Final Report

Housing implications of social, spatial and structural change

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EXECUTIVE SUMMARY

Over the last few decades Australia, like a number of other countries, has experienced significant social, demographic and economic change. The combined effect of these changes has resulted in a significant polarisation of household income and to increasing social and spatial inequality on a range of indicators. One such indicator is housing and home ownership. The Positioning Paper for this project raised the possibility that housing and home ownership may have contributing to social and spatial inequality and discussed the concerns arising from this possibility. In particular, it provided a review of the literature on the social and economic advantages and disadvantages associated with home ownership.

This report has provides information on housing outcomes arising from social, spatial and structural change. The results have been presented at an increasingly disaggregated level of analysis in relation to space, demographic and socio-economic characteristics. This process of disaggregation allows underlying trends that are disguised by aggregation to be discerned. It also provides an indication of which results are unaffected by the process of aggregation. Key results are presented below

Socio-demographic change

Between 1986 and 1996 social and demographic change in Australia resulted in significant changes in the age structure of the population and in the household composition within each age group.

- Demographic changes that have resulted in an ageing population have been relatively uniformly spread at a broad level of spatial disaggregation. However, the increase in the proportion of older households has been more pronounced in the smaller and slower growing states.
- There is more spatial variation in the extent to which there have been changes in household type for each age group. The most significant changes in household structure have been
  - a growth in single person and single parent households,
  - a decline in the proportion of younger couple with children households and
  - an increase in the proportion of older couple with children households.
- The growth of single adult households is more noticeable in non-metropolitan regions. The decline in younger and increase in older couple with children households are more noticeable in metropolitan regions.

Spatial polarisation of income

As a result of these demographic changes and changes in household structure, average household income in Australia declined between 1986 and 1996. This decline in household income has been associated with a significant polarisation of household income and with increased spatial polarisation of income.

- The extent of income declines and income polarisation varied regionally, with declines generally greater in non-metropolitan regions and polarisation generally more pronounced in metropolitan regions.
- There were considerable variations in the age specific declines in the different regions, with younger households and retirement age households generally facing greater declines in household income than households in the established 45-64 year old age group.
- Once age and household structure are controlled for, income changes in non-metropolitan are very similar to those in metropolitan regions.
- At a sub-regional level, there is clear evidence of an emerging spatial polarisation of income that is not attributable solely to changes in the socio-demographic composition of households.
- The polarisation of income that has emerged is one factor that explains changes in housing outcomes.

Changes in home ownership rates

These changes have a greater impact on tenure outcomes for younger than for older households. Housing tenure for older households is determined as much by their past socio-economic status and past housing history as it is by their current socio-economic status and current market conditions. For younger households with no external support, housing tenure will be determined by current economic status and by housing preferences alongside current market conditions. For younger households with external support, more housing options are available.

The home ownership results presented are based on census data that indicates an aggregate home ownership rate of 66 per cent in 1996 and a decline in the aggregate home ownership rate in Australia of 2.2 percentage points between 1986 and 1996. This arises from a small decline in the aggregate home ownership rate in non-metropolitan regions and a greater decline in metropolitan regions. At this level of disaggregation, within the different states,

- changes in home ownership rates varied from a decline of 5.7 percentage points to an increase of 6.9 percentage points
- home ownership rates in 1996 varied from 61.2 per cent to 71.2 per cent.

Regional differences are attributed to two broad groups of factors - those that are associated with differences in the socio-demographic and economic characteristics of households in each region and those that are associated with differences in the housing market conditions they face.

- Declines in home ownership occurred generally across all age groups in metropolitan regions (although it was not uniform across regions) and amongst lower aged households in non-metropolitan regions.
- At an Australia wide level, the home ownership for households in the 25-44 year old age group declined by 6.7 percentage points, more than twice the decline in non-metropolitan regions and more than three times the decline in the aggregate home ownership rate.
- Older couple with children households (a small group) have experienced a 10 percentage point increase in home ownership.
- A 3 percentage point increase in the home ownership rate of couple households in the pre-retirement age group had a significant positive impact on the aggregate home ownership rate for non-metropolitan regions.
- Differences in home ownership rates between households in the lowest and highest income groups are greater in metropolitan regions than they are in non-metropolitan regions.
    - Aggregated over all age groups and household types, home ownership rates in metropolitan regions varied from 53.8 per cent for households in the low income group to 81.3 per cent for households in the high income group.
    - In non-metropolitan regions home ownership rates varied from 58.9 per cent to 77.5 per cent.
    - This is consistent with the constraints imposed by higher housing costs in metropolitan housing markets.
- Declines in home purchase rates generally were ameliorated by increases in outright ownership, which were observed (and expected) amongst older households. However, although they were more than offset by declines in home purchase rates,
    - there were systematic increases in outright ownership amongst 25-44 year old households living in metropolitan regions, many of whom were single person households.

- This suggests that such households have had external support to assist them into non-mortgaged home ownership and points to the importance of wealth as well as income as a critical factor in assisting younger households into home ownership in high cost regions.

- The sub-regional analysis undertaken for Sydney and Melbourne suggests that similar results hold within these cities as for the broader level of aggregation.

Changes in home ownership rates for 25-44 year old households

A detailed statistical analysis of changes in home ownership outcomes for households in the 25-44 year old age group allowed for separate identification of the impact of socio-economic change and housing market constraints.

- Within metropolitan regions, the largest declines in home ownership amongst 25-44 year old households occurred in Sydney and in Brisbane with declines of 7.4 and 9.6 percentage points respectively.
  - Less than 25 per cent of these declines could be attributed to the changing socio-economic composition of households (the endowment effect) in each city.
  - The remaining 75 per cent (the residual effect) is attributable to the changes in housing market constraints, or to changes in any other factors that affect tenure choice (such as changes in preferences).
  - The results obtained suggest that the housing market constraints are the dominant explanation for declines in home ownership rates.
- Within the 25-44 year old age group under consideration, home ownership rates generally declined most for households with children, yet these are households for whom many of the social benefits attributed to home ownership are perceived to be the most pronounced.
- Declines in home ownership have been greater in metropolitan regions, where the economic (real capital) gains from home ownership have been higher and lower in non-metropolitan regions where the economic gains have been lower.

Tenure polarisation

Between 1986 and 1996, owners became richer and renters became poorer. Spatial polarisation of income is supplemented by a tenure polarisation of income.

- Between 1986 and 1996 the average weekly income of private renter households decreased by 6 percentage points to $714 per week whilst that for home purchasers increased by 3 percentage points to $1036 per week.
- The gap in household income between private renters and home purchasers increases upto retirement age and increased for all household types in each age group except for over 65 year old households.
  - This holds for households in both metropolitan and non-metropolitan regions.
  - The gap between owners in metropolitan regions and non-metropolitan regions also increased.

There has been both tenure and spatial polarisation of income for all household types in all age groups except for the retirement age group. The economic advantage enjoyed by home owners in metropolitan regions, as reflected in household incomes, is both increasing relative to their counterparts in rental housing in metropolitan regions and to their fellow home owners in non-metropolitan regions.

Policy options

A number of these policy options that arise out of the concerns outlined in the Positioning Paper and from the results presented in the final report are outside of the reach of housing policy, although they are highly relevant in their impact on housing markets and hence housing outcomes. These include all policies that reduce pressures on the housing market. Examples are

- better transport systems,
- planning initiatives that encourage regional and non-CBD development,
- population policies,
- regional or industry policies which provide broad based employment opportunities,
- support for the development of e-commerce and web based businesses which allow people to work from home.

These policies often cross over federal and state boundaries. This suggests that use of a national forum such as the Premiers' conference could be fruitfully employed to consider and coordinate such policies.

There are a number of policies, however, that are more directly related to housing at either a Commonwealth of State level, although many fall outside of the arena of State housing departments as they are currently constituted. This suggests that each State might usefully establish a State based forum along the lines of the national forum suggested above. These would cross current departmental responsibilities and have responsibility for defining housing objectives and developing a housing strategy to meet these objectives. Such forums would provide the information and expertise to contribute to a national equivalent.

At a specific level, the results presented in this paper suggest, first, that home ownership policies need to be revisited.

- Poorly targeted policies that provide support to established home ownership may need to be reconsidered.
- Well targeted policies that improve access to home ownership for lower income households need to be re-introduced.
- Shared ownership schemes which enable assistance to be recaptured should be reconsidered

Home ownership policies, however, will not address the needs of those currently excluded from the benefits provided by it. These policies need to be supplemented by policies that directly tackle the problem of poor housing affordability. Supply side policies to encourage increased supply of affordable housing include

- tax credits for low income housing
- increased depreciation allowances for private investors in affordable housing

The results presented in the paper indicate that policies need to be sensitive to spatial variations in housing markets. One size fits all policies are unlikely to be as effective as policies that are explicitly targeted to particular households in particular regions.

CHAPTER 1. INTRODUCTION

1.1 Background

Over the last few decades Australia, like a number of other countries, has experienced significant social, demographic and economic change. The combined effect of these changes has resulted in a significant polarisation of household income and to increasing social and spatial inequality on a range of indicators. One such indicator is housing and home ownership. The Positioning Paper for this project raised the possibility that housing and home ownership may have contributed to social and spatial inequality and discussed the concerns arising from this possibility. In particular, it provided a review of the literature on the social and economic advantages and disadvantages associated with home ownership.

The possibility that housing and home ownership may contribute to social and spatial polarisation is not new. Past research has suggested that income polarisation will lead to a polarised housing market which, in turn, will reinforce inequalities arising from the labour market. Recent research already has signalled a decline in aggregate home ownership rates amongst younger households. This material was covered in the Positioning Paper.

The Positioning Paper also provided an overview of research that documents the changing structure of the income distribution in Australia. Studies at a national level have highlighted an increasing polarisation of income and the "disappearing middle" in relation to the underlying distribution of income in Australia. In part, these changes are attributable to a growing earnings inequality. In part, they are attributable to socio-demographic changes impinging upon household structure.

An increase in inequality has also emerged at a regional level with the result there has been an increase in the geographic polarisation of household income across Australia. This trend has been popularised and simplified by the media as a rural versus urban divide. Much of the discussion of and concern with these trends has focussed on the loss of employment opportunities as a result of the economic restructuring that has taken place. However, concerns also have been expressed that there may be factors that contribute to an institutionalisation of the disadvantage that is associated with low earnings capacities and opportunities.

Chapter 2 of the Positioning Paper provided an overview both of these changes at an Australia wide level and of the factors that have contributed to them. It pointed to declining average gross household income over the 25 year period from 1975 to 1999 and to a steady increasing dispersion in gross household income over the same period. The Positioning Paper also presented data for 1991 and 1996 that showed an increasing spatial disparity in average household income at a regional level and highlighted the difference in household incomes by 1996 in these regions in for each of the states and territories.

Chapter 3 of the Positioning Paper discussed the ways in which home ownership contributes to cumulative advantage (and, conversely, how lack of home ownership contributes to cumulative disadvantage) by pointing to the range of both the social and economic advantages associated with it. Social advantages are attributed to network effects and to interaction effects between home owners and the community in which they live. Economic effects relate both to policy factors and to the ways in which housing markets operate. Whilst the advantages cannot be presumed to hold for all households, there is evidence to suggest that housing wealth accumulated through home ownership has added wealth inequalities to the income inequalities that have emerged over the period of economic restructuring that took place in the 1980s and 1990s in Australia. Consistent with this, home ownership has been seen by some as a cornerstone of Australia's welfare state and there is ample evidence to show that home ownership has protected many older Australians from after housing poverty. In light of the data presented and arguments rehearsed in chapter 3, the declines in home

ownership that have been observed amongst younger households at an aggregate level in Australia raise serious concerns. These relate both to future patterns of wealth and income equality and to the capacity of the Australia's welfare policies to provide future generations with the same standard of living in retirement as enjoyed by the current generation.

They also raise concerns about the extent to which future generations will be able to gain access to the benefits of economic growth when these benefits are spatially concentrated. This latter concern arises because of the constraints that housing markets place on labour mobility. Some of these concerns underpinned the spatial mismatch debates that emerged, initially in the 1970s but again in the 1990s.

Chapter 4 of the Positioning Paper highlighted the ways in which regional variations in housing and labour markets might interact to generate a similar process of cumulative disadvantage as that associated with lack of access to home ownership. Regional variations in the impact of economic restructuring have resulted in 'hot spots' and 'cold spots' in the Australian economy and the extent of structural change has been significantly different in metropolitan and non-metropolitan Australia. Higher unemployment rates in non-metropolitan regions in Australia mean reduced labour market opportunities for those households in these regions whose members are unemployed or under-employed. Higher house prices and higher rents in areas with higher employment opportunities impose constraints on their ability to re-locate for employment related reasons. Research elsewhere has suggested these constraints may be even more binding on home owners with limited equity in their dwellings. Conversely, more accessible housing in these regions may attract households who are otherwise unable to meet their housing preferences and, in so doing, permanently lock them out of labour market participation.

Thus, there are a number of ways in which housing and home ownership may reinforce the polarisation of income that has emerged in Australia in the last few decades as a result of social, economic and demographic change. This final report is concerned with the outcomes of these processes.

1.2 Potential impact of social, spatial and structural change

The literature review presented in the Positioning Paper identified a number of factors that have the potential to contribute to a continuing process of polarisation. The first is changing structure of household income that, in part, is attributable to the impact of economic restructuring and, in part, to social and demographic change. The second is the spatial variation in household income both attributable to, and distinct from, these changes. Spatial differences in household growth and household income are likely to impact differentially upon housing markets and contribute to regional differences in house prices. These differences can be seen either as encouraging households with a high preference for home ownership to locate in regions where housing is affordable or as constraining them from locating in regions where housing is unaffordable. A third is the changing structure of housing markets themselves.

The results presented in this report focus on the spatial impact of social and economic change on housing outcomes and on the relation between housing outcomes and the socio-economic characteristics of households. The interaction of economic, socio-demographic and geographic factors is likely to become increasingly important as moves towards labour market flexibility increase the importance of spatial mobility and as the economic uncertainty associated with such flexibility decreases the willingness or ability of households to make long-term economic commitments. An understanding of the outcomes of the interaction of economic, socio-demographic and geographic factors is critical for any attempt to determine what the future pressures are likely to be on both regional and national home ownership and private rental markets.

1.3 Report Outline

This final report provides results on the extent of socio-demographic change at both a national and sub-national level, focussing specifically on changes between 1986 and 1996. These results are presented in chapter 2 initially for Australia as a whole and then for increasing degrees of spatial disaggregation. These results are then further disaggregated by age and household type.

Brief summary paragraphs are provided at the end of each section and at the conclusion of each chapter to highlight the major findings.

The detailed results of this chapter can be skipped without any loss of continuity. They provide a spatially disaggregated version of data discussed more fully elsewhere (for example, in AIHW 1997). In AIHW (1997, p56) McDonald argues that public services can influence the demography of families. The results of this report raise the possibility that access to housing can have a similar effect.

Chapter 3 uses the results of chapter 2 to indicate how socio-demographic change has contributed to observed changes in household income. These results extend those generated for NATSEM by Lloyd et al (2000). They provide a clear indication of the extent to which changes in average household income can be attributed to changes in demographic and household structure and of the extent to which these changes differ spatially. This chapter provides evidence that the spatial polarisation of income that has been observed at an aggregate level (and documented in the Positioning Paper), holds at a more disaggregated level. The final section of chapter 3 provides a summary overview of the results obtained. As with chapter 2, the detailed results presented can be skipped without loss of continuity. However, the results of both chapters are fundamental to explaining the outcomes in the remaining chapters in this report.

Chapter 4 focuses on the housing outcomes that result from the observed socio-economic changes documented in chapters 2 and 3. The focus is primarily on changes in home ownership, although results are presented for all tenures. A rationale for this focus on home ownership was provided in the Positioning Paper. This is summarised briefly in the introduction to chapter 4. Chapter 4 provides new aggregate and spatially disaggregated results on changes in home ownership rates, in turn disaggregated by age, household type and household income. Aggregate results are provided for Australia as a whole and for the metropolitan and non-metropolitan regions in each state. These are disaggregated by age and household type for Australia as a whole and at a metropolitan and non-metropolitan level of disaggregation. The equivalent data is also presented at a sub-metropolitan level of disaggregation within Sydney and Melbourne and sub-non-metropolitan level of disaggregation for regions within NSW.

Chapter 5 provides a detailed statistical analysis of the factors that have contributed to the change in home ownership rates amongst households in the 25-44 year old age group. This analysis, based on logistic modelling techniques, enables the effects of changes in the socio-economic characteristics of households (reflected in changes in household composition and income) to be isolated from the other factors that impinge upon home ownership outcomes. It thus provides a way of identifying the impact of external factors that differ over time and space.

Chapter 6, final results chapter, provides a spatially disaggregated overview of the outcomes for all age groups arising from the interactions of the socio-economic changes identified in chapters 2 and 3 and the tenure outcomes identified in chapter 4. As in chapter 4, results begin with an Australia wide overview and are then disaggregated, first at the metropolitan and non-metropolitan levels of disaggregation considered in earlier chapters and then for the more detailed sub-regional levels of disaggregation. Chapter 6 provides evidence of the extent to which there has been a tenure polarisation of income over and above the spatial polarisation of income documented in chapter 4.

Chapter 7 provides an overview of the results presented in this report, draws a number of conclusions from them and provides examples of policy options that might be considered. This chapter can be read as a self contained summary of the report.

CHAPTER 2. CHANGES IN SOCIO-DEMOGRAPHIC STRUCTURE

Over the last few decades, Australia, like a number of other countries, has experienced significant social, demographic and economic change as a result of economic restructuring. This chapter documents the former changes, focussing specifically on differences between regions. A summary of the results of this chapter is provided in section 2.3. The following chapter examines economic change in light of these observed social and demographic changes.

2.1 Changes at a broad level of spatial disaggregation

In the first instance, the analysis in this paper is undertaken at a spatial level that disaggregates Australia into 15 regions based on a metropolitan/non-metropolitan split for each of the states and territories in Australia[1]. These results will then be disaggregated further into sub-metropolitan regions for Sydney and Melbourne and into several illustrative sub-non-metropolitan regions in NSW.

Table 2.1 below provides an indication of the share of households in each region. In 1986, for example, 64 per cent of all households in Australia lived in metropolitan Australia as defined by the 8 capital cities, leaving 36 per cent of households living in non-metropolitan regions of Australia.

Between 1986 and 1996 there was a 23.4 per cent growth in the number of households in Australia, representing an increase of approximately 2 per cent per annum. This arose from a 21.7 per cent growth in the number of households in metropolitan regions and a higher 26.3 per cent growth in non-metropolitan regions.

[1] The Positioning Paper that underpins this paper provided the rationale for this choice of regions. Metropolitan regions in each state are defined as the relevant capital city statistical divisions (or equivalent) according to the Australian Standard Geographical Classification. Details of the statistical sub-divisions or statistical regions incorporated in each definition are provided in Appendix A. Non-metropolitan regions cover the rest of the state or territory. In what follows "states" will be taken to refer to both states and territories unless otherwise indicated.

Table 2.1: Regional share of households

	All households		
	1986	1996	growth[a]
	%	%	%
Sydney	21.8	20.5	16.2
NSW non-metro	13.0	13.1	23.4
Melbourne	18.4	17.6	17.9
Vic non-metro	7.3	7.1	19.5
Brisbane	7.6	8.3	35.8
Qld non-metro	8.8	10.0	40.1
Adelaide	6.7	6.4	18.0
SA non-metro	2.4	2.2	15.6
Perth	6.5	7.2	35.8
WA non-metro	2.4	2.5	28.0
Hobart	1.2	1.1	18.4
Tas non-metro	1.7	1.6	18.1
Darwin	0.4	0.4	20.8
NT non-metro	0.4	0.4	27.8
ACT	1.5	1.6	34.4
metro	64.0	63.2	21.7
non-metro	36.0	36.8	26.3
Australia	100.0	100.0	23.4

a. Growth is in number of households in each region, not in regional shares
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Thus, the decade to the mid 1990s represented a period of counter-urbanisation, at least at a household level, with a marginal increase in the share of households living in non-metropolitan regions and a commensurate decrease for those living in metropolitan Australia. By 1996, 63.2 per cent of households lived in metropolitan regions.

Household growth was not evenly distributed across the 15 regions identified in Table 2.1. It was, for example, considerably higher in Queensland and Western Australia than in the more populous states and was lowest in South Australia and Tasmania. A continuation of past tendencies of increasing urbanisation occurred only in Western Australia, whilst the reversal of this trend was strongest in NSW and Queensland.

A spatial restructuring of the population can be attributed either to socio-demographic factors or to economic factors. The former, as reflected in a changing age structure or in changes in household composition, is examined below. The latter is examined in chapter three.

2.1.1 Changes in the age structure of households.

The aging of the population and the greater impact this has had on household growth in non-metropolitan Australia can be seen in the growth figures in the final column of Table 2.2. Column three shows the growth in the number of households in each age group in each region. Column four standardises this growth rate by comparing it to the overall household growth in the respective regions.

The fastest growing age group are households in the retirement age group, with a reference person aged 65 or more. These households grew at least half as fast again as all households, with a growth rate of 36.9 per cent over the period compared with the overall household growth of 23.4 per cent. By 1996, households in this retirement age group accounted for 20.2 per cent of all households in Australia, up from 18.2 per cent in 1986.
Households in the 'empty-nester' age group from 45 to 64 also experienced an above average growth rate of 27 per cent. By 1996 households in these two older groups accounted for 52.2 per cent, or more than half, of all households in Australia.

Whilst the household growth rate in non-metropolitan regions exceeded that in metropolitan regions in Australia, Table 2.2 shows there is relatively little evidence that this faster relative growth can be attributed to a disproportionate growth of older households in non-metropolitan Australia.

Table 2.2: Incidence and growth of households by age group

age of reference person	1986	1996	growth[a] 86-96	relative growth[b] 86-96
Metropolitan households				
15-24	6.7	6.0	9.2	42.5
25-44	44.4	42.4	16.0	74.0
45-64	31.2	32.1	25.3	116.5
65+	17.7	19.5	34.3	158.0
all metro	100.0	100.0	21.7	100.0
Non-metropolitan households				
15-24	7.3	6.4	10.8	41.1
25-44	42.7	40.4	19.6	74.3
45-64	30.8	31.8	30.1	114.5
65+	19.1	21.4	41.2	156.5
all non-metro	100.0	100.0	26.3	100.0
All households				
15-24	6.9	6.1	9.8	42.1
25-44	43.8	41.7	17.3	74.0
45-64	31.1	32.0	27.0	115.6
65+	18.2	20.2	36.9	157.9
all households	100.0	100.0	23.4	100.0

a. growth is in number of households, not in share of age group
b. relative growth is measured against regional growth
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

The relative growth rate of older households (both retirement and pre-retirement, or middle-aged, households) was, in fact, marginally greater in metropolitan regions than it was in non-metropolitan regions. This, however, must be seen against the relatively slower growth of metropolitan regions generally. At the broad level of aggregation indicated in Table 2.2, the incidence of older households increased by 2.7 per cent (to 51.6 per cent) in metropolitan regions and by a marginally greater 3.2 per cent (to 53.1 per cent) in non-metropolitan regions over the 10 year period.

Generally, however, a comparison of the growth rates in column three and the relative growth rates in column four for metropolitan and non-metropolitan households show that the faster growth of households in non-metropolitan Australia has been more or less uniformly spread across the age distribution. Households in the critical 25-44 year old category, for example, grew at just under 75 per cent of the rate of all households in both metropolitan and non-metropolitan Australia. The incidence of such households fell by approximately 2 percentage points in both broad regions. There has been no widespread age restructuring on a spatial basis at this level of spatial aggregation.

Incidence data for each of the 15 regions in 1986 and 1996 is given in Table B.1 Appendix B. Growth and relative growth data are given in Table B.2. At a regional level, Table B.2 shows that the fastest growth of households in the 65 years and over age group occurred in the ACT and Darwin with growth rates over the 10 year period of 85 per cent and 77 per cent, respectively. These rates were more than double the Australia wide growth rate of 37 per cent for households in this age group. This disproportionate growth rate resulted in a considerable increase in the incidence of older households in these regions. In the more populous states, a disproportionate growth of retirement age households in non-metropolitan compared with metropolitan regions occurred only in NSW and Queensland which were, in fact, the two states identified above as showing the greatest degree of counter-urbanisation for the period under consideration.

The number of young households with a reference person less than 25 years old grew by less than 10 per cent over the ten year period under consideration. In the Sydney metropolitan region, in the South Australian non-metropolitan region and in the Northern Territory, the absolute numbers of such households actually declined. Below average rates of growth also can be observed for households in the critical 25-44 year old age group that will be the focus of much of the analysis in chapter four of this paper.

2.1.2 Changes in household type

Much of the social and demographic change that has taken place has resulted in smaller households. The impact of demographic change arising from an aging population on the age structure of households has been noted in the sub-section above. This effect alone will have contributed to an increase in the number of smaller households. Its effect, however, has been compounded by social change reflected in declining marriage rates, declining fertility, increasing cohabitation, increasing divorce and separation and a rise in the proportion of single person and lone parent households.

This sub-section provides an overview of these changes at a broad level of spatial aggregation. Table 2.3 below provides similar data as Table 2.2 but for household structure rather than for age. As such, it hides some of the important inter-relationships between age and household type that will be identified in the following table. The incidences reported in this and following tables do not add to 100 per cent. The shortfalls reflect data for group and multiple households. These have been included in the calculations but are not presented. Growth rates have not been reported for sole parents because of qualifications regarding the data in relation to older sole parents (as outlined in Appendix A). For this reason, less attention will be paid to the outcomes for this household type in what follows.

Table 2.3: Incidence and growth by household type, 1986 and 1996

	incidence 1986	incidence 1996	growth[a] 86-96	relative growth[b] 86-96
Metropolitan households				
couple	30.5	23.0	-8.4	-38.9
couple with children	33.5	36.4	32.1	147.8
single	19.2	23.1	45.9	211.6
sole parent[c]	5.4	10.2	n.a.	n.a.
all metro	100.0	100.0	21.7	100.0
Non-metropolitan households				
couple	32.0	26.9	6.0	22.7
couple with children	35.3	34.8	24.8	94.2
single	17.9	23.1	63.1	239.5
sole parent[c]	5.3	9.7	n.a.	n.a.
all non-metro	100.0	100.0	26.3	100.0
All households				
couple	31.1	24.4	-3.1	-13.3
couple with children	34.1	35.8	29.4	125.7
single	18.8	23.1	51.8	221.7
sole parent[c]	5.3	10.0	n.a.	n.a.
all households	100.0	100.0	23.4	100.0

a. growth is in number of households, not in share of age group
b. relative growth is measured against regional growth
c. incidence data for sole parents is not strictly comparable across years. See Appendix A for details
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table 2.3 clearly shows the rapid and disproportionate growth of single person households. Between 1986 and 1996, single person households grew at more than double the rate of all other significant household types in Australia and, by 1996, represented almost one quarter of all households in Australia. This growth in single person households has been attributed to a demographic but also to social changes.

Similar outcomes regarding the relative growth and increasing importance of single person households in each of the states can be seen in Tables B.3 and B.4 in Appendix B. The highest growth rates for single person households occurred in the ACT and in the non-metropolitan regions of Queensland and Western Australia - in all cases from a below average incidence of such households in 1986. The highest relative growth rates occurred in South Australia and Tasmania and increased the already high incidence of such households.

Table 2.4: Change in incidence of household type by age, 1986-1996

Age of reference person	couple	couple with children	single	sole parent[a]	all households
Metropolitan households					
15-24	-7.0	-3.7	4.6	1.6	0.0
25-44	0.2	-7.3	4.4	2.9	0.0
45-64	-20.3	18.1	2.1	n.a.	0.0
65+	-7.1	6.6	2.4	n.a.	0.0
all metro	-7.6	2.9	3.8	n.a.	0.0
Non-metropolitan households					
15-24	-5.5	-3.7	3.8	2.4	0.0
25-44	-0.6	-7.8	5.0	4.6	0.0
45-64	-13.5	10.9	4.2	n.a.	0.0
65+	-5.9	4.1	4.8	n.a.	0.0
all non-metro	-5.2	-0.4	5.2	n.a.	0.0
All households					
15-24	-6.4	-3.7	4.3	1.9	0.0
25-44	-0.1	-7.4	4.6	3.5	0.0
45-64	-17.8	15.4	2.9	n.a.	0.0
65+	-6.6	5.7	3.3	n.a.	0.0
all households	-6.7	1.7	4.3	n.a.	0.0

a. Incidence data for older sole parents is not strictly comparable across years because of definitional changes. See Appendix A for details.
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table 2.3 also shows that couples with children grew at an above average rate. Whilst this might appear to be at odds with declining fertility rates, the more detailed data in Table 2.4 provides one explanation of this above average growth rate. It also provides additional insight into the source of growth of single person households.

Table 2.4 reports the change in the incidence for each household type in each age group between 1986 and 1996, both at an Australia wide level and at a metropolitan and non-metropolitan level of spatial disaggregation. The underlying incidence data for 1986 and 1996 from which it is generated can be seen in Tables B.5 and B.6 in Appendix B.

2.1.3 Age and household type interactions

The data in Table 2.4 are generated by separately examining the household structure of households in each age group in 1986 and 1996 and reporting on changes. The data reported sum to zero across each row. For example, at an Australia wide level, 31.1 per cent of all households were couple only households in 1986. By 1996, this had fallen to 24.4 per cent of all households. This decline of 6.7 percentage points is reported in the last row of the first column in Table 2.4.

Table 2.4 shows that, despite the aging of the population and the growth in households in the pre-retirement and retirement age groups, there has been an increase in the incidence of single person households across all age groups with a greater impact amongst younger rather than older households. This suggests that social factors

affecting household formation amongst younger households have been as important as demographic factors contributing to an increased number of older single person households in explaining the growth of single person households.

Table 2.4 also highlights the basis of concerns about declining fertility. These are reflected in a declining incidence of younger households with children. The disproportionate growth in couples with children has occurred solely amongst older household with children. For older age groups, the decline in the incidence of couples with no children and the offsetting increase in the incidence of couples with children supports suggestions that an increasing number of (adult) children are staying at home longer (ABS 2000, p28). An alternative explanation is that it is a consequence of the increase in the age at which women have their first child (ABS 2000, p29).

The considerably greater increase in the incidence of older couples with children in the higher cost metropolitan regions lends some support to a housing affordability explanation underlying the first of these explanations. In 1986, 43.6 per cent of households in the 45-64 year old age group in metropolitan regions were couple only households with no children and only 25.8 per cent of households in this age group were couples with children. By 1996, these proportions had had more or less reversed.

Table 2.5 presents an alternative way of highlighting the implications of these changes. It examines changes in the age distribution for each household type.

Table 2.5: Change in age distribution for each household type, 1986-1996

Age of reference person	couple	couple with children	single	sole parent[a]	all households
Metropolitan households					
15-24	-0.6	-1.0	-0.6	n.a.	-0.7
25-44	6.7	-17.3	2.4	n.a.	-2.1
45-64	-12.0	14.8	-0.8	n.a.	0.9
65+	6.0	3.6	-1.0	n.a.	1.8
all households	0.0	0.0	0.0	n.a.	0.0
Non-metropolitan households					
15-24	-1.0	-1.1	-1.9	n.a.	-0.9
25-44	1.3	-12.3	2.7	n.a.	-2.3
45-64	-5.2	10.8	0.3	n.a.	0.9
65+	4.8	2.6	-1.2	n.a.	2.3
all households	0.0	0.0	0.0	n.a.	0.0
All households					
15-24	-0.8	-1.1	-1.0	n.a.	-0.8
25-44	4.3	-15.5	2.4	n.a.	-2.2
45-64	-9.2	13.4	-0.4	n.a.	0.9
65+	5.6	3.2	-1.0	n.a.	2.0
all households	0.0	0.0	0.0	n.a.	0.0

a. Incidence data for older sole parents is not strictly comparable across years because of definitional changes. See Appendix A for details. Incidence data for 1986 and 1996 are reported in Appendix B.
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

The age distributions for 1986 and 1996 that underpin the changes reported in Table 2.5 can be found in Table B.7 and Table B.8 in Appendix B. Table 2.5, for example, highlights the relative increase in the incidence of younger single person households. This has occurred despite the declining share of younger households in the population (as seen in the final column). Older single person households, however, are still by far the most dominant, representing almost 4 out of every 10 single person households (as can be seen from the relevant incidence Tables in Appendix B).

Table 2.5 also shows that the declining share of younger couples with children is disproportionately a metropolitan phenomenon as are the decline in the proportion of older couple only households (despite an aging population) and the increasing average age of couple households with children.

2.1.4 Summary

Changes in the demographic structure of households have been relatively uniformly spread at a broad spatial level of disaggregation. However, the aging of the population, which has resulted in an increase in the proportion of older households in all regions, has been more pronounced in the smaller and slower growing states (South Australia and Tasmania). The fastest growth of younger households has been in Queensland and Western Australia.

Changes in household type for each age group have shown a greater degree of spatial variation than have changes in the age distribution of households. The growth in single person households has been more noticeable in non-metropolitan than in metropolitan Australia, whilst the increase in the proportion of young households with no children and of older households with children is disproportionately a metropolitan phenomenon.

2.2 Changes at a sub-metropolitan level of spatial disaggregation

Some insight into the factors that have contributed to the above trends observed at a broad level of spatial disaggregation can be obtained by determining whether similar trends are observed at a more detailed level of spatial disaggregation. In principle, the more disaggregated the level of analysis, the greater would be the expected differences between regions.

This section examines data similar to that reported above for intra-metropolitan changes within Sydney and Melbourne and for the Hunter, Illawarra and Mid-North Coast regions in non-metropolitan NSW. These three regions account for just over 50 per cent of households in non-metropolitan NSW.

Table 2.6 gives a broad indication of the relative importance of these sub-regions. The zones within Sydney and Melbourne are defined on a ring-based system. More detail on the geographic composition of these three zones and their relation to planning regions within each city can be found in Appendix A and in Yates (2001). Just under one half of all households in each of Sydney and Melbourne reside in the middle zones, as defined, in those cities. The remaining households are split reasonably evenly between the inner and outer zones.

Table 2.6: Share of households within specific regions

	1986	1996	growth[a]
	%	%	%
Sydney[b]	21.8	20.5	16.2
inner	30.2	27.3	5.1
middle	46.5	45.7	14.4
outer	23.3	26.9	34.3
Melbourne[b]	18.4	17.6	17.9
inner	28.8	26.0	6.4
middle	49.3	47.1	12.7
outer	21.9	26.9	44.6
NSW non-metropolitan[b]	13.0	13.1	23.4
Hunter	24.2	24.1	22.8
Illawarra	15.3	15.7	26.3
Mid north coast	10.6	11.6	34.6

a. Growth is in number of households in each region, not in regional shares
b. Data on regional shares for Sydney, Melbourne and non-metropolitan NSW relate to Australia as a whole; data within these regions relate to sub-regional shares.
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

As can be seen in Table 2.6, the greatest household growth has taken place in the outer zones in each city and to a greater extent in Melbourne than Sydney. Growth rates in the inner and middle zones, by way of contrast, fall well below the growth rate in each city and well below the average growth rate of 23.4 per cent for Australia as a whole. A more detailed examination of the spatial differences in the growth patterns between Sydney and Melbourne and the role of urban consolidation in explaining these can be found in Yates (2001).

Each of the three non-metropolitan sub-regions covered in this paper, on the other hand, has experienced a growth rate which approximates, or exceeds, that for Australia as a whole. The growth rate in the Mid north coast region was as great as the growth in the outer zone of Sydney. Growth rates in the remaining two non-metropolitan regions are closer to the average for non-metropolitan NSW, despite the dominance of declining old economy activities in the key urban centres of both the Hunter and the Illawarra regions.

2.2.1 Changes in the age structure of households

The data presented in section 2.1 above suggested that, at the broad level of spatial disaggregation considered in that section, relatively little of the observed spatial restructuring of households could be attributed to demographic factors associated with an aging population. Tables 2.7 and 2.8 examine this spatial restructuring within Sydney and Melbourne. Table 2.9 examines it for the three NSW non-metropolitan regions indicated above.

Table 2.7 provides evidence of a greater degree of demographic restructuring within Sydney than was observed at the broader level of spatial aggregation reported in Table 2.2. There has been an absolute decline in the number of very young households (under 25 years old) in both inner and middle Sydney which has only been partly offset by growth in the number of such households in the outer zone.

A different pattern, however, is observed for young households (25-44 years old) in the critical household formation years. Whilst the greatest growth of these households has taken place on the urban fringe, their greatest relative growth has been in the inner urban area with the result that there was a small increase in the incidence of 25-44 year old households in the inner zone. Conversely, the greatest growth amongst older households has been in the middle and outer zones.

The number of retirement age households in the middle zone grew more than twice the rate of households in all other age groups in that zone. This presumably reflects both a tendency to "stay put" and age in place amongst older households and constraints on affordability for younger households. Whilst the incidence of older households increased in the outer zone, younger households are still by far the dominant group with 56.3 per cent of all households in the outer zone of Sydney in 1986 and 50.3 per cent in 1996 having a reference person aged less than 45.

Table 2.7: Incidence and growth of households by age group, 1986 and 1996: Sydney

age of reference person	incidence 1986	incidence 1996	growth[a] 86-96	relative growth[b] 86-96
	%	%	%	
Inner Sydney				
15-24	7.6	6.8	-6.2	-121.4
25-44	42.0	43.5	8.8	171.4
45-64	29.8	29.3	3.5	68.5
65+	20.6	20.4	4.2	82.0
all inner	100.0	100.0	5.1	100.0
Middle Sydney				
15-24	4.8	4.0	-4.3	-29.7
25-44	41.7	39.8	9.1	63.3
45-64	35.1	34.9	13.5	93.9
65+	18.3	21.3	32.9	229.0
all middle	100.0	100.0	14.4	100.0
Outer Sydney				
15-24	6.4	5.1	8.2	23.9
25-44	49.9	45.2	21.7	63.2
45-64	28.5	32.1	51.0	148.7
65+	15.2	17.6	55.4	161.3
all outer	100.0	100.0	34.3	100.0
All Sydney				
15-24	6.0	5.1	-1.9	-11.9
25-44	43.7	42.3	12.4	76.2
45-64	32.0	32.6	18.5	113.9
65+	18.3	20.1	27.5	169.5
all households	100.0	100.0	16.2	100.0

a. growth is in number of households, not in share of age group
b. relative growth is measured against zone growth
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

There has been a similar spatial restructuring by age within Melbourne. This can be seen in Table 2.8. Unlike Sydney, however, there was not an overall decline in the number of very young households, although there was a decline in the number of these households in the middle zone and their overall growth was marginal. As with Sydney, the greatest growth for households in the critical household formation years took place in the inner zone although the greatest incidence of these households is still found in the outer zone.

Table 2.8: Incidence and growth of households by age group, 1986 and 1996: Melbourne

age of reference person	incidence 1986	incidence 1996	growth[a] 86-96	relative growth[b] 86-96
	%	%	%	
Inner Melbourne				
15-24	7.4	7.1	1.6	25.2
25-44	39.9	41.1	9.5	147.9
45-64	29.3	29.1	5.6	87.9
65+	23.4	22.8	3.6	56.9
all inner	100.0	100.0	6.4	100.0
Middle Melbourne				
15-24	5.6	4.6	-7.8	-61.2
25-44	42.4	40.3	7.3	57.6
45-64	35.4	34.1	8.7	68.5
65+	16.6	20.9	41.9	330.0
all middle	100.0	100.0	12.7	100.0
Outer Melbourne				
15-24	5.4	4.5	20.1	45.2
25-44	54.4	48.6	29.1	65.3
45-64	27.8	32.3	68.1	152.7
65+	12.4	14.6	70.7	158.6
all outer	100.0	100.0	44.6	100.0
All Melbourne				
15-24	6.1	5.2	0.9	5.3
25-44	44.3	42.7	13.7	76.8
45-64	32.0	32.3	19.2	107.4
65+	17.6	19.7	31.7	177.6
all households	100.0	100.0	17.9	100.0

a. growth is in number of households, not in share of age group
b. relative growth is measured against zone growth
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

In 1986, 58.8 per cent of all households in the outer zone had a reference person aged less than 45. By 1996, despite the greater relative growth of older households, 53.1 per cent of all households in the outer zone still had a reference person aged less than 45 years. As with Sydney, the greatest growth in the number of retirement age households occurred in the outer zone although the greatest relative growth took place in the middle zone.

In the middle zone of Melbourne, for example, older households grew at three times the rate of all households in this zone. In 1986, 52.0 per cent of all households in the middle zone of Melbourne had a reference person aged 45 years or more. By 1996, this had increased to 55.0 per cent of all households in the middle zone.

In both Sydney and Melbourne, the number of households with a reference person in the 25-44 year old age group grew at approximately three quarters of the rate of the overall growth in the number of households in these two metropolitan regions. In both cities, the number of very young households either declined or grew only marginally. However, by 1996, close to 48 per cent of households in Sydney or Melbourne still had a reference person aged less than 45. The incidence of households in the 45+ year old age groups increased by approximately 2 percentage points to approximately 52 per cent in 1996.

Table 2.9 shows that the impact of an aging population similarly can be seen in the relatively greater growth of older households in the three non-metropolitan regions of NSW.

Despite the reputation of the Mid North Coast as a tourism or resort based region, the highest growth and relative growth of older households occurred in the Illawarra region. Overall, the results in Table 2.7 and Table 2.9 suggest that the counter-urbanisation tendency observed for Australia as a whole between 1986 and 1996, in NSW at least, has been fuelled by the relatively greater growth of older households in non-metropolitan regions. In non metropolitan NSW as a whole, by 1996 the proportion of households with a reference person aged 45 years or more had increased from 51.7 per cent to 55.5 per cent of all households.

Overall, this spatially disaggregated data presented in Tables 2.7 to 2.9 show a relatively rapid growth in the number of younger households in the inner zones of Sydney and Melbourne, and in the number of retirement aged households in non-metropolitan regions. Despite this, however, the earlier observation that there has been no widespread age restructuring on a spatial basis remains broadly true at this considerably more spatially disaggregated level.

Table 2.9: Incidence and growth of households by age group, 1986 and 1996: Non-metropolitan NSW

age of reference person	incidence 1986	incidence 1996	growth[a] 86-96	relative growth[b] 86-96
	%	%	%	
Hunter				
15-24	6.6	6.1	14.2	62.3
25-44	41.7	38.8	14.2	62.2
45-64	31.4	31.2	22.2	97.2
65+	20.2	23.8	44.4	194.5
all Hunter	100.0	100.0	22.8	100.0
Illawarra				
15-24	6.4	5.5	8.7	33.2
25-44	41.9	39.0	17.6	66.8
45-64	33.4	32.0	20.9	79.3
65+	18.2	23.5	62.6	237.9
all Illawarra	100.0	100.0	26.3	100.0
Mid North Coast				
15-24	5.5	4.8	16.7	48.4
25-44	38.7	35.6	23.8	68.8
45-64	31.8	32.5	37.6	108.7
65+	24.0	27.1	52.1	150.7
all Mid North Coast	100.0	100.0	34.6	100.0
Non-metropolitan NSW				
15-24	6.7	5.9	8.5	36.4
25-44	41.5	38.6	14.6	62.6
45-64	31.7	32.0	24.3	104.1
65+	20.0	23.5	45.1	192.7
all non-metro NSW	100.0	100.0	23.4	100.0

a. growth is in number of households, not in share of age group
b. relative growth is measured against zone growth
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

2.2.2 Changes in household type

Section 2.1 above highlighted the impact on household structure of social and demographic changes that have taken place at an aggregate level. These changes in the composition of households are examined at a spatially disaggregated level in this sub-section in light of the results presented immediately above. The results for Sydney are shown in Table 2.10, those for Melbourne in Table 2.11 and those for the non-metropolitan regions in NSW in Table 2.12.

Table 2.10: Incidence and growth by household type, 1986 and 1996: Sydney

household type	incidence 1986	incidence 1996	growth[a] 86-96	relative growth[b] 86-96
	%	%	%	
Inner Sydney				
couple	27.7	22.3	-15.3	-298.5
couple with children	21.5	25.1	22.9	445.6
single	29.6	31.7	12.6	245.5
sole parent[c]	4.5	8.5	n.a.	n.a.
all inner	100.0	100.0	5.1	100.0
Middle Sydney				
couple	32.2	22.5	-20.1	-140.1
couple with children	35.6	41.3	32.6	227.1
single	16.4	19.5	36.5	254.3
sole parent[c]	4.9	10.0	n.a.	n.a.
all middle	100.0	100.0	14.4	100.0
Outer Sydney				
couple	29.2	21.7	-0.4	-1.0
couple with children	40.7	42.6	40.6	118.3
single	14.1	17.9	70.2	204.4
sole parent[c]	6.8	12.0	n.a.	n.a.
all outer	100.0	100.0	34.3	100.0
All Sydney				
couple	30.1	22.2	-14.3	-88.2
couple with children	32.5	37.2	33.0	203.4
single	19.8	22.4	31.3	192.9
sole parent[c]	5.2	10.2	n.a.	n.a.
all households	100.0	100.0	16.2	100.0

a. growth is in number of households, not in share of age group
b. relative growth is measured against zone growth
c. incidence data for sole parents is not strictly comparable across years because of definitional changes. See Appendix A for details.
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

In broad terms, the changes in Sydney are similar to, but more extreme than, those observed for metropolitan regions as a whole. Within Sydney, for example, the growth of couples with children has been more pronounced than the growth of single person households. This was more pronounced in the inner compared with the middle and outer zones although by 1996 the incidence of such households in the inner zone was still considerably lower than elsewhere. The following sub-section examines the extent to which these changes in household composition vary with age.

A reverse pattern can be seen with singles, with the greatest growth of single person households occurring in the outer zone that, traditionally, has had a smaller proportion of single person households than the middle and inner zones. Much of this, however, arises from the greater contribution that the outer zone makes to overall growth. In relative terms, the growth of singles is still marginally higher in the inner and middle zones. The growth in both single and couple with children household types is mirrored in a decline in the number of couple only households. There has been an absolute

decline in couple households in all zones with dramatic reductions in the inner and middle zones. Little comment can be made about changes in the incidence of sole parents between 1986 and 1996 because of definitional changes in the data.

Consideration of the factors that have contributed to these outcomes must be left until the age specific data is analysed. The implications of a growth in single person households, or couple households with children is likely to be very different if these households are young than if they are older households.

Whilst there are some similarities for the changes in household structure in Melbourne, the changes in Melbourne have been less dramatic than in Sydney. The results for Melbourne are shown in Table 2.11.

The absolute decline in the number of couple only households, for example, occurred in both the inner and middle zones of Melbourne with only a relative(?) decline in the proportion of couple only households in the outer zone. Overall, there was still a far higher proportion of couple households with children in Melbourne compared with Sydney despite the greater relative growth of these households in Sydney. As with Sydney, the growth in single person households was greatest in the outer zone but, again, this is attributable to the overall contribution to growth made by the outer zone. The greatest relative growth of singles occurred in the middle zone in Melbourne. In 1986 there were more single households in the inner zones in both Sydney and Melbourne than in the middle or outer zones. By 1996, there were more singles in the middle zones in each city and an increased proportion in the outer zones.

Table 2.11: Incidence and growth by household type, 1986 and 1996: Melbourne

household type	incidence 1986	incidence 1996	growth[a] 86-96	relative growth[b] 86-96
Inner Melbourne				
couple	28.6	22.0	-18.4	-287.9
couple with children	22.7	26.6	24.6	384.3
single	29.8	32.4	15.5	243.0
sole parent[c]	4.6	8.3	n.a.	n.a.
all inner	100.0	100.0	6.4	100.0
Middle Melbourne				
couple	31.6	22.2	-20.6	-162.5
couple with children	36.7	39.1	20.0	157.2
single	16.3	21.4	48.4	381.0
sole parent[c]	4.8	10.3	n.a.	n.a.
all middle	100.0	100.0	12.7	100.0
Outer Melbourne				
couple	29.9	22.2	7.3	16.3
couple with children	46.8	46.4	43.2	96.9
single	11.5	16.1	102.5	229.7
sole parent[c]	4.9	10.6	n.a.	n.a.
all outer	100.0	100.0	44.6	100.0
All Melbourne				
couple	30.4	22.1	-14.0	-78.4
couple with children	34.9	37.8	27.7	154.9
single	19.1	22.9	40.8	228.1
sole parent[c]	4.8	9.9	n.a.	n.a.
all households	100.0	100.0	17.9	100.0

a. growth is in number of households, not in share of age group
b. relative growth is measured against zone growth
c. incidence data for sole parents is not strictly comparable across years because of definitional changes. See Appendix A for details.
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

One of the more noticeable effects when comparing these metropolitan results with those for non-metropolitan regions generally and the specific NSW non-metropolitan regions in particular is the result commented upon in section 2.1. The growth of single person households is disproportionately a non-metropolitan phenomenon. The proportion of single person households increased by at least 5 percentage points in non-metropolitan areas generally. This outcome is again reflected in the data for non-metropolitan NSW reported in Table 2.12.

Table 2.12: Incidence and growth by household type, 1986 and 1996: Non-metropolitan NSW

age of reference person	incidence 1986	incidence 1996	growtha 86-96	relative growthb 86-96
Hunter				
couple	33.1	26.0	-3.6	-15.8
couple with children	33.2	34.6	28.0	122.5
single	18.5	23.4	55.3	242.4
sole parentc	5.5	10.5	n.a.	n.a.
all Hunter	100.0	100.0	22.8	100.0
Illawarra				
couple	34.0	26.5	-1.8	-6.8
couple with children	34.5	35.7	30.5	115.9
single	17.3	22.1	61.3	232.8
sole parentc	5.6	10.4	n.a.	n.a.
all Illawarra	100.0	100.0	26.3	100.0
Mid North Coast				
couple	35.2	30.0	14.5	41.9
couple with children	31.7	31.1	32.0	92.4
single	18.4	23.9	75.4	218.0
sole parentc	5.8	10.3	n.a.	n.a.
all Mid North Coast	100.0	100.0	34.6	100.0
Non-metropolitan NSW				
couple	32.3	26.6	1.7	7.1
couple with children	34.4	34.2	22.7	97.2
single	18.3	23.6	59.0	252.4
sole parentc	5.5	10.3	n.a.	n.a.
all non-metro NSW	100.0	100.0	23.4	100.0

a. growth is in number of households, not in share of age group
b. relative growth is measured against zone growth
c. incidence data for sole parents is not strictly comparable across years because of definitional changes. See Appendix A for details.
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

The results presented in Table 2.12 suggest that the outcomes for household structure for the non-metropolitan sub-regions considered are broadly similar both within non-metropolitan NSW and compared with non-metropolitan Australia as a whole. Whether this observation holds when the interaction between age and household type is taken into account is examined below.

