Research Paper

Housing affordability in Australia

National Research Venture 3: Housing Affordability for Lower Income Australians

Research Paper 3

authored by

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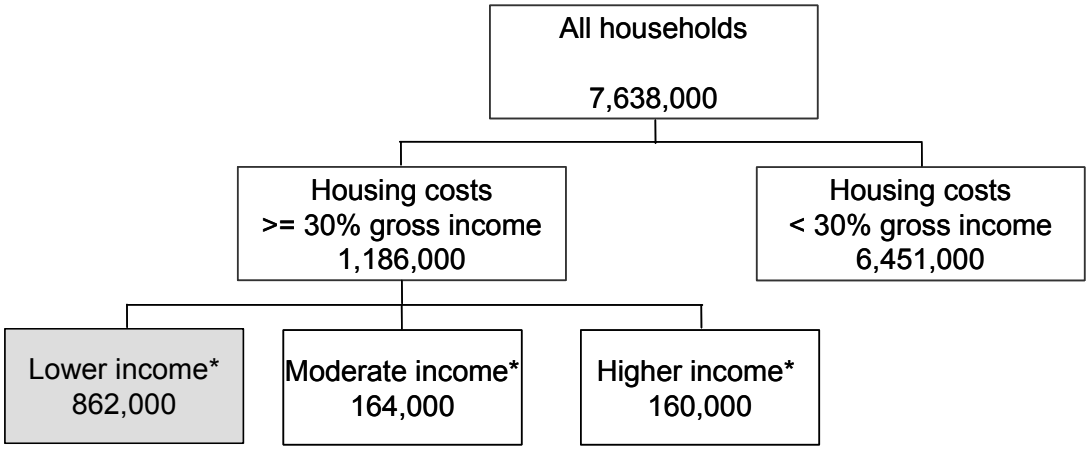
EXECUTIVE SUMMARY

Data from the 2002-03 Survey of Income and Housing show that, of the 7.6 million households in Australia, 1.2 million or 15.8 per cent of all households in Australia paid 30 per cent or more of gross household income in meeting their housing costs. Of these:

- 862,000 of these were lower income households in 'housing stress'[1],
- so that 11.3 per cent of all households and 28.2 per cent of all lower income households were in housing stress.

The figure below, taken from Chapter 1, provides an overview of these results.



*Income categories are described in Chapter 2

In addition, 454,000 or 5.9 per cent of all households in Australia paid 50 per cent or more of gross household income in meeting their housing costs. Of these:

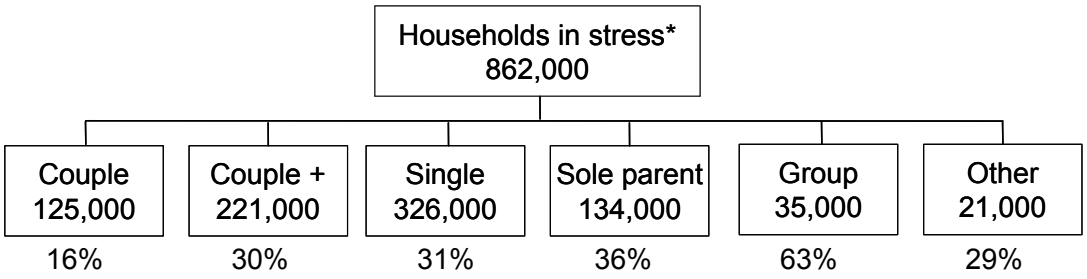
- 413,000 lower income households paid 50 per cent or more of their gross household income in meeting their housing costs,
- so that, 5.5 per cent of all households and 13.7 per cent of all lower income households paid at least 50 per cent of their incomes in meeting their housing costs.

On any measure, the greatest numbers in housing stress are single person households. The incidence of housing stress is also highest for these households.

[1] Here housing stress is defined by the 30/40 rule with equivalent disposable income used to determine the lowest two income quintiles with equivalent disposable incomes below $367 per week. These numbers are robust to the way in which lower income households are defined, but are reduced by the ABS practice of discarding all observations in the first decile of the income distribution. A discussion of the advantages and disadvantages of this practice is provided in Chapter 2 of this report.

In the lowest two quintiles, couple households have the lowest incidence of housing stress; group households have the highest incidence of housing stress and households with children (both couple and sole parent households) have a disproportionate share of households in housing stress.

In the following chart, taken from Chapter 1, the incidence of housing stress amongst these household types is given below the numbers in stress.



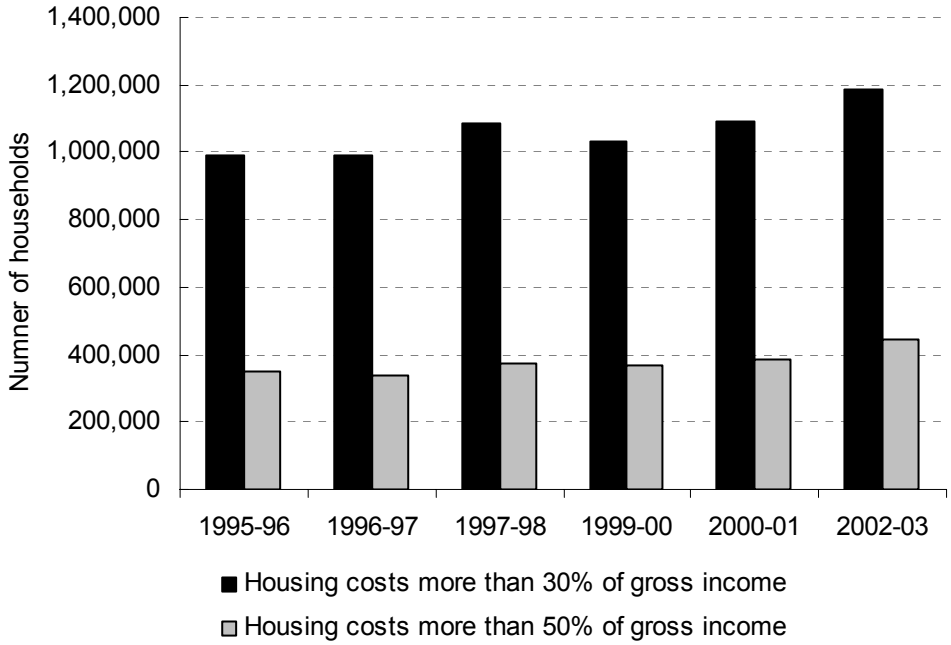
Of households in housing stress:

- almost 400,000 lower income households, representing more than 40 per cent of all lower income households in housing stress, are working households;
- of the working households in the lowest 2 income quintiles, 36 per cent are in housing stress;
- more than half of lower income working households in housing stress had children.

At an aggregate level, these results are consistent with long trend data on affordability, which show:

- a relatively stable proportion of households paying 30 per cent or more of their gross household incomes in meeting their housing costs since 1995;
- a steady increase in household numbers paying 30 per cent or more of their gross household incomes in meeting their housing costs since 1995 and
- a steady increase in average housing costs from 10.5 per cent of average gross household income in 1975 to 12.1 per cent in 2003-04.

The following chart, taken from Chapter 4, illustrates the first of these two points.



Analysis of HILDA data for the 3 waves from 2001 suggests that

- 1 out of every 2 persons living in a household paying at least 30 per cent of its gross household income in meeting their housing costs in one year will still be living in such a household in the following year; and
- approximately 1 out of every 3 persons living in a household will still be living in such a household in the two following years.

In other words, although the affordability measures employed are based on current income and current housing costs data, longitudinal data suggest that, for a high proportion of those with high housing cost ratios, affordability problems are protracted rather than transient problems. These results are presented in Chapter 4. These results from time series and longitudinal data show that the affordability results presented in this report are not short term results that can be explained by economic cycles; they have been persistent over a long period of time. They are also not results that can be dismissed as applying to households only for a short period of time.

If the definition of housing stress is extended to include moderate income households,[2] estimates of those in stress would increase by an additional 164,000 households so that 22.4 per cent of all low and moderate income households and 13.4 per cent of all households would be classified as being in housing stress. The following table, from Chapter 1, provides an indication of the numbers in stress at a spatially disaggregate level. The spatial disaggregation reinforces the expected

[2] Defined here as households in the third quintile of an equivalent disposable income distribution with equivalent disposable incomes in excess of $367 per week but less than $550 per week.

results: namely that the highest numbers of low or moderate income households in housing stress live in either Sydney or Melbourne. However, they also show significant numbers in the rest of NSW and in Brisbane and the rest of Queensland.

	housing costs at least 30% of gross household income	
	Lower income hhlds	Moderate income hhlds
hholds with affordability problems	862,000	164,000
Sydney	183,000	42,000
Melbourne	161,000	29,000
Brisbane	79,000	18,000
Adelaide	45000	7,000
Perth	64,000	13,000
Hobart	10,000	1,000
Rest of NSW	118,000	17,000
Rest of Vic	50,000	4,000
Rest of Queensland	97,000	21,000
Rest of SA	10,000	1000
Rest of WA	24,000	5,000
Rest of Tas	8,000	1,000

Use of the 30/40 ratio measure which ignores rent assistance overestimates the numbers of lower income households in housing stress compared with taking this assistance into account. If rent assistance is netted out from housing costs, the estimate of the total number of lower income households in housing stress is reduced:

- from 862,000 to 746,000 (or 24 per cent of all lower income households) when rent assistance is deducted both from housing costs and from income and
- from 862,000 to 711,000 (or 23 per cent of all lower income households) when rent assistance is deducted from housing costs but not from income.

Use of the 30/40 ratio measure, however, provides a conservative estimate of the numbers of lower income households in housing stress compared with alternative residual measures which focus more specifically on the income that households have available to meet their non-housing needs after their housing needs are met. Based on a low cost budget standard estimate of non-housing needs:

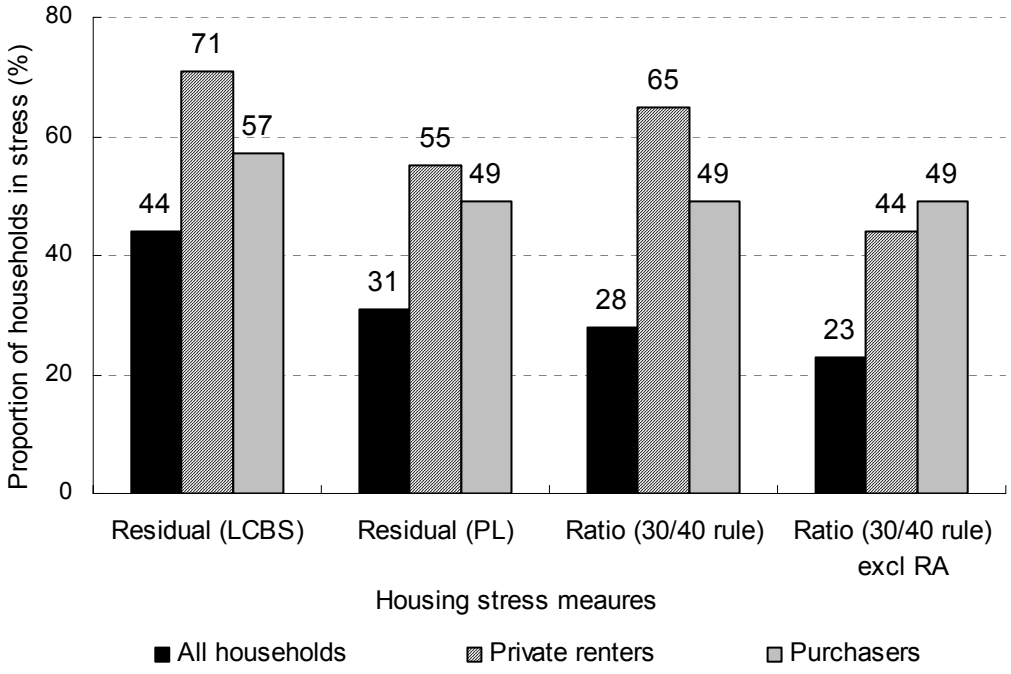
- 1.4 million lower income households have insufficient income after meeting their housing needs to maintain a frugal standard of living
- these represent 44 per cent of all lower income households (compared with the 28 per cent estimate derived from a 30/40 rule)

Based on an after housing poverty line estimate of non-housing needs:

- 947,000 lower income households, representing 31 per cent of all lower income households, have insufficient income to meet their non-housing needs.

These results are presented in Chapter 3.

The chart below, taken from Chapter 3, illustrates the differences in the assessed incidence of housing stress on the different measures discussed in the report.



A number of conclusions can be drawn from the results presented in this report:

- use of the 30/40 rule with the 30 per cent housing cost ratio defined by housing costs and gross household income and the lowest 2 quintiles of the income distribution based on household adjustment (that is, equivalised) disposable income generates conservative estimates of the numbers in housing stress and hence of the incidence of housing stress; and
- many households defined as being in housing stress on this measure have insufficient income to meet a frugal assessment of their non-housing needs.

Refinements of this basic measure will give (sometimes only marginally) different estimates of the numbers and types of households in housing stress but the incidence of housing stress amongst different household types is relatively robust to different measures as is the overall assessment of where the major problems are.

The results suggest the 30/40 rule is a sound anchor measure. It is a summary measure that is simple to interpret, accessible and publicly appealing. It clearly informs about the extent of the issue it represents. It provides clear and useful output.

The results obtained provide sufficient detail to monitor affordability outcomes; they provide an indication of the well being of the households whose housing outcomes are being measured; they rely on existing data, require only a limited number of parameters and are simple to monitor both at a point in time but also over time. They can be disaggregated in a way that provides information at a level appropriate for assisting policy evaluation and aiding policy development.

However, in many respects, the enormity of the housing affordability problem renders precise measurement of it irrelevant. Any housing policy which assists in alleviating the housing costs of households defined as being in housing stress on any of the measures covered in this report will be targeted to a household with a significant affordability problem.

1 HOUSING AFFORDABILITY IN AUSTRALIA, 2002-03

1.1 Overview and report structure

This background paper for the CRV3 on Housing Affordability for Lower Income Australians provides a detailed analysis of current affordability outcomes for households in Australia using the 2002-03 Survey of Income and Housing, the most recent data available at the time the report was prepared. An earlier background paper for CRV3 (Gabriel et al, 2005) discussed the broad methodological issues that arise in relation to defining and measuring housing affordability and provided an overview of much of the relevant literature. The key purpose of this background paper, which should be read in conjunction with the Gabriel et al report, is:

- to provide and analyse new estimates of the numbers of households with affordability problems;
- to provide an assessment of which households are most at risk of having moderate or severe housing affordability problems; and
- to provide an indication of the extent to which the assessment of affordability outcomes is affected by the measures employed.

Chapter 1 provides headline estimates of the extent of housing affordability problems based on the preferred benchmark measure for this report. Chapter 2 provides an analysis of how these estimates are affected by different interpretations of the way in which low income households are defined in the conventionally employed 30/40 measure. It focuses specifically on the impact of these interpretations on the types of household identified as being in housing stress.

Chapter 3 examines the extent to which the reported outcomes are affected by alternatives to the conventional 30/40 ratio measure embodied in the results presented in Chapter 1 and Chapter 2. It covers the effect of changing the benchmark ratio from 30 per cent and of changing the way in which housing costs and income are defined (and, in particular, the effect of different ways of treating rent assistance). It concludes with an assessment of how outcomes are changed if a residual rather than ratio measure of affordability is employed. Two residual measures based, respectively, on a low cost budget standard and poverty line approach are considered.

Chapter 4 uses time series data on ratio measures derived from cross section survey data to provide a decade long overview of affordability trends. It concludes with longitudinal data from the HILDA data to provide an assessment of the extent to which affordability problem for specific households endure over time.

A brief appendix to the report compares the results with those derived from alternative data sources as a means of providing an indication of how and why estimates from different sources vary.

1.2 Summary of results

Data from the 2002-03 Survey of Income and Housing show that, of the 7.6 million households in Australia, 1.2 million or 15. 8 per cent of all households in Australia paid 30 per cent or more of gross household income in meeting their housing costs. Of these:

- 862,000 of these were lower income households in 'housing stress'[1],
- so that 11.3 per cent of all households and 28.2 per cent of all lower income households were in housing stress.

In addition, 454,000 or 5.9 per cent of all households in Australia paid 50 per cent or more of gross household income in meeting their housing costs. Of these:

- 413,000 lower income households paid 50 per cent or more of their gross household income in meeting their housing costs,
- so that, 5.5 per cent of all households and 13.7 per cent of all lower income households paid at least 50 per cent of their income in meeting their housing costs.

1.3 Detailed results

1.3.1 Aggregate measures

In 2002-03, just over 6.4 million households in Australia did not experience housing affordability problems; that is, they did not spend 30 per cent or more of their gross income on housing costs. However, there were almost 1.2 million households and 862,000 lower income households who did pay 30 per cent or more on housing costs. The latter are described here as being in 'housing stress'. This means that 15.8 per cent of all households paid at least 30 per cent of their income in meeting their housing costs and 28.2 per cent of all lower income households were in housing stress.[2]

More than 450,000 households, of whom 417,000 were lower income households, paid 50 per cent or more on housing costs. This means 5.9 per cent of all households and 13.7 per cent of lower income households paid at least 50 per cent of their income in meeting their housing costs. For convenience of presentation, these are described as being in housing crisis in the tables below.

