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Changes in the supply of affordable housing in the private rental sector for lower income households, 2006–11

authored by

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ACRONYMS

ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
AHRF	Australian Housing Research Fund
AHURI	Australian Housing and Urban Research Institute Limited
ATO	Australian Taxation Office
CPI	Consumer Price Index
DIY	Do It Yourself
ERP	Estimated Resident Population
FIRB	Foreign Investment Review Board
FHOB	First Home Owner Grant Boost
GDP	Gross Domestic Product
GFC	Global Financial Crisis
LIHTC	Low Income Housing Tax Credit
NHSC	National Housing Supply Council
NOM	Net Overseas Migration
NRAS	National Rental Affordability Scheme
NSW	New South Wales
NT	Northern Territory
QLD	Queensland
RA	Rent Assistance
SA	South Australia
SD	Statistical Division
SIH	Survey of Income and Housing (ABS)
SMSF	Self-Managed Superannuation Fund
SSD	Statistical Subdivision
TAS	Tasmania
VIC	Victoria
WA	Western Australia

EXECUTIVE SUMMARY

Aim of the study

Almost one in four Australian households rent their housing in the private rental sector including many lower income households. Government housing policies increasingly rely on the private sector rather than social housing to accommodate these households and offer various forms of assistance to lower income households to assist them to access and remain in the sector. The scheme that affects the greatest number of lower income private renters is the Australian Government's Rent Assistance scheme with an annual budget of $3.6 billion (2012–13) but state and territory governments also offer schemes to provide financial and other types of assistance, such as loans to pay bonds and various rent support schemes. For these initiatives to be successful requires an adequate supply of affordable rental dwellings for lower income households.

This is the first publication from a project that investigated the supply of, and demand for, private rental dwellings affordable to lower income households in 2011 and compared this with the situation in 2006. The project follows three others which reported on the situation in 1996, 2001 and 2006 as well as changes in the relevant intercensal periods. This approach enables an assessment of the extent of shortages or surpluses in rental dwellings affordable by lower income households as well documenting trends in the supply of affordable rental dwellings relative to demand. This report focuses on supply and will be followed by a second report which investigates in more detail the type of demand from lower income households for rental accommodation.

Research design and method

The key concept in the research design is whether lower income households are able to access housing which is '*affordable'* based on weekly rent of no more than 30 per cent of gross household income and '*available'* referring to the extent to which affordable dwellings are in fact occupied by lower income households. The project was carefully designed to update analysis in three previous projects but also to provide a more detailed analysis of the geography of shortages/surpluses of affordable rental housing for lower income households than previously.

The research method involved original empirical analysis using customised data from the 2011 Census of Population and Housing conducted by the Australian Bureau of Statistics (ABS). As a key part of this project was to update analysis in three previous studies, great care was taken to ensure validity and reliability through consistent definitions, measures and spatial units (Chapter 1).

Market and policy context 2006–11

The market and policy context for changes in the private rental sector 2006–11 was substantially different from that of the prior intercensal period, due largely to a series of economic and demographic shocks that affected the housing market—and the private rental sector—in important ways (Chapter 2).

- Real rents rose rapidly 2006–09 (unlike 2001–06), and then more slowly but still by more than inflation until 2011; rental yields increased compared to 2001–06.
- There was increased pressure on metropolitan private rental markets and those in resource development areas due to the combined effects of the resources boom and long-term decline in some key employment sectors.
- A multi-speed economy contributed to increased inequality in household incomes with the greatest increase in the highest income deciles.

- An increase in population mainly due to a dramatic increase in net overseas migration peaking in 2009 was not accompanied by an increase in the supply of new housing, putting upward pressure on housing costs, including private rents.
- There were significant changes to housing policy settings after 2007, which are likely to have had a modest effect in moderating demand by lower income households for private rental, although the extent of this is unknown.

The structure of the private rental market in 2011 compared to 2006 and previous Census years

There were some important changes in the structure of the private rental sector nationally between 2006 and 2011 which were of a greater magnitude than previous intercensal periods (Chapter 3):

- The private rental sector grew more strongly between 2006 and 2011 than in the two previous intercensal periods.
- There was a loss of lower rent dwellings and an increase in higher rent properties 2006–11, to a greater degree than in previous intercensal periods.
- Weekly rents were strongly clustered between $300 and $500 a week in 2011; higher in real terms than in 2006, and these rents were unaffordable to many households on lower incomes using the 30 per cent of income affordability benchmark.
- The most striking change in private renter household incomes between 2006 and 2011 was the increase in households with higher incomes, which exceeded that of the prior intercensal periods.

Estimates of the shortages of affordable and available housing for lower income private renters in 2011 compared to 2006

The analysis of shortages in this report uses household income quintiles derived from the Australian distribution of all gross household incomes in 2006 and 2011—with Q1 being the lowest 20 per cent of household incomes and Q5 the highest 20 per cent. In 2011, as in previous Census years, the household incomes of private renters were substantially more dispersed than weekly rents, the latter being clustered at levels affordable to Q2 and Q3 households. The biggest increase in privately rented dwellings 2006–11 was in those with weekly rents affordable to Q3 households. In consequence, very-low-income (Q1) and low-income (Q2) households faced different problems in the rental market (Chapter 4).

- The situation for both Q1 and Q2 households deteriorated on three measures of shortage between 2006 and 2011, with Q1 and Q2 households facing different problems.
- Very-low-income (Q1) households faced a shortage of 187 000 affordable dwellings nationally in 2011, up from 138 000 in 2006. However, when occupation of affordable dwellings by higher income (Q2–Q5) households was taken into account, there was a shortage of 271 000 affordable and available rental dwellings for Q1 households (up from 211 000 in 2006).
- Low-income (Q2) households, in contrast, had an apparent surplus of affordable dwellings of 521 000 nationally in 2011 (a slight decrease compared with 2006). However, when occupation by higher (Q3–Q5) and some lower (Q1) income households was taken into account, there was a shortage of 122 000 affordable and available dwellings nationwide in 2011 (up from 87 000 in 2006).
- The consequences of these shortages are severe. Across Australia, four in five Q1 private renter households did not live in affordable housing in 2011, much the same as in 2006; while a third of Q2 households did not live in affordable rental housing in 2011, a

substantial increase from 24 per cent in 2006, indicating that this problem moved further up the household income distribution over the 2006–11 period.

- Shortages of affordable and available rental stock for both Q1 and Q2 households are worse in metropolitan than non-metropolitan regions, although there is evidence of an increased shortage for very-low-income (Q1) households in non-metropolitan regions.

The geography of shortages of dwellings affordable to lower income households in 2011 compared to 2006

Shortages of affordable and available housing vary in different parts of Australia, reflecting different economic conditions and regional housing markets (Chapter 5).

- The greatest numeric shortage of affordable and available rental housing for Q1 households in 2011 was in Sydney and Melbourne, with substantial shortages in the other larger state capitals. Sydney had the greatest numeric shortage of affordable and available rental housing for Q2 households in 2011. Shortages of affordable and available housing for both Q1 and Q2 households increased 2006–11 in almost all state capital cities.
- While the proportion of Q1 households paying unaffordable rents was consistently very high in both 2006 and 2011 across the larger state capitals, there was a marked increase in the percentage of Q2 households in this situation 2006–11, as shortages moved further up the household income scale.
- There was little difference in the percentage of Q1 households living in unaffordable housing in different capital city sub-regions in either 2006 or 2011 indicating a general city-wide shortage of affordable and available housing for these households. There were higher percentages of Q2 households living in unaffordable housing in inner and middle areas of the larger capital cities in 2011 compared to outer areas.
- Shortages of affordable and available rental housing increased markedly in larger regional centres in states that were affected by the resources boom discussed in Chapter 2. The percentage of both Q1, and particularly Q2 households, living in unaffordable rentals increased in regional centres in Western Australia and Queensland, as well as in respective state capital cities.

Implications for policy

While current policy settings, along with economic and other factors, enabled a general increase in supply of private rental dwellings between 2006 and 2011, they did not generate an adequate supply of affordable dwellings for lower income households. The deteriorating position for lower income households documented in this report raises two related challenges: how policy settings could generate investment in affordable rental housing for such households and how rents could be kept at affordable levels over time.

A more comprehensive approach to policy settings for investment in, and management of, rental housing is necessary to address a worsening situation which, if left unchecked, could lead to greater housing instability and homelessness with consequent economic and social costs for individuals/households and governments. This would require agreement between Australian and state/territory governments over the longer term for re-calibrating policy settings to achieve a greater supply of affordable rental dwellings for Q1 households and some Q2 households. In so doing, the guiding principle would be that subsidy arrangements be tied to achieving improved outcomes for lower income households.

The report identifies five areas for policy development as part of a comprehensive package which involves different roles for governments, viz:

1. Support Q1 households to compete more effectively in the private rental market through better designed and targeted demand-side subsidies.

2. Substitute the market through government investment in affordable supply for Q1 households (capital and/or recurrent) in which rents can be kept at affordable levels.
3. ‘Nudge’ the rental market with its current predominance of individual/household investors by re-calibrating taxation incentives to encourage investment in new supply of lower rent dwellings.
4. Design a new market through establishing infrastructure to enable institutional investment in the private rental sector specifically targeted at lower income households with appropriate arrangements for keeping rents affordable.
5. Regulate the market to enable affordability to be maintained through tenancy, as occurs in many other developed countries.

1 INTRODUCTION

1.1 Policy context

The private rental sector lies at the heart of the Australian housing system, providing flexibility in enabling households to adapt to life cycle, life events, employment and other changes. The sector provides accommodation at different price points for households on a wide variety of incomes but plays a particularly important role in housing lower income households (Wulff et al. 2011; Hulse et al. 2012, Stone et al. 2013). A supply of affordable private rental dwellings that can meet demand from lower income households is of vital importance to the success of the housing policies and programs of governments in Australia's federal system of government.

The Australian Government [1] (Federal Government) provides financial assistance (Rent Assistance) to 1.27 million recipients at a cost of $3.6 billion a year (FaHCSIA 2013, Table 6.1, p.48). The effectiveness of this expenditure depends on recipients being able to access an adequate supply of affordable rental dwellings in the private market. State/territory governments provide financial and other assistance to enable lower income households to access and sustain tenancies in the private rental sector, such that more than twice as many households are assisted each year with bond loans than are allocated social housing (COAG Reform Council 2012, pp.52, 53, 59). Bond loans and other types of assistance such as rental grants and subsidies assist a range of lower income households to rent privately since supply constraints mean that social housing is targeted at vulnerable households with the highest and most complex needs (Jacobs et al. 2007). In addition, the Australian and state/territory governments are developing pathways for some public housing tenants into private rental, as part of social housing reforms (COAG 2009, p.32), a strategy that depends substantially on the supply and availability of low rent private housing.

Within this broader policy context, it is important to understand trends in the supply of, and demand for, private rental housing over time, with a focus on affordable rental housing that can be accessed by lower income households. Identification of trends over time is important at a national level and also for state/territory and local governments who are concerned about shortages of affordable rental housing in major metropolitan areas, larger regional centres and other non-metropolitan areas.

1.2 Background to the research

The research on which this report is based is the fourth in a series of studies into the supply of, and demand for, affordable private rental dwellings based on detailed analysis of data from the five yearly Australian Bureau of Statistics (ABS) Census of Population and Housing. These studies provide a snapshot of supply and demand at a point in time and an analysis of changes between Census years (intercensal periods).

The origins of this series of research projects lay in policy debates in the mid-1990s about whether lower income households in receipt of Rent Assistance payments from the Australian Government could access and sustain affordable rental housing. This was an important question since by that time Rent Assistance, rather than public housing, had become the primary form of government rental housing assistance in terms of the number of households assisted and annual expenditure (Maher et al. 1997).

The first project was funded by the former Australian Housing Research Fund (AHRF) and aimed to produce estimates of the shortage of low cost private rental stock in 1996 and to determine whether there had been a decline in the availability of housing affordable for low to middle-income households in the period 1986–96 (Wulff & Yates 2001).

[1] The Australian Government is sometimes referred to as the Commonwealth Government.

The second and third projects were funded by the Australian Housing and Urban Research Institute (AHURI) to update and extend this research covering the periods 1996–2001 (Yates et al. 2004a, 2004b) and 2001–06 (Wulff et al. 2009, 2011) respectively. Some of the data generated by the third project were also used in additional analysis by the (former) National Housing Supply Council (NHSC 2009).

The broad aims of this, the fourth research project, also funded by AHURI, were:

- To update empirical investigation of the supply of, and demand for, private rental dwellings affordable to lower income households to 2011; and to assess the extent of change compared to 2006 and previous Census years.
- To provide an increased understanding of the changing geography of the private rental sector with a more nuanced spatial analysis of the supply/demand for affordable private dwellings than previously.

Within this context, there were six specific research questions:

1. What is the structure of the private rental market in 2011 in terms of the distribution of rents and household incomes and how has this changed since 2006?
2. To what extent are there shortages of affordable and available housing for lower income private renters in 2011 and how has this changed since 2006?
3. What is the profile of lower income private renter households in 2011, including comparison with 2006?
4. What are the characteristics of dwellings which are affordable and available to lower income households in 2011, including comparison with 2006?
5. For each research question (1 to 4), how are these changes spatially distributed?
6. What are the key implications of the findings of this project, in conjunction with the three prior projects, in understanding the dynamics, structure and geography of the private rental market in Australia 1986–2011?

This is the first of two Final Reports. It investigates changes in the *supply* of affordable private rental dwellings in Australia and addresses research questions 1, 2 and relevant parts of research question 5.

A second Final Report will focus on *demand* from lower income private renter households (research question 3 and part of research question 5). This second report will examine a selection of private renter household (demand) characteristics such as: age; household type and size; employment status, and, for the first time, year of arrival in Australia. It will also look at the types and sizes of dwellings that are affordable and available to lower income private renter households (research question 4). Finally, this second report will also review the four projects in the series in terms of understanding the dynamics, structure and geography of the private rental market in Australia between 1986 and 2011 (research question 6).

1.3 Research approach and method

There are a number of internationally established approaches to assessing the supply of housing relative to the needs of lower income households (the approaches in the Anglophone countries were reviewed in the previous project and the methodology used for this series of Australian projects was found to be robust (Wulff et al. 2011, pp.32–37). These utilise a number of key concepts, such as affordability, availability, adequacy and suitability, albeit in different ways. This project uses an approach first employed in the 1990s by the US Department of Housing and Urban Development (Nelson 1994) and subsequently developed in the 2000s (Vandenbroucke 2007). It first assumes that housing can be assigned to households on the basis of affordability in order to identify the shortages (or surpluses) of rental units affordable to households with household incomes in the first two quintiles of the income

distribution. It then recognises that not all affordable units are available because of prior occupation by higher income renters. This approach was adapted for use in Australia by Wulff and Yates (2001) and was subsequently adopted by the (former) National Housing Supply Council in its reports (e.g. NHSC 2012).

The key concepts in the Australian studies are thus whether lower income households are able to access housing that is:

- ‘*affordable*’ based on rent as a percentage of gross household income
- ‘*available*’ referring to the extent to which affordable dwellings are in fact occupied by lower income households.

The original US work also included whether affordable and available dwellings were *adequate* in terms of the standard of accommodation, but this was never included in the design due to a lack of adequate Australian data on housing standards and conditions[2] (Wulff et al. 2009, p.10). In this study, and consistent with the prior studies in the series, the private rental sector refers to occupied private dwellings enumerated in the ABS Census of Population and Housing in which the occupant pays rent to either a real estate agent or a person not living in the same household, which is consistent with ABS definitions.[3] Further, ‘household income’ refers to gross, unequivalised income and is the sum of the individual incomes reported in the Census by all household members aged 15 years and over. As stated on the Census form, income includes the total of all wages/salaries, government benefits, pensions, allowances and other income that a person usually receives. Of particular relevance to this study, Rent Assistance is listed as an example of income and is, therefore, *included* in total household income.

The research method involved original empirical analysis using customised data from the latest Census of Population and Housing conducted by the Australian Bureau of Statistics (ABS) in August 2011. The data were carefully specified by the research team and discussed in detail with ABS personnel. As a key part of this project was to update analysis in three previous studies, great care was taken to ensure validity and reliability through consistent definitions, measures and spatial units.

A key feature of the research method is a sophisticated data imputation process developed for the previous reports with assistance from the ABS. This addresses the problem of missing data for key variables in the Census, particularly for household incomes, (where in 2011 nearly 11% were either incomplete or not-stated), and for rents paid[4]. It also converts household incomes, recorded only on a pre-defined categorical basis, to point estimates so that 2011 Census data could be re-grouped into new, user-defined income ranges. These ranges were defined to match two sets of ranges used in the previous studies: the first to match the 12 income categories used in the previous studies for the examination of the changing household income structure in the private rental sector, and; the second set of income ranges reflect the quintile values of the Australia-wide household income distribution.

The 12 weekly rent and household income segments were originally defined for the analysis of 1996 and 2001 data and in subsequent projects have been updated by the Consumer Price Index (CPI). This approach was taken again and the upper value of these rent ranges correspond with 30 per cent of the upper boundary of the household income category (see Appendix 1 for details). In this report, we use analysis of these segments only to establish real

[2]There was some consideration of the size of dwellings in previous studies which relates to appropriateness of the supply of dwellings relative to household type and size, an issue which will be considered further in the second Final Report of this project.

[3] The standard definition of the private rental sector excludes dwellings occupied by visitors and not usual residents (e.g. holiday houses); those with non-classifiable households; and dwellings with households living rent free (paying $0 rent).

[4] Details of specification requirements and the imputation process are provided in Appendix 1. Note that there was no imputation for weekly rents stated to be $0.

change over time in the distribution of the household incomes of private renters and weekly rents going back to 1996 (reported in Chapter 3) and not, as in previous projects, to establish measures of shortage/surplus for which the household income quintiles were used.[5]

For the analysis of shortages/surpluses of affordable private rental dwellings in 2011, and changes between 2006–11, we analyse households grouped by household income quintiles (with Q1 being the lowest income quintile and Q5 the highest). Use of household income quintiles to examine housing affordability issues has been widely accepted in policy and research in Australia. Household income quintiles provide a consistent and widely understood definition of 'very-low income' and 'low income' over time (unlike the 12 income and rent categories defined to examine changes in income and rent structures within the private rental sector and used solely in this series of reports).

In this report, unless otherwise stated, 'lower income' households refer to all households in the lowest 40 per cent of the Australia-wide gross household income distribution. The rationale for focusing the affordability analysis on only *lower* income households is based on two main assumptions: that higher income households are likely to have high housing costs by choice, and; that higher income households have more disposable income after housing costs, sufficient to cover non-housing expenses (Gabriel et al. 2005). A separate analysis was undertaken for households in the lowest quintile (bottom 20%) and second lowest quintile (21–40%), since they face different problems in the private rental market as will be discussed in detail in later chapters. In this report, households in the former group are referred to as 'Q1' or 'very-low-income' households and those in the latter group as 'Q2' or 'low-income households'. The affordable rent categories aligned with these quintiles, were defined by calculating 30 per cent of the upper value of the income category (i.e., the value of the quintile). The household income quintile categories, along with the corresponding affordable rent ranges, are shown in Table 1.

Table 1: Gross unequivalised household income quintiles and corresponding affordable rent categories, Australia, 2011

Gross household income segment ($2011)			Affordable private rent segment ($2011)	
	Weekly	Annual		Weekly
Quintile 1 (Q1)	$0–$584	$30,500 or less	Rent 1 (R1)	$1–$175
Quintile 2 (Q2)	$585–$1,074	$30,501–$56,000	Rent 2 (R2)	$176–$322
Quintile 3 (Q3)	$1,075–$1,748	$56,001–$91,000	Rent 3 (R3)	$323–$524
Quintile 4 (Q4)	$1,749–$2,727	$91,001–$142,000	Rent 4 (R4)	$525–$818
Quintile 5 (Q5)	$2,728+	$142,001 or more	Rent 5 (R5)	$819+

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

Note 1: Household income refers to gross unequivalised 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, $584*0.3=$175.

One of the aims of this project was to expand the spatial analysis of changes in the supply of affordable private rental housing. For this reason, we report on the supply of affordable private rental dwellings for Q1 and Q2 households in sub-regions of the larger state capitals—Sydney, Melbourne, Brisbane, Perth and Adelaide. Furthermore, to take into account population growth

[5] Appendix 2 includes a 2011 update of all the tables and figures based on the 12 categories that were included in past reports for those readers wanting to follow this series of analyses.

in regional areas, we include an additional 14 larger regional centres (in addition to eight such centres in the prior project): five in NSW; three in Victoria; four in Queensland and two in Western Australia. 'Balance of state' figures are also provided. While these additional units add value in a more spatially aware analysis of changes in the supply of private rental housing in Australia, the study is not, nor was ever intended to be, a series of local housing market studies.

1.4 Measures of surplus/shortage of affordable housing

The research methods outlined above enabled calculation of three measures of shortage/surplus of affordable private rental housing for lower income households—lowest quintile (Q1) and second lowest quintile (Q2) separately—which are presented at a number of spatial scales (in Chapters 4 and 5).

- *Shortage/surplus of affordable dwellings*: this measure compares the number of households with incomes in the lowest and second lowest quintile with the number of dwellings in the private rental sector at rents they could afford, using the 30 per cent of income benchmark as described above.
- *Shortage/surplus of affordable and available dwellings*: this takes the previous measure and deducts from the surplus of affordable rental housing—or adds to the shortage of such dwellings—those units which are affordable by Q1 and Q2 households but which are occupied by households on higher incomes (and sometimes those on lower incomes). It provides an estimate of those affordable dwellings that are actually available for occupancy by lower income households.
- *The percentage of lower income households paying unaffordable rents*: this derives from the previous measure (affordable and available surplus/shortage) and calculates the percentage of lower income households (Q1 and Q2) that are paying unaffordable rents (using the 30% of income benchmark). This is a very useful summary measure for outlining the situation in 2011 and change over time, and is produced for different spatial units.

1.5 Structure of this report

The rest of this report proceeds as follows. Chapter 2 provides the market and policy context for changes in the supply of, and demand for, private rental housing between 2006–11, a period that included a number of economic and demographic shocks as well as substantial housing policy changes. It is followed by an overview of changes in the supply and distribution of private rental housing at a national level between 2006–11 which also looks at longer term trends going back to 1996 (Chapter 3). Chapter 4 provides estimates of the *shortage/surplus* of affordable and affordable/available housing for very-low and low-income households separately in 2011 compared to 2006, distinguishing between metropolitan and non-metropolitan areas. The following chapter (Chapter 5) presents this analysis for a number of different spatial units: capital cities and 'rest of state' areas; major zones within the larger cities; and for 21 regional centres. The concluding chapter of the report discusses the implications of these findings in the context of major drivers of change in the private rental sector over the last five years before considering implications for policy (Chapter 6).

2 MARKET AND POLICY CONTEXT FOR CHANGES IN THE PRIVATE RENTAL SECTOR 2006–2011

This chapter discusses these three sets of factors—economic shocks, demographic shocks and policy changes—which individually and cumulatively provide important context for understanding changes in the private rental sector, 2006–11.

2.1 Economic shocks 2006–11

In the intercensal period prior to 2006, Australia's housing market had been characterised by historically high rates of house price inflation following a period of sustained economic growth, with growth in the number of households underpinned by a relatively stable population growth. It had also been characterised by decreasing affordability for many households, a decline in the aggregate rate of home ownership (brought about primarily by declines among the young, but extending through all age groups other than those who had already reached retirement age) and, as a result, a growth in the private rental market (Wulff et al. 2009, pp.3–5). Further, a dramatic increase in the share of housing finance being loaned to private investors between 2001–06 was seen as a key driver of dwelling price inflation, not least because a disproportionate share of this finance was being used to purchase established rather than new dwellings[6] (see also Hulse et al. 2012). For much of the period from 2001 to 2006, however, the growth in real house prices assisted in keeping the growth in real rents subdued (and, in fact, negative for most of the period).

In contrast, the intercensal period 2006–11 which is the focus of this project was characterised by economic shocks. The most significant of these was the global financial crisis (GFC) of 2008–09 which had its most severe impact in Australia in 2009 when real GDP growth declined from an annual average over the previous five years (between 2001 and 2006) of close to 3.5 per cent to less than 1.5 per cent. As a result, average annual GDP growth between the 2006 and 2011 Censuses declined to 2.7 per cent,[7] although this was less dramatic than many other developed countries which experienced what became known as the Great Recession.

This economic shock, together with the effect it had on household confidence as well as on the supply of housing finance, had a substantial impact on the housing market. At an Australia-wide level, real dwelling prices declined during 2009 and again in 2011. At the time of the 2011 Census, they were still marginally below their pre-2009 peak and this was not exceeded until mid-2013, as can be seen in Figure 1 below.[8]

The slow-down in dwelling prices and the resultant reduction in capital gains, shaped in part by increases in interest rates from 2002 until the onset of the GFC in 2008, had a considerable impact on rents charged in the private rental market. After a period of relative stability between 2001 and 2006, real rents rose rapidly between 2006 and 2009 (Figure 2). Despite a post-2009

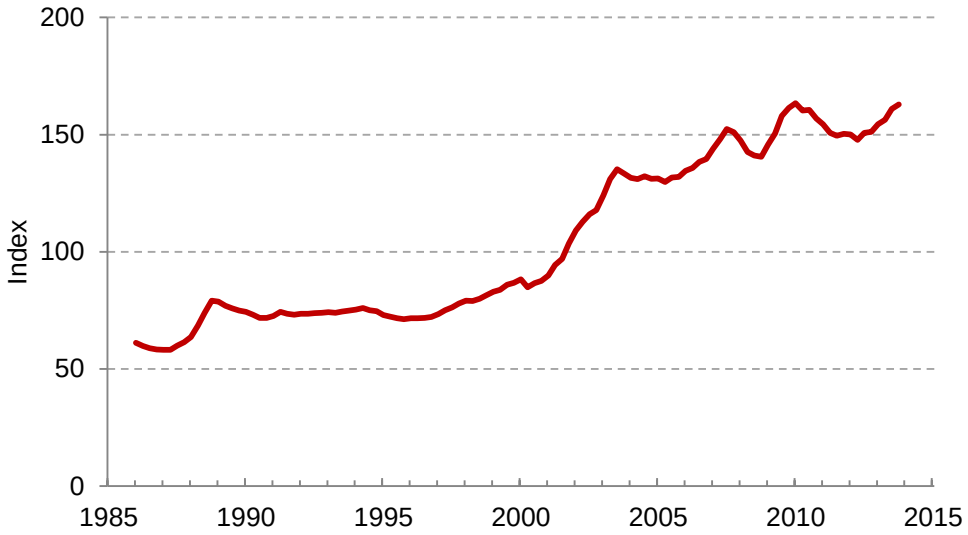
[6] New lending for investment dwellings rose from 30 per cent of housing finance commitments in 1999 to almost 50 per cent in 2004. This rise in debt-financed investment was seen as being a response to tax changes in 1999 that encouraged negative gearing (e.g. Macfarlane 2003).

[7] ABS (various years) Australian National Accounts: National Income, Expenditure and Product, ABS cat. no. 5206.0, Table 1, viewed 27 July 2014, http://www.abs.gov.au/AUSSTATS/abs@.nsf/second+level+view?ReadForm&prodno=5206.0&viewtitle=Australian%20National%20Accounts:%20National%20Income,%20Expenditure%20and%20Product~Mar%202014~Latest~04/06/2014&&tabname=Past%20Future%20Issues&prodno=5206.0&issue=Mar%202014&num=&view=&.