2.2.3 *Age and household type interaction*

Tables 2.13 to 2.15 repeat the information provided in Table 2.3 for the sub-metropolitan and sub-non-metropolitan regions considered in section 2.2.2 above.

Table 2.13: Change in incidence of household type by age, Sydney, 1986-1996

age of reference person	couple	couple with children	single	sole parent[a]	all households
Inner Sydney					
15-24	-2.9	-3.0	3.6	-0.5	0.0
25-44	3.2	-5.5	2.4	0.2	0.0
45-64	-17.2	15.0	1.4	8.2	0.0
65+	-7.0	7.2	2.3	7.6	0.0
all inner	-5.4	3.6	2.1	4.1	0.0
Middle Sydney					
15-24	-4.4	-3.7	3.5	3.0	0.0
25-44	0.7	-6.8	3.4	2.4	0.0
45-64	-24.7	23.3	1.2	7.4	0.0
65+	-8.9	8.2	2.1	7.9	0.0
all middle	-9.7	5.7	3.2	5.1	0.0
Outer Sydney					
15-24	-5.6	-5.4	2.5	4.2	0.0
25-44	-1.2	-6.4	3.4	4.3	0.0
45-64	-21.1	19.9	1.7	7.0	0.0
65+	-9.6	6.2	3.8	7.2	0.0
all outer	-7.5	1.9	3.8	5.2	0.0
All Sydney					
15-24	-4.0	-3.6	3.0	2.2	0.0
25-44	0.8	-6.0	2.9	2.4	0.0
45-64	-21.5	20.4	1.0	7.5	0.0
65+	-7.8	7.4	2.0	7.7	0.0
all Sydney	-7.9	4.7	2.6	4.9	0.0

a. incidence data for sole parents is not strictly comparable across years because of definitional changes. See Appendix A for details.
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

The data for all of Sydney, shown in the final rows of Table 2.13, reflect a broadly similar pattern to that shown for metropolitan households generally, except for changes in the incidence of single person households which show a uniformly lower increase in Sydney across all age groups. For older households, these differences are offset by generally higher increases in the incidence of couples with children. For younger households they are offset by increases in the incidence of couple only households.

The data in Table 2.14 show that, as for the more aggregate results, the increase in the incidence of couple with children households arises from increase in the numbers of older households in this category. There has been a decline in the proportion of younger couple with children households. Within Sydney, this decline is marginally more pronounced in the middle and outer zones, as is the increase in the incidence of older couple households with children. The relationship of these outcomes to economic changes will be examined in the following chapter.

As for Sydney, the data for all of Melbourne, shown in the final rows of Table 2.14 below, reflect a broadly similar pattern to that shown for metropolitan households but the lower increases in the incidence of single person households are limited to households in the retirement age group. Declines in the proportion of young couples with children have been more pronounced in Melbourne than in Sydney. In Melbourne, as in Sydney, this decline is marginally more pronounced in the middle and outer zones. Conversely, the increases in the proportion of older couples with children have been less marked in Melbourne than in Sydney. In broad terms, however, the patterns of change are remarkably similar within each city.

The data underlying the results presented in Table 2.13 and Table 2.14 (not reported here) do not suggest that spatial differences in the incidence of sole parents are related to the age structure of these households. The most significant changes in Sydney and Melbourne are the reductions in the proportions of 25-44 year old couple households with children and the increases in the proportions of older couple households with children. The former changes are offset by increases in the proportion of single person households (or increases in the proportion of couple households in the inner zones). The latter changes are offset by decreases in older couple only households. These outcomes are similar to those for metropolitan regions as a whole.

Table 2.14: Change in incidence of household type by age, Melbourne, 1986-1996

age of reference person	couple	couple with children	single	sole parent[a]	all households
Inner Melbourne					
15-24	-6.4	-2.4	2.6	-1.2	0.0
25-44	1.5	-5.7	4.0	-0.2	0.0
45-64	-17.8	16.1	1.2	7.8	0.0
65+	-6.7	5.8	2.4	6.8	0.0
all inner	-6.7	3.9	2.6	3.7	0.0
Middle Melbourne					
15-24	-10.1	-4.8	6.5	1.0	0.0
25-44	0.8	-10.4	5.8	3.1	0.0
45-64	-23.6	19.1	3.1	8.0	0.0
65+	-9.4	9.1	1.5	8.1	0.0
all middle	-9.3	2.4	5.2	5.5	0.0
Outer Melbourne					
15-24	-13.5	-6.7	6.1	5.9	0.0
25-44	-1.1	-9.0	4.6	5.3	0.0
45-64	-22.4	19.0	2.2	7.1	0.0
65+	-9.6	6.2	3.9	6.0	0.0
all outer	-7.7	-0.4	4.6	5.7	0.0
All Melbourne					
15-24	-9.3	-4.1	4.9	1.4	0.0
25-44	0.4	-8.2	4.7	2.9	0.0
45-64	-21.4	18.5	2.0	7.7	0.0
65+	-7.7	7.6	1.4	7.3	0.0
all Melbourne	-8.2	2.9	3.7	5.1	0.0

a. incidence data for sole parents is not strictly comparable across years because of definitional changes. See Appendix A for details.
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

The final table showing the interdependencies between age and household structure is Table 2.15 for non-metropolitan regions within NSW. Again, these results present a similar picture. The change in the proportions of older couple households with and without children, whilst present, is less pronounced in the Mid North Coast region than elsewhere.

Table 2.15: Change in incidence of household type by age, non-metropolitan NSW, 1986-1996

age of reference person	couple	couple children	with single	sole parent[a]	all households
Hunter					
15-24	-7.1	-4.1	3.5	2.9	0.0
25-44	-1.6	-7.1	4.8	4.6	0.0
45-64	-19.3	16.9	3.3	6.4	0.0
65+	-4.4	4.3	3.1	5.9	0.0
all Hunter	-7.1	1.4	4.9	5.0	0.0
Illawarra					
15-24	-6.5	-6.1	2.0	2.5	0.0
25-44	-1.6	-7.1	4.1	4.9	0.0
45-64	-20.0	16.6	3.7	6.0	0.0
65+	-6.0	5.1	2.4	5.5	0.0
all Illawarra	-7.6	1.1	4.8	4.9	0.0
Mid North Coast					
15-24	-3.8	-0.4	0.1	3.7	0.0
25-44	-1.9	-7.0	4.4	6.1	0.0
45-64	-13.2	9.1	5.5	4.2	0.0
65+	-5.8	3.0	5.3	4.4	0.0
all Mid North Coast	-5.3	-0.6	5.6	4.6	0.0
All non-metro NSW					
15-24	-5.9	-3.7	2.8	3.1	0.0
25-44	-1.2	-7.5	4.8	5.0	0.0
45-64	-15.0	12.1	4.2	5.1	0.0
65+	-5.4	4.2	4.1	5.7	0.0
all non-metro NSW	-5.7	-0.2	5.3	4.7	0.0

a. incidence data for sole parents is not strictly comparable across years because of definitional changes. See Appendix A for details.

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

2.2.4 Summary

This chapter has provided a detailed overview of changes in the age and structure of households at a more disaggregated level than that provided in section 2.1. In general, the more disaggregated data for non-metropolitan regions within NSW provides relatively little increase in the insights gained from the non-metropolitan data for Australia as a whole.

The results highlight the impact of an aging population and the growth of single person households and reinforce the observations made at a more aggregate level. They also highlight the decline in the numbers of younger couple households with children and growth in the numbers of older couple households with children. For the disaggregated data for non-metropolitan regions and for the aggregate Sydney and Melbourne data, whilst the outcomes are not exactly the same, there are few substantive differences from the more aggregate results presented in section 2.1.

The disaggregated data for Sydney and Melbourne, however, do highlight a significant spatial restructuring within those cities. In both cities, the greatest absolute and relative growth of retirement aged households occurred in the middle and outer zones. For households in the pre-retirement age group, this occurred in the outer zones. The increase in the incidence of older couples with children in these zones is more pronounced in Sydney than in Melbourne. In both cities, there was a relative increase in the contribution made by households in the 25-44 year old age group in the respective inner zones although the highest incidence of such households is still found in the outer zones. The incidence of single person and sole parent households is far higher in Melbourne than in Sydney (or for all other region in Australia covered in this report).

2.3 Chapter summary

This chapter has reported on changes in the socio-demographic structure of households at the spatial levels of analysis employed in this paper. The social and demographic trends that have contributed to these changes were touched on in the Positioning Paper and have been discussed at length in numerous reports.

The results presented here suggest that the aging of the population has had a greater relative impact on the smaller and slower growing States and on non-metropolitan rather than metropolitan regions only in NSW and in Queensland. However, changes in the demographic structure of households have been relatively uniform at a broad spatial level of disaggregation.

Changes in household structure are reflected in an increasing proportion of single person and sole parent households, a decreasing proportion of younger couples with children and an increasing proportion of older couples with children. The increase in the incidence of single person households has been more pronounced amongst younger than older households and is disproportionately a non-metropolitan phenomenon. The increase in the incidence of couples with children is most pronounced in the higher cost metropolitan regions and results from the increase in the number of older households in this category. The declining share of younger couples with children is disproportionately a metropolitan phenomenon. Any relative growth of younger couple only households is predominantly, but not entirely, a metropolitan phenomenon.

CHAPTER 3. CHANGES IN HOUSEHOLD INCOME

As indicated in the previous chapter, the Positioning Paper for this study provided an overview of changes in household income that have taken place in Australia over the past few decades. These changes were attributed to socio-demographic changes impinging upon household structure and to a growing earnings inequality that has strong spatial implications. The previous chapter has provided an overview of spatial differences in the impact of socio-demographic changes on household structure between 1986 and 1996.

This chapter uses census data on gross household income to analyse the extent to which socio-economic and demographic changes, and spatial variations in these, have contributed to changes in household income. In the census data, household income is derived by summing the individual incomes reported by all household members. Negative income is treated as no income. If any household member aged 15 years and over did not state their income, or was temporarily absent, household income in the census data is reported in the partial income stated category. For this study, income has been imputed for all cases where income was either not stated or was only partially stated. This was done using a conditional mean method of imputation where missing incomes were replaced by the average income for households with the same age of the reference person, the same household structure, the same number of earners, the same tenure and in the same location. Just over 10 per cent of cases had income imputed in this manner. Details of the income data and imputation procedures employed are provided in Appendix A.

Since the Positioning Paper for this report was prepared, additional work from NATSEM has analysed income data from the various Household Expenditure Surveys from 1988 to 1999. Their analysis suggest "resetting negative incomes to zero consistently reduces income inequality … and ... has had a greater impact during the 1990s than the late 1980s." (Harding and Greenwell 2001, p34). Their analysis, however, is based on equivalent disposable household income and the unequivalised gross household income measure used in this chapter shows a greater degree of inequality than equivalised disposable income. An overview of the relative merits of the various income measures that can be used to examine income inequality, and a rationale for using gross household income and not using equivalence scales, was provided in Chapter 2 of the Positioning Paper. Briefly, use of census data constrains the analysis to gross income and a focus on housing outcomes for different household types raises questions about the use of equivalence scales that do not take into account housing needs. Use of equivalised income has the effect of both compensating for, but also disguising, the impact of changing household structure on household incomes. The impact of changing household structures is one of the factors that will be explicitly considered in this section as contributing to changes in household income.

Section 3.1 below relates changes in household income at a broad regional level of disaggregation to changes at an Australia wide level. In the first instance, the analysis will focus on differences at the metropolitan and non-metropolitan level both at an Australia wide level and within each state. In section 3.2, these changes are then examined to determine the extent to which they can be attributed to changes in household structure. The data in these sections will provide a socio-economic indication of the extent of the geographic divide between the city and the bush. In section 3.3, these data will be further disaggregated into specific sub-metropolitan and sub non-metropolitan regions in order to provide illustrative case studies on the extent of variation within the broad regions rather than focussing on variations between them. Section 3.4 provides an overview of the impact of these changes on the distribution of household income and section 3.5 provides a brief chapter summary.

3.1 Differences in aggregate household income by age

Declining household size has been a well documented characteristic of households in Australia over the past few decades. One of the obvious implications of this trend is the potential it has to reduce household income even if individual incomes are increasing. The Positioning Paper presented ABS Household Expenditure Survey data on gross household income that indicated a decline in household income between 1984 and 1994 with a partial recovery to the 1986 level between 1994 and 1999.

Table 3.1 below provides similar data from the 1986 and 1996 censuses. It summarises gross household income (in $1996 per week) for households in the 15 metropolitan or non-metropolitan regions identified for this study and for the aggregate of all metropolitan and non-metropolitan regions. These census data show a decline in gross household income of 3.3 per cent between 1986 and 1996 at an Australia wide level. At a disaggregate level, the 4.5 per cent decline in non-metropolitan regions was discernibly greater than the 2.5 per cent decline in metropolitan regions.

Table 3.1: Average gross household income, 1986 and 1996 ($1996 pw)

	All households		
	1986	1996	growth
	$(1996) pw	$pw	%
Sydney	874	886	1.5
NSW non-metro	702	667	-5.0
Melbourne	869	828	-4.7
Vic non-metro	715	653	-8.6
Brisbane	801	801	0.0
Qld non-metro	710	703	-0.9
Adelaide	775	711	-8.3
SA non-metro	671	629	-6.2
Perth	815	795	-2.4
WA non-metro	779	776	-0.5
Hobart	785	714	-9.0
Tas non-metro	699	625	-10.6
Darwin	1013	976	-3.6
NT non-metro	928	920	-0.9
ACT	1106	1001	-9.5
metro	852	831	-2.5
non-metro	712	680	-4.5
Australia	802	775	-3.3

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

This change in household income was not uniform across all regions. Household income grew in Sydney, was stable in Brisbane and declined in all other regions. Declines in household income varied by state but, consistent with the aggregate data, were most pronounced in the non-metropolitan regions in each state.

A decline in household income is consistent with a changing socio-demographic structure of households that has resulted in an increase in the proportion of older households and an increase in the proportion of single person and sole parent households. As indicated in the previous chapter, each of these trends were more pronounced in non-metropolitan than metropolitan regions, although differences attributable to age were not strong.

Table 3.2 provides an indication of the extent to which changes in household income can be attributed to changes in the age distribution in each of the regions reported in Table 3.1. It does so by reporting household income in 1996 and growth in income between 1986 and 1996 for each age group. The results in Table 3.2 clearly indicate that regional differences in the age structure of households will have an impact on average regional incomes because of the different changes in household income for different age groups. As can be seen from the final row in Table 3.2, declines in household income have been most pronounced for households in the youngest and oldest age groups reported. Given that the former account for only 6 percent of all households and the latter for 20 percent of all households, it is the latter trends associated with the regional redistribution of an aging population that will dominate. As reported in chapter 2, the impact of an aging population was marginally greater in non-metropolitan regions than in metropolitan regions. Combined with the above average declines in household income that have been experienced by those in the over 65 year old age group, this factor alone would contribute to the results in Table 3.1.

Table 3.2: Household income in 1996 and growth from 1986 to 1996 by age

	age of household reference person							
		15-24		25-44		45-64	65 and over	
	1996	growth	1996	growth	1996	growth	1996	growth
	($pw)	%	($pw)	%	($pw)	%	($pw)	%
Sydney	778	-3.5	998	2.6	1012	3.6	471	-1.9
NSW non-metro	578	-10.2	790	-1.7	757	-1.8	364	-9.1
Melbourne	699	-13.7	931	-3.7	953	-1.9	434	-6.1
Vic non-metro	565	-17.8	767	-6.4	747	-5.2	355	-11.6
Brisbane	693	-7.6	907	1.6	911	1.9	404	-6.7
Qld non-metro	656	-4.6	813	1.5	765	0.3	383	-10.1
Adelaide	581	-18.0	815	-8.2	852	-2.6	376	-7.3
SA non-metro	551	-10.3	735	-3.9	708	-2.3	342	-11.0
Perth	647	-11.0	897	-1.3	917	1.2	398	-6.9
WA non-metro	736	2.9	893	1.9	808	-0.8	378	-9.0
Hobart	564	-15.7	825	-6.4	828	-8.2	389	-8.9
Tas non-metro	548	-14.4	732	-7.3	693	-11.8	335	-11.9
Darwin	817	-7.0	1012	-4.6	1022	0.3	503	-12.3
NT non-metro	740	-5.0	960	-3.8	960	4.0	535	2.1
ACT	716	-26.7	1067	-8.3	1131	-4.8	562	-4.3
metro	699	-10.7	937	-1.4	956	0.5	433	-5.0
non-metro	612	-8.6	797	-1.7	757	-2.2	365	-10.0
Australia	665	-10.0	887	-1.6	883	-0.6	407	-6.9

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

The results in Table 3.2, however, also show that a change in the age structure of the population is not the only factor that has contributed to observed declines in average household income. On average, household incomes have declined for every age group. For all but the small, youngest age group, these declines are greater in non-metropolitan regions than they are in metropolitan regions and are significantly so for older households. This adds to the downward pressure on average household income in non-metropolitan regions that arises from the aging of the population.

Within each age group there are significant differences between and within each of the states. Average household income for very young households in a number of small regions (the ACT, South Australia and Tasmania generally and non-metropolitan Victoria) declined from 10 to nearly 27 per cent. For retirement age households, average declines have not been quite as dramatic, but the greatest declines have been concentrated in the same regions as for young households.

Within the different regions reported, relatively low positive growth in household income occurred for households both in the key 25-44 year old and the 45-64 year old age groups in Sydney and in both metropolitan and non-metropolitan Queensland. Small but still positive growth also occurred for one of these groups in either metropolitan or non-metropolitan Western Australia. In these regions, the declines in the household incomes of the very young and the retirement aged households are also well below the Australia wide average.

Table 3.3 provides similar data to that presented in Table 3.2. Instead of focussing on the extent to which changes in household income can be attributed to changes in the age distribution in each of the regions covered, it provides an indication of the extent to which they may be attributed to differences in household composition. As with Table 3.2, Table 3.3 clearly indicates that regional differences in the incidence of different household types will have an impact on average regional incomes because of the different changes in household income for different household types. At an Australia wide level, the incomes of couple only households have declined by 11.5 per cent, whilst those of single persons have declined by only 0.6 per cent. The change in income for couples, however, varies from a decline of 20.3 per cent in non-metropolitan Tasmania to an increase of 8.2 per cent in non-metropolitan Northern Territory. Similar differences arise for other household types. These differences in outcomes for different household types and the variations between the different regions show that differential changes in household composition will have an impact on average household income in each region. They also show that similar changes in household composition will have different effects on average household income.

Table 3.3: Household income in 1996 and growth from 1986 to 1996 by household type

	couple		couple with children		single person		sole parent[a]	
	1996	growth	1996	growth	1996	growth	1996	growth
	($pw)	%	($pw)	%	($pw)	%	($pw)	%
Sydney	902	-7.3	1149	10.0	454	4.1	680	n.a.
NSW non-metro	638	-14.7	948	10.4	337	-2.9	504	n.a.
Melbourne	831	-12.9	1087	5.1	430	-0.5	643	n.a.
Vic non-metro	630	-17.0	916	5.5	329	-6.4	499	n.a.
Brisbane	818	-7.2	1062	11.8	401	3.0	607	n.a.
Qld non-metro	703	-5.6	937	11.5	370	3.0	529	n.a.
Adelaide	716	-16.9	1025	6.9	361	-4.5	556	n.a.
SA non-metro	615	-14.1	877	10.2	330	-5.3	466	n.a.
Perth	813	-9.7	1077	10.1	411	0.4	600	n.a.
WA non-metro	775	-2.1	993	11.0	437	5.5	535	n.a.
Hobart	741	-16.6	1016	6.2	368	-5.1	534	n.a.
Tas non-metro	611	-20.3	868	4.0	327	-4.5	472	n.a.
Darwin	1109	-2.4	1156	2.7	545	-5.8	678	n.a.
NT non-metro	1059	8.2	1056	4.5	536	-2.2	641	n.a.
ACT	1091	-9.9	1267	1.2	557	-9.0	699	n.a.
metro	843	-10.4	1102	8.0	426	0.6	636	n.a.
non-metro	665	-11.7	936	9.4	351	-1.5	510	n.a.
Australia	771	-11.5	1042	8.7	398	-0.6	591	n.a.

a. Data for sole parents are not strictly comparable across years because of definitional changes. See Appendix A for details.
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

3.2 Differences in aggregate household income by age and household type

The patterns of change in household income shown in Tables 3.2 and 3.3 show household incomes have increased only for some households in the 45-64 year old age group and for most couple with children households. The age specific changes in household composition shown in Chapter 2 suggest that the changes in income by household type need to be examined at an age specific level to enable an assessment of the impact of socio-demographic change vis a vis economic factors on regional variations in household income. Table 3.4 provides such data at the metropolitan/non-metropolitan level of aggregation.

Table 3.4: Household income in 1996 and growth from 1986 by age, household type and region

	couple		couple with children		single person		sole parent[a]	
	1996	growth	1996	growth	1996	growth	1996	growth
	$ pw	%	$ pw	%	$ pw	%	$ pw	%
15-24 year old households								
metropolitan regions	944	-3.4	663	-2.1	408	-7.2	427	3.1
non-metropolitan regions	822	-2.1	599	-0.8	398	-4.6	378	2.0
Australia	898	-3.2	631	-1.8	404	-6.2	405	2.4
25-44 year old households								
metropolitan regions	1210	1.1	1025	4.2	612	-3.0	525	-0.3
non-metropolitan regions	994	0.0	894	6.6	509	-6.7	454	0.2
Australia	1144	1.0	974	4.9	578	-4.5	497	-0.7
45-64 year old households								
metropolitan regions	855	-16.2	1246	6.2	459	4.1	802	n.a.
non-metropolitan regions	699	-13.9	1065	9.8	372	1.2	636	n.a.
Australia	782	-16.8	1191	7.6	426	2.4	753	n.a.
65+ year old households								
metropolitan regions	465	-17.2	944	12.7	257	-0.9	699	n.a.
non-metropolitan regions	411	-16.1	781	19.7	231	-1.9	579	n.a.
Australia	442	-17.0	895	17.0	247	-1.5	658	n.a.
all households								
metropolitan regions	843	-10.4	1102	8.0	426	0.6	636	15.3
non-metropolitan regions	665	-11.7	936	9.4	351	-1.5	510	9.7
Australia	771	-11.5	1042	8.7	398	-0.6	591	13.5

a. data for sole parents are not strictly comparable across years because of definitional changes. See Appendix A for details.
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table 3.4 shows that the increases in household income experienced by couple with children households occurred for households in all age groups other than the youngest, at least at a metropolitan and non-metropolitan level of aggregation. Likewise, the declines in household income reported in Table 3.3 for all other household types occurred across all age groups (with the single exception of 25-44 year old couples). Thus, the age specific declines reported in Table 3.2 are explained by greater weight assigned to household types other than the traditional couple with children family.

For most age groups and for most household types there have been declines in household income in both metropolitan and non-metropolitan regions, although there a number of important exceptions. In general, when both age and household structure are controlled for, declines have been greater or growth smaller in metropolitan than in non-metropolitan regions. This suggests that much of the greater decline observed in aggregate household incomes in non-metropolitan regions (and reported in Table 3.1) can be attributed to differential changes in age structure and changes in household composition between metropolitan and non-metropolitan regions. It does not provide any indication, however, of the extent to which these differential changes, particularly in household structure, are driven by necessity rather than choice because of housing market constraints.

Table 3.5 provides a "shift-share" analysis of changes in age specific household income for all households in metropolitan and non-metropolitan regions and for Australia as a whole. It shows what household income would have been in each age group in each region had there been no change in household structure between 1986 and 1996. Columns 1 and 2 show actual household income in 1986 and 1996 in each year. Column 3 gives the growth rate in these age specific average incomes for each region. These totals and growth rates are as reported in Tables 3.1 and 3.2. Column 4 generates a hypothetical average household income if household incomes for each household type in each age group were as in 1996 (as in column 2) but if the incidence of each household type in 1996 was as in 1986. Relevant incidence data for the 4 major household types for 1986 and 1996 can be seen in Tables B.5 and B.6 in Appendix B. Column 5 gives the hypothetical growth rate showing the change in household income that is not attributable to changes in household structure.

The hypothetical or household structure adjusted data in column 4 provides an indication of the extent to which the observed change in each age specific average household income arises from the changes in household structure that were documented in chapter 2. An increase in the incidence of single person or single parent households in any age group, for example, will result in a decline in average household income in that age group even if the income of each household type remained unchanged.

The results for Australia as a whole are shown in the final row. A comparison of the results in columns 1 and 4 for Australia, suggests that all of the observed decline in income between 1986 and 1996 can be explained by changes in household structure over the same period. Had the incidence of the different household types remained as it was in 1986 then, given the 1996 average household incomes for each household type, average household income in Australia would have been $803 per week. That is, virtually the same as it was in 1986 (in $1996). Similar results hold for household incomes at the metropolitan and non-metropolitan level of analysis.

The age specific totals in Table 3.5, however, suggest that these spatially aggregated results arise from an interaction of demographic and social changes. The shift share analysis for each age group shows that, with the single exception of households in the 25-44 year old age group, age specific household incomes would still have declined, even if there had been no change in household composition.

Table 3.5: Average gross household income, 1986, 1996 and structure adjusted ($1996)

	1986	1996	growth actual	adjusted 1996	growth adjusted
	$pw	$pw	%	$pw	%
15-24 year old households					
metropolitan regions	782	699	-10.7	726	-7.1
non-metropolitan regions	670	612	-8.6	633	-5.5
Australia	739	665	-10.0	690	-6.7
25-44 year old households					
metropolitan regions	951	937	-1.4	970	2.0
non-metropolitan regions	811	797	-1.7	838	3.3
Australia	902	887	-1.6	923	2.3
45-64 year old households					
metropolitan regions	951	956	0.5	922	-3.1
non-metropolitan regions	774	757	-2.2	750	-3.1
Australia	888	883	-0.6	856	-3.6
65+ year old households					
metropolitan regions	456	433	-5.0	414	-9.3
non-metropolitan regions	406	365	-10.0	365	-10.0
Australia	437	407	-6.9	395	-9.7
all households					
metropolitan regions	852	831	-2.5	856	0.4
non-metropolitan regions	712	680	-4.5	712	0.0
Australia	802	775	-3.3	803	0.2

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

For the very young, adjusting for household composition has ameliorated the impact of a declining average household income in each region. For households in the pre- or post- retirement age groups, however, it has exacerbated the decline by reducing the impact of the higher proportion of older households with children in 1996.

Once changes in household composition are taken into account, the average income of households in the 25-44 year old age group shows an increase from 1986 to 1996 rather than the decline in actual household incomes. In 1986 there were more couples with children and fewer single households in this age group. The higher average incomes of the former have contributed to the household structure adjusted result.

One final observation that can be drawn from the results in Table 3.4 is reinforced by these results in Table 3.5. The spatial polarisation of household income, observed in the aggregate results presented in Table 3.1 and Table 3.2, is primarily a result of differential changes in household structures at the metropolitan and non-metropolitan level of aggregation. As before, the data employed here cannot give any indication of the extent to which household structures are influenced by housing market conditions. However, the changes are consistent with the argument that lower income households (or household structures that lead to low household incomes) are less likely to live in higher cost housing markets.

Because of the considerable data requirements for estimating hypothetical incomes, the exercise undertaken in Table 3.5 is not repeated for the sub-regional levels of disaggregation considered below. The results from table 3.5 indicate the ways in which the age specific results are likely to be affected by changing household composition. However, the age and household structure specific incomes that are presented in Table 3.4 and that underpin the results in Table 3.5 provide a clearer indication of the patterns of change that can be observed. The spatially disaggregated results in the following section are equivalent to those presented in Table 3.1 and 3.2 (for age specific results) and in Table 3.4 for a further disaggregation by household type.

3.3 Differences in aggregate household income by sub-region

The impact of spatial variations in income, reflecting spatial variations in household structure and a resultant spatial polarisation of income, are clearly identifiable at a sub-metropolitan level as well as for metropolitan regions as a whole. This can be seen from the summary of household incomes for each age group in the inner, middle and outer zones in both Sydney and Melbourne shown in Table 3.6.

As shown in Table 3.1, Sydney was one of the few regions where household income increased and, as shown in Table 3.2, within Sydney, age specific household incomes declined only for the youngest and oldest age groups. Table 3.6 shows that declines were least or growth most for households in the inner Sydney zone and, except for the increasing proportion of retirement aged households, declines generally were greatest or growth least in the middle Sydney zone. Table 3.7 and Table 3.8 provide a breakdown of these data by household type for each city.

Table 3.6: Household income in 1996 and growth from 1986 by age: Sydney and Melbourne

Sydney	1996 $ pw	growth %	**Melbourne**	1996 $ pw	growth %
15-24 year old households					
inner Sydney	816	-0.7	inner Melbourne	715	-11.1
middle Sydney	786	-5.8	middle Melbourne	688	-14.9
outer Sydney	714	-3.3	outer Melbourne	694	-15.5
Sydney	778	-3.5	Melbourne	699	-13.7
25-44 year old households					
inner Sydney	1067	7.8	inner Melbourne	1008	1.3
middle Sydney	1018	0.5	middle Melbourne	912	-5.1
outer Sydney	900	1.7	outer Melbourne	893	-5.5
Sydney	998	2.6	Melbourne	931	-3.7
45-64 year old households					
inner Sydney	991	6.4	inner Melbourne	980	4.2
middle Sydney	1074	2.8	middle Melbourne	947	-4.4
outer Sydney	915	5.6	outer Melbourne	940	-2.0
Sydney	1012	3.6	Melbourne	953	-1.9
65+ year old households					
inner Sydney	508	1.0	inner Melbourne	474	-3.3
middle Sydney	488	-0.9	middle Melbourne	424	-5.1
outer Sydney	394	-4.3	outer Melbourne	398	-9.1
Sydney	471	-1.9	Melbourne	434	-6.1
all households					
inner Sydney	914	6.3	inner Melbourne	858	1.2
middle Sydney	916	-0.6	middle Melbourne	811	-7.5
outer Sydney	806	1.0	outer Melbourne	827	-6.0
Sydney	886	1.4	Melbourne	828	-4.8

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table 3.7: Household income in 1996 and growth from 1986 by age and household type: Sydney metropolitan region

	couple		couple with children		single person		sole parent[a]	
	1996	growth	1996	growth	1996	growth	1996	growth
	$ pw	%	$ pw	%	$ pw	%	$ pw	%
15-24 year old households								
inner Sydney	1088	8.3	772	3.4	441	-0.8	476	7.5
middle Sydney	1040	0.1	711	-0.1	463	-2.2	445	1.8
outer Sydney	962	0.5	703	2.5	417	-5.1	428	6.9
Sydney	1030	2.5	713	0.9	443	-2.1	441	4.1
25-44 year old households								
inner Sydney	1356	9.2	1165	9.9	730	10.7	606	2.9
middle Sydney	1272	0.9	1094	4.6	634	-1.7	568	3.7
outer Sydney	1150	1.4	990	8.1	553	-3.2	499	8.1
Sydney	1278	4.2	1069	6.2	664	3.4	549	3.4
45-64 year old households								
inner Sydney	1054	-2.5	1300	10.1	566	11.1	869	n.a.
middle Sydney	939	-15.5	1315	6.2	484	8.9	901	n.a.
outer Sydney	769	-16.2	1204	12.9	394	7.5	758	n.a.
Sydney	910	-14.2	1284	7.8	494	7.6	855	n.a.
65+ year old households								
inner Sydney	583	-11.0	1075	14.0	305	4.5	777	n.a.
middle Sydney	503	-16.4	1048	13.4	268	3.2	760	n.a.
outer Sydney	400	-17.6	890	17.4	228	-0.9	657	n.a.
Sydney	494	-16.4	1023	14.3	271	1.4	741	n.a.
all households								
inner Sydney	1063	5.3	1215	11.5	534	10.2	738	n.a.
middle Sydney	887	-11.7	1184	8.4	424	3.1	718	n.a.
outer Sydney	762	-11.5	1052	12.9	367	1.0	585	n.a.
Sydney	902	-7.3	1149	10.0	454	4.1	680	n.a.

a. data for sole parents are not strictly comparable across years because of definitional changes. See Appendix A for details.

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

As with the analysis in the previous section, Table 3.7, for Sydney, shows that some, but not all, of these differential patterns of growth can be attributed to changes in household structure. For very young households, for example, only single person households experienced a decline in household income. The increased incidence of single person households, with their low and declining average household incomes, explains the overall decline in household incomes amongst those in the 15-24 year old age group. Young single persons in the inner zone, however, did experience a lower decline in their incomes than young singles elsewhere in Sydney.

Table 3.7 shows that, once age and household type are controlled for, household incomes in inner Sydney were both higher and increased more (or decreased less) than in the rest of Sydney. The growth of incomes for inner zone households under the age of 45 was greater than the growth of incomes for their middle and outer zone counterparts. However, disparities between household incomes in inner Sydney tend to be greater for household in the 45-65 and 65 years and over age groups than they are for younger households. The analysis in the following chapter, which examines tenure outcomes, provides further insights into this socio-spatial pattern of incomes.

Table 3.6 showed that similar outcomes hold for Melbourne in relation to the relative changes in age specific household incomes although, as shown in Table 3.1, average household income in Melbourne declined rather than increased.

Table 3.8 shows the equivalent data for Melbourne as shown in Table 3.7 for Sydney. Table 3.2 showed the age distribution of the change in Melbourne was similar to that in Sydney, with the youngest and oldest age groups experiencing the greatest declines in income. Table 3.6 showed that households in inner Melbourne, like their Sydney counterparts, fared relatively better than households elsewhere in Melbourne with increases in incomes for households in the 25-64 year old age groups and lower declines for households in the youngest and oldest age groups.

As for Sydney, Table 3.8 shows that the restructuring of income was partly but not wholly explained by the changing structure of households. However, in Melbourne unlike Sydney, most households did experience a decline in income. Inner zone households in the 25-44 year old age group are the major exception to this generalisation.

The pattern of change shown in Tables 3.6 to 3.8 lead to a similar conclusion to that drawn from the results derived from the broader level of aggregation reported sections 3.2 and 3.3 above. Some, but not all, of the observed change in household income can be attributed to changes in the socio-economic structure of households within and between regions.

Table 3.8: Household 1996 in 1996 and growth from 1986 by age and household type: Melbourne metropolitan region

	couple		couple with children		single person		sole parent[a]	
	1996	growth	1996	growth	1996	growth	1996	growth
	$ pw	%	$ pw	%	$ pw	%	$ pw	%
15-24 year old households								
inner Melbourne	985	-2.7	667	-6.3	420	-8.0	411	-11.2
middle Melbourne	934	-6.8	632	-12.5	409	-8.4	422	-0.7
outer Melbourne	932	-7.3	667	-8.0	416	-7.8	428	-3.9
Melbourne	946	-6.0	652	-9.7	414	-8.2	423	-3.6
25-44 year old households								
inner Melbourne	1309	4.7	1157	5.8	673	1.8	547	-3.7
middle Melbourne	1185	-1.9	988	0.5	593	-4.8	523	-3.9
outer Melbourne	1125	-4.6	965	1.3	564	-9.5	509	-1.4
Melbourne	1207	-0.5	1008	1.5	620	-3.4	522	-3.9
45-64 year old households								
inner Melbourne	1022	-4.1	1299	6.0	525	6.2	818	n.a.
middle Melbourne	777	-25.2	1207	3.0	418	0.8	808	n.a.
outer Melbourne	766	-21.8	1204	4.8	404	0.5	766	n.a.
Melbourne	825	-20.0	1224	3.9	453	1.3	800	n.a.
65+ year old households								
inner Melbourne	574	-11.5	989	7.1	298	0.9	718	n.a.
middle Melbourne	410	-23.7	922	7.5	233	-2.3	687	n.a.
outer Melbourne	414	-20.4	854	8.4	239	-3.6	657	n.a.
Melbourne	454	-20.5	925	7.2	257	-2.9	691	n.a.
all households								
inner Melbourne	979	0.0	1206	7.1	489	4.3	685	n.a.
middle Melbourne	777	-18.1	1075	4.2	397	-1.2	652	n.a.
outer Melbourne	785	-16.1	1039	5.9	393	-2.7	596	n.a.
Melbourne	831	-12.9	1087	5.1	430	-0.5	643	n.a.

a. data for sole parents are not strictly comparable across years because of definitional changes. See Appendix A for details.
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

The final two tables in this sub-section suggest that the above generalisations apply equally to non-metropolitan sub-regions. Table 3.9 and Table 3.10 provide age specific income data for the Hunter, Illawarra and Mid-North Coast non-metropolitan regions as well as for non-metropolitan NSW as a whole.

Table 3.9 shows that age specific average incomes generally have declined for all age groups and in all regions. Households in the 25-44 year old age group in the Hunter and Illawarra provide the only exception to this as a result of a small growth in their household incomes. In general, declines in age specific incomes were higher in the tourism and life-style based Mid North Coast region than in older-economy Hunter and Illawarra regions, suggesting that the impact of underlying structural changes are disguised even at this relatively fine level of spatial disaggregation.

Table 3.9: Household income in 1996 and change from 1986 by age: NSW non-metropolitan regions

	income $ pw	growth %
15-24 year old households		
Hunter	605	-13.6
Illawarra	619	-5.6
Mid-North Coast	504	-8.6
non-metro NSW	578	-10.2
25-44 year old households		
Hunter	858	2.0
Illawarra	853	0.5
Mid-North Coast	677	-4.1
non-metro NSW	790	-1.7
45-64 year old households		
Hunter	820	-0.2
Illawarra	814	-0.7
Mid-North Coast	643	-4.3
non-metro NSW	757	-1.8
65+ year old households		
Hunter	355	-9.1
Illawarra	366	-7.9
Mid-North Coast	357	-10.0
non-metro NSW	364	-9.1
all households		
Hunter	711	-5.6
Illawarra	714	-4.2
Mid-North Coast	571	-6.8
non-metro NSW	667	-5.0

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Age specific averages, however, disguise differential fortunes for different household types in each age group as can be seen from the final four rows of Table 3.10. Household income has fallen for couple only households and for single person households but has increased for households with children. As in metropolitan regions or sub-regions, these changes are most pronounced for older households with children.

Table 3.10: Household 1996 in 1996 and change from 1986 by age and household type: NSW non-metropolitan regions

	couple		couple with children		single person		sole parent[a]	
	1996 $ pw	growth %	1996 $ pw	growth %	1996 $ pw	growth %	1996 $ pw	growth %
15-24 year old households								
Hunter	848	-7.4	609	-8.1	377	-14.7	376	5.1
Illawarra	896	1.2	601	-4.0	373	-9.7	377	6.2
Mid-North Coast	667	-10.3	525	0.5	330	-6.3	349	2.5
non-metro NSW	796	-5.3	582	-3.2	371	-8.7	367	2.2
25-44 year old households								
Hunter	1067	-2.3	986	5.1	536	-8.9	466	-1.4
Illawarra	1105	2.7	969	9.4	529	-8.1	458	0.7
Mid-North Coast	830	-1.7	784	4.1	412	-8.2	417	3.9
non-metro NSW	992	-0.2	903	7.2	494	-8.4	446	-0.2
45-64 year old households								
Hunter	719	-18.0	1173	10.3	377	0.9	684	n.a.
Illawarra	683	-20.4	1156	11.1	380	0.8	692	n.a.
Mid-North Coast	602	-13.2	945	9.2	322	-1.0	536	n.a.
non-metro NSW	685	-15.9	1083	11.5	366	0.9	636	n.a.
65+ year old households								
Hunter	388	-17.9	803	15.9	222	-0.6	608	n.a.
Illawarra	392	-17.5	810	14.2	225	-3.0	616	n.a.
Mid-North Coast	405	-13.1	715	9.4	237	1.0	516	n.a.
non-metro NSW	407	-15.9	785	20.8	230	-0.4	569	n.a.
all households								
Hunter	661	-17.5	1032	8.6	344	-3.2	538	12.0
Illawarra	653	-17.7	1019	12.3	348	-5.0	535	15.5
Mid-North Coast	547	-13.6	824	7.3	301	-2.5	452	10.7
non-metro NSW	638	-14.7	948	10.4	337	-2.9	504	10.5

a. data for sole parents are not strictly comparable across years because of definitional changes. See Appendix A for details.
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

In general, there are significant differences in outcomes for different household types in each region. Amongst 45-64 year old households in the Illawarra region, for example, there was a decline of more than 20 per cent in the incomes of couple only households and an increase of more than 11 per cent in the incomes of couple with children households.

These differences, when combined with the differential changes in the incidence of the various household types, explain regional differences in age specific household incomes. They do not, however, explain why household incomes vary to such an extent between regions for given household types in each age group, nor why there have been such considerable changes in these outcomes. As can be seen in Table 3.10, for example, household incomes for non-retirement aged households in the Mid-North Coast are considerably lower than incomes for similar households in other non-metropolitan regions in NSW. Household incomes for some retirement aged households, however, are higher.

As above, the analysis in the following chapter, which examines tenure outcomes by age and household type for the regions covered above, will provide further insight into this socio-spatial pattern of incomes.

3.4 Effect of changes in household income on the distribution of income

The final results in relation to changes in the pattern of income to be examined in this chapter relate to the impact of socio-demographic changes on the overall distribution of income. Two broad trends were identified in chapter 2. These relate to the growth in the number of single person households and the growth in the number of older households with children. The results in this chapter have shown that changes in household structure are associated with distinct changes in average household incomes. They also have shown that these outcomes can be used to explain much of the change in average household income.

The Positioning Paper for this project provided an overview of the evidence of increasing inequality in household income over the 1980s and 1990s and on the extent to which household income in Australia has polarised during this time. In this paper, Table 3.1 showed that there were significant differences in average household income in the metropolitan and non-metropolitan regions of each state in Australia. Tables 3.2 and 3.3 highlighted differences in household income for different household types of different ages both within and between regions. The combined effect of changes in household income for age and type specific households with changes in the age distribution and incidence of different household types have been contributing factors to the extent of polarisation that has taken place in household income. Whilst these changes explain much of the polarisation, they do not detract from the fact that it has taken place.

There are a number of ways in which increasing inequality and income polarisation can be illustrated. Table 3.11 provides one example by reporting the growth in the number of households with high and low incomes in each region relative to the average income growth in that region. The income categories employed roughly correspond to income quintiles in 1996. Because the income categories are also defined to be approximately constant in real terms, they do not correspond to income quintiles in 1986. Whilst 20.7 per cent of households in Australia were defined as being low income households in 1996 (with incomes less than $300 per week measured in $1996), only 13.9 of such households had equivalently low incomes in 1986. More information about the income categories employed and the distribution of income in 1986 and 1996 for the data used here is provided in Appendix A. Table B.9 gives these incidence data for all income categories for both 1986 and 1996.

As shown in Table 2.1 in chapter 2, the number of households in Australia grew by 23.4 per cent between 1986 and 1996. The index of 361 in the first column in the final row of Table 3.11 shows that, for Australia as a whole, the number of households with low incomes grew at more than three times this rate (that is, by more than 80 per cent) over the same period.[2] The index of 126 in the final row of the second column shows that the number of households with low to moderate incomes also grew at an above average rate (of 29.5 per cent compared with 23.4 per cent). At the same time, the number of households with high incomes (of more than $1200 per week in $1996) grew at 1.38 times the average rate (that is, by 32 per cent). The number of households with middle range incomes, however, grew at a rate considerably below average.

[2] These growth rates are indicative as the income categories for 1986 and 1996 are not absolutely comparable in real terms. Growth rates for the lowest income groups are likely to be marginally overstated. However, the results are reported here as they are consistent with more robust results presented elsewhere (and reported in the Positioning Paper) and because they are used to draw out differences between regions and age groups. These comparisons are unaffected by the approximations involved.

Table 3.11: Growth relative to regional growth for all households, 1986-1996

	relative growth rates (regional average = 100)[a]					
income category	low	low-mod	moderate	mod-high	high	
upper boundary ($1996 pw)	<$300	<$500	<$800	<$1200	$1200+	growth %
Sydney	388	124	-53	-23	219	16.2
NSW non-metro	368	89	-13	16	152	23.4
Melbourne	459	219	-11	-28	109	17.9
Vic non-metro	449	139	-10	-31	77	19.5
Brisbane	255	112	27	51	158	35.8
Qld non-metro	249	90	29	66	168	40.1
Adelaide	488	143	10	-56	66	18.0
SA non-metro	498	67	-39	-13	120	15.6
Perth	283	123	29	37	137	35.8
WA non-metro	332	85	8	46	179	28.0
Hobart	476	201	1	-48	51	18.4
Tas non-metro	543	128	-30	-38	27	18.1
Darwin	481	266	42	31	77	20.8
NT non-metro	302	98	69	73	100	27.8
ACT	402	285	127	44	40	34.4
metro	342	97	5	27	144	26.3
non-metro	370	151	0	0	141	21.7
Australia	361	126	2	10	138	23.4

a. The index reported (base = 100) is the ratio of growth in each income category in each region to the total growth in that region (as reported in the final column).
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Overall, these results illustrate the polarisation of household income documented by numerous other researchers and reviewed in the Positioning Paper. The relatively greater growth of households in the lowest and highest income groups at the expense of households in the middle income groups reflects the hollowing out of the middle associated with income polarisation.

The data presented in Table 3.11 show that the extent of income polarisation has differed considerably between regions. At an aggregate level, the growth of low income and low to moderate income households has been relatively greater in non-metropolitan regions than it has in metropolitan regions, although the broad orders of magnitude are similar. Not surprisingly, the regions with the slowest growth or greatest decline in average household income (non-metropolitan Victoria, South Australia and Tasmania) are the regions with the greatest relative growth in the numbers of low income households. Similarly, the regions with the highest growth (or least decline) in household income (Sydney, Queensland and Western Australia) are the regions with the greatest relative growth in the numbers of high income households.

Table 3.12 presents the same information as presented in Table 3.11 but limits this to households in the 25-44 year old category. Table B.10 in Appendix B provides the relevant incidence data showing the income distribution of 25-44 year old households in both 1986 and 1996.

Table 3.12: Growth relative to regional growth of households aged 25-44, 1986-1996

	relative growth rates (regional average = 100)[a]					
income category upper boundary ($1996 pw)	low <$300	low-mod <$500	moderate <$800	mod-high <$1200	high $1200+	growth %
Sydney	644	421	-76	-81	289	12.4
NSW non-metro	459	311	-51	21	177	14.6
Melbourne	882	668	-28	-61	140	13.7
Vic non-metro	782	519	-30	-68	51	11.9
Brisbane	346	264	9	49	183	28.7
Qld non-metro	221	175	33	73	171	35.9
Adelaide	1044	635	-11	-123	34	11.2
SA non-metro	666	407	-66	-58	75	8.5
Perth	379	312	11	26	165	26.0
WA non-metro	305	223	1	52	193	23.3
Hobart	974	563	-35	-92	83	11.3
Tas non-metro	1054	505	-92	-71	27	10.4
Darwin	1241	1043	25	-98	8	6.7
NT non-metro	436	240	72	62	64	24.8
ACT	934	737	178	4	-4	15.8
metro	630	451	-19	-31	174	16.0
non-metro	390	271	-5	32	155	19.6
Australia	520	367	-13	-8	165	17.3

a. Index reported (base = 100) is ratio of growth in each income category in each region to total growth in that region (as reported in final column).
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

This 25-44 year old age group has been singled out as providing the greatest source of demand for new housing. It is also the group for which changes in household structure and household income, along with changes in housing markets, are likely to have the greatest impact on their ability to satisfy their housing preferences. It forms the basis of a detailed case study of the housing results covered in the following chapter. The case study is presented in Chapter 5.

Table 3.12 shows that the degree of income polarisation is generally more pronounced for this younger cohort than it is for the population as a whole and that this polarisation is more pronounced in metropolitan rather than non-metropolitan regions.As a result of changing household structures and widespread declines in household incomes regardless of household structure, the number of low income households in the 25-44 year old age group on average has grown five times faster than the total number of households in this age group. At a regional level, their relative growth has been as low as twice the regional average (in non-metropolitan Queensland) to as high as 10 times the regional average, or more, in some of the smaller regions. Income polarisation amongst this group has been most noticeable in the high income Sydney region. The growth in working age low income households suggests that these households have not benefited from the economic restructuring that took place between 1986 and 1996. However, it also illustrates the impact on household income of the social changes that have taken place.

3.5 Chapter summary

This chapter has examined factors that have contributed to the general declines in average gross household income observed at an Australia wide level between 1986 and 1996 and has reported on the net effect of these changes on the distribution of income. It shows, first, that declines in household income are significant for the increasing proportion of retirement aged households. These declines were particularly severe in non-metropolitan regions. Thus, part of the decline in average household income can be attributed to an aging population.

The second factor that has contributed to declining average household income is the change in household composition that has emerged as a result of an increased number of single adult households.

The results presented above suggest that, at an Australia wide level, changes in household structure explain the entire decline in household incomes between 1986 and 1996. Had the incidence of different household types remained the same in 1996 as it was in 1986 then, given the same 1996 average household income for each household type, average household income in Australia would have remained unchanged between 1986 and 1996. This holds regardless of the changes in age structure that took place over the decade. Changes in household structure also explain the relatively greater declines in non-metropolitan compared with metropolitan regions.

Changes in household structure, however, do not explain all of the changes in age specific income. Except for the 25-44 year old age group, all age groups experienced household adjusted declines in average income.

Within the different household types there have been noticeable changes in household income. Household incomes for couples have generally fallen as have household incomes for all but pre-retirement age single person households (although by a smaller amount). These declines have been offset by an increase in household incomes for couples with children.

Analysis of change at a sub-metropolitan and sub-non-metropolitan level reinforces the broad conclusions outlined above. Within both Sydney and Melbourne, however, there is clear evidence of an emerging spatial polarisation of income that is not attributable solely to changes in the age structure or household composition of the population. To a lesser extent, there is also some indication of a spatial polarisation of income within the non-metropolitan regions of NSW considered, with the Mid-North Coast region showing both lower household incomes and greater declines in household incomes for almost all age groups and household types.

