Final Report

Changes in the supply of and need for low rent dwellings in the private rental market

authored by

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EXECUTIVE SUMMARY

This research project examines how the low rent end of the Australian private rental market fared between the 1996 and 2001 Censuses. During this period a number of significant changes affected the private rental housing market. Household incomes improved. Nationally, the growth in the number of households continued to outpace population growth as more and more small households formed. Inflation remained low and interest rates declined to their lowest levels since the 1970s. These trends contributed to a housing boom that began in the late 1990s (Productivity Commission, 2003) and, with it, to a worsening of housing affordability for many households (ABS, 2002a). Associated with Australia's housing boom, there was an unprecedented level of investment in private rental housing. Coincident with these trends, housing assistance in Australia continued to shift away from the public housing sector and towards private rental as expenditures on rent based subsidies increased. Rising investment in private rental housing, alongside the continued reliance on the private market to meet the housing needs of lower income households, raise the question of how well the private market meets these needs.

To address this question, the research presented in this report builds upon an earlier study by Wulff and Yates (2001), which examined Australia's private rental supply in 1986 and 1996. It updates and monitors changes in the supply of private rental housing by examining the data from the 2001 Australian Census and by comparing this with data from the 1996 Census. The earlier study showed that between 1986 and 1996, the Australian private rental market grew by a robust 34 per cent, but this growth generally masked gains in the top end of the market and losses in the bottom. The stock of low rent dwellings fell dramatically. At the same time, the number of low income households renting privately almost doubled. By 1996 these trends led to a national shortage of approximately 50,000 low rent private dwellings, with Sydney accounting for more than half this national figure.

This project provides an update of these earlier results.

The Positioning Paper focused on the research questions below:

- What has happened to the supply of private rental dwellings between 1996 and 2001 in terms of the distribution of dwelling rents?
- Have the incomes of households in the private rental market changed between 1996 and 2001?
- To what extent are there supply shortages for low-income households and has this worsened or improved since 1996?
- To what extent are there differences between capital cities and non-metropolitan regions in each state?

This Final Report focuses on the remaining research questions that follow from the shortage analysis presented in the Positioning Paper. These are as follows:

- To what extent do low-income renters reside in low rent dwellings?
- To what extent do medium to high-income earners utilise existing low rent private rental housing stock (and, hence, to what extent can any mismatch in the availability of, and need for, low rent stock be attributed to the use that is made of that stock)?
- What are the socio-demographic characteristics of low-income households in private rental?

In 2001, Australia's private rental market comprised 19.7 per cent of all households. This study employs the standard Australian Bureau of Statistics definition of private rental, that is, occupied private dwellings in which the household pays rent to either a

real estate agent or a person not living in the same household. The analysis excludes dwellings that are either (a) only occupied by visitors (not residents) and (b) in which the household type is not classifiable[1].

In both the 1996 and 2001 Censuses, approximately 2 per cent of renter households lacked information on weekly rent. For the household income variable, the comparable figures for missing information (including partial or not stated incomes) ranged between 8 per cent in 1996 to 11 per cent in 2001. The data sets used in this research project impute information for all missing cases. Moreover, the 2001 Census data have been further refined to convert the 2001 household income categories recorded in the 2001 Census into the real equivalents of those recorded in the 1996 Census.

The key results from the Positioning Paper are summarised in this Report, but readers are directed to the earlier report for detailed results. The results reported in the Positioning Paper were based upon two ABS summary tabulations (dwelling rent and household income respectively), specified to compare data from the 1996 and 2001 Censuses. ABS spatially disaggregated these tables to Local Government Areas (except in Brisbane where the spatial unit used was the Statistical Region Sectors). The results were analysed and reported on the basis of 12 rent categories and 12 household income categories. These categories were defined so that the rent data categories corresponded to 30 per cent of the household income categories. Shortage was defined as the difference between a cumulative count of households in each income category and the cumulative count of dwellings in the corresponding rent categories.

The analysis reported in the Positioning Paper documented:

- Growth in the number of private rental dwellings in the top end of the rental market. Despite a 7.6 per cent growth in the number of private rental dwellings between 1996 and 2001, the number of dwellings renting for less than $235 per week (in $2001) declined. In 1996, such dwellings accounted for 86 per cent of the total rental stock. In 2001 they accounted for 78 per cent. In other words, between 1996 and 2001, the growth in the number of private rental dwellings occurred solely in the top quintile of the rent distribution (see Table A.1).
- Overall improvement in the household incomes of private renters. In general, the number of private renter households with incomes in the bottom 70 per cent of household income categories declined, while the numbers in the top 30 per cent of higher categories increased (see Table A.2).
- A supply shortage of 59,000 dwellings in 2001 for households on less than $335 per week (bottom 16 per cent of household incomes), based on the assumption that the low income households (with incomes below $335 per week in 2001) could afford rental dwellings with rents up to and including $100 per week. By comparison, the equivalent shortage in 1996 (when $335 per week accounted for the lowest 19 per cent of household incomes) reached 76,000.[2]
- A supply shortage of 61,000 dwellings for metropolitan based low income households in 2001, down from 65,000 in 1996. Low income households in metropolitan regions accounted for 14 per cent of all metropolitan renter households in 2001 (down from 16 per cent in 1996). Slightly further up the income scale, the shortage of dwellings for households with incomes in the bottom 22 per

[1] ABS defines a 'not classifiable household' as 'households which the collector determined were occupied on Census Night but where the collector could not make contact; households that contained only persons aged under 15 years, or households which could not be classified elsewhere in this classification because there was insufficient information on the census form' (ABS 2001, *2001 Census Dictionary*, Cat. No. 2901.0, Canberra).

[2] These estimates assume a dwelling is affordable if gross rent is no more than 30 per cent of income. Use of this ratio is discussed in the Positioning Paper.

cent (less than $447 per week) increased from 15,000 in 1996 to 43,000 in 2001. In 1996, the equivalent household income ($447 per week) encompassed 26 per cent of metropolitan renter households.

- A surplus of 3,000 low rent dwellings for non-metropolitan low income households in 2001, compared with a shortage of 11,000 in 1996. Low income households in non-metropolitan regions accounted for 21 per cent of all renter households in non-metropolitan regions in 2001 (marginally down from 22 per cent in 1996).
- Shortages of affordable rental dwellings for low income households in all metropolitan regions other than Hobart. In Sydney, there was a shortage of 24,000 dwellings for low income households (with incomes less than $335 per week in 2001), a shortage of 36,000 dwellings for households with incomes less than $447 per week in 2001 and a shortage of 27,000 dwellings for low to moderate income households (with incomes less than $558 per week). In both Melbourne and Brisbane, shortages existed for households with incomes below $447 per week in 2001. This extension of shortages to low to moderate income households represents a worsening of the 1996 situation when shortages for households with incomes at or above $335 per week were found only in Sydney

The results presented in this Final Report are based upon the expanded ABS 2001 Special Request Matrix. This data file matches the 1996 ABS Special Request Matrix reported in Wulff and Yates (2001) and provides cross-referenced data on a number of categorical variables describing household socio-economic, demographic, and dwelling characteristics. Because of the large number of variables and categories included, the rent variable used in this Final Report is limited to four categories and the household income variable is limited to five categories. While the categories employed are equivalent to the 1996 Census analysis reported in Wulff and Yates (2001), there are fewer rent and household income variables used in this Final Report than reported in the Positioning Paper. Differences are explained in the text.

The analysis contained in the Final Report documents the following:

- An increase in proportion of low rent dwellings occupied by other than low income households. By 2001, 61 per cent of low rent dwellings were occupied by households with incomes in the top four income categories. This represents an increase from 58 per cent in 1996. This increase may be partly explained by the improved income circumstances of those in the private rental market and, in particular, by the reduction in the number of low income households.
- A shortfall of 134,000 dwellings affordable and available for low income households (with incomes less than $335 per week). This figure is based on the on the fact that only 78,000 of the 212,000 low rent dwellings were occupied by low rent households. This represents a marginal improvement over the equivalent 1996 estimate of a 150,000 shortage
- A shortfall of 138,000 dwellings affordable and available to the combined lowest two income groups (private renter households with incomes less than $558 per week). There are 666,000 dwellings deemed affordable in this analysis for the lowest two income groups (482,000 households in total). Because moderate to high income households rent dwellings in the lowest two rent segments, however, the apparent surplus of 184,000 dwellings is converted into the 138,000 shortfall. In 1996, once availability was taken into account, the shortage of dwellings affordable for low and low to moderate income renters was the same as that for low income renters: it remained at 150,000. By 2001, however, the 138,000 shortage of dwellings affordable for low and low to moderate income household is worse than the shortage for low income households despite the considerable reduction in the number of low and low to moderate income households in 2001.

- Only about 40 per cent of households living in low rent stock actually have a low income; a proportion that is fairly similar in metropolitan and non-metropolitan regions. In metropolitan regions, 60 per cent of higher income households pay low rents; the comparable figure for non-metropolitan regions is 62 per cent. The analysis in the Final Report reveals a highly consistent pattern in which higher income households paying low rents tended to be aged less than 35 years, a couple headed household, and very likely to have two adults in the paid workforce. Given that this pattern held true for both metropolitan and non-metropolitan regions, it appears that an element of estate agent/landlord gate-keeping may play a role in this outcome. The Final Report suggests that in the risk minimisation behaviour adopted by most investors, landlords and agents are more likely to choose an employed tenant over one who is outside the paid workforce.
- The key distinguishing characteristics of the 60 per cent of low income private renters paying rents above the lowest rent segment were household composition and age. Low income young couple families were disproportionately more likely to be paying higher rents than other household types. A similar pattern was documented in both metropolitan and non-metropolitan regions. In a climate of increasing part time and casualised work, becoming a low income household may be thrust rather suddenly upon a household. If the household contains a family with children, it may not be possible to down-size rental dwellings instantly. Therefore, it is not surprising to find a minority of low income households paying disproportionately high rents. The increasing unexpectedness of family transitions, particularly divorce or separation, contributes the same outcome.
- In the capital cities, the low rent segment of the rental market continued to disappear in Sydney and steadily decline in Melbourne. In Brisbane, Adelaide, Perth and Canberra, the relative share of stock in the segment remained steady. Hobart recorded an increase in the share of the stock designated low rent, from 22 per cent of the stock in 1996 to 31 per cent in 2001.
- Utilisation of the low rent stock by low income households worsened in Sydney and Melbourne (the cities in which low rent stock was declining), held steady in all other cities except Hobart where it increased.

The Final Report indicates a range of policy initiatives that might be considered as a response to the outcomes reported. These range from direct intervention in supplementing or replacing the private rental market in order to ensure an adequate supply of low rent dwellings, to measures that provide a more targeted allocation of the existing low rent stock.

1 PRIVATE RENTAL SUPPLY IN AUSTRALIA

1.1 Introduction

Over the past few decades, Australians in general, and lower income households in particular, increasingly have relied upon the private rental market to meet their housing needs. For a number of reasons, many of these households have faced significant affordability problems in the private rental market. This research project focuses primarily on the extent to which the availability of low rent dwellings in the private rental market has contributed to these problems. The results of this research project provide an update to 2001 of an earlier study undertaken for the period 1986 to 1996 (Wulff and Yates 2001).

The Positioning Paper focused specifically on the overall supply of low rent dwellings and documented the changes in Australia between 1996 and 2001 in the distribution of rents and household incomes of households in the private rental market. The findings from this earlier paper are summarised in section 1.3 below.

This Final Report presents findings on a number of research questions that follow from the analysis presented in the Positioning Paper. These are as follows:

- To what extent do low-income renters reside in low rent dwellings?
- To what extent do medium to high-income earners utilise existing low rent private rental housing stock (and, hence, to what extent can any mismatch in the availability of, and need for, low rent stock be attributed to the use that is made of that stock)?
- What are the socio-demographic characteristics of low-income households in private rental?

The Positioning Paper reported on a number of studies showing evidence of the significant affordability problems faced by lower income households in Australia.[3] Collectively these studies suggest that one of the biggest problems low-income households face is finding appropriately located affordable rental housing. What they do not show is the extent to which this problem arises because there is an inadequate supply of affordable rental housing and to what extent it arises because the affordable housing that does exist is not available to, or appropriate for, lower income households.

Determining the extent to which housing costs contribute to affordability problems for households is a relatively straightforward exercise. It is also a relatively straightforward exercise to determine the extent to which the housing assistance provided reduces affordability problems for low-income households. What is more complex, however, is explaining why particular households are faced with an affordability problem.[4] An answer to this question requires, inter alia, an answer to the question of whether affordability problems arise from inadequate household income or excessive housing consumption (in other words, a demand related problem) or whether they arise because of a lack of affordable housing (in other words, a supply related problem). It

[3] These studies show considerable spatial variation in affordability problems. Disaggregated estimates for Sydney alone can be found in MTF (1998), Hall (1998) and Randolph and Holloway (2003, 2002) and Yates and Reynolds (2003). Alternative approaches that document similar outcomes for Queensland can be found in Seelig (1999) and Waite and McLaughlin (2003).

[4] Throughout this paper, "affordable housing" is defined as that which costs no more than 30 percent of household income and households are assumed to have an affordability problem if their housing costs exceed this ratio. Whilst this simple ratio definition of affordability is inherently subjective, and there are likely to be weaknesses with any measure employed, this 30 per cent benchmark is employed because of its simplicity and its widespread use. The key points raised in this paper, which focus on changes over time and space, are unlikely to be affected by the specific definition employed. For lower income households, rent payments that exceed 30 per cent of income are likely to leave insufficient funds for essential non-housing expenditures.

requires an answer to the question of the extent to which housing affordability problems are a matter of choice or of necessity. Much of the by now considerable literature on affordability (for example, Whitehead, 1991; Hancock, 1993; Hulchanski, 1995 and, more recently, Thalmann, 2003 and Quigley and Raphael, 2004) focuses on the question of whether households have an affordability problem because they choose to consume housing above a minimum acceptable standard. The question that underpins the analysis in this paper is whether they do so because there is no other housing available.

Whilst the question of whether affordability problems are primarily a demand side or supply side problem cannot be answered definitively from an analysis of the supply side of the private rental market, the possibility that poor affordability outcomes arise from necessity rather than choice is increased when the supply of affordable housing is inadequate. An inadequate supply of affordable housing will contribute to affordability problems when the lower rent end of the market fails to keep pace with the number of low income households. It will contribute to affordability problems when those rental dwellings that are affordable are not available for lower income households because they are occupied by higher income households who can afford to pay more for their rental housing without exceeding the defined affordability benchmark.

By focusing specifically on the supply side of the rental market and examining both the characteristics of the rental stock and the characteristics of those who occupy it, the data in the Positioning Paper and in this Final Report provide information needed to provide insights into the source of affordability problems.

1.2 Background

Evidence of an inadequate and declining supply of low rent dwellings in countries other than Australia was provided in the Positioning Paper. Malpezzi and Green (1996) and Nelson (1994), for example, demonstrated serious supply shortages in low rent units in the United States in the mid 1980s and early 1990s.

More recent reports of shortage in the U.S. can be found in both academic and government reports (eg Joint Centre for Housing Studies 2001, 2003; US Dept of HUD 2000). The most recent annual State of the Nation report, for example, claimed that 'the already scarce supply of smaller, less costly housing is shrinking' (JCHS, 2003, p4). This is attributed to 'regulatory and natural constraints on land in and around many of the nation's metropolitan areas.' The State of the Nation report goes on to suggest that, in addition to the demands from households for whom renting is the only housing option because they cannot afford home purchase, pressures on the rental market also arise from higher income households who prefer to rent. This may be so because it offers increased flexibility (for example for households in transition), because it provides better access to employment and leisure opportunities (for example for households otherwise facing long commuting times) or because it is more convenient (for example, for households not willing or able to cope with the responsibilities of ownership)(adapted from JCHS, 2003, p23).

In other words, shortages of low rent housing can arise because of pressures from those for whom housing affordability may not be a critical issue. Regardless of the reasons behind the inadequate supply of low rent dwellings, the State of the Nation report suggests that 'the shortage of affordable housing directly affects the quality of life for the millions who eke out their housing payments every month, sacrifice the purchase of other essentials, commute long distances to work and/or suffer overcrowded or unsafe conditions' (JCHS, 2003, p25).

Andrews (1998) suggests the diminished supply of affordable rental housing in the US has been driven largely by increasing real costs of rental dwellings and the declining real incomes of renters. She argues:

> The housing supply problem is fundamentally a mismatch of housing costs and incomes, location and housing size. Low cost housing is in short supply in areas where low income families reside and where jobs matching their skills are located. Indeed, the mismatch between the location of new jobs and low income families is one of the most important realities of the last several decades. Exacerbating this problem is the retrenchment of federal support for housing programs, resulting in a stagnation of the supply of assisted housing (Andrews 1998, p2).

Similar outcomes and concerns have been expressed in relation to the supply of low rent dwellings in Canada. The interim report of the Ontario Ministry of Municipal Affairs and Housing's (MAH) working group on housing supply claimed:

> Canada's urban regions are experiencing a severe shortage of affordable rental housing with construction at a near standstill. This shortfall, combined with significant population increases, has brought vacancy rates to all-time lows in many cities and pushed rental costs beyond the reach of many Canadians (MAH, 2001).

Along with earlier evidence of a declining low rent stock in Australia, these concerns, expressed in countries with broadly similar housing systems and policies as those that operate in Australia, suggest that the findings presented in the Positioning Paper are not unique to Australia.

1.3 Overview of Positioning Paper results

The Positioning Paper for this project provided an initial set of findings designed to address the first set of research questions. These related specifically to the supply of private rental dwellings:

- To what extent were there shortages of low rent dwellings for low-income renters in 2001?
- How has this changed since 1996?
- How is the existing low rent stock spatially distributed throughout Australia?
- To what extent are there differences between capital cities and non-metropolitan regions in each state?

The Positioning Paper documented the changes in Australia between 1996 and 2001 in the distribution of the rents and household incomes of private renters. This information on rents and household income provided the basis for estimates both of the extent of shortages in the low rent stock for low income renters in each year and of how this had changed between the two census years. The data source for the Positioning Paper comprised simple matched tables on dwelling rent and household income requested from the ABS to supplement the more complex data on which the analysis in this Final Report is based. Because these were single variable tables, it was possible to request income and rent variables at a finer level of detail and at a more highly disaggregated spatial level than is available for the data used in this Final Report. This ensured that the results presented in the Positioning Paper were more precise in determining the extent of shortage at various rent levels than is the case in this Final Report.[5] The focus in the Final Report, however, is not on the absolute levels of shortage but on how these estimates are affected by the use made of the low rent stock.

[5] Clustering of data at critical rent values in $10 multiples means that, over time, comparisons based on maintaining constant real rent categories can be distorted for a specific rent category according to whether data spikes fall just in or just out of the chosen category. This effect is ameliorated by focusing on the cumulative rent distribution.

The analysis reported in the Positioning Paper documented:

- Growth in the number of private rental dwellings in the top end of the rental market. Despite a 7.6 per cent growth in the number of private rental dwellings between 1996 and 2001, the number of dwellings renting for less than $235 per week (in $2001) declined. In 1996, such dwellings accounted for 86 per cent of the total rental stock. In 2001 they accounted for 78 per cent. In other words, between 1996 and 2001, the growth in the number of private rental dwellings occurred solely in the top quintile of the rent distribution (see Table A.1).
- Overall improvement in the household incomes of private renters. In general, the number of private renter households with incomes in the bottom 70 per cent of household income categories declined, while the numbers in the top 30 per cent of higher categories increased (see Table A.2).
- A supply shortage of 59,000 dwellings in 2001 for households on less than $335 per week (bottom 16 per cent of household incomes), based on the assumption that these low income households (with incomes below $335 per week in 2001) could afford rental dwellings with rents up to and including $100 per week. By comparison, the equivalent shortage in 1996 (when $335 per week accounted for the lowest 19 per cent of household incomes) reached 76,000.[6]
- A supply shortage of 61,000 dwellings for metropolitan based low income households in 2001, down from 65,000 in 1996. Low income households in metropolitan regions accounted for 14 per cent of all metropolitan renter households in 2001 (down from 16 per cent in 1996). Slightly further up the income scale, the shortage of dwellings for households with incomes in the bottom 22 per cent (less than $447 per week) increased from 15,000 in 1996 to 43,000 in 2001. In 1996, the equivalent household income cut-off ($447 per week) encompassed 26 per cent of metropolitan renter households.
- A surplus of 3,000 low rent dwellings for non-metropolitan low income households in 2001, compared with a shortage of 11,000 in 1996. Low income households in non-metropolitan regions accounted for 21 per cent of all renter households in non-metropolitan regions in 2001 (marginally down from 22 per cent in 1996).
- Shortages of affordable rental dwellings for low income households in all metropolitan regions other than Hobart. In Sydney, there was a shortage of 24,000 dwellings for low income households (with incomes less than $335 per week in 2001), a shortage of 36,000 dwellings for households with incomes less than $447 per week in 2001 and a shortage of 27,000 dwellings for low to moderate income households (with incomes less than $558 per week). In both Melbourne and Brisbane, shortages existed for households with incomes below $447 per week in 2001. This extension of shortages to low to moderate income households represents a worsening of the 1996 situation when shortages for households with incomes at or above $335 per week were found only in Sydney

Tables detailing key results from the Positioning Paper are reproduced in Appendix A.

Shortages and/or surpluses were measured in the Positioning Paper by directly comparing the number of households within each income category against the number of rental dwellings in the aligned rent category (which represented 30 per cent of household income). Apart from the detailed spatial analysis of shortage presented in the Positioning Paper, the supplementary tables did not allow for additional factors that influence estimates of shortage or surplus. An analysis of the household incomes of private renters residing in different segments of the rental stock; and the socio-demographic characteristics of private renters is the focus of this Final Report.

[6] These estimates assume a dwelling is affordable if gross rent is no more than 30 per cent of income. Use of this ratio is discussed in the Positioning Paper.

