger households, households with children and group households, and recently arrived migrants

- singles/couples with children and group households are disproportionately represented in Q2 households paying unaffordable rents.

Table 9: Rental affordability by selected characteristics of lower income PRS households, Australia, 2016

Characteristics	Q1 PRS households				Q2 PRS households		
	Paying afford. rent	Paying unafford. rent	Paying severely unafford. rent	Total	Paying afford. rent	Paying unafford. rent	Total
	%	%	%	%	%	%	%
Total No.	72,000	183,000	99,000	354,000	286,000	157,000	443,000
Age (years)^							
15–24	10	12	23	15	11	10	11
25–34	12	21	24	20	28	29	28
35–44	12	18	21	18	21	26	23
45–54	16	15	14	15	17	18	17
55–64	19	14	9	13	12	9	11
65+	31	19	9	19	11	7	10
Total %	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Household type*							
Couple families, no children	5	8	11	8	16	15	16
Couple families with children	1	8	16	9	15	22	17
Single parent families	10	26	23	22	22	24	22
Group household/other	4	6	19	9	8	13	10
Younger person living alone	22	17	16	18	21	15	19
Mid-life person living alone	30	19	9	18	14	8	12
Older person living alone	29	16	6	16	4	2	3
Total %	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Period of arrival							
Before 2011	17	23	28	23	21	31	24
2011 or after	3	8	24	12	6	11	8
Born in Australia (or NS)	79	69	47	65	73	58	68
Total %	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Characteristics	Q1 PRS households				Q2 PRS households		
	Paying afford. rent	Paying unafford. rent	Paying severely unafford. rent	Total	Paying afford. rent	Paying unafford. rent	Total
	%	%	%	%	%	%	%
Dwelling type and size							
Small detach. hse: 1–2 bdrms	23	13	4	12	12	4	9
Larger detach. hse: 3+ bdrms	28	38	39	36	43	45	44
Small semi-det: 1–2 bdrms	18	15	4	13	14	5	10
Larger semi-det: 3+ bdrms	3	6	11	7	7	12	8
Small flat/unit/apart: 0–1 bdrm	12	11	10	11	9	8	9
Larger flat/unit/apart: 2+ bdrms	15	17	31	20	15	26	19
Other dwelling	2	1	0	1	1	0	1
Total %	**100**	**100**	**100**	**100**	**100**	**100**	**100**

*Notes: ^Age of household reference person; *'Younger' is household reference person <45years; 'mid-life' is aged 45 to 64 years; 'older' is aged 65 years or more; numbers may not sum exactly due to rounding. There is only one category for Q2 households 'paying unaffordable rents', which includes the relatively small percentage paying severely unaffordable rents. #The totals in this table differ slightly to those in Table 8 because the results are sourced from two different ABS data files. Appendix 1 describes in detail the structure of these data files and why such differences occur. NS = not stated.*

Source: ABS customised matrix derived from Australian Census of Population and Housing data, 2016.

6.4 The geography of paying unaffordable and affordable private rents

In addition to understanding what type of households are living in unaffordable and severely unaffordable private rental housing, it is important to have a clear idea of where these households live. Table 10 shows affordability outcomes for Q1 and Q2 households in metropolitan and non-metropolitan areas in 2016:

- 41 per cent of Q1 households were paying severely unaffordable rents in metropolitan areas in 2016, up from 36 per cent in 2011 (and up from 26 per cent in 2006; see Table A11 in Appendix 2). The percentage of Q1 households in this category in non-metropolitan areas was relatively stable (at 13–14 per cent.)
- The affordability outcomes for Q2 households in metropolitan regions also deteriorated 2011–2016, with 46 per cent paying unaffordable rents in 2016 compared to 41 per cent in 2011 (and 29 per cent in 2006).
- The affordability outcomes in non-metropolitan areas were much the same as in 2011 in terms of percentages but, with the growth of the sector, the number of households paying affordable/unaffordable rents for housing has increased.

Table 10: Affordability outcomes for Q1 and Q2 private renter households: metropolitan and non-metropolitan regions, 2016

	Q1 PRS households				Q2 PRS households		
	Paying afford. rent	Paying unafford. rent	Paying severely unafford. rent	Total	Paying afford. rent	Paying unafford. rent	Total
Australia (%)	20	50	29	*100*	64	36	*100*
Australia (No.)	79,000	192,000	113,000	*384,000*	304,000	173,000	*476,000*
Metro region (%)	11	48	41	*100*	54	46	*100*
Metro region (No.)	24,000	106,000	91,000	*221,000*	160,000	136,000	*296,000*
Non-metro region (%)	34	53	14	*100*	80	20	*100*
Non-metro region (No.)	55,000	86,000	22,000	*163,000*	144,000	37,000	*180,000*

Note: There is only one category for Q2 households 'paying unaffordable rents', which includes the relatively small percentage paying severely unaffordable rents.

Source: ABS customised matrix derived from Australian Census of Population and Housing data, 2016.

The analysis explored in more depth affordability outcomes for lower income households in major cities and zones within cities (Table 11). Key findings are:

- The very poor affordability outcomes in Sydney for Q1 and Q2 households. Only 8 per cent of Q1 households in Sydney paid affordable rents in 2016, while 29 per cent paid unaffordable rents and a remarkable 63 per cent paid severely unaffordable rents. The situation in Sydney was little better for Q2 households, with only outer suburbs offering anything approaching a supply of affordable rental housing for these households.
- In the three largest cities (Sydney, Melbourne and Brisbane), there is clear evidence of the effects of an increasing bid rent curve, with increasingly higher rents in inner and many middle areas. Q1 households in inner Melbourne and inner/middle Brisbane also faced high levels of severely unaffordable rents.
- All of the other capitals had high rates of Q1 households paying unaffordable rents, and Canberra and Darwin also had high rates of Q1 households paying severely unaffordable rents.

Table 11: Rental affordability of lower income PRS households by major capital city sub-regions, 2016

Capital city sub-region	Q1 private renter households					Q2 private renter households			
	Paying afford. rent	Paying unafford. rent	Paying severely unafford. rent	Q1 total		Paying afford. rent	Paying unafford. rent	Q2 total	
	%	%	%	%	No.	%	%	%	No.
Sydney									
Inner	6	18	76	100	20,300	20	80	100	25,000
Middle	7	24	69	100	22,700	24	76	100	35,500
Outer	10	49	41	100	17,300	46	54	100	24,500
Sydney total	8	29	63	100	60,300	29	71	100	85,000
Melbourne									
Inner	7	38	54	100	23,200	47	53	100	26,300
Middle	13	56	31	100	27,100	65	35	100	39,600
Outer	11	72	17	100	19,400	78	22	100	30,400
Melbourne total	10	54	35	100	69,700	64	36	100	96,300
Brisbane									
Inner	12	41	47	100	10,500	51	49	100	10,300
Middle	11	39	49	100	6,600	43	57	100	8,000
Outer	10	69	20	100	16,200	72	28	100	19,400
Brisbane total	11	55	34	100	33,200	60	40	100	37,700
Adelaide									
Northern	18	74	7	100	8,500	90	10	100	9,800
Western	19	65	16	100	4,900	79	21	100	6,000
Eastern	13	56	31	100	5,400	72	28	100	5,700
Southern	14	72	14	100	6,400	81	19	100	7,800
Adelaide total	16	68	16	100	25,300	82	18	100	29,300
Perth									
Central	10	41	49	100	2,600	48	52	100	2,100
East	13	47	40	100	3,300	54	46	100	3,600
North	10	46	43	100	6,500	51	49	100	6,800
South West	10	50	40	100	5,000	52	48	100	4,900
South East	12	48	40	100	5,800	56	44	100	6,200

Capital city sub-region	Q1 private renter households					Q2 private renter households			
	Paying afford. rent	Paying unafford. rent	Paying severely unafford. rent	Q1 total		Paying afford. rent	Paying unafford. rent	Q2 total	
	%	%	%	%	No.	%	%	%	No.
Perth total	11	47	42	100	23,200	53	47	100	23,500
Hobart total	29	61	10	100	5,200	86	14	100	5,400
Darwin total^	13	37	50	100	800	41	59	100	1,200
Canberra total^	10	31	59	100	3,000	42	58	100	5,700

^ *Low counts in these cities: caution should be exercised when interpreting these figures*

Source: ABS customised matrix derived from Australian Census of Population and Housing data, 2016.

It is also important to note that these figures are for 2016, and housing markets can change quite quickly because of economic changes that affect employment. However, the type and extent of change depends on local conditions. For example, the housing market in Perth began to ease in 2015 following the end of the resources boom, but this has not translated into relief from rental affordability problems for lower income households (BCEC 2019) largely because of the increased concentration of rents identified in this research. In Hobart, affordability outcomes for lower income private renters, while not good, did not appear to be as bad as the other capitals in 2016. Since that time, however, house prices and rents have risen substantially because of an influx of tourists and conversion to short-term rentals (Tasmanian Department of Treasury and Finance 2018), with a negative effect on affordability outcomes for Q1 and even Q2 households.

Finally, we examined rental affordability outcomes for lower income households in six large regional (satellite) cities: Wollongong and Newcastle (New South Wales), Geelong (Victoria) and Gold Coast, Sunshine Coast and Toowoomba (Queensland) (Table 12):

- 35 per cent of Q1 households in Wollongong and 24 per cent in Newcastle paid severely unaffordable rents in 2016 (up from 16 and 11 per cent in 2006, respectively; see Table A12 in Appendix 2). Of Q2 households in Wollongong and Newcastle, 46 per cent and 35 per cent, respectively, paid unaffordable rents in 2016 (up from 25 and 18 per cent respectively in 2006).
- Geelong had significantly greater affordability for Q2 households (87 per cent living in affordable rentals) and relatively low rates of Q1 households paying severely unaffordable rents (10 per cent).
- The affordability outcomes for Q1 and Q2 renter households in Gold Coast and Sunshine Coast remained very poor in 2016; the situation in Toowoomba was better for Q2 renters but around two-thirds of Q1 renters (68 per cent) still paid unaffordable rents.

To the extent that these are satellite cities for the major capitals, it appears that there has been more of a spillover effect from Sydney and Brisbane rental housing markets than from Melbourne. Table A13 in Appendix 2 provides these figures for another 15 regional centres for 2016.

Table 12: Rental affordability of lower income PRS households in selected satellite cities, 2016

Location	Q1 private renter households					Q2 private renter households			
	Paying afford. rent	Paying unafford. rent	Paying severely unafford. rent	Q1 total		Paying afford. rent	Paying unafford. rent	Q2 total	
	%	%	%	%	No.	%	%	%	No.
Selected satellite cities									
Newcastle	19	57	24	100	9,400	65	35	100	12,200
Wollongong	16	49	35	100	4,700	54	46	100	5,300
Geelong	27	63	10	100	4,000	87	13	100	5,100
Gold Coast	8	51	41	100	12,600	47	53	100	14,300
Sunshine Coast	11	53	36	100	6,200	51	49	100	6,900
Toowoomba	24	68	8	100	3,300	89	11	100	3,400

Source: ABS customised matrix derived from Australian Census of Population and Housing data, 2016.

6.5 Policy development implications

It is important to reiterate that the absolute number of lower income (Q1 and Q2) private renter households increased 2011–2016, despite lower income households becoming a smaller proportion of all private renters as more middle- to higher income households entered the sector. In 2016, there were 860,000 lower income private renter households: 384,000 of these were Q1 households (up from 347,000 in 2011) and 476,000 were Q2 households (up from 378,000 in 2011).

- 477,000 lower income households in Australia were paying unaffordable private rents in 2016 indicating the widespread (and widening) extent of rental affordability problems.

While general policy settings must work for the increasingly diverse group of households in the PRS, additional and targeted policy development is required to address the large numbers of Q1, and increasingly Q2, households paying rents in excess of 30 per cent of household income.

- There is an urgent need for supply solutions for Q1 households (as discussed in earlier chapters), with an initial focus on households in metropolitan areas who pay severely unaffordable rents, notably younger households who are also affected by increased precarity in the labour market (as will be discussed in Chapter 7), and families with children (mainly sole parent families) who are increasingly unable to access social housing unless they have complex needs.
- Policy development for Q2 private renter households could include a broader range of measures, including increased rates of Rent Assistance, new affordable housing models including those financed with funds raised through the NHFIC and Build to Rent properties where these can be brought to market at rents affordable to Q2 households. It is also important that policy development includes means of improving the supply of affordable housing near to jobs, as is discussed in the next chapter.

7 Affordable private rental housing supply and employment participation

- The statistical aggregates in this chapter are suggestive of lower- and moderate-income households trading off affordable rental housing for access to jobs.
- Q2 households tend to concentrate in higher housing-cost areas, where access to a variety of jobs, industries and urban amenities may be better. The proportion of jobs-rich low-income and moderate-income households in unaffordable rentals is therefore high in inner (62 per cent) and middle (55 per cent) areas of Sydney, compared to outer (45 per cent) parts of Sydney and satellite cities (approximately 45 per cent). This trend is also found across inner (58 per cent), middle (54 per cent) and outer (50 per cent) Melbourne and Geelong (49 per cent), but the trend is less marked.
- There is little difference in the employment status of Q2 households living in affordable and unaffordable rentals within different parts of Sydney and Melbourne. Irrespective of affordability outcome, the modal Q2 employment status is a single full-time household income. However, Q2 households in Melbourne are more likely to rent affordably than unaffordably. This is not the case in Sydney.
- In Sydney, there is some evidence that some Q3 households in inner Sydney also trade off affordability for access to jobs.
- Many lower and moderately paid jobs and part-time jobs are dispersed throughout metropolitan areas and accessible to low- and moderate-income households in inner, middle and outer parts of capital and satellite cities.
- Industries typically associated with higher shares of part-time employment (administration and support, retail trade, and accommodation and food services) and with female employment are typically more dispersed throughout both capital and satellite cities.

7.1 Introduction

To this point, the report has examined changes in the affordability and availability of private rental housing, by household income quintiles. The research finds that the biggest growth in supply is in dwellings with rents affordable to Q3–Q5 households. This supply is unaffordable to Q1 and Q2 households, which are increasingly paying unaffordable rents. In this chapter, we start to unpack how the supply of affordable private rental dwellings might affect employment participation and affordability outcomes.

As described in Chapter 1, household employment participation is operationalised through a framework of jobs-rich to jobs-poor households. The chapter is explorative and descriptive and examines, broadly, whether there are discernible differences in the employment and affordability status of households associated with their income quintile and their location in inner, middle and outer Sydney and Melbourne, and satellite city locations. Census data enable

an analysis of the spatial distribution of where households in affordable and unaffordable housing live and their employment status at a (static) point in time. Together, these broad employment and spatial characteristics provide a picture of trends in employment status and location—but household decisions and motivations can, at best, be considered as statistical aggregates.

An adequate supply of affordable private rental housing in a particular location potentially enables individuals and households to match their skills and human capital more readily to labour market opportunities because of the relatively lower transaction costs of relocating residences compared with other tenures. Therefore, access to affordable private rental housing where low-skilled jobs are more highly concentrated is thought to enhance employment participation and improve productivity by better matching an individual's skills to the jobs available (Coulson and Fisher, 2009; Ferreira, Gyourko et al. 2010; Nouwelant, Crommelin et al. 2016; Oswald 1996; Whelan and Parkinson 2017).[33] In Australia there is a perception that rapid population growth, especially in capital cities, has led to an increasing jobs-affordable housing mismatch, as evidenced by multiple submissions to the 'Building Up & Moving Out' federal parliamentary inquiry (SCITC [Standing Committee on Infrastructure, Transport and Cities] 2018).

Conversely, it may be that households trade off affordability for proximity to jobs. In this case, a shortage of affordable private rental becomes an equity rather than efficiency issue. Previous research (Davis 2009; Dodson 2005; Nouwelant, Crommelin et al. 2016; Productivity Commission 2015; Terrill and Batrouney et al. 2018) suggests that the impact of a potential mismatch may be moderate, in part because jobs that lower income households typically would access are distributed throughout metropolitan areas. Some of the evidence suggests that access to jobs is more about an individual's characteristics than the places that households live in (Productivity Commission 2015). The chapter proceeds as follows:

- Section 2 provides an overview of employment status (household labour supply) by income quintile and the distribution of rental affordability by employment status at the national level and for all private renters.
- Section 3 provides an overview of the concentration and dispersion of jobs and occupations across the metropolitan areas of Sydney and Melbourne, and their respective satellite cities.
- Section 4 examines where jobs-rich and jobs-poor households live across the metropolitan areas of Sydney and Melbourne.[34] In this section, we learn whether aggregate statistics can provide broad insights with respect to mismatch and trade-off outcomes.
- Section 5 focusses more specifically on mismatch and trade-off outcomes of Q2 households living in affordable and unaffordable private rental, with some extensions to Q1 and Q3. Here we extend the analysis to include satellite cities as an alternative location for jobs-seeking households.
- Section 6 draws out policy implications from the research findings.

[33] However, the link between housing costs and labour markets can be tenuous (Bridge, Flatau et al. 2003). Our measure of income in this report includes the effect of other payments, such as Rent Assistance (RA), that relate to household income. The effective marginal tax rate for labour market participation (or increased participation) may therefore vary for RA recipients and non-RA recipients.

[34] Satellite cities are treated as statistical unitary entities, and therefore no spatial patterns can be examined.

7.2 A national overview: what is the link between private renter household income quintiles, household employment status and living in affordable/unaffordable housing?

To begin, we examine households' employment status (labour supply) across income quintiles. Household employment status in this section is operationalised through a jobs-rich to jobs-poor continuum, ranging from dual full-time employed, where both members of a couple household are employed full-time, to those where there are no members in the labour force.[35] Table 13 shows results for all private renter households nationally. Combined, the categories in dark shading are considered jobs-rich. On average, a jobs-rich household will have a greater number of paid hours of work (or assess their hours of work to be adequate and therefore not actively look for work) than a jobs-poor household, relative to household members actively in work, or searching for work. Hence, there is a close association between being a jobs-rich household and being in the middle- to higher income quintiles, and conversely between a jobs-poor household and being in the lower- to middle-income quintiles. Some key findings are:

- The majority of Q1 households (55 per cent) are not in the labour force, and so primarily derive income from pensions and allowances, and are classified as jobs-poor. Only a very small proportion (7.5 per cent) is jobs-rich.
- The percentage of jobs-rich Q2 households is greater (50.8 per cent), but most are single full-time earning households (33.6 per cent). The percentage of households with two full-time income earners is negligible. Approximately half of Q2 households are jobs-poor.
- Q3 households are characterised with a much higher percentage (nearly 80 per cent) of jobs-rich households. However, compared to Q4–Q5 households (41.4 per cent), the percentage of dual full-time employed households remains low (9.8 per cent). As with Q2 households, the percentage of single full-time Q3 households is high (31 per cent).

