Research Paper

Conceptualising and measuring the housing affordability problem

National Research Venture 3: Housing Affordability for Lower Income Australians

Research Paper 1

authored by

Michelle Gabriel, Keith Jacobs, Kathy Arthurson and Terry Burke with Judith Yates

for the

**Australian Housing
and Urban Research Institute**

RMIT-NATSEM Research Centre
Southern Research Centre
Swinburne-Monash Research Centre
Sydney Research Centre
UNSW-UWS Research Centre

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EXECUTIVE SUMMARY

Background Paper 1 has two aims. The first is to review relevant literature on affordability issues and discuss some of the main methods of measuring housing affordability. The second is to inform discussion on how housing affordability is to be measured for the overall CRV3 research program.

Chapter 1 discusses the policy context, including a rationale for researching affordability, the emergence of housing affordability as a policy concern and the contested nature of this concept. Chapter 2 reviews the Australian and international literature, exploring the linkages between affordability debates and recent housing policy outcomes. In Chapter 3, recent literature concerning the measurement of housing affordability is reviewed. Here different measures are examined in terms of their potential to accurately assess the scale and incidence of affordability problems overall and across sub-populations. There is a sizeable Technical Appendix attached to Chapter 3 which outlines the key methodological complexities that have to be addressed in designing individual or household measures of affordability and which indicates the ways in which these complexities are to be addressed. Chapter 4 sets out the criteria that any measure of housing affordability should take into account.

The paper provides a rationale for continued use of the 30/40 affordability rule (that is housing costs below 30 per cent for the bottom 40 per cent of the household income distribution) both because it provides continuity with traditionally used measures and because it is simple to apply and easy to understand. However, a case is also made for providing additional complementary indicators that are more responsive to household needs and capacity to pay.

Such indicators, for example, might define the bottom 40 per cent as applying to an equivalised income distribution, in which case fewer single person households and more households with children will be included in the definition. Alternatively, they might extend to the whole of the income distribution, in which case the affordability problems faced by marginal home purchasers are more likely to be brought into focus.

Where possible, they should provide an indication of how sensitive any measures reported are to the specific assumptions made (such as what ratio is employed, whether disposable or gross income is employed and whether RA is included or excluded from income and rent paid). There is sufficient evidence provided in the paper to support the argument that different household types and different income groups have very different capacities to pay for their housing and that the measured outcomes will differ according to the way in which key variables are defined. The paper suggests that indicators should be disaggregated by tenure and household characteristics. Whilst still limited, greater insight into the problematic issue of whether affordability problems are short-term, on going, or episodic is likely to be provided by such disaggregation.

Finally, the paper explicitly recognises that it will not be possible to incorporate all relevant concerns in simple affordability measures. Issues such as the appropriateness of housing (in terms of occupancy standards) and its adequacy (in terms of physical quality, location and access to services, for example) will need to be addressed by an additional complementary set of indicators.

1 INTRODUCTION

This paper provides a background to, and sets a framework for, much of the research to be undertaken for the AHURI funded collaborative research venture (CRV3) project 'Housing Affordability for Lower Income Australians'. The rationale for CRV3 is to provide an evidence base to assist government agencies in their efforts to tackle the problems experienced by low-income households seeking to access housing commensurate with their needs. Over the next two years, AHURI affiliated researchers will engage in a set of linked projects to answer one overarching research question: 'How do we assess and address housing affordability for lower income households in Australia?' In preparation for doing so, this Background Paper reviews Australian and international literature on housing affordability, identifies and discusses the key issues in conceptualising and measuring housing affordability, and suggests ways in which these might be addressed. It should be read in conjunction with its Technical Appendix.

In the early 1990s, UK housing academic Christine Whitehead called attention to the lack of analytical clarity in relation to the concept of housing affordability. She argued that, given how central the concept was to policy development, it is surprising how rarely it has been analysed in any detail. Instead, the only relevant question on the policy agenda was whether the agreed affordability criteria were being met (Whitehead 1991: 887). Though Whitehead was referring to the UK context almost 15 years ago, her observation has resonance for contemporary Australian policy debate where the concept of housing affordability has not, with a few notable exceptions (e.g. Karmel 1998; Landt and Bray 1997; Burke et al. 2004), been subject to detailed and critical analysis. Largely missing from the Australian research is a discussion of housing affordability assessment in context; that is, linking theoretical discussion of measurement to wider discussions about policy implementation. Such a lacuna is linked to two factors. First, the technical aspects of affordability measurement are arcane and difficult for non-specialists to follow; second, the fragmented nature of Commonwealth/state policy making and the parameters of the Commonwealth-State Housing Agreement (CSHA) have acted as an institutional barrier to a 'whole of government' approach to housing policy.

Yet, in spite of the institutional barriers, the interest in housing affordability by policy makers, academics and the media persists, propelled by the fact that the housing costs for most Australians have risen considerably over the last decade. Existing evidence suggests the groups most affected by the increase in housing costs are low-income households in the private rental market and moderate-income owner purchasers. Other important repercussions of high dwelling prices affect the labour market, the physical and social environment, and industries such as finance and the building trade. Within the housing policy community, the problems associated with rising dwelling prices have precipitated a wide-ranging debate both about the extent of the problem and the most effective policy interventions.

1.1 Aims and objectives of the project

Background Paper 1 has two aims. The first is to review relevant literature on affordability issues and discuss some of the main methods of measuring housing affordability. The second is to inform discussion on how housing affordability is to be measured for the overall CRV3 research program. To achieve the overall aims of CRV3, this paper has a number of specific objectives:

- To discuss how and why the concept of affordability has been used as a shorthand term to highlight a range of housing related policy issues;

- To review and provide a critique of definitions of housing affordability currently being deployed in Australian policy fields while also drawing selectively from international cases;

- To evaluate the utility of housing affordability as an analytical concept to measure household expenditure on housing related costs;

- To review the criticisms of affordability measures in academic and policy studies;

- To comment on the scale and incidence of affordability problems, the range of affordability policy measures being used, and their practical implications;

- To determine the most appropriate measures of housing affordability for defined purposes.

To achieve these two aims and these six objectives, the Background Paper seeks to address five research questions:

1. Why has housing 'affordability' become the focal point of debate about the appropriate level of government subsidies to assist low-income households?

2. What are the difficulties of deploying an affordable concept to measure housing stress?

3. What are the connections or linkages between affordability debates and recent policy outcomes?

4. How sensitive is an assessment of the overall scale and incidence of affordability problems to the different measures that are or could be employed?

5. What is the most appropriate measure of housing affordability for lower and moderate-income households either renting or owning their home?

The paper is organised thematically. Chapter 1 discusses the policy context, including a rationale for researching affordability, the emergence of housing affordability as a policy concern and the contested nature of this concept (questions 1 and 2). Chapter 2 reviews the Australian and international literature, exploring the linkages between affordability debates and recent housing policy outcomes (question 3). In Chapter 3, recent literature concerning the measurement of housing affordability is reviewed. Here different measures are examined in terms of their potential to accurately assess the scale and incidence of affordability problems overall and across sub-populations (question 4). There is a sizeable Technical Appendix attached to Chapter 3 which outlines the key methodological complexities that have to be addressed in designing individual or household measures of affordability (question 5) and which indicates the ways in which these complexities are to be addressed. Chapter 4 sets out the criteria that any measure of housing affordability should take into account.

1.2 Why be concerned with affordability and affordability indicators?

This project is driven by recognition that housing affordability is more than just a personal trouble experienced by individual households. It has implications not only for housing but also for employment, health, labour market performance, aged care, finance, community sustainability, economic development and urban and regional development.

This Background Paper does not attempt to measure the form and nature of the social and economic problems associated with deteriorating affordability, as this will be the subject of a separate report later in this project. It is useful, however, to signal some broader issues.

1.2.1 Economic

Housing affordability issues can have serious ramifications for the health of the Australian and local economies. High housing costs may require excessive debt, making households sensitive to future interest rate rises and creating the potential for greater economic instability as people wind back consumption to avoid falling into mortgage arrears.

High housing costs may result in wage pressures and affect the competitive advantage of firms locating in areas of high house prices by virtue of being unable to attract key employees. This may not be a problem just of large metropolitan areas but regional towns where there are fewer housing choices if prices rise to non-affordable levels for key workers. High housing costs and associated high debt levels can reduce savings and effect investment in other sectors that are essential to the long-term growth of the economy. Differentials in affordability between areas may create labour market impediments by discouraging people from moving to employment in areas of low affordability and conversely discouraging migration to areas of high affordability as the low house prices and rents indicate low capital gain potential and poor employment prospects. Part two of this project will examine in more detail the macroeconomic implications of housing affordability and high dwelling price issues.

1.2.2 Social

High housing costs and consequent affordability problems can lead to significant social problems. High housing costs in the private sector increase construction costs for social and special needs housing, reduce the availability of stock and/or force stock to be located in areas of poorer amenity, with implications for employment, health and social connectedness.

In an era of aspirational values, blocked access to home ownership because of affordability problems is potentially a source of personal hardship and social and political tension.

High housing costs accentuate financial hardship for low income families by leaving too little in the household budget for necessities other than housing (Burke and Ralston 2003) and place some households at risk of not being able to sustain their tenancy, creating an increased potential for homelessness. Placing yet another stress on already fragile families or relationships may accelerate relationship breakdown with all the associated personal and social costs. The excessive mobility created by the need to find affordable housing may threaten children's education.

High housing costs are likely to lead to over-crowding, which in turn can affect the health of household members and may lead to outbreaks of contagious diseases, as evidenced by the New Zealand experience in the 1990s (Baker et al. 2000).

High housing costs and low affordability have as their corollary substantial increases in the asset levels of residential property owners and therefore a widening of the wealth distribution between them and the sizeable minority of non-owners.

1.2.3 Spatial

The high concentration of low-income households in areas of high affordability can undermine social cohesion and community bonds and increase levels of crime and anti-social behaviour. It can also reduce local spending power and deter investment, creating areas of urban blight with poor social infrastructure (Stegman 1998). In both the UK and the US, there has been concern about 'food droughts' where lack of investment by major supermarket chains has left large areas without access to affordable fresh produce.

The sifting and sorting of households in response to differentials in relative affordability across large metropolitan areas can create spatial polarisation and impair economic and social sustainability.

Increasingly polarised cities foster defensive behaviours, not just by those in areas of deprivation but also by more affluent citizens who may demand housing estates and building forms constructed on principles of safety and security, e.g. gated communities. This in turn can undermine a sense of wider citizenship as people retreat to and structure a life around their own small, gated world and ignore their broader social obligations. This in turn may lead to a growth of 'NIMBYism' and greatly increase the difficulties of government in trying to address issues of housing and urban planning.

1.2.4 Environmental/design

High housing costs may inhibit progress towards more environmentally sustainable dwellings. In the interests of keeping dwelling prices down in a context of declining affordability, the building and development industries will be reluctant or unable to undertake the innovations needed for greater environmental sustainability, e.g. re-use of grey water, greater use of energy rated building material and appliances, more efficient use of insulation, better laid out but more expensive estates that maximise orientation to the sun, greater use of quality multi-unit housing.

These economic, social, spatial and environmental costs are not just incurred by individual households or firms as internal costs. Collectively the unintended side effects of a lack of affordable housing and/or the spatial divides between areas of high and lower affordability potentially create major expenditure implications for government in terms of increased health, aged care, homelessness, criminal justice and policing costs. In addition there are the potential costs of forgone investment, environmental clean-up and economic instability. More subtly, these outcomes can lead to a loss of public faith in both market and government decision-making. All these costs are contingent on the form, scale and duration of the affordability problem.

There is no consensus regarding the nature of the risks posed by housing affordability issues in Australia. The extent of these problems is unclear and there is limited understanding of the causal relationships between any of the problems and affordability.

1.3 Emergence of 'affordability' as a policy concern

Though the term 'affordability' has been in widespread use in US housing policy since the 1960s, it was not until the late 1980s that it became an integral part of policy discourse in Australia and the UK. Its usage can be traced to the promotion by governments of neo-liberal modes of housing provision; namely, more reliance on the private market and non-government organisations to provide and manage low cost housing, and less reliance on subsidy for public housing provision. This is not to say that difficulties in accessing housing have not previously been a concern, but the

problem was never couched in the language of affordability. The report of the Committee of Inquiry into Housing Costs (1978) implicitly had a theme of affordability; chapter 2 used a range of affordability measures to highlight the housing cost situation, but never actually used the term affordability, the language being one of access not affordability. A report by the Priority Review Staff (1975) also drew attention to housing costs in relation to income, but like the Commission of Inquiry into Poverty (1975); largely saw the problem in terms of low levels of income and issues of income support. Again, affordability was not the language.

In Australia, affordability emerged as part of the policy language in the 1980s as a response to mortgage interest rates of the order of 17 per cent and a housing price boom, and to policy reports such as the National Housing Policy Review and, later, the National Housing Strategy. Over the last few years, it has re-emerged, again as a consequence of rising house prices placing pressure on lower income households and, increasingly, middle income household seeking to purchase their first home. While first home ownership and rising costs have been addressed in Productivity Commission reports, there is now a concern by many policy makers to widen this debate about affordability to consider the implications of rising house prices in the context of a declining public rental stock.

What is driving housing policy debate is the significant increase in housing costs experienced by many Australians, especially first time buyers and those on lower incomes renting in the private market. In practice, rising costs have generated a complex set of policy challenges for Commonwealth, state and local governments about the most appropriate ways to intervene. However, as Burke (2003) points out, despite the research and numerous reports around affordable housing, progress in addressing the issue has been limited. While there has been some Commonwealth response, largely focused on ownership through First Home Owner Grants and tax breaks and on private rental through Commonwealth rent assistance (RA), there is increasing concern, particularly at the state level, that current policies are not sufficient to address the problems being experienced by many low income households. Though much has been written on housing affordability in the Australian context, it has proved difficult to secure agreement about the right mix of responsibilities for housing policy among the various tiers of government and how best to address housing affordability.

1.4 Contestation in housing affordability debates

Why has housing affordability been identified as a serious social problem requiring policy intervention? A quick answer would emphasise the material deprivation and onset of difficult choices that confront households lacking the necessary resources to secure housing commensurate with their basic needs. Yet this can only be a partial explanation. Often neglected in the literature on housing problems is the role played by professional interest groups and lobbyists in defining problems such as affordability and homelessness. A useful way of understanding the emergence of housing affordability as an issue in Australia is to draw upon some of the 'social problem' literature (Jacobs et al. 2003; Kemeny 2004). In particular, writers such as Hajer (1993) and Sabatier (1988) argue that policy issues come to the fore as result of the combination of adverse material factors and effective arguments by lobbyists and the media that ensure that the issue is subsequently viewed as a problem by government policy makers.

Housing affordability's emergence as a policy problem can be traced to the fact that more people pay more for their housing, but also because governments and interest groups such as the building industry and welfare lobbyists have sought to conceptualise the issue in accordance with their own interests. It is therefore best viewed as a contested term in which different interest groups struggle to impose their own definition of the problem and the solutions to address it. For example, in setting out the causes of the affordability problem, the building industry very often emphasises bureaucratic regulation and taxation as impediments to affordability, while welfare lobbyists such as ACOSS emphasise the lack of investment in public housing. The contested nature of the debate is also apparent in discussions of how to measure housing affordability, as different criteria play an important part in framing the type of policy solutions advanced. Notably, housing affordability can never be defined in any objective sense; it will always be subject to reinterpretation and critical analysis.

1.5 Defining housing affordability

Granted the contested nature of housing affordability, one of the challenges in any discussion is to be as precise as possible about the terms that are deployed. Without analytical clarity, some of the debates can generate confusion. Accordingly, explanations of the terms 'housing affordability', 'housing stress', 'affordable housing' and 'housing need' as they are understood for this paper are given below, expanding upon the definitions advanced by the National Affordable Housing Project (NAHP 2004a).

Affordable housing

In recent years, the term 'affordable housing' has been used as an alternative to terms such as 'public', 'social' or 'low cost' housing. It is not difficult to discern why this has occurred. First, the term potentially is tenure neutral and as such is viewed as a more appropriate description of the realities of contemporary housing policy. Currently, government subsidies intended to improve affordability include assistance to public and community housing, but also to private tenants in the form of Commonwealth RA and to homeowners through the First Home Owners Grant. Second, the ubiquity of affordable housing in policy discourse is indicative of the success of lobbyists representing private sector interests to recast debates policy away from the funding of public housing investment and towards subsidies for private investors and the building industry. Third, the notion of affordable housing is symptomatic of a shift in social policy generally away from collective provision towards individual responsibility. The term 'affordability' denotes an individual's capacity to exercise choice in the marketplace.

Housing affordability

One of the most helpful statements about what housing affordability entails is provided by Maclennan and Williams (1990: 9):

> 'Affordability' is concerned with securing some given standard of housing (or different standards) at a price or rent which does not impose, in the eyes of some third party (usually government), an unreasonable burden on household incomes.

Whitehead (1991: 875) has pointed out that definitions usually focus on the relationship between housing expenditure and household income, and that they seek to establish a standard in respect of which the amount of income spent on housing is deemed unaffordable. The standard can be defined in terms of absolute residual

income once housing costs have been met, or as a ratio measure specifying the acceptable proportion to be spent on housing. The technical issues that relate to defining housing affordability are explored in greater detail in Chapter 3 and in the Technical Appendix.

Housing stress

Both Maclennan's, Williams' and Whitehead's explanations place an emphasis on the recurrent outlays which households can be expected to pay for their housing. Yet those who engage in housing affordability debates recognise the necessity of making distinctions between the ways in which households *experience* affordability problems. Very often, the term used to discuss this is 'housing stress' (National Housing Strategy 1991; Randolph and Holloway 2002). This encompasses a range of financial circumstances including a short-term or one-off issue of paying a mortgage deposit or rental bond, an ongoing problem for households whose income is insufficient to meet housing costs (e.g. households who have over-extended themselves and pay too much in rental or mortgage costs), and an episodic problem due to unforseen circumstances such as redundancy or a rent rise. It can also refer to factors such as over-crowding, insecurity of tenure, and inappropriate facilities within the home. As made clear by the NAHP (2004a: 2), the 'analyses of housing stress in Australia tend to emphasise affordability or cost stresses, and affordability is often taken as a proxy measure for all forms of housing stress'.

The significance of housing stress and the role of government policy in ameliorating its worst aspects are at the centre of debates about housing policy making and affordability. The fact that both housing affordability and stress entail a subjective judgement ensures that their meanings will always remain open to scrutiny and reinterpretation.

Housing need

Though less frequently deployed in contemporary policymaking, some mention should be made of the concept of housing need, a term that was widely used in the UK in the 1970s and 1980s. Discussions usually make reference to a defined standard which no household should be expected to fall below. Freeman et al. (2000: 102) argue that there are at least three ways in which discussions about housing affordability and housing need diverge:

> First, affordability looks only at housing expenditure and incomes, not at housing standards, while need looks at standards and does not directly mention expenditure or income. Second, with need, the policy emphasis is on production and allocation, while, with affordability, the emphasis is on incomes and prices; if incomes increase and prices decrease, housing becomes more affordable. Third, need is defined in absolute terms, while generally affordability is not. Affordability takes into account the capacity to purchase other necessary goods apart from housing. In practice, these extremes are modified, so that need tends to be measured in terms of those unable to afford social housing, while affordability accepts the standards implicit in mortgage and social sector allocation as well as unfitness and other regulations.

Other terminology

Though the terms 'affordability', 'stress', 'affordable' and 'need' are the ones most frequently used in discussions, some academics have sought to introduce new concepts. For example, Yi Tong (2004) introduces the concept of 'home ownership affordability' to differentiate the concerns of owner-occupiers from other groups. In the Australian debate, this has often been described as 'accessibility' (for example, Yates, 1987). Elsewhere Stone (1993: 32) invokes the term 'shelter poverty' as a way of countering the orthodox view of affordability in terms of a certain fixed percentage of income. Stone advances a sliding scale of affordability that takes into account the differences in income level and household composition.

Summary

This brief discussion makes clear how different terms are used to advance arguments about housing affordability The discussion as to how each definition is likely to vary by regions, household groups and tenures will be set out in the conclusion of the report.