1.4 Factors affecting the private rental market

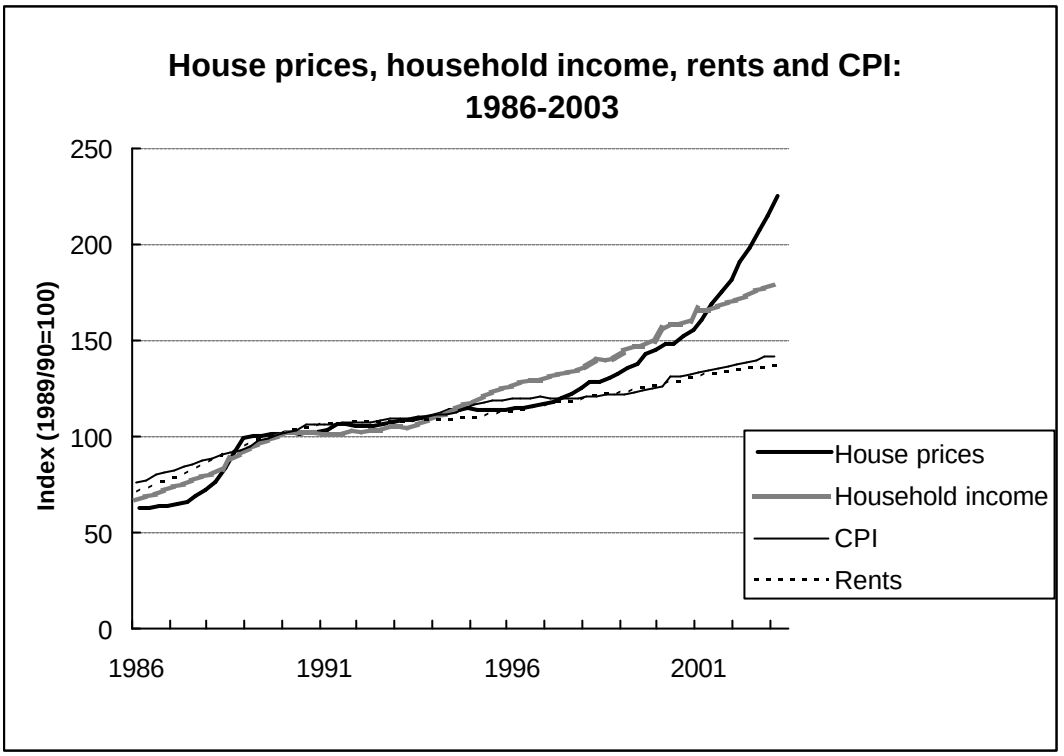
Before the results of the more detailed analysis of 2001 Census data are presented, the following places in context the changes that have already been identified in the Positioning Paper. The most salient of these are the continuing decline of the low rent stock and the apparent reduction in the shortage of affordable housing in the period from 1996 to 2001.

Both changes in the supply of and demand for rental housing respond to changes in the housing market as a whole and reflect broader structural social and economic changes. The period from 1996 to 2001 saw significant temporary and structural changes in the housing market. Household incomes improved. Nationally, the growth in the number of households continued to outpace population growth as more and more small households formed. Inflation remained low and interest rates declined to their lowest levels since the 1970s. These trends contributed to a housing boom that began in the late 1990s (Productivity Commission, 2003) and, with it, a worsening of housing affordability for many households (ABS, 2002a). Median house prices have increased at an average annual rate of 12 per cent since 1996 with apartment prices showing a similar increase (RBA, 2003).[7] Real household income has increased by 1 per cent per annum since the early 1990s with nominal household income increasing by 4.5 per cent per annum over the same period. Indicative trends are illustrated in Figure 1-1below.

Increases in house prices over much of the period have been attributed to a number of factors. The REIA points to historically low interest rates, historically high consumer and business confidence, relatively poor performance of alternatives for investment, "herd mentality" of property buyers in a buoyant market, and changing demographics (REIA, 2003). The RBA adds increased purchasing power arising from changed financial conditions (historically low interest rates and financial innovations) that have led to increasing household borrowing capacity. In particular, financial innovations have facilitated borrowing for investment purposes and investment in rental housing has been encouraged by taxation arrangements that encourage negative gearing amongst investors facing high marginal tax rates and which, through the interaction of depreciation allowances and capital gains taxes, encourage investment in new rental dwellings (RBA, 2003). The Productivity Commission concludes that it is growth in real household income that has been the key driver of house price inflation (PC, 2003). These latter explanations are supported by results from a recent empirical study of determinants of house prices. Sutton (2002), on the basis of an econometric study of house prices in 6 advanced economies, suggests that for Australia, prices have been driven primarily by increases in national income and decreases in real interest rates.

[7] In their submission to the Productivity Commission Inquiry into First Home Ownership (2003), from which the above figures were taken, the RBA adds a caution that 'it is likely that the broad aggregates for apartment prices overstate the average rate of increase since, over time, they are affected by a significant shift in apartment turnover towards inner-city areas where prices are relatively high'.

Figure 1-1: Trends in rents, house prices and CPI: 1986-2003



Source: ABS AUSSTATS 640107d, 641601, 5206036

Despite the steady growth in household incomes shown in Figure 1-1: Trends in rents, house prices and CPI: 1986-2003, the rate of growth of house prices has been considerably in excess of growth in household income with the result that the ratio of house prices to incomes has increased rapidly from a value of between 3 and 4 in the mid 1980s and mid 1990s to a high of 6 to 7 by 2003 (RBA, 2003, chart 8).

This rising house price to income ratio has contributed to declining affordability for households who have not yet entered home ownership. Over the past few decades, in fact, there has been a general trend towards declining home ownership amongst younger households which has been linked to declining affordability (Yates, 2002) and to deferral of home ownership associated with social changes such as deferral in family formation, longer periods spent in higher education, changing composition of households and the attractiveness of alternative forms of investment (Rodrigues, 2003). Deferral of home purchase from potential first homebuyers, for whatever reason, imposes additional constraints on the private rental market.

In principle, any additional pressure on the private rental market can be absorbed if there is a matching increase in investment. Whilst much of Australia's recent housing boom has been driven by repeat buyers who are upgrading the quality or location of their owner-occupied dwellings, more importantly for this project, it has also been driven investors in private rental housing (Bond, 2003). There has been a trebling of the share of investor loans to total loans outstanding from around 15 per cent in 1990 to over 30 per cent a decade later and more than a quadrupling of loans to investors as a share of new housing loans approved (RBA, 2003, chart 14).[8]

These stylised facts reinforce the perception that, in the past decade or so, there has been an unprecedented level of investment in private rental housing. There is also

[8] This increase in investment activity has resulted in a 50 per cent increase in the proportion of households with an investment property (from around 8 per cent in the early 1990s to around 12 per cent in 2001). Increases in ownership rates have been highest for households in the highest income deciles (RBA, 2003, chart 16).

increasing evidence of an over-supply in inner city apartments in Sydney and Melbourne (RBA, 2003). In other words, much of this housing investment has been at the top end of the market.

This is not a phenomenon that is unique to Australia. The report of the Ontario Working Group on Housing Supply referred to above argues:

> The economics of the rental market are such that regardless of the business climate, developers will tend to build at the high end of the market, where economic viability is greatest. Improvement in business climate conditions will encourage an increase in new rental development but will not increase the relative attractiveness of building low end rental market housing: even in the most favourable business climate, it will generally be more profitable to build for the high end of the market (Ontario MAH, 2001, p12).

Much of the analytical work undertaken by Wood and his colleagues (for example, Wood 2001; Wood and Watson 2001) has shown how the interaction of Commonwealth and State taxes in Australia, in conjunction with current market trends, serve to encourage investment at the top end of the market, thus fuelling house price inflation that adds to pressures elsewhere in the housing system.

Despite rapid increases in dwelling prices, average rents have increased only in line with inflation since the mid 1990s (as seen in Figure 1-1). The combined effect of these dwelling price and rent trends has been that gross rental yields are well below historical and international norms having declined from in excess of 8 per cent in the mid 1980s to around 5 percent in the mid 1990s to a current low of around 3-3.5 per cent (RBA, 2003, chart 18).

Wood (2001) and Wood and Watson (2001) suggest that the tax incentives for landlords identified above work to disadvantage the lower income households who are the typical landlords of low rent dwellings and serve to raise their after-tax costs in comparison to the landlords of high rent housing. As a result, they earn insufficient returns on their rental investments and so are likely to exit the market. Inadequate returns are likely to be exacerbated by higher maintenance costs on the older properties that disproportionately represent low rent dwellings as a result of downward filtering.

The results reported in Wulff and Yates (2001) and in the Positioning Paper for this project provide a solid evidence base for the claims of this analytical work that predicts declines in the low rent stock. Wulff and Yates showed that, between 1986 and 1996, whilst the total supply of private rental housing increased more rapidly than the number of households in Australia, there was an absolute loss of low rent stock, with a small increase in the low to moderate rent stock and large absolute and proportional increases in the moderate to high and high rent stock. They concluded, 'it would thus appear that the investment boom in the private rental sector has been concentrated at the upper end of the market' (Wulff and Yates, 2001, p12). The update of these results from census data for 1996 and 2001 reported in the Positioning Paper showed that, between 1996 and 2001 this pattern of change in the private rental market was maintained. Despite an overall growth in the total number of private rental dwellings, there were absolute losses in the number of dwellings in the bottom four quintiles of the rent distribution, not just in the low rent stock. As indicated in section 1.2, all of the increase in private rental dwellings between 1996 and 2001 occurred in the top end of the rental market.

The existence of incentives that encourage investment at the top end of the private rental market need not be problematic if new high rent stock ultimately filters down to form part of the affordable end of the private rental market. In principle, 'investment at the high end increases affordability, because it adds to the overall stock, putting downward pressure on rents and freeing up more affordable units as higher income

tenants move into the new supply.' In practice, however, if there is an overall shortage of affordable units, 'competition for existing affordable rental units will intensify, giving tenants at the lowest end of the income spectrum little or no choice' (Ontario MAH, 2001, p4).

The analysis of census data from 1986, 1996 and 2001 has already shown that downward filtering has not resulted in an adequate supply of low rent units in the private rental market in Australia. The results presented in the Positioning Paper suggest that some of the pressure on the low end of the private rental market in Australia has arisen from the improved income circumstances of private renter households. A second potential source of pressure arises if the low rent stock that is available is of sufficient quality that higher income households compete with low income households for that stock which remains. If this is so, the process of filtering that relies on higher income households vacating existing stock as new, higher quality stock becomes available, also fails.

This particular question is addressed in the remainder of this report.

1.5 Data description

The results presented in the Positioning Paper used two simple matched tables with frequencies of rents and income from each of the 1996 and 2001 Censuses. By way of contrast, the results presented in this Final Report rely on a more complex matrix tabulation. This allows for a more detailed analysis of the 2001 Census data than was presented in the Positioning Paper and underpins the further examination of the extent to which the private rental market has met the changing needs of low-income households undertaken in this Final Report. The Special Request Matrix from the 2001 Census matches the 1996 Special Request Matrix reported in Wulff and Yates (2001) and provides cross-referenced data on nine categorical census variables describing household socio-economic, demographic, and dwelling characteristics. It includes information for each private occupied dwelling on age of reference person, household income, dwelling rent, tenure, household type, dwelling structure, number of bedrooms, number of employed adults and geographic region. Because of the large number of variables and categories included, the rent variable used in this report is limited to four categories and the household income variable is limited to five categories. The categories employed are equivalent to the 1996 Census analysis reported in Wulff and Yates, but are considerably reduced from the rent and household income categories reported in the Positioning Paper. All rent and income data for 2001 have been CPI adjusted to their 1996 equivalent (using CPI data for June 2001 and June 1996 or, specifically, a scale factor of 133.8/119.8=1.12).

A number of further adjustments to the 2001 Census data were needed in order to generate results that were comparable to those generated for 1996 in the earlier study. Missing and/or partially stated values were imputed and 2001 income data have been re-categorised so that the categories in 2001 are the same as those in 1996. These adjustments were described at length in the Positioning Paper and, because the procedures employed were both innovative and critical to the results obtained, a summary of them has been provided in Appendix B to this Final Report. Appendix B also provides a table which relates the rent and income categories of the supplementary tables that underpinned the results in the Positioning Paper to those that underpin results in this Final Report.

1.6 Report outline

The Positioning Paper addressed a number of the research questions that were set for this project. These focused particularly on supply characteristics. This Final Report addresses the remaining research questions. These remaining questions, outlined at the start of Section 1.1, are associated more with demand characteristics.

Chapter 2 provides equivalent data to the Positioning Paper data summarised in Appendix A but relies on the more complex matrix tabulation to allow for cross referencing of the characteristics of private rental dwellings and their occupants. It further examines the extent to which the private rental market has met the changing needs of low-income households. The results of this analysis are more aggregated than those presented in the Positioning Paper but provide an update of the seminal results first presented in Yates and Wulff (2000). Chapter 2 includes an assessment of the impact of stock utilization and adequacy on these estimates and concludes with an examination of the extent to which there are spatial variations in these results.

Chapter 3 examines the characteristics of low income private renter households and Chapter 4 looks closely at the households characteristics of different income groups residing in low rent dwellings. In Chapter 5, the 60 per cent of low income households who miss out on paying low rents provide the focus for the analysis. Chapter 6 summarises the report and draws out some of the implications of this study.

2 LOW RENT SUPPLY

In 2001, there were 6.7 million households living in private dwellings in Australia who fell within the scope of this study[9]. The dominance of home ownership is apparent: 40.9 per cent of households owned their dwelling outright; 27.6 per cent were purchasing their dwelling and; 5.3 per cent lived in social housing (Table 2-1). Another 6.5 per cent did not state their tenure or occupied their dwelling rent-free. The private rental market accounted for 19.7 per cent of all occupied private dwellings.

Table 2-1: Occupied private dwellings in Australia by nature of occupancy, 2001

Tenure	*Number*	*%*
Outright owner	2,757,000	40.9
Owner purchaser	1,861,000	27.6
Private renter	1,328,000	19.7
Social renter	358,000	5.3
Tenure not stated	441,000	6.5
All households in scope	6,745,000	100.0

Source: ABS Special Matrix Tabulation, 2001 Census

The focus of this study is on the 1,328,000 dwellings that make up nearly 20 per cent of the housing stock that is in the private rental sector and on the households who occupy this stock.

2.1 Availability: A National Overview

This Chapter is primarily concerned with a more in depth analysis of the shortage results than was possible in the Positioning Paper. These results were summarised in Chapter 1. As indicated in Chapter 1, the analysis in this report relies on a more complex data set which records data on dwelling and household characteristics cross classified by rent and income categories. In order to contain data costs, the rent and income categories are more aggregated than those employed in the single variable tabulations on which the results in the Positioning Paper rely. Table 2-2 to Table 2-4 below provide the equivalent data to that provided in a more disaggregated form in the Positioning Paper. The disaggregated results are summarised in Appendix A.

Table 2-2 indicates the way in which the private rental stock in 1996 and 2001 was distributed across the 4 rent categories employed in this paper and indicates the cumulative total of all dwellings that rent below the rent levels that define the rent categories.[10]

[9] This is the count of households within the scope of this study. Just over 327,000 visitor only or not classifiable households are excluded. The count of households used in this study, therefore, under-reports the dwelling stock by 0.5 per cent. Visitor only and not classifiable households have been excluded because there is no or only limited data available on their socio-economic and demographic characteristics and no basis on which this information can be imputed other than by applying a scale factor to the results reported.

[10] All rent and income values in this report are presented in $2001. The specific categories employed were chosen so that they represent the real equivalent of the same categories employed in 1996. Thus, the low rent category of $1 to $111 or less than $112 per week in 2001 is equivalent to $1 to $99 or less than $100 per week in 1996. Use of $111 per week as the upper boundary for low rent stock in this Final Report is a more generous definition than the $100 per week boundary employed in the Positioning Paper. For direct comparability with the Wulff and Yates study, the low rent category in this Final Report is based on 33 per cent rather than 30 per cent of income (which yields rents below $101 per week in $2001) reported in the Positioning Paper and in Chapter 1. Section B.4 in Appendix B provides a more detailed comparison of the impact of the different rent categories employed in the Final Report and Positioning Paper.

Table 2-2: Private rental dwellings in Australia, 1996 and 2001

Rent ($2001 pw)		Rental stock		%		Cumulative rental stock		Cumulative %	
		1996	2001	1996	2001	1996	2001	1996	2001
Low	$1-111	173,000	201,000	14	15	173,000	201,000	14	15
Low-mod	$112-$166	467,000	465,000	38	35	640,000	666,000	52	50
Mod-high	$167-$222	369,000	341,000	30	26	1,008,000	1,007,000	82	76
High	$223 or more	225,000	321,000	18	24	1,234,000	1,328,000	100	100
Total		1,234,000	1,328,000	100	100	1,234,000	1,328,000	100	100

Source: ABS Special Matrix Tabulations, 1996 and 2001 Censuses

In 2001, low rent stock (renting for less than $112 per week in $2001) accounted for just 15 per cent of the total rental stock, a marginal increase on the 1996 figure of 14 per cent.[11] Stock affordable for low and low to moderate income households (renting for less than $167 per week) accounted for 50 per cent of the total stock and stock affordable for moderate to high income households (renting for less than $223 per week) accounted for just over 75 per cent of the total private rental stock.

Table 2-3 provides an indication of the pressures on this stock. It shows the distribution of household income of households in the private rental market in each of 5 income categories (low through to high). In 1996, each of these income categories broadly represented an income quintile. In 1996 there were 18 per cent of private renter households in the low income category and 40 percent in the low and low to moderate income categories. By 2001, however, there were only 16 percent of private renter households in the low income category and only 36 per cent in the low and low to moderate income categories.[12]

Table 2-3: Distribution of income of households in private rental in Australia, 2001

Household income ($2001 pw)		Number of households		%		Cumulative number of households		Cumulative %	
		1996	2001	1996	1996	1996	2001	1996	2001
Low	$0-$334	221,000	212,000	18	16	221,000	212,000	18	16
Low-mod	$335-$557	278,000	270,000	23	20	499,000	482,000	40	36
Moderate	$558-$892	333,000	313,000	27	24	832,000	795,000	67	60
Mod-high	$893-$1339	236,000	286,000	19	22	1,068,000	1,080,000	87	81
High	$1340+	166,000	248,000	13	19	1,234,000	1,328,000	100	100
Total		1,234,000	1,328,000	100	100	1,234,000	1,328,000	100	100

Source: ABS Special Matrix Tabulations, 1996 and 2001 Censuses

[11] See footnote 5 for a partial explanation of why the low rent share in 2001 is higher than in 1996. Note that the rent categories reported here do not map exactly into those employed in the Positioning Paper.

[12] These categories can be mapped directly onto those employed in the Positioning Paper.

Table 2-4 provides the estimates of shortage and surplus that apply to the rent and income categories employed in the remainder of this report. For this study, housing has been defined as affordable for all households if no more than 30 per cent of household income is required for rent.[13] The second column in Table 2-4 provides an estimate of the stock that is affordable for households with incomes in the 5 categories indicated. These estimates are based on just 4 rent categories that are consequently broader than those reported in the Positioning Paper.

The results in Table 2-4 show an estimated shortfall of 11,000 dwellings with rents below $112 per week presumed affordable for low income households with incomes below $335 per week. This is lower than the estimates presented in the Positioning Paper for reasons explained in footnote 10 but it is the base figure from which the revised estimates in this Chapter that take into account occupancy are based.

This estimate of shortage of 11,000 in 2001 is derived from data that is consistent with that employed in the Wulff and Yates study and can be compared directly with their estimated shortage of 50,000 dwellings for 1996. As with the data reported in the Positioning Paper, the results indicate a still significant shortage in private rental dwellings affordable for the 16 per cent of households in the lowest income category considered but they also show there has been a considerable reduction in this shortage for 2001 compared with 1996. This marks a turnaround from the change between 1986 and 1996 where there was a considerable worsening in the availability of stock affordable for low income households. As suggested in the Positioning Paper and repeated in Chapter 1, this outcome can be attributed to a significant improvement in the incomes of households in the private rental market.

Table 2-4 also shows that there were 666,000 dwellings affordable for the 482,000 households on low and low to moderate incomes leading to an apparent surplus of 184,000 dwellings.

These 'first-cut' estimates of shortage or surplus will be commented on in the following section.

Table 2-4: Affordable private rental stock, Australia: 2001

	Household income ($2001 pw)	Number of households	Affordable rental stock	Shortage/ surplus
Low	<$335	212,000	201,000	-11,000
Low-mod	<$558	482,000	666,000	184,000
Moderate	<$893	795,000	1,328,000	533,000
Mod-high	<$1,340	1,080,000	1,328,000	248,000
High		1,328,000	1,328,000	0

Source: ABS Special Matrix Tabulation, 2001 Census

[13] A detailed rationale for this choice was provided in the Positioning Paper. Briefly, the choice was based on the simplicity and widespread use both in Australia and elsewhere of a simple rent to income ratio. It was also influenced by the desire to employ a consistent measure with that employed in the Wulff and Yates (2001) study. There are weaknesses with use of this simple ratio because is does not take household structure or income into account. However, these weaknesses ensure that the data presented in this project provide conservative estimates of shortage of affordable dwellings. Estimates of shortage are based on the unlikely assumption that a dwelling that is affordable for a single person on a given income is also affordable for a multiple person household on the same income. They are also based on the assumption that the affordable dwellings that exist are appropriate and available. This latter assumption will be tested in this chapter.

2.2 Utilisation of stock

In 1996, the shortage of affordable housing for low income households was exacerbated by the fact that much of the low rent stock that did exist was occupied by households who could afford to pay more in rent without exceeding a 30 per cent affordability benchmark. Once this 'misallocation' of stock was taken into account, the estimated shortage of low rent stock in 1996 increased from 50,000 to 150,000 and an apparent surplus of low and low to moderate rent stock of almost 150,000 was converted into an estimated shortage of 150,000 dwellings affordable for households on low and low to moderate incomes (with incomes below $558 per week in $2001).

The results presented in Table 2-5 provide the basis for an assessment of whether the outcomes for 2001 continue to show an improvement over those previously identified for 1996 or whether they follow the same pattern as in 1996. The numbers in bold type represent households with incomes sufficient to enable them to pay a higher rent without paying more than 30 per cent of their income.

