Positioning Paper

Baseline small area projections of the demand for housing assistance

authored by

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1   INTRODUCTION

In recent decades there has been a decline in home ownership as a proportion of total dwellings in Australia – one of the primary drivers of this decline is likely to be rising housing prices and corresponding falls in housing affordability (New South Wales Department of Housing 1999; Yates 2002). The trend towards renting rather than purchasing is particularly evident in the younger and ageing populations. If this trend is a reflection of a lifetime reduction in home ownership rather than a temporary deferral, there may be a substantial future impact for the rental sector in general, but more importantly, for low-income households and the underlying demand for housing assistance. The future demand for housing assistance is a key concern of housing policy. Projection of the overall demand for housing assistance is of course useful in terms of policy setting and planning. Of greater use however, are projections of the demand for housing assistance for small geographic areas – the subject of this research.

The two major forms of direct housing assistance are Commonwealth Rent Assistance (CRA) and public rental housing funded primarily by the Commonwealth State Housing Agreement (CSHA). In recent years, expenditure on CRA has overtaken expenditure provided by CSHA assistance (Productivity Commission 2003). This trend towards CRA, coupled with high numbers of households on public rental waiting lists and declining public rental stock, is likely to lead to an increase in the relative importance of CRA as a means of direct housing assistance to low-income households.

In related AHURI RMIT/NATSEM research on the regional impact of CRA (King and Melhuish 2003), a detailed small-area housing dataset is being produced using spatial microsimulation techniques. The small-area housing dataset will establish a detailed and up-to-date geographic dataset for the analysis of housing and housing policy issues – with initial emphasis on CRA. This current research will build on the CRA project by extending the small-area housing dataset and by adding a projection capability to the housing dataset.

There are two aims to this project:

1. To further develop AHURI's capacity for small-area housing modelling and projections. This research will add a projection capability to the detailed regional microsimulation model which is currently under development for AHURI as part of the CRA project. It will also add public rental housing to the model.

The CRA project and this current research are part of a broader program to develop a detailed and comprehensive Australian housing dataset with the capacity to simulate and assess the immediate and future impacts of possible changes in the socio-demographic, economic and policy environments.

2. To provide 'baseline' projections of the demand for housing assistance at the small-area level. These projections will be provided:

    –   for the short to medium term (to 2011);

    –   for small areas (Statistical Local Areas); and

    –   broken-down by household characteristics

The research question to be addressed by the baseline projections of the demand for housing assistance relates to the level of demand in the short to medium term; the likely 'hot spots' of demand; which client groups are likely to drive demand; and potential changes in the composition of the client groups and the type of housing required. The sensitivity of the results to alternative assumptions about the shape of the future and the risks related to these results will be addressed.

Section 2 of this paper provides some definitions to help clarify the scope and aims of the research. The major types of direct housing assistance are discussed in section 3 along with possible trends in housing tenure and the demand for housing assistance. Section 4 discusses the related CRA project and the methods and aims of the CRA project. It also touches on the addition of public rental housing to the regional housing dataset being constructed. The body of this current project is discussed in detail in section 5. The overall model design is described along with the projection modules to be included in the projection capability. The issues involved in identifying, describing and analysing the demand for housing assistance are also considered. The construction of baseline projections is covered in section 6 – including assumptions on future rental, supply of housing and socio-economic, economic and policy scenarios. Access to the research tool and future model development are discussed in the final two sections.

2 DEFINITION OF TERMS

Any discussion on social issues usually leads to some confusion and disagreement over the meaning and scope of the issue concerned. Some of this disagreement is likely to be due to the terms used in the discussion and different interpretations of these terms. The topic of this research – baseline small area projections of the demand for housing assistance – can be interpreted in a number of ways. What is meant by assistance; who is the relevant target group requiring assistance; and how should this assistance be measured or assessed? The following definitions are intended to clarify the interpretation of terms as they are used in this research and to assist in defining the topic of this research.

2.1 Demand for housing

One of the critical distinctions required in this research is the difference in meaning between *need* and *demand*. In many instances, demand can be seen as expressed need – that is, demand is that subset of need that can access a resource. In other circumstances, need and demand may be so entwined that for all-intents-and-purposes there is no practical difference.

Housing can be seen on many levels – as a basic means of shelter, as a means of accumulating wealth or as provision of an adequate lifestyle for a household. Because housing is such a fundamental need in society, it is likely that the *need* for shelter and the demand for *shelter* are practically the same. On the other hand, the need and demand for housing as a form of wealth creation or for lifestyle choice may be very different. The demand for investment properties, upgrading a home or moving for lifestyle reasons is interwoven with general economic conditions and personal circumstances. The distinction may be made that housing demand involves a decision or choice, where housing need does not.

The demand for housing in the context of this research is defined as the overall volume and type of housing that is required to house the population at a given point in time. The demand for housing will of course then depend on demographic and family structures, as well as choice in living arrangements. The demand for housing will therefore depend on some measure of household formation, based on the likely population structure and trends in living arrangements.

2.2 Need for housing assistance

Given the above distinction between need and demand it is likely that the need for housing assistance is – in some circumstances – going to be greater than the demand for housing assistance. It may be helpful here to introduce a broad measure of housing need.

The 'need for housing assistance' can mean different things to different people, can cover all housing tenures, and can reflect various dimensions of people's housing circumstances – such as, affordability and aspects of appropriateness. In this research, the need for housing assistance – confined only to the rental sector - is considered to be a separate but related issue to demand. In the application of the model, we will use the following definition of the need for housing assistance:

- people in the (public or private) rental sector with high housing costs relative to their incomes.

In broad terms, the need for housing assistance will be determined by a measure of housing affordability based on a measure of housing costs and income. One of the more difficult aspects of measuring need is the determination of current and future rent levels. The issue of housing costs – in particular prevailing rent levels - and income will be dealt with during model development.

2.3 Demand for housing assistance

Because it is the subject of this research, it is crucial that 'the demand for housing assistance' be clearly defined. In this research, the demand for housing assistance is seen as a subset of the need for housing assistance. The demand for housing assistance is a complex issue that needs to be considered in conjunction with the supply of assistance – in this research, the supply of rental assistance and of public rental housing.

Without pre-empting later discussions, any rental assistance scheme must be administered by eligibility and entitlement rules. As such, the demand for rental assistance will be determined by the number of people that currently satisfy these rules - that is, rental assistance is fundamentally demand-driven (although supply of rental assistance is moderated by the tightness of eligibility rules). Public rental housing, on the other hand, is supply driven - at least in the short-term - in that there is a fixed amount of stock and in fixed locations. Although the demand for public rental housing can be estimated by current waiting lists for public rental, the 'real' demand is likely to depend on the location and type of public rental properties available, the perceived supply and waiting time to be accommodated, and the availability of other forms of assistance – in particular, rental assistance.

In the application of the model, we will use the following definition of the demand for housing assistance:

- people in the (public or private) rental sector with high housing costs relative to their incomes that satisfy the current or assumed future eligibility and entitlement rules for rental assistance or public rental housing.

2.4 Baseline projections

By 'baseline' we mean projections under a limited number of scenarios of the future socio-demographic, economic and policy environment. These scenarios will be based on broad assumptions of the key drivers of the demand for housing assistance and will be designed to provide useful 'starting points' for housing policy development. The actual assumptions and scenarios will be developed in collaboration with relevant stakeholders during the development of the model.