Table 1: Key definitions

Term	Definition
Affordable housing	Generic term to cover any low cost housing (irrespective of tenure). Defined without reference to dwelling occupants but intended to meet agreed affordability benchmarks.
Housing affordability	Term usually denoting the maximum amount of income which households should be expected to pay for their housing.
Housing stress	Generic term to denote the negative impacts for households with insufficient income to secure adequate housing. It can also refer to other factors such as over-crowding and insecurity.
Housing need	Term denoting a defined standard which no household should fall below.

This introduction to the Background Paper has set out some of the reasons why affordability has emerged as a policy concern and some of the ways in which affordability debates are subject to contestation. It has also advanced some definitions of key terms that feature in contemporary discussions. The next section reviews recent academic and policy literature in order to contextualise the discussion and explain how affordability has been addressed in recent years.

2 REVIEW OF THE LITERATURE (ACADEMIC AND POLICY TEXTS)

This chapter provides a review of international and Australian literature relating to housing affordability, including academic research and policy development. The review of international literature focuses specifically on those developed nations in which housing affordability has emerged as a central policy concern (i.e. US, UK and Canada). The purpose is to clarify how housing affordability has been defined and addressed in various historical and policy contexts, and to highlight the connections between the principal debates surrounding affordability and their impact on recent policy interventions.

2.1 International experience

While globalising processes have resulted in some synchronicity in economic and demographic trends and policy approaches across advanced industrial nations, housing affordability policy in Australia is not as developed as in the US, the UK and Canada, and as such there are key lessons to be derived from this experience. This section provides background on the way in which housing affordability has been conceptualised and operationalised in international academic research and within various policy settings.

2.1.1 Variation in economic and social policy context

In the US, the issue of housing affordability and the development of housing affordability targets emerged in the late 1960s, largely in response to the urban riots of the mid-1960s (Stone 1993: 341). It provided a basis for targeted allocation of subsidies to low and middle income households seeking accommodation within the private rental market (Maclennan and Williams 1990: 9). The focus on housing finance and consumption, as opposed to housing need and supply, was consistent with the broader social policy environment in the US, in which policy makers have designed government intervention and provision in a way which facilitates market mechanisms. In contrast, in Canada, the UK and other European nations, housing affordability emerged in the 1980s as part of a general retreat away from an administered social housing system towards multi-faceted, market-based policy responses (Cahill 1994; Hulchanski and Shapcott 2004; Maclennan and Williams 1990). The emergence of housing affordability in Australia and New Zealand is somewhat consistent with the experience of Europe, but unlike the UK and Europe, the social housing sector is small and the adaptation to a more diverse and market-orientated approach has been achieved with a broader coalition of support.

In reviewing international evidence, there are striking parallels in the economic and demographic circumstances that are said to be driving recent problems of housing affordability: namely, the global rise in property prices over the past decade and, in particular, the stronger appreciation of housing prices in the inner urban precincts of larger metropolitan areas (Katz et al. 2003). In the US, Canada and the UK, social and spatial inequality is on the rise, with both a greater gap between the rich and the poor, with the latter increasingly housed in inner city ghettos, fringe suburbs or small rural towns. The populations of advanced industrial nations are also ageing rapidly, with a subsequent increase in demand for low cost, supported accommodation. The two key trends identified in these nations are the broadening of housing affordability problems to a wider population, especially young, middle income households who aspire to home ownership but increasingly are priced out of the housing market (Katz et al. 2003), and the increasing problems faced by a high-need population. Early debate

centred on whether the former trend was actually a problem of affordability or a problem of increasing material expectations (Linneman and Megbolugbe 1992).

In regards to identifying who is affected by housing affordability, similar patterns are observed across advanced industrial nations. Recent assessments indicate that those most at risk of experiencing housing stress include low-income households (but increasingly young, middle income households), sole parent families, and the frail and elderly (Monk and Whitehead 2000; Hulchanski and Shapcott 2004). In the US, race has also been identified as a central problem. Stone (1993: 33) notes that 'shelter-poverty is disproportionately borne by African Americans and Latinos'. While about 25 per cent of white households experience affordability problems, approximately 50 per cent of both African-American and Latino households are shelter-poor. In contrast, attention in Canada has been focused on the housing need and related issues of affordability of Indigenous people (Lanigan 2004). In general, however, problems of ethnicity and race have fallen outside the terms of the affordability debate.

2.1.2   Conceptualisation of housing affordability

One of the major issues raised in the international literature is the ambiguity of the concept of affordability, and the way in which it is operationalised for specific policy purposes. In the early 1990s, this was raised as a central concern by researchers in both the UK and the US, with Maclennan and Williams (1990: 8) suggesting that researchers and policy makers either clarify the meaning of the term or stop using it. Maclennan and Williams (1990: 11) noted that researchers were setting affordability at a range of levels and there was considerable variation across studies in regards to defining housing costs (such as including utility costs as well as rent paid). This had inhibited international comparative analyses of the phenomenon. Fifteen years later, the issue of ambiguity persists:

> Affordability…jumbles together in a single term a number of disparate issues: the distribution of housing prices, the distribution of housing quality, the distribution of income, the ability of households to borrow, public policies affecting housing markets, conditions affecting the supply of new or refurbished housing, and the choices that people make about how much housing to consume relative to other goods. This mixture of issues raises difficulties in interpreting even basic facts about housing affordability. (Quigley and Raphael 2004: 191-2)

To some degree, the contested nature of the concept of housing affordability reflects the different priorities and assumptions of researchers with different disciplinary backgrounds, with economists (generally) privileging objectivity, conceptual clarity and utility (Quigley and Raphael 2004), and sociologists (generally) privileging concerns about social inequality and the capacity of housing affordability research to capture 'real' household experiences of housing stress (Stone 1993). Such academic debate has resulted in the emergence of two distinctive approaches to the measurement of housing affordability for policy purposes: ratio and residual measures. These measures are discussed in Chapter 3.

Ambiguity in the conceptualisation of housing affordability is also linked to different understandings of its causes and drivers, in particular, the degree to which the issue stems from inadequate incomes for working families or inadequate housing. In the US, policy development has historically been informed by the assumption that lack of housing affordability is primarily a problem of poverty (Stone 1993; Grigsby 1990). This has led to a focus on demand-side approaches, such as targeted RA, above the use of

urban planning instruments and housing provision. In contrast, policy development in the UK and Europe has historically been guided by concerns about housing poverty, that is, the lack of available affordable housing. This has led to more emphasis on supply-side approaches, such as the provision of social housing and planned development,

2.1.3 Working definitions of housing affordability

Despite the contested nature of the concept of affordability, working definitions have been employed in various policy settings. In general, differences in the way the term has been conceptualised and operationalised are linked to the nature of the housing system within particular nations, inherited policy settings, and the orientation of policy reforms.

In the US, affordability targets have been a key component of housing policy since the 1970s. Here the conventional public policy indicator of affordability is the percentage of income spent on housing (Linneman and Megbolugbe 1992: 371; Bogdon and Can 1997). Typically, households that spend more than 30 per cent of their income on housing are defined as being in housing stress, although the level at which this benchmark has been set has varied over time. This approach to affordability is reflected in the National Affordable Housing Act (1990), which directs localities in the US to develop regional affordability strategies. Under the Act, each locality is required to calculate the number of households that spend more than 30 per cent of their gross income on rent and utilities (Chaplin and Freeman 1999: 1,951). They are also required to develop strategies centred on the provision of affordable housing is understood as housing that:

> '...bears rents not greater than the lesser of: (i) the existing fair market rent for comparable units in the area; or (ii) a rent that does not exceed 30 per cent of the adjusted income of a family whose income equals 65 per cent of the median income for the area … with adjustment for number of bedrooms in the unit.' (Sec. 215, National Affordable Housing Act, 1990).

In contrast to the US, housing affordability within the UK has been conceptualised more broadly to include housing supply, housing needs and housing costs. Indeed, there has been considerable criticism of measures that focus on the housing costs incurred by household units to the exclusion of other factors such as the ability of households to borrow and the interaction of planning and social policies (Freeman et al. 2000). Accordingly, the Housing Green Paper does not provide a set definition of housing affordability; instead, it provides a framework for developing locally determined targets. Current policy directs local planning authorities to 'define what the authority considers to be affordable in the local plan area in terms of the relationship between local income levels and house prices or rents for different types of households' (Planning Policy Guidance Note 3: Housing, 1992). It also directs authorities to undertake assessments of affordable housing:

> Assessments should include factors such as: local market house prices and rents, local incomes, the supply and suitability of existing local affordable housing (including both subsidised and low cost market housing), the size and type of local households, and the types of housing best suited to meeting these local needs (Circular 6/98: Planning and Affordable Housing, 1998).

In Canada, policy makers have advocated a combined approach in which the percentage of income is recognised as a viable indicator of housing affordability; however, the Canada Mortgage and Housing Corporation has also sought to distinguish between those who *choose* to spend more than 30 per cent of their income on housing and those households who have no alternative. This is achieved by applying a 'norm rent income' value which is used as the low-income cut-off (CMHC 1991). A household is then said to be in housing need due to affordability problems if it spends more than 30 per cent of its income on housing *and* its income falls below the norm rent income required to rent an average dwelling which is suitable (in terms of number of bedrooms) and adequate for that household's purpose. Within the 2001 Canadian Affordable Housing Framework), 'housing need' is assessed in relation to the three standards of adequacy, suitability and affordability. First, a household's dwelling situations are evaluated against each of the standards. Then, if it is found to have fallen below at least one of the standards, a means test is applied to determine whether or not the household could find an acceptable alternative for less than 30 per cent of its before-tax income. If not, the household is said to have fallen into 'core housing need' (TD Economics 2003: 2-3).

Although frameworks for addressing housing affordability in New Zealand are still under review, within currently available policy documentation there is recognition of the need to step beyond conventional definitions based on percentage of income spent on housing to include consideration of the capacity of households to meet non-housing costs:

> Housing affordability is not simply a matter of housing costs and household income levels. It is also about a household's ability to obtain housing and then to retain it. It is important that households have sufficient residual income to purchase other necessities after paying their housing costs (HNZC).

In summary, there is growing recognition across OECD countries of the need for a broad and more encompassing understanding of housing affordability, beyond the straightforward calculation of housing costs and income ratios. However, ratio targets, used widely in the US, continue to be viewed as an appropriate first step in calculating the cost component of housing affordability, with efforts underway to make such measures more sensitive to household composition and spatial variation.

Table 2: Recent policy strategies to increase housing affordability

Country	Housing affordability initiatives	Date	Definition of affordability
United States	National Affordable Housing Act Since 1990, states and local jurisdictions that receive federal housing block grants are required to develop Comprehensive Housing Affordability Strategies (CHAS)	1990	Less than 30% of gross income; costs include rent and utilities
United Kingdom	Green Paper Circular 6/98: Planning and Affordable Housing Planning Policy Guidance Note 3: Housing	2000 1998 1992	Locally determined measures
Canada	Affordable Housing Framework	2001	Less than 30% of

			gross income; costs based on norm rent income
New Zealand	Building the Future: Towards a New Zealand Housing Strategy	2004	Recognition of housing and non-housing costs

2.1.4 Correspondence between policy and research

While the correspondence between housing affordability research and policy development historically has been close in the US, Canada and the UK, researchers have expressed ongoing concerns about both affordability policy frameworks and outcomes. Although much of this criticism is specific to particular policy programs, there are some general concerns raised within the academic literature.

In regards to the measuring and monitoring of housing affordability, there have been concerns expressed about the utility of ratio measures in adequately capturing the phenomenon of housing affordability, and the ongoing dependence on these measures within the policy arena (Hancock 1993; Stone 1993; Lerman and Reeder 1987; Freeman et al. 2000). The specific criticisms of this approach are detailed in Chapter 3. However, more broadly, there is concern that as governments move towards a greater emphasis on new housing affordability strategies there is a need to critically examine current measurement practices to ensure that they are effective in the targeting of housing support and programs. The main concern is that housing affordability targets are not examined in isolation from the context of the housing system, the interaction of different policy instruments, and the lived experience of being in household stress (Hulchanski and Shapcott 2004; Monk and Whitehead 2000).

Researchers have also expressed concern about the current orientation in housing affordability policy towards demand-side rather than supply-side measures. In the US, Katz et al. (2003) assessed the effectiveness of three broad approaches that have underpinned housing affordability programs over the past 70 years: RA, home ownership assistance, and regulatory policies. They found that mixed approaches to housing affordability are required, with the particular combination of programs varying according to the economic and social profile of the city or region. Reflecting on housing affordability policy in Canada, Pomeroy (2004: 295) similarly concludes that although there is merit in providing income assistance to private tenants, 'tackling the demand side of the equation alone would not address the lack of new supply that is the cause of rising rents and worsening affordability', and that used in isolation this measure could potentially lead to cost inflation.

Finally, researchers have expressed concern that the development of affordable housing strategies is occurring in a period in which there is declining federal commitment to housing. In general, there has been a shift towards the devolution of responsibility for the design and implementation of affordable housing initiatives to state and local housing agencies and community groups. This is the experience in the US and Canada (Maclennan and Williams 1990; Hulchanski and Shapcott 2004), with the UK adopting a multi-level approach (Monk and Whitehead 2000). While this regional approach is consistent with the view that housing affordability is a relative concept that varies considerably with regard to household composition and location, academics have noted that it has been largely driven by the significant reduction in federal investment in housing (Katz et al. 2003; Shapcott 2004). In Canada, the expansion of local affordable housing strategies has not compensated for the significant contraction in federal funding and programs. Evidenced of this is seen in the

dramatic increase in homelessness in Canada at the end of the 1990s and the subsequent mobilisation of community groups (Shapcott 2004: 202-11). The Australian experience follows a similar pattern, with state governments taking a leading role in policy development in the absence of federal policy direction and investment.

2.2 Housing affordability in Australia

This section provides an outline of the way in which housing affordability has been conceptualised and operationalised in recent Australian housing policy and research, with technical discussion of measurement issues being held over until Chapter 3.

2.2.1 Conceptualising and defining housing affordability

In conceptualising housing affordability in the Australian context, recent academic and policy discussions have focused primarily on:

- Defining who is most in need of affordable housing, that is, identifying the types of households experiencing greatest housing stress;

- Defining the appropriate level of government subsidies to assist low income households and deciding where the subsidies should be directed;

- Identifying the house price points or income thresholds necessary to access first home purchase or affordable rental accommodation.

In general, there is consensus in defining the groups most likely to experience housing stress. These include sole parents and families with young children on low incomes, low-income single people and households either renting in the private market or buying their first home. Yates et al. (2004a), in reviewing the literature, find affordability problems particularly for low-moderate income groups in the private rental market. The ABS (2002), using time series data for 1994-95 and 1997-98, also identifies that the majority of low-income households experiencing affordability problems are in private rental. Likewise, Berry and Hall (2001) find that the affordability problem is greater for those in the private rental market and note that low-income tenants are increasingly unable to afford an average priced home. Harding et al. (2004), using statistical modelling to examine trends between 1998 and 2004, determine that two-thirds of those in housing stress are in private rental (590,000), followed by around one quarter of home purchasers (230,000). They conclude that the group least likely to experience housing stress is homeowners and, after that, public tenants. In comparative terms, this amounts to one in every five private tenants experiencing housing affordability problems, less than one in ten home purchasers, one in twenty public tenants and one in every hundred outright home owners. Nevertheless, regardless of whether a study employs a standard 30 per cent ratio measure or a residual measure, whether it uses gross or disposable income in the base, and whether it defines its target population on an equivalent income measure or not, public housing always yields better affordability outcomes than private rental. In the main, this reflects a deeper level of subsidies provided to public tenants.

In policy debates, the emphasis placed on defining the groups experiencing affordability problems varies to some extent depending on the specific sector represented and their constituencies of interest. Croce (2004: 3) on behalf of the CHFA (Community Housing Federation of Australia) argues that the crisis in affordable housing is in the public and private rental market. Public housing numbers are declining, and funding provided under the CSHA has decreased. These factors are accompanied by constriction in the private rental market so that low to moderate income households are squeezed between a safety net social housing market that has lost a substantial amount of stock and an evaporating low cost private rental market.

ACOSS, National Shelter and the CHFA all view the affordability problem as a consequence of under-investment in public housing as the Commonwealth has preferred providing subsidies to low-income tenants in private rental through RA and to purchasers through the First Home Owners Grant. They are united in advocating reforms to the tax system to see more of the current indirect government assistance of $17. 9 billion in tax relief and incentives, such as capital gains and negative gearing, redirected towards the provision of affordable housing supply. They argue for equity in the distribution of government funds for housing assistance through tax reforms in order to improve investment in affordable housing (Croce 2004).

On the other hand, for the Housing Industry Association, the nub of the problem is for young Australians who are being priced out of home ownership as housing affordability declines (HIA 2003). The concerns with access to affordable housing have led to growth of research in, and greater prominence given to, measures which show the incomes required to purchase or rent affordable housing or the price or rent levels that define affordability (AMP Banking-REIA, Commonwealth Bank of Australia/HIA; Burke and Hayward 2002; Victorian Department of Premier and Cabinet 2005).

Debates about the appropriate level of government subsidies to assist low-income households, and where these should be directed, have also varied depending on the perspectives of different actors. Each has drawn on these perspectives to lobby for redirection of funding and subsidies within their own specific sectors and constituencies of interest. For the HIA, one of the key debates revolves around who should pay for the cost of urban infrastructure. Previously, this was debt funded by state and local government and paid for by the broader tax paying community. These costs have shifted to capital levies on new home purchasers, raising equity issues between existing homeowners and those aspiring to ownership (HIA 2003: 1). Consequently, for the HIA, the affordability problem provides a clear rationale for reform to the supply side of the housing market, including abolition of taxes such as stamp duty and specifically more equitable funding of urban infrastructure and improvements in the development approval process.

2.2.2 Operationalising housing affordability

One major outcome of debates about housing affordability has been the recent formation of the National Housing Alliance, comprising unions, industry bodies and community organisations. As a first step in considering issues of affordability, the Alliance convened a National Summit on Housing Affordability in Canberra in June 2004. It is advocating a 'new' approach that requires all levels of government to engage in developing solutions to the housing crisis and implementing reforms throughout the system (Croce 2004: 4).

This 'whole of government' direction is also supported in operational policy outcomes, with Housing Ministers agreeing in April 2003 'to promote a national, strategic, integrated and long-term vision for affordable housing in Australia through a comprehensive approach by all levels of government' (NAHP: 2004b). This was adopted as Principle 11 of the current (2003-08) multilateral CSHA. To date, activities have involved:

- The Housing Ministers Advisory Committee beginning to identify and classify policy levers with the potential to address housing affordability issues. An expected contribution arising from this is the development of a financial model to test the impact of various policy levers, either separately or in combination, in housing sub-markets where affordability problems are present. This is being undertaken by

KPMG and SGS. To date, there is no evidence publicly available that the model has been established;

- A synthesis of recent material on housing affordability, completed in June 2004.

Another key government policy response has focused on a perceived crisis in home ownership. This resulted in the introduction of the federal government funded First Home Owners Grant in 2000, which was administered by the state and territory governments. Research by the Productivity Commission (2004) indicates that the grant has largely assisted middle to high-income earners who would have purchased a home anyway without the assistance provided. In view of the findings, the commission concludes that the scheme is not addressing the current crisis in affordability whereby low-income families are not able to access secure and affordable housing. It argues that the scheme would have more impact on home ownership if it were targeted at lower income households. This would decrease demand on the pool of funding and concurrently allow the level of the grant to be increased to assist those most in need of support.

The other major government response in Australia has been to consider how best to use incentives and subsidies to attract private and community sector investment in the provision and management of affordable rental housing. Accordingly, there has been a flurry of activity across the states towards establishing new ways to finance and deliver affordable housing, as summarised in Table 3. Milligan et al. (2004) have studied these newly developing forms of affordable housing delivery. They found that additional government incentives will be required while the structures are still in their formative stage if the sector is to move beyond small-scale opportunity-driven development projects. They also concluded that a national policy approach is necessary if this model of affordable housing provision is to realise its full potential.