Table 2-5: Distribution of household income by rent paid, Australia: 2001

Household income ($2001 pw)	Rent pw ($2001)				
	$1-111	$112-$166	$167-$222	$223+	Total
$0-$334	78,000	84,000	30,000	20,000	212,000
$335-$557	**53,000**	129,000	60,000	28,000	270,000
$558-$892	**41,000**	**129,000**	91,000	51,000	313,000
$893-$1339	**21,000**	**85,000**	**94,000**	86,000	286,000
$1340+	**9,000**	**38,000**	**66,000**	135,000	248,000
Total	201,000	465,000	341,000	321,000	1,328,000

Source: ABS Special Matrix Tabulation, 2001 Census

The results show that, although there were some 201,000 low rent dwellings in 2001 which were deemed affordable for 212,000 low income households, only 78,000 of these dwellings were occupied by low income households. The remaining 123,000 were occupied by households for whom higher rent properties were still affordable. There is, therefore a shortfall of 134,000 dwellings affordable and available for low income households.[14] In other words, 'misallocation' of the existing low rent means that the first cut estimate of a shortage of 11,000 has increased by a factor of 12 to a shortage of 134,000 which, whilst it represents a marginal improvement over the equivalent 1996 estimate of a 150,000 shortage, is of the same order of magnitude despite the considerable improvement in the incomes of low income renter households.

On the same basis, there are some 666,000 dwellings with rents less than $167 per week that are deemed affordable for the 482,000 low and low to moderate income households with incomes less than $558 per week (in $2001). This yielded the estimated surplus of 184,000 dwellings shown in Table 2-4. However, 321,000 of these dwellings are occupied by moderate to high income households with incomes in excess of $557 per week. This means only 344,000 are available for low and low to moderate income households. In other words, in 2001 there is a significant shortfall of 138,000 dwellings that are both affordable and available for low and low to moderate income households.[15]

In 1996, once availability was taken into account, the shortage of dwellings affordable for low and low to moderate income renters was the same as that for low income

[14] This total can be obtained by subtracting from the estimated surplus or shortage all dwellings that are occupied by households who could afford to pay higher rents.

[15] The data reported in the text are based on raw data before rounding and so differ marginally from the results obtained by using the data in the Table. These differences are solely attributed to rounding effects.

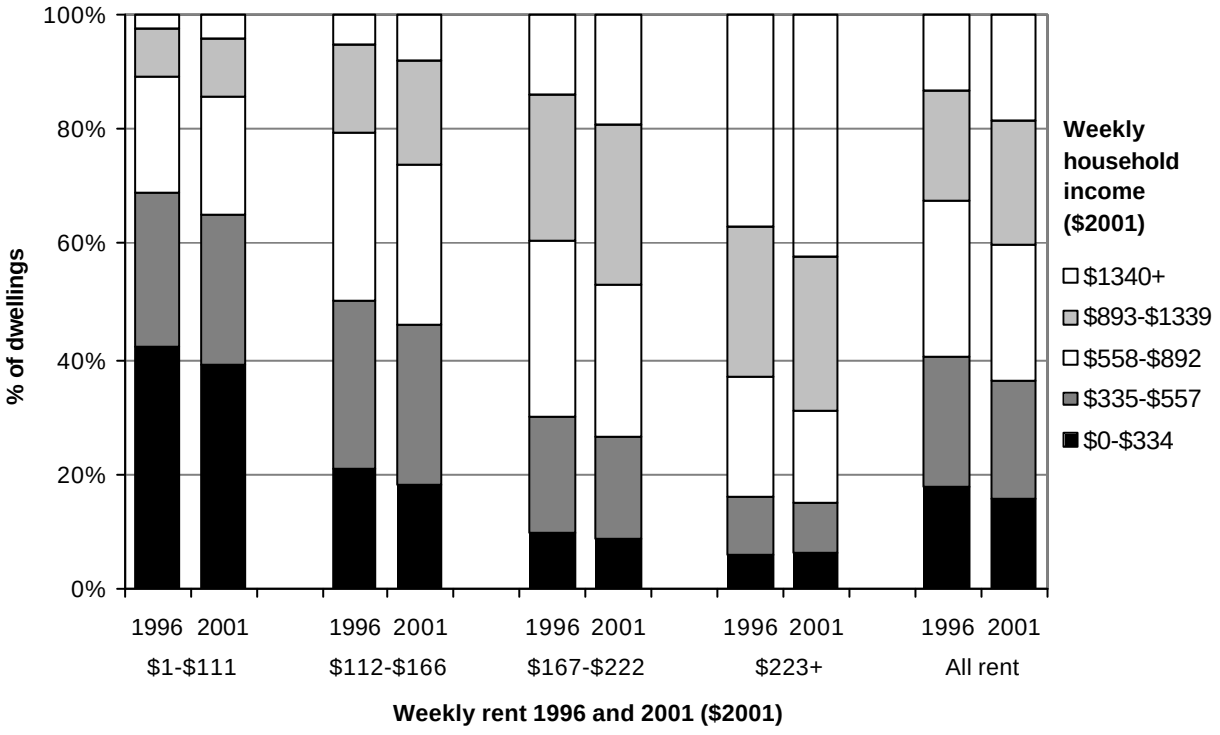
renters: it remained at 150,000. By 2001, however, the 138,000 shortage of dwellings affordable for low and low to moderate income household is worse than the shortage for low income households despite the considerable reduction in the number of low and low to moderate income households in 2001.

This result can be attributed to a loss of lower rent stock between 1996 and 2001 that extends up to rents of $235 per week, much further up the rent scale in 2001 than the losses observed between 1986 and 1996. In part this may arise from the increased demand pressures placed on the private rental market as a result of the greater capacity of higher income households to meet higher rents.

Figure 2-1 illustrates the extent to which higher income households in both 2001 and 1996 occupied stock that is the only stock affordable for households on lower incomes. In 1996, 58 per cent of the limited supply of low rent dwellings was occupied by households in the top 4 income categories. By 2001, 61 per cent of a reduced supply of low rent dwellings was occupied by households in the top 4 income categories. In part, but only in part, this arises because of the improved income circumstances of renter households. As can be seen from the final bars in each half of Figure 2-1, in 2001 there were proportionately more households with income in the top 4 income categories than there were in 1996.

Figure 2-1 shows that low income households are more likely to occupy low rent rather than high rent stock and, conversely, that high rent stock is disproportionately occupied by high income households but it also illustrates the extent of the 'mismatch' that gives rise to the revised estimates of shortage presented in this sub-section.

Figure 2-1: Distribution of weekly household income by weekly rent paid: 1996 and 2001



Source: ABS Special Matrix Tabulations, 1996 and 2001 Censuses

The shortage outcomes highlighted in this and the previous sub-section provide one explanation of the significant affordability problems faced by lower income households. Lower income households are forced to pay more than 30 percent of their incomes in rent both because continuing declines in the low rent stock mean there is an inadequate supply of affordable rental stock and because much of the limited low rent stock that does exist is not available to them because it is occupied by higher income households.

2.3 Availability: a disaggregated overview

The results presented above show that the first cut estimates of shortage based solely on comparing the number of households with given income characteristics with the supplies of rental dwellings that are affordable for these households results in significant underestimates of shortages of affordable dwellings. The summary results presented in Chapter 1 suggested that problems associated with loss of lower rent stock and the resultant shortages at an Australia wide level were primarily a metropolitan rather than non-metropolitan issue. The results in this section focus on determining the extent to which the results presented in the previous section are affected by spatial disaggregation.

Table 2-6 below provides the information for metropolitan and non-metropolitan regions that is equivalent to that presented in Table 2-4 for Australia as a whole. It confirms the conclusions summarised in Chapter 1, namely the problems of shortage are primarily a metropolitan rather than a non-metropolitan issue. For the aggregate data used in this Final Report, the Australia wide shortage of 11,000 dwellings affordable for low income households (before stock utilisation is taken into account) consists of a shortage of 40,000 dwellings in metropolitan regions being offset by a surplus of 30,000 dwellings in non-metropolitan regions.

Table 2-6: Affordable private rental stock, metropolitan and non-metropolitan regions: 2001

Metropolitan regions

	Household income ($2001 pw)	Number of households (cumulative)	Affordable rental stock (cumulative)	Surplus/shortage (cumulative)
Low	<$335	118,000	78,000	-40,000
Low-moderate	<$558	272,000	337,000	65,000
Moderate	<$893	471,000	873,000	402,000
Moderate-high	<$1340	673,000	873,000	200,000
High		873,000	873,000	0

Non-metropolitan regions

	Household income ($2001 pw)	Number of households (cumulative)	Affordable rental stock (cumulative)	Surplus /shortage/ (cumulative)
Low	<$335	94,000	124,000	30,000
Low-moderate	<$558	211,000	329,000	118,000
Moderate	<$893	324,000	455,000	131,000
Moderate-high	<$1340	407,000	455,000	48,000
High		455,000	455,000	0

Source: ABS Special Matrix Tabulation, 2001 Census

Data on the use of stock in each rental category by low to high income households is presented in Table 2-7 and illustrated in Figure 2-2.

Using equivalent calculations as described in the previous section for the data presented in Table 2-7 yields changes in the estimated shortage of affordable dwellings for low income households in metropolitan regions from 40,000[16] when utilisation is ignored to 86,000 when 'mismatch' is taken into account. For low and low to moderate income households an apparent surplus of 65,000 affordable dwellings shown in Table 2-6 is converted into a shortage of 105,000 dwellings.

In non-metropolitan regions, a surplus of 30,000[17] dwellings affordable for low-income households is converted into a shortage of 48,000 dwellings and a surplus of 118,000 dwellings affordable for low and low to moderate income households is converted into a shortage of 33,000 affordable dwellings.

As with the Australia wide data, the affordable rental stock available to low income households after that occupied by higher income households is taken into account is considerably reduced in both metropolitan and non-metropolitan regions.

Table 2-7: Distribution of household income by rent paid, metropolitan and non-metropolitan regions: 2001

Metropolitan regions

	Rent pw ($2001)				
Household income ($2001 pw)	$1-$111	$112-$166	$167-$222	$223+	Total
$0-$334	32,000	47,000	22,000	17,000	118,000
$335-$557	**19,000**	69,000	43,000	23,000	154,000
$558-$892	**15,000**	**73,000**	66,000	44,000	199,000
$893-$1339	**8,000**	**48,000**	**70,000**	76,000	202,000
$1340+	**4,000**	**22,000**	**51,000**	124,000	200,000
Total	78,000	260,000	252,000	284,000	873,000

Non-metropolitan regions

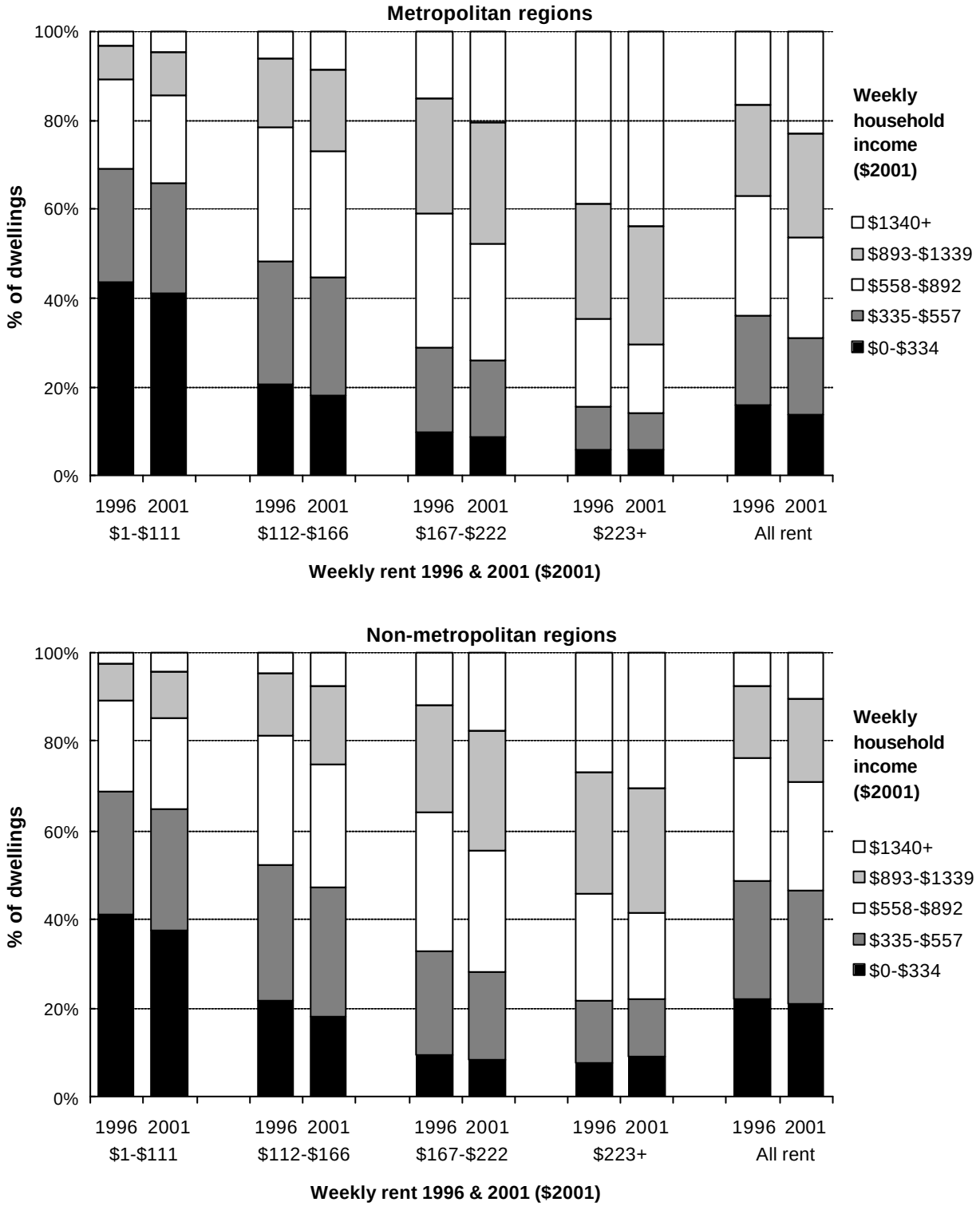
	Rent pw ($2001)				
Household income ($2001 pw)	$1-$111	$112-$166	$167-$222	$223+	Total
$0-$334	47,000	37,000	7,000	3,000	94,000
$335-$557	**34,000**	60,000	18,000	5,000	116,000
$558-$892	**25,000**	**56,000**	24,000	7,000	113,000
$893-$1339	**13,000**	**36,000**	**24,000**	10,000	84,000
$1340+	**5,000**	**16,000**	**15,000**	11,000	47,000
Total	124,000	205,000	89,000	37,000	455,000

Source: ABS Special Matrix Tabulation, 2001 Census

[16] The equivalent first cut estimate of shortage for low income households in metropolitan regions in 1996 was 50,000. In the earlier report, no estimates were made of the effect of stock utilisation on shortages.

[17] The equivalent estimate for low income households in non-metropolitan regions in 1996 was less than 1,000.

Figure 2-2: Distribution of weekly household income by weekly rent paid, metropolitan and non-metropolitan regions: 1996 and 2001



Source: ABS Special Matrix Tabulations, 1996 and 2001 Censuses

3 WHO ARE THE LOW INCOME HOUSEHOLDS IN THE PRIVATE RENTAL MARKET?

As discussed in Chapter 1, between 1996 and 2001, the national household income distribution improved. The number of households with incomes at the lower end of the income distribution declined by 13 per cent, while those with very high incomes increased by over a third. In the private rental sector, the decline in the numbers of low income households was less marked (at 4 per cent) but the increase at the upper end of the income distribution was more pronounced (49 per cent). Indeed, the total number of private renter households increased by nearly 8 per cent in the inter-censal period, yet the number with high household incomes increased by close to 50 per cent.

Table 3-1: Growth in household income 1996-2001, all households and private renter households, total and by selected age group

	Total Households			Private renter households		
Household income ($2001)	**1996**	**2001**	**% change**	**1996**	**2001**	**% change**
$0 - $334	1,299,000	1,126,000	-13.3	221,000	212,000	-3.8
$335 - $557	1,142,000	1,207,000	5.7	278,000	270,000	-3.0
$558 - $892	1,328,000	1,307,000	-1.6	333,000	313,000	-6.1
$893 - $1,339	1,285,000	1,461,000	13.7	236,000	286,000	20.8
$1,340+	1,225,000	1,644,000	34.2	166,000	248,000	49.4
Total	6,280,000	6,745,000	7.4	1,234,000	1,328,000	7.6

	Total Households (Reference person aged 25-64 yrs)			Private renter households (Reference person aged 25-64 yrs)		
Household income ($2001)	**1996**	**2001**	**% change**	**1996**	**2001**	**% change**
$0 - $334	592,000	534,000	-9.8	142,000	140,000	-0.9
$335 - $557	713,000	691,000	-3.2	204,000	201,000	-1.8
$558 - $892	1,074,000	1,003,000	-6.7	258,000	248,000	-3.7
$893 - $1,339	1,126,000	1,272,000	12.9	188,000	237,000	26.3
$1,340+	1,132,000	1,507,000	33.1	139,000	214,000	53.4
Total	4,638,000	5,006,000	7.9	931,000	1,040,000	11.7

Source: ABS Special Matrix Tabulations, 1996 and 2001 Censuses

Table 3-1 controls for any effect that different age distributions between private renter households and total households might have on the outcome by presenting the same information for working age households[18] only. The results suggest that, amongst all working age households, the number in the lowest income category declined by 9.8 per cent, whereas amongst working age households that rented privately the number declined by less than 1 per cent. At the same time, the number of private renter working age households in the highest income category expanded one and a half times more than the rate recorded for all working age households. Specifically, the numbers in private rental grew by 53 per cent compared with a national figure of 33 per cent.

[18] The 'age' of the household is indicated by the household reference person, and working age households was where this person was aged 25-64 years old.

Table 3-2 examines the relationship between the age of reference person in the household and household income. Households in the private rental sector are compared with the total household distribution. Two main points emerge from this table. First, in general, household incomes tend to rise with age, but this relationship is stronger in the Australia-wide figures than it is for households in private rental housing. Second, when private renters are compared with all households, it emerges that household income distributions are generally comparable among the young (below 25 years) and the old (65 years or older), but grow increasingly apart over the age groups 25-34 years and those older. The similar income distributions among young households, and the lack of income differentiation this implies, suggests that housing choices at this life stage are more likely to represent family and household structure rather than income alone. Among the old, it reflects the flattening effect of retirement on the income distributions. But for tenants aged between 25 to 34 years and 45 to 64 years, the household income gap between private renter households and all households in that same age group steadily widens. For example, for the age group 25 to 34 years, 24 per cent of private renters and 28 per cent of all households fall into the highest household income group ($1,340 per week or more), whereas the comparable figures for 45 to 64 year olds are 18 and 32 per cent respectively.

Table 3-2: Weekly household income by age, private renter households and all households, Australia, 2001

		Weekly household income						
Age	**Tenure**	**$0-$334**	**$335-$557**	**$558-$892**	**$893-$1,339**	**$1,340 +**	**Total %**	**Total n**
15-24	Private renter	17.6	21.9	25.4	20.5	14.6	100.0	211,000
yrs	All households	20.0	20.7	24.1	20.6	14.6	100.0	346,000
25-34	Private renter	10.3	18.1	23.9	23.6	24.1	100.0	438,000
yrs	All households	8.6	13.8	22.5	27.5	27.6	100.0	1,179,000
35-44	Private renter	12.8	20.8	24.9	23.7	17.8	100.0	316,000
yrs	All households	8.6	13.2	20.8	28.8	28.7	100.0	1,486,000
45-64	Private renter	19.1	19.5	22.8	20.5	18.1	100.0	286,000
yrs	All households	13.0	14.2	18.3	22.2	32.2	100.0	2,341,000
65 +	Private renter	45.3	30.2	13.7	6.8	4.0	100.0	76,000
yrs	All households	37.5	31.9	15.8	8.5	6.3	100.0	1,393,000
Total	Private renter	16.0	20.3	23.6	21.5	18.7	100.0	1,328,000
(%)	All households	16.7	17.9	19.4	21.7	24.4	100.0	6,745,000
Total	Private renter	212,000	270,000	313,000	286,000	248,000	100.0	1,328,000
(number)	All households	1,126,000	1,207,000	1,307,000	1,461,000	1,644,000	100.0	6,745,000

Source: ABS Special Matrix Tabulation, 2001 Census

Many factors may account for this growing division including the types of households moving into private rental during these ages and those moving out into another tenure. Household moving out of private rental – and usually into home purchase – tend to have higher incomes than those staying on longer term in private rental. At the same time, households entering into private rental during these ages may be those who have experienced drops in income arising from divorce or loss of employment.

The figures presented in Table 3-3 suggest that the household profile of low income private renters altered little between 1996 and 2001. Most low income renters (accounting for the lowest 18 per cent of incomes in 1996 and 16 per cent in 2001) tend to live alone. The proportion of lone person household of all low income private

renter households rose between 1996 and 2001 from 59 to 64 per cent. Single parents are the next most numerous low income household type, accounting for 19 per cent. Couple headed households and group and other households make up the remaining 17 per cent of low income renter households.