3   HOUSING ASSISTANCE

3.1   Trends in housing tenure in Australia

There is a growing body of research that indicates that in recent decades there has been a reduction of home ownership in Australia, particularly in the younger age groups (Landt 1998; Percival 1998; Yates 1999; Donald et al. 2001; Yates 2002). The release of the 2001 ABS Census of Population and Housing shows that – in aggregate terms at least – the proportion of dwellings being purchased fell from 26.7% in 1991 to 25.5% in 1996 but then rose to 26.5% in 2001. Over the ten-year period from 1991 to 2001, the proportion of dwellings being purchased fell marginally by 0.2% (see Table 1). The proportion of fully owned dwellings on the other hand, rose from 40.4% in 1991 to 40.9% in 1996 and then fell to 39.8% in 2001 – a fall of 0.6% over the ten year period. Overall, the proportion of dwellings that were fully owned or being purchased fell slightly from 67.1% in 1991 to 66.4% in 1996 to 66.3% in 2001 – an overall fall of 0.8% between 1991 and 2001. It is likely, however, that this overall fall masked greater falls in age-specific propensities for home ownership, such as those for younger Australians.

Table 1: Tenure type by occupied private dwellings, Australian time series: 1991, 1996, 2001.

	1991		1996		2001	
Fully owned	2,362,000	*40.4%*	2,658,000	*40.92%*	2,811,000	*39.8%*
Being purchased	1,561,000	26.7%	1,656,000	25.5%	1,872,000	26.5%
Rented:						
State/Territory housing authority	329,000	5.6%	329,000	5.1%	317,000	4.5%
Other landlord type	1,180,000	20.2%	1,431,000	22.0%	1,519,000	21.5%
Not stated	51,000	0.9%	13,000	0.2%	22,000	0.3%
Total Rented	1,561,000	26.7%	1,774,000	27.3%	1,858,000	26.3%
Other tenure type	369,000	6.3%	409,000	6.3%	531,000	7.5%
Total occupied private dwellings	**5,853,000**		**6,496,000**		**7,072,000**	

Note: Some definitional changes occur across the series, refer to source for details.

Source: ABS, 2001 Census Community Profile Series, Table T19 Tenure Type and Landlord Type.

Whether this change in tenure is a temporary deferral of home purchase or '… a reduction in the lifetime achievement of home ownership' (Mudd et al. 2001) is yet to be seen. But it is clear that this reduction in home ownership is associated with rising house prices - particularly in larger cities - and declining housing affordability (New South Wales Department of Housing 1999; Yates 2002).

Along with falling home ownership in the younger age groups, the ageing of the Australian population will change the pattern of housing need over the coming decades (Donald et al. 2001). Many empty nesters, retirees and the aged will move from their traditional family homes and will require smaller dwellings in central locations that are accessible to services and facilities, or in 'sea change' locations out of the main cities. For many of these future retirees - particularly those that are renting - housing choice decisions will be determined fundamentally by housing affordability.

In general terms, it is likely that changing demographics and tenure choice will lead to an increase in the proportion of renters and an increase in the need for low cost housing and housing assistance. Some of this need for low cost housing may be met by an increased role of private sector investment in low cost housing (Berry 2002). But a substantial part of this increased need will have to be addressed by government rent assistance, social housing or other more innovative methods of assistance (Darcy and Randolph 1999).

The two major forms of direct housing assistance are Commonwealth Rent Assistance (CRA) - which is an income supplement paid to income support recipients - and public rental housing funded primarily by the Commonwealth State Housing Agreement (CSHA). Over the past decade, Commonwealth expenditure on CRA has overtaken expenditure on CSHA assistance (Productivity Commission 2003). Figure 1 shows the general trend of both CRA and CSHA assistance over the past decade.

Figure 1: Expenditure on Commonwealth Rent Assistance and on CSHA assistance, 1992-93 to 2001-02 (2001-02 dollars)
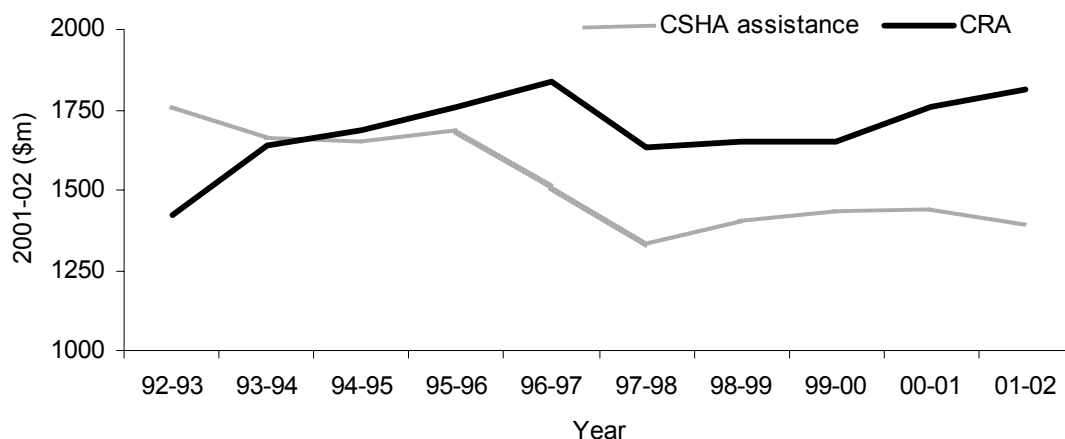
Data source: Productivity Commission 2003, Table 16A.74

In 2000-2001, there were approximately 360,000 households accommodated in public housing (Department of Family and Community Services 2003) and in 2001 there were approximately 220,000 households on public housing waiting lists (ACOSS 2002). In comparison, at 30 June 2002, there were almost a million (943 877 [1]) income units receiving CRA (Productivity Commission 2003). Referring back to Table 1, there has been a striking reduction in the proportion of State/Territory housing authority rentals to overall tenures from 5.6% in 1991 to 5.1% in 1996 and then to 4.5% in 2001. This further supports the observed trend in CSHA assistance – suggesting declining support for, and investment in, public housing in Australia.

Given recent tenure trends, high numbers of households on public housing waiting lists and the quite dramatic recent falls in the number of public housing properties, it is likely that the relative importance of CRA as a form of housing assistance will continue to increase in the coming years.

3.2 Commonwealth Rent Assistance

CRA is available to people who are in the private rental market and who have low-income. Eligibility for CRA is tied to receipt of an income support payment. For a more detailed discussion on CRA eligibility and entitlement rules see King and Melhuish (2003).

The CRA has uniform national provisions that govern entitlements despite regional variations in prevailing rent levels. Figure 2 shows the variation in average rent paid by CRA recipients and CRA entitlement at June 2002 in Australian capital cities. It is evident that average rents in Sydney are substantially higher than those in other capital cities – particularly cities such as Hobart, Adelaide and Perth.

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[1] This is the number of CRA recipients who were receiving payments through the Department of Family and Community Services. Some additional CRA recipients receive payments through the Department of Veterans' Affairs and the Department of Employment, Science and Technology.