The net effect of the changes in household structure and changes in household income has been an increase in income polarisation with a disproportionately high growth of low and high income households. The extent of this income polarisation has differed considerably between regions and has been considerably more noticeable for households in the 25-44 year age group than it has for the population as a whole.

The changes in household income, along with the changes in household structure, reported in this and the previous chapter are likely to have significant ramifications on housing markets and on the housing opportunities available to both established and emerging households. It is these outcomes that are the focus of the following chapter.

4. HOME OWNERSHIP OUTCOMES

Whilst there are a number of ways in which the housing outcomes that result from the changes identified in chapters 2 and 3 might be considered, this paper focuses on tenure changes and, in particular, changes in home ownership as being illustrative of these. The Positioning Paper provides a rationale for this focus.[3]

Briefly, the polarisation of income observed in Australia in the 1980s and 1990s may lead to a socio-tenurial polarisation that may reinforce existing income inequalities. Home ownership generally provides both social and economic advantages to those who are not excluded from it. High home ownership in the past has protected older households from poverty after their housing costs were taken into account. Home owners, in turn, are seen as contributing more to social capital and neighbourhood quality than households in other tenures.

Whether the observed changes in income distribution arise from an increasing proportion of low income young or old households and what the impact of these changes are on tenure outcomes are critical questions in relation to housing and housing policy implications. In the current environment, older households are more likely than not to be owners. Their future housing needs are likely to be associated with support services, often aimed at keeping them in their homes, or with financial assistance meeting the ongoing costs of maintaining their homes. Younger households, on the other hand, are more likely than older households to make demands on the private rental market and, if unemployed or in receipt of social security payments of some sort, to make demands upon rental assistance. If these younger households are permanently excluded from home ownership, the rent assistance demands they make on public expenditure are likely to re-emerge when they reach retirement age. Likewise, the support services they may need are likely to differ depending on whether they are, or are not, in their own home. If they live in areas where housing is low cost and, because of this, have less access to employment opportunities, the rent assistance demands they make on public expenditure are likely to continue until they reach retirement age. Some of the possible policy responses to these issues lie within State jurisdiction; others lie within Commonwealth jurisdiction. Thus, the spatial implications of change are critical.

Section 4.1 below provides an overview of the changes in home ownership rates that took place between 1986 and 1996 at a broad regional level of disaggregation. Section 4.2 discusses some of the factors that affect regional differences in outcomes. Sections 4.3 and 4.4 provide a disaggregation of home ownership rates in these regions by age and household structure. Section 4.5 considers the impact of income differentials on households with specific socio-demographic characteristics at an Australia wide level and at a metropolitan and non-metropolitan level of disaggregation. Section 4.6 provides a similar analysis for the Sydney and Melbourne sub-metropolitan regions and the NSW non-metropolitan regions. The final sub-section provides a summary of the broad conclusions arising from the results presented in chapter 4.[4]

Chapter 5 provides a detailed analysis of outcomes for households in the critical 25-44 year old age group using logistic regression techniques to unpack the complex interactions taking place. Chapter 6 returns to an analysis of the extent of socio-tenurial polarisation that has occurred in different regions in Australia for all age groups.

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[3] A detailed analysis of changes in the private rental market that are associated with the changes identified in this paper, with a particular focus on the low rent segment of that market, can be found in Wulff and Yates (2001). The Wulff and Yates report relies on the same data as used in this paper and much of the analysis is undertaken at the same level of spatial disaggregation.

[4] Early results from some of the analysis presented in section 4.1 were presented at the 1999 National Housing Conference. The results presented here are more comprehensive both in terms of their disaggregation by age and their spatial level of disaggregation but the results at the broad level of aggregation are as presented earlier. They have been included in order to provide a benchmark against which the more detailed results can be evaluated.

4.1 Aggregate changes in home ownership

Changing trends in aggregate home ownership rates over the period covered in this paper have been well documented elsewhere. Yates (2000), for example, pointed out that much of the explanation for Australia's continuing high home ownership rate arises from the combination of home ownership rates that increase with age and an aging population. Declining purchase rates amongst younger households over the past few decades, however, raise questions about the long-term sustainability of past home ownership rates.

Table 4.1 provides data on home ownership rates in 1986 and 1996 at an aggregate and regional level for data directly comparable with that used to generate the results presented in previous sections in this paper. It shows a small decline in the Australia wide home ownership rate from 68.1 per cent to 66.0 per cent[5] and a noticeably greater decline in metropolitan regions than in non-metropolitan regions.

At a regional level changes in the home ownership rate varied from a 5.7 percentage point decline in the Brisbane metropolitan region to a 6.9 percentage point increase in Darwin. Aggregate home ownership rates in 1996 in the more populous regions varied from a low of 61.2 in non-metropolitan Queensland to a high of 71.2 in non-metropolitan Victoria.

[5] These data are not adjusted for not stated cases and so are lower than the often reported 70 per cent home ownership figure for Australia. Mudd et al (1999) provide a comprehensive overview of variations in estimated of home ownership rates depending on whether census or survey data is used and whether these data are adjusted for not stated data. No adjustment has been made to tenure data in this study because the focus is primarily on differences between households and regions and because the standard approach employed (pro-rata adjustment), whilst potentially valid at an aggregate level, has more scope for having distortions built in at a disaggregate level. Appendix A provides a brief discussion of problems associated with imputation generally.

Table 4.1: Home ownership rates by region, 1986 and 1996

	1986[a]	1996[a]	change 86-96
	%	%	
Sydney	67.0	63.6	-3.4
NSW non-metro	66.8	66.4	-0.4
Melbourne	72.9	69.8	-3.0
Vic non-metro	72.8	71.2	-1.6
Brisbane	70.7	65.0	-5.7
Qld non-metro	61.1	61.2	0.2
Adelaide	70.3	67.1	-3.2
SA non-metro	64.4	67.3	2.9
Perth	70.5	68.5	-2.0
WA non-metro	53.4	58.7	5.3
Hobart	70.7	67.2	-3.6
Tas non-metro	71.0	69.3	-1.7
Darwin	38.4	45.3	6.9
NT non-metro	27.9	32.6	4.6
ACT	65.8	63.8	-2.0
metro	69.7	66.4	-3.3
non-metro	65.4	65.2	-0.2
Australia	68.1	66.0	-2.2

a. Rates are lower than commonly reported rates as no adjustment has been made for cases where tenure was not stated.
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

As will be examined below, these differences are likely to reflect both differences in the socio-economic and demographic composition of households in different regions and differences in housing market conditions in different regions.

4.2 Factors affecting home ownership

Some indication of the factors contributing to changes in home ownership rates can be seen from the disaggregation of these changes in home ownership rates into changes in outright ownership and owner-purchaser rates (that is, into households without or with a mortgage). These data are shown in Table 4.2. The aggregate data in the final three rows and columns, for example, show that the observed decline in home ownership rates can be attributed solely to declines in purchase rates. Home purchase rates declined by 5.5 percentage points overall and by 7.5 percentage points in metropolitan Australia. Outright ownership, on the other hand, increased - by a small amount in non-metropolitan regions and by 4.2 percentage points in metropolitan regions.

In general, outright ownership is associated with older households or with high wealth households. The former have paid off past mortgages and have sufficient income or assets to meet consumption demands without re-mortgaging their owner-occupied dwelling. The latter may be younger households who have benefited from inherited wealth. Increases in outright ownership, therefore, can reflect both an aging of the population and increases in wealth.

Declines in home purchase rates are likely to be associated either with a change in preferences away from home ownership or with declining affordability. Changes in preferences can occur across the age spectrum. Declining affordability, however, is more likely to affect younger households who are not yet homeowners. In the decade to 1996, for example, potential homebuyers faced nominal interest rates that rose to a record high of 17 per cent in 1989-90. These fell only slowly to just under 10 per cent by 1996 Throughout the whole period, however, real interest rates remained at the record levels of 5 to 7 per cent reached and sustained in the mid 1980s. These levels were at least 1 to 2 percentage points higher than real rates of the 1970s and early 1980s.. Whilst the financial constraints imposed by high real and nominal interest rates affect the capacity to purchase a home, they cannot be used to explain regional differences in housing outcomes because households throughout Australia faced the same financial conditions.

Table 4.2: Outright ownership and purchase rates by region, 1996 and change from 1986

	1996[a]			change 86-96		
	outright owner	owner purchaser	owner	outright owner	owner purchaser	owner
Sydney	41.0	22.7	63.6	5.0	-8.3	-3.4
NSW non-metro	45.3	21.1	66.4	2.6	-3.0	-0.4
Melbourne	42.8	27.1	69.8	4.4	-7.4	-3.0
Vic non-metro	46.5	24.8	71.2	2.6	-4.1	-1.6
Brisbane	37.2	27.9	65.0	1.4	-7.0	-5.7
Qld non-metro	39.4	21.8	61.2	-0.1	0.2	0.2
Adelaide	39.1	28.0	67.1	3.1	-6.3	-3.2
SA non-metro	43.4	23.9	67.3	1.1	1.7	2.9
Perth	37.0	31.5	68.5	4.5	-6.5	-2.0
WA non-metro	35.7	23.0	58.7	2.7	2.6	5.3
Hobart	39.0	28.1	67.2	4.9	-8.5	-3.6
Tas non-metro	44.7	24.6	69.3	2.3	-4.0	-1.7
Darwin	16.1	29.2	45.3	9.4	-2.6	6.9
NT non-metro	14.4	18.2	32.6	1.6	3.0	4.6
ACT	29.7	34.1	63.8	11.5	-13.4	-2.0
metro	39.8	26.6	66.4	4.2	-7.5	-3.3
non-metro	42.8	22.4	65.2	1.6	-1.8	-0.2
Australia	40.9	25.0	66.0	3.3	-5.5	-2.2

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Regional differences, however, can arise from two broad groups of factors - those that are associated with the regional composition of households and those that are associated with the housing market conditions they face. The first derive from the differences in household characteristics in different regions. The second are associated with economic constraints as reflected in house prices and dwelling rents.

Households differ in their preferences for home ownership - in the data available for this study, this will be reflected in differences in household composition and in age. When all other characteristics are held constant, young single households, for

example, are more likely to choose rental housing over owner-occupation than are pre-retirement age couples. Households also differ in their capacity to pay - in the data available for this study, this will be reflected in differences in household income (or employment). When all other characteristics are held constant, higher income households are likely to have a greater capacity to pay for home ownership than are lower income households. Whilst there is little reason to presume that either of these factors will vary between regions for any given household, differences between regions in the composition of households in relation to household structure, age and income, employment, are likely to lead to different tenure outcomes in different regions. These compositional differences contribute to the first broad group of factors indicated above.

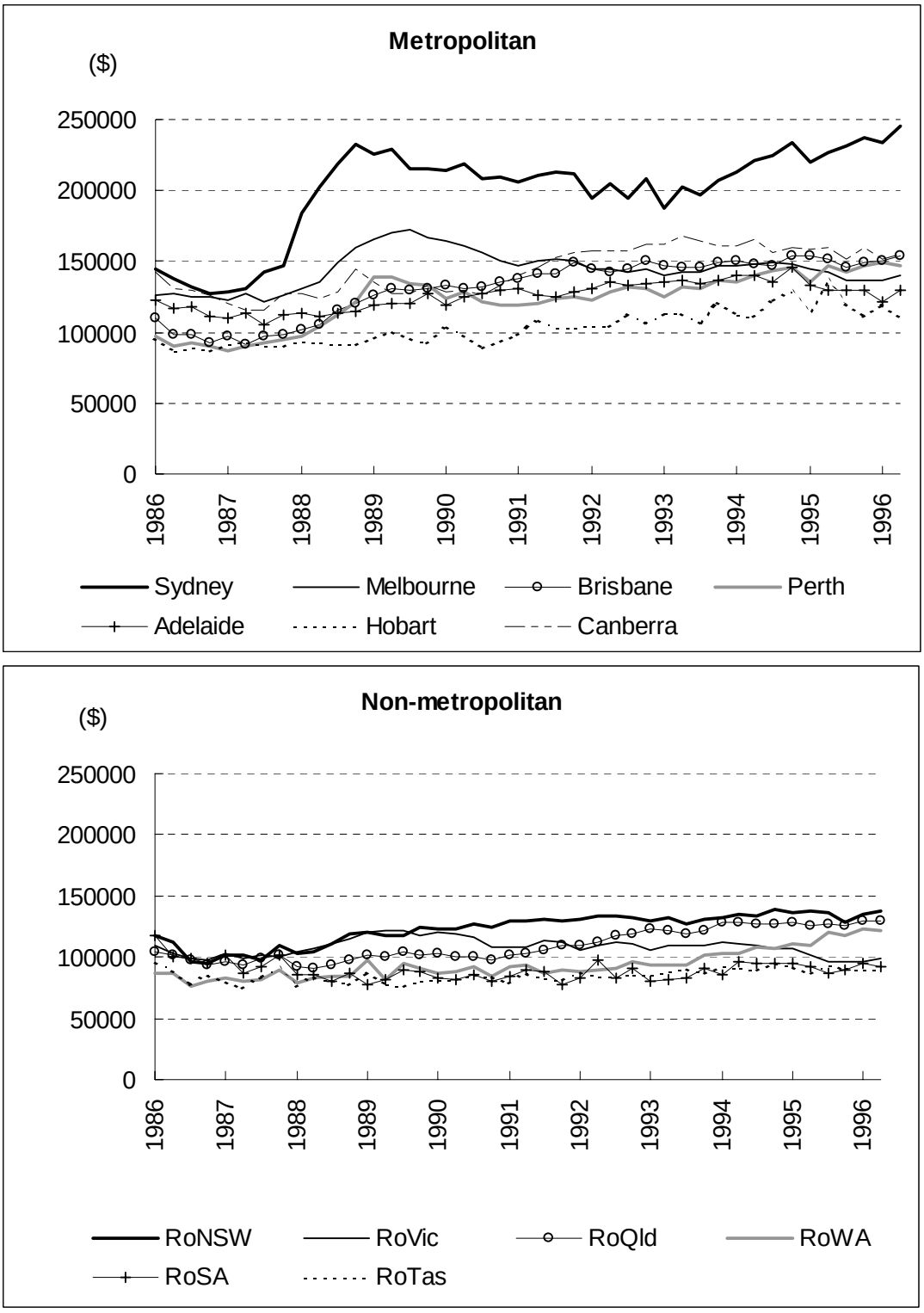
The second broad group of factors that can lead to different tenure outcomes in different regions arise from the different housing market conditions households face. These impose different affordability constraints as a result of differences in dwelling prices and different economic incentives in relation to owning or renting as a result of spatial differences in the relative tenure prices. As such, they have the potential to affect differentially otherwise similar households in different regions and, therefore, to have an impact over and above that arising from differences in household composition.

Figure 4.1 illustrates regional differences in levels and trends in median house prices as indicated by the readily available quarterly data on established house prices reported in the HIA/CBA Housing Reports. Figure 4.8 (to be presented and discussed in section 4.6) provides similar data for trends within the Sydney and Melbourne metropolitan regions.

The data in Figure 4.1 clearly show a difference between Sydney house prices and those elsewhere. Sydney prices are higher and are more volatile. They show a somewhat smaller difference between metropolitan and non-metropolitan prices. Metropolitan prices in each state are likewise higher and more volatile. However, the data also clearly show an upward trend in real house prices in most regions with real prices lower in 1996 than 1986 only in the non-metropolitan regions of Victoria and South Australia.

In general, aggregate real house prices have increased by at least 1 per cent per annum in metropolitan areas and have been relatively stable in most non-metropolitan regions. Data on prices over a longer period of time, reinforce the conclusion that real house prices have increased in all metropolitan regions in Australia but suggest the relativities between Sydney and other capitals is not quite as pronounced as that implied by Figure 4.1 (Bourassa and Hendershott 1995).

Figure 4.1: Established house prices, Australian regions: 1986-1996 ($1996)



Source: HIA/CBA Housing Reports, various years, CPI adjusted

These increases in real house prices need to be seen against the decline in average real household incomes and the increased polarisation of household income over the period as reported in section 3. At a broad aggregate level, declining real incomes impose increasing affordability pressures in light of rising real house prices and these pressures will be greater in regions where incomes have declined most relative to the increase in house prices.[6]

Whilst distributional data on dwelling prices over time are not readily available, analysis of rent data suggests that an increasing dispersion in household incomes has not been met with a matching increase in the dispersion of dwelling rents. More importantly, a growth in the number of low income households has been associated with a loss of low rent stock (Yates and Wulff 2000). A similar outcome for dwelling prices would suggest that problems of affordability or access are likely to be more severe for lower income households than those indicated by use of median price data.

Although the differences between median house prices in Sydney and all other regions are a dominant characteristic of the data presented here, the increasing differences between house prices in the metropolitan and non-metropolitan regions are also noteworthy. Metropolitan prices, on average, were some 10 to 20 per cent higher than their non-metropolitan counterparts in 1986. By 1996, they were 20 to 30 per cent higher. These differentials were even higher for NSW and Victoria.

Increases in real house prices over a period when real household incomes have been steady or falling have been one of the explanations provided for the declining home ownership rate amongst younger households (Mudd et al, 1999; Yates, 2000). Numerous other factors, of course, do affect tenure choice although many of these will not vary spatially or over time to the same extent as do house prices and the household characteristics considered here. Factors, such as ethnicity, education, occupation, gender, wealth, etc. that vary at an individual level and financial and labour market conditions that vary at a national level are presumed to be of secondary importance at the broad spatial level of analysis being considered in this paper.

One factor worth mentioning, however, is the role played by the relative price of rental versus owner-occupied housing. Wood and Watson (1999) have shown that, for investors, user costs are higher for low valued properties or properties in non-metropolitan areas. This could suggest the possibility of a relative price bias towards ownership in low value or non-metropolitan regions compared with high value or metropolitan regions. In the presence of capital market constraints on access to home ownership, this effect would reinforce declines in home ownership in high value markets and reinforce increases in low value markets. This result, however, needs to be set alongside the results of the conventional tax arbitrage model of tenure choice that yields a tax bias in favour of ownership for high income households regardless of the underlying property value. Wood (2001) provides an overview of this arbitrage literature and combines the potentially competing results of this literature with those of Wood and Watson. He shows that the institutional arrangements surrounding the provision of rental and owner-occupied housing in Australia are such that households in all income categories find renting financially unattractive regardless of dwelling values. They will rent only when capital market imperfections constrain them from owning or when direct rent subsidies encourage them to do so. Direct rent subsidies in Australia are limited to social security recipients and are less valuable in high than low rent markets. In the 25-44 year old age group, generally speaking recipients are either unemployed or are low income households with dependent children. For other households, Wood's results lend support to the argument that capital market constraints associated with spatial differences in house prices can be used to explain different outcomes in relation to home ownership for otherwise similar households. Yates (2001) analysis for Sydney and Melbourne supports this conclusion.

[6] This analysis abstracts from the impact of interest rates on affordability in the interest of focussing on factors that differ regionally.

4.3 Changes in home ownership rates disaggregated by age

Table 4.3 disaggregates the data in Table 4.1 on aggregate home ownership rates and changes in these into the outcomes for each age group. This highlights some of the points made above regarding expected differences in outcomes in relation to age. Table B.11 provides equivalent data at the metropolitan/non-metropolitan level of aggregation with a more detailed breakdown of tenure (into outright owners, purchasers, private and public renters).

Table 4.3 shows the general increase in rates of home ownership with the age of the household reference person. For the 1996 data, aggregate home ownership rates increase from 19.8 per cent for households in the 15-24 year old age groups to 58.7 per cent for those in the 25-44 year old age groups and reach a peak of 77.4 per cent for those in the 45-64 year group. Table B.11 shows the increase in outright ownership rates and decrease in home purchase rates with age.

These outcomes, of course, embody significant cohort effects and the incremental increase between age groups at any one particular point of time does not necessarily imply that the same increment will hold as each cohort moves through its life-cycle. A good discussion of the use of cross section data for time series analysis can be found in Pitkin and Myers (1994) and an overview of related literature can be found in Yates (2000). Winter and Stone (1999) provide a cohort analysis of changes in home ownership rates for Australia which addresses some of the problems of cross section data but which, in fact, shows a generally similar result to that in Table 4.3. Although cross section data is of limited use for time series use, spatially varying cross section data at several points of time does provide an indication of the changing fortunes of different households at the same life-stage as well as the implications of spatial variations in housing markets.

At an Australia wide level, the home ownership rate for those in the 25-44 year old age bracket in 1996 was some seven percentage points lower than the home ownership rate for the population as a whole. In small part this arises because of later entry into home ownership. Survey data, however, indicates that less than 11 per cent of first home buyers are older than 44 (ABS, 1993) and there are signs this proportion is declining (ABS, 1998). In larger part, it reflects the lower incidence of home ownership in each age bracket in the 1990s compared with the same age bracket in the 1980s. A decline of 5.5 percentage points for households in the 25-44 year old age bracket between 1986 and 1996 is shown in Table 4.3. There was also an equally significant but marginally smaller decline of 4.8 percentage points for the smaller proportion of younger households.

At an Australia wide level, the decline in home ownership was considerably greater for younger households than it was for older households. Overall, the home ownership rate in Australia declined by 2.2 percentage points. The home ownership rate for households in the pre-retirement and retirement age groups, however, fell by only 0.6 and 0.5 percentage points respectively and in a number of non-metropolitan regions home ownership rates for households in the 45-64 and 65 and over year old age groups actually increased. Home ownership rates for younger households, however, on average decreased by more than twice the Australian wide average.

Table 4.3: Home ownership rates in 1996 and change from 1986 by age and region

	15-24		25-44		45-64		65+		All	
	1996	change 86-96	1996	change 86-96	1996	change 86-96	1996	change 86-96	1996	change 86-96
	%		%		%		%		%	
Sydney	20.0	-2.5	53.9	-7.4	75.3	-1.5	76.1	-1.8	63.6	-3.4
NSW non-metro	16.3	-5.5	57.5	-4.4	77.7	1.2	78.3	1.3	66.4	-0.4
Melbourne	22.2	-4.4	63.1	-6.1	80.5	-2.0	79.4	-1.0	69.8	-3.0
Vic non-metro	21.5	-6.5	65.1	-3.8	81.4	-0.7	79.9	-0.9	71.2	-1.6
Brisbane	17.9	-9.1	59.0	-9.6	77.1	-2.2	78.1	-2.2	65.0	-5.7
Qld non-metro	16.6	-3.9	52.5	-3.5	73.1	2.0	77.3	3.3	61.2	0.2
Adelaide	21.6	-6.5	63.5	-6.0	78.6	-1.0	70.8	-1.8	67.1	-3.2
SA non-metro	23.3	0.2	61.9	2.3	77.5	3.0	73.9	-2.2	67.3	2.9
Perth	24.6	-5.6	65.1	-4.4	80.2	0.4	73.0	-3.2	68.5	-2.0
WA non-metro	20.3	-1.7	51.7	3.6	71.3	7.0	73.2	3.9	58.7	5.3
Hobart	18.9	-5.7	62.6	-6.4	78.3	-3.1	75.9	-0.9	67.1	-3.6
Tas non-metro	23.3	-6.9	65.5	-2.4	79.1	-1.3	76.3	-2.2	69.3	-1.7
Darwin	16.7	-2.7	41.7	1.3	60.3	14.8	44.9	16.1	45.3	6.9
NT non-metro	12.0	0.1	30.6	1.8	42.0	8.7	35.8	6.7	32.6	4.6
ACT	17.6	-5.0	58.7	-7.4	79.7	2.3	71.7	4.7	63.8	-2.0
metro	20.9	-4.9	59.5	-6.7	78.0	-1.4	76.2	-1.7	66.4	-3.3
non-metro	18.2	-4.7	57.3	-3.2	76.4	1.2	77.7	1.1	65.2	-0.2
Australia	19.8	-4.8	58.7	-5.5	77.4	-0.5	76.8	-0.6	66.0	-2.2

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

These declines have not been uniform across all regions. At an aggregate level, home ownership rates for older households decreased in metropolitan regions and increased in non-metropolitan regions and generally were greater in the larger cities. For 25-44 year old households, the declines in home ownership were twice as great in metropolitan regions as they were in non-metropolitan regions and greater in the high cost metropolitan regions than in other metropolitan regions.

These outcomes are consistent with the possibility that households with a high predilection for home ownership have shifted to regions where it remains relatively more affordable. Differences in the extent and pattern of change in home ownership at a spatial level amongst a clearly defined demographic group, however, raise questions about whether there might be any socio-economic trends that can explain, or at least partly explain, the observed outcomes. The changes in household structure and in household income described in the previous sections are two obvious explanations.

4.4 Changes in home ownership rates disaggregated by household structure

Traditionally, home ownership rates have been highly correlated with household structure as well with age although, as Winter and Stone (1999) have shown, there is strong evidence to suggest that these traditional relationships no longer hold. Winter and Stone argue housing careers have become increasingly disconnected from other associated life events such as marriage and children. This notwithstanding, Table 4.4 shows that couples and couples with children had a considerably higher propensity for home ownership in 1996 than did single persons and sole parents. Thus, an increase in the incidence of single adult households in any region could explain a decline in the regional home ownership rate even if household specific home ownership rates were unchanged.

Table 4.4, however, shows that household specific rates have changed and often by sizeable amounts at a sub-regional level. At an aggregate level, home ownership rates for couple households and couple with children households decreased in metropolitan regions and increased in non-metropolitan regions. In the larger regions, for couple households these changes varied from a decline of 5 percentage points in Sydney to an increase of 8.6 percentage points in non-metropolitan Western Australia. For couple with children households they varied from a decline of 3 percentage points in non-metropolitan Queensland to an increase of 9.1 percentage points in non-metropolitan Western Australia.

Table 4.4 shows that, despite an overall decline in the aggregate home ownership rate, at the broad non-metropolitan level of disaggregation, home ownership rates actually increased for all household types indicated other than single person households. Thus, at this level of aggregation, the decline in the home ownership rate in non-metropolitan regions can be attributed to the higher incidence of single person and sole parent households. The same argument, however, does not apply for the aggregate home ownership rate at the metropolitan level of disaggregation. Home ownership rates declined for all households other than for the relatively small proportion of sole parent households. Thus, in metropolitan regions, the shift towards household types with higher ownership propensities prevented what would otherwise have been a greater decline in metropolitan home ownership.

Table 4.4: Home ownership rates in 1996 and change from 1986 by household type and region

	couple		couple with children		single		sole parent[a]		All	
	1996	change 86-96	1996	change 86-96	1996	change 86-96	1996	change 86-96	1996	change 86-96
	%		%		%		%		%	
Sydney	70.5	-5.0	75.5	-0.5	52.4	-2.6	48.8	6.3	63.6	-3.4
NSW non-metro	78.9	2.8	74.5	2.3	55.8	0.2	44.7	7.2	66.4	-0.4
Melbourne	77.4	-2.8	82.1	-0.6	57.4	-0.7	56.4	4.2	69.8	-3.0
Vic non-metro	82.2	1.3	79.9	1.9	60.5	-1.2	50.2	4.1	71.2	-1.6
Brisbane	75.4	-3.4	77.1	-3.0	54.0	-3.0	46.6	-0.8	65.0	-5.7
Qld non-metro	73.8	5.0	68.3	1.7	52.4	0.5	40.4	2.2	61.2	0.2
Adelaide	78.4	-0.8	83.1	1.2	50.6	-4.0	48.8	5.9	67.1	-3.2
SA non-metro	78.6	4.4	75.8	7.9	52.6	-0.9	45.0	14.1	67.3	2.9
Perth	77.9	-0.1	82.7	0.6	53.7	-2.0	52.2	4.3	68.5	-2.0
WA non-metro	70.6	8.6	64.7	9.1	48.0	2.6	38.0	4.5	58.7	5.3
Hobart	79.8	-1.8	80.6	0.2	54.2	-2.0	47.5	4.2	67.1	-3.6
Tas non-metro	81.1	0.4	78.8	2.7	55.9	-1.8	46.9	5.8	69.3	-1.7
Darwin	51.5	12.3	56.2	9.4	34.5	6.9	32.0	3.7	45.3	6.9
NT non-metro	42.7	13.2	39.2	5.1	25.5	6.5	25.5	0.9	32.6	4.6
ACT	72.4	0.7	77.2	0.8	50.6	0.4	47.8	-0.6	63.8	-2.0
metro	74.9	-2.9	79.1	-0.4	53.8	-2.1	50.7	4.4	66.4	-3.3
non-metro	77.3	3.2	73.0	2.7	54.9	-0.2	44.1	5.4	65.2	-0.2
Australia	75.9	-0.5	76.9	0.8	54.2	-1.4	48.4	4.8	66.0	-2.2

a. Change data for sole parents should be treated with caution because of changes in definition. See Appendix A for details.
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Differential changes in outcomes for different household types, however, also interact with age and income and can be explained by different age and income compositions in different regions. Table 4.5 indicates the impact of changes in household structure and age on home ownership rates. The impact of changes in income is covered in the following section.

The data in Table 4.5 more clearly show the increasing propensity for home ownership as age increases for each household type than was evident in Table 4.3 where age and household structure interacted.[7] Home ownership rates for couples at an Australian wide level of aggregation, for example, increased from 30.1 per cent for the youngest households to 85.8 per cent for retirement aged households. Similar increases can be seen for each household type in each region.

Table 4.5: Home ownership rates in 1996 and change from 1986 by household type and age

age	couple		couple with children		single		sole parent[a]		all households	
	1996	change 86-96	1996	change 86-96	1996	change 86-96	1996	change 86-96	1996	change 86-96
	%		%		%		%		%	
Metropolitan households										
15-24	30.9	-6.2	26.3	-11.0	22.1	1.0	11.6	-6.1	20.9	-4.9
25-44	61.4	-3.4	74.4	-4.2	42.2	-0.6	36.3	-8.3	59.5	-6.7
45-64	84.7	-1.0	86.8	0.0	57.9	-1.4	65.5	n.a	78.0	-1.4
65+	85.4	-0.3	88.2	9.2	66.0	-3.5	79.3	n.a	76.2	-1.7
all metro	74.9	-2.9	79.1	-0.4	53.8	-2.1	50.7	n.a	66.4	-3.3
Non-metropolitan households										
15-24	28.9	-4.9	22.4	-10.1	18.1	1.8	8.5	-5.8	18.2	-4.7
25-44	60.1	0.9	69.2	-0.2	39.2	2.8	33.0	-4.6	57.3	-3.2
45-64	83.8	3.4	83.5	3.2	59.3	-0.4	61.2	n.a	76.4	1.2
65+	86.3	4.7	88.4	12.2	68.1	-2.2	79.3	n.a	77.7	1.1
all non-metro	77.3	3.2	73.0	2.7	54.9	-0.2	44.1	n.a	65.2	-0.2
All households										
15-24	30.1	-5.7	24.4	-10.7	20.5	1.3	10.2	-6.1	19.8	-4.8
25-44	61.0	-2.0	72.4	-2.7	41.2	0.3	35.0	-7.2	58.7	-5.5
45-64	84.3	0.6	85.8	1.1	58.4	-1.0	64.3	n.a	77.4	-0.5
65+	85.8	1.7	88.2	10.4	66.8	-3.0	79.3	n.a	76.8	-0.6
all households	75.9	-0.5	76.9	0.8	54.2	-1.4	48.4	n.a	66.0	-2.2

a. incidence data for older sole parents is not strictly comparable across years because of definitional changes. See Appendix A for details.
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table 4.5 also shows that the largest increases in home ownership occurred for older couple with children households with increases of 12.2 percentage points in non-metropolitan regions and an equally significant 9.2 percentage points in metropolitan regions for households with a reference person aged 65 years or more. In metropolitan regions, older couple with children households were the only ones who experienced

[7] The reader is reminded of the cautionary note raised in section 4.3 concerning the use of cross section data for time series analysis.

any significant increases in home ownership. In non-metropolitan regions, however, increases in home ownership rates were more broadly experienced across the socio-demographic range of households. These greater increases in the incidence of home ownership amongst older households in non-metropolitan regions provide some insight into the observed differences in home ownership rates between households in metropolitan and non-metropolitan regions.

Such increases in the incidence of home ownership, however, are not observed for younger couple or couple with children households. As shown in Table 4.5, the decline in home ownership rates for households in the 25-44 year old age occurred for all household types in metropolitan regions and was greatest for households with children. Similar results hold for the small (and declining) proportion of households in the youngest age group. Within metropolitan regions, home ownership rates for 25-44 year old households declined by 4.2 percentage points for couples with children and by 8.3 percentage points for sole parents. Declines for couple only households were slightly smaller and declines for single person households were considerably smaller.

Yates (2000) provides a detailed statistical analysis of the changes shown in Table 4.5 broken down by income for 25-44 year old households. This showed that these changes varied systematically by income as well as household type and region. Section 4.5 below provides a similar descriptive analysis for all age groups at a broad metropolitan/non-metropolitan level of disaggregation. Section 4.6 provides similar data for the Sydney and Melbourne sub-metropolitan regions and for the NSW non-metropolitan regions. Chapter 5 provides a formal statistical analysis for households in the 25-44 year old age group for the regions indicated in Table 4.4.

4.5 Spatial differences in home ownership rates by household income and socio-demographic characteristics

Table 4.6 gives a breakdown of the incidence of home ownership at an Australia wide level of aggregation and for metropolitan and non-metropolitan regions in 1996 by age and income. It shows that the increasing incidence of home ownership as income increases that occurs at an aggregate level (as seen from the final 3 rows) holds equally for all age groups except for the atypical youngest group.

It also shows that differences in home ownership rates between households in the lowest and highest groups are greater in metropolitan regions than they are in non-metropolitan regions both at an aggregate level and for all but the youngest age group.

Table 4.6: Incidence of home ownership by age and income, 1996: Australia

	<$300	$300-500	$500-800	$800-1200	$1200+	all households
15-24 year old households						
metro	17.8	14.8	19.8	27.6	26.8	20.9
non-metro	12.8	13.0	19.3	27.4	27.4	18.2
Australia	15.7	14.0	19.6	27.5	27.0	19.8
25-44 year old households						
metro	26.7	39.1	55.1	69.9	75.2	59.5
non-metro	33.2	43.4	58.2	69.3	70.9	57.3
Australia	29.4	41.0	56.3	69.7	74.1	58.7
45-64 year old households						
metro	57.2	66.2	73.8	83.4	90.4	78.0
non-metro	65.0	72.1	77.2	81.4	87.2	76.4
Australia	60.9	68.9	75.1	82.7	89.6	77.4
65+ year old households						
metro	67.6	80.8	84.9	89.2	92.3	76.2
non-metro	71.5	82.9	85.9	88.7	90.9	77.7
Australia	69.2	81.7	85.3	89.1	92.0	76.8
all households						
metro	53.8	57.0	61.7	73.2	81.3	66.4
non-metro	58.9	60.1	63.9	72.0	77.5	65.2
Australia	56.0	58.3	62.6	72.8	80.3	66.0

Source: ABS Special Request Matrix, Census of Population and Dwellings, 1986 and 1996

The fact that outright ownership dominates home ownership amongst the very young clearly shows that wealth, not income, is the major explanation for home ownership outcomes for households in this 15-24 year age group. Given that the data used in this paper can give no insight into the role that wealth plays in contributing to home ownership outcomes, relatively little attention will be paid to these outcomes for the 15-24 year old age group in what follows.

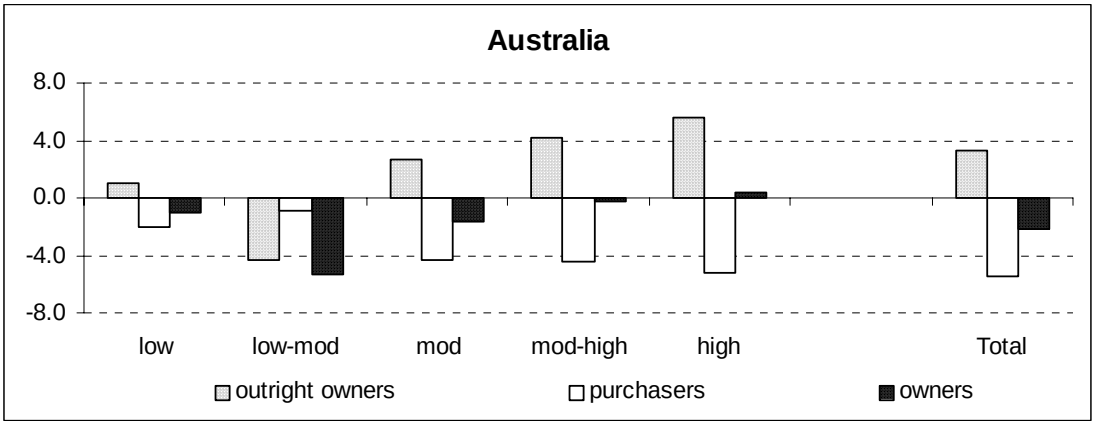
For all other age groups, the greater marginal impact of income on the incidence of home ownership in metropolitan regions is consistent with the greater affordability constraints in those regions. Further support for this tentative conclusion will be provided in section 4.6 when intra-metropolitan outcomes are considered for Sydney and Melbourne.

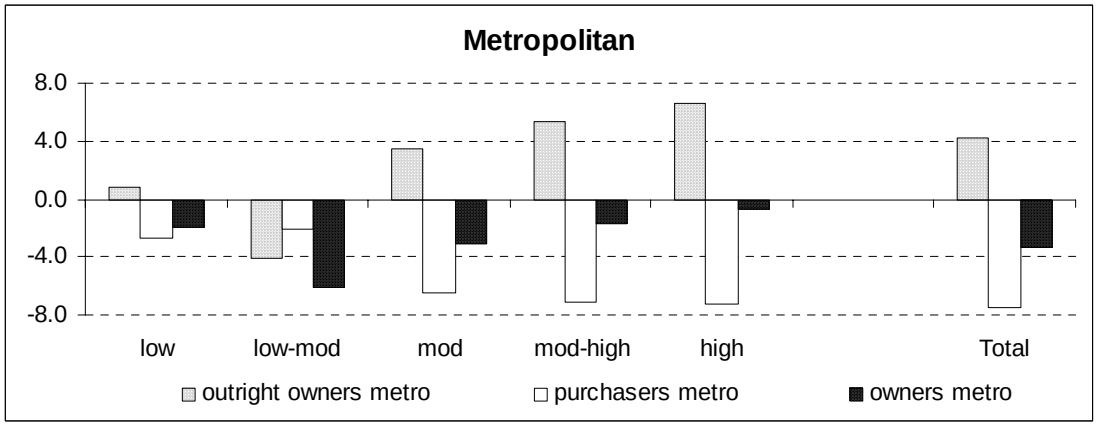
A breakdown of changes in home ownership rates between 1986 and 1996 for households in each income group is illustrated in Figure 4.2. Figure 4.3 illustrates the metropolitan and non-metropolitan data for the four age groups being considered and Figures 4.4 to 4.7 do so for the key household types. Tables B.12 to B.14 in Appendix B provide the raw data on changes in incidence that underpin aged based data presented in Figure 4.3 and indicate changes for rental and well as home ownership tenures. Tables B.15 to B.20 provide the relevant incidence data both for 1986 and 1996. Tables B.21 to B.26 provide the raw data that underpin the changes illustrated in Figures 4.4 to 4.7.

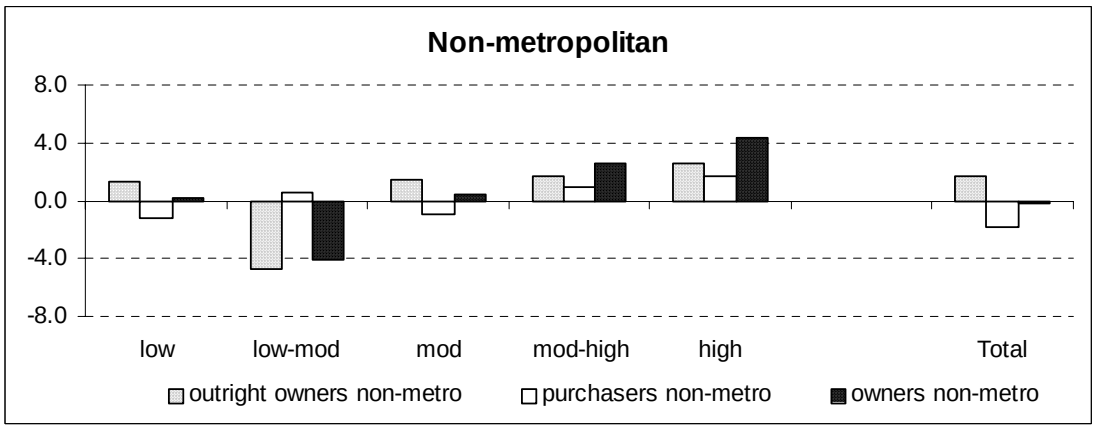
These tables and figures, which present the results of data disaggregated by household characteristics, are limited to a metropolitan/non-metropolitan split for ease of presentation. Sub-regional results for Sydney and Melbourne and for non-metropolitan NSW are discussed in section 4.6 below. Chapter 5 reports statistical results based on disaggregation at a 15 region level for the 25-44 year old age group regarded as being critical for the processes outlined in the Positioning Paper.

Figure 4.2 provides a graphic representation of the conclusion that, at an aggregate level, the declines in home purchase rates are predominantly a metropolitan phenomenon. It also suggests that there are significantly different processes underlying the results for metropolitan and non-metropolitan regions. In metropolitan regions, for example, home purchase rates have declined for households in every income category. In non-metropolitan regions, declines are limited to lower income households with declines being greater the higher is household income. For high income households in metropolitan regions, however, these declines simply represent a movement from mortgaged ownership to outright ownership although, even for these high income households, increases in outright ownership have not been sufficient to prevent an overall decline in home ownership. In non-metropolitan regions, by way of contrast, both outright ownership and home purchase rates contributed to an overall increase in home ownership for higher income households, counter to the general trend.

Figure 4.2: Changes in outright ownership and home purchase by income, 1986-1996: all households







Source: ABS Special Request Matrix, Census of Population and Dwellings, 1986 and 1996

Lower income households in both metropolitan and non-metropolitan regions experienced similar outcomes in relation to home ownership. Consistent with the differences in affordability between metropolitan and non-metropolitan regions, lower income households in metropolitan regions fared worse than their non-metropolitan counterparts.

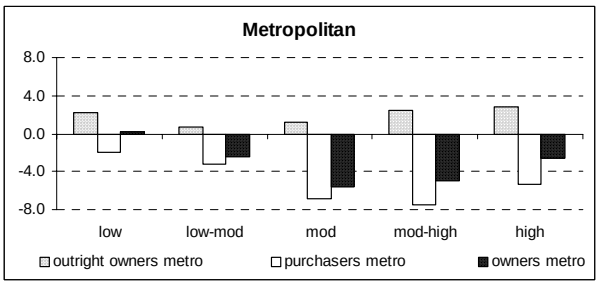
Figure 4.3 below indicates the extent to which these outcomes can be attributed to changes in the age composition in each region. It shows, for example, that the increases in ownership for retirement aged households that are attributable to increases in outright ownership occurred across the income spectrum in both metropolitan and non-metropolitan regions. These can arise because the current household income of retirement age households may not reflect their past economic capacities. At the metropolitan level of aggregation, the transfer from home purchase to outright ownership for these 65 and over year old households occurred at a scale sufficient generally to prevent an overall decline in their home ownership. For non-metropolitan households, however, it contributed significantly to the observed increased in outright ownership for all income groups.

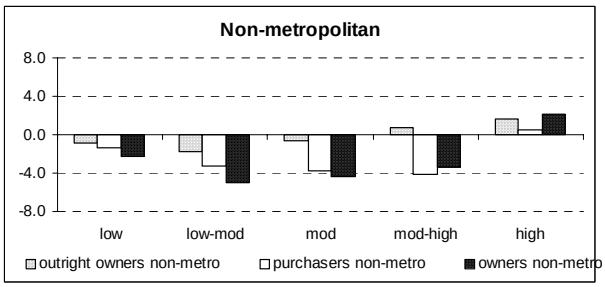
Increases in outright ownership offset by matching declines in home purchase rates amongst retirement aged households can arise because these households have traded down and, in so doing, have paid off their mortgage. This may or may not be associated with a change in location. However, they are also a logical consequence of "aging in place" and the cohort effects of an era of rising home ownership some twenty or thirty years earlier. Older households in the 1980s are more likely to have been later entrants to home ownership than their 1990s counterparts and therefore more likely to have had a mortgage when they reached retirement. A decline in home purchase rates and increase in outright ownership for this age group may reflect little more than the past history of home ownership policies and a greater ease of access to home ownership in the past. The data available for this study, however, can give no insight into the explanations for the outcomes observed.

Except for this oldest age group, increases in outright ownership are more or less confined to households in the metropolitan region and are generally greater for higher income households. The greater increases in outright ownership in higher cost metropolitan regions suggests that wealth inequality (Kelly, 2001) may also be a factor adding to income polarisation. This, however, is beyond the scope of this study.

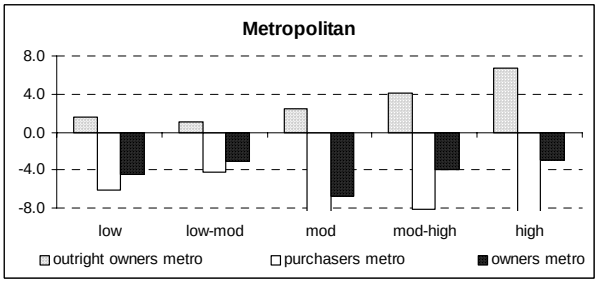
Figure 4.3: Changes in outright ownership and home purchase by income and age, 1986-1996:

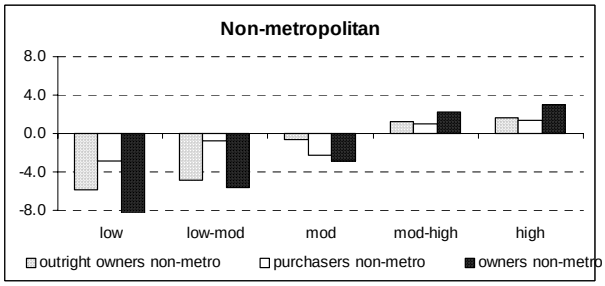
15-24 year old households



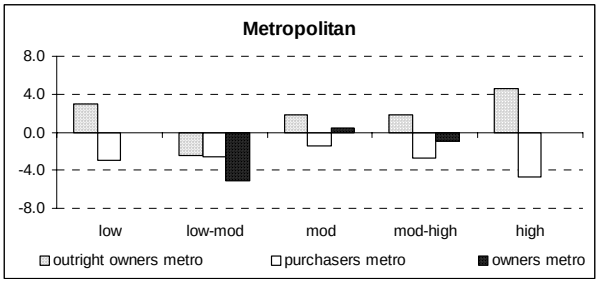


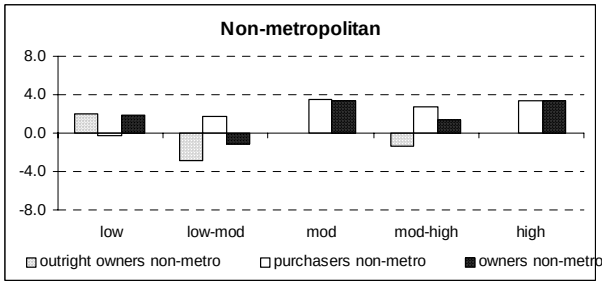
25-44 year old households



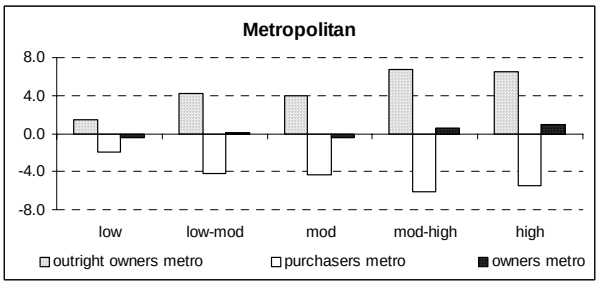


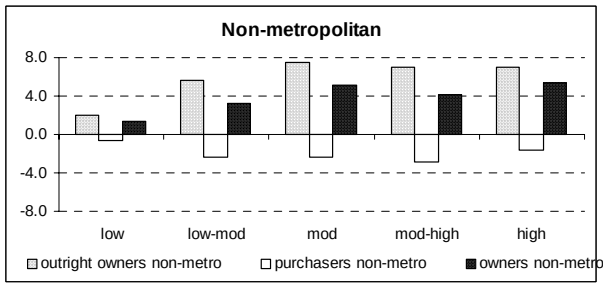
45-64 year old households





65 and over year old households





Source: ABS Special Request Matrix, Census of Population and Dwellings, 1986 and 1996

For metropolitan households in the pre-retirement age group, the transfer from home purchase to outright ownership prevented an overall decline in the home ownership rate for households in the top income groups but not for lower income households. Amongst this 45-64 year old age group, declines in purchase rates and increases in outright ownership are generally confined to metropolitan households. Increases in home ownership rates for pre-retirement aged households in non-metropolitan regions, on the other hand, are attributable solely to increases in home purchase rates and these have occurred more or less across the income scale. Such increases are consistent with greater housing affordability in non-metropolitan regions.

For metropolitan households in the critical 25-44 year old age group, national home ownership rates have declined across the whole income spectrum despite significant increases in outright ownership for higher income households. Increases in outright ownership for this age group are consistent with the impact of intergenerational transfers of housing wealth. The results suggest that, in metropolitan regions, wealth as well as income, is becoming a significant factor in explaining entry into home ownership. Whilst declines in home ownership rates are spread across the whole of the income distribution, declines in home purchase rates are greater amongst higher income households who traditionally have been the drivers of the first home buyer market.

For 25-44 year old households in non-metropolitan regions, declines have occurred only for households with average or below average income levels. For higher income households in non-metropolitan regions there have been increases both in outright ownership and home purchase. Lower increases in outright ownership amongst these households raise questions about the spatial differences in access to wealth. Similar outcomes hold for the youngest age group, although home ownership generally is very low for those younger than 25.

Overall, the decline in home ownership rates is greatest for households in the 25-44 year old age group and greatest amongst households in the lower income groups in all regions. The home ownership rate for 25-44 year old households on average incomes (between $500 and $800 per week in 1996) declined by 5.2 percentage points, from 61.5 per cent in 1986 to 56.3 per cent in 1996. In metropolitan regions, it fell by 6.7 percentage points from 61.7 per cent in 1986 to 55 per cent. The fall in the home purchase rate contributed 9.2 percentage points to this fall. These results can be seen in Tables B.12 to B.14.