Table 3-3: Characteristics of low income private renter households, Australia 1996 and 2001

	1996	2001
Total n	218,000	212,000
Age		
15-24 yrs	20.5	17.5
25-34 yrs	23.9	21.3
35-44 yrs	18.1	19.1
45-64 yrs	21.9	25.7
65 yrs+	15.6	16.3
Total	100.0	100.0
Household type		
Couple only	8.7	5.8
Couple family	7.0	5.4
Single parent households	19.1	18.8
Lone person households	58.6	64.3
Group household	5.3	4.3
Other	1.4	1.4
Total	100.0	100.0
No of employed adults		
Zero	77.8	76.1
One	19.9	22.0
Two+	2.3	1.9
Total	100.0	100.0
Lone person households by age		
Total n	128,000	136,000
15-24 yrs	17.7	15.1
25-34 yrs	18.5	15.9
35-44 yrs	15.0	15.0
45-64 yrs	27.0	31.2
65 yrs+	21.8	22.8
Total	100.0	100.0

Source: ABS Special Matrix Tabulations, 1996 and 2001 Censuses

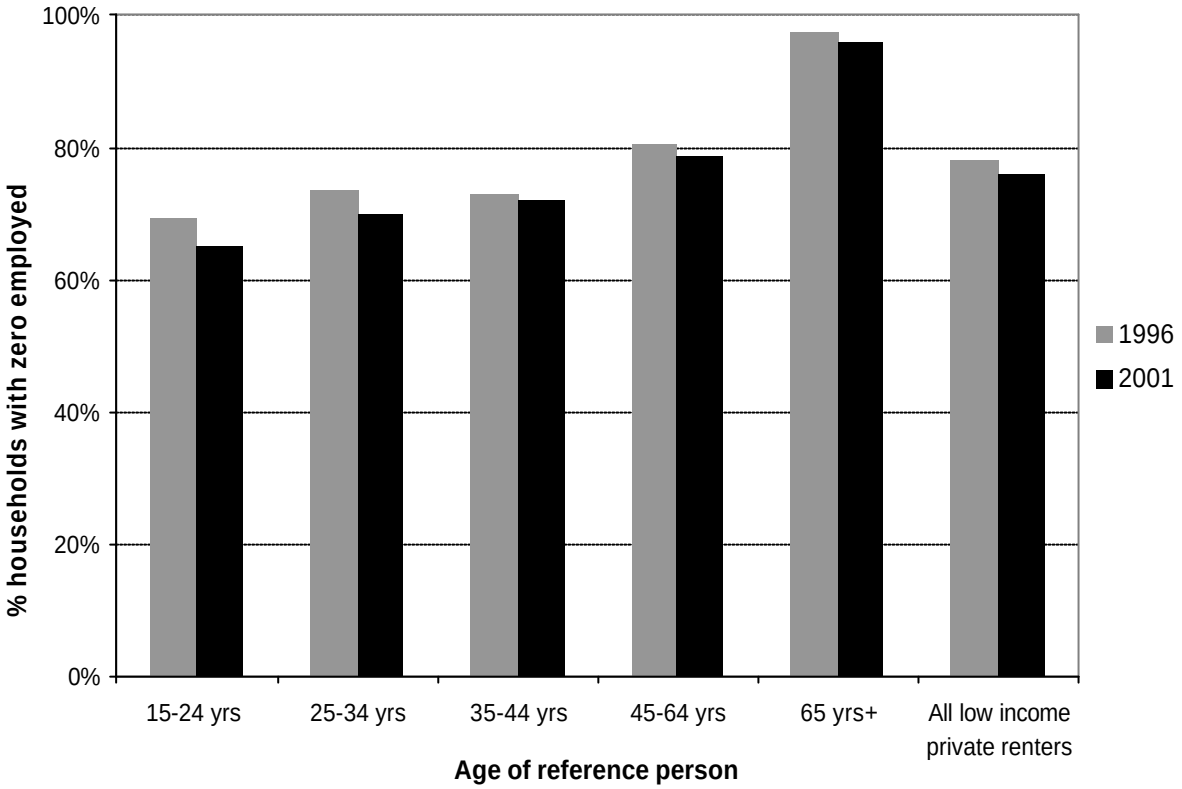
Note: Given Commonwealth Social Security eligibility criteria for income support payments and rent assistance, it appears that the number of household types other than sole persons classified as low income may seem unduly high. This profile of low income household type accords with the distribution based on the ABS 1999 Housing Survey and the ABS 2001 Expanded Community Profile. See Appendix C for a short discussion of this issue.

Consistent with the ageing of the Australian population as a whole, the age profile of low income renters is ageing, with persons aged over 45 years rising from 37 to 42 per cent between 1996 and 2001.

In 2001, approximately 76 per cent of all low income households in the private rental market did not have an employed adult in the household. This figure represents a slight decrease from 1996, when the comparable proportion was 78 per cent. Figure

3-1 shows that, among all low income private renter households, the share of households without an employed adult rises with the age of the reference person. The proportion in each age group, however, declined between 1996 and 2001.

Figure 3-1: Proportion of all low income private renter households without an employed adult, 1996 and 2001, Australia



Source: ABS Special Matrix Tabulations, 1996 and 2001 Censuses

4 WHO LIVES IN THE LOW RENT STOCK?

In 2001, approximately 39 per cent of the low rent stock was occupied by low income households, down from 42 per cent in 1996. As a consequence, around three-fifths of stock is being occupied by higher income households, including just over 14 per cent of the stock by households with incomes in the top two income categories (with incomes starting at $893 per week).

Table 4-1: Low rent private rental stock by household income of renters, selected characteristics, Australia, 2001 (per cent distributions)

Selected characteristics	Household income ($2001pw)						
	Low $0 - $334	$335 - $557	$558 - $892	$893 - $1,339	High $1,340+	Total in low rent stock	Total private renter h'hlds
Total n	78,000	53,000	41,000	21,000	9,000	201,000	1,328,000
% in low rent stock	38.8	26.4	20.2	10.2	4.3	100.0	
Age of reference person in household							
15-24 yrs	15.3	19.0	18.9	17.1	13.5	17.1	15.9
25-34 yrs	16.7	24.9	31.1	34.4	38.2	24.5	33.0
35-44 yrs	16.3	20.6	22.8	23.3	21.9	19.7	23.8
45-64 yrs	28.9	23.0	22.7	22.3	23.7	25.2	21.5
65+ yrs	22.9	12.6	4.6	2.9	2.8	13.6	5.8
Household type							
Couple only	3.9	14.8	15.4	25.7	32.3	12.5	18.2
(Ref person < 45 yrs)	(1.7)	(5.0)	(9.7)	(20.1)	(26.2)	(7.1)	(12.9)
(Ref person 45+ yrs)	(2.2)	(9.8)	(5.7)	(5.6)	(6.1)	(5.4)	(5.3)
Couple family	1.7	9.8	18.8	25.0	30.5	10.9	22.0
(Ref person < 45 yrs)	(1.4)	(8.0)	(15.6)	(19.4)	(20.3)	(8.7)	(16.8)
(Ref person 45+ yrs)	(0.3)	(1.8)	(3.1)	(5.6)	(10.2)	(2.2)	(5.2)
One parent family	9.3	20.0	10.9	7.8	6.7	12.2	16.5
(Ref person < 45 yrs)	(7.9)	(15.4)	(6.8)	(3.8)	(2.8)	(9.0)	(12.2)
(Ref person 45+ yrs)	(1.4)	(4.6)	(4.1)	(4.0)	(3.9)	(3.2)	(4.2)
Lone person	82.5	46.3	43.0	25.3	9.7	56.0	28.4
(Ref person < 45 yrs)	(34.9)	(29.5)	(30.6)	(17.4)	(5.8)	(29.5)	(17.5)
(Ref person 45+ yrs)	(47.6)	(16.9)	(12.4)	(7.9)	(3.9)	(26.4)	(10.9)
Group	2.1	7.0	9.3	12.5	15.9	6.5	11.8
Other*	0.6	2.0	2.7	3.7	4.8	1.9	3.1
Employed adults							
Zero employed	80.5	41.9	12.7	5.2	5.5	45.7	25.2
One employed	18.7	53.1	67.7	46.9	19.7	40.7	41.6
Two+ employed	0.7	5.0	19.6	47.9	74.8	13.6	33.2
Children in household?							
Yes	11.0	29.8	29.7	32.8	37.3	23.1	38.5
No	88.4	68.2	67.6	63.5	58.0	75.0	58.4
N/A**	0.6	2.0	2.7	3.7	4.8	1.9	3.1

*Other family types

**Not available in Special Matrix

Source: ABS Special Matrix Tabulation, 2001 Census

To explore this situation, Table 4-1 presents selected household characteristics by the household income of renters of low rent dwellings. While household income is recognised as strongly related to the probability of paying low rent (in other words, the lower the income, the greater the probability of living in low rent stock), it is not a total determinant. Household characteristics other than income, such as family type, may be related to the probability of paying low rent. Household attributes related to age, household composition and employment are presented in Table 4-1. The final two columns in Table 4-1 provide the same descriptive figures for all households in the low rent stock and all households in this tenure.

Some consistent relationships between household income and the likelihood of living in the low rent stock show up in Table 4-1. Among occupants of low rent stock:

- The higher the household income, the younger the resident. Whereas 32 per cent of the lowest income households are aged less than 35 years, 51 per cent of the two highest income groups fall into this age range. Conversely, the lower the household income, the older the tenant age profile of households renting in this low rent segment.
- The higher the income, the more likely the occupant of the low rent stock is to be in a couple household, either with or without children. Among the lowest income group, couple headed households account for less than 6 per cent, while these households make up 50 and 63 per cent of the two highest income groups, respectively.
- The majority of high income couple households living in low rent dwellings are aged less than 45 years.
- Over 80 per cent of the lowest income renters who are living in low rent stock live alone. These people are not all elderly singles, as shown in the percentage breakdown – while 47 of the 82 per cent are 45 years or older, 35 per cent are younger than 45 years.
- The probability of the household having an employed adult is directly related to household income. Although this finding is unsurprising, given the strong association between income and employment, the difference in employment characteristics is quite marked. Whereas 80 per cent of low income tenants in the low rent stock do not have an employed adult member, a quite opposite employment picture occurs among the higher income households. Among the 4.3 per cent of households paying low rents but with weekly incomes of at least $1,340, 75 per cent are dual income households.

Essentially, the results presented in Table 4-1 suggest that, among all households renting low rent dwellings, there is a systematic association between household income and other household characteristics. Higher income households living in this segment of the rental stock are considerably more likely to be young (aged 35 years or younger) and/or in a couple relationship. Three-quarters have two adults in the workforce. This latter figure stands in sharp contrast to the lowest income households in low rent segment - 80 per cent of these household do not have an employed adult.

Table 4-2 further explores the household characteristics of renters of low rent dwellings to see if the same relationships are found within capital city regions. Australia's capital cities hold 38 per cent of the national inventory of 201,000 low rent dwellings. Table 4-2 points to a pattern of access to low rent dwellings by household income that mirrors the national picture. Similar proportions of different household income groups reside in low rent dwellings. Whereas nationally, for example, 39 per cent of the lowest income tenants reside in the low rent stock, in capital cities the figure is 41 per cent. At the upper end of the income distribution, 4 per cent of high income households take up low rent dwellings compared to 5 per cent in the capital cities.

Table 4-2: Metropolitan low rent private rental stock by household income of renters, selected characteristics, 2001 (per cent distributions)

	Household income ($2001pw)						
Selected characteristics	**Low $0 - $334**	**$335 - $557**	**$558 - $892**	**$893 - $1,339**	**High $1,340+**	**Total in low rent stock**	**Total private renter h'hs**
Total n	32,000	19,000	15,000	8,000	4,000	78,000	873,000
% in low rent stock	40.8	25.1	19.8	9.8	4.6	100.0	
Age							
15-24 yrs	14.6	17.5	16.1	15.9	13.9	15.7	15.4
25-34 yrs	17.6	25.7	32.8	36.8	41.7	25.6	34.9
35-44 yrs	15.5	20.0	22.8	22.0	19.7	18.9	23.7
45-64 yrs	28.2	23.0	23.3	21.8	21.2	25.0	21.0
65+ yrs	24.1	13.9	5.0	3.5	3.6	14.8	5.0
Household type							
Couple only	3.2	13.4	13.0	24.9	34.4	11.2	19.0
(Ref person < 45 yrs)	(1.5)	(4.8)	(8.9)	(20.7)	(30.0)	(7.0)	(14.4)
(Ref person 45+ yrs)	(1.7)	(8.5)	(4.0)	(4.2)	(4.4)	(4.2)	(4.6)
Couple family	1.3	6.4	11.9	17.5	22.1	7.2	21.4
(Ref person < 45 yrs)	(1.1)	(5.2)	(9.6)	(12.7)	(14.0)	(5.6)	(15.9)
(Ref person 45+ yrs)	(0.2)	(1.1)	(2.4)	(4.7)	(8.1)	(1.7)	(5.5)
One parent family	6.4	14.6	9.2	7.4	7.5	9.1	14.8
(Ref person < 45 yrs)	(5.2)	(10.6)	(5.3)	(2.9)	(2.7)	(6.2)	(10.5)
(Ref person 45+ yrs)	(1.2)	(4.0)	(3.9)	(4.5)	(4.8)	(2.9)	(4.3)
Lone person	86.3	56.5	53.6	30.7	10.9	63.4	28.1
(Ref person < 45 yrs)	(37.3)	(35.5)	(37.6)	(21.5)	(6.5)	(33.9)	(18.2)
(Ref person 45+ yrs)	(49.0)	(21.0)	(16.1)	(9.2)	(4.4)	(29.5)	(9.9)
Group	2.1	7.1	9.6	15.0	19.0	6.9	13.2
Other*	0.6	2.1	2.7	4.6	6.1	2.1	3.5
Employed adults							
Zero employed	81.0	37.4	11.2	5.3	5.8	45.4	21.4
One employed	18.4	58.4	73.4	50.4	19.1	42.5	42.3
Two+ employed	0.6	4.2	15.4	44.2	75.2	12.1	36.4
Children in household?							
Yes	7.7	21.0	21.1	24.9	29.6	16.4	36.2
No	91.6	77.0	76.2	70.5	64.3	81.6	60.2
N/A**	0.6	2.1	2.7	4.6	6.1	2.1	3.5

*Other family types
**Not available in Special Matrix
Source: ABS Special Matrix Tabulation, 2001 Census

Table 4-3: Non-metropolitan low rent private rental stock by household income of renters, selected characteristics, 2001, per cent distributions

	Household income ($2001pw)						
Selected characteristics	**Low $0 - $334**	**$335 - $557**	**$558 - $892**	**$893 - $1,339**	**High $1,340+**	**Total in low rent stock**	**Total private renter h'hs**
Total n	47,000	34,000	25,000	13,000	5,000	124,000	455,000
% in low rent stock	37.6	27.3	20.5	10.4	4.1	100.0	
Age							
15-24 yrs	15.7	19.9	20.6	17.7	13.2	18.0	17.0
25-34 yrs	16.0	24.4	30.1	33.0	35.7	23.8	29.3
35-44 yrs	16.9	20.9	22.7	24.0	23.4	20.2	23.8
45-64 yrs	29.3	23.0	22.3	22.6	25.4	25.3	22.6
65+ yrs	22.1	11.8	4.4	2.6	2.3	12.8	7.2
Household type							
Couple only	4.4	15.6	16.9	26.1	30.8	13.4	16.5
(Ref person < 45 yrs)	(1.9)	(5.1)	(10.2)	(19.8)	(23.5)	(7.2)	(9.9)
(Ref person 45+ yrs)	(2.5)	(10.5)	(6.7)	(6.4)	(7.3)	(6.1)	(6.6)
Couple family	2.0	11.8	22.9	29.5	36.5	13.2	23.2
(Ref person < 45 yrs)	(1.6)	(9.6)	(19.3)	(23.4)	(24.8)	(10.7)	(18.6)
(Ref person 45+ yrs)	(0.4)	(2.2)	(3.6)	(6.1)	(11.7)	(2.6)	(4.6)
One parent family	11.3	23.1	12.0	8.0	6.2	14.1	19.7
(Ref person < 45 yrs)	(9.7)	(18.1)	(7.8)	(4.3)	(2.9)	(10.7)	(15.5)
(Ref person 45+ yrs)	(1.6)	(5.0)	(4.2)	(3.7)	(3.3)	(3.3)	(4.1)
Lone person	79.9	40.5	36.5	22.1	8.9	51.3	29.2
(Ref person < 45 yrs)	(33.2)	(26.0)	(26.4)	(15.0)	(5.4)	(26.8)	(16.3)
(Ref person 45+ yrs)	(46.6)	(14.5)	(10.2)	(7.1)	(3.6)	(24.5)	(12.8)
Group	2.0	7.0	9.1	11.1	13.8	6.3	9.3
Other*	0.5	1.9	2.7	3.2	3.8	1.8	2.1
Employed adults							
Zero employed	80.2	44.5	13.6	5.1	5.3	45.9	32.5
One employed	19.0	50.1	64.3	44.8	20.2	39.5	40.4
Two+ employed	0.8	5.4	22.1	50.1	74.5	14.6	27.0
Children in household?							
Yes	13.2	34.9	34.8	37.5	42.6	27.3	42.9
No	86.3	63.1	62.5	59.3	53.5	70.9	55.0
N/A**	0.5	1.9	2.7	3.2	3.8	1.8	2.1

*Other family types
**Not available in Special Matrix
Source: ABS Special Matrix Tabulation, 2001 Census

Over 60 per cent of Australia's low rent stock is located outside the capital cities in non-metropolitan regions. Household incomes and rents are generally lower in non-metropolitan areas. Moreover, the non-metropolitan renter population includes more couples and families with children and fewer people living alone. Despite these socio-demographic differences compared with capital city households, Table 4-3 nevertheless suggests non-metropolitan low income households also experience limited access to the low rent stock (with only 38 per cent of low income households in the stock). As observed in the capital cities, the higher income households tend to be

younger and are more likely to be couples. Among the highest income households in the low rent stock, couples with children predominate. The profile of the low income household renting an affordable low rent dwelling remains the same as documented within the capital cities. About 80 per cent live alone and a similar proportion is outside the paid workforce.

Taken together, these tables suggest that higher income households, particularly if they are employed young couples, may seek to pay low rents and may be given some preference by agents and landlords in accessing the low rent dwellings. In a housing tenure in which household incomes have been improving, with particularly strong growth in household numbers with the very highest incomes, the competition for the low rent stock becomes tougher. In this situation, if a high income household chooses to pay low rent, perhaps in order to save for home purchase, landlords and agents appear to show a systematic preference, whether in cities or non-metropolitan regions, towards selecting higher income employed tenants.

The next table, Table 4-4, turns to the stock of low rent dwellings and examines whether, with respect to the nature of the dwellings occupied, any systematic relationship between household income and dwelling type appears.

Table 4-4 shows that, on the whole, Australia's stock of low rent dwellings tends to be smaller in size than private rental dwellings generally. In the national private rental stock, only 10 per cent of dwellings consist of a single bedroom, yet this figure reaches to one quarter in the low rent segment. Two thirds of the low rent stock consists of two bedrooms or less; the comparable figure in the total private rental stock is 47 per cent. Separate detached dwellings are less prominent in the low rent stock than private rental dwellings generally, and flats and units more common. Although making up a small proportion of the stock, 'other dwellings' such as caravans or improvised housing are about two and a half times more common within the low rent stock than in the private rental stock generally. As might be expected, the nature of the low rent stock differs between capital cities and non-metropolitan regions. One third of the urban low rent stock is made up of one bedroom dwellings, compared with just 19 per cent in the regions. Over half the low rent metropolitan dwellings consists of flats in comparison with less than a third of the stock located outside the major cities.

Table 4-4: Low rent private rental stock, selected dwelling characteristics by household income of residents: Australia, metropolitan and non-metropolitan regions, 2001 (percent distributions)

	Household income ($2001pw)						
Selected characteristics	**Low $0 - $334**	**$335 - $557**	**$558 - $892**	**$893 - $1,339**	**High $1,340+**	**Total in low rent stock**	**Total private renter h'hs**
ALL AUSTRALIA							
Total n	78,000	53,000	41,000	21,000	9,000	201,000	1,328,000
% in low rent stock	38.8	26.4	20.2	10.2	4.3	100.0	
No. of bedrooms							
One	34.2	22.4	20.3	14.9	9.5	25.2	10.0
Two	41.6	42.4	40.8	38.3	33.2	40.9	37.4
Three or more	18.4	30.9	35.6	43.8	54.2	29.3	51.0
Other dwelling	5.8	4.2	3.3	2.9	3.0	4.5	1.7
Dwelling structure							
Separate house	35.2	47.8	50.7	58.6	66.4	45.4	51.6
SD, row/terr, t'house	11.6	10.3	10.0	8.9	8.0	10.5	15.1
Flat/unit/apartment	47.4	37.6	36.0	29.6	22.6	39.6	31.7
Other dwelling	5.8	4.2	3.3	2.9	3.0	4.5	1.7
METROPOLITAN							
Total n	32,000	19,000	15,000	8,000	4,000	78,000	873,000
% in low rent stock	40.8	25.1	19.8	9.8	4.6	100.0	
No. of bedrooms							
One	44.4	33.5	31.1	23.6	13.7	35.6	11.6
Two	38.0	42.0	40.9	41.3	39.5	39.9	39.3
Three or more	13.5	20.8	25.2	32.7	44.5	21.0	47.9
Other dwelling	4.1	3.7	2.9	2.5	2.3	3.5	1.2
Dwelling structure							
Separate house	23.0	30.0	33.8	42.1	52.8	30.1	45.2
SD, row/terr, t'house	13.7	13.9	13.3	12.5	11.9	13.5	16.5
Flat/unit/apartment	59.2	52.3	50.0	42.9	33.0	52.9	37.1
Other dwelling	4.1	3.7	2.9	2.5	2.3	3.5	1.2
NON-METROPOLITAN							
Total n	47,000	34,000	25,000	13,000	5,000	124,000	455,000
% in low rent stock	37.6	27.3	20.5	10.4	4.1	100.0	
No. of bedrooms							
One	27.3	16.0	13.7	9.8	6.6	18.8	7.0
Two	44.0	42.7	40.7	36.5	28.8	41.6	33.6
Three or more	21.8	36.8	41.9	50.4	61.1	34.6	56.9
Other dwelling	7.0	4.6	3.6	3.2	3.5	5.1	2.4
Dwelling structure							
Separate house	43.5	58.1	60.8	68.3	75.9	54.9	63.8
SD, row/terr, t'house	10.2	8.2	8.1	6.7	5.2	8.6	12.5
Flat/unit/apartment	39.4	29.2	27.5	21.8	15.3	31.3	21.3
Other dwelling	7.0	4.6	3.6	3.2	3.5	5.1	2.4

Source: ABS Special Matrix Tabulation, 2001 Census

Having stated this, however, there are certain regularities in the low rent dwellings occupied by consecutive household income groups, namely:

- The higher the income group occupying the low rent stock, the more likely they are to live in the relatively limited supply of three bedroom dwellings.
- This basic relationship holds for both metropolitan and non-metropolitan areas, but the level is higher in the non-metropolitan region (which reflects the relatively higher proportion of three-bedroom low rent dwellings compared with the housing stock in the cities). The proportion of each income group accessing a three bedroom dwelling ranges from 13 per cent among the lowest income group in the cities and steadily rises to 44 per cent of the highest income group. The comparable figures in the non-metropolitan regions go from 22 per cent to 61 per cent.
- The higher the income group occupying the low rent stock, the more likely the household is to rent a separate detached dwelling.
- Again, this relationship holds firm in both capital cities and non-metropolitan regions. In the capital cities, 23 per cent of the lowest income groups in the low rent stock reside in separate dwellings. This figure rises steadily to cover 53 per cent of the highest income group in the stock. In the non-metropolitan regions, the comparable figures range from 43 per cent to 76 per cent.