[35] The benefits of a jobs-rich and jobs-poor framework is that it directs us to the significance of understanding the links between the household employment and housing and non-housing related outcomes. However, a limitation is that it does not provide insight into how opportunities to increase paid work within the household have been shaped by labour market restructuring, including the growth of non-standard employment and underemployment. Campbell, Parkinson et al. (2013; 2014) revealed that that adequacy of hours of work and how these are distributed within the household is equally important in understanding affordability constraints and broader experiences of heightened housing insecurity.

Table 13: Employment participation across income quintiles, all private renter households*, Australia, 2016

	Employment status meta groups	Employment status, detailed groups	Q1	Q2	Q3	Q4–Q5	All
Jobs-rich	Dual full-time	Two earners full-time employed	0.2%	0.9%	9.8%	41.4%	15.7%
	Dual full-time or part-time	One earner full-time, one part-time	0.3%	3.6%	18.3%	22.0%	12.2%
		Two earners part-time	0.6%	3.6%	4.3%	2.4%	2.8%
	Single full-time	One earner full-time, one NILF	1.0%	9.1%	15.7%	11.4%	9.7%
		One earner full-time	5.4%	33.6%	31.0%	14.7%	21.0%
	Single part-time	One earner part-time, one NILF	2.7%	5.3%	3.1%	1.0%	2.8%
		One earner part-time	18.9%	15.9%	5.2%	1.3%	9.4%
	Jobs-seeking	One earner full-time, one jobs-seeking	0.3%	2.7%	4.0%	3.1%	2.5%
		One earner part-time, one jobs-seeking	1.0%	1.5%	0.8%	0.3%	0.9%
		Two/one jobs-seeking, one NILF	13.9%	4.1%	1.7%	0.6%	4.5%
Jobs-poor	All NILF	No members in the labour force	55.8%	19.6%	6.0%	1.9%	18.5%

**Note: Excludes group households and households with non-dependent children living at home. In both these cases additional income pooling may be present. Also excludes households where labour force status of one or both partners (if partnered) was not stated or recorded as 'away from work'. Light-shaded rows indicate jobs-poor spectrum, dark-shaded rows indicate jobs-rich.*

Source: ABS customised matrix derived from Australian Census of Population and Housing data, 2016.

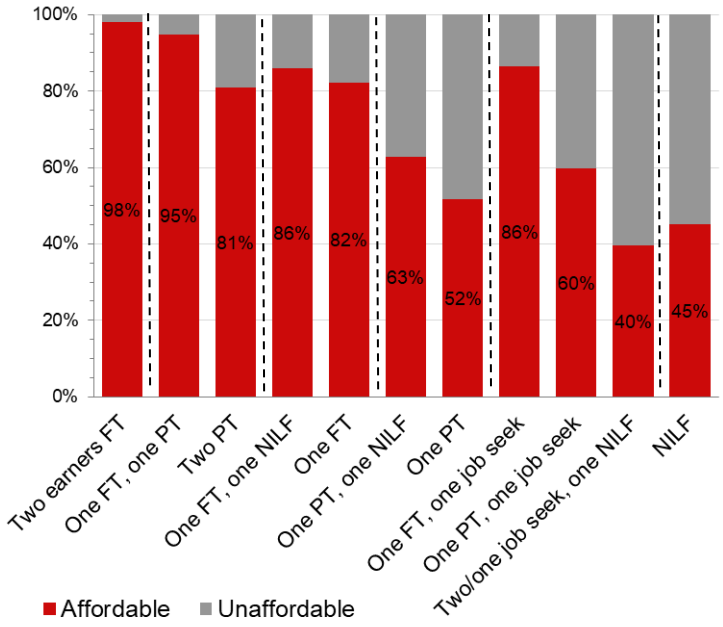
Census data do not allow us to determine whether the observed supplied labour is an active choice or whether these households want to work more but cannot obtain—or it is financially unattractive to obtain—additional hours of work and therefore might be considered under-employed. However, it is notable that a relatively large proportion of Q1 households are jobs-seeking and without any earned income. Similarly, there is a relatively large proportion of Q1 and Q2 households that primarily have part-time paid income.

Figure 17 Panel A (all renters) and Panel B (Q2 renters) provides an initial insight with respect to the affordability outcomes of jobs-seeking and (potentially) a proportion of households who may also be under-employed. Unsurprisingly, across all income quintiles, jobs-rich households can typically access affordable private rental. More than 95 per cent of households with dual full-time, or one full-time and one part-time job, are in affordable rentals. More than 80 per cent of households with at least one full-time job or two part-time jobs are also paying affordable rents. Access to affordable private rental becomes more constrained for households with only a single part-time job and additional income support, and for households relying only on one part-time job, where the percentage accessing affordable private rental falls to approximately 60 per cent and 50 per cent, respectively. For households not in the labour force, the percentage accessing affordable private rental is 45 per cent. In terms of affordability outcomes, there is significant variation across the jobs-seeking household category, ranging from 86 per cent of jobs-seeking households with one full-time job renting affordably, to only 40 per cent of jobs-seeking households with no paid employment renting affordably.

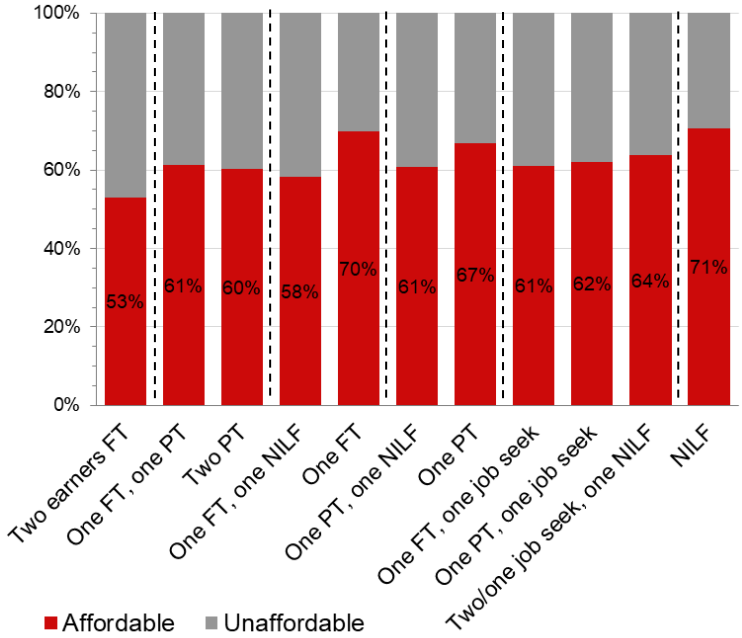
Notably, when focussing only on Q2 households (quasi-standardising for income), the association between employment status and affordability disappears. Many more jobs-rich households live in unaffordable rentals; also within the jobs-seeking category the difference disappears.

Figure 17: Employment status of 'all' renter households and Q2 renter households living in affordable/unaffordable rental housing, Australia, 2016

a) All PRS households



b) Q2 PRS households



Note: The stipulated lines in the figure demarcate the jobs-rich, jobs-poor categories from Table 13; the individual bars show affordability outcomes and household employment status. FT = full-time; PT = part-time; NILF = not in labour force.

Source: ABS customised matrix derived from Australian Census of Population and Housing data, 2016.

At a national level, therefore, it appears that a comparatively large proportion of jobs-poor households are jobs-seeking and that a large proportion of jobs-seeking households are living in unaffordable private rental housing. Later in this chapter we explore the extent to which these households might be subject to a mismatch between available jobs and location of affordable rental housing (and therefore locked out of opportunities to increase income), or alternatively, trade off unaffordable rents for locations from which they can access additional work. However, before examining this issue, we investigate the extent to which different types of jobs and industries are concentrated and dispersed across metropolitan and satellite city areas. In the next section we focus on Sydney and Melbourne, and satellites.

7.3 How are jobs distributed across the urban economies of Sydney and Melbourne and their respective satellite cities?

Although jobs growth, particularly professional sector jobs, has been strongest in the CBDs and inner urban locations of major cities (for example Ellis 2014; Productivity Commission 2012), small area labour market estimates reveal that the pattern of employment participation and corresponding unemployment across urban regions is far from uniform.

In brief, not all capital city inner areas have low unemployment and not all regional areas have high unemployment, although participation in the labour market is generally lower in more remote regions (Labour Market Research and Analysis Branch 2019). While job accessibility in the form of a low skills to employment 'spatial mismatch' has been found to exert a significant role in explaining area-based unemployment (Jin and Paulsen 2018), access to paid work does not necessarily correspond with travel distance to high jobs growth areas but rather the *types of employment* that can be accessed by particular groups of workers within these areas.

The analysis here is based on where jobs are located, not where workers live, and focusses on the extent to which different types of jobs are spatially concentrated or dispersed. The more concentrated particular types of jobs are, the more concentrated the housing opportunities will be that offer accessibility to these jobs and vice versa. An overview of the distribution of employment opportunity across Melbourne, Sydney and their satellite cities is shown in Table 14 (by industry) and Table 15 (by occupation). The dissimilarity index presented here ranges between 0 and 1 and shows the extent to which different types of jobs are evenly distributed relative to all other jobs. A higher (lower) value indicates a more concentrated (dispersed) spatial distribution of jobs.

Table 14: Spatial concentration of jobs by industry (dissimilarity index), Sydney, Melbourne and satellite cities, 2016

	Admin & support	Construction	Retail trade	Accom. & food	Professional, scientific and technical services	Public admin. & safety	Education and training	Manufacturing	ITC and media	Finance & insurance
Sydney	0.15	0.25	0.28	0.20	0.35	0.36	0.34	0.47	0.45	0.58
Melbourne	0.16	0.26	0.28	0.22	0.34	0.38	0.35	0.50	0.43	0.52
Newcastle	0.14	0.21	0.25	0.20	0.26	0.42	0.27	0.43	0.35	0.47
Wollongong	0.14	0.23	0.21	0.21	0.21	0.42	0.35	0.55	0.29	0.45
Geelong	0.09	0.13	0.20	0.15	0.18	0.30	0.29	0.27	0.25	0.38

Note: dissimilarity index is calculated at SA2 level for each capital and satellite city.
DIS$=0.5 * \sum_{i=1}^{n} \left|\frac{J_i}{J_T} - \frac{K_i}{K_T}\right|$*, where n is number of spatial units, i is an index of spatial units, J is number of jobs in a particular industry or occupation (Ji is thus number of particular jobs in a given SA2), T is the total number of jobs by industry or occupation in a city (Ti is thus the total number of particular jobs in a city), and K is the total number of jobs (minus J).*

Source: Author analysis of data from ABS (2016) Table Builder.

Analysis of the spatial concentration of jobs by industry (Table 14) reveals three patterns.

- Industries typically associated with higher shares of part-time employment (administration and support, retail trade, and accommodation and food services) (Cassidy and Parsons 2017) and with female employment are typically more dispersed throughout both capital and satellite cities (columns 2, 4 and 5 of Table 14).
- More knowledge-intensive and public-sector-type jobs (professional/scientific, public administration, education and training) with many full-time jobs, including quality jobs for women, have an intermediary degree of concentration (columns 6, 7 and 8 of Table 14).
- Key business-service jobs (ITC and media; finance and insurance) are highly concentrated. Similarly, manufacturing jobs tend to be highly concentrated. Common for this third group of industries is a lower share of part-time employment (columns 10 and 11 of Table 14).

In terms of spatial accessibility—that is, the location of jobs relative to the residential footprint of these cities—industries often associated with the knowledge-intensive and key business services tend to be more spatially concentrated, whereas occupations with higher shares of part-time employment—for example, clerical and administration—tend to be more dispersed (Cassidy and Parsons 2017).

Examining the spatial concentration of occupations (rather than industries) in Table 15 also shows three patterns:

- Most types of occupations in capital cities are more concentrated than in satellite cities. This is partly a function of spatial scales, but also suggests that accessibility to jobs from different locations is greater in satellite cities.

- Professional jobs are relatively concentrated, although the highest spatial concentration of jobs are typically machinery operators and drivers (columns 3 and 8 in Table 15).
- Clerical and administrative jobs are the most dispersed type of occupations, along with managerial jobs (columns 2 and 6 in Table 15).

Table 15: Spatial concentration of jobs by occupation (dissimilarity index)

	Managers	Professionals	Technical & trades	Community & personal services	Clerical & admin.	Sales	Machinery ops & drivers	Labourers
Sydney	0.14	0.25	0.19	0.23	0.12	0.20	0.44	0.22
Melbourne	0.12	0.26	0.18	0.24	0.12	0.22	0.45	0.21
Newcastle	0.09	0.20	0.15	0.14	0.14	0.22	0.29	0.14
Wollongong	0.07	0.19	0.16	0.14	0.17	0.17	0.41	0.12
Geelong	0.04	0.17	0.11	0.15	0.15	0.16	0.24	0.12

Note: see Table 14.

Source: Author analysis of data from ABS (2016) Table Builder.

Overall, considering the concentration/dispersion of industry and occupation together reveals that jobs more likely to be characterised by full-time employment and higher skilled (and paid) work tend to be more spatially concentrated than part-time and lower skilled work. The concentration of full-time and higher skilled work thus reduces the residential locations that are spatially proximate to these jobs or that are well connected via the transport infrastructure. Conversely, those in part-time and lower skilled work may find employment opportunities in a wide range of locations across the urban economic areas of Sydney and Melbourne and their satellite cities. Therefore, access to these jobs does not necessarily require access to central locations of these cities.[36]

7.4 Where do jobs-rich and jobs-poor private renter households live in Melbourne and Sydney?

The PRS is thought to be efficient to the functioning of an economy because individuals can more readily adjust to sudden unemployment or move in search of jobs with minimal housing transaction costs, compared with those in home ownership or social housing. However, most long-distance moves that might facilitate access to better employment opportunities are made by those who already have a job to go to rather than by unemployed people moving in search of better opportunities for work (Whelan and Parkinson 2017). Whether households are able to adjust is not only affected by the location of affordable housing relative to jobs, but also the mix of employment potential and division of labour within households occupying a dwelling.

[36] Although some of these jobs will naturally also be located in the central parts of cities. Nouwelant, Crommelin et al. (2016) show that lower-income individuals accessing central city employment typically have longer commutes than lower-income individuals accessing these jobs from elsewhere in the metropolitan area.

As the PRS continues to grow, the mix of household types occupying and competing for dwellings in given areas is becoming more diverse (Hulse, Parkinson et al. 2018). This diversity translates to a more complex set of decisions about the location of rental housing and the juggling of employment of all members. For instance, the supply of labour among women, including those within single adult households, is often determined by localised employment opportunities close to or accessible to childcare and schools, and which therefore have shorter commute times (Saugeres and Hulse 2010).

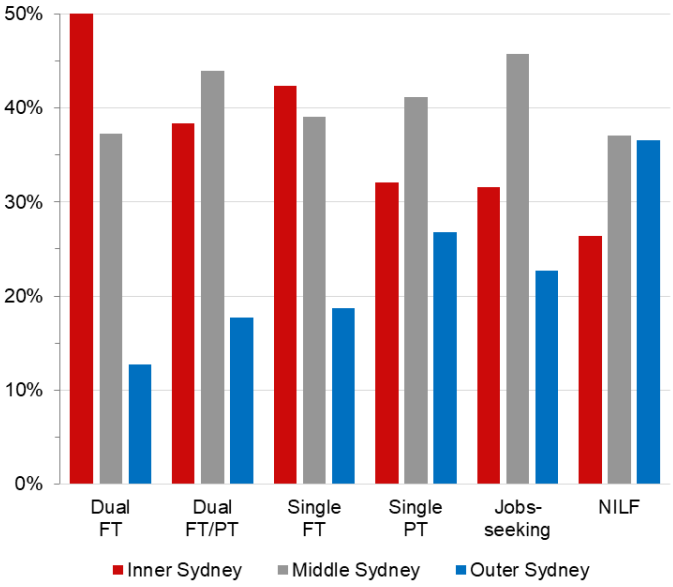
As rental affordability constraints push low- to moderate-income households further away from concentrated labour markets, the capacity to take up more localised employment opportunities can diminish, affecting job search behaviours and, in turn, economic participation (Whelan and Parkinson 2017). This in turn shapes the opportunities that will continue to be available within the local and neighbouring regions accessible to all earners in the household. It is likely that dual earning or 'jobs-rich' households will not only be more competitive in applying for rentals, but they also have greater imperative and capacity to occupy more jobs-rich or agglomerated locations. This again highlights the Productivity Commission finding that access to jobs is more about individual characteristics, rather than neighbourhood or area characteristics (Productivity Commission 2015). For example, in the latest small area estimates for the March 2019 quarter, the inner areas of Collingwood (10.3 per cent) and Flemington (12.9 per cent) in Melbourne, Victoria, have high respective rates of unemployment despite their accessibility to job growth areas (Labour Market Research and Analysis Branch 2019).

Figures 18a and 18b reveal where jobs-rich through to jobs-poor private-renting households live in Sydney and Melbourne. For the metropolitan areas as a whole, there is remarkable consistency across the two cities. However, inner Sydney differs somewhat from Melbourne in its concentration of full-time employed households. Generally, as could be expected, Sydney jobs-rich households with two employed adults are more concentrated in the inner-city areas or middle suburbs. However, we also witness a large share of single full-time earner households residing in inner-city areas of Sydney and Melbourne, most likely occupying the growing stock of apartments.

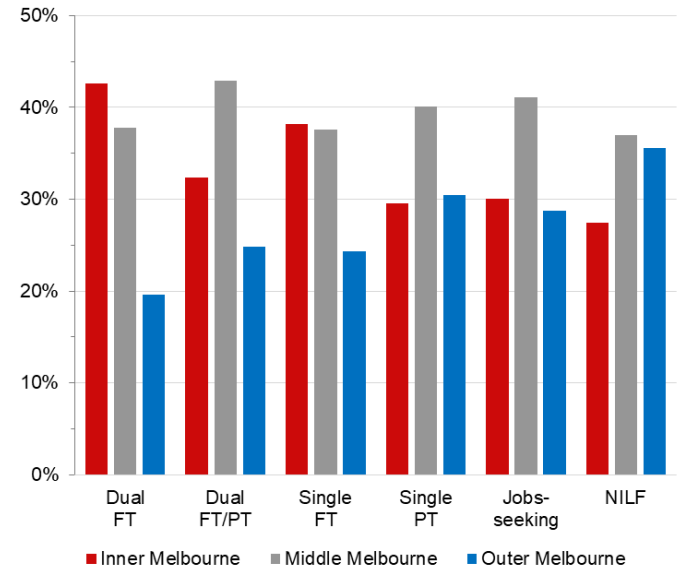
While there is a relatively even spread of household employment groups living in the middle suburbs, there is a slightly higher concentration of 'jobs-seeking' households, where one or more members is looking for work, living in the middle suburbs of Sydney. Households with no members in the labour force had the highest share of households residing in the outer suburbs of both Sydney and Melbourne.