Table 1.1 provides an overview of the scale of households in housing stress and crisis among particular socio-economic groups in 2002-03. These are all lower income

[1] Here housing stress is defined by the 30/40 rule applied using equivalent disposable income to determine the lowest two income quintiles. These numbers are robust to the way in which lower income households are defined, but are reduced by the ABS practice of discarding all observations in the first decile of the income distribution. A discussion of the advantages and disadvantages of this practice is provided in Chapter 2 of this report.

[2] These data, along with all of the data presented in the main part of this report, have been derived from the confidentialised unit record file from the 2002-03 Survey of Income and Housing. More details are presented in Chapter 2. Lower income households are defined here as those with an equivalent disposable income of less than $367 per week. An indication of how this equivalent disposable income translates into an unequivalised disposable or gross household income for different household types is also provided in Chapter 2.

households with incomes in the lowest two quintiles of the equivalised disposable income distribution. Table 1.2 repeats the same information for moderate income households in the third quintile of the equivalised income distribution. At a glance, the results in Table 1.1 indicate that there were a substantial number of low income households, young households, lone person households, households with children, working households, private rental households and urban households experiencing housing affordability problems in Australia in 2002-03. Details on the numbers in housing stress at a spatial level of disaggregation are provided in Table 1.3 below.

Details on the incidence of housing stress are provided in section 1.4.

Table 1.1: Number of lower income Australian households in housing 'stress' and 'crisis'*, 2002-03

	Housing stress (housing costs at least 30% of gross household income)	**Housing crisis** (housing costs at least 50% of gross household income)
Lower income hhlds with affordability problems	862,000	417,000
Age < 65 years	760,000	373,000
Age 65+ years	102,000	44,000
Single person age <65	261,000	172,000
Single person age 65+	66,000	29,000
Couple households	94,000	65,000
Couple with children	221,000	88,000
Sole parents	134,000	42,000
Group households	35,000	14,000
Households with children	354,000	130,000
Working households	376,000	176,000
Outright owner	82,000	70,000
Home purchaser	265,000	134,000
Private renter	460,000	192,000
Public renter	40,000	5,000
Urban households	542,000	276,000
Non-urban households	308,000	137,000

*all numbers apply only to those whose equivalised disposable household income is below $367 per week which places them in the lowest 2 quintiles of the equivalised disposable household income distribution.
Source: Survey of Income and Housing, 2002-03, confidentialised unit record file

Table 1.2 shows that an additional 164,000 moderate income households or 11 per cent of all households in the third quintile of the equivalent disposable income distribution (with equivalent disposable incomes between $367 and $550 per week) also paid 30 per cent or more of their household income in meeting their housing costs. An additional 19,000 (or 1 per cent of all households in the third income quintile) paid 50 per cent or more on housing costs.

The data in Table 1.1 and Table 1.2 together show there are more than 1 million households in the lowest three quintiles of the equivalent disposable income distribution who are paying 30 per cent or more of their income in meeting their housing costs. In other words, 13.4 per cent of all households and 22.4 per cent of all low and moderate income households pay at least 30 per cent of their gross household income in meeting their housing costs. Similarly, there are almost 440,000 households, representing 5.7 per cent of all households and 10 per cent of all low and moderate income households, paying at least 50 per cent of their gross household income in meeting their housing costs.

Incidence data for the various categories in these tables are provided in section 1.4.

Table 1.2: Number of moderate income Australian households with affordability problems*, 2002-03

	Housing costs at least 30% of gross household income	**H**ousing costs at least 50% of gross household income
Moderate income hhlds with affordability problems	164,000	19,000
Age < 65 years	160,000	18,000
Age 65+ years	4,000	1,000
Single person age <65	54,000	5,000
Single person age 65+	3,000	1,000
Couple households	25,000	5,000
Couple with children	48,000	6,000
Sole parents	19,000	2,000
Group households	9,000	0
Households with children	68,000	9,000
Working households	152,000	18,000
Outright owner	0	0
Home purchaser	101,000	14,000
Private renter	62,000	4,000
Public renter	1,000	1,000
Urban households	111,000	16,000
Non-urban households	49,000	3,000

*all numbers apply only to those whose equivalised disposable household income is between $367 per week and $550 pw which places them in the third quintile of the equivalised disposable household income distribution.
Source: Survey of Income and Housing, 2002-03, confidentialised unit record file

Table 1.3 below provides a regional disaggregation of the Australia wide data presented in Table 1.1 for lower income households. Table 1.4 does the same for the data in Table 1.2 for moderate income households. This spatial disaggregation reinforces the expected results: namely that the highest numbers of lower income households with affordability problems live in either Sydney or Melbourne. However,

they also show significant numbers in Brisbane and, to a lesser extent in Perth. They also show large numbers of households with affordability problems, and often quite severe affordability problems, outside of the capital cities in both NSW and Queensland.

Table 1.3: Number of lower income Australian households in housing 'stress' and 'crisis'* by state and region, 2002-03

	Housing stress (housing costs at least 30% of gross household income)	**Housing crisis** (housing costs at least 50% of gross household income)
Lower income hhlds with affordability problems	862,000	417,000
Sydney	183,000	115,000
Melbourne	161,000	77,000
Brisbane	79,000	37,000
Adelaide	45,000	17,000
Perth	64,000	25,000
Hobart	10,000	4,000
Rest of NSW	118,000	55,000
Rest of Vic	50,000	24,000
Rest of Queensland	97,000	39,000
Rest of SA	10,000	5,000
Rest of WA	24,000	10,000
Rest of Tas	8,000	3,000

*all numbers apply only to those whose equivalised disposable household income is below $367 per week which places them in the lowest 2 quintiles of the equivalised disposable household income distribution.
Source: Survey of Income and Housing, 2002-03, confidentialised unit record file

Similar outcomes at a regional level are observed when the analysis is extended to moderate income households, as can be seen in Table 1.4.

Table 1.4: Number of moderate income Australian households with affordability problems*, 2002-03

	Housing costs at least 30% of gross household income	Housing costs at least 50% of gross household income
Moderate income hhlds with affordability problems	164,000	19,000
Sydney	42,000	5,000
Melbourne	29,000	5,000
Brisbane	18,000	2,000
Adelaide	7,000	0
Perth	13,000	4,000
Hobart	1,000	0
Rest of NSW	17,000	2,000
Rest of Vic	4,000	0
Rest of Queensland	21,000	1,000
Rest of SA	1000	0
Rest of WA	5,000	0
Rest of Tas	1,000	0

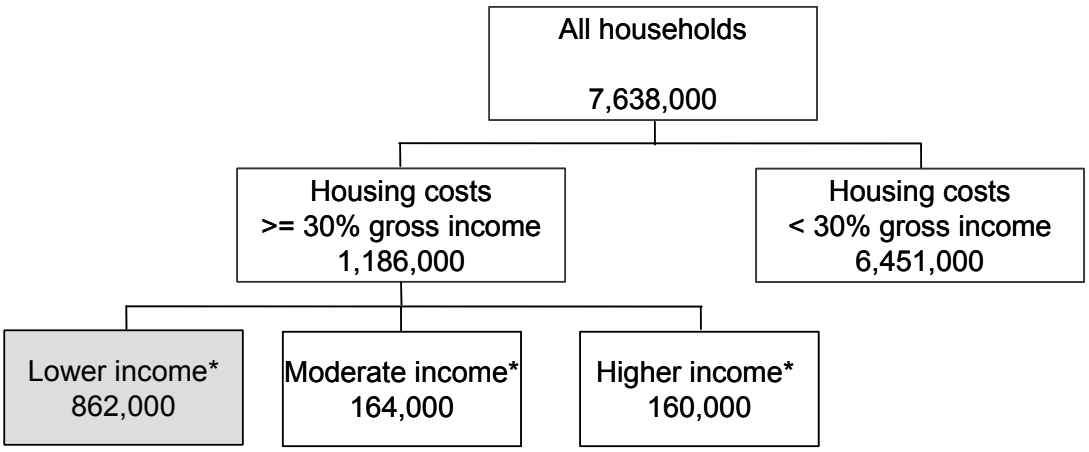
*all numbers apply only to those whose equivalised disposable household income is between $367 per week and $550 pw which places them in the third quintile of the equivalised disposable household income distribution.
Source: Survey of Income and Housing, 2002-03, confidentialised unit record file

1.3.2 Disaggregate measures

Some of these outcomes are illustrated more graphically in the Figures below.

Figure 1.1 shows the affordability outcomes for all households with the shaded box indicating those in housing stress, identified by application of the 30/40 rule with the lowest two quintiles defined by equivalent disposable income.

Figure 1.1: Number of households by affordability outcomes, 2002-03



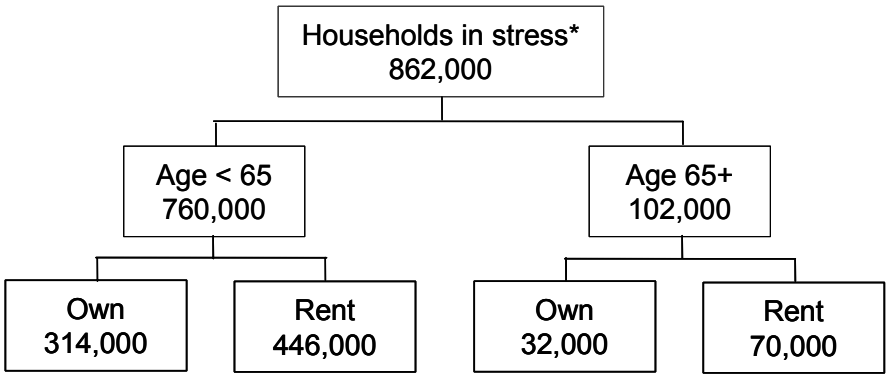
*Lower income households are those in the lowest 2 income quintiles of the equivalised disposable household income distribution; moderate and higher income households are those in the third and two highest quintiles respectively.
Source: Survey of Income and Housing, 2002-03, confidentialised unit record file

Figure 1.2 to Figure 1.6 focus specifically on these 862,000 households conventionally defined as being in housing stress according to their age, household characteristics, employment status and tenure and location outcomes.[3] Information on the incidence of housing stress for particular types of households is provided in section 1.4.

Figure 1.2 shows that housing stress is predominantly a characteristic of younger renting and purchasing households because, despite the tendency for older households to have lower incomes than the rest of the population, they also have a higher incidence of outright home ownership. As can be seen in Figure 1.2, in 2002-03 there were 446,000 households aged less than 65 years old who were renting and in housing stress. A further 314,600 of those in stress in this age group owned or were purchasing their own home.[4] For older households, those in rental housing are an even greater disproportionate share of the total of those in housing stress.

In other words, most of the households in housing stress are below retirement age; and, whilst the majority of those in stress rent, a significant proportion are purchasing their own home. These outcomes, in part, are related to the household characteristics of those in housing stress (despite the fact that household income has been equivalised to take into account the different capacities to pay of different household types).

Figure 1.2: Households in stress by age and tenure, 2002-03



*Households in stress defined according to 30/40 rule with lowest 2 income quintiles defined by the equivalised disposable household income distribution.
Source: Survey of Income and Housing, 2002-03, confidentialised unit record file

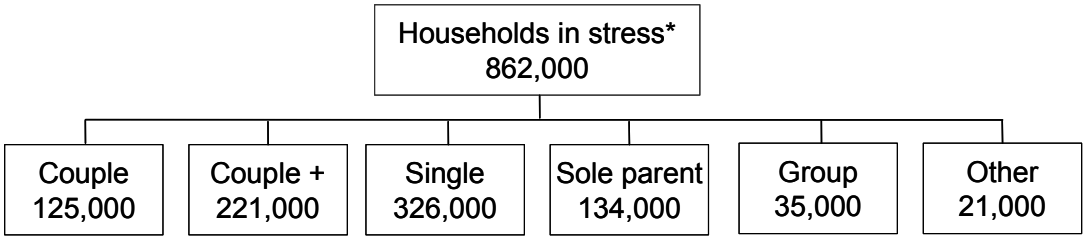
Figure 1.3 highlights the fact that of those in housing stress, 326,000 are lone person households, accounting for almost forty per cent of all households in housing stress. As implied by the above and indicated in Table 1.1, the majority of these are below retirement age. However, Figure 1.3 also highlights the fact that there 354,000 households with children in housing stress. This is more than forty per cent of all

[3] Note that rounding errors mean that occasionally totals appear marginally inconsistent with sub-total data.

[4] Own has been used here as shorthand for owning and purchasing. Almost 80 per cent of households in housing stress who "own" their homes are purchasers rather than outright owners.

households in housing stress. Of these, couples with children account for almost 221,000 households and sole parents for almost 134,000.

Figure 1.3: Households in stress by household type, 2002-03

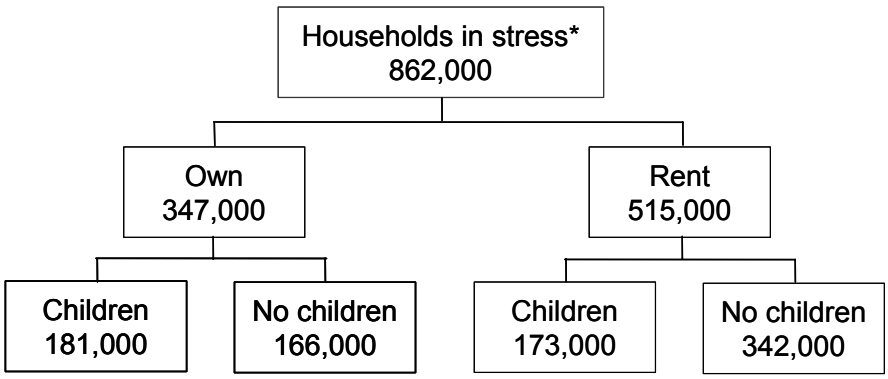


*Households in stress defined according to 30/40 rule with lowest 2 income quintiles defined by the equivalised disposable household income distribution.
Source: Survey of Income and Housing, 2002-03, confidentialised unit record file

The presence of children in so many of the households in housing stress is likely to create additional problems if their parents are unable to maintain their rent or mortgage repayments.

Figure 1.4 shows that approximately half of the households with children who are in housing stress are in rental housing whilst the remainder are in households who own or are purchasing their home.

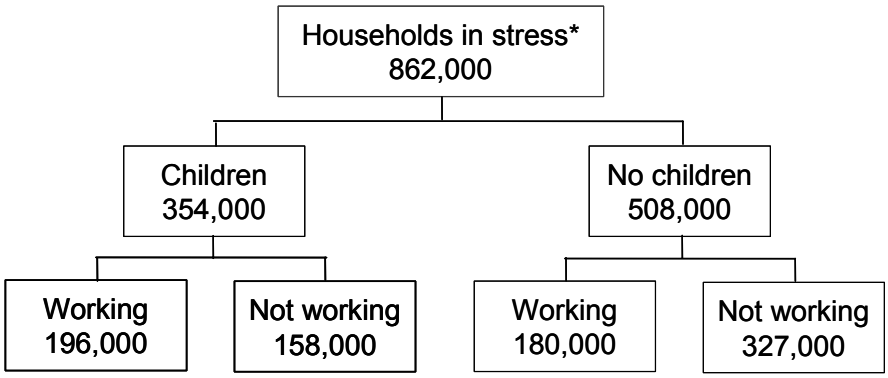
Figure 1.4: Households in stress by tenure and presence of children, 2002-03



*Households in stress defined according to 30/40 rule with lowest 2 income quintiles defined by the equivalised disposable household income distribution.
Source: Survey of Income and Housing, 2002-03, confidentialised unit record file

Whilst lack of employment is often seen as a contributing factor to low household incomes, the results illustrated in Figure 1.5 show that there was a greater number of households with children where the reference person was in employment than where the reference person was not working, either because he or she was unemployed or not in the labour force.

Figure 1.5: Households in stress by presence of children and tenure, 2002-03

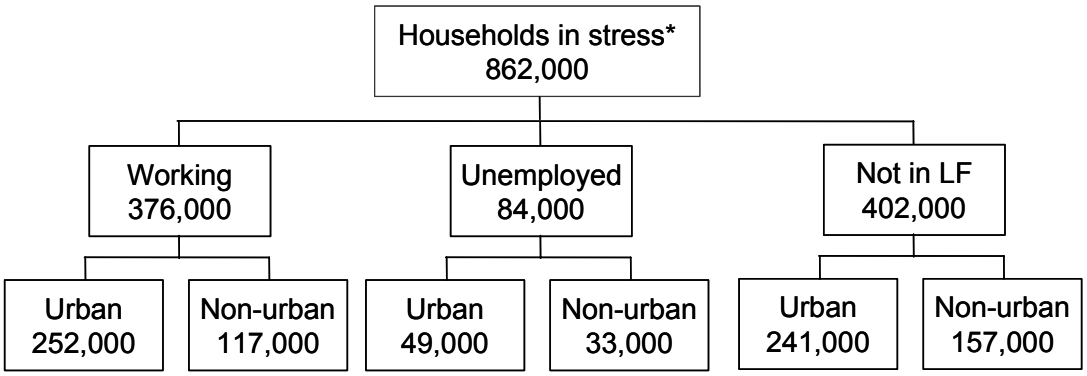


*Households in stress defined according to 30/40 rule with lowest 2 income quintiles defined by the equivalised disposable household income distribution. Not working includes both the unemployed and those not in the labour force.
Source: Survey of Income and Housing, 2002-03, confidentialised unit record file

Figure 1.6 shows that 376,000 lower income households who are in housing stress are households who are in employment, or working households. However, it also shows that almost 50 per cent of those in housing stress are households classified as not being in the workforce. Whilst a number of these are of retirement age, the aged account for relatively few of those in stress, as shown in Figure 1.2 above. The remaining households in stress and not in the labour force are households whose main source of income is derived from their own business or from other sources. Issues surrounding such households are examined in the following chapter.