The data presented in this section point to a systematic selection process may be operating in the private rental sector. This process in one in which higher income households, if they wish to pay low rent, may be preferred by agents and landlords to those with lower incomes. This is not surprising in a market in which the incomes of private tenants have been improving and in which greater numbers of young couples are likely to be saving for home purchase and therefore try to pay the lowest rent as possible.

The concept of the 'gatekeeper' as the controller of access to the housing stock (Pahl, 1975) is useful in explaining these outcomes. As Pahl noted in his ground-breaking 1975 work, 'access to housing is tightly controlled … by various bureaucratic rules and procedures and gatekeepers from various public and private agencies' (Pahl, 1975, p202). Estate agents and landlords act as gatekeepers in a number of ways, including matching potential tenants to available properties. There may be instances where agents select which tenants they will put on their books. Tenants may simply be met with evasion when enquiring about available rentals. But, as noted by the 1992 National Housing Strategy (NHS, 1992, p27), 'determining the extent of discrimination is difficult. Defining discriminatory behaviour hinges on interpretations of legislation which are rarely unequivocal.' The same report goes on to suggest that the extent of discrimination is not known because of fairly widespread under-reporting.

At least part of what appears to be a systematic screening process may stem from the growing importance of tenancy databases (Seelig, 2003; Short et al, 2003). These databases are increasingly being used as risk management tools to identify difficult or 'problem tenants'. Seelig notes that "landlords and agents have always sought to screen out 'risky tenants', and tenant databases are simply the latest and perhaps greatest tool available to do this" (Seelig, 2003). From the landlord's perspective, many of whom are looking for a long term stable return, tenant databases offer an opportunity to minimize risk and maximize returns. Given the choice of a low income tenant on social security or a higher income employed family, the landlord is likely to choose the latter. Seelig observes that this places the low income tenant into what could be described as a self-fulfilling prophecy – forced into paying high, unaffordable rents, the tenant is likely to end up in arrears and therefore make it on to a tenancy database. "Many tenants listed on rental databases may in fact be 'justifiably listed' – they really do have rent arrears, and may well have actually represented a risk to investors" (Seelig, 2003). Alongside the risk to investors, Seelig notes the longer term

risk to governments of a growing situation in which large numbers of low income tenants cannot access affordable stock.

Two additional observations can be made concerning the apparent lack of access of many low income households to low rent dwellings. The first relates to the tenant and the second to the nature of the low rent supply. Both are simply raised as questions to consider. Is it the case that low income private renters may be less likely to have the knowledge and information about how to access low rent dwellings compared with higher income households? Nearly 80 per cent are out of the workforce, irrespective of age. Do they lack the contacts and networks that are available to employed tenants? Generally speaking, little is known about the search process for rental housing. This information would help to fill out the picture of who is able to access low rent dwellings.

The second issue relates to the nature of the supply. Figures from the Australian Bureau of Statistics Housing Survey (1999) suggest that the low rent stock is less likely to be managed by an agent and more likely by an individual landlord. Further, as described above, the low rent stock consists of more improvised and 'other' dwelling types. 'Accidental' landlords, or individual landlords who manage their own properties, may go to great lengths to ensure that the tenant is, in their subjective opinion, 'reliable'. By virtue of being outside the paid workforce, the low income tenant is less able to present the requisite character references that an otherwise employed tenant can. Another unknown supply-related question concerns the extent to which low rent dwellings are entered into the property market temporarily, for example, while an owner is away. Again, in these cases, while the rent may be notionally defined as 'low', the temporary landlord may prefer an employed tenant or someone who can act as a 'caretaker tenant' and therefore received a reduction in rent payments.

A final point for this Chapter relates to the fact that higher income households occupy low rent dwellings may have some positive benefits. Paying low rents may reflect the housing choices of these higher income households. Their presence in the low rent stock suggests the dwellings are likely to be of adequate quality and close to employment (as most of these higher income households are employed). In areas where the low rent stock may be spatially concentrated, higher income households potentially contributes to social mix. These are suggestions only and would need to be substantiated in other research based on more detailed household and locational information.

At the same time, however, the occupation of low rent dwellings by other than low income households reduces the affordable stock available for low income households and so reduces their housing choices.

5 LOW INCOME RENTERS – WHO MISSES OUT ON THE LOW RENT STOCK?

This section focuses on the 60 per cent of low income tenants who pay rents above $111 per week, that is, in any rent segment above the lowest rent category. As in the previous chapter, we examine whether any systematic patterns related to household characteristics can be observed.

Table 5-1: Low income private renters by rent segment of residence, selected characteristics, Australia, 2001 (per cent distributions)

	Dwelling rent segment ($2001pw)				
Selected characteristics	**Low $1 - $111**	**$112 - $166**	**$167 - $222**	**High $223+**	**Total low income private renters**
Total n	78,000	84,000	30,000	20,000	212,000
% of low income households	36.9	39.7	14.0	9.5	100.0
Age					
15-24 yrs	15.3	16.8	20.1	25.4	17.5
25-34 yrs	16.7	23.0	27.5	23.6	21.3
35-44 yrs	16.3	19.5	23.2	22.1	19.1
45-64 yrs	28.9	25.8	20.7	21.0	25.7
65+ yrs	22.9	15.0	8.6	7.9	16.3
Household type					
Couple only	3.9	6.3	7.8	8.5	5.8
(Ref person < 45 yrs)	(1.7)	(2.7)	(4.2)	(5.0)	(2.7)
(Ref person 45+ yrs)	(2.2)	(3.6)	(3.6)	(3.5)	(3.1)
Couple family	1.7	5.2	10.8	12.9	5.4
(Ref person < 45 yrs)	(1.4)	(4.4)	(8.7)	(9.4)	(4.4)
(Ref person 45+ yrs)	(0.3)	(0.9)	(2.0)	(3.6)	(1.1)
One parent family	9.3	24.5	28.3	18.0	18.8
(Ref person < 45 yrs)	(7.9)	(21.3)	(24.2)	(13.8)	(16.0)
(Ref person 45+ yrs)	(1.4)	(3.2)	(4.1)	(4.3)	(2.8)
Lone person	82.5	59.3	44.3	43.7	64.3
(Ref person < 45 yrs)	(34.9)	(26.7)	(25.5)	(27.1)	(29.6)
(Ref person 45+ yrs)	(47.6)	(32.6)	(18.9)	(16.7)	(34.7)
Group	2.1	3.8	6.7	11.4	4.3
Other*	0.6	1.0	2.1	5.3	1.4
Employed adults					
Zero employed	80.5	76.0	69.9	68.5	76.1
One employed	18.7	22.5	26.6	25.7	22.0
Two+ employed	0.7	1.5	3.5	5.8	1.9
Children in household?					
Yes	11.0	29.7	39.1	31.0	24.2
No	88.4	69.3	58.8	63.7	74.4
N/A**	0.6	1.0	2.1	5.3	1.4

*Other family types

**Not available in Special Matrix

Source: ABS Special Matrix Tabulation, 2001 Census

The figures in Table 5-1 show that over three quarters of low income renters rent dwellings in either the lowest (37 per cent) or second lowest (40 per cent) rent segment. The others, however, the remaining 23 per cent of low income private renters, pay dwelling rents that housing analysts would define as highly unaffordable on a rent to household income basis. These are private renter households with incomes less that $335 per week that are recorded in 2001 census data as paying weekly rents of more than $167 per week, with some paying as much as $223 per week or more.

The data provided in Table 5-1 provide initial insight into the factors that may explain this situation. The key differences in age, household type, and employment that show up in Table 5-1 include the following:

- The age profile of the low income households in the different rent segments is inversely related to the amount of rent paid. In other words, the higher the rent paid, the younger the age profile. Low income households renting in the top two rent segments are considerably more likely to be young, that is, aged under 35 years than those in the bottom two rent segments.
- The higher the weekly rent paid, the greater the proportion of low income couple headed households renting in the segment. Couples, either with or without children, are relatively more frequent in the high rent stock than in the low rent stock.
- Although households with employed adults are less common among low income renters than private renters in general, the proportion of households with one or more adult employed rises steadily as the rent segments increase.

In metropolitan areas, a similar pattern emerges in terms of the types of low income households paying various levels of rent. These results are shown in Table 5-2. Although relatively fewer reside in the low rent stock (only 27 per cent of low income households) than in the national overview, and a higher proportion pay rents in the top two rent segments, the general pattern depicted in the national figures given in Table 5-1 remains the same. Low income renters paying higher rents are more likely to be couple headed households; more likely to have an employed adult; and considerably more likely to have children.

Table 5-2: Metropolitan low income private renters by rent segment of residence, selected characteristics, 2001 (per cent distributions)

	Dwelling rent segment ($2001pw)				
Selected characteristics	**Low $1 - $111**	**$112 - $166**	**$167 - $222**	**High $223+**	**Total low income private renters**
Total n	32,000	47,000	22,000	17,000	118,000
% of low income households	26.8	40.1	18.8	14.2	100.0
Age					
15-24 yrs	14.6	16.5	20.9	27.6	18.4
25-34 yrs	17.6	23.6	27.9	24.3	22.9
35-44 yrs	15.5	19.1	22.7	21.7	19.2
45-64 yrs	28.2	25.3	19.7	19.5	24.2
65+ yrs	24.1	15.4	8.9	7.0	15.3
Household type					
Couple only	3.2	6.1	7.3	8.0	5.8
(Ref person < 45 yrs)	(1.5)	(2.7)	(4.3)	(5.1)	(3.0)
(Ref person 45+ yrs)	(1.7)	(3.4)	(3.0)	(2.9)	(2.8)
Couple family	1.3	5.5	10.9	13.2	6.5
(Ref person < 45 yrs)	(1.1)	(4.5)	(8.9)	(9.6)	(5.2)
(Ref person 45+ yrs)	(0.2)	(1.0)	(2.0)	(3.6)	(1.3)
One parent family	6.4	21.6	26.4	17.7	17.9
(Ref person < 45 yrs)	(5.2)	(18.6)	(22.7)	(13.5)	(15.0)
(Ref person 45+ yrs)	(1.2)	(3.0)	(3.8)	(4.2)	(2.8)
Lone person	86.3	62.0	45.9	42.5	62.7
(Ref person < 45 yrs)	(37.3)	(29.1)	(26.8)	(27.7)	(30.7)
(Ref person 45+ yrs)	(49.0)	(32.9)	(19.1)	(14.8)	(32.1)
Group	2.1	3.8	6.9	12.4	5.1
Other*	0.6	1.1	2.5	6.1	2.0
Employed adults					
Zero employed	81.0	76.3	70.9	69.1	75.5
One employed	18.4	22.4	26.1	25.8	22.5
Two+ employed	0.6	1.3	3.0	5.1	2.0
Children in household?					
Yes	7.7	27.1	37.3	31.0	24.4
No	91.6	71.8	60.1	63.0	73.7
N/A**	0.6	1.1	2.5	6.1	2.0

*Other family types
**Not available in Special Matrix
Source: ABS Special Matrix Tabulation, 2001 Census

It might be expected, given the relatively lower cost of housing outside the capital cities, that a different picture might appear in Table 5-3. While it is the case that a higher proportion of low income renters rent low rent dwellings than observed in the capital cities (49 per cent compared with 27 per cent respectively), nevertheless, the household profile of those paying rents in the top two rent segments remains much the same as noted in the cities. It is younger couples and families, particularly households with children that tend to pay high rents. The likelihood of an employed adult in the household mirrors the figures documented in the capital cities. In the non-metropolitan regions, among low income renters, 20 per cent of households in the low rent segment has an employed adult compared with 34 per cent of households paying the highest rental amount of at least $223 per week.

Table 5-3: Non-metropolitan low income private renters by rent segment of residence, selected characteristics, 2001 (per cent distributions)

	Dwelling rent segment ($2001pw)				
Selected characteristics	**Low $1 - $111**	**$112 - $166**	**$167 - $222**	**High $223+**	**Total low income private renters**
Total n	47,000	37,000	7,000	3,000	94,000
% of low income households	49.4	39.1	7.9	3.5	100.0
Age					
15-24 yrs	15.7	17.1	17.7	14.4	16.4
25-34 yrs	16.0	22.1	26.2	20.6	19.4
35-44 yrs	16.9	20.1	24.7	24.0	19.0
45-64 yrs	29.3	26.3	23.7	28.6	27.7
65+ yrs	22.1	14.4	7.7	12.4	17.6
Household type					
Couple only	4.4	6.5	9.2	11.0	5.8
(Ref person < 45 yrs)	(1.9)	(2.6)	(3.7)	(4.3)	(2.4)
(Ref person 45+ yrs)	(2.5)	(3.9)	(5.4)	(6.7)	(3.4)
Couple family	2.0	4.8	10.3	11.5	4.1
(Ref person < 45 yrs)	(1.6)	(4.1)	(8.2)	(8.1)	(3.3)
(Ref person 45+ yrs)	(0.4)	(0.7)	(2.1)	(3.4)	(0.7)
One parent family	11.3	28.2	33.9	19.6	20.0
(Ref person < 45 yrs)	(9.7)	(24.8)	(29.0)	(15.2)	(17.3)
(Ref person 45+ yrs)	(1.6)	(3.5)	(5.0)	(4.3)	(2.7)
Lone person	79.9	55.8	39.5	50.0	66.2
(Ref person < 45 yrs)	(33.2)	(23.7)	(21.4)	(24.1)	(28.2)
(Ref person 45+ yrs)	(46.6)	(32.2)	(18.0)	(26.0)	(38.0)
Group	2.0	3.8	6.2	6.3	3.2
Other*	0.5	0.8	1.0	1.6	0.7
Employed adults					
Zero employed	80.2	75.6	67.0	65.6	76.8
One employed	19.0	22.7	27.8	25.0	21.4
Two+ employed	0.8	1.7	5.2	9.4	1.8
Children in household?					
Yes	13.2	33.1	44.2	31.1	24.1
No	86.3	66.2	54.8	67.3	75.3
N/A**	0.5	0.8	1.0	1.6	0.7

*Other family types

**Not available in Special Matrix

Source: ABS Special Matrix Tabulation, 2001 Census

Table 5-4 considers the dwelling stock occupied by low income renter households and examines whether differences in the stock exist according to the amount of rent paid. Those paying higher rents, typically families with children as suggested above, tend to occupy three bedroom dwellings. With the exception of those paying the top rent ($223 per week or more), they are more likely to occupy houses rather than flats. This suggests a number of possibilities, including the obvious requirement that family households have for adequate space. Generally, the data points to the relationship between household composition and the amount of rent paid. This relationship holds

firm, even when we are only considering the lowest income households. Families with children present are considerably more likely to be paying high rents than those without.

Table 5-4: Low income private renters by rent segment, selected dwelling characteristics: Australia, metropolitan and non-metropolitan regions, 2001 (per cent distributions)

	Dwelling rent segment ($2001pw)				
Selected characteristics	**Low $1 - $111**	**$112 - $166**	**$167 - $222**	**High $223+**	**Total low income private renters**
ALL AUSTRALIA					
Total n	78,000	84,000	30,000	20,000	212,000
% in low rent stock	36.9	39.7	14.0	9.5	100.0
No. of bedrooms					
One	34.2	12.6	10.2	11.8	20.1
Two	41.6	49.1	38.1	41.7	44.1
Three or more	18.4	36.4	50.5	43.7	32.4
Other dwelling	5.8	2.0	1.2	2.9	3.4
Dwelling structure					
Separate house	35.2	45.2	49.0	34.8	41.1
SD, row/terr, t'house	11.6	16.3	15.8	15.8	14.5
Flat/unit/apartment	47.4	36.5	34.0	46.6	41.1
Other dwelling	5.8	2.0	1.2	2.9	3.4
METROPOLITAN					
Total n	32,000	47,000	22,000	17,000	118,000
% in low rent stock	26.8	40.1	18.8	14.2	100.0
No. of bedrooms					
One	44.4	17.6	12.3	12.4	23.0
Two	38.0	48.0	42.2	44.3	43.7
Three or more	13.5	32.7	44.2	41.4	31.0
Other dwelling	4.1	1.8	1.3	1.9	2.3
Dwelling structure					
Separate house	23.0	39.2	44.1	30.9	34.6
SD, row/terr, t'house	13.7	16.4	15.0	16.2	15.4
Flat/unit/apartment	59.2	42.7	39.7	51.1	47.7
Other dwelling	4.1	1.8	1.3	1.9	2.3
NON-METROPOLITAN					
Total n	47,000	37,000	7,000	3,000	94,000
% in low rent stock	49.4	39.1	7.9	3.5	100.0
No. of bedrooms					
One	27.3	6.1	4.2	8.5	16.5
Two	44.0	50.5	25.6	28.3	44.5
Three or more	21.8	41.1	69.0	55.1	34.3
Other dwelling	7.0	2.3	1.2	8.1	4.7
Dwelling structure					
Separate house	43.5	52.9	63.4	54.3	49.1
SD, row/terr, t'house	10.2	16.2	18.2	14.0	13.3
Flat/unit/apartment	39.4	28.5	17.2	23.6	32.8
Other dwelling	7.0	2.3	1.2	8.1	4.7

Source: ABS Special Matrix Tabulation, 2001 Census

This result may reflect several possibilities. For increasing numbers of Australian households, low income is not an expected or planned-for condition, but the result of unpredictable factors. The increase in casual and part-time employment creates an income vulnerability that is becoming a feature of the new economy. Household incomes may drop on short notice due to unplanned-for decrease in hours worked or the loss of a job among one of the partners in a couple family. In these circumstances, households may suddenly be defined as 'low income households' yet continue to pay higher rents. Particularly for family households, the desire to stay put and provide children with secure and familiar housing and schools may account in part for the unduly high rental payments. Divorce and separation may create the same circumstances. Recently divorced or separated parents may be as equally reluctant as those with lowered incomes to uproot children to other rental housing. The insecurity generally ascribed to private rental housing (often in terms of tenure) may be exacerbated by the range of social and economic circumstances brought about by the economic restructuring and family and households transformations that have become part of Australian society. In other words, for some low income households, high rental costs may reflect an underlying preference. For many, however, the shortage of affordable housing means that this option is not available as a choice for those households who would prefer to spend their limited low incomes on necessities other than housing.

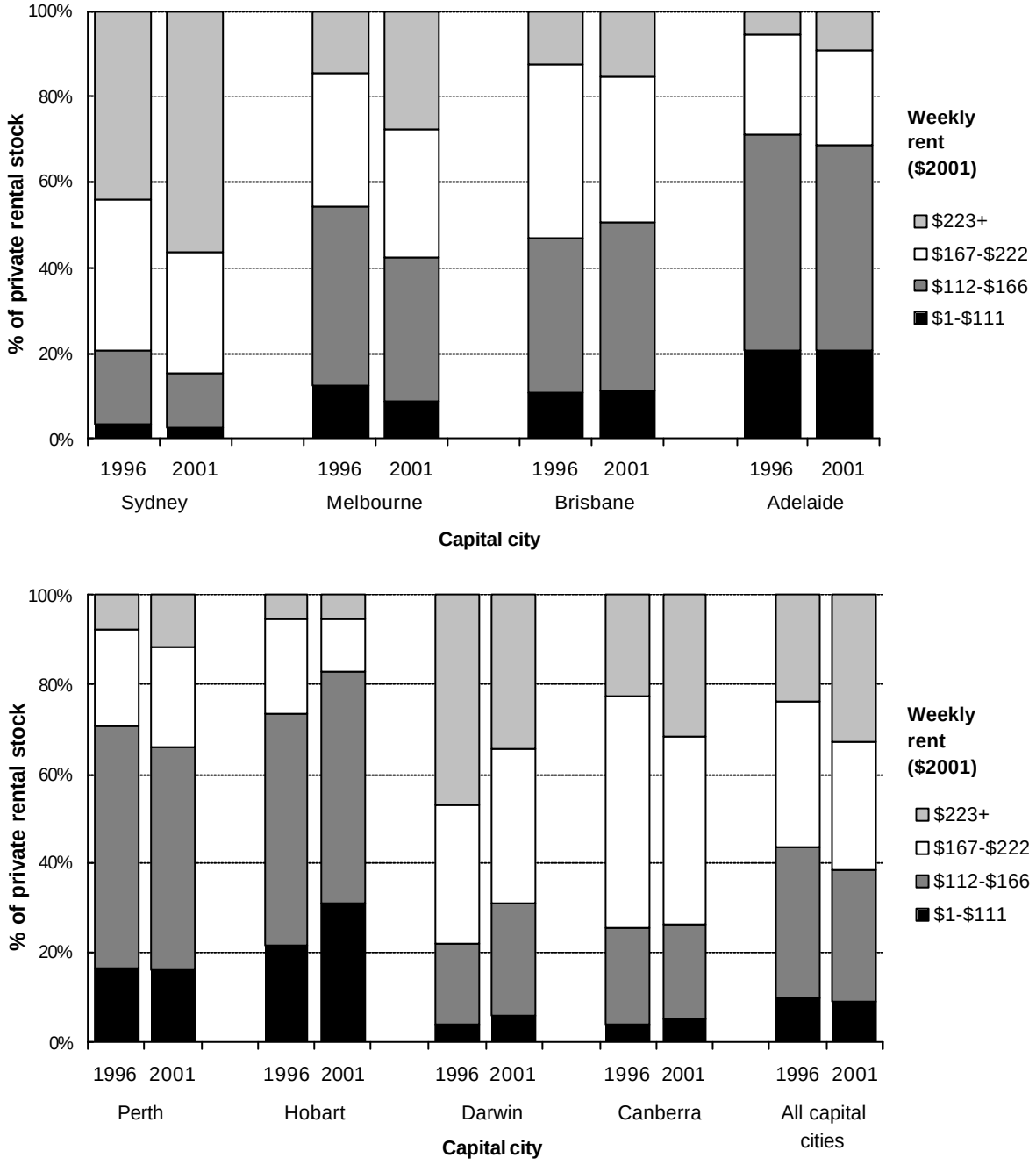
The final section of this chapter briefly describes the distribution of private rents across Australia's capital cities and how the 2001 situation compares with that which existed in 1996.

