

Final Report

Housing assistance and non-shelter outcomes

authored by

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EXECUTIVE SUMMARY

Introduction

Australian state and federal governments spend a large amount of money on providing housing assistance to Australian households. This housing assistance takes a variety of forms. It includes the provision of public housing, subsidies for low-income renters in the private sector and various forms of assistance for homeownership. An improved housing outcome for the recipient provides an explicit rationale for much of this recipient based assistance.

In addition to directly influencing housing outcomes, housing assistance programs also have significant non-shelter effects. The keys areas in which housing assistance programs may influence non-shelter outcomes include:

- Physical and mental health status.
- Education status.
- Labour market outcomes.
- Crime.
- Community participation and social cohesion.
- Income/wealth distribution and poverty outcomes.
- Locational advantage.

The aim of this study is to provide a systematic review of the evidence on the non-shelter effects of housing assistance measures.

In addition, this report has identified key research questions which have not been adequately addressed in the Australian context and which need to be addressed if housing and other arms of economic and social policy are to proceed on a well-informed basis.

As part of this assessment, research design and research methods that might underpin a collaborative research venture that will advance current understanding and contribute to policy development are set out.

A Systematic Review of the Literature

Undertaking a review of the research evidence on the role of housing assistance measures in affecting non-shelter outcomes is a complex process. This signals the importance of a systematic approach to undertaking a review of the research evidence.

In this report the Campbell Systematic Review (CSR) Protocol has been adopted and adapted to guide us in this process. The CSR Protocol was established to guide the review and synthesis of evidence of the effects of interventions and public policy primarily in the fields of social welfare, education and criminal justice.

The following summarises what the literature reviewed reveals about the linkages between housing assistance and the range of non-shelter outcomes indicated above and highlights the key findings from this literature. It then outlines key gaps in the literature and provides a brief indication of how these gaps might be addressed.

Housing, Labour Markets and Education

Linkages between Housing, Labour Markets and Education

Labour markets and education are inextricably interrelated because of the critical importance of formal schooling and training to the development of skills, expertise and know-how (human capital) of workers.

Housing assistance programs can favour human capital development:

- By reducing housing costs and increasing family resources that can be used to purchase educational and training resources
- By providing security of tenure and hence a stable learning environment that is believed to foster child development
- By improving the physical, social and economic foundations of neighbourhoods that can be positive influences on education and training processes and outcomes.

On the other hand housing assistance measures can contribute to unemployment/poverty traps by increasing marginal effective tax rates, thereby blunting the incentive to participate in labour markets. They may also impair geographical mobility, and thus exacerbate any spatial mismatch between the residential locations of people and location of jobs. Homeowners are thought to be less mobile than private renters because of high transaction costs that are in part reflect state government taxes (stamp duties). Public housing tenants are thought to be less mobile because of their security of tenure, and the non-portable nature of indirect subsidies. Finally, housing assistance policies can have negative impacts on neighbourhoods and hence on the educational and training outcomes for their residents. This is particularly evident in settings where housing assistance programs produce spatial concentrations of poor households.

Key Findings: Housing and Incentives to Work

Labour Supply

The labour supply effects of housing assistance programs include potential impacts on the decision to participate in the labour market as well as on the number of hours of work. The key findings from studies reviewed are:

- The theoretical impact of HA programs on labour market activities, in particular hours worked, is ambiguous.
- Empirical analysis suggests that participation in the labour market is less likely for individuals in receipt of benefits from HA programs after controlling for other factors.
- For those who choose to participate in the labour force, the amount of labour supplied will depend critically on the structure and parameters of the HA program and how this affects labour market opportunities. The incentives created and the response on the part of individuals will be a function of all income support programs, and how benefits under alternative programs interact with one another and opportunities in the labour market.
- The rationing aspect of HA benefits means that labour force behaviour is affected while waiting for benefits in addition to when the household is in receipt of benefits. These impacts can be negative (to preserve entitlement) or positive (the benefits are not worth waiting for). There is some evidence to suggest that lengthening the waiting period increases employment.
- Residing in public housing as a child has beneficial affects on labour market outcomes as a young adult after controlling for other observable characteristics of the individual. It is not possible to ascertain whether this is due to security of tenure aspects or the better quality of public housing as compared to the alternatives for low-income households.
- The form of HA and its associated spatial characteristics may affect the behaviour of individuals via the impact of neighbourhood and related opportunity effects.

Unemployment

Tenure and mobility effects can impact on wage cuts people are prepared to accept in order to keep jobs, and their preparedness to move in order to find employment. Key findings in the literature review include:

- The probability of terminating an employment relationship (quitting) and therefore becoming unemployed is increased if an individual is faced with longer commutes to the workplace as a result of placement in public housing.

- Tenure type may impact on the ability and/or willingness of a household to migrate from a region with high unemployment to a region with low unemployment. Hence local unemployment outcomes may be adversely affected by household immobility.
- There is evidence that public housing tenure reduces an individual or household's willingness to migrate and therefore move to regions of greater employment opportunity. This pattern may reflect two aspects of HA policy. Limited supply may mean that public housing tenures are unavailable in regions with good employment prospects. Further, the application of policy does not facilitate the relocation of households by giving priority to those moving for employment related reasons.
- There is consistent evidence that public housing tenure reduces household mobility (relative to private rental) and is likely to exacerbate local unemployment problems. An important qualification is the overwhelming importance of UK evidence on the link between public housing and mobility. The small-scale private rental-housing sector may magnify the adverse impacts on public tenant mobility in the UK. A relatively healthy Australian private rental tenure could mitigate these impacts on mobility.
- Home-ownership may also constrain or reduce the ability of a household to migrate between regions and therefore worsen a local unemployment problem. For example, owner-occupiers with negative equity may also be constrained in their labour market mobility. Hence, HA measures designed to promote homeownership may in fact reduce labour market flexibility and increase unemployment.
- This is in fact the thinking behind the Oswald thesis, which hypothesises a positive relationship between the rate of homeownership and the level of unemployment. The evidence is inconclusive. Australian studies using data on persons find that contrary to the Oswald thesis, the probability of being unemployed decreases if you are a homeowner and spells of unemployment are shorter for homeowners.
- Structural change to the economy may result in 'spatial mismatches' between local labour supply and employment opportunities. If credit constraints inhibit the ability of households to relocate, some regions of an expanding and otherwise prosperous economy may be characterised by limited opportunities and poverty. Widening regional house price differentials can exacerbate the severity of these credit constraints and spatial mismatches, but the evidence (largely from the UK) is mixed.

Key Findings: Housing Assistance and Education

Housing assistance impacts on educational outcomes through effects on crowding, security and safety at the household level, and through access to schools and peer group effects at the neighbourhood level. Conclusions that emerge from a review of the literature are:

- Identifying the influence of HA policy and the separate dimensions of HA measures on education outcomes is difficult in light of the multitude of influences that impact on education outcomes.
- The empirical evidence, both Australian and US, suggests that the receipt of HA measures *per se* is not associated with poorer educational outcomes. Poor education outcomes is associated with other characteristics, measured and unmeasured, of HA recipients.
- Two well-designed studies have found that homeownership has positive effects on education outcomes, but the evidence has not been replicated in Australia and remains limited in overseas countries. The Moving to Opportunity (MTO) programs in the USA promise better education outcomes as a result of the use of vouchers to relocate in suburban neighbourhoods, but the findings of relevant studies is equivocal.

The empirical analysis examining the relationship between HA and education outcomes is hindered by the need to control for the range of factors that potentially influence the education outcome of individuals. There is a widely held view that the causal role of HA is difficult to establish due to the multiple risk factors that contribute to low educational levels, and the non-shelter factors such as health through which HA effects are mediated.

Housing and Health Outcomes

Linkages between Housing and Health

The fact that both natural and man-made environments directly impact human health appears self-evident. Human habitation serves to mediate natural environmental extremes. As such, housing sustains and supports human life and thus housing environments directly and indirectly impact on health, social support, absence of disease, quality of life and well-being. In this context better understanding the links between housing assistance and health are essential for better understanding how insufficient housing investment might lead to additional costs for other services, including health, through increased need for health care, prescription costs, etc. Research into the relationship between health and housing, while profuse, has to contend with many confounding factors. For instance, poverty; poor nutrition; violence; exposure to weather, pest and toxins; social isolation and self damaging behaviours such as drug addiction are typically observed concurrently in poorly housed populations where inequality exists, and all have been linked to poor health.

These confounding factors will mediate the impact of housing on health outcomes, and as with other non-shelter outcomes, these complex interrelationships make identification of causality problematic. Indeed research on housing and health though substantial remains limited in its ability to reliably model causality. Failure to demonstrate causality is unsurprising given the complexity of relationships noted above, the lack of control and comparison groups; and high prevalence of correlational research in combination with selection bias and poor control for demographic variables.

An important feature that is evident from the systematic review is the absence of research into the effects of housing assistance interventions *per se*. Though there is substantial research on housing and health relationships, it is rare for researchers to focus on a housing assistance program and identify and measure associated health outcomes. This is once again a feature shared with the other research areas reviewed.

Key Findings: Housing and Health

The principal findings from the systematic review are classified into several groups:

- Curative outcomes are circumstances where a housing outcome helps ameliorate or aggravate an existing health problem.
- Preventative outcomes are circumstances where a housing outcome assists the avoidance of a health hazard, or exposes people to a health hazard.
- Studies that identify and measure general associations between housing, housing environments and health, but where causal paths are particularly uncertain.

Curative

There is evidence from the former sections that effective curative housing outcomes are linked to the following:

- Aged and older populations outcomes varied depending on the linkages between care and housing assistance provision and the necessity of increasing the short term provision of retrofit services whilst in the longer term increasing adaptable dwelling design provision for the next cohort.
- Physical and or medically impaired population subgroups outcomes varied with the type of condition, length of time in the home, adequacy of the dwelling (quality and suitability) and access to housing assistance, care and support all critical factors. Moreover, poor quality dwelling design and inappropriate physical locale, specifically inadequate space, lack of transport and lack of social supports negatively impacts health costs and formal care need. For instance, the collective evidence suggests that homes that are specifically designed to minimise indoor humidity may improve health outcomes for both children and adults with an allergic disposition. This may be more cost effectively achieved by design than post-hoc

modification. The absence of standards for indoor air quality in the home implies that their development and application to new dwelling construction is a priority.

- Mentally impaired population subgroups outcomes hinged on housing assistance in the form of medical priority rehousing and rental subsidy, in combination with provision of appropriate support, training and dwelling design. The evidence for impact of physical crowding and height from the ground remain inconclusive, implying that more research with better control of confounding variables is needed.
- Homeless population subgroups outcomes hinge on housing assistance in the form of medical priority rehousing and rental subsidy, because homelessness impacts physical morbidity and mortality. The need for provision of flexible support and better dwelling design relates to the fact that having a physical or mental health problem or being older make maintaining tenancies and housing upkeep more difficult. The outcomes vary in terms of the length of time of housing deprivation and the time of onset with some evidence indicating that the children of homeless adults have worse health outcomes in later life.
- Being cared for and providing care outcomes are associated with policy interdependence. Medical priority housing provision outcomes with shortfalls in care have been shown to be most acute in social housing. Lack of secure housing and support affects morbidity as does dwelling design and location. Indeed, dwelling design has been shown to decrease dependency whilst location impacts access to services.

Preventative

There is evidence from the former sections that effective preventative population housing outcomes are linked to the following:

- Injury is most commonly associated with housing that is of poor repair or quality whilst the effectiveness of interventions and targeting of vulnerable populations relates to morbidity and mortality outcomes. Poor quality construction and lack of regular maintenance, specifically bad plumbing, poor drainage, lack of insulation and poor ventilation negatively impact on mortality and morbidity; and negatively impact mental health and wellbeing.
- Health is strongly associated with physical locale, housing quality, and social supports. Theoretically, the impacts are most likely when the contrasts are extreme. The psychological impact of housing quality has been shown to benefit mental health in proportion to the degree of improvement. Policy factors outside the health system, such as the introduction of legislation, and the increased provision of medical priority and special needs housing, improved access to renovation, repair and retrofit grants and home safety initiatives all work to improve health and wellbeing.

Housing and Health Associations

There is evidence from the former sections that housing outcomes, and related housing assistance programs, are linked to the following health outcomes:

- Outright homeownership has been linked to lower morbidity than that of renters but this effect appears to be primarily socio-economic in nature and is linked to locale and to the ability of homeowners to maintain their home over time and in relation to changing need.
- Rental subsidy can reduce homelessness but cannot guarantee choice or security of tenure. The generally poorer quality of dwellings and or delays in benefits all impact on health.
- Social rehousing prevents homelessness and produces health service savings, however effectiveness is impacted by shortage of dwellings, dwelling quality, locale and lack of social support.
- Retrofit enables health cost savings associated with hospital discharge and deinstitutionalisation, and it also decreases dependence and increases confidence. However, shortage of service and service inflexibility and fragmentation are impeding outcomes.

- Renewal can reduce morbidity and improve wellbeing and life quality but failure to consult with communities may produce a perceived lack of control and resultant shortage of affordable housing.

Housing Environments and Health Outcomes

There is evidence from the former sections that housing environment outcomes are linked to the following health outcomes:

- Physical locale can impact morbidity and mortality both positively and negatively. The severity of exposure to factors such as neighbourhood deprivation, humidity, winter temperature, wind, and precipitation is nevertheless mediated by dwelling design, length of exposure and health vulnerability.
- Social support is primarily associated with improved wellbeing but inequalities in access to social support place more vulnerable people at greater risk of institutional relocation and homelessness. Availability of support is mediated by physical locale and program linkages.
- Dwelling design impacts overall dwelling quality and suitability. The overall quality and suitability of a dwelling result in both direct and indirect health impacts for occupants. Direct impacts relate to mortality whilst indirect impacts correlate with housing deprivation and relate to lower quality of life and greater morbidity. Lack of market provision of accessible housing has resulted in medical priority rehousing and has contributed to inability to meet demand.
- Overcrowding is both culturally and socially determined but has been identified as a causal factor in increased infection rates and respiratory disease. It is indirectly associated with both increases and decreases in wellbeing and mental health. The contradictory nature of findings raises the possibility that, when choice and control increase, informal support wellbeing increases (but decreases if the inverse is true).

Housing and Community Viability and Cohesion

Linkages between Housing and Crime

Most of the literature to date has explored linkages between public housing and crime. The following linkages are thought to be particularly important in relation to crime.

- It is thought that the design features of public housing may influence crime rates. In particular poor 'defensible space' qualities of public housing estates inhibit monitoring and other crime prevention activities by tenants, and facilitate criminal activity.
- Public housing allocation mechanisms may result in individuals with a pre-disposition to engage in crime being concentrated in particular estates.
- Alternatively, self-selection processes produce the same outcome. Individuals willing to accept placements in crime prone estates are pre-disposed to engage in crime.
- Finally, public housing supply decisions could result in estates located in areas vulnerable to criminal behaviour *per se*.

Key Findings: Housing and Crime

Empirical studies and the findings from these studies support the following conclusions:

- The defensible space hypothesis cannot be dismissed entirely but the evidence linking the design features of the built environment (especially for public housing estates) and criminal activity is mixed.
- Support for associations between crime and specific patterns of housing design is weak. Hence, there is little evidence that high rise housing necessarily exhibits poor defensible space qualities and are therefore prone to high rates of crime related activities.
- There is some evidence that a sense of community or lack thereof, may be partly responsible for the crime problems commonly associated with some public housing estates. This lack of participation in the collective policing of community and social norms reflects two distinct

influences. First, certain design features of housing may limit community interaction and therefore the willingness and ability for households to be the 'eyes and ears' of the community. Second, public housing allocation policies may result in individuals without a sense of community responsibility being concentrated in a neighbourhood. Rather than design features *per se*, it is the implementation of the HA program that may lead to poor crime related outcomes for some neighbourhoods.

Linkages between Housing and Social Capital

Social capital in a community incorporates features of social organisation, such as networks, norms and social trust that facilitate coordination and cooperation for mutual benefit. We can identify four linkages between housing and social capital:

- *Incentive Effects.* This linkage operates due to complementary components of social capital. Active participation in civic organisations responsible for the management of physical infrastructure in a community (e.g. parks) is illustrative in this respect. Improvements in physical infrastructure will boost residential capital values. Existing homeowners benefit both directly as consumers, but also indirectly via accrued capital gains. Renters benefit directly as consumers, but higher rents are the likely indirect consequence, as a community becomes a more attractive place to reside. The indirect benefits to homeowners sharpen the incentive to participate in the civic arena.
- *Commitment Effects.* Social capital assets are typically community specific and not portable. It is generally believed that the transaction costs of homeowners when they move are higher than those of renters, and so the former are less mobile. In addition renters do not have security of tenure, and so may be forced to move if a private landlord decides to sell up, and a suitable vacancy in the present community cannot be guaranteed. The willingness of renters to commit to investments in social capital is understandably weaker, *ceteris paribus*, as the expected residence period over which returns/benefits can be enjoyed is shorter.
- *Urban form and resident composition effects.* The physical design and location of buildings and the socio-economic, ethnic and demographic heterogeneity of communities affect the 'social distance' between residents. Most obvious here is the physical distance between residents, and thus urban sprawl may negatively impact on the formation of social capital. Also, there is the design of buildings and the common areas between residential buildings that has been invoked as a determinant of the capacity of residents to engage in surveillance activities for security reasons. Impediments to social connection can be heightened if the allocation procedures of social housing authorities concentrate poorer households in 'sink' estates that are associated with social exclusion.
- *Feedback mechanisms.* The trust and reciprocity that are at the core of the social capital concept will impact on housing outcomes. Tenant participation in social housing management and policy development can help cement relationships between the social landlord and tenant to the benefit of housing outcomes.

Key findings: Housing and Social Capital

The revival of interest in ideas related to the social capital concept is relatively recent, so empirical studies focusing on the linkages between housing and social capital are few, and in the case of Australia there are no finalised studies that we can draw on for guidance.

The Movement to Opportunity (MTO) program in the USA is based on the assumption that poor tenants in public housing estates will benefit if encouraged to move to neighbourhoods possessing richer levels of social capital. Early findings from the Gautreaux program in inner city Chicago are encouraging, though a similar program in Yonkers, NY cannot confirm these linkages.

There are a plethora of studies using different statistical techniques and data sets from a range of countries, offering evidence that homeowners are more socially connected with their communities. The replication of this finding in a sizeable number of studies indicates that this is one of the more reliable findings in the literature. However, caution is warranted. Researchers in this area are rarely able to use the randomised controlled experimental study designs favoured

by health researchers and regarded by the latter as necessary if we are to consider evidence reliable.

The social capital mediation model posits that social capital adds value to housing policies, i.e. it makes them more effective. The evidence reviewed offers some support for this model. Though the studies reviewed employ sound statistical techniques, the cross section data bases pose unavoidable methodological problems.

Linkages between Housing and Neighbourhood Effects

Neighbourhood effects arise because an individual's characteristics or actions can affect neighbours' behaviour and socio-economic outcomes. A neighbourhood is the product of market and non-market processes in housing systems that spatially sort households in terms of their residential location choices. There are growing concerns that housing systems and the housing assistance programs that shape these systems, are contributing to socio-tenurial and spatial polarisation that is the cause of various negative non-shelter outcomes at the neighbourhood level.

Key findings: Housing and Neighbourhood Effects

A systematic review of 88 studies by Ellen and Turner (1997) concludes that neighbourhood is an influence on important outcomes for children and adults, but suggests that attempts to identify which neighbourhood characteristics matter have been inconclusive. However, since their review was completed a number of studies have been published which have examined interdependencies between public housing, rent assistance, homeownership and neighbourhood effects. This area is in its infancy and so firm conclusions have not yet emerged.

Disadvantaged households, who lack the resources to participate in day-to-day activities that the typical person regards as routine, are a growing concern. This issue is central to the social exclusion debate. Affordable housing that meets satisfactory standards is thought to be essential to an individual's participation in society. Neighbourhood effects are also believed to contribute to social exclusion, though the causal links are poorly understood and under researched.

The social exclusion debate has been most prominent in the UK, and area based initiatives (incorporating housing assistance measures) have been invoked to address this policy problem. A consensus appears to be solidifying around the idea that a balanced strategy involving integration and coordination of different services, and featuring resident involvement, is necessary. Housing investment alone will not then turn around areas where social exclusion problems are apparent. These conclusions have emerged from program evaluations rather than empirical studies of the processes linking housing, neighbourhood effects and social exclusion. A similar conclusion is evident on examining the Australian literature in this area.

Market Effects

The capitalisation of demand-side housing assistance programs into rents and prices, and the crowding-out or displacement impacts of supply-side housing assistance programs are associated with externalities that have consequences for the economic well being of those affected. There is then a linkage between these market effects of housing assistance programs and non-shelter outcomes.

An understanding of the market effects of housing assistance programs, and their quantitative significance, is critical to an appreciation of the economy-wide consequences for standards of living.

The early evidence from the US experimental housing allowance program suggests that there is relatively little pressure on rents as a result of the introduction of a demand-side rental subsidy. However, critics have suggested that outcomes for rents will depend on the specific contexts or location of the programs being evaluated, and that there are studies demonstrating such patterns. In general, the literature on the market effects of demand-side effects impacts on housing assistance remains unresolved.

It seems that the market impacts of supply-side housing assistance programs is conditional on the segment of the housing market that such programs are targeted upon. If new subsidised

additions are targeted on moderate (or higher) value housing segments, the evidence indicates a 100% crowding-out effect with zero net additions to the housing stock.

However, if subsidised additions, particularly in the form of public housing, are targeted on low value segments of the market, net additions to the stock of housing eventuate. It seems that public housing is targeted on single parents and older households typically resident in shared dwelling arrangements. An increase in the supply of low cost public housing provides opportunities for new households to be formed, with no resultant contraction in the demand for private housing. Moderate (or higher) value subsidised housing supply does not prompt new household formation, and the consequent reduced demand for unsubsidised housing results in offsetting reductions in private housing construction.

Tenure Effects

Most of the housing assistance received by homeowners is delivered via the tax system. It is widely acknowledged that this assistance has a regressive distribution. To the extent that it promotes rates of homeownership, and to the extent that homeownership has positive social and economic benefits, the homeowner tax subsidies can be said to have non-shelter outcomes. Studies of the wider social and economic impacts of homeownership are thus relevant.

Homeownership is said to have a range of positive social impacts that include; neighbourhood stability, civic involvement, improved psychological health, improved residential satisfaction, improved life satisfaction and improved physical health. The limited evidence on individual social impacts offers some confirmation of a positive association with homeownership, however the evidence is subject to a list of reservations and qualifications that is sufficiently long to suggest that it would be premature to conclude that the associations reflect causal relationships.

The economic non-shelter impacts range from individual effects such as wealth and financial security to impacts on the national economy. There is clear evidence that homeownership increases wealth but that wealth accumulation benefits do not accrue evenly to homeowners in all income brackets. Indeed, for lower income households, a number of studies reveal a higher holding of owner occupied housing assets than is optimal from a risk and portfolio return perspective. The national economy impacts of housing is an under researched area, despite the importance of this sector to economic performance.

Income and Wealth Effects

Housing assistance programs can reduce housing costs and permit a higher level of spending on other goods and services. This is particularly important to low income households who can be lifted out of after-housing cost poverty by housing assistance. This is an area of strength in the Australian literature with a considerable body of evidence and several consistent findings:

- The housing assistance provided to public tenants reduces the extent of after housing cost poverty compared with poverty before housing costs.
- Home ownership protects older households from after housing cost poverty.
- Rent assistance alleviates after-housing cost poverty but the greatest incidence of such poverty is found amongst low-income private renters.

Less is known about the dynamics of poverty and intergenerational poverty. What studies there are give no indication of whether housing assistance is a relevant factor.

For the typical household, housing assets are a critically important vehicle for the accumulation of wealth. It has been estimated that housing wealth accounts for almost 50% of gross household wealth in Australia. Despite rising rates of homeownership in the first half of the 20th century, the distribution of wealth remains highly unequal and housing plays an important role in determining that unequal distribution. Furthermore, there is evidence that the 1990s boom in housing markets and equity markets has accentuated wealth inequalities in this period.

What We Do *not* Know: Gaps in the Evidence Base

Three major gaps in the literature related to the nexus between housing assistance and non-shelter outcomes exist.