[8] While there were significant differences in the timing of changes in dwelling prices at a sub-national level, the general trend dwelling prices in most cities followed the same broad trend as illustrated by the Australia-wide index (see, for example, ABS (various years) Residential Property Price Indexes, ABS cat. no. 6416.0, Table 1, viewed 27 July 2014, http://www.abs.gov.au/AUSSTATS/abs@.nsf/second+level+view?ReadForm&prodno=6416.0&viewtitle=Residential%20Property%20Price%20Indexes:%20Eight%20Capital%20Cities~Mar%202014~Latest~13/05/2014&&tabname=Past%20Future%20Issues&prodno=6416.0&issue=Mar%202014&num=&view=&.

slowdown in the rate of growth of real rents, rents rose more rapidly than inflation for the whole of the 2006–11 period.

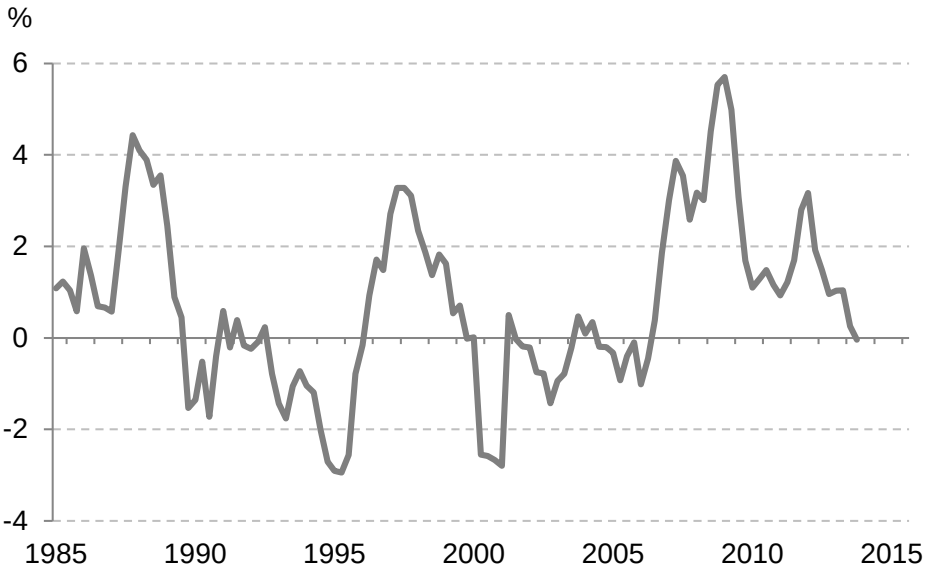
Figure 1: Real residential property price index: Australia



Source: ABS Residential property price indexes, March 2014. cat. no. 6416.0, Table 1, CPI adjusted

Note: pre-2003 data are based on the ABS established house price index for capital cities.

Figure 2: Annual growth in real rents: Australia

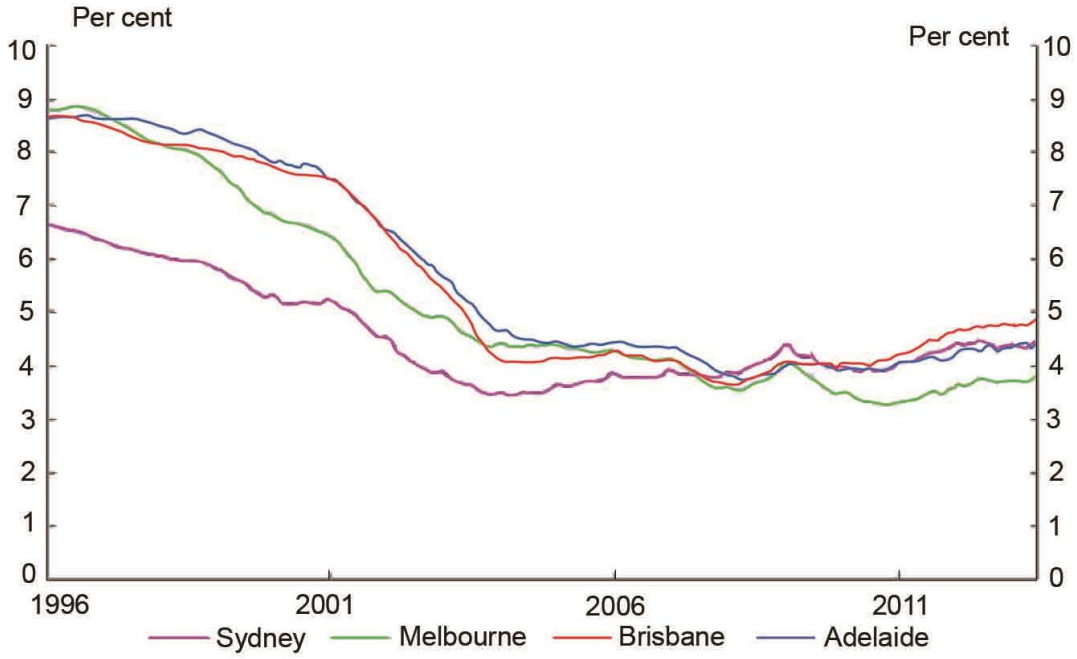


Source: ABS Consumer Price Index, Australia, March 2014, cat. no. 6401.0, Table 7

Note: The rental component of the CPI consists of rentals actually paid to private or government landlords, including housing authorities, by tenants or subtenants occupying unfurnished or furnished premises as their main residence. As such, it is likely to underestimate changes in market rents as it includes components that do not reflect conditions in the private rental market. This can be seen clearly by comparison with data from alternative data sources in RBA (2014a, p.3).

With this growth in real rents, there was a slight recovery in rental yields for rental investors/landlords over this period (Figure 3). Since the post 2008–09 economic shocks, rental vacancy rates have risen marginally (RBA 2014a, graph 3) but, at around 2 per cent in 2013, are still below what is generally regarded in Australia as a market clearing rate (of 3%).

Figure 3: Rental yields (monthly) Sydney, Melbourne, Brisbane and Adelaide



Source: NHSC 2013, p.18, Figure 1.11, using RP Data Hedonic Gross rental yields (Imputation Method)

Note: Data are for all dwellings. Rental yields for other cities can be found in NHSC 2013.

Australia's economic growth was protected from the worst of the effects of the GFC and its aftermath partly because of a coincident resources boom, the first phase of which (the commodity price boom) was associated with a sharp rise in the terms of trade and began in the early 2000s. The second phase, the investment boom, is seen to have peaked by 2013 (Stevens 2013).

This boom exacerbated the long-term structural decline in manufacturing and agriculture that had been a characteristic of Australia's post-war economy. Structural change in Australia, resulting from decline in its traditional sectors and growth in mining and service sectors, increased dramatically between 2006 and 2011 (Productivity Commission 2012a, p.50), after a period of relative stability between 2001 and 2006. This change brought with it an increase in urbanisation which, in turn, has put increased pressure on metropolitan housing markets. Some local regional housing markets were subjected to even greater demand pressures as a result of the concentration of mining activity in Queensland and Western Australia. Others were affected by reductions in demand as a result of concentration of loss of manufacturing jobs. More broadly, recent structural changes, while being uneven across Australia, were assessed by the Productivity Commission (2012b, p.23) as having been 'mainly beneficial for Australia's regions'. However, there is also recognition that lack of affordable housing, and a declining supply of affordable rental housing in particular, impedes geographic labour mobility throughout Australia's regions, particularly among low-income workers and job seekers (Productivity Commission 2014, p.22).

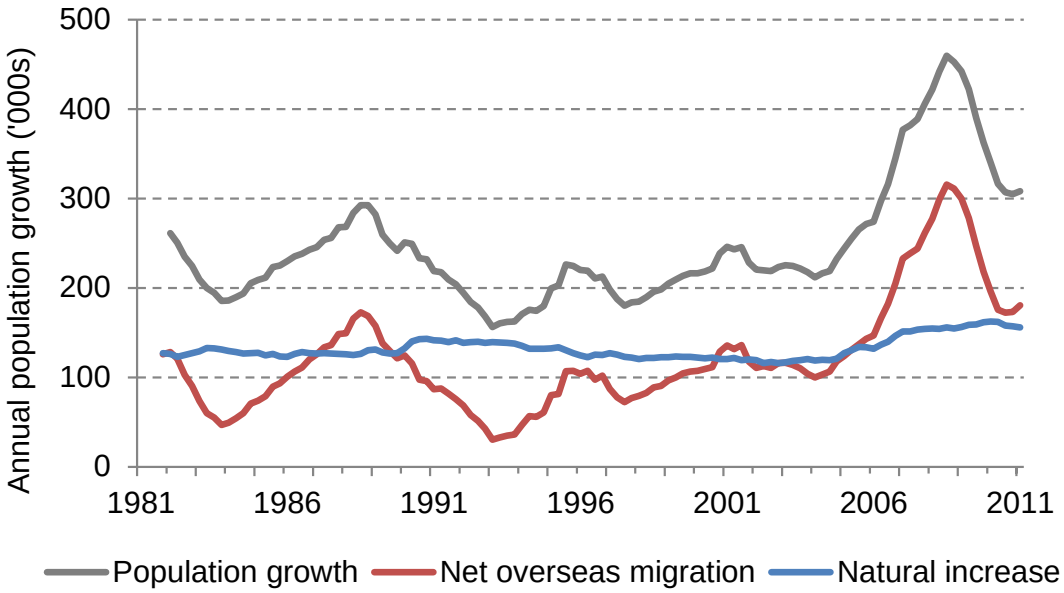
These factors contributed to what has been described as a 'two-speed' or 'multi-speed' economy in which the gains from growth have not been uniform and, in particular, have provided disproportionate benefits to those in the top half of the income distribution (Greenville

et al. 2013, p.62; see also ABS 2012a, p.14).[9] Greenville et al. claim that this trend accelerated between 2003–04 and 2009–10 (the most recent period for which data are available). The slowest growth in income over this period has been amongst those in the lower end of the middle of the income distribution and labour income has contributed most to measured increases in household income inequality (Greenville et al. 2013, p.88).

2.2 Demographic shocks 2006–11

The sustained economic growth of the 1990s and 2000s, together with an increase in the Australian Government's migration target in 2008–09, and an improved ABS methodology for estimating net overseas migration (NOM), contributed to a significant rise in NOM from a 20-year average of just over 100 000 persons per year to a peak of over 300 000 in 2009. Much of this growth can be attributed to increases in migrants on temporary or permanent skilled work visas and in overseas students (Productivity Commission 2012b, p.23). The demographic shock provided to Australia's population growth between 2006 and 2011 can be seen in Figure 4.

Figure 4: Annual population growth: Australia



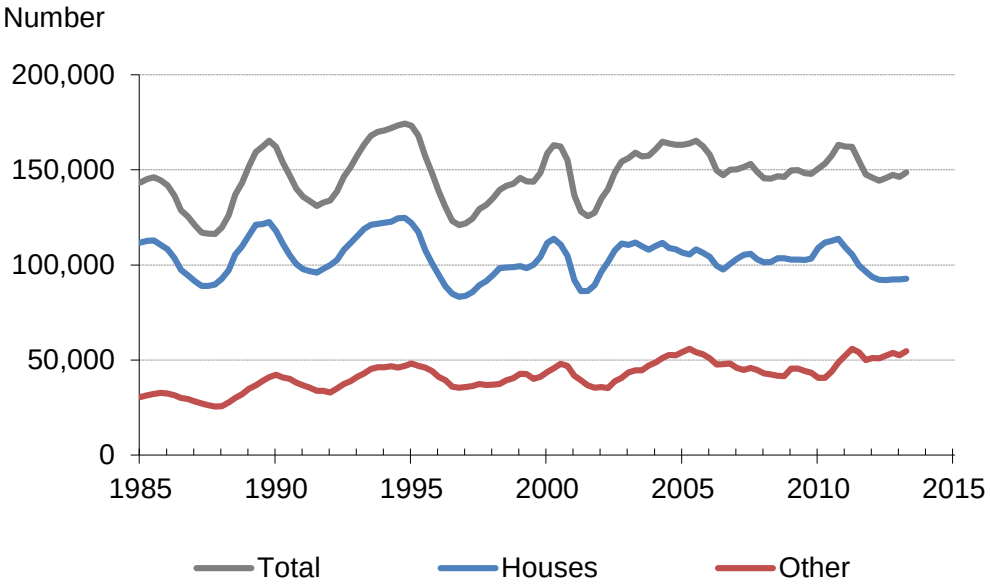
Source: ABS, cat. no. 3101.0, *Australian Demographic Statistics*, Table 1, 2014

Note: An improved NOM processing method ('12/16 month rule') has been used in calculating Australia's official ERP since the September quarter 2006. NOM estimates from earlier periods are not strictly comparable. The Productivity Commission (2012b, p.34) suggest post-2006 estimates are 15–20 per cent higher than those using the previous methodology.

If the (age-adjusted) propensity to form households had been the same in the 2011 Census as was observed in the 2006 Census, this rapid growth in population would have resulted in 76 000 more households than there were new dwellings to accommodate them (NHSC 2013, p.16). In other words, the rate of construction of new dwellings between the 2006 and 2011 Censuses that took place was inadequate to sustain past rates of household formation. As can be seen in Figure 5 below, the rate of completion of new dwellings has remained relatively stable for over a decade at a time when population growth has expanded rapidly.

[9] Both the Greenville et al. (2013) analysis and ABS data are based on equivalised 'final' income which includes the net effect of indirect taxes and transfers (but not the effect of tax concessions such as those that apply to housing and superannuation). ABS data also includes estimates of imputed rent. These inclusions have the extensions that have the effect of considerably flattening the income distribution compared with the more common use of equivalised disposable household income.

Figure 5: Annual dwelling completions: Australia



Source: ABS cat. no. 8752.0 Australian Demographic Statistics, Table 37, 2014

As a result, between 2006 and 2011, population growth exceeded household growth and average household size increased after a century long sustained decline.[10] One explanation of this gap, created by the difference between available dwellings and what the (former) National Housing Supply Council (and others) has called 'underlying' demand, provides one (often contested) estimate of the extent to which there is a housing supply shortage in Australia. It provides one, among many, explanations of why there has been a general upward pressure on housing costs across all tenure types in Australia in the past decade, including private sector rents.

2.3 Housing policy context 2006–11

Prior to the GFC, the incoming Australian Labor Government (elected in 2007) introduced a number of initiatives to address widespread community and media concerns about 'housing affordability problems' associated with rapidly increasing housing prices in the first years of the decade (Milligan & Pinnegar 2010). Some of these measures were intended to improve housing supply generally, for example, through the establishment of a National Housing Supply Council (NHSC) and the Housing Affordability Fund. The Supply Council was to coordinate information on the supply of housing relative to demand on a consistent national basis (NHSC 2009) while the Fund aimed to reduce barriers to supply due to high holding costs and infrastructure costs.[11] Others initiatives were more specifically intended to increase the supply of affordable rental housing for lower income households. These included an umbrella National Affordable Housing Agreement (2009)[12] with the states and territories allied with specific funding arrangements (National Partnership Agreements) with the states/territories for

[10] ABS have yet to release their official household estimates for 2011, but unofficial estimates suggest a rise from 2.53 persons per dwelling in 2006 to 2.78 in 2011 (based on analysis presented at http://blog.id.com.au/2012/australian-housing-trends/2011-census-our-expanding-households/, viewed 30 May 2014). From 1911 until 2006, household size decreased from 4.5 to 2.6 (ABS 2012b *2012 Year Book*, cat. no. 1301.0, p.264). This decline has been attributed to decreasing fertility (at least until recently), delayed household formation (with more single person households as a result), and increasing longevity (with an increase in the number of older, smaller households).

[11] Australian Government Department of Social Services, *Housing Affordability Fund*, viewed 31 October 2014, https://www.dss.gov.au/our-responsibilities/housing-support/programs-services/housing-affordability-fund.

[12] The NAHA replaced the series of Commonwealth-State Housing Agreements which had been negotiated periodically between the Australian Governments and the states/territories since 1945.

homelessness assistance, social housing and housing in remote Indigenous communities as well as measures to encourage affordable housing supply and home ownership. Funding for additional social housing for very-low-income households was limited to two years and seen primarily as providing exit points for people leaving homelessness services.

Of particular significance was the National Rental Affordability Scheme (NRAS) which was introduced in 2008 by the Australian Government, with states/territories being required to provide some additional funding in cash or in kind. This was an initiative to increase the supply of new affordable rental housing; 'reduce rental costs for low and moderate income households; and encourage large-scale investment and innovative delivery of affordable housing'.[13] It was loosely based on the Low Income Housing Tax Credit scheme (LIHTC) in the US and was intended to relieve some of the demand pressure on the private rental sector by eliciting a targeted supply response. It provided an annual subsidy or tax credit to eligible for-profit and not-for-profit organisations for 10 years to build new sub-market rental housing and to maintain rents at affordable levels for this period. By the time of the 2011 Census, although many NRAS incentives had been approved and were 'in the pipeline' (and were tenanted subsequently[14]) only 4178 NRAS incentives had been delivered (tenanted) nationally so any effect on the supply of affordable rental housing by August 2011 (the month of the Census) was small.

While these and other measures were being introduced, the economic shock of the GFC, discussed above, led to further measures to provide economic stimulus and support employment; two of which had a direct impact on the housing market: the First Home Owner Grant Boost (FHOB) and the Social Housing Initiative (SHI). The First Home Owner Boost Scheme (funded by the Australian Government but administered by the states and territories) built on an existing program of demand side assistance to those buying their first home, with a higher rate of payment for those buying new homes. It was intended to support employment in the residential construction and ancillary industries (Randolph et al. 2013, p.56) and ran between October 2008 and September 2009 in its original form, and from October 2009 to December 2009 in a reduced form. Definitive figures are hard to come by, but it appears that FHOB had the effect of bringing forward demand, particularly for new housing, rather than adding to demand (COAG 2012). In New South Wales, for example, the effect of FHOB was to increase grants to a peak of 7176 a month in June 2009, but by December 2010 the monthly figure had fallen below the average for First Home Owner Grants between 2006–08 before the Boost (Randolph et al. 2013, p.60). This suggests that there may have been some temporary moderation of demand for private rental as households brought forward their home purchases.

The Social Housing Initiative was a $5.638 billion injection of funds to build new social housing and to carry out overdue maintenance on some existing social housing (2008–09 to 2011–12), with the aim of supporting jobs in the construction and property maintenance sectors. These funds were made available by the Australian Government to the states/territories, and indirectly to not-for-profit housing providers, to construct and maintain/upgrade social housing for very-low-income households. A review of the Social Housing Initiative found that approximately 19 700 new dwellings were constructed with a further 12 000 dwellings that were uninhabitable, or likely to be uninhabitable within two years, able to remain tenanted through the repairs and maintenance program (KPMG 2012). It is likely that many of the new residents of these dwellings would have previously been private renters and the effects of this program

[13] Australian Government Department of Social Services, *National Rental Affordability Scheme*, Introduction, viewed 16 July 2014, http://www.dss.gov.au/our-responsibilities/housing-support/programs-services/national-rental-affordability-scheme/.

[14] By December 2013, 17 645 had been tenanted or were available for rental and a further 20 470 incentives had been allocated and were 'in the pipeline'. Department of Social Services (2014), *National Rental Affordability Scheme Quarterly Performance Report as at 31 December 2013*, viewed 16 July 2014, http://www.dss.gov.au/sites/default/files/documents/07_2014/nras_december_2013_quarterly_performance_report_0.pdf.

on demand at the lower end of the market could have been substantial but the extent of this effect is unknown.

2.4 Summary

The market and policy context for changes in the private rental sector between 2006–11 was substantially different from that of the prior intercensal period, due largely to a series of economic and demographic shocks that affected the housing market—and the private rental sector—in important ways:

- Australia-wide, real dwelling prices declined during 2009 and again in 2011 although not as dramatically as in other developed countries, unlike the previous five years when there were sustained real price increases.
- Real rents rose rapidly 2006–09 (unlike 2001–06), and then more slowly, but still by more than inflation until 2011; rental yields increased compared to 2001–06.
- There was increased pressure on metropolitan private rental markets and those in resource development areas due to the combined effects of the resources boom and long-term decline in other key employment sectors.
- A multi-speed economy contributed to increased inequality in household incomes with the greatest increase in the highest income deciles.
- The increase in population, mainly due to a dramatic increase in net overseas migration peaking in 2009, was not accompanied by an increase in the supply of new housing, putting upward pressure on housing costs, including private rents.
- There were significant changes to housing policy settings after 2007, which may have had a modest effect in moderating demand by lower income households for private rental, although the extent of this is unknown.

3 THE CHANGING STRUCTURE OF THE PRIVATE RENTAL MARKET: COMPARING 2011 WITH 2006 AND PREVIOUS CENSUS YEARS

This chapter investigates how the market and policy changes discussed in the previous chapter affected the private rental sector at a national level based on detailed analysis of customised Census data. It examines change in the size of the private rental sector, the distribution of private sector rents and the household incomes of private renters between 2006 and 2011, addressing the first research question. The analysis is based on the 12 categories of household income and the 12 corresponding categories of rents that are affordable to households using the 30 per cent of income benchmark, a method that also enables analysis of trends over the longer term (1996–2011), using equivalent data from previous studies in this series.

3.1 Growth in the size of the private rental sector 2006–11 in the context of longer term housing tenure change

There was a substantial *increase* in the number of households living in the private rental sector, with 264 000 more households living in the sector in 2011 than in 2006. The increase should be seen in the context of other changes in household tenure 2006–11, namely a similar increase in the number of home purchasers (with a mortgage) but only a small increase in the number of outright owners (without a mortgage) and the number of social renters.

The 18 per cent increase in private renter households 2006–11 was not only double the percentage increase in all Australian households (9%) but was significantly greater than the slow but relatively steady percentage increase in private renters in the previous intercensal periods (11% between 2001 and 2006 and 8% between 1996 and 2001). These outcomes can be seen in Table 2.[15]

[15] It should be noted that estimates of the percentage of all households who are private renters varies depending on the source data (e.g. Census data or sample survey data such as the ABS Survey of Income and Housing) and some relatively minor differences in inclusion/exclusions. Analysis of data from the ABS Census 2011 (using Table Builder) indicates that 1 769 000 households rented privately or 23.4 per cent of all households (7 565 000) who provided sufficient information to identify tenure in 2011 (i.e. excluding 'tenure not stated' cases). This includes all households providing sufficient information to identify their tenure and is consistent with other analysis using the same source (e.g. Stone et al. 2013, p.9, Table 1). For the purposes of our analysis, however, while we include households who did not state a rent (for whom rents were imputed as discussed in Section 1.3), we exclude those who stated that they paid zero rent. Thus 1 735 000 households are in scope as private renters for this project (or 22.3% of all households including those, however, with tenure not stated), enabling direct comparison with previous projects in this series.

Table 2: Occupied private dwellings in Australia by tenure type: 1996, 2001, 2006 and 2011

	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
	Intercensal change					
1996–2001						
No. of households	146,000	244,000	94,000	*-1,000*	*-18,000*	465,000
% change within tenure	6	15	8	*-0*	*-4*	7
	Intercensal change					
2001–06						
No. of households	*-327,000*	575,000	142,000	*-5,000*	14,000	399,000
% change within tenure	*-12*	31	11	*-2*	3	6
	Intercensal change					
2006–11						
No. of households	57,000	274,000	264,000	11,000	9,000	616,000
% change within tenure	2	11	18	3	2	9

* 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’.

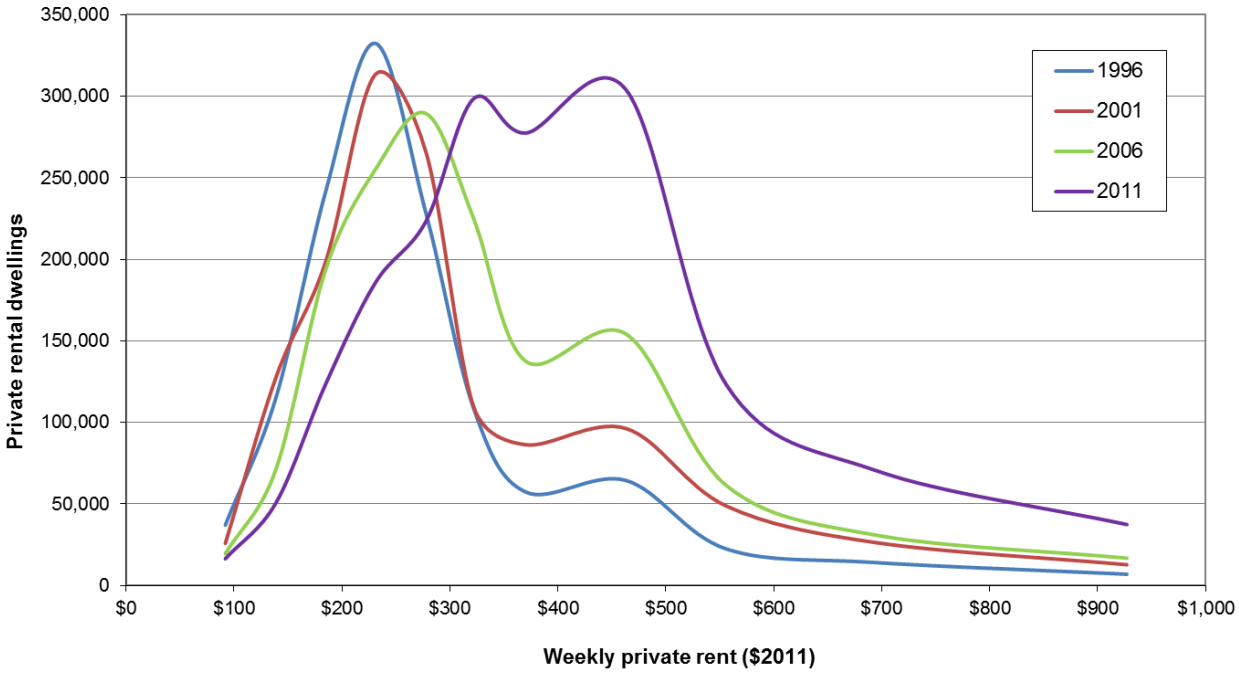
Source: Customised ABS Expanded Matrices based on 1996, 2001, 2006 and 2011 Australian Census of Population and Housing data

3.2 Changes in the supply of private rental dwellings by weekly rent

A characteristic of the Australian private rental sector is that weekly rents are highly clustered around key price points. In 2011, rents were strongly clustered between $300 and $500 a week. Rents had increased markedly in real terms since 2006 when they were strongly clustered between $250 and $350 a week ($2011). In examining the distribution of rents in 2006 and 2011, it is clear that there was a marked increase in rentals in the middle and higher

parts of the rent distribution and a decrease at the lower end.[16] Further, the extent of this change was much greater than in the two previous intercensal periods (Figure 6).