Table 5-5: Private rental dwellings, capital cities, 1996 and 2001

Weekly rent ($2001)	Sydney		Melbourne		Brisbane		Adelaide	
	1996	2001	1996	2001	1996	2001	1996	2001
$1-$111	10,000	9,000	27,000	19,000	13,000	16,000	13,000	14,000
$112-$166	50,000	39,000	90,000	76,000	44,000	55,000	31,000	32,000
$167-$222	105,000	89,000	67,000	68,000	48,000	48,000	15,000	14,000
$223+	129,000	176,000	32,000	61,000	15,000	21,000	4,000	6,000
Total	293,000	312,000	215,000	224,000	120,000	140,000	63,000	66,000
Weekly rent ($2001)	**Perth**		**Hobart**		**Darwin**		**Canberra**	
	1996	2001	1996	2001	1996	2001	1996	2001
$1-$111	15,000	15,000	3,000	4,000	0	0	1,000	1,000
$112-$166	47,000	45,000	6,000	7,000	1,000	2,000	5,000	4,000
$167-$222	19,000	21,000	3,000	1,000	2,000	3,000	11,000	8,000
$223+	7,000	11,000	1,000	1,000	3,000	3,000	5,000	6,000
Total	88,000	91,000	12,000	13,000	6,000	8,000	21,000	20,000

Source: ABS Special Matrix Tabulations, 1996 and 2001 Censuses

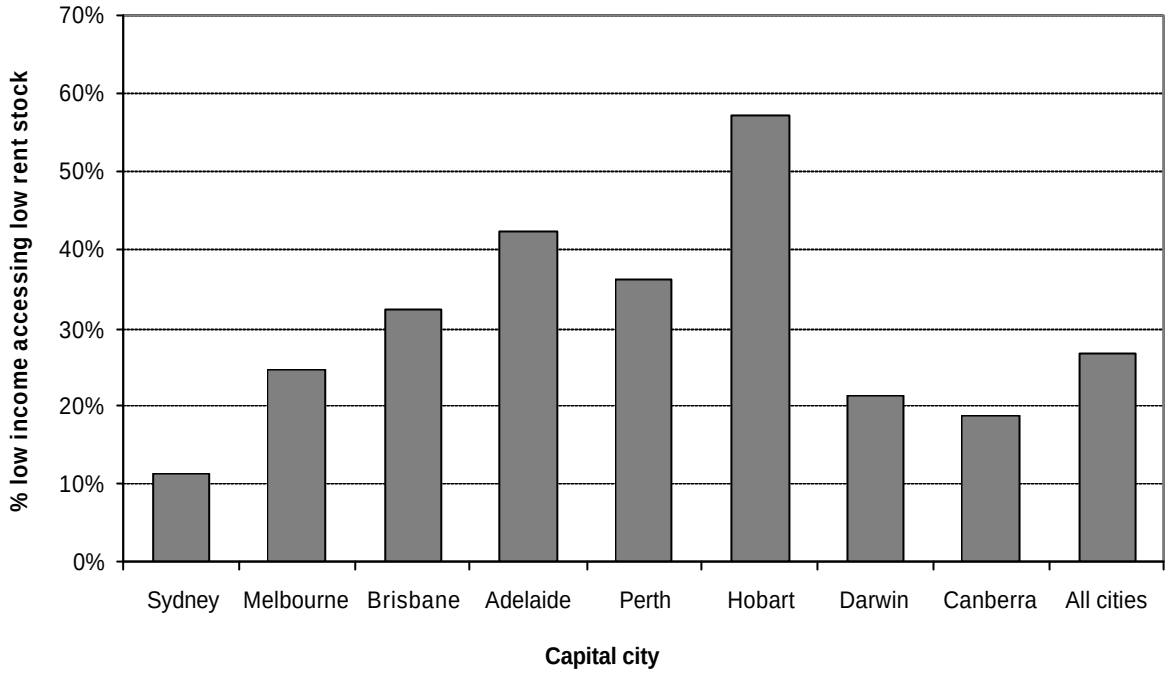
Figure 5-1: Rent segments in the private rental stock, capital cities, 1996 and 2001 (per cent distributions)



Source: ABS Special Matrix Tabulations, 1996 and 2001 Censuses

Low rent stock in the Sydney metropolitan area continued to vanish between 1996 and 2001 (Table 5-5 and Figure 5-1). During the same period, only the high rent stock increased as a proportion of all rental dwellings. In 2001, Sydney's high rent stock made up 56 per cent of all rental dwellings, an increase from 44 per cent in 1996. Melbourne is the only other capital to record significant losses in the share of dwellings renting in the combined low and low to moderate rent segments, although the declines were of a lesser degree than in Sydney. The most significant contraction in Melbourne's stock occurred in the second lowest rent segment. Relative shares of low rent stock remained more or less stable between 1996 and 2001 in Brisbane, Adelaide, Perth, Darwin and Canberra, notwithstanding the fact that the size of the low rent segment differed considerably. Hobart, the exception in 2001, recorded an increase in the share of low rent dwellings.

Figure 5-2: Proportion of low income private renters accessing the low rent stock by capital city, 2001



Source: ABS Special Matrix Tabulation, 2001 Census

Across the capital cities, the extent to which low income private renter households occupied the low rent stock varied considerably (Figure 5-2). While the average level of access to low rent stock for all capital cities in 2001 was 27 per cent, in Sydney only 11 per cent of low income renter households were paying low rents. The situation was somewhat better in Melbourne, in which 24 per cent of low income renters resided in low rent dwellings. Darwin aside, the tighter the low rent segment (in terms of the relative share of the overall private rental stock in that city), the more limited the access by low income renter households. And the converse occurred for cities with expanding or stable low rent segments. In Hobart, 75 per cent of low income renters lived in low rent dwellings (up from a figure of 43 per cent in 1996). Brisbane's low rent segment continued to remain at relatively the same share of the rental market, as did the low rent segments in Adelaide and Perth. In each of these cities, the share of low income renters living in low rent stock also stayed at the same level.

This brief overview of the situation in the capital cities reinforces the different private rental markets that operate across Australia's metropolitan regions. Moreover, the figures underscore the difficulties faced by low income urban residents in finding an affordable dwelling to rent.

6 CONCLUSIONS

6.1 Summary of results

This Final Report builds on the analysis of rental shortages presented in the Positioning Paper. The analysis in the Positioning Paper, which represented stage one of this research project, was based on two special ABS summary tabulations (dwelling rent and household income respectively) in which the variable categories were consistently defined in both the 1996 and 2001 Censuses. Twelve rent and household income categories were specified in these tables to ensure that each rent category represented approximately 30 per cent of the corresponding household income category. No other social-demographic variables were available in the summary tables. Therefore, this Final Report focuses on the extent to which different types of households occupy different segments of the stock and the characteristics of renter households paying high dwelling rents. Nevertheless, because the shortage figures provided in the Positioning Paper are presented across a greater range of household incomes and rents than is possible with the expanded ABS Special Matrix used in the Final Report, they are summarised again here.

Positioning Paper: The Positioning Paper revealed an absolute decline between 1996 and 2001 in the number of rental dwellings with rents up to $235 per week in 2001, which represents the bottom 78 per cent of the private rental dwelling stock. Only the stock of dwellings with rents in the top 22 per cent increased in number.

Between 1996 and 2001, the income circumstances of private renter households improved considerably, thereby bettering their overall ability to pay for housing. This income improvement was more pronounced in metropolitan than in non-metropolitan regions. Accordingly, one potential explanation for the declining numbers of lower rent dwellings over the period may be that the generally higher incomes of private renters placed upward pressure on rents. This explanation is consistent with the relatively greater improvement in incomes in metropolitan regions compared with the non-metropolitan areas and the relatively greater loss of lower rent stock in the cities. It is also consistent with lower income households locating in non-metropolitan regions because of a lack of affordable housing in metropolitan regions.

Due to the improved incomes of private renters, the overall shortage of affordable rental dwellings at a national level in 2001 represented a marginal improvement on the 1996 situation. From the summary tabulations reported in the Positioning Paper, in 2001, the absolute shortage of dwellings affordable for low-income households (with incomes less than $335 per week) amounted to 59,000 dwellings. The result for 1996 using equivalent rent and income levels was recorded at 76,000 dwellings. (These shortage numbers provided in the Positioning Paper relate to the number of private renters with household incomes below $335 per week and the number of dwellings renting for than $101 per week. Note that this is a slightly different definition of shortage than appears in the Final Report analysis because of the differences in the data sets used). For households in metropolitan regions in general, and Sydney, Melbourne and Brisbane in particular, significant shortages extend beyond the lowest household income groups up to households with incomes less than $558 per week or the bottom 33 per cent of household incomes. A fuller summary of the results of the Positioning Paper can be found in Appendix A.

Final Report: The expanded 2001 ABS Special Matrix data set used in this Final Report provides more aggregated household income and rent categories. These categories match the 1996 ABS Special Matrix employed in the Wulff and Yates 2001 study. In the ABS Special Matrix the cut off for low rent dwellings was $111 per week (in $2001). This had the effect of reducing the Australia wide estimate of shortage of low rent private rental dwelling for low income households with incomes less than $335 per week to 11,000 and the shortage in metropolitan regions to 40,000.

The data presented in this Final Report, however, enabled a more detailed analysis of the extent to which the low rent stock that existed was available for low income households. The impact of usage by higher income households was assessed against these more conservative shortage estimates.

The Final Report allowed for an assessment of whether the dwellings that are affordable are available to lower income households. This is because the ABS Special Matrix data sets include a number of social and demographic variables, unlike the summary tabulations employed in the Positioning Paper. The results revealed that, taking stock utilisation into account, the estimated shortage of dwellings affordable for low income households increased to 134,000 on an Australia wide basis and an apparent healthy surplus of 184,000 low to moderate rent dwellings was converted to a shortage of 138,000 dwellings for households with incomes up to $558 per week. The equivalent Australia wide estimate for 1996 was 150,000.

The results from this analysis confirm that the greatest pressures are in the metropolitan regions. Once utilisation of stock is taken into account, the estimated shortage of low rent dwellings in metropolitan areas more than doubled from 40,000 to 86,000 and the estimated surplus of 65,000 dwellings of low and low to moderate rent dwellings was converted to a shortage of 105,000 dwellings.

Only about 40 per cent of households living in low rent stock actually has a low income. This proportion is fairly similar in metropolitan and non-metropolitan regions. In metropolitan regions, 60 per cent of higher income private renter households pay low rents; the comparable figure for non-metropolitan regions is 62 per cent. The analysis in the final report showed a consistent pattern in which higher income households paying low rents tended to be aged less than 35 years, a couple headed household, and very likely to have two adults in the paid workforce. Given that this pattern held true for both metropolitan and non-metropolitan regions, it appears that an element of gate-keeping plays a role. The Final Report suggests that in a risk minimisation context, landlords and agents may be more likely to choose an employed tenant over one who is outside the paid workforce.

Young low income couple families are the most likely group of low income private renters to be paying rents in the highest two rent segments. This pattern was similar in both metropolitan and non-metropolitan regions. In an economic climate of increasing part time and casualised work, becoming a low income household may be thrust rather suddenly upon a household. If the household contains a family with children, it may not be possible to down-size rental dwellings instantly. Therefore, it is not surprising to find many low income households paying disproportionately high rents. The increasing frequency of family transitions, particularly divorce or separation, contributes the same outcome.

6.2 Housing policy issues and options

The Final Report indicates ongoing shortages of affordable housing in the private rental market despite improved economic circumstances of renters and considerable evidence of increased investment in private rental housing.

Unlike many other countries, Australia does not have a tradition of institutional investment in private rental dwellings. The vast majority of investors in the private rental market are individuals rather than corporate investors (Yates, 1996). Wood and Watson (2001) suggest those individuals who invest in the low rent stock have lower incomes on average than rental investors overall. As a result, they receive fewer of the tax advantages that encourage investment in rental property. They also face higher operating costs. Because of these factors, they receive lower returns on their investment, making them the most marginal of individual investors in rental property and, potentially, the most likely to leave the market. Higher income investors benefit more from current tax breaks available, but tend to invest in higher valued properties.

The results of this study, which provide evidence of loss of rental stock at the lower end of the rental market between 1996 and 2001, are consistent with these arguments.

Recent tax changes such as those announced by the NSW State government in 2004 are unlikely to reverse these incentives. Land tax changes, which trade-off decreased taxes on higher valued properties at the expense of increased taxes on lower value properties, favour investment at the top end rather than the bottom end of the rental market. On the other hand, exit taxes on rental investment to pay for reduced stamp duties for owner-occupiers are likely to increase the relative advantage of home ownership over rental investment and may reduce some of the pressure on the rental market from higher income renters who have been choosing to rent rather than own. Reductions to the top land tax rates announced by the Victorian government in 2004 may reduce the disincentives for larger investors, or more specifically, may reduce the disincentives for investors with multiple holdings to enter the market.

A number of broad options might be considered. The shortage of low rent stock in the private rental market might be addressed by either replacing or supplementing the existing private rental market. Replacement might occur through creating a secondary rental market, such as happens with head leasing by a social landlord. This solution is already being implemented on a small scale in different states through head leasing low rent properties as they become available. This effectively involves creation of a secondary market for low income tenants and, importantly, ensures that the low rent stock which does exist is allocated to those households most in need of it. The results of this study, which underscore the extent to which shortages are magnified because existing low rent stock is occupied by higher income households reinforce the need to maintain some control over the allocation process for low rent dwellings. Such policies, however, do not address the problem of needing to *increase* the total stock affordable for households on low or low to moderate incomes in order to ensure that these households have the same choices available to them as do higher income households. The declining numbers of low rent properties mean that an approach that is restricted to better targeting of the existing low rent stock ultimately will be limited.

A second solution is that of market supplementation. An obvious example is the development of a social housing sector committed to expanding the range of affordable housing available for lower income households. If such an initiative cannot be funded directly by central or state governments, there may be scope for supporting institutions prepared to fund potential housing providers. This may require new tax breaks, guarantees or other forms of direct subsidy. Because market supplementation policies are likely to rely on the income support provided by rent assistance to ensure their financial viability, a market supplementation approach highlights the need to ensure rent assistance is both guaranteed and available as a supply side measure. In broad terms, a market supplementation policy highlights the need to work towards building institutional structures that can increase control over the supply of affordable rental accommodation.

These institutional structures could encompass all or some of a fund raising arm, a set of appropriate financial instruments, a housing provider and a housing manager. These roles do not have to be undertaken by the one institution and not all may be necessary. What is appropriate at any time will depend on the current economic environment and on whatever windows of opportunity arise. At present (2004), for example, the uncertainties associated with the tax treatment of depreciation allowances may provide some opportunity for negotiation for more targeted tax incentives. Likewise, the expected slow down in the rate of dwelling price inflation could provide an opportunity for development of income securities for investors more concerned with income streams than capital gain. In light of higher rental yields on lower compared with higher valued properties, such securities may be attractive to investors interested in indirect investment in rental property. A number of recent studies both have provided an overview of the types of policies that might be needed to increase

investment in lower rent stock and have suggested several constraints that need to be overcome before institutional investors would be willing to invest in or fund the provision of low rent dwellings (AHRNC, 2001; Allen Consulting, 2004; Berry, 2000, 2002; Berry et al, forthcoming).

Much of the discussion around the impact of tax reform has not considered whether such tax reform will encourage investment at the low rather than the top end of the rental market. Nor has the discussion considered whether these incentives will protect individual investors of low rent stock or encourage institutional investors to invest in such stock. Given the current trends in our rental stock, and the on-going need to increase the low rent supply, the absence of such discussion is of some concern.

Broad policy solutions, which target the private rental market as a whole, are unlikely to address issues related to the low rent end of the market; to the way in which the low rent stock available is allocated; and to the location of the low rent rental stock (for example, across and within the capital cities). It is these issues that require the attention of housing policy analysts.

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APPENDIX A: SUMMARY OF KEY RESULTS FROM POSITIONING PAPER

At an Australia wide level, the private rental stock grew by 7.6 per cent between 1996 and 2001. This growth in the private rental stock, however, occurred in the top quintile of the rent distribution. Despite the overall growth in the private rental stock, there was an absolute decline in the total number of dwellings that rented in the bottom four rent quintiles. Conversely, there was an absolute increase in the total number of dwellings for those that rented in the top quintile of rental values. In other words, the growth in the rental stock between 1996 and 2001 occurred solely at the top end of the private rental market.

Over the same period, the household income distribution of private renters improved. There was a decline in the proportion of low-income households and an increase in the proportion of households with moderate to high and high levels of household income. Despite fewer households in the lowest two income categories, the decline in the affordable stock of rental properties created an overall shortage of 59,000 rental dwellings on an Australian wide basis for low-income households. This income level is below benefit levels for all household types other than single persons. The comparable figure for 1996 was 76,000 dwellings. In other words, based on this basic shortage measure, the private rental supply situation for low-income households improved between the two census years. The Positioning Paper, however, emphasises that this represents a 'first-cut' estimate. The estimates presented in this Final Report present a more sophisticated measure that takes into account the adequacy and availability of the affordable stock and the characteristics of its occupants.

These first cut results are summarised in Table A 1, which shows the cumulative distribution of private rental stock for both 1996 and 2001, the growth in the stock available below the respective rent levels indicated and the resultant shortage or surplus for each of these categories.[19] This latter calculation is based on comparing the cumulative stock data in Table A 1 with the cumulative income data for private renter households in Table A 2.

Table A 1: Private rental stock, Australia: 1996-2001

		Rent $2001pw	Stock 1996 (cumul.)	Stock 2001 (cumul.)	Growth 1996-2001 %	Shortage, 1996	Shortage, 2001
Low	R1	<$68	37,000	26,000	-30	-73,000	-66,000
Low	R2	<$101	153,000	154,000	1	-76,000	-59,000
Low-moderate	R3	<$135	395,000	353,000	-11	26,000	4,000
Low-moderate	R4	<$168	727,000	666,000	-8	219,000	184,000
Moderate	R5	<$202	955,000	931,000	-2	324,000	339,000
Moderate	R6	<$235	1,064,000	1,041,000	-2	319,000	340,000
Moderate	R7	<$269	1,121,000	1,127,000	1	289,000	333,000
Moderate-high	R8	<$336	1,186,000	1,224,000	3	215,000	279,000
Moderate-high	R9	<$403	1,208,000	1,273,000	5	142,000	210,000
High	R10	<$503	1,222,000	1,299,000	6	85,000	129,000
High	R11	<$671	1,229,000	1,312,000	7	41,000	19,000
High	R12		1,234,000	1,328,000	8	0	0
Total stock			1,234,000	1,328,000	8	0	0

Source: ABS Summary Rent Tabulations, 1996 and 2001 Censuses

[19] The apparent increase in the stock in the R2 category arises from the clustering of rent data at $100 per week, as discussed in footnote 5. As can be seen from Table B 2, there is a spike in the data for rental stock with a $2001 value of $100. The effect of these data spikes evens out as data accumulates.

Table A 2: Private renters by household income, Australia: 1996-2001

		$2001pw	Households 1996 (cumul.)	Distrib'n 1996 (cumul.)	Households 2001 (cumul.)	Distrib'n 2001 (cumul.)	Growth 1996-2001 %
Low	Y1	<$223-	110,000	8.9	92,000	6.9	-17
Low	Y2	<$335	229,000	18.6	212,000	16.0	-7
Low-moderate	Y3	<$447	369,000	29.9	349,000	26.3	-5
Low-moderate	Y4	<$558	508,000	41.2	482,000	36.3	-5
Moderate	Y5	<$670	631,000	51.1	592,000	44.6	-6
Moderate	Y6	<$782	745,000	60.4	701,000	52.8	-6
Moderate	Y7	<$893	832,000	67.4	795,000	59.9	-5
Moderate-high	Y8	<$1,117	971,000	78.7	945,000	71.2	-3
Moderate-high	Y9	<$1,340	1,066,000	86.4	1,063,000	80.0	0
High	Y10	<$1,675	1,137,000	92.1	1,170,000	88.1	3
High	Y11	<$2,234	1,188,000	96.3	1,293,000	97.4	9
High	Y12		1,234,000	100.0	1,328,000	100.0	8
Total households			1,234,000	100.0	1,328,000	100.0	8

Source: ABS Summary Rent and Income Tabulations, 1996 and 2001 Censuses

Approximately two thirds of private renter households are located in metropolitan regions and the remaining one-third in non-metropolitan areas. The incidence of low rent stock is far greater in non-metropolitan Australia than the capital cities. In 2001, seventy-two per cent of dwellings in non-metropolitan Australia had low and low to moderate rents compared with 39 per cent of dwellings in metropolitan regions. On the other hand, 20 per cent of the dwellings in metropolitan regions had rents in the moderate-high to high range against only 4 per cent in non-metropolitan regions.

The national decline in the total number of rental dwellings with rents in the bottom four rent distribution quintiles is almost solely a metropolitan phenomenon. Declines in non-metropolitan regions are observed only for the extremely low valued rental stock (the bottom 2 per cent of rental dwellings). Within metropolitan regions, however, the number of rental dwellings declined in each rent segment through to the moderate-high rent range.

In 2001, household incomes continued to differ between private renters living in metropolitan and non-metropolitan regions. In metropolitan regions, more than 50 per cent had incomes above the moderate household income range of $782 per week compared with only 30 per cent in non-metropolitan Australia. Between 1996 and 2001, the household incomes of private renters improved for the bottom 47 per cent of metropolitan households. In contrast, only the very lowest income households (bottom 20 per cent of households) showed an improved household income picture in non-metropolitan regions.