1. First, there is a dearth of Australian evidence on the links between HA programs, housing outcomes and non-shelter outcomes.
2. Second, whether we consider the relatively abundant overseas literature, or the more limited Australian literature, there is a lack of conceptual understanding about (a) How dimensions of HA are linked to non-shelter outcomes; (b) How HA is interrelated with other government interventions that have combined impacts on non-shelter outcomes that are either offsetting, or mutually reinforcing.
3. Third, even we have a good theoretical understanding of the linkages between housing and non-shelter outcomes, establishing the magnitude and direction of impacts has proved problematic.

In relation to the first of these themes, it may be argued that the dearth of robust Australian empirical work on the impact of housing assistance programs on non-shelter outcomes is not critical as there exists a strong emerging US and UK literature in the field. However, policy analysis and development is clouded by differences between features of the Australian socio-economic and institutional environment and those of the overseas country.

The final theme apparent from the subject chapters is the methodological difficulties associated with measuring the direction and magnitude of impacts on non-shelter outcomes. Even if we have a good conceptual understanding of the linkages between housing assistance and non-shelter outcomes, measurement can be problematic.

Three key methodological hurdles face researchers when conducting studies in to the impact of housing assistance programs on non-shelter outcomes. These hurdles are not insurmountable but need to be well understood by researchers and policy makers alike.

- **Omitted Variables.** The problem arises because: (a) Factors other than HA programs impact on non-shelter outcome(s) and/or (b) the HA programs impact on non-shelter outcomes is mediated by some other factors that in turn effect non-shelter outcomes. The methodological problem arises if these other influences are omitted from the statistical inquiry. It is a particularly important source of error if the assistance provided by the housing policy intervention is correlated with an omitted factor.
- **Endogeneity.** The possibility that housing assistance and related housing outcomes can affect other relevant explanatory variables, or that the non-shelter outcome to be explained is in turn a determinant of housing outcomes, creates additional methodological concerns. These are associated with endogeneity concerns or issues of causality. Many of the concerns with public housing, for example, arise from its hypothesised impact on concentrated poverty and social isolation, but analyses can fail to take into account the fact that public housing is more likely to be located in low income neighbourhoods than housing occupied by recipients of other types of housing assistance, simply because of allocation policies.
- **Measurement error.** Measurement error is an issue that troubles most research studies in the social sciences. The problem arises when a variable is imprecisely measured because of reporting error, processing error or due to difficulties of defining a variable.
- **Dynamic Effects and Cumulative Causation.** The final challenge to be raised in relation to methodology arises from what researchers have called the problem of cumulative causation.
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How Do We Fill In The Gaps? Future Directions for Research

Specific policy issues that require further investigation in the Australian context are listed above for each of the relevant subject areas.

In general terms, we can summarise these issues into **five key areas** that should inform the development of any collaborative research venture established to examine the non-shelter impacts of housing assistance programs.

1. What are the housing and non-shelter benefits and costs of public (and social) housing assistance on the one hand and private market rent assistance on the other? Which form of assistance (public housing or private market rent assistance) works best to meet clearly defined housing and health, education, labour market, and community objectives? Is it a matter of 'one-size fits all' or of tailored assistance programs for different housing and non-shelter sources of disadvantage?
2. What are the housing and non-shelter benefits and costs of policies that financially assist households to enter homeownership? If such policies have regressive income distribution features (and other potential detrimental effects) but also lead to other net non-shelter benefits how are we to treat and design such policies to better promote non-shelter benefits and reduce regressive impacts?
3. How can we best connect housing policy to private market activity and urban and regional design policy so that Australians live and participate in vibrant communities and neighbourhoods?
4. How must housing assistance policies interact with income support policies, welfare and community programs and ageing policies to achieve higher levels of economic and/or community participation?
5. How must we link housing policy to education, health, ageing and community policies to ensure that children, adolescents and adults live in environments that are conducive to better learning, promote better mental and physical health outcomes and are less prone to crime and negative social behaviours.

How are these issues to be addressed?

1. The expert authors involved in this review continue to advocate the use of secondary databases to study housing and non-shelter interactions. Secondary datasets include the well-known cross-section Australian Bureau of Statistics surveys (e.g., The Australian Census of Population and Housing, the Survey of Income and Housing Costs, the National Health Survey, the Rental Investors Survey, the Australian Housing Survey, the Disability, Ageing and Carers Survey, the Mental Health and Wellbeing of Adults Survey and any other relevant surveys).
2. There is a strong advocacy of panel data sets that permit a researcher to track a cohort of individuals over time. The use of the HILDA dataset by housing researchers is of critical concern.
3. Carefully specified experimental study designs are a typical component of pilot housing assistance programs. This enables analysts to monitor and evaluate HA programs using data specifically designed for the purpose. The MTO programs and studies of their impacts on non-shelter outcomes are typical, but they have a long history going back to the US Housing Allowance Experiments in the 1960s. It would be highly beneficial from a policy evaluation perspective if this practice were adopted in Australia.
4. Finally, the expert authors frequently find weak conceptualisation of the linkages between HA and non-shelter outcomes. Deductive theorising can help clarify the linkages and generate unambiguous hypotheses. On the other hand inductive methods based on qualitative applied research methods, can be helpful in uncovering unanticipated linkages.

1 OVERVIEW

1.1 Background

Australian State and Federal governments spend a large amount of money providing housing assistance (HA) to recipients. Official reports give estimates of between \$4b and \$5b per year for total federal and state outlays on housing over the past decade.¹

This HA takes a variety of forms including, *inter alia*, the provision of public housing, subsidies for low-income renters in the private sector and direct grants for home purchasers and for various home modification programs as well as various place based programs such as community development and neighbourhood renewal programs. An improved housing outcome for the recipient provides an explicit rationale for much of this recipient based assistance. Public housing, for example, improves affordability for those who gain access and provides a measure of security that is not generally available in the private rental market. Rent assistance reduces financial stress for those eligible and provides recipients with some element of increased location choice. Home purchase assistance facilitates entry into homeownership for first time homebuyers. Home modification programs enable aged persons or those with disabilities to remain in private dwellings.² An improved environment provides a rationale for much of the place based assistance.

Housing outcomes differ according to the type of housing assistance provided and according to the characteristics of the recipient. For low-income households in high-cost metropolitan regions, for example, public housing is more affordable than private rental housing combined with rent assistance. For moderate-income first homebuyer households, assisted homeownership may be less affordable than private rental in the short run but is likely to be more affordable in the long run. For most households, assistance into public housing or homeownership provides a more secure form of tenure than assistance with private rental costs. The effectiveness of HA measures for the aged, or those with disabilities, may depend on the existence or otherwise of an integrated support network.

In addition to influencing housing outcomes, HA measures may also have significant impacts outside of housing. Housing researchers refer to these impacts as 'non-shelter' effects. It is important that policy makers consider these non-shelter effects when designing HA programs. The most important of these non-shelter outcomes are childhood development and educational attainment; mental and physical health and well-being; and labour market outcomes. Other important non-shelter outcomes include crime, community and social stability, poverty, and income and wealth inequality.³

Housing assistance programs will influence non-shelter outcomes through a complex array of direct and indirect pathways. To illustrate the role of housing assistance in affecting non-shelter outcomes and to underline the fact that the level of assistance is just as important as the structure of that assistance, take the case of mental health. Mental health is affected by many things including the physical design of buildings. Suicide risk, for example, increases with residence in high-rise dwellings. Housing assistance provided in a form that does not prescribe the physical structure of housing (say a private rent subsidy), therefore, is likely to have a

¹ AHURI Facts Sheet 3. This ignores an estimated \$21b in indirect housing assistance provided annually through the federal tax system (Yates 2002b) and any additional indirect assistance provided through state tax and regulatory systems. This indirect assistance will not be covered explicitly in this review, although its impact will be taken into account where relevant.

² A more detailed coverage of housing assistance programs that impact upon the different non-shelter outcomes considered in this review will be provided in chapters 3 to 5. Because of their special characteristics, Aboriginal housing assistance programs will not be covered by this review.

³ A more detailed coverage of non-shelter outcomes will be provided in chapters 3 to 5. The primary focus in this paper, however, will be on health, education and labour market outcomes and on non-shelter outcomes related to community viability and cohesion. Other non-shelter outcomes will be taken into account where relevant.

different impact on mental health and suicide risk than is assistance that explicitly targets the physical adequacy or appropriateness of dwellings.

In terms of the labour market, income-related rents in public housing can create work disincentives and poverty traps, as can eligibility requirements for rent assistance in the private rental market. Education outcomes, as reflected in such as macro indicators as school retention rates, may be influenced by security of tenure, as provided by public housing and by homeownership. The latter will be positively affected by homeownership assistance programs. At the same time, homeownership assistance can contribute to dwelling price inflation and lead to increasing tenure and spatial polarisation. Increasing polarisation, in turn, might affect crime rates. Crime rates may be associated with public housing but the causal factor might be a concentration of disadvantage arising from a concentration rather than dispersion of housing assistance.

Well-established research has identified a clear link between alternative forms of HA and shelter outcomes such as affordability, security of tenure or improved dwelling quality.⁴ The impact of alternative forms of HA on many of the above non-shelter outcomes, however, is less well established despite an emerging body of research that examines impacts on at least some non-shelter outcomes. Indeed, the non-shelter outcomes experienced by the recipient of the HA measure may be an unintended consequence of the way in which housing assistance is provided.

An important additional point for consideration is that establishing a link between a particular form of housing assistance and a particular non-shelter outcome does not necessarily indicate that there is a *causal* relationship between them. Both assistance and non-shelter outcomes might be affected by a common determining factor. Alternatively, the particular non-shelter outcome being observed might be a factor that contributes to the observed housing outcome or form of HA under consideration. In other words, the non-shelter outcome under consideration might be a dependent variable (an outcome of the particular form of HA provided), or an independent variable (a contributing factor to the particular form of housing assistance provided).

An even more complex analysis would allow for the possibility that the relationship between housing assistance and non-shelter outcomes is interdependent. However, as Beauvais and Jenson (2002, p19) argue in their systematic review of the literature on social cohesion, once causal arguments become bi-directional they become less robust. In their view, though, consideration of uni-directional links can be useful for thinking through complex issues.

The focus in this review is on literature that examines uni-directional links from housing assistance or housing outcome to non-shelter outcomes. At the same time, the review remains cognizant of the possibility that correlation does not imply causation.

1.2 Pathways

The brief overview above has suggested that there might be a number of ways in which housing assistance impacts on non-shelter outcomes. The link between housing assistance and non-shelter outcome might be direct or indirect. The former arises where (a) housing assistance directly affects a non-shelter outcome without passing through an intermediate step or (b) there is an overwhelming causal link between the housing outcome that gives rise to the observed non-shelter outcome on the one hand and the housing assistance that provided this housing outcome on the other hand. An indirect link between housing assistance and the non-shelter outcome of interest arises when housing assistance acts in concert with other determining factors in affecting the housing outcome *and*, housing outcomes, in turn, represent but one of a number of factors influencing the non-shelter outcome in question.

A home modification program for the aged or those with disabilities, for example, can lead directly to improved physical and mental health outcomes through facilitating ageing in place or enabling the recipient to remain independent (Bridge *et al* 2002). Whilst this program has a particular housing outcome (the home is modified), this particular outcome can be linked directly

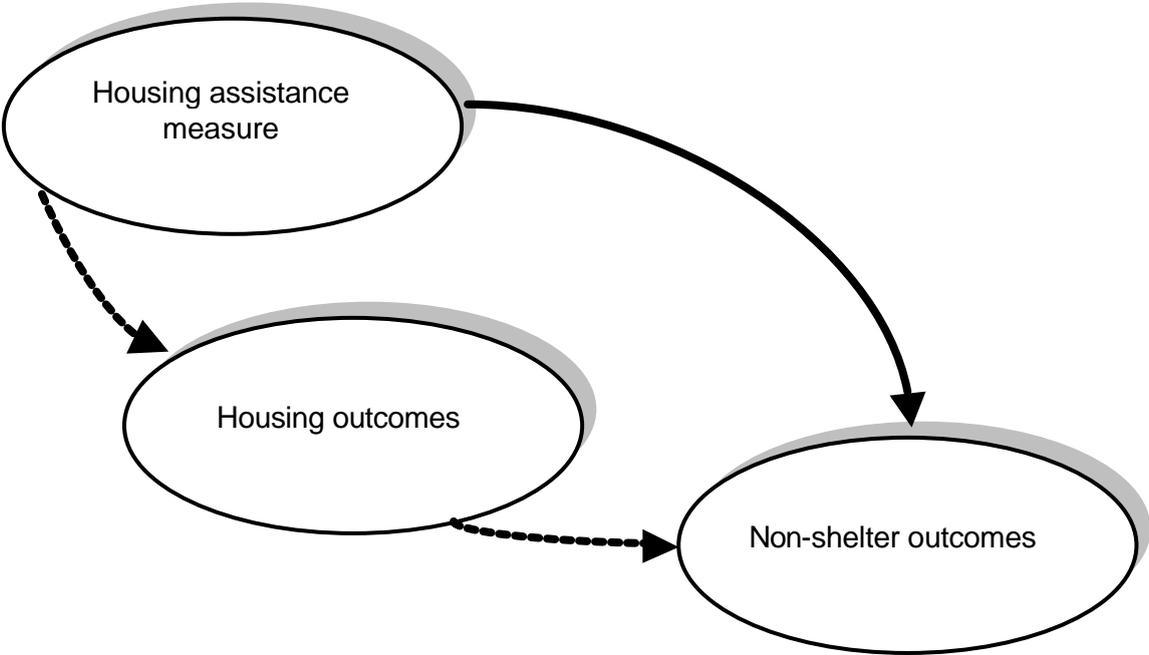
⁴ It does not follow, however, that the results of such research are unequivocal.

to the housing assistance that generated it. Such a link between housing assistance and non-shelter outcomes can be seen as a direct link. Similarly, homeownership program assistance for households with children can lead directly to higher levels of cognition amongst those children through the higher quality of housing that results (Haurin, Parcel and Haurin 2002).

Much housing assistance, however, has an indirect impact on the non-shelter outcome of interest. Rent assistance may lead to improved employment outcomes by increasing location choice or by increasing the amount of disposable income available for meeting work related expenses (such as child care). Public housing may lead to improved educational outcomes by providing tenure security and reducing household mobility.

Figure 1.1-1 illustrates such transmission mechanisms where there is a clear connection between the particular housing assistance provided and the non-shelter outcome observed. The solid lines suggest a direct link. The dotted lines indicate an indirect link in which the non-shelter outcome arises from a particular housing outcome which, in turn, is brought about by the housing assistance provided.

Figure 1.1-1: Direct causal relation between housing assistance and non-shelter outcomes



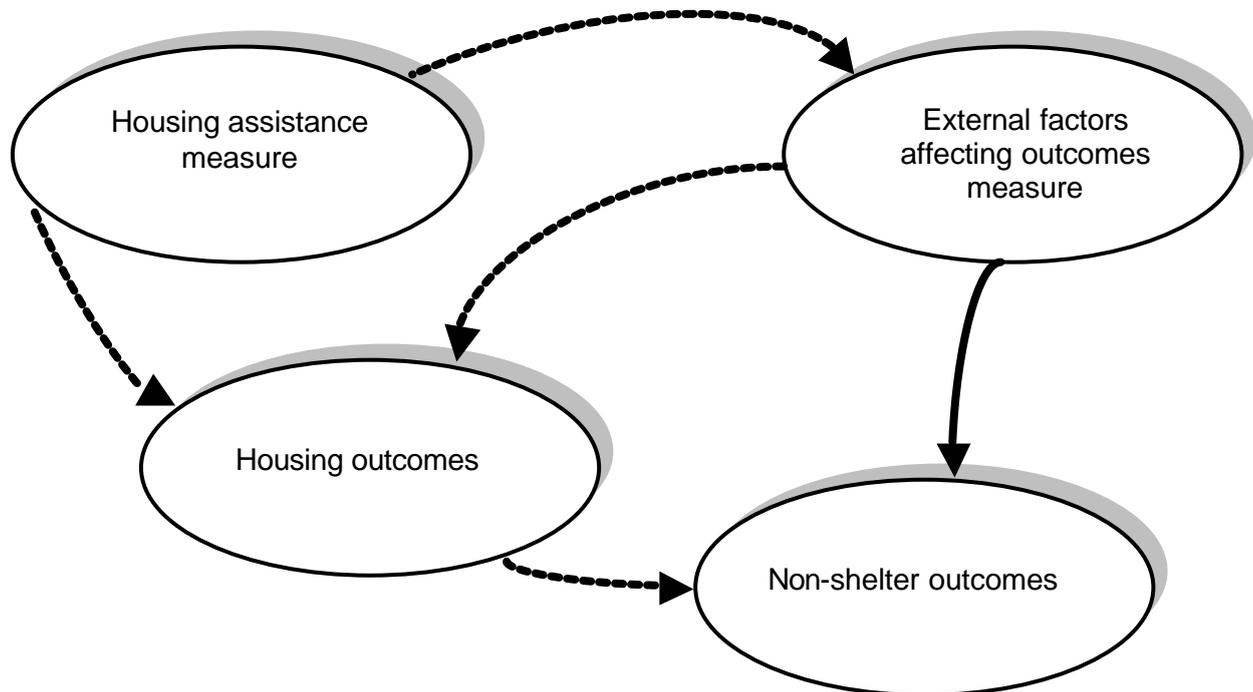
Simple direct causal relationships are unlikely. The relationship between housing assistance measures and non-shelter outcomes is more likely to be complex and to reflect an indirect transmission mechanism. Housing assistance measures may affect the non-shelter outcome achieved, working through a number of different housing outcomes. Different forms of assistance might both improve after housing disposable income and reduce household mobility and provide increased security of tenure. These housing outcomes, in turn, are likely to be affected by a number of other factors. For example, security of tenure may influence the employability of an individual and therefore her ability to participate in the labour market. Employment outcomes, however, are also likely to be affected by a range of external factors. The housing assistance provided may contribute to providing security of tenure but it might also have an impact on some of the other factors that affect employment (such as location).

As a second example, housing assistance measures are likely to influence the affordability of housing and the degree of housing stress experienced. The housing stress experienced by individuals, in turn, may affect their health status. Healthier people, living in a more secure and stable home environment involving fewer forced dwelling moves, may be less vulnerable to

criminal pressures. Criminal activity, on the other hand, also might be less likely when disadvantaged households in receipt of assistance are dispersed rather than concentrated. In other words, housing assistance might affect a particular non-shelter outcome directly through a particular housing outcome or indirectly through an external factor.

In these examples, the non-shelter outcomes observed (employment or criminal activity in the examples above) is likely to be affected by a number of factors. Specific housing outcomes may be amongst these. These housing outcomes may be influenced by the housing assistance provided but, as with non-shelter outcomes, are also likely to be affected by factors other than housing assistance measures. In other words, the links between housing assistance and non-shelter outcomes are indirect and are confounded by a number of additional drivers that may have as great an impact, or even a greater impact, on the observed non-shelter outcome. Figure 1.1-2 provides one illustration of such indirect transmission mechanisms.

Figure 1.1-2: Indirect causal relation between housing assistance and non-shelter outcomes



The existence of indirect mechanisms creates methodological complexities for studies concerned with the relation between housing assistance measures and non-shelter outcomes. These arise because of the doubts indirect mechanisms raise about causal mechanisms (Rohe *et al* 2000, p30). Home ownership, for example, may be associated with improved educational outcomes for school age children. This outcome may arise from the security of tenure and lower levels of mobility associated with homeownership compared with private rental. However, security of tenure also is a housing outcome associated with public housing. Thus, improved educational outcomes also may be associated with public housing (Phibbs 2002, p22). The direct link is between the housing outcome and the non-shelter outcome, not between the housing assistance measure and the non-shelter outcome. Improved educational outcomes, in other words, may be achieved through any form of housing assistance that provides security of tenure. Correct identification of the pathways is important when the different forms of housing assistance have different housing and non-shelter outcomes as well as common housing and non-shelter outcomes.

The existence of indirect causal mechanisms raises additional complications arising from the possibility that different forms of housing assistance have more than one housing outcome and more than one non-shelter outcome. Figure 1.1-3 provides a simple illustration of a case where two different forms of housing assistance (such as home purchase assistance and public housing assistance) can achieve a specific non-shelter outcome (C) (such as an improved educational outcome) because they have a common housing outcome (such as improved security of tenure) but where they might differ in relation to other non-shelter outcomes (A or B). Figure 1.1-3 ignores the complications introduced in Figure 1.1-2. However, the probability that each non-shelter outcome is also affected by a number of external factors must also be recognised.

Home ownership, for example, might have positive economic benefits. Public housing, for example, might have negative outcomes if it is spatially concentrated. In this limited case where only one housing outcome is considered, a policy preference for housing assistance measure A over housing assistance measure B may depend on the non-shared outcomes for A and B. In practice, different measures of housing assistance are likely to be targeted at different groups

with the result that their comparison is further complicated by the different needs of the potential recipients and by the possibility they will respond differently to potential outcomes.

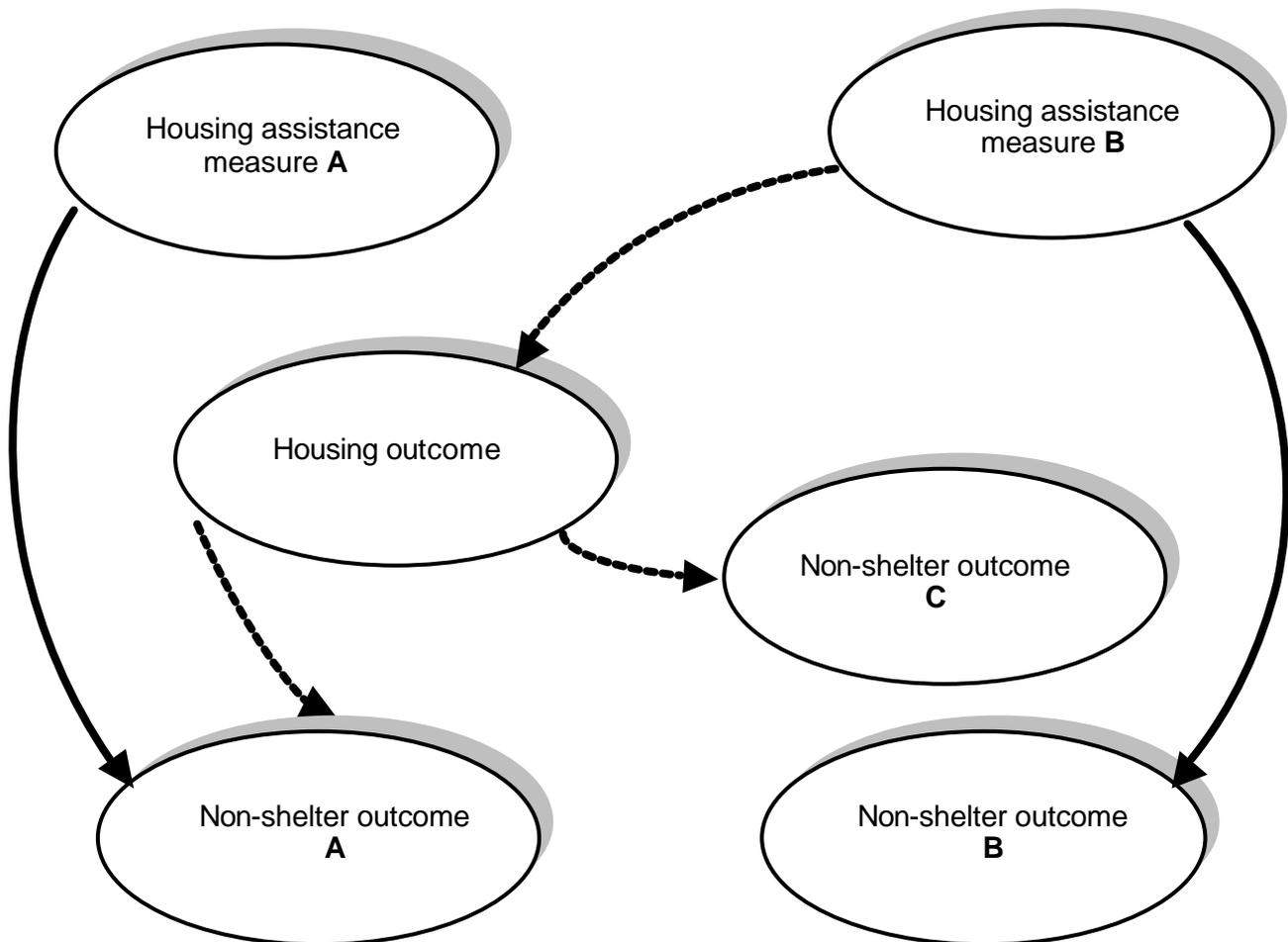
Housing assistance measures, in fact, may be characterised along a range of dimensions, and additional complexities are introduced when the multidimensional nature of housing outcomes associated with different forms of housing assistance are taken into account. For example, housing assistance may be provided directly to the individual or household or indirectly through subsidising housing provision. Each housing assistance measure can be expected to have a somewhat different target recipient group and eligibility rules governing provision differ between housing assistance measures. Such characteristics are likely to impinge upon non-shelter outcomes.