Finally, Figure 1.6 shows that housing stress is disproportionately, but not solely, an urban phenomenon. In other words, lower rents and house prices in non-urban areas do not protect non-urban dwellers from housing stress regardless of whether they are employed or not. There are 542,000 urban households in housing stress and a further 308,000 non-urban-based households.

Figure 1.6: Households in stress by employment status and region, 2002-03



*Households in stress defined according to 30/40 rule with lowest 2 income quintiles defined by the equivalised disposable household income distribution. Regional classification misses 12,000 households in stress in ACT and NT for whom data are combined and hence classification is not possible.
Source: Survey of Income and Housing, 2002-03, confidentialised unit record file

1.4 Incidence of housing stress

The results in the previous section focussed on the numbers in housing stress. This section focuses on the incidence of stress amongst the various categories of households identified in Table 1.1 to Table 1.4. Table 1.5 below summarises the incidence data for low income household that apply for the results presented in Table 1.1 and Table 1.3. Table 1.6 summarises the same data for moderate income household that apply for the results presented in Table 1.2 and Table 1.4.

As can be seen from Table 1.5, the highest incidence of housing stress is found amongst young, lone person households and, closely associated with the housing outcomes for the young, amongst the relatively large numbers in private rental housing and the much smaller numbers living in group households.

Table 1.5: Incidence of housing stress and crisis amongst lower income Australian households*, 2002-03

	Housing stress (housing costs at least 30% of gross household income)	**Housing crisis** (housing costs at least 50% of gross household income)
	%	%
Lower income hholds with affordability problems	28	14
Age < 65 years	38	19
Age 65+ years	10	4
Single person age <65	53	35
Single person age 65+	12	5
Couple households	16	8
Couple with children	30	19
Sole parents	36	11
Group households	63	26
Households with children	30	12
Working households	36	17
Outright owner	6	5
Home purchaser	49	25
Private renter	65	27
Public renter	13	1
Urban households	32	16
Non-urban households	23	10
Sydney	36	22
Melbourne	33	16
Brisbane	32	15
Adelaide	23	9
Perth	30	12
Hobart	26	9
Rest of NSW	24	11
Rest of Vic	21	10
Rest of Queensland	27	11
Rest of SA	13	7
Rest of WA	26	11
Rest of Tas	15	5

*data apply only to those whose equivalised disposable household income is below $367 per week which places them in the lowest 2 quintiles of the equivalised disposable household income distribution.

Source: Survey of Income and Housing, 2002-03, confidentialised unit record file

There is a high incidence of affordability problems amongst lower income home purchasers and a relatively higher incidence of housing stress and crisis amongst urban compared with non-urban households and households in Sydney, Melbourne, Brisbane and Perth compared with those in Adelaide or Hobart. These outcomes are consistent with much of the research on housing affordability in Australia reviewed in Yates et al (2004).

The results in Table 1.5, however, also highlight the relatively high incidence of housing stress amongst lower income working households (primarily against a benchmark of those not in the labour force). The results show that 36 per cent of all lower income working households are in housing stress compared with 28 per cent of all lower income households. They also show 17 per cent of all lower income working households are spending at least 50 per cent of their incomes on housing compared with 14 per cent of all lower income households.

The results in Table 1.6, which apply to moderate rather than lower income households, indicate that a very similar pattern follows when the analysis is extended to cover those with moderate levels of income. Amongst moderate income households, the proportion of households spending at least 50 per cent of their gross household income in meeting their housing costs has all but disappeared. The numbers in the equivalent of housing stress, however, are still significant with 11 per cent of all moderate income households paying at least 30 per cent of their gross household income in meeting their housing costs. If the 30/40 rule used to define housing stress were to be changed to a 30/60 rule, there would be 22 per cent of all low and moderate income households in housing stress.

The pattern of which households are most likely to be in stress under a broader definition, however, remains unchanged. Amongst the moderate income households paying at least 30 per cent of their income in meeting their housing costs, it is still young, single households whether renting privately, purchasing or living in group households who have a relatively high incidence of housing stress. Likewise, moderate income urban households are more likely to have high housing cost ratios than their non-urban counterparts but only those in Sydney, Brisbane and Perth exhibit above average levels of incidence of high housing cost ratios. In non-urban regions, relatively greater affordability problems are found in Queensland and Western Australia.

As with lower income households, working households are still more likely than non-working households to have an above average proportion of households with affordability problems.

Table 1.6: Incidence of housing stress and crisis amongst moderate income Australian households*, 2002-03

	Housing costs at least 30% of gross household income	Housing costs at least 50% of gross household income
Moderate income hhlds with affordability problems	11	1
Age < 65 years	13	1
Age 65+ years	2	0
Single person age <65	26	2
Single person age 65+	5	1
Couple households	8	2
Couple with children	7	1
Sole parents	10	1
Group households	22	0
Households with children	8	1
Working households	13	2
Outright owner	0	0
Home purchaser	18	2
Private renter	18	1
Public renter	2	1
Urban households	12	2
Non-urban households	8	1
Sydney	16	2
Melbourne	11	2
Brisbane	12	1
Adelaide	8	0
Perth	12	4
Hobart	7	0
Rest of NSW	8	1
Rest of Vic	4	0
Rest of Queensland	12	1
Rest of SA	4	0
Rest of WA	12	0
Rest of Tas	4	0

*all data apply only to those whose equivalised disposable household income is between $367 per week and $550 pw which places them in the third quintile of the equivalised disposable household income distribution.

Source: Survey of Income and Housing, 2002-03, confidentialised unit record file

1.5 Summary

The estimates presented for lower income households in Table 1.1, Table 1.3 and Figure 1.1 to Figure 1.6 are based on what is described as the 30/40 rule that has become a conventional measure of housing stress. They assess housing costs (including rates and maintenance for purchasers) in relation to gross household income, they use a 30 per cent housing cost ratio as a benchmark for defining potential affordability problems and they focus on outcomes only for lower income households, defined as those in the lowest two quintiles of the equivalent disposable income distribution. Whilst these estimates will vary if this definition is changed (for example by measuring costs in relation to disposable income or by defining lower income households on the basis of gross household income), the results in the following chapter show that these changes are relatively marginal for a wide range of alternative definitions.

As concluded after the aggregate results presented in Chapter 2, by any assessment, any of these measures indicate that, based on the most recently available data, Australia has a significant housing affordability problem. A number of them suggest it has an overwhelming housing affordability problem.

However, the results will change if an alternative ratio is chosen as the benchmark for defining potential affordability problems, if different approaches are employed to identify lower income households and if an alternative to the simple ratio method is employed to define housing stress. The sensitivity of the results to these potential factors affecting outcomes is also addressed in the following chapters.

2 MEASURING AND ANALYSING AFFORDABILITY

This chapter maintains the use of a 30 per cent ratio of housing costs to gross household income as a benchmark for measuring affordability but provides an analysis of some of the factors that affect the headline results presented in Chapter 1. Section 2.1 focuses on the assumptions made in defining low and moderate income households. Section 2.2 provides numerical estimates which show how these assumptions affect the results.

2.1 Measurement issues

In its 2005 release of the results of the 2002-03 Survey of Income and Housing[5], the ABS reported that 15.9 per cent of all households in Australia in 2002-03 spent more than 30 per cent of their gross household income in meeting their housing costs. This amounted to 1,184,000 households. In the same publication, they reported that 5.8 per cent of household, amounting to 443,000 households in total, were in housing stress (ABS, 2005a, Table 3). Both estimates are based on an examination of the ratio of housing costs to gross household income and both estimates use a 30 per cent ratio as the benchmark for measuring housing affordability.

The first provides an estimate based on all households in Australia. The second is based on all persons in second, third and fourth deciles of an equivalised disposable income distribution (that is, the lowest 2 quintiles excluding the lowest 10 per cent). The first is an intuitively obvious measure; the second is likely to be understood only by specialist analysts. Whilst these are not the only measures employed, in many ways, the differences between them encapsulate a number of the unresolved issues surrounding affordability measurement. These relate to the choice of income measure and to the range of incomes covered in defining a low income household. These issues are covered briefly below. The issues they do not highlight relate to the choice of gross income as a base for assessing housing cost ratio, the choice of a 30 per cent benchmark and the use of a ratio approach to determining affordability. These remaining issues are covered in Chapter 3 of this report.[6] All are covered in more detail in Gabriel et al (2005).

2.1.1 Choice of income measure in defining low income households

Once a decision is made to measure affordability as the ratio of housing costs to gross household income, the total numbers of households with housing costs in excess of a

[5] This survey, formerly known as the Survey of Income and Housing Costs, was conducted every one or two years from 1994-95. In 2002-03 it was based on an expanded sample of 10,000 households (up from 7,000 in earlier years) and, from 2002-03, will be conducted every two years in between the Household Income and Expenditure Survey cycles with an 11,000 household sample to provide a biennial household income series (ABS cat. no. 6523.0, p27).

[6] An additional choice not covered here relates to that between current (income at the time the data was collected) and annual income (income for the previous year) as these issues have been well rehearsed in the income distribution literature (e.g. ABS cat. no. 6523.0). Whilst there may be a preference for data over a one year period to smooth out short-term fluctuations in outcomes, data on household structure will relate to the current period. For this reason, current income is generally employed in ABS published results and this preference will be maintained here.

defined ratio is given. The choice of income measure is relevant only in determining which households are defined as low income households as, for example, implied by application of the '30/40 rule'.[7] The choice between gross or disposable and equivalised or unequivalised income, however, is likely to affect both the numbers and the types of households assessed as being in the lower two quintiles of the income distribution and hence in housing stress.

The choice of gross or disposable income would be irrelevant if all households had only a single source of income and if all income was treated the same way by the tax system. Under such strict assumptions, there would be a one to one relationship between gross and disposable income and the rank ordering of households would be unchanged by choice of one or the other. However, significant differences are likely to emerge in the relationship between gross and disposable incomes across households when there are several income earners contributing to household income and where there is considerable disparity both in the incomes they earn and in the sources of those incomes. This arises because the income taxes in Australia apply to individual rather than household incomes and because of the progressive nature of the income tax scale. For a given level of household income, a household with only a single income earner will have a lower, and possibly considerably lower, disposable income than will a household with the same total income earned by two or more earners in the household.[8] On an unequivalised disposable household income basis, the former household therefore will be lower down the income distribution than the latter even though both have the same ranking on the basis of gross household income.

These issues suggest that, where only gross household income is provided and where the data are not available on individual incomes within the household, use of tax scales to convert gross to disposable household income is fraught with difficulty and not recommended.

Conceptually similar, but operationally quite different, issues arise in moving from unequivalised to equivalised household income. The results presented in this report use equivalent disposable household income as a means of determining income quintiles when this can be derived but results are compared with those based on gross household income in order to provide an indication of the effect of the choice made. In practical terms, the former is often provided or can be generated from survey data but the latter is usually all that is readily available from census data.

As described in more detail in Gabriel et al (2005), equivalence scales are used to adjust household income to reflect the differences in capacity to pay between different household types.[9] As in Gabriel et al (2005) and in the ABS results reported above,

[7] The 30/40 rule defines a household as being in housing stress if it spends at least 30 per cent of its income on housing and is in the lowest 40 per cent of the income distribution but is generally silent about what income measures are employed.

[8] In 2002-03, for example, a household with a gross (assumed taxable) income of $60,000 with a single income earner would have been liable for $15,580 in tax and would have had a disposable household income of $34,620. If this income had been earned equally by 3 separate income earners, the household would have had a tax liability of $2,230 per earner (taking into account the low income tax offset) and a household disposable income of $41,080.

[9] Table A.5 in their report shows how average household incomes for different household types in 2002-03 change when moving from a gross to a disposable to an equivalent disposable income benchmark.

the equivalised income results presented in this paper employ the modified OECD scale that has become the norm in Australia. This assigns a weight of 1 point to the first adult in the household, 0.5 points to each additional person aged 15 years or older, and 0.3 points to each child under the age of 15. Equivalised household income is derived by dividing total household income by the sum of the equivalence points allocated to the household members. This adjustment has the effect of using a single person as the standard benchmark.

2.1.2 Range of income distribution covered

The second set of unresolved issues surrounding affordability measurement raised by the differences in the two ABS measures above relate to two specific issues associated with the range of the income distribution covered. The first is whether this should be restricted to the lowest 2 quintiles; the second is whether results for households with incomes recorded as being in the lowest 10 per cent of the income distribution should be deleted. The lower of the estimates provided by the ABS imposes both of these restrictions.

Again, these issues are covered in detail in Gabriel et al (2005). In relation to the first, a focus on the lower two income quintiles implied by operation of a 30/40 rule is based on an often explicit assumption that those on higher incomes have high housing costs by choice. By definition, however, such a restriction is likely to exclude many moderate income households who are marginal first home buyers in high cost areas. Such households, in fact, may be purchasing dwellings that yield fewer services (for example, arising from housing quality or location) than would have been affordable had the household chosen to rent. Although home purchasers are trading off high current housing outlays for lower outlays in the future, the question of whether they should be excluded from consideration remains. At the same time, there is a benefit to maintaining the restriction to the bottom 2 quintiles for consistency with past practice so that trends over time can be observed on a consistent basis. In recognition of each of these arguments, the results in this report are given for households in both the lowest 2 quintiles and also in the third income quintile. Where trend data are reported, data based on the 30/40 rule are employed to ensure consistency over time.

The second point relates to the recent ABS practice of excluding households in the first (equivalised) income decile. The justification for this is based on perceived inaccuracies in income reporting in the lowest income decile. Although the ABS suggests that both measures be provided, practice often has been to indicate only the more narrowly defined measure (such as quoted in the introduction to this chapter). This is despite evidence that more than 80 per cent of households in the first income quintile rely on government pensions and allowances or wages and salaries. Only 5 per cent of those in the lowest quintile report zero or negative incomes and only 4 per cent claim to rely on own business income (ABS, 2005b, Table 6). As Saunders notes “the decision by ABS to focus on deciles 2 and 3 rather than one has potentially enormous significance for those concerned with the fortunes of those on low incomes, although the change has not yet attracted the attention it deserves” (Saunders, 2004, p3).

Whilst it is accepted that there are likely to be reporting errors in many of the low incomes recorded, the results presented in this report include households in the lowest decile on the grounds that the vast majority of these are bona fide low income households. Those with zero or negative incomes are presumed to be spending 50 per cent or more of their income in meeting housing costs and therefore in housing stress; those with low but positive incomes are presumed to be in housing stress when their housing costs exceed more than 30 per cent of their recorded gross household income. For completeness, however, housing stress and crisis data on the numbers and characteristics of those in the lowest income decile are reported in tables presenting aggregate data.

2.1.3 Remaining assumptions underlying affordability measures

The remaining relevant assumptions made in this chapter are summarised here for completeness.

All measures are based on the use of the household as the unit of analysis. Affordability measures can differ in relation to their choice of the unit of analysis between household, person or, as often used by NATSEM, income unit.[10] As argued in Gabriel et al (2005), whilst the question of which measure is appropriate is likely to depend on the use to which it is to be put, there is a strong case for use of the household as the appropriate unit of measurement for analyses concerned with housing outcomes and housing policy.

For owners without a mortgage, housing costs comprise rates (general and water); for owners with a mortgage they also include mortgage or unsecured loan payments if the initial purpose was primarily to buy, build, add to or alter the dwelling. For renters they cover rent payments. Housing stress is based on housing costs absorbing at least 30 per cent of gross household income. This is supplemented by a housing crisis measure defined by a 50 per cent of gross household income ratio.

The sensitivity of the results to the choice of the ratio benchmark, the use of disposable rather than gross income as the base measure and the treatment of rent assistance is covered in Chapter 3 as is the related issue of the impact of the choice of a ratio or residual measure. The critical issue in relation to these refinements or alternative definitions is whether they have an impact on the assessment of how many and which households are at risk.

2.2 Impact of definitions on results

The results presented in this sub-section are based on the assumptions outlined above. The section begins by providing information on where the boundaries are drawn for defining lower and moderate income households. The results presented show how the total numbers estimated to be in housing stress are affected both by the choice of income measure and by the different restrictions imposed on the range of

[10] As employed, for example, in Harding et al (2004). This particular paper by NATSEM also takes housing costs as a ratio of disposable household income. The implications of this are discussed in the Appendix to this report.

income considered. They also show how the mix of household types is affected by the different choices made and how this affects estimates of numbers in housing stress. Finally, they provide data on the incidence of housing stress and crisis by household type for each income definition and range.