Figure 18: Where are jobs-rich through to jobs-poor PRS households located, Sydney and Melbourne, 2016?

a) Melbourne



b) Melbourne



Note: FT = full-time; PT = part-time; NILF = not in labour force.

Source: ABS customised matrix derived from Australian Census of Population and Housing data, 2016

The aggregate statistics provide a blunt assessment of whether the availability of affordable rental properties contributes to locking households out of labour markets, or whether households trade off affordability for access to jobs. What is clear is that jobs-seeker households are somewhat more likely, especially in Sydney, to rent in middle-ring suburbs where rents are higher and less affordable than in outer-ring suburbs. The analysis in Section 7.3 suggests that middle-ring suburbs are likely to provide good access to a wide range of occupations that lower income households might be likely to search for, since these are more dispersed throughout the metropolitan areas. With respect to households not in the labour force, there is little difference in location between middle- and outer-ring locations. However, the

above analysis does not distinguish between how sensitive different households might be to variations in private rent levels.

One way to gain additional insight from aggregate statistics is to focus on low- to moderate-income households (Q2) and, to a lesser extent, Q3 households—as it was revealed in chapters 4–5 that these households have experienced a deterioration in rental affordability over time.

Figure 19 shows the distribution of different types of jobs-poor Q2 households living affordably and unaffordably across Sydney (Panel A) and Melbourne (Panel B). A number of key trends can be observed:

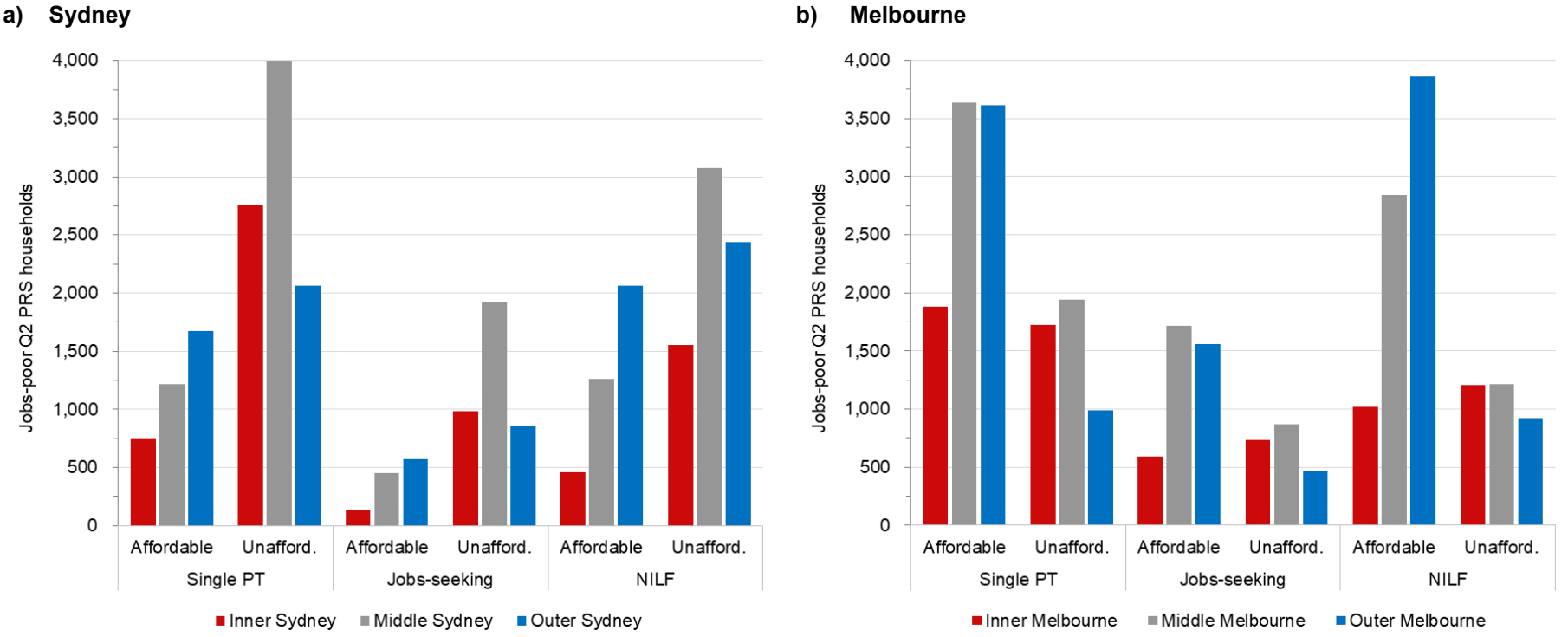
- In Sydney, jobs-poor Q2 households typically live in unaffordable rental housing. This is not the case in Melbourne, where nearly two-thirds of Q2 households in inner and middle Melbourne live in affordable private rental.
- In Sydney, the small number of part-time employed and jobs-seeking households renting affordably increases with distance from the central ring of suburbs (Figure 19, Panel A). In Melbourne, this trend differs with the number of part-time and jobs-seeking households living affordably, similar to the number living affordably in outer Melbourne (Figure 19, Panel B).
- In Sydney, the larger number of Q2 part-time and jobs-seeking households renting unaffordably is more likely to be found in middle-ring suburbs. This is also the case for Q2 households not in the labour force, but differences to outer Sydney are less marked. In Melbourne, the number of part-time employed and jobs-seeking households in unaffordable rental is substantially lower than in Sydney, but these households are more likely to live in middle-ring suburbs rather than outer Melbourne (approximately twice as likely) (Figure 19, Panel B).

Figure 20 repeats this analysis for Q3 households in Sydney (Panel A) and Melbourne (Panel B). The aggregate statistics for all private renters (Table 13) showed that Q3 renters were much more likely to be jobs-rich. In Figure 20:

- Most jobs-poor Q3 renters live affordably in both cities, although this trend is more marked in Melbourne.
- In both cities, jobs-poor Q3 private renters tend to concentrate in middle-ring suburbs.

The concentration of jobs-seeking households in middle-ring suburbs is suggestive of households trading off affordability for access to employment. In Sydney, the evidence also suggests that some Q3 households make a comparable trade-off.

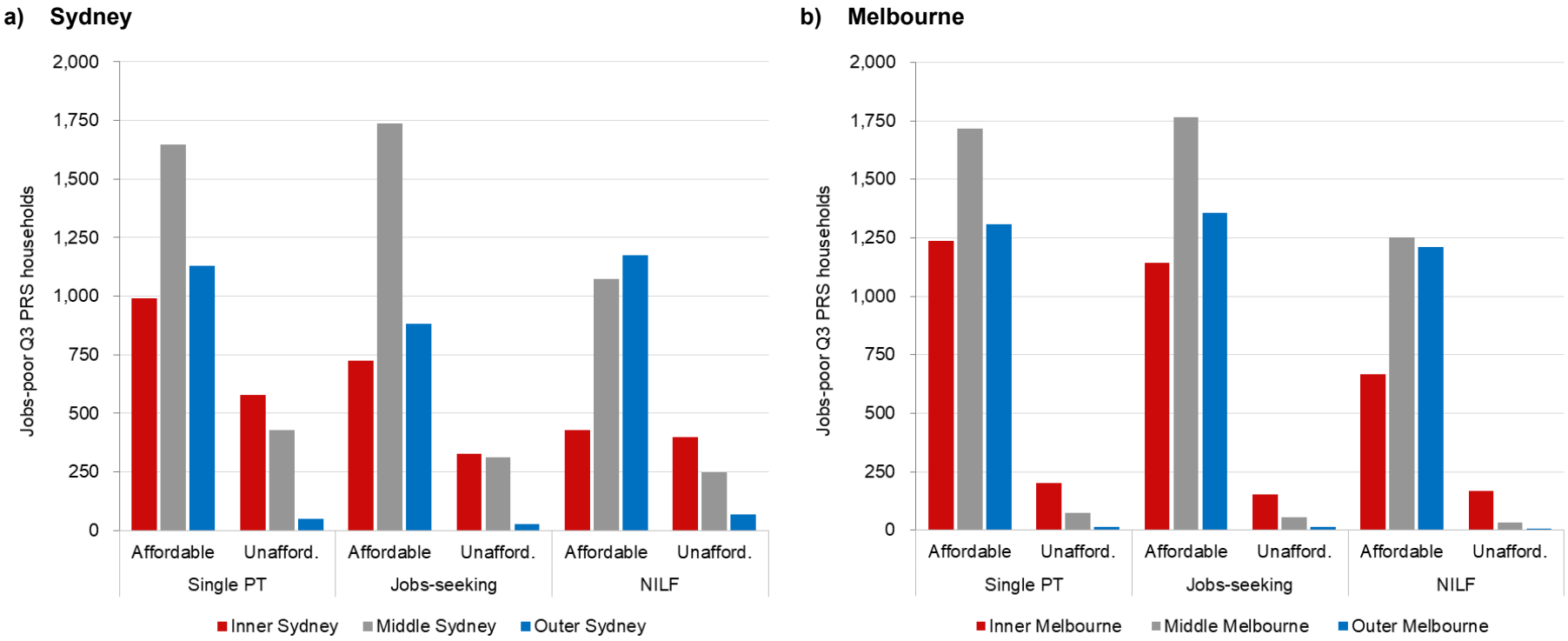
Figure 19: Where are jobs-poor Q2 PRS households, in affordable and unaffordable rental, located across inner, middle and outer Sydney and Melbourne, 2016?



Note: In panels A and B, the six columns for each employment status group (single part-time, jobs-seeking and NILF) combine to the total number of Q2 private renters living affordably and unaffordably across inner, middle and outer Sydney and Melbourne. For instance, in panel A, approximately 1200 single part-time households live affordably in middle Sydney, whereas nearly 4000 live unaffordably in middle Sydney. Comparing the bars within each group gives a sense of this group's location in the metropolitan area. Comparing the group as a whole to the two other groups gives a sense of the total number in each employment status group. PT = part-time; NILF = not in labour force.

Source: ABS customised matrix derived from Australian Census of Population and Housing data, 2016.

Figure 20: Where are jobs-poor Q3 PRS households, in affordable and unaffordable rental, located across inner, middle and outer Sydney and Melbourne, 2016?



Note: In panels A and B, the six columns for each employment status group (single part-time, jobs-seeking and NILF) combine to the total number of Q3 private renters living affordably and unaffordably across inner, middle and outer Sydney and Melbourne. For instance, in panel A, approximately 1650 single part-time households live affordably in middle Sydney, whereas some 430 live unaffordably in middle Sydney. Comparing the bars within each group gives a sense of this group's location in the metropolitan area. Comparing the group as a whole to the two other groups gives a sense of the total number in each employment status group. PT = part-time; NILF = not in labour force.

Source: ABS customised matrix derived from Australian Census of Population and Housing data, 2016.

7.5 What is the employment status of Q2 private renter households living in affordable and unaffordable housing in different parts of Sydney, Melbourne and satellite cities in 2016?

In Section 1.2 there is a clear association between affordability outcomes and employment status when looking at all private renters combined, but this difference largely disappears when looking at Q2 renters only. Tables A14–A16 in Appendix 2 provide a detailed comparison of the employment status of Q1, Q2 and Q3 households for inner, middle and outer Sydney and Melbourne, and for their respective satellites. Tables A14–A16 show that the modal employment status for Q2 households, irrespective of affordability outcome, is a household with one person employed full-time; this is followed by a household with one person employed part-time. Overall, however, the differences in employment status between those renting affordably and renting unaffordably in each of the income quintiles and within each area are minor, and most likely reflect variation in hourly wages or detailed hours worked, rather than evidence towards understanding spatial mismatch and trade-offs. However, when comparing across areas, aggregate statistics may still provide insight towards this issue.

- Differences between inner, middle and outer areas of capital cities can provide an indication of whether a trade-off between housing affordability and proximity to jobs might exist *within* capital cities.
- Differences between capital cities and satellite cities provide an indication of whether relocation to a satellite city provides an alternative to remaining in outer suburbs of capital cities.

Panel A in Figure 21 and Figure 22 shows the distribution of household employment status of Q2 private renters in affordable and unaffordable housing in Sydney and satellites (Figure 21) and Melbourne and Geelong (Figure 22). Percentages in Panel A refer to the jobs-rich group combined. Panel B compares the aggregate jobs-rich and jobs-poor status of Q2 renters in unaffordable rental to the equivalent Q1 and Q3 households in unaffordable rental.

With respect to Sydney, Figure 21 shows a number of trends:

- Q2 private renters in Sydney typically live in unaffordable private rental and are concentrated in the middle-ring suburbs (Figure 21 Panel A). These are suburbs with good access to a wide variety of jobs in the metropolitan area.
- Jobs-rich Q2 households in Sydney are less likely to live in unaffordable rental housing in outer Sydney. This trend can be seen more clearly from Panel B. The proportion of jobs-rich Q2 private renters in unaffordable rental is 62 per cent and 55 per cent, respectively, in inner and middle Sydney, but lower at 45 per cent in outer Sydney. The concentration of jobs-rich households in more unaffordable locations and outcomes in inner and middle Sydney is suggestive of households trading off affordability for access to employment. In other words, jobs-rich Q2 households could relocate to outer Sydney and improve their affordability outcome *provided the reduction in housing costs exceeds the increase in commuting costs and provided they could access a job with the same pay*. At the aggregate level, the gap between inner, middle and outer suburbs is suggestive of households trading off affordability for access to jobs. Importantly, jobs-rich locations may also be locations with a higher concentration of private and public services (lifestyle) that also determined location choices.
- The dominance of single full-time worker households for Q2 private renters in both affordable and unaffordable housing.

With respect to Melbourne, Figure 22 shows:

- Unlike Sydney, Q2 renters are overall more likely to live in affordable rental. This is particularly the case in middle and outer Melbourne. In inner Melbourne, the share of Q2 renters in affordable and unaffordable rental is similar.
- Also, in Melbourne the share of jobs-rich Q2 renters living in unaffordable rental declines with distance to the CBD, but the trend is less stark than in Sydney. In Melbourne, the share of jobs-rich households in unaffordable private rental declines from 58 per cent in inner Melbourne to 50 per cent in outer Melbourne.
- The dominance of single full-time earner households for Q2 private renters in both affordable and unaffordable housing.

Finally, with respect to discernible differences between capital cities and satellite cities, Figure 21 and Figure 22 reveal that:

- The difference in affordability outcomes for jobs-rich and jobs-poor Q1 and Q2 private renters in affordable and unaffordable private rental is largely the same across outer parts of Sydney and Melbourne and their respective satellite cities. At this very macro level of analysis, therefore, there is little indication that jobs-rich and jobs-poor households in a capital city are likely to improve their affordability outcome significantly by relocating to satellite cities.

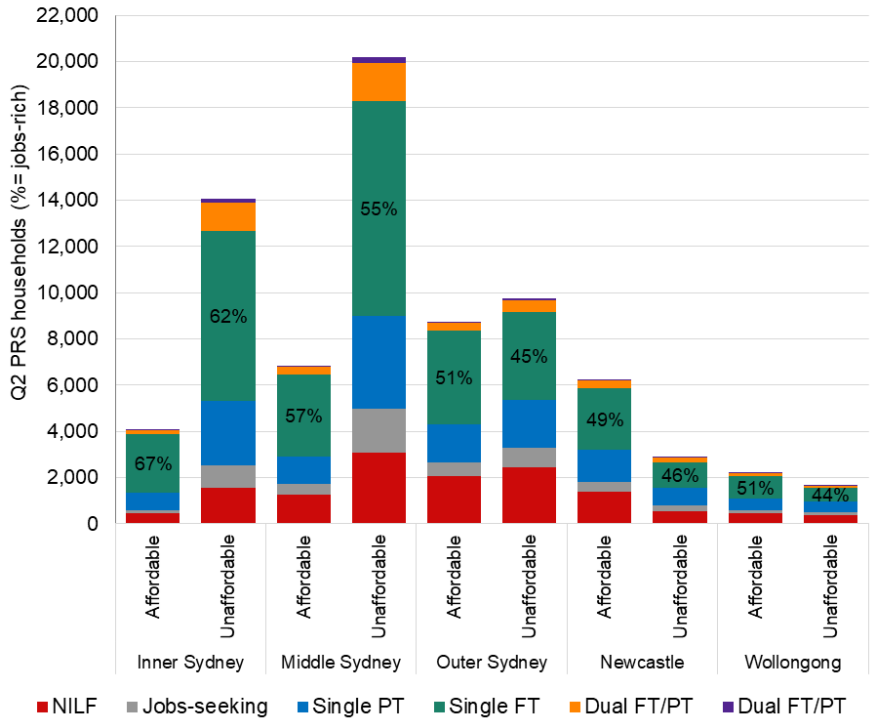
Trends are also shown for Q1 and Q3 households. The majority of Q1 households are not in the labour force and so a focus on jobs-seekers or part-time employment is less meaningful. For this group, the differences between inner/middle and outer/satellite locations are marginal. Over 90 per cent of Q1 households in private rental in inner Sydney and Melbourne rent unaffordably, declining to only to 89 per cent (Sydney) and 88 per cent (Melbourne) in outer areas (see Tables A14a and b in Appendix 2).

Nearly all Q3 households (over 97 per cent) outside inner Melbourne rent affordably and only one in 10 Q3 households in inner Melbourne rent unaffordably. In inner Sydney, the proportion of Q3 renters in unaffordable rental is significantly higher—at 30 per cent (see Tables A16a and b in Appendix 2). Q3 households in unaffordable rental declines to 16 and 3 per cent, respectively, in middle and outer Sydney.