Table 3: Major state government housing policy initiatives to increase affordability

State	Initiative	Aims and outcomes to date	$
NSW	1998-99: Established an affordable housing service (Centre for Affordable Housing)	- To help broker new financing and delivery models - Provided 18 units of housing	$10m seed funding
Vic	2000-01: State funded joint venture program, Social Housing Innovations Project (SHIP) 2003: Announced strategy for growth in low income housing	- To develop innovative housing models and increase participation in provision by equity joint partners, e.g. charitable organisations and local government - Over 800 new housing units approved - To build on SHIP through development of not-for-profit housing associations	$94.5m over three years $70m
Qld	2001: Affordable Housing in Sustainable Communities Strategic Action Plan released as forerunner to establishing Brisbane Housing Company in collaboration with Brisbane City Council	- Foster partnerships between government, non-government and private sector - Establish Brisbane Housing Company as not-for-profit organisation providing affordable housing in inner city	$50m

State	Initiative	Aims and outcomes to date	$
SA	2005: State Housing Plan released	• Outlines broader range of approaches to funding and delivering affordable housing • Expression of interest called to set up development company to increase affordable housing in inner Adelaide: partnerships with private sector or local government	
WA	Wide-ranging strategy on housing being developed 2003-08: Strategic plan for community housing released	• To promote alternative funding sources and delivery models for affordable housing • Set growth target for community housing of 40%	CSHA, non-govt, local govt and other sources
Tas	2003: Announcement of new Affordable Housing Strategy	• To provide additional assistance to low income households across all tenures • Two-thirds of funding reserved for new housing supply; expect much will be directed to non-government providers	$45m from stamp duty revenue
ACT	2003: Announcement of additional social housing, sourced from government's home loan portfolio Restructure of existing government agency (Community Housing Canberra)	• To increase supply through partnerships that leverage resources from the community and private sectors • To provide an option for government to use it as a vehicle for the development arm of community housing	$33.2m

2.3 Summary

While the discussion above highlights the contested nature of the concept of housing affordability and its diverse application in various policy environments, some general themes emerge.

First, the literature draws attention to ongoing debates about whether declining housing affordability is a product of growing poverty and declining real wages, or whether it is an issue of inadequate housing supply. While the literature does not provide clear direction on this issue, there is an emerging consensus amongst researchers and policy assessments that the way forward is to pursue diverse policy measures that respond to both issues.

Second, there is growing recognition across OECD countries, including Australia, of the need for a broad and more encompassing understanding of housing affordability, rather than a simple ratio measure based on income and housing costs. However, ratio measures, as used widely in the US, continue to be viewed as an appropriate first step in calculating the cost component of housing affordability, with efforts underway to make them more sensitive to household composition and spatial variation.

Third, there is considerable consensus about who is most affected by declines in housing affordability across advanced industrial nations. Household types that are most likely to experience housing stress include sole parents, low-income families with children, and low-income single persons. Affordability affects some tenures disproportionately, with private tenants bearing the brunt of declining housing affordability, and increasingly first homebuyers. Although some attention has been given to the issue of whether or not housing stress affects particular ethnic and racial groups disproportionately, the specific housing needs of Indigenous people have generally fallen outside the terms of the debate.

Fourth, although it is outside the remit of this paper, the literature provides some insight into the effectiveness of particular affordability policy initiatives, although many of these programs are in the early stages of implementation. Assessments emerging from the US, the UK, Canada and Australia tend to favour a mixed policy response which includes supply-side and demand-side measures, and flexible tailored policy responses (i.e. those that facilitate different policy responses in different regions). It is also recognised that there is a need for all tiers of government to be involved in addressing the issue.

3   MEASURING HOUSING AFFORDABILITY

3.1   Introduction

This chapter provides an overview of the issues involved in undertaking an assessment of housing affordability. Its purpose is to inform researchers and policy makers about the range of measures currently employed in Australia and to highlight their strengths and weaknesses. This chapter should be read in conjunction with its Technical Appendix (Appendix A) in which specific measurement issues are identified and analysed.[1]

The focus on affordability measures throughout this chapter is based primarily on individual or household measures of affordability, although average or aggregate measures are briefly examined. The chapter provides an outline of the two mostly widely used measures, ratio and residual measures, and of measures that focus on access to home ownership and private rental (that is, entry or accessibility measures) and follows this with an overview of some of the major empirical research in Australia that has employed these measures. It concludes with a brief discussion of measurement issues relating to supply side indicators of housing affordability.

3.2   Key considerations in developing appropriate measures

3.2.1   Definition and assumptions

The National Housing Strategy definition of affordability can be taken as a useful starting point for raising the technical issues that arise in conceptualising affordability as a housing issue.

> The term 'affordable housing' conveys a notion of reasonable housing costs in relation to income. Households can be said to afford their housing costs if those costs do not extract an unreasonable share of the household budget, leaving the household with sufficient income to meet other needs such as food, clothing, transport, medical care, education etc. (NHS 1991: 3).

An understanding of many of the technical issues associated with measuring housing affordability can be enhanced by means of a diagram that has been used in a number of studies to illustrate the critical relationships involved. This is presented in Figure 1 which illustrates some of the assumptions embodied in this definition and in the two key measures that have attempted to put it into practice: ratio and residual measures. The ratio measure, based on a fixed percentage of income spent on housing, presumes housing expenditure increases proportionally with income (as represented by OH). A housing unit with expenditure above OH is presumed to have an affordability problem.[2] This, however, does not take account of the effect of expenditure on housing on the general household budget as specified in the second part of the NHS definition. In contrast, the residual measure presumes that a housing unit does not have an affordability problem if its income after housing is sufficient to meet non-housing expenditures at or above E^*E^*, where E^*E^* represents the amount

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[1] The specific measurement issues identified in Appendix A formed the basis of a discussion between academics and a user group consisting of a number of the State Housing Authorities' representatives on the Policy Reseach Working Group and representatives from the Commonwealth Department of Family and Community Services and from AHURI. The conclusions presented here and in the Appendix reflect the outcomes of that discussion.

[2] Points above OH represent a higher proportion of income spent on housing than is the case on or below OH.

needed to meet minimum non-housing needs. Thus, only those with expenditure patterns that place them above EE* AND below OH are seen as not having a housing affordability problem.

Figure 1: Affordability measures
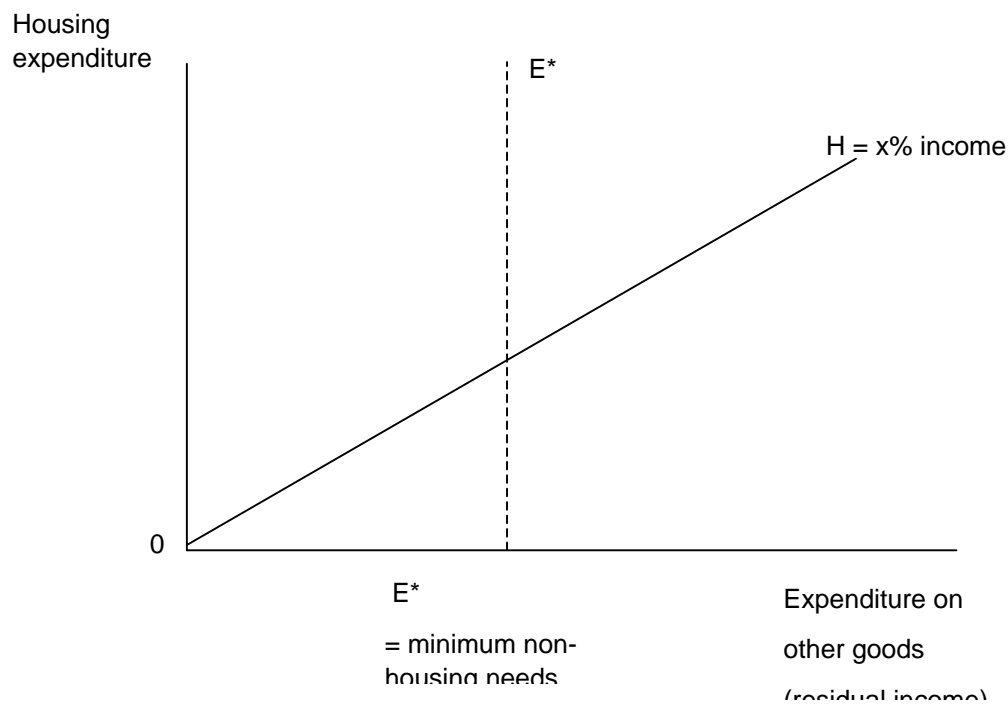
Source: Adapted from King (1994), but axes reversed so that high housing costs are above OH.

3.2.2 Measurement variables

In applying measures of housing affordability, researchers and policy makers are required to make a number of decisions about the variables used to measure affordability. In general, these include:

- *Measurement of income:* Issues arise over the choice of gross (private income from all sources plus social security payments) or disposable (gross minus direct tax) income, and whether these should be adjusted for household size;

- *Housing costs:* Issues arise over inclusion of utility payments and repayments of principal. There is widespread agreement that costs include rent, mortgage interest payments, rates, taxes, household insurance, repairs and maintenance (Milligan 2003);

- *Unit of analysis:* Issues arise over choice of household or income unit. The household is generally the preferred unit, but choice of income units can extend coverage to persons living in non-private dwellings (King 1994);

- *The composition of a household:* Issues arise over how to account for the very different income and expenditure profiles required by different households. One commonly employed approach is to adjust income using equivalence scales;

- *Locational factors:* Issues arise over the treatment of the poor level of services and transport connections that are often associated with areas of low cost housing. King (1994), for example, suggests commuting costs should be acknowledged as a

housing related cost. Transparency in treatment of locational and spatial factors inevitably entails subjective judgements so it is essential that these are made explicit if transparency is to be maintained;

- *The time period:* Issues arise over the choice of time period over which any definition of housing affordability should apply;

- *Non-housing* costs: If definitions are extended to include transport costs, the issue arises as to whether a household's expenditure on other non-housing costs should also be considered;

- *Choice of benchmarks*: This requires an explanation of the assumptions that inform this decision;

- *Housing adequacy:* The issue of whether or not to cover *housing adequacy* for particular household types (i.e. over-crowding), and *housing standards* and *quality* within a measure of affordability need to be addressed. In Australia, the Canadian housing stress standard (NHS 1991) is generally used for over-crowding. While minimum building and health standards for new construction are available, there is limited data on standards for existing housing, and even more limited ability to link this with affordability measures (Burke et al. 2004: 12);

- *Treatment of housing assistance*: The issue of whether housing costs should be measured net of housing subsidies needs to be addressed. Issues arise particularly in relation to the treatment of RA. There is less disagreement regarding public housing where costs net of subsidies are taken as the norm, in part because of difficulties in measuring the subsidy.

In assessing the utility of particular measures of housing affordability for policy purposes, it is also important to be aware of their specific objectives. For example, measures and indicators can be used to ration resources, for problem identification, evaluation and monitoring, for education (e.g. to assist industry decision making) and for policy design. Table 4 shows the major objectives.

Table 4: Objectives of housing affordability measures and indicators

- Part of the selection criteria of financial institutions in the decision to provide a mortgage (a rationing criterion)
- Assessment of underlying need in aggregate, e.g. Australia, or specific area, e.g. a municipality, or for a specific household type, e.g. sole parents (a problem identification criterion)
- Measurement of performance of the public housing system, e.g. public housing provision, Commonwealth RA (monitoring and evaluation criteria)
- Measurement of performance of the private housing system, e.g. private market outcomes (monitoring and evaluation criteria)
- Assessment of the financial wellbeing of recipients of housing assistance (problem identification and monitoring and evaluation)
- Assessment of the financial wellbeing of housing consumers generally (problem identification and monitoring and evaluation)
- Guiding the actual provision of affordable housing for industry and government (problem identification, industry decision making)
- Facilitating identification of the type of policy options to address affordability (problem identification and policy design)

3.2.3 Methodological constraints

There are a number of issues which need to be considered when undertaking any assessment of housing affordability. While some have been addressed by the use of more advanced ratio and residual measures (see Sections 3.3 and 3.4), methodological constraints that apply to all measures are listed here. They include:

- Measures are dependent on large episodic secondary data sets that include data on both income and housing costs, such as the ABS Census (every five years), ABS Household Expenditure Survey (between seven and five years) or the Survey of Income and Housing Costs (every one or two years). Use of categorical data and delays in availability can inhibit the monitoring of housing affordability at an individual level on a timely basis;

- Different data sources have different strengths and weaknesses (e.g. the Household Expenditure Survey or Survey of Income and Housing Costs provides only limited spatial information, the Census only provides gross not disposable income, and much relevant data is available only in categories);

- There is limited understanding of the way in which income is shared within household units, with no measure accounting for variation in the affordability burden of individuals within the household;

- At present, neither residual nor ratio measures are able to distinguish between affordability problems arising from household choice or from an inadequate supply of affordable housing;

- There is limited understanding of the dynamics of affordability. Almost all affordability analysis is static in that it captures the situation at the time of data collection. Because every survey covers a different set of households, the capacity to understand how affordability affects individual households over their lifecycle is constrained. Panel data in Australia, which can be used to address dynamic issues, currently is limited to relatively short time spans.

3.3 Ratio measures

3.3.1 Overview

The ratio approach is the most commonly used measure of housing affordability in Australia and internationally (Karmel 1998: 30; Chaplin and Freeman 1999: 1,956). Ratio measures address the question of whether or not households are spending an unacceptably large proportion of their income on housing costs. While they have been refined and adapted in various contexts and for specific policy purposes, these measures can be grouped into three general types:

- Simple 'housing cost to income' ratio;

- Fixed ratio with benchmark;

- Refined ratio measures.

At their simplest level, ratio measures are used to monitor shifts in affordability over time. The simple 'housing cost to income' ratio entails calculating a ratio between median house prices and median household incomes at different points of time, and then comparing them to determine whether affordability is improving or worsening. The AMP/REIA index and the Commonwealth Bank/HIA index are based on this straightforward approach. Such indices are of limited use in policy making as they measure the changing affordability of home ownership only, without regard to the private and public rental sector. Another criticism is that the index assumes constant

lending practices over time, and therefore does not necessarily capture the reality of lending practices in the market (Burke et al. 2004: 16).

While simple indices are useful in tracking shifts in affordability, they do not provide a clear rationale for policy intervention. In order to make such indices more responsive to policy objectives, ratio measures have been linked to a normatively ascribed affordability benchmark. This benchmark is used to determine the point at which affordability is deemed to be a problem for the average household and which in turn requires some form of policy intervention. Under the fixed ratio approach, households are said to have unaffordable housing if their housing costs (including mortgage and rental payments) take up more than some predetermined proportion of their income. In general, fixed ratio measures focus only on the circumstances of low income households, with moderate to high income households being excluded as it is assumed that they are able to spend a large proportion of their income on housing without experiencing affordability problems (Karmel 1998: 30; Burke et al. 2004: 17). Consequently, this approach is sometimes referred to as the *30/40 rule of thumb* as housing stress is attributed to low-income households (i.e. the bottom 40 per cent of the income distribution) that spend more than 30 per cent of their income on housing.

The fixed ratio approach raises two major concerns: how to define the two central variables, income and housing costs, and where to set the affordability benchmark. In regards to defining variables, Milligan (2003: 251-2) notes that, in practice, different surveys include different components of housing costs, and consequently researchers are often limited by what data is available. In addition, there may be differences in the way information about housing costs is collected for different tenure groups. Generally, a standard definition of housing costs includes rent, mortgage interest payments, rates and taxes, house insurance, repairs and maintenance, interest payments on loans for alterations and additions, and levies on strata-titled dwellings (Milligan 2003: 251). For further discussion of housing cost components, see Yates (1987) and King (1994). Similarly, there is no standard income measure used in fixed ratio measures. Instead, researchers must choose between gross household income and disposable income, and decide whether to include welfare payments and non-cash benefits or not (Milligan 2003: 252). In regards to setting benchmarks, there is greater consistency across countries, although the benchmark has tended to increase over time. Today, if a household is spending more than 25 or 30 per cent of its income on housing, then it is typically said to be experiencing housing stress. However, critics have expressed concerns about setting the benchmark at a particular level without any clear, scientific rationale (Freeman et al. 2000: 103). In Australia, Burke et al. (2004: 17) have raised similar concerns about the application of 25 and 30 per cent benchmarks in regards to the National Housing Strategy (1991). Their concern is that these rather arbitrary figures have now become accepted as the standard, despite the NHS only granting cursory attention to their rationale. They contend that the NHS provided a brief overview of the international experience before opting for the upper end benchmark of 30 per cent, and then, having selected these figures, 'did not fully recognise that the 25 or 30 per cent measures used in the United States and Canada typically include utility costs for heating, cooling and lighting' (Burke et al. 2004:17).

3.3.2 Advantages and disadvantages

The fixed ratio approach is the most commonly used ratio measure in housing policy and as such has attracted the most criticism. In addition to definitional issues and concerns about how affordability benchmarks are set, it has been criticised for:

- Applying a single measure across all tenures, locations and household types (Hancock 1993: 128);

- Failing to account for issues of housing quality and over-crowding (Burke et al. 2004: 18);

- Failing to consider the capacity of particular households to meet both their housing and non-housing costs, and thereby maintain adequate housing and an adequate standard of living (Stone 1993).

Despite these concerns, fixed ratios continue to be used by policy makers (see Section 3.5) as they have several clear advantages. They are simple to use in the sense that: they rely on few variables and therefore appropriate data can be located easily and often at more regular intervals; the logic behind ratio measures is easily communicated to non-experts; and the measure relies on transparent and apparently objective variables, with limited subjective assumptions about individual's housing and non-housing consumption.

Table 5: Advantages and disadvantages of ratio measures

Advantages	**Disadvantages**
• Depends on few variables that are readily available over time • Easy to explain to non-experts • Limited subjective assumptions about individual's consumption	• No clear rationale behind affordability benchmarks • A single measure is applied across all tenures, locations and household types • Assumes all families and individuals have the same ability to pay, and does not consider non-housing costs • Does not consider issues of housing quality and over-crowding

3.3.3 Modifications to the ratio approach

In general, fixed ratio measures, which do not take account of household composition, tend to classify more single person households as being in housing stress than other measures, and to classify fewer couples with children as being in housing stress. In view of these problems, researchers have proposed several *refined* ratio measures. One such approach is to substitute income with equivalent income, in which household incomes are adjusted for household composition. This modification has the effect of reclassifying more lone person households out of low income and reclassifying more low income couples with children as low income (Karmel 1998: 32).

Another approach, the *targeted* affordability ratio, entails considering the cost of obtaining appropriately sized accommodation in particular locales. In this targeted approach, the low-income benchmark is based on the cost of appropriately sized housing in the area in which a household lives, rather than on the income distribution. Here households are considered to be low income if they cannot afford to rent a dwelling of the size they require at average cost for the area they are living in without spending more than 25 per cent of their gross income (Karmel 1998: 34).

Chaplin and Freeman (1999) offer a far more radical departure from the fixed ratio approach. Using a statistical measure adapted from poverty research, they examine the gap between individual households' rent-to-income ratios and a prescribed benchmark, and then weight households according to the size of this gap. This adds a further dimension to the traditional fixed ratio approach by considering the depth of affordability problems for individual households. Further improvements to the ratio approach might entail providing data disaggregated by household type and the development of several ratio measures for different household types.

While these modified approaches represent an important advance on income-housing cost measures, they tend to be more data intensive and are less transparent than the simpler approach. The latter two modifications make an assumption that appropriately sized dwellings are available at the relevant cost, even though this is not always the case.

3.4 Residual measures

3.4.1 Overview

In contrast to ratio measures, residual measures are concerned with the relationship between housing costs and the capacity of a household to maintain an acceptable standard of living. They focus on the income remaining after housing costs are met and consider whether housing is affordable in the context of current income levels and essential household expenditure (Milligan 2003: 68). The assumption underlying this approach is that households should be able to afford both housing and non-housing expenses (Karmel 1998: 38). In practice, these measures rely on some measure of adequate standards of living, which may be determined either normatively or relatively (Burke and Ralston 2003). Residual measures are elsewhere referred to as 'after poverty', 'non-shelter first' or living standards measures (Burke et al. 2004: 18; Milligan 2003: 68; Karmel 1998: 29).

In the Australian context, two measures of living standards have been used to determine the non-housing cost component of residual measures of housing affordability:

- The Henderson poverty line, established by the Commission of Inquiry into Poverty (chaired by Ronald Henderson) in 1974;

- The budget standard developed by the University of New South Wales Social Policy Research Centre in 1998.