2.2.1 Numbers in housing stress

Table 2.1 provides estimates of numbers in housing stress based on gross and disposable household incomes that are both unequivalised and equivalised for a number of different ranges of the relevant income distributions. The first column of provides the estimates of numbers of households paying at least 30 per cent of their gross household income in meeting their housing costs. The second column provides estimates of those paying at least 50 per cent.

The estimate of 1,186,000 households paying at least 30 per cent of their income in the final row of each set of results corresponds to the first of the ABS measures highlighted at the start of this chapter.[11] As can be seen, this estimate is unaffected by which of the four measures is employed.

Which measure is employed, however, does affect the estimates of those in stress once higher income households are excluded from the base. On the simple gross household income measure (unequivalised) shown in the top set of rows, application of the 30/40 rule suggests there are 862,000 households in housing stress. Each of these households has a gross household income of less than $658 per week (approximately $35,000 per year). The fourth set of rows shows that, if the 30/40 rule is applied with an equivalent disposable income measure, the estimate is the same. [12] Each of these households has an equivalent disposable income of less than $367 per week.[13]

[11] This estimate, derived from the confidentialised unit record file, differs marginally from that which can be derived from published information because it is based on the raw data whereas the latter is derived as the product of a percentage figure rounded to the nearest decimal point and the number of households rounded to the nearest thousand.

[12] This is coincidental rather than reflecting a fundamental law. In most instances, the numbers will differ at least marginally. At a greater degree of accuracy, the estimate above based on a gross income measure would be reported as 862,250 and that based on an equivalent disposable income would be reported as 861,700.

[13] For a lone person household, equivalent disposable income and disposable income are identical and, in this case, $367 per week is equal to a disposable income of approximately $19,000 per year (and equal to a gross household income of approximately $25,000 per year). For a couple, disposable income exceeds equivalent disposable income by a factor of 50 per cent so that an equivalent disposable income of $367 per week translates to a disposable income of $550 per week. This amounts to a disposable income of around $28,500 per week and, if there was just one earner in the household, to a gross household income of less than $35,000 per year. For a two earner household, it would correspond to an even lower gross household income. A couple with two dependent children would be in the lowest two quintiles of an equivalent disposable income distribution if their disposable household income was $770 per week (amounting to a disposable income of no more than $40,000 per year and, based on the assumption of a single income earner, a gross household income of around $55,000 per year excluding family tax benefits).

Table 2.1: **Numbers with affordability problems by income measure, 2002-03**

		Housing stress (housing costs at least 30% of gross household income)	**Housing crisis** (housing costs at least 50% of gross household income)
	Gross income measures	no.	no.
	Lowest decile (<$226 pw)	314,800	255,000
30/40 rule	Lowest two quintiles (<$658 pw)	862,000	413,000
	Lowest three quintiles (<$1062 pw)	1,054,000	438,000
	All households	1,186,000	454,000
	Equivalent gross income measures		
	Lowest decile (<$213 pw)	385,000	290,000
30/40 rule	Lowest two quintiles (<$409 pw)	847,000	413,000
	Lowest three quintiles (<$621 pw)	1,017,000	434,000
	All households	1,186,000	454,000
	Disposable income measures		
	Lowest decile (<$224 pw)	319,000	257,000
30/40 rule	Lowest two quintiles (<$587 pw)	865,000	411,000
	Lowest three quintiles (<$877 pw)	1,059,000	437,000
	All households	1,186,000	454,000
	Equivalent disposable income measures		
	Lowest decile (<$211 pw)	400,000	294,000
30/40 rule	Lowest two quintiles (<$367 pw)	862,000	417,000
	Lowest three quintiles (<$515 pw)	1,026,000	436,000
	All households	1,186,000	454,000

Source: Survey of Income and Housing, 2002-03, confidentialised unit record file

The differences in the relationships between equivalised and unequivalised incomes by household type and in the relation between gross and disposable income depending on the number of earners contribute to the differences in the mix of household types estimated in stress according to the different measures employed. This will be examined below.

The key observation from the results presented in Table 2.1 is that, regardless of which measure is employed, application of the 30/40 rule means that around 850,000 lower income households, with incomes that place them in the lowest two quintiles of the income distribution, are in housing stress. Extension of this to moderate income households, with incomes that place them in the lowest three quintiles, means that there are more than 1,000,000 low or moderate income households paying at least 30 per cent of their gross household incomes in meeting their housing costs.[14]

[14] On a gross household income measure, these households have incomes of no more than approximately $55,000 per year. On an equivalent disposable income measure, they have disposable incomes equivalent to less than $27,000 per year for a single person. This equates to gross household incomes of less than $35,000 per year for a single person and $55,000 for a single earner couple household.

As can be seen from the numbers indicated in the first row of each income measure, all of these estimates would be reduced by between 300,000 and 400,000 if households in the lowest decile of the respective income distribution are excluded. The ABS estimate of 443,000 in stress, for example, can be derived from the equivalent disposable income data in Table 2.1 by subtracting from the estimate of 862,000 in stress in the lowest two quintiles, the 400,000 households in stress in the lowest decile.[15] As above, however, why this should be done given the characteristics of those households in the lowest income decile is questionable.[16]

The results in Table 2.1 also indicate that a significant proportion of households in housing stress are also, spending at least 50 per cent of their gross household income in meeting their housing costs. In total, over 450,000 households are in housing stress with more than 400,000 of these being in the lowest two quintiles on any income measure.

By any assessment, any of these numbers indicate that, based on the most recently available data, Australia has a significant housing affordability problem. A number of them suggest it has an overwhelming housing affordability problem.

2.2.2 Impact of income definition on household mix

Table 2.2 indicates how the two key definitions of income which are employed in many affordability studies and which underpin the results presented in this report affect the mix of households in various income ranges.

The first three sets of rows indicate the share of each household type within the various income categories. A comparison of the outcomes in the two columns highlights the effect of switching from an income distribution based on unequivalised gross income (as tends to be used with analyses based on census data) to an equivalised disposable income distribution (a preferred measure, usually available for analyses based on survey data). As can be seen from the data for the first decile and quintile of each distribution, analyses based on percentiles taken from a gross household income distribution will have a significantly greater representation of lone person households and a correspondingly lower representation of couple households with or without children. This arises both because the gross income distribution is not adjusted for the greater demands made upon household income in households where there is more than one person and because of the greater income earning capacity of households with more than one potential income earner. Combined with the different incidence of housing stress amongst different household types, the differences between these two measures provides one obvious explanation of why the estimates of those in stress vary depending on which income distribution is used to define the lowest two quintiles when applying the 30/40 rule even when both are based on the same ratio of housing costs to gross household income.

[15] See footnote 11.

[16] The results in Table 2.1 also suggest that little is to be gained by adding to the complexity of presentation by continuing to report results for all four measures. The two commented on above capture the essential differences between the four measures covered.

In view of the high incidence of housing stress amongst lone person households shown in the following sub-section, the difference in the proportion of households between the first decile and the lowest two quintiles for each income distribution also provides an indication of why estimates of the number of households in housing stress is reduced by such a significant amount if households in the first decile are excluded. The difference in the proportions of lone person households in the first two quintiles of the gross and equivalised income distributions also provides an indication of the likely differences in the household structure of those identified as being in housing stress under different definitions of which households are classified as being low income households.

Table 2.2: Proportions of households by household type and income distribution

	Gross income	%	**Equiv disp income**	%
	D1 (< $226pw)		D1 (< $211pw)	
1 couple only		11		17
2 couple and children		6		21
3 lone person household		78		47
4 sole parent		4		11
5 group household		1		1
6 other household		1		2
All lowest decile hhlds		100		100
	Q1+Q2 (<$658pw)		Q1+Q2 (<$367pw)	
1 couple only		27		25
2 couple and children		11		24
3 lone person household		45		35
4 sole parent		12		12
5 group household		2		2
6 other household		2		2
All lowest two quintile hhlds		100		100
	Q1+Q2+Q3(<$1,062pw)		Q1+Q2+Q3(<$515pw)	
1 couple only		26		24
2 couple and children		19		30
3 lone person household		38		29
4 sole parent		13		12
5 group household		2		2
6 other household		2		2
All lowest three quintile hhlds		100		100
	All households		All households	
1 couple only		26		26
2 couple and children		32		32
3 lone person household		25		25
4 sole parent		10		10
5 group household		3		3
6 other household		3		3
All households		100		100

Source: Survey of Income and Housing, 2002-03, confidentialised unit record file

2.2.3 Types of household in housing stress

Table 2.3 provides an indication of which types of households have the greatest numbers with affordability problems and the greatest incidence of housing stress. For both stress and crisis measures, the first column gives estimates of household numbers and the second column gives the incidence of stress within each category. In other words, in the lowest two quintiles using a gross income measure, the 862,000 households in housing stress represent 28 per cent of all households in this income category.

The final sets of rows in the top and bottom halves of Table 2.3 are identical, reinforcing the point made above; namely that the choice of income measure does not affect estimates of the total number of households in housing stress.

The second sets of rows in each half of the table, which represent estimates based on application for the 30/40 rule for each of the two income measures suggest on either measure, show that the greatest numbers of households in stress are found amongst lone person households. This is partly attributable to the greater numbers of lone person households in the lowest two quintiles of both income distributions (as indicated in Table 2.2) but is also attributable to the relatively high incidence of housing stress amongst these households.

On neither income measure, however, is the greatest incidence of housing stress found amongst lone person households. On both income measures, (the relatively small number of) group households have a considerably higher incidence of housing stress and crisis with almost 2 out of every 3 low income group households being in housing stress and almost one out of every 4 low income group households paying at least 50 per cent of their income in meeting their housing costs. On a gross income measure, the 43 per cent of couples with children with gross household incomes below $658 per week are in housing stress and 22 per cent are paying more than 50 per cent of what is undoubtedly already an inadequate level of household income in meeting their housing costs.[17]

Application of the 30/40 rule using an equivalised disposable income measure (which results in considerably more couples with children in the lowest two quintiles of the income distribution but results in many of them having higher gross household incomes[18]), results in 30 per cent of all couple with children households being in housing stress and 36 per cent of all sole parent households in housing stress of whom nearly 1 in 5 are spending at least 50 per cent of their income in meeting their housing costs.

As with the total estimates of those in stress, the choice of income measure, whilst it affects results at the margin, does not make substantive differences to the overall assessment of which households are most likely to be in housing stress and which types of household contribute most to the numbers in stress.

[17] Gross household income includes all forms of government assistance. An alternative treatment of rent assistance is addressed in Chapter 3.

[18] As indicated above, an equivalent disposable household income of $367 per week for a single earner couple household with two children would translate to a gross household income of around $55,000 per year excluding family tax benefits.

On either measure, the greatest numbers in stress are lone person households. In the lowest two quintiles, couple households have the lowest incidence of housing stress; group households have the highest incidence of housing stress and households with children (both couple and sole parent households) have a disproportionate share of households in housing stress.

Table 2.3: Australian households in housing stress and crisis by household type and income quintiles, 2002-03

		Housing stress		Housing crisis	
Gross income measure		no.	%	no.	%
Lowest decile (< $226 pw)	1 couple only	54,000	65	46,000	55
	2 couple and children	38,000	81	37,000	79
	3 lone person household	195,000	33	150,000	25
	4 sole parent	19,000	69	14,000	53
	5 group household	5,000	100	5,000	100
	6 other household	3,000	71	3,000	57
	All lowest decile hhlds	314,000	41	255,000	34
Lowest two quintiles (<$658 pw)	1 couple only	129,000	16	68,000	8
30/40 rule	2 couple and children	151,000	43	77,000	22
	3 lone person household	391,000	28	206,000	15
	4 sole parent	136,000	36	41,000	11
	5 group household	39,000	63	14,000	23
	6 other household	17,000	35	7,000	14
	All lowest two quintile hhlds	862,000	28	413,000	14
Lowest three quintiles (<$1,062 pw)	1 couple only	156,000	13	72,000	6
	2 couple and children	235,000	27	92,000	10
	3 lone person household	443,000	26	208,000	12
	4 sole parent	155,000	26	45,000	8
	5 group household	43,000	40	14,000	13
	6 other household	21,000	24	7,000	8
	All lowest three quintile hhlds	1,054,000	23	438,000	10
All households	1 couple only	191,000	9	80,000	4
	2 couple and children	306,000	12	97,000	4
	3 lone person household	456,000	24	210,000	11
	4 sole parent	159,000	21	45,000	6
	5 group household	49,000	20	14,000	6
	6 other household	26,000	12	7,000	3
	All households	1,186,000	16	454,000	6

… contd.

Table 2.3: Australian households in housing stress and crisis by household type and income quintiles, 2002-03 …. contd.

		Housing stress		Housing crisis	
Equivalent disposable income measure		no.	%	no.	%
Lowest decile (< $211 pw)	1 couple only	62,000	47	50,000	38
	2 couple and children	100,000	64	67,000	43
	3 lone person household	175,000	49	138,000	38
	4 sole parent	45,000	52	27,000	31
	5 group household	11,000	100	8,000	74
	6 other household	7,000	54	4,000	31
	All lowest decile hhlds	400,000	53	294,000	39
Lowest two quintiles (<$367 pw)	1 couple only	125,000	16	65,000	8
30/40 rule	2 couple and children	221,000	30	88,000	12
	3 lone person household	326,000	31	201,000	19
	4 sole parent	134,000	36	42,000	11
	5 group household	35,000	63	14,000	26
	6 other household	21,000	29	7,000	10
	All lowest two quintile hhlds	862,000	28	417,000	14
Lowest three quintiles (<$515 pw)	1 couple only	150,000	14	70,000	7
	2 couple and children	269,000	19	95,000	7
	3 lone person household	384,000	29	206,000	15
	4 sole parent	153,000	27	44,000	8
	5 group household	44,000	45	14,000	14
	6 other household	25,000	22	7,000	6
	All lowest three quintile hhlds	1,026,000	22	436,000	10
All households	1 couple only	191,000	9	80,000	4
	2 couple and children	306,000	12	97,000	4
	3 lone person hhld	456,000	24	210,000	11
	3 lone person household	159,000	21	45,000	6
	4 sole parent	49,000	20	14,000	6
	5 group household	26,000	12	7,000	3
	All households	1,186,000	16	454,000	6

Source: Survey of Income and Housing, 2002-03, confidentialised unit record file

Table 2.4 provides a summary of the key results in Table 2.3 that are used as headline indicators to focus on the impact of using a 30 per cent affordability ratio with no restrictions on income and of different interpretations of how a 30/40 rule might be applied.

Table 2.4: Summary table - Comparison of three affordability measures that estimate the number and type of households in housing stress ('000s)

	30% rule no income cut-off		30/40 rule lowest two quintiles gross household income		30/40 rule lowest two quintiles equivalised disposable household income	
	no.	%	no.	%	no.	%
1 couple only	191,000	9	129,000	16	125,000	16
2 couple and children	306,000	12	151,000	43	221,000	30
3 lone person household	456,000	24	391,000	28	326,000	31
4 sole parent	159,000	21	136,000	36	134,000	36
5 group household	49,000	20	39,000	63	35,000	63
6 other household	26,000	12	17,000	35	21,000	29
All households	1,186,000	16	862,000	28	862,000	28

Source: SIH, 2002-03

More detailed information of the household structure of households in housing stress compared with the proportion of households in each income percentile (as recorded in Table 2.2) is presented in Table 2.5. Results are presented for both gross and equivalised disposable household income percentiles.

The results in Table 2.5, for example, the equivalised disposable income results (in the final three columns of the table) show that, whereas 25 per cent of all households in the lowest two equivalised disposable income quintiles are couple only households, only 15 per cent of all households in housing stress (according to the 30/40 rule) are couple only households and only 16 per cent of those spending at least 50 per cent of their income in meeting their housing costs are couple only households. Conversely, whereas 35 per cent of households in the lowest two equivalised disposable income quintiles are lone person households, 38 per cent of all households in housing stress (according to the 30/40 rule) and 48 per cent of those spending at least 50 per cent of their income in meeting their housing costs are lone person households.

In other words, almost 2 out of every 5 households in housing stress and 1 out of every 2 households spending 50 per cent of their income in meeting their housing costs is a lone person household.