In general, different outcomes in non-metropolitan compared with metropolitan regions can be explained by differences in house prices in each of these broadly defined regions. Although not the primary focus of the discussion in this paper, the increases in outright ownership across the income spectrum amongst households in the pre-retirement age group suggest a changing pattern in wealth distribution between 1986 and 1996. Increases in outright ownership that are more significant in metropolitan than non-metropolitan regions lead to a similar conclusion.

When combined with changes in their incidence, the different home ownership outcomes for households with different age and income characteristics groups illustrated in Figure 4.3 provide further explanations of aggregate home ownership rates over time. Different outcomes for households with different household and income characteristics provide similar insights given the changes in household composition identified in chapter 2. Figure B.1 in Appendix B illustrates the same data for different household types as Figure 4.3 did for different age groups. Figures 4.4 to 4.7 provide household specific data for each age group.

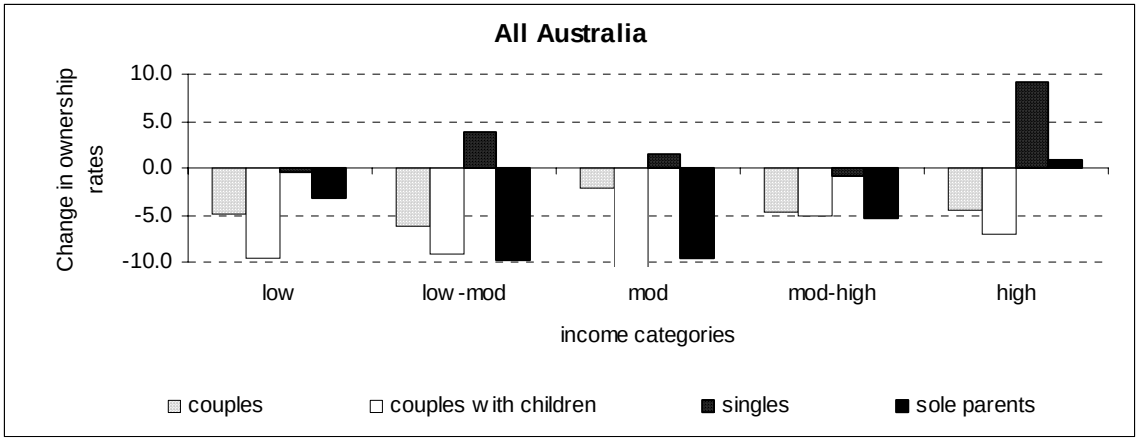
From Figure 4.4, it can be seen that, for younger households, the household type that has exhibited the greatest propensity to increase its home ownership rates has been single persons and, in particular, single persons in non-metropolitan regions. With the exception of high income sole parents, single person household were the only young households in the 15-24 year old age group who experienced an increase in home ownership. These (relatively small) increases were highest for high income households

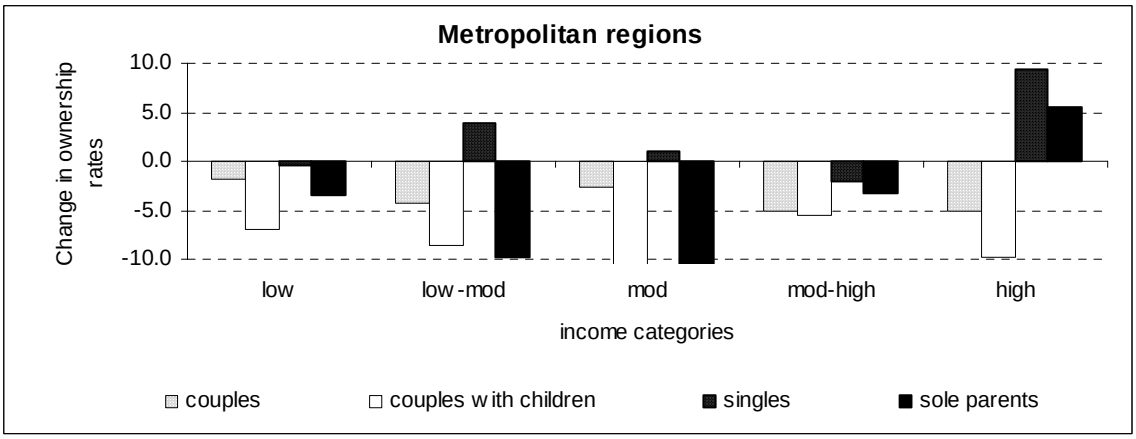
but were also apparent for lower income households, in marked contrast with the outcomes for all other household types. For high income young single person households, home ownership increased from 24 per cent in 1986 to 33.2 per cent in 1996 and in metropolitan regions from 27.9 per cent in 1986 to 37.2 per cent in 1996.[8] Those increases that have occurred arise from increases in outright ownership which reflect wealth transfers. Overall, however, home ownership is a relatively insignificant tenure for this age group, which declined from 24.7 per cent of all households in 1986 to 19.8 per cent in 1996.

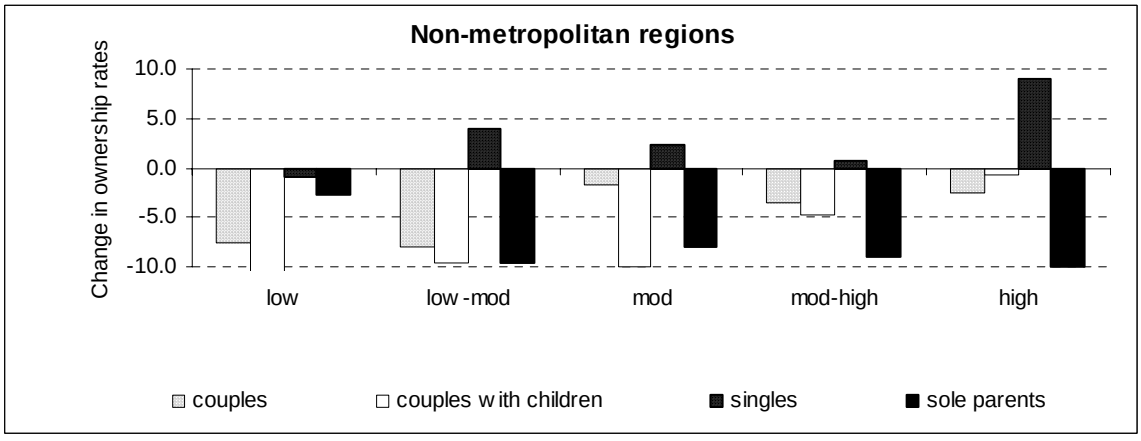
The outcomes for households in the 25-44 year old age group shown in Figure 4.5 are of more interest and concern. These are discussed below after Figure 4.5.

[8] These detailed data can be found in Tables B.21 and B.22 in Appendix B.

Figure 4.4: Changes in the incidence of ownership, 1986-1996: 15-24 year old households

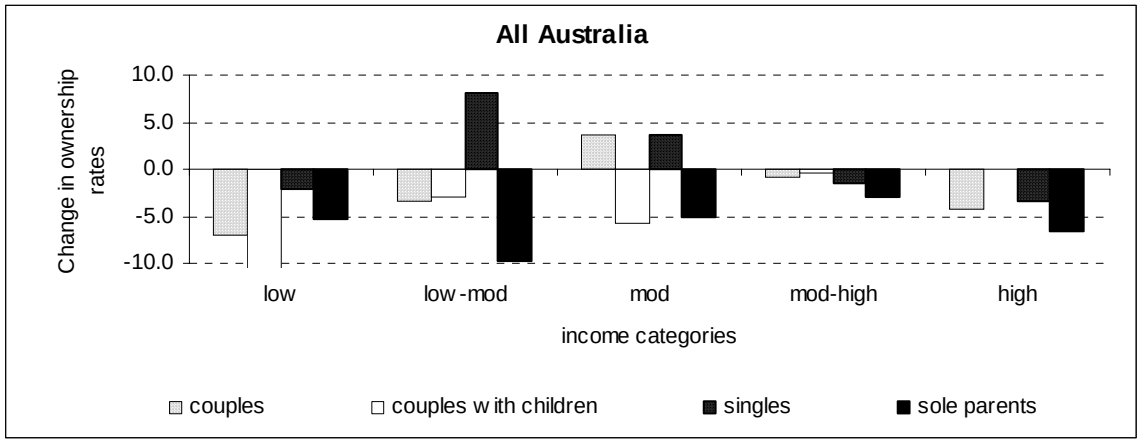


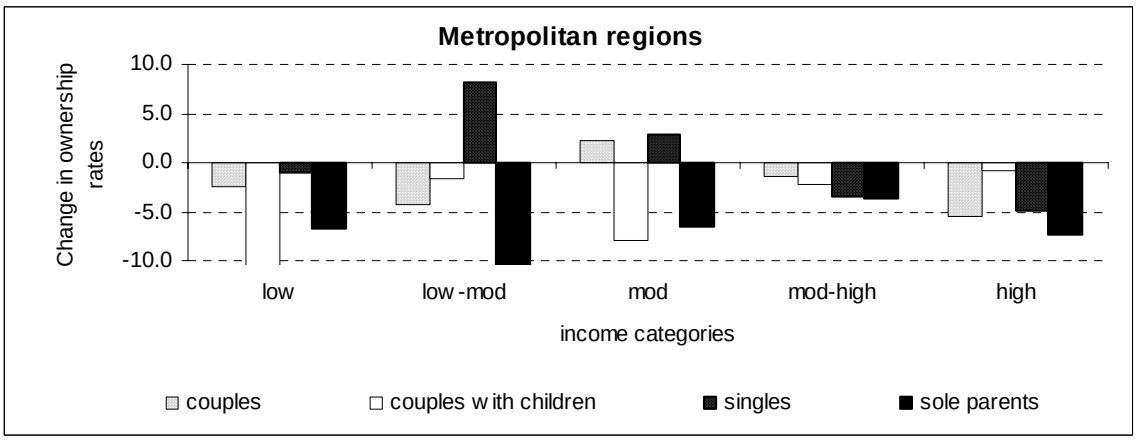


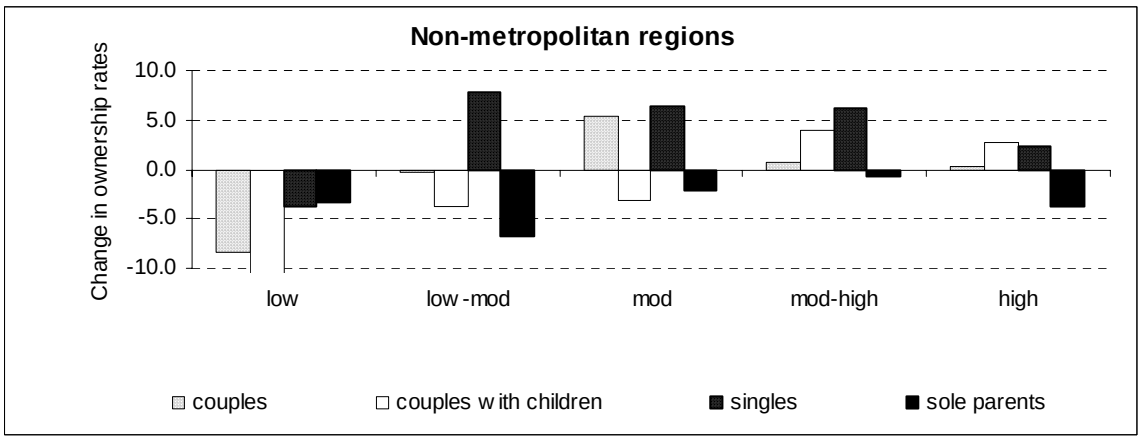


Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Figure 4.5: Changes in the incidence of ownership, 1986-1996: 25-44 year old households







Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

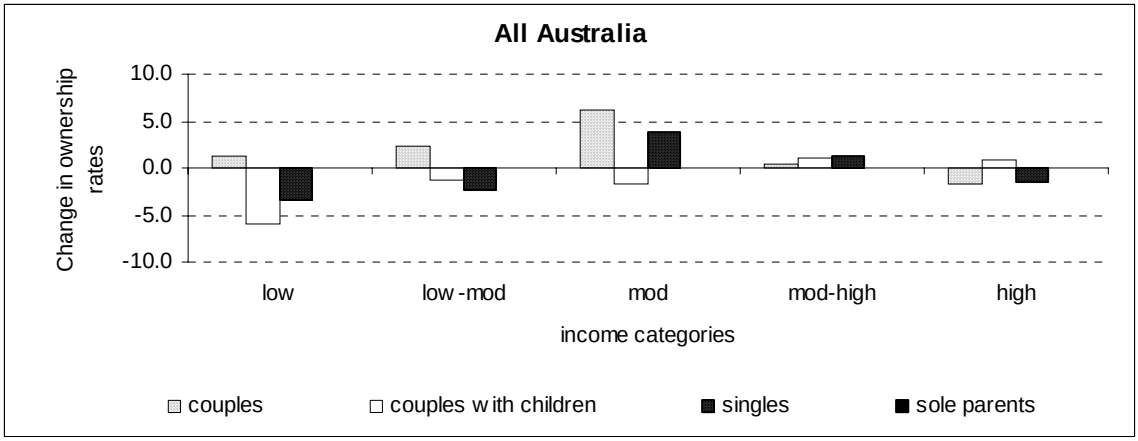
As shown in Table 4.5 above, aggregate home ownership for the 25-44 year old age group declined by 5.5 percentage points to 58.7 per cent in 1996. The 7.5 percentage point decline in the home purchase rate (Table B.11) was even more pronounced. Figure 4.5 shows that, as with the youngest age group, single persons and particularly those in the middle income groups, were the only households in the 25-44 year old age group who experienced an increase in home ownership.

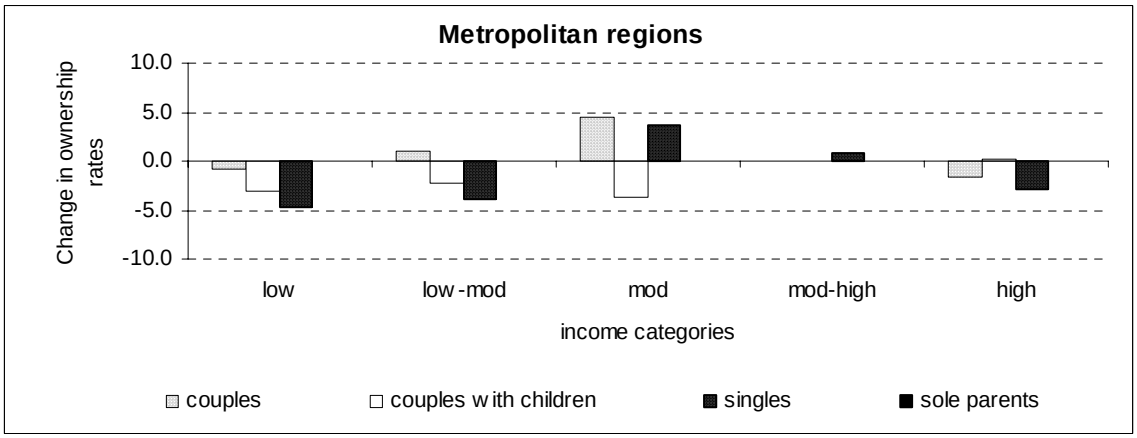
These increases in the incidence of home ownership amongst young households are likely to reflect the increased independence of women over this time period. This presumption is supported by supplementary evidence from ABS surveys. Over a comparable time period, although there was a 15.7 per cent decline in the proportion of income units under 35 who were first home buyers, there was a 24 per cent growth in the number of young female headed income units who were first home buyers. (ABS 1988b, Table 24 and ABS 1999 p154). It is also consistent with Winter and Stone's conclusions about changing patterns of ownership. It may reflect the impact of increased divorce and separation and property settlement of what had been a home owning couple. The increases in home ownership for low to moderate income single person households provides some element of support for this explanation. Home ownership rates for single person households, however, are still considerably lower than for couple households in the same age group because far more of them have low household incomes.

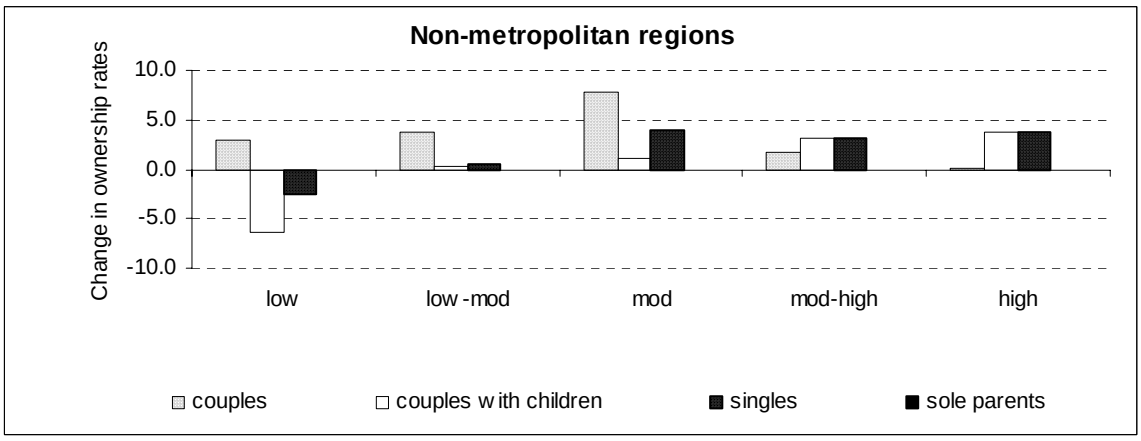
The differences in the home ownership rates illustrated in Figures 4.4 and 4.5 clearly shows that declines in home ownership rates have been most significant for all households with children, regardless of income level and have been discernibly greater in metropolitan compared with non-metropolitan regions. Again this highlights the constraints higher cost housing markets impose upon tenure choice and the greater impact these constraints can have on those households for whom home ownership traditionally has been the preferred tenure but for whom there are many competing demands made upon their incomes.

Chapter 5 provides a detailed statistical analysis of home ownership changes for households in the 25-44 year old age group for the 15 regions that have been aggregated in the data illustrated in the Figures presented in this section. The following section provides an indication of the extent to which the broad trends identified to date in this section are reflected in the more disaggregated data for Sydney and Melbourne and NSW non-metropolitan regions.

Figure 4.6: Changes in the incidence of ownership, 1986-1996: 45-64 year old households

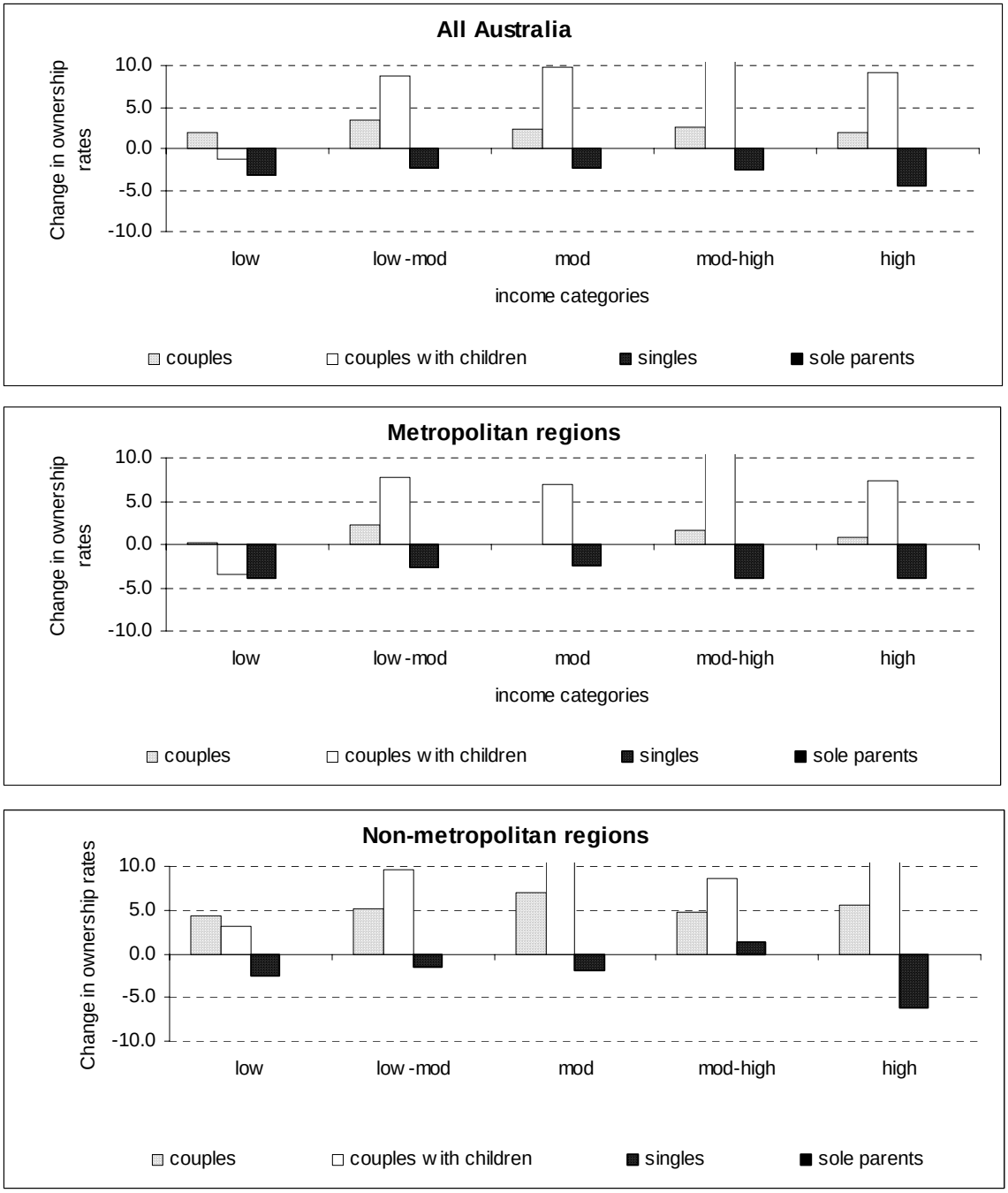






a. Data for sole parents not reported because of lack of comparability over time. See Appendix A for details
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Figure 4.7: Changes in the incidence of ownership, 1986-1996: 65 and over year old households



a. Data for sole parents not reported because of lack of comparability over time. See Appendix A for details
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

The results for older households, illustrated in Figure 4.6 and Figure 4.7, show noticeably different patterns for different household types in the pre-retirement and retirement age groups. For those in the 45-64 year old age group, increases have been greatest for couples and singles with only moderate incomes but for the 65 and over year old age group they have been greatest for couples and couples with children across the income spectrum. Increases for couples have been considerably greater in non-metropolitan than metropolitan regions. Similar differences hold with the patterns of change for single person households.

As above, the differences in home ownership outcomes according to age, income and household type when combined with changes in household composition within each age group have the potential to explain differences in regional home ownership rates.

The data presented in this section to date suggest that socio-demographic changes reflected in changes in age and household composition and economic changes reflected in changes in household income explain much, but not all, of the aggregate changes in home ownership observed between 1986 and 1996. The remaining differences between similar households in metropolitan and non-metropolitan regions are consistent with the impact of different housing market conditions on affordability and with different wealth constraints operating in different regions. The relative importance of these contributing factors will be formally assessed in chapter 5 at a state based metropolitan and non-metropolitan level of disaggregation for the 25-44 year old households who, traditionally, have been the most significant of first home buyers or new entrants into home ownership.

Before this is undertaken, the following section provides an assessment of the extent to which the observations are robust to a more detailed level of spatial disaggregation.

4.6 Changes in home ownership at a sub-regional level of disaggregation

In the first instance, this spatial disaggregation is undertaken for the sub-metropolitan data for Sydney and Melbourne because housing market conditions as reflected in house prices vary as much, or even considerably more, within the larger cities as they do between regions. The variation within the two largest cities in Australia provides an opportunity to determine whether the differences, observed above for a metropolitan and non-metropolitan level of disaggregation and attributed to housing market constraints, are mirrored at a sub-metropolitan level of disaggregation.

Strong house price gradients in Sydney and Melbourne constrain housing choice within each city in much the same way that regional disparities in house prices constrain choices between regions. Indicative housing market data for various regions within Sydney and Melbourne are illustrated in Figure 4.8.[9] The regions represented by the solid bold lines can be taken as indicative of inner and outer regions respectively.

Over time, house price gradients have increased and shifted out as each city has expanded. The changes have been considerably greater in Sydney than in Melbourne. In 1986 and 1996 Sydney and Melbourne, for example, house prices were broadly comparable except for the highest cost suburbs in Sydney. After the Sydney house price boom of the late 1980s, however, Sydney prices, on average, have been consistently at least 50 per cent higher than Melbourne prices.

In both cities, median house prices are significantly higher in the inner zone. Abelson (1994) gives estimates for a standard house in Sydney which suggest a location premium 15 per cent higher at the fringe in Sydney compared with Melbourne in the late 1980s and a distance gradient more than 25 per cent higher in Sydney than in

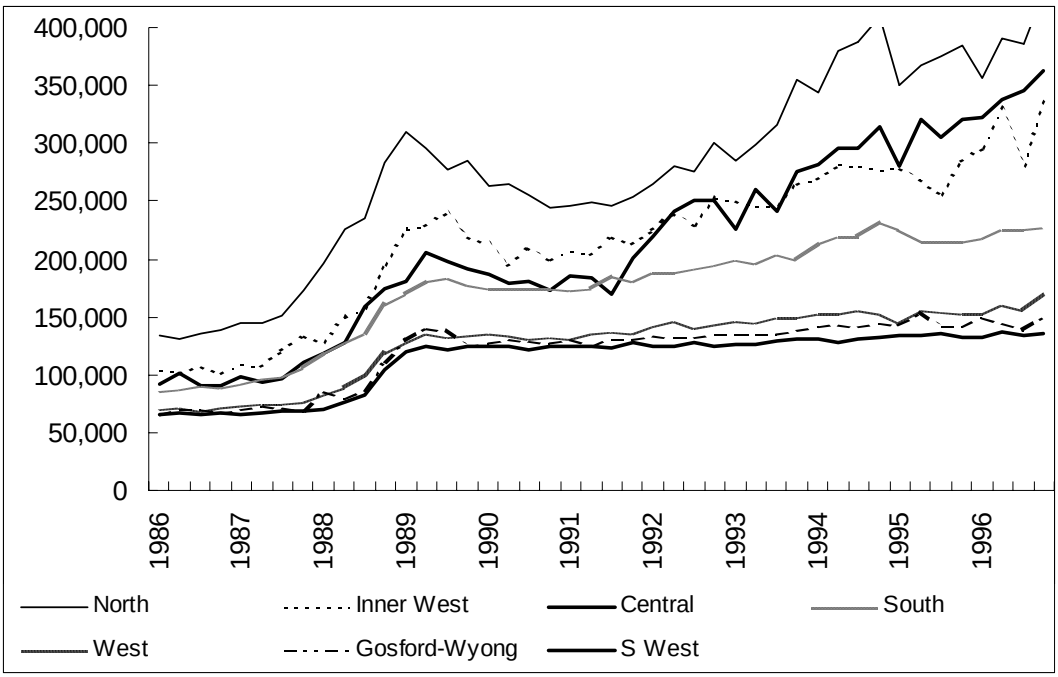
[9] These data are derived from Valuer General data. They have been aggregated by the respective providers and the level of aggregation does not match exactly that employed in this study. The separation in the data, however, is more than adequate to illustrate the points being made here. Because these data are derived from sales data, they can reflect both quality change and a change in the composition of dwellings sold rather than a change in the underlying prices of constant quality dwellings.

Melbourne. Work undertaken by the Industry Commission (1992) for their report on patterns of urban settlement support these results. Kirwan (1990) presents estimates for Melbourne for every three years that show a steepening of the land price gradient over a twenty year period to 1989. A more detailed analysis of house price trends within these cities can be found in Burbidge (2000) and Maher (1994).

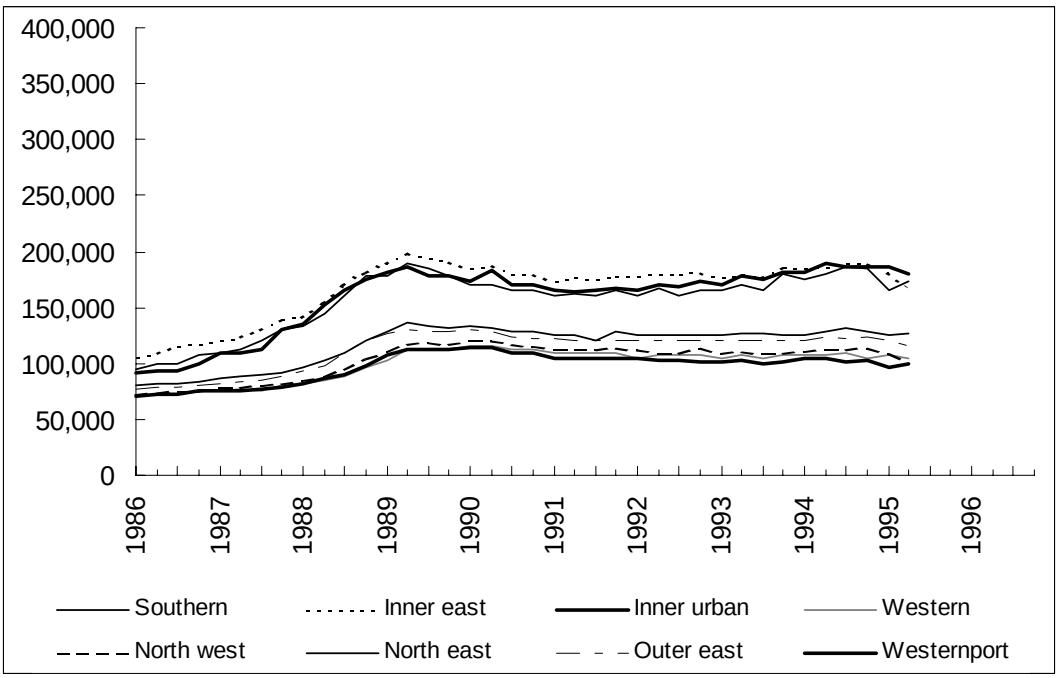
These differences suggest that, to the extent that differences in the outcomes for metropolitan and non-metropolitan regions were attributable to affordability constraints, similar outcomes will be observed within Sydney and Melbourne. They also suggest a greater impact can be expected in Sydney than in Melbourne as a result of the greater change in relative prices between inner and outer regions in Sydney.

Figure 4.8: Median house prices, 1986-1996

Sydney



Melbourne



Source: Valuer General data, NSW and Victoria, supplied by state housing departments

Table 4.3 provided data on the incidence of home ownership in Sydney and Melbourne in 1996 and on the change in this between 1986 and 1996. These data showed that, at an aggregate level, whilst the change in the aggregate home ownership rate was similar in each city, the overall incidence of home ownership in Sydney (63.6 per cent) was lower than in Melbourne (69.8 per cent). For households in both the 25-44 year old age group and the more established 45-64 year old age group, the disparities in ownership rates are even greater than this. In Sydney, only 53.9 per cent of 25-44 year old households were home owners in contrast with 63.1 per cent of 25-44 year old households in Melbourne.

The incidence of home ownership disaggregated by age and income for the inner, middle and outer zones in these two cities is given below in Table 4.7 for Sydney and Table 4.8 for Melbourne.

These tables show that the same general observations for home ownership by age and income as made for metropolitan and non-metropolitan regions can be made for these two major cities. Within each income group and each zone, overall home ownership increases with age. This can be seen by the data presented in each column in Tables 4.7 and 4.8. Tables B.27 and B.30 give the incidence for all tenures for the socio-demographic classifications shown in Tables 4.7 and 4.8 for Sydney and Melbourne as a whole and Tables B.28 and B.31 give the changes in these incidence data between 1986 and 1996. These tables show outright ownership systematically replacing home purchase with the age of the household. Tables B.29 and B.32 give the change in home ownership rates only, but do so for each zone within each city.

Tables 4.7 and 4.8 also show that, within each income group, home ownership rates for younger households in the high cost inner zones are considerably lower than in the lower cost outer zones. As suggested earlier, younger households who have no past housing history to protect them from changes in housing markets are more likely constrained by their current economic circumstances than are older households. Their housing market outcomes, therefore, are more likely to reflect changing housing market constraints than are the outcomes of older households.

As with Table 4.6 for the spatially more aggregated regions, the data in each row in Table 4.7 and Table 4.8 show the increase in the incidence of home ownership as income increases for any given age group in a particular location.

Table 4.7: Incidence of home ownership by age and income, 1996: Sydney zones

	<$300	$300-500	$500-800	$800-1200	$1200+	all households
15-24 year old households						
inner	20.4	12.6	10.3	9.4	11.5	12.7
middle	25.0	17.5	20.2	25.2	32.0	23.7
outer	13.4	13.2	22.0	36.7	47.1	25.0
Sydney	20.1	14.6	17.4	22.8	25.6	20.0
25-44 year old households						
inner	16.4	22.9	27.6	43.4	52.6	39.3
middle	25.3	34.6	47.3	65.5	75.5	58.1
outer	25.7	37.2	56.6	74.6	83.7	62.0
Sydney	22.8	32.8	45.3	62.7	69.5	53.9
45-64 year old households						
inner	41.7	49.8	58.2	71.6	81.6	66.0
middle	56.4	63.4	71.2	83.2	89.8	79.2
outer	60.3	63.8	72.1	83.6	89.8	76.9
Sydney	53.7	60.1	68.1	80.5	87.9	75.3
65+ year old households						
inner	61.0	76.9	81.2	87.1	91.7	72.5
middle	69.0	81.7	84.4	89.4	92.9	78.0
outer	71.2	79.5	82.2	86.1	87.4	76.3
Sydney	67.4	80.0	83.0	88.1	91.8	76.1
all households						
inner	44.9	46.7	43.2	54.0	63.1	52.1
middle	56.7	58.1	59.3	72.4	82.4	68.3
outer	55.9	54.3	61.3	76.1	85.5	67.4
Sydney	53.1	54.1	55.6	68.6	77.3	63.6

Source: ABS Special Request Matrix, Census of Population and Dwellings, 1986 and 1996

The marginal impact of income on home ownership is greatest in the higher cost zones and decreases with age.

Home ownership amongst 25-44 year olds in the inner zone in Sydney is 16.4 per cent amongst those with the lowest incomes and 52.6 per cent amongst those with the highest incomes. In the outer zone it is 25.7 per cent for those with the lowest incomes and 83.7 per cent for those with the highest incomes. Similar increases, but to higher levels, hold for Melbourne.

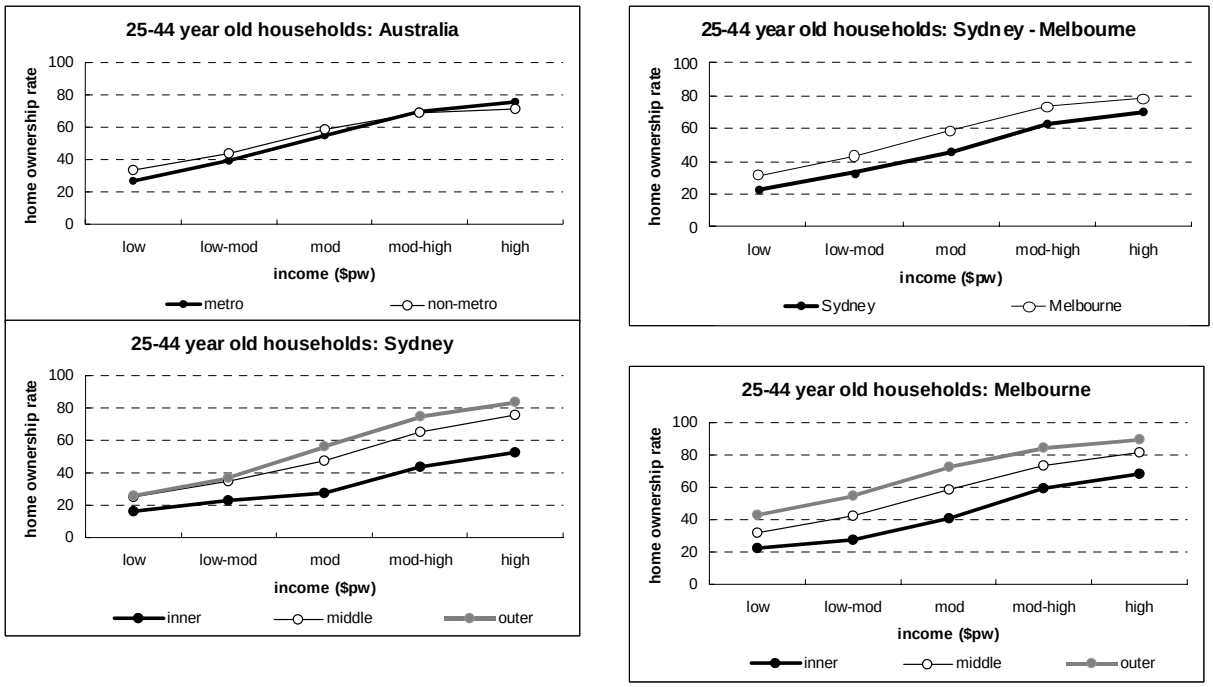
Table 4.8: Incidence of tenure by age and income, 1996: Melbourne zones

	<$300	$300-500	$500-800	$800-1200	$1200+	all households
15-24 year old households						
inner	14.6	10.8	12.1	13.0	14.6	12.8
middle	20.5	17.3	21.5	30.4	29.9	23.2
outer	24.1	22.9	34.3	48.7	52.3	35.3
Melbourne	20.1	16.7	21.3	28.6	26.0	22.2
25-44 year old households						
inner	22.1	27.1	40.4	59.3	68.2	51.7
middle	31.5	42.3	58.5	73.5	81.1	63.2
outer	43.2	54.5	72.8	84.5	89.7	75.0
Melbourne	31.7	43.6	58.9	73.2	77.8	63.1
45-64 year old households						
inner	46.6	64.4	64.4	79.2	88.1	72.9
middle	64.6	71.5	77.8	86.1	93.0	81.8
outer	71.7	77.5	82.1	88.6	94.0	85.3
Melbourne	62.5	70.0	76.4	85.0	91.8	80.5
65+ year old households						
inner	65.7	77.9	84.3	88.6	91.0	76.3
middle	75.5	84.9	86.6	90.8	93.2	81.4
outer	73.7	83.6	87.7	91.0	90.7	80.0
Melbourne	72.3	83.3	86.5	90.2	92.8	79.4
all households						
inner	52.0	56.9	52.3	64.3	74.5	60.8
middle	62.0	62.2	66.4	77.2	86.3	71.5
outer	64.1	65.8	74.4	84.4	91.0	77.2
Melbourne	59.1	60.9	65.2	75.9	83.5	69.8

Source: ABS Special Request Matrix, Census of Population and Dwellings, 1986 and 1996

The relationship between income and home ownership for 25-44 year old households in the different regions covered by Tables 4.6 to 4.8 is illustrated in Figure 4.9. This provides an indication of the relative impact of increases in income in regions with disparate median house prices. The differences in home ownership rates at every level of income are greatest where house price differentials are greatest. They are greater between Sydney and Melbourne than between metropolitan and non-metropolitan regions as a whole and they are greater within both Sydney and Melbourne than between Sydney and Melbourne. They are greater within Sydney than they are within Melbourne. The effect of differences in household composition on these patterns of home ownership will be taken into account (at a higher level of spatial aggregation) in the analysis of the outcomes for 25-44 year old households presented in the following chapter.

Figure 4.9 : Impact of increases in household income on home ownership rates



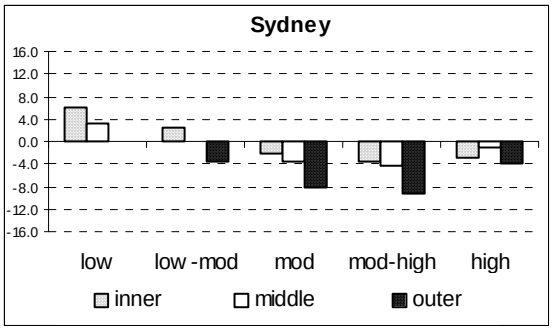
Source: derived from Tables 4.6 to 4.8 in text

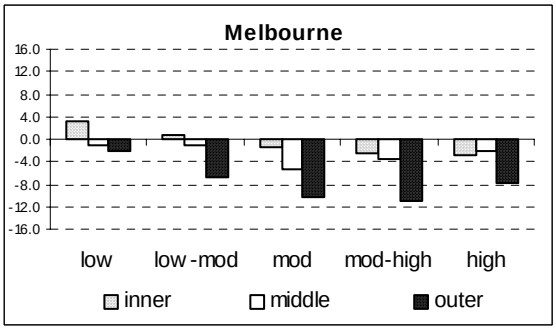
Figure 4.10 illustrates the changes in the incidence of home ownership in the inner, middle and outer zones of Sydney and Melbourne equivalent to the incidence data presented in Tables 4.7 and 4.8. Tables B.29 and B.32 in Appendix B give the data that underpin this Figure.

The data in Figure 4.10 and the results in Tables B.29 and B.32 reinforce the observations drawn from the more aggregate data presented earlier in this section. Declines in home ownership have been greater for younger households and have been greatest for households in the 25-44 year old age group with a 7.4 percentage point decline in Sydney and a 6.1 percentage point decline in Melbourne. In turn, these arise from even greater declines in home purchase rates of 12.3 per cent and 10.1 per cent being offset by increases in outright ownership of 4.9 per cent and 4.0 per cent respectively.

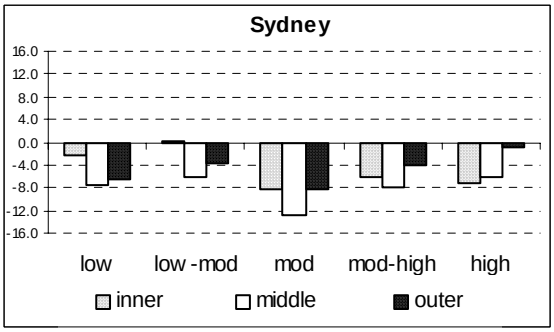
Figure 4.10: Changes in home ownership by age and income, 1986-1996: Sydney and Melbourne zones

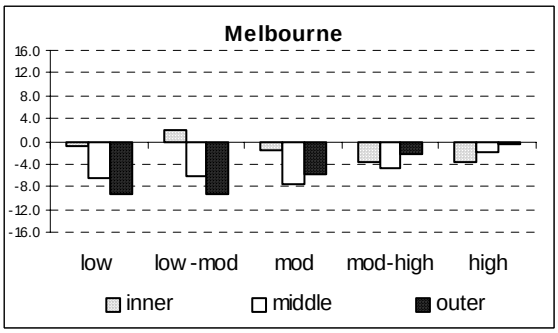
15-24 year old households



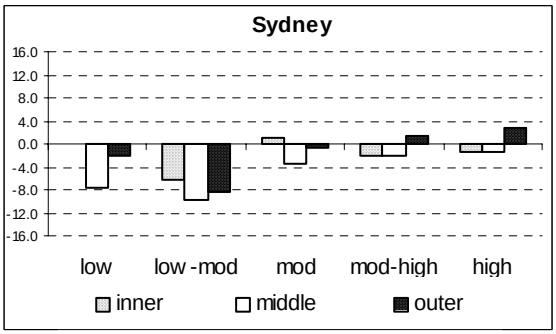


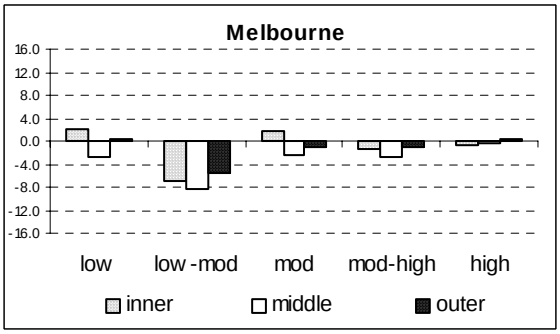
25-44 year old households



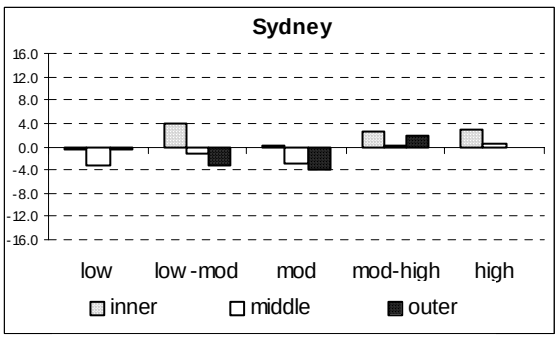


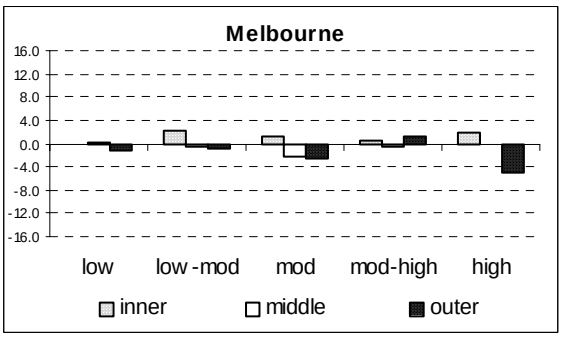
45-64 year old households





65+ year old households





Source: ABS Special Request Matrix, Census of Population and Dwellings, 1986 and 1996

Some of the largest declines in home ownership, particularly for younger households, have occurred in the outer zones rather than in the inner and middle zones. This is consistent with the increase in the incidence of young single person households and the decrease in the incidence of couples with children as the former have lower home ownership rates than the latter. The cases where there are relatively small declines in home ownership for younger households on low or low to moderate incomes are associated with increases in outright ownership. Again, this reflects the outcome access to home ownership depends on wealth rather than income for lower income households and changes in wealth are not necessarily related to the household characteristics observed.

The greatest declines in home ownership rates occurred in the middle zone for middle income households in the 25-44 year old age group in Sydney where a massive decline of 15.9 percentage points in home purchase was offset by an increase of 5.9 percentage points in outright ownership. In Melbourne, a smaller 12.6 percentage point decline was offset by a smaller 4.1 percentage point increase for this household group. Ownership rates for low and middle income groups were already extremely low in the high cost zones and the declines in middle zones reflect a further squeezing out of those who traditionally have been marginal home purchasers from any well located housing. As with the youngest age group, the impact of a changing household composition arising from a greater disproportionate increase in single adult households in the outer zone of Melbourne compared with Sydney, provides an explanation for the greater decline in home ownership rates amongst outer zone households in Melbourne.

For households in the 45-64 year old age group, declines in home ownership in Sydney have been limited to lower income households but have been spread relatively evenly within the metropolitan regions for these income groups. In Melbourne, declines for this age group have been small. The decline in home ownership rates for older high income groups in the outer region are unlikely to reflect housing market effects.

The final results to be presented in this section are for the three NSW non-metropolitan regions. In the absence of readily available house price data, a systematic analysis of these outcomes in relation to affordability constraints cannot be undertaken. However, an analysis of home ownership outcomes for different age and income groups will provide an indication of the extent to which changes in the aggregate sub-regional home ownership rates are explained by changing socio-economic factors. By implication, any further changes are likely to be explained by housing market factors or other factors outside of the range of household characteristics considered here.

Results equivalent to those in Tables 4.6 to 4.8 are presented in Table 4.9 for the Hunter, Illawarra and Mid-North Coast regions of NSW as well as for the whole of non-metropolitan NSW as a benchmark for comparative purposes. The most remarkable of the outcomes reported in Table 4.9 is their similarity across the different non-metropolitan regions of NSW although, overall, home ownership rates are lower in the Mid North Coast than elsewhere. The age specific rates suggest this is attributable primarily to lower home ownership rates amongst younger households.

Table 4.9: Incidence of tenure by age and income, 1996: NSW regions

	<$300	$300-500	$500-800	$800-1200	$1200+	all households
15-24 year old households						
Hunter	9.6	11.3	17.3	29.0	36.0	17.4
Illawarra	9.8	11.0	18.5	29.2	30.6	17.4
Mid North Coast	10.7	10.6	17.0	23.5	35.8	14.5
Non-metro NSW	10.9	10.9	17.7	26.5	30.1	16.3
25-44 year old households						
Hunter	26.5	37.7	57.0	73.7	81.1	59.7
Illawarra	23.2	37.6	56.9	74.8	81.3	59.4
Mid North Coast	33.0	43.1	59.3	73.8	74.6	55.5
Non-metro NSW	30.3	40.8	56.8	72.2	77.6	57.5
45-64 year old households						
Hunter	64.4	72.8	78.4	85.2	92.0	79.2
Illawarra	63.1	71.9	75.9	83.3	92.4	78.0
Mid North Coast	69.4	75.3	80.2	86.4	92.2	78.8
Non-metro NSW	65.1	72.2	77.5	83.9	90.9	77.7
65+ year old households						
Hunter	74.3	84.3	87.6	90.3	94.6	79.7
Illawarra	70.7	81.6	85.6	91.0	95.1	77.1
Mid North Coast	73.2	83.7	86.6	85.7	95.7	78.9
Non-metro NSW	72.3	83.1	86.7	89.2	93.2	78.3
all households						
Hunter	60.6	68.0	65.9	76.5	82.8	70.5
Illawarra	54.3	65.7	63.9	75.7	83.5	68.3
Mid North Coast	55.2	62.4	64.5	73.7	78.4	64.8
Non-metro NSW	59.2	59.9	64.1	74.9	83.3	66.4

Source: ABS Special Request Matrix, Census of Population and Dwellings, 1986 and 1996

There is also a lesser dispersion in the home ownership rates between low and high income households in each age group in the Mid North Coast region than in the other regions reported. This may be attributable to greater affordability constraints arising from the major urban regions within the Hunter and Illawarra regions.

Data from the NSW Rent and Sales Report (Number 41) for June 1997, the first for which house price data (based on non-strata sales) was reported, suggests that, in 1996, the housing market in Wollongong imposed greater constraints than elsewhere. However, in the absence of systematic housing market data for these regions, it is not possible to postulate on the impact of affordability on these outcomes.