Henderson poverty line

The Henderson poverty line identifies the level of income necessary to maintain a minimum standard of living. While it is criticised for being based on fairly crude assumptions about household expenditure, it remains in wide use and is updated quarterly (Burke et al. 2004: 18). As the poverty line is based on estimates of housing and non-housing expenditure items, it is possible to show poverty rates before and after the onset of housing costs. In determining housing-related poverty, two types of lines are used: an estimate of income including an allowance for housing costs (before-housing poverty line) and an estimate not including housing costs (after-housing poverty line). The after-housing poverty line includes a deduction for housing costs that varies by family type (Landt and Bray 1997: 15) but does not vary spatially or by tenure.

Analyses employing this approach have identified four types of households experiencing some form of housing or non-housing-related poverty:

- Very low income households with income below the level required to meet even their basic non-housing costs;

- Low income households with sufficient income to meet their basic non-housing costs, but who fall below the poverty line when housing costs are considered;

- Low income households who do not have an excessive housing cost burden relative to their income, but who still face difficulties in managing their basic non-housing costs;

- Moderate to high-income households who have an excessive housing cost burden relative to their income (Karmel 1998: 39-40).

Karmel (1998: 42) identifies two shortcomings with the affordability estimates generated by the Henderson before-housing and after-housing poverty lines. First, the housing costs provision is based on average housing expenditure without regards to differences in tenure. Second, no low-income cut-off is specified, so that moderate to high-income households who overspend on housing are also considered at risk of having unaffordable housing. Landt and Bray (1997) suggest that the first of these shortcomings can be overcome with the replacement of Henderson housing costs provision with regional average rents of the required size for household type. Karmel (1998: 43) suggests that the second can be overcome by excluding households whose income is above the adjusted before-housing poverty line, and hence can theoretically meet the costs of adequate housing and essential non-housing items. As with modifications to the ratio measure, both proposed solutions presume the existence of an adequate supply of affordable housing.

Budget standard

In 1998 the Social Policy Research Centre (SPRC) at the University of New South Wales developed indicative budget standards for Australia which set out to represent 'what is needed, in a particular place at a particular point in time, in order to achieve a specific standard of living' (Saunders et al. 1998: 4). An update of these budget standards to 2003 is available in Saunders (2004). The budget standard approach is derived from:

- An examination of ABS Household Expenditure Survey to establish a weighting measure and cost of items in a household expenditure budget;

- A combination of the normative judgements of researchers and focus group discussions to establish the amount needed by different household formations to meet basic housing and non-housing costs (Burke and Ralston 2003: 9).

Based on their data, the team proposed two budget standards: a modest but adequate standard, and a low cost standard that necessitates especially tight budgetary management to the extent that it may compromise some health and education outcomes (Saunders et al. 1998: 63). While the budget standard updates the assumptions used in the Henderson line, the measure is currently under review in response to early criticisms.

The NAHP (2004a) pointed out that the scope for using budget standards methodologies have been boosted by the development of a statistical local identifier within datasets used by State Housing Authorities. This enables researchers to undertake a needs-based assessment that factors in different sub-groups of all Centrelink recipients.

3.4.2 Advantages and disadvantages

Advantages

Supporters of residual measures argue that this approach provides information that is more accurate for different household types than ratio measures. Saunders (2004) contends that the main advantage of a budget standard is that the judgements and assumptions that inform it are explicit. It also has utility for small area needs analysis, but not for Australia- wide research because of variations in housing cost that can be attributed to locational factors. Third, it is useful for examining both low and moderate-income households' expenditure patterns.

Disadvantages

The most common criticisms of residual measures are that they:

- Depend on subjective judgements as to what counts as necessary household expenditure;

- Rely on a wider range of variables than ratio measures, which are not always readily available (e.g. data on non-housing costs);

- Are complex and time-consuming.

In addition, these measures at present rely on the ABS Household Expenditure Survey data, with a sample range of 6,000 to 9,000 households nationally. When this is disaggregated for household types and by state, the sample sizes are too small to produce reliable state-level data. Researchers have also had difficulties in accessing appropriate non-housing expenditure data that reflects regional variation in the costs of living.

Table 6: Advantages and disadvantages of residual measures

Advantages	Disadvantages
- Makes explicit the relationship between housing and non-housing expenditure - More accurate across household type than ratio measure - Useful for examining housing affordability for low income households - Valuable for small area studies	- Dependent on subjective assumptions about household expenditure - More onerous data requirements than ratio measure (i.e. require data on non-housing costs) - Complex and time-consuming - HES data limited at state level and when disaggregated is too small

Burke et al. (2004: 2) have commented that, whilst a number of studies that review low-income housing issues recognise the utility of residual housing costs measures (e.g. HNZC 2004; Bramley 1990; NHS 1991: ix), the preference for most researchers has been to deploy a ratio measure because of the perceived difficulties of defining measurement criteria.

3.4.3 Modifications to the residual approach

The budget standard approach can be enhanced by introducing spatially varying housing costs although, as signalled above, there is no guarantee that housing will be available at the assigned cost. This is the solution advanced by Saunders (2004: 16-17) who adopts a market rent approach in order to ascertain how household budgets are likely to vary across locations. Saunders uses data from the Real Estate Institute of Australia presenting estimates of median and first quartile rents in major conurbations. However, he points out that to undertake a comprehensive analysis of regional cost variations, including transport, would require accounting for other cost factors that might affect variations across regions. Saunders argues that the aim of budget standards research is not to provide a definitive measurement of poverty but rather a framework for benchmark adequacy that should proceed alongside other methods of measuring poverty.

3.5 Entry measures

The above individual or household measures of affordability are concerned with the ongoing costs of housing and serve certain policy needs; however, other policy needs are met by measures and indicators of the *access* problems of housing. These are measures which capture the changing cost barriers or supply constraints on purchasing a dwelling or achieving an affordable rent. They are measured in a number of ways, including:

- Size of the deposit gap between an affordable loan and current dwelling prices;

- Threshold income required to purchase or rent an affordable property;

- Price of typical dwelling prices or rents relative to income, e.g. average weekly earnings or household income;

- Stock of affordable dwellings (owner occupied or rented) available to lower income households.

These measures are used for problem identification and market monitoring and to provide guidelines to industry as to what represents an affordable dwelling. One way of conceptualising the price or income points for industry decision making is in terms of a ladder of affordability which shows for different income ranges the price of a dwelling or rent that is affordable, given certain income to price assumptions (Burke 2003). Table 7 illustrates the concept using 2001 Census income deciles for all Australian households, CPI adjusted to 2004. On assumptions of an interest rate of 7 per cent, annual repayments equal to 30 per cent of income, a 25-year loan and a 10% deposit, it shows the maximum house prices affordable for first home purchase at each income decile. These can be then compared to current prices, using Valuer General's data, for example, or the cost of new construction. This enables identification of the scale of the affordability problem for the different income levels, and what price levels have to be achieved to push first home ownership opportunities down the price ladder.

Table 7: Affordable home purchase housing targets by income decile: Australia 2004

Decile grouping	$pw 2001	$pw, indexed 2004	$pa 2004	Max. affordable house price*
Cut-off point decile 1	250	270	14,200	55,000
Cut-off point decile 2	360	390	20,300	79,000
Cut-off point decile 3	470	510	26,600	103,000
Cut-off point decile 4	620	670	35,100	136,000
Cut-off point decile 5	790	850	44,200	172,000
Cut-off point decile 6	970	1,050	54,800	213,000
Cut-off point decile 7	1,190	1,290	66,900	260,000
Cut-off point decile 8	1,520	1,650	85,700	333,000
Cut-off point decile 9	1,960	2,120	110,400	429,000

Source: ABS (2001) Census of Population and Housing, indexed by CPI to June 2004
* Based on a 25 year loan, 10% deposit, 7% rate of interest and repayments equal to 30% of income (annual repayments assumed)

The exercise could also be used to guide the provision of rental accommodation, as shown by Table 8. This takes the same income deciles and converts their income into an affordable weekly rent, assuming a 30 per cent benchmark. On assumption of a

particular rental yields (5 per cent in Table 8), the capital value of a property consistent with each income level can be determined. In Table 8, a household on a decile 4 income level (with an upper cut off of $674 pw or $35,100 pa in 2004) would require a dwelling which had been constructed or purchased for no more than $210,000. This exercise could be refined for household types, and for the effect of RA on lower income deciles.

Table 8: Affordable rental housing targets for different income deciles

Decile grouping	$pw 2004	Rent @ 30% benchmark $pw 2004	Capital value/ construction cost @5% yield
Cut-off point decile 1	270	80	85,000
Cut-off point decile 2	390	120	122,000
Cut-off point decile 3	510	150	159,000
Cut-off point decile 4	670	200	210,000
Cut-off point decile 5	850	250	265,000
Cut-off point decile 6	1,050	320	329,000
Cut-off point decile 7	1,290	390	401,000
Cut-off point decile 8	1,650	490	514,000
Cut-off point decile 9	2,120	640	662,000

A number of technical issues with access indicators are briefly reviewed in Appendix C, along with a summary of the major access affordability measures used in Australia.

3.6 Application of affordability measures in Australia

This section outlines some major empirical research projects that have sought to apply the above measures in Australia.

3.6.1 Applying the ratio approach

Ratio measures are widely used in housing affordability research in Australia. The two most recent comprehensive studies of affordability using ratio measures are the analysis of housing stress undertaken by Harding et al. (2004) for the National Summit on Housing Affordability, and the work undertaken by Berry and Hall (2001) as part of their research into private sector investment in affordable housing for the Affordable Housing National Research Consortium.

In Harding et al.'s study, the housing affordability threshold was defined as those income units within the lowest two quintiles of an equivalised income distribution who incurred housing costs greater than 30 per cent of disposable income. The study updated ABS 1999-00 and 2000-01 Surveys of Income and Housing Costs to provide 2004 estimates. The authors using this indicative estimate found that, by 2004, 8.8 per cent of income units were experiencing housing stress, down from 10.7 per cent in 1998. The headline figure from the research suggests that 883,000 families and single people are in housing stress, a combined total of 1.7 million Australians. Some concern has been raised about the reliability of 2004 projections that derive principally from a 2002 data set (NAHP 2004a).

Over an earlier time period, 1986-96, Berry and Hall (2001) showed that housing stress amongst private rental households increased significantly for those in the bottom two quintiles of a gross income distribution in all capital cities except Perth and Darwin. They estimated that in 1996 across Australia 227,480 private rental households were in housing stress. Berry and Hall also analysed the impact of Commonwealth RA in enabling low-income households to access private rental in Sydney and Melbourne in two time periods, 1994 and 2000. They found that RA is failing to provide a wide range of either location or dwelling type choices for low income tenants in these cities, with the partial exception of couples with children.

While it may appear that the ratio method and residual methods are mutually excusive, that need not be the case. Residual methods are more complex to construct and much more dependent on a limited range of surveys (such as the ABS Household Expenditure Survey). The ratio method has more and notably larger data sets (such as the Census) to draw on and can therefore be used for more detailed and perhaps more accurate analysis of the scale of the affordability problems for specific household types and for income cohorts within each household type and location. Thus it is possible that the two measures could be used in a complementary way. The ratio method could be used to identify in detail the specific households and income types most intensely experiencing affordability problems, while the residual method could complement these findings by providing richer data for the identified household types as to how it affected their wellbeing in terms of the trade-offs between housing costs and their consumption of other goods and services.

3.6.2 Applying the residual approach (Henderson poverty line)

The key measure used in studies in Australia that have employed a residual approach has been based on the Henderson poverty line. The Henderson Commission measured poverty by calculating the number of families whose annual income fell below a specified poverty line, defined as a level of income that would provide an 'austere' standard of living (Bradbury et al. 1986). Modified versions of this approach have been applied in reports on housing affordability by the Social Policy Research Centre (Bradbury et al. 1986) and the Australian Institute of Health and Welfare (AIHW 1995; Karmel 1995), and a report on poverty in Australia by NATSEM (Harding and Szukalska 2000).

An early study by Bradbury et al. (1986) used data from the 1981-92 ABS Income and Housing Survey and the poverty line established by the Institute of Applied Economic and Social Research (1984) to examine before and after housing poverty. They reported that, before housing is accounted for, some 11.8 per cent of Australian income units could be deemed to be in poverty. After housing expenditure is accounted for, the level is 11.2 per cent. Their work highlighted the housing affordability problems faced by private tenants.

In the early 1990s, the Australian Institute of Health and Welfare (AIHW 1995; Karmel 1995) developed a model of housing need. Compared with the NHS measure of housing affordability, this residual-based model was particularly sensitive to household circumstances, including size, composition, income, location and required dwelling size. Within this model, households with net incomes below the Henderson after-housing poverty line were considered to be in basic need (i.e. to have insufficient income to maintain a minimal or basic standard of living and to have no capacity to pay housing costs). In addition, households were considered to be in housing-related need if their current housing costs are greater than that deemed affordable, or they are over-crowded and cannot afford housing of an appropriate size, or both (AIHW 1995: 50-1). An analysis of 1991 Census data illustrated differences between the AIHW and

the NHS model, with the former generating higher estimates of housing need (16.7 per cent of Australian households) compared with the latter (10.5 per cent). Notably, this housing needs model attracted considerable criticism at the political level and has not been used in the monitoring and development of national housing policy.

Harding and Szukalska's (2000) study is based on a variation of the Henderson poverty line, with a housing benchmark derived from ranking incomes after actual housing costs. They estimate that one in seven Australians live in income poverty and one in five poor Australians live in a family where wages and salaries are the main source of income. They suggest that there has been an overall decline in the proportion of households in poverty from 1982 (14.6 per cent) to 1999 (13.3 per cent), primarily because of improvements in assistance for low-income families with children, introduction of child support schemes, and a slight fall in unemployment. The authors make the case for looking at poverty 'after housing' because those who own homes outright or are in public housing typically have much lower housing costs than those purchasing or renting privately. When housing expenditure is accounted for, poverty rates are higher (17.3 per cent compared with 13.3 per cent before housing) because housing costs of the poorest households are a more significant component of their income than for better-off households. The poverty risk doubles for home purchasers and private tenants when moving from 'before housing' to 'after housing' assessment; for purchasers the risk of poverty increases from 8.2 per cent to 15.7 per cent.

Harding and Szukalska report that 'after housing' poverty rates are highest in Adelaide and Perth, although the biggest difference between 'before' and 'after' housing poverty rates is in Sydney. In most states, 'after housing' poverty rates are higher outside capital cities, because of the high proportion of low-income households outside of the cities.

3.6.3 Applying the residual approach (budget standards)

An alternative research approach relies on a budget standard measure of housing affordability. Burke and Ralston (2003) applied this approach in their study of expenditure patterns and household indebtedness over the period 1975 to 1999. Their analysis shows an increase in housing costs over this period, with housing costs accounting for 17.6 per cent of the household income of all Australians in 1998-99 compared with 11.7 per cent in 1975-76. Like other studies, their analysis indicates that a large proportion of private tenants and a small proportion of public tenants face housing affordability problems. However, in applying a residual measure of affordability, their analysis highlights that there has been an increase in the proportion of public tenants experiencing housing stress over the period, with 64.8 per cent falling below the budget standard measure of wellbeing in 1998-99 compared with 47.0 per cent in 1975-76. They argue that current affordability benchmarks do not allow for a sufficient standard of living once many private and public tenants have paid their rent.

3.6.4 Methods used in Indigenous housing research

In regards to Indigenous housing research, assessments of affordability have occurred under the auspices of the Building Better Futures Framework (SCIH 2003). Within this framework, the Standing Committee on Indigenous Housing sets out a multi-measure of housing need that incorporates homelessness, over-crowding, affordability, and condition of dwelling and amenities. A discussion of the framework in the NAHP (2004a) report notes that it poses some difficulties in terms of measuring over-crowding and in accounting for non-housing items in remote areas (which are likely to be more expensive than within urban centres). To date, affordability research conducted within the SCIH framework has focused on private rental housing. Here a

ratio measure has been adopted, which counts households who pay more than 25 per cent of their income on rent as experiencing a housing affordability problem. The data shows that, in 2001, 43.1 per cent of Indigenous households were paying more than 25 per cent of their income on rent, and that proportionally the locations where affordability problems were greatest were the ACT (58.3 per cent), Victoria (53.3 per cent) and Queensland (47.7 per cent). Methods of assessing the affordability problems faced by owner-occupier Indigenous households have yet to be developed.

3.6.5 Summary

Comparison of the housing affordability studies outlined above is hindered by variation in their aims, the survey data used, and differences in the selected unit of analysis. However, in general, application of the ratio measure has generated more conservative estimates of the proportion of Australian households in housing stress than research that has applied a residual approach. Application of the residual approach has also revealed that problems with meeting housing costs are more widespread among public tenants than conventional ratio measures have previously indicated. In addition, those studies that have not restricted their analysis to lower income quintiles (i.e. the 30/40 rule) have observed that affordability problems extend to middle income households.

By contrast, access affordability measures have drawn attention to the severe erosion in ability to achieve home purchase in recent years and to the high levels of income now required to access affordable purchase while supply measures of affordability have exposed the vulnerability of the low cost or affordable end of the private rental stock.

Table 9 provides a summary of the data and measurement tools used in recent Australian studies of housing affordability.

Table 9: Data and measurement tools used in Australian studies of housing affordability

Author and date	Aim	Data source	Measure	Policy objective	Application of measure	Variable measures employed	Spatial disaggregation of data	Estimates of housing affordability
AIHW 1995	To develop a model of housing need and to identify households in housing-related need	ABS (1991) Census data	Residual	Problem Identification Assessment of underlying need.	After-housing poverty line	Net income	Australia and state	In 1991, 16.7% (n=905,000) of all households experienced some level of housing need, with 2% of these households experiencing over-crowding.
Landt and Bray 1997	To analyse a range of approaches to measuring housing affordability, and provide estimates.	ABS Survey of Income, Housing Costs and Amenities (1990), (1994)	Ratio	Problem Identification Assessment of underlying need	30/40 rule 40% based on equivalent income distribution	Gross and Disposable income	Australia	Low-income earners in the private rental market pay similar rents to higher income earners. Most at risk of housing stress and inadequate housing include sole parents, young single people and elderly couples.
Harding, Phillips and Kelly (NATSEM) 2004	To examine trends in housing stress, 1998-2004	Census data and ABS Survey of Income and Housing Costs (1997-98, 1999-00 and 2000-01)	Ratio	Problem identification Assessment of underlying need	30/40 rule 40% based on equivalent income distribution Consider interaction between income and welfare	Disposable income	State	8.8% (n=883,000) of families and singles are in housing stress. Those at risk include private tenants, sole parents, Queensland households and 30-39 years.
Harding and Szukalska 2000		1997-98 National Income Survey ABS	Residual	Problem identification	Modified Henderson poverty line	Disposable income.	Australia	Marginal decline in poverty between 1982-99. Impact of housing costs greatest for poorest households.

Author and date	Aim	Data source	Measure	Policy objective	Application of measure	Variable measures employed	Spatial disaggregation of data	Estimates of housing affordability
Berry and Hall 2001	To explore options for private sector financing for affordable housing	Census data (1986-96)	Ratio	Problem identification Market monitoring	30/40 rule – impact of RA on affordability.	Gross income	State LGA for Sydney, Melbourne and Adelaide only	Increase in housing stress among private rental households in all capital cities except Perth and Darwin (1986-96).
Burke and Ralston 2003	To provide a cost-effective way of measuring benefits of public housing rent rebates and private RA to clients	Household Expenditure Survey (1975-76, 1988-89, 1993-94 and 1998-99)	Residual	Problem identification Evaluation and monitoring of housing assistance	Budget standards approach – equivalent income distribution	Disposable income	Australia	Large number of public tenants experiencing stress, with 64.8% falling below the budget standard measure of wellbeing in 1998-99. Also large proportions of all renters experiencing housing hardship.
Bradbury, Rossiter and Vipond 1986		ABS Data Income and Housing Survey 1981-82	Residual	Problem identification, assessment of underlying need	Henderson poverty line	Disposable income	Australia	11.4% of income units in poverty, after housing costs the poverty level is 8.4%.
Standing Committee on Indigenous Housing 2003		ABS Census (2001)	Ratio	Problem Identification Evaluation and monitoring of housing assistance	25% benchmark	Not specified	State	43.1% of Indigenous households pay more than 25% of their income on rent; affordability problems are greatest in the ACT (58.3%), Victoria (53.3%) and Queensland (47.7%).