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

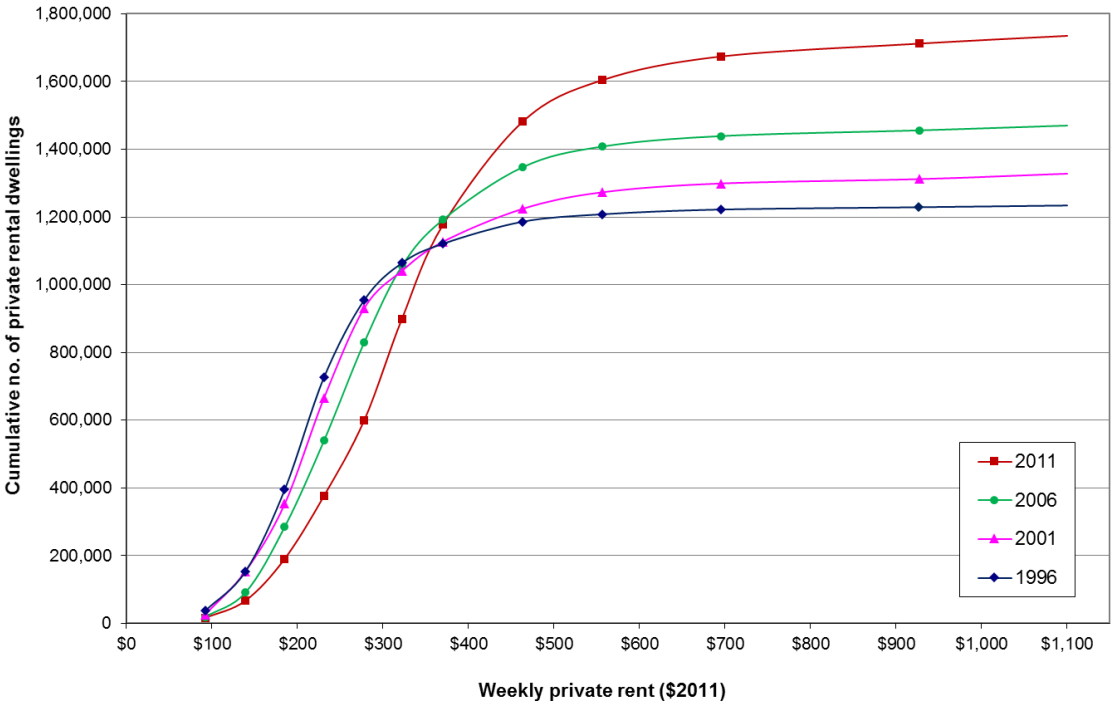


Source: Customised ABS Summary Matrices based on 1996, 2001, 2006 and 2011 Australian Census of Population and Housing data

When we examine the cumulative distribution of weekly rents at Census years between 1996 and 2011, the combination of loss of lower rent dwellings and increase in higher rent properties is apparent, as is acceleration of these trends between 2006 and 2011 compared to previous intercensal periods (Figure 7).

[16] In this and subsequent sections in this chapter, we draw on detailed analysis of changes in weekly rents and household incomes in 12 income and rent segments. Wherever possible, to enable greater clarity, we use $2011 weekly rent or household income amounts on which the 12 categories are based. Readers who wish to view the more detailed results are referred to Appendix 2.

Figure 7: Cumulative distributions of private rental stock, Australia: 1996, 2001, 2006 and 2011



Source: Customised ABS Summary Matrices based on 1996, 2001, 2006 and 2011 Australian Census of Population and Housing data

Despite significant growth in the size of the private rental sector between 2006 and 2011, the number of dwellings renting for around $320 pw or less (in $2011) fell, with the result that their share fell from close to three-quarters of the total rental stock in 2006 to not much more than one half in 2011. For rents below $200 per week, falls were even greater with such dwellings representing little more than 1 in 10 of all rental dwellings in 2011 (compared with 1 in 5 in 2006). Precise numbers can be seen in Appendix 2 (Tables A3 and A4).

3.3 Household incomes of private renters

Increases in weekly rent may not matter if there have been commensurate increases in the incomes of private renter households. The broad picture in relation to household incomes 2006 and 2011 is complex due to the effects of the GFC and subsequent economic stimulus measures aimed at maintaining consumption by lower income households.

Using the customised Census data on gross household incomes obtained for this project, we can observe a general upward shift in household incomes of private renters 2006–11 (Figure 8).[17] The number of households with incomes at or below $462 per week ($2011) decreased; this is an income range which includes the single rate of major income support payments such as the age and disability pension. On the other hand, there was growth in the number of private renter households with incomes above $770 per week ($2011). The median weekly gross income of private renter households in 2011 was around $1235 per week, an increase from approximately $1100 per week in 2006 ($2011). A more detailed distribution of household incomes is given in Appendix 2, Table A5.

[17] These income ranges are not quintiles of any type but rather an aggregation of the 12 income categories to encompass some of the key income ranges for people on the single rate of pensions and income ranges that would include those on part pension/part earned income as well as families in receipt of family tax benefit.

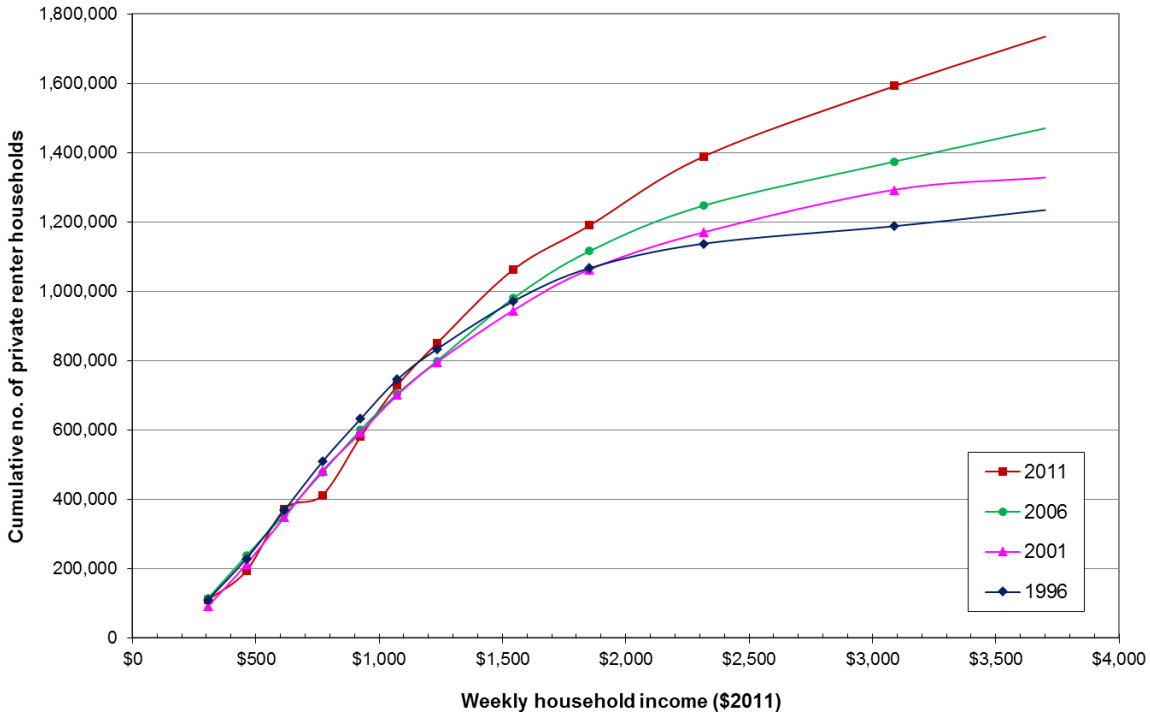
Figure 8: Distribution of income of households in the private rental market, Australia 2006 and 2011

Note: 12 household income categories have been aggregated into six categories.

Source: Customised ABS Summary Matrices based on 2006 and 2011 Australian Census of Population and Housing data

Looking at the cumulative distribution of the household incomes of private renter households in 2011 compared to the three prior Census years (Figure 9), it is clear that there was a more substantial increase in household incomes at the higher end of the income distribution (starting from $1500 per week gross and particularly above about $1800 per week in $2011) between 2006 and 2011 than in the previous intercensal periods. The data do not enable analysis of the drivers of this change but there are a number of potential explanations including increasing difficulty in accessing home ownership due to rising house prices (discussed in Chapter 2), increasing employment mobility and lifestyle choices.

Figure 9: Cumulative income distributions of private renter households, Australia: 1996, 2001, 2006 and 2011



Source: Customised ABS Summary Matrices based on 1996, 2001, 2006 and 2011 Australian Census of Population and Housing data

3.4 Some key differences between metropolitan and non-metropolitan regions

This section provides an overview of the tenure changes, and stock and income changes, in the private rental markets of metropolitan and non-metropolitan regions in Australia. The relevant tables and figures are included in Appendix 2.

In both metropolitan and non-metropolitan areas,[18] the proportion of households that rented privately had increased between 2006 and 2011. In 2011, 23 per cent of metropolitan households were private renters with a comparable figure of 20 per cent in non-metropolitan areas. The percentage increase between 2006 and 2011 in the number of private renter households was greater, however, in non-metropolitan regions (off a lower base) where such households increased by 19 per cent compared to a 17 per cent increase in metropolitan regions (Tables A8 and A9 in Appendix 2). In non-metropolitan areas, this increase amounted to some 94 000 extra households, more than three times the growth between 2001 and 2006.

As expected, renting in metropolitan areas continued to be more expensive than non-metropolitan regions. In both areas, the number of dwellings available at the lower rent end of the market declined. In metropolitan areas, this decline extended up the rent scale to dwellings renting for $370 per week: in 2006, 76 per cent of stock was available at or below this level; this had declined to 60 per cent of the stock in 2011. A similar decline in lower rent dwellings was experienced in the non-metropolitan regions: in 2006, 72 per cent of the stock had rents up to $278 per week but by 2011, this had declined to 55 per cent of the stock.

In terms of private renter household incomes, both metropolitan and non-metropolitan areas experienced similar proportionate declines in households at the lowest end of the income

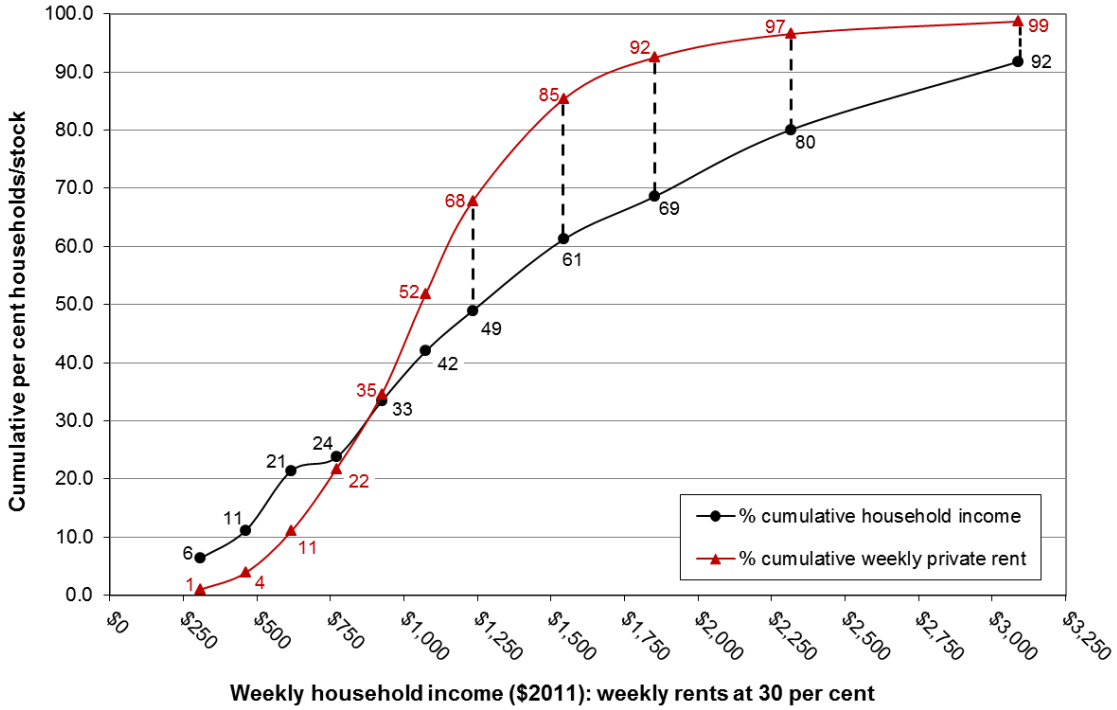
[18] The definition of 'metropolitan' and 'non-metropolitan' is included in Appendix 2 (Table A19).

distribution (less than $463 per week). While in both types of areas the number of households at the upper end of the income scale increased, metropolitan areas experienced a somewhat more dramatic increase, adding an extra 144 000 households with incomes above $1850 per week. Such households made up 28 per cent of all private renters in 2006, and this increased to 37 per cent in 2011. In non-metropolitan areas, such households made up 15 per cent of all private renter households in 2006 and, in 2011, 21 per cent of all households were those with incomes of $1850 or more per week. In both metropolitan and non-metropolitan regions, the increase in the number and proportion of high-income private renter households was greater between 2006–11 than in prior intercensal periods.

3.5 Comparing the distribution of household incomes and weekly rents

Thus far, we have considered separately changes in the distribution and cumulative distribution of weekly rents and household incomes in the private rental sector. Calculation of the shortage/surplus of affordable dwellings for private renter households on different incomes requires rents and incomes to be considered together. We illustrate this for 2011, showing the intersection of the cumulative *percentage* distributions of private renter weekly household incomes and weekly rents (at the 30% benchmark (Figure 10)). Analysis of cumulative percentage distributions in this way enables identification of the extent and type of shortages which is useful in targeting any policy interventions (Wulff et al. 2009, p.11).

Figure 10: Cumulative distributions of weekly rents and private renter household incomes by weekly rent/income segment, Australia 2011



Source: Customised ABS Summary Matrix based on 2011 Australian Census of Population and Housing data

Figure 10 illustrates a simple point: there is a fundamental mismatch between the cumulative distribution of private renter household incomes and weekly rents. This results in two separate problems. First, there is a clear shortage of affordable rentals at the lower end of the household income scale. This problem occurs for households in approximately the bottom 25 per cent of private renter household incomes. Above this level, and most clearly for the highest 65 per cent of private renter household incomes, there is an apparent surplus of affordable rental stock. This raises a second potential problem: to what extent are lower income households able to

access the stock which is affordable to them or whether such stock is occupied by households with higher (or in some cases lower) incomes? We consider both of these issues in detail in the next chapter.

3.6 Summary

Our analysis suggests that there were some important changes in the structure of the private rental sector nationally between 2006 and 2011 that were of a greater magnitude than previous intercensal periods:

- The private rental sector in Australia grew more strongly between 2006 and 2011 than in the two previous intercensal periods and played an increasingly important role in accommodating household growth.
- There was a loss of lower rent dwellings and an increase in higher rent properties between 2006–11, to a greater degree than in previous intercensal periods.
- Weekly rents were strongly clustered between $300 and $500 a week in 2011; these rents were unaffordable to many households on lower incomes using the 30 per cent of income affordability benchmark.
- While there was an absolute and proportionate decrease in private renter households with the lowest incomes between 2006 and 2011, the most striking change was the increase in households with higher incomes, the latter exceeding that of the prior intercensal periods.
- The different distribution of weekly rents (which are highly clustered) and weekly household incomes of private renters (which are more dispersed) results in two problems: a shortage of affordable rental dwellings for private renter households on the lowest incomes and a potential problem of availability of affordable housing for other lower income households.

4 ESTIMATES OF NATIONAL SHORTAGES OF AFFORDABLE AND AVAILABLE HOUSING FOR LOWER INCOME HOUSEHOLDS

In this chapter, we provide estimates of the supply of private rental housing that was 1) affordable and 2) affordable *and* available to lower income households in 2011 as well as 3) the proportion of lower income households paying unaffordable rents. We estimate shortages or surpluses of private rental housing on these measures nationally, and for metropolitan and non-metropolitan areas between 2006 and 2011, addressing the second research question. We provide separate estimates for two groups: *very-low-income household*s (also referred to as lowest quintile or 'Q1 households') and *low-income household*s (also referred to as second lowest quintile or 'Q2 households') to illustrate whether affordability and availability problems moved up the income scale between 2006 and 2011. We also provide estimates for the two lowest quintiles combined (i.e. the lowest 40% of household incomes) on these two measures which enables some comparison with estimates provided by the (former) National Housing Supply Council (NSHC 2012, p.48), although direct comparison is not possible for reasons outlined in detail in Appendix 3.

In the analysis in this chapter (and hereafter in this report), we use household income quintiles, and rent categories that correspond to 30 per cent of the quintile value (the upper value of the income range),[19] rather than the 12 income and rent segments used in the previous chapter.

As mentioned in Section 1.3, affordability analysis based on household income quintiles is widely accepted in policy and research in Australia and the use of quintiles provides a consistent and widely understood definition of 'very-low income' and 'low income' over time. In so doing, it should be emphasised that household income quintiles are derived from the distribution of *all* Australian household incomes (regardless of tenure) and not that of private renter households specifically. [20]

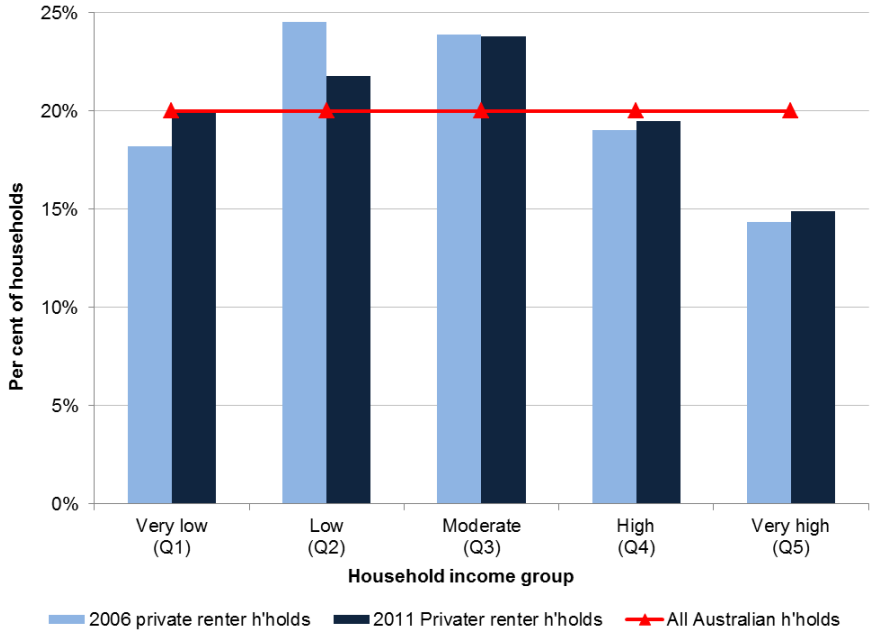
4.1 Type and level of shortage for very-low and low-income households

There is a broad spread of private renter households across the five Australian household income quintiles, but the proportion with Q2 and Q3 incomes is somewhat over-represented and the proportion of private renter households with very high incomes (Q5) considerably under-represented compared to Australian households generally (Figure 11). When compared with 2006, the percentage of private renter households with very-low (Q1) income has increased (from 18 to 20%) while the percentage of private renter households in Q2 has declined slightly.

[19] Table 1 in Section 1.3 of this report shows the dollar values of household income quintile and corresponding weekly rent categories.

[20] It is important to note that many Q1 households in the distribution of all Australian gross household income are aged pensioners who own their homes outright (without a mortgage).

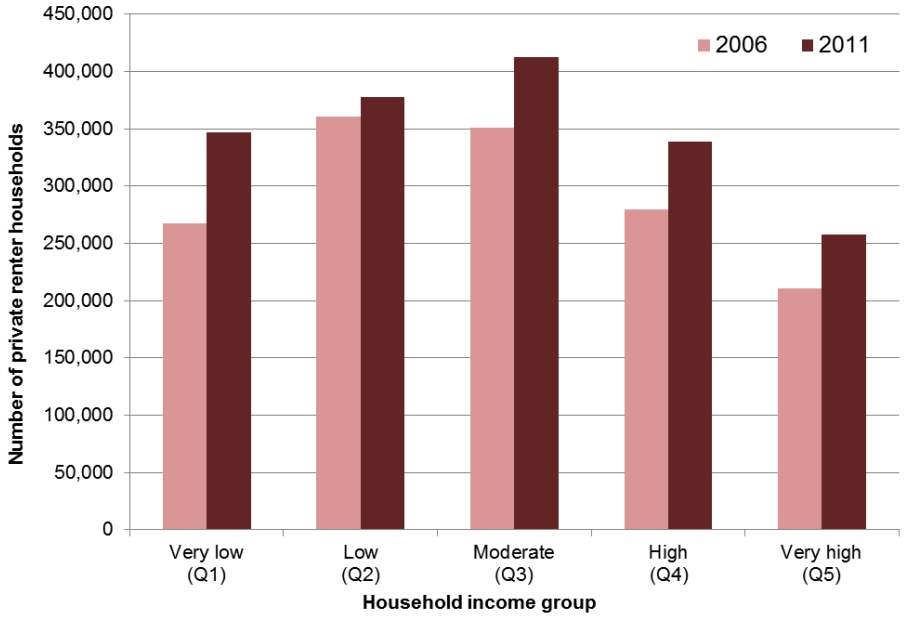
Figure 11: Distribution (%) of private renter household incomes compared with Australia-wide household income quintiles, 2006 and 2011



Source: Customised ABS Expanded matrices based on 2006 and 2011 Australian Census of Population and Housing data

It is clear, however, when we compare the *number* of private renter households in each quintile in 2006 and 2011, there have been absolute increases in private renter households in all groups, with a particularly notable increase in Q1 households renting privately, as well as increases in higher income quintiles (Figure 12).[21]

Figure 12: Number of private renter households within each Australia-wide household income quintile, 2006 and 2011



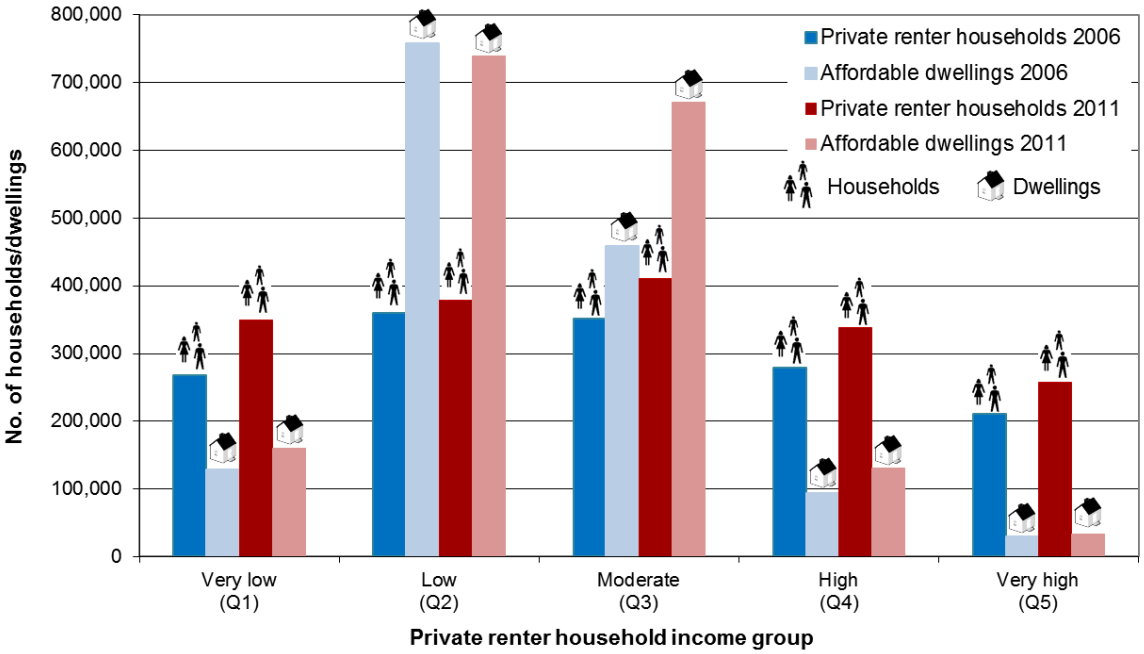
Source: Customised ABS Expanded matrices based on 2006 and 2011 Australian Census of Population and Housing data

[21] The precise numbers in this chart, along with the numbers of affordable dwellings seen in the following chart, are tabulated in Appendix 2, Tables A15 and A16.

Figure 13 below presents the number of private renter households in each quintile compared with the number of rental dwellings affordable to each income group (using the 30% of income affordability benchmark).[22] The different nature of the problem facing private renter households in the Q1 and Q2 income groups is evident (Figure 13).

In 2011, as in 2006, Q1 households faced a *shortage* of affordable rental stock. Furthermore, between 2006 and 2011 there was a 30 per cent increase in the number of Q1 households, but the affordable stock did not increase at the same rate. On the other hand, Q2 households had a clear *surplus* of affordable dwellings in 2011, as in 2006. Over the five-year period there was a 5 per cent increase in the number of Q2 households, but a 3 per cent decline in the number of affordable dwellings. Despite these minor changes, however, there was still a large surplus of dwellings affordable for Q2 households in 2011. In 'theory', Q2 households should not have a private rental affordability problem, however, when use of this stock by households with higher (or lower) incomes is examined, a different picture emerges. It is for this reason that we estimate shortages for Q1 and Q2 private renters separately in the next section of the report.

Figure 13: Number of private renter households by income group compared with the number of dwellings affordable at 30 per cent benchmark, Australia 2006 and 2011



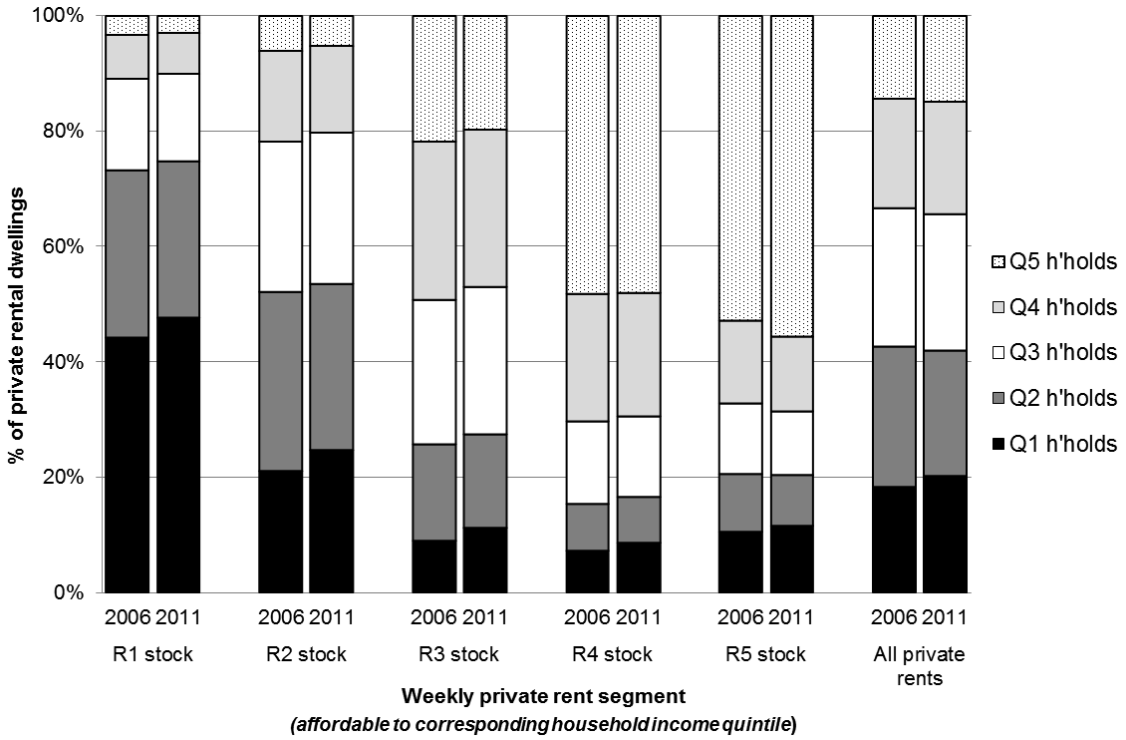
Source: Customised ABS Expanded matrices based on 2006 and 2011 Australian Census of Population and Housing data

It is also clear from Figure 13 that the most significant increase in private rental supply 2006–11 was in dwellings affordable to Q3 households. The number of such dwellings grew by 46 per cent over the five-year period. Furthermore, the low level of higher end stock seen in 2006 was again evident in 2011. The high rent stock grew by around 40 per cent, but off a very low base, meaning the growth in Q4 households out-numbered any increase in high rent stock. The growth in very high rent stock was also no match for the growth in the number of Q5 private renter households. The data do not enable any assessment of the preferences and decision-making of higher income private renters. What is made clear by Figure 14 below, however, is that occupation of dwellings in the lower segments of the rental market by Q4 and Q5 households reduced availability for lower income households, particularly Q2 households. The figure shows the proportions of dwellings in each rent segment (R1–R5, affordable to the

[22] It is important to note that households in the higher income groups can also afford dwellings in the lower rent segments, not only those at the 30 per cent benchmark of their quintile group.

corresponding household income quintile) that were occupied by households in the five income quintiles. In both 2006 and 2011, about half of the R1 and R2 stock was occupied by higher income households. For the R1 stock, higher income refers to Q2–Q5 households and for the R2 stock, higher incomes are those households in Q3 or above.