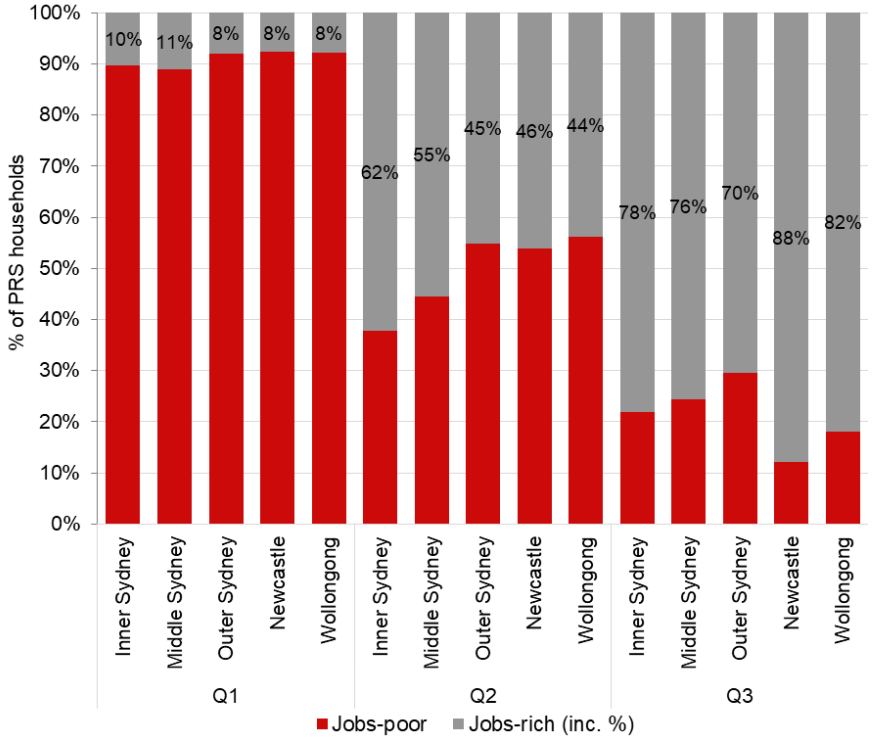
The aggregate statistics in Figure 21 and Figure 22 suggest that Q2 households, and to a lesser extent Q3 households, are trading off affordable housing for access to labour markets. Importantly, affordability decisions are not only made relative to employment opportunities. The marginal differences in employment status of those living affordably and unaffordably in different locations across capital and satellite cities may also reflect a wide range of other decisions that are important in deciding where to live, including lifestyle factors and family or social networks. The aggregate statistics considered here are, therefore, at best, suggestive of trends and patterns.

Figure 21: Q2 PRS affordability: employment status and comparison with Q1 and Q3 PRS households in unaffordable rental, Sydney and satellites, 2016

a) Q2 PRS household employment status in affordable and unaffordable rental



b) Q1, Q2 and Q3 jobs-rich and jobs-poor households in unaffordable private rental

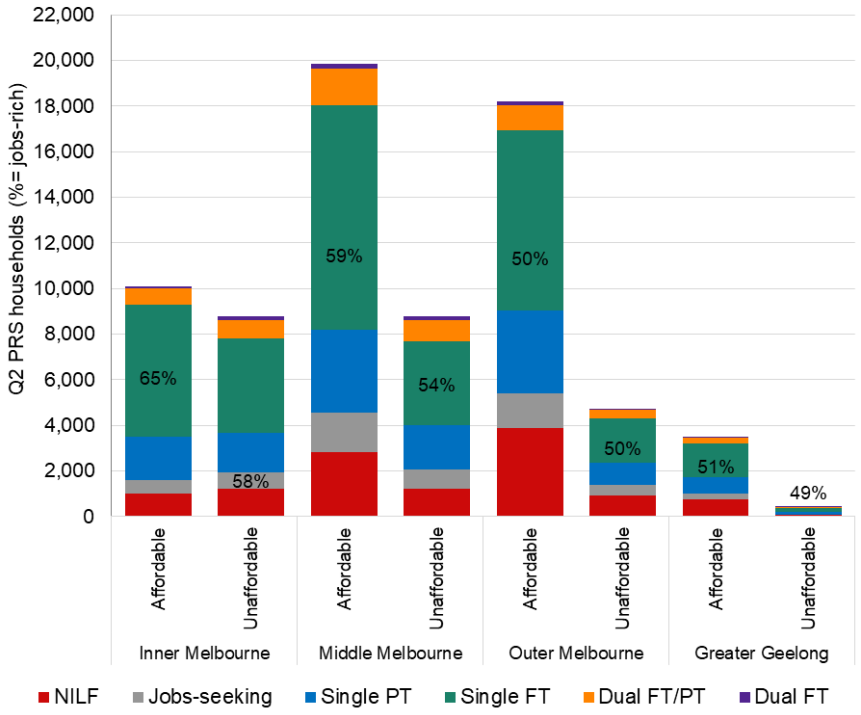


Note: Percentage in Panel A refers to combined share of jobs-rich Q2 households. FT = full-time; PT = part-time; NILF = not in labour force.

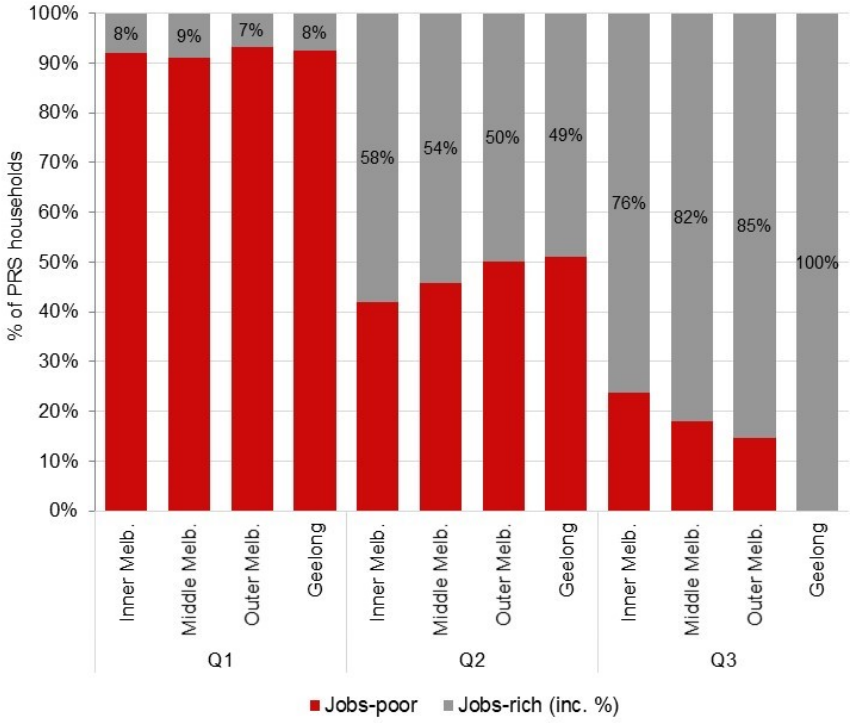
Source: ABS customised matrix derived from Australian Census of Population and Housing data, 2016.

Figure 22: Q2 PRS affordability: employment status and comparison with Q1 and Q3 PRS households in unaffordable rental, Melbourne and satellites, 2016

a) Q2 PRS household employment status



b) Q1, Q2 and Q3 jobs-rich and jobs-poor households in unaffordable private rental



Note: Percentage in Panel A refers to combined share of jobs-rich Q2 households. FT = full-time; PT = part-time; NILF = not in labour force.

Source: ABS customised matrix derived from Australian Census of Population and Housing data, 2016.

7.6 Policy development implications

It is clear that employment status—the amount of waged income or waged hours—in a household chiefly determines a household's income quintile and its affordability outcome. The findings in this chapter start to unpack how the supply of affordable private rental dwellings might relate to employment participation and affordability outcomes.

A particular focus of the chapter is on what statistical aggregates can tell us about whether the supply and availability of affordable rental housing is resulting in a spatial mismatch that disadvantages lower- and moderate-income households in accessing labour markets, or whether low- and moderate-income households trade off affordability for access to employment.

- It is a common perception that work in capital cities is highly centralised. While this may be true for some types of jobs and industries, it is not necessarily the case for the type of jobs that many low- and medium-income households access. If households trade off affordability for access to jobs one would expect low- and moderate-income households to have a variety of affordability outcomes across inner, middle and outer parts of capital cities. The results in this section show that Q2 households have a tendency to locate in middle-ring suburbs, but also in inner-city areas of Sydney and Melbourne, where housing costs are high relative to the outer rings of capital cities and (some) satellite city locations. This suggests that households trade off affordable rental outcomes for access to employment.[37] From a policy perspective, this raises concerns about the role that rental markets and new rental supply play in facilitating urban equity and social justice. This issue is particularly pronounced in Sydney, and to a lesser extent also extends to Q3 households. However, it is less clear that the supply and availability, on average, is indicative of a strong spatial mismatch that strongly inhibits jobs and skills-matching.
- It has been a longstanding policy ambition to decentralise population growth in capital cities to relieve infrastructure pressure and congestion costs—that is, negative externalities—in capital cities. On average, the aggregate statistics in this chapter suggest that satellite cities provide no better outcomes for inner- and middle-suburb private renters than outer capital city locations. Policies to facilitate the development of satellite cities (and other Australian cities) therefore need to be approached from a point of developing these cities in their own right, rather than as overspill locations for Sydney and Melbourne.

[37] As emphasised in the main section, areas with good access to jobs may also provide good access to a range of private and public services that are important in households' location decision-making.

8 Policy development options

8.1 Policy questions: key research findings

Can the PRS provide an adequate supply of dwellings that are affordable to lower income households? This was the question that stimulated the initial project in this series of five projects and remains a critical policy concern. The results of this study clearly indicate that current policies are not meeting the needs of vulnerable private renter households. As such, they provide a rationale for the many recent (and longer standing) policy studies that have pointed to ways in which affordability outcomes might be improved and, in particular, for those studies that have pointed to how the supply of affordable rental housing might be stimulated. A summary of policy options from past AHURI reports and a brief overview of their effectiveness can be found in AHURI (2016).

While the results of this paper do not give any insight into which policies are likely to be the most effective, they do highlight the need to consider the spatial implications of these policies—an aspect that is often ignored in policy analyses.

The PRS has been increasing in size since 1996 and, more rapidly, since 2006. This increase is not more of the same: there has been an increasing concentration of private dwellings with rents at mid-market levels and an increase in middle- to higher income households that rent privately. Rental market restructuring has also had a distinct spatial dimension, with increased rent levels in inner and middle suburbs of capital cities and more affordable rentals in outer suburbs and large regional centres.

8.1.1 How can increasing shortages in the supply of rental housing affordable by lower income households 2006–2016 be addressed?

Previous reports have examined options for addressing shortages of rental housing affordable for lower income households, including:

- increasing Rent Assistance for Q1 households
- capital investment in social housing
- reshaping taxation policies to encourage small-scale investors to provide lower-rent properties
- creating incentives for new types of institutional investment
- moderation of rent increases for current renters during their tenancies (see Hulse, Reynolds et al. 2014: 47–48; Hulse, Reynolds et al. 2015: 63–66; Wulff, Reynolds et al. 2011: 27–28; and see also Productivity Commission 2019a).

At the time of writing (August 2019), these options have proved to be politically difficult and/or too slow to address the increasing shortages of rental dwellings for lower income households. There is growing recognition that any solution will require a significant amount of government subsidy (see for example AHWG 2016; Daley et al. 2017).

There is an urgent need for additional supply of rental housing affordable by Q1 households—that is, below 2016 $202 per week—as the private rental market has not provided, does not provide and cannot provide enough rental dwellings at this level. Even in the context of a large increase in private rental supply 2006–2016, some four out of five low-income households experienced affordability stress in 2016. It is essential that stock increases are diverse and that rents be kept at affordable levels for the Q1 households so that other undesirable social outcomes—such as overcrowding and very low-quality housing outcomes—are avoided in the available stock.

- The shortage of supply affordable for Q1 private renters is at least 200,000 dwellings and requires investment in a program in the order of 20,000 additional dwellings a year for 10 years, with a focus on metropolitan areas where need is most acute. A transparent process is required in which different types of social housing providers compete for these funds and specify outcomes in terms of targeting of allocations, rent-setting and tenancy conditions.

Policy development is required to improve the increasing problems of availability of affordable dwellings for Q2 renter households who can afford rents up to $355 per week. The trend in Q2 households living in unaffordable private rental increased strongly 2006–2016, especially in metropolitan regions.

- New types of affordable housing would need to be scaled up, including a variety of not-for-profit—such as housing associations, community housing providers—drawing on funds raised by NHFIC, as well as for-profit models, such as Build to Rent, which raise private finance. Part of the packages needed to make these models work in tight housing markets could be consideration of higher rates of Rent Assistance. However, in tight housing markets, where the supply of housing is often unresponsive to increases in demand, there is also a role for supply-side subsidies and planning amendments that in turn enable housing providers to match properties to particular income and employment of skills profiles. These models need to work in capital cities and large regional cities, where the research finds supply shortages are greatest.

8.1.2 Which lower income households are particularly affected by shortages of affordable and available private rental housing in 2016?

Single income and jobs-poor households in capital cities (and some large regional cities) experience the most widespread and greatest intensity of rental affordability problems. Renting unaffordably in the private market is unlikely to be sustainable for Q1 households, which are unable to increase household income over time due to incapacities, chronic physical and mental health issues or long-term unemployment or disengagement from the labour market. Some Q1 and Q2 private renter households will be able to increase their incomes over time if they can access jobs that match their skills in locations where they can manage the logistics of day-to-day living.

- There is an urgent need for supply solutions for Q1 households (as discussed earlier), with an initial focus on households in metropolitan areas that pay severely unaffordable rents—notably younger (single person) households, which are also affected by increased precarity in the labour market—and families with children, mostly sole parent families, which are increasingly unable to access social housing unless they have complex needs.
- Other options that could be considered for Q2 households include a change to the Rent Assistance formula to take greater account of higher rent payments in some markets, and other supply options—such as a reimagined National Rental Affordability Scheme (NRAS) to provide additional supply targeted at these households. In Sydney, in particular, but also in Melbourne, the availability of affordable rental properties is additionally constrained by competition from Q3 households. Rent Assistance alone is therefore unlikely to address the targeted availability of properties in a way that is achievable through a reimagined NRAS policy.

8.1.3 What role could affordable private rental housing play in encouraging employment participation for lower income households?

In theory, a large and growing PRS enables better matching of jobs and skills, particularly in large cities, in ways that may increase economic participation and enhance city productivity. It can provide greater flexibility for households engaged in a more precarious labour market.

However, in practice, the PRS only provides greater flexibility for lower income households if affordable rental stock is located in areas where they can find jobs to match their skills.

Higher skilled and higher paid occupations and industries are, in general, more spatially concentrated than part-time and lower skilled work. This has two effects in terms of matching workers to jobs. There are employment opportunities in a wide range of locations within Sydney and Melbourne and their satellite cities for those seeking lower-skill, and part-time work. However, many Q2 and Q3 households appear to be self-selecting into middle suburban areas that potentially provide better access to more dispersed jobs, while also ensuring access to those jobs concentrated in the inner and CBD areas. In the longer term, we can anticipate growing demand for rental accommodation in these locations—which will potentially continue to price out those on the lowest incomes.

The implications for policy development are as follows:

- Developing short-term housing assistance where lower income private renter households have experienced a sudden loss of income and are likely to increase their earnings again. In such instances, households may remain in the areas where they have established existing social and employment networks.
- Providing more targeted and coordinated employment and housing assistance for lower income households who pay unaffordable rents. A core group are jobs-poor families, women, older renters, and migrants, all of which have more constraints in where they can live and work. These groups are likely to experience protracted difficulty accessing both the labour market and the PRS over time.
- More strategic location of social and affordable rental dwellings close to transport and economic hubs and precincts across a range of city locations. This would require identification of employment hubs around the suburbs, particularly the middle suburbs, rather than focussing only on commuting to jobs in inner-city locations.
- There needs to be more nuanced understanding of the concentrated/dispersed location of different jobs and the trade-offs that households make between access to jobs, affordable rental housing and a range of other factors. This work is required to shape metropolitan planning strategies, as well as policies in housing, employment and transport.

8.2 Final remarks

This report is the latest in a series that have reported on changes in private rental supply in Australia since 1996. The value of the series is that by applying a consistent approach to five-yearly Census data, it can chart longer-term changes in the PRS as well as highlighting what appear to be short-term and cyclical changes. Each project has also explored some broader implications of rental market restructuring; in this report we explored some of the spatial dimensions of household employment participation of lower income renters in 2016.

Using Census data in this way has considerable advantages and some limitations. The advantages lie in the very high response rate to the Census,[38] which enables a degree of spatial disaggregation and analysis that is not possible with Australia-wide household sample surveys. The series has also benefited from high-level technical advice from the ABS about the use of

[38] The ABS reports that the dwelling response rate for private dwellings was 95.1 per cent in 2016 and the person response rate (all types of dwellings) was 94.8 per cent in 2016 (ABS 2017c *Census of population and housing: understanding the census and census data, Australia*, 2016, cat. no. 2900.0).

Census data, including development and application of a method for imputation of household incomes that is essential for the project. The main limitations are twofold:

- Census data releases are lagged due to the enormity of the processing task, and Census questions are necessarily limited to ensure a high response rate. Analysis of change in private rental supply is published three years after the Census and housing markets can change considerably in the interim. This has been the case in Australia since 2016–2017, with falling house prices in major cities and little or no increases in rents.
- The relatively simple nature of Census questions about renting enables consistency across years but does not enable the series to include analysis of some of the dynamics of rental supply that have been identified in other research, including the increase in short-term lets such as Airbnb (Crommelin, Troy et al. 2018; Gurran and Phibbs 2017), and informal renting arrangements (Dalton, Pawson et al. 2015; Parkinson, James et al. 2018).

In brief, charting changes in private rental supply every five years is important to understanding the temporal and spatial dimensions of an increasingly critical part of the Australian housing system. It is important that it is supplemented by careful analysis of household surveys that occur more recently, such as the ABS Survey of Income and Housing, as well as alternative data sets such as the Household Income and Labour Dynamics of Australia (HILDA) panel data, which can interrogate household behaviours and trade-offs in a more nuanced way.

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Appendix 1: Additional details on methodology

Data file structure: research questions 1 and 2

The 2016 Census data for this project was obtained in seven separate files: three relating to RQs 1 and 2 and four files to examine RQ3, a new component in the series. In the past, only two files were necessary for RQs 1 and 2:

- an 'expanded file' that included the household income quintiles, tenure and various socio-demographic variables for all Australian households within 20 spatial units
- a 'summary' file that included the 12 income and 12 rent segments for only PRS households across 88 spatial units.

However, after comparing totals from the standard 'expanded' file with those produced by the ABS TableBuilder product, notable differences were found. Our ABS consultant reviewed the data files and concluded that these differences likely stemmed from the ABS removing a data-processing procedure known as 'additivity' for the 2016 Census: additivity is a process that makes small adjustments to table cells to ensure internal consistency of tabular output. It is a process that was applied to (at least) 2006 and 2011 Census data. This was the first time in this series of projects that the technique was not used. Our consultant suggested that the removal of the additivity procedure would have the greatest impact on large, relatively 'sparse' tables—that is, those with a large number of cells with a very small count—such as our 'expanded' file. In such files, there could be an imbalance in the number of cells being rounded down to zero (rather than up to three), resulting in a noticeable undercount (as found in our expanded file). However, the more compact the file—that is, the fewer small cells—the less impact this has on final totals and these will match published totals more closely.