Author and date	Aim	Data source	Measure	Policy objective	Application of measure	Variable measures employed	Spatial disaggregation of data	Estimates of housing affordability
Commonwealth Bank/HIA index of housing affordability		CBA client house price data	Index	Evaluation and monitoring of private market	30% benchmark, 20% deposit, 25 year loan period	Gross and Disposable income	Australia and state	2004 Home Purchase Affordability has eroded by 70% since 2001. Threshold income required for purchase has gone from $42500 to $72000.
Wulff, Yates and Burke 2001		ABS Census data 1986, 1996	Percentage of affordable rental stock	Problem Identification Evaluation and monitoring of private market	Percentage of rental stock in rent level categories	Stock rather than household measure	Australia, state, regional	Low cost rental supply has eroded substantially since 1991.
Yates, Wulff and Reynolds 2004b	To determine the mismatch (or otherwise) between the supply of and need for low rent housing	ABS Census data 1996, 2001	Percentage of affordable rental stock	Problem Identification and evaluation and monitoring of private market	Percentage of rental stock in rent level categories	Stock rather than household measure	Australia, state, regional	In 2001, there was an absolute shortage of 59,000 affordable dwellings for low income households, a marginal improvement in supply since 1996
ABS 2002	To examine trends in housing affordability and suitability	ABS Time series data (1994-95, 1997-98)	Ratio	Problem identification and evaluation and monitoring of private market	30/40 rule 40% based on equivalent income distribution	Gross income	Australia	Proportion of households in housing stress remained the same throughout the 90s (11%). Most low-income households in housing stress are private tenants.

3.7 Supply-side affordability

The above analysis of affordability measures has been concerned with housing consumption measures, that is, those that focus on households and the access and affordability barriers they confront. These measures provide no indication of the extent to which affordability problems arise because households have no other choice than to pay for housing that is not affordable. An approach that provides some answer to this is implicit in analyses that focus on supply-side affordability measures and examine the extent to which affordable stock is available to meet household needs. Such supply-side affordability analysis in Australia is best represented by the rental housing studies of Wulff et al. (2001) and Yates and Wulff (2000, 2005). Discussion of the measurement problems of this method and updating of the analysis will not be part of this study as it is the focus of an AHURI study (Yates et al. 2004a, 2004b). A related approach for home ownership based on Melbourne household income and house price data can be found in Burke and Hayward (2001).

One of the problems of measures of housing affordability is that they tell us very little about how affordability is experienced. Part of the objective of this CRV3 project is to provide a greater understanding of how affordability problems impact on households in terms of the trade-offs they make (in relation to location, other household expenditures, housing quality, employment opportunities etc. as well as household formation and structure). While answers to this question can largely be addressed through specifically designed surveys of the type that will be a later stage of this project, the ABS is starting to incorporate 'hardship' questions into a number of national surveys, and these can be statistically reworked to evaluate the degree to which affordability and tenure differences are causes of hardship. The 1998-99 ABS Household Expenditure Survey was the first to ask such questions but they have been repeated in the 2003 ABS General Social Survey, with questions on:

- Financial ability to fund certain activities;

- Perception of living standards at the time of the survey and two years earlier;

- Ability to raise money in an emergency;

- Various kinds of personal problems experienced in the previous year, including those of health;

- Ability to save and meet day-to-day commitments.

There is the expectation that such questions will become a regular part of large ABS social surveys, providing an opportunity to assess some measure of the degree to which housing affordability hurts; in short, to quantify some of the non-shelter outcomes. For discussion and general analysis on the hardship measures, see Bray (2001), while Burke and Ralston (2003) have used them specifically in relation to affordability. Not surprisingly, households with affordability problems have a much higher incidence of hardship, to a degree that would suggest considerable impairment to the quality of their lives.

4 CONCLUSIONS

Conceptualising and measuring affordability is as complex as understanding the causal factors of the housing affordability problem itself. Indeed, as the discussion of affordability debates illustrates (Chapter 2), many of the conceptual and measurement problems stem from contested understandings of the problem. For example, housing affordability can be understood as the continuing costs of a mortgage or rents relative to income, problems of accessing affordable housing (e.g. first home ownership), not being able to afford housing costs after meeting other expenditures, or a problem of too low an income or too high housing prices. Even more problematically, affordability can be experienced by household types in different ways, that is, the employment, transport, health, and other consumption trade-offs that have to be made by singles, sole parents and couples with children as they adapt their circumstances to high housing costs and/or low income.

The complexity surrounding affordability means that there is no one best measure for assessing the nature and degree of housing affordability problems. The challenge is therefore to identify the policy needs around the issues and to devise measures relevant to the policy requirements of identifying the scale and form of the problem, evaluating housing market trends, informing policy design or providing guidelines for industry.

This paper and its accompanying methodological appendices reviewed the major methodologies deployed. It advanced the rationale for deploying a suite of measures and recommended ways of addressing the technical problems that inevitably accompany the development of affordability criteria. For example, with respect to the ratio measure and residual methods, it is suggested that they both have utility; the former to identify the specific household types and income groups experiencing affordability, and the latter to provide a richer understanding of how these identified groups adapt to their affordability problem through trade-offs. The other type of affordability measure, reviewed albeit briefly, focused on accessing affordable housing. This not only provides data about the scale of barriers to achieving affordability (e.g. for first home buyers) but it can reveal issues relating to the supply-side issues of affordability. These measures, whilst not a major focus of subsequent CRV3 work, are reported in other AHURI research (Yates et al. 2004b) and state government publications (for example, New South Wales Ministerial Task Force on Affordable Housing 1998; Victorian Department of Premier and Cabinet 2005).

No measure or indicator of affordability or even suite of indicators can capture the nuances of how households and individuals adapt their lives to minimise or mitigate affordability problems. All the existing quantitative measures can reveal is that there is an affordability problem, but not how it is felt and adapted to. To obtain this information requires a different approach, and that is the objective of Stage 3 of this CRV3: a survey of those households with an affordability problem.

It will of course be necessary for researchers, whatever measures are adopted, to be as explicit as possible about their approach. For this reason, the paper concludes by summarising criteria derived by Statistics New Zealand for determining appropriate indicators for measuring housing affordability.[3] In opting for particular indicators, it is

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[3] <http://www.stats.govt.nz/analytical-reports/housing/housing-indicators/housing-indicators-information.htm>

recommended that researchers and policy makers consider the degree to which indicators respond to each of the following issues:

Sensitivity

- Provides sufficient detail to monitor developments

Wellbeing

- Applicable to conditions of wellbeing

Cost-effectiveness

- Requires limited numbers of parameters

- Uses existing data and information if possible

- Is simple to monitor

Policy relevance

- Monitors the key outcomes of housing policy and legislation and informs of progress towards policy goals

- Measures socioeconomic processes of national and regional importance that cause pressure on housing

- Provides information to a level appropriate for aiding policy decision making

Comparability over time

- Measures changes on an appropriate geographic and temporal scale

- Is representative and shows reliability over time

- Has predictive qualities

Output orientated and analytically valid

- Clear and useful output is obtainable

- Output is developed within a consistent analytical framework

- Definitions are based on statistical standards

- Data is clearly defined and verifiable

- Data collection uses standard methodologies with known accuracy and precision (statistical integrity)

Internationally comparable

- Data is compatible with information from other countries

Simplicity

- Is simple to interpret, accessible and publicly appealing

- Clearly informs about the extent of the issue(s) it represents

- Is summary in nature

National significance

- Information is relevant at a national level

Sub-national significance

- Information is relevant at a sub-national level

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APPENDIX A: TECHNICAL ISSUES[4]

A.1   Technical issues

The main focus on affordability in this Background Paper 1 is limited to individual rather than average or aggregate measures of affordability and to measures that focus on the relationship between housing expenditure and income. The paper provides an overview of relatively recent or seminal contributions in Australia in order to highlight some of the methodological issues that arise. This Technical Appendix examines these issues in more detail. The discussion on these issues is necessarily brief. A more detailed overview of many of them can be found in the Senate report on poverty and financial hardship (SCARC 2004: ch. 2).

Technical issues in defining affordability arise in relation to:

A.1   The coverage of the analysis;

A.2   The choice of the unit of analysis;

A.3   The definition of income;

A.4   The definition of housing costs;

A.5   Whether rent assistance (RA) should be included in income or excluded from housing costs,

A.6   Whether non-housing costs should be taken into account;

A.7   Whether housing adequacy should be included in the measure;

A.8   Whether adjustments should be made for household size or composition;

A.9   Whether the measure employed should vary by income or household needs;

A.10   The time period over which any definition should apply;

A.11   Whether a ratio or residual measure should be employed;

A.12   What benchmarks should be employed.

There are also other broader issues that may be associated with definitions of affordability which relate to the question of why affordability might be an issue (these are covered in the CRV3 plan). These will be addressed in a later paper. The fact that these are not to be covered by this Background Paper should not be taken to imply they are regarded as being unimportant; instead, it reflects a belief that consideration of them is likely to constrain the paper's usefulness in relation to the issues that are covered. There are also issues surrounding terminology that, whilst relevant, are touched only briefly or not at all in Background Paper 1. Amongst these are the issues that relate to definitions of:

A.13   Housing stress;

A.14   Affordable housing;

A.15   Social housing;

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[4] The material in this Technical Appendix was prepared by Judy Yates to facilitate discussion of the issues implicit in the Background Paper. These issues were discussed with a user group consisting of representatives of the relevant State and Commonwealth departments concerned with housing issues. This version of the paper reflects the response to the draft version of the paper and the decisions made at that meeting.

A.16   Adequate or appropriate housing.

Whilst it may well be desirable to have agreement on such terminology, the issues surrounding these definitions are not covered in the Background Paper. Where these terms are used, however, a clear indication of what is meant by them is provided.

This Technical Appendix begins with a framework which can be used to analyse many of the technical issues indicated above. The examples used are for illustrative purposes only.

A.2   Framework for conceptualising affordability as a housing issue

As in Chapter 2, the National Housing Strategy definition of affordability is taken as starting point for raising the technical issues that arise in conceptualising affordability as a housing issue:

> The term 'affordable housing' conveys a notion of reasonable housing costs in relation to income. Households can be said to afford their housing costs if those costs do not extract an unreasonable share of the household budget, leaving the household with sufficient income to meet other needs such as food, clothing, transport, medical care, education etc. (NHS 1991: 3).

Whilst this definition is couched in terms of the household, the language in the NHS reports switched between household, income units and, less frequently, persons. The data analysis presented in NHS Issues Paper 2 is said to be undertaken at an income unit rather than household level of analysis although the definition given (NHS 1991: 7, footnote 1) is consistent with the ABS definition of a household. In order to avoid confusion, the question of the implication of the choice of unit of analysis is addressed here before the remaining technical issues are covered.[5]

A.2.1 Choice of income unit and coverage of analysis

The ABS definition of a household is a lone person who makes provision for his or her own food and other essentials of living without combining with any other person or group of related or unrelated people living together who usually live in the same dwelling and make common provision for food and other essentials of living. An income unit is a subset of this definition, incorporating only those who can reasonably be presumed to share income. Income sharing is presumed to take place between couples and between parents and dependent children.

For many household types, the definition of income unit and household are synonymous. Differences arise primarily in relation to non-dependent children living with a parent or parents. These are generally defined as a separate income unit, although there is some degree of uncertainty about the degree of income sharing that does take place in such circumstances. The question also arises of how to treat the housing costs of these 'stay at home' non-dependent children whose incidence appears to be increasing and whose existence may well reflect an underlying housing affordability problem.

King (1994) suggests options are to exclude from the analysis those cases where there is more than one income unit in the household, to include or exclude them depending on the employment status of non-primary income units, and to separately identify them. He indicates a preference for analysing affordability problems in terms of

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[5] This background paper makes the assumption that neither the individual (because of obvious economies of scale) nor the family (because it excludes single persons) is an appropriate unit of analysis for housing affordability.

the income unit because this does not force a distinction in terms of coverage between those in private and non-private dwellings. Whilst there may be a good argument for this, it does raise questions of data reliability if coverage is to be extended to those in non-private dwellings.

Households, however, are the unit of analysis that is synonymous with private dwellings and provide a more logical unit when discussion of affordable housing is an integral part of a discussion of affordability. In large part this is because housing markets operate at the household level. As with King's options, if the household is to be used as the unit of analysis, one option is to separately identify households by their structure. A second, and not necessarily mutually exclusive, option is to limit the analysis to households containing only one income unit. A disadvantage of this solution is that it eliminates from analysis cases where sharing is a way of overcoming affordability problems.

For the purposes of Stage 2 of this CRV3 research, it was agreed that the household should be the unit of analysis (this was more intuitively logical for the audience for whom the research is intended), and that the analysis should be disaggregated by different household types, including those with more than one income unit where possible. There is no case for excluding such households from the analysis. It was also acknowledge that this decision would limit coverage to private dwellings only. The non-private dwelling sector was thought to be too disparate and to have causes of affordability that are too different from those that arise for households in private dwellings for it to be integrated into a study of household affordability. It should be the subject of separate research.

The material that follows is couched in terms of the household as the unit of analysis, but the key points raised are unchanged for income units.

As signalled in section 3.2 of this paper, an understanding of many of the technical issues associated with measuring housing affordability can be enhanced by means of a diagram that has been used in a number of studies. For convenience, Figure 1 in the text and the brief description of it provided above are reproduced here. The ratio measure, based on a fixed percentage of income spent on housing, presumes that a housing unit with expenditure above OH has an affordability problem.[6] This does not take account of the second part of the NHS definition. The residual measure presumes that a housing unit can meet non-housing expenditures at or above E*E*. Thus, only those with expenditure patterns that place them above EE* AND below OH are seen as not having a housing affordability problem.

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[6] Points above OH represent a higher proportion of income spent on housing than is the case on or below OH.

Figure A. 1: Affordability measures
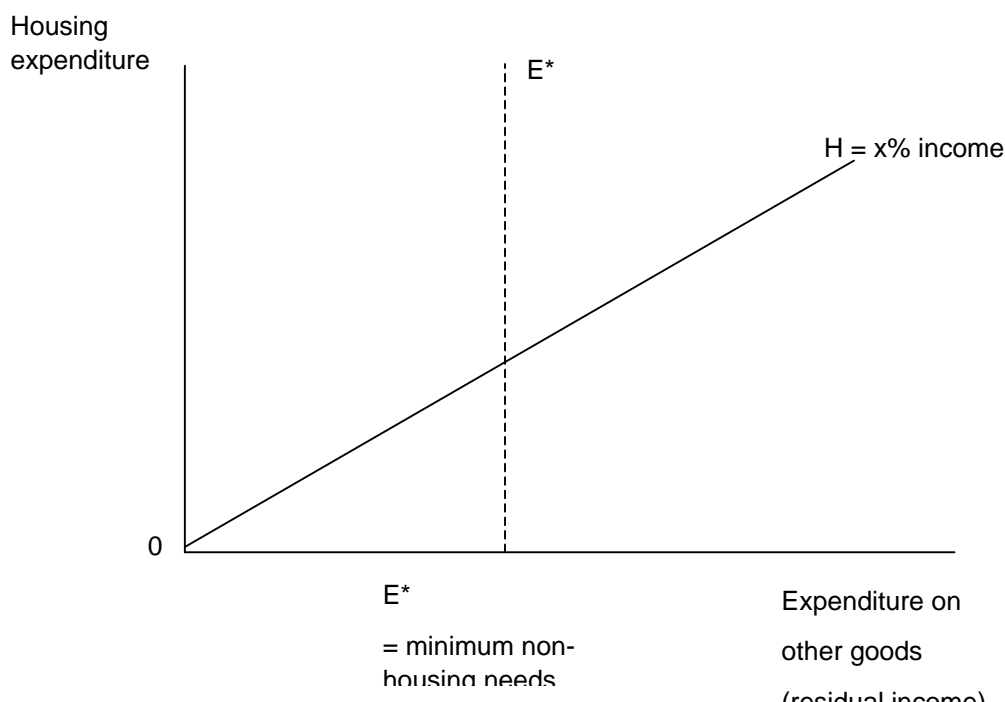
Source: Adapted from King (1994), but axes reversed so that high housing costs are above OH.

Even at this initial level of abstraction, some of the key issues associated with defining affordability can be highlighted.

In the first instance, no comment has been made on the unit of analysis embodied in Figure A.1 and on how minimum housing needs (E*E*) might be measured. These and other issues will be returned to below. The immediate discussion does not require consideration of them. In the second instance, no comment has been made on how income is to be defined, what housing expenditures are to be included in housing costs, and what percentage of income should be embodied in the slope of OH. Each of these (along with consideration of the treatment of housing costs for purchasers and for renters in receipt of direct housing subsidies) also will be returned to below. For the moment, housing expenditures are assumed to be equal to rent payments for those in rental housing, and income is assumed to be gross or disposable household income.

In Australia, rent to gross income ratios as low as 20 per cent (18 per cent for some public tenants) have been employed in practice but, increasingly, ratios of 25, 27 and even 30 per cent have become more common. As is often suggested, the choice of such ratios is arbitrary. The most recent (1998-99) Household Expenditure Survey indicates that, on average, households spend only 11 per cent of their gross income and 14 per cent of their disposable income in meeting their housing costs. For all households in the lowest two quintiles, however, these ratios increase to 26 and 27 per cent respectively.[7] The 27 per cent figure, whilst based on housing costs for all households and gross household income quintiles, is exactly the same as that given by Burke and Ralston (2003: 41) for private renters only and for quintiles based on

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[7] The difference in the ratios based on gross and disposable income is minimal because of the relatively low levels of income taxation incurred by those with low incomes.

disposable income. Burke and Ralston also provide data that show this housing cost ratio for private renters has increased from close to 20 per cent in the mid-1970s. These results provide some explanation both of the origin of conventionally employed ratios and of why they have increased. They are based on norms reflecting an average outcome over all low-income households.

The question of the implications of the chosen ratio (and for increases in this ratio) for the qualification built into the NHS definition (that sufficient should be left over for other essential expenditures) raises a critical issue with the use of a ratio measure. The fact that no account is taken of the adequacy of housing raises a second. Whether concern should be limited only to low income households raises a third.

A.2.2 Sufficient income to meet non-housing needs

Concern with the ability of the household to meet its non-housing needs after covering its housing costs underpins the residual measure often proposed as an alternative to the simple ratio measure. Under a simple ratio measure, households with housing expenditures below OH may be deemed not to have an affordability problem. However, if their non-housing expenditure is below E^*E^*, it is reasonable to suggest that their income is inadequate to meet their basic needs and they are in need of additional income assistance. E^*E^* can be seen as reflecting an after-housing poverty line. It describes the minimum amount needed to maintain an acceptable standard of living without taking housing costs into account.

The question of how E^*E^* is to be defined essentially is one that has been at the focus of the Henderson poverty line definitions and the more recent SPRC attempt to derive a budget standard for different types of households. Determination of such a standard necessarily involves many subjective judgements. An overview of these can be found in Saunders (1998) and in the recent Senate report on poverty and financial hardship (SCARC 2004). The latter report also provides an overview of a number of additional poverty measures, including consensual approaches, living standards approaches, and financial stress or deprivation measures. This material will not be repeated here. An important qualification is that all measures have strengths and weaknesses, and any measure employed should be seen as indicative, not prescriptive.

Table A.1 below indicates a number of commonly employed measures: poverty lines for households with the head not in the workforce (HPL) (that for households with the head in the workforce can be derived by adding $59 per week to the data reported); budget standard measures based on low cost standards (LCBS, basically for those not in the workforce) and on modest but adequate standards (MBABS, basically for those with one person in employment); and, for comparison, average household expenditures (HES) for comparable households.[8] Saunders et al. (2004) have recently added a comfortably adequate and sustainable budget standard (CASBS) to the earlier two measures. However, as this applies to retirees only, is designed to reflect relatively prosperous aspirations and reflects a standard that is approximately 75 per cent higher than the MBABS, it will not be included here.

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[8] In his update of the budget standards to 2003, Saunders (2004: 5) has suggested that the LCBS is most probably too low for setting minimum wage standards, whereas the MBABS is most probably marginally too high. A comparison with HES data adjusted to 2003 indicated the low cost budget standard was generally located no higher than between the first and second quintiles of household expenditure, and the moderate but adequate standard was situated either below the second quintile or between the second and third expenditure quintiles for each selected household type (Saunders 2004: 36-8).