The housing outcomes associated with housing assistance are also multi-dimensional. As suggested above, several different forms of housing assistance can bring about security of tenure. All forms of housing assistance are likely to have an impact on affordability outcomes but the precise impacts will differ depending on how this assistance is provided. Some forms of housing assistance engender control over all or some housing decisions; others do not.

Similarly, there is a range of non-shelter outcomes each of which may be multi-dimensional and many of which may be inter-related.

Housing assistance measures may influence the mental and physical health and well-being of those assisted. They may also influence child and adolescent development and add to (or detract from) the level of social cohesion including the degree of social or community participation and family stability. Housing assistance may improve the after-housing cost income position of those assisted. This in turn may affect other non-shelter outcomes such as health status. Healthier people, living in a more secure and stable home environment involving fewer forced dwelling moves are, in turn, less likely to be vulnerable to criminal pressures. At the same time they are more likely to be able to participate in education and training options and to secure employment in the labour market. Housing assistance measures may affect the incidence and extent of after-housing cost poverty and the overall distribution of income. Significant impacts on regional and national economic activity from housing assistance measures can also be expected.

Figure 1.1-3: Multiple relationships between housing assistance and non-shelter outcomes



Non-shelter outcomes also will be affected by many more factors than the direct or indirect impacts of housing assistance. In many instances, the socio-demographic and economic characteristics of the target group are likely to have a greater impact on non-shelter outcomes than the form of housing assistance. It is important, therefore, also to ensure that all of the factors that can affect non-shelter outcomes are identified and taken into account. This complication has not been incorporated into the pathways illustrated in Figure 1.3. It would require further stimuli to both housing and non-shelter outcomes to be included ? and to be included in a way in which allowed for the possibility that external factors might have different effects on different non-shelter outcomes.

In general, the relationships between housing assistance and non-shelter outcomes are likely to be complex and the pathways between them may be non-linear. Non-shelter outcomes may also differ according to the characteristics of the housing assistance recipients. This suggests that identification of the relationships between housing assistance and non-shelter outcomes requires a careful analysis in which all factors other than housing assistance which affect housing and non-shelter outcomes are controlled for.

An indication of the possible factors that may be linked is provided in Table 1.1 below. In this systematic review, only papers in which there is a clear indication of the linkages between housing assistance and/or housing outcomes and the non-shelter outcome under consideration are considered for inclusion. Chapters 3 to 5 discuss the potential linkages between housing assistance programs, housing outcomes and non-shelter outcomes in much more detail.

Table 1.1: Dimensions of housing and non-shelter outcomes

Housing assistance (HA) schemes	Housing outcomes/ characteristics	Non-shelter outcomes
Private rent assistance	Tenure	Health
Income support	Tenure mix	Education
Rent support	Security of tenure	Employment
Public housing	Physical design	Crime
Capital funding	Dwelling quality	Social cohesion
Rent assistance	Adequacy	Income/wealth distribution
Home purchase assistance	Affordability	Locational advantage
Deposit assistance	Appropriateness	
Mortgage assistance	Location	
Community housing assistance	Level of control	
Home modification		
Home care		
Neighbourhood renewal programs		

1.3 Measurement issues

Whilst the non-shelter outcomes indicated in Table 1.1 are apparently clear cut at a macro level of analysis, assessment of the impact of a particular form of housing assistance or housing outcome at a micro level of analysis requires a more precise indicator than that provided in the above table. Specific issues of measurement concerning specific non-shelter outcomes will be addressed in the relevant chapters below. In general, however, the appropriateness of the measures employed is likely to both vary with the characteristics of the recipient of the assistance and with the implicit or explicit theory that links the assistance measure with the observed outcome.

In recent AHURI reports, for example, Adkins *et al* (2002) identify a number of different definitions of security of tenure. Subsequent research (Minnery *et al* 2003) suggests that not all definitions are of equal concern to those surveyed and, of the definitions that are important, different definitions are more important for one group than another. Locational advantage or disadvantage, similarly, can vary according to population group and can be used in a variety of ways. Greive *et al* (2002, p3) and Mullins *et al* (2001, p13) suggest that community is a key concept for social and housing policy but is poorly defined. Health outcomes can refer to physical or mental health; educational outcomes can refer to opportunity or achievement and so on.

The mechanisms by which a particular non-shelter outcome is presumed to arise from a particular housing outcome or form of housing assistance is likely to influence the measure chosen and the choice of definitions can influence what is analysed, measured, what policy is recommended (Beauvais and Jenson 2002, p4).

In the results presented in the following chapters, explicit recognition of the issues arising from measurement and the specific measures employed are seen as an integral part of the systematic review.

1.4 Policy context

Understanding the impact of housing assistance measures on non-shelter outcomes is important for a variety of reasons. Firstly, assessment of housing assistance policy effectiveness should take account not just of the housing outcome generated by the measure, but also the non-shelter impacts on recipients. The impact of housing assistance measures on non-shelter outcomes may influence the relative value of alternative housing assistance measures and should be properly

accounted for when assessing any housing assistance policy. In the context of competing demand for scarce government funds identifying the total impact of housing assistance measures is critical in prioritising alternative policy measures.

Secondly, if governments have a specific policy outcome in mind it is important to understand how housing assistance measures impact on non-shelter outcomes. A desire to target a particular group will necessitate an understanding of the non-shelter implications of alternative housing assistance measures.

Thirdly, to the extent that housing assistance measures have identifiable impacts on non-shelter outcomes, it is important that the full set of policies (housing assistance and non-housing assistance measures) are structured in a manner that achieves the best possible outcome. Co-ordination of policy, both within and between governments, is more feasible when an understanding of the non-shelter outcomes of housing assistance measures is identified.

Fourthly, understanding the non-shelter impacts of housing assistance is important because of the costs that may be imposed in either the short, medium or long term on the budgets of departments responsible for health, education, employment and other relevant outcomes.

Commonwealth and State participants in AHURI have identified the impact of housing assistance on non-shelter outcomes as a critical policy issue. Current CSHA renegotiations, for example, have been hampered by a lack of information on the relative costs and benefits of public housing and Commonwealth Rent Assistance (CRA). States face the additional question of to whom to allocate public housing. The way in which this assistance is provided has the capacity to interact positively or negatively with additional support services for those with multiple needs. Whilst both rent assistance and public housing programs aim to deliver affordable housing, public housing has the potential to offer stable housing in neighbourhoods that are inaccessible for many low-income private renters, even when in receipt of CRA. Rent assistance, on the other hand, potentially provides more flexibility in relation to housing choice.

Determining whether, and for whom, assistance in the form of public housing over rent assistance (or vice versa) is appropriate in an environment of diminishing funding becomes an urgent research priority. Housing assistance, however, is not solely limited to that provided to those in rental housing. Home ownership policies have provided a sound foundation to Australia's retirement income system - a factor that will become increasingly important with the ageing of the population. Home ownership is also seen as a source of other social and economic benefits.

A systematic review of the impact of housing assistance on non-shelter outcomes will provide those responsible for determining the form and structure of housing assistance with an indication of the factors that need to be taken into account in assessing the efficacy of different forms of assistance, including assistance directed at both the rental and the owner-occupied housing market.

By the very nature of this project, there is a much wider policy context to the review. Non-shelter outcomes cover a number of policy areas (education, labour markets, health and urban planning) and there is a need for all arms of government to be aware of the non-shelter impacts of housing assistance measures in the determination of their policies. This emphasizes the need for whole-of-government policy approaches backed by sound research.

1.5 Aims

The aim of this project has been to conduct a systematic review of the evidence on the non-shelter effects of housing assistance measures. In the first instance, the review focuses on the non-shelter outcomes related to employment, education, health and community viability and cohesion. It extends its analysis to other non-shelter outcomes as relevant.

This review has identified both the various dimensions of housing assistance measures and their relationship to the dimensions of non-shelter outcomes. Identifying the various *pathways* through which housing assistance influences non-shelter outcomes has been a key aim.

In addition to providing a systematic review of the extant evidence on linkages between housing assistance measures and non-shelter outcomes, this report has identified key research questions

which have not been adequately addressed and which will contribute to future policy development. As part of this assessment, research design and research methods that might underpin a collaborative research venture that will advance current understanding and contribute to policy development are set out.

The project has:

- Identified the key research questions which have not been adequately addressed hitherto and whose answers will significantly add to the current evidence base and contribute to policy development.
- Provided indicative frameworks that map linkages between various dimensions of housing assistance measures and various dimensions of non-shelter outcomes.
- Determined the appropriate statistical tools, assessment mechanisms, and datasets by which appropriate evidence-based conclusions can be drawn on the inter-linkages between housing assistance dimensions and non-shelter outcomes.
- Specified some of the research design and research methods that might underpin a collaborative research venture that will advance current understanding and contribute to policy development.

The research questions that were addressed in this systematic review are:

- What are the key dimensions of housing assistance that conceptually or logically relate to aspects of different non-shelter outcomes?
- How do dimensions of different forms of housing assistance affect different aspects of non-shelter outcomes?
- Under what circumstances do these dimensions of housing assistance have such effects upon non-shelter outcomes?
- What research designs and research methods will most productively support further primary research to improve understanding of these relationships?

1.6 Outline and approach

The remainder of this report is set out as follows. The following chapter provides an overview of the protocol followed in generating this systematic review, a taxonomy of the methodologies employed in the studies reviewed, and uses this to identify the criteria set for considering studies for review.

In the following three chapters, key studies describing the relationship between housing assistance and non-shelter outcomes from a number of fields are set out. Studies from labour (including education and training), health, and community viability and cohesion respectively are identified, and a summary of each presented. Summary matrices providing an overview of the literature selected for inclusion in the systematic review are provided in Appendices E, F and G for, respectively, labour, health and community viability and cohesion outcomes.

Chapter six provides a summary of what is known, what is not known and how these gaps could be filled.

Appendices A, B and C provide some reflections on the process of undertaking as broad an evidence based review as attempted in this report, some background information on one of the exemplary methodologies for building up an evidence base and some basic information on the sources used for the evidence reviewed.

2 SYSTEMATIC REVIEW PROTOCOL

2.1 Background

Undertaking a review of the research evidence on the role of housing assistance measures in affecting non-shelter outcomes is a complex process. First, one has to account for a large number of housing assistance measures many of which differ according to their underlying characteristics. Second, there exist a large number of possible non-shelter outcomes. Third, examining the relationship between housing assistance measures and non-shelter outcomes is complex because there exist many different pathways through which housing assistance measures can influence these non-shelter outcomes. Finally, the review process is complex because non-shelter outcomes are clearly influenced by a large number of non-housing factors in addition to housing assistance measures. Indeed, it is to be expected that non-housing influences would generally represent the dominant causal determinants of any particular non-shelter outcome we care to consider.

This signals the importance of a systematic approach to undertaking a review of the research evidence. In this report the Campbell Systematic Review (CSR) Protocol has been adopted and adapted to guide us in this process. The CSR Protocol was established to guide the review and synthesis of evidence of the effects of interventions and public policy primarily in the fields of social welfare, education and criminal justice.

The CSR Protocol establishes a framework by which the aims and intentions of reviewers are explicitly stated and sets out strict requirements as to how a literature review is to be conducted. In the CSR Protocol, the method by which the review is to be undertaken is pre-established. In theory, this leads to a more directed review path and is thought to reduce the impact of reviewer bias on the review process. Greater levels of transparency and accountability are introduced as a result.

That said, some flexibility in literature review design is essential, as the panel of reviewers needs to react to new information, which was not foreseen when establishing the Protocol. More importantly, there is a danger in rigidly applying a Protocol that continues to undergo modification, especially with regard to the treatment of qualitative research. Whilst the basic framework suggested by the CSR Protocol is used in this review, it has been adapted for the specific discipline needs of the present study.

In the strict form of the CSR Protocol, there is a range of criteria to be applied to determine whether a study is to be included in the review. The most important (and controversial) of these is the 'robust methodology' (our term) criterion. In the CSR Protocol, a study is methodologically robust and worthy of inclusion in a literature review (assuming other inclusion criteria are met) if the study utilises a methodology based on a randomised control or quasi-randomised control experiment/trial form where a no-treatment control group is included. However, while a properly implemented controlled experiment meets the robust methodology criterion, it is argued that limiting studies to be included in our review to randomised control experiments is inappropriate for a number of reasons.

First, true randomised experiments are rarely possible and very unlikely to be undertaken in the social sciences. They are more evident in the health sciences than is the case in the social sciences. Consequently, the literature on the health effects of housing assistance programs has been approached is different to the way literature on labour market and community effects of housing assistance measures has been assessed. In some cases, 'natural experiments' are observed and used to assess the impact of policy on behaviour and outcomes. Natural experiments arise when different, albeit similar, groups of individuals receive different policy treatments. The natural experiment approach in the social sciences exploits the differential policy application to evaluate the effect of policy changes that apply to some groups but not others.

Second, the social sciences have developed a range of statistical techniques to control for confounding factors without the application of randomised trials. The development and use of longitudinal data sets in particular facilitate the identification of the effect of policy parameters on behaviour and outcomes by using multiple observations of individuals over time. The effect of

policy interventions, net of the influence of an individual's other characteristics, can then be readily identified. Formal approaches such as these complement and can be supplemented by alternate approaches such as reliance on case studies, use of well-designed focus groups, development of formal theoretical frameworks and so on.

It is against this background that in this review, modifications to the strict form of the CSR Protocol on what is seen as methodologically robust have been developed to make it more general in form. We set out below the 'robust methodology' criterion to be applied in this study.

A study is assessed as being methodologically robust if a compelling attempt is made in the study to apply well-founded statistical and other methodological tools to the data and evidence so that robust conclusions on the impact of housing assistance effects on non-shelter outcomes can be reliably drawn.

Evidence and data differ according to the particular discipline area and subject matter. The appropriate methodologies to analyse that evidence and data will therefore not remain fixed.

However, despite these differences, studies assessed as being methodologically robust are based on data and evidence that is as free as possible of measurement error and adopt statistical techniques that control for the large range of non-housing assistance confounding influences on non-shelter outcomes so that the particular role of housing assistance programs can be more clearly seen.

There is one qualification to our criteria that we shall adopt. *Australian* studies that provide *suggestive* linkages between housing assistance and non-shelter outcomes but which fail to meet our methodological benchmark test will at times be included in the review. The conclusions from these studies will, however, be presented in a necessarily qualified form. Unfortunately, as will be emphasised on more than one occasion in this review, there exist large gaps in the Australian research agenda when it comes to the examination of housing assistance effects on non-shelter outcomes.

Beyond the 'big picture' issue of whether a study is methodologically robust and meets the demarcation line of study inclusion criteria, the CSR Protocol sets out a range of steps to be followed in undertaking a systematic review.

The remainder of this chapter is concerned with specifying features of the CSR Protocol utilised in the present review.

The adopted CSR Protocol contains 10 key elements. This CSR Protocol was applied to each non-shelter subject area with the criteria adopted to determine the methodological quality of a particular study being adapted to take into account the particular methodological tendencies of each subject matter area.

1. The objective of the review.
2. The criteria adopted to determine whether a particular study is to be included or excluded from the review.
3. The criteria adopted to determine the methodological quality of a particular study.
4. Types of studies.
5. Types of Housing Assistance recipients.
6. Types of Housing Assistance interventions.
7. Types of non-shelter outcomes.
8. The search strategy for identification of relevant studies.
9. Time frame.
10. Plans for updating the review.

2.2 The CSR Protocol for the Present Review

2.2.1 The Objective of the Review

The objective of this review is to determine the ability of housing assistance to deliver non-shelter outcomes in the areas of employment, education, health and community viability and cohesion. The review's broad aims have been discussed in section 1.5 above.

2.2.2 Criteria for inclusion and exclusion of studies in this review

Inclusion criteria

Primary studies were sought in English. The focus of the literature search was on the period 1990-2003. Definitions of key terms were agreed. Health definitions, for instance, can be problematic as they typically imply physically and mental soundness or absence of illness. Whilst for population health approaches to be included, health definitions need to be expanded to include wellbeing, which implies more than the mere absence of illness, it also implies happiness and prosperity (Hawkins 1988).

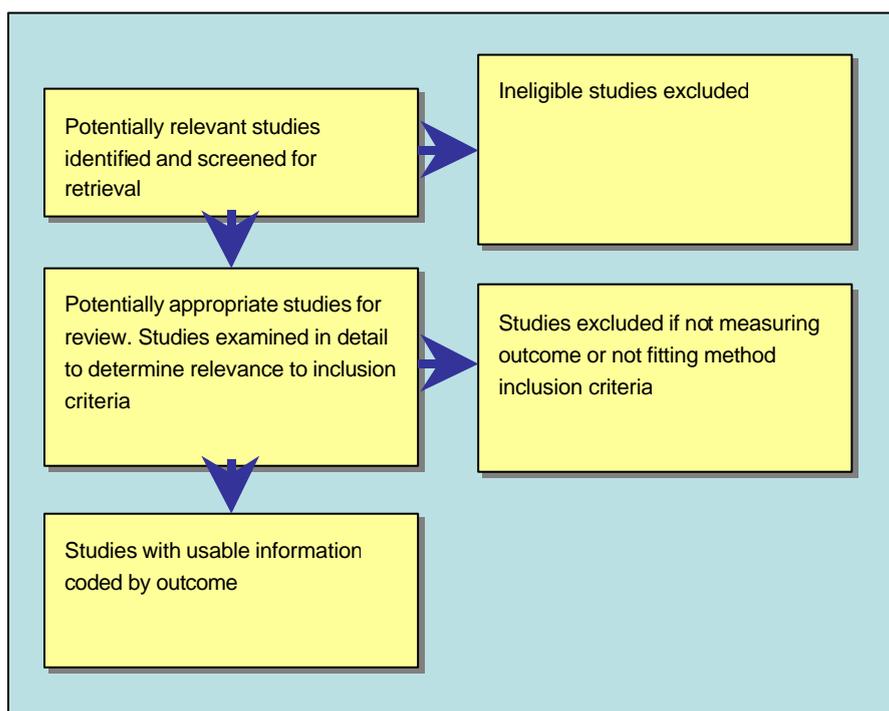
In addition, synonyms for inputs, outcomes and comparisons were identified and were used in designing the search strategy. Those applied for instance, in looking for housing matches meant that we also picked up articles that referred to shelter, lodging, accommodation, dwelling, household etc.. Careful attention to synonyms and antonyms is important for breadth and depth of search coverage. Most citations were included based on information within the title. All studies that used methods fitting our protocol were included.

Exclusion criteria

The review excluded those articles that were 'out-of-scope' on either a housing assistance/housing outcome basis or a non-shelter outcome basis. In addition, editorials, general and unoriginal, or whole of subject books and conference papers were excluded unless there was a clear indication that the publication had had a significant impact on the field.

Figure 2.1 summarises the process by which studies were included or excluded from the systematic review. We use the health field as a point of illustration. This figure illustrates the stages at which review criteria were applied. In the case of health, 1025 studies were reviewed; of which 762 were excluded from the review on an 'out of scope' basis. A further 108 were excluded on purely methodological grounds. Similar numbers were evident in other broad non-shelter fields.

Figure 2.2-1: Review process flow (with health as an example)



Assessment of methodological quality

Development of the assessment strategy occurred over a period of eight weeks through an iterative process. A bibliography of potentially appropriate studies and reviews of all the existing systematic literature was circulated to the wider non-shelter outcomes research team.

Based on these preliminary results and the general lack of randomised control trial evidence, the research team decided to pursue a strategy whereby a set of methodology review criteria were devised for each of the non-shelter areas being examined. The decision to move away from the universal framework initially envisioned evolved because of having to accommodate such a broad range of inputs and methods that differed dramatically depending on the non-shelter housing areas being evaluated.

During a teleconference of participants in the present systematic review, concern was expressed regarding the primary exclusion criteria being based on an assessment of study design alone. Consequently, a decision was made to develop a broader inclusion criteria based on potential value of the paper to the question. Adoption of broader inclusion criteria requires that meta-analysis appropriately isolate and comment on research findings based on an appraisal of any perceived weakness in methodology or conceptualisation. This more inclusive strategy that was adopted deals more appropriately with the potential to undervalue qualitative and or theoretical research findings and is in line with other Campbell protocol guidelines for review protocol such as that used by Baldwin *et al* (2002).

Table 2.2 below provides a taxonomy of the types of study designs that were employed by the potentially relevant literature and highlights the strengths and weaknesses of each approach. Had the initial inclusion criteria been adhered to, this review would have included only studies below category 4. Concerns with the difficulties of implementing such studies in the social sciences as well as with their potential limitations, however, were additional factors that contributed to a adoption of a more inclusive approach in this review.

Table 2.2: Study design definitions

	Level of evidence	Type of study design	Study design reported	
			Negative (X)	Positive (v)
Methodology	0 (highest)	Systematic review	<ul style="list-style-type: none"> • The cut-offs for inclusion may be too high or too low. • The question under consideration may not be specified properly i.e. it may be too broad or too specific. • The results capture a snapshot of published research at a particular time interval so results must be interpreted in relation to currency of information and change in the body of knowledge being reviewed. 	<ul style="list-style-type: none"> • This attempts to answer a particular research question in an evidence-based manner. • It provides policy makers with a summary of available evidence. • It effectively maps the inputs and outcomes under review.
	1	Randomised Control Trial (RCT)	<ul style="list-style-type: none"> • This assumes that variables can be controlled and groups appropriately matched • This assumes that randomised blind allocation of intervention is given ethical clearance by relevant human ethics review board • This is very expensive in terms of time and money. • There may be compliance and participant attrition problems. • Blinding and random allocation can be problematic. 	<ul style="list-style-type: none"> • This is the 'gold standard' in health research but is extremely rare in the social sciences. • Random allocation balances known, unknown and unmeasurable confounding variables • Greater confidence that conclusions are attributable solely to intervention manipulation. • Reduces selection bias • Blinding reduces measurement and performance bias • Provides evidence of causality
	2	Quasi experimental (i.e. not random)	<ul style="list-style-type: none"> • Because variables not fully controlled may exhibit selection, performance and measurement bias 	<ul style="list-style-type: none"> • Remains experimenter controlled • Most reliable when variables of interest and controls for these made explicit

Table 2.1 Continued

	Type of study design	Study design reported	
		Negative (X)	Positive (v)
	Observational (i.e. cohort studies, pre and post test studies, cross-sectional and longitudinal studies)	<ul style="list-style-type: none"> • Can take a long time • Can be an expensive, large scale undertaking • Useful when randomised studies are inappropriate • external factors can change over time with panel or longitudinal data 	<ul style="list-style-type: none"> • Most reliable observational data is cohort studies because there is no recall bias and can ensure baseline similarities between groups. • More reliable answers and less statistical problems than case control
4	Case (i.e. case series and case comparative)	<ul style="list-style-type: none"> • No statistical validity • Hard to control for confounders as no controls • Subject to recall bias as retrospective • Difficult to demonstrate causality 	<ul style="list-style-type: none"> • May generate hypotheses • Less expensive • Can have large sample sizes
5	Expert opinion/ Theoretical/ unsystematic literature review	<ul style="list-style-type: none"> • May be based on hearsay • May not clearly indicate assumptions or method • May be faulty or inaccurate 	<ul style="list-style-type: none"> • May assist in reconceptualisation of problem area • May add to knowledge in terms of scoping variables or measurement methods

Source: Adapted from Baldwin *et al* (2002).

Types of studies

Both Australian and international studies that meet the 'robust methodology' criterion will be included in the review together with Australian studies that fall short of meeting this standard but still provide suggestive linkages between housing assistance programs and non-shelter outcomes.

One of the strengths of the team brought together for this review is its multi-disciplinary nature. A consequence of this is that several reviewers from different disciplines can work both independently and collaboratively to determine which material is most important for inclusion in the review. This will assist in the generation of an unbiased selection of papers for ultimate appraisal. It will also assist in developing a conceptual framework for identification of key issues.