Figure 14: Distribution (%) of weekly household incomes by weekly rent paid: household income quintiles and corresponding affordable rent categories (R1–R5), Australia 2006 and 2011[23]



Source: Customised ABS Expanded matrices based on 2006 and 2011 Australian Census of Population and Housing data

4.2 Estimating shortages of private rental dwellings for very-low-income households (Q1)

Estimation of the shortage of rental dwellings affordable for Q1 private renter households involved the following:

- Calculation of the difference between the number of Q1 households and the number of dwellings with rents affordable for such households (using the 30% benchmark). This calculation assumes that all such dwellings are actually available to Q1 households.
- An additional step deducts the number of dwellings affordable to Q1 households that were occupied by households in higher income quintiles (Q2–Q5). This estimate of shortage thus excludes dwellings affordable but not available to Q1 households.
- A further calculation was the percentage of Q1 private renter households paying unaffordable rents, that is, Q1 households renting dwellings that were only affordable to Q2–Q5 households using the affordability benchmark.[24]

[23] Appendix 2, (Tables A15 and A16) provides the dollar ranges for the 2006 and 2011 household income (Q) and rent (R) categories.

[24] Whilst strictly speaking this measure could be seen as an indicator of demand rather than supply, it us a useful and easily understood measure and in combination with the other two measures gives a fuller picture of supply shortages.

These estimates were prepared at the national level and also separately for metropolitan and non-metropolitan regions (Table 3). It should be noted that the calculation of shortage for Q1 private renter households using these two measures does not take into account mismatches in terms of location or whether dwellings were appropriate to household type/size or of an adequate quality.

Table 3: Shortage of affordable and available stock for private renter households with gross incomes at or below Q1 in the nation-wide household income distribution

	Shortage/surplus of affordable stock		Shortage of affordable and available stock		Proportion (%) of low-income (Q1) households paying unaffordable rents	
	2006	2011	2006	2011	2006	2011
Australia	-138,000	-187,000	-211,000	-271,000	79	78
Metropolitan regions	-107,000	-143,000	-134,000	-171,000	87	88
Non-metro regions	-31,000	-44,000	-76,000	-100,000	68	66

Source: Customised ABS Expanded matrices based on 2006 and 2011 Australian Census of Population and Housing data

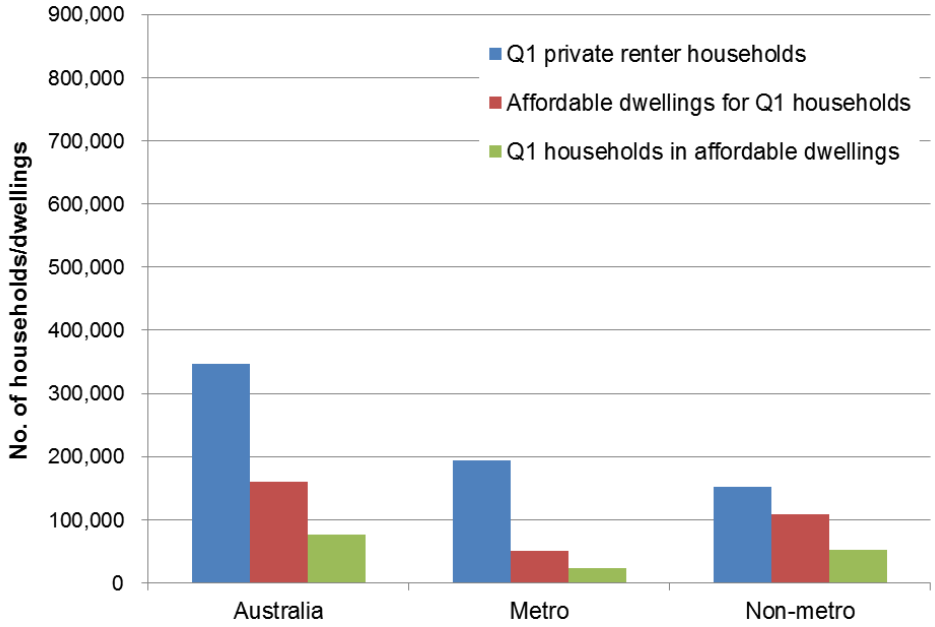
In 2011, there was a national shortage of affordable dwellings for Q1 households of 187 000 up from 138 000 in 2006. The shortage of affordable and available dwellings for Q1 households increased from 211 000 in 2006 to 271 000 in 2011 (deducting those dwellings affordable to Q1 households but which were occupied by households with Q2–5 incomes). Approximately only one in five Q1 households was paying affordable rents and four in five unaffordable rents in 2011, percentages that were much the same as in 2006.

The shortage of affordable dwellings for Q1 households was greater in metropolitan regions than in non-metropolitan regions in 2011, although in both cases had increased compared to 2006. However, the shortage of affordable and available stock increased markedly in non-metropolitan regions between 2006–11, although in numerical terms was larger in metropolitan regions. The percentage of Q1 households living in unaffordable rental dwellings in the metropolitan regions is significantly higher than in non-metropolitan regions and had remained almost unchanged between 2006–11.

These points are summarised in Figure 15 below which shows that the key issue in 2011 was the lack of supply of dwellings which were affordable to Q1 households. This shortage is then exacerbated when a portion of the very limited stock that was affordable to Q1 households is occupied by Q2–Q5 households (i.e. the stock was unavailable to Q1 households). Another way of interpreting the data shown in Figure 15 is that if all the affordable stock was occupied by only Q1 households—a 'best-case' scenario—then just 46 per cent of those households (nationally) would be paying affordable rents. The comparable figure for 2006 (not shown) was 48 per cent. In reality, however, due to utilisation of the affordable stock by higher income households, only 22 per cent of the 347 000 Q1 private renter households in 2011 were housed affordably, little change from 2006 when 21 per cent of Q1 households accessed affordable rental dwellings.[25]

[25] These figures can also be understood from a stock, rather than household, perspective whereby the green bars in the chart represent the number of dwellings that are *available* for Q1 households.

Figure 15: Shortage and accessibility for Q1 households: Australia, metropolitan and non-metropolitan regions, 2011



Source: Customised ABS Expanded matrix based on 2011 Australian Census of Population and Housing data

4.3 Estimating shortages of private rental dwellings for low-income households (Q2)

The same procedure was followed as for Q1 households to estimate shortages. The results show that Q2 households have a different problem. As we saw in Chapter 3, weekly rents are strongly clustered at levels that are affordable to Q2 and Q3 income households and Q2 households had an apparent surplus of 521 000 affordable dwellings to rent in 2011, a very slight decrease from 2006 (Table 4). There were different trends, however, in metropolitan and non-metropolitan regions. The surplus of affordable dwellings for Q2 households had declined slightly in metropolitan regions but increased somewhat in non-metropolitan regions (see Table 4).

When occupation by higher income households is taken into account, along with Q1 households who have no choice but to rent housing above the 30 per cent affordability benchmark (as discussed above), it is clear that there is a *shortage* of *affordable and available* rental dwellings for Q2 households.

In 2011, the nationwide shortage of affordable and available dwellings for Q2 households was 122 000, an increase from 87 000 in 2006. Much of this shortage was in metropolitan regions with the situation in non-metropolitan regions being relatively stable during this period.

There was an increase in the percentage of Q2 households who paid unaffordable rents in 2011, up from 24 to 32 per cent nationally. The biggest increase was in metropolitan regions, with relative stability on this measure in non-metropolitan regions.

Table 4: Shortage of affordable and available stock for Q2 private renter households, 2006 and 2011

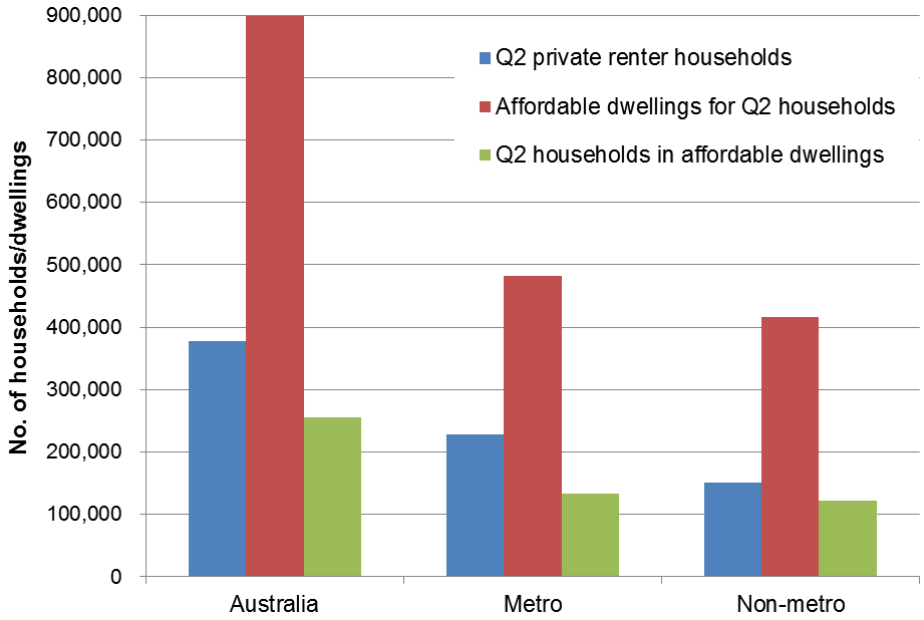
	Shortage/surplus of affordable stock		Shortage of affordable and available stock		Proportion (%) of lower income (Q2) households paying unaffordable rents	
	2006	2011	2006	2011	2006	2011
Australia	+528,000	+521,000	-87,000	-122,000	24	32
Metropolitan regions	+303,000	+255,000	-63,000	-94,000	29	41
Non-metro regions	+224,000	+266,000	-24,000	-28,000	17	19

Source: Customised ABS Expanded matrices based on 2006 and 2011 Australian Census of Population and Housing data

The analysis suggests that the shortage of affordable and available stock had extended up the income scale between 2006 and 2011 to include a significant number of Q2 households. These shortages are greatest, and have increased more, in metropolitan than non-metropolitan regions during this period.

The situation for Q2 households nationally and in metro and non-metro regions in 2011 is summarised in Figure 16 below. It shows that, notwithstanding an apparently large surplus of affordable dwellings, when occupancy by households on other incomes is taken into account, there is insufficient affordable accommodation available for them to rent. Unlike Q1 households, all Q2 households could be housed in affordable rental in a 'best-case' scenario. In reality, however, only 68 per cent of the 378 000 Q2 households (nationally) were paying affordable rents, down from 76 per cent in 2006 (not shown).

Figure 16: Shortage and accessibility for Q2 households: Australia, metropolitan and non-metropolitan regions, 2011



Source: Customised ABS Expanded matrix based on 2011 Australian Census of Population and Housing data

4.4 Estimating shortages for lower income households (Q1 and Q2 combined)

Finally in this chapter, we estimate the surplus/shortage of affordable, and affordable and available, rental housing for households in the lowest 40 per cent of household incomes combining Q1 and Q2. This is done because policy-makers often reference these households as one group—'lower income households' and there have been previous estimates provided by the (former) National Housing Supply Council using a similar methodology to ours but using the ABS Survey of Income and Housing, a large sample survey conducted every two years, rather than the five yearly Census (NHSC 2012, pp.47–48) (see Appendix 3 for further details about comparison of results).

Using what is in effect a cumulative shortage of affordable and available stock for Q1 and Q2 households, there was a surplus of affordable dwellings nationwide of 174 000 in 2011, significantly down from 260 000 in 2006. The decrease was entirely in metropolitan regions (Table 5).

This surplus turned into a shortage when the availability of affordable dwellings for Q1 and Q2 households is taken into account. We estimate a national shortage of 212 000 affordable and available rental dwellings in 2011 compared to 138 000 in 2006. Much of the shortage is in metropolitan regions although there was also some increase in shortage on this measure in non-metropolitan regions over this period, which we explore further in the next chapter.

There was a corresponding increase in the percentage of lower income households (Q1 and Q2 combined) paying unaffordable rents up from 22 per cent nationally in 2006 to 29 per cent in 2011. However, the percentage of lower income households in this situation was much greater in metropolitan than non-metropolitan regions and, furthermore, had increased markedly such that by 2011, almost four in ten lower income households in metropolitan regions lived in unaffordable housing.

Table 5: (Cumulative) shortage of affordable/available stock for private renter households with incomes in the bottom 40 per cent (Q1 and Q2 combined) of the nation-wide household income distribution, 2006 and 2011

	Shortage/surplus of affordable stock		Shortage of affordable and available stock		Proportion (%) of lower income* households paying unaffordable rents	
	2006^	2011	2006^	2011	2006	2011
Australia	+260,000	+174,000	-138,000	-212,000	22	29
Metropolitan regions	+148,000	+60,000	-104,000	-164,000	28	39
Non-metro regions	+112,000	+114,000	-35,000	-48,000	14	16

('+' = surplus and '–' = shortage)

^ NB: these figures were not published for the previous project.

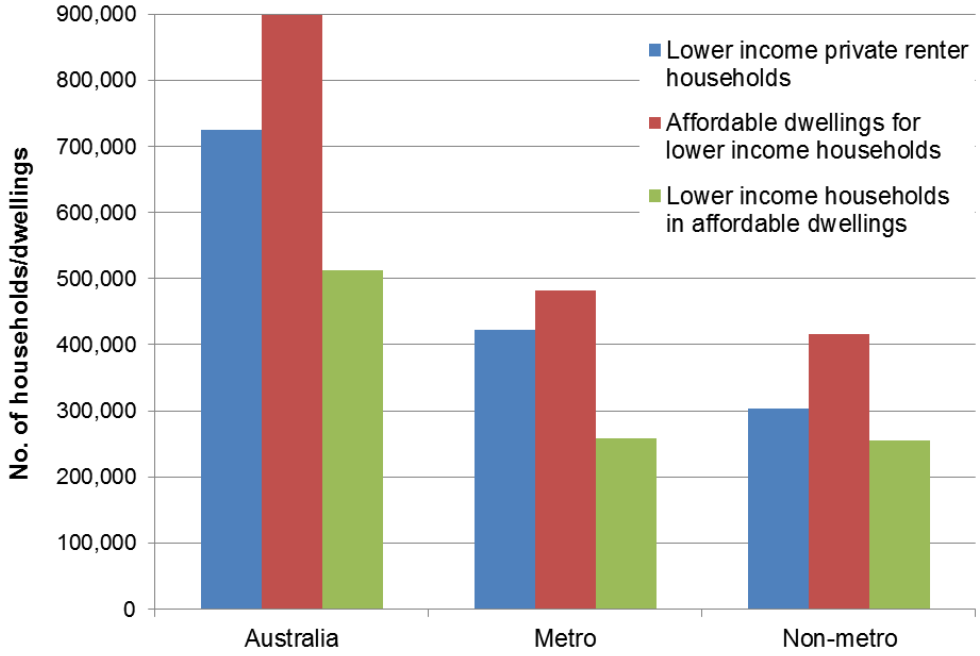
* Lower income refers to households in the bottom two quintiles of the Australia-wide household income distribution.

Source: Customised ABS Expanded matrices based on 2006 and 2011 Australian Census of Population and Housing data.

Figure 17 below (derived from Table 5) shows how a surplus of affordable dwellings converts to a shortage of affordable and available dwellings when utilisation by, in this instance, only higher income households is included. The situation for lower income households changes from a 'best-case' scenario whereby all would be renting affordably, to the reality where nationally, only around 70 per cent of the 725 000 lower income households are in affordable rental. Also clearly illustrated in the chart, with the blue and red bars approaching the same

level, is the relatively small surplus seen in Table 5 of only 60 000 affordable dwellings for lower income households in metropolitan areas.

Figure 17: Shortage and accessibility for lower income private renter households: Australia, metropolitan and non-metropolitan regions, 2011



Source: Customised ABS Expanded matrix based on 2011 Australian Census of Population and Housing data

There are both advantages and disadvantages of using a cumulative measure for Q1 and Q2 households combined. The main advantages are that it is a single measure which is clear and easy to understand and which can easily be tracked over time. The disadvantages are that, as highlighted in Sections 4.1–4.3 above, the situation facing Q1 and Q2 households is quite different; one is about shortage exacerbated by the occupation of affordable dwellings by households on incomes higher than Q1; the second is about surplus in affordable supply which is whittled away by competition from Q3–5 households as well as by Q1 households who face an outright shortage of affordable dwellings and have to pay higher rents. This latter point also highlights a problem with the composite measure: Q1 households paying rents affordable to Q2 households are not actually in affordable housing, so the problem they face is understated with a cumulative measure.

4.5 Summary

In 2011, as in previous Census years, the household incomes of private renters were substantially more dispersed than weekly rents, the latter being clustered at levels affordable to Q2 and Q3 households. The biggest increase in privately rented dwellings between 2006 and 2011 were those with weekly rents affordable to Q3 households. In consequence, very-low-income (Q1) and low-income (Q2) households face different problems in the rental market.

- The situation for Q1 and Q2 households deteriorated on three measures of shortage between 2006 and 2011.
- Very-low-income (Q1) households faced a shortage of 187 000 dwellings nationally in 2011, up from 138 000 in 2006. Low income (Q2) households had an apparent surplus of affordable dwellings of 521 000 nationally in 2011 (a slight decrease compared to 2006).
- The shortage of affordable and available dwellings for Q1 households, which deducts affordable dwellings occupied by higher income (Q2–Q5) households, was 271 000 dwellings in 2011 (up from 211 000 in 2006). For Q2 households, a theoretical surplus of

affordable dwellings became a shortage of 122 000 affordable and available dwellings nationwide in 2011 (up from 87 000 in 2006).

- Across Australia, four in five Q1 private renter households did not live in affordable housing in 2011, much the same as in 2006; while a third of Q2 households did not live in affordable rental housing in 2011 (a substantial increase from 24% in 2006), indicating that this problem moved further up the household income distribution between 2006 and 2011.
- Shortages of affordable and available rental stock for both very-low-income and low-income households were worse in metropolitan than non-metropolitan regions, although there is evidence of an increased shortage for very-low-income (Q1) households in non-metropolitan regions.
- The cumulative shortage of affordable and available dwellings for Q1 and Q2 households combined across Australia was 212 000, a deteriorating situation from 2006, although this measure is very broad brush and should be treated with caution.

5 GEOGRAPHIC VARIATION IN THE SHORTAGES OF AFFORDABLE PRIVATE RENTAL HOUSING

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 in the previous chapter. Clearly, geography matters, and rental housing markets differ spatially which affects affordability and availability for lower income households. In this chapter, we consider the ways in which shortages of affordable, and affordable and available, private rental housing are distributed spatially across Australia (responding to research question 5).

Previous projects have compared state capital and the 'balance of state' shortages. This is the first time in this series of projects that there has been an examination of zones (sub-regions) within cities. We have also included 21 regional centres (rather than eight in 2006) in view of the growth in private rental in larger centres other than state capitals, as well as the 'balance' of non-metropolitan regions in each state (i.e. excluding the larger regional centres).

5.1 Capital cities

We saw in the previous chapter that national shortages of affordable rental housing for Q1 households increased on both measures (affordable and affordable/available) between 2006 and 2011, particularly in metropolitan regions. It is not surprising then that the stock shortages for Q1 households worsened in all capital cities (Table 6) with the greatest numeric shortages being in the two biggest cities—Sydney and Melbourne.

Table 6: Shortage of affordable and available stock for private renter households with gross incomes at or below (Q1) in the nation-wide household income distribution, 2006 and 2011: capital cities

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

^very low counts in these areas: caution should be exercised when interpreting these figures.

Source: Customised ABS Expanded matrices based on 2006 and 2011 Australian Census of Population and Housing data

The percentage of Q1 households paying unaffordable rents was high in all capitals in 2011 and in most cases this percentage had increased since 2006. The biggest percentage point increase 2006–11 was in Perth.

The situation for Q2 households in capital cities is that the shortage of affordable and available rental stock increased between 2006 and 2011 but that the shortage was greatest in numeric terms in Sydney, which also has the highest percentage of Q2 households paying unaffordable

rents (other than Darwin and Canberra) (Table 7). The greatest increase in the proportion of Q2 households paying unaffordable rents (2006–11) was in Perth.

Table 7: Shortage of affordable and available stock for private renter households with gross incomes in the Q2 segment of the nation-wide household income distribution, 2006 and 2011: capital cities

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

^ low counts in these areas: caution should be exercised when interpreting these figures.

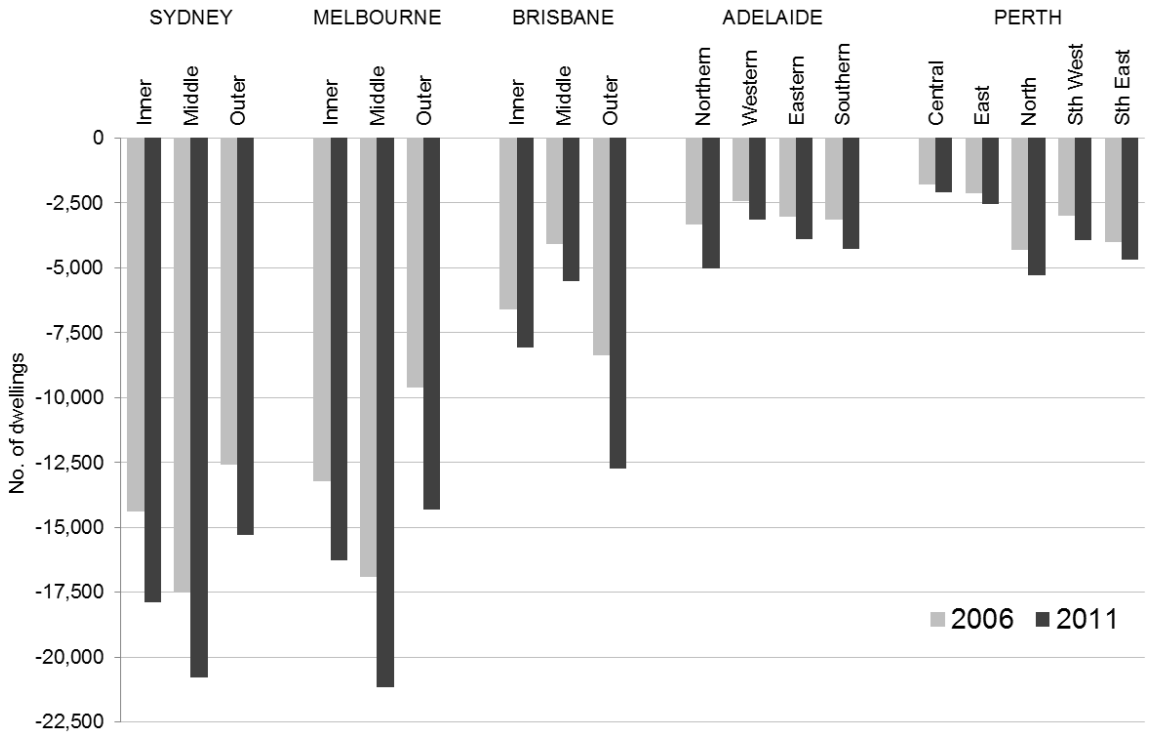
Source: Customised ABS Expanded matrices based on 2006 and 2011 Australian Census of Population and Housing data

5.2 Capital city sub-regions

Figure 18 below compares, for Q1 households in 2006 and 2011, the shortage of affordable and available private rental dwellings in sub-regions[26] of Australia's five largest capital cities. Reflecting their large populations, the volume of shortages in the sub-regions of Sydney and Melbourne far surpass those of the other capital cities, though the outer suburbs of Brisbane experienced shortages in 2011 comparable to the outer suburbs of Melbourne. There was a shortage of over 20 000 dwellings affordable and available for Q1 households in the middle suburbs of both Sydney and Melbourne in 2011. In Brisbane, on the other hand, the middle suburbs fared better than the inner and outer regions where shortages were greater. In both Adelaide and Perth, shortages were greatest in the northern areas, with little variation in the remaining Adelaide regions, though shortages in Perth's central and east regions were considerably smaller than those in the south-west and south-east suburbs. In all these capital city sub-regions, shortages of affordable and available rental properties for Q1 households increased over the five-year period.

[26] These sub-regions are based on individual, or groupings of, 2006 Statistical Subdivisions. A list is provided in Appendix 2.

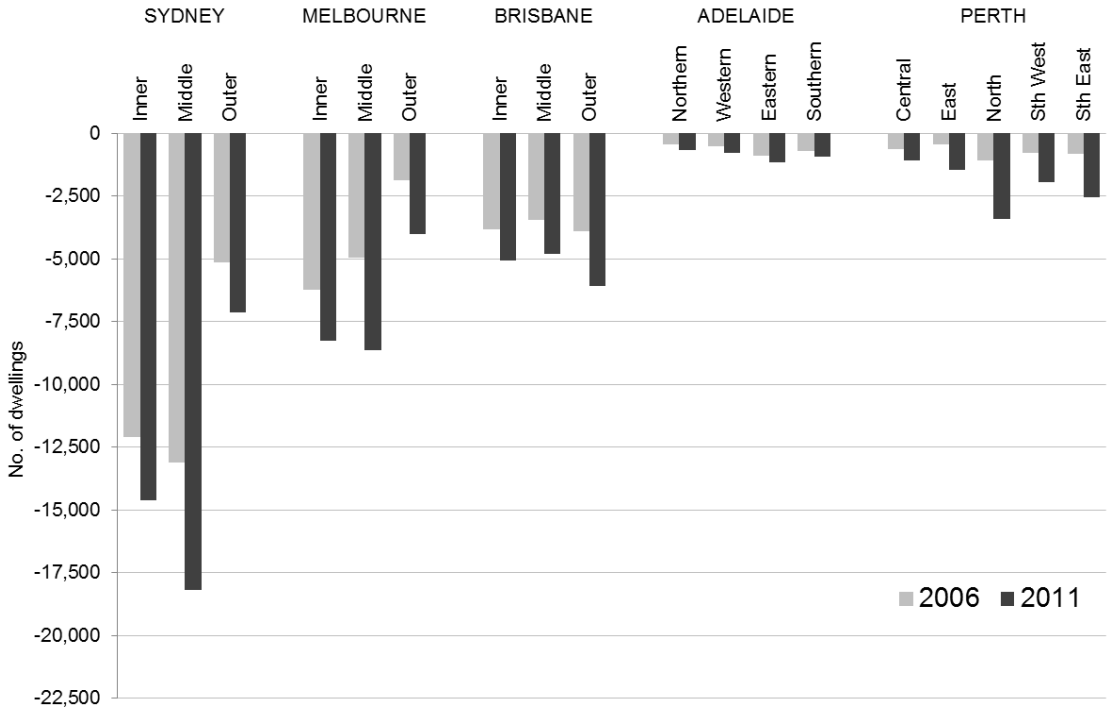
Figure 18: Shortage of affordable and available dwellings for Q1 private renter households: sub-regions of five capital cities, 2006 and 2011



Source: Customised ABS Expanded matrices based on 2006 and 2011 Australian Census of Population and Housing data.