Table 2.5: Proportions of Australian households in housing stress and crisis by household type and income percentiles

	stress	crisis	all hhlds		stress	crisis	all hhlds
Gross income	%	%	%	Equiv disp income	%	%	%
D1 (< $226)				D1 (< $211)			
1 couple only	17	18	11		16	17	17
2 couple and children	12	14	6		25	23	21
3 lone person household	62	59	78		44	47	47
4 sole parent	6	6	4		11	9	11
5 group household	2	2	1		3	3	1
6 other household	1	1	1		2	1	2
All lowest decile hhlds	100	100	100		100	100	100
Q1+Q2 (<658) 30/40 rule				Q1+Q2 (<$367) 30/40 rule			
1 couple only	15	16	27		15	16	25
2 couple and children	18	19	11		26	21	24
3 lone person household	45	50	45		38	48	35
4 sole parent	16	10	12		16	10	12
5 group household	5	3	2		4	3	2
6 other household	2	2	2		2	2	2
All lowest two quintile hhlds	100	100	100		100	100	100
Q1+Q2+Q3(<$1,062)				Q1+Q2+Q3(<$515)			
1 couple only	15	16	26		15	16	24
2 couple and children	22	21	19		26	22	30
3 lone person household	42	47	38		37	47	29
4 sole parent	15	10	13		15	10	12
5 group household	4	3	2		4	3	2
6 other household	2	2	2		2	2	2
All lowest three quintile hhlds	100	100	100		100	100	100
All households				All households			
1 couple only	16	18	26		16	18	26
2 couple and children	26	21	32		26	21	32
3 lone person household	38	46	25		38	46	25
4 sole parent	13	10	10		13	10	10
5 group household	4	3	3		4	3	3
6 other household	2	2	3		2	2	3
All households	100	100	100		100	100	100

Source: Survey of Income and Housing, 2002-03, confidentialised unit record file

2.3 Summary

The key point that can be drawn from the discussion and results presented in this chapter is that, whilst estimates of the numbers and characteristics of those in housing stress are marginally sensitive to the definition of income employed and to the restrictions imposed on income range over which housing stress is defined, there are few substantive differences arising from different interpretations of the 30/40 rule.

3 SENSITIVITY OF RESULTS TO ALTERNATIVE AFFORDABILITY MEASURES

3.1 Chapter overview

As indicated, the estimates of numbers of households in housing stress presented in the previous chapter were based on affordability ratio measures derived from housing costs and gross household income. Such measures are simple to derive and simple to understand. Generally they can be derived from readily available survey and census data although use of more sophisticated measures such as equivalised income to determine which households are described as lower income households is likely to be more problematic.

However, as discussed in detail in Gabriel et al (2005), ratio measures do not take into account the fact that the capacity of a household with a given level of gross household income to pay for their housing costs is likely to vary by household type (with larger households having less capacity to pay for housing from a given level of household income than smaller households). They also do not take into account the fact that capacity to pay for housing costs is likely to vary by level of income (with lower income households having a lower capacity to pay for their housing than higher income households regardless of household type).

This chapter examines the effect on the estimates of numbers and characteristics of households in housing stress when these factors are taken into account. In the first instance, it briefly examines the impact on outcomes of changes in the benchmark housing cost ratio used to define housing stress. In the second, it examines the effect of using gross income as the income base for determining whether housing costs exceed 30 per cent of income and the implications of how housing costs are defined, focussing specifically on the treatment of rent assistance.

Finally, it examines the effect of using a residual rather than a ratio measure of housing stress. This sensitivity analysis is based on the 2002-2003 Survey of Income and Housing used to derive the results presented in Chapter 2 in order to enable a direct comparison with those results.

In all cases, the definition of who is defined as a lower income household remains unchanged as those in the lowest two quintiles of an equivalised disposable income distribution. Equivalisation is intended to adjust actual household income in a way that takes into account the different demands made on that income as a result of differences in household size and structure. The analysis in the latter part of this chapter provides an indication of the extent to which this adjustment is effective in also determining which households have an adequate capacity to pay for their non-housing costs once their housing costs are taken into account.

3.2 Choice of housing cost ratio

The results presented in Chapter 2 showed that, on the basis of a benchmark defined by housing costs at 30 per cent of gross household income, 16 per cent of all households and 28 per cent of lower income households were defined as having affordability problems. The common rationalisation for this particular choice of benchmark is that it is consistent with bank lending practices which, in the past at least, tended to use 30 per cent of income as a rule of thumb for determining the repayment capacity of households borrowing for home purchase.

However, the choice of 30, rather than 20 or 25 per cent, for example, can be disputed, particularly for lower income households as it can leave many with insufficient resources to meet their non-housing needs. Whether this is so will be addressed below.

This purpose of this section is simply to highlight the impact on the estimates on numbers in housing stress is stress is defined on the basis of an affordability ratio other than 30 per cent. To ensure direct comparability with earlier results, housing costs are expressed as a proportion of gross household income as used in Chapter 2 and lower income households are defined as those in the lowest two quintiles of an equivalent disposable income distribution.

Table 3.1 indicates how the estimated numbers (and proportions) of households in stress decrease as the benchmark ratio is increased. If the benchmark had been set at 20 per cent, then nearly 2.5 million or 45 per cent of all households would be paying at least 20 per cent of their gross household income in meeting their housing costs. At a 25 per cent benchmark, the numbers decrease to 1.7 million households in total and 1,055,000 households in the lowest two income quintiles. At the 30 per cent and 50 per cent benchmarks, the numbers are as reported in Chapters 1 and 2.

Table 3.1: Percentage of all households and household in lowest two quintiles with housing cost ratio at or above value indicated*

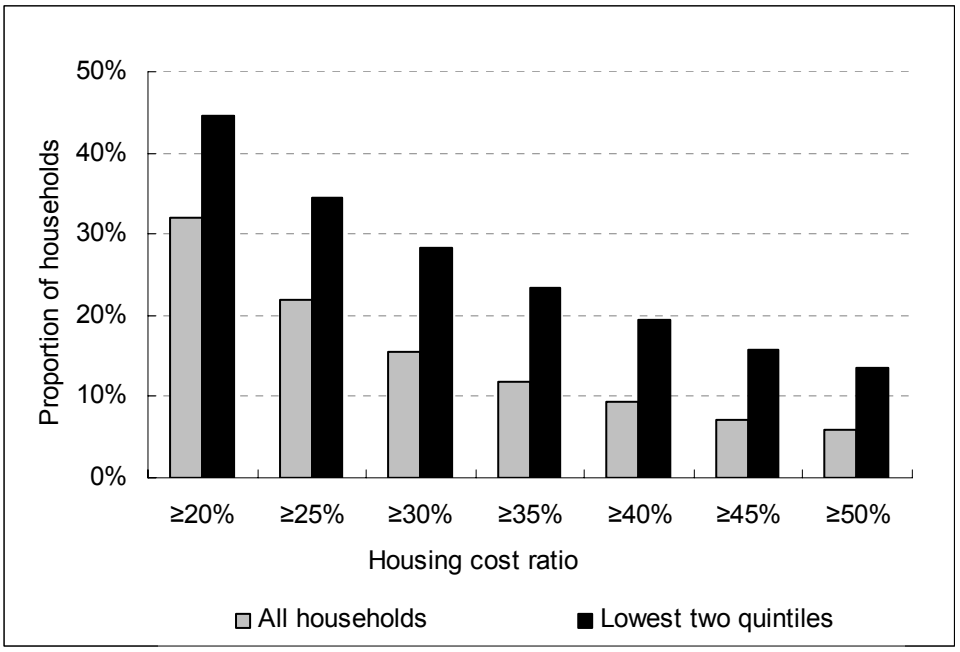
	Housing cost ratio						
	≥20%	≥25%	≥30%	≥35%	≥40%	≥45%	≥50%
				(no.)			
lowest 2 quintiles	1,361,000	1,055,000	862,000	716,000	597,000	485,000	417,000
all households	2,452,000	1,667,000	1,186,000	900,000	709,000	552,000	454,000
				(%)			
lowest 2 quintiles	45	35	28	23	20	16	14
all households	32	22	16	12	9	7	6

* quintiles based on equivalent disposable income; housing costs related to gross household income

Source: Survey of Income and Housing, 2002-03, confidentialised unit record file

Figure 3.1 illustrates these outcomes.

Figure 3.1: Percentage of all households and household in lowest two quintiles with housing cost ratio at or above value indicated*



*quintiles based on equivalent disposable income; housing costs related to gross household income
Source: Survey of Income and Housing, 2002-03, confidentialised unit record file

3.3 Alternative approaches to defining key variables

3.3.1 Use of gross or disposable income in base

All of the results in Chapter 2 were presented on the basis of an affordability ratio determined by relating housing costs to gross household income. However, there is no inherent rationale for why gross rather than disposable household income should be used as the basis.

Results based on a 30 per cent benchmark or derived from a 30/40 rule are not directly comparable when different income measures are employed as a benchmark for determining housing cost ratios. This can be illustrated by the following. In 2002-03, the period which forms the basis of the substantive results presented in this report, households with an equivalent disposable household income of less than $367 per week were defined as low income households. As indicated in section 2.2.1, for a lone person, this translates to a disposable income of $19,000 per year and a gross household income of approximately $25,000 per year (or $480 per week). For a single earner couple with no children it translates to a disposable income of $28,500 per year (or $550 per week) and a gross household income of approximately $35,000 per year (or $673 per week).

With the 30 per cent benchmark based on gross household income, the lone person household could spend up to $144 per week on housing costs without violating this predetermined affordability benchmark. The couple household could spend just over $200 per week without being defined as being in housing stress on the 30/40 rule.

Given that both households are generally defined as having the same housing need based on an adequacy standard (viz. one bedroom), it is not surprising that there is a higher incidence of housing stress amongst low income lone person households. With these levels of expenditure, however, neither household (both of whom defined as low income households) would be defined as being in housing stress on a housing cost ratio based on gross income.

However, with the same housing expenditures, if disposable income was used to determine the housing cost ratio, the lone person would have a housing cost ratio of $144/$367 = 39 per cent and the couple would have a housing cost ratio of $200/$550 = 36 per cent and both would be defined as being in housing stress if a 30 per cent benchmark based on disposable household income were applied.

Table 3.2 provides equivalent data to the summary data provided in Table 2.4 in Chapter 2 in order to highlight the impact on estimates of the numbers and incidence of those in housing stress when the housing cost ratio benchmark of 30 per cent is based on disposable rather than gross household income. The first set of columns present the new data based on a housing cost ratio with disposable income in the base; for ease of comparison, the second set of results repeat those from Table 2.4 based on a housing cost ratio with gross income in the base.

Table 3.2: Estimates of numbers and incidence of housing stress when disposable income used to define benchmark income for housing cost ratio

	disposable income base				gross income base			
	30% rule		30/40 rule		30% rule		30/40 rule	
	no income cut-off		lowest two quintiles equivalised disposable household income		no income cut-off		lowest two quintiles equivalised disposable household income	
	no.	%	no.	%	no.	%	no.	%
1 couple only	269,000	13	133,000	17	191,000	9	129,000	16
2 couple and children	468,000	19	257,000	35	306,000	12	151,000	43
3 lone person household	579,000	30	328,000	31	456,000	24	391,000	28
4 sole parent	196,000	26	151,000	40	159,000	21	136,000	36
5 group household	60,000	24	37,000	69	49,000	20	39,000	63
6 other household	30,000	14	23,000	32	26,000	12	17,000	35
All households	1,602,000	21	929,000	30	1,186,000	16	862,000	28

Source: Survey of Income and Housing, 2002-03, confidentialised unit record file

Based on a gross household income benchmark, the data presented in Table 2.4 reported an estimate of 1,186,000 households paying at least 30 per cent of their gross household income in meeting their housing costs, of whom 862,000 were in the lowest two income quintiles (defined by equivalent disposable income) and hence were in housing stress on that particular application of the 30/40 rule. The data presented in Table 3.2 report an estimate of 1,602,000 households paying at least 30 per cent of their disposable household income in meeting their housing costs of whom 929,000 were in the lowest two income quintiles (defined by the same equivalent disposable income definition) and hence would be described as being in housing stress on this revised application of the 30/40 rule.

On the more conservative use of the 30/40 rule based on a gross household income benchmark, 16 per cent of all households paid at least 30 per cent of their income in meeting their housing costs and 28 per cent of all lower income households were classified as being in housing stress. On the alternative use illustrated here, based on a disposable household income benchmark, 21 per cent of all households paid at least 30 per cent of their income in meeting their housing costs and 30 per cent of all lower income households would be defined as being in housing stress.

Because the estimated numbers of households in housing stress is higher on the disposable income benchmark, the incidence of housing stress also is higher for all household types. However, if data are adjusted to take into account the higher overall incidence in Table 3.2, the adjusted incidence figures suggest a decrease in the relative incidence of housing stress amongst couples with children under a disposable income benchmark compared with the gross income benchmark employed in Table 2.4.

The examples given here and the data in Table 3.2 highlight the fact that use of the gross income benchmark for defining the housing cost ratio provides more conservative estimates of numbers in housing stress than the equally credible and, in some respects, more plausible use of disposable income. Many analysts, indeed, suggest that disposable income provides a better measure of the capacity of a household to pay for its housing costs than gross household income. This argument, however, is more appropriate for alternative measures of housing stress based on residual rather than ratio measures. This is examined in section 3.4 below.

The key result is that the choice of gross income in the base of the housing cost ratio presents a more conservative estimate of the numbers in housing stress than does choice of disposable income. The difference in outcomes also reinforces the fact that the choice of 30 per cent as an affordability benchmark is an arbitrary choice.

3.3.2 Housing costs and treatment of RA

In all of the ratio measures employed above, no adjustment to housing costs has been made for the fact that, for many lower income households in the private rental market, household income reflects rent assistance (RA) received to ease their housing cost burdens.[19] This suggests that housing costs should be redefined (as argued, for example, by Landt and Bray, 1997). Redefining housing costs to exclude RA then raises the question of whether RA should be included in the definition of income (as done in all of the results reported in this report) or whether it should be subtracted from housing costs and/or income when calculating the housing cost ratio that determines whether a household is classified as being in housing stress or not.

This section examines the impact on housing stress results based on a 30/40 rule when housing costs but not incomes are defined net of rent assistance and when both are defined net of rent assistance. Because of limitations on data availability, the

[19] Rent Assistance is limited to persons who pay more than a certain amount for rent (other than public housing) or equivalent services and who are in receipt of a pension, an allowance or benefit or who receive more than the base rate of family tax benefit. Details of eligibility requirements can be found at <http://www.centrelink.gov.au/internet/internet.nsf/payments/qual_how_ra.htm>. Data on actual benefits paid for June 2002 can be found in MIAESR (2002).

results should be seen as indicative. The assumptions made in deriving them have been chosen to ensure the results maximise the assessed impact of RA.

The SIH does not provide data on which respondents received RA nor on the amount received. However, it does provide data on source of income and on the presence of children. In the calculations presented here, where the primary source of income was government benefits or pensions, all privately renting households have been assumed to receive the maximum amount of rent assistance available for that particular household type irrespective of how much rent they actually paid. In addition, all privately renting households with any children have been assumed to receive maximum rent assistance for the number of children present, regardless of their household income or the dependency status of their children.

For comparability with the results based on housing cost ratios defined by gross housing costs and gross household income, the definition of lower income households is unchanged and is still based on those in the lower 2 quintiles of an equivalised disposable income distribution in which income for eligible households still includes rent assistance. This means that the total numbers and characteristics of households classified as lower income households remains unchanged. All that differs is an assessment of how many and which of these households are in housing stress when there is a change in the way in which their housing cost ratio is defined.

Table 3.3: shows this impact of excluding RA from housing costs on the estimates of numbers in housing stress and the incidence of housing stress by household type both for the case where RA is included in income and where it is excluded. The case for excluding it from both is that if RA is assigned to meeting housing costs (as implied by subtracting it from these) then it is not available for non-housing costs which means that income needs to be adjusted to take this into account. As above, the first set of columns present the new results based on excluding RA from housing costs but including it in income; the second set of columns present results based on excluding RA from both housing costs and income; the final set of columns simply repeat the comparable set of results from Table 2.4 which are based on including RA both in housing costs and in income.

Because RA is received only by households who are renting privately, any changes in the estimates of the numbers in housing stress derived from different ways of treating RA will affect only households in the private rental market. For this reason, only the results affected are presented below.

Table 3.3: Impact on housing stress measures of excluding RA from housing costs and/or income; 2002-03*

	RA excluded from costs included in income		RA excluded from costs excluded from income		RA included in costs included in income	
	no.	%	no.	%	no.	%
1 couple only	109,000	14	114,000	15	125,000	16
2 couple and children	198,000	27	198,000	27	221,000	30
3 lone person household	256,000	24	285,000	27	326000	31
4 sole parent	96,000	25	96,000	25	134,000	36
5 group household	33,000	59	33,000	60	35,000	63
6 other household	21,000	29	21,000	29	21,000	29
All households	711,000	23	746,000	24	862,000	28
Private renters	309,000	44	344,000	49	460,000	65

* regardless of how RA is treated in housing costs or income, in this table, lower income households remain those in the lowest 2 quintiles of an equivalised disposable income distribution (with no adjustments made for RA).
Source: Survey of Income and Housing, 2002-03, confidentialised unit record file

The first point that can be made is that, when RA is netted out from both housing costs and income, the estimates of those in housing stress are reduced by 116,000 households (from 862,000 to 746,000 households) and the incidence of housing stress amongst lower income households is reduced from 28 per cent to 24 per cent. When RA is netted out from housing costs only, the estimates of those in housing stress are reduced by an even greater 151,000 households (from 862,000 to 711,000 households) and the incidence of housing stress reduced from 28 per cent to 23 per cent. By definition, all of the reduction in the numbers in housing stress occurs amongst households in the private rental market where the numbers of lower income households in stress is reduced by the same amounts as above and the incidence of housing stress from an extremely high 65 per cent to a still high, but significantly lower, 49 per cent when RA is netted out from both housing costs and income or 44 per cent when it is netted out only from housing costs.