Figure 2: Average rent paid and CRA entitlement: CRA recipients, Australian capital cities, June 2002 ($/fortnight)
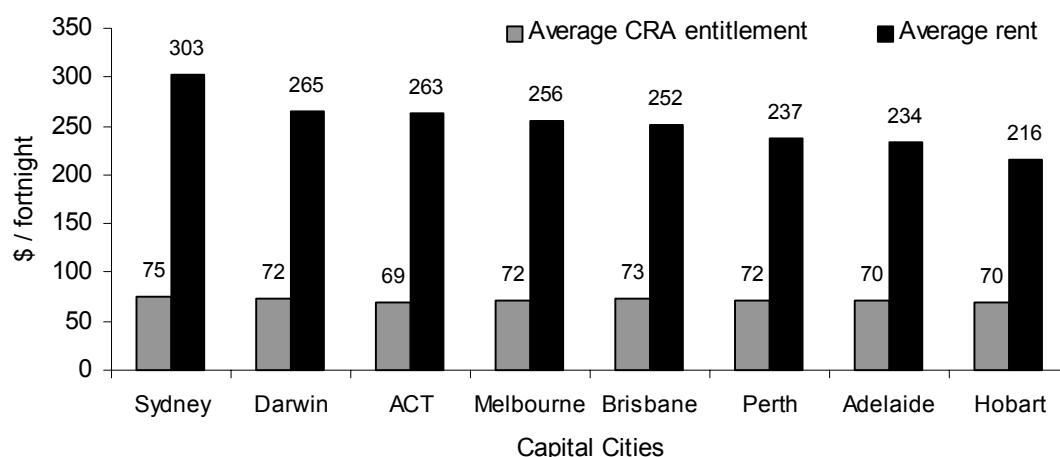
Data source: Productivity Commission 2003, Table 16A.56

Average CRA entitlements on the other hand, are relatively stable across all capital cities. This stability in CRA entitlements generally comes about because of the uniform national entitlement provisions that apply. In particular, CRA entitlement:

1. only covers 75% of rent paid above the rent threshold

2. is constrained to maximum rates of payment

3. maximum rates of payment apply at relatively low rent levels.

Current CRA entitlement provisions thus result in varied regional outcomes in terms of the extent to which CRA addresses the additional costs faced by income support recipients who are renting in different parts of the country. The Productivity Commission 'Report on Government Services' (2003) revealed that CRA has a major impact on housing affordability but is only weakly responsive to regional variations in the amounts of rent being paid.

The varied regional outcomes that result from current CRA provisions have led to calls for a regional dimension to be added to CRA payments (King 1995; Johnston 2002). This issue is being addressed by another AHURI/RMIT NATSEM project – 'The regional impact of Commonwealth Rent Assistance' (King and Melhuish 2003).

This work will form the basis of this current research and is discussed in detail later in this report.

3.3 Public rental housing

All states and mainland territories in Australia provide some type of public housing, generally as a form of housing assistance to low income people. The key eligibility requirement for public housing assistance is low income, though the current rules for eligibility can be complex and vary between states and territories (Burke and Hulse 2003). It is a commonly held view that over the past decade there has been an increase in the number of low income households in Australia and decreasing housing affordability in most Australian cities (Burke 2001; Donald et al. 2001; Hulse 2001). Recent strong housing price growth is likely to ensure that housing affordability will remain low some time into the future. This reduction in housing affordability and deepening divide in socio-economic means is likely to result in an increasing demand for housing assistance – both for public rental housing and for CRA.

As Table 1 shows however, state and territory housing authority rental housing has not only fallen as a proportion of total dwellings but the actual number of dwellings has reduced by 12,000 in the five year period between 1996 and 2001. The supply of public housing also needs to be considered in terms of trends in the location of supply. In areas of rising land value – generally those in the inner-suburban areas or near amenities and potential employment – housing authorities have tended to sell ageing stock under the pressure of market forces. Remaining stock is likely to be in areas of lesser economic demand, such as declining fringe and regional areas where employment prospects and social opportunities are less – an undesirable outcome in the broader social context. There is also the issue of the mix of the public rental stock in terms, for example, of dwelling size.

3.4 The demand for housing assistance

In line with our earlier definitions, the demand for housing assistance can be seen as a function of the need for housing assistance – that is, demand is in effect 'expressed need'. Traditional housing affordability measures compare a household's income with their housing costs to determine whether a household is in housing stress. If the increase in the number of low-income households and decreasing affordability suggested above is accepted, then housing stress and the need for housing assistance are also likely to be increasing. The demand for housing assistance, however, depends not only on the circumstances of the household, but critically on the level and types of housing assistance available and their eligibility rules.

CRA is a demand-driven system that responds to changes in eligibility and entitlement rules and to the circumstances of the household. Rent assistance payments are determined by a person's eligibility for income support, their living arrangements, rent paid, and family situation. Public housing on the other hand is a supply-driven system that depends on the level and location of public housing stock. Eligibility for public housing varies from jurisdiction to jurisdiction but is generally tied to income. Public housing stock is allocated to those in need – that is, those on low income, but is not generally responsive – at least in the short-term - to either changes in need or in demand.

4 THE REGIONAL HOUSING DATASET

4.1 Concurrent research

This research is part of a broad model development strategy currently being undertaken by the AHURI RMIT/NATSEM Research Centre. This model development was initiated by the project entitled 'Regional Impact of Rent Assistance' (the CRA Project). These two projects combined contribute to the development of AHURI's capacity for small-area housing modelling and projections. The CRA Project provides the foundation for the work covered in this project.

The CRA Project was conceived as the first step in a program to develop a comprehensive small-area housing modelling/projections capacity for AHURI. The modelling tool will be a spatial microsimulation model (see section 4.2) incorporating:

- detailed socio-demographic, economic, and housing characteristics of the population at the small-area level; and

- the capacity to run projections and simulations under alternative assumptions about the socio-demographic, economic, housing and policy environments.

Recognising the scale of this task, the adopted strategy has been for incremental development of the model with each step linked to a particular policy question. The CRA Project is developing the spatial microsimulation methodology that will produce the base data for the model. This involves using the techniques of spatial microsimulation to combine small-area 2001 Census data with detailed unit record data from the ABS Household Expenditure Survey (HES). The result is a very detailed dataset of population characteristics for each area of the country as at 2001. Adding NATSEM's established tax-transfer microsimulation model – STINMOD – (Lambert et al. 1994) then provides the basis for detailed analysis of the impact of possible changes in housing-related income support. When this capacity is in place, the distributional and budgetary impacts of changes to CRA payment rules can be assessed on a regional basis.

The next step in model development is to add the capacity to undertake *projections* at the small-area level. This involves projecting the scale and characteristics of both housing demand and housing supply, with this research covering the work required to project housing demand. One key reason for confining this research to the housing demand side stems from our incremental model development strategy. A second is the fact that this is an area where we can apply considerable leverage from other NATSEM research – and thereby secure a relatively quick advance in the model.

The second aim of this research – 'to provide baseline projections of the demand for housing assistance at the small-area level' – can be met once the demand-side projections capacity has been added to the basedata that is being created under the CRA Project. The immediate attention is on housing demand, though supply considerations will also be incorporated in a simple manner at this stage – in assumptions, for example, about the projected supply of public rental housing.

While this research is thus focused on just one part of further model development, and a related policy application, it is appreciated that AHURI may have other priorities for the course of model development.

4.2 Spatial microsimulation

To project the demand for housing assistance for small areas requires housing data with detailed individual, family and household characteristics with a high degree of geographic detail. The ABS Census of Population and Housing provides data at a fine level of geographic detail but the individual, family and household characteristics available in standard Census products are limited both in classification – such as grouped income and rental data – and in the degree of cross-classification available in standard tables. To assess housing affordability and the need and potential demand for housing assistance requires individual, family and household characteristics as well as specific details of income and housing costs. The cross-classified data available from the Basic Community Profile (BCP) and the Expanded Community Profile (XCP) from the Census can provide a broad, albeit average, measure of housing affordability – and thereby potential demand for housing assistance. It is also possible to purchase customised tables from the ABS that could provide multiple socio-demographic as well as individual, family and household characteristics, but they would still be limited because of the ranged data, the confidentialisation processes adopted by the ABS to protect privacy and the cost of these tables.