Table A. 1: Potential measures of non-housing expenditures, June 2004

Household type	LCBS Incl housing $pw	LCBS Excl. housing $pw	MBABS Incl housing $pw	MBABS Excl. housing $pw	HES Incl housing $pw	HES Excl. housing $pw	HPL Incl housing $pw	HPL Excl. housing $pw
Couple	459	310	773	478	1283	882	360	247
Couple with 1 child	601	413	804	600	1048	814	444	322
Couple with 2 children	723	488	982	726	1088	863	529	396
Couple with 3 children	792	556	1166	910	1172	952	613	470
Couple with 4 children	880	644	1301	1045	1021	840	698	544
Single	353	204	460	292	645	448	254	152
Sole parent with 1 child	447	260	625	421	497	367	343	230
Sole parent with 2 children	584	348	830	574	603	446	427	305
Sole parent with 3 children							512	379
Sole parent with 4 children							596	453

Source: Saunders et al. (1998: 465-8) for budget standards and HES, all but one person in couple assumed to be unemployed, all above assumed to be private renters; both budget standards and HES measures updated by CPI. Melbourne IAESR (2004) for poverty lines June 2004; $59 pw to be added to all households for head in workforce.

The data reported in Table A.1 is for 2004 and is limited to households that contain only one income unit. The original 1997 data is reported in Table B.1 in Appendix B which contains a range of supplementary tables for Appendix A. Poverty lines are updated every quarter using an established methodology based on indexing past poverty lines to disposable household income, but there is no established methodology for indexing budget standards. Poverty line data for the head in the workforce is presented. Data for the low cost budget standard and for a moderate but adequate budget standard (basically for households with a head in the workforce) has been derived by indexing 1997 data by the CPI (as recommended in Saunders et al. 2004). Use of the same methodology as employed for the Henderson poverty lines would maintain the relativities implied in Table B.1. Extension of policy concerns to the working poor suggest measures such as the poverty lines for households with a head in the workforce and the modest but adequate budget standards may be increasingly important.

Two points which arise from the data presented in Table A.1 are signalled here but will be discussed in more detail later. The first is the obvious one that standards differ between household types. The second is that, even for a specific household type, they differ from each other and in a way that is different depending on whether housing costs are included or excluded. Whilst it is only the measure that excludes housing costs that is relevant for determination of E*E*, the relative differentials for measures that include and exclude housing costs signal a potential problem to be considered below when the use of equivalence scales to adjust income to take household structure into account is discussed.

The key point for this section is that the budget standard, household expenditure and poverty line measures for each household type are different. The low cost budget standard (excluding housing) varies from 25 per cent to almost 50 per cent more than the poverty line for households with the head not in the workforce. The modest but adequate budget standard (excluding housing) varies from 50 per cent above to almost double the poverty line for households with a head in the workforce. The

modest but adequate standard (excluding housing) varies from being half of the HES data for equivalent households to 25 per cent higher. Johnson (1998) provides an overview of poverty line methodology. Saunders (1998) provides an overview of budget standard methodology analysis and the nature of the differences between the two measures.

The conclusion that can be drawn is that it is unlikely that it will be possible to get agreement on what is the most appropriate measure to use. What might be done about this is considered below after discussion of the implications of what measure is chosen for E*E*. Once E*E* is set, the implications for the appropriate housing ratio for different income levels can be generated from Figure A.1.

A.2.3 Choice of housing cost ratio

For a couple household on maximum Centrelink payments, use of the HPL excluding housing to reflect E*E* means that any housing cost ratio less than 38 per cent of income for a household with a head not in the workforce or 23 per cent for a household with a head in the workforce would leave the household with sufficient resources to pay for their non-housing needs at a minimum essential standard. For such households, the distinction between gross and disposable income is largely irrelevant. Equivalent ratios for other household types are presented in Table A.2.[9]

Use of the most parsimonious of the measures in Table A.1 (reported in column (1) in Table A.2) suggests that the choice of a 30 per cent housing cost ratio is likely to leave most households with children with too few resources to meet their non-housing needs. Use of the less austere poverty line standard for those with a head in the workforce (column (3) in Table A.2) indicates that 30 per cent is too high for all households and that an affordability ratio of 15 per cent to 25 per cent is more appropriate. Even lower affordability ratios are suggested for most households by the low cost budget standard (column (4)). An alternative viewpoint is that the use of a 30 per cent ratio provides a conservative measure for all low-income households and an extraordinarily conservative measure for those with children.

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[9] Poverty line measures are used here for illustrative purposes simply because they are the only housing residual measures reported in Table A.2 that are readily available for current data. This should not be taken to imply that appropriate updates for the other measures are not available nor a preference for poverty line measures.

Table A. 2: Housing cost ratios consistent with meeting alternative measures of non-housing needs for households on Centrelink payments, June 2004

Household type	Centrelink income (incl RA) $pw	Max housing cost ratio HPL Not in workforce	HPL In workforce	LCBS	MBABS
	(1)	(2)	(3)	(4)	(5)
Couple	396	0.38	0.23	0.22	-0.21
Couple with 1 child	538	0.26	0.15	0.09	-0.35
Couple with 2 children	624	0.25	0.15	0.11	-0.46
Couple with 3 children	711	0.23	0.15	0.09	-0.47
Couple with 4 children	242	0.37	0.13	0.16	-0.21
Single	392	0.41	0.26	0.34	-0.07
Sole parent with 1 child	547	0.31	0.20	0.22	-0.21
Sole parent with 2 children	634	0.29	0.19	0.12	-0.27
Sole parent with 3 children	396	0.38	0.23		
Sole parent with 4 children	472	0.32	0.19		

Source: as for Table A.1

Extension of this approach to households on disposable income levels 25 per cent higher than those reported in column (1) of Table A.2 yields housing affordability ratios based on the HPL with a head in the workforce that are such that choice of a 30 per cent benchmark will leave all households with sufficient to meet their minimum non-housing needs. Use of the higher LCBS, however, suggests that this is still too low for couple households with children. These results are presented in Table B.2 in Appendix B.

A.2.4 Disposable income compared with gross income

Increasing income beyond the levels reported in column (1) of Table A.2 raises several related questions: the use of disposable compared with gross income minimum, whether RA should be included in the definition of income, and whether the same budget standards should be applied regardless of the workforce status of the head of household. These first of these is discussed here. The remaining two are covered in Sections A.2.5 and A.2.6. No consideration is given to whether or not non-cash income should be included in the definition of income. Likewise, there is no discussion of use of whether current or annual income (when both are available) is to be preferred. The issues surrounding these choices have been well rehearsed in the income distribution literature (e.g. ABS Cat. no. 6523.0).[10] 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 preferred in ABS data and this preference will be assumed here. In practice, the choice is likely to be dictated by data availability. The implications of outcomes over a lifetime income will be discussed where relevant, but constraints on operationalising such a measure limit its use at a practical level. The

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[10] This distinction is between income at the time the data was collected (current income) and that for the previous year (annual income). For presentation purposes, it is a trivial distinction whether data is presented on a weekly or annual basis.

question of whether analysis should exclude those with incomes in the lowest income quintile is covered in Section A.2.10.

The expenditure standards reported in Table A.1 are based on the income needed to meet basic housing and non-housing costs. By definition, they are based on use of disposable income as a benchmark and the results presented in Table B.2 use disposable income as the benchmark. The ratios in Table B.2 have been re-estimated in Table B.3 using the equivalent gross income levels that would generate the disposable income reported in Table B.2.[11]

Use of the same housing cost ratio on a gross income basis would (incorrectly) imply ratios as high as 40 per cent for couples with children to over 50 per cent for households with no children would leave sufficient resources for the most austere of the Table A.1 measures for essential non-housing expenditures. Conversely, use of a 30 per cent housing affordability ratio based on gross rather than disposable income would imply no households would have problems in meeting their non-housing needs on either the poverty line measure or the LCBS measure, despite the indications in Table B.2 that many would, in fact, have insufficient income for their non-housing needs. At these levels of income (with a presumed marginal tax rate of 17 per cent), affordability ratios based on gross household incomes need to be reduced by at least 3 percentage points to allow for tax obligations. For higher levels of income, required adjustments are likely to be greater.[12]

The principles behind the setting of the non-budget standard along with the examples in Table A.2 and Table B.2 indicate that disposable income is the preferred income measure when considering the question of whether sufficient income after housing is available to meet non-housing costs. If gross income is used, then appropriate adjustments need to be made to affordability ratios to ensure sufficient income is available for non-housing expenditures.

A.2.5 Inclusion of RA in the definition of income

A not unrelated issue arises in relation to whether RA should be included in the definition of income (as done for the estimates in Table A.2) or subtracted from housing expenditures when determining whether actual housing costs are affordable or not. As with the examples above, the effect of this is to alter the housing cost ratio deemed affordable if sufficient residual income is to remain for non-housing expenditures.

Table A.3 indicates the impact on the maximum housing cost ratio that is deemed affordable if RA is excluded from the definition of income (and also from housing costs).

Exclusion of RA from the definition of disposable income has the same effect as a reduction in income: it serves to reduce the maximum housing cost ratio that can be afforded whilst still maintaining minimum non-housing expenditures. On the most austere measure of these non-housing expenditures, maximum affordable ratios are reduced from 8 to 16 percentage points to affordable ratios as low as 16 per cent. Reductions are even higher (and maximum affordable ratios much lower) for the less austere non-housing expenditure measures.

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[11] It has been assumed that income in excess of Centrelink incomes is taxed at a 17 per cent marginal tax rate. Centrelink levels of income are assumed to be tax-free.

[12] For disposable incomes at 50 per cent above Centrelink levels of income, affordability ratios based on gross income need to be approximately 5 per cent higher than those based on disposable income.

Conversely, of course, the probability that housing costs will fall below a specific housing cost ratio is increased when an equivalent adjustment is made on the cost side by excluding RA from housing costs.

Table A. 3: Housing cost ratios consistent with meeting alternative measures of non-housing needs for households on Centrelink payments (excl. RA), June 2004

| Household type | Income Centrelink (excl. RA) $pw | Max housing cost ratio | | | |
		HPL Not in workforce	HPL In workforce	LCBS	MBABS
Couple	351	0.30	0.13	0.12	-0.36
Couple with 1 child	416	0.23	0.08	0.01	-0.44
Couple with 2 children	482	0.18	0.06	-0.01	-0.51
Couple with 3 children	561	0.16	0.06	0.01	-0.62
Couple with 4 children	648	0.16	0.07	0.01	-0.61
Single	194	0.22	-0.09	-0.05	-0.51
Sole parent with 1 child	336	0.32	0.14	0.23	-0.25
Sole parent with 2 children	402	0.24	0.09	0.13	-0.43
Sole parent with 3 children	484	0.22	0.10		
Sole parent with 4 children	571	0.21	0.10		

Source: as for Table A.1

The key lesson that is illustrated from the discussion in this and the previous section is that use of a 30 per cent affordability ratio based on disposable income does not ensure sufficient residual income is available for non-housing needs for many low income households. It is even less likely to do so if gross rather than disposable income is used as the benchmark and if RA is excluded from the definition of income (and housing costs).

Conversely, its use is likely to exclude many lower income households with children from being assessed as having a housing affordability problem. A potential response to this is considered in section A.2.9.

Whilst there is no clear agreement on the issue of whether Rent Assistance should be included in a definition of income or excluded from a definition of housing costs, a case can be made for the argument that, if RA is seen as an income support payment, it should be included in income and that rent should be gross rent (in part because of the difficulties in identifying the level of rent assistance received). In practice, however, it is not clear whether this approach meets an international comparability criterion and, nationally, it does not provide an affordability measure which is directly comparable across public and private rental tenures.

A case for excluding RA from rent paid (and with income measured exclusive of RA) might be made on the grounds that RA may be important for development of funding models for affordable housing which relied on its hypothecation. In this case, the above discussion suggests that affordability ratios should be appropriately adjusted to reflect the household's lower capacity to meet non-housing needs when all of the

assistance provided for rent is allocated to reducing the assessed burden of housing expenditures and none is available to meet non-housing requirements.

One solution to the lack of agreement as to the appropriate treatment of the relevant variables is to assess the sensitivity of results to the different approaches. This will form part of a supplementary data project to be undertaken in Stage 2 of the CRV.

A.2.6 Income dependent adjustments to essential non-housing costs

To illustrate the issues that arise in determining an appropriate affordability ration, the discussion in section A.2.4 above referred to supplementary data presented in Appendix B which showed the effect on the maximum housing ratios affordable if disposable income was 25 per cent higher than the amounts currently available from Centrelink. The 25 per cent increase in disposable income above Centrelink payments which has been incorporated into Table B.2 amounts to approximately $60 per week for singles, $115 per week for a sole parent with 2 children and $180 per week for couples with 4 children or, respectively, approximately $70, $140 and $215 per week in gross income on the basis of the assumptions made of the relation between taxable and disposable income for Table B.2. These increases require at least one member of the household to be in employment.

The June 2004 HPL for households with the head in employment provides a flat $59 per household to allow for the additional costs of employment; the LCBS explicitly assumes unemployment for all but couple households. The fact that households with children would have to cover child care costs as well as costs normally associated with employment suggests that the minimum standards for non-housing costs embodied in the measures in Table A.1 are too low.[13] An indication of the sensitivity in housing cost ratios to differences in assessed non-housing needs expenditures can be seen by comparing the ratios in columns (2), (3) and (4) in Table A.2 with the differences in the underlying assessment of non-housing needs given in Table A.1. In general terms, any increase in the minimum amount regarded as essential for non-housing expenditures will reduce the estimates of what housing cost ratios are affordable for different household types.

The points raised in Sections A.2.2 to A.2.4 can be illustrated by Figure A.2 which is an extension of Figure A.1 with the addition of an income constraint.

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[13] The treatment of travel costs will be dealt with separately in Section A.2.8.

Figure A. 2: Income and affordability

Housing
expenditure

Y2

Y1

E*

H2 = x2% income

H1 = x1% income

0

E*

Y1

Y2

E*
= minimum non-
housing needs

Expenditure on
other goods
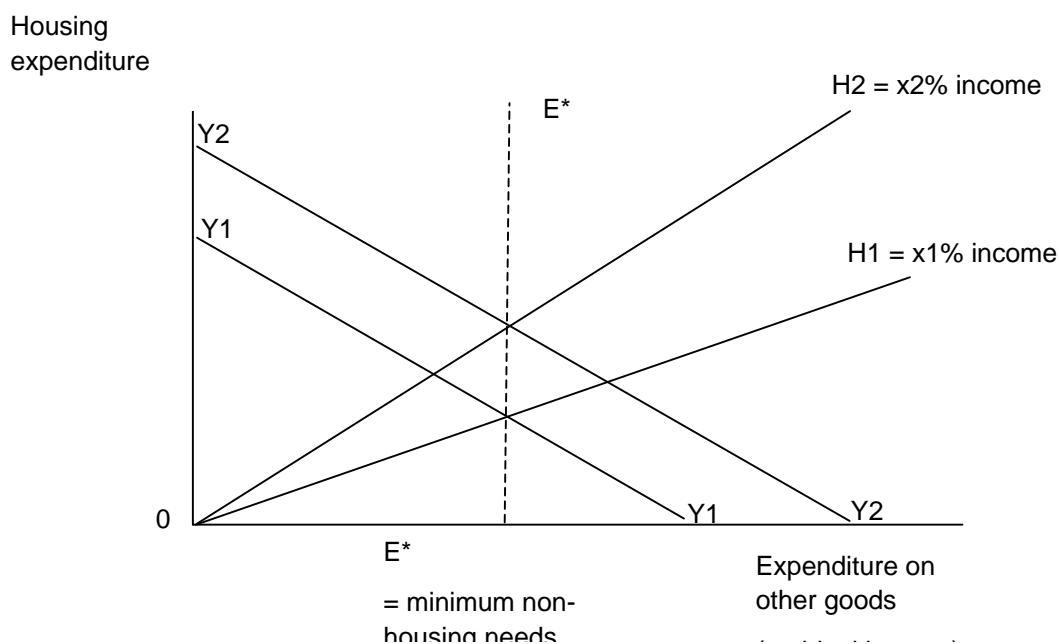
Source: Adapted from Hancock (1993).

Figure A.2 highlights the implications of the increasing household income without making any changes to the assessment of the expenditure needed for minimum non-housing needs (E*E*). At an income level defined by Y1Y1, any housing cost ratio in excess of x1% of income would mean that households would not be able to meet their non-housing needs. At the higher level of income given by Y2Y2, higher housing cost ratios of x2% of income are feasible.

An increase in the assessment of minimum housing needs as income increases would mean that E*E* shifts to the right and, as it does so, the affordability ratio indicated by OH2 shifts back towards OH1.

In a similar way, if Y2Y2 is interpreted as measuring gross income and Y1Y1 the equivalent level of disposable income, Figure A.2 clearly indicates why the housing cost ratio given by OH2 results in an inadequate amount of residual income available for non-housing needs and needs to be replaced by OH1. A similar interpretation arises if Y2Y2 is income including RA and Y1Y1 is income excluding this.

One of the final issues that can be illustrated by Figure A.2 is the question of whether the constraints on using a ratio definition of housing affordability imposed by the requirement that sufficient residual income be available for non-housing needs results in an adequate standard of housing being achieved.

A.2.7 Housing adequacy

In broad terms, housing adequacy can be defined in terms of occupancy rates, physical quality and location. Only the first two are considered here. Location is considered along with transport costs in Section A.2.8.

The notion that different size households have different housing needs has been well established in the literature and there is reasonably widespread agreement about acceptable occupancy standards.

The National Housing Strategy set the trend in housing adequacy studies by employing what now might be called an Australian occupancy standard. These measures, however, were based on the Canadian occupancy standard (NHS 1991). They are:

- A maximum of two and minimum of one person per bedroom;

- Parents are eligible for a bedroom separate from the children;

- Household members aged 18 or more are eligible for a separate bedroom unless married or cohabiting as spouses;

- Dependents aged five or more of the opposite sex, do not share a bedroom.

Variations of this occupancy standard have been employed by the ABS in their affordability measures; by the Social Policy Research Centre in their budget standards study; and by researchers at the National Centre for Social and Economic Modelling and the Australian Institute of Health and Welfare. The relatively parsimonious measures employed in different studies are sufficiently similar to be taken as standard. Couples are presumed to need no more than a one-bedroom dwelling and a couple with three children is presumed to need no more than a three-bedroom dwelling. Confidentiality restrictions on the data generally limit analysis of households who might be presumed to need more than a four bedroom dwelling on these standards in use in Australia.

In general, the definition of need may be socially as well as economically constructed. Single aged persons may well 'need' an additional room to enable them to continue to participate in family life as their children or grandchildren stay either overnight or longer. Likewise, divorced or separated households may need additional space for children who reside elsewhere but who visit on a regular basis. However, information is not always available on these intermittent demands. It was agreed that this information could not adequately obtained from conventional measures of affordability and should not be part of Stage 2 of the project. Where possible, the survey of Stage 3 should try and capture some of these issues.

Whilst it may not be appropriate under all circumstances, the following maintains the standard practice of basing assessment of need on a 'usual residents' definition. Given this practice, and the preponderance of two-bedroom apartments and three-bedroom houses in the Australian housing stock, the above occupancy standards are likely to be violated only by large households or households that consist of multiple income units.

Physical quality of dwellings is less readily quantified. King (1994) suggests that a minimum requirement might be the presence of an internal toilet and a separate bathroom, and the absence of the need for major repairs (although this, too, is difficult to define). Most surveys suggest that, in general, housing in Australia is of a relatively high standard. Issues are most likely to arise in some rural and remote areas.

Subject to qualifications indicated below, the amount needed to ensure that the minimum level of housing that meets minimum quality standards and defined occupancy requirements can be illustrated by addition of a minimum housing constraint to Figure A.2 similar to the minimum residual constraint given by E*E*. In Figure A.3, this is represented by H*H*.

Any point below H*H* implies that the household is inadequately housed. Figure A.3 also indicates that such an outcome is feasible for households who are not otherwise perceived as having an affordability problem. It is quite plausible that a household can have a housing cost ratio below OH and have sufficient residual income to meet the E*E* standard but be inadequately housed. In Figure A.3, for example, households

with incomes of Y1Y1 and who meet the minimum non-housing constraint of E*E* and have a housing cost ratio of x% of income do so at the expense of consuming an adequate amount of housing.