As a result of this change in ABS data-processing procedures, and to ensure our total counts matched as closely as possible with any already published figures, a 'control' file was specified—a file with a reduced number of variables and spatial units—from which our main shortage analysis was undertaken. The following is a summary of the three files, and the results that were derived from each, used to address RQs 1 and 2:

- **Control file:** shortage results at the national, metro/non-metro and capital city scales are derived from this file. This file includes only three variables: household income quintile; tenure/rent category; and 16 spatial units (capital city and rest of state balances only). This reduction in variables and spatial units (compared to the 'standard' expanded file used in this series), significantly reduced the number of small cells in the resulting data file and, subsequently, also significantly reduced the impact of the removal of the additivity process.
- **Expanded file:** used for the socio-demographic analysis of Q1 and Q2 private renter households. There is a 3.5 per cent undercount of all Australian households in this file compared with the control file.
- **Summary file:** includes the 12 household income and corresponding rent segments of only PRS households, along with cut-points for the 2016 household income quintiles and corresponding affordable rent categories. There are 88 spatial units in this file. The analyses of real rents and incomes, and the 2016 shortage analyses at the sub-city and regional centre scales, are derived from this file. Tables A1 and A2 list the dollar ranges of the 12 weekly gross household income and 12 weekly rent segments for Census years 1996, 2001, 2006, 2011 and 2016, which have been used in this (and previous) reports.

Table A1: Nominal (gross) household weekly income categories: 1996–2016 (Chapter 3)

Weekly household income segment	$1996 per week	$2001 per week	$2006 per week	$2011 per week	$2016 per week
1	$0–$199	$0–$222	$0–$256	$0–$307	$0–$324
2	$200–$299	$223–$334	$257–$385	$308–$462	$325–$487
3	$300–$399	$335–$446	$386–$514	$463–$617	$488–$650
4	$400–$499	$447–$557	$515–$642	$618–$770	$651–$812
5	$500–$599	$558–$669	$643–$771	$771–$925	$813–$975
6	$600–$699	$670–$781	$772–$900	$926–$1,074*	$976–$1,138
7	$700–$799	$782–$892	$901–$1,028	$1,075–$1,234	$1,139–$1,300
8	$800–$999	$893–$1,116	$1,029–$1,287	$1,235–$1,544	$1,301–$1,627
9	$1,000–$1,199	$1,117–$1,339	$1,288–$1,544	$1,545–$1,853	$1,628–$1,952
10	$1,200–$1,499	$1,340–$1,674	$1,545–$1,930	$1,854–$2,316	$1,953–$2,440
11	$1,500–$1,999	$1,675–$2,233	$1,931–$2,575	$2,317–$3,090	$2,441–$3,255
12	$2,000+	$2,234+	$2,576+	$3,091+	$3,256+

**The top of the sixth 2011 household income category ($1,074) is slightly less than the CPI-adjusted value ($1,080) to correspond with the nationwide Q2 value.*

Source: Categories defined by the authors, initially for the 2001-based project (including 1996 values), and subsequently increased by the All Groups CPI for each Census year.

Table A2: Nominal dwelling weekly private rent categories: 1996–2016 (Chapter 3)

Weekly private rent segment	$1996 per week	$2001 per week	$2006 per week	$2011 per week	$2016 per week
1	$1–$60	$1–$67	$1–$77	$1–$92	$1–$97
2	$61–$90	$68–$100	$78–$115	$93–$139	$98–$146
3	$91–$120	$101–$134	$116–$155	$140–$185	$147–$195
4	$121–$150	$135–$167	$156–$192	$186–$231	$196–$244
5	$151–$180	$168–$201	$193–$232	$232–$278	$245–$293
6	$181–$210	$202–$234	$233–$270	$279–$322	$294–$341
7	$211–$240	$235–$268	$271–$309	$323–$370	$342–$390
8	$241–$300	$269–$335	$310–$386	$371–$463	$391–$488
9	$301–$360	$336–$402	$387–$464	$464–$556	$489–$586
10	$361–$450	$403–$502	$465–$579	$557–$695	$587–$732
11	$451–$600	$503–$670	$580–$773	$696–$927	$733–$977
12	$601+	$671+	$774+	$928+	$978+

Source: Categories defined by the authors: the upper values of the ranges correspond with 30 per cent of the upper boundary of the gross household income category in Table A1.

Data file structure: research question 3

Typically, analysis of employment focus on individuals as they relate to housing—for example, mapping journeys to work. An innovation for this project was investigation of the connections between affordable housing supply and household-level employment. To investigate this requires combining the characteristics of people within a household to create household level variables and information. This first involved careful conceptual analysis of the configuration of labour force characteristics of private renter households, and a high level of interaction with the ABS about how best to capture this information. This was informed by the literature review, which identified key themes relating to work and productivity, including:

- conceptualising and measuring hours of work at the level of households
- classifications of occupational groups
- broader connections between labour markets and housing outcomes.

This literature was pivotal in formulating the Census data specifications that add to the conceptual and empirical evidence-base on the spatial distribution of jobs-rich and jobs-poor private renter households living in affordable and unaffordable housing (Chapter 7). As this was a new file, it had to be designed from scratch in consultation with the ABS who advised that, due to data quality considerations, four files were needed. These files were supplied and are the basis of the analysis in Chapter 7.

Household-level files were specified, with each file including:

- household income quintiles (Q1 to Q5)—five categories
- tenure and landlord type, and weekly private rent paid—nine categories
- age of household reference person (15–34 years; 35–54 years; and 55 years+)—three categories
- presence of dependent and/or non-dependent children–four categories
- geography—88 spatial units (including SSD levels for Sydney and Melbourne)

Data for the household-level labour force information relate to: couple families, lone parent families and lone person households. 'Other' family types (including multi-family households) and 'group' households where collective decision-making about housing and employment cannot be assumed, are counted only in the 'all others' category.

Within this framework, four expanded data files were agreed with, and supplied by, the ABS:

1. Labour force status of partners in couples, lone parents in one family households and lone persons by the 12 expanded categories in the jobs-rich to jobs-poor continuum outlined in Table 2 in Chapter 1.
2. Labour force status of partners in couples, lone parents in one family households and lone parents in 12 expanded categories, which identified different household employment status, taking into account combinations of adults within the households in these categories: full-time work, part-time work, jobs-seeking, and not in labour force.
3. The skill levels of partners in couples, lone parents in one family households and lone parents in 13 expanded categories, which identified the combined employment status of households by individual skill level of adults using ANZSCO[39] skill levels as follows: skill level

[39] Australian and New Zealand Standard Classification of Occupations.

A: ANZSCO skill level 1; skill level B: ANZSCO skill levels 2 and 3 combined; and skill level (SL) C: ANZSCO skill levels 4 and 5 combined

4 Partners in couple, and lone parents in one family households and lone persons in 13 expanded categories by individuals within households employed in two definitions of key worker: KW1 (mainly public-sector essential occupations) and KW2 (other essential city support services).

Imputation methodology: ABS

The following is the documentation of the imputation of missing values process undertaken by the ABS to generate the summary and expanded files used in this research.

Overall Imputation Strategy

Impute for Bedrooms (BEDROOM) and Dwelling Structure (STRD), which are required...

- to derive DWEL
- to impute RENT

Impute for Employed (EMPL), which is required...

- to impute INCOME (done in step 0.3)

Impute for partially and fully not-stated household income, which is required...

- to impute RENT

Impute for RENT, which is required...

- to derive TENU

Imputing for Bedrooms & Dwelling Structure

We assign the mode of the BEDROOM variable (4 levels), conditional on the dwelling structure (4 levels). Conversely when imputing for dwelling structure, we apply the mode conditional on BEDROOM—the number of bedrooms (4 levels, with 0–1 bedrooms combined). Where both BEDROOM and STRD are missing, the 'grand mode' (at state level) of each variable is applied independently.

Imputing for Number Employed in household

As for household income, if any one (or more) members of the household had not stated employment status, then the household status was unknown. This was solved by imputing for the employment status of each individual.

Within each state, the population of individuals who stated their employment status was divided into sub-populations by Region (Capital City, Remainder of State/Territory), by sex, by five-year age groups (up to 65), and by relationship in household. The probability of status 'employed' was calculated for each of those sub-populations.

Each of the individuals with unstated employment status was then assigned a value of 'employed' or 'not employed', with the probability of being 'employed' for the relevant sub-population. In this way, the proportion of individuals with unstated employment status, who were assigned to a status of 'employed' was the same (on average) as the proportion for the corresponding sub-population of individuals whose employment status was reported.

Imputing for Household Income

We first partitioned the population into 60 sub-populations for each of the eight states/territories. The sub-populations consisted of:

- Region—2 levels (StatDiv=05 and StatDiv=other).
- Age of household reference person—5 levels.
- HHOLD variable, a derivation based on the composition of the household—6 levels.

Within each sub-population, we then further partition into...

1. A donor population of households where all (relevant) members of the household reported their income and their employment status. The Census file has no invalid or not-stated values for any of region, age of reference person, or HHOLD (since we have already excluded unclassifiable households).
2. An imputed (or recipient) population of households, for which household income was either partially or completely unstated. This recipient population may include households for which an employment status was imputed.
3. All other households not identified in i) or ii) above.

A point estimate for income was assigned to all individuals who stated an income. The median individual income for each income range was used to construct a distribution for individual income within each range. Half the population (on average) was assigned a point estimate uniformly distributed between the low point of the range and the median, while half the population was assigned a point estimate uniformly distributed between the median and the upper point of the range. This method was applied upon the stipulations of the client.

The point estimates were then summed for each household. Where one or more household members did not state income, the sum was considered partial income. A lower and upper bound for the sum of the point estimates was applied, to ensure that the contribution of each household to the original ABS income range could not be inconsistent with the new range for household income—for example, a household with income $0–$249 could not have a new range of $386–$422.

The donor population therefore consisted only of households where all members stated their income. The imputed or recipient population contained a measure of partial household income (which was zero if all individual incomes were not stated).

Within each of the 60 sub-populations, each record in the recipient population was then randomly assigned a donor record's household income, so long as it was at least as great as the partial income. Typically there were a small number of households with partially stated incomes, for which no donor could be found. These were later randomly allocated to an income range which was equal or greater than its partial income, using observed likelihoods at the state level. From this complete distribution of household incomes, the quintile values were identified and the households could be grouped into the 12 real income categories.

Imputing for Rent

The ‘in-scope’ households for the rent imputation are privately rented households (TEND=4 and LLDD = 10, 31, 32), excluding not classifiable households and excluding visitor-only households.

We impute for rent conditional upon region (2 levels per state —the same as for imputing income), dwelling structure (4 levels), bedrooms (4 levels), and income (3 levels).

The four levels for dwelling structure are separate house, semi-detached, etc., flat/unit/apartment and other dwelling. The four levels for bedroom are 0–1, 2, 3, 4+ bedrooms.

As for income, the in-scope households were partitioned (within each sub-population) into the ‘donor population’ (where both rent and income were fully stated), the imputed (or recipient population, all those where rent was not stated), and the remainder. The rent from one record of

the donor population was then randomly assigned to each record in the recipient population (within each sub-population).

Imputing for Year of Arrival of Household Reference Person

All household reference persons who stated year of arrival were stratified by Region (Capital City, Remainder of State/Territory), Age in Single Years and Country of Birth and Year of Arrival.

Median Year of Arrival was determined for each combination of Region, Age and Country of Birth. Each household reference person who did not state year of arrival was allocated to median year of arrival of their combination of Region, Age and Country of Birth. If neither year of arrival nor country of birth was stated, then median Year of Arrival for combination of Region and Age only was allocated.

Appendix 2: Supporting analysis

The purpose of this appendix is twofold:

1. it provides the detailed counts and percentages that are referred to in the main body of this report and that form the basis of the tables/figures presented in the report
2. the tables and graphs continue the series of results presented in the previous reports in this series.

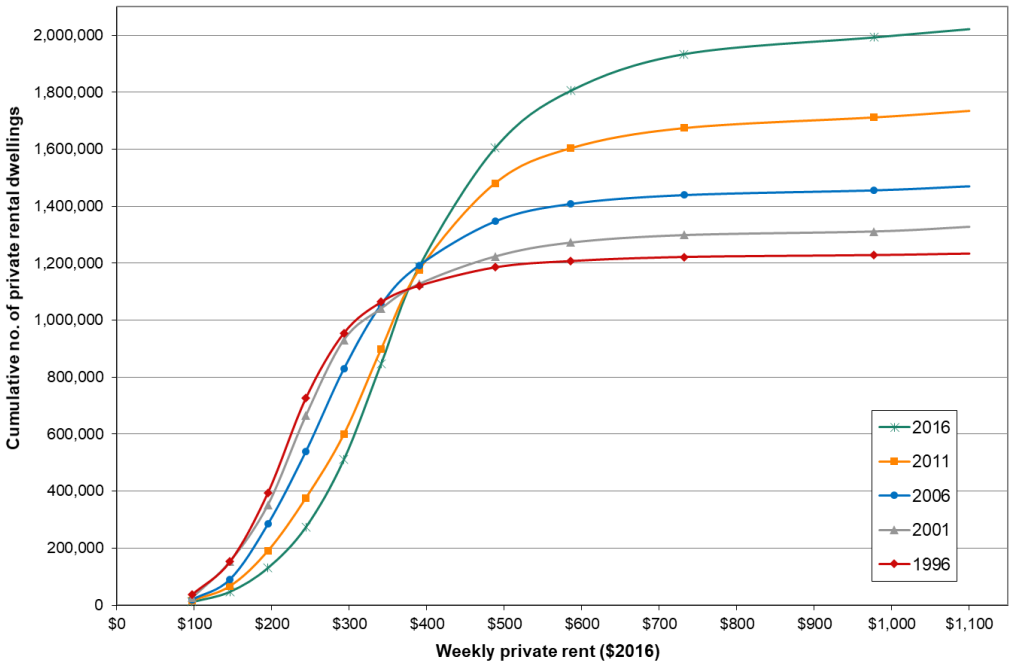
Table A3: Occupied private dwellings in Australia by tenure type: 1996, 2001, 2006, 2011 and 2016 (Chapter 3)

	Tenure					
	Outright owner	Purchaser	Private renter	Social renter	Other groups/ tenure not stated*	Total
1996						
No. of households	2,612,000	1,617,000	1,234,000	359,000	459,000	6,280,000
% of households	42	26	20	6	7	100
2001						
No. of households	2,757,000	1,861,000	1,328,000	358,000	441,000	6,745,000
% of households	41	28	20	5	7	100
2006						
No. of households	2,431,000	2,436,000	1,470,000	352,000	456,000	7,145,000
% of households	34	34	21	5	6	100
2011						
No. of households	2,488,000	2,709,000	1,735,000	363,000	465,000	7,760,000
% of households	32	35	22	5	6	100
2016						
No. of households	2,566,000	2,855,000	2,023,000	348,000	493,000	8,286,000
% of households	31	34	24	4	6	100
Intercensal change—5 years						
2011–2016						
Absolute no. of h'holds	78,000	146,000	289,000	–15,000	29,000	526,000
% change within tenure	3	5	17	–4	6	7
Intercensal change—10 years						
2006–2016						
Absolute no. of h'holds	135,000	419,000	553,000	–4,000	38,000	1,142,000
% change within tenure	6	17	38	-1	8	16
Intercensal change—20 years						
1996–2016						
Absolute no. of h'holds	–46,000	1,238,000	790,000	–10,000	34,000	2,006,000
% change within tenure	–2	77	64	–3	7	32

**Other groups/tenure not stated includes: 'being occupied under a life-tenure scheme'; 'rented–other landlord type'; 'rented–landlord type not stated' (including those with rent not stated); all renters paying zero rent (regardless of landlord type); 'other tenure type', and; 'tenure type not stated'.*

Source: ABS customised matrices derived from the Australian Census of Population and Housing 1996, 2001, 2006, 2011 and 2016.

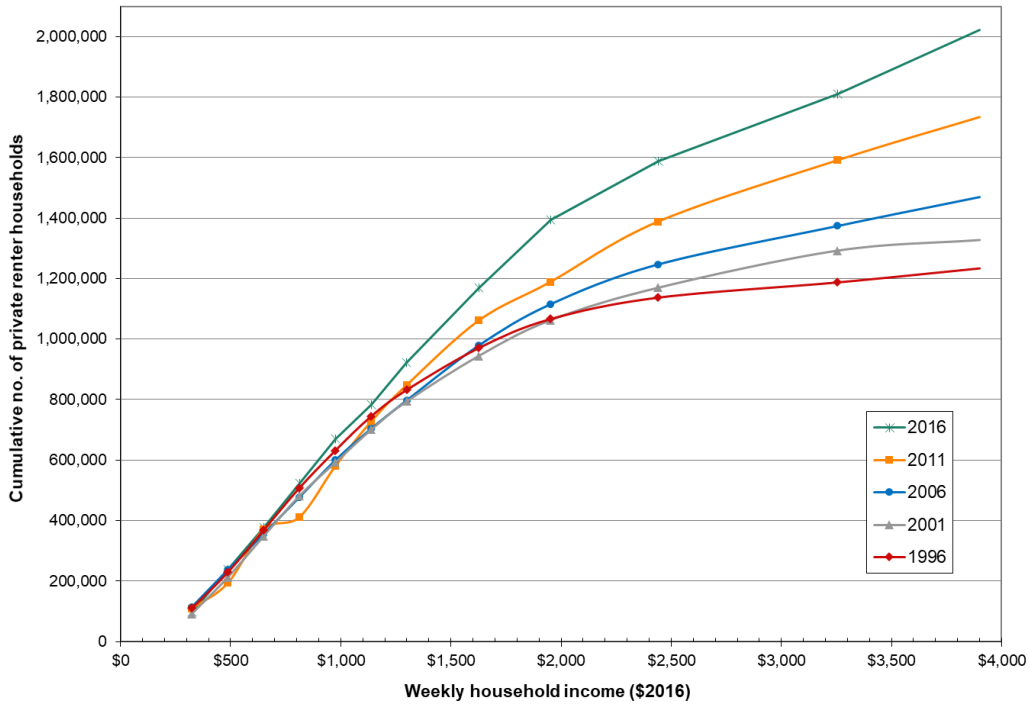
Figure A1: Cumulative distributions of private rental stock, Australia 1996–2016 (Chapter 3)



Source: ABS customised matrices derived from the Australian Census of Population and Housing 1996, 2001, 2006, 2011 and 2016.