A third type of data that could inform on housing assistance issues are administrative data collected by agencies such as public housing authorities, Centrelink, and financial institutions. These data can contain very good individual, family or household information and may have very detailed geographic locators, but unfortunately these data are generally collected for particular administrative functions, for specific segments of the population and access for public research can be difficult.

The challenge then, is to combine the strengths of the ABS Census, the ABS HES and any relevant and available administrative data, to produce a dataset that has sufficient socio-demographic characteristics and is at sufficient geographic detail to provide the base population data for projecting the demand for housing assistance.

Spatial microsimulation is a term used to describe those techniques that create estimates of unit record data for small geographic areas based on data for larger areas (Melhuish et al. 2002). They work by combining individual or household microdata, currently available only for large spatial areas (such as the unit record data from the ABS HES), with spatially disaggregated data (such as the small-area data from the Census) to create unit record data estimates for small areas. There are two possible methods by which this can be achieved - 'synthetic reconstruction' or 'reweighting' (Williamson et al. 1998).

The synthetic reconstruction approach requires the creation of a set of synthetic individuals or households whose characteristics match aggregate characteristics for the small area, such as those in the Census XCP tables. The process usually involves imputing characteristics based on the distributions within the constraining tables, building the individual or household profile in a sequential manner.

Reweighting is achieved by altering the weights for each individual or household in a survey sample to reflect the specific characteristics of the population in a particular area. As national sample surveys are based on a sample of the population, and typically a sample which is stratified and has some pattern of non-response, each individual or household within the survey needs to be weighted to represent the total number of that type of individual or household within the population. The survey sample is thus being weighted to reflect the population characteristics of the whole country. In a similar manner, the same sample can be reweighted so it represents the population within a small area.

The reweighting method can be applied in one of two ways. One way is to select from the unit record dataset a particular set of individual or household records that, when viewed together, best fit the aggregate characteristics of the small area. For example, if a small area included 300 households, then 300 household records would be selected. Effectively, these 300 households are all given a weight of '1' for this area, and all other records in the sample are given a weight of '0'. Alternatively, all households within the sample can be given a small fractional weight so that the sum of all weights equals the population in the small area and the sum of the fractional individuals or households best matches the characteristic profile of the area. The first of these two approaches to reweighting is more intuitively appealing, though the second offers the prospect of a better match with the aggregate profile of the area.

Spatial microsimulation is a new technique that is an emerging research focus at NATSEM. The related research on the regional impact of Commonwealth Rent Assistance involves the application of spatial microsimulation techniques to create a detailed regional housing dataset.

The spatial microsimulation approach applied in the CRA project, and thus for this project too, uses fractional weights derived for all records in the HES unit record dataset.

Detailed base dataset

This research builds directly on the detailed regional dataset that is being constructed as part of the current AHURI research project 'Regional Impact of Rent Assistance'. That dataset will comprise a unit record dataset providing detailed socio-economic and housing characteristics for individuals, income units and households for each of the 1353 Statistical Local Areas across the country. This dataset will have been produced using spatial microsimulation techniques to combine:

- the small area data from the 2001 Census

- the detailed population characteristics from the ABS 1998-99 Household Expenditure Survey Confidentialised Unit Record File

- the detailed estimation of income support entitlements – including Commonwealth Rent Assistance – provided by STINMOD (NATSEM's established tax-transfer model)

- benchmark administrative data from Centrelink and/or the Department of Family and Community Services.

This very detailed representation of the Australian population in 2001 will provide the base data for the generation of projections in this project.

4.3 The addition of public rental housing

The supply of public housing is an important pillar in overall direct housing assistance. The trend in direct housing assistance however, appears to be toward CRA with the expenditure on CRA exceeding that of CSHA assistance and the number of households accommodated in public housing almost one-third of the number of income units receiving rent assistance (see section 3).

The supply of public housing is, as previously discussed, policy driven. For this reason, it is difficult to forecast future stock – either in number, in type of dwelling and, importantly for this work, by location. There also appears to be a move towards private development of the more traditional public housing estates, with any replacement of public housing being in mixed locations to provide greater choice and to improve the social and economic opportunities for public housing tenants. This trend, along with the varied and complex nature of public housing tenants, further complicates the forecasting of public housing supply and of demand. This should not be seen as a major limitation to this research, however. Although forecasting public housing supply

is difficult, it is still possible to make plausible assumptions and projections about future public housing supply.

Over the past decade, the number of new applicants accommodated in public housing has generally fallen in all states and territories (Burke and Hulse 2003) and it is probable that most people in need of housing assistance over coming years will rely on CRA. Furthermore, as the stock of public housing is policy driven, it can only be determined by assumptions about supply. The assumption of public housing supply will be incorporated in the model along with other supply-side assumptions. These supply-side assumptions are discussed further below in the context of the limited scenario approach to be used in generating the 'baseline' projections.

An elaboration of the base dataset that will be undertaken for this research will be the addition of market rent data for public renters. This information will be imputed with reference to dwelling characteristics, location rents, data from the ABS Fiscal Incidence Study, and publicly available administrative data from the State/Territory housing authorities. Any necessary benchmarking of public rental numbers against administrative data will also be undertaken. Market rent data is required to determine our measure of the need for housing and will allow a more complete picture of the fiscal incidence of rental housing assistance.

5 PROJECTING THE DEMAND FOR HOUSING ASSISTANCE

5.1 The overall model design

Model structure

The broad model design provides for the following key elements:

1. a detailed regional housing base dataset

2. simulation modules to cover eligibility and entitlements to CRA assistance

3. addition of public rental housing

4. projection of population characteristics (including housing demand)

5. projection of dwelling characteristics (housing supply).
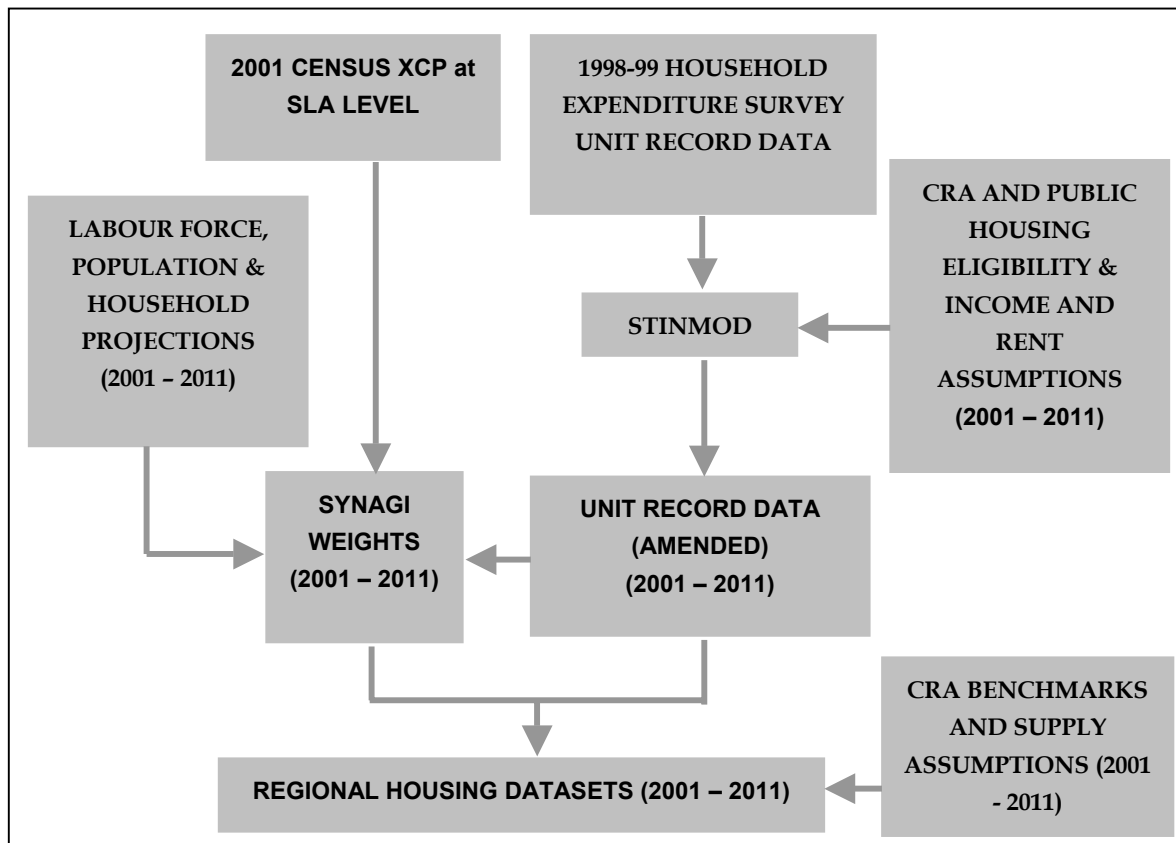
Upon completion of the CRA Project, elements 1 and 2 will be in place. This research is to add the third and forth elements to the broader model development. Possible future research – including projecting housing supply – is discussed at the end of this paper.