Figure 19 below shows the equivalent information for Q2 private renter households. The inner and middle suburbs of Sydney are prominent in this graph, with the volumes of shortages of affordable and available dwellings for Q2 households far exceeding the outer Sydney region and also all the regions of Melbourne, and the remaining capital cities. In 2011, shortages in the outer suburbs of Melbourne were around half those of the inner and middle areas. In Brisbane, shortages were fairly evenly spread in the sub-regions, though somewhat greater in the outer suburbs. The sub-regions of Adelaide are notable in 2011 for their uniformly small shortages of affordable dwellings for Q2 households, all around 1000 dwellings or less. In 2006, the sub-regions of Perth shared a similar profile to those in Adelaide, with only relatively small shortages. Figure 19 shows, however, that Perth's almost three-fold increase in shortage of affordable and available dwellings, seen in Table 7 above, was most acutely felt in the northern, south-eastern and south-western regions of the city.

Figure 19: Shortage of affordable and available dwellings for Q2 private renter households: sub-regions of five capital cities, 2006 and 2011

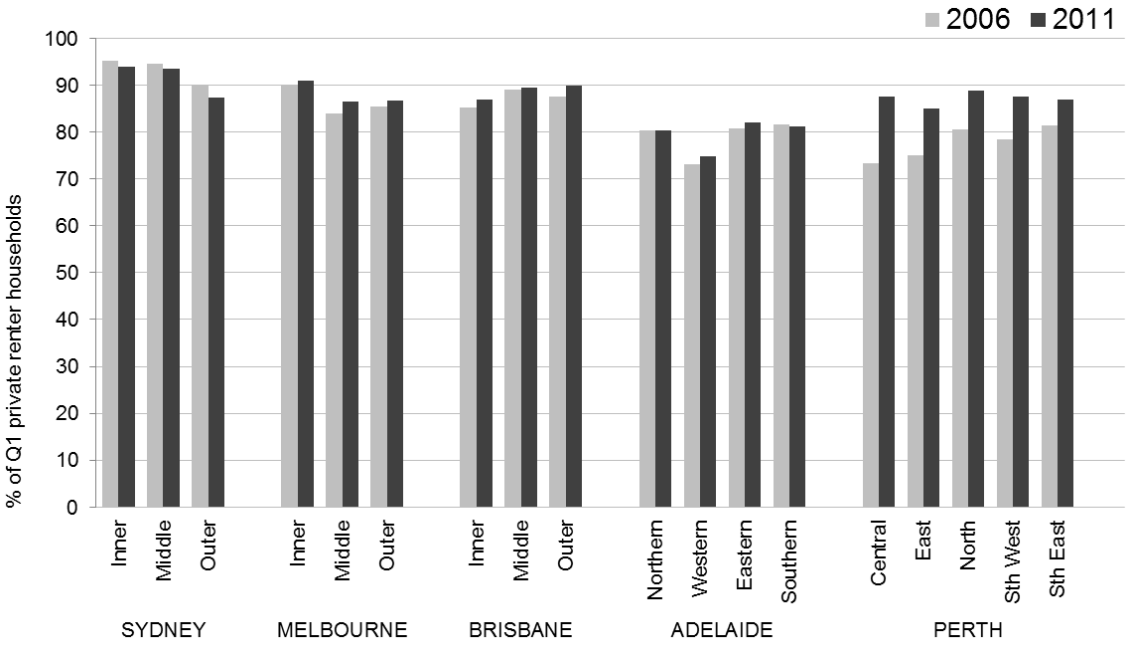


Source: Customised ABS Expanded matrices based on 2006 and 2011 Australian Census of Population and Housing data

It is important to consider these numeric shortages in the context of the number of private renter households in each city. Figure 20 below examines the capital city sub-regions, in terms of the proportion (%) of Q1 households paying unaffordable rents in 2006 and 2011. The figure shows that these shares remained fairly stable over the five-year period and there was little difference between the sub-regions within each city, largely because affordable housing was simply not available for most Q1 households wherever they lived in a city. Of note, is that the greatest increases in the percentage of Q1 households living in unaffordable housing between 2006 and 2011 were in the sub-regions of Perth.[27]

[27] Although a smaller *percentage* of Q1 households miss out in Sydney in 2011 compared to 2006, because there are more households in Q1 in 2011 compared with 2006, a greater *number* of households miss out in 2011. These numbers can be seen in Figure 18 or in more detail in Appendix 2, Table A17.

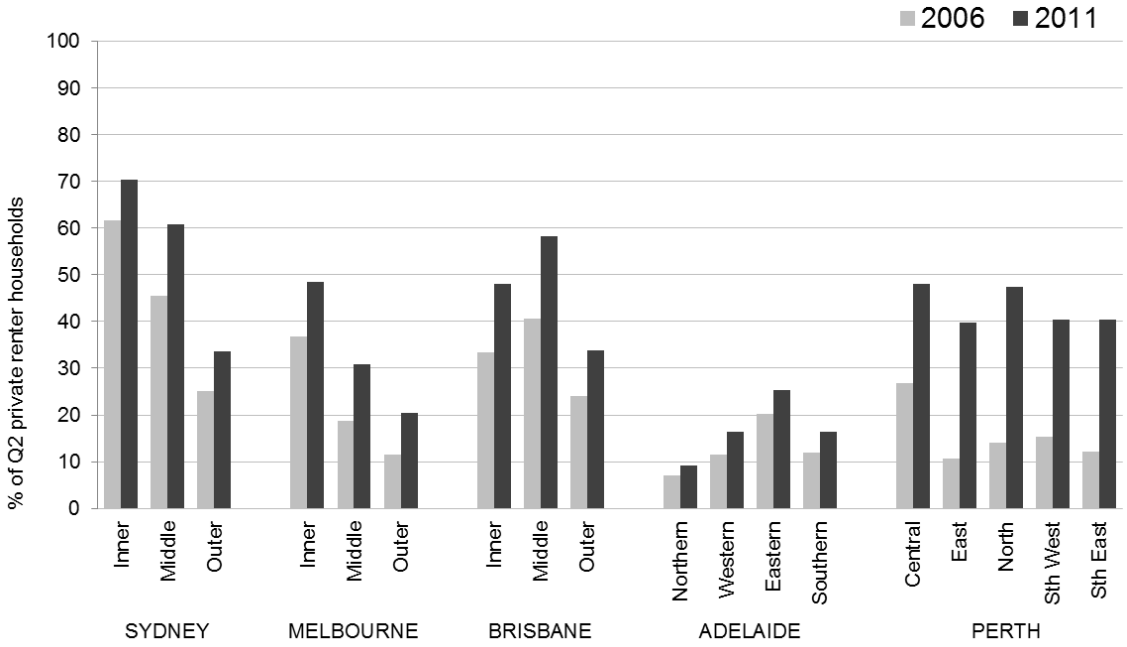
Figure 20: Affordable and available private rental stock for very-low-income (Q1) households: share of households paying unaffordable rents by capital city sub-region, 2006 and 2011



Source: Customised ABS Expanded matrices based on 2006 and 2011 Australian Census of Population and Housing data

Reflecting the national situation, between 2006 and 2011, the increase in the percentage of Q2 households living in unaffordable housing was greater than for Q1 households, illustrating how shortages moved up the household income scale during this period. For Q2 households, the situation is more varied between zones of the city than for Q1 households, with higher percentages of such households living in unaffordable housing in inner and middle suburbs and lower percentages in outer suburbs where rents are cheaper (Figure 21). For example, 70 per cent of Q2 households living in inner Sydney in 2011 lived in unaffordable housing. The inner and northern zones of Perth had percentages of Q2 households living in unaffordable housing in 2011 that were similar to inner Melbourne and Brisbane. Perth is somewhat of an exception with little variation on this dimension between sub-city regions.

Figure 21: Affordable and available private rental stock for households in the low (Q2) income segment: share of households paying unaffordable rents by capital city sub-region, 2006 and 2011



Source: Customised ABS Expanded matrices based on 2006 and 2011 Australian Census of Population and Housing data

5.3 Regional centres and the 'balance' of non-metropolitan regions

Finally, we examine the shortage of affordable and available dwellings, and the percentage of households paying unaffordable rents, in regional Australia; those areas outside of state capital cities in, more specifically, 21 larger regional centres and the remaining 'balance of other non-metropolitan areas' in each state (called 'non-metro balance').[28] The analysis is again presented separately for Q1 and Q2 households for 2006 and 2011.

Figures 22 and 23 below present the above information for Q1 and then Q2 households in terms of the shortage in the *number of dwellings* that were affordable and available. For Q1 households, numerical increases in shortages over the five years are evident in Figure 22 in all of the non-metro regions (state balances and regional centres). Of note are the relatively large increases in the mining states of Queensland (QLD) and Western Australia (WA). Shortages in the non-metro balance of QLD were comparable with Victoria in 2006, but the increase was more than twice that experienced in Victoria over the five-year period. Among the larger regional centres, as in 2006, the Gold Coast in 2011 had the greatest shortage of affordable and available dwellings for Q1 households. Notably, the four regional centres where shortages increased the most were all in Queensland—Gold Coast, Sunshine Coast, Cairns and Townsville.

[28] However, to ensure that the 2006 and 2011 non-metro balance data are comparable, the regional centres analysed for the first time in the current project are counted in the 2011 *non-metro* balances. This is because these regional centres were not separately identified in 2006 and were necessarily, therefore, incorporated in the state 'non-metro balances' for that year. The detailed figures behind the charts in this section are included in Appendix 2, Tables A18 and A20.

Figure 22: Shortage of affordable and available dwellings for Q1 private renter households: state non-metropolitan balances and regional centres, 2006 and 2011

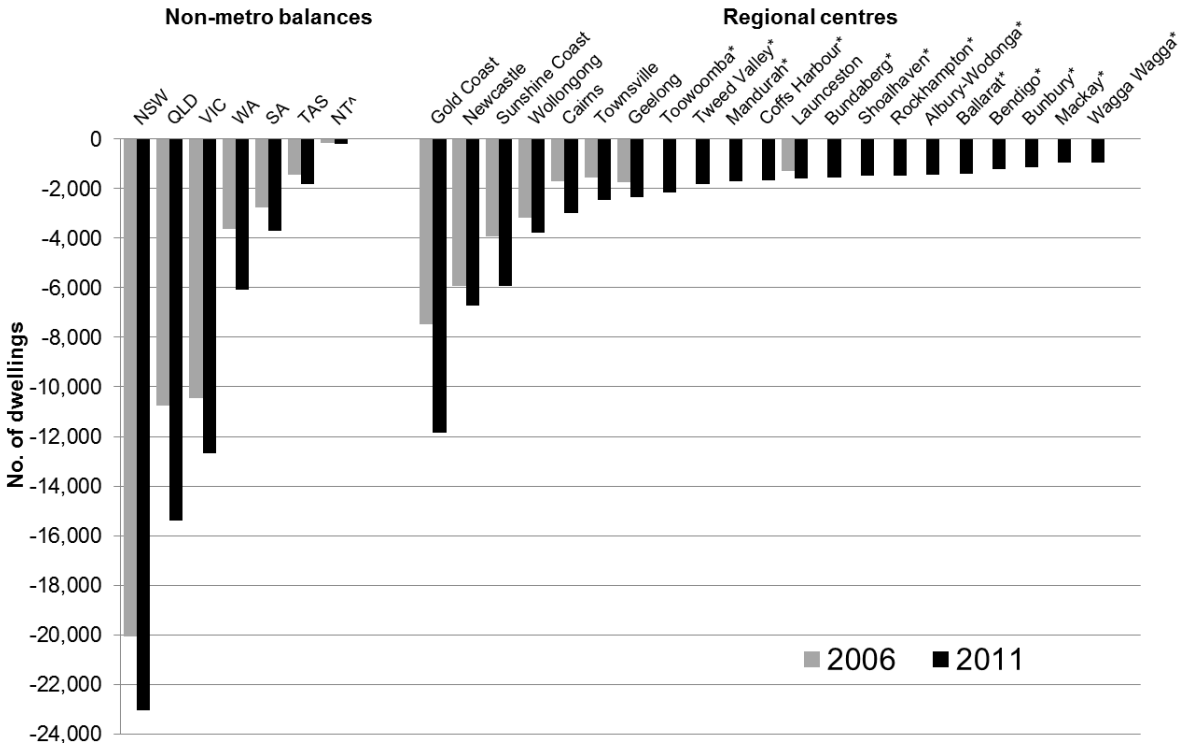


Figure note: state balances and regional centres are ordered by size of 2011 shortage.

* These regional centres were analysed for the first time in this project and therefore only data for 2011 are available.

^ Low counts in these areas: caution should be exercised when interpreting these figures.

Source: Customised ABS Expanded matrices based on 2006 and 2011 Australian Census of Population and Housing data

Figure 23: Shortage of affordable and available dwellings for Q2 private renter households: state non-metropolitan balances and regional centres, 2006 and 2011

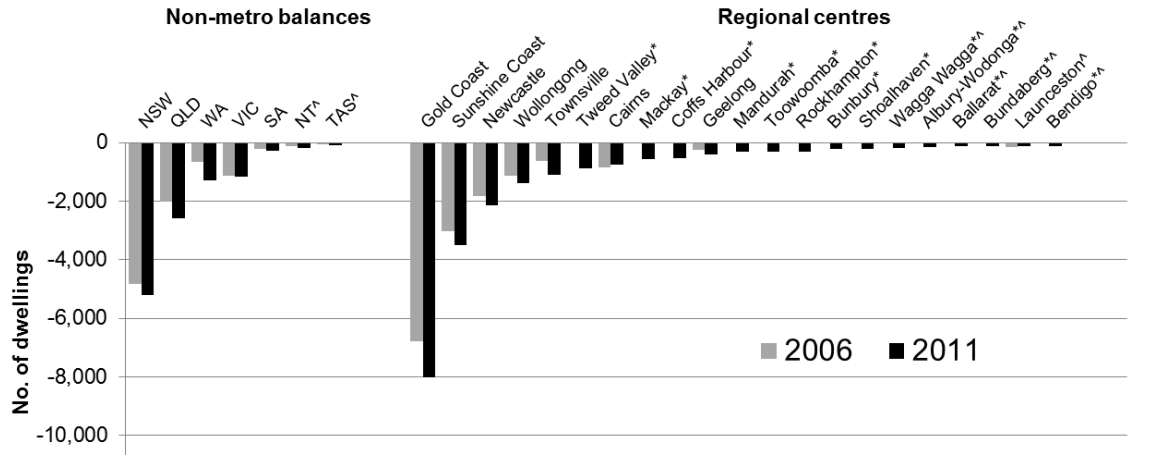


Figure note: state balances and regional centres are ordered by size of 2011 shortage.

* These regional centres were analysed for the first time in this project; only data for 2011 are available.

^ Low counts in these areas: caution should be exercised when interpreting these figures.

Source: Customised ABS Expanded matrices based on 2006 and 2011 Australian Census of Population and Housing data

Chapter 4 reported that in non-metropolitan Australia, between 2006 and 2011, there was only a relatively modest increase in the shortage of affordable and available dwellings for Q2 households (around 4000 dwellings) (Table 4, Section 4.3). Figure 23 supports this and shows that the magnitude of such shortages in each year, and the growth of such shortages (2006 to 2011), were much less than for Q1 households in all the regional areas. Not surprisingly, as was the case for Q1 households, the more states with a greater non-metropolitan population (New South Wales and Queensland) have the greatest shortages for Q2 households and again, non-metro Western Australia is prominent for its increase in dwelling shortages for lower income private renter households. In contrast, in the non-metro balance of Victoria, the shortage of dwellings for Q2 households remained static over the five years.

Turning to the larger regional centres, Figure 23 shows that in the Gold Coast, the shortage of affordable and available dwellings for Q2 households increased by around 1200 to a total of 8000 dwellings in 2011. Of all the regional centres, the Gold Coast has by far the greatest shortage of affordable private rental dwellings for Q2 households; a shortage that is more than twice the size of the next largest, that found in the Sunshine Coast. As with shortages for Q1 households, regional centres in Queensland again feature among those with the greatest shortages, with three centres in the top five (Gold Coast, Sunshine Coast and Townsville). Nonetheless, the Queensland town of Cairns was the only regional centre to experience a decline in shortage for Q2 households, albeit a small one of around 100 dwellings over the five-year period.

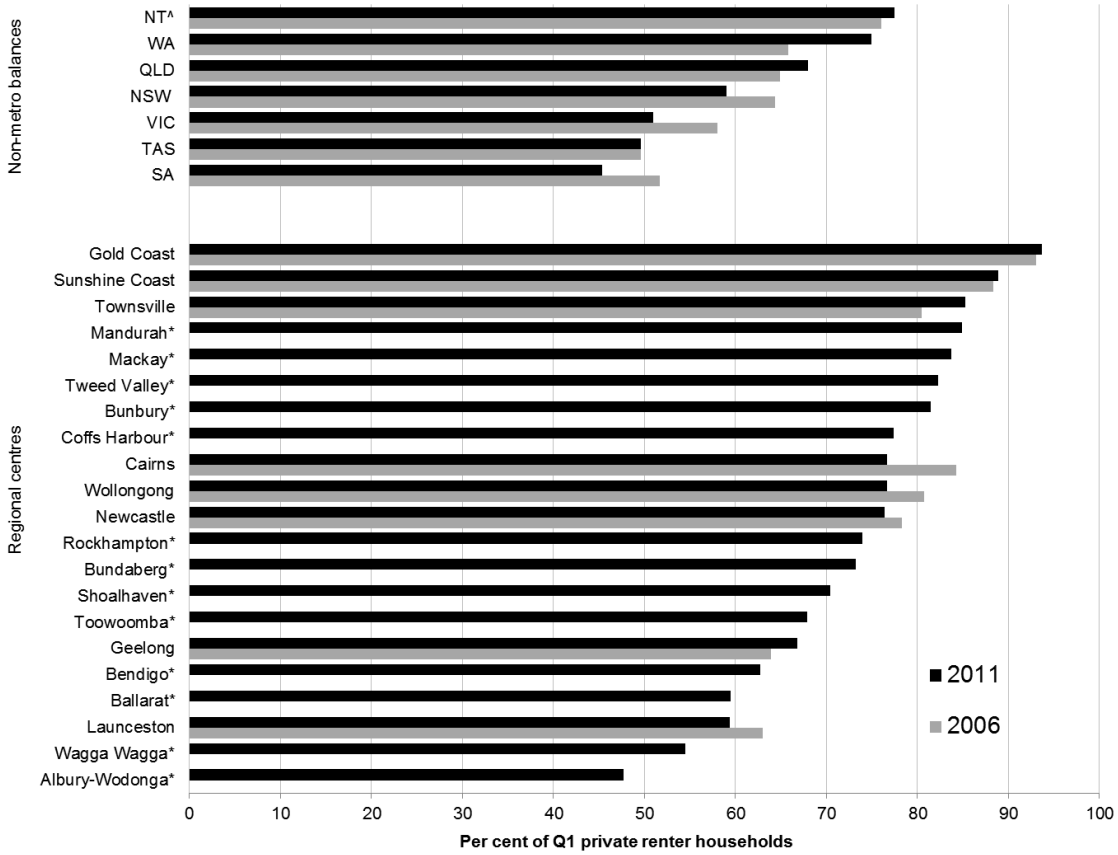
The scale of the dwelling shortages provided in Figures 22 and 23 above is, of course, strongly related to the population size of a region. The final charts presented here account for this by examining the *proportion* of either Q1 (Figure 24a) or Q2 (Figure 24b) households that paid unaffordable rents in 2006 and 2011. It is clear from the analysis of *dwelling* shortages that there were particular shortages of affordable and available housing in the larger regional centres of Queensland and to a lesser extent New South Wales, and also the non-metro balances of Western Australia, Queensland and New South Wales. Not surprisingly then, these areas also had some of the highest *proportions* of Q1 households paying unaffordable rents. Regional centres in Queensland, such as the Gold Coast, the Sunshine Coast, Townsville and Mackay had particularly high proportions and also the Western Australian regional centres of Mandurah and Bunbury. In terms of the non-metro balance in each state, the situation in Western Australia and Queensland is worse than in the other states.[29] Perhaps surprisingly, however, there were small declines in the share of Q1 households paying unaffordable rents (2006–11) in the non-metro balances of New South Wales, Victoria and South Australia and in the regional centres of Cairns, Wollongong, Newcastle and Launceston.

For Q2 households, we can observe higher percentages living in unaffordable rental in large regional centres in Queensland and New South Wales. The percentage of Q2 households in this situation generally increased between 2006 and 2011, providing further evidence of the shortages of affordable and available housing moving further up the household income scale. Only in the regional centres of Cairns and Launceston did the proportions of Q2 private renter households in unaffordable dwellings decline between 2006 and 2011. In terms of the non-metro balance in each state, the situation in Western Australia deteriorated the most of all the states, with the result that, in 2011, Western Australia had the greatest proportion of Q2 households in unaffordable dwellings.

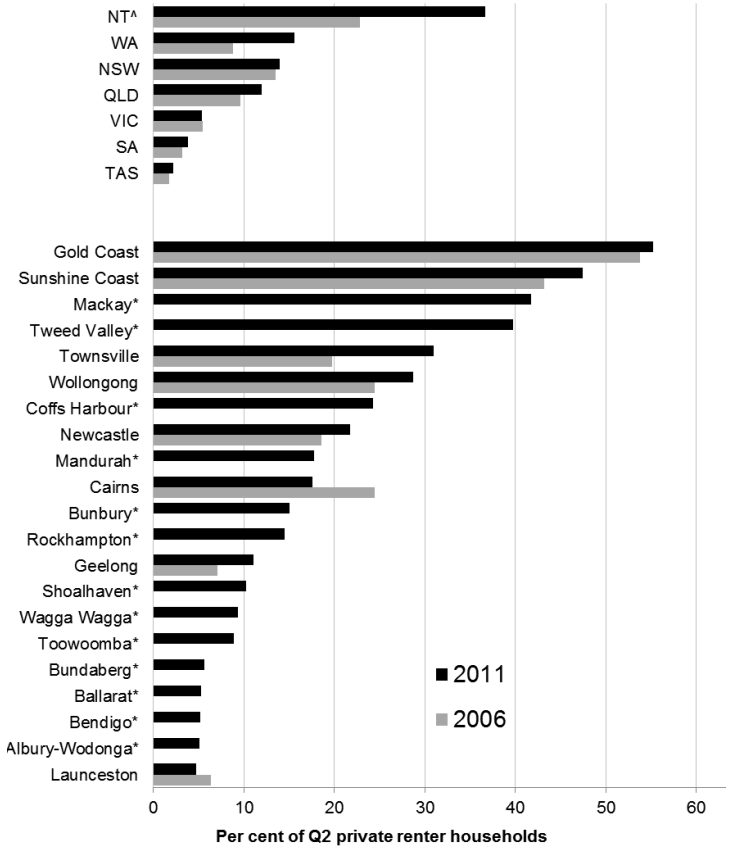
[29] Counts in the Northern Territory (NT) are too low for reliable analysis of either Q1 or Q2 households.

Figure 24: Affordable and available private rental stock for very-low (Q1) and low-income (Q2) households: share of households paying unaffordable rents by regional centres and state non-metropolitan balances, 2006 and 2011

a. Q1 households



b. Q2 households



* These regional centres were analysed for the first time in this project and therefore only data for 2011 are available.

Source: Customised ABS Expanded matrices based on 2006 and 2011 Australian Census of Population and Housing data.

5.4 Summary

Shortages of affordable and available housing vary in different parts of Australia, reflecting different economic conditions and regional housing markets.

- Numerically, the greatest shortage of affordable and available rental housing for Q1 households is in Sydney and Melbourne with substantial shortages in the other larger state capitals and these shortages were greater in 2011 than in 2006.
- For Q2 households, Sydney had the greatest numeric shortage of affordable and available rental housing in 2011, with shortages increasing between 2006 and 2011, as in the other larger state capitals.
- While the proportion of Q1 households paying unaffordable rents was consistently very high in both 2006 and 2011 across the larger state capitals, there was a marked increase in the percentage of Q2 households in this situation between 2006–11, as shortages moved further up the household income scale.
- In all of the capital city sub-regions shortages of affordable and available dwellings for Q1 households increased between 2006 and 2011. The situation was particularly acute for Q1 households in the middle suburbs of both Sydney and Melbourne in 2011 with a shortage of over 20 000 affordable and available dwellings in each case. For Q2 households, the greatest shortages of dwellings were in the inner and middle suburbs of Sydney.
- There was little difference in the percentage of Q1 households living in unaffordable housing in different capital city sub-regions in either 2006 or 2011 indicating a general city-wide shortage of affordable and available housing for these households. There were higher percentages of Q2 households living in unaffordable housing in the inner and middle regions of the largest capital cities compared to the outer zones in 2011.
- Shortages of affordable and available rental housing increased markedly in larger regional centres in states that were affected by the resources boom discussed in Chapter 2. The percentage of both Q1, and particularly Q2 households, living in unaffordable rentals increased in regional centres in Western Australia and Queensland, as well as in their respective state capitals.

6 DISCUSSION AND IMPLICATIONS FOR POLICY

This chapter considers the implications of the research findings for policy development in the light of an existing body of research about the factors that shape supply of private rented housing in Australia. It then considers how policy settings could be re-calibrated to address the worsening shortages of private rental dwellings which are affordable and available to lower income households outlined in Chapters 3–5 above.

6.1 Factors that shape the supply of private rental housing in Australia

The supply of private rental dwellings in Australia is provided predominantly by individuals owning one or two rental properties, many of which were originally built for the home ownership market (Hulse & McPherson 2014). This is unlike countries such as the US and Canada which have a distinct and identifiable 'primary' rental stock in which institutional and corporate investors have an important role (Hulse et al. 2011). Investment in rental property by individuals has increased with many such investors seeing residential property as a safe, long-term, low-risk investment which will generate a financial return by way of capital gain rather than rental yield. There are also often personal or family reasons for such investment including buying a home for future retirement or children's future requirements (Seelig et al. 2009). This type of investment has increased with almost 1.8 million individuals declaring rental income (14% of individual tax payers) in 2011, up from around 6 per cent in 1986.[30] Many of these investors rely primarily upon debt finance to fund their residential investment portfolios and such investors are more likely to 'churn' their properties than equity investors, resulting in instability in the private rental sector (Wood & Ong 2010, 2013).

Current public policy settings encourage investment in residential property by individuals who benefit from 'negative gearing' provisions as well as a 50 per cent discount on capital gains (as for other investment classes). Negative gearing is generous compared to other developed countries (see Oxley et al. 2010). Since the mid-1990s, the share of such investors declaring a loss on rental income has increased from around 50 per cent to almost 70 per cent.[31] At a household (rather than individual) level, non-owner-occupied residential property is held predominantly by owner-occupier households with a reference person in the 45–64-year old age group and by households in the top (equivalised disposable) income quintile (Yates 2011, p.285).

While most investors remain individuals/households who own one or two properties, there were some changes in investment in residential property in the 2006–11 period: viz an increase in activity by Self-Managed Superannuation Funds (SMSFs) and by foreign investors.

SMSFs are vehicles regulated by the Australian Tax Office through which a small number of individuals invest for their retirement in lieu of using industry or private superannuation funds. Policy changes from 2007 have meant an increasing, but still relatively small, proportion of investment in rental property is taking place through SMSFs. These changes removed restrictions that previously prevented SMSFs from borrowing to invest in residential property on a limited recourse basis. This provided an incentive for debt-financed SMSF investment because: property can be purchased with pre-tax dollars; there is access to generous depreciation benefits; and there is no capital gains tax liability as long as the property is sold in the pension phase. With the 2007 relaxation of SMSF rules, holdings of residential rental

[30] Australian Taxation Office, Taxation Statistics 2011–2012, detailed tables, individual tax, viewed 27 July 2014, https://www.ato.gov.au/about-ato/research-and-statistics/in-detail/tax-statistics/taxation-statistics-2011-12/?page=23#Individual_tax.