Figure A2 shows a consistent volume of PRS households at the lower end of the income distribution. In contrast, Figure A1 shows a dispersion in the volume of lower-rent properties as the number of low cost rentals progressively declines over the 20 years.

Figure A2: Cumulative distributions of PRS household incomes, Australia, 1996–2016 (Chapter 3)



Source: ABS customised matrices derived from the Australian Census of Population and Housing 1996, 2001, 2006, 2011 and 2016.

Table A4: Private rental dwellings (stock) by weekly rent segment, Australia: 1996, 2001, 2006, 2011 and 2016 (Chapter 3)

Weekly rent segment ($2016)	1996				2001				2006				2011				2016			
	Dwellings per segment		Cumulative dwellings		Dwellings per segment		Cumulative dwellings		Dwellings per segment		Cumulative dwellings		Dwellings per segment		Cumulative dwellings		Dwellings per segment		Cumulative dwellings	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
$1–$97	37,000	3	37,000	3	26,000	2	26,000	2	19,000	1	19,000	1	16,000	1	16,000	1	11,000	1	11,000	1
$98–$146	116,000	9	153,000	12	128,000	10	154,000	12	72,000	5	91,000	6	51,000	3	67,000	4	36,000	2	47,000	2
$147–$195	242,000	20	395,000	32	199,000	15	353,000	27	194,000	13	285,000	19	124,000	7	191,000	11	84,000	4	131,000	6
$196–$244	333,000	27	727,000	59	313,000	24	666,000	50	255,000	17	540,000	37	186,000	11	377,000	22	143,000	7	274,000	14
$245–$293	228,000	18	955,000	77	265,000	20	931,000	70	289,000	20	830,000	56	224,000	13	600,000	35	237,000	12	511,000	25
$294–$341	109,000	9	1,064,000	86	110,000	8	1,041,000	78	225,000	15	1,055,000	72	299,000	17	899,000	52	336,000	17	847,000	42
$342–$390	57,000	5	1,121,000	91	86,000	6	1,127,000	85	138,000	9	1,192,000	81	278,000	16	1,177,000	68	341,000	17	1,188,000	59
$391–$488	64,000	5	1,186,000	96	96,000	7	1,224,000	92	154,000	11	1,347,000	92	304,000	18	1,481,000	85	416,000	21	1,604,000	79
$489–$586	22,000	2	1,208,000	98	49,000	4	1,273,000	96	61,000	4	1,408,000	96	123,000	7	1,604,000	93	202,000	10	1,806,000	89
$587–$732	14,000	1	1,222,000	99	26,000	2	1,299,000	98	31,000	2	1,439,000	98	70,000	4	1,674,000	97	128,000	6	1,934,000	96
$733–$977	7,000	1	1,229,000	100	13,000	1	1,312,000	99	17,000	1	1,456,000	99	37,000	2	1,712,000	99	59,000	3	1,992,000	99
$978+	5,000	0	1,234,000	100	16,000	1	1,328,000	100	14,000	1	1,470,000	100	23,000	1	1,735,000	100	29,000	1	2,022,000	100
Total	*1,234,000*	*100*	*1,234,000*	*100*	*1,328,000*	*100*	*1,328,000*	*100*	*1,470,000*	*100*	*1,470,000*	*100*	*1,735,000*	*100*	*1,735,000*	*100*	*2,022,000*	*100*	*2,022,000*	*100*

Note: weekly rent segments equate to 30 per cent of household income segments in Table A5.

Source: ABS customised matrices derived from the Australian Census of Population and Housing 1996, 2001, 2006, 2011 and 2016.

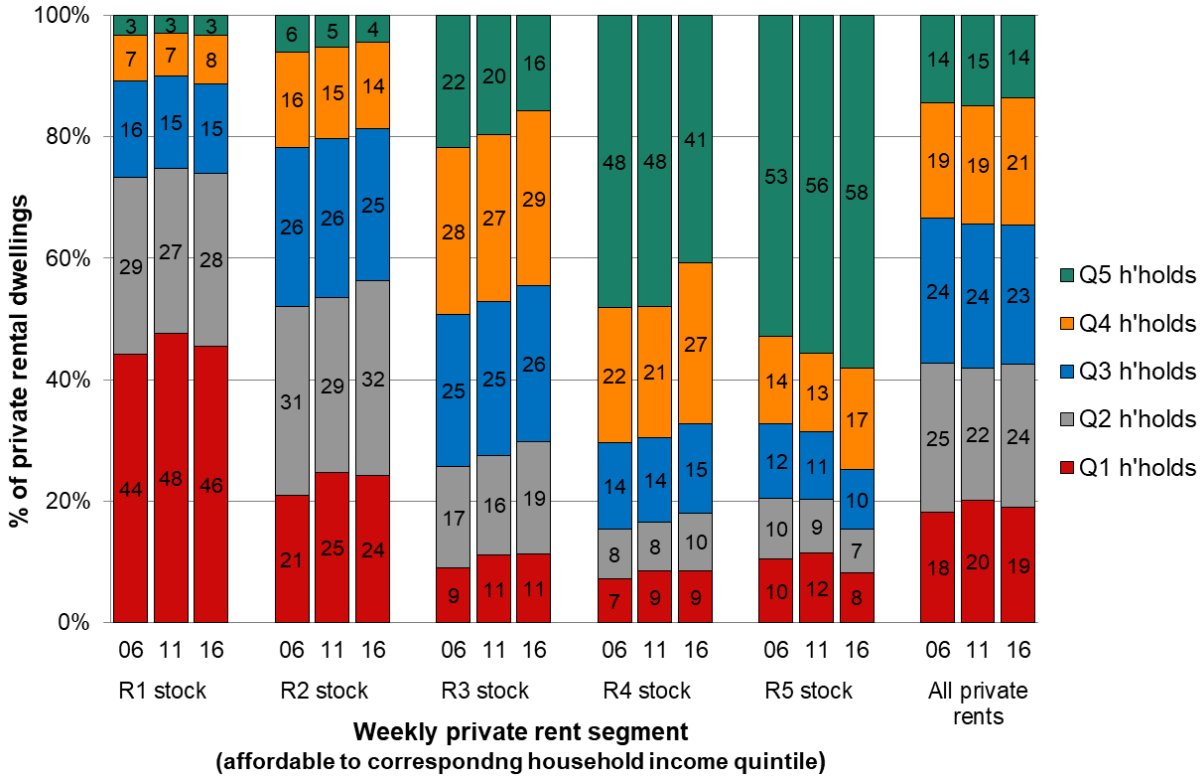
Table A5: Distribution of weekly income of households in the private rental market, Australia: 1996, 2001, 2006, 2011 and 2016 (Chapter 3)

Weekly household income segment ($2016)	1996				2001				2006				2011				2016			
	Households per segment		Cumulative households		Households per segment		Cumulative households		Households per segment		Cumulative households		Households per segment		Cumulative households		Households per segment		Cumulative households	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
$0–$324	110,000	9	110,000	9	92,000	7	92,000	7	114,000	8	114,000	8	109,000	6	109,000	6	98,000	5	98,000	5
$325–$487	119,000	10	229,000	19	121,000	9	212,000	16	123,000	8	237,000	16	84,000	5	193,000	11	140,000	7	238,000	12
$488–$650	140,000	11	369,000	30	136,000	10	349,000	26	119,000	8	356,000	24	178,000	10	371,000	21	139,000	7	377,000	19
$651–$812	139,000	11	508,000	41	133,000	10	482,000	36	121,000	8	477,000	32	40,000	2	411,000	24	147,000	7	524,000	26
$813–$975	124,000	10	631,000	51	110,000	8	592,000	45	122,000	8	600,000	41	168,000	10	580,000	33	147,000	7	671,000	33
$976–$1,138	114,000	9	745,000	60	109,000	8	701,000	53	105,000	7	704,000	48	148,000	9	728,000	42	112,000	6	783,000	39
$1,139–$1,300	87,000	7	832,000	67	94,000	7	795,000	60	94,000	6	798,000	54	121,000	7	849,000	49	139,000	7	922,000	46
$1,301–$1,627	138,000	11	971,000	79	150,000	11	945,000	71	181,000	12	979,000	67	213,000	12	1,062,000	61	247,000	12	1,168,000	58
$1,628–$1,952	96,000	8	1,066,000	86	118,000	9	1,063,000	80	136,000	9	1,115,000	76	127,000	7	1,189,000	69	225,000	11	1,393,000	69
$1,953–$2,440	71,000	6	1,137,000	92	107,000	8	1,170,000	88	131,000	9	1,247,000	85	199,000	11	1,389,000	80	194,000	10	1,587,000	79
$2,441–$3,255	51,000	4	1,188,000	96	123,000	9	1,293,000	97	127,000	9	1,374,000	94	203,000	12	1,592,000	92	222,000	11	1,809,000	89
$3,256+	46,000	4	1,234,000	100	35,000	3	1,328,000	100	96,000	7	1,470,000	100	143,000	8	1,735,000	100	212,000	11	2,022,000	100
Total	*1,234,000*	*100*	*1,234,000*	*100*	*1,328,000*	*100*	*1,328,000*	*100*	*1,470,000*	*100*	*1,470,000*	*100*	*1,735,000*	*100*	*1,735,000*	*100*	*2,022,000*	*100*	*2,022,000*	*100*

Note: corresponding affordable rent segments are shown in Table A4.

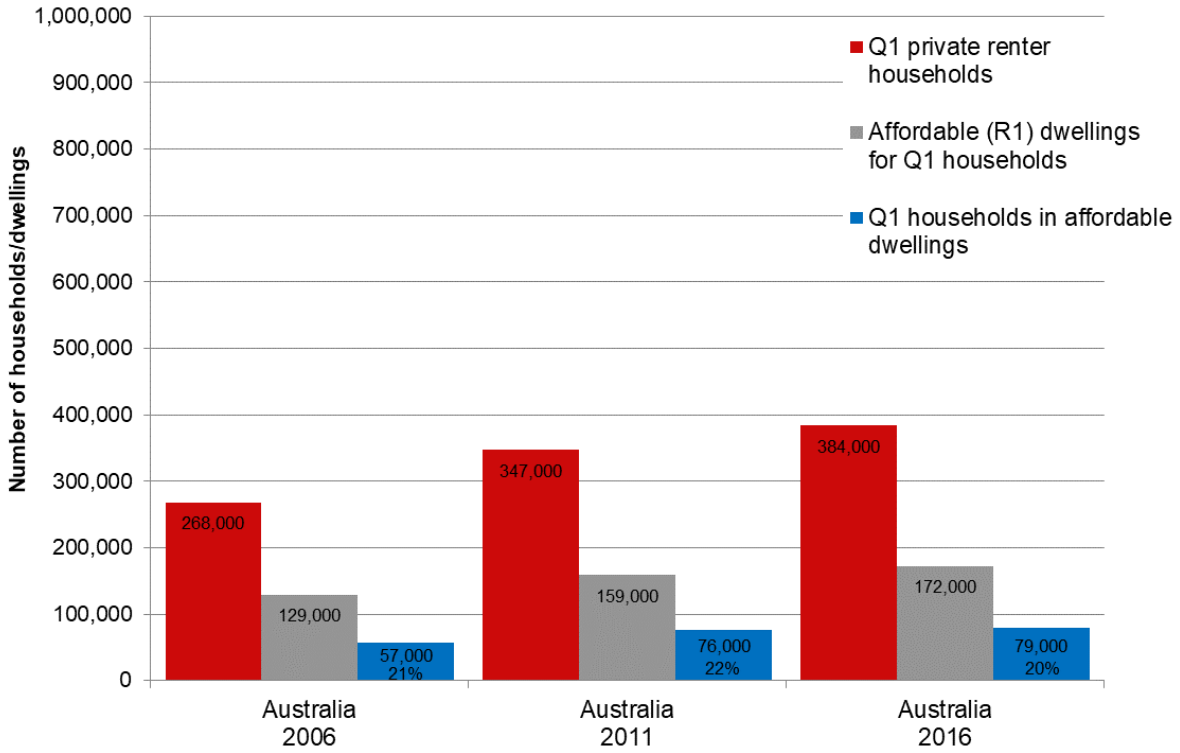
Source: ABS customised matrices derived from the Australian Census of Population and Housing 1996, 2001, 2006, 2011 and 2016.

Figure A3: Income of households (quintile) occupying private rental stock affordable to Q1–Q5 households (per cent share), Australia, 2006, 2011 and 2016 (Chapter 4)



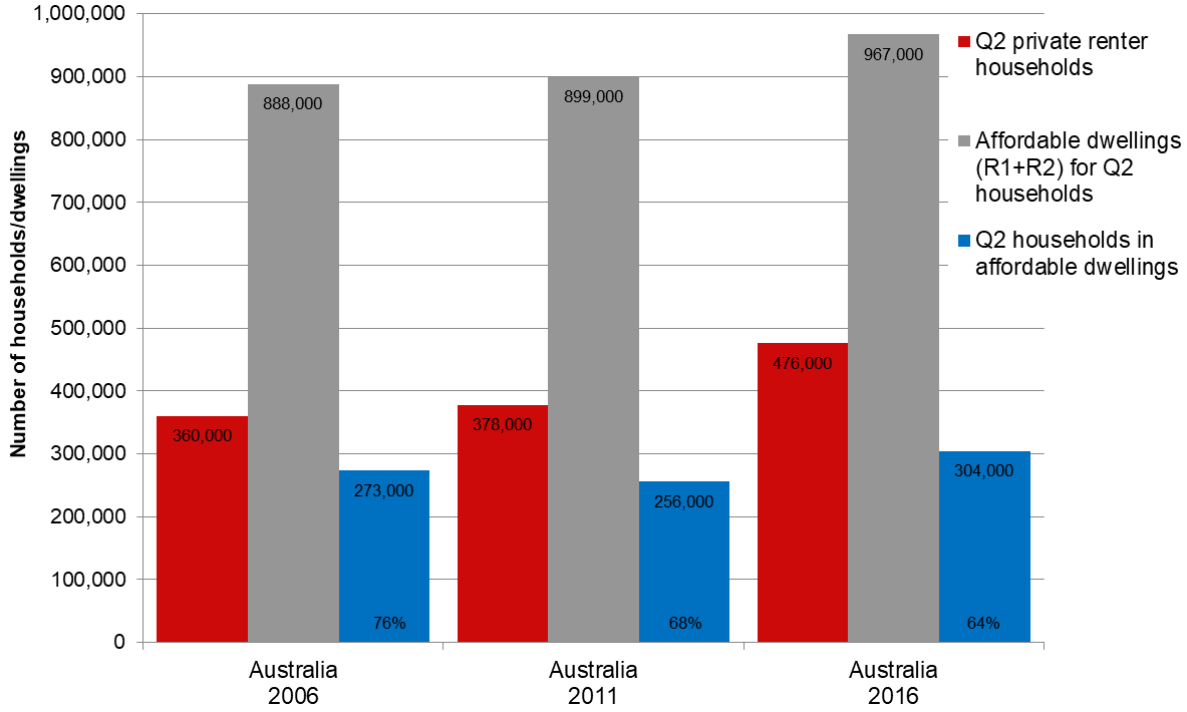
Source: ABS customised matrices derived from the Australian Census of Population and Housing 2006, 2011 and 2016.

Figure A4: Shortage and availability for Q1 households: Australia, 2006, 2011 and 2016 (Chapter 4)



Source: ABS customised matrices derived from the Australian Census of Population and Housing 2006, 2011 and 2016.

Figure A5: Shortage and availability for Q2 households: Australia, 2006, 2011 and 2016 (Chapter 4)



Source: ABS customised matrices derived from the Australian Census of Population and Housing 2006, 2011 and 2016

Table A6: Shortage of affordable and available stock for Q1 PRS households, 2016, Australia, metro and non-metro regions, capital cities and selected capital city sub-regions (Chapter 4 and Chapter 5)

	Very low (Q1) income h'holds	Potentially affordable dwellings (R1)	Shortage or surplus of affordable stock (= 2 - 1)	Higher income h'hlds in the potentially affordable stock	Affordable dwellings actually available (= 2 - 4)	Shortage of affordable *and* available stock (= 3 - 4)	Q1 h'holds paying unaffordable rent (%) (= 6/1 x 100)
Column	***1***	***2***	***3***	***4***	***5***	***6***	***7***
Australia	384,000	172,000	–212,000	94,000	79,000	–305,000	**80**
Metropolitan regions	221,000	56,000	–165,000	32,000	24,000	–197,000	**89**
Non-metro regions	163,000	117,000	–46,000	62,000	55,000	–108,000	**66**
Capital cities							
Sydney	60,600	10,900	–49,700	6,300	4,600	–56,000	**92**
Melbourne	70,000	17,400	–52,600	10,200	7,200	–62,800	**90**
Brisbane	33,300	8,400	–24,900	4,800	3,600	–29,600	**89**
Adelaide	25,300	8,600	–16,800	4,400	4,200	–21,100	**84**
Perth	23,200	6,500	–16,700	4,000	2,500	–20,700	**89**
Hobart	5,200	2,700	–2,500	1,200	1,500	–3,700	**72**
Darwin^	800	400	–400	300	100	–700	**88**
ACT	3,000	1,000	–2,000	700	300	–2,700	**90**
Capital city sub-regions							
Sydney							
Inner	20,300	3,000	–17,300	1,800	1,200	–19,100	**94**
Middle	22,700	4,100	–18,600	2,500	1,600	–21,100	**93**
Outer	17,300	3,800	–13,500	2,000	1,800	–15,500	**90**
Melbourne							
Inner	23,200	4,000	–19,200	2,300	1,700	–21,500	**93**
Middle	27,100	8,200	–18,900	4,800	3,400	–23,700	**87**
Outer	19,400	5,100	–14,300	3,000	2,100	–17,300	**89**
Brisbane							
Inner	10,500	2,900	–7,500	1,700	1,200	–9,200	**88**
Middle	6,600	1,900	–4,700	1,100	700	–5,800	**89**
Outer	16,200	3,500	–12,700	1,900	1,700	–14,500	**90**
Adelaide							
Northern	8,500	3,000	–5,500	1,400	1,600	–6,900	**82**
Western	4,900	2,000	–2,900	1,100	900	–4,000	**81**
Eastern	5,400	1,600	–3,800	900	700	–4,700	**87**
Southern	6,400	1,900	–4,500	1,000	900	–5,500	**86**
Perth							

	Very low (Q1) income h'holds	Potentially affordable dwellings (R1)	Shortage or surplus of affordable stock (= 2 - 1)	Higher income h'hlds in the potentially affordable stock	Affordable dwellings actually available (= 2 - 4)	Shortage of affordable *and* available stock (= 3 - 4)	Q1 h'holds paying unaffordable rent (%) (= 6/1 x 100)
Column	***1***	***2***	***3***	***4***	***5***	***6***	***7***
Central	2,600	700	–2,000	400	300	–2,300	**90**
East	3,300	1,100	–2,200	700	400	–2,800	**87**
North	6,500	1,700	–4,800	1,000	700	–5,800	**90**
South West	5,000	1,200	–3,800	700	500	–4,500	**90**
South East	5,800	1,900	–4,000	1,200	700	–5,200	**88**

Notes: ^Low counts in Darwin: caution should be exercised when interpreting these figures; figures may not sum exactly due to rounding; data were sourced from two separate ABS matrices and therefore, due to standard ABS confidentialisation processes, some inner, middle and outer counts do not sum exactly to their capital city total.