Figure 3 illustrates the overall design of the model incorporating elements 1 through 4. The estimates for the regional housing dataset in 2001 and 2002 will incorporate CRA and public housing benchmarks to calibrate the model to known levels of assistance. For later years, the model estimates will be benchmarked to the best available projections data. NATSEM's established microsimulation model, STINMOD, will be used to identify persons and households that are eligible for CRA and/or public housing.

There are generally three points of interaction with the model:

1. changes to CRA and public housing eligibility and entitlement assumptions that affect the base population

2. changes in the future supply assumptions that can affect the levels of public housing, the supply of low-cost private rental properties and home-ownership rates

3. changes to the broader exogenous environment – that is, labour market factors, demographic structures and household formation.

Figure 3: Projecting housing demand – overall model design

Our general approach

Projecting future housing circumstances can rapidly become a very complex exercise with the risk that research output would forever retreat beyond the horizon. Our experience with this type of modelling, however, shows that starting with a relatively simple and transparent model can produce useful and powerful results, while also demonstrating the capacity for subsequent elaboration in aspects of particular interest.

This is the approach followed in this program of research. The model to be built to generate the projections will incorporate key drivers of the demand for housing assistance, while making a number of simplifying assumptions. These assumptions relate particularly to the definition of the need for housing assistance (see below) and the treatment of the supply side of the equation. While not explicitly modelling housing supply, key characteristics are incorporated in the model projections through exogenous (and variable) assumptions about home-ownership rates, rent levels, and the supply of public rental housing.

The generation of a set of 'baseline' projections, while also providing the capacity to vary the scenarios and assumptions, is also in line with this approach. The baseline projections will be generated using a limited number of scenarios of the future socio-demographic, economic and policy environment. This set of projections, while of interest in its own right, can then provide the starting point around which the modelling capacity can subsequently be used for further sensitivity analysis and risk assessment under alternative scenarios and assumptions.

Small area projections

The methodology being adopted in this research is an extension to the related work on the regional impact of rent assistance. In that work, the spatial microsimulation technique that underpins the small area household estimations is constructed at the Statistical Local Area level. The SLA was chosen as the base unit in the CRA research

as it is an appropriate size for policy analysis and has the added advantage of being the unit on which the Expanded Community Profile is available – one of the key base datasets in the microsimulation model. The SLA is also the smallest spatial unit at which both ABS population and household projections are available (projection data are considered further below). SLAs can also be aggregated to Local Government Areas – a practical unit for planning purposes.

Short to medium term projections

The term for the projection for housing assistance is limited, on the one hand, by the availability of the base datasets that underlie the model – in this case, by demographic, household and labour force projections. This research will use ABS projections and the ANU projections for these data requirements because of their consistency, national coverage and availability – discussed further below. The current ABS population and household projections at the SLA level extend to 2021, and the ABS labour force projections to 2016. The ANU medium term projections extend to 2011 and long-term projections to 2031 – although these long-term projections are likely to be indicative only (McDonald 2003). This provides some flexibility in the term for housing assistance projections. A second limitation on the term of the projections stems from the fact that uncertainty increases with the lengthening time horizon. Ten-year projections – from 2001 - seem practical given the terms of the underlying projections, sensible in terms of potential reliability, as well as useful for planning purposes.

5.2 Model development

The model development steps covered by this project comprise two elements:

1. addition of public housing to the detailed base dataset (previously discussed)

2. housing demand projection modules.

Housing demand projection modules

The design of the projection modules rests on an understanding of those factors that may affect the demand for housing assistance. The key drivers to be incorporated in these projections will include the assumed future environment in terms of:

- demographic factors (age, sex, family structure)
- household formation
- home-ownership rates
- labour market activity
- private incomes
- income support entitlements
- rent levels.

These factors will be incorporated in the model using the standard microsimulation techniques of reweighting, uprating, imputation and benchmarking. As far as possible, these model inputs will be specified at the small area level.

These projection modules will be incorporated in the model in a flexible manner to allow analysis of the impact on housing of alternative possible future environments. For example, what are the implications of different future regional patterns of unemployment, or of growth in private rentals?

Upon completion of these steps, the model will have the capacity to be used to analyse the characteristics of future housing demand across the whole housing system, under various scenarios. The particular model application in this research, however, focuses on just one segment of this demand – low-income households in the rental sectors.

5.3 Small-area population projections

One of the key benchmark datasets to be used in the projection of the demand for housing assistance will be projections of the population by age and sex. The ABS and the state and territory governments are the major producers of small area population projections.

ABS

The ABS produces small area population projections at various small area levels including the Statistical Local Area. In the main, the cohort-component method is used for these projections – a method in which the base population - the Estimated Resident Population - is projected forward annually by calculating the effect of births, deaths and migration within each age-sex group according to the specified fertility, mortality and migration assumptions (Australian Bureau of Statistics 1999).

SLA population projections are constrained to sum to the capital city and balance of state/territory projected populations for each year. The projections seek to take account of state and local government planning decisions that are known at the time the projections were derived but the ABS does not have the level of knowledge that state/territory governments have regarding future land use and availability. There are generally three series of population projections produced for states and territories, each using a different combination of assumptions of future levels of births, deaths and migration to illustrate the possible size, structure and distribution of the population.

The latest available SLA population projections are based on 1999 Estimated Resident Populations and extend to 2021. Updated projections are expected to be released by the ABS in 2004.

State and territory government population projections

All states and territories undertake their own population projections. Although there is no consistent method used to produce state/territory projections, they all generally use a combination of a cohort component model - with variants of births, deaths and migration assumptions - and a distribution approach - based on local knowledge about land availability and likely development - to produce age by sex projections for Statistical Divisions, Local Government Areas and Statistical Local Areas. Projections are generally available for several series for Statistical Divisions based on low, medium and high assumptions for births, deaths and migration but only on a single series for smaller areas. The periods for which projections are available vary between states/territories and for different geographic regions. For the purposes of this research, projections would be required for the short to medium term (5 to 10 years). At the time of writing, the available ACT small area projections only extend to 2010 and the currently available South Australian projections for SLAs are based on the 1991 Census – neither of which would satisfy the requirements of this research.