[31] Australian Taxation Office, Taxation statistics 2011–12, detailed tables, individual tax (see footnote 23). These data are upward biased as they are based on individual tax returns from reported gross rent income and therefore include non-residential as well as residential property.

properties in Do It Yourself (DIY) super funds have grown at about $1 billion per year to more than $14 billion by 2011 (Milligan et al. 2013, p.30). These holdings, however, represent only 3.5 per cent of SMSF assets and only 6.5 per cent of SMSFs own residential rental property (ATO 2013, Table 15, p.28). There is little information on the location of SMSF-owned residential property or the rent segments it serves.

Policy settings on foreign investment in residential property are also important. Foreign Investment Review Board (FIRB) data show that, at its peak in 2010–11, a total of $17b was approved for foreign investment in new residential real estate (including purchase of vacant land and redevelopment). Less than $4 billion went to the purchase of existing housing for use as a principal place of residence for temporary residents (FIRB 2014, p.29).[32] While still small in total, this represented approximately a doubling of the equivalent 2005–06 totals of, respectively, $8.5 and $1.5 billion (FIRB 2006, p.33). This investment tends to be geographically concentrated with much of it being for the purchase of higher-density dwellings located in inner-city areas of Sydney and Melbourne. Rather than being for short-term speculative purposes, much of this investment is seen as being motivated by a need to meet housing needs for business persons located temporarily in Australia, for children studying in Australia, to acquire a second residence (possibly for eventual migration) and/or to diversify holdings of wealth geographically (RBA 2014b, p.4).

In brief, investors in the private rental sector are predominantly older, higher income Australian individuals/households, with additional investment in the sector coming through SMSFs and through foreign investment, the latter particularly in the inner cities of Sydney and Melbourne. There is little institutional investment in private rental compared to many other developed countries (Hulse et al. 2011). The key drivers of investment in rental property in Australia thus revolve around tax, superannuation and foreign investment, which are Australian Government policy areas beyond the domain of housing policy as currently structured. It appears from the limited research available that current rental investors take into account both financial factors (capital gain, security of asset holding, rental yield, and geographic spread of risks across different housing markets/countries) as well as non-financial factors (e.g. buying properties to house family members in the future and securing a foothold for future migration).

A further set of factors revolve around maintaining affordability of rental housing for lower income households through regulation of residential tenancies and rental management practices, which are the responsibility of state and territory governments in Australia's federal system. It could well be, for example, that rents were affordable to some Q1 households (using the 30% benchmark) when they entered their tenancy but subsequent rent rises place resident households in an unaffordable situation. Australia has very light regulation of residential tenancies compared to many other developed countries, with a recent nine country finding that regulation in Australian jurisdictions allowed more frequent rent increases and uncapped rent increases during tenancy to a greater extent than the other countries in the study (Hulse et al. 2011). While the period 2006–2011 saw reform of residential tenancies legislation in some jurisdictions, this did not include measures to moderate rent increases during tenancy.

6.2 Implications for policy

Incentives for rental investors, along with a more favourable economic climate and housing market (increasing real rents and rental yields), did not lead to an increase in supply at the low

[32] The overarching principle for foreign investment in residential real estate is that this should increase Australia's housing stock. Temporary residents are permitted to purchase one established dwelling that must be used as their residence in Australia. Such dwellings must be sold when they cease to be their residence. Temporary residents cannot buy established dwellings as an investment purpose but may do so for redevelopment (as long as this increases Australia's housing stock) and may buy new dwellings without conditions. (FIRB 2014, pp.28, 46–47) FIRB data, which represent the only official source of statistics, are limited in that they represent approvals rather than actual transactions and provide limited information on how many dwellings are covered by a specific approval. There is also no information on the extent to which foreign investment complies with the regulations that govern it.

rent end of the market between 2006 and 2011; in fact the situation deteriorated, as demonstrated in this report. The worsening position for lower income households raises two related issues: what policy settings could generate investment affordable rental housing for such households and how could rents be kept at affordable levels over time? A more comprehensive approach to policy settings for investment in, and management of, rental housing is necessary to address a worsening situation which, if left unchecked, could lead to greater housing instability and homelessness with consequent economic and social costs for individuals/households and governments.

We outline five policy areas that individually, and cumulatively, could make a difference. A guiding principle in this consideration is the importance of linking government subsidies, regulation and related activities to better outcomes for Q1 and some Q2 households, rather than general measures to increase private rental supply. The need for a comprehensive approach has been argued in previous reports (e.g. Berry & Hall 2005) and many of the specific policy areas have been the subject of substantial research (as noted below).

1. *Financial support for Q1 households to access private rental properties at prevailing rentals*

One approach is to enhance financial support made directly to Q1 households so that they can afford current market rents (perhaps up to $300 per week), with some regional variation to take into account different rental markets (Randolph & Holloway 2007). This would involve the redesign of RA payments, perhaps with some state/territory-based supplements—RA Plus—for those with additional needs. However, this approach could be costly given the demand-driven nature of RA and could have a potential inflationary effect on rent levels without adding to supply (Hulse 2002). Demand-side subsidies are likely to be of limited effectiveness on their own in a situation of supply shortage. Increased RA to Q1 households in a redesigned and targeted system could be of value as part of a more comprehensive policy package.

2. *Strategies to invest in a greater supply of lower rent dwellings in the current institutional environment*

The Social Housing Initiative 2009–12 provides an example of this type of investment by the Australian Government which generated almost 20 000 new dwellings for Q1 households, many with additional needs such as 'at risk' of homelessness or having a disability.[33] However, the 'stop-go' nature of such investment was problematical—with capacity and efficiency issues around 'gearing up' (Gilmour & Milligan 2012) and then 'gearing down'. The research found that there is a demonstrated and worsening lack of supply for Q1 households. Addressing this problem requires political agreement around sustained, long-term investment in social and affordable rental housing. Capital investment of this type would require clear outcomes (targeting of lettings, affordability criteria for rent setting, etc.). A fully contestable process would be desirable in which public housing providers and not-for-profit providers, and potentially some private providers either directly or through an intermediary (or some combination of these) could play a role.

Another option is revenue support to different types of providers (as above) which would provide an incentive for providers to let properties to Q1 households rather than a disincentive as currently exists (in terms of risk for rent revenue). It would enable the provider to receive property rents which fully covered tenancy and property management costs and provided sufficient revenue to leverage additional supply, and would be tied to outcomes to be achieved in return for the subsidy (targeting of lettings, affordable rents, etc.).

3. *Re-shaping policy settings on taxation to encourage the current profile of investors (individuals and household) to invest in lower rent segments of the market*

[33] Department of Social Services (2013), *Social Housing Initiative Fact Sheet*, Table 1, viewed 16 July 2014, http://www.dss.gov.au/our-responsibilities/housing-support/programs-services/social-housing-initiative/social-housing-initiative-fact-sheet.

This could be part of a comprehensive reform of tax arrangements such as the Henry Review's proposal for a Savings Income Discount of 40 per cent applied to net income including capital gains from rental investments as well as other non-business assets (other than shares) (Henry et al. 2009). Detailed modelling showed that this would encourage more unleveraged and equity-oriented investors, which would offset any sales by negatively geared investors, enabling more stable supply of private rental (Wood et al. 2011) although not necessarily at the lower end of the market.

More specifically, it would be possible to target negative gearing provisions to encourage investment in new housing for rental at the lower end of the market, perhaps using a sliding scale. A further change could be an increase in the depreciation allowance for investors in new lower rent properties. A number of submissions to the Senate Committee Inquiry into Affordable Housing (2013–14) have made detailed suggestions along these lines.[34]

4. *Creating a new institutional environment to attract institutional and other new investors into the lower end of the private rental market*

A revamped National Rental Affordability Scheme, or similar, has the potential to provide additional supply either through tax credits (as in the US) or recurrent payments to investors over a period. Developing a new asset class takes time to develop and such a scheme would require political support for the longer term to avoid the problems associated with stop/go policies and provide clear settings and certainty for the investment community.

New mechanisms to attract institutional finance into the rental sector, and the barriers to this, have been much studied in Australia (e.g. Pawson & Milligan 2013). A recent, substantial body of work funded by AHURI has proposed a specialist financial intermediary, which could link the suppliers of capital with investment opportunities for rental housing, with management by a well regulated not-for-profit housing sector. Such an intermediary could issue an investment product, housing supply bonds, stimulated by a successful model already operating in Austria (see Lawson et al. 2012a, 2012b, 2014; Milligan et al. 2013, for further details).

At a state/territory level, reforms to land tax have also been mooted (Wood et al. 2012) which could assist in eliciting new types of investors with larger portfolios who are currently deterred by the system of land tax.

5. *More effective moderation of rent increases for current residents during their tenancy*

There are a number of ways of moderating rent increases for current residents during their tenancy, which could prevent households moving into an unaffordable situation that they had not anticipated at the start of their tenancies. This can be done through policy settings as in various types of social housing or more generally through regulation, for example, using a relevant index. At the start of a new tenancy, rents would be reset to reflect prevailing market conditions, a situation that is quite common in Europe and in many cities in the US, where such a system has not deterred either small scale or institutional investors (Hulse et al. 2011). This system could benefit investors who want a long-term investment with reliable tenants.

6.3 Summary

While current policy settings, along with economic and other factors, enabled a general increase in supply of private rental dwellings between 2006 and 2011, they did not lead to an adequate supply of affordable dwellings for lower income households. The deteriorating position for lower income households documented in this report raises two related policy issues: what policy settings could generate investment affordable rental housing for such households and how could rents be kept at affordable levels over time?

[34] Senate Economics References Committee Inquiry into Affordable Housing 2013–14, viewed 16 July 2014, http://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Economics/Affordable_housing_2013/Submissions.

The detailed analysis in this report had found a worsening situation which, if left unchecked, could lead to greater housing instability and homelessness with consequent detrimental economic and social costs for individuals/households and governments. There is no single 'magic bullet'. A comprehensive approach to policy settings for investment in, and management of, rental housing is required to address this situation. This would require agreement between Australian and state/territory governments over the longer term for re-calibrating policy settings to achieve a greater supply of affordable rental dwellings for Q1 households and some Q2 households. In so doing, the guiding principle would be that subsidy arrangements be tied to achieving improved outcomes for lower income households.

This chapter has identified five main areas of policy development which involve different roles for governments:

1. Support Q1 households to compete more effectively in the private rental market through better designed and targeted demand-side subsidies.
2. Substitute the market through government investment in affordable supply for Q1 households (capital and/or recurrent) in which rents can be kept at affordable levels.
3. 'Nudge' the rental market with its current predominance of individual/household investors by re-calibrating taxation incentives to encourage investment in new supply of lower rent dwellings that are affordable to lower income households.
4. Design a new market through establishing infrastructure to enable institutional investment in the private rental sector specifically targeted at lower income households with appropriate arrangements for keeping stock affordable.
5. Regulate the market to enable affordability to be maintained through tenancy, as occurs in many other developed countries.

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APPENDIX 1: ADDITIONAL DETAILS ON METHODOLOGY

As with the previous project, the customised ABS data were obtained in two files:

1. *A summary census data matrix*, containing only private renter households, with a small number of variables (three) each with many categories to enable a fine grained analysis of private rents, household incomes and location without compromising data quality. Specifically:
   - Weekly household income—12 categories of gross (unequivalised) household income (as reported by all household members aged 15 years and over), with missing and partially stated incomes imputed, and categories defined by CPI adjustment of 2006 values to their 2011 equivalent (see Table A1 below).
   - Weekly dwelling rent—12 corresponding categories where the upper values of the private rent ranges correspond with 30 per cent of the upper boundary of the household income categories (see Table A2 below).
   - Geographic location—88 spatial units were specified.

The 12 categories of rent and household incomes were developed for the 2001 project which also analysed 1996 Census data,[35] and have been increased by the Consumer Price Index (CPI) in subsequent studies. While in some ways they are 'simply a historical artefact' (Wulff et al. 2009, p.7), they do enable identification of real change over time at a finer level than is available with alternative measures such as quintiles of quartiles.

2. *An expanded census data matrix*, containing all households regardless of tenure, with a larger number of variables but fewer rent and household income categories. The results presented in the second Final Report of this project are drawn from analysis of this file. This 'expanded matrix' which was designed to enable investigation of the demand for affordable dwellings by low-income households and includes the following variables:
   - household income quintiles
   - tenure type by landlord type by weekly rent paid
   - household/family type
   - age of household reference person
   - dwelling structure by number of bedrooms
   - employment status of people in household
   - year of arrival in Australia (of overseas born).

Tables A1 and A2 below show the nominal household income and weekly private rent categories in 2006 and 2011.

[35] 'The 12 categories were originally selected for two reasons: (1) to provide a sufficient number of categories to identify rent segments undergoing significant changes, and (2) to provide a broad sensitivity analysis that could highlight dollar ranges where particular 'jumps' in the number of renter households might occur (for example, from $100 to $101 per week') (Wulff et al. 2009, p.7).

Table A1: Nominal household income categories: 2006 and 2011

($pw in $2006)	($pw in $2011)	Weekly household income group
$0–$256	$0–$307	Y1
$257–$385	$308–$462	Y2
$386–$514	$463–$617	Y3
$515–$642	$618–$770	Y4
$643–$771	$771–$925	Y5
$772–$900	$926–$1,074*	Y6
$901–$1,028	$1,075–$1,234	Y7
$1,029–$1,287	$1,235–$1,544	Y8
$1,288–$1,544	$1,545–$1,853	Y9
$1,545–$1,930	$1,854–$2,316	Y10
$1,931–$2,575	$2,317–$3,090	Y11
$2,576+	$3,091+	Y12

* The top of the Y6 household income category ($1074) is slightly less than the CPI adjusted value ($1080) to correspond with the nation-wide Q2 value.

Table A2: Nominal dwelling weekly private rent categories: 2006 and 2011

($pw in $2006)	($pw in $2011)	Weekly private rent segment
$1–$77	$1–$92	R1
$78–$115	$93–$139	R2
$116–$155	$140–$185	R3
$156–$192	$186–$231	R4
$193–$232	$232–$278	R5
$233–$270	$279–$322	R6
$271–$309	$323–$370	R7
$310–$386	$371–$463	R8
$387–$464	$464–$556	R9
$465–$579	$557–$695	R10
$580–$773	$696–$927	R11
$774+	$928+	R12

Imputation methodology: ABS

The following is the documentation of the imputation 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 (done in step 0.4)

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 (four levels), conditional on the dwelling structure (four levels). Conversely when imputing for dwelling structure we apply the mode conditional on BEDROOM—the number of bedrooms (four levels, with zero to one 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 and 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. The sub-populations consisted of:

Region—two levels (StatDiv=05 and StatDiv=other).

Age of household reference person—five levels.

HHOLD variable, a derivation based on the composition of the household—six 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 as per Chapter 2 above.
3. All other households not identified in 1 or 2 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 member 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 (i.e. a household with income $0–$249 could not have a new range of $386–$422 for example).

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.

Adjusting household income quintiles to 2011–12 survey of income and housing.

- For each household income quintile calculate household income quintile adjustment factor = 2011–2012 survey of income and housing quintile/2009–2010 survey of income and housing quintile.
- Apply household income quintile adjustment factor to median for each 2011 population census personal income range. If personal income range falls within one original household income quintile, that is original household income quintile value does not fall in personal income range, household income quintile adjustment factor for that household income quintile is used. If personal income range falls within two original household income quintiles, that is original household income quintile value falls in personal income range, household income quintile adjustment factor for that household income quintile containing majority of personal income range is used.
- Adjusted personal income range medians are substituted in programs to produce household income quintiles after 'smoothing imputation' of personal income distribution and imputation of household incomes that were partially or fully not stated.

Imputing for rent

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

We impute for rent conditional upon region (two levels per state—the same as for imputing income), dwelling structure (four levels), bedrooms (four levels), and income (three levels). The levels of (weekly) household income are:

$0–<$584, $584–<$1748, $1748+

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 both year of arrival and country of birth were not stated then median year of arrival for combination of region and age only was allocated.

APPENDIX 2: SUPPORTING ANALYSIS

The tables included here in Appendix 2 provide the detailed figures behind the graphs or tables within the main body of the report. These can be compared with equivalent tables that were produced in the previous reports in this series. Reference to the corresponding chapter is included in the table caption where relevant.

National scale: private rental stock

Table A3: Private rental dwellings (stock) in Australia: 2006 and 2011 (Chapter 3)

Rent segment ($2011)		2006				2011			
		Dwellings	% of total	Cumul. dwellings	Cumul. %	Dwellings	% of total	Cumul. dwellings	Cumul. %
R1	$1–$92	19,000	1	19,000	1	16,000	1	16,000	1
R2	$93–$139	72,000	5	91,000	6	51,000	3	67,000	4
R3	$140–$185	194,000	13	285,000	19	124,000	7	191,000	11
R4	$186–$231	255,000	17	540,000	37	186,000	11	377,000	22
R5	$232–$278	289,000	20	830,000	56	224,000	13	600,000	35
R6	$279–$322	225,000	15	1,055,000	72	299,000	17	899,000	52
R7	$323–$370	138,000	9	1,192,000	81	278,000	16	1,177,000	68
R8	$371–$463	154,000	11	1,347,000	92	304,000	18	1,481,000	85
R9	$464–$556	61,000	4	1,408,000	96	123,000	7	1,604,000	93
R10	$557–$695	31,000	2	1,439,000	98	70,000	4	1,674,000	97
R11	$696–$927	17,000	1	1,456,000	99	37,000	2	1,712,000	99
R12	$928+	14,000	1	1,470,000	100	23,000	1	1,735,000	100
Total		*1,470,000*	*100*	*1,470,000*	*100*	*1,735,000*	*100*	*1,735,000*	*100*

Source: Customised ABS Summary Matrices based on 2006 and 2011 Australian Census of Population and Housing data

Table A4: Change in private rental dwellings by rent segment, Australia 2001–06 and 2006–11 (Chapter 3)

Rent segment ($2011)		Change 2001–2006				Change 2006–2011			
		Dwellings	%	Cumul. dwellings	Cumul. %	Dwellings	%	Cumul. dwellings	Cumul. %
R1	$1–$92	-6,000	-25	-6,000	-25	-3,000	-16	-3,000	-16
R2	$93–$139	-56,000	-44	-63,000	-41	-21,000	-29	-24,000	-26
R3	$140–$185	-5,000	-2	-68,000	-19	-70,000	-36	-94,000	-33
R4	$186–$231	-58,000	-19	-126,000	-19	-69,000	-27	-163,000	-30
R5	$232–$278	24,000	9	-102,000	-11	-66,000	-23	-229,000	-28
R6	$279–$322	115,000	105	14,000	1	74,000	33	-156,000	-15
R7	$323–$370	51,000	59	65,000	6	140,000	102	-16,000	-1
R8	$371–$463	58,000	60	123,000	10	150,000	97	134,000	10
R9	$464–$556	13,000	26	136,000	11	62,000	101	196,000	14
R10	$557–$695	5,000	17	140,000	11	40,000	128	235,000	16
R11	$696–$927	4,000	32	144,000	11	21,000	123	256,000	18
R12	$928+	-2,000	-13	142,000	11	9,000	61	265,000	18
Total		*142,000*	*11*	*142,000*	*11*	*265,000*	*18*	*265,000*	*18*

Source: Customised ABS Summary Matrices based on 2001, 2006 and 2011 Australian Census of Population and Housing data

National scale: private renter household incomes

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

Household income segment ($2011)		2006				2011			
		H'holds	% of total	Cumul. h'holds	Cumul. %	H'holds	% of total	Cumul. h'holds	Cumul. %
Y1	$0–$307	114,000	8	114,000	8	109,000	6	109,000	6
Y2	$308–$462	123,000	8	237,000	16	84,000	5	193,000	11
Y3	$463–$617	119,000	8	356,000	24	178,000	10	371,000	21
Y4	$618–$770	121,000	8	477,000	32	40,000	2	411,000	24
Y5	$771–$925	122,000	8	600,000	41	168,000	10	580,000	33
Y6	$926–$1,074	105,000	7	704,000	48	148,000	9	728,000	42
Y7	$1,075–$1,234	94,000	6	798,000	54	121,000	7	849,000	49
Y8	$1,235–$1,544	181,000	12	979,000	67	213,000	12	1,062,000	61
Y9	$1,545–$1,853	136,000	9	1,115,000	76	127,000	7	1,189,000	69
Y10	$1,854–$2,316	131,000	9	1,247,000	85	199,000	11	1,389,000	80
Y11	$2,317–$3,090	127,000	9	1,374,000	94	203,000	12	1,592,000	92
Y12	$3,091+	96,000	7	1,470,000	100	143,000	8	1,735,000	100
Total		*1,470,000*	*100*	*1,470,000*	*100*	*1,735,000*	*100*	*1,735,000*	*100*

Source: Customised ABS Summary Matrices based on 2006 and 2011 Australian Census of Population and Housing data

Table A6: Change in the number of private renter households by household income segment, Australia 2001–06 and 2006–11 (Chapter 3)

Household income segment ($2011)		Change 2001–06				Change 2006–11			
		H'holds	%	Cumul. h'holds	Cumul. %	H'holds	%	Cumul. h'holds	Cumul. %
Y1	$0–$307	23,000	25	23,000	25	-5,000	-4	-5,000	-4
Y2	$308–$462	2,000	2	25,000	12	-39,000	-31	-44,000	-18
Y3	$463–$617	-17,000	-13	7,000	2	59,000	49	15,000	4
Y4	$618–$770	-12,000	-9	-5,000	-1	-81,000	-67	-66,000	-14
Y5	$771–$925	12,000	11	8,000	1	46,000	37	-20,000	-3
Y6	$926–$1,074	-4,000	-4	4,000	1	44,000	42	24,000	3
Y7	$1,075–$1,234	0	0	4,000	0	27,000	29	51,000	6
Y8	$1,235–$1,544	31,000	21	35,000	4	32,000	18	83,000	8
Y9	$1,545–$1,853	18,000	15	53,000	5	-9,000	-6	74,000	7
Y10	$1,854–$2,316	24,000	22	77,000	7	68,000	52	142,000	11
Y11	$2,317–$3,090	5,000	4	81,000	6	76,000	59	218,000	16
Y12	$3,091+	61,000	174	142,000	11	47,000	49	265,000	18
Total		*142,000*	*11*	*142,000*	*11*	*265,000*	*18*	*265,000*	*18*

Source: Customised ABS Summary Matrices based on 2001, 2006 and 2011 Australian Census of Population and Housing data

National scale: stock shortage

Table A7: Shortage of affordable private rental stock using the 12 household income and rent categories, Australia: 2001, 2006 and 2011

	Cumulative 2001			Cumulative 2006			Cumulative 2011		
Income/ rent	**H'holds Y**	**Stock R**	**Surplus or Shortage =R-Y**	**H'holds Y**	**Stock R**	**Surplus or Shortage =R-Y**	**H'holds Y**	**Stock R**	**Surplus or Shortage =R-Y**
Y1/R1	92,000	26,000	-66,000	114,000	19,000	-95,000	109,000	16,000	-93,000
Y2/R2	212,000	154,000	-59,000	237,000	91,000	-146,000	193,000	67,000	-126,000
Y3/R3	349,000	353,000	4,000	356,000	285,000	-71,000	371,000	191,000	-180,000
Y4/R4	482,000	666,000	184,000	477,000	540,000	63,000	411,000	377,000	-34,000
Y5/R5	592,000	931,000	339,000	600,000	830,000	230,000	580,000	600,000	20,000
Y6/R6	701,000	1,041,000	340,000	704,000	1,055,000	351,000	728,000	899,000	171,000
Y7/R7	795,000	1,127,000	333,000	798,000	1,192,000	394,000	849,000	1,177,000	328,000
Y8/R8	945,000	1,224,000	279,000	979,000	1,347,000	367,000	1,062,000	1,481,000	419,000
Y9/R9	1,063,000	1,273,000	210,000	1,115,000	1,408,000	293,000	1,189,000	1,604,000	415,000
Y10/R10	1,170,000	1,299,000	129,000	1,247,000	1,439,000	192,000	1,389,000	1,674,000	285,000
Y11/R11	1,293,000	1,312,000	19,000	1,374,000	1,456,000	82,000	1,592,000	1,712,000	120,000
Y12/R12	1,328,000	1,328,000	0	1,470,000	1,470,000	0	1,735,000	1,735,000	0
Total	1,328,000	1,328,000	*0*	1,470,000	1,470,000	*0*	1,735,000	1,735,000	*0*

Source: Customised ABS Summary Matrices based on 2001, 2006 and 2011 Australian Census of Population and Housing data

Metropolitan and non-metropolitan regions: tenure change

Table A8: Occupied private dwellings in Australian metropolitan regions by tenure type: 1996, 2001, 2006 and 2011 (Chapter 3)

	Metropolitan tenure					
	Outright owner	**Purchaser**	**Private renter**	**Social renter**	**Other groups/ tenure not stated***	**Total**
1996						
No. of households	1,606,000	1,084,000	819,000	227,000	243,000	3,979,000
% of households	40	27	21	6	6	100
2001						
No. of households	1,703,000	1,239,000	873,000	224,000	239,000	4,279,000
% of households	40	29	20	5	6	100
2006						
No. of households	1,463,000	1,613,000	985,000	218,000	245,000	4,524,000
% of households	32	36	22	5	5	100
2011						
No. of households	1,500,000	1,799,000	1,156,000	225,000	248,000	4,928,000
% of households	30	37	23	5	5	100
	Metro intercensal change					
1996–2001						
No. of households	97,000	155,000	54,000	-3,000	-4,000	300,000
% change within tenure	6	14	7	-1	-1	8
	Metro intercensal change					
2001–06						
No. of households	-240,000	374,000	112,000	-6,000	6,000	245,000
% change within tenure	-14	30	13	-3	2	6
	Metro intercensal change					
2006–11						
No. of households	37,000	186,000	171,000	7,000	3,000	404,000
% change within tenure	3	12	17	3	1	9

* 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: Customised ABS Expanded Matrices based on 1996, 2001, 2006 and 2011 Australian Census of Population and Housing data

Table A9: Occupied private dwellings in Australian non-metropolitan regions by tenure type: 1996, 2001, 2006 and 2011 (Chapter 3)

	Non-metropolitan tenure					
	Outright owner	**Purchaser**	**Private renter**	**Social renter**	**Other groups/ tenure not stated***	**Total**
1996						
No. of households	1,006,000	533,000	415,000	131,000	216,000	2,301,000
% of households	44	23	18	6	9	100
2001						
No. of households	1,055,000	622,000	455,000	133,000	202,000	2,466,000
% of households	43	25	18	5	8	100
2006						
No. of households	968,000	823,000	485,000	134,000	210,000	2,621,000
% of households	37	31	19	5	8	100
2011						
No. of households	988,000	911,000	579,000	139,000	217,000	2,833,000
% of households	35	32	20	5	8	100
	Non-metro intercensal change					
1996–2001						
No. of households	49,000	89,000	40,000	2,000	-14,000	165,000
% change within tenure	5	17	10	1	-7	7
	Non-metro intercensal change					
2001–06						
No. of households	-87,000	201,000	30,000	1,000	9,000	154,000
% change within tenure	-8	32	7	1	4	6
	Non-metro intercensal change					
2006–11						
No. of households	20,000	87,000	94,000	4,000	6,000	212,000
% change within tenure	2	11	19	3	3	8

* 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: Customised ABS Expanded Matrices based on 1996, 2001, 2006 and 2011 Australian Census of Population and Housing data