In 2001, in metropolitan regions households with low to moderate incomes of up to $447 per week (the lowest 22 per cent of household incomes in metropolitan regions) experienced shortages in rental dwellings. The shortage at this level of income is estimated at 43,000 dwellings. Shortages are greater for households in metropolitan regions in low-income categories. In non-metropolitan areas, a 20,000 dwelling shortage was documented only for low-income households with incomes up to $223 per week (the lowest 8 per cent of household incomes in non-metropolitan areas). Overall, for metropolitan renter households, the shortage worsened between 1996 and 2001. The shortage level remained about the same between the two census years for non-metropolitan regions.

The results equivalent to those in Table A 1 and Table A 2 but presented at a metropolitan and non-metropolitan level of disaggregation are summarised in Table A 3and Table A 4.

Table A 3: Private rental stock, metropolitan and non-metropolitan regions: 1996-2001

		Rent $2001pw	Stock 1996 (cumul.)	Stock 2001 (cumul.)	Growth 1996-2001 %	Shortage, 1996 (cumul.)	Shortage, 2001 (cumul.)
Metropolitan regions							
Low	R1	<$68	13,000	8,000	-37	-53,000	-45,000
Low	R2	<$101	68,000	57,000	-17	-65,000	-61,000
Low-moderate	R3	<$135	198,000	151,000	-24	-15,000	-43,000
Low-moderate	R4	<$168	411,000	338,000	-18	112,000	66,000
Moderate	R5	<$202	577,000	529,000	-8	199,000	188,000
Moderate	R6	<$235	664,000	618,000	-7	211,000	208,000
Moderate	R7	<$269	713,000	691,000	-3	200,000	219,000
Moderate-high	R8	<$336	770,000	778,000	1	161,000	204,000
Moderate-high	R9	<$403	791,000	824,000	4	111,000	165,000
High	R10	<$503	804,000	849,000	6	70,000	108,000
High	R11	<$671	810,000	862,000	6	35,000	18,000
High	R12		814,000	874,000	7	0	0
Total stock			814,000	874,000	7	0	0
Non-metropolitan regions							
Low	R1	<$68	24,000	18,000	-27	-20,000	-20,000
Low	R2	<$101	84,000	97,000	15	-11,000	3,000
Low-moderate	R3	<$135	196,000	202,000	3	42,000	47,000
Low-moderate	R4	<$168	316,000	328,000	4	107,000	118,000
Moderate	R5	<$202	378,000	402,000	6	125,000	151,000
Moderate	R6	<$235	400,000	423,000	6	107,000	132,000
Moderate	R7	<$269	408,000	437,000	7	88,000	114,000
Moderate-high	R8	<$336	416,000	445,000	7	54,000	75,000
Moderate-high	R9	<$403	417,000	448,000	7	31,000	45,000
High	R10	<$503	418,000	449,000	7	15,000	21,000
High	R11	<$671	419,000	450,000	7	6,000	1,000
High	R12		420,000	454,000	8	0	0
Total stock			420,000	454,000	8	0	0

Source: ABS Summary Rent Tabulation, 1996 and 2001 Censuses

As with the Australia wide results, the metropolitan and non-metropolitan shortages have been derived by subtracting the cumulative count of households given in Table A 4 from the stock data given in Table A 3.

The results of these calculations have been summarised in Chapter 1 and are presented in detail in the Positioning Paper. As can be seen from the above table, the greatest shortage arises in metropolitan regions for households who can afford to pay no more than $100 per week in rent. These are households on incomes of no more than $335 per week. However, there is still a significant 43,000 shortage of affordable dwellings in metropolitan regions for households on incomes of less than $447 per week who are presumed to be able to afford to pay no more than $135 per week in rent.

Table A 4: Private renters by household income, metropolitan and non-metropolitan regions: 1996-2001

		Income $2001pw	Households 1996 (cumul.)	Distribution 1996 (cumul.)	Households 2001 (cumul.)	Distribution 2001 (cumul.)	Growth 1996-2001 %
Metropolitan regions							
Low	Y1	<$223-	65,533	8.0	53,520	6.1	-18
Low	Y2	<$335	133,189	16.4	118,246	13.5	-11
Low-moderate	Y3	<$447	213,863	26.3	193,843	22.2	-9
Low-moderate	Y4	<$558	299,185	36.8	271,947	31.1	-9
Moderate	Y5	<$670	378,369	46.5	340,795	39.0	-10
Moderate	Y6	<$782	452,707	55.6	409,931	46.9	-9
Moderate	Y7	<$893	512,301	62.9	471,650	53.9	-8
Moderate-high	Y8	<$1117	608,626	74.8	574,183	65.7	-6
Moderate-high	Y9	<$1340	680,021	83.5	659,525	75.4	-3
High	Y10	<$1675	733,910	90.1	741,397	84.8	1
High	Y11	<$2234	774,916	95.2	843,973	96.5	9
High	Y12		814,101	100.0	874,313	100.0	7
Total households			814,101	100.0	874,313	100.0	7
Non-metropolitan regions							
Low	Y1	<$223-	44,415	10.6	38,144	8.4	-14
Low	Y2	<$335	95,431	22.7	94,079	20.7	-1
Low-moderate	Y3	<$447	154,701	36.8	154,799	34.1	0
Low-moderate	Y4	<$558	208,660	49.7	209,849	46.3	1
Moderate	Y5	<$670	253,112	60.3	251,191	55.4	-1
Moderate	Y6	<$782	292,286	69.6	290,694	64.1	-1
Moderate	Y7	<$893	320,132	76.2	323,020	71.2	1
Moderate-high	Y8	<$1117	362,079	86.2	370,524	81.7	2
Moderate-high	Y9	<$1340	386,364	92.0	403,117	88.9	4
High	Y10	<$1675	403,173	96.0	428,603	94.5	6
High	Y11	<$2234	412,730	98.3	448,834	99.0	9
High	Y12		419,867	100.0	453,495	100.0	8
Total households			419,867	100.0	453,495	100.0	8

Source: ABS Summary Income Tabulation, 1996 and 2001 Censuses

This 43,000 shortage of affordable dwellings in metropolitan regions arises primarily from the pressures in the three largest capital cities. The greatest shortage is in Sydney (with a shortage of 36,000 dwellings) with smaller shortages in Melbourne (9,000 dwellings) and Brisbane (4,000 dwellings). In each of these cities, these figures represent a more severe shortage in 2001 than for equivalent rent and income levels in 1996. The spatially disaggregated results that were presented in the Positioning paper are repeated here in Table A 5 to Table A. 8.

Table A 5: Distribution of rent paid and income of households in metropolitan and non-metropolitan regions by State: 2001

Cumulative rents

		NSW		Vic		Qld		SA		WA		Tas		NT		ACT	Australia
	$2001	Sydney	Rest of NSW	Melb	Rest of Vic	Bris	Rest of Qld	Adelaide	Rest of SA	Perth	Rest of WA	Hobart	Rest of Tas	Darwin	Rest of NT	All	
R1	$1-$67	1,000	6,000	2,000	4,000	1,000	4,000	1,000	2,000	1,000	1,000	0	1,000	0	0	0	26,000
R2	$68-$100	7,000	33,000	13,000	20,000	11,000	25,000	10,000	7,000	11,000	6,000	3,000	6,000	0	0	1,000	154,000
R3	$101-$134	17,000	66,000	40,000	40,000	31,000	58,000	24,000	13,000	29,000	13,000	7,000	12,000	1,000	1,000	2,000	353,000
R4	$135-$167	48,000	112,000	95,000	59,000	71,000	104,000	46,000	16,000	60,000	21,000	11,000	14,000	2,000	1,000	5,000	666,000
R5	$168-$201	109,000	141,000	148,000	65,000	110,000	138,000	58,000	17,000	77,000	25,000	12,000	15,000	4,000	2,000	11,000	931,000
R6	$202-$234	150,000	148,000	170,000	66,000	123,000	149,000	61,000	17,000	82,000	25,000	12,000	15,000	5,000	2,000	14,000	1,041,000
R7	$235-$268	189,000	153,000	187,000	67,000	131,000	156,000	63,000	18,000	86,000	26,000	12,000	15,000	6,000	2,000	17,000	1,127,000
R8	$269-$335	245,000	155,000	206,000	68,000	137,000	161,000	65,000	18,000	88,000	27,000	13,000	15,000	7,000	3,000	19,000	1,224,000
R9	$336-$402	278,000	156,000	214,000	68,000	138,000	162,000	65,000	18,000	90,000	27,000	13,000	15,000	8,000	3,000	19,000	1,273,000
R10	$403-$502	296,000	156,000	218,000	68,000	139,000	163,000	66,000	18,000	90,000	27,000	13,000	15,000	8,000	3,000	19,000	1,299,000
R11	$503-$670	305,000	157,000	221,000	68,000	140,000	163,000	66,000	18,000	90,000	27,000	13,000	15,000	8,000	3,000	20,000	1,312,000
R12	$671+	312,000	158,000	224,000	69,000	140,000	164,000	66,000	18,000	91,000	27,000	13,000	15,000	8,000	3,000	20,000	1,328,000
	Total	312,000	158,000	224,000	69,000	140,000	164,000	66,000	18,000	91,000	27,000	13,000	15,000	8,000	3,000	20,000	1,328,000

Cumulative incomes

		NSW		Vic		Qld		SA		WA		Tas		NT		ACT	
	$2001	Sydney	Rest of NSW	Melb	Rest of Vic	Bris	Rest of Qld	Adelaide	Rest of SA	Perth	Rest of WA	Hobart	Rest of Tas	Darwin	Rest of NT	All	Australia
Y1	$0-$222	15,000	14,000	14,000	6,000	9,000	12,000	5,000	2,000	8,000	2,000	1,000	2,000	0	0	1,000	92,000
Y2	$223-$334	31,000	35,000	31,000	15,000	21,000	30,000	13,000	4,000	17,000	5,000	3,000	4,000	1,000	0	1,000	212,000
Y3	$335-$446	52,000	57,000	49,000	25,000	35,000	51,000	21,000	7,000	27,000	8,000	5,000	7,000	1,000	0	2,000	349,000
Y4	$447-$557	75,000	76,000	69,000	33,000	50,000	71,000	29,000	9,000	37,000	11,000	6,000	9,000	2,000	1,000	3,000	482,000
Y5	$558-$669	96,000	91,000	87,000	39,000	63,000	86,000	35,000	11,000	45,000	13,000	7,000	10,000	2,000	1,000	5,000	592,000
Y6	$670-$781	119,000	104,000	104,000	45,000	75,000	101,000	41,000	12,000	53,000	16,000	9,000	11,000	3,000	1,000	6,000	701,000
Y7	$782-$892	140,000	115,000	120,000	50,000	86,000	114,000	45,000	13,000	59,000	18,000	9,000	12,000	4,000	1,000	8,000	795,000
Y8	$893-$1116	177,000	131,000	146,000	57,000	103,000	132,000	53,000	15,000	69,000	21,000	11,000	13,000	5,000	2,000	11,000	945,000
Y9	$1117-$1339	210,000	142,000	168,000	62,000	116,000	145,000	58,000	16,000	76,000	23,000	12,000	14,000	6,000	2,000	13,000	1,063,000
Y10	$1340-$1674	245,000	150,000	190,000	65,000	128,000	154,000	62,000	17,000	83,000	25,000	12,000	15,000	7,000	2,000	16,000	1,170,000
Y11	$1675-$2233	295,000	156,000	217,000	68,000	138,000	162,000	65,000	18,000	90,000	27,000	13,000	15,000	7,000	3,000	19,000	1,293,000
Y12	$2234+	312,000	158,000	224,000	69,000	140,000	164,000	66,000	18,000	91,000	27,000	13,000	15,000	8,000	3,000	20,000	1,328,000
	Total	312,000	158,000	224,000	69,000	140,000	164,000	66,000	18,000	91,000	27,000	13,000	15,000	8,000	3,000	20,000	1,328,000

Source: ABS Summary Rent and Household Income Tabulations, 2001 Census

Table A 6: Shortage of affordable rental housing in metropolitan and non-metropolitan regions by State, 2001

		NSW		Vic		Qld		SA		WA		Tas		NT		ACT	
	$2001	Sydney	Rest of NSW	Melb	Rest of Vic	Bris	Rest of Qld	Adelaide	Rest of SA	Perth	Rest of WA	Hobart	Rest of Tas	Darwin	Rest of NT	All	Australia
Y1	$0-$222	-14,000	-9,000	-12,000	-3,000	-8,000	-8,000	-4,000	0	-6,000	-1,000	-1,000	0	0	0	-1,000	-66,000
Y2	$223-$334	-24,000	-3,000	-17,000	5,000	-10,000	-6,000	-3,000	3,000	-6,000	1,000	0	2,000	0	0	-1,000	-59,000
Y3	$335-$446	-36,000	9,000	-9,000	15,000	-4,000	7,000	3,000	6,000	2,000	5,000	2,000	5,000	0	0	0	4,000
Y4	$447-$557	-27,000	36,000	26,000	26,000	21,000	33,000	17,000	7,000	23,000	10,000	4,000	6,000	1,000	1,000	2,000	184,000
Y5	$558-$669	13,000	51,000	61,000	26,000	47,000	51,000	23,000	7,000	32,000	11,000	4,000	5,000	2,000	1,000	7,000	339,000
Y6	$670-$781	31,000	44,000	66,000	21,000	47,000	47,000	20,000	5,000	29,000	10,000	4,000	4,000	2,000	1,000	8,000	340,000
Y7	$782-$892	49,000	38,000	67,000	17,000	45,000	42,000	18,000	4,000	27,000	9,000	3,000	3,000	3,000	1,000	9,000	333,000
Y8	$893-$1116	68,000	24,000	59,000	11,000	33,000	29,000	12,000	2,000	20,000	6,000	2,000	2,000	3,000	1,000	8,000	279,000
Y9	$1117-$1339	68,000	14,000	46,000	6,000	22,000	17,000	8,000	1,000	13,000	4,000	1,000	1,000	2,000	1,000	6,000	210,000
Y10	$1340-$1674	52,000	7,000	28,000	3,000	11,000	8,000	4,000	1,000	7,000	2,000	1,000	0	1,000	0	4,000	129,000
Y11	$1675-$2233	10,000	0	4,000	0	2,000	1,000	0	0	1,000	0	0	0	0	0	1,000	19,000
Y12	$2234+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: ABS Summary Rent and Household Income Tabulations, 2001 Census

Table A 7: Shortage of affordable rental housing in metropolitan and non-metropolitan regions by State, 1996

		NSW		Vic		Qld		SA		WA		Tas		NT		ACT	
	$1996	Sydney	Rest of NSW	Melb	Rest of Vic	Bris	Rest of Qld	Adelaide	Rest of SA	Perth	Rest of WA	Hobart	Rest of Tas	Darwin	Rest of NT	All	Australia
Y1	$0-$199	-15,000	-9,000	-15,000	-3,000	-8,000	-7,000	-5,000	0	-7,000	0	-1,000	-1,000	0	0	-1,000	-73,000
Y2	$200-$299	-28,000	-7,000	-17,000	1,000	-10,000	-9,000	-2,000	1,000	-6,000	1,000	0	0	0	0	-1,000	-76,000
Y3	$300-$399	-33,000	8,000	7,000	14,000	-2,000	4,000	5,000	5,000	8,000	6,000	1,000	4,000	0	0	-1,000	26,000
Y4	$400-$499	-12,000	33,000	51,000	25,000	20,000	27,000	18,000	8,000	29,000	9,000	4,000	5,000	0	1,000	2,000	219,000
Y5	$500-$599	26,000	45,000	70,000	22,000	38,000	39,000	20,000	6,000	31,000	8,000	4,000	4,000	1,000	1,000	8,000	324,000
Y6	$600-699	49,000	39,000	66,000	16,000	38,000	37,000	17,000	5,000	28,000	7,000	3,000	3,000	2,000	1,000	9,000	319,000
Y7	$700-$799	58,000	31,000	59,000	13,000	33,000	31,000	14,000	3,000	23,000	6,000	3,000	2,000	2,000	1,000	9,000	289,000
Y8	$800-$999	61,000	19,000	43,000	7,000	22,000	20,000	9,000	2,000	16,000	4,000	2,000	1,000	2,000	1,000	7,000	215,000
Y9	$1000-$1199	47,000	11,000	28,000	4,000	14,000	12,000	5,000	1,000	10,000	3,000	1,000	1,000	2,000	1,000	5,000	142,000
Y10	$1200-$1499	33,000	5,000	17,000	2,000	7,000	6,000	3,000	0	6,000	2,000	0	0	1,000	0	3,000	85,000
Y11	$1500-$1999	18,000	2,000	8,000	1,000	3,000	2,000	1,000	0	3,000	1,000	0	0	0	0	1,000	41,000
Y12	$2000+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: ABS Summary Rent and Household Income Tabulations, 1996 Census

Table A 8: Distribution of rent paid and income of households in metropolitan and non-metropolitan regions by State: 1996

Cumulative rents

		NSW		Vic		Qld		SA		WA		Tas		NT		ACT	
	$1996	Sydney	Rest of NSW	Melb	Rest of Vic	Bris	Rest of Qld	Adelaide	Rest of SA	Perth	Rest of WA	Hobart	Rest of Tas	Darwin	Rest of NT	All	Australia
R1	$1-$60	3,000	8,000	4,000	5,000	2,000	5,000	2,000	2,000	2,000	2,000	1,000	1,000	0	0	0	37,000
R2	$61-$90	9,000	29,000	21,000	19,000	11,000	20,000	11,000	7,000	13,000	5,000	2,000	4,000	0	0	1,000	153,000
R3	$91-$120	28,000	66,000	67,000	41,000	31,000	52,000	25,000	13,000	37,000	13,000	6,000	10,000	1,000	1,000	3,000	395,000
R4	$121-$150	76,000	110,000	135,000	60,000	67,000	93,000	45,000	19,000	68,000	19,000	10,000	13,000	2,000	1,000	7,000	727,000
R5	$151-$180	141,000	138,000	175,000	64,000	99,000	121,000	53,000	20,000	79,000	21,000	11,000	14,000	3,000	1,000	14,000	955,000
R6	$181-$210	190,000	145,000	191,000	65,000	110,000	132,000	56,000	20,000	83,000	22,000	12,000	14,000	4,000	2,000	18,000	1,064,000
R7	$211-$240	221,000	148,000	199,000	66,000	115,000	137,000	57,000	20,000	85,000	22,000	12,000	14,000	5,000	2,000	19,000	1,121,000
R8	$241-$300	261,000	149,000	208,000	66,000	118,000	141,000	58,000	20,000	87,000	23,000	12,000	14,000	6,000	2,000	20,000	1,186,000
R9	$301-$360	276,000	150,000	211,000	66,000	119,000	142,000	58,000	20,000	87,000	23,000	12,000	14,000	6,000	2,000	21,000	1,208,000
R10	$361-$450	286,000	150,000	213,000	66,000	119,000	143,000	58,000	20,000	88,000	23,000	12,000	14,000	7,000	2,000	21,000	1,222,000
R11	$451-$600	291,000	150,000	214,000	66,000	119,000	143,000	58,000	20,000	88,000	23,000	12,000	14,000	7,000	2,000	21,000	1,229,000
R12	$601+	293,000	150,000	216,000	66,000	120,000	143,000	58,000	20,000	88,000	23,000	12,000	14,000	7,000	2,000	21,000	1,234,000
	Total	293,000	150,000	216,000	66,000	120,000	143,000	58,000	20,000	88,000	23,000	12,000	14,000	7,000	2,000	21,000	1,234,000

Cumulative incomes

		NSW		Vic		Qld		SA		WA		Tas		NT		ACT	
	$1996	**Sydney**	**Rest of NSW**	**Melb**	**Rest of Vic**	**Bris**	**Rest of Qld**	**Adelaide**	**Rest of SA**	**Perth**	**Rest of WA**	**Hobart**	**Rest of Tas**	**Darwin**	**Rest of NT**	**All**	**Australia**
Y1	$0-$199	18,000	17,000	19,000	8,000	10,000	13,000	7,000	2,000	9,000	2,000	1,000	2,000	0	0	1,000	110,000
Y2	$200-$299	37,000	36,000	38,000	17,000	21,000	29,000	13,000	5,000	18,000	4,000	3,000	4,000	1,000	0	2,000	229,000
Y3	$300-$399	62,000	57,000	60,000	27,000	34,000	48,000	20,000	8,000	29,000	7,000	4,000	6,000	1,000	0	3,000	369,000
Y4	$400-$499	88,000	77,000	84,000	36,000	48,000	66,000	28,000	11,000	39,000	10,000	6,000	8,000	2,000	0	5,000	508,000
Y5	$500-$599	115,000	93,000	105,000	43,000	61,000	82,000	34,000	13,000	48,000	12,000	7,000	10,000	2,000	1,000	7,000	631,000
Y6	$600-699	141,000	106,000	125,000	49,000	72,000	96,000	39,000	15,000	56,000	14,000	8,000	11,000	3,000	1,000	9,000	745,000
Y7	$700-$799	163,000	116,000	140,000	53,000	81,000	106,000	43,000	17,000	62,000	16,000	9,000	12,000	3,000	1,000	10,000	832,000
Y8	$800-$999	200,000	131,000	165,000	59,000	96,000	121,000	49,000	18,000	71,000	19,000	10,000	13,000	4,000	1,000	13,000	971,000
Y9	$1000-$1199	229,000	139,000	183,000	62,000	105,000	130,000	53,000	19,000	77,000	20,000	11,000	13,000	5,000	2,000	16,000	1,066,000
Y10	$1200-$1499	253,000	145,000	196,000	65,000	112,000	137,000	55,000	20,000	82,000	22,000	12,000	14,000	6,000	2,000	18,000	1,137,000
Y11	$1500-$1999	272,000	148,000	206,000	66,000	117,000	140,000	57,000	20,000	85,000	23,000	12,000	14,000	6,000	2,000	20,000	1,188,000
Y12	$2000+	293,000	150,000	216,000	66,000	120,000	143,000	58,000	20,000	88,000	23,000	12,000	14,000	7,000	2,000	21,000	1,234,000
	Total	293,000	150,000	216,000	66,000	120,000	143,000	58,000	20,000	88,000	23,000	12,000	14,000	7,000	2,000	21,000	1,234,000