Source: ABS customised matrix derived from the Australian Census of Population and Housing 2016.

Table A7: Shortage of affordable and available stock for Q2 PRS households, 2016: Australia, metro and non-metro regions, capital cities and selected capital city sub-regions (Chapter 4 and Chapter 5)

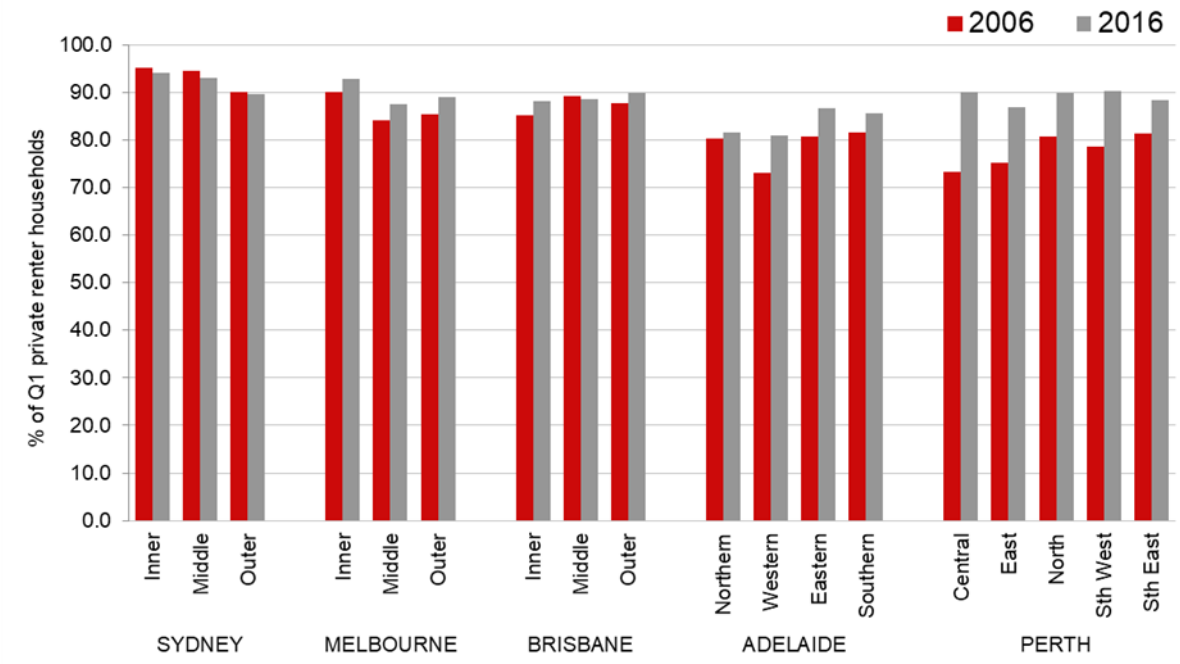
	Low (Q2) income h'holds	Potentially affordable dwellings (R1+R2)	Shortage or surplus of affordable stock (= 2 - 1)	Other income h'hlds in the potentially affordable stock	Affordable dwellings actually available (= 2 - 4)	Shortage of affordable *and* available stock (= 3 - 4)	Q2 h'holds paying unaffordable rent (%) (= 6/1 x 100)
Column	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Australia	476,000	967,000	491,000	664,000	304,000	–173,000	**36**
Metropolitan regions	296,000	512,000	216,000	352,000	160,000	–136,000	**46**
Non-metro regions	180,000	456,000	275,000	312,000	144,000	–37,000	**20**
Capital cities							
Sydney	84,800	79,000	–5,900	54,200	24,800	–60,000	**71**
Melbourne	96,400	193,300	96,900	131,200	62,100	–34,300	**36**
Brisbane	49,400	90,600	41,200	61,700	29,000	–20,500	**41**
Adelaide	29,300	71,200	41,900	47,200	24,000	–5,300	**18**
Perth	23,500	52,600	29,100	40,200	12,400	–11,100	**47**
Hobart	5,500	13,800	8,300	9,100	4,700	–800	**14**
Darwin^	1,200	2,800	1,700	2,300	500	–700	**59**
ACT	5,700	8,200	2,500	5,800	2,400	–3,300	**58**
Capital city sub-regions							
Sydney							
Inner	25,000	17,300	–7,700	12,300	5,000	–20,100	**80**
Middle	35,500	27,700	–7,700	19,100	8,600	–26,900	**76**
Outer	24,500	33,800	9,300	22,500	11,300	–13,200	**54**
Melbourne							
Inner	26,300	41,000	14,800	28,600	12,400	–13,900	**53**
Middle	39,600	80,800	41,100	54,900	25,900	–13,700	**35**
Outer	30,400	71,400	41,000	47,700	23,700	–6,700	**22**
Brisbane							
Inner	10,300	23,300	13,000	18,100	5,200	–5,100	**49**
Middle	8,000	14,600	6,700	11,200	3,500	–4,500	**57**
Outer	19,400	52,600	33,200	38,500	14,100	–5,400	**28**
Adelaide							
Northern	9,800	25,800	16,000	16,900	8,900	–1,000	**10**
Western	6,000	14,200	8,200	9,500	4,800	–1,300	**21**
Eastern	5,700	12,800	7,200	8,800	4,100	–1,600	**28**
Southern	9,800	25,800	16,000	16,900	8,900	–1,000	**10**

	Low (Q2) income h'holds	Potentially affordable dwellings (R1+R2)	Shortage or surplus of affordable stock (= 2 - 1)	Other income h'hlds in the potentially affordable stock	Affordable dwellings actually available (= 2 - 4)	Shortage of affordable *and* available stock (= 3 - 4)	Q2 h'holds paying unaffordable rent (%) (= 6/1 x 100)
Column	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Perth							
Central	2,100	4,900	2,800	3,900	1,000	–1,100	**52**
East	3,600	7,900	4,300	6,000	1,900	–1,600	**46**
North	6,800	14,600	7,800	11,100	3,500	–3,300	**49**
South West	4,900	10,600	5,700	8,100	2,600	–2,400	**48**
South East	6,200	14,600	8,400	11,100	3,500	–2,700	**44**

Notes: ^Low counts in Darwin: caution should be exercised when interpreting these figures; figures may not sum exactly due to rounding; data were sourced from two separate ABS matrices and therefore, due to standard ABS confidentialisation processes, some inner, middle and outer counts do not sum exactly to their capital city total.

Source: ABS customised matrix derived from the Australian Census of Population and Housing 2016.

Figure A6: Affordable and available private rental stock for very low-income (Q1) households: share of households paying unaffordable rents by capital city sub-region, 2006 and 2016 (Chapter 5)



Source: ABS customised matrices derived from the Australian Census of Population and Housing 2006 and 2016.

Table A8: Shortage of affordable and available stock for Q1 PRS households, 2016: satellite cities and other regional centres (Chapter 5)

	Very low (Q1) income h'holds	Potentially affordable dwellings (R1)	Shortage or surplus of affordable stock	Higher income h'hlds in the potentially affordable stock	Affordable dwellings actually available	Shortage of affordable *and* available stock	Q1 h'holds paying unaffordable rent (%)
			(= 2 - 1)		(= 2 - 4)	(= 3 - 4)	(=6/1 x 100)
Column	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Regional cities							
Newcastle	9,400	3,600	–5,800	1,700	1,800	–7,600	**81**
Wollongong	4,700	1,400	–3,300	700	800	–3,900	**84**
Geelong	4,000	2,200	–1,800	1,100	1,100	–2,900	**73**
Ballarat	2,700	1,900	–800	900	1,000	–1,700	**64**
Bendigo	2,300	1,400	–800	800	700	–1,600	**70**
Gold Coast	12,600	2,000	–10,600	1,000	1,000	–11,600	**92**
Sunshine Coast	6,200	1,400	–4,800	700	700	–5,500	**89**
Toowoomba	3,300	1,700	–1,600	900	800	–2,500	**76**
Mandurah	2,100	500	–1,600	300	300	–1,800	**87**
Bunbury	1,600	600	–1,000	400	300	–1,400	**83**
Other regional centres							
Coffs Harbour	1,900	700	–1,200	300	400	–1,500	**79**
Shoalhaven	2,000	900	–1,100	400	500	–1,500	**76**
Tweed Valley	1,900	600	–1,400	200	300	–1,600	**84**
Wagga Wagga	1,800	2,000	200	1,100	900	–1,000	**52**
Albury-Wodonga	3,300	3,400	100	1,700	1,700	–1,600	**49**
Townsville	4,000	1,700	–2,300	900	800	–3,200	**80**
Cairns	3,900	2,000	–1,900	1,000	1,000	–2,900	**74**
Bundaberg	2,400	1,100	–1,300	500	600	–1,800	**75**
Mackay	2,200	1,700	–500	1,000	700	–1,500	**68**
Rockhampton	2,400	1,400	–1,000	700	700	–1,800	**73**
Launceston	3,300	2,500	–800	1,000	1,500	–1,800	**55**

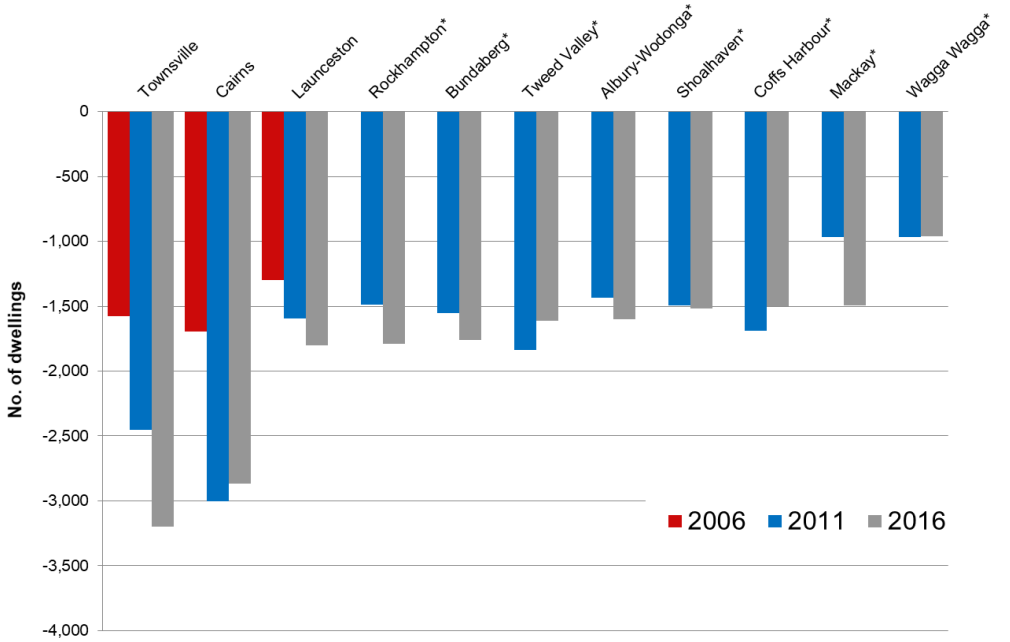
Source: ABS customised matrix derived from the Australian Census of Population and Housing 2016.

Table A9: Shortage of affordable and available stock for Q2 PRS households, 2016: selected regional cities/centres (Chapter 5)

	Low (Q2) income h'holds	Potentially affordable dwellings (R1+R2)	Shortage or surplus of affordable stock	Other income h'hlds in the potentially affordable stock	Affordable dwellings actually available	Shortage of affordable and available stock	Q2 h'holds paying unaffordable rent (%)
			(= 2 - 1)		(= 2 - 4)	(= 3 - 4)	(= 6/1 x 100)
Column	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Regional cities							
Newcastle	12,200	23,700	11,500	15,700	7,900	–4,200	**35**
Wollongong	5,300	9,100	3,700	6,200	2,900	–2,500	**46**
Geelong	5,100	12,800	7,700	8,400	4,500	–700	**13**
Ballarat	3,200	8,800	5,600	5,700	3,100	–200	**6**
Bendigo	3,000	8,000	4,900	5,100	2,900	–200	**5**
Gold Coast	14,300	24,400	10,100	17,700	6,700	–7,600	**53**
Sunshine Coast	6,900	12,400	5,500	8,900	3,500	–3,400	**49**
Toowoomba	3,400	11,800	8,400	8,700	3,100	–400	**11**
Mandurah	1,700	4,800	3,100	3,500	1,200	–400	**26**
Bunbury	1,700	4,900	3,300	3,600	1,300	–300	**19**
Other regional centres							
Coffs Harbour	2,200	4,400	2,200	2,900	1,500	–700	**31**
Shoalhaven	2,100	5,200	3,000	3,500	1,700	–500	**21**
Tweed Valley	2,100	3,700	1,600	2,500	1,200	–900	**42**
Wagga Wagga	2,200	6,200	4,000	4,200	1,900	–200	**11**
Albury-Wodonga	3,600	10,000	6,400	6,600	3,400	–300	**7**
Townsville	4,100	14,300	10,100	10,800	3,500	–600	**15**
Cairns	3,900	11,800	7,900	8,700	3,100	–800	**21**
Bundaberg	2,100	7,200	5,100	5,200	2,000	–100	**5**
Mackay	1,900	8,100	6,200	6,400	1,700	–200	**11**
Rockhampton	2,300	8,400	6,100	6,300	2,000	–200	**10**
Launceston	2,900	8,300	5,400	5,600	2,700	–100	**5**

Source: ABS customised matrix derived from the Australian Census of Population and Housing 2016.

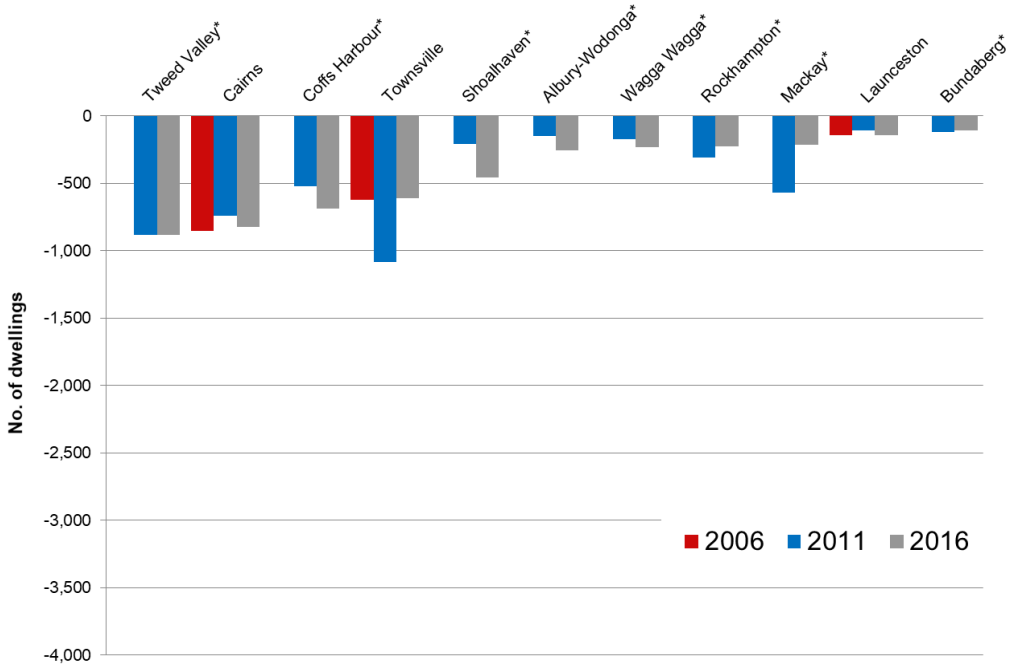
Figure A7: Shortage of affordable and available dwellings for Q1 private renter households: regional towns/cities (not satellite), 2006, 2011 and 2016 (Chapter 5)



*Note: ordered by size of 2016 shortage; *regional centres analysed for the first time in 2011, data for 2006 not available.*

Source: ABS customised matrices derived from the Australian Census of Population and Housing 2006, 2011 and 2016.

Figure A8: Shortage of affordable and available dwellings for Q2 private renter households: selected regional towns/cities (not satellite), 2006, 2011 and 2016 (Chapter 5)



*Note: ordered by size of 2016 shortage; *regional centres analysed for the first time in 2011, data for 2006 not available.*

Source: ABS customised matrices derived from the Australian Census of Population and Housing 2006, 2011 and 2016.

Table A10: Socio-demographic characteristics of PRS households and all households, Australia, 2006 (Chapter 6)

Characteristics	Private renter households					All h'holds
	Q1	Q2	Q3	Q4+Q5	Total	
	%	%	%	%	%	%
Total No.	**268,000**	**360,000**	**351,000**	**491,000**	**1,470,000**	**7,145,000**
Age (years)^						
15–24	16	15	16	12	14	5
25–34	19	28	33	38	31	16
35–44	19	25	25	26	24	21
45–54	15	16	16	17	16	21
55–64	13	9	8	7	9	16
65+	19	7	3	2	6	21
Total %	100	100	100	100	100	100
Household type*						
Younger couple, no children	4	6	14	25	14	7
Mid-life couple, no children	3	4	4	5	4	10
Older couple, no children	4	3	1	1	2	9
Couple families with children	7	16	27	32	22	32
Single parent families	22	27	14	7	16	11
Group household/other	8	10	15	20	14	7
Younger person living alone	21	21	17	7	15	7
Mid-life person living alone	18	11	7	3	9	8
Older person living alone	14	2	1	0	3	9
Total %	100	100	100	100	100	100
Dwelling type						
Detached house	47	55	56	54	54	77
Semi-det/row/terr/town-hse	14	14	14	16	14	9
Flat, unit apartment	38	30	30	30	31	13
Other dwelling	1	1	1	1	1	1
Total %	100	100	100	100	100	100

*Notes: ^Age of household reference person; *'Younger' is household reference person <45 years; 'mid-life' is aged 45 to 64 years; 'older' is aged 65 years or more; numbers may not sum exactly due to rounding. 'Period of arrival' was not available in our dataset for the 2006 project.*

Source: Customised ABS matrix based on Australian Census of Population and Housing data, 2006.