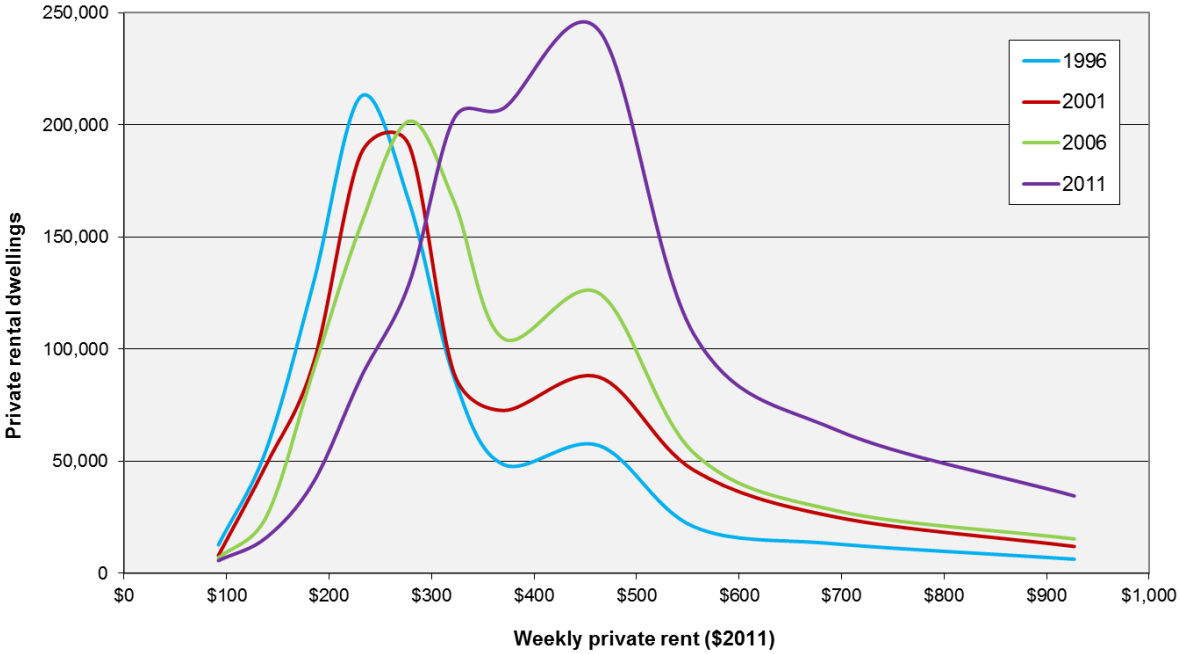
Metropolitan and non-metropolitan regions: private rental stock

Table A10: Private rental dwellings in Australian metropolitan and non-metropolitan regions, 2006 and 2011 (Chapter 3)

Metropolitan regions		2006				2011			
Rent segment	**$2011**	**Stock**	**% of total**	**Cumul. stock**	**Cumul. %**	**Stock**	**% of total**	**Cumul. stock**	**Cumul. %**
R1	$1–$92	7,000	1	7,000	1	6,000	0.5	6,000	0.5
R2	$93–$139	25,000	3	32,000	3	16,000	1	22,000	2
R3	$140–$185	91,000	9	123,000	13	41,000	4	63,000	5
R4	$186–$231	155,000	16	279,000	28	87,000	8	150,000	13
R5	$232–$278	202,000	20	480,000	49	129,000	11	279,000	24
R6	$279–$322	166,000	17	646,000	66	203,000	18	482,000	42
R7	$323–$370	105,000	11	751,000	76	207,000	18	690,000	60
R8	$371–$463	125,000	13	876,000	89	242,000	21	932,000	81
R9	$464–$556	54,000	5	930,000	94	107,000	9	1,039,000	90
R10	$557–$695	28,000	3	958,000	97	64,000	6	1,103,000	95
R11	$696–$927	15,000	2	973,000	99	35,000	3	1,137,000	98
R12	$928+	12,000	1	985,000	100	19,000	2	1,156,000	100
Total		*985,000*	*100*	*985,000*	*100*	*1,156,000*	*100*	*1,156,000*	*100*
Non-metropolitan regions		**2006**				**2011**			
Rent segment	**$2011**	**Stock**	**% of total**	**Cumul. stock**	**Cumul. %**	**Stock**	**% of total**	**Cumul. stock**	**Cumul. %**
R1	$1–$92	13,000	3	13,000	3	11,000	2	11,000	2
R2	$93–$139	46,000	10	59,000	12	35,000	6	45,000	8
R3	$140–$185	103,000	21	162,000	33	83,000	14	128,000	22
R4	$186–$231	100,000	21	261,000	54	98,000	17	227,000	39
R5	$232–$278	88,000	18	349,000	72	94,000	16	321,000	55
R6	$279–$322	59,000	12	409,000	84	96,000	17	417,000	72
R7	$323–$370	33,000	7	441,000	91	70,000	12	487,000	84
R8	$371–$463	29,000	6	471,000	97	62,000	11	549,000	95
R9	$464–$556	8,000	2	478,000	99	17,000	3	565,000	98
R10	$557–$695	3,000	1	481,000	99	6,000	1	572,000	99
R11	$696–$927	1,000	0	483,000	99	3,000	0	575,000	99
R12	$928+	3,000	1	485,000	100	4,000	1	579,000	100
Total		*485,000*	*100*	*485,000*	*100*	*579,000*	*100*	*579,000*	*100*

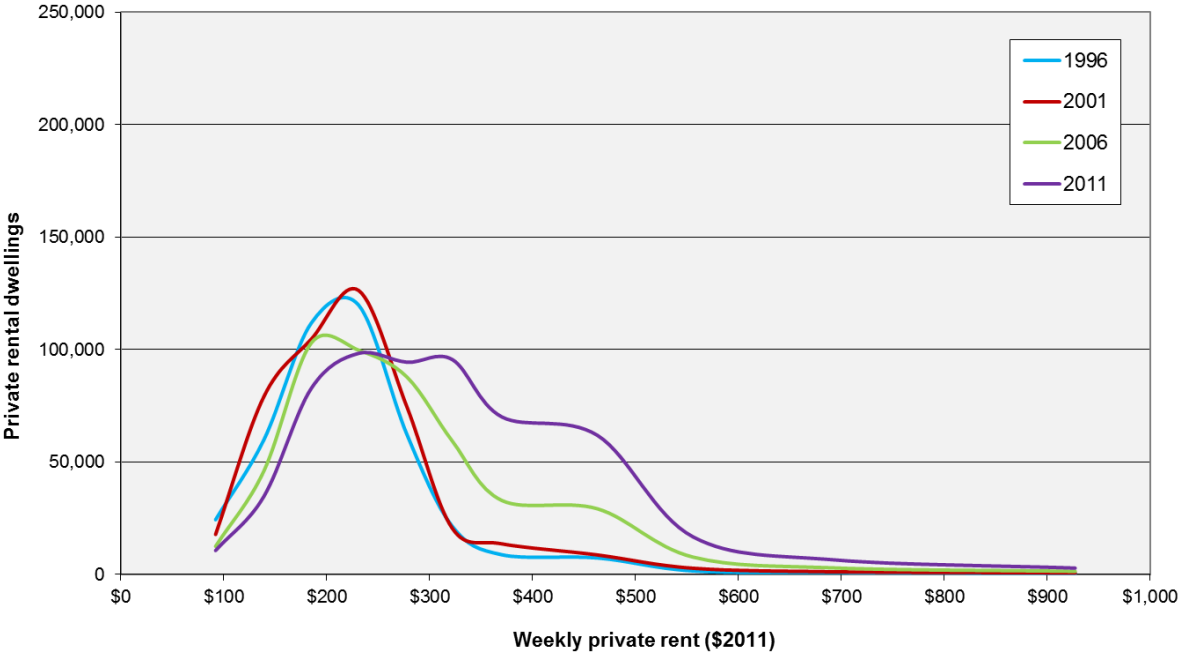
Source: Customised ABS Summary Matrices based on 2006 and 2011 Australian Census of Population and Housing data

Figure A1: Distributions of private rental dwellings by weekly rent paid, Australian metropolitan areas: 1996, 2001, 2006 and 2011



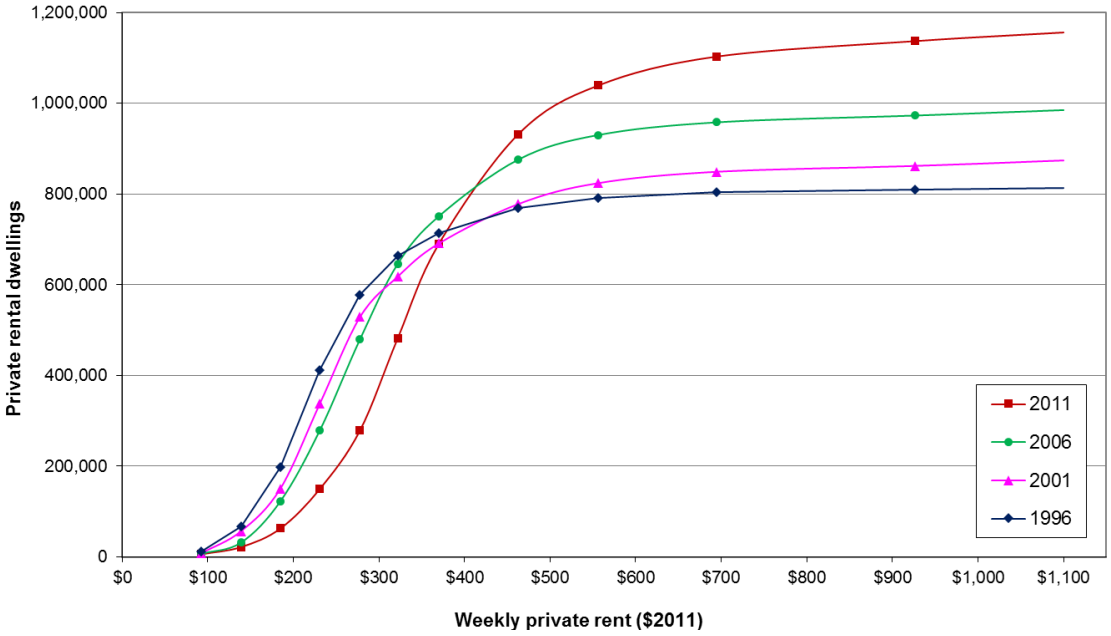
Source: Customised ABS Summary Matrices based on 1996, 2001, 2006 and 2011 Australian Census of Population and Housing data

Figure A2: Distributions of private rental dwellings by weekly rent paid, Australian non-metropolitan areas: 1996, 2001, 2006 and 2011



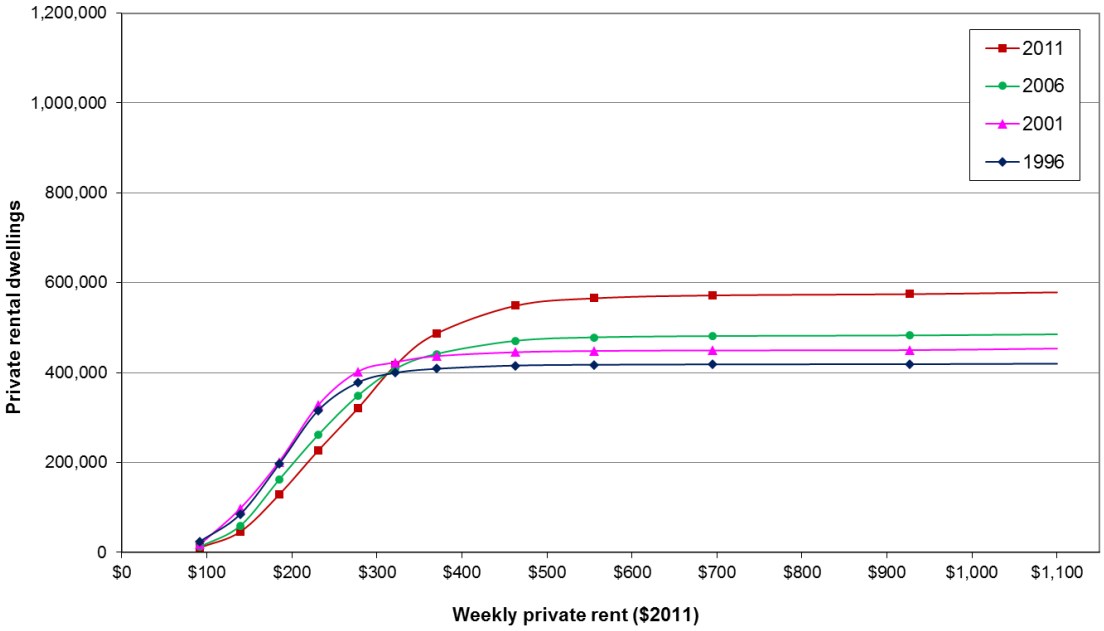
Source: Customised ABS Summary Matrices based on 1996, 2001, 2006 and 2011 Australian Census of Population and Housing data

Figure A3: Cumulative distributions of private rent stock in Australian metropolitan regions: 1996, 2001, 2006 and 2011 (Chapter 3)



Source: Customised ABS Summary Matrices based on 1996, 2001, 2006 and 2011 Australian Census of Population and Housing data

Figure A4: Cumulative distributions of private rent stock in Australian non-metropolitan regions: 1996, 2001, 2006 and 2011 (Chapter 3)



Source: Customised ABS Summary Matrices based on 1996, 2001, 2006 and 2011 Australian Census of Population and Housing data

Table A11: Change in private rent stock by rent segment, Australian metropolitan and non-metropolitan regions: 2001–06 and 2006–11 (Chapter 3)

Metropolitan regions									
Private rent segment		Change 2001–06				Change 2006–11			
		Dwellings	%	Cumul. dwellings	Cumul. %	Dwellings	%	Cumul. dwellings	Cumul. %
R1	$1–$92	-1,000	-14	-1,000	-14	-1,000	-17	-1,000	-17
R2	$93–$139	-23,000	-48	-24,000	-43	-9,000	-37	-11,000	-33
R3	$140–$185	-3,000	-3	-28,000	-18	-50,000	-55	-61,000	-49
R4	$186–$231	-32,000	-17	-59,000	-18	-68,000	-44	-129,000	-46
R5	$232–$278	11,000	6	-49,000	-9	-72,000	-36	-201,000	-42
R6	$279–$322	77,000	86	28,000	5	37,000	22	-164,000	-25
R7	$323–$370	32,000	44	60,000	9	103,000	98	-61,000	-8
R8	$371–$463	37,000	43	98,000	13	117,000	94	56,000	6
R9	$464–$556	8,000	17	105,000	13	53,000	99	109,000	12
R10	$557–$695	3,000	11	108,000	13	36,000	129	145,000	15
R11	$696–$927	3,000	28	111,000	13	19,000	125	164,000	17
R12	$928+	-1,000	-9	110,000	13	7,000	62	171,000	17
Total		*110,000*	*13*	*110,000*	*13*	*171,000*	*17*	*171,000*	*17*

Non-metropolitan regions									
Private rent segment		Change 2001–06				Change 2006–11			
		Dwellings	%	Cumul. dwellings	Cumul. %	Dwellings	%	Cumul. dwellings	Cumul. %
R1	$1–$92	-5,000	-30	-5,000	-30	-2,000	-15	-2,000	-15
R2	$93–$139	-33,000	-42	-38,000	-40	-11,000	-25	-13,000	-22
R3	$140–$185	-2,000	-2	-40,000	-20	-20,000	-20	-33,000	-21
R4	$186-$231	-27,000	-21	-67,000	-20	-1,000	-1	-35,000	-13
R5	$232–$278	13,000	18	-53,000	-13	7,000	8	-28,000	-8
R6	$279-$322	39,000	189	-14,000	-3	36,000	61	8,000	2
R7	$323-$370	19,000	141	5,000	1	37,000	113	45,000	10
R8	$371-$463	21,000	236	25,000	6	33,000	112	78,000	17
R9	$464-$556	5,000	176	30,000	7	9,000	116	87,000	18
R10	$557-$695	2,000	141	32,000	7	4,000	122	90,000	19
R11	$696-$927	1,000	94	33,000	7	1,000	102	92,000	19
R12	$928+	-1,000	-29	32,000	7	1,000	58	93,000	19
Total		*32,000*	*7*	*32,000*	*7*	*93,000*	*19*	*93,000*	*19*

Source: Customised ABS Summary Matrices based on 2001, 2006 and 2011 Australian Census of Population and Housing data

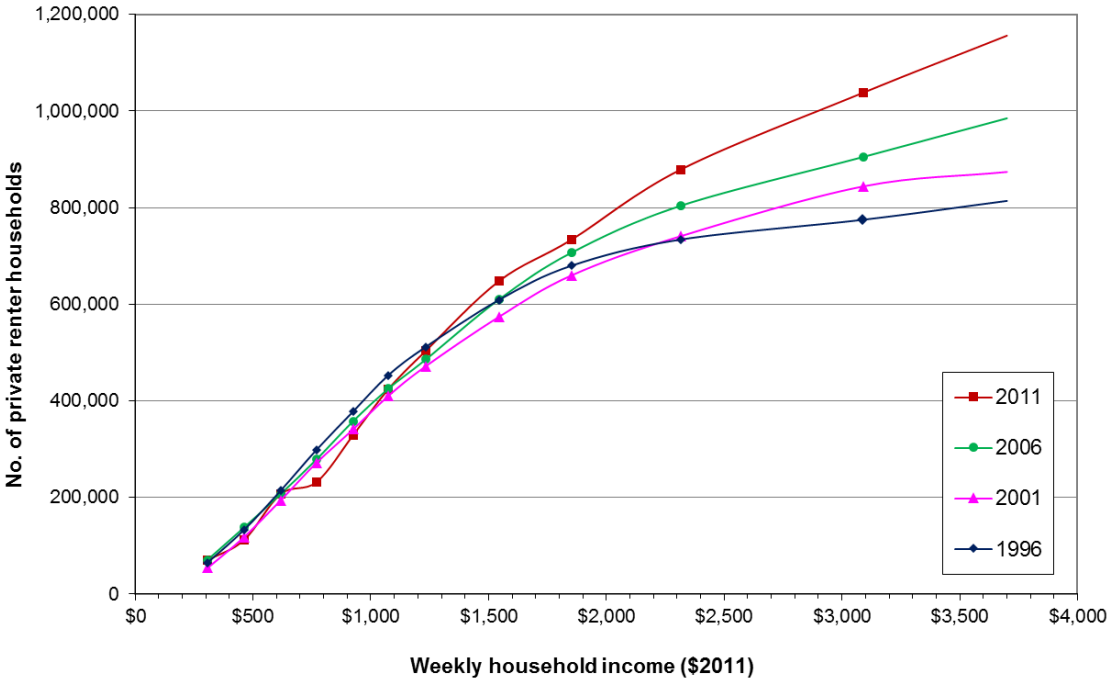
Metropolitan and non-metropolitan regions: private renter household incomes

Table A12: Distribution of income of households in the private rental market, Australian metropolitan and non-metropolitan regions: 2006 and 2011 (Chapter 3)

Metropolitan regions		2006				2011			
Household income segment		H'holds	% of total	Cumul. h'holds	% cumul.	H'holds	% of total	Cumul. h'holds	% cumul.
Y1	$0–$307	71,000	7	71,000	7	70,000	6	70,000	6
Y2	$308–$462	67,000	7	138,000	14	42,000	4	112,000	10
Y3	$463–$617	69,000	7	207,000	21	95,000	8	207,000	18
Y4	$618–$770	73,000	7	279,000	28	25,000	2	232,000	20
Y5	$771–$925	78,000	8	358,000	36	97,000	8	329,000	28
Y6	$926–$1,074	67,000	7	425,000	43	95,000	8	424,000	37
Y7	$1,075–$1,234	61,000	6	486,000	49	79,000	7	504,000	44
Y8	$1,235–$1,544	124,000	13	610,000	62	144,000	12	648,000	56
Y9	$1,545–$1,853	96,000	10	707,000	72	86,000	7	734,000	63
Y10	$1,854–$2,316	97,000	10	804,000	82	146,000	13	879,000	76
Y11	$2,317–$3,090	101,000	10	905,000	92	159,000	14	1,038,000	90
Y12	$3,091+	80,000	8	985,000	100	117,000	10	1,156,000	100
Total		*985,000*	*100*	*985,000*	*100*	*1,156,000*	*100*	*1,156,000*	*100*
Non-metropolitan regions		**2006**				**2011**			
Household income segment		**H'holds**	**% of total**	**Cumul. h'holds**	**% cumul.**	**H'holds**	**% of total**	**Cumul. h'holds**	**% cumul.**
Y1	$0–$307	44,000	9	44,000	9	40,000	7	40,000	7
Y2	$308–$462	56,000	12	99,000	20	42,000	7	81,000	14
Y3	$463–$617	50,000	10	149,000	31	82,000	14	164,000	28
Y4	$618–$770	48,000	10	198,000	41	15,000	3	179,000	31
Y5	$771–$925	44,000	9	242,000	50	71,000	12	250,000	43
Y6	$926–$1,074	37,000	8	279,000	57	53,000	9	304,000	52
Y7	$1,075–$1,234	33,000	7	312,000	64	42,000	7	346,000	60
Y8	$1,235–$1,544	57,000	12	369,000	76	69,000	12	414,000	72
Y9	$1,545–$1,853	40,000	8	409,000	84	41,000	7	456,000	79
Y10	$1,854–$2,316	34,000	7	443,000	91	54,000	9	509,000	88
Y11	$2,317–$3,090	26,000	5	469,000	97	44,000	8	553,000	96
Y12	$3,091+	16,000	3	485,000	100	25,000	4	579,000	100
Total		485,000	100	485,000	100	579,000	100	579,000	100

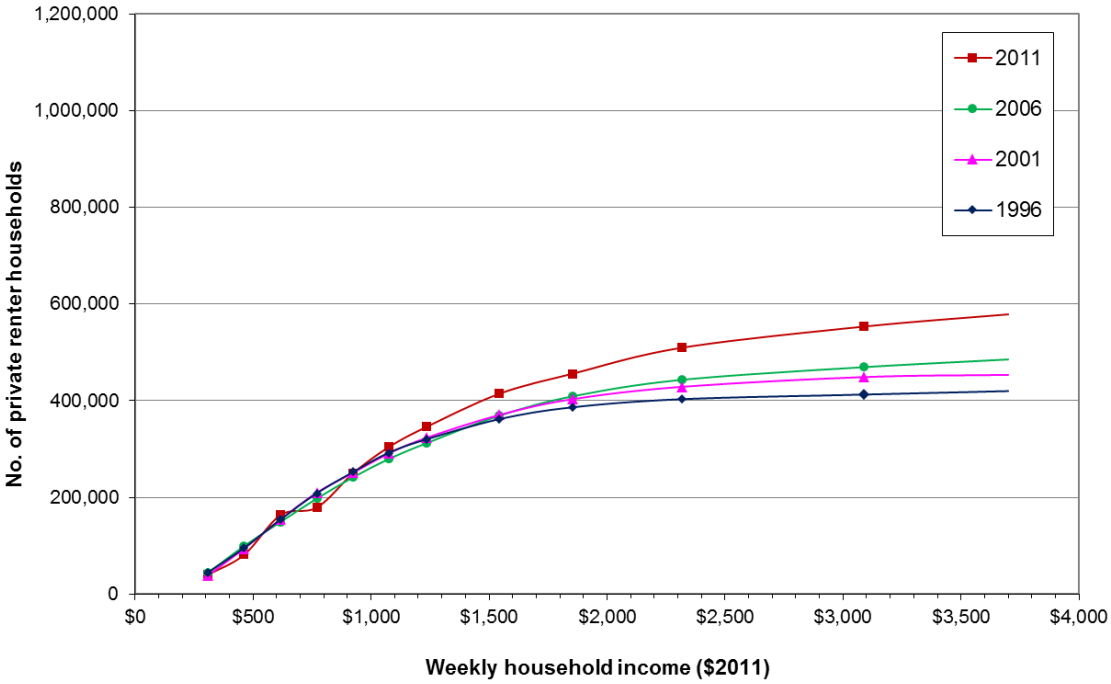
Source: Customised ABS Summary Matrices based on 2006 and 2011 Australian Census of Population and Housing data

Figure A5: Cumulative income distributions of private renter households in Australian metropolitan regions: 1996, 2001, 2006 and 2011 (Chapter 3)



Source: Customised ABS Summary Matrices based on 1996, 2001, 2006 and 2011 Australian Census of Population and Housing data

Figure A6: Cumulative income distributions of private renter households in Australian non-metropolitan regions: 1996, 2001, 2006 and 2011 (Chapter 3)



Source: Customised ABS Summary Matrices based on 1996, 2001, 2006 and 2011 Australian Census of Population and Housing data

Table A13: Change in the number of private renter households by household income segment in Australian metropolitan and non-metropolitan regions: 2001–06 and 2006–11 (Chapter 3)

Metropolitan regions									
Household income segment		Change 2001–06				Change 2006–11			
		H'holds	%	Cumul. h'holds	% cumul.	H'holds	%	Cumul. h'holds	% cumul.
Y1	$0–$307	17,000	32	17,000	32	-1,000	-2	-1,000	-2
Y2	$308–$462	2,000	3	19,000	16	-24,000	-37	-26,000	-19
Y3	$463–$617	-7,000	-9	13,000	7	26,000	38	1,000	0
Y4	$618–$770	-5,000	-7	7,000	3	-48,000	-65	-47,000	-17
Y5	$771–$925	9,000	14	17,000	5	19,000	24	-28,000	-8
Y6	$926–$1,074	-2,000	-2	15,000	4	27,000	41	-1,000	-0
Y7	$1,075–$1,234	-1,000	-1	15,000	3	18,000	30	17,000	4
Y8	$1,235–$1,544	21,000	21	36,000	6	20,000	16	37,000	6
Y9	$1,545–$1,853	11,000	13	47,000	7	-10,000	-11	27,000	4
Y10	$1,854–$2,316	15,000	19	62,000	8	48,000	50	76,000	9
Y11	$2,317–$3,090	-1,000	-1	61,000	7	58,000	57	134,000	15
Y12	$3,091+	49,000	163	110,000	13	38,000	47	171,000	17
Total		*110,000*	*13*	*110,000*	*13*	*171,000*	*17*	*171,000*	*17*

Non-metropolitan regions									
Household income segment		Change 2001–06				Change 2006–11			
		H'holds	%	Cumul. h'holds	% cumul.	H'holds	%	Cumul. h'holds	% cumul.
Y1	$0–$307	5,000	14	5,000	14	-4,000	-9	-4,000	-9
Y2	$308–$462	0	-0	5,000	6	-14,000	-25	-18,000	-18
Y3	$463–$617	-11,000	-18	-5,000	-4	32,000	65	14,000	10
Y4	$618–$770	-7,000	-12	-12,000	-6	-33,000	-69	-19,000	-9
Y5	$771–$925	3,000	7	-9,000	-4	27,000	62	8,000	3
Y6	$926–$1,074	-2,000	-6	-12,000	-4	16,000	44	25,000	9
Y7	$1,075–$1,234	1,000	2	-11,000	-3	9,000	27	34,000	11
Y8	$1,235–$1,544	10,000	20	-1,000	-0	12,000	21	45,000	12
Y9	$1,545–$1,853	7,000	22	6,000	1	1,000	4	47,000	11
Y10	$1,854–$2,316	9,000	34	15,000	3	19,000	57	66,000	15
Y11	$2,317–$3,090	6,000	30	21,000	5	18,000	67	84,000	18
Y12	$3,091+	11,000	241	32,000	7	9,000	59	93,000	19
Total		*32,000*	*7*	*32,000*	*7*	*93,000*	*19*	*93,000*	*19*