Appropriateness of population projections

Because the states/territories incorporate local knowledge in their projections, small area distributions may be more reliable that those of the ABS. The major issue with state/territory projections, however, is the inconsistency of assumptions relating to interstate and overseas migration. These inconsistent migration assumptions result in national projections being inconsistent.

The main advantages in using the ABS projections rather than state/territory projections are:

• the projections method is consistent across Australia

• the projections are available and updated regularly

• interstate and overseas migration assumptions are consistent with national totals.

On balance it would appear that, where projections are required for the whole of Australia, the ABS provides a more practical set of projections. Any decision on which population projections to use would also need to consider their consistency with the ANU projections of households. The appropriate source of population projections will be determined during the course of the research.

5.4 Labour market forecasts and projections

One of the drivers of the need for housing assistance is low income - and low income is strongly related to labour force status. A key eligibility criterion for CRA is the receipt of an income support payment and, again, income support is strongly related to low income and labour force status. Labour market forecasts can provide valuable information regarding future levels of full-time and part-time labour force participation and may provide an estimate of possible unemployment in the short-term (although unemployment forecasts may be less reliable).

ABS national projections

National projections of the total labour force and labour force participation rates by age and sex are produced by the ABS. The projections produced by the ABS show the outcome for the labour force of extrapolating historic trends in labour force participation rates into the future, and applying them to projections of the population.

The most recent published data are based on results from the Labour Force Survey for the period 1979 to 1998. Labour force and labour force participation rates are provided by age and sex for each year in the period 1999-2016. Projections of full-time/part-time participation rates are also available. The ABS projections only cover total labour force participation and make no distinction between employment and unemployment rates or numbers. Projections are released on an irregular basis, with the latest set of projections issued in 1999. The ABS, however, does not produce labour force projections at a regional level.

Other Commonwealth agencies

The Commonwealth Treasury produces and publishes forecasts of employment, unemployment and the labour force participation rate for Australia for one year ahead as part of the budget process. The Retirement Income Modelling Unit within Treasury produces detailed labour market projections at the national level for a five-year horizon. They use the same methods as the ABS but their projections are not publicly available at the current time. Treasury does not produce regional estimates.

The Department of Employment and Workplace Relations (DEWR) does not produce any labour market projections but it does produce current statistics on employment, unemployment, the unemployment rate and the participation rate by ABS labour force region. The data are also presented by State/Territory and metropolitan and non-metropolitan areas. The estimates are three monthly averages derived from the Australian Bureau of Statistics Monthly Labour Force Survey.

DEWR also produces small area labour market estimates on a quarterly basis. These estimates are for the current number of unemployed persons and unemployment rates for the 1353 Statistical Local Areas across Australia. It also provides estimates of the main labour market aggregates for the 19 DEWR labour market regions. These estimates are based on Centrelink data for people in receipt of Newstart or Youth Training Allowance and ABS Labour Force Survey and Census data.

Other potential sources

A number of state treasuries use labour market projections at a state level. These projections are produced either in-house or by economic consulting firms. In general, the states do not produce or use regional labour force projections on a regular basis.

A number of economic consulting firms produce and sell state level employment projections on a regular basis but regional projections are only produced on a consultancy basis.

Appropriateness of labour force projections

Labour market projections at the small area level are not produced routinely by any government or private organisation. The option for this research is to generate labour market scenarios that are guided by the partial data available. For example, the ABS national labour force participation projections along with the ABS labour force survey and ABS population projections can be used to produce several scenarios of possible future labour force distribution and characteristics. These scenarios could then form part of the assumptions in the baseline projections.

5.5 Projection of households and dwellings

One of the key requirements of projecting the demand for housing assistance is projections of the likely formation of households for small areas. Projections of households rely not only on the future demographic characteristics of the population but also on trends, such as levels of partnering, family formation and dissolution, and ageing.

Indicative Planning Council for the Housing Industry

The Indicative Planning Council for the Housing Industry (IPC) previously produced household projections based on the headship rate – a method that relied on the 'head of household' being clearly defined in the Census. When the ABS ceased using the definition of head of household, the headship rate method became unreliable. Since the demise of the IPC in the late 1990s, no single agency has produced housing projections for Australia on a regular or consistent basis.

ABS projections

The ABS has produced several series of the projected number and type of households, household size, the number and type of families and living arrangements by State and Capital City / balance of state for 1996 to 2021. These projections are based on assumptions about changing living arrangements of the population. The ABS household and family projections are irregular - last produced in 1999. The sources of data for these projections are the Census of Population and Housing, 1986, 1991 and 1996, the Estimated Resident Population (ERP) for June 1996 and population projections (Australian Bureau of Statistics 1999).

The Commonwealth Department of Health and Aged Care commissioned the ABS to produce Household and Family Projections by SLA for the period 1999-2019 according to assumptions agreed to by the Commonwealth Department of Health and Aged Care. The SLA boundaries are those that existed at the 1996 Census of Population and Housing. These projections are publicly available (Australian Bureau of Statistics 2001).

ANU projections

The Australian National University has recently undertaken research on behalf of AHURI which examines the future demand for housing in Australia using new methods of projecting households and dwellings (McDonald 2003). The method used was first developed by McDonald and Kippen (1998) for the Victorian Department of Infrastructure but was subsequently adopted by the ABS to produce the 1999 Household and Family Projections, Australia, referred to above.

The main advance in the recent ANU projections is the use of 'transition probabilities' rather than projections of age-specific propensities to determine which household classification type a person was likely to belong (McDonald 2003). The transition probability approach takes into account transitional changes that have already occurred to an age cohort rather than applying a static propensity to each age cohort.

There are 71 regions defined for the ANU projections, all comprising aggregates of SLAs based on 1996 Census geography. Regional projections extend to 2011 and state/territory level projections extend to 2031.

The ANU projections project all individuals (not just household heads) according to their household classification type (HCT) (McDonald 2003). Household projections by type are obtained by collapsing individuals into households. The individual HCT categories used in the ANU projections are collapsed into the following household types:

1. Couples with co-resident children

2. One-parent families

3. Couples with no co-resident children

4. Lone persons

5. Group households.

These household types are likely to be consistent with both ABS classifications and classifications used in the detailed regional housing dataset being constructed in the CRA Project.

States and territories

A number of the states and territories produce household projections as part of their small area population projections. Similar to the state/territory population projections, there are a variety of methods adopted to produce these household projections. As household projections are based on demographic projections, the household projections for small areas are generally limited to the term of the population projections and by their currency and availability.

Appropriateness of household projections

Local knowledge incorporated in the underlying small-area demographic projections are likely to make the state/territory projections more accurate than ABS or ANU projections. However, given the issues relating to the use of the state/territory population projections raised above, state/territory household projections may be inappropriate for this research.

Although the ABS household projections are based on 1996 geography, they are consistent across Australia and are available for the period required. The ABS household projections produced for the Department of Health and Aged Care, are available at SLA level by living arrangement, family and household types.

The ANU projections have been produced on a regional basis but not for SLAs. However, the improved method used by the ANU is likely to produce results that are more reliable than those produced by the ABS. For this reason, it may be preferable to use the ANU household projections in this research. The most appropriate projections for the current model development will be determined during the course of this research.