Table A11: Affordability outcomes for Q1 and Q2 private renter households: metropolitan and non-metropolitan regions, 2006 (Chapter 6)

	Q1 PRS households				Q2 PRS households		
	Paying afford. rent	Paying unafford. rent	Paying severely unafford. rent	Total	Paying afford. rent	Paying unafford. rent	Total
Australia (%)	21	59	19	100	76	24	100
Australia (No.)	57,000	159,000	51,000	268,000	273,000	87,000	360,000
Metro region (%)	13	61	26	100	71	29	100
Metro region (No.)	21,000	94,000	40,000	155,000	156,000	63,000	220,000
Non-metro region (%)	32	58	10	100	83	17	100
Non-metro region (No.)	36,000	65,000	11,000	113,000	117,000	24,000	141,000

Note: There is only one category for Q2 households 'paying unaffordable rents', which includes the relatively small percentage paying severely unaffordable rents.

Source: ABS customised matrices derived from Australian Census of Population and Housing data, 2006 and 2016.

Table A12: Affordability outcomes for Q1 and Q2 private renter households in selected satellite cities, 2006 (Chapter 6)

Location	Q1 private renter households					Q2 private renter households			
	Paying afford. rent	Paying unafford. rent	Paying severely unafford. rent	Q1 total		Paying afford. rent	Paying unafford. rent	Q2 total	
	%	%	%	%	No.	%	%	%	No.
Newcastle	22	67	11	100	7,600	82	18	100	9,900
Wollongong	19	65	16	100	3,900	75	25	100	4,500
Geelong	36	60	4	100	2,800	94	6	100	3,300
Gold Coast	7	52	41	100	8,100	46	54	100	12,600
Sunshine Coast	12	60	29	100	4,500	57	43	100	7,000
Townsville	20	66	14	100	1,900	80	20	100	3,200
Cairns	16	68	16	100	2,000	75	25	100	3,500
Launceston	37	59	4	100	2,000	94	6	100	2,200

Note: In the 2006 data set, only eight regional centres were specified and these are all included in the above table; there is only one category for Q2 households 'paying unaffordable rents', which includes the relatively small percentage paying severely unaffordable rents.

Source: ABS customised matrix derived from the Australian Census of Population and Housing 2006.

Table A13: Affordability outcomes for Q1 and Q2 private renter households in other regional centres, 2016 (Chapter 6)

Location	Q1 private renter households					Q2 private renter households			
	Paying afford. rent	Paying unafford. rent	Paying severely unafford. rent	Q1 total		Paying afford. rent	Paying unafford. rent	Q2 total	
	%	%	%	%	No.	%	%	%	No.
Coffs Harbour	21	61	19	100	1,900	69	31	100	2,200
Shoalhaven	24	65	11	100	2,000	79	21	100	2,100
Tweed Valley	16	57	27	100	1,900	58	42	100	2,100
Wagga Wagga	48	45	7	100	1,800	89	11	100	2,200
Albury-Wodonga	51	44	5	100	3,300	93	7	100	3,600
Ballarat	36	60	3	100	2,700	94	6	100	3,200
Bendigo	30	66	4	100	2,300	95	5	100	3,000
Cairns	26	60	14	100	3,900	79	21	100	3,900
Townsville	20	67	12	100	4,000	85	15	100	4,100
Bundaberg	25	71	4	100	2,400	95	5	100	2,100
Mackay	32	60	8	100	2,200	89	11	100	1,900
Rockhampton	27	66	8	100	2,400	90	10	100	2,300
Mandurah	13	64	23	100	2,100	74	26	100	1,700
Bunbury	17	64	20	100	1,600	81	19	100	1,700
Launceston	45	52	3	100	3,300	95	5	100	2,900

Note: There is only one category for Q2 households 'paying unaffordable rents', which includes the relatively small percentage paying severely unaffordable rents.

Source: ABS customised matrix derived from the Australian Census of Population and Housing 2016.

Table A14a: Employment status of Q1 households, Sydney, Newcastle and Wollongong (Chapter 7)

	Inner Sydney		Middle Sydney		Outer Sydney		Newcastle		Wollongong	
	Afford. rental	Unafford. rental	Afford. rental	Unafford. rental	Afford. rental	Unafford. rental	Afford. rental	Unafford. rental	Afford. rental	Unafford. rental
	Col %	Col %	Col %	Col %	Col %	Col %	Col %	Col %	Col %	Col %
Two earners FT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
One FT, one PT	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Two PT	0%	1%	0%	1%	0%	0%	0%	1%	0%	1%
One FT, one NILF	0%	1%	0%	3%	0%	1%	0%	1%	0%	1%
One FT	5%	8%	4%	6%	3%	6%	3%	6%	4%	5%
One PT, one NILF	0%	4%	1%	8%	0%	3%	0%	2%	2%	3%
One PT	19%	20%	18%	16%	12%	17%	14%	21%	14%	21%
One FT, one jobs-seek	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%
One PT, one jobs-seek	0%	1%	0%	2%	0%	1%	0%	1%	0%	1%
Two/one jobs-seek, one NILF	11%	14%	11%	14%	11%	13%	12%	14%	14%	13%
NILF	64%	51%	66%	49%	73%	58%	70%	54%	65%	54%
Total column %	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*
Row%	*7%*	*93%*	*7%*	*93%*	*11%*	*89%*	*21%*	*79%*	*18%*	*82%*
Total No.	**957**	**12,652**	**1,237**	**15,996**	**1,653**	**12,829**	**1,652**	**6,171**	**661**	**2,991**

FT = full-time; PT = part-time; NILF = not in labour force. 'Col' = column.

Source: ABS customised matrix derived from the Australian Census of Population and Housing 2016.

Table A14b: Employment status of Q1 households, Melbourne and Geelong (Chapter 7)

	Inner Melbourne		Middle Melbourne		Outer Melbourne		Greater Geelong	
	Afford. rental	Unafford. rental	Afford. rental	Unafford. rental	Afford. rental	Unafford. rental	Afford. rental	Unafford. rental
	Col %	Col %	Col %	Col %	Col %	Col %	Col %	Col %
Two earners FT	0%	0%	0%	0%	0%	0%	0%	0%
One FT, one PT	0%	0%	0%	0%	0%	0%	0%	0%
Two PT	0%	1%	0%	1%	0%	0%	0%	1%
One FT, one NILF	0%	1%	0%	2%	0%	2%	0%	1%
One FT	5%	5%	4%	5%	3%	4%	4%	5%
One PT, one NILF	1%	3%	2%	5%	0%	3%	1%	2%
One PT	21%	20%	18%	19%	13%	19%	19%	23%
One FT, one jobs-seek	0%	0%	0%	0%	0%	0%	0%	0%
One PT, one jobs-seek	0%	1%	0%	2%	0%	1%	0%	1%
Two/one jobs-seek, one NILF	13%	15%	15%	15%	12%	14%	10%	13%
NILF	60%	52%	61%	49%	72%	55%	65%	53%
Total column %	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*
Row%	*8%*	*92%*	*14%*	*86%*	*12%*	*88%*	*29%*	*71%*
Total No.	**1,331**	**14,389**	**2,815**	**17,370**	**1,840**	**14,105**	**938**	**2,328**

FT = full-time; PT = part-time; NILF = not in labour force. 'Col' = column.

Source: ABS customised matrix derived from the Australian Census of Population and Housing 2016.

Table A15a: Employment status of Q2 households, Sydney, Newcastle and Wollongong (Chapter 7)

	Inner Sydney		Middle Sydney		Outer Sydney		Newcastle		Wollongong	
	Afford. rental	Unafford. rental	Afford. rental	Unafford. rental	Afford. rental	Unafford. rental	Afford. rental	Unafford. rental	Afford. rental	Unafford. rental
	Col %	Col %	Col %	Col %	Col %	Col %	Col %	Col %	Col %	Col %
Two earners FT	0%	1%	1%	1%	0%	1%	0%	1%	0%	1%
One FT, one PT	1%	3%	2%	4%	2%	3%	3%	3%	2%	3%
Two PT	3%	6%	3%	5%	2%	2%	3%	3%	3%	3%
One FT, one NILF	4%	10%	13%	17%	8%	11%	5%	7%	5%	10%
One FT	59%	42%	38%	29%	38%	28%	38%	32%	40%	27%
One PT, one NILF	2%	5%	6%	8%	4%	6%	5%	5%	5%	6%
One PT	17%	15%	12%	12%	15%	15%	18%	21%	18%	21%
One FT, one jobs-seek	1%	3%	3%	4%	2%	3%	2%	2%	2%	2%
One PT, one jobs-seek	0%	1%	1%	2%	1%	1%	1%	2%	1%	2%
Two/one job seek, one NILF	2%	3%	3%	4%	3%	5%	4%	4%	3%	4%
NILF	11%	11%	18%	15%	24%	25%	22%	19%	20%	22%
Total column %	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*
Row%	*22%*	*78%*	*25%*	*75%*	*47%*	*53%*	*68%*	*32%*	*57%*	*43%*
Total No.	**4,061**	**14,057**	**6,841**	**20,194**	**8,735**	**9,766**	**6,215**	**2,880**	**2,211**	**1,683**

FT = full-time; PT = part-time; NILF = not in labour force. 'Col' = column.

Source: ABS customised matrix derived from the Australian Census of Population and Housing 2016.

Table A15b: Employment status of Q2 households, Melbourne and Geelong (Chapter 7)

	Inner Melbourne		Middle Melbourne		Outer Melbourne		Greater Geelong	
	Afford. rental	Unafford. rental	Afford. rental	Unafford. rental	Afford. rental	Unafford. rental	Afford. rental	Unafford. rental
	Col %	Col %	Col %	Col %	Col %	Col %	Col %	Col %
Two earners FT	1%	2%	1%	2%	1%	1%	1%	3%
One FT, one PT	3%	4%	4%	5%	4%	5%	4%	4%
Two PT	4%	5%	4%	5%	2%	3%	3%	4%
One FT, one NILF	5%	8%	12%	13%	12%	16%	7%	13%
One FT	52%	39%	37%	29%	31%	25%	36%	25%
One PT, one NILF	3%	4%	5%	6%	6%	6%	5%	6%
One PT	16%	16%	13%	16%	14%	15%	16%	24%
One FT, one jobs-seek	2%	3%	4%	4%	3%	3%	2%	2%
One PT, one jobs-seek	1%	2%	2%	2%	1%	2%	1%	2%
Two/one jobs-seek, one NILF	2%	4%	3%	4%	4%	5%	3%	2%
NILF	10%	14%	14%	14%	21%	19%	22%	16%
Total column %	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*
Row%	*54%*	*46%*	*69%*	*31%*	*79%*	*21%*	*89%*	*11%*
Total No.	**10,092**	**8,763**	**19,833**	**8,780**	**18,210**	**4,730**	**3,476**	**412**

FT = full-time; PT = part-time; NILF = not in labour force. 'Col' = column.

Source: ABS customised matrix derived from the Australian Census of Population and Housing 2016.

Table A16a: Employment status of Q3 households, Sydney, Newcastle and Wollongong (Chapter 7)

	Inner Sydney		Middle Sydney		Outer Sydney		Newcastle		Wollongong	
	Afford. rental	Unafford. rental	Afford. rental	Unafford. rental	Afford. rental	Unafford. rental	Afford. rental	Unafford. rental	Afford. rental	Unafford. rental
	Col %	Col %	Col %	Col %	Col %	Col %	Col %	Col %	Col %	Col %
Two earners FT	7%	7%	9%	7%	9%	8%	9%	15%	8%	6%
One FT, one PT	16%	15%	19%	20%	20%	17%	23%	26%	22%	28%
Two PT	5%	7%	5%	6%	4%	4%	5%	6%	5%	7%
One FT, one NILF	11%	12%	22%	20%	21%	21%	17%	17%	16%	23%
One FT	46%	37%	24%	22%	23%	20%	25%	24%	27%	19%
One PT, one NILF	2%	3%	4%	5%	4%	4%	4%	0%	4%	3%
One PT	5%	6%	3%	5%	4%	6%	5%	0%	5%	0%
One FT, one jobs-seek	3%	3%	5%	5%	4%	3%	3%	0%	4%	7%
One PT, one jobs-seek	1%	1%	1%	1%	1%	1%	1%	0%	1%	0%
Two/one jobs-seek, one NILF	1%	2%	2%	2%	2%	1%	2%	0%	1%	0%
NILF	3%	7%	5%	6%	9%	14%	7%	12%	7%	9%
Total column %	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*
Row%	*70%*	*30%*	*84%*	*16%*	*97%*	*3%*	*99%*	*1%*	*97%*	*3%*
Total No.	**13,827**	**5,959**	**21,637**	**4,078**	**13,657**	**486**	**6,550**	**66**	**2,897**	**105**

FT = full-time; PT = part-time; NILF = not in labour force. 'Col' = column.

Source: ABS customised matrix derived from the Australian Census of Population and Housing 2016.

Table A16b: Employment status of Q3 households, Melbourne and Geelong (Chapter 7)

	Inner Melbourne		Middle Melbourne		Outer Melbourne		Greater Geelong	
	Afford. rental	Unafford. rental	Afford. rental	Unafford. rental	Afford. rental	Unafford. rental	Afford. rental	Unafford. rental
	Col %	Col %	Col %	Col %	Col %	Col %	Col %	Col %
Two earners FT	10%	9%	13%	11%	14%	19%	13%	32%
One FT, one PT	14%	14%	19%	18%	21%	22%	23%	0%
Two PT	3%	4%	5%	5%	3%	2%	4%	0%
One FT, one NILF	9%	12%	16%	22%	21%	23%	15%	37%
One FT	48%	36%	29%	27%	20%	19%	28%	32%
One PT, one NILF	2%	2%	3%	3%	3%	1%	2%	0%
One PT	5%	7%	4%	5%	4%	5%	4%	0%
One FT, one jobs-seek	4%	4%	5%	4%	5%	6%	4%	0%
One PT, one jobs-seek	0%	1%	1%	1%	1%	0%	1%	0%
Two/one jobs-seek, one NILF	1%	2%	1%	1%	2%	0%	1%	0%
NILF	3%	8%	5%	3%	6%	3%	5%	0%
Total column %	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*
Row%	*90%*	*10%*	*97%*	*3%*	*99%*	*1%*	*99%*	*1%*
Total No.	**20,182**	**2,179**	**26,403**	**898**	**18,989**	**218**	**2,635**	**19**

FT = full-time; PT = part-time; NILF = not in labour force. 'Col' = column.

Source: ABS customised matrix derived from the Australian Census of Population and Housing 2016.

Appendix 3: Spatial units

Table A17: Spatial units used to define geographic regions in this report

Area	Spatial unit/boundary definition
Capital cities	2006 Statistical Divisions
Metro	All eight state/territory capital cities (including the entire ACT)
Non-metro	Everything outside the state/territory capital cities and the ACT
Capital city sub-regions	
Sydney	
Inner	2006 Statistical Subdivisions: Inner Sydney; Eastern Suburbs; Inner Western Sydney; Lower Northern Sydney
Middle	2006 Statistical Subdivisions: St George-Sutherland; Canterbury-Bankstown; Central Western Sydney; Blacktown; Central Northern Sydney; Northern Beaches
Outer	2006 Statistical Subdivisions: Fairfield-Liverpool; Outer South Western Sydney; Outer Western Sydney; Gosford-Wyong
Melbourne	
Inner	2006 Statistical Subdivisions: Inner Melbourne; Boroondara City; Southern Melbourne
Middle	2006 Statistical Subdivisions: Western Melbourne; Moreland City; Northern Middle Melbourne; Eastern Middle Melbourne; Eastern Outer Melbourne; Greater Dandenong City
Outer	2006 Statistical Subdivisions: Melton-Wyndham; Hume City; Northern Outer Melbourne; Yarra Ranges Shire Part A; South Eastern Outer Melbourne; Frankston City; Mornington Peninsula Shire
Brisbane	
Inner	2006 Statistical Region Sectors: City Core Brisbane; Northern Inner Brisbane; Eastern Inner Brisbane; Southern Inner Brisbane; Western Inner Brisbane
Middle	2006 Statistical Region Sectors: Northern Outer Brisbane; Eastern Outer Brisbane; Southern Outer Brisbane; Western Outer Brisbane
Outer	2006 Statistical Region Sectors: Logan City; Beaudesert Shire Part A; Redland Shire; Caboolture Shire; Pine Rivers Shire; Redcliffe City; Ipswich City
Adelaide	2006 Statistical Subdivisions: Northern Adelaide; Western Adelaide; Eastern Adelaide; Southern Adelaide
Perth	2006 Statistical Subdivisions: Central Metropolitan; East Metropolitan; North Metropolitan; South West Metropolitan; South East Metropolitan

Regional centres	
New South Wales	
Newcastle	2006 Statistical Subdivision (SSD)
Wollongong	2006 Statistical Subdivision (SSD)
Albury	2016 Statistical Area 3 (SA3)
Coffs Harbour	2016 Statistical Area 3 (SA3)
Shoalhaven	2016 Statistical Area 3 (SA3)
Tweed Valley	2016 Statistical Area 3 (SA3)
Wagga Wagga	2016 Statistical Area 3 (SA3)
Victoria	
Greater Geelong City Pt A	2006 Statistical Subdivision (SSD)
Ballarat	2016 Statistical Area 3 (SA3)
Bendigo	2016 Statistical Area 3 (SA3)
Wodonga (Alpine)	2016 Statistical Area 3 (SA3)
Queensland	
Gold Coast	2006 Statistical Division (SD)
Sunshine Coast	2006 Statistical Division (SD)
Townsville City Part A combined with Thuringowa City Part A	2006 Statistical Subdivision (SSD)
Cairns City Part A	2006 Statistical Subdivision (SSD)
Bundaberg	2016 Statistical Area 3 (SA3)
Mackay	2016 Statistical Area 3 (SA3)
Rockhampton	2016 Statistical Area 3 (SA3)
Toowoomba	2016 Statistical Area 3 (SA3)
Western Australia	
Mandurah	2016 Statistical Area 3 (SA3)
Bunbury	2016 Statistical Area 3 (SA3)
Tasmania	
Greater Launceston	2006 Statistical Division (SD)
Rest of state balance	All areas outside the state capital city, plus areas outside any listed regional centre

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