Types of Housing Assistance recipients

All

Types of Housing Assistance interventions

The following direct housing assistance programs (see Table 1.1) will be examined:

- Private rent assistance

- Public housing
- Home purchase assistance
- Home modification programs
- Home care

Indirect housing assistance programs such as tax concessions applied in a non-tenure neutral manner such as Capital Gains Tax will not be given extended treatment in this report. However, publicly funded neighbourhood regeneration programs linked to housing assistance programs (such as public housing) and mobility allowances linked to housing assistance programs will be assessed. Aboriginal housing assistance programs have been excluded from consideration because of time and data constraints.

Types of non-shelter outcomes

The following non-shelter outcomes will be reviewed:

- Physical and mental health status.
- Education status.
- Labour market outcomes.
- Crime.
- Community participation and social cohesion.
- Income/wealth distribution and poverty outcomes.
- Locational advantage.

Attention has been paid to assessing the relationship between housing dimensions, pathways and the *specific* aspects of the non-shelter outcomes signalled in chapter 1 (and to be outlined in more detail in chapters 3 to 5). For example, in regard to education outcomes, the concern of this review has not been with 'education' outcomes in general but with specific forms of education outcomes identified as being of prime policy interest. These include secondary school completion rates and highest level of schooling achieved. In this respect, for example, the review has focused on whether rent assistance programs have been of benefit in terms of improving school retention rates.

2.2.3 Search strategy for identification of relevant studies

In order to locate relevant studies, systematic searches of the library databases of the universities of the participating researchers were conducted using keyword techniques to locate published (including web published) and unpublished articles, reports and other material that might be deemed relevant to the study.

At the early stage of the literature review, broad inclusion criteria were applied. After this process was completed, the researchers, using titles, abstracts, summaries and the like narrowed the literature to those studies which would clearly be candidates for inclusion in the systematic review. Any study that relates housing assistance policy (broadly defined) to non-shelter outcomes, again broadly defined, including conceptual and theoretical studies was included in the first stage of the search process. Particular care was taken to identify empirical studies that clearly related shelter assistance programs to non-shelter outcomes.

The first stage filtering process included both qualitative and quantitative studies as well as specific case studies. Qualitative studies, including case studies, which might report, for example, the analysis of narratives of program participants and/or those making or implementing assistance policy were included to illustrate breadth of policy and breadth of policy outcomes. Distinctions were made between studies that used formal methods of textual analysis and those of a more anecdotal nature.

It is important to realise that qualitative studies are not intended to deliver results about which inferences can be made about wider populations. In general, qualitative studies are not formal

statistical exercises. Rather, they are designed to deliver breadth of experience that may guide researchers in formulating theory and specific hypotheses to be tested.

Quantitative studies, on the other hand, are typically designed to reveal from sample evidence inferences that can be made about broader populations. These studies will be surveyed and critically evaluated on the basis of how well statistical inferences can be drawn from the analysis. That is, a criterion used in selecting and evaluating the quantitative studies will be the statistical robustness of the studies, given their research methodologies.

The detailed search process undertaken, including identification of key search terms, databases and websites, is set out in Appendix D.

2.2.4 Description of methods used in primary research

Table 2.2 has provided a broad indication of the methods that have been employed in the primary research reviewed. The question of how well the studies covered meet the criteria and what the concerns are with those studies that have a number of flaws is covered in the relevant review chapters 3 to 5.

2.2.5 Criteria for determination of independent findings

Chapters 3 to 5 highlight the key findings that can be extracted from the literature reviewed. As will be obvious from the results, there are relatively few findings that can be presented without qualification. An indication of the factors that contribute to this is provided both in the outcome specific chapters 3 to 5 and in a generalised form in Chapter 6.

2.2.6 Types of data analysis

For each study that met the criteria for inclusion in the modified CSR Protocol, the non-shelter outcome data has been extracted and assessed in a critical manner against the range of measures listed above. Studies have been evaluated against a housing assistance *dimensions*, *pathways*, and *type* of non-shelter outcome framework (see chapter 1) and findings evaluated against the research questions posed above and the policy context of the study.

2.3 Time Frame

The review was completed within 18 weeks. The search process and the review and synthesis of the evidence was complex and time consuming. Both of these major tasks would have benefited from a longer timeframe. Given the broad scope of the review and the multiple non-shelter outcomes covered the timeframe was considered inadequate.

2.4 Plans for updating the review

To be undertaken by CRV team.

2.5 Statement concerning conflict of interest

None known.

3 HOUSING, LABOUR MARKETS AND EDUCATION

3.1 Introduction

This chapter reviews Australian and overseas research evidence on the linkages between housing assistance (HA) programs and labour market and education outcomes. HA programs come in many different forms. It is not surprising, therefore, that HA programs may influence labour market and education outcomes via a wide variety of direct and indirect channels.

The manner in which HA programs provide support is varied. For example, HA programs may provide shelter to those who would otherwise be homeless. Likewise, they can enable recipients to achieve better quality housing than they might be able to afford. Housing cost stress levels are often reduced via a subsidy to the rent that the recipient pays. In other instances, HA measures are designed to enable recipients to more easily make the transition to homeownership.

When HA programs provide for greater security of tenure, reduce housing cost stress levels and improve the dwelling and housing environment, a stronger platform for better learning, for more effective job search and for more settled work patterns results. At the same time, however, HA measures may impede regional labour market mobility and so induce inefficiencies in labour markets. This may particularly be the case when there exists a lack of clear benefit transferability between jurisdictions. Further, HA programs typically act to increase a recipient's 'non-earned' income. This, in turn, can reduce the incentive to work. The incentive to work may also be reduced if HA is structured in such a way that assistance is withdrawn sharply as earned income rises (the so-called housing assistance 'poverty trap' problem).

The fact that a large range of potentially positive and potentially negative non-shelter effects can arise from HA programs means that it is important to gather together the relevant research evidence and understand what it tells us about the size and direction of these and other non-shelter effects. Despite the very large body of Australian research on both housing issues and on the determinants of labour market and education outcomes, surprisingly few Australian studies are devoted specifically to an analysis of linkages between Australian HA measures and labour market and education outcomes. Of these, only a handful of Australian studies can be characterised as methodologically robust against our review criteria established in chapter 2.⁵

The paucity of robust Australian research on the linkages between housing assistance and labour market and education outcomes contrasts with an ever-growing array of such studies in the US and the UK, specifically focussed on HA and non-shelter linkages. As a consequence, greater coverage is given to US and UK studies in this review than might otherwise have been expected given the focus on informing the development of the Australian policy and research agenda. This issue is discussed in the conclusion to this chapter and in chapter 6 where an attempt is made to set out what should be done to correct for this gap in the Australian research profile.

Chapter 3 is set out as follows. Section 3.1 provides context to the review by listing key education and labour market processes and outcomes and examining the potential role that HA measures may play in influencing these labour market and education outcomes and processes.

The review of the Australian and overseas research evidence is contained in section 3.2. It comprises four sub-sections.

The first part of the review (section 3.2.1) considers the impact of HA measures on labour supply. The impact of HA measures on two fundamental labour supply decisions are set out, (a) the

⁵ As indicated in Chapter 2, a study is assessed as being methodologically robust if a compelling attempt is made in the study to apply well-founded statistical and other methodological tools to the data and evidence so that robust conclusions on the impact of housing assistance effects on labour market and education outcomes can be reliably drawn. By implication, such studies are based on data and evidence that is as free as possible of measurement error and adopt statistical techniques that control for the large range of non-housing assistance confounding influences on non-shelter outcomes so that the particular role of housing assistance programs can be more clearly seen.

decision of whether or not to participate in the labour market and, (b) the decision on the number of hours of work to supply.

The second part of the review (section 3.2.2) then considers research findings on the links between housing tenures and HA programs on the one hand and unemployment on the other hand. There are a number of strands to the literature on housing markets and unemployment. One important strand refers to the long-standing UK-based literature on how public housing may impede inter-regional labour mobility and so affect unemployment outcomes. More recently, Andrew Oswald has argued that higher rates of homeownership in many western countries in recent decades have acted to increase the rate of unemployment because homeowners are faced with high transaction costs making them less mobile than private renters. By implication, HA measures that make it easier for people to enter the homeownership market act to increase the unemployment rate. In a related development in the literature, attention is also being paid to the role that mortgages and housing equity levels may play in the labour market. One final component of the literature relates to the incorporation of housing factors into macro models of the labour market.

The third part of the review (section 3.2.3) brings a spatial dimension to our examination of the relationship between housing assistance and labour markets. The spatial mismatch hypothesis represents a long-standing part of the urban affairs research literature and asserts that in many cities and regions poor people may not reside in areas where jobs are located thereby perpetuating patterns of poverty and inequality. This suggests a potentially important role for HA programs in moving people to where the jobs are (as an alternative to economic development policies to develop poor neighbourhoods). The spatial mismatch hypothesis has been thoroughly covered in a number of previous comprehensive literature reviews. In this chapter a number of key conclusions from these reviews are restated and the implications for Australia drawn out. In a related literature, the role of neighbourhood effects in affecting labour market and education outcomes has received increased attention. Neighbourhood effects are more fully developed in chapter 5. In this chapter, attention is restricted to some of the key findings with respect to the labour market.

The final part of the chapter (section 3.2.4) discusses the links between housing and education. The review of the literature covers two main types of research evidence. The first type of research evidence is indirect evidence on the impact of HA programs on education outcomes and is drawn from the voluminous literature on the factors that influence education outcomes. This literature points, for example, to the importance of stability in the child's home environment in affecting school performance. It is possible to conclude from this that HA programs that provide greater security of tenure will be more likely to generate better educational performance outcomes. The second type of research evidence examined is a much smaller literature, again scant in terms of Australian work, which has as a particular focus the links between housing and education. Here, a discussion is set out relating to issues such as the role of public housing, homeownership, and homelessness on education outcomes.

In section 3.4, possible implications for the design of HA policies in Australia are drawn from the review. Section 3.5 identifies those areas of Australian research on housing assistance programs, education and labour markets most clearly in need of remedial action.

3.2 Housing Assistance and Labour Market and Education Linkages

A static representation

To understand the potential links between housing assistance programs and labour market and education outcomes, it is first helpful to sketch out the structure of the labour market and of education sector. We begin with a simple non-spatial heuristic representation of the labour market and the role of education in the labour market (see Figure 3.1).⁶

⁶ The model is one of the 'formal' labour market as no account is taken of the household production sector and work conducted through informal work channels.

Human capital formation—the development of an individual's knowledge and skills—provides a useful entry point to our heuristic model of the labour market. It also reinforces the argument that there exists a close link between the labour market and education, the two points of focus of the current chapter. Human capital formation is the product of both the individual's abilities, commitment and receptiveness to schooling together with the education and training services provided to that individual by families, schools, universities and colleges. There are important environmental influences on education and training processes and outcomes. Included in these environmental effects are neighbourhood and housing influences.

The greater the security of tenure provided to the HA recipient relative to the non-receipt case, the greater may be the sense of security felt by the child. The more secure the child, the better the learning environment. In certain situations, frequent moves may inhibit child development and educational outcomes. Further, a reduction in housing costs lessens financial stress and gives the family greater resources in which to purchase educational resources. The provision of HA to overcome cases of homelessness or poor housing outcomes can be expected to have a significant positive effect on educational outcomes.

Dwelling type, streetscape and neighbourhood dimensions of HA measures are also likely to have important impacts on education outcomes. Assistance that provides for or enables a family to live in a clean, healthy and spacious environment is also more likely to result in a better learning environment. Peer group and parental effects, neighbourhood educational resources, environmental amenity and health quality can lower or enhance motivation, expectations for academic achievement and readiness for learning. HA programs linked to neighbourhood regeneration may improve these outcomes.

Labour market signals, in the form of the perceived rates of return to various types of educational investments, will also strongly influence the education and training decisions families and individuals make. Not all education and training is undertaken prior to entry to the workplace as firms provide on-the-job training to workers. However, the literature on housing and education linkages rarely refers to training issues and we shall not develop this link further in the current review.

Human capital formation represents the 'quality' component of labour supply. The quantity component of labour supply is represented by the desired hours of labour. This component can be broken down into two parts. First, a decision about whether to participate in the formal labour market or not. Second, once an individual decides to participate in the labour market, they must also determine the number of hours of labour they wish to supply given their family circumstances, their general preference structure and their hourly wage opportunities. Government tax and income support programs have an important influence over labour supply decisions. Such policies influence the non-labour earnings component of individual's incomes and the net returns received by the income support recipient to a marginal increase in their supply of labour to the market. The influence of government tax and income support policies is greatest at the low earnings end of the market, exactly that market segment where HA measures are also targeted. For these individuals, the application of income tests on income support payments sharply affects the effective marginal tax rates facing the individual in their labour supply choices.

Labour supply together with the demand for labour, a function of the productivity of workers and the demand for their goods in the product market, determines outcomes in the labour market including the jobs individuals are attached to, the earnings they receive and the hours they work. While the wage in the market acts as a key instrument for matching labour demand with labour supply, there are important additional mediators in the labour market including wage and industrial relations regulations.

Not all those individuals who have taken a decision to participate in the labour force end up in jobs. Such individuals are classified as being unemployed when they are actively seeking work. The job search process is a complex one. A range of factors influences the effectiveness of the job search process. These include the employability of the unemployed person, the networks of information and support available to the unemployed person, the distribution of wage offers and

the individual's reservation wage.⁷ Governments play an important role in the job search process through their interventions in the job vacancy information process, training opportunities for unemployed people and the income support programs for the unemployed. Those individuals who remain unemployed for long periods may, in fact, lose an attachment to the labour market and no longer actively search for work. In turn, they may be classified as 'not in the labour force' even when they would take a job if it were offered to them.

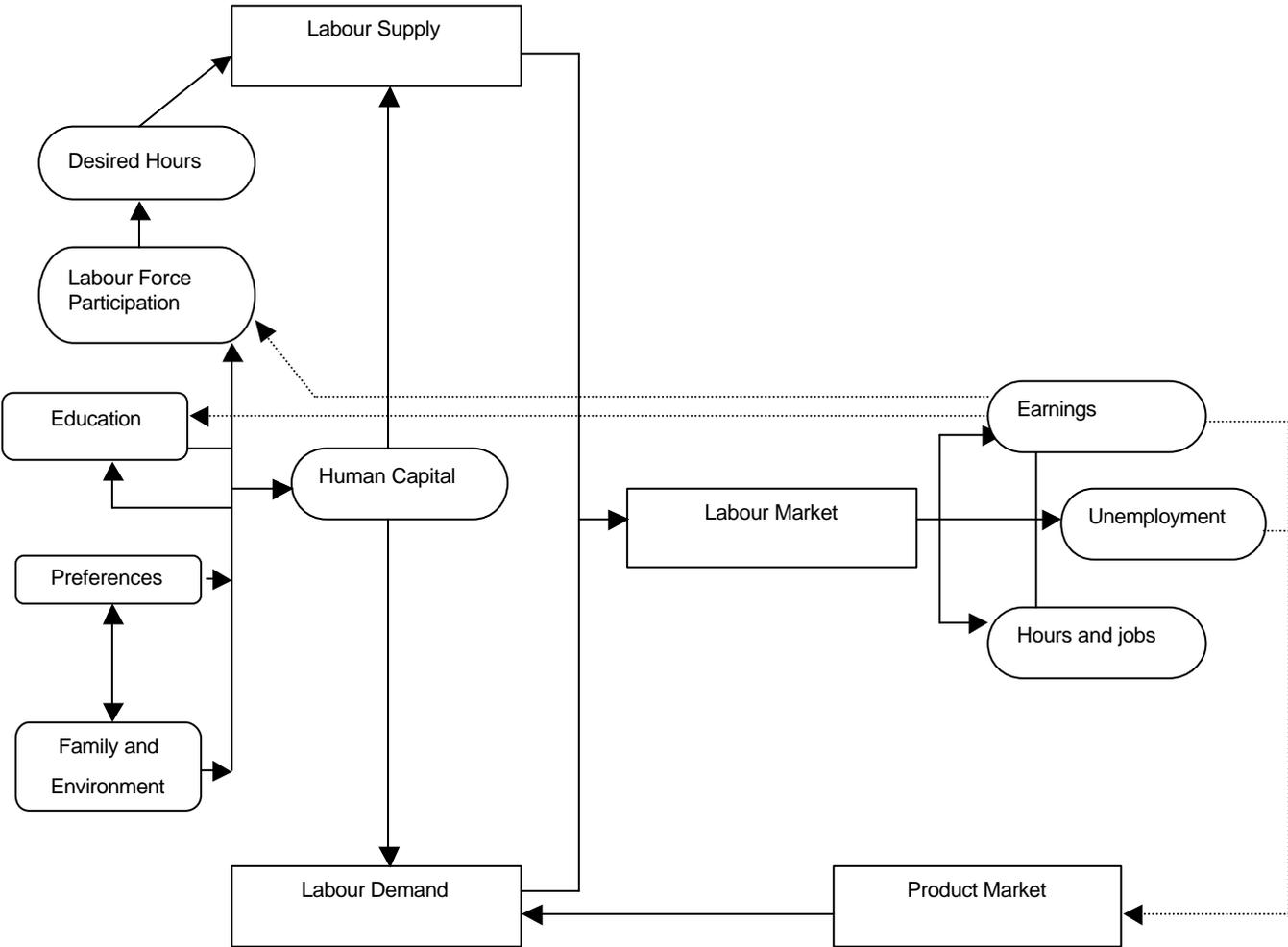
There are a number of potentially important HA links in terms of labour supply and unemployment outcomes. For example, public and private rental subsidies may generate (unearned) income and substitution effects on labour supply.⁸ Further, job search decisions may be influenced if the receipt of HA measures affects an individual's reservation wage. Those on waiting queues for public housing may be induced to maintain low incomes over time to get the public housing spot with a consequent impact on labour supply and job search incentives. Housing assistance measures may also harm or improve geographical mobility and hence influence the efficiency of the regional matching process in the labour market. Home ownership is thought by some to decrease the efficiency of the labour market and to increase the natural rate of unemployment, as homeowners are less mobile than other tenures due to the high transaction costs associated with moving.⁹ Finally, HA may impact on the long-run labour supply choice/outcome by raising the ability to develop human capital: HA may permit new household formation and lower crowding, provide stability, better education and improved health outcomes

⁷ The reservation wage is the minimum wage at which an individual who is not currently working will begin to supply positive hours of labour.

⁸ The income effect refers to the fact that HA measures generally increase the resources available to recipients and therefore acts to 'increase their income'. The substitution effect refers to the effect of HA measures on the relative price of shelter and other goods. If housing becomes cheaper due to a HA program, recipients may 'substitute' away from more expensive commodities and towards the now relatively cheaper housing. In both cases, the set of commodities (including housing) that an individual purchases in the presence of a HA program may differ from that which is purchased in the absence of a program. See section 3.3.1 for further discussion of these issues.

⁹ The natural rate of unemployment refers to the level of unemployment that exists in an economy that has full employment. The natural rate is greater than zero because at any point in time for a number of reasons. For example, some individuals are between jobs and therefore temporarily unemployed.

Figure 3.3-1: The Labour Market



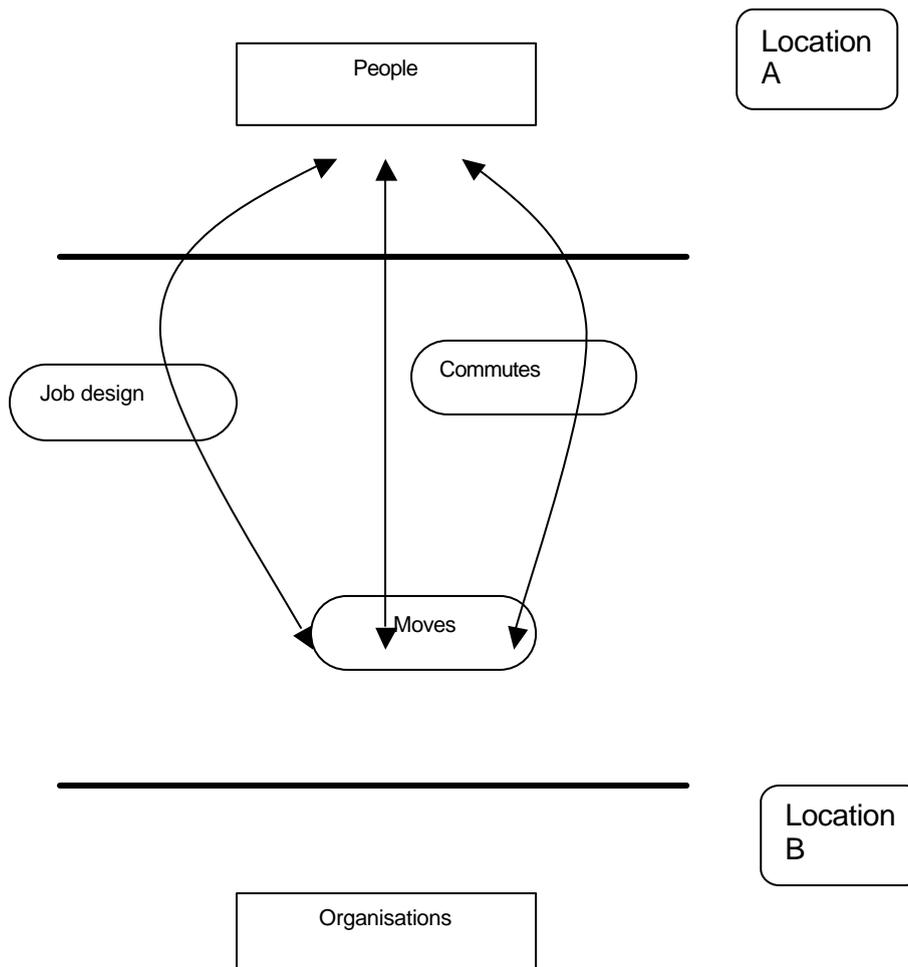
Legend: —▶ Direct effect
▶ Feedback mechanism

Spatial dimensions

Having listed the major features of our static heuristic labour market model, we are now in a position to introduce a spatial dimension to that model. Figure 3.2 serves to highlight the fact that individuals or households generally reside in locations that are distinct to those where employment is undertaken. This spatial disparity between people and jobs may be overcome through a variety of mechanisms that include commuting or relocating the household.

The first point to notice when introducing a spatial dimension is that a mismatch may exist between the location of people and the location of jobs. A similar mismatch may be evident between the location of education services and the location of those who would benefit from those services. While there a number of factors that could help ameliorate such a mismatch, ultimately such a friction can only be overcome if organisations are mobile (i.e., firms move to the people), people are mobile (i.e., people move or commute to where the jobs are located) or work tasks become spatially amorphous (i.e., the job is re-designed so that work tasks can be completed anywhere including by the individual working from home using a linked home computer and telecommunication network). The forces of the market will act to increase mobility levels when spatial mismatch is evident but government policies that provide greater incentives to be mobile will play their part. Correspondingly, policies that inhibit mobility will exacerbate spatial mismatch problems.

Figure 3.3-2: People, Jobs and Locations

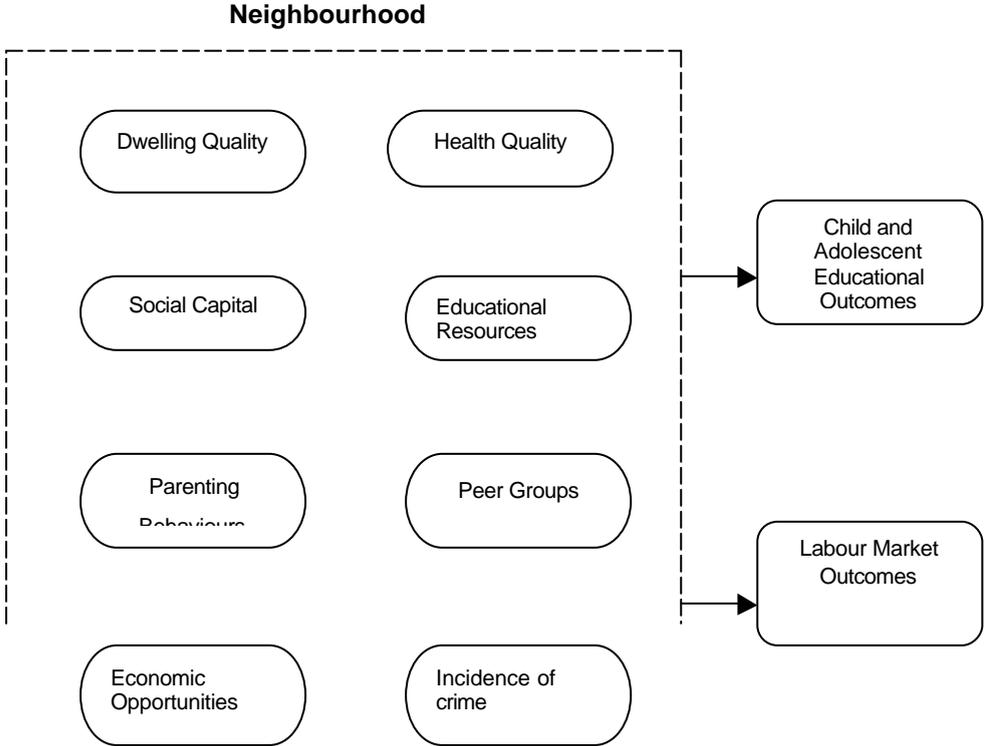


A second important spatial feature of the labour market is that of locational inequality. Not all locations are equal in terms of the environment they offer for human capital formation or for job opportunities. The myriad of potential locational or neighbourhood effects are depicted in Figure 3.3 below. At the one end of the scale, a neighbourhood may have few economic and

educational resources and be characterised by low levels of social capital, poor parenting and peer group behaviours with endemic crime.