Source: Customised ABS Summary Matrices based on 2001, 2006 and 2011 Australian Census of Population and Housing data

Metropolitan and non-metropolitan regions: stock shortage

Table A14: Shortage of affordable private rental stock in Australian metropolitan and non-metropolitan regions: 2001, 2006 and 2011

	Metropolitan regions								
	Cumulative 2001			Cumulative 2006			Cumulative 2011		
Income/ rent	H'holds Y	Stock R	Surplus or Shortage =R-Y	H'holds Y	Stock R	Surplus or Shortage =R-Y	H'holds Y	Stock R	Surplus or Shortage =R-Y
Y1/R1	54,000	8,000	-45,000	71,000	7,000	-64,000	70,000	6,000	-64,000
Y2/R2	118,000	57,000	-61,000	138,000	32,000	-105,000	112,000	22,000	-90,000
Y3/R3	194,000	151,000	-43,000	207,000	123,000	-83,000	207,000	63,000	-145,000
Y4/R4	272,000	338,000	66,000	279,000	279,000	-1,000	232,000	150,000	-82,000
Y5/R5	341,000	529,000	188,000	358,000	480,000	123,000	329,000	279,000	-50,000
Y6/R6	410,000	618,000	208,000	425,000	646,000	221,000	424,000	482,000	58,000
Y7/R7	472,000	691,000	219,000	486,000	751,000	265,000	504,000	690,000	186,000
Y8/R8	574,000	778,000	204,000	610,000	876,000	266,000	648,000	932,000	284,000
Y9/R9	660,000	824,000	165,000	707,000	930,000	223,000	734,000	1,039,000	305,000
Y10/R10	741,000	849,000	108,000	804,000	958,000	154,000	879,000	1,103,000	223,000
Y11/R11	844,000	862,000	18,000	905,000	973,000	68,000	1,038,000	1,137,000	99,000
Y12/R12	874,000	874,000	0	985,000	985,000	0	1,156,000	1,156,000	0
Total	*874,000*	*874,000*	*0*	*985,000*	*985,000*	*0*	*1,156,000*	*1,156,000*	*0*
	Non-metropolitan regions								
Y1/R1	38,000	18,000	-20,000	44,000	13,000	-31,000	40,000	11,000	-29,000
Y2/R2	94,000	97,000	3,000	99,000	59,000	-41,000	81,000	45,000	-36,000
Y3/R3	155,000	202,000	47,000	149,000	162,000	12,000	164,000	128,000	-35,000
Y4/R4	210,000	328,000	118,000	198,000	261,000	64,000	179,000	227,000	48,000
Y5/R5	251,000	402,000	151,000	242,000	349,000	107,000	250,000	321,000	71,000
Y6/R6	291,000	423,000	132,000	279,000	409,000	130,000	304,000	417,000	113,000
Y7/R7	323,000	437,000	114,000	312,000	441,000	130,000	346,000	487,000	141,000
Y8/R8	371,000	445,000	75,000	369,000	471,000	102,000	414,000	549,000	134,000
Y9/R9	403,000	448,000	45,000	409,000	478,000	70,000	456,000	565,000	110,000
Y10/R10	429,000	449,000	21,000	443,000	481,000	38,000	509,000	572,000	62,000
Y11/R11	449,000	450,000	1,000	469,000	483,000	13,000	553,000	575,000	21,000
Y12/R12	453,000	454,000	0	485,000	485,000	0	579,000	579,000	0
Total	*453,000*	*454,000*	*0*	*485,000*	*485,000*	*0*	*579,000*	*579,000*	*0*

Source: Customised ABS Summary Matrices based on 2001, 2006 and 2011 Australian Census of Population and Housing data

Distribution of private renter households and dwellings based on household income quintile groupings, Australia, 2006 and 2011

Table A15: Distribution of private renter households by national household income quintile, Australia, 2006 and 2011 (Chapter 4)

Household income quintile			Private renter households				
			2006		2011		Growth 06–11 (%)
	$2006	$2011	No.	% of total	No.	% of total	
Q1	$0–$422	$0–$584	268,000	18	347,000	20	30
Q2	$423–$809	$585–$1,074	360,000	25	378,000	22	5
Q3	$810–$1287	$1,075–$1,748	351,000	24	413,000	24	18
Q4	$1288–1977	$1,749–$2,727	280,000	19	339,000	19	21
Q5	$1978+	$2,728+	211,000	14	258,000	15	22
Total			*1,470,000*	*100*	*1,735,000*	*100*	*18*

Source: Customised ABS Expanded Matrices based on 2006 and 2011 Australian Census of Population and Housing data

Table A16: Distribution of private rental dwellings by rent segments defined by the 30 per cent affordability benchmark (of household income quintiles), Australia, 2006 and 2011 (Chapter 4)

Rent segment			Private rental dwellings				
			2006		2011		Growth 06-11 (%)
	$2006	$2011	No.	% of total	No.	% of total	
R1	$1–$126	$1–$175	129,000	9	159,000	9	23
R2	$127–$242	$176–$322	759,000	52	740,000	43	-3
R3	$243–$386	$323–$524	459,000	31	671,000	39	46
R4	$387–$593	$525–$818	94,000	6	131,000	8	39
R5	$594+	$819+	30,000	2	33,000	2	13
Total			*1,470,000*	*100*	*1,735,000*	*100*	*18*

Source: Customised ABS Expanded Matrices based on 2006 and 2011 Australian Census of Population and Housing data

Shortage of affordable and available stock—Q1 households 2011

Table A17: Shortage of affordable and available stock for private renter households with gross incomes at or below Q1 in the nation-wide household income distribution, 2011: Australia, metropolitan and non-metropolitan regions, capital cities and capital city sub-regions (Chapters 4 and 5)

	Very-low-income h'holds	Potentially affordable dwellings	Shortage or surplus of affordable stock (=2-1)	Higher income h'holds in the potentially affordable stock	Affordable dwellings actually available (=2-4)	Shortage of affordable *and* available stock (=3-4)	% of Q1 households paying unaffordable rents (=6 / 1)
	1	2	3	4	5	6	7
Australia	349,000	159,000	-190,000	83,000	76,000	-273,000	78
Metropolitan regions	196,000	51,000	-145,000	28,000	24,000	-172,000	88
Non-metro regions	153,000	108,000	-45,000	55,000	52,000	-101,000	66
Capital cities							
Sydney	58,800	10,400	-48,400	5,500	4,900	-54,000	92
Melbourne	58,900	15,700	-43,200	8,600	7,100	-51,800	88
Brisbane	29,600	7,100	-22,500	3,800	3,300	-26,300	89
Adelaide	20,400	8,500	-12,000	4,300	4,100	-16,300	80
Perth	21,300	6,600	-14,700	3,900	2,700	-18,600	87
Hobart	4,200	2,200	-2,000	1,000	1,200	-3,000	71
Darwin^	900	400	-500	300	100	-700	85
Canberra^	1,800	600	-1,200	400	200	-1,700	90
Capital city sub-regions							
Sydney							
Inner	19,100	2,600	-16,400	1,500	1,200	-17,900	94
Middle	22,200	3,500	-18,700	2,100	1,500	-20,800	93
Outer	17,500	4,200	-13,300	2,000	2,200	-15,300	87
Melbourne							
Inner	17,900	3,600	-14,300	2,000	1,600	-16,300	91
Middle	24,500	7,400	-17,100	4,100	3,300	-21,200	87
Outer	16,600	4,700	-11,800	2,500	2,200	-14,300	87
Brisbane							
Inner	9,300	2,600	-6,700	1,400	1,200	-8,100	87
Middle	6,200	1,600	-4,600	1,000	700	-5,500	89
Outer	14,200	2,900	-11,300	1,500	1,400	-12,700	90
Adelaide							
Northern	6,300	2,500	-3,800	1,300	1,200	-5,000	80
Western	4,200	2,200	-2,000	1,100	1,100	-3,100	75
Eastern	4,700	1,800	-2,900	1,000	900	-3,900	82
Southern	5,200	2,000	-3,300	1,000	1,000	-4,300	81
Perth							
Central	2,400	700	-1,700	400	300	-2,100	88
East	3,000	1,100	-1,800	700	400	-2,500	85
North	6,000	1,600	-4,400	900	700	-5,300	89
Southwest	4,500	1,300	-3,200	800	600	-4,000	88
Southeast	5,400	1,800	-3,600	1,100	700	-4,700	87

Notes: ^ very low counts in these areas, 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 counts might differ slightly to those in-text. When this occurs, figures sourced from the Expanded file take precedence.

Source: Customised ABS matrices based on 2011 Australian Census of Population and Housing data.

Table A18: Shortage of affordable and available stock for private renter households with gross incomes at or below Q1 in the nation-wide household income distribution, 2011: large regional centres and rest of state balances (Chapter 5)

	Very-low-income h'holds	Potentially affordable dwellings	Shortage or surplus of affordable stock (=2-1)	Higher income h'holds in the potentially affordable stock	Affordable dwellings actually available (=2-4)	Shortage of affordable and available stock (=3-4)	% of Q1 households paying unaffordable rents (=6 / 1)
	1	2	3	4	5	6	7
Large regional centres							
Newcastle	8,800	4,000	-4,800	1,900	2,100	-6,700	76
Wollongong	5,000	2,000	-2,900	900	1,200	-3,800	77
Albury-Wodonga	3,000	3,100	100	1,500	1,600	-1,400	48
Coffs Harbour	2,200	800	-1,300	300	500	-1,700	77
Shoalhaven	2,100	1,100	-1,000	500	600	-1,500	70
Tweed Valley	2,200	600	-1,600	200	400	-1,800	82
Wagga Wagga	1,800	1,800	0	1,000	800	-1,000	54
Geelong	3,500	2,200	-1,300	1,000	1,200	-2,300	67
Ballarat	2,400	1,800	-500	900	1,000	-1,400	59
Bendigo	2,000	1,500	-500	800	700	-1,200	63
Gold Coast	12,600	1,600	-11,100	800	800	-11,800	94
Sunshine Coast	6,700	1,300	-5,400	600	700	-5,900	89
Townsville	2,900	900	-1,900	500	400	-2,500	85
Cairns	3,900	1,800	-2,100	900	900	-3,000	77
Bundaberg	2,100	1,000	-1,100	500	600	-1,600	73
Mackay	1,200	600	-600	400	200	-1,000	84
Rockhampton	2,000	1,100	-900	600	500	-1,500	74
Toowoomba	3,200	2,000	-1,200	1,000	1,000	-2,200	68
Mandurah	2,000	600	-1,400	300	300	-1,700	85
Bunbury	1,400	700	-700	400	300	-1,200	82
Launceston	2,700	2,000	-700	900	1,100	-1,600	59
Rest of state balance*							
NSW balance	29,400	26,300	-3,100	13,300	13,000	-16,400	56
VIC balance	19,200	20,600	1,300	10,600	9,900	-9,300	48
QLD balance	14,000	10,500	-3,500	5,700	4,800	-9,200	66
SA balance	8,200	9,700	1,500	5,200	4,500	-3,700	45
WA balance	4,700	4,200	-500	2,700	1,500	-3,200	68
TAS balance	3,700	3,900	200	2,000	1,800	-1,800	50
NT balance^	200	300	100	300	100	-200	78
Rest of state balance—comparable with 2006 rest of state balance (Chapter 5, Section 5.3)							
NSW balance	39,300	32,500	-6,900	16,200	16,300	-23,000	59
VIC balance	24,900	25,100	200	12,900	12,300	-12,700	51
QLD balance	22,500	15,200	-7,200	8,200	7,100	-15,400	68
SA balance	8,200	9,700	1,500	5,200	4,500	-3,700	45
WA balance	8,200	5,500	-2,700	3,400	2,100	-6,100	75
TAS balance	3,700	3,900	200	2,000	1,800	-1,800	50
NT balance^	200	300	100	300	100	-200	78

* 'Rest of state balance' refers to all areas outside the state capital city plus areas outside any listed regional centre.

^ very low counts in these areas: caution should be exercised when interpreting these figures.

Figures may not sum exactly due to rounding

Source: Customised ABS matrices based on 2011 Australian Census of Population and Housing data.

Shortage of affordable and available stock—Q2 households 2011

Table A19: Shortage of affordable and available stock for private renter households with gross incomes in the Q2 segment of the nation-wide household income distribution, 2011: Australia, metropolitan and non-metropolitan regions, capital cities and capital city sub-regions (Chapters 4 and 5)

	Low-income h'holds	Potentially affordable dwellings	Shortage or surplus of affordable stock (=2-1)	Other income h'holds in the potentially affordable stock	Affordable dwellings actually available (=2-4)	Shortage of affordable and available stock (=3-4)	% of Q2 households paying unaffordable rents (=6 / 1)
	1	2	3	4	5	6	7
Australia	378,000	899,000	521,000	643,000	256,000	-122,000	32
Metro	228,000	482,000	255,000	349,000	133,000	-94,000	41
Non-metro	150,000	417,000	266,000	294,000	122,000	-28,000	19
Capital cities							
Sydney	73,100	108,900	35,800	76,300	32,600	-40,500	55
Melbourne	63,100	164,900	101,800	122,200	42,700	-20,400	32
Brisbane	36,800	73,800	37,100	53,000	20,900	-15,900	43
Adelaide	22,100	63,700	41,700	45,200	18,500	-3,500	16
Perth	24,200	52,700	28,500	39,000	13,800	-10,500	43
Hobart	4,100	11,600	7,500	8,100	3,400	-600	16
Darwin	1,500	2,400	900	1,800	600	-900	59
Canberra	2,900	4,200	1,300	3,300	900	-2,100	70
Capital city sub-regions							
Sydney							
Inner	20,800	23,400	2,600	17,300	6,200	-14,600	70
Middle	30,000	39,600	9,700	27,900	11,800	-18,200	61
Outer	21,300	45,900	24,600	31,700	14,200	-7,100	34
Melbourne							
Inner	17,100	36,700	19,700	28,000	8,800	-8,300	49
Middle	27,900	72,200	44,300	52,900	19,300	-8,600	31
Outer	19,600	55,900	36,300	40,300	15,600	-4,000	21
Brisbane							
Inner	10,500	21,200	10,700	15,800	5,500	-5,100	48
Middle	8,200	12,600	4,400	9,200	3,400	-4,800	58
Outer	18,000	40,000	22,000	28,100	11,900	-6,100	34
Adelaide							
Northern	7,100	21,100	14,000	14,600	6,500	-700	9
Western	4,700	13,500	8,800	9,500	3,900	-800	16
Eastern	4,500	12,800	8,200	9,400	3,400	-1,200	25
Southern	5,700	16,400	10,600	11,600	4,800	-900	16
Perth							
Central	2,300	5,000	2,700	3,800	1,200	-1,100	48
East	3,700	8,100	4,400	5,900	2,200	-1,500	40
North	7,200	14,200	7,000	10,400	3,800	-3,400	47
Southwest	4,800	11,400	6,500	8,500	2,900	-1,900	40
Southeast	6,300	14,200	7,900	10,400	3,800	-2,600	40

Notes: 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 counts might differ slightly to those in-text. When this occurs, figures sourced from the Expanded file take precedence.

Source: Customised ABS matrices based on 2011 Australian Census of Population and Housing data

Table A20: Shortage of affordable and available stock for private renter households with gross incomes in the Q2 segment of the nation-wide household income distribution, 2011: large regional centres and rest of state balances (Chapter 5)

	Low-income h'holds	Potentially affordable dwellings	Shortage or surplus of affordable stock (=2-1)	Other income h'holds in the potentially affordable stock	Affordable dwellings actually available (=2-4)	Shortage of affordable and available stock (=3-4)	% of Q2 households paying unaffordable rents (=6 / 1)
	1	2	3	4	5	6	7
Large regional centres							
Newcastle	9,800	25,700	15,800	18,000	7,700	-2,100	22
Wollongong	4,800	11,900	7,100	8,500	3,400	-1,400	29
Albury-Wodonga	2,900	9,100	6,200	6,300	2,800	-100	5
Coffs Harbour	2,200	5,100	2,900	3,400	1,600	-500	24
Shoalhaven	2,000	5,500	3,500	3,700	1,800	-200	10
Tweed Valley	2,200	4,100	1,900	2,800	1,300	-900	40
Wagga Wagga	1,800	5,400	3,600	3,800	1,600	-200	9
Geelong	3,600	10,900	7,300	7,700	3,200	-400	11
Ballarat	2,400	7,300	5,000	5,100	2,200	-100	5
Bendigo	2,000	6,500	4,500	4,600	1,900	-100	5
Gold Coast	14,500	21,200	6,700	14,700	6,500	-8,000	55
Sunshine Coast	7,400	12,500	5,100	8,600	3,900	-3,500	47
Townsville	3,500	9,000	5,500	6,500	2,400	-1,100	31
Cairns	4,200	11,900	7,700	8,500	3,500	-700	18
Bundaberg	2,100	6,400	4,300	4,400	2,000	-100	6
Mackay	1,400	3,500	2,200	2,700	800	-600	42
Rockhampton	2,100	6,800	4,700	5,000	1,800	-300	14
Toowoomba	3,400	10,800	7,300	7,600	3,100	-300	9
Mandurah	1,700	5,300	3,600	3,900	1,400	-300	18
Bunbury	1,500	5,100	3,600	3,800	1,300	-200	15
Launceston	2,300	7,400	5,100	5,200	2,200	-100	5
Rest of state balance*							
NSW balance	27,300	78,700	51,400	54,700	24,000	-3,300	12
VIC balance	16,500	53,800	37,400	38,200	15,600	-900	5
QLD balance	13,300	41,800	28,500	29,800	12,000	-1,300	10
SA balance	7,000	23,500	16,500	16,800	6,800	-300	4
WA balance	4,800	15,800	11,000	11,700	4,100	-700	16
TAS balance	3,200	10,100	6,900	7,000	3,200	-100	2
NT balance^	500	1,300	800	1,000	300	-200	37
Rest of state balance—comparable with 2006 rest of state balance (Chapter 5, Section 5.3)							
NSW balance	37,000	103,500	66,400	71,600	31,800	-5,200	14
VIC balance	22,200	72,100	49,800	51,000	21,100	-1,200	5
QLD balance	22,400	69,300	47,000	49,500	19,800	-2,600	12
SA balance	7,000	23,500	16,500	16,800	6,800	-300	4
WA balance	8,000	26,300	18,200	19,500	6,800	-1,300	16
TAS balance	3,200	10,100	6,900	7,000	3,200	-100	2
NT balance^	500	1,300	800	1,000	300	-200	37

* 'Rest of state balance' refers to all areas outside the state capital city plus areas outside any listed regional centre.

^ very low counts in these areas: caution should be exercised when interpreting these figures.

Figures may not sum exactly due to rounding.

Source: Customised ABS matrices based on 2011 Australian Census of Population and Housing data

Table A21: List of 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-Wydnham; Hume City; Northern Outer Melbourne; Yarra Ranges Shire Part A; South Eastern Outer Melbourne; Frankston City; Mornington Peninsula Shire
Brisbane	
Inner	2006 Statistical Region Sector: City Core Brisbane; Northern Inner Brisbane; Eastern Inner Brisbane; Southern Inner Brisbane; Western Inner Brisbane
Middle	2006 Statistical Region Sector: Northern Outer Brisbane; Eastern Outer Brisbane; Southern Outer Brisbane; Western Outer Brisbane
Outer	2006 Statistical Region Sector: 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

Table A22 continued…

Area	Spatial unit/boundary definition
Regional centres	
NSW	
Newcastle	2006 Statistical Subdivision
Wollongong	2006 Statistical Subdivision
Albury	2011 Statistical Area 3 (SA3)
Coffs Harbour	2011 Statistical Area 3 (SA3)
Shoalhaven	2011 Statistical Area 3 (SA3)
Tweed Valley	2011 Statistical Area 3 (SA3)
Wagga Wagga	2011 Statistical Area 3 (SA3)
VIC	
Grtr. Geelong City Pt A	2006 Statistical Subdivision
Ballarat	2011 Statistical Area 3 (SA3)
Bendigo	2011 Statistical Area 3 (SA3)
Wodonga (Alpine)	2011 Statistical Area 3 (SA3)
QLD	
Gold Coast	2006 Statistical Division
Sunshine Coast	2006 Statistical Division
Townsville City Part A combined with Thuringowa City Part A	2006 Statistical Subdivisions
Cairns City Part A	2006 Statistical Subdivision
Bundaberg	2011 Statistical Area 3 (SA3)
Mackay	2011 Statistical Area 3 (SA3)
Rockhampton	2011 Statistical Area 3 (SA3)
Toowoomba	2011 Statistical Area 3 (SA3)
WA	
Mandurah	2011 Statistical Area 3 (SA3)
Bunbury	2011 Statistical Area 3 (SA3)
TAS	
Greater Launceston	2006 Statistical Division
Rest of state balance	All areas outside the state capital city plus areas outside any listed regional centre

APPENDIX 3: COMPARING RESULTS WITH OTHER STUDIES

This section outlines why it is not possible to directly compare the shortage figures presented in this report with those produced from other studies, most importantly, those published by the National Housing Supply Council (now disbanded) in their reports (2009, 2010, 2012 and 2013). Although similar methodological approaches were adopted in both this study and those undertaken by the NHSC, and the overarching aim of each of the studies is the same, a number of data issues are present that have resulted in the publication of shortage figures of significantly different magnitudes. Before these are outlined, however, it is important to state that the main findings from all of these studies is consistent: there is a significant shortfall in the supply of affordable rental housing in Australia's private rental market—the order of magnitude is such that, even if ALL new dwelling construction for the next almost two years was targeted solely at the affordable end of the rental market, the shortfall would not be addressed.[36]

This section outlines several reasons why results from this study differ to those published in, for example, National Housing Supply Council reports. These differences stem primarily from the choice of data source, ABS Census or the Survey of Income and Housing (SIH, ABS), and also definitions of key variables.

Count of households

There is a disparity in the number of households (defined by number of occupied dwellings) identified in the 2011–12 SIH compared with the 2011 Census. Based on place of enumeration, the 2011 Census provides data on 7.76 million households (in 8.18 million occupied private dwellings).[37] Of these, 1.735 million households were categorised as private renters.[38] The 2011–12 SIH, on the other hand, provides data on a significantly greater total of 8.63 million households in occupied private dwellings of whom 2.025 million are private renters. Two reasons can be given for these disparities. The first is that, in the absence of more up-to-date information, the weights employed to generate household estimates from the 2011–12 survey were derived from the 2006, rather than the 2011, Census. Household estimates for 2011 were obtained by applying data derived from trends over the past four Censuses. Because there was a further inter-censal slow-down in the rate of household formation between 2006 and 2011,[39] estimates of household numbers based on past rates of household formation are likely to be too high. A second reason likely to provide an upward bias in the 2011–12 survey estimates is that there was a downward revision to population estimates following the 2011 Census. See NHSC (2012, Appendix 2) for more detailed information. As at the start of 2014, the ABS had not yet released its revised household estimates which take these factors into account. These differences are likely to mean that, in absolute terms, survey estimates will exceed Census estimates. There is, however, little reason to expect that the assessment of their distributional impacts will be affected.

[36] Independent analysis by Yates.

[37] These counts are taken from the 2011 *Basic Community Profiles* (ABS cat. no. 2001.0), *Time Series Profiles* (ABS cat. no. 2003.0) and *Place of Enumeration Profiles* (ABS cat. no. 2004.0). Recorded data excludes 422 000 visitor only and non-classifiable households for whom no information is collected. The occupied dwelling count excludes 0.93 million dwellings unoccupied on census night.

[38] 'Private renters' here follows the definition adopted for this, and past, studies, namely: those households renting from a real estate agent or a person not in the same household; it *excludes* households paying zero rent (to those landlords), and includes households where rent paid (to those landlords) was 'not stated' as these have been imputed. This definition excludes those renting in a caravan park because survey data does not allow such renters to be separately identified from those renting from an employer, community group or other landlord.

[39] This represented a continuation of a slow-down observed initially in 2006. Data from 1991 to 2001, however, showed a declining number of persons per household with households growing more rapidly than population. Detailed information on the derivation of household projections can be found in the explanatory notes to ABS cat. no. 3236.0, *Household and Family Projections, Australia 2006 to 2013*.

Measuring income

A second set of issues that arise concerns the measure of income. The first of the income measurement issues in comparing census with survey results arises because the definitions of income employed can differ between the two.[40] The ABS undertook a major review of its income standards in the mid-2000s, 'to ensure that its standards and practice appropriately reflected new international standards for household income statistics (promulgated in 2004)' (ABS 2013, p.55). In its periodic surveys since 2007–08, the ABS has expanded its definition of (gross) income to include: non-cash benefits, termination payments, payment for irregular overtime, and financial support received from family members resident outside the household in the form of goods and services received which were purchased by others (e.g. rent, education, food, clothing, car registration and utilities). The 2005–06 definition of income available in the post 2007–08 surveys excludes these additions made from 2007–08. For the imputation exercise undertaken for this study, and in consultation with the ABS, the 2005–06 definition of income was identified as being more likely to be a closer proxy for income reported in the Census and also corresponds with the definition used in the imputation procedure in the previous study.

The second of the income measurement issues arises from timing differences. The 2011–12 SIH collected information from a sample of 14 569 households over the period July 2011 to June 2012. Given that the Census was undertaken on 9 August 2011, more or less at the start of the survey period, income from the SIH would have been expected to be higher than that for the census.

A third income measurement issue arises because there is a tendency for incomes to be slightly understated in the Census compared with the surveys. In the surveys undertaken by the ABS, a series of questions on income prompts the respondent for each of the key components. The Census, on the other hand, has a single question asking for total income usually received. By definition, some of the payments included in the survey definition adopted since 2007–08 are excluded. By omission other components will go unrecorded without the detailed prompting provided by the survey questionnaire.

A related issue arises from the fact that, in the Census, more than 10 per cent of households are reported as having only partial or not stated incomes. These problems are addressed in this report through the imputation procedure described in Appendix 1.

Notwithstanding each of these concerns, however, the ABS reports that the distribution of income obtained from the Census is largely consistent with that obtained from the ABS income surveys (ABS 2011, p.220).

Definition of 'private renter household'

Private renter households in this research include: those households renting from a real estate agent or a person not in the same household; it excludes households paying zero rent (to those landlords), and includes households where rent paid (to those landlords) was 'not stated' as these have been imputed. All 'visitor-only' and 'other non-classifiable' households are excluded. This definition has been employed consistently throughout this series of reports. On the other hand, the NHSC expanded its definition of a 'private renter' in its 2012 report where it published shortage figures from the 2007–08 and 2009–10 SIH. In these reports, a private renter includes all renters other than those renting from a government authority. It includes around 100 000 renters with employer, community and other landlords not covered by the definition employed for this study.

[40] This issue affects this study because the imputation procedure employed requires use of median incomes within each income category and these can vary depending on which definition is employed.

Aggregation of income and rent categories

Finally, the number of income and corresponding rent categories used to calculate the shortage of affordable and available stock also impacts on the final figure. If lower income households (those in the bottom 40% of the household income distribution) are analysed as a single, combined group, then a more conservative shortage figure results. If, however, this income group is disaggregated into multiple categories (e.g. deciles, or even just quintiles), then it is possible to detect more households that are paying unaffordable rents (the shortage figure will increase). As shown in Chapter 4, for example, by examining Q1 and Q2 households separately, it is possible to detect and enumerate those Q1 households that are paying rents only affordable to Q2 (or higher) households. When considered as a group, such households are not identified. It is necessary to know, therefore, the level of disaggregation of income/rent categories behind the calculation of the shortage figures in the different studies.

For the reasons outlined above, it is not possible to make a *direct* comparison of shortage figures published from different studies that analysed data from different sources and employed different definitions of key variables.

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