The second point that can be made is that these results show that use of a net measure for housing costs (but not income) gives a far more favourable assessment of the impact of RA in reducing both the numbers and incidence of housing stress amongst lower income households in the private rental market. However, regardless of which of the three measures reported in Table 3.3:, the results show that there is a high incidence of housing stress amongst households in the private rental market.

Table 3.4 focuses specifically on the impact of different ways of treating RA on the measurement of the numbers in, and incidence of, housing stress for lower income households in the private rental market since only private renter households are affected by the measures covered in this section.

Table 3.4: Impact on housing stress measures of excluding RA from housing costs and/or income for private renter households*; 2002-03

	RA excluded from costs included in income		RA excluded from costs excluded from income		RA included in costs included in income	
	no.	%	no.	%	no.	%
1 couple only	37,000	44	42,000	50	53,000	63
2 couple and children	44,000	27	44,000	27	66,000	41
3 lone person household	135,000	54	164,000	65	206,000	82
4 sole parent	55,000	37	55,000	37	93,000	62
5 group household	27,000	71	28,000	72	30,000	77
6 other household	11,000	62	12,000	62	12,000	62
All private renter households	309,000	44	345,000	49	460,000	65

* regardless of how RA is treated in housing costs or income, in this table, lower income households remain those in the lowest 2 quintiles of an equivalised disposable income distribution (with no adjustments made for RA).
Source: Survey of Income and Housing, 2002-03, confidentialised unit record file

Similar patterns in the effect of the different measures can be seen for households within the private rental market as overall. Measures that exclude RA from housing costs and/or income tend to present a more sanguine result for lone person and sole parent households than for couple households with children but the relative differences are small.

The issue of whether these outcomes are consistent with the relative capacity of different household types to pay is addressed in the following section.

3.4 Residual affordability measures

All of the previous analysis has been undertaken on the basis of a fixed ratio measure of affordability. As summarised in Gabriel et al (2005), such measures have the advantage of depending on readily available and relatively little data, of being easy to explain, and of making few subjective assumptions about what is an appropriate level of housing consumption for different types of households. However, they have also been criticised because there is no clear rationale that underpins the benchmark, because they employ the same measure across all tenures and all household types, assuming, therefore, that all have an equal capacity to pay and they do not ensure that households have an adequate income to meet their non-housing costs.[20]

Residual measures, based on a determination of whether the income available to the household after its housing costs have been met, are seen to address at least some of these concerns. The main advantage of a residual measure is that it takes into account the impact of household structure on household needs by explicitly taking into account differences in non-housing needs for different household types. At the same time, however, this is also a weakness because it requires a judgement to be made as

[20] They also do not take issues of housing quality and adequacy into account but these weaknesses are ignored here as they also apply to the residual measures to be covered in this section. One response to this criticism is that a single measure cannot achieve multiple objectives and additional criteria need to be introduced to ensure housing is adequate and appropriate as well as affordable. The measures covered here relate only to affordability.

to what these non-housing needs are. A further weakness of residual measures is that they impose more onerous data requirements and can be complex and time consuming Gabriel et al (2005) provide a fuller discussion of the advantages and disadvantages of the residual approach.

This section provides estimates of affordability outcomes based on what might be described as the most straightforward way of applying a residual affordability measure. It is one which is most directly compatible with the ratio measures employed in the earlier part of this report in that it makes no judgement on the adequacy or appropriateness of the housing expenditure undertaken by individual households. This is taken as given.[21] The residual measures employed here compare the disposable income left after a household's housing expenditures have been undertaken with externally determined measures of the income needed to meet non-housing needs. As with the conventional ratio measure that underpins the 30/40 rule, the residual measures reported here apply only to households in the lowest two quintiles of the equivalised disposable income measure.

This leaves the measure of non-housing needs as the only decision that is to be made. In Australia, there are two options from which to choose: the Henderson poverty line established in 1974 (Commission of Inquiry into Poverty, 1975) and the more recent Social Policy Research Centre (SPRC) indicative low cost budget standard measures developed in 1997 (Saunders et al, 1998).[22] The former is updated on a quarterly basis by the Melbourne Institute of Applied Economic and Social Research (MIAESR); Saunders (2004) outlines a methodology for updating the latter. Results based on each of these measures are reported here.

The indicative low cost budget standard developed by the SPRC was developed for a limited range of household types and for children of specific ages. In the application here, the information on the age of children has been ignored and only the number of children taken into account. The budget standards were also only developed for single family households. The approach embodied in the data in Table 3.5 below has been to apply to a multiple family household the budget standard that applies to a single family household with the same number of children. Likewise, it has been assumed that the budget standard for sole parents with more than 2 children is increased by the same amount as that for couples with more than 2 children. Group households have been assigned the same budget standard as a couple only household. Finally, consistent with the recommendation in Saunders (2004), the 1997 budgets have been up-rated to June 2002 in line with a CPI adjustment.[23] All of these decisions have been made on

[21] This approach is similar to that employed by Waite and Henman (2005) who apply an after actual housing costs budget standards approach to low income renters in Queensland. Their paper is more extensive in terms of household types covered and applies regional difference in the cost of goods and services to update the 1997 budget standards (although the original standards were not regionally specific).

[22] Saunders et al (1998) also derive a modest but adequate budget standard which is regarded by the authors as more appropriate for households with a head in the workforce. In the interest of retaining a conservative approach, this has not been employed here.

[23] June 2002 was chosen as being at the start of the period covered by the 2002-03 SIH to ensure that estimated budgets are at the low rather than high end of the range of options that might have been chosen.

the basis that they represent conservative extensions to the indicative budgets derived by Saunders et al. (1998).

The resultant low cost budgets for different household types are shown in Table 3.5, along with the after housing Henderson poverty line for 2002 (MIAESR, June 2002). As can be seen by comparing these results, the low cost budget standard (excluding housing), which assumes only one person in a couple household is employed and all other households have no person in employment, is more generous than the extremely parsimonious after housing poverty line for households with a head not in the workforce. It ranges from 10 to 15 per cent higher for sole parents to up to 37 per cent higher for singles. For working households, however, the low cost budget standards tend to be marginally more generous only for couples (and multiple families) with children; they are less generous than the poverty line estimates for working sole parents.

Table 3.5: Low cost budget standard (LCBS) and poverty line (PL) estimates of non-housing need, 2002

	LCBS	PL (excl housing)	
Household type	excl housing	in workforce	not in workforce
	$pw	$pw	$pw
Couple	295	288	232
Families with 1 child	393	357	301
Families with 2 children	464	427	371
Families with 3 children	529	497	441
Families with 4 children	612	566	510
Sole parent with 1 child	247	272	216
Sole parent with 2 children	331	342	286
Sole parent with 3 children*	396	411	355
Sole parent with 4 children*	461	481	425
Single	194	198	142
Group	295	288	232

*sole parents with more than two children have had LCBS increased by $65pw per child (derived from increment in cost of 3rd child in couple LCBS)
Source: LCBS from Saunders et al (1998), uprated by CPI; PL from MIAESR (2002)

The following sub-sections provide results obtained from application of the low cost budget standard (excluding housing) and from the after housing Henderson poverty. They report the numbers and proportions of households who do not have sufficient income to meet basic non-housing needs (such as food, clothing, transport, education and health) after their housing needs are met. Residual income is derived by subtracting from household disposable income, all housing costs. When residual income is less than the chosen benchmark for non-housing needs, the household is defined as being in housing stress under this residual measure. Because actual housing costs are employed, this approach takes into account the impact of spatial variation in housing costs on affordability. However, it does not take into account any variation in non-housing costs. These are assumed to be constant across Australia.

As with the ratio measures of housing stress defined in the earlier part of this report, the data apply only to households in the lowest two quintiles of an equivalised disposable income distribution. In other words, the data are directly comparable with those reported in Table 1.1 and Table 1.3, the results from which are repeated in Table 3.6 below.

Table 3.6: Comparison of numbers in, and incidence of, housing stress using residual and ratio measures, 2002-03

	Residual measures				Ratio measure	
	after housing income below low cost budget standard		after housing income below poverty line		30/40 rule	
	no.	%	no.	%	no.	%
All lower income hholds in stress	1,359,000	44	947,000	31	862,000	28
Age < 65 years	1,086,000	55	838,000	42	760,000	38
Age 65+ years	273,000	26	108,000	10	102,000	10
Single person age <65	399,000	81	280,000	57	261,000	53
Single person age 65+	189,000	34	58,000	10	66,000	12
Couple households	212,000	28	160,000	21	94,000	16
Couple with children	351,000	48	275,000	38	221,000	30
Sole parents	175,000	46	144,000	38	134,000	36
Group households	29,000	53	28,000	51	35,000	63
Households with children	525,747	48	434,000	38	354,000	30
Working households	473,000	46	433,000	42	376,000	36
Outright owner	304,000	22	181,000	13	82,000	6
Home purchaser	308,000	57	264,000	49	265,000	49
Private renter	500,000	71	398,000	55	460,000	65
Public renter	213,000	68	90,000	28	40,000	13
Urban households	802,000	47	563,000	33	542,000	32
Non-urban households	540,000	41	369,000	28	308,000	23
Sydney	272,000	53	197,000	38	183,000	36
Melbourne	224,000	46	164,000	34	161,000	33
Brisbane	113,000	45	73,000	29	79,000	32
Adelaide	81,000	41	55,000	28	45,000	23
Perth	95,000	45	65,000	31	64,000	30
Hobart	16,000	42	7,000	22	10,000	26
Rest of NSW	209,000	42	135,000	27	118,000	24
Rest of Vic	96,000	39	68,000	28	50,000	21
Rest of Queensland	152,000	43	112,000	32	97,000	27
Rest of SA	25,000	34	16,000	21	10,000	13
Rest of WA	37,000	40	26,000	28	24,000	26
Rest of Tas	20,000	36	11,000	19	8,000	15

Source: Survey of Income and Housing, 2002-03, confidentialised unit record file

Table 3.6 presents results for housing stress under three different measures of stress. The first two provide estimates based on the two residual measures: respectively, the low cost budget standard and the poverty line. The third repeats the 30/40 ratio measure results that were presented in Chapter 1 and which underpin much of the sensitivity analysis undertaken in this and previous chapters.

As can be seen from these results, residual measures suggest that more households are in housing stress than indicated by the application of a ratio based 30/40 rule, particularly when the low cost budget standard measure of the minimum amount of income needed for non-housing costs is applied. Because of its more generous (or more realistic) assessment of the minimum level of expenditure needed to meet non-housing costs, more lower income households are assessed as having insufficient income to meet these housing costs under the low cost budget standard than when the poverty line is employed.

Both measures highlight the distinct possibility that application of the 30/40 rule understates the extent to which lower income households face pressures in maintaining even a minimum standard of living after meeting their housing costs.

Under the 30/40 rule, 28 per cent of all low income households were defined as being in housing stress. Under the PL residual measure, this increases to 31 per cent. Under the LCBS, it increases to 44 per cent. For the sub-categories with high degrees of housing stress under the 30/40 rule, the changes are less extreme. For example, under the 30/40 rule, 65 per cent of private renters were defined as being in housing stress. Under the PL residual measure, only 55 per cent are defined as being in stress whilst under the LCBS measure, 71 per cent are so defined. Similar relativities arise for purchasers with 49 per cent defined as being in stress on the 30/40 rule, the same proportion on the PL residual measure and 57 per cent on the LCBS residual measure.

For households with children, the proportion in housing stress increases from 30 per cent under a 30/40 rule to 38 per cent under the PL residual measure to 48 per cent under the LCBS measure.

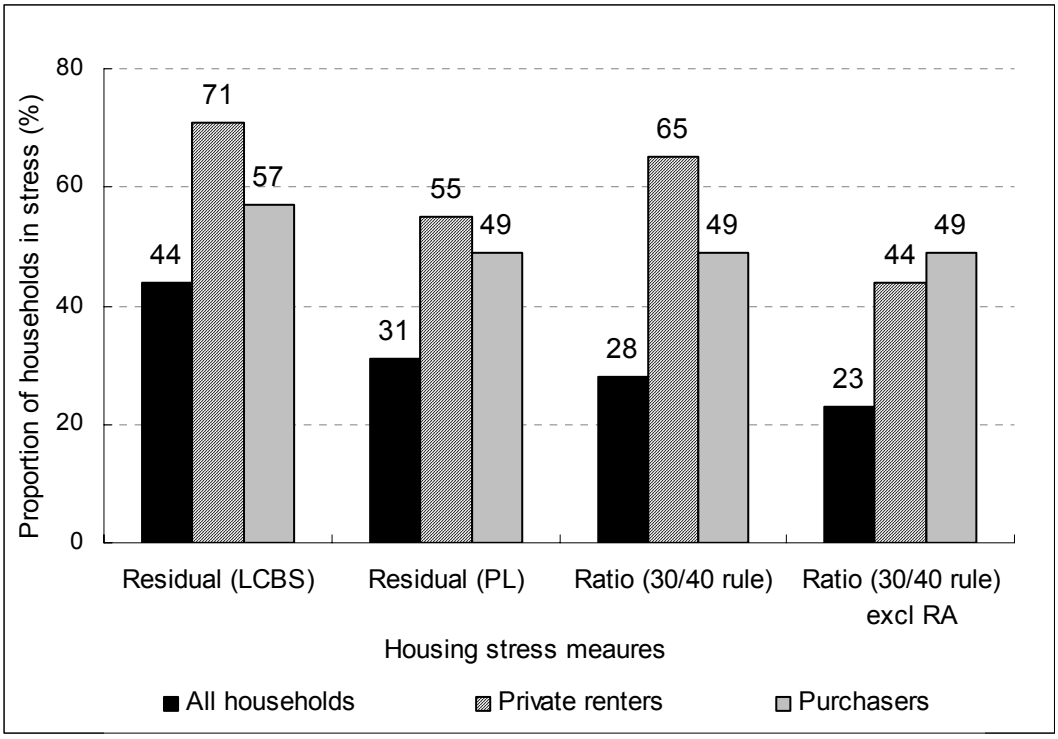
For working households, it increases, respectively, from 36 per cent to 38 per cent to 48 per cent. For single persons aged less than 65 years, it increases from 53 per cent to 57 per cent to 81 per cent.

The most significant changes under the residual measures, however arise with those groups identified with low proportions of housing stress under the 30/40 rule. On this ratio measure, for example, only 13 per cent of public renters were defined as being in housing stress. Under the PL residual measure, 28 per cent were defined as being in housing stress and under the LCBS measure, 68 per cent were so defined. In part these large differences can be attributed to the more generous assessment of non-housing needs for households where the head is unemployed with the low cost budget standard than with the poverty line. Similar large differences arise for older households.

Figure 3.2 highlights some of these differences. The first set of results, which show the highest levels of housing stress, illustrate the results based on the residual measure which uses a low cost budget standard to determine whether a lower income

household has sufficient income to meet its non-housing needs. The final set of results, which show the lowest levels of housing stress, illustrate the results when RA is subtracted from housing costs but is still included in the definition of income employed.

Figure 3.2: Proportion of lower income households in stress under different affordability measures*: 2002-03



*all data apply to households in lowest 2 quintiles of equivalised disposable income distribution
Source: Survey of Income and Housing, 2002-03, confidentialised unit record file

These results suggest that attempts to adapt ratio measures to take into account assistance provided to lower income renters is likely to be more misleading than improving in terms of the impact it has on an assessment of the capacity that these households have to maintain an acceptable standard of living once their housing costs are met.

3.5 Summary

This chapter has highlighted a number of key results regarding the use of the 30/40 ratio measure with a gross household income base. The dominant one is that it provides a conservative estimate of the numbers in housing stress. It also reinforces the fact that the choice of 30 per cent as an affordability benchmark is an arbitrary choice.

Measures that exclude RA from housing costs and/or income tend to present a more sanguine result for lone person and sole parent households than for couple households with children but the relative differences are small. The proportion of households in stress under each measure is relatively unchanged by the choice of affordability measure.

Residual measures tend to suggest that more households are in housing stress than indicated by the application of a ratio based 30/40 rule, particularly when the low cost budget standard measure of the minimum amount of income needed for non-housing costs is applied. Both low cost budget standard and poverty line residual measures, however, highlight the possibility that application of the 30/40 ratio measure understates the extent to which lower income households face pressures in maintaining even a minimum standard of living after meeting their housing costs.