Homelessness, inadequate and cramped housing together with unhealthy environments may also be endemic in the neighbourhood. There may or may not be jobs in this neighbourhood but those that do exist may be low paid and casual, exhibit short tenures and offer few opportunities for career advancement. Finally, individuals from such neighbourhoods may experience discrimination in job hiring decisions by organisations elsewhere. At the other end of the spectrum, neighbourhoods may be characterised by good housing, healthy environments and high levels of social capital. As is discussed later, how these neighbourhood characteristics interact with one another and household functioning is complex. Nonetheless, educational and labour market outcomes can be expected to be lower in neighbourhoods with fewer resources.

Figure 3.3-3: Neighbourhoods, education and labour



3.3 A Systematic Review of the Literature

3.3.1 Labour Supply

It has been well recognised by researchers and policy makers for some time that programs that transfer resources to individuals, either in the form of cash or in-kind, potentially change observed labour market behaviour and outcomes. These changes may occur for a variety of reasons. The parameters of transfer program may alter the relative cost or price of undertaking certain activities or consuming certain goods. For example, housing assistance measures in the form of rental subsidies may change the relative price of shelter in comparison to an environment in which there is no HA measure. Further, the withdrawal or reduction of assistance may influence an individual’s after tax wage as the value of the HA transfer is reduced when earned income from wages increase. Hence, the relative cost of non-labour (leisure) activities varies as labour market activity is undertaken.

It is also true that even if a transfer does not affect the relative prices of the goods or activities an individual consumes or participates in, a positive transfer will enlarge the set of opportunities available to the individual. This ‘income effect’ of the transfer will likely change the individual’s behaviour compared to the situation of no transfer.

The effect of transfers on labour market behaviour and outcomes has been extensively studied. The set of behaviours that may be influenced by transfers include the decision to participate in the labour force; the number of hours of labour supplied conditional on participation; duration of employment spells; the individual's propensity to quit employment; and, the length of time an individual spends unemployed. The nature of the impact of transfer programs on labour market behaviour and outcomes will depend critically on the structure and characteristics of the program. In the discussion that follows the linkages between HA programs and labour market outcomes is described. The fact that HA measures may take a range of forms means that identifying how these linkages operate between the HA measure and labour market outcomes will depend critically on identifying the parameters of the program that impact on behaviour.

Analysis of how HA programs influence behaviour in the labour market may proceed using a standard neoclassical model of labour supply. In this model, the individual maximises her utility by allocating time between labour and non-labour activities. Time not spent in labour activities is assumed to represent leisure time. The choice set or set of opportunities available to the individual is determined by the amount of time available to the individual and her opportunities in the labour market. The latter aspect is usually assumed to be encapsulated in the wage rate faced by the individual. If the wage rate offered to the individual is sufficiently high then she will supply positive hours of labour supply and time will be allocated between work and leisure activities to maximise the individual's utility.

The income earned from work activities, along with any unearned income, will allow the individual to purchase a bundle of goods and services she can consume. Amongst other goods, the individual will usually consume shelter or housing in some form or another. Intuitively then, a housing assistance program that either provides an individual with additional funds to purchase shelter, or provides shelter as part of an in-kind transfer, will likely change the individual's decision to allocate time between work and leisure compared to that which would be made in the absence of the transfer program. Hence the decision to participate in the labour force and conditional on supplying labour, the amount that is supplied, will likely be influenced by the existence and characteristics of the HA program.

While the effect of transfer programs that provide assistance in the form of cash to individuals has been extensively examined in the literature, HA programs are more problematical from an analytical perspective. For example, consider a HA program that may provides an in-kind transfer in the form of shelter to an individual or household at a subsidized rent. When HA is provided in the form of a specific residence, the transfer is an in-kind transfer that is not readily fungible. The transfer must be 'consumed' in its entirety in the form it is received including its spatial or location characteristics. In contrast, cash transfer programs allow the individual choice in how the transfer is consumed. In the case of the HA program, however, the choices of the individual may be constrained by the fact that the transfer is provided in a particular form and for a particular purpose such as rent subsidisation.

In the case of cash assistance, the impacts on some aspects of labour market behaviour are well recognised. Economic theory suggests that the provision of cash transfers will reduce the probability that an individual participates in the labour force. For those who do participate, hours of work are likely to be lower than in the absence of the program when the transferred is reduced gradually or tapered off. This may create non-linearities in the opportunity set for the individual that may affect labour market choices. In a policy context, it is possible that transfer programs create poverty traps and or low income traps that generate incentives for individuals to maintain low levels of labour market activity and therefore maintain eligibility for the transfer program. If the recipient of HA is faced with high taper or benefit withdrawal rates, her effective wage rate after the withdrawal of benefits may be so low as to provide little or no incentive to supply labour. The reasons for these outcomes reflect the combined influence of transfers on the costs of employment and leisure (or non-labour activities) in the presence of the transfer program and the higher income associated with receipt of a transfer.

The effect of an in-kind transfer on the decision to participate in the labour force and, conditional on participation, the decision on how much labour will be supplied is more complex than that of a cash transfer. The impact of such a transfer will depend on the relationship of the good (shelter or housing) transferred and leisure. Leonesio (1988) examines the impact of in-kind transfers on

the labour supply decisions of individuals using a neo-classical labour supply model. He finds that when the good transferred is a substitute for leisure, the in-kind transfer will either increase work effort (labour supply) or lead to a smaller reduction in labour supply than would an equivalent cash transfer. Conversely, when the good transferred and leisure are complements, theory cannot predict how labour supply changes compared to labour supply under a cash transfer. In both cases, however, hours of work will decline. Schone (1992) also examines the ambiguity associated with the effect of an in-kind transfer on the labour supply decision.

In the absence of unambiguous predictions from theory, empirical analysis must be undertaken to determine the effect of the transfer on labour market behaviour. Leonesio's analysis of the impact of the HA programs in the United States suggests that in-kind transfers under HA programs induce smaller reductions in hours worked than equally generous cash transfers. The results of this analysis, however, should be treated cautiously as the relationships are estimated at an aggregate level and may not accurately pick-up the nuances associated with actual program parameters.

Empirical analysis of the impact of HA measures on labour supply using microdata generally has been conducted in the context of all programs that provide HA. Only a few studies have been able to distinguish between the particular form HA is received. Distinguishing between different types of HA programs is important for the reasons discussed above as the impact on labour market behaviour will depend critically on the characteristics and parameters of individual programs. In a number of countries including Australia, HA measures take a variety of forms including the provision of public housing at rent levels lower than those in the private rental market, and, the provision of transfers to be used for the subsidization of rents in the private rental market. In each case, the set of prices faced by HA recipients and the impact on the set of available opportunities will reflect the characteristics of the program.

A study by Rosenbaum and Harris (2001) highlight the importance of identifying the characteristics of particular HA programs on labour market behaviour and outcomes. In that study, they examine the impact of the Moving to Opportunities program in Chicago, Illinois. This program uses a random assignment technique to examine the impact of moving households in public housing estates characterised by high poverty rates to low poverty neighbourhoods by providing tenant-based housing subsidies that can be used in the private rental market.

The results of their study suggest short-term effects of a move to a low poverty neighbourhood include a statistically significant positive effect on employment. No impact on the rate of labour force participation or wages amongst those employed is identified, however. Although the study acknowledged the difficulty of identifying the effect of moving to a low poverty neighbourhood net of any macroeconomic influences, it highlights an important linkage between HA programs and labour market outcomes. Housing assistance measures that are not location specific potentially provide greater access to employment opportunities for recipients and thereby reduce the financial costs associated with engaging in employment. Alternatively, the characteristics of the neighbourhood the household relocates to may induce a greater willingness to engage in labour market activity if it is consistent with 'neighbourhood values'.

The importance of the form of HA and the consequent transmission mechanism associated with the provision of HA measures is highlighted by the study of Harkness and Newman (2002). In this study, the 'long term' impact (between 10 and 15 years) of residing in public housing as a child on labour market outcomes as an adult is examined. The linkage between public housing residence and subsequent labour market outcomes may arise for a variety of reasons. Public housing may offer households a better quality of shelter relative to families in similar economic circumstances residing in the private market. Overcrowding may be minimised thereby improving the child's health and development. Further, public housing may provide a more stable environment by limiting the financial burden faced by the household. This in turn may generate greater security in the child's upbringing and limit potential interruptions to her education. Limiting the financial burden imposed by the need to provide shelter may also free up other resources for the household that can be directed towards the education and development of children.

Residing in public housing may have, however, detrimental effects. Hence, to the extent that public housing is concentrated in high poverty neighbourhoods, behaviour and development of

the children may be affected by the deleterious neighbourhood characteristics. Exposure to criminal activities or an environment in which education and commitment to work is limited may have adverse consequences on the child's development and her outcomes as an adult. It is also true that the behaviour of parents or guardians receiving public HA may affect the outcomes exhibited by children. Further, public housing offers potentially large and valuable subsidies that may affect incentives for adults in a household to engage in paid employment. Poor attachment to the workforce and to employment in general may be transmitted across generations. In a similar vein, if public housing is located in an area in which employment opportunities are limited parents may have limited ability to engage in the workforce with detrimental impacts on children. Conversely, to the extent that public housing reduces the financial situation of the household, stress and various forms of psychological burden may be minimised. The development of children in the household may then be beneficially impacted.

It is clear that these potential linkages between public housing and labour market outcomes will operate differently, or not at all, for other HA measures. Hence, subsidies that can be spent in the private market may not constrain the household to reside in areas of concentrated poverty and be prone to potentially adverse neighbourhood effects. On the other hand, private rental properties may not be as well maintained as those in a public housing estate. In both cases, however, the relaxation of the household budget constraint may have positive implications for the resources and stresses the household faces. In turn, the development of children and their subsequent labour market behaviour may be improved.

The study by Harkness and Newman (2002) cannot identify the exact transmission mechanism by which residence in public housing as a child impacts on the labour market outcomes as an adult. Nonetheless, positive impacts of living in public housing as a child on labour market outcomes as an adult are generally recognised. Hence, their results suggest that growing up in public housing raises the probability of working between ages 25 and 27; raises annual earnings also between the ages of 25 and 27, and; reduces the use of welfare (other transfer programs) between the ages of 20 and 27.

Bingley and Walker (2001) examine the impact of Housing Benefit (a means tested transfer program) on labour supply in the United Kingdom. Their findings suggest that income from the HB program has similar labour supply effects to earned income. That is, that any stigma effect associated with receipt of HB is small.

Ong (1998) examines the relationship between the receipt of subsidised housing and hours worked by female recipients of welfare or public assistance. For the reasons described above, it is generally believed that HA programs create disincentives for individuals to engage in the labour market. Ong (1998) finds that among welfare recipients, those residing in public housing work considerably less than those in receipt of rental subsidies that can be used in the private rental market (section 8 recipients). At the same time, those in public housing and renting in the private rental market both work approximately the same number of hours after controlling for other observable factors. The exact reasons for this result are unclear, though Ong suggests that it may reflect the better set of employment opportunities available to section 8 recipients by releasing them from neighbourhoods where prospects are better and the individual faces less discrimination or stereotyping.

Other studies have examined the impact of HA measures on labour market behaviour without distinguishing the form the transfer takes. For example, Fischer (2000) is an American study that examines the labour force behaviour (hours worked annually and labour force participation) of public assistance recipients who do and do not receive HA. Further, the labour force behaviour of those individuals is examined prior to and following the receipt of HA measures. In neither case, however, can the analysis distinguish between individuals in public housing and those receiving tenant based assistance (section 8 measures). The analysis suggests that housing subsidies have a substantial negative effect on the probability of labour force participation and on hours worked.

A key feature of the analysis in Fischer (2000) is the recognition that HA programs in the United States are rationed so that individuals do not necessarily receive housing benefits automatically on becoming eligible. Rather, they must usually wait for some period of time. In Australia, a

similar situation exists with respect to public housing, though Commonwealth Rental Assistance is an entitlement program that provides immediate support. The implication of this is that the HA programs may affect labour market behaviour prior to and while in receipt of HA measures. If individuals need to maintain eligibility for the program to retain their place on the waiting list, labour market activity may be adversely affected during any waiting period. Alternatively, the loss of income associated with maintaining eligibility over an extended periods reduces the 'lifetime value of any HA program' and may induce additional labour market activity if the cost of waiting is perceived to be high.

Painter (2001) examines the impact of the benefits available under HA programs in the United States on program participation and labour supply. His analysis takes account of the fact that HA programs in the United States are not entitlement program but rather represent programs in which benefits are rationed. Although his analysis fails to distinguish between alternative HA support measures (public HA and rental vouchers or subsidies that can be used in the private rental market), he finds significant negative impacts of HA benefits on the labour force participation of recipients. Painter (2001) finds that HA programs have similar work disincentive effects as other transfer programs (both cash and in-kind) that, given the magnitude of benefits available under HA programs, implies a large negative impact on the work incentive for potential recipients. Further, he presents some evidence that longer waiting periods for HA increase the probability that an individual is observed to engage in employment.

It is also possible that an individual's behaviour while employed will be impacted by the characteristics of HA programs and the type of housing tenure experienced. For example, it may be that the constraints imposed by some types of tenure limit an individual's ability to search for employment and therefore impact on the individual's propensity to quit an employment relationship. If the willingness to terminate an employment relationship is effected, the observed duration of an employment spell can in turn be influenced by the HA program. For example, public housing may limit the mobility of an individual by making the search for employment and relocation process more costly. In turn, a public housing tenant may be less likely to terminate the employment relationship than the recipient of tenant-based assistance. On the other hand, the fixed nature of public housing, coupled with the rationing of HA may result in individuals being more willing to terminate an employment relationship so as to maintain benefits under a HA program. Ultimately the effect of the HA program on behaviour while employed will be an empirical question.

The discussion above highlights a number of ways in which HA policies may influence labour market behaviour and outcomes. It is important to emphasise, however, that the relationship between housing, HA programs and labour market outcomes is complex. The casual relationships between housing and labour markets reflects complex feedback mechanisms that make identifying the effect of HA programs *per se* difficult. For example, HA programs may influence the cost associated with housing and the willingness of individuals to move to places with better employment prospects. In turn, the effect on labour markets (such as relatively high rates of unemployment and lower wages), may in turn impact on housing markets. For example, in an area experiencing high unemployment the housing market may be characterised by low shelter costs.

The discussion above should be seen to highlight the myriad of relationships between the housing and labour markets. Moreover, it should serve to highlight the fact that the relationship between housing markets, HA programs and the labour supply decision is complex.

3.3.2 *Housing and Unemployment*

There is a relatively large overseas literature on the impact of HA programs on unemployment. Much of this literature is U.K.-based and has focussed on public housing programs. In the U.K., a key point of interest of this literature has been on whether public housing leads to regional immobility and, as a result, impedes the movement of people from regions of relatively high unemployment to areas of low unemployment. In recent years, Andrew Oswald has advanced the thesis that homeownership acts to increase the natural rate of unemployment. Reviewing the literature on the Oswald thesis is of policy interest as the prevailing orthodoxy is that homeownership has significant net non-shelter benefits and a number of housing assistance

programs either explicitly or implicitly aid those wishing to make the transition to homeownership and provide support to existing homeowners.

Housing Tenure and Housing Assistance, Residential Mobility and Unemployment

Early U.K. Studies on Housing

Engleman (1977) represents the first quantitatively rigorous study examining the link between HA programs and unemployment. The issue addressed by Engleman (1977) was whether placement into council housing in Glasgow influenced the propensity of those recipients currently employed to quit their employment. When households are initially allocated into council housing from the private rental market, they may find themselves in a council dwelling further from their place of work than their previous housing unit. As such, journey-to-work costs are increased.

In his analysis, Engleman (1977) utilises a sample of households chosen randomly from a master list of households provided by Glasgow Corporation, the public housing authority of the day responsible for rehousing families. Engleman (1977) hypothesises that the probability of a quit subsequent to a placement into council housing (from the private rental market) will be greater, *ceteris paribus*, for those whose journey to work costs increase as a result of a public housing placement compared with those whose costs decrease. His empirical research confirms this hypothesis. The allocation of council housing farther from one's employment increased the probability of a quit as compared with being moved closer to one's employment. The effect is much stronger for men than for women, though the presence of young children is associated with a higher propensity to quit for women.

In a series of papers through the 1980s and early 1990s, Gordon Hughes and Barry McCormick examined the connections between public housing (and other housing tenures), regional and local mobility, and unemployment (Hughes and McCormick 1981, 1985, 1987, 1994, and McCormick 1983).

Hughes and McCormick (1981, 1985) present evidence that actual and planned migration and moving activity is distinctly different between the various housing tenures. The authors define a 'migrating' household as one in which the current address is in a different region to that one year previously and a 'moving' household is one that moves in the past year to any destination. Migration therefore typically represents long-distance moves across local council jurisdictions. Hughes and McCormick (1981, 1985) find that council tenants are less likely to migrate between regions than owner-occupiers are even though council tenants do not differ from homeowners in respect to their *intentions* to migrate. Nor do council tenants differ from homeowners in terms of the probability of making local moves. Based on British 1973 and 1974 General Household Survey data, Hughes and McCormick find that migration rates for owner-occupiers are, *ceteris paribus*, approximately four times higher than those of council tenants. Hughes and McCormick (1981, 1985) also found that owner-occupiers had lower actual and planned migration rates than private renters.

In a subsequent paper, Hughes and McCormick (1987) consider the impact of three housing policies — Local Authority housing policies; application of rent controls to the private rental sector; and tax relief on loans to house purchasers — on mobility patterns. Hughes and McCormick (1987) suggest that these policies are an impediment to labour mobility, restricting the incentives for workers to move between regions in response to regional unemployment differentials. Hughes and McCormick (1987) argue that a key reason for this outcome is that rent controls have reduced the supply of short-term private rental accommodation for intending council migrants. This has amplified the weakness in the operation of the council housing system that discourages migration of its tenants. Having little access to private rental housing, council tenants wishing to migrate must obtain council housing in their destination region. To locate suitable accommodation, council tenants rely on council house exchanges/transfers. If an unequal number of households seeking to enter and leave an area existed, some workers would be 'rationed' out of an exchange. Such an imbalance is inevitable given the asymmetry of the U.K. labour market — the largest stocks of council housing are located in regions of high unemployment from where workers are likely to migrate.

Hughes and McCormick's (1987) argument about the impact of public housing policy in Britain is further advanced by comparison with the situation in the US. Their findings are based on a comparison of the British 1973 and 1974 General Household Survey, and the 1983 Labour Force Survey together with the 1980 US Panel Survey of Income Dynamics. Migration in the UK is taken to mean a move across a regional boundary while in the US it is across a state boundary. From the datasets analysed, it is possible to distinguish between those who reported that they migrated/moved for job-related reasons or for other reasons. The result reported in Hughes and McCormick (1987) suggests that movement and migration rates are much lower in the UK than in the US. The higher mobility levels of US residents is linked to lower levels of public housing in the US. The authors argue that these figures provide prima facie evidence for the view that council housing has an important negative effect in reducing mobility rates in the UK.

The Hughes and McCormick result that, in the UK during the 1970s and early 1980s, council tenants had relatively low rates of regional migration relative to other housing tenure categories while owner-occupiers also had lower rates of regional migration relative to private tenants is an important finding with strong potential implications for the operation of local labour markets.¹⁰ It suggests that the rules and practices governing the allocation of council housing and the transferability of council tenants may add some inertia to the operation of local labour markets. The same argument may also apply to the role of private rental tenants. If labour is relatively immobile, unemployment differentials between regions are less likely to fall rapidly.

It is important at this juncture to highlight two important methodological issues in relation to these early UK findings on housing tenure and mobility/unemployment effects. The first issue is that of selection bias. As Bover, Muellbauer, and Murphy (1989) point out, council housing represents 'housing of last resort'. They suggest that it would be natural to expect that a number of unobservable characteristics such as low motivation, low ability, bad luck, poor health (unobservable in many of the early datasets) are likely to be correlated with council housing. This means that part of the regional mobility and unemployment differentials found between housing tenures may be due to unobserved heterogeneity effects as compared to housing tenure effects *per se*. Most of the early studies reported in this section of the review rely on cross-sectional datasets (see Table 3.3). The ability to control for unobserved heterogeneity is limited in cross-sectional studies and so some caution should be applied in interpreting our results. The second methodological issue is that research outcomes must be read against the institutional settings. If, for example, the legislative requirements and rules governing the movement of those in council housing from one region to another are rigidly specified and applied then it is not surprising that regional migration rates are lower. A different result on council tenant regional migration rates may obtain if these rules are more flexible in design or application.

Bearing these methodological points in mind, we can now proceed to examine the interaction of housing tenure and labour markets. One of the first studies to explicitly test for whether housing tenure patterns impact on unemployment outcomes controlling for a range of confounding factors and utilising a large database was Nickell's (1980) study of male unemployment in the UK. Nickell (1980) had found significant differences in unemployment outcomes between housing tenure states. Those in public housing were more likely to be unemployed, all things being equal, than those in other housing tenures.

McCormick (1983) addressed the link between housing-related regional mobility and the issue of unemployment differentials between regions more fully. In that study, McCormick argues that the UK housing tenure mix and housing policy framework may have acted inadvertently to increase the natural rate of unemployment in the UK. Using 1973 and 1974 UK General Household Survey data, McCormick (1983) distinguishes between four housing tenure states: council tenants, private tenants, mortgagees and outright owners. McCormick (1983) finds that mortgagees had lower rates of unemployment than those owning outright. Council tenants and

¹⁰ Owners may be expected to face high direct transaction costs when selling their existing home and buying a new home. The higher differential transaction costs would lead one to expect higher migration rates for council tenants, all other things being equal, than for owner-occupiers. The difference may, however, reflect a high degree of inter-regional inflexibility in placing council tenants arising from jurisdictional rigidity.

private tenants in turn had higher rates of unemployment than outright owners. These results appear robust to sub-sample specifications and remain even after accounting for non-observed personal characteristics. According to McCormick, one reason for the higher unemployment outcomes of those owning outright relative to mortgagees is the wealth/incentive effect. Outright owners with a reduced liquidity constraint and greater wealth take longer to search for new jobs.

Another study by Pissarides and Wadsworth (1989) uses data from the UK Labour Force Survey to examine the nexus between inter-regional migration patterns and unemployment. Housing-related effects are included in the Pissarides and Wadsworth (1989) model of migration. As with the Hughes and McCormick work, the results indicate that those in council tenancies have lower probabilities of inter-regional migration holding all other factors constant.

Henley, Disney and Carruth (1994) who analyse the impact of housing equity on job tenures using a Cox proportional hazards model with time-varying covariates provide a different perspective on the relationship between housing and unemployment. The 'hazard' in this case is that of a job ending. How one interprets the findings on job duration are, however, problematic as some jobs end for good reasons (employees end one job to move to a better job) while others end for bad reasons (employees suffer redundancies). Henley, Disney and Carruth (1994) find no significant private renter and council tenancy effects. Using a control of zero housing equity, Henley, Disney and Carruth (1994) also find that higher equity levels increase the probability of a job ending. The authors interpret this result as indicating that higher levels of housing equity increase the degree of labour mobility.

Commuting and the Labour Market

So far, the review has focussed on the causal links between three elements in a sequence (1) HA and housing tenures, (2) residential migration and (3) unemployment. A frequently made point is that instead of migrating across regions for employment-related reasons, individuals may choose to commute instead of migrating. There is a large literature on the nexus between commuting costs and labour markets. Much of this is technical nature and typically it is not focussed on HA programs.