Home ownership rates for all age and income groups in all these NSW non-metropolitan regions are both systematically higher than rates for their NSW metropolitan counterparts and show the same overall patterns summarised below.

4.7 Summary

Chapter 4 has provided spatially disaggregated data on home ownership outcomes by age, income and, to a lesser extent, household type and on changes in these home ownership rates between 1986 and 1996.

These rates are presented against a benchmark of an Australia wide aggregate home ownership rate of 68.1 per cent in 1986 and a lower rate of ? 1996. Home ownership rates are both lower in metropolitan regions in Australia and declined by a greater amount than in non-metropolitan Australia. They also vary considerably by state and within each state.

Home ownership outcomes are related to differences in regional housing markets and to differences in the socio-demographic and economic characteristics of households. When combined with different patterns of household composition, regional differences in home ownership rates by household characteristics provide one clear explanation of differences in home ownership rates between regions and over time.

At an aggregate level, home ownership declined for all age groups in metropolitan regions and for all young households in non-metropolitan regions. The largest increases in home ownership occurred for older couples with children, and particularly, for those in non-metropolitan regions. The largest decreases occurred for households in the 25-44 year old age group, and particularly for those in metropolitan regions.

This overall decline was attributable both to a decline in household type specific rates and to a decrease in the incidence of households with high ownership propensities.

Within any region and age group, home ownership rates were shown to systematically increase with income with the gap between rates for low income and high income households in each region decreasing with age and being greater for each age in the higher cost regions. Changes in home ownership, vary by age, income and region and the results for changes in outright ownership in particular suggest that wealth as well as income is becoming an increasingly significant factor in explaining home ownership outcomes.

In broad terms, different housing market conditions and differences in housing affordability in these regions can explain differences in outcomes in non-metropolitan compared with metropolitan regions. The general results, based on a broad level of spatial disaggregation, are supported by the more disaggregated results based on the analysis undertaken for zones within Sydney and Melbourne.

CHAPTER 5. DECOMPOSITION OF CHANGES IN HOME OWNERSHIP RATES: A CASE STUDY OF 25-44 YEAR OLD HOUSEHOLDS

Chapters two and three of this report provided a descriptive overview of some of the complex changes that have taken place in the socio-economic structure of households in Australia and of spatial differences in these changes. Chapter four provided an overview of the impact of these changes on home ownership outcomes.

These observed outcomes raised a number of questions. One is the extent to which changing socio-economic household structure and the related polarisation of household income has affected tenure outcomes. A second is the extent to which housing market constraints and tenure preferences have contributed to the observed changes in household structure and household income.

Neither has a clear cut a priori answer. Increased polarisation of household income has resulted in an increased proportion of households at both the top and the bottom of the income distribution. In both instances, these are households for whom tenure choices are less marginal than for middle income households. Capacity to pay generally does not constrain high income households in their choice of tenure. Low income households generally have no choice. The observed polarisation of income, however, has been associated with a disproportionate increase in the numbers of small households with lower (but increasing) ownership propensities. It has also been associated with a general downward shift in average real household income.

An indication of the contribution made to the overall decline in home ownership rates by changes in the socio-economic structure can be obtained through decomposition techniques that show what home ownership would have been had key factors affecting home ownership all remain unchanged.

This chapter undertakes such an analysis for 25-44 year old households. Section 5.1 provides a brief rationalisation for the case study chosen. Sections 5.2 and 5.3 respectively outline the modeling approach employed and provide details of the specification of the model estimated to address the questions raised above. Sections 5.4 and 5.5 provide the results of decomposing the changes in home ownership rates over time and spatially. Section 5.6 provides a summary of the conclusions drawn from this case study.

5.1 Choice of case study

The results presented in the previous chapter highlighted the complex interactions that need to be taken into account when examining factors that contribute to home ownership outcomes, to spatial differences in these and to changes in them over time. As seen from the number of tables presented in the text and in Appendix B, a cross-tabular presentation of outcomes that takes into account even some of these factors is cumbersome and results in more data than usefully can be absorbed. An alternative approach is to employ more sophisticated statistical techniques in an attempt to extract the most significant of the factors that contribute to the outcomes observed at an aggregate level.

Because the data sets being analysed are extremely large, they impose computing constraints upon the analysis that can be undertaken. It is not possible, for example, to simultaneously analyse outcomes for all age groups for Australia as a whole, or even for the aggregate metropolitan or non-metropolitan level of analysis used in earlier chapters to present the results. It is possible, however, to analyse outcomes for any one age group at the metropolitan/non-metropolitan level of analysis within each state as used in earlier chapters. The Positioning Paper provided a rationale for why this choice of regions does, in fact, provide a logical degree of disaggregation. Briefly, these regions provide the greatest level of disaggregation for which comprehensive

and systematic housing market data are available. Indicative house price data for the metropolitan and non-metropolitan regions in each state was presented in chapter 4.

The Positioning Paper also provided a rationale for choosing the 25-44 year old age group as that group for which the detailed analysis is to be undertaken. Briefly, one specific age group was chosen in order to abstract from life-cycle effects and from the impact of an aging population. A twenty year range has been selected as being sufficiently broad to capture the impact of the major changes which have contributed to demographic uncertainties which have taken place whilst abstracting from the effects of demographic certainties.

In 1986, the 25-44 age group contained those who were raised in an era of post-war optimism, with an expectation of economic growth and full employment. Early, and almost universal, marriage was a social norm (McKay, 1997). In large part, it was a cohort for whom the culture and ideology of home ownership was well entrenched and for whom home ownership policies were still being actively pursued.

In 1996, the 25-44 year old age group contained the last of McKay's 'stress' generation, the generation for whom there was a tension between belief in an 'easy future and … no future at all' and the first of what he described as the 'options' generation, the 'wait and see' generation. In large part, it is a cohort for whom uncertainty about the future has dominated its thinking and for whom flexibility and choice have been given greater emphasis than ever before. Most of these households were making housing choices in a period when government had withdrawn from active support of home ownership policies and during a period of unprecedented economic change.

The 25-44 year age group is an age group for whom labour force attachment is the norm and for whom unemployment, retirement or retrenchment is far more likely to be involuntary than voluntary. It is one for whom location decisions are more likely to reflect housing and employment opportunities than lifestyle choices. It is the age range in which those households who are likely to marry and/or have children are most likely first to do so, even when there has been a deferral of these decisions. It is the age range in which those households who ultimately become home owners are most likely first to do so.

In other words, the 25-44 year age range is sufficiently broad to incorporate most critical stages associated with household formation and household structure. Changes identified below are unlikely to reflect the impact of a deferral or delay of critical household and family formation decisions.

Because of the changes which have taken place, it is probable that changed socio-economic structure has contributed significantly to the observed declines in home ownership amongst households in the 25-44 year old age group.[10]

5.2 Modelling approach

This section sets up a simple model that enables the impact of changes in the socio-economic structure of households over time and space to be isolated from other factors contributing to declines in home ownership. It is based on a comparative static analysis

[10] Other factors could alleviate these pressures. One example is a change in wealth, whether associated with household dissolution or with inheritance. A number of authors have focussed on the importance of accumulated wealth in influencing home ownership. Boehm (1993), for example, focuses specifically on the impact that employment history has on wealth accumulation. Haurin et al (1996) see wealth as being endogenous to the home ownership decision. These are outside the scope of this paper. Also outside the scope of this paper is consideration of the impact of housing markets on household formation, household structure and household income. Some of these issues were discussed in the Positioning Paper in relation to the endogeneity of household formation and tenure choice although most discussion of these has focussed on a younger age group than considered here. Related issues arise in relation to the endogeneity of household income and tenure choice with the possibility that a preference for (mortgage financed) home ownership may influence participation rates, the number of employed persons in any household and, hence, income.

and suffers from all the constraints imposed by such an approach[11]. Its advantage, however, is that it allows the complex interactions outlined above to be taken into account and to be considered at a disaggregated spatial level. The model employed makes no attempt to provide a behavioural explanation of tenure outcomes[12]. Nor does it attempt to articulate the interdependencies between household formation, tenure choice, labour market decisions and location choice.

Because of data constraints, the technique used relies solely on discrete or categorical variables. Use of categorical data, however, has the advantage of avoiding the difficulty of superimposing a specific functional relationship[13] on the data and allows the relationship between the key variables to vary over time and space. This is particularly advantageous given the presumption that changing socio-economic structures may be associated with changing tenure relationships.

The analysis is based on estimating home ownership probabilities for households in the 25-44 year age group in each of the 15 regions described in Table 2.1. These probabilities are assumed to vary by five income categories, six household types, three employment outcomes, and a household size dummy[14]. The five income categories are those employed in earlier chapters. The six household types are the four for which outcomes were reported in chapters 2 to 4 with the addition of the less significant numbers of group and family households. The data for these latter households were implicit in the results presented in earlier chapters but they were suppressed for presentation purposes on the grounds that they were of relatively little interest. The three employment categories are none, one or two or more persons employed in the households. The household size dummy is described below.

Estimation of home ownership probabilities based on these variables provides a way of summarising the interdependencies between them and has the added advantage of eliminating or at least reducing the impact of idiosyncratic data that can affect observed outcomes (Wachter and Megbolugbe 1992). Constraining the analysis to a particular life-cycle group reduces difficulties that arise from the use of current rather than permanent income.

The prime modelling tool employed is that of decomposition analysis associated with logistic regression techniques. These techniques were developed initially for use in labour market analyses by Blinder (1973, 1976). They have been employed in a number of housing studies concerned with the changing impact on home ownership of race (for example, Wachter and Megbolugbe 1992), gender (for example, Haurin and Kamara 1992), marital status (for example, Bourassa 1994) and education (for example, Gyourko and Linneman 1997).

A vast array of literature has employed logistic regression techniques to model tenure choice, either as an independent decision or as one that interacts with some of the factors outlined above. The limited data on which this paper relies do not allow for such ambitious aims. Instead, logistic regression techniques are employed as an alternative to the multi-layered cross tabulations which would be required to record the complex interactions in the data employed.

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[11] It ignores, for example, the changes in housing decisions over the household's lifetime. However, limiting the analysis to just one age group minimises the problems that might arise from having no information on housing history.

[12] Such a model, for example, would identify all the factors influencing the household's decision and would enable the impact of changes in house prices, or interest rates, or other such factors on the probability that a particular household was a home owner to be determined. Such an analysis is beyond the scope of this study. Yates (2000) provides an overview of such models.

[13] In any formal modelling of the factors that influence a specific decision, not only does a decision have to be made about the variables that should be considered, but also a decision needs to be made about the way in which they affect the outcome. A typical assumption is to assume a linear or log-linear relationship that indicates, for example, that doubling one variable will have either a proportional or a decreasing impact on the variable of interest. Use of categorical variables, where the explanatory variables are discrete rather than continuous allows the underlying relationships to be determined by the data.

[14] Dummy variables take on the value of one in the presence of, in this case, a large household and zero otherwise.

5.3 Model specification

The descriptive results presented in the previous chapter showed that tenure outcomes vary by age and by life-stage, by economic capacity and by housing opportunities or constraints. In the regressions used here to estimate home ownership, household type, household size, income and employment status and household size are presumed to determine economic capacity. Household type and income are as described in earlier chapters. The number of persons employed in the household and household size, which are included as separate variables, supplement these economic capacity variables. Number of persons employed can be regarded as a proxy that helps distinguish labour market from other sources of income. If, for example, there are no persons employed, any recorded income must be from non-labour market sources. It also could be regarded as allowing for the possibility that income variability may be affected by how many people in the household are employed. Household size is represented by a dummy variable for large households, defined as those who need more than two bedrooms on the basis of standard occupancy criteria[15]. Large households are defined as households with at least two children or group or multiple family households with at least three residents. Larger households, and particularly lower income households, may find their size requirements impose additional constraints to those imposed by their capacity to pay. This may have an independent impact on the ability to access housing via home ownership. The household size dummy variable is designed to incorporate such effects.

In addition to these key variables, the model estimated includes terms that allow household type, number employed and household size to interact with the income variable. This allows for the constraints imposed by income to vary with household structure (and so addresses one weakness of using gross household income as an indicator of housing affordability). It also allows for the possibility that a given level of income is less secure the more persons needed to earn it. All of the equations have been estimated with (small) single person, low income households with no person employed as the base case. In all, this specification yields 44 explanatory variables in total in addition to the variables implicit in the choice of the base case. A detailed specification is presented in Appendix C.

Housing opportunities and constraints are presumed to be affected predominantly by the structure of dwelling prices and, hence by location. The impact of location and the role it plays in affecting house price relativities is taken into account by separately analysing outcomes within each of the 15 regions identified. One factor that has been shown to affect tenure choice and which may affect it differentially over time and space, but which is not modelled explicitly because of data constraints, is the relative price of rental versus owner-occupied housing. This can vary between households (for example because of the interaction of the income tax system with housing choices) or across housing markets (for example, because of different speeds of adjustment to disequilibrium in rental and owner-occupied markets). The impact of the first of these will be absorbed into the impact that income has on decisions undertaken as long as sufficient flexibility is incorporated into functional specifications to allow for this. A fully flexible functional form[16] is employed by the use of categorical variables. The impact of the second is taken into account by treating each region as a separate housing market and examining change within that region.

The logistic regressions estimated provide an indication of the contribution made to the estimated probability of home ownership by each of the key variables outlined above. By replacing the actual values of the variables with their values as they were in a different time period or in a different location, it is possible to estimate a hypothetical probability of home ownership. This can be taken as an indication of what home

[15] These are described in most ABS housing publications. Broadly speaking they allow for one bedroom for a single adult or a couple and one bedroom for every two same sex children under 15.
[16] See footnote 13.

ownership would have been had the observed changed in endowments not taken place. The difference between the actual and the hypothetical results provides an indication of the extent to which the changing socio-economic structure contributed to the observed declines in home ownership rates. The remaining difference, the residual, is explained by changes in all the other factors that impinge upon tenure choice. In this paper, the focus has been on housing market constraints reflected in house prices.

The impact of changes in the socio-economic structure of households in the critical household formation age range (25 to 44 years) can be viewed from both a temporal and spatial perspective. Both are considered below. In the former, the impact of changes in socio-economic characteristics (or endowments) between 1986 and 1996 are considered for each of the 15 metropolitan and non-metropolitan regions in Australia. In the latter, the impact of differences in endowments between the metropolitan and metropolitan regions in each of the states and territories in Australia are considered for each of the two census years.

Representative coefficients and diagnostics for the logistic equations estimated are presented in Appendix C. The results are not presented here because the use of categorical variables and the presence of interaction terms means what little intuition might be derived from them is lost.

5.4 Decomposition of changes in home ownership rates over time

Table 5.1 provides a summary of the results of the estimation procedure outlined for changes over time in each region. These results are estimates of the observed changes initially reported in Table 4.3. The first column in Table 5.1 shows the changes in home ownership rates between 1986 and 1996 as estimated by the logistic equations undertaken for each region. Columns two and three provide the results of decomposing the estimated change in home ownership rates into that due to changes in the socio-economic structure of 25-44 year old households (their endowments) and that due to changes in other factors (the residual component).[17]

[17] If the estimated probabilities are given by $P_0 = B_0'X_0$ and $P_1 = B_1'X_1$, where 0,1 reflect either time or space and where X is the vector of regressors, and B the estimated coefficients, then the change in probabilities can be decomposed either as $P_0-P_1 = B_0'(X_0-X_1) + X_1'(B_0-B_1)$ with X_0 as the base or as $P_1-P_0 = B_1'(X_1-X_0) + X_0'(B_1-B_0)$ with X_1 as the base. In both cases, the first component provides the endowment effect. For both temporal and spatial decompositions, the average of the results with X_0 and X_1 as the base has been reported.

Table 5.1: Decomposition of changes in home ownership rates over time, households aged 25-44

	estimated total change	due to change in endowments	due to change in residual
	(%points)	(%points)	(%points)
Metropolitan			
Sydney	-8.7	-1.7	-7.0
Melbourne	-6.6	-3.7	-2.9
Brisbane	-10.6	-2.4	-8.2
Adelaide	-6.2	-5.3	-0.9
Perth	-4.5	-2.3	-2.1
Hobart	-6.3	-4.3	-2.0
Darwin	1.8	-1.2	3.0
ACT	-7.8	-5.6	-2.2
Non-metropolitan			
NSW non-metro	-4.6	-2.5	-2.0
Vic non-metro	-3.4	-3.7	0.3
Qld non-metro	-3.8	-1.4	-2.4
SA non-metro	2.7	-2.8	5.5
WA non-metro	4.0	-0.7	4.7
Tas non-metro	-1.7	-3.9	2.2
NT non-metro	1.8	1.4	0.4

The persistent negative effect in column two highlights the impact of the economic and socio-demographic socio-economic changes that took place in the population between 1986 and 1996. In all but one region, the increase in the proportion of smaller households, the rise in the proportion with no person employed and the consequent increase in the proportion of lower income households have contributed to a decline in home ownership. This contribution varies from a negative 5.6 per cent in the ACT (where mean household income declined by more than in any other region), to a negative 0.7 per cent in non-metropolitan Western Australia where mean household income for households in the age group considered increased. Mean household income also increased in Sydney, Brisbane and non-metropolitan Queensland. In each of these regions, however, this increase was associated with a strong polarisation of income. The negative net endowment effect on aggregate home ownership rates in each of these regions, despite a household restructuring which has resulted in higher average household income, suggests a greater sensitivity of home ownership to changes in income at the lower end of the income spectrum than at the top.

Increased mean income arising from higher real incomes at the top end of the income distribution can serve to reinforce this negative net endowment effect on home ownership rates through an upward pressure on real house prices. Any upward pressure on real house prices is likely to add to the access constraints faced by those at the lower end of the income distribution. Because of this, increased income polarisation can further limit housing opportunities of those in the lower income groups. Gyourko (1998) makes a similar point. He relates the problems of affordability faced by those whose wages have eroded with globalisation to two factors. The first is the upward pressure on house prices associated with increased demand from those with increased household income; the second is the failure of the market to produce low quality, affordable homes.

The residual effect shown in column three of Table 5.1 incorporates the impact of changes in housing market constraints and changes in any other factors affecting home ownership. Key changes illustrated above are those arising from increased real house prices. Others identified are changes in the relative price of owning and renting or changes in preferences. This residual effect is negative in all major metropolitan regions and positive in all non-metropolitan regions other than the high cost regions of NSW and Queensland.

The differences in these residual effects are closely related to levels of and trends in median dwelling prices in the different regions shown in Figure 4.1. The largest residual contributions to the change in home ownership rates occur in Sydney and Brisbane. After Sydney, Brisbane (along with Perth) had the highest rate of growth of real house prices over the period under consideration. This higher relative growth in house prices, in turn, can be attributed to higher household growth (in Brisbane and Perth) compared with all other regions and to higher income growth (in Sydney and Brisbane).

The temporal decomposition of the change in home ownership rates presented in Table 5.1 shows that socio-economic change amongst 25-44 year old households (the endowment effect) has systematically contributed to declining home ownership rates between 1986 and 1996 in most regions of Australia. However, by no means is it the sole explanation of these declines. In all but some non-metropolitan regions, other factors (the residual effects) have contributed as much or more to the observed decline. These residual effects have a greater negative value in the regions where real house prices have increased most and a positive value in regions where real house prices have been stagnant. This suggests that affordability (along with the relative price effects identified by Wood and Watson, 1999) has contributed more than preference change to exacerbating declines in home ownership. Attributing these residual effect outcomes to preference changes would require preferences to vary with access constraints and to vary systematically across regions.

5.5 Spatial decomposition of changes in home ownership rates

The second question to be addressed relates to the possibility that demographic-economic? restructuring has been associated with different patterns of socio-economic change amongst households between metropolitan and non-metropolitan regions and that this has contributed to the differences in the changes in home ownership rates between these regions. Closely related to this is the question of the extent to which changes in home ownership reflect an increasing division between "the city and the bush".

Table 5.2 presents the results of a similar decomposition exercise to that reported in Table 5.1. In this case, the focus is on the differences between the metropolitan and non-metropolitan regions within each state in each of 1986 and 1996.

In 1986, positive endowment effects arose in NSW, Queensland, Tasmania and the Northern Territory. This suggests the socio-economic and demographic structure of households in the metropolitan regions in these states meant they would have been more likely to gain access to home ownership had they faced the same preferences and same housing market constraints as households in non-metropolitan regions. In Victoria, South Australia and Western Australia, however, the reverse was true. However, between 1986 and 1996, the endowment effects in most states increased with the result that they were positive in all but the small states of the SA and Western Australia. This suggests there has been an increased spatial disparity in the underlying factors affecting capacity for home ownership between households in metropolitan and non-metropolitan households in most states. If they had faced the same housing market constraints as their non-metropolitan counterparts, metropolitan households in 1996 generally would have been more likely to be home owners. Illustrative of why this is so is the greater decline in average household income in the non-metropolitan compared with the metropolitan regions, at least in the larger states.

Table 5.2: Decomposition of changes in home ownership within regions, households aged 25-44

	estimated total change	due to change in endowments	due to change in residual
	(%points)	(%points)	(%points)
1986			
NSW metro/non-metro	0.0	1.3	-1.3
Victoria metro/non-metro	1.8	-0.3	2.0
Queensland metro/non-metro	15.1	1.7	13.4
South Australia metro/non-metro	12.5	-1.4	13.9
West[n] Australia metro/non-metro	24.9	-0.8	25.6
Tasmanian metro/non-metro	2.8	0.3	2.5
North[n] Territory metro/non-metro	11.0	2.9	8.1
1996			
NSW metro/non-metro	-4.1	3.2	-7.4
Victoria metro/non-metro	-1.5	1.5	-3.0
Queensland metro/non-metro	8.3	1.5	6.7
South Australia metro/non-metro	3.6	-1.8	5.4
West[n] Australia metro/non-metro	16.4	-2.2	18.6
Tasmanian metro/non-metro	-1.8	1.4	-3.2
North[n] Territory metro/non-metro	11.0	1.0	10.0

The results of systematic changes in the endowment effects between 1986 and 1996 clearly suggest that the socio-economic changes amongst households have been very different between metropolitan and non-metropolitan regions in each state. They signal the possibility that there may be a strong interaction between housing market constraints (for example, as reflected in differential dwelling prices) and the socio-economic structure of households within any region.

In all states other than NSW, residual effects were positive in 1986, suggesting that, in general, households with given endowments were both more able and more willing to undertake home ownership in the metropolitan regions of each state. To the extent that preferences are unlikely to vary systematically across regions this suggests that the metropolitan/non-metropolitan differences in house prices in 1986 generally were not sufficient to have a negative impact on home ownership in regions other than NSW.

Between 1986 and 1996, however, was a decrease in the residual effect in all regions other than the Northern Territory, with these effects becoming more negative or less positive. In NSW and Victoria, which account for almost 50 per cent of households in Australia, these effects were negative which suggests that, by 1996, households with given endowments in metropolitan regions were less able or willing to gain access to home ownership than their non-metropolitan counterparts. Whilst this may reflect a differential change in the underlying preferences between city and country of households with given characteristics, it is more likely to reflect the increasing price differential between metropolitan and non-metropolitan regions illustrated in Figure 4.1. The positive effects of a changing economic and socio-demographic structure of households in metropolitan regions (reflected in an increase in the endowment effect) has not been sufficient to offset the negative impact of the factors affecting the tenure choices made by these households. These negative factors represent the combined effect of reduced affordability associated with the increase in relative prices in metropolitan compared with non-metropolitan regions and all other factors affecting tenure choice.

5.6. Summary

The analysis undertaken above has focussed on the differential socio-economic changes in younger households that took place between 1986 and 1996 in the metropolitan and non-metropolitan regions of the various states in Australia. This enabled the impact of these changes on home ownership rates to be separated out from the impact of other factors affecting tenure outcomes.

The results from the decomposition over time showed that the household restructuring that took place explains a considerable amount of the decline in home ownership over the decade being considered. However, it also showed that there were increasing constraints on access to home ownership in all metropolitan regions (and in some non-metropolitan regions). Households are being excluded from home ownership by the changes in their socio-economic structure, and they are also increasingly being excluded by housing market constraints, particularly in metropolitan regions.

The results from the decomposition over space focussed on the differential changes in the socio-economic structure of households in metropolitan and non-metropolitan regions. They highlighted an increasing spatial disparity in their respective abilities to access home ownership. Changes in the socio-economic structure of non-metropolitan households between 1986 and 1996 have resulted in a relative reduction in their potential to access home ownership in any housing market compared with metropolitan households. Household structures are becoming increasingly spatially disparate.

These conclusions hold specifically for households in the 25-44 year old age group. The results for this age group are seen as providing a signal of changes to come. This 25-44 year old cohort from 1996 has not had the same positive home ownership experiences as its equivalent cohort from 1986.

An indication of the implications of the results observed in chapter 4 and outlined in detail in this chapter is given in the following chapter.

CHAPTER 6. IMPLICATIONS OF OBSERVED SOCIO-ECONOMIC AND TENURE OUTCOMES

Chapters two and three of this report provided an overview of the socio-economic changes that took place in Australia between 1986 and 1996, of the demographic factors contributing to them and of their spatial variations. Chapter four provided an overview of the tenure outcomes that resulted from these changes, with a particular focus on home ownership as a key policy concern. Chapter five provided a detailed case study of outcomes for households in the 25-44 year old age group that highlighted the interactions between socio-economic changes and tenure outcomes for this particular age group. This chapter provides a spatially disaggregated overview for all age groups of the impact of the interactions of socio-economic changes and tenure outcomes on household income. The following section begins with the Australia wide outcomes and the results for the broad metropolitan and non-metropolitan levels of spatial disaggregation. Section 6.2 focuses specifically on outcomes for the sub-metropolitan regions within Sydney and Melbourne and Section 6.3 focuses on outcomes for the selected non-metropolitan regions in NSW. Section 6.4 summarises.

6.1 Outcomes at an Australia wide level of aggregation

This examination of the impact of the interactions of socio-economic and tenure outcomes is undertaken by providing a tenure based disaggregation of the household income data presented along spatial and socio-demographic lines in Chapter 3. This serves to determine whether there is any substance to the concerns raised in the literature covered in the Positioning Paper about the possibility that housing and home ownership may reinforce existing trends that are contributing to a socio-spatial polarisation of income. It also indicates the extent to which the tenure polarisation documented in chapter 4 is associated with a spatial polarisation of income.

Table 6.1 below provides an initial, non-spatially disaggregated overview. It provides data on household income in 1996 for each household type in each age group and for each tenure. It also indicates how this changed between 1986 and 1996. As with earlier tables, data for households other than the four types identified are included in the all households total but growth data are not presented for older sole parents because of a lack of comparability between the 1986 and 1996 censuses.

Table 6.1: Household income in 1996 and change from 1986 by age, household type and tenure: Australia

	couple		couple with children		single person		sole parents[a]		all households	
	income	growth	income	growth	income	growth	income	growth	income	growth
	$ pw	%	$ pw	%	$ pw	%	$ pw	%	$ pw	%
15-24 year old households										
outright owner	909	2	685	6	390	2	501	7	611	-5
owner purchaser	1049	1	768	7	530	1	560	10	878	-1
private renter	850	-6	603	-5	406	-7	422	-2	670	-12
public renter	527	-31	483	-10	262	-26	328	10	388	-19
all tenures	898	-3	631	-2	404	-6	405	2	665	-10
25-44 year old households										
outright owner	1119	4	1005	10	579	0	556	2	934	5
owner purchaser	1252	1	1059	7	721	-1	624	3	1035	3
private renter	1055	-1	804	-5	553	-4	487	-1	765	-7
public renter	549	-37	588	-12	262	-28	352	-2	439	-22
all tenures	1144	1	974	5	578	-4	497	-1	887	-2
45-64 year old households										
outright owner	739	-20	1201	10	412	2	796	n.a.	891	1
owner purchaser	994	-9	1288	6	621	13	876	n.a.	1100	2
private renter	752	-14	971	1	446	0	709	n.a.	698	-5
public renter	388	-48	707	-9	223	-8	479	n.a.	424	-28
all tenures	782	-17	1191	8	426	2	753	n.a.	883	-1
65+ year old households										
outright owner	454	-16	916	19	261	0	675	n.a.	433	-4
owner purchaser	471	-21	957	12	268	-1	787	n.a.	545	-2
private renter	397	-21	772	5	227	-1	616	n.a.	360	-2
public renter	278	-35	617	-3	187	-5	500	n.a.	253	-18
all tenures	442	-17	895	17	247	-1	658	n.a.	407	-7
all households										
outright owner	630	-19	1102	13	341	4	700	n.a.	731	0
owner purchaser	1111	0	1118	9	651	6	721	n.a.	1036	3
private renter	905	-2	820	-2	472	1	527	n.a.	714	-6
public renter	363	-44	614	-9	214	-7	385	n.a.	385	-24
all tenures	771	-11	1042	9	398	-1	591	n.a.	775	-3

a. Income growth data for sole parents not reported because of lack of comparability over time. See Appendix A for details

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

The results in the final row and final column for each age group are the same as those reported in the final row of Table 3.2 in chapter 3. The results in the final row for each age group are the same as those reported in the final rows for each age group in Table 3.4. Table 6.1 disaggregates these earlier results along the tenure lines identified in Chapter 4.

Before focusing on the outcomes for the major ownership and rental tenures, one clear outcome that can be observed from the results presented here is the impact of the increased targeting of public housing. As reported in chapter 3, at an Australia wide level, average household income declined by 3 per cent between 1986 and 1996. Over the same period, the average income for public tenants decreased by 24 per cent (this has an equivalent effect, of course, on the income of the state housing authorities). This disproportionate decline in household income occurred in every age group and for all couple, couple with children and single person households in public rental. It clearly reflects the increased incidence of lower income households in public housing over the period under review. For every age group, and for every household type, public renters are those with the lowest average household incomes. In many cases, their age and household type specific income is generally less than 60 per cent of that of other renting households who are similarly disadvantaged compared with home owners.

The results for the household incomes for owners and renters in the private sector provide an indication of the concern with income polarisation across tenures. The data in the final column for all households shows that, on average, household incomes are higher for purchasers than they are for outright owners or for private renters. Home purchasers have household incomes that, on average, are almost 50 per cent higher than household incomes for private renters and some 40 per cent higher than incomes for outright owners. Household incomes increased for owner purchasers between 1986 and 1996, were stable for outright owners and declined for renters, with the significant declines for households in public rental being noted above.

This pattern of change in household income is repeated for age specific outcomes. Average household income declined in every age group (although not, as discussed in chapter 4, for all household types). However, average household incomes for owners either increased or decreased by less for all age groups other than the over 65 year old households. These differences in the growth of household incomes are greater for younger households than they are for retirement aged households.

The breakdown of data by household type shows that these generalisations, with one exception to be discussed below, are not attributable to compositional changes in household structure within each age group. Table 6.1 also shows that, without exception, home purchasers have higher incomes than outright owners for every household type in every age group. This provides a further indication of the extent to which wealth as well as income is an important factor contributing to access to home ownership. As indicated in Chapter 4, one of the reasons why home ownership rates amongst younger households did not fall as dramatically as home purchase rates was the increased incidence of outright ownership. In many cases, these increases in outright ownership occurred amongst households in the youngest age groups and in metropolitan regions, as shown in Figure 4.2.

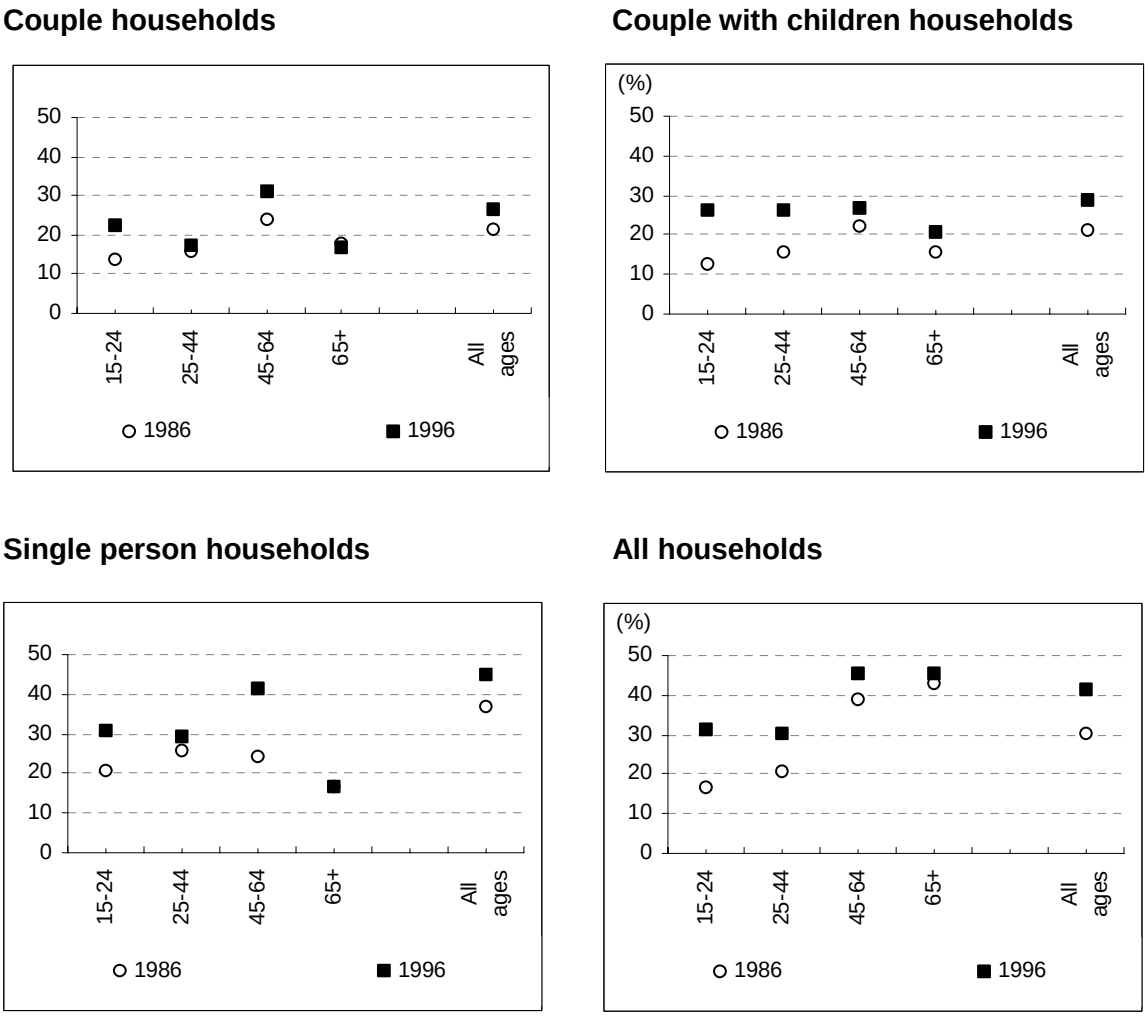
Without exception, household income for owner purchasers was considerably higher than for renters for every household type in each age group and that for outright owners was higher for all but couple only households in the 45-64 year old age group. This latter group was the one exception to the generalisation that household income for owners - both outright or purchasers - also grew faster than household income for renters (or, for older households, decreased less). The results presented in Table 6.1 show that the growth in household income for couple households with children in the two older age groups that was identified in Chapter 4 is attributable primarily to growth in the household income of outright owners and owner purchasers.

This suggests that higher incomes may arise from a higher incidence of independent adult children in the family home. If so, the results in Table 6.1 also suggest that this incidence is greater amongst home owners than it is amongst renting households. Such an outcome lends support for one of the benefits of home ownership that was articulated in the Positioning Paper underpinning this report. Independent adults in the family home have the ability both to contribute to the capacity of the household to meet its housing costs and to benefit from reduced housing costs. To the extent that home ownership encourages such an outcome, it provides these potential households with economic advantages not available to those unable, for whatever reason, to enter the housing market. A more detailed analysis of the changing household structure for older households, however, is required to test these suggestions.

Regardless of the changes that underpin this particular group of households, the outcomes presented in Table 6.1 provide a further indication of the conclusion signaled in the previous chapter. Home ownership is increasingly being associated with those on higher household incomes. They also indicate that the polarisation of household income that has taken place is reflected in an increasing gap in household incomes between those in home ownership and those in rental tenures.

Figure 6.1 provides a visual representation of key contributions to this conclusion. It shows the gap between the household income of home purchasers and that of renters for each age group for couples, couples with children, single persons and all households combined.

Figure 6.1: Income gap between purchaser and private renter households[a] by age and household type: Australia, 1986 and 1996



a. Expressed as a percentage of average household income for each age and household type
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Figure 6.1 shows that the gap between the (all household, all ages) average income of purchasers and the average income of renters in 1986, for example, was 30 per cent of average household income. By 1996, this gap had increased to 42 per cent. The results show that the gap between the incomes of purchasers and renters increased for all household types in all age groups except for singles and couples in the retirement age group. These results are illustrated only for Australia as a whole but are presented in Tables for the spatial disaggregation considered throughout this report.

Table 6.2 and Table 6.3 provide the equivalent outcomes for household income by age, household type and tenure for metropolitan and non-metropolitan regions to those presented in Table 6.1 for Australia as a whole. The increasing gap between household income of those in metropolitan regions compared with those in non-metropolitan regions was highlighted in Chapter 4 as was the extent to which this could be attributed to changing socio-demographic patterns. These results underpin those presented in Tables 6.2 and 6.3.

A comparison of the results in these two tables shows that, as with Table 6.1, the observed disparity between household incomes in metropolitan and non-metropolitan regions can be attributed to a greater growth (or lesser decline) of the household incomes of home owners than of renters. The last set of rows in each table show that, on average, the household income of home owners grew more rapidly than did that of renters. They also show that, not only did the income gap between owners and renters increase, but also the gap between owners in metropolitan regions and in non-metropolitan regions and between renters in metropolitan regions and in non-metropolitan regions increased.

The age specific totals in the final columns of each table indicate that this increasing spatial dispersion was most pronounced for private renters (other than those in the youngest age group). In the 25-44 year old age group, for example, the household income of households in the private rental sector in non-metropolitan regions fell by 14 per cent to an average of $656 per week. The incomes of private renter households in this age group in metropolitan regions, on the other hand, fell by only 4 per cent (to $816 per week). Similar examples can be seen in all other age groups and, with the same single exception as discussed above, across all household types.

Table 6.2: Household income in 1996 and change from 1986 by age, household type and tenure: metropolitan regions

	couple		couple with children		single person		sole parents[a]		all households	
	income	growth	income	growth	income	growth	income	growth	income	growth
	$ pw	%	$ pw	%	$ pw	%	$ pw	%	$ pw	%
15-24 year old households										
outright owner	964	-3	764	6	403	3	527	11	629	-8
owner purchaser	1096	2	800	7	536	-1	587	14	907	-2
private renter	899	-6	630	-6	417	-6	448	-3	712	-11
public renter	501	-34	488	-9	252	-23	332	10	379	-18
all tenures	944	-3	663	-2	408	-7	427	3	699	-11
25-44 year old households										
outright owner	1224	3	1067	8	635	0	591	3	999	4
owner purchaser	1314	1	1115	8	754	0	659	5	1088	4
private renter	1109	0	841	-4	584	0	520	-1	816	-4
public renter	515	-39	577	-12	254	-23	356	-2	425	-22
all tenures	1210	1	1025	4	612	-3	525	0	937	-1
45-64 year old households										
outright owner	811	-19	1258	9	453	5	850	n.a.	978	3
owner purchaser	1080	-6	1344	7	660	15	918	n.a.	1165	3
private renter	832	-9	1017	1	481	3	761	n.a.	753	0
public renter	387	-48	714	-9	223	-9	497	n.a.	424	-28
all tenures	855	-16	1246	6	459	4	802	n.a.	956	0
65+ year old households										
outright owner	480	-16	969	14	274	1	719	n.a.	466	-2
owner purchaser	501	-20	1003	11	276	0	818	n.a.	588	1
private renter	408	-20	814	-1	236	1	656	n.a.	391	6
public renter	278	-36	625	-3	189	-5	507	n.a.	253	-19
all tenures	465	-17	944	13	257	-1	699	n.a.	433	-5
all households										
outright owner	683	-18	1166	10	368	6	753	n.a.	796	1
owner purchaser	1191	2	1178	10	687	7	767	n.a.	1093	4
private renter	978	0	864	-1	505	4	571	n.a.	766	-3
public renter	351	-45	616	-8	212	-6	397	n.a.	376	-25
all tenures	843	-10	1102	8	426	1	636	n.a.	831	-3

a. Income growth data for sole parents not reported because of lack of comparability over time. See Appendix A for details

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table 6.3: Household income in 1996 and change from 1986 by age, household type and tenure: non-metropolitan regions

	couple		couple with children		single person		sole parents[a]		all households	
	income	growth	income	growth	income	growth	income	growth	income	growth
	$ pw	%	$ pw	%	$ pw	%	$ pw	%	$ pw	%
15-24 year old households										
outright owner	815	6	598	1	365	1	460	0	572	0
owner purchaser	968	3	728	9	519	5	507	3	828	3
private renter	763	-7	574	-3	388	-9	389	0	598	0
public renter	553	-29	479	-12	277	-29	323	10	399	10
all tenures	822	-2	599	-1	398	-5	378	2	612	2
25-44 year old households										
outright owner	916	-1	912	12	478	-2	503	0	828	4
owner purchaser	1096	0	959	8	635	-2	560	2	928	3
private renter	895	-6	742	-7	479	-12	440	1	656	-14
public renter	599	-34	601	-11	279	-35	345	-1	461	-20
all tenures	994	0	894	7	509	-7	454	0	797	-2
45-64 year old households										
outright owner	661	-17	1070	12	353	0	664	n.a.	749	-3
owner purchaser	875	-7	1150	8	539	15	754	n.a.	960	2
private renter	638	-20	864	-4	379	-5	587	n.a.	591	-15
public renter	388	-47	695	-8	222	-8	440	n.a.	426	-28
all tenures	699	-14	1065	10	372	1	636	n.a.	757	-2
65+ year old households										
outright owner	419	-15	796	22	241	-1	590	n.a.	385	-8
owner purchaser	424	-19	835	14	252	-2	702	n.a.	461	-6
private renter	382	-21	644	8	214	-3	529	n.a.	313	-14
public renter	279	-33	598	-2	185	-5	483	n.a.	252	-16
all tenures	411	-16	781	20	231	-2	579	n.a.	365	-10
all households										
outright owner	563	-18	978	14	299	1	595	n.a.	627	-4
owner purchaser	955	-1	1000	10	565	6	622	n.a.	920	4
private renter	750	-9	743	-6	405	-6	457	n.a.	611	-13
public renter	383	-43	612	-9	217	-10	367	n.a.	402	-24
all tenures	665	-12	936	9	351	-2	510	n.a.	680	-4

a. Income growth data for sole parents not reported because of lack of comparability over time. See Appendix A for details

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

The same observation can be drawn for this spatial analysis at a metropolitan and non-metropolitan level of disaggregation as for Australia as a whole. Home ownership is increasingly being associated with those on higher household incomes.

The polarisation of household income that has taken place is reflected in an increasing gap in household incomes between those in home ownership and those in rental tenures. It is also reflected in an increasing gap within each tenure across the spatial divide and an increasing gap between tenures. The economic advantage enjoyed by home owners in metropolitan regions, as reflected in their household incomes, is both increasing relative to their counterparts in rental housing in metropolitan regions and to their fellow home owners in non-metropolitan regions.

The following sections examine the equivalent outcomes at the sub-regional level of disaggregation for Sydney and Melbourne and for non-metropolitan NSW.

6.2 Outcomes within Sydney and Melbourne

Table 6.4 provides these data for the whole of Sydney and Tables 6.5 to 6.7 do so for the inner, middle and outer zones in Sydney. Tables 6.8 to 6.11 provide the equivalent data for Melbourne.

As indicated in chapter 2, the Sydney metropolitan region was one of only two broad regions in Australia that experienced an increase in average household income between 1986 and 1996.

At an aggregate level within Sydney, one of the outcomes, or explanations, of this positive growth in average household income has been slightly less disparity in incomes across private sector tenures compared with the outcomes described in the previous section. Average household income for home purchasers in Sydney as a whole is some 40 per cent higher than the average income of both outright owners and of private renters (compared with 45 per cent for Australia as whole). The gap between household income of those in the public sector and those in the private sector, however, is greater. In 1996 in Sydney, the household income of public renters was just 33 per cent of that of that of home purchasers (and less than 45 per cent of average household income in Sydney). As for Australia as a whole, much of this arises from different age and household composition in the different tenures.

Table 6.4: Household income in 1996 and change from 1986 by age, household type and tenure: Sydney

	couple		couple with children		single person		sole parents[a]		all households	
	income	growth	income	growth	income	growth	income	growth	income	growth
	$ pw	%	$ pw	%	$ pw	%	$ pw	%	$ pw	%
15-24 year old households										
outright owner	1073	7	848	11	424	5	536	-3	703	-3
owner purchaser	1224	9	879	7	574	3	622	15	1001	4
private renter	990	-1	680	0	469	1	475	2	811	-2
public renter	623	-18	516	-9	260	-19	337	13	401	-12
all tenures	1030	2	713	1	443	-2	441	4	778	-4
25-44 year old households										
outright owner	1296	7	1112	10	694	7	635	8	1058	8
owner purchaser	1421	5	1200	11	847	8	730	13	1189	8
private renter	1182	3	878	0	650	8	564	4	898	2
public renter	512	-44	579	-13	249	-13	356	0	422	-22
all tenures	1278	4	1069	6	664	3	549	3	998	3
45-64 year old households										
outright owner	867	-17	1305	10	488	9	906	n.a.	1043	6
owner purchaser	1194	-1	1403	9	741	23	1006	n.a.	1254	7
private renter	911	-5	1046	4	538	10	839	n.a.	832	6
public renter	370	-54	733	-12	226	-6	501	n.a.	440	-31
all tenures	910	-14	1284	8	494	8	855	n.a.	1012	4
65+ year old households										
Outright owner	512	-14	1056	14	290	3	769	n.a.	507	2
Owner purchaser	539	-20	1076	14	301	4	869	n.a.	670	7
Private renter	441	-21	883	3	260	8	698	n.a.	458	11
Public renter	259	-43	643	-3	189	-5	508	n.a.	259	-19
All tenures	494	-16	1023	14	271	1	741	n.a.	471	-2
all households										
Outright owner	726	-17	1217	12	390	9	805	n.a.	851	6
Owner purchaser	1305	7	1260	13	768	14	853	n.a.	1191	9
Private renter	1070	4	906	3	571	13	630	n.a.	854	4
Public renter	332	-51	634	-9	212	-3	402	n.a.	383	-25
All tenures	902	-7	1149	10	454	4	680	n.a.	886	1

a. Income growth data for sole parents not reported because of lack of comparability over time. See Appendix A for details

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table 6.5: Household income in 1996 and change from 1986 by age, household type and tenure: Sydney inner zone

	couple		couple with children		single person		sole parents[a]		all households	
	income	growth	income	growth	income	growth	income	growth	income	growth
	$ pw	%	$ pw	%	$ pw	%	$ pw	%	$ pw	%
15-24 year old households										
outright owner	1101	5	977	11	401	0	518	5	621	-10
owner purchaser	1414	19	954	-1	562	0	627	11	953	-3
private renter	1079	4	765	2	470	3	559	11	877	2
public renter	609	-6	342	-31	280	-12	341	24	409	-3
all tenures	1088	8	772	3	441	-1	476	8	816	-1
25-44 year old households										
outright owner	1394	10	1241	17	797	14	707	14	1145	14
owner purchaser	1546	7	1370	14	953	13	819	8	1319	11
private renter	1275	7	975	6	704	15	652	11	1007	10
public renter	547	-36	612	-7	254	-12	347	1	385	-22
all tenures	1356	9	1165	10	730	11	606	3	1067	8
45-64 year old households										
outright owner	1014	-8	1321	13	587	11	929	n.a.	1059	7
owner purchaser	1403	11	1461	11	853	19	1049	n.a.	1283	10
private renter	1050	8	1103	7	586	17	865	n.a.	852	11
public renter	348	-52	753	-7	227	-12	496	n.a.	387	-26
all tenures	1054	-3	1300	10	566	11	869	n.a.	991	6
65+ year old households										
outright owner	616	-9	1100	10	342	7	814	n.a.	567	5
owner purchaser	618	-13	1199	28	395	23	1016	n.a.	742	14
private renter	492	-20	960	10	279	10	737	n.a.	463	11
public renter	256	-41	639	42	189	-6	478	n.a.	239	-20
all tenures	583	-11	1075	14	305	4	777	n.a.	508	1
all households										
outright owner	859	-6	1269	13	472	14	848	n.a.	875	9
owner purchaser	1480	13	1400	14	889	17	945	n.a.	1286	12
private renter	1192	11	1003	8	622	19	724	n.a.	938	11
public renter	316	-47	674	-3	213	-6	406	n.a.	333	-22
all tenures	1063	5	1215	12	534	10	738	n.a.	914	6

a. Income growth data for sole parents not reported because of lack of comparability over time. See Appendix A for details
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table 6.6: Household income in 1996 and change from 1986 by age, household type and tenure: Sydney middle zone

	couple		couple with children		single person		sole parents[a]		all households	
	income	growth	income	growth	income	growth	income	growth	income	growth
	$ pw	%	$ pw	%	$ pw	%	$ pw	%	$ pw	%
15-24 year old households										
outright owner	1104	6	861	10	442	8	536	-3	723	-5
owner purchaser	1244	7	890	8	609	9	586	3	1024	4
private renter	990	-2	687	0	491	1	491	-2	821	-4
public renter	565	-17	532	-7	251	-17	327	12	388	-13
all tenures	1040	0	711	0	463	-2	445	2	786	-6
25-44 year old households										
outright owner	1301	5	1128	10	657	4	644	6	1076	7
owner purchaser	1432	4	1238	10	820	7	769	17	1223	8
private renter	1127	-1	882	-1	615	3	586	7	876	-1
public renter	495	-44	574	-16	243	-15	363	-2	423	-24
all tenures	1272	1	1094	5	634	-2	568	4	1018	0
45-64 year old households										
outright owner	905	-17	1334	9	480	12	939	n.a.	1101	6
owner purchaser	1234	0	1430	8	726	30	1050	n.a.	1302	8
private renter	910	-8	1057	2	537	10	882	n.a.	874	4
public renter	392	-52	750	-13	223	-3	514	n.a.	456	-31
all tenures	939	-16	1315	6	484	9	901	n.a.	1074	3
65+ year old households										
outright owner	519	-14	1082	13	284	5	787	n.a.	524	3
owner purchaser	557	-19	1065	11	283	0	834	n.a.	659	3
private renter	450	-18	901	7	265	14	731	n.a.	497	19
public renter	259	-43	659	-2	189	-4	546	n.a.	268	-18
all tenures	503	-16	1048	13	268	3	760	n.a.	488	-1
all households										
outright owner	738	-19	1246	11	374	10	831	n.a.	890	5
owner purchaser	1317	6	1299	12	734	17	899	n.a.	1227	9
private renter	1032	0	915	2	553	11	661	n.a.	854	1
public renter	332	-51	639	-11	210	-2	411	n.a.	387	-26
all tenures	887	-12	1184	8	424	3	718	n.a.	916	-1

a. Income growth data for sole parents not reported because of lack of comparability over time. See Appendix A for details

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table 6.7: Household income in 1996 and change from 1986 by age, household type and tenure: Sydney outer zone

	couple		couple with children		single person		sole parents[a]		all households	
	income	growth	income	growth	income	growth	income	growth	income	growth
	$ pw	%	$ pw	%	$ pw	%	$ pw	%	$ pw	%
15-24 year old households										
outright owner	1012	12	801	16	428	10	550	-10	779	10
owner purchaser	1172	10	866	9	536	-4	646	29	996	7
private renter	856	-4	654	4	431	-3	444	7	677	-4
public renter	670	-26	527	-8	248	-29	346	10	410	-13
all tenures	962	1	703	3	417	-5	428	7	714	-3
25-44 year old households										
outright owner	1134	2	1010	9	564	6	575	11	954	6
owner purchaser	1284	6	1104	13	716	4	667	17	1081	9
private renter	967	-2	773	-1	514	-4	480	4	708	-5
public renter	510	-47	577	-11	253	-12	354	0	439	-19
all tenures	1150	1	990	8	553	-3	499	8	900	2
45-64 year old households										
outright owner	710	-18	1218	15	369	9	805	n.a.	909	9
owner purchaser	1045	-4	1329	14	612	25	910	n.a.	1164	10
private renter	693	-15	946	6	410	-2	717	n.a.	717	0
public renter	359	-57	705	-13	228	-2	490	n.a.	466	-33
all tenures	769	-16	1204	13	394	8	758	n.a.	915	6
65+ year old households										
outright owner	407	-16	915	30	233	-1	663	n.a.	403	-3
owner purchaser	456	-21	1026	12	252	1	844	n.a.	643	16
private renter	375	-22	776	-9	217	1	590	n.a.	399	3
public renter	261	-45	622	-13	188	-4	470	n.a.	274	-20
all tenures	400	-18	890	17	228	-1	657	n.a.	394	-4
all households										
outright owner	595	-17	1111	14	306	5	702	n.a.	747	6
owner purchaser	1161	4	1159	17	643	12	761	n.a.	1092	10
private renter	829	-4	795	2	441	0	519	n.a.	688	-3
public renter	345	-55	617	-8	216	0	390	n.a.	418	-25
all tenures	762	-12	1052	13	367	1	585	n.a.	806	1

a. Income growth data for sole parents not reported because of lack of comparability over time. See Appendix A for details.
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

The smaller discrepancy in the household incomes of those in the different private sector tenures in Sydney in 1996 can partly be attributed to a more even pattern of income growth across these tenures within Sydney. Against an Australia wide decline in household income of 3 per cent and a Sydney wide increase of 1 per cent, the average income of purchasers in Australia increased by 3 per cent between 1986 and 1996 and, for those in Sydney, by 9 per cent. For Australia as a whole, average income of outright owners was stable and for private renters declined by 6 per cent. Within Sydney, average income for outright owners increased by 6 per cent and for private renters by 4 per cent. Household income of public renters decreased by 25 per cent, which is the same order of magnitude as for Australia as a whole.