Figure A. 3: Adequacy and affordability

Housing
expenditure

Y2

Y1

E*

H = x% income

H*
= minimum

H*

0

E*

Y2

Y1

E*
= minimum non-housing needs

Expenditure on
other goods
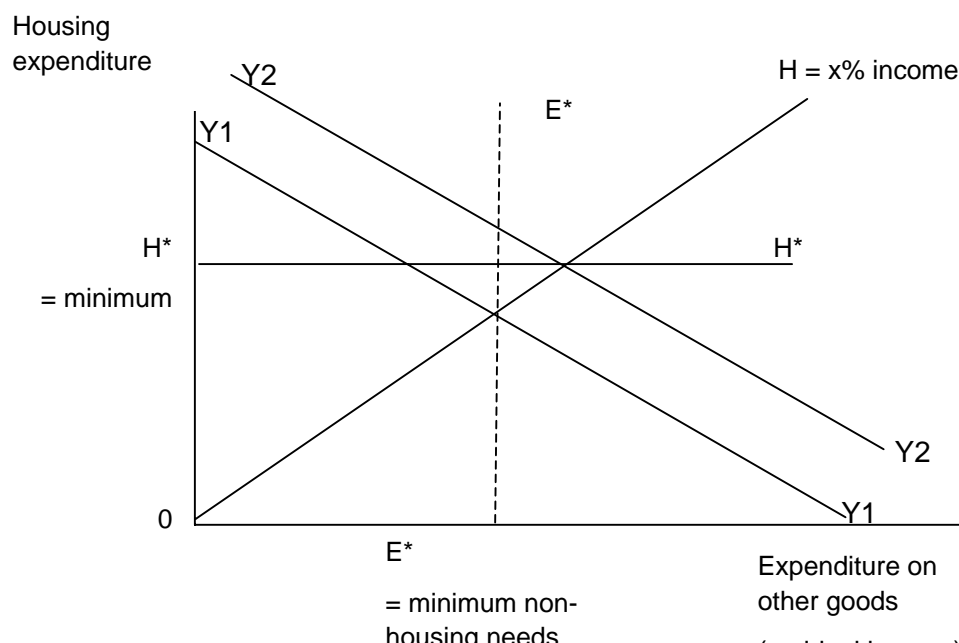
Source: as for Figure A.2

Given the significant spatial variation in housing costs, translation of these standards into a dollar value is not possible. What Figure A.3 does show is that the occupation of housing that does not meet dwelling condition or occupancy standards may be regarded as more critical for households who do not meet the affordability condition indicated by expenditure patterns above E*E* and below OH. Households who do meet this condition, in principle at least, have the option of increasing their housing expenditure and reducing non-housing expenditures.

One obvious solution is to ignore this constraint in the first instance and, when data allows it, to provide an alternative assessment of housing conditions of those households who do not meet the affordability conditions defined above. This is likely to require an assessment of the housing conditions of most low-income households. In general, existing occupancy standards as defined by the National Housing Strategy are adequate for research purposes. These will be referred to as occupancy standards in use in Australia. Where these standards, along with issues of housing quality and appropriateness, cannot be effectively incorporated into simple ratio or residual affordability measures, they should be covered by supplementary indicators particularly for groups for whom over-crowding or quality is a risk.

Before moving on to a discussion of adequacy in terms of location and access to services, in part preparation for the sections on affordability for purchasers, Figure A.3 can be used to raise the issue of whether any adjustment should be made to households who could, but do not, meet the affordability criteria defined by above E*E* despite adequate income and below OH because their expenditure on housing is well above that defined by H*H* (and above OH), as is possible for a household with an

income of Y2Y2. This is the reverse of the case where minimum housing standards are not met. This may arise because such households have a preference for housing over other goods and services. In such instances, it is reasonable to assume that this is their choice, and their high housing cost ratio is not a problem. However, as shown by Yates et al. (2004b), such an outcome may arise for lower income households because there is no cheaper or more appropriate housing available, either because of supply shortages or because existing low cost housing is occupied by higher income households. In this case, high housing cost ratios do reflect an inherent affordability problem. Limiting the analysis of affordability to low and moderate-income households, therefore, will address most concerns about over-consumption. The question of how low and moderate income households can be defined is considered in Section A.2.10.

A.2.8 Location and travel costs

In the same way that it is difficult to determine the extent to which high housing cost ratios arise from household preference for housing over other goods and services, it is also difficult to determine the extent to which households satisfy their housing preferences (and maintain what appear to be affordable housing ratios) by location choices that impose high non-housing costs. The most obvious of these are travel costs, which will be the primary focus of this section. Similar issues and costs arise in terms of lack of access to essential services, to leisure facilities and to family and friends.

For the most part, it is difficult to measure the importance and impact of costs other than travel costs for different types of households. Travel costs, however, are directly measurable and it is possibly for this reason that the possibility of including these in any housing affordability measure is raised. One rationale for doing so is that high housing costs (or, more accurately, high housing prices or rents) reflect the value of location. This implies that a trade-off is made between location and transport costs. King (1994) argues that two households with identical incomes living in identical dwellings can have very different outcomes in relation to housing affordability, despite having similar residual incomes, once housing and transport are taken into account.

Table A. 4: Indicative housing and transport costs, June 2004

| | Gross household income quintile | | | | | |
	1st	2nd	3rd	4th	5th	All households
Income	$pw	$pw	$pw	$pw	$pw	$pw
Upper boundary of quintile	355	651	1047	1626		
Decile median income	189	490	843	1321	2363	1041
Income tax	2	25	124	266	629	210
Disposable income	187	465	719	1055	1735	831
Costs						
Housing costs	65	86	120	139	167	115
Transport	57	86	124	184	247	140
% of disposable income	%	%	%	%	%	%
Housing costs	34.8	18.6	16.6	13.1	9.6	13.8
Transport	30.4	18.6	17.3	17.4	14.3	16.8
Disposable income	100.0	100.0	100.0	100.0	100.0	100.0

Source: ABS, HES 1998-99: 7, Cat. no. 6535.0, indexed by CPI

Table A.4 provides an overall indication of the importance of transport and housing costs across all households as reflected in household expenditure survey data. The results indicate that transport costs are of the same order of magnitude as housing costs for low-income households, but are considerably more significant than housing costs for high-income households. Contrary to conventional wisdom, Siminski and Saunders (2004) suggest that differences in housing costs are not always offset by differences in transport costs. Their analysis shows, for example, that transport costs are higher on average in the major cities than in the balance of Australia even though housing costs, also, are higher there.

One-way of including transport costs into the analysis is to add them to the existing benchmark defined by E*E*. This would have the effect of shifting E*E* to the right and reducing the assessed maximum housing cost ratio deemed affordable. An alternative, as suggested by Siminski and Saunders (2004: 4), is to adjust the incomes of those in high employment regions for the presumed premium in housing costs that results from gaining access to a stronger labour market and which reflects the cost of earning a higher income in such regions. The impact of adjusting either income or non-housing expenditures to reflect travel costs are similar to those discussed in Section A.2.5 in relation to the treatment of RA.

A conceptual difficulty with either of these interpretations is that, in principle at least, the definition of the essential non-housing costs for which a minimum residual income is required already includes an allowance for travel costs. Thus, if travel costs are to be treated explicitly, it may be necessary to redefine the benchmarks illustrated by E*E* as excluding travel as well as housing costs. Travel costs could then be included along with housing costs on the vertical axis. In contrast to the approach suggested above, this would have the effect of shifting E*E* to the left and so increasing the value of the newly defined housing plus transport cost ratio. Redefinition of minimum residual income is a relatively simple matter for either of the budget standards or HES based benchmarks provided in Table A.1 since they have been developed from

detailed budgets in which specific components of expenditure have been separately identified. It is a less straightforward matter for either of the poverty line benchmarks since this information is not available.

There are also a number of practical difficulties associated with identifying appropriate travel costs in any of the above approaches. Accessibility is only one of the factors that influence house prices or rents, and the location choices of different households simply may reflect trade-offs made between, for example, dwelling size, type or tenure reflecting a housing standard in excess of that identified by H*H* in Figure A.2 or Figure A.3.

The question also arises as to how essential travel costs should be measured. The data in Table A.4 measures all travel costs, not minimum essential costs. One issue is whether an allowance should be made only for work related travel or travel to access essential services and, if so, how these costs will be determined. A second is that travel costs may well reflect choices about mode of travel, with the result that cheapest options available may not be selected. A third is whether the costs of travel time should be incorporated into the estimates. A fourth issue arises in relation to what costs should be included for those who are in the workforce but currently unemployed with limited current travel costs.

Despite some apparent arguments in favour of their inclusion, a pragmatic assessment is that the conceptual and practical difficulties of doing so outweigh the benefits and as a result travel costs (and, more generally, appropriateness of housing as measured by access to services) will not be measured in Stage 2 of this project, although the survey (Stage 3) will attempt to collect information on the trade-offs made by households in making their housing choices and on the role that location, access to services and travel costs play in these decisions.

A.2.9 Equivalent income and equivalence scales

One of the key results to emerge from Tables A.2 and A.3 on maximum affordability ratios is that the outcomes are dependent on household size and composition and therefore on the assumptions made about these should be taken into account. If we assume that the underlying concern with housing affordability is that households should have sufficient residual income to enable them to meet non-housing expenditures and participate in society, then the amount required after housing costs may differ greatly by household size and composition in a way which may be disguised by affordability ratios.

The standard approach in the literature dealing with this household compositional problem (mainly income distribution literature) is to adjust household incomes to some standardised or equivalent value through the use of equivalence scales. The following description of the process used to generate equivalent incomes and of some of the issues in so doing is taken from the ABS (Cat. no. 6523.0):

> Various calibrations, or scales, have been devised to make adjustments to the actual incomes of households in a way that recognises differences in the needs of individuals within those households and the economies that flow from sharing resources. The scales differ in their detail and complexity but commonly recognise that the extra level of resources required by larger groups of people living together is not directly proportional to the number of people in the group. They also typically recognise that children have fewer needs than adults…

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While there has been considerable research by statistical and other agencies trying to estimate appropriate values for equivalence scales, no single standard has emerged. In theory, there are many factors which might be taken into account when devising equivalence scales, such as recognising that people in the labour force are likely to face transport and other costs that can affect their standard of living. It might also be desirable to reflect the different needs of children at different ages, and the different cost levels faced by people living in different geographic areas.[14] On the other hand, the tastes and preferences of people vary widely, resulting in markedly different expenditure patterns between households with similar income levels and similar composition. Furthermore, it is likely that equivalence scales that appropriately adjust incomes of low-income households are not as appropriate for higher income households, and vice versa. This is because the proportion of total income spent on housing tends to fall as incomes rise, and cheaper per capita housing is a major source of economies of scale that flow from people living together.

It is therefore difficult to define, estimate and use equivalence scales which take all relevant factors into account. As a result, analysts tend to use simple equivalence scales which are chosen subjectively but are nevertheless consistent with the quantitative research that has been undertaken. A major advantage of simpler scales is that they are more transparent to the user, that is, it is easier to evaluate the assumptions being made in the equivalising process.

In recent ABS publications, the 'modified OECD' equivalence scale has been used. This is seen as having wide acceptance among those who analyse income distribution in Australia because it coincides with current agreement on international best practice (Saunders 2004: 4). It 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.[15]

Table A. 5 indicates the difference in mean household income and equivalent income for different household types for 2002-03.

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[14] Some of these factors were made explicit in the derivation of the budget standard measures reported above but were ignored for presentation purposes.
[15] This adjustment has the effect of using a single person as the standard benchmark. This is not always the benchmark chosen. The poverty line measures reported above employed a household with a couple and two children as the standard, and equivalence scales were used to generate poverty lines for households that differ from this standard household (Johnson 1998: 46).

Table A. 5: Mean gross, disposable and equivalent disposable income by household type, 2002-03

	Gross household income	Income tax	Disposable household income	Equivalised disposable income
	$pw	$pw	$pw	$pw
Couple only	1,069	212	856	573
Couple with dependent children only	1,359	305	1053	491
Other couple, one family households	1,762	347	1415	603
One parent, one family households with dependent children	687	83	604	357
Other family households	1,235	216	1019	535
Lone person	524	93	431	432
Group households	1,253	236	1016	616
All households	1,061	210	851	506

Source: ABS Cat. no. 6523.0: Table A12

The results presented in Table A.5 have been derived by applying the modified OECD equivalence scales to household disposable income. Outcomes would be slightly different if applied to household gross income because tax liabilities vary with income. They would also differ if applied to income after housing, because the economies of scale embedded in general household consumption patterns are not necessarily the same as those embedded in housing consumption.[16]

Table A. 6 indicates the equivalence scales implicit in the measures reported above along with the modified OECD standard that is rapidly becoming an Australian standard.

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[16] One way of illustrating this is to point out that, using the modified OECD scale, the household income for a couple would be scaled down by 1.5 to render it equivalent to that of a single person. Under the housing occupancy standards indicated above, however, both a single person and a couple have the same housing needs. Adjusting income before housing costs will not yield the same equivalent income as adjusting after housing costs.

Table A. 6: Equivalence scales implicit in alternative minimum income and residual income measures

	LCBS Incl housing	LCBS Excl. housing	MBABS Incl housing	MBABS Excl. housing	HES Incl housing	HES Excl. housing	HPL Incl housing	HPL Excl. housing	OECD modified Incl housing
Couple	1.3	1.5	1.7	1.6	2.0	2.0	1.4	1.6	1.5
Couple with 1 child	1.7	2.0	1.7	2.1	1.6	1.8	1.7	2.1	1.8
Couple with 2 children	2.0	2.4	2.1	2.5	1.7	1.9	2.1	2.6	2.1
Couple with 3 children	2.2	2.7	2.5	3.1	1.8	2.1	2.4	3.1	2.4
Couple with 4 children	2.5	3.2	2.8	3.6	1.6	1.9	2.7	3.6	2.7
Single	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Sole parent with 1 child	1.3	1.3	1.4	1.4	0.8	0.8	1.4	1.5	1.3
Sole parent with 2 children	1.7	1.7	1.8	2.0	0.9	1.0	1.7	2.0	1.6
Sole parent with 3 children							2.0	2.5	1.9
Sole parent with 4 children							2.3	3.0	2.1

Source: as for Table 1

Increasingly, a number of analysts (e.g. ABS, NATSEM) are using equivalent income to limit the scope of households considered at risk of having a housing affordability problem. A typical approach is to focus on affordability outcomes for households in the lowest two quintiles of an equivalised rather than raw income distribution. The equivalence scales used to adjust income focus on (disposable) income before housing costs. In broad terms, this has the effect of increasing the number of couple households and households with children in the target population relative to the number of childless households.

Such studies, however, continue to use a fixed ratio measure (based on unequivalised income) to determine housing stress and so do not address the underlying concern at the basis of employing equivalence adjustments, namely, that different household types have different needs and therefore different capacities to pay for housing after those needs are taken into account. The estimates of maximum affordable housing cost to income ratios remain unchanged from those reported in Table A.2 or Table A.3. The only difference is that households with higher unequivalised incomes (and in general lower maximum affordable housing cost ratios) are included in the target population.

This suggests the possibility of exploring use of an after-housing costs benchmark against which to assess the capacity of different household types to meet their housing needs.

Given the advantages and disadvantage of equivalised and non-equivalised income definitions, results should be presented in both forms where possible.

A.2.10 Consideration of not all and other than low income households

Two relatively common practices need to be considered in relation to restrictions that might be imposed when considering whether or not to limit the target population to a particular part of the income distribution. These are restriction to the households in the lowest two quintiles of the income distribution, and exclusion of those in the lowest decile.

Restriction to lowest two quintiles

The rationale for limiting the target population to households in the lower end of the (equivalised or not) income distribution is based on the assumption that higher income

households have sufficient income to meet minimum housing and non-housing standards (that is, their budget line in Figure A.3 is above the intersection of H*H* and E*E*).

A number of points can be made in relation to such a restriction. The first highlights the point raised by the discussion in the previous section. It is important to recognise the different demands made upon a given level of income by different household types. Selecting the target group on the basis of equivalised incomes has this effect. However, the question of whether analysis should be restricted to households in the lowest two (equivalised) income quintiles remains.

This focus on the lower two income quintiles arises primarily from a concern with those unable to finance a generally accepted standard of living. It is based on an often-explicit assumption that those on higher incomes have high housing costs by choice. For example, the ABS (2004) justify restricting analysis to those with incomes below the 40th percentile (of an equivalised disposable income distribution) as follows:

> Some people choose to incur relatively high housing costs because they prefer a relatively high standard of housing instead of other consumption possibilities. High mortgage repayments might reflect a choice to purchase a relatively expensive home, or pay off a mortgage relatively rapidly, as a form of investment. In any case, all repayments of mortgage principal are additions to the wealth of the household (ABS 2004: 66).

By definition, however, such a restriction is likely to exclude many moderate-income households who are marginal first homebuyers in high cost areas. Such households may, in fact, be purchasing dwellings that yield fewer services (for example, 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. This is discussed further in Sections A.2.11 to A.2.13.

While important for rental analysis, a focus on the two lowest quintiles will hide a lot of affordability problems around home ownership access. Many renters in higher quintiles are likely to aspire to home ownership but to face access constraints and it is important to have some understanding of these constraints. It is therefore felt that, while it is important to have data on the bottom 40 per cent and to continue to undertake affordability analyses using the 30/40 rule for purposes of comparison over time, Stage 2 research for CRV3 should also provide data on all income quintiles disaggregated both by tenure and household type. For the lowest 40 per cent, the analysis should also try to identify source of income for reasons given below.

Exclusion of lowest income decile

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 inaccuracies in income reporting in the lowest income decile:

While income generally provides a useful indicator of economic wellbeing, there are some circumstances which present particular difficulties. Some households report extremely low and even negative income in the SIH, which places them well below the safety net of income support provided by social security pensions and allowances. Households may underreport their incomes in the SIH at all income levels, including low-income households. However, households can correctly report low levels of income if they incur losses in their unincorporated business or have negative returns from their other investments. Studies of income and expenditure reported in the 1998-99 ABS Household Expenditure Survey (HES) have shown that such households in the bottom income decile and with negative gross incomes tend to have expenditure levels that are comparable to those of households with higher income levels (and slightly above the average expenditures recorded for the fifth decile), indicating that these households have access to economic resources, such as wealth, which are not measured in the SIH, or that the instance of low or negative income is temporary, perhaps reflecting business or investment start up. Other households in the bottom income decile in the 1998-99 HES had average incomes at about the level of the single pension rate, were predominately single person households, the average age of the reference person was 53 years, and their principal source of income was largely government cash benefits. However, on average, these households also had expenditures above the average of the households in the second decile, which is not inconsistent with the use of assets to maintain a higher standard of living than implied by their incomes alone. Therefore it can be reasonably concluded that most are unlikely to be suffering extremely low levels of economic wellbeing, and income distribution analysis may lead to inappropriate conclusions if such households are included. For this reason, tables showing statistics classified by income quintile include a supplementary category comprising the second and third deciles, which can be used as an alternative to the lowest income quintile (ABS Cat. no. 6523.0).

Although the ABS suggests that both measures be provided, practice often has been to indicate only the more narrowly defined measure (such as is provided, for example, in ABS 2004: 66). 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, *Survey of Income and Housing Costs 2002-03*: Table 6).

Saunders (2004: 3) claims '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'.

A.2.11 Inclusion of other than rental tenures

As implied above, affordability studies need to consider households at the margin of home purchase as well as renter households. Many of these will be couples or households with children. As a result of the housing boom of the last half decade, the acquisition costs associated with purchase in the high cost regions in Australia mean that only moderate income households at best are likely to be able to access owner-occupied housing unless they have access to significant deposits. This reinforces the

conclusion above that affordability analyses should be undertaken across the whole income spectrum rather than being limited to the bottom two quintiles. It also highlights the need for identifying the resources available to first homebuyers who are able to undertake home purchase in the higher cost regions of Australia.