A large number of these studies have been conducted in the context of a test of the spatial mismatch hypothesis that is discussed in the following section. The spatial mismatch hypothesis suggests that many poor neighbourhoods and regions are located far from areas of employment opportunity. Therefore, commuting times are longer than they would otherwise be for those in such neighbourhoods. The largely US-based literature suggests that blacks and Hispanics are more concentrated in neighbourhoods with few employment opportunities and generally, though not always, experience significantly longer commuting times than might otherwise be expected (see, for example, Zax 1991; Zax and Kain 1991; Taylor and Ong 1995; Wyly 1996; McLafferty and Preston 1992, 1996; Gabriel and Rosenthal 1996; Petite and Ross 1999; and DeRango 2001).

Cameron and Muellbauer (1998) provide evidence on the role of net commuting and net migration between British regions but focus their attention on the role of housing prices. The paper extends the impeded mobility argument by suggesting that commuting can act as a substitute for migration when high house prices impede migration to prosperous areas. The authors use 1981 and 1991 population censuses on interregional commuting. The net region (in minus out) migration rates respectively for the South East and other regions of the UK suggest that, despite strong relative labour market pressures, there was a sharp decline in the 1987-89 period in net migration to the South East. This is prima facie evidence that high relative house prices during the 1980s house price boom had a discouraging impact on net migration to the South East region. The econometric model of regional net commuting rates also suggested that rising relative earnings and falling relative unemployment encourage in-commuting. Further, high relative house prices also encourage in-commuting by discouraging in-migration. The econometric model for regional net migration rates supports the hypothesis that migration responds strongly to relative earnings and relative employment prospects, as measured by the unemployment rate. However, the high relative house prices discourage net migration to a region, though expected house price rises, by reducing the user cost of housing, can provide a temporary offset. Furthermore, recent experience of negative returns in the housing market acts

as a strong disincentive against net migration to a region. As owner-occupation has risen, the evidence is that the influence of relative house prices on net migration rates has risen also.

The Oswald Thesis

In a series of recent unpublished papers, Andrew Oswald has argued that an important explanation for the secular rise in unemployment in OECD countries over the last 30 years is the increase in the rate of homeownership (Oswald 1996, 1997, 1999, and Gardner, Pierre, and Oswald 2001). His key conclusion is striking: A 5percentage point increase in the rate of homeownership results in a one-percentage point higher unemployment rate.

Oswald (1996) contains a large range of findings on the relationship between homeownership rates and unemployment. These results are based on:

- Scatter-plots and estimated simple OLS models of homeownership rates and unemployment rates for a cross-selection of selected OECD countries in the 1960s and the 1990s;
- Scatter-plots and estimated simple OLS models of changes in unemployment and homeownership rates between the 1970s and the 1990s for a cross-section of selected OECD countries;
- Scatter-plots and estimated simple OLS models of changes in unemployment and homeownership rates between the 1970s and the 1990s for US states and UK regions;
- Scatter-plots and estimated simple OLS models of homeownership rates and unemployment rates for a cross-selection of regions in France, Sweden, and Italy in the 1990s;
- Fixed effects panel models for US states (1986-1995) for unemployment rates (against homeownership rates) and for UK regions (1973-1994) for unemployment rates (against private rental rates).

As can be seen from the above list, Oswald's empirical analysis suffers from the absence of a sound econometric foundation. The analytical techniques employed can be very misleading about the true underlying relationship between the variables of interest. Scatter plots do not control for any potential confounding effects on the relationship of interest. The methodological robustness of these results, or lack thereof, cast serious questions on the weight that should be placed on the patterns identified by Oswald. Nonetheless, Oswald's findings do raise some interesting questions warranting additional analysis.

Oswald's explanation for the relationship between homeownership and unemployment is that homeowners are less willing than private renters to move when they become unemployed. In short, they face higher transaction costs than private renters. However, there is little development of the argument. He suggests that a decline in labour mobility feeds into higher rates of 'equilibrium unemployment'. Government policy, designed to increase homeownership rates, Oswald argues, has worsened the efficiency of the labour market.¹¹

Oswald (1997) provides a brief description of further evidence of the relationship between unemployment and homeownership rates and the degree of mismatch unemployment (e.g., homeowners express the least willingness to move when asked what they would do if they lost their jobs). He also develops a theoretical model of location and housing tenure choice. In this model, Oswald assumes that homeownership provides a 'pride of ownership' supplemental utility to the homeowner not available to the renter. However, those who choose to rent rather than buy gain in terms of 'ex post flexibility'. By assumption, renters can move costlessly if and when they wish. Homeowners, however, incur a moving cost. When a negative demand shock affects a particular region, renters move costlessly from that region but many homeowners will commute instead or may stay in the depressed locality. A rise in 'pride of ownership', costs of moving (for homeowners) and government subsidies towards homeownership all result in increases in the equilibrium rate of unemployment.

¹¹ See also Oswald (1997), which is a brief summary of Oswald (1996).

Oswald (1999) develops further the general argument on the housing unemployment nexus. The theme is that the natural rate of unemployment depends on the ease with which people move around to find jobs: The greater the degree of fluidity, the lower the natural rate of unemployment. Private rental housing is an important factor in increasing the degree of fluidity. The five causal chains that Oswald posits are:

1. Selling a house and moving is expensive. Owner-occupiers are therefore less mobile than renters as transaction costs are much lower for the latter group. Owner-occupiers will also be more likely to commute long distances than renters.
2. Unemployed people are constrained in their ability to purchase housing. In a world of high homeownership rates, this makes it difficult to move into areas where job opportunities exist because of the lack of available accommodation.
3. Once immobility develops because of homeownership, people accept jobs for which they are not fully suited. The efficiency of the economy drops. Jobs consequently are destroyed.
4. Areas with high homeownership may deter entrepreneurs from developing new industries. Homeowners may, through local councils, enforce restrictive planning and land development laws.
5. Homeowners commute more than renters do. This results in transport congestion leading to higher costs in the economy. In turn, the incentive to work is reduced.

Gardner, Pierre, and Oswald (2001) utilise the British Household Panel Study and the British National Child Development Study to examine the links between housing tenure and labour market outcomes. This work represents a more structured attempt to examine the relationships between homeownership and unemployment as compared with his previous work. The results in Gardner, Pierre, and Oswald (2001) suggest a strong relationship between housing tenure and mobility across the two panel data sets. Private renting produces a significantly higher rate of mobility (for job-related reasons) than other housing tenure forms. Public renters and owner-occupiers have approximately the same mobility tendencies. These results still hold when person-effects are included in the set of control variables.

Despite the weak econometric foundations to Oswald's stated conclusion of a strong relationship between homeownership and unemployment, the Oswald thesis encouraged renewed interest internationally in the relationship between housing and unemployment. The evidence from these international studies is mixed but, on balance, they provide little support for Oswald.

This review of empirical findings on the Oswald thesis begins with a contemporaneous US study undertaken independently of Oswald but addressing the same issues. Goss and Phillips (1997) examine the impact of housing equity levels on the duration of unemployment in the US using the 1986 Panel Study of Income Dynamics. Using a hazard analysis framework, Goss and Phillips (1997) find that homeownership reduces the duration of unemployment by between 11 and 17 weeks. The impact of homeownership on unemployment is stronger for mortgagees as compared with outright owners suggesting that mortgage repayments have a significant effect on labour market behaviour.

Pehkonen (1999) findings, based on regional data on Finnish labour districts, imply that a 10 per cent rise in the owner-occupation rate is associated with a around a 1 per cent percentage point rise in the unemployment rate. These results are consistent with Oswald's results but at the lower end of the range. The analysis is based on 13 Finnish labour districts and the regional unemployment rates are from the 1991 Labour Force Survey.

Partridge and Rickman (1997) examine the factors that underlie the persistence in the dispersion of US state unemployment rates. The factors examined included amenities, crime, education, homeownership and residency patterns, industry composition and international migration. The influence of homeownership patterns may be of particular interest, they suggest, because the US housing market is more market-oriented than in other nations. In terms of mobility issues, Partridge and Rickman (1997) argue that costs of moving can influence out-migration and, therefore, increase the region's equilibrium unemployment rate. Three variables are also included to control for the monetary and psychological costs of moving: the percentage of the population

that was born in the state of residence; the percentage of the population living in an owner occupied residence; and the percentage of the population living in the same residence for at least five years. Following Blanchard and Katz (1992) they assume that residents that own their home face greater opportunity costs in relocating after a negative economic shock. Thus, by increasing homeownership rates, Partridge and Rickman (1997) suggest that large mortgage subsidies in the US tax code may, unintentionally, reduce regional mobility and increase unemployment. Likewise, people living in the same residence for the last five years or living in the state where they are born are likely to be attached to the region. Partridge and Rickman (1997) also control for national cyclical effects of U.S employment growth and changes in the US natural unemployment rate using a set of year dummy variables. Thus, the resulting coefficients measure the impact on state unemployment rates net of aggregate cyclical conditions or trends.

Partridge and Rickman (1997) present results for US states using OLS, OLS with fixed state dummies, and OLS with fixed state dummies corrected for first-order autocorrelation. The dependent variable is the state unemployment rate for the period 1972-1991. The results presented in Partridge and Rickman (1997) indicate that US states, characterised by higher homeownership rates, have higher unemployment rates. The homeownership variable is highly significant with the marginal effect (du/dh) ranging from 0.11 to 0.12. This result is consistent with the Oswald hypothesis but only around half the size of Oswald's reported effect – see below).¹²

Using data from the U.K. Labour Force Surveys for the period 1979-95, Wadsworth (1998) finds that owner-occupiers do better in terms of unemployment outcomes than those in private rental accommodation who in turn experience better employment prospects than those in council housing. Wadsworth (1998) argues that employment and earnings opportunities have moved sharply against those living in the local authority sector. His results suggest that, in 1979, council tenants were twice as likely to lose/leave their jobs relative to owner-occupiers. By 1995, they were three times more likely to do so. At the same time, the chances of finding work for council tenants also declined both in absolute and relative terms. In 1979, there was a one in five chance but by 1995 the chances had fallen to one in seven. In contrast, the chances of owner-occupiers finding work rose from one in five to one in four. Those living in the private rental sector were found to have the highest chances of finding work.

Wadsworth (1998) also provides an analysis on whether means tested income support benefits provide a disincentive to take low paying jobs for those in council housing. He suggests that there is little evidence that those in council accommodation hold out for higher wages relative to those in owner occupation. The poor entry into employment rates for council tenants seem to be caused by lack of access to jobs rather than a greater unwillingness to accept low paid work. Wadsworth (1998) points to the fact that between 1979 and 1995, the proportion of the working age population living in the local authority shrank from 33% to 18% and this decline is entirely accounted for by a rise in the proportion of owner-occupiers, from 58% to 74%, the private rental sector remaining static. Ethnic minorities are now over-represented in the council stock, reversing the position of 1981. The private sector remains the domain of the young and more educated.

Henley (1998) investigates the extent to which low or negative housing equity impedes individual household mobility and whether a stagnant housing market impairs labour market flexibility using duration analysis. In the British context, these linkages are of particular recent importance given the large boom and bust cycle experienced by homeowners between the mid 1980s and mid 1990s. In the early 1990s, a collapse of the housing market was associated with a decline in turnover in the owner-occupied residential property market. The argument is that a household that cannot sell its home (or cannot sell at a sufficiently high price to yield sufficient funds for a deposit on next home) may find itself 'locked' into a home that provides inappropriate level of housing services given current needs. Immobile households may seriously inhibit the ability of the labour market to match vacancies with potential employers. The rational response of homeowners in a falling market is to hold on to existing housing investments in anticipation of positive expected future returns.

¹² See also Green and Hendershott (2001) for a direct test of the Oswald thesis using US state-based data.

In his analysis, Henley (1998) utilises longitudinal data from British Household Panel Survey (BHPS) for 1991-94. Both median and mean housing wealth declined over the four years of the panel, consistent with the effects of falling nominal house prices in most regions of the U.K.. Henley estimates a hazard function for the sample of households who were owner-occupiers in 1991. The results of the estimation of the single risk proportional hazard model shows that households who bought their home as former local authority tenants are less likely to move, confirming the hypothesis that such households may be less mobile due to 'lock in' clauses in their contracts of sale to prevent instant arbitrage gains. Outright owners are also significantly less likely to move. The coefficient on the negative equity variable is also significant but much larger, pointing to a serious detrimental impact on residential mobility. Increased regional house price inflation also has a significant negative impact on the hazard rate though this effect is not consistently significant across the various specifications.

Van Leuvensteijn and Koning (2000) use hazard rate models with micro-panel data for the Netherlands from the Dutch Tax department for the period 1989-98 (the Income Panel Research data set). Individuals are tracked annually over the period in question. The authors find that homeowners that lose their jobs are *more* geographically mobile than renters who lose their jobs; a finding which contradicts Oswald's theory. *Employed* homeowners, in contrast are found to be *less* mobile than renters and less likely to switch jobs. Van Leuvensteijn and Koning (2000) provide three explanations for this outcome. First, that, in the 1990s, the Dutch housing market was relatively settled. Oswald's theory may be more relevant during periods when homeowners that move to another area face high losses due to a depressed housing market. Second, in the Netherlands, unemployed homeowners are not entitled to social assistance if they exceed asset limits. Therefore, homeowners can be forced to spend this capital and have a strong incentive to find a job. Moreover, renters can avail themselves of rent subsidies (presumably the link is to those on income support) and this may lower the incentive to find jobs.

Two recent studies have tested the Oswald thesis using US micro datasets. Coulson and Fisher (2002) find that homeowners have significantly lower probabilities of being unemployed and typically earn significantly higher wages than renters. They also find that homeownership exerts a significant negative influence upon the length of the spell of unemployment. Green and Hendershott (2002) examine the duration of unemployment of roughly 2500 Americans who became unemployed during the 1985-92 period. In a two-component analysis, they first estimate a probit explaining homeownership and then relate the duration of unemployment to predicted homeownership. Rather than Oswald's predicted positive relationship, they find a negative relationship.

This review of the Oswald thesis can be completed by reference to three recent papers from three different countries that do not test the Oswald thesis but are concerned with the nexus between residential mobility and housing. This nexus represents the key causal channel specified by Oswald (and the key causal mechanism specified in the earlier UK studies on the relationship between public housing and unemployment), namely, the spatial lock-in effects of homeownership. High transaction costs of moving for homeowners lock in homeowners to their current location. This results in a retarded response by homeowners to labour market shocks.

Antolin and Bover (1997) use individual data from the Migration Survey included in the Spanish Labour Force Survey dataset, pooling independent cross-sections from 1987 to 1991. The purpose of their paper is to study the factors that influence the individual's probability of migrating between regions in Spain. Among other things, the authors find marked differentials in regional migration behaviour within the unemployed group; those registered as unemployed with the official agency (INEM) have much lower rates of internal migration than those not registered. The non-registered group has a higher migration rate than the employed, who in turn, have a higher rate than the registered. Hence, the registration process induces some regional fixity in the system. From a housing market perspective, Antolin and Bover (1997) find that people in regions with higher than average house prices have a higher probability of regional migration.

Chan (2001) examines the impact of falling house prices on residential mobility in the US.¹³ The recession of the early 1990s in the US saw a fall in house prices and the emergence of negative equity problems. Negative equity is typically defined as occurring when the value of a mortgage is larger than the estimated market price of the dwelling. From a residential mobility perspective, however, one needs to take account of the downpayment required when purchasing a new dwelling (around 5 per cent of the dwelling price at minimum) and the transaction costs of a move from one dwelling to another (again around 5 per cent of house value). As such, a loan-to-value ratio greater than 90 per cent is indicative of an effective negative equity problem. Using a US-based dataset of mortgages and applying a hazard model to the duration of a spell of owner-occupied housing, Chan (2001) finds that negative equity levels significantly reduce residential mobility in the US.

Böheim and Taylor (2002), who use longitudinal data from the first 7 waves of the British Household Panel Survey, provide the most recent analysis of the links between housing equity and residential mobility.¹⁴ The importance of longitudinal data, in the context of the issue of residential mobility and unemployment, is that the sequence of residential moves and labour market states can be tracked through time. Longitudinal data also allows researchers to better control for unobserved heterogeneity. Böheim and Taylor (2002) find that mortgagees had lower levels of residential mobility (particularly intra-regional moves) than those in other housing tenures. Böheim and Taylor argue that these results may reflect the incidence of low and negative housing equity in the UK over the 1990s. As with the Hughes and McCormick studies reviewed previously, Böheim and Taylor (2002) find that council tenants have relatively high rates of local moves and relatively low rates of inter-regional moves. This once again focuses attention on the role of inter-regional co-ordination of public housing placements, or lack thereof, which does not facilitate council tenants who are unemployed to find employment in other regions. Private renters are identified as having relatively high rates of local and inter-regional migration.

Housing Tenure and Housing Assistance, and Unemployment in Australia

Australian studies of unemployment have generally neglected the role of housing. When housing is considered, it tends to be included in a relatively simple manner. For example, the analysis may incorporate an additional explanatory variable (dummy variables for housing tenure generally) in a regression framework. Recently, however, greater attention has been paid to housing effects though still without a proper targeted focus on housing.¹⁵

The first examples of Australian studies taking into account housing effects are Inglis and Stromback (1986) and Bradbury, Garde and Vipond (1986). The first of these studies uses the 1981 Australian Census one per cent household sample file and focuses on the unemployment experience of immigrants. The emphasis of the study, not surprisingly, is on the effects of English language proficiency, country of birth and period of Australian residence on the probability of being unemployed. While there is no extended comment on the results, public renters are found to experience a statistically higher probability of being unemployed than others controlling for a range of observed characteristics.

Bradbury, Garde and Vipond's (1986) study is more closely associated with housing-related issues. The point of focus in this study is the teenage unemployment problem and how the unemployment experience of young teenagers relates to the disadvantage experienced by their parents. As with Inglis and Stromback (1986), the 1981 Australian Census unit record file is the basis of the empirical analysis. Public renters were again found to experience a statistically

¹³ See also Genovese and Mayer (1994), Chan (1996); Archer, Ling and McGill (1996); and Caplin, Freeman and Tracy (1997) for studies examining residential mobility, mortgage and negative equity effects in the US.

¹⁴ For other U.K.-based analyses of the relationship between residential mobility, housing and labour markets see Forrest (1987), Coleman and Salt (1992), Green (1992), Evans and McCormick (1994), Greenwood (1997), and Buck (2000a), Buck (2000b) and Pawson and Bramley (2000). Strassmann (1991), (2001) provides a review of a broad range of international studies on housing and residential mobility.

¹⁵ In Le and Miller's (2000) recent comprehensive review of Australian studies of unemployment, no specific focus is put on housing/unemployment linkages.

higher probability of being unemployed than others as were teenagers in households that were recent movers. Parental residential movement (perhaps even for job relocation or job search reasons) impedes the opportunities for young people to find employment. The major finding of the Bradbury, Garde and Vipond's (1986) study was that the unemployment experience of parents was transmitted to teenage sons and daughters. The same was true of other indicators of parental disadvantage suggesting that inter-generational rigidities in the labour market existed. It needs to be emphasised, however that as the census contains no direct controls for wealth, the housing tenure effects may pick up wealth effects rather than housing tenure effects *per se*.

Despite these findings of a link between housing tenure and unemployment, few subsequent Australian studies have included housing effects as determinants of unemployment. Harris (1996), Knights, Harris and Loundes (2002), and Miller (1998) represent three recent examples but all three are representative of a tradition where housing tenure effects are not extensively discussed. There is also insufficient attention paid to public housing effects. Harris (1996) and Knights, Harris and Loundes (2002) utilise panel data from the Australian Longitudinal Survey to examine the determinants of the probability of being employed. Harris (1996) finds that mortgagees had a higher probability of being employed than outright owners. Male renters also exhibited relatively high probabilities of employment. However, there is no distinction between public and private renters in Harris' (1996) work. Knights, Harris and Loundes (2002) use a more complex modelling structure on the same dataset and find no significant housing tenure effects. Miller (1998) attempts a task similar to Bradbury, Garde and Vipond (1986) examining the role of family background on unemployment outcomes using the 1991 Census unit record data. As was the case with Bradbury, Garde and Vipond study, parental background (including the labour market status of parents) is a crucial determinant of unemployment outcomes for young adults. In terms of housing tenure effects, Miller (1998) finds that renters experience higher rates of unemployment than outright owners.

Flatau and Dockery (2001) and Barrett (2002) report results of the effect of housing on the duration of unemployment utilising the Department of Family and Community Services (FaCS) Longitudinal Data Set (LDS) 1% Sample. The FaCS dataset is an administrative dataset based on fortnightly records of income support recipients.

Flatau and Dockery (2001) estimate a proportional hazard function for the unemployed and female parenting payment categories of income support recipients. Explanatory variables incorporated in the analysis include a set of housing tenure variables (home purchaser, other homeowner, private rent, government rent, and other rent; the default is outright homeowner), and income support arrangement variables including the amount of rent assistance received by the income support recipient and rent assistance sharer status.

The analysis indicates that a number of housing-related determinants have significant effects on the duration of unemployment. For male unemployed income support recipients, home purchasers tend to have a significantly higher probability of exit from the income support system while renting in the Government sector significantly lowers the risk ratio. A significantly lower risk ratio for those recipients renting in the government sector is also evident in the case of female unemployed income support recipients and female Parenting Partnered income support recipients. As the authors note, government rental status may reflect long-term socio-economic disadvantage. Other housing-related effects of interest include the fact that an increase in rent assistance payments lowers the risk ratio (or alternatively, lowers the probability of exit from the income support payment system) as does being a 'rent sharer'. A 'rent sharer' refers to the fact that the recipient is in shared accommodation, is not married and is subject to sharer legislative provisions with regard to rent assistance.

Barrett (2002) undertakes a hazard analysis of the time spent in the sole parent pension using the (FaCS) Longitudinal Data Set (LDS) 1% Sample. Using as a default those sole parent pensioners renting privately, Barrett (2002) finds that when public housing is interacted with a NSW/ACT state of location variable, the interactive term has a significant impact on the time spent on the sole parent pension. Those sole parent pensioners who are in public housing in NSW/ACT have a 32 per cent lower exit rate than private renters. Barrett suggests that this negative effect arises because of the much higher implicit public housing subsidies in NSW/ACT.

Two recent Australian studies conducted as part of an on-going AHURI project examining the relationship between housing and labour markets, explicitly focus on the Oswald thesis, Flatau, Forbes, Hendershott, O'Dwyer and Wood (2002) and Flatau, Forbes, Hendershott, and Wood (2002). The first of these papers tests the Oswald thesis for Australian regions and localities while the second uses individual-level data. The individual-level analysis utilises the Australian Bureau of Statistics (ABS) Survey of Income and Housing Costs (SIHC) Confidentialised Unit Record Files (CURFs) for the years 1994-95 to 1997-98. The SIHC micro datasets are based on a sample of individual respondents and are particularly strong both on the labour market position of the respondents and their housing status.

The regional-level data used by the authors is based on Census-based information on housing tenure, labour force status, and other relevant socio-demographic variables for localities at different levels of aggregation for the 1986 to 2001 Censuses. The regional dataset has three important attributes. First, the structure of the dataset means that Oswald's thesis can be tested at various levels of geographical aggregation. Three spatial units of analysis were utilised: (1) the Collection District (CD), the most disaggregated spatial unit available in the Census geographical structure, (2) the Local Government Area (LGA), the basic government-level unit in Australia, and (3) the Statistical Local Area (SLA) unit. The use of a variety of regional categories allows the authors to determine the robustness of any conclusions drawn from testing Oswald's thesis at the regional level. Second, the authors include important controls (such as the age composition of the region and the educational qualification profile of the region) that micro-based research on unemployment emphasises as being important in explaining unemployment differentials between individuals (see, Le and Miller, 2000). Third, detailed housing tenure type classification is possible.

The analysis of both individual-level and locality-level data supports a rejection of the Oswald thesis for Australia. In fact, in the case of the individual-level results in particular, the likelihood of someone owning a home appears to decrease (rather than increase) the probability of their being unemployed and, if they become unemployed, of their being unemployed longer. Both studies find higher rates of unemployment, after controlling for other factors, among public tenants and in localities where public tenants are more concentrated.