The age specific results for Sydney give some indication of the source of what, based on outcomes elsewhere in Australia, is an atypically positive increase in the household income of private renters. It arises largely because of the increase in the incomes of older households who are private renters and particularly because of the increase in the incomes of retirement aged renters.[18]

Although the gap between the average household incomes of owners and private renters for Sydney as a whole was less than elsewhere, it still increased between 1986 and 1996. Thus there is still evidence of tenure polarisation as discussed above. This tendency is more pronounced amongst younger households who, it was argued in the previous chapter, are more likely to bear the brunt of socio-economic changes that affect household incomes and interact with housing markets.

The information provided in Tables 6.5 to 6.7 on the spatial outcomes of these changes provides further insights. Any tendency towards tenure polarisation is considerably less obvious within the high cost inner zone than elsewhere. In inner Sydney, the household incomes of private renters, although still lower than those of home purchasers, increased by as much as the latter. For all but the 25-44 year old age group, their incomes increased by more than household incomes for outright owners.

This suggests that spatial polarisation of income within Sydney as a whole, as discussed in Chapter 3, is a more likely outcome and greater concern than is tenure polarisation within the high cost Sydney inner zone. Increasingly, only high income households, whether they own or they rent, can afford the high cost of housing in the inner zone. The outcomes for the middle and outer zones, however, suggest that an apparent lack of tenure polarisation is limited to the inner zone in Sydney.

In the middle and outer zones of Sydney, however, the basis for concerns with tenure polarisation again become apparent. Average household incomes are lower than in the inner zone and have increased less. These results contributed to the discussion of spatial polarisation in chapter 3.

Within the middle and outer zones of Sydney, the same pattern of tenure polarisation discussed in the previous section can be seen. Household incomes of owners are both higher and increased by more than household incomes of renters. For younger households, renter incomes actually declined in both middle and outer zones, in marked contrast with the significant increase in the income of purchasers. The patterns of change for each household type, however, suggest that much of these age specific declines in the middle zone arise from the compositional changes discussed in chapter 2.

The net outcome of these results along with those for Melbourne is illustrated in Figure 6.2. This will be presented and discussed after the results for Melbourne, presented in Table 6.8 for the whole of Melbourne and in Tables 6.9 to 6.11 for the inner, middle and outer zones, are considered. Unlike the data for Sydney, the data for Melbourne in Table 6.8 show a similar pattern to that for Australia as a whole. Except for households

[18] As in the previous section, although presented, the results for households in the 15-24 year old age group are generally not commented upon for a number of reasons. There are relatively small numbers involved, their age renders their household structures unstable and those who are owners or purchasers are likely to have had family support.

in the 65 years old and over age group, the household incomes of owners either increased by more or decreased by less than did the incomes of renters. Again, this pattern is more marked with the 25-44 year old age group than for the older age groups, highlighting the greater impact on this age group of the social and economic trends discussed in the Positioning Paper. This result generally holds for each household type within each age group as well as for the age groups as a whole.

Tables 6.9 to 6.11 reinforce the observations made for Sydney about the extent of spatial polarisation although this is not as marked in Melbourne as in Sydney. Yates (2001) discusses some of the reasons for this in terms of different planning policies in each city but consideration of these is outside the scope of this paper.

Table 6.8: Household income in 1996 and change from 1986 by age, household type and tenure: Melbourne

	couple		couple with children		single person		sole parents[a]		all households	
	income	growth	income	growth	income	growth	income	growth	income	growth
	$ pw	%	$ pw	%	$ pw	%	$ pw	%	$ pw	%
15-24 year old households										
outright owner	942	-8	671	-10	405	0	480	14	606	-13
owner purchaser	1093	0	785	2	523	-5	563	-1	906	-5
private renter	903	-8	608	-14	424	-7	421	-13	709	-14
public renter	416	-48	485	-19	253	-28	349	15	375	-23
all tenures	946	-6	652	-10	414	-8	423	-4	699	-14
25-44 year old households										
outright owner	1208	1	1037	6	624	-4	566	-1	974	2
owner purchaser	1312	0	1092	5	748	-1	638	1	1070	1
private renter	1091	-3	800	-9	580	-3	497	-5	788	-8
public renter	506	-40	542	-17	262	-12	360	0	427	-21
all tenures	1207	-1	1008	2	620	-3	522	-4	931	-4
45-64 year old households										
outright owner	777	-23	1231	7	433	0	838	n.a.	967	0
owner purchaser	1060	-8	1320	4	649	14	904	n.a.	1148	1
private renter	801	-13	983	-3	461	-2	732	n.a.	718	-4
public renter	338	-53	691	-6	211	-3	506	n.a.	430	-21
all tenures	825	-20	1224	4	453	1	800	n.a.	953	-2
65+ year old households										
outright owner	465	-20	944	10	272	-2	708	n.a.	459	-4
owner purchaser	475	-22	1000	6	261	-3	775	n.a.	563	-1
private renter	401	-20	789	-3	233	-2	637	n.a.	385	3
public renter	262	-41	636	-14	187	-5	535	n.a.	257	-15
all tenures	454	-21	925	7	257	-3	691	n.a.	434	-6
all households										
outright owner	663	-22	1138	8	362	3	740	n.a.	787	-2
owner purchaser	1192	1	1156	7	680	6	749	n.a.	1074	2
private renter	964	-3	831	-6	500	1	552	n.a.	740	-7
public renter	320	-47	594	-12	205	-3	410	n.a.	375	-20
all tenures	902	-7	1149	10	454	4	680	n.a.	886	1

a. Income growth data for sole parents not reported because of lack of comparability over time. See Appendix A for details

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table 6.9: Household income in 1996 and change from 1986 by age, household type and tenure: Melbourne inner zone

	couple		couple with children		single person		sole parents[a]		all households	
	income	growth	income	growth	income	growth	income	growth	income	growth
	$ pw	%	$ pw	%	$ pw	%	$ pw	%	$ pw	%
15-24 year old households										
outright owner	991	-7	715	-12	379	-4	436	14	527	-18
owner purchaser	1251	3	997	25	540	-12	648	6	908	-7
private renter	969	-5	628	-12	441	-5	437	-17	753	-10
public renter	356	-57	411	-29	253	-18	343	3	349	-30
all tenures	985	-3	667	-6	420	-8	411	-11	715	-11
25-44 year old households										
outright owner	1342	5	1221	9	699	1	592	-5	1082	5
owner purchaser	1468	2	1286	8	849	3	726	-1	1225	4
private renter	1207	2	942	1	634	2	558	1	901	1
public renter	485	-43	497	-23	261	-13	343	2	406	-24
all tenures	1309	5	1157	6	673	2	547	-4	1008	1
45-64 year old households										
outright owner	986	-8	1312	9	531	6	886	n.a.	1030	5
owner purchaser	1288	8	1423	6	773	15	942	n.a.	1232	7
private renter	955	0	1089	0	512	5	753	n.a.	757	4
public renter	336	-52	698	0	212	-4	502	n.a.	405	-19
all tenures	1022	-4	1299	6	525	6	818	n.a.	980	4
65+ year old households										
outright owner	597	-11	1012	7	328	3	762	n.a.	520	-1
owner purchaser	602	-9	1138	8	322	9	751	n.a.	602	3
private renter	466	-15	812	9	250	-1	647	n.a.	377	1
public renter	268	-41	608	-21	189	-3	505	n.a.	249	-17
all tenures	574	-11	989	7	298	1	718	n.a.	474	-3
all households										
outright owner	807	-9	1250	8	427	8	792	n.a.	817	4
owner purchaser	1370	10	1331	9	789	10	834	n.a.	1201	6
private renter	1096	5	973	2	548	7	622	n.a.	820	1
public renter	331	-46	569	-14	207	-3	408	n.a.	349	-23
all tenures	979	0	1206	7	489	4	685	n.a.	858	1

a. Income growth data for sole parents not reported because of lack of comparability over time. See Appendix A for details

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table 6.10: Household income in 1996 and change from 1986 by age, household type and tenure: Melbourne middle zone

	couple		couple with children		single person		sole parents[a]		all households	
	income	growth	income	growth	income	growth	income	growth	income	growth
	$ pw	%	$ pw	%	$ pw	%	$ pw	%	$ pw	%
15-24 year old households										
outright owner	914	-10	670	-13	424	2	546	28	632	-12
owner purchaser	1100	0	768	1	509	-2	581	1	921	-3
private renter	892	-8	608	-16	414	-8	424	-9	695	-15
public renter	441	-41	482	-18	224	-44	339	15	372	-19
all tenures	934	-7	632	-13	409	-8	422	-1	688	-15
25-44 year old households										
outright owner	1195	1	1015	6	600	-3	576	2	959	1
owner purchaser	1321	1	1101	6	736	0	651	4	1077	2
private renter	1006	-8	758	-12	535	-6	492	-5	736	-12
public renter	531	-28	544	-17	265	-9	361	-2	429	-19
all tenures	1185	-2	988	0	593	-5	523	-4	912	-5
45-64 year old households										
outright owner	736	-28	1217	7	397	0	838	n.a.	965	-2
owner purchaser	1045	-9	1315	3	621	19	916	n.a.	1148	1
private renter	736	-20	926	-5	431	-5	738	n.a.	699	-9
public renter	326	-55	687	-9	206	-3	519	n.a.	434	-23
all tenures	777	-25	1207	3	418	1	808	n.a.	947	-4
65+ year old households										
outright owner	417	-23	938	9	242	-1	699	n.a.	442	-3
owner purchaser	452	-24	999	11	236	-7	791	n.a.	564	1
private renter	368	-23	782	-10	216	-1	639	n.a.	409	8
public renter	258	-41	646	-10	186	-6	569	n.a.	268	-12
all tenures	410	-24	922	8	233	-2	687	n.a.	424	-5
all households										
outright owner	618	-28	1124	8	331	3	742	n.a.	780	-4
owner purchaser	1193	2	1166	7	659	9	770	n.a.	1077	2
private renter	897	-8	787	-8	467	-2	551	n.a.	706	-11
public renter	316	-46	599	-11	203	-4	419	n.a.	379	-19
all tenures	777	-18	1075	4	397	-1	652	n.a.	811	-7

a. Income growth data for sole parents not reported because of lack of comparability over time. See Appendix A for details

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table 6.11: Household income in 1996 and change from 1986 by age, household type and tenure: Melbourne outer zone

	couple		couple with children		single person		sole parents[a]		all households	
	income	growth	income	growth	income	growth	income	growth	income	growth
	$ pw	%	$ pw	%	$ pw	%	$ pw	%	$ pw	%
15-24 year old households										
outright owner	965	-3	659	0	400	3	402	-13	648	-10
owner purchaser	1060	-1	779	1	528	-1	532	-1	893	-5
private renter	822	-12	601	-11	397	-11	414	-14	636	-17
public renter	516	-52	553	-17	372	100	378	38	430	-22
all tenures	932	-7	667	-8	416	-8	428	-4	694	-16
25-44 year old households										
outright owner	1096	-5	977	4	553	-9	534	2	922	-1
owner purchaser	1196	-3	1020	4	651	-5	603	5	992	0
private renter	940	-10	753	-11	496	-14	463	-2	665	-17
public renter	471	-54	574	-14	249	-27	372	0	447	-21
all tenures	1125	-5	965	1	564	-10	509	-1	893	-5
45-64 year old households										
outright owner	708	-23	1202	8	370	0	786	n.a.	920	1
owner purchaser	960	-15	1272	5	555	10	861	n.a.	1100	-1
private renter	670	-22	963	-3	387	-9	685	n.a.	685	-10
public renter	365	-52	692	-12	226	2	481	n.a.	466	-24
all tenures	766	-22	1204	5	404	0	766	n.a.	940	-2
65+ year old households										
outright owner	422	-19	868	20	248	-2	648	n.a.	413	-7
owner purchaser	411	-29	914	-2	244	-7	761	n.a.	528	-5
private renter	362	-20	771	4	222	1	606	n.a.	346	-2
public renter	259	-40	641	-15	183	-5	472	n.a.	243	-20
all tenures	414	-20	854	8	239	-4	657	n.a.	398	-9
all households										
outright owner	620	-22	1088	9	327	2	680	n.a.	773	-1
owner purchaser	1085	-5	1080	7	594	1	689	n.a.	1008	0
private renter	798	-12	778	-8	423	-7	497	n.a.	647	-14
public renter	311	-54	606	-12	207	1	396	n.a.	408	-22
all tenures	785	-16	1039	6	393	-3	596	n.a.	827	-6

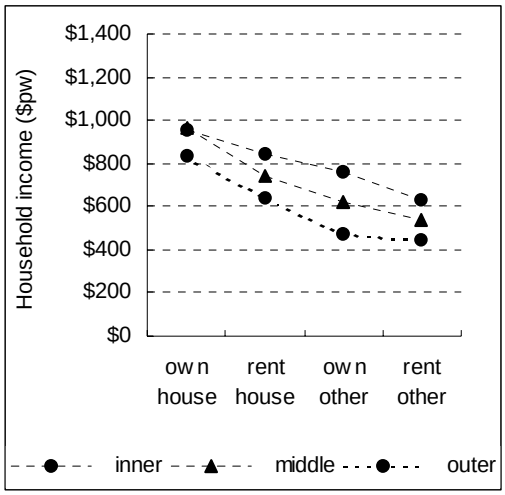
a. Income growth data for sole parents not reported because of lack of comparability over time. See Appendix A for details

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

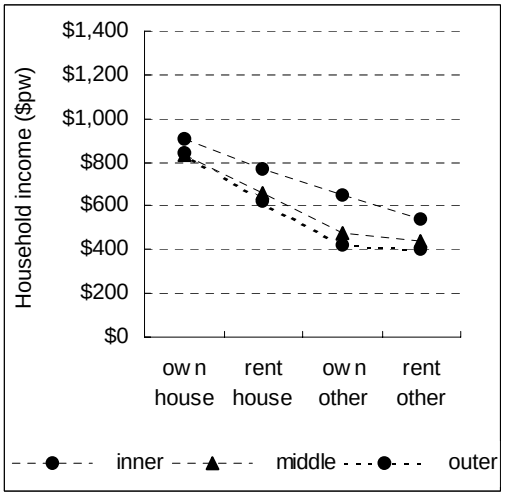
Figure 6.2, taken from Yates (2001) and therefore containing additional information about dwelling structure not covered in this paper, provides an overview of the extent of spatial and tenure polarisation within Sydney and Melbourne. It illustrates the strong spatial polarisation of income that has occurred with the income of households in inner zones exceeding those of households in the middle zones. These, in turn, exceed household incomes of those in the outer zones.

Figure 6.2: Household income by zone, dwelling type and tenure, 1996: Sydney and Melbourne

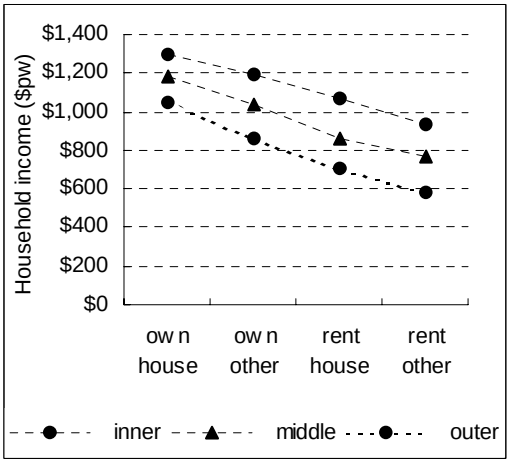
Sydney: all households



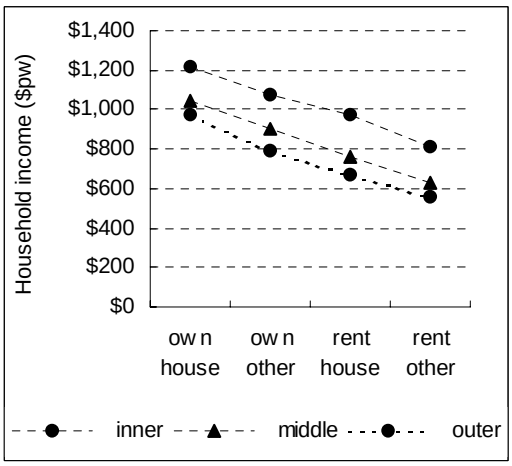
Melbourne, all households



Sydney: 25-44 year old households



Melbourne, 25-44 year old households



Source: Yates (2001).

This spatial polarisation is not as strong for all households as it is for young households. Outcomes for the former are affected by past incomes as well as reflecting current incomes and the housing outcomes for older households in particular can reflect opportunities as they were up to 5 decades earlier. The greater spatial polarisation of household income for the latter in Sydney can also be seen in Figure 6.2, particularly in relation to the middle - outer zones. Incomes of households in the inner zones of both cities are clearly higher than elsewhere.

Figure 6.2, which shows income on the vertical axis and, tenure (and dwelling type), on the horizontal axis also illustrates the extent of tenure polarisation within each zone and the greater impact of this for younger households than for all households. For 25-44 year old households, incomes are higher for owners than they are for renters in every zone. For all households, this is apparent only once dwelling types are taken into account.

6.3 Outcomes for non-metropolitan regions in NSW

The final set of results showing household income by tenure for non-metropolitan regions in NSW are presented in Tables 6.12 to 6.15.

Again, with the exception of households in the retirement age group, the same pattern of tenure polarisation can be seen. The incomes of home owners are higher than the incomes of renters. They have also increased by more. This is particularly so for home purchasers compared with renters in the pre-retirement age groups. In all other age groups the incomes of owner households either rose faster or declined by a lesser amount than the incomes of renter households.

Table 6.12: Household income in 1996 and change from 1986 by age, household type and tenure: Hunter region

	couple		couple with children		single person		sole parents[a]		all households	
	income	growth	income	growth	income	growth	income	growth	income	growth
	$ pw	%	$ pw	%	$ pw	%	$ pw	%	$ pw	%
15-24 year old households										
outright owner	930	2	673	-11	385	1	457	15	630	-4
owner purchaser	1060	0	847	10	536	-12	597	32	914	1
private renter	756	-12	562	-7	384	-14	389	2	584	-15
public renter	333	-50	451	-20	219	-18	304	20	336	-20
all tenures	848	-7	609	-8	377	-15	376	5	605	-14
25-44 year old households										
outright owner	1024	-6	1027	9	549	-1	527	0	924	2
owner purchaser	1208	1	1086	8	714	-2	605	-1	1039	3
private renter	917	-5	767	-3	504	-10	451	1	676	-9
public renter	487	-37	557	-16	230	-23	329	-4	402	-25
all tenures	1067	-2	986	5	536	-9	466	-1	858	-3
45-64 year old households										
outright owner	671	-22	1172	10	356	0	704	n.a.	809	-1
owner purchaser	997	-4	1288	10	615	24	846	n.a.	1094	7
private renter	684	-14	942	7	409	-1	640	n.a.	632	-4
public renter	345	-54	694	-9	211	-10	442	n.a.	386	-34
all tenures	719	-18	1173	10	377	1	684	n.a.	820	0
65+ year old households										
outright owner	393	-18	815	25	228	0	613	n.a.	371	-7
owner purchaser	447	-13	842	-9	260	9	958	n.a.	495	0
private renter	383	-21	650	-24	223	2	551	n.a.	321	-13
public renter	264	-38	613	22	185	-5	502	n.a.	246	-18
all tenures	388	-18	803	16	222	-1	608	n.a.	355	-9
all households										
outright owner	545	-24	1084	10	291	2	628	n.a.	647	-5
owner purchaser	1070	0	1131	11	637	6	694	n.a.	1038	5
private renter	778	-9	771	-1	429	-6	472	n.a.	630	-9
public renter	327	-50	585	-13	202	-7	360	n.a.	358	-28
all tenures	661	-18	1032	9	344	-3	538	n.a.	711	-6

a. Income growth data for sole parents not reported because of lack of comparability over time. See Appendix A for details
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table 6.13: Household income in 1996 and change from 1986 by age, household type and tenure: Illawarra region

	couple		couple with children		single person		sole parents[a]		all households	
	income	growth	income	growth	income	growth	income	growth	income	growth
	$ pw	%	$ pw	%	$ pw	%	$ pw	%	$ pw	%
15-24 year old households										
outright owner	943	1	606	-25	364	-12	591	52	637	1
owner purchaser	1073	3	778	7	596	12	537	-19	934	6
private renter	818	-1	578	-3	382	-9	359	-8	595	-9
public renter	1006	34	464	-16	236	-5	350	26	384	-7
all tenures	896	1	601	-4	373	-10	377	6	619	-6
25-44 year old households										
outright owner	1058	1	1011	13	539	-5	538	6	930	6
owner purchaser	1251	4	1073	12	725	1	617	8	1045	7
private renter	964	0	763	1	506	-9	446	-2	677	-7
public renter	558	-36	566	-11	243	-16	336	-7	419	-24
all tenures	1105	3	969	9	529	-8	458	1	853	0
45-64 year old households										
outright owner	641	-23	1163	12	364	2	747	n.a.	819	0
owner purchaser	984	-5	1277	12	589	16	857	n.a.	1088	6
private renter	716	-5	923	2	425	-3	615	n.a.	632	-2
public renter	387	-51	767	-7	216	-10	422	n.a.	430	-34
all tenures	683	-20	1156	11	380	1	692	n.a.	814	-1
65+ year old households										
outright owner	400	-17	828	24	237	-1	628	n.a.	388	-6
owner purchaser	454	-12	879	-4	251	5	867	n.a.	527	8
private renter	384	-15	678	10	209	-7	618	n.a.	314	-8
public renter	276	-35	648	-19	179	-8	461	n.a.	251	-23
all tenures	392	-17	810	14	225	-3	616	n.a.	366	-8
all households										
outright owner	538	-24	1076	14	301	0	657	n.a.	670	-4
owner purchaser	1096	3	1116	14	638	8	705	n.a.	1040	8
private renter	819	0	768	3	428	-5	461	n.a.	630	-6
public renter	354	-49	625	-6	204	-7	361	n.a.	381	-29
all tenures	653	-18	1019	12	348	-5	535	n.a.	714	-4

a. Income growth data for sole parents not reported because of lack of comparability over time. See Appendix A for details

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table 6.14: Household income in 1996 and change from 1986 by age, household type and tenure: Mid North Coast region

	couple		couple with children		single person		sole parents[a]		all households	
	income	growth	income	growth	income	growth	income	growth	income	growth
	$ pw	%	$ pw	%	$ pw	%	$ pw	%	$ pw	%
15-24 year old households										
outright owner	677	-6	569	22	278	-6	445	41	501	3
owner purchaser	892	-2	616	-8	427	-2	483	51	718	-6
private renter	641	-9	519	5	344	-12	319	-10	499	-12
public renter	365	-63	435	-15	176	-28	384	21	391	-9
all tenures	667	-10	525	0	330	-6	349	2	504	-9
25-44 year old households										
outright owner	783	-3	795	8	371	-3	441	5	706	1
owner purchaser	960	-1	869	5	574	-3	514	1	829	0
private renter	745	-3	661	2	419	-10	403	5	566	-9
public renter	304	-65	524	-11	230	-21	342	3	408	-20
all tenures	830	-2	784	4	412	-8	417	4	677	-4
45-64 year old households										
outright owner	576	-15	953	10	309	-4	566	n.a.	632	-6
owner purchaser	796	-5	1024	4	495	14	596	n.a.	860	1
private renter	557	-18	755	2	332	-8	482	n.a.	507	-17
public renter	306	-52	599	-3	207	0	422	n.a.	366	-28
all tenures	602	-13	945	9	322	-1	536	n.a.	643	-4
65+ year old households										
outright owner	410	-13	735	7	247	2	534	n.a.	374	-8
owner purchaser	428	-16	828	8	243	-14	485	n.a.	421	-13
private renter	409	-16	483	8	203	-9	497	n.a.	322	-21
public renter	295	-26	534	49	186	-4	398	n.a.	240	-14
all tenures	405	-13	715	9	237	1	516	n.a.	357	-10
all households										
outright owner	499	-16	862	11	274	0	517	n.a.	533	-8
owner purchaser	828	-2	906	7	497	4	535	n.a.	823	1
private renter	617	-8	657	2	352	-7	407	n.a.	525	-10
public renter	301	-48	536	-9	199	-2	362	n.a.	352	-23
all tenures	547	-14	824	7	301	-2	452	n.a.	571	-7

a. Income growth data for sole parents not reported because of lack of comparability over time. See Appendix A for details

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table 6.15: Household income in 1996 and change from 1986 by age, household type and tenure: non-metropolitan NSW

	couple		couple with children		single person		sole parents[a]		all households	
	income	growth	income	growth	income	growth	income	growth	income	growth
	$ pw	%	$ pw	%	$ pw	%	$ pw	%	$ pw	%
15-24 year old households										
outright owner	802	2	623	-4	346	-3	459	11	568	-2
owner purchaser	996	1	737	5	510	-4	543	15	845	1
private renter	737	-9	565	0	378	-11	374	-1	570	-13
public renter	524	-29	448	-19	238	-26	311	9	362	-18
all tenures	796	-5	582	-3	371	-9	367	2	578	-10
25-44 year old households										
outright owner	923	-2	924	13	473	-2	496	1	832	5
owner purchaser	1137	1	1000	9	660	-3	573	0	963	4
private renter	884	-3	738	0	478	-11	430	2	644	-9
public renter	483	-44	563	-13	240	-32	336	-4	417	-24
all tenures	992	0	903	7	494	-8	446	0	790	-2
45-64 year old households										
outright owner	650	-19	1088	13	351	0	667	13	767	-2
owner purchaser	911	-5	1191	10	563	17	779	12	754	4
private renter	637	-15	874	4	383	-3	578	20	1001	-9
public renter	369	-51	690	-9	214	-10	418	-5	585	-34
all tenures	685	-16	1083	11	366	1	636	12	757	-2
65+ year old households										
outright owner	414	-15	798	23	240	1	581	39	383	-7
owner purchaser	440	-16	874	17	252	0	714	39	472	-4
private renter	393	-16	633	19	210	-4	522	-1	312	-11
public renter	274	-36	604	-4	185	-5	465	22	246	-19
all tenures	407	-16	785	21	230	0	569	30	364	-9
all households										
outright owner	549	-20	994	15	294	1	591	14	621	-5
owner purchaser	985	0	1041	11	582	5	640	9	956	4
private renter	738	-6	739	1	402	-6	446	6	597	-9
public renter	344	-49	587	-11	205	-9	355	1	370	-28
all tenures	638	-15	948	10	337	-3	504	11	667	-5

a. Income growth data for sole parents not reported because of lack of comparability over time. See Appendix A for details

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

6.4 Chapter summary

The results for household income disaggregated by age, household type and tenure that have been presented in this chapter provide an indication of the tenure and spatial polarisation of income that was raised as a concern in the literature covered in the Positioning Paper for this project. Spatial polarisation of income was indicated in the results presented in Chapter 3. The results in this chapter show that the same results hold once results are disaggregated by tenure.

The results also suggest that the data for retirement aged households need to be considered separately from those for younger households.

Except for households in the retirement age group, the data show both that household incomes of home owners are higher than household incomes of renters and that the gap between them increased in the decade from 1986 to 1996. This holds generally for each household type in each age group, so that the aggregate change is not attributable solely to compositional effects.

Without exception, the incomes of home purchasers are higher than the incomes of outright owners in each socio-demographic group, highlighting the role that wealth plays in providing access to home ownership to households. Households who rely only on their income because of little or no wealth to contribute towards home purchase need higher incomes to become home owners than do households who do have access to wealth. Many outright owners are households who have incomes more similar to those of private renters than of home purchasers. This suggests that, on the basis of their income alone, they would appear not to be able to access or sustain home ownership.

The results generally suggest that home owners are getting richer whilst renters are getting poorer. In other words, there has been a polarisation of income along tenure lines in the same way that there has been a polarisation of income over space.

There are two exceptions to the latter part of this generalisation. The first are renters in the high cost inner zone of Sydney where household incomes have increased for all in the private sector. Polarisation of incomes appears to be more pronounced between the different zones in Sydney than between the different tenures within inner Sydney. Nonetheless, the gap between owners and renters in inner Sydney has increased. The second are older households. As indicated in the text, housing tenure for older households is more likely to have been determined by their past than their current household income.

The results for older households, however, also indicate there have been changes in household structures that require further analysis. This would focus, not so much on household formation as young persons leave home, but more on the failure of households to follow the traditional path from couple with no children, to couple with children and back to couple with no children. It suggests that the role that home ownership amongst their parents plays in slowing down household formation amongst younger singles is a potentially fruitful avenue of inquiry. It is, however, beyond the scope of this study.

The spatial disaggregation undertaken shows that these results hold both at the Australia wide level and at the spatially disaggregated levels. Household incomes in Australia polarised across space and across tenure between 1986 and 1996.

CHAPTER 7. CONCLUSIONS

7.1 Overview

This report has provided information on housing outcomes arising from social, spatial and structural change. The results have been presented at an increasingly disaggregated level of analysis in relation to space, demographic and socio-economic characteristics. Increasing the level of disaggregation of analysis brings with it both advantages and disadvantages. The disadvantages lie in the overwhelming amount of data that is available at a disaggregate level. Many of the tables presented in this report are repetitive in that they show very similar results. However, one of the purposes of disaggregation is to determine when outcomes are unaffected by the process of disaggregation and when they are not.

The advantages of disaggregation lie in the ability to identify systematic patterns of change that are disguised by the process of aggregation. Examples that follow are differences in outcomes for households in different age groups, in different household structures and with different household incomes. The importance of disaggregation can be illustrated by the stability of the aggregate home ownership rate in the past few decades in Australia. Disaggregate analysis by Yates (2000), showed that, whilst the overall rate was stable,that for younger households declined dramatically. The stable rate is explained by a combination of higher home ownership rates for older households and an increasing proportion of older households. Concentration on the aggregate result disguises the patterns of change that underpin it. The process of disaggregation begun in Yates (2000) is continued in this report.

The results presented here are still highly aggregated. They employ only age, income and household structure as characteristics to distinguish one household from another. The results obtained highlight some of the weaknesses of this level of abstraction. For example, increases in outright ownership amongst young, lower income households in high cost regions cannot be explained by the data available. The results are also presented at what is still a highly aggregated level of spatial analysis despite a level of spatial disaggregation that is far greater than normally available for an Australia wide study. The spatial disaggregation within the two largest metropolitan regions provides a signal of the variation that occurs within the regions considered. The results rely on tenure as the only indicator of housing outcomes. Issues such as affordability are not considered. A detailed case study, which attempts to quantify the impact of the different factors that affect tenure outcomes, is provided only for one age group and only at one level of spatial disaggregation.

Despite these potential shortcomings, the analysis undertaken highlights a number of key results. These results are summarised in this chapter.

7.2 Results

7.2.1 Socio-demographic change

Between 1986 and 1996 social and demographic change in Australia resulted in significant changes in the age structure of the population and in the household composition within each age group. Demographic changes have resulted in an ageing population. The results presented in chapter 2 suggest that demographic changes have been relatively uniformly spread at a broad level of spatial disaggregation, although the increase in the proportion of older households has been more pronounced in the smaller and slower growing states. Greater differences in demographic change are observed at a sub-regional level of spatial disaggregation. Spatial variation in the extent to which there have been changes in household type for each age group, on the other hand, can be observed even at broad level of aggregation. The most significant change in household structure has been the growth in single person and single parent households, a decline in the proportion of younger couple with children households and

an increase in the proportion of older couple with children households. The growth of single adult households is more noticeable in non-metropolitan regions. The decline in younger couple with children households and increase in older couple with children households is more noticeable in metropolitan regions.

As a result of these demographic changes and changes in household structure, average household income in Australia declined between 1986 and 1996. This decline in household income has been associated with a significant polarisation of household income and with increased spatial polarisation of income. The results presented in chapter 3 show the extent of income decline and polarisation varied regionally, with declines generally greater in non-metropolitan regions and polarisation generally more pronounced in metropolitan regions. There were also considerable variations in the age specific declines in the different regions, with younger households and retirement age households generally facing greater declines in household income than households in the established 45-64 year old age group. However, once age and household structure are controlled for, income changes in non-metropolitan are very similar to those in metropolitan regions. The outcomes are consistent with the argument that lower income households (or households with structures that lead to low household incomes) are less likely to live in higher cost housing markets.

7.2.2 Spatial polarisation of income

At a sub-regional level within Sydney and Melbourne there is clear evidence of an emerging spatial polarisation of income that is not attributable solely to changes in socio-demographic composition of households. However, regardless of whether or not it can be explained by socio-demographic change, and regardless of the level of spatial aggregation at which it occurs, the polarisation of income that has emerged is one factor that explains changes in housing outcomes.

This report has argued that these changes are more likely to have an impact on tenure outcomes for younger than for older households. Housing tenure for older households is likely to be determined as much by their past socio-economic status and past housing history as it is by their current socio-economic status and current market conditions. For younger households with no external support, housing tenure will be determined by current economic status and by housing preferences alongside current market conditions. For younger households with external support, more housing options are available. The results presented in chapter 4 provided vindication of this argument.

7.2.3 Impact on home ownership

The results in chapter 4 are based on census data that indicates a decline in the aggregate home ownership rate in Australia of 2.2 percentage points between 1986 and 1996. This arises from a 0.2 percentage point decline in the aggregate home ownership rate in non-metropolitan regions and a greater 3.3 percentage point decline in metropolitan regions. At a regional level (based on a metropolitan/non-metropolitan split in each state), changes in home ownership rates between 1986 and 1996 varied from a decline of 5.7 percentage points to an increase of 6.9 percentage points. These changes resulted in home ownership rates in 1996 that varied from 61.2 per cent to 71.2 per cent.

Regional differences are attributed to two broad groups of factors - those that are associated with differences in the socio-demographic and economic characteristics of households in each region and those that are associated with differences in the housing market conditions they face. The results in chapter 4 provided a descriptive analysis for all age groups based on a spatially disaggregated analysis of changes for households with age and household composition separately identified. The results in chapter 5, which focused specifically on the outcomes for households in the 25-44 year old age group, provided a detailed statistical analysis of the contributions of each of these two broad groups to the observed changes in home ownership.

The chapter 4 results showed that the decline in home ownership occurred generally across all age groups in metropolitan regions (although it was not uniform across regions) and amongst lower income households in non-metropolitan regions. Older households in non-metropolitan regions provided the exception to the generalisation that declines in home ownership occurred for all age groups. Because of the ageing of the population in Australia and because home ownership rates increase with age, it is possible for the aggregate home ownership rate to remain stable even if every age specific home ownership rate declines. This will occur when the positive effect of the increased weight assigned to older age groups offsets the negative effect of an age specific decline in home ownership. Similarly, the decline in the aggregate home ownership rate can be less than the decline in each age specific home ownership rate. This provides a further example of the difficulties of aggregation when there are fundamental changes in the composition of the households being aggregated.

At an aggregate level, the home ownership rate for households in the 25-44 year old age group declined by 6.7 percentage points. This was more than twice the 3.2 percentage point decline in non-metropolitan regions and, overall, more than three times the decline in the aggregate home ownership rate. Disaggregation of these results into household type specific rates within each age group showed that older couple with children households were one of the few groups that systematically experienced significant increases in home ownership. In both metropolitan and non-metropolitan regions, the home ownership rates of retirement age couples with children increased by approximately 10 percentage points. However, such households represent only 1 per cent of all 65 and over year old households. The 3 percentage point increase in the home ownership rate of non-metropolitan couple households in the pre-retirement age group, who represent almost 75 per cent of all their regional cohort, is far more significant in the overall impact it has on the home ownership rate for non-metropolitan regions.

Disaggregation of the results by household income showed that the differences in home ownership rates between households in the lowest and highest income groups are greater in metropolitan regions than they are in non-metropolitan regions. Aggregated over all age groups and household types, home ownership rates in metropolitan regions varied from 53.8 per cent for households in the low income group to 81.3 per cent for households in the high income group. In non-metropolitan regions they varied from 58.9 per cent to 77.5 per cent. This is consistent with the constraints imposed by higher housing costs in metropolitan housing markets and with the greater polarisation of income observed in metropolitan regions.

The net decline in home ownership rates generally was ameliorated by increases in outright ownership that offset often considerable declines in home purchase. Increases in outright ownership were observed (and expected) amongst older households. However, there were also systematic increases in outright ownership amongst 25-44 year old households living in metropolitan regions, many of whom were single person households. This suggests that such households have had external support to assist them into non-mortgaged home ownership and points to the importance of wealth as well as income as a critical factor in assisting younger households into home ownership in high cost regions. The age specific increase in outright ownership for 25-44 year old households was not very different from the 2.4 percentage point increase for 65+ year old households. However, only 19.0 per cent of 25-44 year old households in metropolitan regions and 8.2 per cent in non-metropolitan regions were outright owners by 1996 compared with, respectively, 72.5 and 74.7 per cent of 65+ year old households.

The sub-regional analysis undertaken for Sydney and Melbourne suggests that similar results hold within these cities as for the broader level of aggregation. Within each income group and each zone, overall home ownership increases with age. Within each income group, home ownership rates for younger households in the high cost inner zones are considerably lower than in the lower cost outer zones. The marginal impact of income on home ownership is greatest in the higher cost zones and decreases with age.

7.2.4 Home ownership results for 25-44 year old households

The statistical analysis in chapter 5 focussed on changes in home ownership outcomes for households in the 25-44 year old age group in light of the social, spatial and structural changes that have been identified. The analysis showed that both changes in household composition and changes in household income explained much of the observed decline in their home ownership rates between 1986 and 1996 but that both socio-economic change and housing market constraints independently contributed to declining home ownership rates.

Within metropolitan regions, the largest declines in home ownership amongst 25-44 year old households occurred in Sydney and in Brisbane with declines, respectively, of 7.4 and 9.6 percentage points. The decomposition analysis undertaken in chapter 5 suggested that less than 25 per cent of these declines could be attributed to the changing socio-economic composition of households (the endowment effect) in each city. The remaining 75 per cent (the residual effect) is attributable to the changes in housing market constraints, or to changes in any other factors (such as changes in preferences) that affect tenure choice. As indicated in chapter 5, the fact that this residual effect is negative in all metropolitan regions and positive in all but the high cost non-metropolitan regions suggest that the housing market constraints are the dominant factor.

Within the 25-44 year old age group, home ownership rates generally declined most for households with children, yet these are households for whom many of the social benefits attributed to home ownership are perceived to be the most pronounced. Overall declines in home ownership have been greater in metropolitan regions, where the economic gains from home ownership (as reflected by real capital gains) have been higher and lower in non-metropolitan regions where the economic gains have been lower.

The paper began by raising the possibility that housing outcomes, as reflected in home ownership rates, contribute to a process of social and spatial polarisation that has been observed over the past few decades. The observed outcomes signalled spatially varying changes in the structure of households across all age groups, and particularly in the formative 25-44 year age range. They suggest that many young households increasingly are being excluded from home ownership in high cost housing markets. These effects are particularly strong amongst lower income households with children for whom home ownership has been a preferred tenure and one that has conferred social, if not economic, advantages. The detailed analysis undertaken in chapter 5 for this age group showed that the household restructuring that took place over the decade explains a considerable amount, but not all, of the declines in home ownership for households in this age group.

One possibility, raised by the Positioning Paper prepared for this project, was that a strong preference for home ownership might have contributed to the observed differences in household structure in the different regions. If so, the lower declines in home ownership than would otherwise have been the case in non-metropolitan or in the outer zones of the two metropolitan regions examined in detail. This possibility has not been tested explicitly, but the greater declines in home ownership in the lower cost outer zones of Sydney and Melbourne would suggest that such a claim is not strongly supported.

7.2.5 Tenure polarisation

Chapter 3 provided evidence of the extent of spatial polarisation of income. Chapter 6 concludes the results presented in this report with evidence of the extent of tenure polarisation of income. Between 1986 and 1996 the average weekly income of all households in Australia declined by 3 percentage points to $775 in 1996. Over the same period, that for private renter households decreased by 6 percentage points to $714 per week whilst that for home purchasers increased by 3 percentage points to

$1036 per week.[19] This resulted in an increase in the gap in the household incomes of the economically most advantaged and most disadvantaged households in the private sector. In 1986, home purchasers had an average household income that was 1.32 times that of private renters. By 1996, their average household income was 1.45 times that of private renters.

The disaggregate results presented in chapter 6 show that this gap in household income between private renters and home purchasers increases upto retirement age and increased for all household types in each age group except for over 65 year old households. This holds for households in both metropolitan and non-metropolitan regions. Not only did the income gap between owners and renters increase, but also the gap between owners in metropolitan regions and non-metropolitan regions increased. In other words, there has been both tenure and spatial polarisation of income for all household types in all age groups except for the retirement age group. The economic advantage enjoyed by home owners in metropolitan regions, as reflected in household incomes, is both increasing relative to their counterparts in rental housing in metropolitan regions and to their fellow home owners in non-metropolitan regions.

7.3 Conclusions

The framework outlined in the Positioning Paper for this project suggested that the social and economic restructuring that has taken place is likely to have had a dual impact in depressing home ownership. In the first place, social changes that have contributed to a growth of smaller households have combined with economic changes which have resulted in a disproportionate growth in the number of low income households. These are households who, traditionally, have been excluded from home ownership through economic constraints and who continue to be so excluded.

The results presented in this paper highlight the importance of identifying the impact of socio-demographic and economic change on housing outcomes. A changing income distribution, whether the increasing proportion of low income households are young or old, has significantly different housing and housing policy implications. In the current environment, older households are more likely than not to be owners. Their future housing needs are likely to be associated with support services, often aimed at keeping them in their homes, or with financial assistance meeting the ongoing costs of maintaining their homes. Younger households, on the other hand, are more likely to make demands on the private rental market and, if unemployed or in receipt of social security payments, to make demands upon rental assistance. If these younger households are permanently excluded from home ownership, the rent assistance demands they make on public expenditure are likely to re-emerge when they reach retirement age. Likewise, the support services they may need are likely to differ depending on whether they are, or are not, in their own home. If they are trapped in areas where housing is low cost throughout their housing careers and, because of this, have less access to employment opportunities, the rent assistance demands they make on public expenditure could continue before they reach retirement age.

At the same time, at the opposite extreme, social and economic changes have also resulted in a disproportionate increase in the number of high income households. This is particularly noticeable for younger rather than older households. In regions where the impact of income polarisation has been most noticeable, house prices are highest or have increased most. The impact of these regional trends in house prices has served to place additional constraints on the ability of lower income households to access home ownership. Thus, any tendency for income to polarise, regardless of whether this results from social change or economic change, will have negative impacts on home ownership (and consequent greater pressures on private or social rental markets). This provides the second of the dual impacts on depressing home ownership.

[19] Average income for households in public rental declined by a massive 24 per cent over the same period to $385 per week.

The Positioning Paper raised the possibility that differential changes in the constraints on access to home ownership may encourage households to locate or re-locate where housing is more affordable. To the extent that housing affordability reflects economic opportunity, any such tendency may reinforce the patterns of social and economic advantage that have already been identified as being of concern.

In particular, the increased disparity between dwelling prices in metropolitan compared with non-metropolitan regions may encourage younger households with a strong predilection towards home ownership to relocate to non-metropolitan regions in order to attain home ownership. To the extent that these regions offer lower employment opportunities and lower economic benefits from home ownership, these households will be increasingly locked out of the gains associated with economic restructuring.

An underlying presumption of this paper has been that home ownership, on balance, provides most, but not all, households with positive net social and economic benefits. Households less likely to derive positive net economic benefits are low income households and households in regions with weaker housing markets. In broad terms (with obvious sub-market exceptions), weaker housing markets can be equated with non-metropolitan rather than metropolitan housing markets and with outer rather than inner metropolitan housing markets.

The results presented in this paper provide sufficient support for these concerns to be taken seriously. There is evidence that an increasing number of low and moderate income households are being excluded from home ownership in the high cost metropolitan areas. It is these areas where, historically at least, home ownership has conferred the greatest economic advantages on those who do gain access to it. In the time period examined in this paper, there is also an indication that those low and moderate income households who have gained access to home ownership have done so by locating in regions where the benefits of structural change have yet to be observed. Such outcomes mean that home ownership can add an additional spatial dimension to the processes of economic and social polarisation that have been emerging since the mid 1980s. There is evidence of both spatial and tenurial polarisation of income as a result of the changes that have taken place.

Like many research projects, this project has raised almost as many questions as it has answered. It has shown, for example, that there have been differential patterns of household formation in between and within different regions in Australia. The data used here does not allow for any exploration of all of the reasons for these differences. An understanding of the motivations of the location decisions made by different households may be obtained from interview data but analysis of this must take into account the economic constraints that affect decisions, possibly in an unstated and unrecognised way.

7.4 Policy options

A number of policy implications arise out of the concerns outlined in the Positioning Paper and from the results presented in this report. These relate primarily to the implications of the ageing of the population as a result of socio-demographic trends that have been well documented and to the spatial and polarisation trends as a result of structural change that have been documented in this paper.

A number of these policies are outside of the reach of housing policy, although they are highly relevant in their impact on housing markets and hence housing outcomes. Any policy that reduces pressures on the housing market in general and on land markets in particular fits into this category. Examples are a better transport systems, planning initiatives that encourage regional and non-CBD development, population policies, regional or industry policies which provide broad based employment opportunities, infrastructure and other support for the development of e-commerce and web based businesses which allow people to work from home. These policies often cross over federal and state boundaries. This suggests that use of a national forum such as the Premiers' conference could be fruitfully employed to consider and coordinate such policies.

There are a number of policies, however, that are more directly related to housing at either a Commonwealth or State level, although many fall outside of the arena of State housing departments as they are currently constituted. This suggests that each State might usefully establish a State based forum along the lines of the national forum suggested above. These would cross current departmental responsibilities and have responsibility for defining housing objectives and developing a housing strategy to meet these objectives. Such forums would provide the information and expertise to contribute to a national equivalent.
At a specific level, the results presented in this paper suggest, first, that home ownership policies need to be revisited. Policies that improve access to home ownership for lower income households that once were part of the Australian policy agenda may need to be reconsidered with a view to their reintroduction. Policies that provide support to established home ownership likewise may need to be reconsidered, with a view to redistributing the assistance to those more in need of it.

In the past few years, concerns with declining home ownership in countries other than Australia have led to a number of research consultancies, the brief for which has been a survey of instruments used overseas that might be employed to encourage home ownership. The policy proposals emerging from several such studies are summarised below.

7.4.1 Canadian study on home ownership policies

In their study undertaken for the Canada Mortgage and Housing Corporation (CMHC), Miron et al (2001) identified seven broad strategies for improving access to home ownership. Along with illustrative examples, these are as follows (from pp 14-16).