4 TRENDS IN, AND DURATION OF, HOUSING STRESS

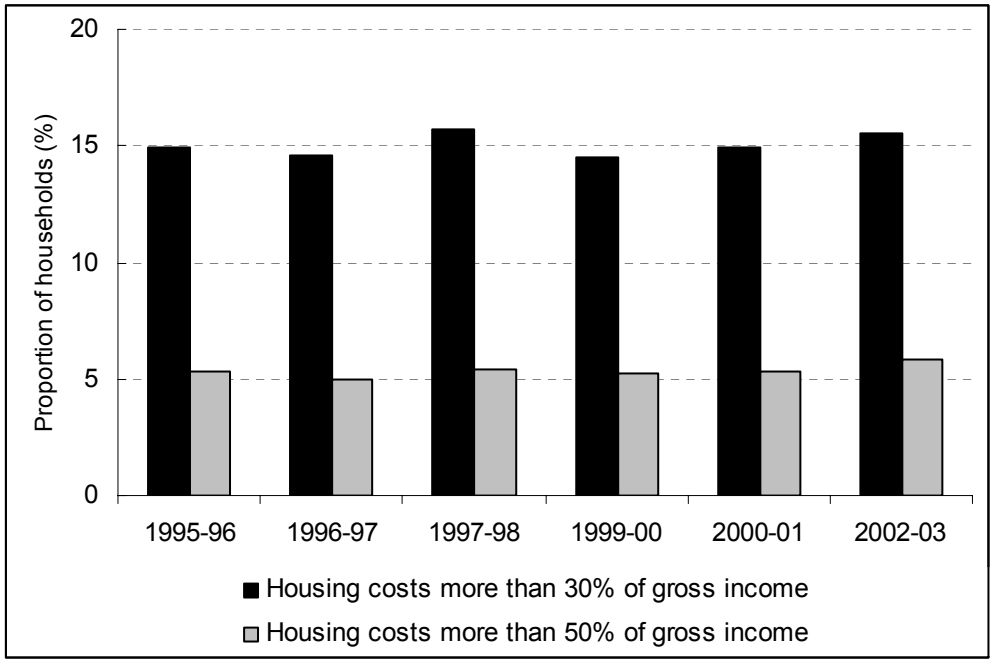
4.1 Trends in affordability

Two key issues regarding the robustness of the results presented in the previous chapters relate to the extent to which they are sensitive to the year in which the survey data were collected and the extent to which they are on-going. This section addressed the first of these. Section 4.2 addresses the second. Both sections rely on results derived from ratio measures.

4.1.1 Trends in affordability: aggregate measures

One indication of whether the results presented arise from the choice of year can be seen from the results illustrated in Figure 4.1 which indicates the proportion of households with housing cost ratios in excess of both 30 per cent and 50 per cent of gross household income taken from the Surveys of Income and Housing that have been undertaken in Australia since 1995-96. Figure 4.2 provides the numbers of such households.

Figure 4.1: Proportion of households with housing costs in excess of 30% and 50% of gross household income, 1995-96 to 2002-03



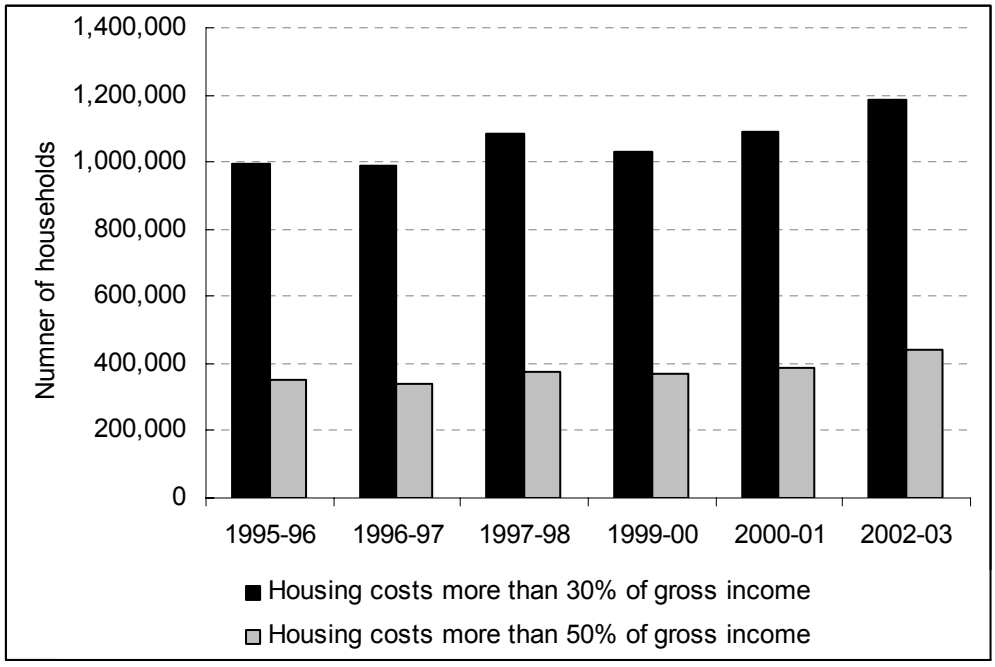
Source: Survey of Income and Housing, 2002-03, Table 3 (ABS Cat. No. 4130.0.55.001)

The published results from these surveys do not provide data from which numbers or proportions in housing stress as defined by a 30/40 rule or a more extreme 50/40 rule can be derived. However, the results illustrated serve to support the argument that there was nothing unusual about the results for 2002-03. The proportions of households with high housing cost ratios have been relatively steady over the past

decade and the total numbers have trended upwards as the total number of households in Australia has increased.

The data illustrated in Figure 4.1 show that, over the period from 1995 and 2003, between 14 and 16 per cent of all households faced housing costs ratios in excess of 30 per cent of gross household income and between 5 and 6 per cent of all households faced housing cost ratios in excess of 50 per cent of gross household income. The proportions for 2002-03 are towards the top end of the decade long results but fully consistent with results over almost 10 years. As reported above, in 2002-2003, this means there were almost 1.2 million households paying in excess of 30 per cent of their gross household income in meeting their housing costs and over 400,000 households paying in excess of 50 per cent.

Figure 4.2: Numbers of households with housing costs in excess of 30% and 50% of gross household income

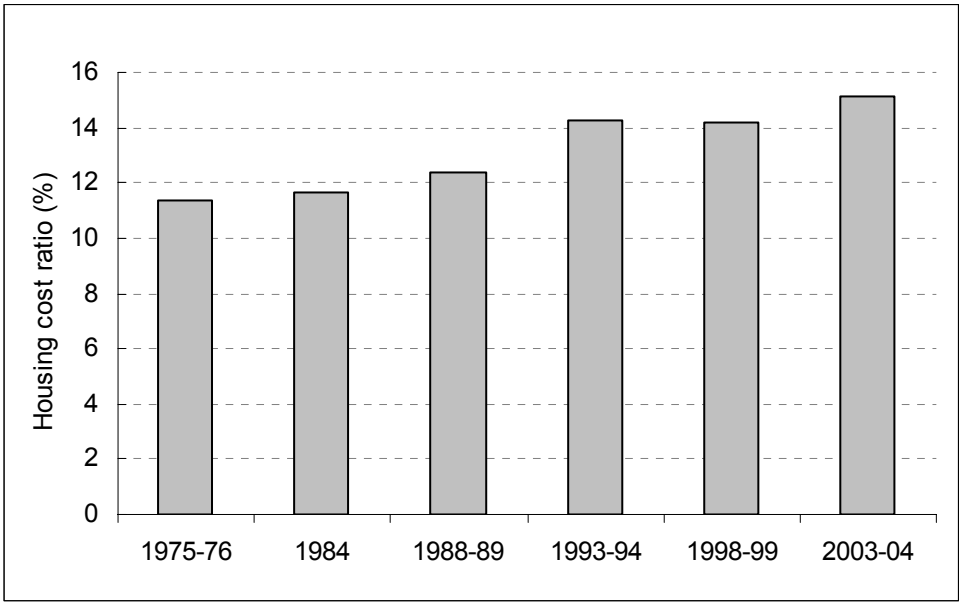


Source: Survey of Income and Housing, 2002-03, Table 2 (ABS Cat. No. 4130.0.55.001)

These results, which show a steady increase in the number of households, are reinforced by the general upward trend in the average housing cost ratio for all households over a much longer period of time. Data from the Household Expenditure Surveys over the past 30 years, for example, reveal that the average proportion of gross household income spent on housing costs has increased from 11.4 per cent in 1975-76 to 15.1 per cent in 2003-04. These results are illustrated in Figure 4.3 below.[24]

[24] These HES data include repayments of mortgage principal for home owners in order to be compatible with the definition of housing costs in the Survey of Income and Housing data that has been the focus of

Figure 4.3: Average housing cost ratios for all households: 1975-2004



Source: Household Expenditure Surveys, various years (ABS Cat. No. 6530.0)

4.1.2 Trends in affordability: disaggregate measures

Disaggregation by household income

The unchanging tendency for the greatest numbers of those in housing stress to be from the lower ends of the income distribution can be seen in the results illustrated in Figure 4.4 below. Figure 4.4 charts average housing cost ratios over time for households in different equivalised disposable income quintiles.[25] It shows that households in the lowest equivalised income quintile have average housing cost ratios that are well in excess of those faced by households in higher income categories and which are more than double the Australia wide average. For the purpose here, it also shows that these differentials have not changed significantly over time (although the composition of households in the lowest income quintiles may well have changed).

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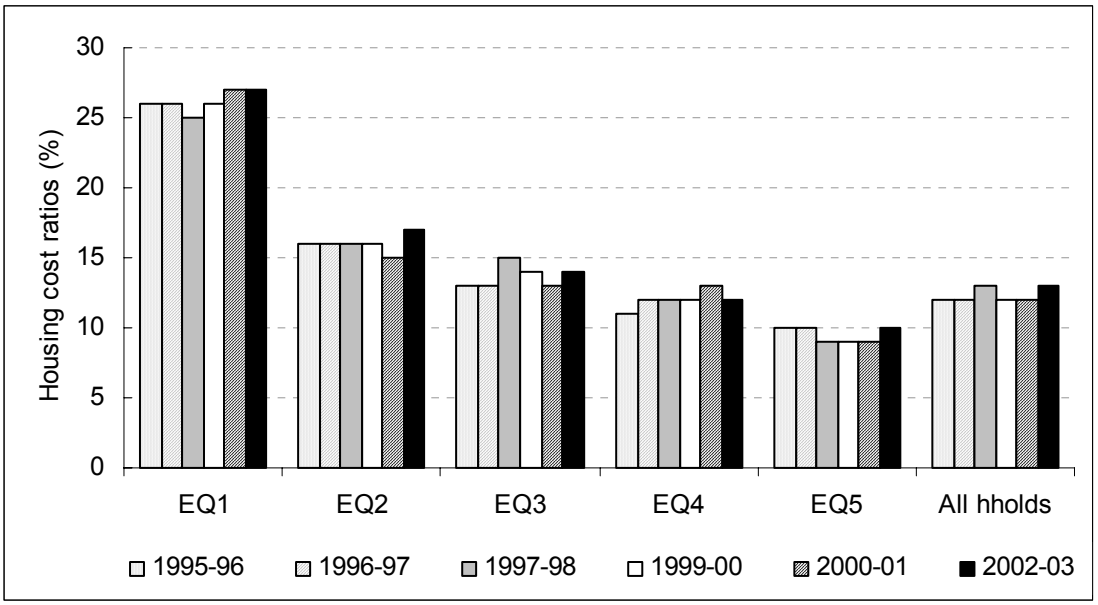
the results in this chapter. Chapter 3 covered issues surrounding the definition of housing costs in more detail.

[25] In contrast with the quintiles reported in the previous section (which are derived from household weighted data), the quintiles in Figure 4.4 are derived from person weighted data. This difference is likely to lower the average housing cost ratios for households in the lowest income quintile as it effectively assigns greater weight to multiple person households (who tend to have a lower housing cost ratios and a lower incidence of housing stress) than it does to single person households (who are more likely to face high housing cost ratio and be in housing stress).

Figure 4.4: Housing cost ratios by equivalised disposable income quintiles, 1995/96-2002/03

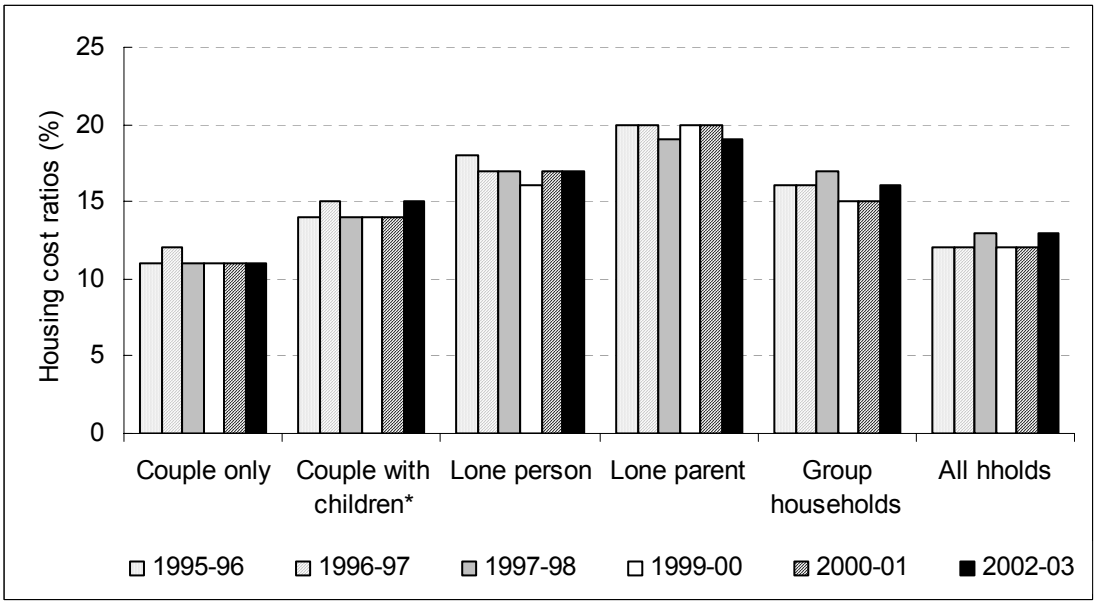


Source: Survey of Income and Housing, 2002-03, Table 2 (ABS Cat. No. 4130.0.55.001)

Disaggregation by household type

A similar indication of the relative stability of the housing cost ratios faced by different household types over time and hence of the propensity of particular households to be in housing stress can be seen in the results illustrated in Figure 4.5.

Figure 4.5: Housing cost ratios by household type, 1995/96-2002/03



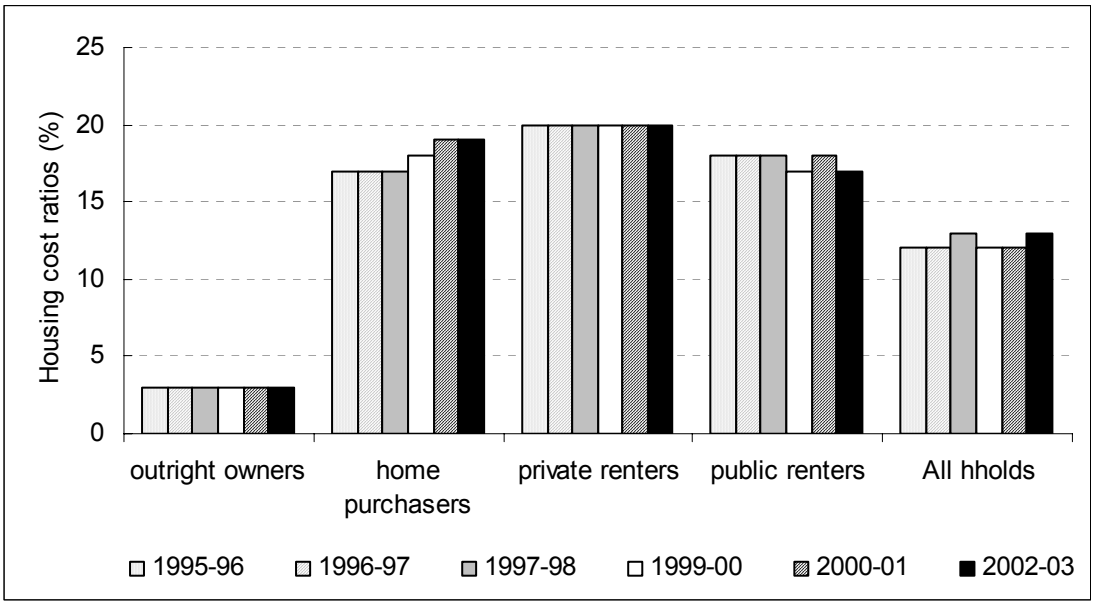
Source: Survey of Income and Housing, 2002-03, Table 2 (ABS Cat. No. 4130.0.55.001)
* the couple with children category is based on couples with only dependent children and so is not directly comparable with the results presented in the tables in the previous sub-section that are based on couples with any children.

These results highlight the persistently higher housing cost ratios faced by sole parent households in the period since 1995. Their average housing cost ratios are more than 50 per cent higher than the Australian wide average and almost double the ratios for couple only households. Much of these differences can be attributed to their lower household incomes but they also can be attributed to different tenure outcomes. Differences in average housing costs by tenure are illustrated below.

Disaggregation by tenure

The final disaggregated results to be presented in this overview section are housing costs by tenure. These are presented in Figure 4.6. These results clearly highlight the greater relative problems faced by private renters and households purchasing their own homes. In broad terms, renters face higher relative housing costs than do purchasers and all have housing cost ratios that are well in excess of the average for all households. They also show that the differentials in the housing costs faced by renters and outright owners have been sustained since 1995. In part, these differentials arise because of the interaction of household income and tenure.