Housing and the Aggregate Labour Market

A number of U.K. papers appeared in the late 1980s and early 1990s examining the role of housing tenure patterns and housing market trends in influencing aggregate labour markets (see Minford, Ashton, and Peel 1988; Bover, Muellbauer, and Murphy 1989; and Blackaby and Manning 1992).¹⁶ The role of housing-related impediments to regional residential mobility and movements in house prices represent important components in the macro-labour models developed in these papers.

Minford, Ashton, and Peel (1988) develop a general equilibrium model of regional labour markets in which national and local factors such as regional demand, unions, housing subsidies and rates, interact to determine local wages and unemployment. When mobility between regions is obstructed by rent subsidies and controls, Minford, Ashton, and Peel (1988) suggest unemployment and wage differentials arise. In the model, homeowners may move from one region to another, selling and buying houses at the free market rate. This also applies to private renters in the unprotected sector, exchanging one rent for another in the (limited) free market. However, council house tenants in one region may find difficulty in renting a council house in another region (the same argument applies in relation to protected private tenants). To move, the council tenant will have to rent or buy a house in the free market and give up the council house as well as his subsidised rent. This limits mobility among council house tenants; especially those unemployed council tenants who not only get subsidised rents but also miscellaneous other benefits. As a result, unemployment is higher than would otherwise be the case. Tests of the hypothesis are undertaken using UK regional unemployment data from 1963 to 1979.

¹⁶ Recent macro labour market analyses which take account of interactions between housing and labour markets include Nickell (1998), Meen and Andrew (1998), Meen (2001) and Cameron and Muellbauer (2001).

Minford, Ashton, and Peel (1988) employ three methods of estimation: Pooled cross-section and time series, pooled time series (with dummies for each region) and pooled cross-section (with dummies for each time period). The authors conclude that if all rent restrictions had been abolished, the reduction in the national unemployment rate in 1979 would have been about 1.8 percentage points.

Bover, Muellbauer, and Murphy (1989) extend the Layard-Nickell model of the U.K. economy by building into the model housing and labour market interactions. The housing market and the labour market interact through five key channels.

- A housing tenure status regional mobility channel ? As the proportion of the housing stock taken by housing tenures with low regional mobility rates increases so too does the degree of regional labour market mismatch as unemployment differentials are less quickly reduced. The study uses the Hughes and McCormick results on low regional mobility rates for council housing to construct an index of mobility.
- A house and land price regional mobility channel ? As house and land prices rise, it becomes more difficult for those in depressed regions with lower house prices to move to regions of economic success (and high house and land prices). Providing an offset to this, some of those living in regions of high house prices will realise capital gains and move to areas of lower housing costs.
- The cost of location channel ? As rents and land prices rise in regions that are economically successful, some businesses find it more profitable to locate to lower cost regions.
- A wealth and liquidity channel ? As house and land prices rise, wealth also increases. A rise in wealth leads to increased consumer spending levels. Higher wealth levels mean stronger collateral levels, which in turn, increases consumer credit and subsequently consumer spending.
- An expectations channel ? Expected movements of earnings may be capitalized in house and land prices.

House prices and housing tenure effects are included in aggregate macroeconomic wage and Unemployment-Vacancy (UV) relationships. A mobility index term (that picks up on the council housing mobility effect) and regional house price effects are found to be significant in the UV equations. The results suggest that house price differentials between regions increase unemployment at the aggregate level. The presumed channel is that of high house prices in SE England depressing in-migration to a prosperous region and this resulting in higher than otherwise unemployment elsewhere (and higher earnings in the SE).

Blackaby and Manning (1992) extend the work of Bover, Muellbauer, and Murphy (1989) and consider in detail the regional implications of the Bover, Muellbauer, and Murphy (1989) model. The authors consider the determination of regional unemployment differentials and earning differentials in a simultaneous equation framework. In the analysis, a two-equation model is estimated in error-correction form using pooled data on the difference between the regional and national rates of unemployment. Among other things, the authors examine the role of the house and land price regional migration channel in influencing regional unemployment patterns. Blackaby and Manning (1992) argue that there is no evidence to support the hypothesis that higher regional house prices are associated with lower regional unemployment. This, they suggest, casts doubt on the validity of the impeded mobility argument of Bover, Muellbauer, and Murphy (1989) at the regional level.

3.3.3 Labour Markets, Spatial Mismatch, and Neighbourhood Effects

The Spatial Mismatch Hypothesis

As shown above, HA programs may interact with labour market outcomes, because HA programs influence the economic incentives faced by households and, in so doing, affect labour supply behaviour and unemployment outcomes. The nature of the impact of HA programs on labour market behaviour and outcomes will depend critically on the structure and characteristics of the program. However, HA programs may affect labour market outcomes not simply because

they directly influence economic incentives, but rather because, as the nature of labour markets change over time, HA programs may constrain (or promote) responses by households to changing labour market dynamics.

It is in this context that the spatial mismatch hypothesis becomes relevant. Kain (1968) first discussed spatial mismatch in modern analytical terms. The key idea is that, as labour demand shifts and the geographic location of employment opportunities change, some people may be constrained by their housing opportunities to respond to changing job opportunities and become 'marooned' in high unemployment, low income locations. Housing assistance programs may then hinder (promote) either the movement of people to where jobs are located or jobs to where people are located.

Kain's analysis was developed in the context of the decreased job opportunities facing American blacks brought about by the decentralisation of jobs to white suburban communities in major US metropolitan areas. He argued that discrimination in the housing market, both in terms of rentals and owner-occupied housing, prevented the integration of blacks into white communities, and thus led to their exclusion from emerging job opportunities in the suburbs.

Kain's analysis generated an immense literature. Detailed literature reviews of the subject exist and the reader is referred to the work of Jencks and Mayer (1990), Holzer (1991), Kain (1992), and Ihlanfeldt and Sjoquist (1998) for a comprehensive overview of individual papers. Yates' (2002c) recent review of the spatial mismatch literature in the AHURI report, *A spatial analysis of trends in housing markets and changing patterns of household structure and income*, discusses relevant Australian studies. Rather than undertake a detailed examination of individual papers we shall draw out the main themes of the spatial mismatch literature focussing on key conclusions, Australian empirical findings, the role of HA programs, and important implications for Australian public policy.

Much of the US literature on the spatial mismatch hypothesis addresses the nature and causes of employment and wage inequality due to housing segregation facing Afro-Americans and other minorities. Housing segregation is generally assessed in the spatial mismatch literature as being the result of racial discrimination in the housing market. While such racially determined housing segregation is of less importance in the Australian context, the spatial mismatch argument can be (and was) generalised to incorporate constraints on choices that arise from sources other than housing discrimination. This literature is of more direct relevance to the present review.

Spatial mismatch may arise, in the first instance, because of the cost of moving residential locations and commuting. Mobility and commuting costs constitute a negative part of the gross income that derives from employment, and to the extent that mobility and commuting costs rise due to the relocation of jobs, net incomes will be lower, other things equal, and so the incentive (or capacity) to supply labour to those jobs will change. The issue is not just about mobility and commuting costs, however, especially when we consider extensive labour market dynamics brought about by changes in the industrial composition of output. As the industrial composition of output changes due to changing relative prices, which may in turn come from a number of factors – technical progress, changes in international trading opportunities due to changes in trade policy (e.g., the reduction in industry protection), changes in consumer tastes and so on – the location of jobs will change. These locational changes typically are multi-dimensional, spanning changes in the demand for different skills, changes in the occupational demand for labour, changes in the industrial demand for labour and changes in the geographic demand for labour.

To illustrate these ideas, consider two examples in recent Australian experience, the changing regional demand for labour due to technical progress in agriculture and the changing demand for labour in the clothing, textiles and footwear industries due to the reduction in tariff protection in those industries. As agriculture becomes more efficient due to technical advances in that sector, the costs of agricultural production fall. Competitive pressures ensure that the relative prices of agricultural output fall and this puts pressure on the production process for agriculture. The response is typically (at least in broad acre farming) to increase the size of farms to reap economies of scale and to increase the capital intensity of agriculture. The inevitable consequence is a fall in the demand for agricultural labour, especially low-skilled agricultural

labour. This feeds back on to the demand for labour in regional areas, especially in small towns. The opportunities for employment diminish in the regions.

In the case of textiles, clothing and footwear the reduction in tariff protection reduces the competitiveness of firms in these industries producing for the mass market and utilising low-skilled (often immigrant) labour. As the industry restructures, the demand for labour, and especially low-skilled labour, falls.

In both cases housing investment factors, both in terms of homeownership and in terms of investment in the rental market, will constrain the ability of labour to respond to these changes.¹⁷ Home ownership is typically the largest investment that the great majority of people make. Their lifetime consumption patterns may depend critically on the ongoing value of their home. Thus, when the changing industrial composition of output and the consequent changing pattern of labour demand affect housing values, people's capacity to 'follow jobs' is severely constrained. Consider how the regional demand for labour is altered in response to changes in agriculture. As regions decline in terms of job opportunities, housing prices are likely to fall relative to those locations where the demand for labour is high and thus the capacity of individuals to migrate from economically declining regions to expanding regions is constrained.

A similar scenario may apply to labour 'marooned' in urban locations where specific industries, like clothing, textiles and footwear, decline (although housing dynamics in urban areas are typically more complex and not so dependent on specific industries). Although less severe, the same force affect those dependent upon the rental market for housing. Jobs might be more plentiful and wages higher in Sydney, for example, but rents in Sydney compared with rent in a regional area make a shift to Sydney problematic.

Inaccessibility of jobs due to housing investment also affects the capacity of people to search for jobs and thus further contributes to spatial mismatch. These forces, in turn, set up a further dynamic of declining incomes due to an over-supply of labour in a specific location, declining house values and perhaps a degradation in the quality of housing. They may also interact with other features of declining neighbourhoods, such as the availability of good schools and dysfunctional family structures, thus giving rise to intergenerational inequality of opportunity. The net result of these forces is a dynamic that may result in pockets of low income and relative poverty, high unemployment and low-grade housing contained within an otherwise expanding and prosperous economy.

There now exists an extensive Australian literature pointing to increased spatial inequality in Australia (see, for example, Stilwell 1989; Foard, Karmel, Collett, Bosworth, and Hulmes 1994; Hunter 1995; Gregory and Hunter 1995, 1996; Gregory 1996; Productivity Commission 1998; Stimson, Shuaib, and O'Connor 1998; Beer 2001; and Yates 2002a, 2002c). The work of Hunter and Gregory points to increasing inequality both between cities and regions and within cities and regions. They point to the fact that low income and low employment neighbourhoods in Australia have suffered the greatest from economic restructuring forces in the 1970s to 1990s. Employment grew in the services and finance sectors and declined in manufacturing. This tended to favour high income and high employment regions and high income and high employment neighbourhoods. Those regions most dependent on manufacturing suffered the worst decline. In terms of housing effects, Hunter and Gregory point to the fact that neighbourhoods with the highest concentration of public housing also suffered the greatest relative deterioration in their economic position over the 1976 to 1991 period.

Much of the policy focus in the Australian literature in relation to the spatial mismatch problem concentrates on the role of industry assistance programs and labour market programs. With some industries in decline and others in a growth phase, retraining and re-skilling programs are required. Governments and private businesses may also consider the relocation of employment opportunities to areas of low employment and low income together with targeted industry development programs and job-creation programs.

¹⁷ Of course, the costs associated with housing relocation are but one element of the total costs of relocation, and may not even be the most important. The psychic and social costs of relocation are very high for many people.

However, unless industry and job-creation programs generate a significant movement of jobs to those neighbourhoods where they are most required there will remain a spatial wedge between the location of people and the location of jobs.¹⁸ This suggests that programs aimed at moving people to where jobs are located remain important. Transportation subsidy programs provide reduced commuting costs to individuals from disadvantaged neighbourhoods enabling them to more easily search for jobs in other locations or to provide an incentive to accept low-wage jobs in other areas, which might otherwise not be accepted because of high commuting costs. In the US, there is an emphasis on redressing housing discrimination, which may be the root cause of high levels of housing segregation.¹⁹ Finally, HA programs may be used to relocate people from disadvantaged locations into neighbourhoods with better employment prospects.

Neighbourhood Effects

A closely allied model to the spatial mismatch model, which again focuses on the spatial dimension of disadvantage, is the neighbourhood effects model. The neighbourhood effects model posits that neighbourhoods have independent positive and negative effects on their residents. Those in disadvantaged neighbourhoods are more disadvantaged than they might otherwise be because of net negative neighbourhood effects. Conversely, those in better off neighbourhoods are better off than they might otherwise be because of net positive neighbourhood effects.

Those living in low-income low-employment neighbourhoods may have access to fewer educational, health and community resources and reduced access to transportation than residents in other neighbourhoods. They may experience higher crime and drug-related problems (discussed in detail in chapter 5). Low expectations and poor peer group pressures may arise. Importantly, from a labour market perspective, those from low-income and low-employment neighbourhoods typically do not have social networks that will generate as strong employment opportunities as those from high-income and high employment neighbourhoods (see Reingold 1999b, and Reingold, Van Ryzin and Ronda 2001). Individuals find out about jobs and obtain access to job openings through both formal job networks (e.g., the Job Network in the Australian context) and informal social networks. Informal social networks refer to the system of family, friends, and local community organisations that individuals are connected to. These social networks can provide individuals with word-of-mouth information about the availability of jobs. In some cases, those who are part of the social network may themselves directly provide jobs to others in the network. Finally, there may be adverse statistical discrimination neighbourhood effects. Statistical discrimination effects arise when all individuals from a perceived 'poor' neighbourhood are assessed as having the characteristics associated with that neighbourhood in the minds of outsiders.²⁰

In short, those in low-income low-employment neighbourhoods can often be expected to live in communities with a range of deleterious characteristics compared to high-income neighbourhoods. These include higher crime rates and more acute drug problems, lower expectations and poor peer group pressures, more limited access to neighbourhood resources, and social networks whose members are less likely to directly provide jobs and also less likely to be able to provide information about job openings compared to those from high-income high-employment neighbourhoods. The question that naturally arises is: does this necessarily mean, however, that a policy that moves people from low-income low-employment neighbourhoods with

¹⁸ Granger and Blomquist (1999) point to one difficulty in attracting industry to disadvantaged areas. They provide evidence for the view that business may be more attracted to high-amenity urban locations rather than low amenity urban locations.

¹⁹ Ihlanfeldt and Scafidi (2002) consider the role of self-segregation in generating higher than anticipated levels of housing segregation along racial lines in the US. The self-segregation hypothesis suggests that housing segregation is the product of voluntary residential placement by racial groups. Ihlanfeldt and Scafidi's (2002) empirical test suggests that self-segregation in US cities plays a relatively small though statistically significant role in housing segregation outcomes in the US.

²⁰ See Reingold (1999a) for an empirical study of statistical discrimination effects in the US. Croce (2000) alludes to statistical discrimination effects in the Australian context.

a concentrated public housing and private rental housing assisted profile to dispersed housing neighbourhoods with stronger income and employment profiles will lead to improved social network outcomes and improved labour market benefits?

The answer to this question is that anticipated positive social network benefits of relocation may not always eventuate or may be more than offset by negative effects. The relocation of housing assisted tenants to dispersed housing settings can result in social isolation in the new neighbourhood. The establishment of social networks in the new neighbourhoods may turn out to be a difficult process and the relocated tenants may find themselves in a position where ties with old neighbourhoods are less effective than before and are not replaced with new social network ties in the new neighbourhoods. At the same time, the relocated tenants may find themselves faced with higher prices for goods and services in the new neighbourhood further exacerbating their disadvantage. The alternative scenario is that the relocated tenants begin to connect on to the more effective social networks (from a labour market perspective) of the new neighbourhoods. This generates more employment opportunities. In addition, the relocated tenant is able to tap into the higher resourced educational and community resources of the new neighbourhood and to be less threatened by crime and drug problems that tend to be more acute in poorer neighbourhoods.

The role of endogenous neighbourhood effects is addressed in detail in chapter 5 of this review. Chapter 5 also includes a review of the international and Australian literature on neighbourhood renewal. Neighbourhood renewal is an important alternative policy to neighbourhood relocation. In what follows, however, we briefly examine a range of studies (all from the US) that examine the linkages between neighbourhoods, HA programs, and the labour market. (There exist important endogenous neighbourhood effects on education and the following section of this chapter reviews the evidence in relation to education outcomes.)

There is an enormous US literature devoted to determining the nature and size of labour market related neighbourhood effects generated from HA programs whose aim is to offer relocation opportunities to housing assisted residents from distressed (largely inner city) neighbourhoods. Primary studies include Briggs (1998); Popkin, Buron, Levy, and Cunningham (2000); Katz, Kling and Liebman (2001); Kleit (2001); Rosenbaum and Harris (2001) and; Kleit (2002). For recent reviews see Briggs (1997) and Goering, Feins and Richardson (2002). The two most famous of these US programs are the HA programs generated from the Gautreaux legal case (a 1969 US Federal Court case, which concluded that US Federal housing authorities had discriminated against black tenants by concentrating them in particular neighbourhoods in Chicago), and the US Department of Housing and Urban Development's Moving to Opportunity (MTO) program.²¹ As the Gautreaux program has been in existence for a considerable time, we shall put somewhat greater emphasis on the MTO program because it was introduced on a social experiment basis, which allows for the independent role of neighbourhood effects to be more precisely estimated.

In the 'social experiment' phase of the MTO program, public housing tenants and private rent assisted tenants in poverty-concentrated locations were invited to volunteer for the MTO program. The households were then randomly assigned to one of three groups (Goering, Feins and Richardson, 2002).

- *The MTO treatment group* - received rent assistance vouchers that could only be used in areas with *less than 10 per cent* poverty rates;
- *A rent assistance comparison group* - received rent assistance vouchers that could be used in any location;
- *An in-place control group* - continued to receive their current project-based assistance in poverty-concentrated locations.

The random assignment of participants under the MTO program to these three programs significantly reduces selection bias problems although the volunteer nature of the program creates its own econometric problems.

²¹ See Appendix B for a detailed discussion of the Moving to Opportunity Program and the Gautreaux programs.

The key labour market findings from the US research literature on housing assistance relocation programs (MTO, Gautreaux, and other like programs) are as follows:

- There is conflicting evidence from experimental phase early studies of the MTO program in terms of labour market and welfare dependency rates for household heads. Katz, Kling and Liebman (2001), for example, find no significant labour market outcome differences between MTO treatment and control groups in the Boston site of the MTO program while Rosenbaum and Harris (2001) find significant positive labour market effects in Chicago. However, it is not clear from the study whether the positive effects are more the result of improved economic conditions generally.
- There is strong evidence, from the experimental phase, that the MTO program has resulted in significantly improved child and adult health, child behavioural outcomes, and crime rates (Katz, Kling and Liebman, 2001; and Goering, Feins and Richardson, 2002). Improved outcomes for children, suggests that the MTO program may have strong inter-generational labour market benefits.
- Studies that examine the social network effects of assisted housing relocation do not provide clear evidence of whether relocation from disadvantaged areas hinders or harms housing assistance recipients' social networks (see Briggs, 1998; Kleit, 2001, 2002).

3.3.4 Education, Housing and Housing Assistance

There is a growing but still relatively small literature on the impact of housing outcomes and HA programs on educational processes and outcomes. This literature, again largely international, focuses on the impact of housing tenure, dwelling conditions, HA programs and neighbourhood effects on socialisation, learning and educational outcomes of early childhood age groups and school age children. There are few studies examining the effect of housing outcomes and HA programs on post-compulsory educational outcomes. We know little about the impact of HA programs on the position of the unemployed undertaking retraining.

Most studies focus on micro-level education processes and outcomes (e.g., individual literacy, numeracy, spelling, social and communication skills) rather than macro-level education processes and outcomes (e.g., aggregate academic performance, retention rates, education participation outcomes). The focus on micro-level education outcomes reflects, in large part, the utilisation of cross-sectional and longitudinal micro-data bases in the relevant research. It also reflects an emphasis on the study of intervention programs, which lend themselves to a micro-analysis. As in the case of labour market outcomes, there are few Australian studies that focus directly on the housing-education link.

Education and Housing Tenure

A recent point of interest in housing studies has been on the linkage between homeownership and non-shelter outcomes. Boehm and Schlottmann (1999) point to a number of potential benefits of homeownership on education outcomes. Homeownership may lead to higher levels of financial security. This in turn feeds through to higher spending on education. Homeownership results in higher levels of personal esteem and life satisfaction and hence a more settled home environment for study and learning. Neighbourhood quality and stability is improved as a result of higher homeownership rates in a locality because homeowners are less mobile and invest more in their neighbourhood. The lower rates of residential mobility among homeowners further enhance feelings of security among children and allow children to develop their circle of friends, which over time result in important social networks in adulthood.

Very few studies provide good empirical tests of the independent role of homeownership on education outcomes. Two recent US studies, Green and White (1997) and Boehm and Schlottmann (1999) do, however, examine this relationship and find positive impacts of homeownership on education outcomes. Green and White (1997) find that children of homeowners are less likely to drop out of school and have higher graduation rates than that of renters having controlled for potentially confounding influences. It is interesting to note that this positive effect on retention rates effect was largest among low-income homeowners. The authors tested for selection bias to ensure tenure choice was not a result of parental characteristics and found the homeownership effect remained significant after confounding influences were

accounted for. Boehm and Schlottmann (1999) come to similar findings that homeownership is associated with increases in educational attainment of children and higher earnings once they become adults. They find, as might be expected, that housing wealth is likely to be a source of funding of private education and higher education fees. The impact of homeownership on a range of non-shelter outcomes is considered in more detail in Chapter 5.

At the other end of the housing tenure spectrum to homeownership lies public housing. The impact of public housing (and assisted private rental housing) on education outcomes is examined in the US context by Newman and Harkness (2000) and Currie and Yelowitz (2000). Newman and Harkness (2000) find that a disadvantaged family background, irrespective of housing conditions, provides a powerful explanation of low levels of educational attainment in children. Newman and Harkness (2000) suggest that irrespective of length of residence in, or stage of childhood lived in public housing, educational outcomes were not affected by this tenure status. Whilst they found children in public housing do have inferior educational outcomes on average, these disappeared after controlling for observable family characteristics. Rather, Newman and Harkness (2000) find that it was the level of the disadvantage of recipients, including lower levels of earnings, parental education and economic self-sufficiency, which had a greater impact on educational outcomes. Currie and Yelowitz (2000) arrive at similar conclusions to Newman and Harkness (2000). The correlation of poor educational outcomes with public housing children is explained by unmeasured characteristics rather than housing variables. Importantly they find that public housing has positive effects on both housing quality and children's educational outcomes.

The Education Effects of Housing Conditions and Security of Tenure

Young (2001), Phibbs and Young (2002), and Bartlett (1997) provide in-depth reviews of the literature on the role of the physical characteristics of dwellings and on residential mobility on influencing child-rearing and socialisation processes. Material from these reviews provided the basis of the general comments on housing-education linkages listed below.

When housing results in over-crowding, and unsafe, insecure, and unhealthy environments, the environment for learning and study is adversely affected. Overcrowding may result in direct disruptions to concentration, study, sleep and play. The likelihood that parents may engage in punitive parenting in order to 'control' their children within these potentially harmful or stressful environments also increases. Internal and external play areas for children are crucial both in allowing children to explore their environment, to play with other children in sufficient space and to reduce stress levels among parents. Children and teenagers are also influenced by self-esteem and peer group pressures. Dilapidated and poorly located housing may adversely affect the self-esteem of children and teenagers which may inhibit learning and socialisation processes.

The lessons for policy makers from studies that examine the links between education and housing is that where HA is provided in an 'in-kind' form the physical environment is important. Hence, the assignment of tenants and design, building and refurbishment programs must tailor their placement, building and internal and external design programs to reduce produce harmful or stressful physical environments for individual household tenants. In chapter 5, we review evidence on Australian public housing renewal programs.

An important housing education link is that of security of tenure and mobility. Young (2001), Phibbs and Young (2002), and Bartlett (1997) point to studies that emphasise the importance of stability in childhood to socialisation processes and education outcomes. Moving house can be stressful to young children and teenagers. The move is more stressful if it is forced than when children and the parents can see the purpose behind the move and are in agreement with it. One circle of friends is left behind and a new circle of friends must be found. Many children adapt quickly to their new environment but the research evidence suggests that the adaptation process appears to be more difficult for older children and teenagers. New community and school environments must also be adapted to. As a result, the research evidence points to a loss of self-esteem, life satisfaction, and family relationship pressures for some children. This can feed through into poorer educational outcomes. The importance of these findings for the design of HA programs is that HA programs which offer security of tenure may promote childhood socialisation and educational development processes.