5.6 Identifying the demand for housing assistance

There are two steps in identifying the demand for housing assistance as defined in this research:

1. Identify people living in the rental sector

Supply-side considerations would be of obvious importance in defining this population. In the absence of a fully-fledged supply-side to the model at this stage, we will be relying on approximating assumptions about supply – including supply of public housing, and supply of low-cost housing (that is, rent levels) and home-ownership rates.

2. Identify the subset of people living in the rental sector with high housing costs relative to their incomes

The identification of the demand for housing assistance will be made on the basis of circumstances in the absence of assistance (that is, either public rental rebates or CRA). A range of alternative measures will be used to define this part of the demand for housing assistance. These could include public rental income thresholds, CRA eligibility, and rent-to-income measures.

The identification of the demand for housing assistance will be conducted for each small area and for each year in the projection. It is proposed to conduct the analysis at the Statistical Local Area level (there are 1353 SLA's across Australia).

5.7 Describing the projected demand for housing assistance

The identified demand for housing assistance can be presented at a detailed level in terms, for example, of:

- individuals, income units and households
- characteristics such as age, sex, household or unit composition, income source, labour force status
- the alternative financial criteria used to define the need for housing assistance
- geographic areas (SLA's or aggregations to larger areas).

The appropriate approach to describing and presenting the demand for housing assistance will be determined during the course of the research.

5.8 Analysing the projected demand for housing assistance

The identification of the demand for housing assistance abstracts from different tenures within the rental sector (the need for assistance is calculated, for example, with respect to market rents of public renters). At this point, rental tenure and the form of assistance can be brought back into the picture.

The picture of the changing level and pattern of the demand for housing assistance can be held up against the possible policy response. For example, how much can be addressed through the existing public rental stock, how much through CRA and what are the implications for these forms of assistance? What if the size and structure (household type and location) of the public rental stock changes?

Note that a single distinction will be made here between public and private rental. The required data to reliably distinguish the small community housing sector does not appear to be readily available. Instead, it is expected that community housing will be included with public rental.

5.9 Baseline scenario specifications

The other area of analysis concerns the variation in outcomes under alternative future environments. For each of the projection drivers listed in section 3.2, there is of course a wide range of possible profiles over the next 10 years. It is in acknowledgement of this that the research will provide three baseline projections to cover a range of possible outcomes. (The project deliverables provide the capacity to explore outcomes under further alternative scenarios in future work.)

Specifying the scenarios for the baseline projections will involve a good deal of work assessing relevant material. Under socio-demographic factors, for example, further consideration would be given to using the different series of ABS projections, using state/territory projections and of potentially using the household projections produced by the ANU AHURI Research Centre (McDonald 2003). The assumed course of future rent levels will also be particularly important. These could be specified, for example, to follow a certain real growth rate with possibly different growth rates for different dwelling types and areas.

In determining scenarios of the future environment, selecting realistic and useful assumptions is a matter of analysing trends and prospects in the underlying drivers, considering the consistency of assumptions, and a good deal of judgement. Accordingly, a valuable step in this part of the work will be to ascertain potential users' views of the most useful specification of the baseline scenarios.

6 BASELINE PROJECTIONS

6.1 Small area housing modelling and projections

This project is seen as an essential step on the path towards creating a modelling capacity for AHURI that can be used to answer questions about the small-area distributional impact of housing assistance and housing futures. It builds directly on the initial step being taken to create a detailed 2001 housing dataset under the current CRA Project.

Since the mid 1980s, the availability of detailed unit record datasets in combination with microsimulation techniques has revolutionised the capabilities for distributional and budget analysis of *national* policy impacts in areas such as income support, taxation, health and housing assistance. There has been a quantum shift in the quality of analysis possible and, thereby, in the information available to decision-makers. Spatial microsimulation promises the same for policy analysis at the regional level.

The overall modelling design – for which this project would provide an important part – has clear relevance for policy evaluation, analysis and issue identification over a range of housing issues for both the public and private sectors. This is best illustrated with some examples of possible applications of the model.

1. *Analysis of regional housing patterns* – At a first level, using the detailed information on housing and the population, the regional dataset could be used to provide a range of information for analysis and/or mapping. This could cover, for example,

   - housing affordability characteristics for small areas – broken down by characteristics such as tenure or family type;

   - the extent to which the housing stock in small areas is affordable to households with differing family characteristics; and

   - the relationship between housing type, family characteristics and location.

2. *Analysis of the regional distributional impact of policy alternatives* – While the above issues could be examined using just the detailed regional dataset (i.e. the 2001 base dataset which is being created under the CRA Project), a whole range of other issues can be examined by constructing a further microsimulation model on top of the base dataset. This can then be used, for example, for fine-level analysis of the regional distributional impacts of policy changes (such as the analysis of CRA proposed in the CRA Project, or public rental policies) – as well as the overall budgetary implications.

3. *Projections* – The regional dataset and the incorporated microsimulation updating techniques provide a natural basis for small area housing projections – projections of housing demand and supply. In particular, the level of detail in the model will allow projections which differentiate characteristics of households and dwellings. The current research includes an example of this type of application.

4. *Locating housing debates within wider public policy debates* – Another important ramification of the overall model design is that it explicitly treats housing issues within the broader socio-demographic, economic and policy environment. This will allow analysis of housing policy and developments to be located within wider public policy debates, such as those over tax and transfer policy, labour market developments, and population movement.

Projecting the detailed characteristics of populations at a small area level is currently at the frontiers of knowledge. NATSEM is undertaking model projections of customers for up to five years at the postcode level for Centrelink, currently using ABS population projections by postcode allied with its new regional microsimulation (SYNAGI) modelling techniques. It is also modelling the aged care and health needs of older Australians through projects with other clients, and is continuing current work projecting the future incomes and wealth of Australians. Outputs from these projects will in the future be able to be linked to the AHURI model. Ultimately, therefore, it is likely that the model will be able to explore questions associated with housing assistance linkages (such as the linking of aged care and housing assistance) and many questions on ageing and housing. Similarly, the model will be able to assist in modelling the future level and cost of health and aged support needs associated with current and projected declining rates of home ownership.

While the range of potential future extensions to the model and applications is vast, this research is restricted to adding a capacity to project housing demand and incorporate further detail on public rental housing to those parts of the model developed under the current CRA Project. Experience has shown that it is better to break large projects into manageable components. This also minimises the risk for AHURI, as AHURI will be able to assess the model in 2004 prior to considering any further extensions to the model.

6.2 Baseline small area projections of the demand for housing assistance

The second aim of this research – to provided baseline projections of the demand for housing assistance for small areas - is fundamental to Australian housing assistance policy. To enable government and non-government agencies involved in the provision of housing assistance to adequately plan for the future needs of Australians, and to respond to emerging trends, some estimate of the likely future demand for housing assistance is required.

This future demand will depend on the socio-economic characteristics of the population, and on the future structure of the housing market. While broad estimates of future demand for housing assistance are useful, the real benefit for planning purposes lies in estimates of the likely geographic distribution of this demand, particularly for small areas. This research aims to provide a set of projections and a modelling tool that will help fill this information gap.

As such, the project is clearly located in the 'future environment for housing policy' research area of the 'Housing Futures' theme in the AHURI Research Agenda 2003. The proposed research complements the recent ANU AHURI project in this area on 'Medium and long term projections of housing needs in Australia' (McDonald 2003). Indeed, as previously discussed, it is envisaged that some output from the ANU project will provide important input for this research. The research, however, goes beyond projections of household numbers and type through incorporating economic and policy aspects in the focus on housing assistance – and also includes a finer level of geographic and household detail.