Source: ABS Summary Rent and Household Income Tabulation, 1996 Census

Table A 9: Growth in cumulative rental stock and rental incomes in metropolitan and non-metropolitan regions by State: 1996-2001

Growth in cumulative rents

		NSW		Vic		Qld		SA		WA		Tas		NT		ACT	
	$1996	Sydney	Rest of NSW	Melb	Rest of Vic	Bris	Rest of Qld	Adelaide	Rest of SA	Perth	Rest of WA	Hobart	Rest of Tas	Darwin	Rest of NT	All	Australia
R1	$1-$67	-47	-29	-36	-27	-40	-27	-22	-29	-40	-31	-14	-2	-47	-30	-29	-30
R2	$68-$100	-25	11	-38	9	6	25	-9	6	-12	15	32	33	10	-2	1	1
R3	$101-$134	-41	0	-41	-4	-1	11	-5	-5	-21	1	21	16	2	-13	-22	-11
R4	$135-$167	-37	2	-30	-3	6	12	0	-14	-12	9	6	8	26	8	-27	-8
R5	$168-$201	-23	3	-16	1	11	14	8	-12	-3	19	5	8	35	27	-21	-2
R6	$202-$234	-21	2	-11	1	11	12	10	-12	-1	18	4	7	26	19	-19	-2
R7	$235-$268	-15	3	-6	2	14	14	12	-12	1	18	5	7	21	18	-13	1
R8	$269-$335	-6	4	-1	2	16	14	13	-12	2	16	5	7	16	13	-9	3
R9	$336-$402	1	4	1	2	16	14	13	-12	2	16	5	7	16	15	-7	5
R10	$403-$502	4	4	2	2	17	14	13	-12	3	16	5	7	16	14	-7	6
R11	$503-$670	5	4	3	3	17	14	13	-12	3	16	5	8	16	15	-6	7
R12	$671+	7	5	4	3	17	15	14	-11	3	16	6	8	16	15	-6	8
	Total	7	5	4	3	17	15	14	-11	3	16	6	8	16	15	-6	8

Growth in cumulative incomes

		NSW		Vic		Qld		SA		WA		Tas		NT		ACT	
	$1996	Sydney	Rest of NSW	Melb	Rest of Vic	Bris	Rest of Qld	Adelaide	Rest of SA	Perth	Rest of WA	Hobart	Rest of Tas	Darwin	Rest of NT	All	Australia
Y1	$0-$222	-17	-15	-26	-25	-8	-6	-17	-31	-16	1	-5	-11	16	31	-38	-17
Y2	$223-$334	-16	-2	-20	-11	3	5	0	-21	-6	11	2	3	26	45	-33	-7
Y3	$335-$446	-15	-1	-18	-8	5	6	3	-20	-5	13	5	6	20	24	-30	-5
Y4	$447-$557	-15	-1	-17	-8	6	8	4	-21	-5	12	4	5	15	17	-31	-5
Y5	$558-$669	-16	-2	-17	-8	4	6	4	-21	-6	9	1	4	13	8	-30	-6
Y6	$670-$781	-16	-2	-16	-7	4	6	5	-20	-5	9	1	4	13	5	-28	-6
Y7	$782-$892	-14	-1	-14	-5	6	8	6	-19	-4	10	1	5	14	7	-25	-5
Y8	$893-$1116	-12	0	-11	-4	8	9	7	-17	-3	10	2	5	14	10	-21	-3
Y9	$1117-$1339	-8	2	-8	-1	11	11	9	-15	-1	13	3	6	14	12	-17	0
Y10	$1340-$1674	-3	3	-3	1	14	13	12	-13	1	15	4	7	16	13	-13	3
Y11	$1675-$2233	9	6	5	4	18	15	15	-12	5	19	6	9	20	18	-5	9
Y12	$2234+	7	5	4	3	17	15	14	-12	3	16	5	8	16	15	-6	8
	Total	7	5	4	3	17	15	14	-12	3	16	5	8	16	15	-6	8

Source: ABS Summary Rent and Household Income Tabulation, 1996 and 2001 Censuses

The simplified tabulations analysed in the Positioning Paper allowed for more disaggregated rent and income categories and for a greater degree of spatial disaggregation than the more complex matrix tabulation that forms the basis of the results reported in this Final Report. The value-added census data used for this study were described in the Positioning Paper as were the imputation techniques used to replace missing data and re-categorise the 2001 Census data so that the income categories in 2001 were the real equivalents of those recorded in 1996.

APPENDIX B: VALUE ADDED CENSUS DATA

Overview

In the data employed in this study, issues arose for a number of reasons. In the first place, census data on critical variables such as household income and rent tend to have fairly high proportions of observations for which data are missing or, in the case of household income, are only partially stated. A further problem occurred with the 2001 Census because income was collected as a categorical variable with the same categories employed in 2001 as in the 1996 Census. Consequently, adjustments were needed to ensure that real income remained unchanged in the categories employed. A brief indication of the procedures employed is given below. More detail is provided in subsections B.2 and B.3.

Missing values

All observations for which data were missing have had values imputed. The rationale for imputation is outlined in Wulff and Yates (2001) and the imputation process employed in this present study generally follows the same procedures as the earlier study. For this study, however, because the imputation was undertaken by the ABS before the data requested were extracted from the census file, it was possible to refine the process of imputation employed for missing or partially stated household income.

For Australia, approximately 2 per cent of private rental dwellings in 2001 required that rent paid be imputed. Broadly, observations for which rents paid were missing had data assigned on the basis of an equivalent 'donor' population for whom full information was available. Missing rental values were assigned on the basis of dwelling structure (4 types) and size (4 levels) and on location (a metro, non-metro breakdown within each state) and on the basis of three categories of household income (low; low to moderate; or above average). This calculation was undertaken after missing household income was imputed. For the supplementary rent data collected for 1996, cost constraints meant it was not possible to employ these detailed imputation procedures and the 1.8 per cent of cases for which rent was not stated were imputed on a pro-rata basis within each LGA.

In 2001, there were approximately 11 per cent of households for whom income needed to be imputed. Of these, 8 per cent had incomes partially stated. Only 3 per cent had no income information provided. ABS analysis of the non-response rate to the income question (Summerfield and Tobin 2003) suggests that, at the person level, non-response arises primarily from those not in the labour force (such as students or unemployed, a high proportion of whom were aged 15-24). Many of these are presumed to regard the question as not applicable to them. Whilst such incomes are likely to be at the low end of the personal income distribution, they contribute to the 8 per cent of cases where household income is only partially stated and it does not follow that households containing at least one individual who did not respond to the income question are necessarily at the low end of the household income distribution.

Household income was imputed from donor populations categorised into 1,440 sub-populations on the basis of location, age of household reference person, household type and employment status. The census data had no missing observations for location, age of reference person and household type.[20] Within each of these sub-populations, data were further partitioned three ways with cases where income and employment data were reported for all household members forming a 'donor' category, and those where income was partially or completely not stated and all other households forming two 'recipient' categories. Each record in the recipient population

[20] Non-classifiable households have been excluded from the data.

was randomly assigned a donor record's household income so long as it was at least as great as the partial income. More specific details are provided below.

Re-categorisation of income ranges

In order to generate new income categories equivalent in real terms to those employed in the 1996 Census, further manipulation of the data was needed. This was achieved by recalculating household income from the individual incomes that contribute to it, assigning a point value to each household income and then reassigning household income to the newly defined real equivalent income categories for 2001.

A point estimate was initially assigned to all individuals who stated their income. The median individual income for each income range was used to construct a distribution for individual income within each census range. Half the population of individuals in each range was assigned a point estimate uniformly distributed between the lower bound of the range and the median and half was assigned a point estimate uniformly distributed between the median and the upper bound of the range. Household income was re-estimated by summing these point estimates for individuals, with the sum constrained so that the contribution of each household to the original ABS range was not inconsistent with the new 12 level range for household income.

These point estimates of household income were then used to classify income into the new income categories. A more detailed description of the procedures employed and a rationale for the need for this more sophisticated approach to reclassification than would arise by use of median incomes within each category is provided in subsection B.2 below.

Variables in special matrix request table

The first stage of this project was to create a value-added census unit record file. This formed the basis of the matrix tabulation on which the results presented in this Positioning Paper and in the Final Report are based. This Appendix reports on the procedures employed to convert the reported census data into the value added file used in this project.

The value-added census file consisted of one record for each private occupied dwelling, with non-missing values for all the following household characteristics:

- region
- age of household reference person
- household income
- household rent
- tenure of household
- household type (family, lone person etc).
- dwelling type
- number of bedrooms
- number of employed household members

In order to create this file the following key tasks were undertaken:

All reported household income ranges in the 2001 Census were converted into a point estimate of household income, so that new income ranges based on real equivalents of the ranges employed in the 1996 Census could be created. The point estimates created for reporting households were subsequently used to "donate" information to the households with unreported household income. Details are provided in the following sub-section.

Missing data were imputed. Missing data may be either item non-response (some but not all characteristics were reported by the household) or full non-response (no contact was made with the household). Item non-response of household income demanded the greatest attention. Details are provided in sub-section B.3.

Income re-categorisation for 2001 value-added census file

Income data in the 2001 Census were collected in ranges that were unchanged in dollar terms from those employed in the 1996 Census. This meant that some adjustments were required to convert the income ranges employed in 1996 to their real equivalent for 2001.

Although the results in this report are presented in terms of household incomes, the Census does not collect income data at a household level. Instead, it collects data on individual incomes within a number of categories. Census data for household income are derived from individual income data by assigning to each individual in the household the median income within their stated categorical range and then adding these for all individuals in the household (ABS 2001). Median incomes for persons, in turn, are derived from relevant data from the 1999/2000 Survey of Income and Housing Costs (SIHC).

In 2001, when household incomes from the 2001 Census were presented in more or less the same categories as individual incomes, the ABS concluded that this median value imputation was the most appropriate of a number of approaches experimented with (see ABS 2002b). However, when the categories to be employed for household income differ from those used for the underlying data, some attempt needs to be made to determine how observations are to be allocated across category boundaries. For the value added data set created for this project, the simple median value imputation process was deemed inappropriate (on advice from ABS), given the desire to convert the 1996 categories to their 2001 real equivalents. This is because it results in a bunching of data for single income households, with individual incomes in any given 1996 range all being assigned to the one 2001 range even though each 2001 range actually cuts across two 1996 ranges as a result of the inflation over the period. All single income households in $300-$399 in 2001, for example, would have been assigned a value of $349 which would place them in the Y3 category in 2001 even though a number of them (those with incomes from $300 to $334 in 2001) had unchanged real incomes from 1996 and should have remain categorised in the Y2 group.

For this reason, the value added data set for this project relies on a more sophisticated procedure that removes this lumpiness whilst maintaining the aggregate characteristics of the data. The procedure employed relies upon randomly assigning person level data a specific value within the categorical range.

This procedure employed the same starting point as the median value imputation approach employed in the 2001 Census data. The median value for individual incomes in each census income range, derived from relevant SIHC data, was used to construct a distribution for individual incomes within each census income category. Half the population of individuals in each income range was assigned a point estimate uniformly distributed between the lower bound of the range and the median and half was assigned a point estimate uniformly distributed between the median and the upper bound of the range. Household income was re-estimated by summing these point estimates for individual households, with the sum constrained so that the contribution of each household to the original ABS range was not inconsistent with the new 12 level range for household income.[21]

[21] Ideally, this procedure might be more refined by using more disaggregated data such as household type or age to generate a more realistic distribution than the uniform distribution above and below individual median incomes employed here. However, it must be recognized that the survey data used to benchmark

These point estimates of household income were then used to classify income into the new income categories. The data ranges employed in the Positioning Paper and in this Final Report are shown in Table B 1 below. Table B 2 indicates the equivalent rent categories.

Imputation for 2001 value-added Census File

Overall Imputation Strategy

1. Impute for Bedrooms and Dwelling Structure, which are required to impute RENT
2. Impute for Employed, required to impute INCOME
3. Impute for partially and fully not stated household income, required to impute RENT
4. Impute for RENT

Imputing Bedrooms & Dwelling Structure

Observations for which number of bedrooms was missing were assigned the modal value of the derived classification of bedrooms, conditional on the dwelling structure (4 levels). Conversely when imputing for dwelling structure, the mode conditional on the number of bedrooms (4 levels, with 0-1 bedrooms combined) was employed. Where both bedrooms and structure were missing, the "grand mode" (at state level) of each variable was applied independently.

Imputing Number Employed in household

As for household income, if any one or more members of the household had employment status not stated, then the employment status for the household was unknown. The following procedure was employed to impute the employment status of each individual:

> Within each state, the population of individuals who stated their employment status was divided into sub-populations by LGA, by sex and by age. The probability of status "employed" was calculated for each of those sub-populations.

Each of the individuals with unstated employment status was then assigned an employment status according the probabilities of the responding population.

Imputing Household Income

The population was first partitioned into 180 sub-populations for each of the 8 states (that is, 1,440 sub-populations in all). The sub-populations for each state consisted of:

- Region - 2 levels (StatDiv=05 and StatDiv=other).
- Age of household reference person - 5 levels.
- Household composition - 6 levels.
- Number employed in household - 3 levels.

Each of these 1,440 sub-populations was then further partitioned into:

> i. 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 household type (since unclassifiable households have been excluded).

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the Census data consists of only 13,000 households and is subject to sampling error. When split over 16 income categories, there is not a lot of scope for further refinement. In both the Census data and the value added data employed in this project, household income is only an (reasonably accurate) estimate.

ii. 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 above.

As indicated in sub-section 2 above, a point estimate for income was assigned to all individuals who stated an income. These point estimates were then summed for each household. Where one or more household members did not state income, the sum was considered partial income (consistent with reported census data) and these observations were excluded from the donor population and included in the recipient population. The donor population thus 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 1,440 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 that was equal or greater than its partial income, using observed likelihoods at the state level.

Where there was no information on individual incomes within the household, each record in the recipient population was randomly assigned a donor record's household income from within the matching 1,440 sub-populations.

Imputing Rent

The "in-scope" households for the rent imputation are privately rented households *excluding* not classifiable households and *excluding* visitor-only households.

Observations where rent was missing had rent imputed conditional upon region (2 levels per state), dwelling structure (4 levels), bedrooms (4 levels), and income (3 levels). The levels of (weekly) household income were: $0-<$334, $334-<$892, $892+

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).

Data categories employed in Positioning Paper and Final Report

As indicated in the text, the results in the Final Report are based on more aggregated data than was used for the Positioning Paper. The more disaggregated rent and household income categories available in the two supplementary tables, therefore, can be used to shed light on the distributions within the broader categories used in this Final Report. These are illustrated below. However, all cross-tabulated analysis in this report is restricted to the four dwelling rent categories and five household income categories available in the Special Matrix.

Table B 1: Comparison of income categories in Supplementary tables (Positioning Paper) and Special Request Matrices (Final Report): 1996 and 2001

Special Matrix categories	Positioning Paper categories	Household income ($1996)	Household income ($2001)	1996	2001	1996 (%)	2001 (%)
Y1	Y1	$0-$199	$0-$222	110,000	92,000	8.9	6.9
	Y2	$200-$299	$223-$334	119,000	121,000	9.6	9.1
Y2	Y3	$300-$399	$335-$446	140,000	136,000	11.3	10.3
	Y4	$400-$499	$447-$557	139,000	133,000	11.3	10.0
Y3	Y5	$500-$599	$558-$669	124,000	110,000	10.0	8.3
	Y6	$600-$699	$670-$781	114,000	109,000	9.2	8.2
	Y7	$700-$799	$782-$892	87,000	94,000	7.1	7.1
Y4	Y8	$800-$999	$893-$1116	138,000	150,000	11.2	11.3
	Y9	$1000-$1199	$1117-$1339	96,000	118,000	7.8	8.9
Y5	Y10	$1200-$1499	$1340-$1674	71,000	107,000	5.7	8.1
	Y11	$1500-$1999	$1675-$2233	51,000	123,000	4.1	9.2
	Y12	$2000+	$2234+	46,000	35,000	3.8	2.6
			Totals	**1,234,00**	**1,328,000**	**100.0**	**100.0**

Table B 2: Comparison of rent categories in Supplementary tables (Positioning Paper) and Special Request Matrices (Final Report): 1996 and 2001

Special Matrix	Positioning Paper	Original 19 rent categories	Dwelling rent ($1996)	Dwelling rent ($2001)	1996	2001	1996 (%)	2001 (%)
R1	R1	1	$1-$60	$1-$67	37,000	26,000	3.0	1.9
	R2	2	$61-$89	$68-$99	86,000	78,000	7.0	5.9
		3	$90	$100	29,000	50,000	2.4	3.7
	R3	4	$91-$98	$101-$109	23,000	14,000	1.9	1.0
		5	$99	$110-$111	0	34,000	0.0	2.5
R2		6	$100	$112	62,000	0	5.1	0.0
		7	$101-$103	$113-$115	2,000	19,000	0.1	1.4
		8	$104-$120	$116-$134	154,000	132,000	12.5	9.9
	R4	9	$121-$149	$135-$166	247,000	313,000	20.0	23.6
R3		10	$150	$167	85,000	0	6.9	0.0
	R5	11	$151-$180	$168-$201	228,000	265,000	18.5	20.0
	R6	12	$181-$199	$202-$222	52,000	75,000	4.2	5.7
R4		13	$200-$210	$223-$234	57,000	34,000	4.6	2.6
	R7	14	$211-$240	$235-$268	57,000	86,000	4.7	6.5
	R8	15	$241-$300	$269-$335	64,000	96,000	5.2	7.3
	R9	16	$301-$360	$336-$402	22,000	49,000	1.8	3.7
	R10	17	$361-$450	$403-$502	14,000	26,000	1.1	2.0
	R11	18	$451-$600	$503-$670	7,000	13,000	0.6	1.0
	R12	19	$601+	$671+	5,000	16,000	0.4	1.2
				Totals	**1,234,000**	**1,328,000**	**100.0**	**100.0**

As shown in Table B 2, the analysis of shortage in the Final Report defines the low rent category as including dwellings with rents up to and including $111 per week. The low rent category in the Positioning Paper definition, however, finishes at $100 per week. A different definition is used in the Final Report because it matches the analysis undertaken in the Wulff and Yates report (2001). The definition of low household income, however, remains the same – that is, a household income less than $335 per week.

By including dwellings with rents up to and including $111 per week as 'low rent dwellings', Table B 2 points to an explanation of the differences in the estimates of the stock of low rent dwellings in the Final Report analysis and in the Positioning Paper. These differences explain the differences in the shortage estimates of 59,000 dwellings in the Positioning Paper to 11,000 in the Final Report. Because it is directly comparable with the data used in the Wulff and Yates study, it is this latter shortage number that is used in this Final Report in further analysing how rental shortages can be further affected by the characteristics of who is living in the stock. However, this embodies a 33 per cent affordability ratio for low income households (and the low rent stock) and a 30 per cent ratio for all other households (and stock)[22].

[22] This apparent inconsistency arose from difficulties in matching 1986 and 1996 data in the initial study. For the Wulff and Yates study, it had not been feasible to re-categorise census income data and choices were limited to published categories.

APPENDIX C: SOME EXPLANATIONS FOR THE PRESENCE OF FAMILY AND GROUP HOUSEHOLDS IN THE LOW INCOME CATEGORY DEFINED IN THIS STUDY

1. **Underreporting and misreporting**: respondents may fail to include all of their income on the census form. Problems similar to those encountered in the ABS 2000-01 Survey of Income and Housing Costs (SIHC) may also apply to underreporting and misreporting in the census:

   > In some cases, respondents fail to report all their income, including government benefits. Respondents are asked to report the latest amount received as benefit transfers. These amounts are likely to be reported in SIHC, at least in part, as the net cash transfers usually received by the respondent. Amounts that are deducted at source, such as tax, rent or other regular commitments for which arrangements have been made for automatic deduction by Centrelink, may be excluded by some respondents…Respondents may also fail to report all their income for a variety of other reasons, such as privacy concerns, difficulties in remembering income details, and unwillingness to reveal fraudulent or other illegal activity (ABS 2003, p46).

2. **Nil and negative income**: in this report, households that reported nil or negative income were included in the lowest income category. The ABS evaluation paper on income data from the 2001 Census (Summerfield and Tobin, 2003) investigates the characteristics of people who reported nil or negative income. The report states that 'Nil Income' comprised around 5.9 per cent of all income responses in 2001 and 'Negative Income' around 0.6 per cent of all income responses (p 23). Although these responses are not explored by tenure type or household type, the analysis that the ABS has undertaken on the characteristics of those who reported nil or negative income does present some possible explanations for why a range of household types are found in the lowest rent category. The analysis notes the following:

   a. Misunderstanding of the negative income category on behalf of respondents leading to incorrect use of the category. This could apply to a range of household types, which as a consequence of reporting negative income, will be included in the lowest rent category defined in this study. According to the ABS: 'by definition negative income should only have been reported by the owners of unincorporated business…[and] should not have been used by employed persons or any other labour force category' (Summerfield and Tobin, 2003, p37).

   b. Students may perceive their HECS debt as negative income. If the household reference person is such a student, then the household will be included in the lowest income category of this study. Furthermore, nearly half of the nil income responses were from students. It is possible that some of these might be the household reference person in, for example, a group household and thereby be included in the lowest rent category employed in this study

   c. As negative income refers to 'a situation in a self-employment business (including farming) or rental property where operating expenses exceed income or profits…' it is possible that a range of household types might have correctly reported negative income and thus been classified as 'low income' in this study.

d. Around 80 per cent of nil income respondents were 'Not in the labour force', leaving about 20 per cent attached to the labour force in some way. This suggests that some respondents receiving government benefits might have misunderstood the question, and did not consider these payments 'income'.

3. **Lack of awareness of social security eligibility:** it is possible that a household may not be aware that they are eligible for social security benefits, for example, non-English speaking households or recent migrant households.
4. **Lack of take-up of social security payments**: this may occur if a household perceives its low income status as temporary.
5. **Misinterpretation of census income question:** the respondent simply might have misread or misunderstood the income question as it appears on the census form.

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