- *Strategy 1*: Focus on the factors shaping tenure choice. This includes policies that
  - encourage households to save for a downpayment
  - provide downpayment assistance
  - promote flexibility in mortgage underwriting criteria
  - reduce out of pocket expenses of cost of home ownership (through interest subsidies, tax expenditures etc)
- *Strategy 2*: Focus on changing household structure. This recognises that non-traditional households, amongst whom home ownership rates are lowest, may need non-traditional forms of home ownership and may need smaller dwellings and more flexible mortgage arrangements. Policies that might assist are those that
  - increase outreach to underserved groups and reduce discrimination in financial markets
  - assist home owners in distress
- *Strategy 3:* Focus on the biased treatment home ownership currently receives. This includes policies that
  - put mortgage instruments on a par with other financial instruments that involve the same level of risk
  - remove any potential bias in treatment of owners and renters in tax and social policy.
  - alter the taxation of capital gains
  - alter depreciation allowances to allow homeowners to shelter part of cost of housing
  - reformulate property taxes
  - reconsider deductibility of mortgage interest
- *Strategy 4*: Focus on promoting price stability in housing markets as a means of reducing the risk for households unable to face the impact of a sudden downturn.
- *Strategy 5*: Focus on improving consumer knowledge

- *Strategy 6*: Focus on subsidies to encourage construction of affordable new housing
- Strategy 7: Focus on conversion of public sector rental housing into home ownership.

As a result of a survey of six countries (Germany, France, UK, USA, New Zealand and Australia), Miron et al identified 84 policy measures either employed or contemplated to support home ownership. Of these, 16 were identified as being of potential application for the issues that currently exist in Canada. A number of the policies identified relate to increasing the flexibility of the mortgage finance system and reflect options that already exist in Australia (such as flexible accounts that allow equity withdrawal and variability in monthly repayments). Full details of the 16 policies considered and an overview of the 84 examined can be found Miron et al (2001). A number that may be relevant for Australia are listed below (with the strategy to which they are relevant indicated in parentheses).

- Extension of the mortgage assistance scheme that currently operates in some states (Strategy 1, 2)
- Reduction of transaction costs (Strategy 1, 3)
- Re-introduction of shared equity schemes (Strategy 2, 7)
- Revisit taxation of rental income (Strategy 3)
- Re-introduction of home savings accounts (Strategy 1, 2, 3)
- Provision of interest free loans (Strategy 1)
- Introduction of tax subsidised mortgage revenue bonds for affordable housing (Strategy 1, 3)
- Reduced deposit requirements (Strategy 1)

The measures selected for consideration were selected because they were seen to address three barriers that prospective buyers have to overcome before they are able to obtain mortgage finance. These relate to a downpayment constraint (a wealth constraint), to a repayment constraint (an income constraint), and to perceived credit worthiness (a credit risk constraint). In the Australian context, these policies are reflected in deposit assistance schemes currently in operation (such as the FHOG - to be returned to below) and proposed (such as allowing access to superannuation contributions) at a federal level. They recall past and present state based schemes (such as subsidised interest loans and interest free mortgage assistance schemes). They signal policies that have been successful on some criteria in the past and unsuccessful on others (such as use of home savings accounts).

7.4.2 UK study on low cost home ownership policies

Two examples of research more focussed on specific home ownership initiatives can be found in the UK's Department of Transport, Local Government and the Regions Scoping Report on low cost home ownership (DLTR, 2001) and in a more detailed assessment of these schemes by a Joseph Rowntree Task Force (Martin, 2001).

There are a number of low cost home ownership (LCHO) initiatives that currently operate in the UK. The DLTR report lists Conventional shared ownership, Do it yourself shared ownership (DIYSO), Homebuy, Right to Acquire (RTA), Starter Home Initiative (SHI), Tenants Incentive Scheme (TIS) and Voluntary Purchase Grant (VPG).

The DLTR study suggests that there have been three key objectives emerge for these LCHO programs to date. These are:

- to free up social rented accommodation either directly by taking existing tenants out of their homes or indirectly by allocating to people on the waiting list;
- to encourage sustainable home ownership;
- to contribute to mixed communities through the provision of multi tenure developments.

with the Starter Home Initiative adding a further objective

- to help key workers, particularly nurses, teachers and the police to buy a home in areas where high demand and high house prices might otherwise price them out of the market in the communities they serve.

The purpose of the DLTR study was to highlight the known strengths and weaknesses of the LCHO program. It focussed on the regional variations in the stock of the outputs, on the cost effectiveness of the program and on the extent to which LCHO is targeted effectively.

It reported there was evidence that shared ownership, DIYSO and TIS "appeared to be reaching people who would not otherwise have afforded to buy and that these households were, by and large, in housing need" and provided comparative evidence on the cost effectiveness of the various schemes in operation. Amongst other things, however, the evidence available highlighted the range of factors that need to be taken into account when determining the effectiveness of such policies. These factors are likely to vary regionally. The demand for LCHO schemes in the UK, for example, varies significantly by region with demand easily outstripping supply in the high cost regions of London and the South East but with excess stock in the North and Midlands. The DLTR report suggests that this leads to questions about whether the program is effectively targeted.

The concerns raised about the program relate to a perception that there has been a lack of strategic vision and a failure to place sufficient emphasis upon creating sustainable home ownership. The issue of sustainability is critical given that some people who take on shared ownership are seen to be below the margins needed to sustain home ownership.

A more in depth research study is that undertaken by Martin (2001) for a Task Force set up by the Joseph Rowntree Foundation to examine the future for publicly subsidised low-cost home ownership projects in the UK. Martin drew on submissions to the (UK) Government's Housing Green Paper to draw many of the same conclusions as reached by the DLTR scoping study. There is considerable unmet demand in high cost regions. Strategic use of such initiatives can contribute to many of the benefits of home ownership outlined in the Positioning Paper prepared for this report. There is a tendency for governments to focus on short term needs rather than taking a strategic view of problems associated with housing provision. There is evidence that some variations of the LCHO schemes do not operate as effectively or as equitably as others and, as always, there is scope for improvement.

Shared ownership schemes in the UK have been seen as providing access to home ownership to those who are at the margin of home ownership and who, at present, are being excluded from the social and economic benefits that home ownership provides. They are also seen as means of contributing to urban renewal policies, to addressing the needs of older households who cannot afford homes appropriate for their specific needs and as a means of reducing the demand for social housing.

This latter goal of shared ownership schemes raises broader issues that arise in relation to the appropriate policies that arise from the results presented in this report. The policies discussed to date have focussed on increasing access to home ownership and suggest that shared ownership is one way, amongst others, of achieving this. However, a related question is whether such policies of themselves will address the problems that are beginning to emerge.

7.4.3 Limitations of home ownership policies

The results of this report pointed to increasing polarisation between renters and owners in Australia. Similar trends have been recorded in countries with similar economies and similar housing markets. Hulchanski (2001), for example, points to a widening of both income and wealth gaps between owners and renters in Canada. As in Australia, the incomes of owners increased between 1984 and 1999 and the incomes of renters decreased so that, by 1999, home owners in Canada had more than double the income

of renters. Trends in median net worth were even more dramatic. The median net worth of owners in 1999 increased by 24 per cent between 1984 and 1999 to $145,000. That for renters decreased by 48 per cent to $2100. Home ownership was the major factor contributing to the difference.

The results presented on trends in household income in Australia in this report suggest that outcomes in Australia are not yet as dramatic as in Canada. It is therefore worth considering whether changes can be introduced to prevent them from following the same path.

The research survey by Miron et al (covered in section 7.4.1) was undertaken against this background in response to one particular outcome of these trends - namely declining home ownership rates. The final report touched on but, because it was outside its brief, did not focus on the contribution that home ownership policies might make to the observed trends as a result of the most disadvantaged being excluded from access to home ownership.

Many home ownership policies may serve to impede rather than improve access and so can contribute to the problems of polarisation. Hulchanski highlights policies, similar to those that are current in Australia, that have reinforced the growing economic inequality in Canada. He points to exemption from capital gains for owner-occupiers, the ability to use tax-sheltered registered retirement savings as a down payment, and a waiver of land transfer taxes. In the Australian context, equivalent policies or potential policies of concern are the exemption of owner-occupied housing from capital gains taxation, the recently introduced First Home Owners' Grant and the exemption of owner-occupied housing from State based land taxes.

Any subsidies towards home ownership are likely to add to pressures on the housing market. When such policies are perversely targeted, they will serve to benefit those for whom home ownership is a choice and add to the problems of access for those who are most marginal.

In the Canadian context, Hulchanski (2001, p3) argues

> *"Although there are two Canadas in terms of income and wealth, there is only one residential land and housing market. Owners and potential owners (higher income and upwardly mobile renters) have the ability to outbid renters for residential land (that is, building sites). In order to compete with condominium[20] developers for land, rental housing developers would have to set rents too high for most tenants. A thriving supply/demand market exists in the home ownership sector, but only demand and social need - without new supply - exists in the rental sector. ….*
>
> *Government policies that focus on incentives for home ownership …. do not address the housing needs of the vast majority of renter households. The federal government has not provided new social housing for low- and moderate-income renters since 1993.*
>
> *A comprehensive national housing policy, with complementary regional policies, must address the very low income and wealth of renters. Canada, more than most Western nations[21], relies on the private sector to provide housing. Renters must find adequate housing in housing markets in which prices are driven by the income and wealth level of homeowners.*
>
> *Social policies and traditional assistance programs (social assistance, unemployment, disability pensions, and so forth) must better address the growing inequality between owners and renters.*

[20] Multi-unit developed for owner-occupied housing operating under regulations similar to strata title in Australia. Footnote added.
[21] But less than Australia. Footnote added.

Federal and provincial/territorial housing policies must recognize that very few renters have incomes high enough to pay the rent levels required by unsubsidized new construction. Increased supply - the construction of new rental housing - is the only answer to low vacancy rates. Given the income and wealth profile of Canada's renters, only a significant public-sector intervention will increase the supply of affordable rental housing.

This highlights the need for a broader range of policies other than those that focus just on increasing access to home ownership. Increasing access to home ownership and ensuring they have some protection once they enter home ownership will assist marginal home buyers and reducing poorly targeted support for home ownership will reduce demand pressures on the housing market. However, there will still be many households who will need some additional protection from the pressures imposed on housing markets by the spatial and tenurial polarisation that has been occurring.

7.4.4 UK based study on fiscal policies for affordable housing

In the draft report of their scoping study currently being prepared for the Department of Transport, Local Government and the Regions (DTLR), Holmans et al (2002) reviewed the potential for fiscal instruments to help tackle the problem of affordability in the housing market. The first stage of their study involved an overview of the full range of possibilities (taken from Germany, Australia, France, Denmark, Sweden, the Netherlands, Finland and the US) and a categorisation of these policies according to whether they affected demand, supply or worked through the tax system. The second stage focused on a more detailed analysis of 6 selected policies, examining their economic rationale, the international experience in their implementation and the practical issues that might arise from their adoption.

Holmans et al suggested that the objectives of fiscal instruments are to change consumer income and the capacity to pay for housing, to change the price affordability of housing and to increase the incentive to supply. They suggest that what is most important may not be the type of policy employed, but an analysis of what prevents any policy from achieving its goal. In their view, "the emphasis should be on the nature of the administrative framework, the linkages between different instruments and the estimates of initial impact and relevant price elasticities." They suggest that, in the UK context, "the land use planning system is a major constraint on market response …Equally, the most important pressures may be political … This suggest that policies that can achieve additional planning permissions are likely to be particularly effective in providing additional affordable housing."

Similar constraints may well be impeding the development of rational housing policies in Australia.

Their review led them to consider in detail 6 policy instruments used elsewhere to tackle the problem of affordability in the housing market. Detailed illustrations of how the policy might work are provided in their paper. Four of these are supply side policies and only two are demand side policies. The six considered are

- Tax relief for construction of affordable housing. This could be applied to rented, owner-occupied or shared equity schemes. It would allow costs to be offset against other income and would provide tax relief for investors who would be required to let the dwelling at below market rates for a specified period or sell to a household with income below a certain cap. Restrictions would be needed to ensure dwellings were allocated to those who could not afford market prices or rents. This is similar to the US Low-Income Housing Tax Credit (LIHTC) scheme that has been in operation since 1986 (McClure 1996). Tax credits may not be as efficient as direct subsidies but they have the advantage of not being counted as public expenditure. Holmans et al suggest that funds eligible for this subsidy be raised by an Affordable Housing Company.

- Home purchase assistance in high cost areas. This would be provided either as a grant or interest free loan (as SHI), or an equity loan (as Homebuy) with an obligation to repay the same proportion of the price received. It would be similar to the Homebuy or Starter Homes Initiatives but would be targeted at particular high cost areas, or groups of people, including key workers. Such a policy will have little impact on increasing the supply of affordable housing. Recapture, which would be feasible if tied to the sale of the dwelling, would make a given budgeted amount go further. Such assistance could be targeted to people in occupations where local staff shortages were worst. Such assistance sensibly could be linked to shared equity and shared ownership programs.
- Savings schemes for first-time buyers. This would provide tax relief for savings schemes and could include an employer contributions. It is the second of the two demand side policies considered. Like the one above, it has the disadvantage of having little or no effect on the supply of affordable housing and of adding to house price pressures. Such schemes have been in widespread use - their effectiveness can depend on how well they are targeted.
- Fiscal instruments to increase employer involvement in housing provision. Possible instruments to reduce employer tax burden cover income tax relief on employer contributions to employee savings schemes (as above); tax relief for construction of affordable housing (along the lines of the policy in the first dot point); use of depreciation or accelerated depreciation allowances; relief from capital gains tax on land or property for affordable housing; the right to sell land for the provision of affordable housing in consideration of nomination rights (as to whom such housing should be allocated); and hypothecation of the payroll tax to provide affordable housing. There are few international examples of employer based schemes for direct provision of affordable housing. However, there has been a past tradition of employers providing housing for their employees and Holmans et al suggest there is evidence of increased appetite amongst employers in pressure areas in the UK.
- Fiscal instruments to encourage mixed use and housing only developments on sites previously designated for non-residential development. This is primarily a planning rather than a fiscal instrument. It is seen as having particular benefits in relation to large scale renewal projects where large up-front costs associated with private provision of infrastructure limit the potential for provision of affordable housing.
- Reduction of goods and services tax on renovation of affordable housing. This relates to similar concerns that arose in Australia with introduction of the GST. Tax exemption, as currently applies, does not allow for recovery of input taxes. Zero-rating, on the other hand, would allow for this. In the UK context, the impact of this, however, is thought to be relatively minor.

7.5 Summary

The range of policy options outlined above provide an illustration of actions that might be taken to ameliorate the outcomes that have been documented in this report. Most of the options listed are options available for consideration by either the Commonwealth or the various State governments. The fact that these options have been identified by international research that focussed specifically on potential policy solutions for a specified problem suggests that a similar approach might be employed to address the problems that have been identified in this report.

The level of spatial disaggregation employed in this study, whilst greater than is normally undertaken for an Australia wide study, is still too broad to provide the basis for locally based solutions such as those that have focussed on neighbourhood renewal and social inclusion. On the other hand, the fact that spatial and tenurial polarisation can be observed on a much broader geographic scale than is generally the focus of local policies suggests that there is an important role for global or economy wide policies as well as for local ones.

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APPENDIX A. THE DATA SET

The results presented in this paper are derived from a special matrix tabulation from the Australian Census for Population and Housing for 1986 and 1996. Cost constraints limit the data employed to key variables defined over a limited number of categories. This data source was chosen in preference to survey data with more variables or the 1 per cent sample file from the census for two reasons. The first is that special matrix tabulations are the only Australia wide source of data where detailed spatial disaggregation is possible. The second is that it enabled variables to be defined in a way which, with only small exceptions, was consistent between 1986 and 1996.

In general, the data collected in1986 provided a constraint on the definitions that could be used. In 1986, for example, census data on households excluded both visitors and/or temporary residents and usual residents temporarily absent. These data are available in the 1996 census but have not been employed in this study to ensure maximum compatibility in the data over the decade.

In this paper, comprehensive results presented at a 15 region level of disaggregation have been supplemented by case study results at a finer level of disaggregation. These results are presented for different household categories, different age groups and different income categories, for different numbers of persons employed and for different tenure outcomes. This Appendix provides information on the data employed and on the measures that were used to compensate for missing data.

A1. Data definitions

A.1.1. The spatial level of disaggregation

The special request matrices for both 1986 and 1996 were each defined to ensure complete coverage of the whole population of Australia and boundaries were defined to be consistent over time.[22]

All states, the capital city statistical divisions define metropolitan regions. The non-metropolitan regions are defined as the rest of the state or territory. For Sydney and Melbourne, within metropolitan data were collected at the statistical sub-division level and aggregated to provide a 3 zones within these cities. These zones are defined on an inner-middle-outer ring based description of the city. Justification of them and a comparison of these zones with those used by planning departments and in other studies can be found in Yates (2001). The statistical sub-divisions or statistical regions included in these definitions are indicated in Table A.1 below.

[22] The data employed differ marginally from equivalent data available in CDATA because the latter includes households in the Cook Islands for 1996. As these were not included in the Australian totals for 1986, they have been excluded for 1996 in this data set. Likewise, CDATA includes data for Jervis Bay in the NSW totals, whereas these data are excluded in the NSW data used here. These differences are immaterial.

Table A.1: Regions in ABS data set

NSW metropolitan	Zone
Inner Sydney (SSD)	1
Eastern Suburbs (SSD)	1
St George-Sutherland (SSD)	2
Canterbury-Bankstown (SSD)	2
Fairfield-Liverpool (SSD)	3
Outer South Western Sydney (SSD)	3
Inner Western Sydney (SSD)	1
Central Western Sydney (SSD)	2
Outer Western Sydney (SSD)	3
Blacktown-Baulkham Hills (SSD)	2
Lower Northern Sydney (SSD)	1
Hornsby-Ku-ring-gai (SSD)	2
Northern Beaches (SSD)	2
Gosford-Wyong (SSD)	3

NSW non-metropolitan
Hunter SR
Illawarra SR
Mid-North Coast SR
Rest of NSW

Queensland metropolitan
Brisbane City Inner Ring SR - City Core
Brisbane City Inner Ring SR: E & S Inner
Brisbane City Inner Ring SR: N & W Inner
Brisbane City Outer Ring SR: E & S Outer
Brisbane City Outer Ring SR: N & W Outer
South and East BSD Balance SR
North and West BSD Balance SR

Queensland non-metropolitan
Rest of QLD

Victoria metropolitan	Zone
Inner Melbourne (SSD)	1
Western Melbourne (SSD)	2
Melton-Wyndham (SSD)	3
Moreland City (SSD)	2
Northern Middle Melbourne (SSD)	2
Hume City (SSD)	3
Northern Outer Melbourne (SSD)	3
Boroondara City (SSD)	1
Eastern Middle Melbourne (SSD)	2
Eastern Outer Melbourne (SSD)	2
Yarra Ranges Shire Part A (SSD)	3
Southern Melbourne (SSD)	1
Greater Dandenong City (SSD)	2
South Eastern Outer Melbourne (SSD)	3
Frankston City (SSD)	3
Mornington Peninsula Shire (SSD)	3

VIC non-metropolitan
Rest of Victoria

Western Australia metropolitan
Central Metropolitan (SSD)
East Metropolitan (SSD)
North Metropolitan (SSD)
South West Metropolitan (SSD)
South East Metropolitan (SSD)

Western Australia non-metropolitan
Rest of WA

Tasmania metropolitan

……contd.

South Australia metropolitan	Greater Hobart (SD)
Northern (SSD)	Tasmania non-metropolitan
Western (SSD)	
Eastern (SSD)	Rest of TAS
Southern (SA SSD)	
	Northern Territory
SA non-metropolitan	
	Darwin (SD)
Rest of SA	
	NT non-metropolitan
	Rest of NT
	Australian Capital Territory

The inner zones (code 1) in both Sydney and Melbourne, containing statistical sub-division within ten kilometres of the city centre, have the highest population densities. The outer zones (code 3), containing statistical sub-divisions roughly 25 to 30 kilometres from the centre, have the lowest population densities and the greatest supply of land available for residential development.

These zones have been defined in such a way that, by 1996, approximately 27 per cent of all households were located in the fringe or outer zones in each city. Almost the same proportion of households were located in the inner zones (27 per cent in Sydney and 26 per cent in Melbourne), leaving the middle zone or middle ring suburbs with just under 50 per cent of all households (46 per cent in Sydney, 47 per cent in Melbourne).

Data for sub-regional non-metropolitan regions is provided for the 3 statistical regions in NSW indicated in Table A.1. The Hunter and Illawarra regions are centred on Newcastle and Wollongong, respectively, and represent two 'old economy' regions. The Mid-North Coast region contains the expanding Coffs Harbor and Port Macquarie urban regions and can be regarded as representing a 'new economy' or tourist/leisure based region.

A.1.2 Income data

Income data in this paper is based on gross household income. Chapter 2 of the Positioning Paper provides a detailed discussion of the impact of different definitions of income. Chapter 3 of this paper provides further information.

Where current dollar comparisons are made, these have been done in $1996. The income and rent data for 1986 have been scaled up by a CPI adjustment of 119.8/75.6, representing the ratio of the June 1996 and June 1986 values of the CPI (weighted average of the 8 capital cities taken from ABS Ausstats 604010B with 1989-90 = 100).

In a number of the tables and charts presented in this paper, household income has been broken down into 5 broadly comparable categories for 1986 and 1996. Within the limitations of the categories available in the census data, these boundaries have been defined in a way that real income is broadly comparable in each category between 1986 and 1996. Income cut-offs for 1996 were based on approximate household income quintiles as reported in the 1994 HES (appropriately scaled to $1996 via a CPI adjustment). Examination of the data suggests that the chosen categories provided a reasonable approximation for quintile household incomes based although there are fewer than 20 per cent of households in what can be equated to the top income quintile in the 1994 HES. Also, there are more households in what can be equated to the

second and third HES income quintiles. Because the income data only approximate quintiles, their relative status as low, moderate, high and the two intermediate categories will be used to define income status.

The 1986 data were somewhat more constrained because they were only collected in quite large categories. As far as possible, the categories were chosen to match the real values of those defined for 1996. The broad nature of the 1986 categories did not always allow for a precise matching with real income levels being between 5 and percent lower for the low and low to moderate categories but only between 1 and 2 percent lower for the moderate to high income categories. For 1986 the first two categories are closer to decile than quintile boundaries. In practice, however, it is unlikely that the difference in will have much impact at least in relation to the low income boundary. The low income category is likely to cover only single persons and some sole parents on statutory incomes. As shown in Appendix B, in all but two instances statutory incomes for the relevant household types in 1996 and 1986 were either both above or both below the boundaries employed.[23] In principle, this means that any worsening of affordability problems between 1986 and 1996 will be underestimated because of the marginally higher cut offs for household income for those in the lowest two income categories in 1996.

The relevant income boundaries for the different income categories in 1986 and 1996 are given in Table A.1 below. For purposes of comparison, statutory incomes in each of these years are given in Table A. 2.

Table A.2: Income boundaries and means: 1996 and 1986

	1996	1996 category mean*	1986	1986 category mean*
	($1996 pw)	($pw)	($1996 pw)	($pw)
low income	0 - 299	167	0 - 274	186
low-mod income	300 - 499	389	275 - 457	359
moderate income	500 - 799	642	458 - 792	619
mod-high income	800 -1199	987	793 -1220	997
high income	1200+	1754	1220+	1730
all households		776		802

*category means derived from 1984 and 1994 Household Expenditure Survey data
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

[23] There were only two case where the reported statutory income were split across the 1986 and 1996 boundaries. The first was for sole parents with 2 children who were classified in the low income category in 1986 but in the low to moderate income category in 1996. These represent 3 per cent of all renting households. The second was for couples with 4 children who were classified in the low to moderate income category in 1986 and in the moderate income category in 1996. Couples with at least 3 children represented 6 per cent of all renting households. Couples with 4 would be a considerably lower proportion. As indicated below, however, the affordability measures employed are not affected by the boundary choices.

Table A.3: Maximum statutory incomes as at June 1986 and June 1996

	Statutory income[a]	
	June 1986[b]	June 1996
	$ pw ($1996)	$ pw
married couple, 0 children	279	321
married couple, 1 child	322	375
married couple, 2 children	361	422
married couple, 3 children	402	474
married couple, 4 children	451	538
Single	162	195
Single, pension	180	208
Single, 1 child	231	277
Single, 2 children	271	323
Single, 3 children	312	375
Single, 4 children	361	440

a. amounts are maximum statutory incomes and include maximum rent assistance.
b: Data derived from CPI adjustments to September 1988 data in absence of 1986 data; raw 1986 RA data is $10 and $15 per week.
Source: Institute of Applied Economic and Social Research, Poverty Lines: Australia, September 1988, June 1996

Whilst the boundaries for 1996 were chosen to be approximately equivalent to those that would apply for income quintiles at an Australia wide level, the changing pattern of income distribution over time and the differences between regions means that these income categories should not be confused with income quintiles.

Table A.4 gives the distribution of households in each of the income categories for 1986 and 1996. In 1996, for example, whilst 20.7 per cent of all households in Australia had low incomes, 18.8 per cent of households in metropolitan regions and 24 per cent of those in non-metropolitan regions had low incomes. In 1986, only 13.9 per cent of all households had equivalent low incomes, with a similar difference in the proportions in metropolitan and non-metropolitan regions.

The treatment of cases where income data were missing is explained in section A.2 below.

Table A.4: Income distribution: 1996 and 1986

	Household income				
1986	low	low-mod	mod	mod-high	high
Metro	12.7	15.1	24.8	25.8	21.5
non-metro	16.0	21.6	28.3	22.3	11.9
All households	13.9	17.4	26.1	24.6	18.1
1996					
Metro	18.8	16.5	20.4	21.2	23.1
non-metro	24.0	21.4	22.6	18.9	13.0
All households	20.7	18.3	21.2	20.4	19.4

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

A.1.3 Household categories

The results are presented for the 4 major household types in Australia; couples, couples with children; singe persons and sole parents. All other households, such as group, multiple family households or visitor only households, are included in a catch-all 'other' category.

One problem with the data set for this study arises with a change in the family/household definitions employed between the 1986 and 1996 census. In 1986, families with one parent and an only an independent adult child or children were classified as related individual/multi-family households. However, these were defined as sole parent families in 1996. The result of this definitional discrepancy between 1986 and 1996 is to overstate the growth rates for lone parent households, particularly for households with a parent over 45. In 1986, 6.6 per cent of all households were classified in the 'other-multiple family' category. By 1996, as a result of the reclassification of households with only dependent children, this figure drops to 2.4% (but the proportion of one parent families has increased dramatically). These changes in definition have little impact on households where the age of the reference person is less than 45 years. In the results presented, this problem has been addressed by either combining sole parent data with that for group household and multiple family households for the over 45 year old age categories or simply not reporting potentially misleading data.

Similar problems lead to the observed decline in couple only households in results relying on census data. According to Mudd et al (2001), the observed decline in couple without children (at least between 1986 and 1991) in the 1% sample file for the census arises from definitional or classification changes relating to couples living with relatives and couples only. However for the special matrix tabulation employed in this study, households and families could be distinguished and the data consistently employed couple only definitions for both 1986 and 1996. Couples with relatives were included in the multiple family classification. The results obtained from the data employed are consistent with those reported in Mudd et al after correcting for definitional changes. No adjustments, therefore, have been made in the data reported in the text to account for these definitional changes.

There are no missing data in the household type classifications in the special matrix tabulations, nor in the employment data discussed below.

A.1.4 Employment data

In several instances, the analysis in the paper has employed outcomes according to the number of persons employed in each household. Employment status is based on labour force status which applies to all people aged 15 years and over and classifies these as employed, unemployed or not in the labour force. The number of persons employed is based on a simple count of persons in the household in the first category.

In 1986, the count of persons in the household excluded persons temporarily absent from the household were not counted and excluded visitors. To ensure comparability, these same counts were applied for 1996.

A.1.5 Age data

The age data used in this report refers to the age of the reference person in the household. Results have been reported for four age categories: an emerging household group younger than 25 years; a critical household formation group aged between 25 and 44 years old; an established age group from 45-64 years and a retirement age group from 65 years. Much of the analysis focuses on those in what have been called the critical formation years. A rationale for this is provided in chapter 5 of the Positioning Paper and is briefly summarised in chapter 5 of this report. The treatment of cases where age data were missing is covered in section A.2 below.

A.1.6 Tenure data

Tenure is reported for owners with no mortgage (outright owners), owners with a mortgage (owner-purchasers), and for private and public renters. Household who pay no rent and households for whom tenure status is missing are all included in the "other" category. Outright owners and purchasers are defined as owner-occupiers; renters include both public and private renters. In 1986, the census data did not distinguish between employer and other landlords whereas this distinction was available in 1996. In 1996, employer landlords were excluded from the definition of private rental and included in the "other" category. This has introduced some minor discrepancies in the tenure definitions between 1986 and 1996 but they do not have a material impact on the results reported.

As indicated below, no attempt has been made to impute tenure to households where these data were missing.

A.2: Treatment of missing data

Because the data employed in this study are derived from a special matrix tabulation of the 1986 and 1996 censuses, they represent a full count of all occupied dwellings. As such, in principle there is no sampling error in the data. However, whilst the ABS employs a range of techniques to ensure there is a complete response there is, inevitably, some element of non-response which contribute to missing data.

For example, approximately 10 per cent of households in 1996 provided no or incomplete information on household income and a significantly lower proportion had no age data provided. Spatial data and data on household composition and number of earners in each household were available for all households.

There are two broad reasons why there may be missing values in any complex data set. The first can be attributed to unit non-response (missing observations or missing rows); the second to item non-response (missing data within each observation or missing cells in different columns). Unit non-response arises from non-contacts and refusals. Item non-response from an inability to answer all the questions. In the census data, any record may represent a mixture of these. In the case of the former, the ABS creates dummy records based on whatever information is available. The need for dummy records arises when there is either no one at home (in which case information from neighbours is used to ascertain that the dwelling was usually occupied) or when there is no person over the age of 15 available to complete the form.

The procedures used to record household data in dummy records changed in 1991 with the result that there were different outcomes in relation to age and household type variables in 1986 and 1996. In 1986 all such non-response cases were defined as consisting of a couple with 2.3 children and the age for the reference person (the adult male) was imputed. In 1996, non-response households were classified in a ‘other/multiple family household’ category and age was recorded as not stated.[24]

Approximately 1 per cent of the data in the census matrix tables consists of such dummy records. In these cases, however, data that can be recorded by the interviewer (such as type of dwelling), in principle, should be available. In practice, however, it is not always available because the census interviewer failed to record it. Absence of some, but not all, dwelling data contributes to item non-response. This is compounded by absence of information on specific household characteristics both in unit non-response cases and from those cases where respondents have not been willing or able to answer all questions.

[24] Information provided by ABS census evaluation branch in the Population Statistics division. In the matrix tables provided by ABS, some data has been provided for non-response cases. In general, this has been imputed by ABS via a hot-deck method of imputation discussed briefly below. With the exception of cases where household information (such as tenure) is available but age is recorded as not stated, it is not possible to identify which data have been imputed by ABS.

A.2.1 Reweighting of unit non-response data

Two approaches are generally employed to deal with non-response. These can be classified as re-weighting and imputation. Of these, re-weighting is the simplest and most straightforward. Lehtonen and Pahkinen (1995, p116) claim reweighting is appropriate for unit non-response; imputation for item non-response.

Whilst there are a number of variations on re-weighting techniques, the most commonly used approach is simply to employ an expansion factor which is the inverse of the response rate. This approach assumes the probability of responding is equal for all elements of the population. It is a suitable approach for unit non-response if it can be assumed that the missing data is ignorable, or is non-systematic. Under this assumption, it ensures that the population means for the variables in question are the same as derived from the non-missing data. Both this naïve re-weighting approach and the imputation approach considered below have the effect of biasing any estimates of standard errors. This is regarded as having relatively little impact in this study for two reasons. The first is because the major focus of the study is with tabulation rather than estimation and totals. The second is because the level of unit non-response is of a relatively low order of magnitude. Unit non-response cases represent only approximately 3 per cent of the census population. Item non-response is even lower than this for all variables other than income where it is still less than 10 per cent for the households of interest in this study.

Pro-rata adjustment for missing data is an example of this re-weighting approach. This provides the same outcome for a population mean as would be obtained by ignoring the information and relying solely on the smaller number of cases for which information was available. It does not, however, provide the same estimate of the population variance.

In what follows, re-weighting is assumed to be appropriate in those cases where household data is missing because of unit non-response. In 1996, these cases can be identified as being all cases where there is no age data. In 1986 they cannot be identified from the special census matrix tables (although they are identifiable in the one per cent sample file). As a result, re-weighting has only been undertaken for the 1996 census data. The 1996 tables in this study have been derived for each tenure by discarding all households classified by tenure but with data not stated age and re-weighting the remaining cases by the appropriate scale factor to retain population totals. 25

For the full 1996 data set, there were 214,211 cases with not stated age data, representing 3.3 per cent of all observations. Of these, 46,041/2,657,587 were classified as outright owners; 8,428/1,625,741 were purchasers; 2,903/361,606 were public renters and 122,830/581,810 were in the other, rent free, tenure not stated category. The data were re-weighted within each of the categories in order to retain the population totals in each tenure category as specified by ABS. For example, outright owners were re-weighted by 2,657,587 / (2,657,587–46,041) and so on for the other categories. Likewise, the imputations described below for item non-response data were estimated from data within each of these five tenure categories.

A.2.2 Imputation of item non-response data

This naive approach of discarding observations which have missing data because of unit non-response may not be appropriate for dealing with data missing because of item non-response. It will not be so when the information available from observed data can be used to determine whether the missing data are non-random.[26]

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[25] For a more detailed discussion of this and other methods see, for example, Lehtonen and Pahkinen (1995, chpt 4).

[26] The techniques described below distinguish between variables missing completely at random (MCAR) and missing at random (MAR). A simple example can be given for two variables X and Y. Data on Y is described as missing completely at random if it depends neither on the value of X nor the value of Y. It is described as missing at random if its missingness does not depend on the value of Y even though it may depend on the value of X. (Rubin and Little 1987, p14)

The non-random nature of the missing data can be illustrated from the data sets being employed in this study. In 1996 12.2 per cent of all households and a significantly lower 8.5 per cent of rental households had partial or not stated income data. In 1986, the equivalent data were 11 per cent and 8 per cent. This suggests that excluding these missing data from the analysis would impose a downward bias on any estimate of home ownership that relied only on data for which there were no missing income data.

Other examples of a systematic pattern in the missing data can be found in the characteristics of households for whom income was not stated or partially stated. On an Australia wide basis and for households for whom age data was available, there was a disproportionate tendency for households in the middle to older age categories (35–64) in both 1986 and 1996 to have no income data. This is consistent with the hypothesis that income data are missing because of incomplete income data on usually resident, independent offspring. This is supported by a more specific analysis of households in the private rental sector. For private renters, there is a disproportionate share of households for whom income data is incomplete in the couple with children category (35 per cent of partial or not stated incomes compared with 23 percent of all households). To a lesser extent this also holds for group households (17 per cent with incomplete income compared with 13% overall) and family households (9 per cent compared with 6 per cent overall).

Similar results hold for 1986 for couples with children (with 45 per cent of those with incomplete income information being in this category compared with only 24 per cent overall) and for family households (9 per cent compared with 6 per cent overall). Interestingly, it does not hold for group households in 1986.

Further patterns in the missing income data can be observed. For example, over 60 per cent of the households for whom income data are missing in 1996 were multiple income unit households compared with only 40 per cent of households for whom income data are available. This suggests that such households may have higher incomes than the smaller households for whom income data are present. Ignoring these households (eg either by pro-rating data across households for whom income data are present or by ignoring those observations for which all data are not present) could over-estimate the number of low income households.

Little and Rubin (1987) claim that, in such cases, discarding incompletely recorded observations and analysing only observations with complete data, whilst simple and potentially satisfactory when only small amounts of data are missing, can lead to serious biases. It is also not efficient. An approach to dealing with non-response when this arises from item non-response is to impute values for the missing data.

A.2.3 Methods of imputation

This can be done by substituting observations where data is recorded for those where it is missing. This is described as hot deck imputation if replacement value is derived from observed data and cold deck imputation if it is derived from an external source.[27] Alternatively, it can be done by mean imputation where the means from sets of recorded variables are substituted for missing data or a value for the missing variable is estimated by regression techniques. Two simple approaches are to estimate the missing values by the unconditional or the conditional means of the recorded values.

Unconditional mean imputation arises when the missing value of a particular variable is replaced with the mean of the observed values of the same variable. This ensures the means of the observed and imputed values are the same as those of the observed values. However, because it imputes values at the centre of the distribution, it results in

[27] Both the ABS and the US Census Bureau employ hot deck imputation in those instances where missing data is imputed before being provided to the analyst. The hot-deck procedure relies on making all observed variables (X) categorical and finding, for each non-respondent, an exactly matching respondent. With only one match, a straight replacement is undertaken. With more than one match, either the first or a randomly chosen respondent can be chosen to define the missing value. With no matching respondents, the categories of the observed variables need to be made broader or some components of X need to be dropped altogether. (Rubin 1987, 157)

underestimates of the true variance of the data. Also, because the imputation is unconditional, it is possible that relevant and available information on the household or dwelling for which data is imputed is not used (Molenberghs et al 1997). It assumes that the variables are missing completely at random; in other words, that the missingness is not related to any of the variables in the study.

A less restrictive assumption is that the data is missing at random; in other words, the missingness may be related to the observed data, but not to the missing data. The approach to be employed in this study is what is described as conditional imputation. This involves substituting means that are conditioned on the variables recorded in an incomplete case. Rubin and Little (1987, p44) describe this approach as 'a more promising' form of imputation although, quoting other authors, they do caution that

'The idea of imputation is both seductive and dangerous. It is seductive because it can lull the user into the pleasurable state of believing that the data are complete after all, and it is dangerous because it lumps together situations where the problem is sufficiently minor that it can be legitimately handled in this way and situations where standard estimators applied to the real and imputed data have substantial biases.'

Because the observed data in this data set represent full count data with no sampling variation, this approach has been implemented by replacing each of the missing data with means generated from the observed data and conditioned on relevant dwelling or household characteristics. This is described as a conditional mean imputation approach.

A.2.4 Imputation of missing household characteristics

For the households for whom income data are missing, a number of relevant household characteristics have been taken into account to impute these data. These characteristics are region, a combined household type and size variable, age and number of persons employed. There are no data reported missing for any of these chosen characteristics.

In this study, states have been classified into a metropolitan and non-metropolitan split within each state (yielding 16 categories). As the variation in household income for similar household types is unlikely to range across the broad categories employed a less fine spatial disaggregation could be employed in future. Likewise, only 6 broad household types were employed with four single family household types (couples, couples with children, singles, singles with children), a group household and a catch-all multi-family household category. As with the level of spatial disaggregation, too great a level of household disaggregation results in a number of empty cells which have to be treated separately. Experimentation with data which explicitly took household size into account suggested this yielded significant numbers of empty cells. For household income, it was also decided that the number of persons employed in the household was likely to have a significant impact. All 3 categories available for this variable (being 0,1 or 2+ persons employed) were used. Finally, household income varies significantly with life-cycle characteristics and so all available (5) age categories in the data were employed.

Mean income has been estimated from those households in each tenure for whom income data are available for each of the 1,440 combinations arising from the 16*6*5*3 classification. This was done by first converting each income category to its mean dollar value and then estimating a weighted mean over all households in each of the cells in the four way classification. In this study, HES data from 1984 and 1994 with CPI adjustment were used to estimate appropriate mean categorical values. Details are provided in Appendix A. In the absence of appropriate information on the underlying distribution of household incomes, the mid point of each income category could be employed.

The relevant results in these tables have been used to impute a value for any equivalent household for whom income data are missing. For both 1986 and 1996 this procedure resulted in a small number of empty cells for which there were no observed data from which an estimate of income could be generated. This was a problem only when the data was needed because for an observation which met the particular cell characteristics but had missing income data.

This situation arose for a small number of cases where the recorded age of the reference person in the household was over 65. In these cases, households were assigned the relevant single or married person pension or statutory income (including rent assistance) for 1986 or 1996 as relevant. It also arose for a small number of cases of young households with no person in employment in the north western states. In these cases, statutory incomes for the relevant household category were applied. Two children were assumed when their presence was indicated in a sole parent or married couple household; group households were assigned two single statutory incomes. In total there were fewer than a half of one percent of cases in 1996 for whom statutory rather than conditional mean incomes were imputed. After this secondary imputation, there were no cases with income data missing. For 1986 there were no cases which required secondary imputation. There were cases where income was not available for the particular combination of state, age, household and employment characteristics, but there were no matching combinations requiring income imputation.

If this secondary approach leaves a significant number of empty cells, an alternative is to employ a higher level of aggregation to determine mean income levels. This two step approach was sufficient to impute income data for all households in private rental. When the analysis was extended to include other tenures, however, there were still approximately 20,000 observations in 1996 and 1600 observations in 1986 with income data missing. For these observations a secondary round of imputation was undertaken. This employed the conditional mean imputation described above but employed a lower number of categories by dropping both regional and household classification. Thus, for the observations where income was still missing after the first round of imputation, income was imputed on the basis of 5 tenure categories, 3 number of employed persons categories and 5 age categories.

A.3: Imputation References

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APPENDIX B DETAILED TABLES

Table B.1: Incidence and growth of households by agea

	15-24		25-44		45-64		65+		All house-holds
	incid 1996	growth 86-96	incid 1996	growth 86-96	incid 1996	growth 86-96	incid 1996	growth 86-96	growth 86-96
	%	%	%	%	%	%	%	%	%
Sydney	5	-2	42	12	33	18	20	28	16
NSW non-metro	6	9	39	15	32	24	23	45	23
Melbourne	5	1	43	14	32	19	20	32	18
Vic non-metro	6	5	39	12	32	23	23	35	19
Brisbane	8	37	42	29	32	44	18	39	36
Qld non-metro	7	27	42	36	32	47	19	44	40
Adelaide	7	10	40	11	31	18	23	36	18
SA non-metro	6	-15	41	8	32	20	22	37	16
Perth	7	21	43	26	32	46	18	53	36
WA non-metro	7	6	47	23	30	35	16	43	28
Hobart	7	9	41	11	31	22	21	33	18
Tas non-metro	7	8	40	10	32	25	21	29	18
Darwin	9	-10	54	7	31	67	6	77	21
NT non-metro	9	-3	55	25	30	48	6	31	28
ACT	8	32	47	16	33	55	12	85	34
metro	6.0	9.2	42.4	16.0	32.1	25.3	19.5	34.3	21.7
non-metro	6.4	10.8	22.3	19.6	31.8	30.1	21.4	41.2	26.3
all households	6.1	9.8	41.7	17.3	32.0	27.0	20.2	36.9	23.4

a. growth is in number of households, not in share of age group
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.2: Growth and relative growth rates of households by age[ab]

	15-24		25-44		45-64		65+		All households
	growth 86-96	relative growth 86-96	growth 86-96	relative growth 86-96	growth 86-96	relative growth 86-96	growth 86-96	relative growth 86-96	growth 86-96
	%		%		%		%		%
Sydney	-2	-12	12	76	18	114	28	169	16
NSW non-metro	9	36	15	63	24	104	45	193	23
Melbourne	1	5	14	77	19	107	32	178	18
Vic non-metro	5	24	12	61	23	116	35	178	19
Brisbane	37	103	29	80	44	124	39	109	36
Qld non-metro	27	67	36	90	47	118	44	110	40
Adelaide	10	53	11	62	18	100	36	198	18
SA non-metro	-15	-95	8	55	20	129	37	240	16
Perth	21	58	26	73	46	127	53	148	36
WA non-metro	6	23	23	83	35	126	43	155	28
Hobart	9	48	11	61	22	120	33	178	18
Tas non-metro	8	46	10	57	25	137	29	159	18
Darwin	-10	-50	7	32	67	321	77	372	21
NT non-metro	-3	-11	25	89	48	173	31	111	28
ACT	32	93	16	46	55	161	85	247	34
metro	9	43	16	74	25	116	34	158	22
non-metro	11	41	20	74	30	114	41	156	26
all households	10	42	17	74	27	116	37	158	23

a. growth is in number of households, not in share of age group
b. relative growth is measured against regional growth
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.3: Incidence of households by household type, 1986 and 1996

	couple		couple with children		single		sole parent[a]		All households	
	1986	1996	1986	1996	1986	1996	1986	1996	1986	1996
	%	%	%	%	%	%	%	%	%	%
Sydney	30	22	33	37	20	22	5	10	100	100
NSW non-metro	32	27	34	34	18	24	6	10	100	100
Melbourne	30	22	35	38	19	23	5	10	100	100
Vic non-metro	32	26	36	36	19	24	5	10	100	100
Brisbane	30	24	34	35	18	22	6	11	100	100
Qld non-metro	32	27	34	34	17	22	5	10	100	100
Adelaide	33	25	31	32	20	27	6	10	100	100
SA non-metro	34	29	36	35	18	24	5	8	100	100
Perth	31	24	33	35	19	24	6	10	100	100
WA non-metro	30	27	39	38	15	21	5	9	100	100
Hobart	31	24	33	33	20	26	6	11	100	100
Tas non-metro	32	27	36	35	18	24	5	10	100	100
Darwin	23	21	38	38	17	19	8	80	100	100
NT non-metro	24	22	37	38	17	22	5	11	100	100
ACT	26	18	41	49	15	21	7	4	100	100
metro	31	23	34	36	19	23	5	10	100	100
non-metro	32	27	35	35	18	23	5	10	100	100
all households	31	24	34	36	19	23	5	10	100	100

Incidence data for sole parents is not strictly comparable across years because of definitional changes. See Appendix A for details.
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.4: Growth and relative growth rates of households by household type[ab]

	couple		couple with children		single		sole parent		All house-holds
	growth 86-96	relative growth 86-96	growth 86-96	relative growth 86-96	growth 86-96	relative growth 86-96	growth 86-96	relative growth 86-96	growth 86-96
	%	%	%	%	%	%	%	%	%
Sydney	-14	-88	33	203	31	193	126	n.a.	16
NSW non-metro	2	7	23	97	59	252	129	n.a.	23
Melbourne	-14	-78	28	155	41	228	143	n.a.	18
Vic non-metro	-2	-9	17	87	53	274	135	n.a.	19
Brisbane	7	19	42	116	61	171	157	n.a.	36
Qld non-metro	19	48	40	100	79	196	154	n.a.	40
Adelaide	-11	-61	24	131	55	307	114	n.a.	18
SA non-metro	0	-2	12	80	54	346	104	n.a.	16
Perth	6	16	44	124	74	207	120	n.a.	36
WA non-metro	15	55	23	83	79	281	113	n.a.	28
Hobart	-8	-45	19	103	56	302	107	n.a.	18
Tas non-metro	-1	-7	16	88	58	318	108	n.a.	18
Darwin	15	72	18	87	43	207	82	n.a.	21
NT non-metro	7	26	31	110	47	168	97	n.a.	28
ACT	16	46	24	70	95	275	108	n.a.	34
metro	-8	-39	32	148	46	212	131	n.a.	22
non-metro	6	23	25	94	63	240	132	n.a.	26
all households	-3	-13	29	126	52	222	131	n.a.	23

a. growth is in number of households, not in share of age group
b. relative growth is measured against regional growth
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.5: Incidence of household type by age, 1986

age of reference person	couple	couple with children	single	sole parent[a]	all households
Metropolitan households					
15-24	28.6	12.7	20.2	7.2	100.0
25-44	16.1	55.0	12.2	8.6	100.0
45-64	43.6	25.8	16.3	3.3	100.0
65+	44.4	1.0	42.0	0.3	100.0
all metro	30.5	33.5	19.2	5.4	100.0
Non-metropolitan households					
15-24	26.7	17.8	22.3	8.5	100.0
25-44	13.4	62.5	9.3	8.6	100.0
45-64	49.0	22.8	15.7	2.9	100.0
65+	48.2	1.1	39.1	0.3	100.0
all non-metro	32.0	35.3	17.9	5.3	100.0
All households					
15-24	27.9	14.6	21.0	7.7	100.0
25-44	15.1	57.6	11.2	8.6	100.0
45-64	45.5	24.7	16.1	3.2	100.0
65+	45.9	1.1	40.9	0.3	100.0
all households	31.1	34.1	18.8	5.3	100.0

a. Incidence data for sole parents is not strictly comparable across years because of definitional changes. See Appendix A for details.
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.6: Incidence of household type by age, 1996

age of reference person	couple	couple with children	single sole parent[a]		all households
Metropolitan households					
15-24	21.5	9.0	24.8	8.8	100.0
25-44	16.3	47.7	16.6	11.4	100.0
45-64	23.3	43.9	18.4	10.6	100.0
65+	37.3	7.7	44.4	7.2	100.0
all metro	23.0	36.4	23.1	10.2	100.0
Non-metropolitan households					
15-24	21.2	14.1	26.0	10.9	100.0
25-44	12.8	54.7	14.3	13.2	100.0
45-64	35.5	33.7	19.9	7.6	100.0
65+	42.3	5.2	43.9	5.7	100.0
all non-metro	26.9	34.8	23.1	9.7	100.0
All households					
15-24	21.4	11.0	25.3	9.6	100.0
25-44	15.0	50.2	15.8	12.1	100.0
45-64	27.8	40.2	18.9	9.5	100.0
65+	39.2	6.7	44.2	6.6	100.0
all households	24.4	35.8	23.1	10.0	100.0

a. Incidence data for sole parents is not strictly comparable across years because of definitional changes. See Appendix A for details.
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.7: Incidence by age group and household type[a], 1986

age of reference person	couple	couple with children	single	sole parent	all households
Metropolitan households					
15-24	6.2	2.5	7.0	8.9	6.7
25-44	23.4	72.9	28.1	71.0	44.4
45-64	44.6	24.0	26.3	19.1	31.2
65+	25.7	0.5	38.6	0.9	17.7
all metro	100.0	100.0	100.0	100.0	100.0
Non-metropolitan households					
15-24	6.1	3.7	9.1	11.8	7.3
25-44	17.9	75.7	22.2	69.8	42.7
45-64	47.2	20.0	27.0	17.2	30.8
65+	28.8	0.6	41.7	1.2	19.1
all non-metro	100.0	100.0	100.0	100.0	100.0
All households					
15-24	6.2	3.0	7.7	9.9	6.9
25-44	21.4	74.0	26.1	70.6	43.8
45-64	45.6	22.5	26.6	18.4	31.1
65+	26.9	0.6	39.7	1.0	18.2
all households	100.0	100.0	100.0	100.0	100.0

a. Data for older households with children are affected by the definitional changes indicated in Appendix A.
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.8: Incidence by age and household type[a], 1996

age of reference person	couple	couple with children	single	sole parent	all households
Metropolitan households					
15-24	5.6	1.5	6.4	5.2	6.0
25-44	30.1	55.6	30.5	47.7	42.4
45-64	32.6	38.8	25.6	33.3	32.1
65+	31.7	4.1	37.5	13.8	19.5
all metro	100.0	100.0	100.0	100.0	100.0
Non-metropolitan households					
15-24	5.1	2.6	7.2	7.2	6.4
25-44	19.2	63.5	24.9	55.2	40.4
45-64	42.0	30.7	27.3	24.9	31.8
65+	33.7	3.2	40.6	12.7	21.4
all non-metro	100.0	100.0	100.0	100.0	100.0
All households					
15-24	5.4	1.9	6.7	5.9	6.1
25-44	25.7	58.4	28.4	50.4	41.7
45-64	36.4	35.9	26.2	30.3	32.0
65+	32.5	3.8	38.7	13.4	20.2
all households	100.0	100.0	100.0	100.0	100.0

a. Data for older households with children are affected by the definitional changes indicated in Appendix A.
Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.9: Incidence of households by household income, 1986 and 1996

	low		low-mod		mod		mod-high		high	
	1986	1996	1986	1996	1986	1996	1986	1996	1986	1996
	%	%	%	%	%	%	%	%	%	%
Sydney	13	18	14	15	24	19	26	21	23	27
NSW non-metro	17	26	22	22	28	22	22	18	12	13
Melbourne	12	19	14	17	25	21	27	21	23	23
Vic non-metro	16	25	21	22	28	23	23	18	12	11
Brisbane	13	18	17	18	27	22	25	22	17	20
Qld non-metro	15	22	22	21	29	23	22	20	12	14
Adelaide	15	24	18	20	26	22	24	19	17	16
SA non-metro	17	27	23	22	28	23	21	18	10	10
Perth	13	19	17	18	26	21	26	22	18	20
WA non-metro	13	19	19	18	27	22	26	22	15	18
Hobart	14	23	17	20	27	23	25	19	17	15
Tas non-metro	16	27	22	23	30	24	22	17	11	10
Darwin	7	11	10	12	24	22	29	25	31	30
NT non-metro	8	11	14	14	25	24	28	26	25	25
ACT	7	12	8	12	18	19	29	25	39	33
metro	13	19	15	16	25	20	26	21	22	23
non-metro	16	24	22	21	28	23	22	19	12	13
Australia	14	21	17	18	26	21	25	20	18	19