A.2.12 Definitions of housing costs for purchasers

For home purchasers, issues arise over whether repayments of mortgage principal should be included. Arguments in favour of including these are that many households are unable to identify what is interest and what principal, and that it is actual repayments that determine what is available for other expenditures. Arguments against are that repayments of principal are optional, and in general households can reschedule these in times of need and that such repayments are a form of (forced) saving rather than consumption.

A second issue arises over whether non-mortgage costs such as repairs, maintenance and taxes should be included for owners. Exclusion of them has the advantage of being consistent with conventional lending practices from finance institutions and of removing the need to identify essential repairs and maintenance expenditures from those that constitute upgrading. It has the disadvantage of ignoring what can be unavoidable expenditures for income-constrained owners.

A pragmatic solution is to assume that, consistent with conventional lending practices, affordability analyses should include the principal component of a mortgage as its payment does represent an affordability barrier, despite the fact that this payment is building an asset base. Consistent with use in ABS surveys, other non-mortgage costs of maintenance and rates should be included if the data allows. Utilities should be excluded, in part because of data problems, but in part because they are costs largely related to lifestyle choices such as use of heating, air-conditioning as well as presence of gardens (watering).

A.2.13 Duration (or lifetime) analysis

The final substantive issue to be covered in this Appendix relates to the duration. Housing affordability problems can be thought of as being problem with different durations. It can be a short term threshold problem for households having difficulty meeting the up-front costs of entering the housing market; it can be an on-going problem for households where high initial housing costs in relation to income fail to fall in relation to income over time or it can be an episodic problem resulting from an unplanned change in household circumstances or from unpredicted external circumstances. Which of these is relevant at any point of time is likely to depend on housing tenure as much as household and economic circumstances.

Threshold problems are likely to dominate for first homebuyers, particularly when inflation is high. Under conventional mortgage instruments, housing costs for purchasers include repayments of principal and housing costs for purchasers tend to be high in the early years of purchase and to reduce in real terms over time (for the same standard of housing consumption). In part this arises because purchasers are undertaking (forced) saving through their mortgage repayments. For renters, however, rent at best stays constant in real terms for the same standard of housing consumption with the result that renters are more likely to face on-going affordability problems. Households in any tenure can be affected by episodic problems.

Consistent with the issues raised about inclusion of repayment of principle in measuring housing costs, the first two problems suggest that there might be a case for employing higher affordability ratios for home purchasers in the early years of home purchase than for renters. Conversely, for lower income households who are in long-term rental and for whom residual income is likely to be inadequate to meet their non-

housing needs, there might be a case of employing lower affordability ratios than the 30 per cent ratio that has become the norm.

A related concern is with the interpretation of high housing affordability ratios, however measured. High housing costs are likely to be problematic when they affect the capacity of individuals within the household to participate fully in society. They are less likely to be problematic and to have less impact on a household if they are short-lived. This suggests that any static affordability measures such as those implicit in this paper should be supplemented by a dynamic analysis which shows how these change over time.

One of the difficulties in implementing this, however, is the lack of readily available longitudinal data on housing costs at the level of household, tenure and spatial disaggregation necessary. The April 2005 release of an ABS discussion paper (cat no 2060.0) on developing a longitudinal view of the census may help to address this current data shortcoming.

A.2.14 Remaining concerns

The material presented in this technical Appendix has focussed on specific issues associated with measuring housing affordability. In the main it has focussed on the relation between housing costs and current income. A final caution about the limitations of use of these variables as indicators for policy purposes can be found in the following extract from the submission made by the Department of Family and Community Services to the Senate Inquiry into Poverty and Hardship in relation to the limitations of income distribution data for 'most policy purposes, and in particular for shorter-term policy and program development and evaluation.' (FaCS 2003: 107).

> The main reasons for this are:
>
> a) Reported current income, without taking account of resources including assets and capacities, as well as the value of non-cash assistance is a poor guide to individuals' economic wellbeing, let alone other aspects of wellbeing. Many people who report low current incomes are in fact doing quite well, while many with higher current incomes may be doing poorly.
>
> b) There are marked problems in maintaining high quality current information on income with existing data being subject to revision because of known problems. There is only very limited data presently available on income dynamics.
>
> c) Analysis is dependent upon a large number of technical decisions, many of which might be appropriately considered to be the responsibility of the informed analyst. In this way there is scope for a wide range of different, but arguably valid, results to appear.
>
> For these reasons, the department believes that, while this type of analysis will continue to play a role in public debate, these measures are limited, and they are not well suited as instruments for the direct assessment of social outcomes and of policy settings for government.

In contrast, the department considers that alternative approaches such as deprivation, as well as longitudinal analysis of household incomes, offer much greater potential, although current data is relatively limited. More importantly, it needs to be recognised that the measurement and quantification of outcomes are only a process step in the more critical question of understanding the causes of these outcomes. That is, the state of poverty is more often a symptom than an outcome or cause. Social policy development, while recognising such symptoms, must, over the longer term, ensure that the focus remains on addressing causes.

This cautionary qualification signals the importance of supplementing the indicators proposed in this Background Paper with other evidence, such as qualitative evidence based on interview, or with explanations as to what factors have contributed to the outcomes observed. Whilst the FaCS submission relates to different issues than those covered in this paper, the concerns it raises remain relevant. Whilst policy can alleviate symptoms, it is likely to be most effective when it addresses underlying causes.

APPENDIX B: SUPPLEMENTARY TABLES

This appendix contains additional tables to supplement those reported on in Appendix A.

Table B. 1: Potential measures of non-housing expenditures, February 1997

Household type	LCBS Incl housing	LCBS Excl. housing	MBABS Incl housing	MBABS Excl. housing	HES Incl housing	HES Excl. housing	HPL Incl housing	HPL Excl. housing
	$pw	$pw	$pw	$pw	$pw	$pw	$pw	$pw
Couple	382	258	643	398	1068	734	272	187
Couple with 1 child	500	344	669	499	872	677	336	243
Couple with 2 children	602	406	817	604	905	718	400	300
Couple with 3 children	659	463	970	757	975	792	464	356
Couple with 4 children	732	536	1083	870	850	699	528	412
Single	294	170	383	243	537	373	192	115
Sole parent with 1 child	372	216	520	350	414	305	259	174
Sole parent with 2 children	486	290	691	478	502	371	323	231
Sole parent with 3 children							388	287
Sole parent with 4 children							452	343

Key:

LCBS – low cost budget standard (Saunders et al. (1998, p465-468)

MBABS – modest but adequate budget standard (Saunders et al. (1998, p465-468)

HES – 1993-94 data indexed by CPI (Saunders et al. (1998, p465-468):

HPL - Henderson poverty line for head not in workforce; lines for head in workforce obtained by adding $45 to each of the poverty lines above (IAESR, poverty lines March 1997)

Table B. 2: Housing cost ratios consistent with meeting alternative measures of non-housing needs for households on disposable income of 125% of Centrelink payments, June 2004

Household type	Disposable income 125% Centrelink income	Max housing cost ratio Not in workforce	Max housing cost ratio In workforce		
	$pw	HPL	HPL	LCBS	MBABS
Couple	495	n.a.	0.38	0.37	0.03
Couple with 1 child	590	n.a.	0.35	0.30	-0.02
Couple with 2 children	673	n.a.	0.32	0.27	-0.08
Couple with 3 children	780	n.a.	0.32	0.29	-0.17
Couple with 4 children	889	n.a.	0.32	0.28	-0.18
Single	303	n.a.	0.30	0.32	0.03
Sole parent with 1 child	490	n.a.	0.41	0.47	0.14
Sole parent with 2 children	573	n.a.	0.36	0.39	0.00
Sole parent with 3 children	684	n.a.	0.36		
Sole parent with 4 children	793	n.a.	0.35		

Source: as for Table A.1

Table B. 3: Housing cost ratios consistent with meeting alternative measures of non-housing needs for households on gross income equivalent to disposable income of 125% of Centrelink payments, June 2004

Household type	Gross income	Not in workforce	In workforce		
			Max housing cost ratio		
	$pw	HPL	HPL	LCBS	MBABS
Couple	515	n.a.	0.41	0.40	0.07
Couple with 1 child	614	n.a.	0.38	0.33	0.02
Couple with 2 children	700	n.a.	0.35	0.30	-0.04
Couple with 3 children	812	n.a.	0.35	0.31	-0.12
Couple with 4 children	925	n.a.	0.35	0.30	-0.13
Single	315	n.a.	0.33	0.35	0.07
Sole parent with 1 child	510	n.a.	0.43	0.49	0.18
Sole parent with 2 children	596	n.a.	0.39	0.42	0.04
Sole parent with 3 children	712	n.a.	0.38		
Sole parent with 4 children	825	n.a.	0.38		

Gross income estimated by assuming 17% tax rate applied to income in excess of Centrelink income levels.

Source: as for Table A.1.

APPENDIX C: AGGREGATE AND ACCESS MEASURES

Appendix A reviewed the many methodological problems with individual or ongoing affordability measures. As the paper outlined, there is another set of measures related to households' ability to access affordable housing, whether ownership or rental. These measures are not based on surveys of actual individual household incomes and housing costs, but on imputed affordability using a variety of data sources. As such, they provide supplementary indicators to those discussed at length in the text. They both contribute to the explanations of the causes of affordability problems faced at a particular point of time and indicate trends over time. Only a brief overview of them is included here. Measures include:

- Ratio of median household income to average loan repayments (AMP Banking REIA);

- Ratio of mortgage repayments on a typical loan for household on average full-time male earnings, assuming 25 year loan and 25 per cent deposit (BIS Shrapnel);

- Index of ratio of average household disposable income to the qualifying income required for a typical first home loan (CBA/HIA);

- Supply of low cost or affordable housing stock available to low income renters (Yates et al. 2004b);

- Threshold income: the level of income deemed necessary to gain access to the median priced dwelling or one that is some percentage, e.g. 75 per cent, of the median (Burke and Hayward 2002; Burke 2003);

- Areas where the median dwelling price is affordable to households whose incomes are in the 40th and 20th income deciles (purchasers) (Wood et al. 2004).

Each of these measures is a different way of capturing the changing ability of households to afford home purchase or access rental. None is necessarily better than the others. They all have different strengths and weaknesses, including overcoming the challenges of data limitations and methodology. Table C.1 summarises the characteristics and problems with each method.

Table C. 1: Attributes of major affordability measures used in Australia

Producer	Objective	Data source	How calculated	Spatial level. of data	Timeliness	Problems
Burke 2002, 2005	Threshold income To measure the amount of income deemed necessary to gain access to some the median priced dwelling	Valuer General median price dwelling data	Works back from VG median to calculate the required loan and the income to support this loan	Can be calculated to suburb level	Annually	Dependent on availability of VG data Only available annually
AMP/REIA	Median household income to average loan repayments	Median weekly family income figures are based on ABS Family Income Surveys Loan payments from financial institutions	Ratio of median household income to average loan repayments	National, and states and territories	Quarterly	No local housing market coverage Subscription only
BIS Shrapnel Home Loan Affordability Index	Measure access costs for household or individual on AWE income	ABS average weekly earning per employed male unit REIA loan data	Ratio of mortgage repayments on a typical loan (as measured by REIA data) to housing loan to average full-time male earnings, assuming 25 year loan and 25% deposit	National, and states and territories	Quarterly	No local housing market coverage. Subscription only
CBA/HIA Housing Affordability Index	To show over time index of ratio of average household disposable income to the qualifying income required for a typical first home loan	REIA house price data ABS income data	Index of ratio of average household disposable income to the qualifying income required for a typical first home loan	National and capital cities	Quarterly	No local housing market coverage Subscription only
Wood et al. 2004	Identifies areas where median dwelling price is affordable to households whose incomes are in 40th and 20th income	VG median house price data ABS Survey of Income and Income Distribution (1999-2000) for incomes of income units in 20th	Calculates the degree to which local areas are affordable to low income households	Local housing area analysis	Annually (VG data) and requires indexing of Census incomes	Census data becomes outdated Complex to construct

	deciles (purchasers	and 40th deciles				
Yates, Wulff and Reynolds 2004	To measure the amount and changes in low cost rental stock available to low income households	ABS Census special cross-tabulations	Identifies for nominated rental price ranges the amount of stock available in relation to number of low income households	National, down to LGA	Every five years	Potentially only available every five years Complex and expensive to construct

With respect to ownership all these measures tend to use broadly similar methods (although different data sources are used to construct the measures and different assumptions made about key parameters). Typically home purchase access barriers have the data requirements of:

- Dwelling price;

- Transaction costs, notably, stamp duty and legal costs;

- Deposit gap (the required amount of deposit to make up the difference between the house price and the eligible loan);

- Mortgage costs. The annual mortgage repayments that a typical first home purchaser will make is determined by the size of the deposit, e.g. 10, 20 or 25 per cent, the loan period, e.g. 25 years, and the purchase price of the dwelling. The formula used to obtain annual mortgage repayments (A), assuming a credit foncier mortgage (the typical Australian mortgage), is:

$$A = \frac{r}{1 - (1 + r)^{-t}} * P$$

where r = Interest rate, t = Length of loan and P = Principal.

For example, if a first-time home buyer household were to buy at the median house price (say, $300,000) and borrowed 90 per cent of the purchase price ($270,000) at an interest rate of 7 per cent and a repayment period of 25 years. The annual repayment is then the solution to:

$$A = \frac{.0700}{1 - (1 + .0700)^{-25}} * 270,000$$

In this case, the annual repayments are $23,169 and the purchaser is required to provide a deposit of $30,000.

The above formula is used for illustrative purposes. In practice, repayments are made more frequently than on an annual basis with the result that the principal is repaid more rapidly and total repayments less than given in this example. With a variable rate mortgage, repayments are adjusted as interest rates change. This example also ignores any transaction costs associated with the purchase.

Table C. 2 shows what this mortgage would represent as a percentage of household income for the income deciles of the 2001 Census indexed to 2004 for interest rates of 6, 7 and 8 per cent. This table serves to illustrate that purchase at these relatively low interest rates and a relatively low priced dwelling of $300,000 is non-affordable for

households with 2004 incomes below $85,800. Only those in above income decile 6 or 7 can afford to purchase, assuming they have a $30,000 deposit and sufficient additional resources to meet their transactions costs.

Table C. 2: Purchase affordability at different interest rates and income deciles

Decile grouping	Median house price	Household income $pa 2004	Total loan amount*	Annual repayment**			Mortgage as % of income		
				r=6%	r=7%	r=8%	r=6%	r=7%	r=8%
Decile 1	$300,000	$14,000	$270,000	$21,100	$23,200	$25,300	151%	166%	181%
Decile 2	$300,000	$20,300	$270,000	$21,100	$23,200	$25,300	104%	114%	125%
Decile 3	$300,000	$26,500	$270,000	$21,100	$23,200	$25,300	80%	88%	95%
Decile 4	$300,000	$34,800	$270,000	$21,100	$23,200	$25,300	61%	67%	73%
Decile 5	$300,000	$44,200	$270,000	$21,100	$23,200	$25,300	48%	52%	57%
Decile 6	$300,000	$54,600	$270,000	$21,100	$23,200	$25,300	39%	42%	46%
Decile 7	$300,000	$67,100	$270,000	$21,100	$23,200	$25,300	31%	35%	38%
Decile 8	$300,000	$85,800	$270,000	$21,100	$23,200	$25,300	25%	27%	29%
Decile 9	$300,000	$110,200	$270,000	$21,100	$23,200	$25,300	19%	21%	23%

*Assumes the mortgage will not cover more than 90% of the purchase price

**Assumes the loan will cover a period of 25 years

There are a number of sources of data for house prices that could be used to construct access affordability measures, but the sources are problematic. Indeed, the Reserve Bank has said the available house price data in Australia is 'hopeless'. This is because there is no one national set with a universally reliable collection method. Rather, there are a number, each with their own weaknesses and strengths. The major house price data sources are:

- ABS house price index which is based on settlement data from state Titles Offices;

- REIA based on data provided to Titles Offices or Valuer General or, in Victoria, sales from members of the REIA participating in the data collection process;

- CBA/HIA based on Commonwealth Bank housing loans data;

- Australian Property Monitors based on all reported sales, e.g. auctions, private sales;

- Valuer General (state Titles Office) records for each state and territory which provides data on all residential properties for which settlement has taken place.

The problem with these series derive from the selective nature of the samples, the non-universal nature of the data sets (e.g. REIA data is not for all estate agents, just those willing to provide data), or the lack of representativeness of the data (e.g. APM's dependence on auctions, which are not used by all sellers and are weighted to the higher end of the market and inner city locations). The ABS data has the problem that it is an index, not an absolute value, and therefore cannot be linked with income to produce an affordability measure. All of the national data sets have limited spatial coverage and therefore cannot reflect local housing market affordability problems.

With the exception of the ABS series, none attempts to adjust for change of composition, e.g. more houses versus flats sold in the quarter.

Each state has a Valuer General's department which collects property price data as part of legislative requirements to assess stamp duty on property transactions notified or, in some states, to assess local government rates. Median and mean prices for houses and flats are available for local government areas or other area categorisations, but jurisdictions vary in degree of public access and the price. Unit record files are also available in some jurisdictions and the data is available for houses and flats. Given that dwelling prices and affordability are so different across local housing markets, the VG's data is potentially a key resource for local areas affordability analysis.

Stamp duty is another potential barrier to ownership and should be included in access measures. This is not necessarily an easy process, particularly if there is to be any comparative analysis over time. This is because stamp duty rates change over time, so checks have to be made as to when the rates were changed, because rates vary between the States and because some jurisdictions have or had stamp duty exemptions for certain categories of first home buyers. Table C.3 shows the stamp duty for Victoria, and illustrates how affordability tables that incorporate stamp duty require a formula factoring in the stamp duty changes as house price values increase. Similarly, if there was a stamp duty exemption for, say, first home buyers purchasing homes to $200,000, this in principle should be factored in for the relevant years.

Table C. 3: Stamp duty, Victoria, 2005

2005 (Current)	
Not more than $20,000	1.4% of the dutiable value of the property
More than $20,000 but not more than $115,000	$280 plus 2.4% of the dutiable value in excess of $20,000
More than $115,000 but not more than $870,000	$2,560 plus 6% of the dutiable value in excess of $115,000
More than $870,000	5.5% of the dutiable value

The deposit gap is a product of the other factors in the affordability equation and can be an affordability measure in its own right, i.e. the greater the deposit gap between what a household can obtain by way of a loan and the price of a dwelling, the greater the barrier to ownership. The deposit gap is the upfront cash requirement that a typical first time purchaser needs to meet from their savings so that, with the mortgage, a dwelling is purchasable. Table C.4 from Wood et al. (2004) shows the effects of such measures, assuming that the first homebuyer must meet 10 per cent of the purchase price of a median priced dwelling and factoring in the stamp duty. The table reveals the importance of local area affordability analysis and how the national or even capital city data sets disguise considerable submarket affordability patterns.

Table C. 4: Deposit gap for median income earners purchasing median price dwelling in Melbourne LGAs, 1996-2003

LGA	1996 deposit gap	2003 deposit gap	2003 deposit gap as % of Vic annual median income
Melton	$8,500	$13,800	44
Wyndham	$10,000	$16,469	52
Cardinia	$10,270	$20,064	64
Casey	$11,800	$24,115	77
Hume	$11,440	$25,128	80
Greater Dandenong	$9,000	$28,140	89
Frankston	$9,015	$28,780	91
Brimbank	$10,000	$29,260	93
Yarra Ranges	$13,600	$32,460	103
Whittlesea	$14,120	$33,260	106
Mornington Peninsula	$11,800	$36,460	116
Knox	$14,600	$36,460	116
Maroondah	$14,160	$37,260	118
Maribyrnong	$9,535	$40,300	128
Darebin	$14,440	$40,860	130
Hobsons Bay	$14,981	$41,100	131
Banyule	$17,000	$43,660	139
Moreland	$14,440	$44,380	141
Kingston	$15,880	$45,260	144
Melbourne	$25,000	$47,340	150
Nillumbik	$21,200	$48,620	155
Moonee Valley	$19,320	$50,380	160
Whitehorse	$17,800	$50,420	160
Monash	$18,120	$51,660	164
Port Phillip	$23,800	$58,060	185
Glen Eira	$21,000	$58,140	185
Manningham	$24,040	$59,260	188
Yarra	$22,600	$60,940	194
Stonnington	$28,200	$65,260	207
Boroondara	$31,064	$82,380	262
Bayside	$33,160	$86,780	276