By 2004, it is anticipated that AHURI will have a model that simulates the current and projected potential demand for both public and private rental housing assistance for individual households at a detailed small area level, and under alternative scenarios. These scenarios can, for example, include different assumptions about the future supply of public rental housing (in terms of numbers, location and type of housing). The model will be able to play a key role in government efforts to identify the most efficient and effective ways of achieving desirable housing outcomes – examining the distributional and fiscal implications of alternative policy mixes and settings.

6.3 Rental assumptions

As in all projections, the outcomes of the projections for housing assistance will rely on the assumptions that underlie the model. It is common practice in most projections to have a number of scenarios that use a set of assumptions for the key drivers and determinants of the projections. In order to derive a set of plausible assumptions, it is generally necessary to elicit expert opinion from various interested parties. This approach will be adopted in this research to derive assumptions for the baseline projections.

Private rents

The regional housing dataset will include data on regional rents – with the overall distribution of rents in each area matching that revealed by the 2001 Census and the finer distribution of rents then being a result of the spatial microsimulation. The dataset will thus include information on rents for all private renters in the area, not just for CRA recipients. These rent data will be used to describe the regional pattern of variation in rents against which the affordability outcomes will be held up. This regional pattern of rents will also be used as the first step in defining regions for the CRA variant with regional variation in payment specifications.

The regional pattern in rents will be a useful starting point to develop assumptions about future private levels of rent. Rent levels could be assumed to increase by a constant rate across Australia, but the model will incorporate the capacity for variation in regional rates of rental growth.

Public housing rents

Public housing rents are capped to a percentage of the household's income. One measure of the 'true' value of public rental housing is to estimate the market rental rate – a measure of the long-term market rent that could be commanded based on the value of the property. In this research, it is assumed that a household would *potentially* demand public rental housing if the public rental rate - based on the household's income - is less than the market rental rate, and the rent currently being paid by the household is greater than the public rent that would be paid based on the rental cap. Market rents for public rental can be projected by maintaining the relativities between private and public market rents by dwelling type and location.

6.4 Supply considerations

As previously discussed, this research project is confined to the demand for housing and housing assistance. The addition of the supply of both housing and housing assistance is intended to be the subject of future development of the broader model.

In this research, the supply-side of the model will be determined by assumptions about the supply of housing in terms of quantity, type and tenure (home-ownership, private and public rental) by small area.

The provision of public rental housing can form part of the scenarios in the baseline projections. These assumptions are likely to be based on recent trends in the provision of public housing.

The regional impact of CRA is the topic of the related research that underpins this current research. The CRA project includes the development of a tool for the analysis of changes to CRA eligibility and entitlement rules. This capacity will allow the *supply* of CRA to be varied depending on views of likely future rental assistance.

6.5 Sensitivity and risks

The modelling being developed by this and related research is obviously associated with a high level of risk – both in terms of the construction of the model and the outcomes that are derived from model inputs and assumptions. There are several key points within the modelling process that warrant specific mention.

The detailed regional housing dataset being constructed in the CRA project and extended in this project relies on the estimation of reliable and realistic individuals and households for small areas. These small area estimates are fundamental to the outcomes of the projection element of the model. In addition, detailed income and family structure is required to determine the need and eligibility for housing assistance.

The projection module itself relies on population, household and labour market projections to generate the demand for housing and the likely future need for housing assistance.

The baseline projections for demand will then rely on the assumptions relating to home-ownership rates, levels of income and rent levels.

The scenarios within the baseline projections will allow a level of sensitivity to be measured in terms of the various assumptions included in each scenario. A better test of sensitivity would result from making marginal adjustments to individual inputs and assumptions while keeping other constraints constant. The level of sensitivity testing required for this research will be assessed during model development.

7 ACCESS TO THE RESEARCH TOOL

The main findings from the research will be provided in the standard AHURI research reports. In line with the nature of the project, and particularly the research design to produce a tool for AHURI analysis, other important deliverables will be produced. The specification of these further deliverables is based on the following considerations:

- The intellectual property in the underlying modelling techniques used to link the small-area census data and national sample survey data is held by NATSEM

- The ABS confidentiality and licensing terms preclude the provision of detailed data (e.g. unit record or household level data) to third parties

- The capacity to extend the dataset and use it in modelling applications will require a level of specific technical expertise which is unlikely to be found outside NATSEM.

Accordingly, there will be three further deliverables beyond the standard AHURI reports:

1. A reduced-detail output dataset for the baseline scenarios. The finest level of detail provided in the Reduced-Detail Output Datasets would be summary output – such as cell averages or frequency distributions of characteristics – for an area such as Statistical Local Areas (SLAs). The type of variables that would be included in this dataset would be items such as the number of renters by tenure, household type and a measure of income or affordability – for each scenario, area and year of the projection.

2. A detailed output dataset for the baseline scenarios, which will be held by NATSEM, but available for collaborative use with other AHURI stakeholders; and

3. The projections model, which will be located at NATSEM and available for collaborative use with other AHURI stakeholders.

Considerable importance is placed on encouraging the use of these deliverables in order that the full value of the research can be exploited. The intention is that the outcomes of this research should be available to the whole AHURI research network.

The workshop with AHURI stakeholders, which is planned under the current CRA Project to discuss the direction of the modelling, would be an important element.

The proposed terms of AHURI-wide access to the model/dataset(s) are the same as those agreed to for the current AHURI project on the 'Regional Impact of Rent Assistance':

Proposed terms of access to model and dataset(s)

1. Research involving extension to the dataset or modelling applications will need to involve formal collaboration with NATSEM.

2. Copies of output datasets (such as the dataset generated by this project) will be provided to AHURI with reduced detail. The finest level of detail provided in these Reduced-Detail Output Datasets would be summary output – such as cell averages – for statistical local areas (SLAs). Unit record detail will not be provided. Dataset documentation will be provided by NATSEM.

3. The detailed output datasets will be archived by NATSEM.

4. Any Reduced-Detail Output Datasets provided to AHURI can be distributed for use by other members of AHURI.

5. Any analysis of the detailed output datasets will require formal collaboration with NATSEM.

6. NATSEM will not unreasonably refuse any requests for collaboration under the above terms of access.

8 FUTURE MODEL DEVELOPMENT

8.1 Home-ownership sector

Why confine the analysis of the projected demand for housing assistance to the rental sectors? Before the housing costs of home-owners can be properly projected, a separate 'accumulation' module needs to be added. As it is, the model will be saying that the home equity position of, say, 40-45 year old home-purchasers in 10 years time will be broadly the same as that of 40-45 year old purchasers at present. In fact, it is more likely to be related to the position of 30-35 year old home-purchasers now.

For any focus on the housing costs of home-owners, the dynamic accumulation element will need to be added to the model.

8.2 Projecting housing supply

The major model element which would remain to be developed after completion of this project would be the projection of housing supply. This is, of course, a very important element with so much of housing outcomes being the result of the interaction between housing demand and supply. Indeed, it is this interaction which makes adding projections of housing supply to the model a major task. It is one thing to simply add housing supply projections in isolation, but the real value of the projections would not emerge until the model incorporated some interaction between projected demand and supply.

Those parts of the model development covered by the CRA Project and the current research have their complexities and intricacies, but they are largely a known task. We know what needs to be done and how we can do it. In contrast, the step of projecting housing supply, and particularly building the links with housing demand, will involve a far greater element of investigative research into possible methods.

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