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.10: Incidence of 25-44 year old households by household income, 1986 and 1996

	low		low-mod		mod		mod-high		high	
	1986	1996	1986	1996	1986	1996	1986	1996	1986	1996
	%	%	%	%	%	%	%	%	%	%
Sydney	5	8	9	13	27	22	33	26	26	31
NSW non-metro	8	12	16	20	34	27	29	26	14	15
Melbourne	4	8	9	14	29	24	34	28	24	25
Vic non-metro	7	12	14	20	35	30	31	26	13	13
Brisbane	5	8	11	15	33	26	32	29	19	22
Qld non-metro	8	10	16	19	35	29	28	26	13	16
Adelaide	6	12	11	17	31	28	32	25	19	17
SA non-metro	9	13	17	21	35	31	27	24	11	11
Perth	6	9	11	15	30	25	33	28	20	23
WA non-metro	7	9	13	16	31	25	32	29	18	21
Hobart	6	12	11	17	32	28	32	26	18	18
Tas non-metro	7	13	15	21	37	31	29	24	12	11
Darwin	4	6	7	12	24	23	32	28	33	31
NT non-metro	5	8	10	13	26	25	31	28	29	27
ACT	3	7	5	10	18	20	33	29	41	35
metro	5	9	10	14	29	24	33	27	23	26
non-metro	8	11	15	19	34	28	29	26	14	15
Australia	6	10	12	16	31	26	32	27	20	22

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.11: Tenure incidence in 1996 and change from 1986 to 1996 by age and region

	metro households		non-metro households		all households	
	1996	change 86-96	1996	change 86-96	1996	change 86-96
	%		%		%	
15-24 year old households						
outright owner	8.6	2.3	6.6	-0.1	7.9	1.4
owner purchaser	12.2	-7.3	11.6	-4.6	12.0	-6.2
private renter	63.5	5.6	59.2	7.2	61.9	6.2
public renter	5.3	0.0	6.9	-0.2	5.9	-0.1
all tenures	100.0	0.0	100.0	0.0	100.0	0.0
25-44 year old households						
outright owner	19.0	3.6	8.2	-0.4	19.7	2.0
owner purchaser	40.5	-10.3	20.2	1.4	39.0	-7.5
private renter	28.3	5.8	56.0	2.1	26.7	4.7
public renter	5.1	0.3	2.2	0.6	5.5	0.2
all tenures	100.0	0.0	100.0	0.0	100.0	0.0
45-64 year old households						
outright owner	53.3	2.2	56.3	-0.5	54.4	1.3
owner purchaser	24.7	-3.6	20.1	1.7	23.0	-1.7
private renter	11.8	1.5	10.3	0.9	11.2	1.3
public renter	5.0	0.0	4.6	0.3	4.8	0.1
all tenures	100.0	0.0	100.0	0.0	100.0	0.0
65+ year old households						
outright owner	72.5	2.1	74.7	3.0	73.3	2.4
owner purchaser	3.7	-3.8	3.0	-1.9	3.4	-3.1
private renter	4.8	-2.7	5.0	-2.1	4.9	-2.5
public renter	7.7	0.6	5.5	0.9	6.8	0.7
all tenures	100.0	0.0	100.0	0.0	100.0	0.0
all households						
outright owner	39.8	4.2	42.8	1.6	40.9	3.3
owner purchaser	26.6	-7.5	22.4	-1.8	25.0	-5.5
private renter	20.5	2.2	17.8	0.7	19.5	1.6
public renter	5.6	0.3	5.5	0.3	5.6	0.3
all tenures	100.0	0.0	100.0	0.0	100.0	0.0

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.12: Tenure incidence in 1996 and change from 1986 to 1996 by age and income: Australia

	income ($1996 pw)					
	<$300	$300-500	$500-800	$800-1200	$1200+	all households
15-24 year old households						
outright owner	1.0	-0.4	0.5	1.9	2.5	1.4
owner purchaser	-1.7	-3.2	-5.6	-6.3	-3.8	-6.2
private renter	4.4	9.9	10.3	3.7	0.2	6.2
public renter	-2.2	-1.1	-1.4	-0.7	-0.6	-0.1
all tenures	0.0	0.0	0.0	0.0	0.0	0.0
25-44 year old households						
outright owner	-1.9	-1.8	1.3	3.2	5.5	2.0
owner purchaser	-4.7	-2.6	-6.5	-5.2	-7.0	-7.5
private renter	3.0	7.0	6.7	2.3	0.8	4.7
public renter	1.8	-1.4	-0.9	-0.8	-0.6	0.2
all tenures	0.0	0.0	0.0	0.0	0.0	0.0
45-64 year old households						
outright owner	2.7	-2.7	1.1	0.7	3.6	1.3
owner purchaser	-1.7	-0.6	0.6	-0.9	-2.9	-1.7
private renter	-0.8	4.5	1.8	1.2	0.1	1.3
public renter	3.0	-0.2	-1.0	-1.1	-0.9	0.1
all tenures	0.0	0.0	0.0	0.0	0.0	0.0
65+ year old households						
outright owner	1.8	4.8	5.2	6.8	6.6	2.4
owner purchaser	-1.4	-3.4	-3.7	-5.1	-4.5	-3.1
private renter	-4.6	-1.3	-1.5	-1.1	-1.4	-2.5
public renter	0.8	-1.0	-0.3	-0.4	-0.5	0.7
all tenures	0.0	0.0	0.0	0.0	0.0	0.0
all households						
outright owner	1.1	-4.4	2.7	4.2	5.6	3.3
owner purchaser	-2.1	-0.9	-4.3	-4.5	-5.2	-5.5
private renter	-1.6	6.2	4.0	0.8	-0.4	1.6
public renter	1.4	-0.4	-0.9	-0.9	-0.8	0.3
all tenures	0.0	0.0	0.0	0.0	0.0	0.0

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.13: Tenure incidence in 1996 and change from 1986 to 1996 by age and income: Metropolitan regions

	income ($1996 pw)					
	<$300	$300-500	$500-800	$800-1200	$1200+	all households
						15-24 year old households
outright owner	2.1	0.7	1.2	2.4	2.8	2.3
owner purchaser	-2.0	-3.2	-6.8	-7.4	-5.4	-7.3
private renter	1.1	8.6	11.4	4.1	1.8	5.6
public renter	-3.1	-2.0	-1.1	-0.5	-0.3	0.0
all tenures	0.0	0.0	0.0	0.0	0.0	0.0
						25-44 year old households
outright owner	1.6	1.1	2.5	4.1	6.7	3.6
owner purchaser	-6.1	-4.2	-9.2	-8.1	-9.6	-10.3
private renter	0.5	6.4	8.2	4.4	2.7	5.8
public renter	0.7	-2.6	-0.8	-0.7	-0.5	0.3
all tenures	0.0	0.0	0.0	0.0	0.0	0.0
						45-64 year old households
outright owner	2.9	-2.5	1.9	1.8	4.6	2.2
owner purchaser	-3.0	-2.6	-1.4	-2.7	-4.7	-3.6
private renter	-1.9	4.7	2.0	1.9	1.0	1.5
public renter	3.5	-0.8	-1.0	-1.2	-0.9	0.0
all tenures	0.0	0.0	0.0	0.0	0.0	0.0
						65+ year old households
outright owner	1.5	4.3	3.9	6.7	6.5	2.1
owner purchaser	-1.9	-4.2	-4.3	-6.2	-5.5	-3.8
private renter	-5.5	-1.4	-0.9	-0.6	-0.7	-2.7
public renter	0.9	-1.5	-0.4	-0.7	-0.6	0.6
all tenures	0.0	0.0	0.0	0.0	0.0	0.0
						all households
outright owner	0.8	-4.0	3.5	5.4	6.6	4.2
owner purchaser	-2.7	-2.1	-6.5	-7.1	-7.3	-7.5
private renter	-2.4	6.2	4.9	2.2	1.0	2.2
public renter	1.4	-1.1	-0.9	-0.8	-0.7	0.3
all tenures	0.0	0.0	0.0	0.0	0.0	0.0

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.14: Tenure incidence in 1996 and change from 1986 to 1996 by age and income: Non-metropolitan regions

	income ($1996 pw)					
	<$300	$300-500	$500-800	$800-1200	$1200+	all households
						15-24 year old households
outright owner	-0.8	-1.7	-0.6	0.8	1.6	-0.1
owner purchaser	-1.4	-3.3	-3.7	-4.1	0.5	-4.6
private renter	9.0	11.2	8.8	2.8	-3.6	7.2
public renter	-1.0	-0.1	-1.8	-1.2	-1.6	-0.2
all tenures	0.0	0.0	0.0	0.0	0.0	0.0
						25-44 year old households
outright owner	-5.9	-4.9	-0.7	1.2	1.6	-1.0
owner purchaser	-2.8	-0.8	-2.2	1.1	1.4	-2.2
private renter	5.8	7.4	4.6	-1.8	-5.3	2.7
public renter	2.7	-0.2	-1.1	-1.1	-1.2	0.1
all tenures	0.0	0.0	0.0	0.0	0.0	0.0
						45-64 year old households
outright owner	2.1	-2.8	0.0	-1.4	-0.1	-0.5
owner purchaser	-0.2	1.7	3.5	2.8	3.4	1.7
private renter	0.7	4.3	1.5	0.0	-2.7	0.9
public renter	2.8	0.4	-0.9	-0.9	-1.1	0.3
all tenures	0.0	0.0	0.0	0.0	0.0	0.0
						65+ year old households
outright owner	2.0	5.6	7.5	7.0	7.0	3.0
owner purchaser	-0.7	-2.3	-2.3	-2.8	-1.6	-1.9
private renter	-3.3	-1.1	-2.4	-2.4	-3.5	-2.1
public renter	0.8	-0.4	0.0	0.2	0.0	0.9
all tenures	0.0	0.0	0.0	0.0	0.0	0.0
						all households
outright owner	1.3	-4.7	1.4	1.7	2.6	1.6
owner purchaser	-1.2	0.6	-1.0	0.9	1.7	-1.8
private renter	-0.3	6.0	2.7	-1.7	-4.9	0.7
public renter	1.5	0.4	-1.0	-1.0	-1.1	0.3
all tenures	0.0	0.0	0.0	0.0	0.0	0.0

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.15: Incidence of tenure by income and age, 1986: Australia

	<$300	$300-500	$500-800	$800-1200	$1200+	all households
15-24 year old households						
outright owner	10.4	7.7	6.1	4.8	4.9	6.5
owner purchaser	6.0	9.9	18.6	27.2	23.3	18.2
private renter	50.5	55.9	54.6	56.7	62.2	55.7
public renter	14.9	9.2	5.0	2.4	1.5	6.0
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
25-44 year old households						
outright owner	18.7	19.2	17.7	17.6	16.9	17.7
owner purchaser	17.3	26.2	43.8	54.1	58.8	46.5
private renter	32.9	30.0	23.3	18.6	17.9	22.0
public renter	18.7	12.6	5.4	2.4	1.2	5.2
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
45-64 year old households						
outright owner	50.4	57.6	52.0	53.5	52.4	53.1
owner purchaser	9.5	14.6	21.5	29.4	36.5	24.8
private renter	15.3	11.6	12.2	8.5	5.6	9.9
public renter	11.4	7.4	5.1	3.1	1.6	4.8
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
65+ year old households						
outright owner	65.0	73.5	74.8	76.0	78.5	70.9
owner purchaser	3.8	6.7	8.9	11.5	11.4	6.5
private renter	10.0	6.1	6.0	4.9	4.2	7.4
public renter	9.8	5.0	3.2	2.4	1.4	6.2
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
all households						
outright owner	49.1	48.9	32.8	30.9	34.1	37.6
owner purchaser	7.9	14.7	31.4	42.2	45.8	30.5
private renter	18.2	18.0	20.9	17.5	14.0	17.9
public renter	12.2	8.1	5.0	2.6	1.4	5.3
all tenures	100.0	100.0	100.0	100.0	100.0	100.0

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.16: Incidence of tenure by income and age, 1996: Australia

	<$300	$300-500	$500-800	$800-1200	$1200+	all households
15-24 year old households						
outright owner	11.4	7.3	6.6	6.7	7.4	7.9
owner purchaser	4.3	6.7	13.0	20.8	19.5	12.0
private renter	54.9	65.8	64.9	60.3	62.3	61.9
public renter	12.7	8.1	3.6	1.7	0.9	5.9
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
25-44 year old households						
outright owner	16.8	17.4	19.0	20.8	22.4	19.7
owner purchaser	12.7	23.6	37.3	48.9	51.8	39.0
private renter	35.9	36.9	30.0	20.8	18.7	26.7
public renter	20.4	11.1	4.5	1.6	0.6	5.5
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
45-64 year old households						
outright owner	53.1	54.9	53.1	54.3	55.9	54.4
owner purchaser	7.7	14.0	22.0	28.5	33.6	23.0
private renter	14.4	16.1	14.0	9.7	5.7	11.2
public renter	14.4	7.2	4.1	1.9	0.6	4.8
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
65+ year old households						
outright owner	66.8	78.3	80.0	82.7	85.1	73.3
owner purchaser	2.4	3.3	5.3	6.3	6.9	3.4
private renter	5.4	4.7	4.6	3.8	2.8	4.9
public renter	10.5	3.9	2.9	1.9	1.0	6.8
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
all households						
outright owner	50.2	44.5	35.5	35.1	39.8	40.9
owner purchaser	5.9	13.8	27.1	37.7	40.6	25.0
private renter	16.7	24.1	24.9	18.4	13.5	19.5
public renter	13.6	7.7	4.1	1.7	0.6	5.6
all tenures	100.0	100.0	100.0	100.0	100.0	100.0

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.17: Incidence of tenure by income and age, 1986: Metropolitan regions

	<$300	$300-500	$500-800	$800-1200	$1200+	all households
15-24 year old households						
outright owner	10.8	7.4	6.1	4.8	4.9	6.3
owner purchaser	6.8	9.8	19.3	27.9	24.5	19.5
private renter	52.9	58.6	56.2	58.7	64.0	57.9
public renter	15.4	9.7	4.3	1.8	1.0	5.3
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
25-44 year old households						
outright owner	13.1	14.9	15.2	16.2	15.4	15.4
owner purchaser	18.1	27.3	46.5	57.8	62.7	50.8
private renter	37.2	32.8	24.8	18.7	17.5	22.5
public renter	21.8	14.2	5.1	2.1	0.9	4.8
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
45-64 year old households						
outright owner	46.9	54.5	49.4	52.1	51.4	51.0
owner purchaser	10.3	16.8	23.9	32.3	39.1	28.3
private renter	17.3	13.4	13.6	8.7	5.2	10.2
public renter	14.1	9.3	5.6	3.1	1.4	5.0
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
65+ year old households						
outright owner	63.6	73.0	75.3	75.8	78.6	70.4
owner purchaser	4.3	7.7	10.0	12.9	12.8	7.5
private renter	10.6	6.3	5.7	4.7	3.8	7.5
public renter	11.3	6.1	3.6	2.6	1.5	7.1
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
all households						
outright owner	47.4	47.4	31.1	29.5	33.1	35.7
owner purchaser	8.4	15.7	33.6	45.4	48.8	34.0
private renter	19.6	19.1	22.1	17.8	13.5	18.4
public renter	14.1	9.4	5.0	2.4	1.1	5.3
all tenures	100.0	100.0	100.0	100.0	100.0	100.0

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.18: Incidence of tenure by income and age, 1996: Metropolitan regions

	<$300	$300-500	$500-800	$800-1200	$1200+	all households
15-24 year old households						
outright owner	12.9	8.1	7.3	7.2	7.7	8.6
owner purchaser	4.8	6.6	12.5	20.4	19.1	12.2
private renter	54.0	67.2	67.6	62.8	65.8	63.5
public renter	12.3	7.7	3.1	1.3	0.7	5.3
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
25-44 year old households						
outright owner	14.7	16.0	17.7	20.2	22.1	19.0
owner purchaser	12.0	23.1	37.3	49.7	53.1	40.5
private renter	37.7	39.2	33.0	23.1	20.3	28.3
public renter	22.4	11.6	4.3	1.3	0.4	5.1
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
45-64 year old households						
outright owner	49.9	52.0	51.3	53.9	56.0	53.3
owner purchaser	7.3	14.2	22.5	29.6	34.4	24.7
private renter	15.4	18.1	15.6	10.6	6.1	11.8
public renter	17.7	8.5	4.5	1.9	0.6	5.0
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
65+ year old households						
outright owner	65.1	77.3	79.3	82.5	85.1	72.5
owner purchaser	2.4	3.5	5.6	6.7	7.3	3.7
private renter	5.1	4.9	4.8	4.1	3.0	4.8
public renter	12.2	4.6	3.2	1.9	0.8	7.7
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
all households						
outright owner	48.2	43.4	34.6	34.9	39.7	39.8
owner purchaser	5.7	13.6	27.1	38.3	41.6	26.6
private renter	17.1	25.4	26.9	20.0	14.6	20.5
public renter	15.5	8.3	4.2	1.6	0.5	5.6
all tenures	100.0	100.0	100.0	100.0	100.0	100.0

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.19: Incidence of tenure by income and age, 1986: Non-metropolitan regions

	<$300	$300-500	$500-800	$800-1200	$1200+	all households
15-24 year old households						
outright owner	10.0	8.0	6.1	5.0	5.2	6.8
owner purchaser	5.0	10.0	17.5	25.7	20.1	16.1
private renter	47.4	52.9	52.1	52.6	57.0	52.1
public renter	14.2	8.7	6.2	3.5	3.1	7.1
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
25-44 year old households						
outright owner	25.5	24.1	21.6	20.7	21.5	22.0
owner purchaser	16.4	24.9	39.5	46.3	46.4	38.5
private renter	27.6	26.6	20.9	18.4	19.1	21.3
public renter	14.9	10.7	5.8	3.1	2.3	6.0
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
45-64 year old households						
outright owner	54.8	61.2	55.9	56.4	55.8	56.8
owner purchaser	8.4	12.1	17.9	23.7	28.1	18.4
private renter	12.7	9.5	10.0	8.0	7.0	9.3
public renter	7.9	5.3	4.4	2.9	2.0	4.3
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
65+ year old households						
outright owner	67.2	74.3	73.8	76.5	78.2	71.7
owner purchaser	2.9	5.4	6.9	8.1	7.3	4.9
private renter	9.0	5.7	6.7	5.5	5.5	7.1
public renter	7.2	3.4	2.4	1.8	1.4	4.6
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
all households						
outright owner	51.5	50.7	35.5	33.6	37.4	41.1
owner purchaser	7.3	13.5	28.0	35.7	35.9	24.2
private renter	16.4	16.5	19.0	17.0	15.3	17.1
public renter	9.4	6.5	5.1	3.0	2.1	5.3
all tenures	100.0	100.0	100.0	100.0	100.0	100.0

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.20: Incidence of tenure by income and age, 1996: Non-metropolitan regions

	<$300	$300-500	$500-800	$800-1200	$1200+	all households
15-24 year old households						
outright owner	9.1	6.3	5.5	5.7	6.8	6.6
owner purchaser	3.6	6.7	13.8	21.6	20.6	11.6
private renter	56.4	64.1	60.9	55.4	53.3	59.2
public renter	13.2	8.6	4.4	2.3	1.5	6.9
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
25-44 year old households						
outright owner	19.7	19.2	20.9	21.9	23.1	21.0
owner purchaser	13.6	24.2	37.3	47.4	47.8	36.2
private renter	33.4	34.0	25.5	16.6	13.7	24.0
public renter	17.6	10.5	4.7	2.0	1.1	6.1
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
45-64 year old households						
outright owner	56.9	58.3	55.8	55.0	55.7	56.3
owner purchaser	8.2	13.8	21.4	26.4	31.5	20.1
private renter	13.4	13.7	11.5	8.0	4.3	10.3
public renter	10.6	5.6	3.5	2.0	0.9	4.6
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
65+ year old households						
outright owner	69.2	79.8	81.2	83.4	85.2	74.7
owner purchaser	2.3	3.1	4.6	5.3	5.7	3.0
private renter	5.7	4.6	4.3	3.1	2.1	5.0
public renter	8.1	3.0	2.4	2.0	1.4	5.5
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
all households						
outright owner	52.8	46.0	36.9	35.4	40.0	42.8
owner purchaser	6.1	14.0	27.0	36.6	37.6	22.4
private renter	16.1	22.5	21.7	15.2	10.4	17.8
public renter	10.9	6.9	4.1	2.1	1.0	5.5
all tenures	100.0	100.0	100.0	100.0	100.0	100.0

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.21: Incidence of home ownership by age, household type and income 1986, Australia

	<$300	$300-500	$500-800	$800-1200	$1200+	all households
15-24 year old households						
couple	17.8	19.7	27.1	42.4	44.3	35.9
couple with children	23.7	23.4	37.3	45.2	49.2	35.1
single	18.9	15.8	21.3	29.9	24.0	19.2
sole parent	11.0	17.9	23.6	25.7	26.8	16.3
all households	16.5	17.6	24.7	32.0	28.3	24.7
25-44 year old households						
couple	45.8	43.6	47.4	65.2	72.9	63.0
couple with children	64.0	56.0	72.2	78.8	84.5	75.1
single	28.2	27.5	43.0	57.8	57.0	41.0
sole parent	28.7	38.9	51.2	58.1	62.5	42.2
all households	36.0	45.4	61.5	71.7	75.7	64.2
45-64 year old households						
couple	78.9	79.7	78.3	85.9	90.0	83.7
couple with children	75.9	70.2	79.5	84.7	90.9	84.7
single	55.6	62.3	61.2	69.8	69.8	59.4
sole parent	48.3	56.0	64.1	72.5	79.3	62.5
all households	59.9	72.2	73.5	82.9	88.9	77.9
65+ year old households						
couple	80.7	81.8	87.2	89.5	91.9	84.1
couple with children	70.3	74.2	77.1	80.5	85.2	77.8
single	67.5	77.3	83.4	86.7	87.6	69.8
sole parent	63.0	64.5	69.6	70.5	80.9	67.0
all households	68.8	80.3	83.7	87.4	89.9	77.4
	57.0	63.6	64.2	73.1	79.9	68.1
all households						
couple	74.4	78.2	70.5	75.0	82.2	76.4
couple with children	64.4	56.4	71.6	79.5	86.7	76.1
single	59.3	49.4	48.9	62.1	65.2	55.6
sole parent	28.6	39.7	52.1	60.6	67.8	43.6
all households	57.0	63.6	64.2	73.1	79.9	68.1

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.22: Incidence of home ownership by age, household type and income 1996, Australia

	<$300	$300-500	$500-800	$800-1200	$1200+	all households
15-24 year old households						
couple	12.8	13.5	24.9	37.8	39.7	30.1
couple with children	14.1	14.2	26.3	40.0	42.1	24.4
single	18.4	19.7	22.8	29.0	33.2	20.5
sole parent	7.9	8.1	14.0	20.4	27.7	10.2
all households	15.7	14.0	19.6	27.5	27.0	19.8
25-44 year old households						
couple	38.9	40.2	50.9	64.4	68.7	61.0
couple with children	49.5	53.0	66.3	78.4	84.5	72.4
single	26.1	35.7	46.8	56.3	53.6	41.2
sole parent	23.3	29.1	46.0	55.2	55.9	35.0
all households	29.4	41.0	56.3	69.7	74.1	58.7
45-64 year old households						
couple	80.1	82.1	84.4	86.3	88.3	84.3
couple with children	70.0	68.9	77.9	85.9	91.8	85.8
single	52.1	60.1	65.0	71.0	68.3	58.4
sole parent	48.0	52.4	65.7	74.5	78.2	64.3
all households	60.9	68.9	75.1	82.7	89.6	77.4
65+ year old households						
couple	82.7	85.3	89.6	92.1	93.9	85.8
couple with children	69.0	82.8	86.8	91.1	94.5	88.2
single	64.2	75.1	81.2	84.1	83.1	66.8
sole parent	72.3	74.5	79.8	86.9	89.9	79.3
all households	69.2	81.7	85.3	89.1	92.0	76.8
all households						
couple	78.4	79.0	72.4	73.0	75.9	75.9
couple with children	54.8	56.3	68.9	80.9	88.5	76.9
single	53.9	51.0	53.6	62.0	60.9	54.2
sole parent	29.3	39.4	57.0	68.4	73.4	48.4
all households	56.0	58.3	62.6	72.8	80.3	66.0

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.23: Incidence of home ownership by age, household type and income 1986: Metropolitan regions

	<$300	$300-500	$500-800	$800-1200	$1200+	all households
15-24 year old households						
couple	14.6	17.9	26.1	43.1	45.7	37.1
couple with children	19.9	22.9	38.8	47.7	54.3	37.3
single	20.4	16.3	24.3	34.0	27.9	21.2
sole parent	12.5	18.5	25.3	25.4	25.3	17.7
all households	17.6	17.2	25.4	32.6	29.4	25.8
25-44 year old households						
couple	35.4	38.6	44.0	66.4	74.8	64.8
couple with children	55.2	53.0	74.5	82.0	87.9	78.6
single	24.4	26.0	44.8	61.9	60.4	42.8
sole parent	29.6	41.2	52.9	59.9	64.1	44.7
all households	31.2	42.2	61.8	73.9	78.1	66.2
45-64 year old households						
couple	78.5	80.5	79.1	87.8	91.4	85.7
couple with children	71.2	68.7	81.0	86.6	92.3	86.8
single	53.9	62.4	61.2	72.6	72.5	59.3
sole parent	49.4	56.7	65.6	74.0	80.6	64.7
all households	57.2	71.3	73.3	84.3	90.4	79.3
65+ year old households						
couple	81.2	82.6	89.9	90.8	93.4	85.7
couple with children	67.6	74.5	78.7	79.2	87.1	78.9
single	66.7	77.1	83.7	88.1	87.6	69.4
sole parent	61.7	67.8	67.3	77.8	88.9	69.2
all households	68.0	80.7	85.3	88.7	91.4	77.9
all households						
couple	74.0	79.1	71.0	76.2	83.8	77.8
couple with children	56.6	54.3	73.9	82.4	89.5	79.5
single	58.5	49.9	50.6	65.7	67.8	55.9
sole parent	29.7	41.9	53.9	62.5	69.6	46.3
all households	55.7	63.1	64.7	74.9	82.0	69.7

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.24: Incidence of home ownership by age, household type and income 1986: Metropolitan regions

	<$300	$300-500	$500-800	$800-1200	$1200+	all households
15-24 year old households						
couple	12.7	13.6	23.4	37.9	40.6	30.9
couple with children	13.0	14.4	27.2	42.2	44.6	26.3
single	19.9	20.2	25.4	32.0	37.2	22.1
sole parent	9.2	8.6	14.8	22.1	30.9	11.6
all households	17.8	14.8	19.8	27.6	26.8	20.9
25-44 year old households						
couple	32.9	34.4	46.2	64.9	69.4	61.4
couple with children	43.5	51.3	66.6	79.7	87.1	74.4
single	23.4	34.3	47.7	58.4	55.4	42.2
sole parent	22.8	29.8	46.4	56.4	56.7	36.3
all households	26.7	39.1	55.1	69.9	75.2	59.5
45-64 year old households						
couple	77.6	81.5	83.7	87.7	89.9	84.7
couple with children	68.2	66.3	77.4	86.6	92.5	86.8
single	49.3	58.5	64.9	73.5	69.6	57.9
sole parent	47.0	52.3	65.9	74.8	78.8	65.5
all households	57.2	66.2	73.8	83.4	90.4	78.0
65+ year old households						
couple	81.3	84.8	89.9	92.4	94.2	85.4
couple with children	64.0	82.4	85.7	91.0	94.4	88.2
single	62.9	74.5	81.2	84.2	83.8	66.0
sole parent	71.7	73.2	79.1	87.3	89.8	79.3
all households	67.6	80.8	84.9	89.2	92.3	76.2
all households						
couple	76.7	78.0	70.2	73.0	76.1	74.9
couple with children	50.8	55.4	69.4	82.1	90.1	79.1
single	52.3	50.3	54.4	64.1	62.3	53.8
sole parent	29.2	40.3	57.6	69.6	74.5	50.7
all households	53.8	57.0	61.7	73.2	81.3	66.4

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.25: Incidence of home ownership by age, household type and income 1986: Non-metropolitan regions

	<$300	$300-500	$500-800	$800-1200	$1200+	all households
15-24 year old households						
couple	20.5	21.3	28.6	41.0	40.1	33.7
couple with children	27.1	23.7	35.4	41.5	39.0	32.5
single	17.0	15.2	16.0	23.5	17.1	16.3
sole parent	9.2	17.1	20.9	26.2	30.7	14.3
all households	15.0	18.0	23.7	30.7	25.3	22.9
25-44 year old households						
couple	53.6	48.1	52.3	62.7	65.8	59.1
couple with children	69.2	58.6	69.1	72.5	74.8	69.5
single	33.8	30.4	38.2	43.3	44.2	36.4
sole parent	27.3	35.0	47.4	53.3	57.4	37.6
all households	41.9	49.1	61.1	67.0	67.9	60.5
45-64 year old households						
couple	79.1	78.9	77.4	82.7	85.1	80.4
couple with children	78.9	71.9	77.5	81.2	86.1	80.3
single	58.2	62.1	61.4	61.4	61.2	59.7
sole parent	46.9	54.9	61.1	68.3	74.0	57.9
all households	63.2	73.2	73.7	80.0	83.8	75.2
65+ year old households						
couple	80.1	80.8	82.1	86.7	87.5	81.6
couple with children	72.7	73.8	74.8	83.0	79.2	76.2
single	68.7	77.8	82.8	82.4	87.7	70.3
sole parent	64.4	59.9	73.3	57.5	50.0	63.8
all households	70.1	79.7	80.7	84.6	85.5	76.6
all households						
couple	74.8	77.1	69.8	72.8	77.0	74.1
couple with children	69.3	58.3	68.7	73.8	78.5	70.3
single	60.6	48.6	44.8	50.3	56.4	55.0
sole parent	27.1	36.3	48.4	55.4	62.0	38.7
all households	58.8	64.2	63.5	69.3	73.2	65.4

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.26: Incidence of home ownership by age, household type and income 1986: Non-metropolitan regions

	<$300	$300-500	$500-800	$800-1200	$1200+	all households
15-24 year old households						
couple	13.0	13.4	26.9	37.5	37.5	28.9
couple with children	15.1	14.1	25.3	36.8	38.4	22.4
single	16.1	19.1	18.4	24.1	26.1	18.1
sole parent	6.4	7.5	12.9	17.2	20.8	8.5
all households	12.8	13.0	19.3	27.4	27.4	18.2
25-44 year old households						
couple	45.3	47.8	57.7	63.4	66.0	60.1
couple with children	57.3	54.9	66.0	76.4	77.6	69.2
single	30.1	38.2	44.5	49.5	46.6	39.2
sole parent	23.9	28.2	45.3	52.5	53.7	33.0
all households	33.2	43.4	58.2	69.3	70.9	57.3
45-64 year old households						
couple	82.1	82.6	85.1	84.4	85.2	83.8
couple with children	72.4	72.2	78.7	84.4	89.8	83.5
single	55.8	62.6	65.3	64.4	64.9	59.3
sole parent	49.3	52.6	65.0	73.4	75.2	61.2
all households	65.0	72.1	77.2	81.4	87.2	76.4
65+ year old households						
couple	84.4	86.0	89.2	91.5	93.1	86.3
couple with children	75.9	83.5	88.8	91.5	94.8	88.4
single	66.2	76.2	81.0	83.8	81.6	68.1
sole parent	73.1	76.3	81.2	85.7	90.6	79.3
all households	71.5	82.9	85.9	88.7	90.9	77.7
all households						
couple	80.3	80.2	75.1	73.0	75.4	77.3
couple with children	60.1	57.4	68.3	78.8	83.7	73.0
single	56.3	52.1	51.7	55.8	56.8	54.9
sole parent	29.3	38.1	55.8	65.0	68.9	44.1
all households	58.9	60.1	63.9	72.0	77.5	65.2

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.27: Incidence of tenure by income and age, 1996: Sydney metropolitan region

	<$300	$300-500	$500-800	$800-1200	$1200+	all households
15-24 year old households						
outright owner	16.0	9.7	9.0	8.6	9.4	10.4
owner purchaser	4.1	4.9	8.4	14.2	16.1	9.7
private renter	48.3	65.6	68.9	66.3	67.3	63.7
public renter	13.2	7.6	3.1	1.6	0.7	5.0
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
25-44 year old households						
outright owner	14.4	16.4	17.9	21.3	22.2	19.6
owner purchaser	8.4	16.3	27.5	41.4	47.3	34.3
private renter	37.6	42.8	41.2	29.4	25.5	33.1
public renter	25.6	12.9	4.7	1.3	0.4	5.2
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
45-64 year old households						
outright owner	48.8	49.6	50.5	55.6	57.1	53.7
owner purchaser	4.9	10.5	17.7	24.9	30.8	21.7
private renter	14.8	21.3	19.7	13.1	8.1	13.6
public renter	21.2	10.8	5.3	2.1	0.7	5.5
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
65+ year old households						
outright owner	65.5	77.0	78.5	82.0	85.4	72.9
owner purchaser	1.9	2.9	4.5	6.2	6.4	3.2
private renter	4.5	5.2	5.8	4.9	3.5	4.8
public renter	12.9	4.6	3.3	1.8	0.9	7.8
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
all households						
outright owner	49.2	44.3	35.6	37.3	40.3	41.0
owner purchaser	4.0	9.8	20.0	31.4	37.0	22.7
private renter	15.6	26.3	31.6	23.9	18.1	22.6
public renter	17.3	9.3	4.6	1.7	0.6	5.8
all tenures	100.0	100.0	100.0	100.0	100.0	100.0

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.28: Change in incidence of tenure by income and age, 1996: Sydney metropolitan region

	<$300	$300-500	$500-800	$800-1200	$1200+	all households
15-24 year old households						
outright owner	5.1	2.4	2.9	3.5	4.1	3.9
owner purchaser	-1.4	-2.3	-7.0	-8.6	-5.7	-6.5
private renter	-6.7	5.2	10.4	3.4	1.1	2.9
public renter	-2.2	0.4	-0.6	0.2	-0.1	0.5
all tenures	0.0	0.0	0.0	0.0	0.0	0.0
25-44 year old households						
outright owner	2.0	2.3	3.0	6.4	7.2	4.9
owner purchaser	-6.9	-4.9	-12.3	-12.6	-12.7	-12.3
private renter	-2.5	4.3	10.1	6.8	4.5	6.2
public renter	3.6	-0.8	-0.4	-0.6	-0.4	0.6
all tenures	0.0	0.0	0.0	0.0	0.0	0.0
45-64 year old households						
outright owner	2.2	-4.0	2.7	4.0	5.6	3.2
owner purchaser	-4.3	-4.1	-3.5	-5.0	-6.1	-4.8
private renter	-3.4	5.6	2.7	2.0	1.5	1.4
public renter	7.5	1.2	-0.6	-1.4	-1.1	0.3
all tenures	0.0	0.0	0.0	0.0	0.0	0.0
65+ year old households						
outright owner	1.0	3.4	2.5	6.5	7.2	1.8
owner purchaser	-1.9	-3.5	-4.5	-5.1	-5.8	-3.5
private renter	-5.4	-1.4	-0.3	-1.0	-1.2	-2.8
public renter	1.4	-1.4	-0.4	-1.2	-0.4	0.7
all tenures	0.0	0.0	0.0	0.0	0.0	0.0
all households						
outright owner	1.1	-3.1	3.7	7.8	6.8	5.0
owner purchaser	-3.3	-3.0	-8.3	-10.4	-9.2	-8.3
private renter	-4.1	5.0	5.8	3.2	2.4	1.9
public renter	3.2	0.1	-0.4	-0.8	-0.7	0.6
all tenures	0.0	0.0	0.0	0.0	0.0	0.0

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.29: Change in incidence of tenure by income and age, 1996: Sydney zones

	<$300	$300-500	$500-800	$800-1200	$1200+	all households
15-24 year old households						
inner	5.9	2.6	-2.2	-3.6	-3.0	-0.1
middle	3.2	0.2	-3.7	-4.3	-0.9	-2.2
owner	0.1	-3.7	-8.3	-9.4	-3.7	-7.6
Sydney	3.7	0.2	-4.1	-5.1	-1.6	-2.5
25-44 year old households						
inner	-2.3	0.2	-8.2	-6.3	-7.0	-5.1
middle	-7.6	-6.1	-12.8	-8.0	-6.0	-10.0
owner	-6.6	-3.8	-8.2	-3.9	-0.9	-6.5
Sydney	-4.9	-2.6	-9.3	-6.2	-5.4	-7.4
45-64 year old households						
inner	0.1	-6.3	0.9	-2.1	-1.5	-0.5
middle	-7.7	-9.8	-3.6	-2.1	-1.4	-3.3
owner	-2.0	-8.3	-0.6	1.2	2.8	-0.3
Sydney	-2.0	-8.2	-0.7	-1.0	-0.6	-1.5
65+ year old households						
inner	-0.6	3.8	0.0	2.6	3.0	0.2
middle	-3.2	-1.4	-3.0	0.2	0.5	-3.2
owner	-0.7	-3.1	-4.0	2.0	-0.3	-3.1
Sydney	-0.9	-0.1	-2.0	1.3	1.4	-1.8
all households						
inner	-1.5	-2.6	-3.7	-2.8	-4.3	-2.2
middle	-5.6	-8.4	-7.0	-3.7	-2.9	-5.2
owner	-1.0	-7.9	-4.6	-1.5	1.1	-3.0
Sydney	-2.2	-6.1	-4.6	-2.6	-2.4	-3.3

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.30: Incidence of tenure by income and age, 1996: Melbourne metropolitan region

	<$300	$300-500	$500-800	$800-1200	$1200+	all households
15-24 year old households						
outright owner	14.8	10.1	9.0	8.6	7.1	10.1
owner purchaser	5.3	6.6	12.3	20.0	18.9	12.2
private renter	56.1	68.3	67.7	61.7	67.5	64.2
public renter	7.0	4.3	1.8	0.7	0.3	2.9
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
25-44 year old households						
outright owner	17.5	18.5	20.3	22.4	24.0	21.3
owner purchaser	14.1	25.0	38.6	50.8	53.8	41.8
private renter	41.1	38.6	30.8	20.6	18.2	26.8
public renter	13.0	6.6	2.3	0.8	0.2	2.9
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
45-64 year old households						
outright owner	54.6	55.8	54.3	56.4	58.8	56.5
owner purchaser	7.9	14.3	22.1	28.6	33.0	24.1
private renter	16.3	17.5	14.2	9.6	5.1	11.0
public renter	10.0	4.8	2.4	1.1	0.3	2.8
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
65+ year old households						
outright owner	69.5	79.6	80.4	84.1	85.5	75.5
owner purchaser	2.8	3.7	6.1	6.1	7.2	3.9
private renter	5.5	4.9	4.7	4.3	3.0	5.0
public renter	7.9	2.7	2.2	1.4	0.7	4.9
all tenures	100.0	100.0	100.0	100.0	100.0	100.0
all households						
outright owner	52.7	46.3	37.4	37.2	42.2	42.8
owner purchaser	6.3	14.5	27.8	38.7	41.3	27.1
private renter	17.9	24.7	24.9	18.0	12.9	19.3
public renter	9.3	4.8	2.3	1.0	0.3	3.3
all tenures	100.0	100.0	100.0	100.0	100.0	100.0

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.31: Change in incidence of tenure by income and age, 1996: Melbourne metropolitan region

	<$300	$300-500	$500-800	$800-1200	$1200+	all households
15-24 year old households						
outright owner	1.9	2.0	1.6	3.0	1.9	2.9
owner purchaser	-1.1	-2.7	-5.7	-8.0	-5.5	-7.2
private renter	-1.6	6.6	11.4	3.4	3.5	5.3
public renter	-1.8	-0.1	0.0	-0.3	-0.3	0.4
all tenures	0.0	0.0	0.0	0.0	0.0	0.0
25-44 year old households						
outright owner	2.1	0.5	3.0	3.8	8.4	4.0
owner purchaser	-6.0	-3.2	-7.4	-7.2	-10.6	-10.1
private renter	1.8	5.8	6.6	3.4	2.0	5.6
public renter	-1.3	-1.5	-0.2	-0.2	-0.2	0.4
all tenures	0.0	0.0	0.0	0.0	0.0	0.0
45-64 year old households						
outright owner	4.4	-3.3	1.5	0.0	4.4	1.7
owner purchaser	-2.9	-3.0	-1.4	-1.7	-4.5	-3.7
private renter	-0.9	4.7	1.5	1.5	0.9	1.7
public renter	0.3	0.0	-0.2	-0.1	-0.3	0.3
all tenures	0.0	0.0	0.0	0.0	0.0	0.0
65+ year old households						
outright owner	2.9	5.5	1.7	7.4	4.7	2.8
owner purchaser	-2.1	-5.0	-2.4	-7.2	-4.4	-3.9
private renter	-4.4	-1.4	-0.6	0.0	-0.2	-2.1
public renter	-0.3	-0.7	0.1	-0.1	-0.5	0.2
all tenures	0.0	0.0	0.0	0.0	0.0	0.0
all households						
outright owner	1.1	-4.5	3.1	4.6	7.0	4.3
owner purchaser	-2.5	-1.8	-5.0	-6.3	-7.4	-7.4
private renter	-1.1	6.1	3.9	1.6	0.7	2.1
public renter	-0.2	-0.3	-0.1	-0.2	-0.3	0.4
all tenures	0.0	0.0	0.0	0.0	0.0	0.0

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

Table B.32: Change in incidence of home ownership by age, household type and income 1986-1996, Melbourne zones

	<$300	$300-500	$500-800	$800-1200	$1200+	all households
15-24 year old households						
inner	3.1	0.5	-1.6	-2.4	-2.8	-0.4
middle	-1.1	-1.1	-5.2	-3.5	-2.1	-4.6
outer	-2.0	-6.6	-10.2	-11.1	-8.0	-13.2
Melbourne	0.8	-0.8	-4.1	-4.9	-3.6	-4.4
25-44 year old households						
inner	-0.7	2.0	-1.6	-3.9	-3.8	-3.2
middle	-6.7	-6.0	-7.6	-4.9	-1.8	-8.5
outer	-9.4	-9.4	-5.8	-2.2	-0.6	-7.1
Melbourne	-3.9	-2.7	-4.5	-3.4	-2.2	-6.1
45-64 year old households						
inner	2.0	-6.8	1.8	-1.4	-0.5	-0.5
middle	-2.8	-8.3	-2.3	-2.8	-0.2	-3.8
outer	0.4	-5.4	-0.9	-1.0	0.4	-1.7
Melbourne	1.5	-6.3	0.1	-1.7	-0.1	-2.0
65+ year old households						
inner	-0.3	2.4	1.2	0.4	2.0	-0.4
middle	0.2	-0.5	-2.2	-0.5	-0.3	-1.7
outer	-1.2	-0.9	-2.4	1.2	-4.9	-3.0
Melbourne	0.8	0.5	-0.7	0.2	0.3	-1.0
all households						
inner	-2.2	-4.3	-0.7	-1.9	-1.4	-1.6
middle	-2.8	-8.1	-3.9	-2.6	-0.4	-4.5
outer	-2.9	-8.8	-3.9	-1.4	0.2	-4.5
Melbourne	-1.3	-6.3	-1.9	-1.6	-0.4	-3.0

Source: ABS Special Request Matrix, Census of Population and Housing, 1986 and 1996

APPENDIX C LOGIT MODEL SPECIFICATION

Table C.1:Regression results for Sydney

	coefficient	t-ratio	Mean
CONSTANT	-1.52	-(74.2)	1.00
HHOLD1	0.33	(6.4)	0.17
HHOLD2	0.42	(11.0)	0.47
HHOLD4	-0.37	-(11.1)	0.11
HHOLD5	-1.16	-(10.1)	0.06
HHOLD6	0.48	(4.6)	0.03
INC962	-0.10	-(3.0)	0.13
INC963	0.74	(21.8)	0.22
INC964	0.84	(17.4)	0.26
INC965	0.95	(13.2)	0.31
EMPL1	0.60	(22.5)	0.38
EMPL2	1.16	(19.5)	0.48
HHINC12	-0.41	-(6.3)	0.01
HHINC13	-0.88	-(15.5)	0.02
HHINC14	0.03	(0.6)	0.05
HHINC15	-0.14	-(2.2)	0.09
HHINC22	0.40	(8.6)	0.05
HHINC23	-0.13	-(3.1)	0.10
HHINC24	0.55	(12.7)	0.15
HHINC25	0.95	(18.9)	0.16
HHINC42	0.45	(10.1)	0.03
HHINC43	0.09	(2.1)	0.03
HHINC44	0.40	(8.9)	0.01
HHINC45	0.21	(3.6)	0.01
HHINC52	0.19	(1.4)	0.00
HHINC53	-0.70	-(5.7)	0.01
HHINC54	-0.04	-(0.4)	0.01
HHINC55	-0.32	-(2.7)	0.03
HHINC62	-0.15	-(1.2)	0.00
HHINC63	-0.79	-(7.0)	0.01
HHINC64	-0.20	-(1.8)	0.01
HHINC65	-0.10	-(0.9)	0.01
EMPINC12	0.09	(2.6)	0.07
EMPINC13	-0.33	-(9.0)	0.14
EMPINC14	0.17	(3.3)	0.11
EMPINC15	0.03	(0.4)	0.04
EMPINC22	0.11	(1.6)	0.01
EMPINC23	-0.28	-(4.3)	0.06
EMPINC24	-0.71	-(9.7)	0.15
EMPINC25	-0.30	-(3.4)	0.26
LARGE	0.44	(13.8)	0.46
LARGINC2	-0.31	-(8.0)	0.06
LARGINC3	0.02	(0.5)	0.10
LARGINC4	-0.23	-(6.4)	0.13
LARGINC5	-0.37	-(10.2)	0.15

Number of observations	72,758
Log likelihood function	-329,874
Restricted log likelihood	-388,301
Chi-squared	116,853
Degrees of freedom	44

Table C.1 provides an indication of the model specified and estimated for the 15 regions indicated in Table 2.1. The ACT was excluded from the metropolitan/non-metropolitan decomposition since there was only one region defined within the ACT.

The variables indicated by HHOLD1-6 represent, respectively couples, couples with children, singles, sole parents, group households and multiple family households. Singles (HHOLD3) are used as the benchmark case.

The variables INC961-965 represent the 5 income categories (with low incomes INC961 used as a benchmark).

The variables indicated by EMPL1-2 represent number of persons employed with no persons employed (EMPL0) as the benchmark. LARGE is a 0-1 dummy variable taking on the value 1 for large households as defined in the text in chapter 5.

The remaining variables are interaction terms HHINC12, for example, representing the interaction of household type 1 (HHOLD1) with income group 2. (INC962).

The dichotomous dependent variable is OWN, taking on a value 1 for households who are either home purchasers or outright owners and a value 0 for all other outcomes.

The results presented are the estimated coefficients. With continuous rather than categorical variables and in the absence of interaction terms, marginal effects would represent the impact on the probability of home ownership of a change in the relevant characteristic. In the presence of such variables, the impact of a change in one variable on the probability of ownership can only be determined by evaluating the probability given by the estimated equation above before and after the change indicated and at the mean value for all other variables.

Mean values are presented in column 3. The t ratios indicate that virtually all estimated coefficients are significant at the 1 per cent or better level of significance. Non-significant variables have been kept in the specification in the interest of maintaining a standard specification for all 15 regions for which home ownership probabilities have been estimated.

The number of observations represents the unweighted number of cases. Results (and mean) values are based on weighted cases.

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