Figure 4.6: Housing cost ratios by tenure, 1995/96-2002/03



Source: Survey of Income and Housing, 2002-03, Table 2 (ABS Cat. No. 4130.0.55.001)

4.2 Duration of housing affordability problems [26]

The second key issue examined here is the question of whether affordability problems occur only over a relatively short period or whether they affect the household's capacity to pay for non-housing costs over the longer term.

[26] The analysis in this section was undertaken by Kerrie Legge in the School of Economics and Political Science at the University of Sydney. Her invaluable contribution and considerable persistence in dealing with the complex HILDA data set is gratefully acknowledged.

Some insight into this question can be obtained from an analysis of the panel data available in the three waves available in the HILDA data set in 2005 and by considering the housing affordability outcomes for those individuals who responded in all 3 waves.[27]

A potential difficulty in using HILDA data for housing affordability analysis arises because individuals, rather than households, are tracked over time. This has been addressed below by selecting only one person in each wave 1 household, by tracking that person over time and by assigning to the selected individual in the data set, the affordability outcome for the household in which they lived in each wave. In other words, it allows for the possibility that the individual's household structure changed between waves.[28]

The HILDA data show that, of those households in stress in 2001, 60 per cent were in housing stress in one of the 2002 and 2003 waves, almost 49 per cent were still in stress in 2002 and 29 per cent were still in stress in 2003. Likewise, of the similar number of households in stress in 2002[29], 49 per cent were also still in stress in the following 2003 wave. The total numbers in stress in 2003 were similar to those in stress in both 2001 and 2002 but, as yet, no data are available on their housing outcomes for 2004.[30] These results are illustrated in Figure 4.7 below. The 2001 results suggest there is close to a 50 per cent chance that a person living in a

[27] The panel from the first wave consisted of just under 8,000 households. Data were collected on each person in the household aged 15 years or more, resulting in a wave 1 data set that consisted of just under 20,000 individuals. The intent of the survey was to track each of these individuals over time with each respondent being interviewed annually. In any longitudinal data set, however, there is inevitably a problem of non-response. The survey design and longitudinal weights in the HILDA data are adjusted to take this into account. In the results presented here, weighted data (with longitudinal weights adjusted to allow for response bias by correcting for attrition and benchmarking back to the wave 1 characteristics) have been used to evaluate the outcomes. Details on the HILDA data set can be obtained from http://www.melbourneinstitute.com/hilda/.

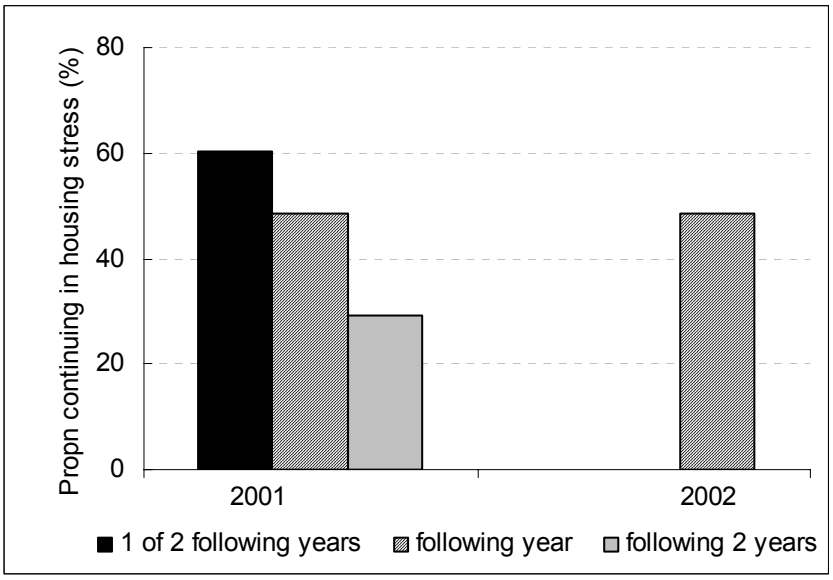
[28] This was done according to the following protocol. In an income unit comprising a couple (with or without dependent children), the primary person was assumed to be the male. In a same-sex couple, the primary person was assumed to be the older partner. In an income unit comprising a sole parent or single person, the primary person is the sole parent or single person respectively. The primary person in any multiple income unit household was defined as the primary person in whichever income unit was classified as income unit number one. This is consistent with the approach used by Rachel Ong for work done for CRV2 and we are grateful to her for providing us with the relevant material. If the so defined primary person individual within the household did not respond in wave 1, the individual selected from the household was the first listed person who did respond. Creation of a balanced panel based on households where the selected person from wave 1 responded in both waves 2 and 3 resulted in a sample of just over 6,000 households.

[29] Some of these would, and others would not, have been in housing stress in 2001. 'Housing stress' is used here to describe any household paying at least 30 per cent of its gross household income in meeting its housing costs. In other words, the data have has not been constrained to households in the lowest two quintiles of an equivalised income distribution because of the complexities of defining this over time.

[30] The 7.5 million estimate of the actual numbers of households on which these duration data are based is marginally lower than that presented in previously in this report. More significantly, the estimate of households in stress in any of the three years is 12 per cent in wave 1, and 11 per cent in each of waves 2 and 3. These estimates are noticeably below the comparable 16 per cent estimate derived from the Survey of Income and Housing data. This may be attributable to the nature of the HILDA sample but may be attributable to the longitudinal household weights that have been applied. It is for this reason, that only the change from one period to the next has been reported.

household in housing stress in one year will be living in a household in stress in the following year and a 60 per cent chance that they will be living in a household in stress for one of the next two years. There is a 29 per cent chance they will living in a household continuously in housing stress for 3 years. Conversely, of course, there is more than a 70 per cent chance that this will not occur. The 2002 results give a similar estimate of the proportion in stress in 2002 and still in stress one year later. Comparable results for households in stress in one of the two following years or two years later will be available once the wave 4 data are released.

Figure 4.7: Extent and duration of housing stress: 2001- 2003



source: HILDA, wave3

The 2001 and 2002 results together suggest that 1 out of every 2 persons living in a household paying at least 30 per cent of its gross household income in meeting their housing costs in one year will still be living in such a household in the following year. The 2001 results suggest that approximately 1 out of every 3 persons living in a household paying at least 30 per cent of its gross household income in meeting its housing costs in one year will still be living in such a household in each of the two following years.

In other words, although the affordability measures employed in this report are based on current income and current housing costs data, longitudinal data suggest that, for a high proportion of those living in households with high housing cost ratios, affordability problems are protracted rather than transient problems.

4.3 Summary

Numerous studies over the past few decades have provided sufficient evidence that, whilst affordability at an aggregate level has not undergone dramatic changes, affordability has worsened considerably for a significant number of households. Many have highlighted the affordability problems faced by lower income households illustrated in Chapter 2. These studies were reviewed in Yates et al (2004). Concern that the difficulties that these households have in finding affordable housing are now also affecting moderate income households aspiring to home ownership has created a new imperative to examine the data underpinning the results presented above provide one of the reasons why housing affordability has become a priority issue.

The results presented in this chapter show that the results that led to these concerns do not derive from short term outcomes that can be explained by economic cycles; they have been persistent over a long period of time. They are also not concerns that can be dismissed as applying to households only for a short period of time. At least 60 per cent of households facing affordability problems in any one year are likely also to face affordability problems into their second year or third years. Almost one in three facing an affordability problem in one year will face continuous affordability problems for at least 3 years.

5 CONCLUSIONS

This paper has provided a consistent set of estimates of the numbers of households in housing stress and an analysis of their characteristics under a range of different measures.

These estimates have been anchored by use of a 30/40 rule with a 30 per cent ratio of housing costs to gross household income as the benchmark for housing stress and with the lowest two quintiles of the equivalised disposable household income distribution being used to determine which households are defined as lower income households.

This anchor measure has been chosen because it meets many of the requirements of criteria derived by Statistics New Zealand for determining appropriate indicators for measuring housing affordability[31]. It generates a summary measure that is simple to interpret, accessible and publicly appealing. It clearly informs about the extent of the issue it represents. It provides clear and useful output.

The results obtained provide sufficient detail to monitor affordability outcomes; they provide an indication of the well being of the households whose housing outcomes are being measured; they rely on existing data, require only a limited number of parameters and are simple to monitor both at a point in time but also over time. They can be disaggregated in a way that provides information at a level appropriate for assisting policy evaluation and aiding policy development.

However, the same characteristics can be applied to many of the variations on this anchor measure. Refinements of this basic measure will give (sometimes only marginally) different estimates of the numbers and types of households in housing stress but the incidence of housing stress amongst different household types is relatively robust to different measures as is the overall assessment of where the major problems are. For comparisons over time, it is important that a consistent measure is employed. The comparisons at a given point of time, any one of a number of measures is likely to be satisfactory.

A number of conclusions can be drawn from the results presented in this report:

- use of the 30/40 rule with the 30 per cent housing cost ratio defined by housing costs and gross household income and the lowest 2 quintiles of the income distribution based on household adjustment (that is, equivalised) disposable income generates conservative estimates of the numbers in housing stress and hence of the incidence of housing stress; and
- many households defined as being in housing stress on this measure have insufficient income to meet a frugal assessment of their non-housing needs.
- use of disposable income in the base of a ratio measure will increase the estimates of numbers in and incidence of housing stress

[31] These criteria, which were set out in more detail in the concluding section of Gabriel et al (2005), can be found at <http://www.stats.govt.nz/analytical-reports/housing/housing-indicators/housing-indicators-information.htm>

- netting out rent assistance from housing costs will decrease the estimates of numbers in the private rental market in housing stress,
- under any measure, there are a large number of households in Australia with significant housing affordability problems and there are a number of indications that the numbers are increasing.

In many respects, the enormity of the housing affordability problem renders precise measurement of it irrelevant. Any housing policy which assists in alleviating the housing costs of households defined as being in housing stress on any of the measures covered in this report will be targeted to a household with a significant affordability problem.

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A APPENDIX: COMPARISON WITH OTHER DATA SOURCES AND STUDIES

A.1 2001 Census results

Census data, although available only every 5 years, provide the sole means of obtaining reliable data that are significantly spatially disaggregated. They also provide one of the few sources of data on housing outcomes for particular minority groups. As such, it is important to determine how well the results obtained from census data compare with those obtained from the more regularly available survey data such as that used in this report.

The results presented here provide one benchmark against which to assess analyses aimed at provided a greater level of disaggregation than is possible from survey data. They are derived from the 1 per cent household sample file (HSF) from the 2001 Census and are restricted to occupied private dwellings (so that, consistent with the survey data reported in the body of this report, persons living in non-private dwellings are excluded). By default, unoccupied private dwellings are excluded. Not classifiable households also have been excluded from the analysis, as have visitor only households. On these exclusions, the HSF represents 6.7 million households in Australia.[1] However, for many of these households, data on a number of key variables are missing or, in the case of income, only partially stated. In the absence of reliable methods of imputation, all of the observations for such households must be ignored.[2] For the 2001 Census, this means that the number of observations for affordability analyses is reduced to 5.6 million households.

The first point that can be made, therefore, is that the usable census data gives a considerable undercount of households compared with the (weighted) totals available from the SIH. This is largely attributable to two facts: there are no non-classifiable households included in the survey data and so no consequent loss of observations and observations for which data may have been missing have had data imputed before release of the survey data.

A second problem that arises with census data is that the key variables used in any assessment of housing affordability depends on housing costs and household income, both of which are provided as categorical variables rather than point estimates and neither of which provides the same flexibility as the equivalent variables in survey data. For renters, housing costs in the census are defined by weekly rent paid which is directly comparable with survey data. For owners, however, housing costs data are limited to monthly mortgage repayments and

[1] This matches the data reported in Tables B32 and B17 in the Basic Community Profiles for the 2001 Census.

[2] Yates, Wulff and Reynolds (2004) provide an example of how this problem can be overcome for census data but the process is time consuming and costly and is not a readily accessible solution for users of census data. The discussion here, therefore, examines the outcomes when a solution such as they suggest is not available.

exclude expenditures on rates and repairs and so provide a less comprehensive measure of housing costs than survey data. In the results below, housing costs for purchasers, defined in the census by monthly mortgage repayments, are divided by four to give an approximation of weekly housing costs. For outright owners housing costs are set to zero. The housing cost ratio is calculated by dividing the mid point of household weekly rental and mortgage payments by the midpoint of HSF categories for gross household income, the only household income data available on the unit record file.

The second point that can be made, therefore, is that housing cost ratios, as measurable from census data, both approximate and under-approximate actual housing cost ratios. A related difficulty arising with the categorical nature of the census data is that it also only approximates income quintiles. In 2001, the closest approximation to the lowest two income quintiles categories covers only 37 per cent rather than 40 per cent of all households.

These qualifications all combine to indicate that use of census data will give an underestimate of the numbers in housing stress. The 2001 HSF census data, for example, gives a count of 836,000 households paying at least 30 per cent of their gross household income in meeting their housing costs, of whom 574,000 are in as close as can be approximated to the lowest 2 quintiles (of unequivalised gross household income). These numbers compare, respectively, with 1,186,000 and 862,000 from survey data. Scaling the data by the known undercount arising from missing data (and from the growth in households from 2001 to 2002-03) gives a closer approximation but the totals are still lower.

Estimates of the incidence of housing stress, however, are considerably more consistent with the census data indicating 15 per cent of all households and 27 per cent of those in the lowest 2 quintiles paying at least 30 per cent of their household income in meeting their housing costs. These estimates are close to the 16 per cent and 28 per cent that were generated from the survey data.

Thus, a tentative conclusion is that census data will underestimate numbers in housing stress. It is important that this is taken into account when using census data to generate more spatially disaggregate results than are available from survey data.

At an aggregate level, however, they appear to give estimates of the incidence of housing stress that are reasonably comparable with those derived from the more detailed, but less comprehensive in coverage, survey data. Further analysis is required to determine whether this carries through to a disaggregate analysis.

A.2 Simulation results (NATSEM)

For inter-censal periods, an alternative approach to deriving estimates of numbers and incidence of housing stress when survey data are not available has been through simulation modelling such as that undertaken by NATSEM. A recent study by Harding et al (2004), for example, provided estimates of the numbers and

characteristics of households in housing stress for 2004. These estimates were based on the 1999-2000 and 2000-2001 Surveys of Income and Housing Costs. The NATSEM study, for example, updated 2001 housing cost data to 2004 by factors based on State-wide changes in average mortgage loans and in median rents in each capital city over the period. The challenging nature of this exercise is acknowledged as are the difficulties that arise from the possibility that the characteristics of home purchasers, assumed to be unchanged in the simulation exercise, actually do change over time. The changing characteristics of rental properties and changing location of renters and owners are also likely to create difficulties. Averages generated at a large spatial level are unlikely to be accurate at a household specific level.[3]

These problems notwithstanding, the NATSEM approach yielded an estimate of 883,000 families and single persons (income units) in housing stress which represented 8.8 per cent of all income units in housing stress in 2004. Whilst the estimate of the numbers in stress is superficially similar, the estimate of the incidence of stress is considerably lower than the 16 per cent estimate reported in Chapter 2.

However, the NATSEM definition of housing stress, although limited to the bottom 40 per cent of an equivalent disposable income distribution, is based on 30 per cent of disposable income. The use of disposable income in the base of the housing cost ratio used to define housing stress, in principle would lead to a greater estimate of both the numbers of those in housing stress than reported in the main part of this report. A better benchmark for the NATSEM estimate, therefore, is the estimate of 929,000 households in housing stress provided in Chapter 3 (and designed to show the impact of changing the housing ratio from a gross to a disposable income base). In addition, the NATSEM results are based on income unit rather than household weights to scale up survey results, which means that more weight is given to multiple income unit households than to single income unit households. Because the former generally have a lower incidence of housing stress, this is a further reason why NATSEM estimates of numbers in housing stress are likely to be lower.

The key reason why the NATSEM estimates are lower than that generated in this report, however, is that the NATSEM study based its estimates on nearly 10 million income units in 2004, well in excess of the estimated number of around 7.7 million households for the same point of time.[4] The number of income units in any period exceeds the number of households (and the number of dwelling units) because, inter alia, independent adults living in the family home or living in a group household are counted separately. The vast majority of the 3 million additional units covered by the

[3] These concerns should not be interpreted as a criticism of the valuable work undertaken by NATSEM. They are presented merely to highlight some of its limitations.

[4] There were 7.4 million households in 2001. On an implied rate of growth of 1.5 per cent per annum in the number of households (at the top end of ABS projections), by 2004 there would have been only 7.7 million households in 2004 (ABS Cat No. 3236.0)

NATSEM analysis are likely to be single persons living in the parental home or in group homes, most of whom are unlikely to be recorded as having a housing affordability problem. This provides one possible explanation of why their estimate of the incidence of housing stress is considerably lower than that reported in Chapter 2.

A.3 Summary

The analysis in this report has served to highlight some of the effects of different assumptions. This brief Appendix highlights the need for users of estimates of affordability outcomes to be aware not just of the assumptions that have been made in deriving them but also of the implications of the underlying choice of data from which the estimates have been derived.

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