Neighbourhoods and Relocation Programs

Access to basic amenities and services (particularly transport), location of schools and housing, school quality, quality of neighbourhood social spaces, access to friends and social networks, and exposure to positive role models are all important factors that affect education performance. We have previously drawn attention to the importance of neighbourhood effects when considering labour market outcomes and examined the US evidence on programs to disperse housing assisted families within higher socio-economic neighbourhoods. We now review comparable evidence in relation to education outcomes (see Jencks and Mayer 1990; Garner and Raudenbush 1991; Brooks-Gunn, Duncan, Kato Klebanov, and Sealand 1993; Ladd and Ludwig 1997; Galster and Zobel 1998; Katz, Kling and Liebman 2001; Ludwig, Ladd and Duncan 2001; Goering, Feins and Richardson 2002).

The results from a number of early studies on the link between neighbourhood effects and education outcomes supports the hypothesis that neighbourhood does matter in terms of both narrow educational measures such as cognitive and school outcomes and broader social and emotional functioning. Powerful neighbourhood effects on the cognitive, social and emotional development of children and adolescents occur even after adjusting for the socio-economic background of families (see Jencks and Mayer 1990; Garner and Raudenbush 1991; and Brooks-Gunn, Duncan, Kato Klebanov, and Sealand 1993). The higher the proportion of a neighbourhood that is disadvantaged the poorer the educational outcomes of children and adolescents controlling for the income and family background of the individual.

The evidence on the impact of relocation on education outcomes is mixed, but generally supports the hypothesis that relocation from distressed neighbourhoods improves the educational outcomes of children living in housing assisted households. In a series of early studies of the US experimental MTO program, Ladd and Ludwig (1997), Katz, Kling and Liebman (2001), Ludwig, Ladd, and Duncan (2001), found that housing assisted families from distressed neighbourhoods with freedom to make any locational moves they wished (the MTO 'Rent assistance comparison group' –see section 3.3.3. above) did not generally experience improved educational outcomes. Interestingly, moves were often made to other urban areas where school quality was no better than their previous urban neighbourhood. If housing assisted families from poor neighbourhoods were required to move to low poverty suburban neighbourhoods (the MTO 'treatment group') educational outcomes did improve. However, such moves were often less successful than entirely voluntary moves. This latter effect is probably due to some of the negative outcomes of moving such as difficulty or impossibility of maintaining important bonding social capital ties with their old neighbourhood, high prices in the new location and from moving into a neighbourhood where efforts to form new bonding and/or bridging social capital are difficult.

Australian Studies

As indicated throughout this chapter, the role of housing in affecting non-shelter outcomes is an underdeveloped component of Australian social and economic research. This applies as much for education as we found it did in the labour market. There exist a large number of studies on educational disadvantage but few which address the question of housing linkages.

While not focussed on housing linkages directly, Zappala and Parker (2000) (see also Considine and Zappala 2002), include housing effects in their statistical models of education outcomes in Australia. The former study is an early evaluation of the Life for Learning (LFL) program established by the independent welfare organisation The Smith Family and aimed at improving education and behavioural outcomes of students from low-income families. This program intervenes at the student level to raise educational performance. This differs from a policy that addresses poor performance by increasing resources to schools in disadvantaged neighbourhoods.

Zappala and Parker (2000) find the overall program has a positive effect on students' educational outcomes. Housing is introduced in the study in terms of housing tenure effects. Four housing tenure types are defined: public rental, private rental, outright homeowner and mortgagee. The evaluation found students of homeowners or those purchasing were more likely to achieve 'outstanding results' than other tenures controlling for family and income factors. There are, however, many confounding factors not controlled for in the study that could account for this

finding. The authors note some of these including the neighbourhood concentrated public housing effects? poorer services and amenities, including school quality, may account for lower educational attainment. However, housing tenure was not found to be as important a mediator of educational achievement as were ethnicity, gender, geographic location, health, and family structure and parental education.

3.4 What have we learned about the design of Housing Assistance Programs?

3.4.1 Labour Supply

- The theoretical impact of HA programs on labour market activities, in particular hours worked, is ambiguous.
- Empirical analysis suggests that participation in the labour force is less likely for individuals in receipt of benefits from HA programs after controlling for other observable characteristics that may influence labour market decisions.
- For those who choose to participate in the labour force, the amount of labour supplied will depend critically on the structure and parameters of the HA program and how this affects labour market opportunities. Further, the incentives created by HA programs and individual behaviour will be affected by the presence of other income support programs. Hence, the behaviour of individuals will be a function of the non-linear set of opportunities available in the labour market and the individual's preferences over work and leisure activities. The level of taper rates, the rate at which benefits are withdrawn as earned income rises, are key to understanding behavioural implications of HA programs. Identifying how HA benefits affect behaviour *ceteris paribus* requires careful empirical analysis.
- Rationing of benefits under some HA programs means that labour force behaviour of household members is affected while waiting for benefits in addition to when the household is in receipt of benefits.
- Residing in public housing as a child has beneficial effects on labour market outcomes as a young adult after controlling for other observable characteristics of the individual.
- The form of HA and its spatial dimensions (location specific) may affect the behaviour of individuals indirectly via neighbourhood effects. There is some empirical evidence that moving households to low poverty neighbourhoods has positive impacts on labour supply.

3.4.2 Unemployment

- The probability of terminating an employment relationship (quitting) and therefore becoming unemployed is increased if an individual is faced with longer commutes to the workplace as a result of placement in public housing.
- Tenure type may impact on the ability and/or willingness of a household to migrate from a region with high unemployment to a region with low unemployment. Hence, local unemployment outcomes may be adversely affected by household immobility.
- There is evidence that public housing tenure reduces an individual or household's willingness to migrate and therefore move to regions of greater employment opportunity. This pattern may reflect two aspects of HA policy. Limited supply may mean that public housing tenures are unavailable in regions with good employment prospects. Further, the application of policy does not facilitate the relocation of households by giving priority to those moving for employment related reasons.
- The evidence is consistent, though not unanimous, that public housing tenure reduces household mobility (relative to private rental) and exacerbates local unemployment problems.
- Home-ownership may also constrain or reduce the ability of a household to migrate between regions and therefore worsen a local unemployment problem. Owner-occupiers may also be constrained in their labour market mobility if, for example, housing debt exceeds housing

equity. Hence, HA measures designed to promote homeownership *may* in fact limit labour market flexibility and increase aggregate unemployment.

- The empirical support for the Oswald thesis, which hypothesises a positive relationship between the rate of home-ownership and the level of unemployment, is inconclusive.

3.4.3 *Spatial Mismatch and Neighbourhoods*

- Structural change to the economy may result in 'spatial mismatches' between local labour supply and employment opportunities. If credit or other constraints inhibit the ability of households to relocate or commute, some regions of an expanding and otherwise prosperous economy may be characterised by a concentration of limited opportunities and poverty.
- Industry assistance, training and labour market programs are an important part of a policy agenda to reduce spatial mismatch problems. HA programs aimed at moving people to where jobs are located also remain potentially important.
- Distressed neighbourhoods may exacerbate levels of disadvantage felt by residents through a range of resource, peer group, social network, and expectational channels.
- Many distressed neighbourhoods include high concentrations of public housing. Housing assistance programs can be either geared to neighbourhood renewal (see chapter 5) or offer relocation options to residents.
- The research evidence suggests that targeted relocation to less distressed neighbourhoods can have strong positive educational benefits leading to longer term beneficial labour market outcomes. However, up-stream relocation may not work for all residents as it may result in isolation.

3.4.4 *Education*

- Housing assistance impacts on educational outcomes through a variety of dimensions. HA measures generate outcomes at both the household (crowding, security and safety) and neighbourhood level (access to quality schools and peer group effects) that influence education outcomes.
- Identifying the influence of HA policy and the separate dimensions of HA measures on education outcomes is difficult in light of the multitude of influences that impact on education outcomes.
- The empirical evidence, *suggests* that the receipt of HA measures *per se* is not associated with poorer educational outcomes. Poor education outcomes is associated with other characteristics, measured and unmeasured, of HA recipients.
- Empirically, home-ownership of parents is associated with better education outcomes of children. It is unclear, however, how much of this is associated with tenure type *per se*.
- The empirical analysis examining the relationship between HA and education outcomes is hindered by an inability to control for the range of factors that potentially influence the education outcome of individuals. Careful empirical analysis is needed to identify the independent effect of HA measures on the education performance and outcomes of individuals.

3.5 **Conclusions and Recommendations Regarding Research Priorities**

A key finding of the examination of the empirical analysis linking HA and labour markets and education outcomes is the paucity of Australian studies examining these relationships.

This makes policy analysis and development difficult because of the unique features of the Australian socio-economic environment, especially in relation to HA measures. For example, both Australia and the United States have programs that provide public housing and those that provide rent subsidies that can be used in private rental markets. Whereas both programs are

rationed in the United States, only public housing is rationed in Australia. Subsidies for rent payments under the CRA program in Australia are an entitlement program that most social security recipients are entitled to receive. Similarly, local school districts in Australia may exhibit a greater degree of homogeneity than those in the United States because of the central role played by state rather than local governments in the provision of secondary education in Australia. In turn, the applicability of the American studies to the Australian environment is limited.

The conclusions that can be drawn for Australia from an examination of the overseas evidence on the relationship between HA programs and non-shelter outcomes are limited. Differences in housing programs, the labour market and institutional arrangements merely serve to highlight the need for comprehensive Australian analysis of the relationships identified in this chapter.

A key step in any future analysis of the relationship between HA and non-shelter outcomes is a dataset that facilitates analysis of a range of important policy questions. In the absence of quasi-experimental data, including the random assignment of different individuals or households between control and experiment groups, a comprehensive panel dataset should be developed that allows the analysis of the relationships identified in this chapter. A panel or longitudinal dataset will allow the analysis of many of the issues canvassed in this chapter in a methodologically sound manner. The key feature of a panel dataset, following the behaviour of the same set of individuals over an extended period of time, facilitates rigorous analysis of before and after behaviour of individuals when an aspect of their environment changes. Moreover, multiple observations of an individual over time allows for the researcher to control for unobserved characteristics of individuals and to examine long term relationships between HA programs and the outcomes canvassed in this chapter.

The new Household, Income and Labour Income Dynamics in Australia (HILDA) dataset is a key resource that in the future will facilitate the analysis of a range of housing related issues. Similar in structure to the Panel Survey of Income Dynamics in the US, the HILDA will over time allow the analysis of a range of housing related issues. A key conclusion/recommendation of this chapter is the need for HILDA be developed and implemented with a comprehensive range of housing related questions and data. Support for the continuation and development of HILDA, especially the inclusion of housing related questions, is essential for the analysis of issues identified above.

Key research questions that will require future analysis include:

- What, if any, incentive effects are created by the presence of HA programs in Australia?
- Empirically, how is labour market behaviour and outcomes influenced by the actual and potential receipt of HA programs?

To identify how labour supply behaviour is influenced by HA programs it is necessary to understand how the market opportunities of individuals change in the presence of transfer programs. Differences between the programs in Australia and those overseas means that the analysis must examine Australian programs and the incentives those programs create for actual and potential recipients. For example, a key concern expressed by policy makers in Australia recently has been the high effective marginal tax rates faced by recipients of HA and other income support measures. The discussion in section 3.3.1 makes clear that the 'prices' for housing and the effective wage rates for actual and potential recipients of HA measures will be heavily influenced by the structure and parameters of HA programs. Research needs to be undertaken to identify how labour market opportunities are influenced by the range of income support programs, especially HA measures, faced by households.

Because the incentive effects of HA measures are program specific, empirical analysis of both public housing and CRA programs is needed. Issues that require attention include the labour force participation decision, patterns of employment and unemployment, and, wage outcomes for actual and potential recipients of HA measures.

- How have aggregate labour market outcomes been affected by HA programs in Australia?

This encompasses a number of issues including:

- Has labour mobility been constrained by policies, such as the FHOGs, that encourage home-ownership?
- Do the limited supply of public housing and the allocation policies associated with this program limit household mobility?
- Have the regional disparities in housing markets (especially variation in the cost of housing between Australian capital cities) limited the ability of individuals to relocate to locations with more attractive employment opportunities?
- How does the receipt of HA measures affect the education outcomes of individuals?

The relationship of housing, and especially HA measures, to education outcomes is complex and requires additional analysis. As noted above, the Australian socio-economic environment poses a number of unique characteristics that suggests further analysis of potential linkages is required. The use of overseas research on potential linkages between housing, HA measures and education outcomes will generally not be appropriate.

Issues requiring empirical analysis include:

- How does residence in public housing affect the school performance of children including (truancy), scholastic achievement and completion of schooling?
- What benefits, if any, does household receipt of CRA produce for the education outcomes of children? Is access to better quality schools enhanced by policies such as CRA?
- What aspects of HA policy, if any, affect access to tertiary education? If so, how? Does living in public housing as a child affect the likelihood that an individual will attend university?

4 WHAT EFFECT DOES HOUSING ASSISTANCE HAVE ON HEALTH OUTCOMES IN AUSTRALIA

4.1 Introduction

Health is generally believed to be a prerequisite for life quality. The extent to which housing either enables or disables health and how housing assistance impacts on outcomes remains unclear particularly in the Australian context where programs and packaging may differ from that of other countries. This chapter presents a retrospective analysis of published materials that were identified using a systematic literature review protocol based on the Campbell review protocol. Details of the way in which this protocol was employed for this chapter are provided in Appendix F. The material in Appendix F also provides an overview of the search strategy employed, the inclusion and exclusion criteria imposed, and the processes by which the matrices presented below were extracted. This chapter begins by highlighting the significance of knowledge about associations between housing assistance and health. It then provides a summary of the results derived from the systematic review. It concludes by outlining an agenda for future research.

4.2 How important is the interaction between housing and health?

The fact that both natural and man-made environments directly have an impact on health appears self-evident. Human habitation serves to mediate natural environmental extremes. As such, housing sustains and supports human life, and thus housing environments directly and indirectly impact on health, social support, absence of disease, quality of life and wellbeing (Burridge and Ormandy 1993; Conway 1995; Ineichen 1993; Krieger and Higgins 2002; Lowe 2002; National Housing Federation 1998; Smith and Alexander 1997; Thomson, Petticrew, and Morrison 2002; Wilkinson 1999; Young and Mollins 1996). Moreover, housing environments are where humans spend the majority of their lives engaged in activities such as eating, preparing food, sleeping, socialising etc.

The National Health Priorities Areas (NHPA) initiative involves the Commonwealth, State and Territory governments, and the non-government sector, and focuses on those areas, most significantly contributing to the burden of illness and injury in the community, particularly if the burden can be significantly reduced. Consequently, Australia's national health priorities framework focuses on achieving better outcomes for: cardiovascular health, cancer control, injury prevention and control, mental health, diabetes and asthma. Moreover, The initiative is Australia's response to the World Health Organization's global strategy *Health for all in the 21st Century*. This document sets out a commitment to build healthy public policy and create supportive environments (World Health Organisation 1997).

Health measurement whilst acknowledging environmental impact is primarily concerned with medically modelled person focused strategies and data and thus has not yet mapped environmental or population focused interventions to outcomes. This is in part because, whilst the links between housing and health are intuitive and studies demonstrate strong independent associations between housing and health, evidence generally fails to convince because of concern about generalisability, nature of methods, and or sampling bias. (Thomson, Petticrew and Morrison 2001). Moreover the magnitude of the change may be small implying that their health status relative to the population as a whole may remain unchanged (Mullins and Western 2001).

However, Australian policy makers are seeking to improve whole of government efficiency and effectiveness. In this context, understanding and mapping the links between housing and health are critical to policy innovation and funding initiatives likely to have demonstrable outcomes. Enabling whole of government management requires that impacts and costs can be mapped across sectors. Mapping the links between housing and health permits policy makers to allocate assistance in a manner most likely to create positive outcomes. Secure, safe and stable housing are generally believed to be a foundation for health (Dunn 2002b; NSW Health Department 2002; Thomson *et al* 2002). For instance, failure to achieve curative and preventative health outcomes creates social and economic inequality that directly impacts individuals whilst indirectly

contributing to health cost. Steadily escalating health costs in conjunction with an ageing population mean that achieving positive housing assistance impacts on health are critical to reducing health inequality.

In this context better understanding the links between housing assistance and health are essential for better understanding how insufficient housing investment might lead to additional costs for other services, including health— through increased need for health care, prescription costs etc. Some of these costs are 'hard' or quantifiable – higher health service costs, special health care responses, environmental health etc. Others clearly exist but are less quantifiable economically – poor mental health, social isolation, and stress. Not to mention the flow on individual cost impacts such as increased utility charges and medical bills which are felt back at governmental level in terms of stated and felt need for additional income supplementation. Ongoing research highlights that increased investment in housing as a key health determinant could reduce costs to other sectors and help improve the well being of individuals and communities.

4.3 Defining input and outcome relations

This review was carried out to provide policy makers and researchers a summary of the evidence as to the health impacts of housing assistance. To enable this, the search needed to be both comprehensive and sufficiently sensitive to identify the greatest number of relevant studies across the subject area. The intention was to attend to how and why housing assistance might cause health change. The objectives of the search undertaken were to identify and review, the main findings of included health and housing literature; to identify and code health, housing and method outcome variables for the purposes of a meta analysis and to analyse the results for implications in regard to the Australian context to determine policy change and or additional research. The processes by which the input and output relations presented in this section have been determined are outlined in Appendix F.

4.3.1 How is health variation and outcome measured?

Research into the relationship between health and housing while profuse has to contend with many confounding factors. For instance, poverty; poor nutrition; violence; exposure to weather, pest and toxins; social isolation and self damaging behaviours such as drug addiction are typically observed concurrently in populations where inequality exists and all have been linked to poor health (Mant 1993). Another major criticism of much research examining health variation in the housing area is a lack of agreement about the required rigour and internal validity of tool selection. There are also disputes about the applicability of biomedical versus qualitative paradigms.

Epidemiological or biomedical models of health are firmly planted in the positivist research paradigm (Baum 1995). Within this paradigm, hard health outcome data typically refers to mortality outcomes such as life expectancy and hospital bed days whereas soft data typically refers to morbidity outcomes such as incidence of chronic illness, non-fatal injury outcomes, self-assessed health status, and occasions of intervention from health agencies. For instance both mortality and morbidity changes are employed to monitor and report on the Australian National Health Priority Area conditions such as asthma, diabetes/high sugar level, cancer, cardiovascular conditions, injuries, mental health) and other long term conditions.

Qualitative approaches on the other hand typically relate to measurement of qualities and attempt to measure less tangible outcomes such as quality of life or wellbeing. Unfortunately this is much more difficult to measure and because outcomes are typically both complex and indirect identification and control for all the possible confounding factors may not be possible. Nevertheless, in the arena of public health promotion, where health straddles the medical social science divide this type of methodology has driven policy initiatives such as Healthy Cities where data collection has been primarily qualitative in nature (Baum and Brown 1989).

Consequently, untangling the underlying social complexities to determine the value of housing assistance programs on long-term health inequality concerns policy makers and elected government officials responsible for housing and health. Moreover housing has been used to improve health in both a curative and a preventative manner (Ambrose 1997). The curative and

preventative distinction is significant because it impacts on target groups and measures. The next section will examine these differences as they relate to the review in greater detail.

Curative health outcomes

Some groups within Australia are more vulnerable to both health and housing variations than others, and housing assistance for these groups is seen as having more direct health outcomes and or being primarily curative in nature (Brooke, Gardner and Kendig 1998). Indeed housing assistance investments for the creation of more favorable health outcomes must reflect the needs of vulnerable groups such as older people, those with medical conditions, poor and marginalized populations if inequality is to be removed. Indeed positive discrimination is an accepted practice recommended by the Human Rights and Equal Opportunity Commission (HREOC) for dealing with the negative discrimination that vulnerable and marginalized population groups typically face (Howe 1991). The curative response focuses on minimizing symptoms and centers around capping escalating health costs. As a consequence housing policy is vulnerable to increasing demand on specialized housing provision and changes in design legislation to meet demand (Burridge and Ormandy, 1993).

Aged/Older persons health issues and housing assistance provision:

Whilst being over 65 years or retiring from the workforce does not necessarily create housing vulnerability and no evidence exists that ageing in and of itself constitutes a health hazard, it has long been thought that housing assistance can impact favourably on facilitating ageing in place. There is clear evidence that most health conditions increase with age, to the extent that at least one long term condition was reported for almost all (99%) persons aged 75 years and over compared with less than a third (27%) of children aged less than 5 years (Australian Bureau of Statistics 2002b).

Older persons typically demonstrate little desire to relocate regardless of unsuitable housing because of the importance of dwelling familiarity in maintaining self-esteem and social relations (Golant 1999). Consequently, the trend towards '*ageing in place*' has massively increased the demands for community care, highlighting the inappropriateness of much of the existing Australian housing infrastructure for older persons (Bridge *et al* 2002). Two previous random control studies of environmental modification of living environments provide some evidence that adaptation to suit individual ability can maintain wellbeing and reduce morbidity (Cumming *et al* 1999; Mann *et al* 1999). This is in a context where the proportion of people aged 65 years and over continues to increase (Australian Bureau of Statistics 2002a) with recent projections indicating that by the by 2031, the population of people aged 65 years and over will reach 22% of the total population (Australian Bureau of Statistics 2002c).

Housing assistance for older persons depends on income assessment and eligibility criteria includes some innovative home equity conversion schemes for instance St George Bank in the ACT and the Defence Service Homes Subsidised Home Loan Scheme allow eligible persons to borrow funds for home alterations/modifications or mortgage refinancing. Other programs, like the Veterans' Home Care program, assist eligible veterans and war widows/widowers with low level care needs to remain in their homes for longer. Gold card holders are also eligible for home modifications advice and financial help via the Rehabilitation Aids Program (RAP), HomeFront and Veterans' Home Maintenance Help Line. Frail older persons and those most at risk of institutionalisation not covered by Veterans affairs are eligible for access to Home and Community Care funded Home Modification and Maintenance Services and or assistance via conversion of Aged Care Assessment Packages (HACC and Ageing Programs Unit, 2000; Home and Community Care (HACC) Program, 1998).

Physical/Medical health issues and housing assistance provision:

The prevalence of a medical condition and or chronic illness regardless of age may make a person more vulnerable to accommodation transition by reducing income and by narrowing the accommodation choices. The trend towards '*deinstitutionalisation*' has resulted in community care being the preferred care context for younger persons in particular, however insufficient resources and shortage of suitable community housing has seen concern over economies of care erode flexibility and opportunities for participation and community inclusion (Bridge *et al*

2002). Housing intervention whilst not necessarily curing the underlying health problem may facilitate continued community participation and can provide a supportive environment capable of accommodating, carers, and or the equipment needed to support and sustain life. In Australia effective housing assistance for this group remains a challenge because the incidence of disability is increasing and the number of available cared accommodation beds decreasing with the most recent statistical data indicating that just under one fifth (19%) of the Australian population has a disability and most of these persons (89%) continue to live in a private home with at least one other person (Australian Bureau of Statistics 1998b).

Housing assistance for those with medical/physical health problems relies on medical priority social housing, rental subsidy or accommodation provision via the Commonwealth/State Disability Agreement (CSDA). The CSDA, has been criticised for limitations surrounding overspending on group homes, its perceived inflexibility and gaps relating to children's and mental health services (Bridge *et al* 2002).

Mental health issues and housing assistance provision:

As with those with physical or medical health related conditions, prevalence of a mental health problems may make a person more vulnerable to accommodation transition by reducing income and by narrowing the accommodation choices. The designation of mental health by Commonwealth and State Governments as one of the five National Health Priority Areas is recognition of its social and public health importance. People with mental illness are among the most vulnerable and disadvantaged in our community; they may experience stigma and discrimination in many aspects of their lives. According to Mullins and Western (2001), housing vulnerability of those with mental health problems is associated with homelessness, overcrowding, certain types of emergency accommodation, and low-income high-rise apartments. In Australia, almost 10% of people reported that they had a long-term mental or behavioural problem (Australian Bureau of Statistics 2002b). The prevalence of mental disorder generally decreases with age. Young adults aged 18 - 24 years had the highest prevalence of mental disorder (27%), declining steadily to 6.1% of those aged 65 years and over (Australian Bureau of Statistics, 1998a).

There is no specialised housing assistance associated with mental health but persons with mental health issues are eligible for the same assistance as those with medical/physical problems and if homeless as a result of inability to maintain security of tenure would qualify for Supported Accommodation Assistance Program (SAAP) (see the following section on homelessness for more detail).

Homeless health issues and housing assistance provision:

Homelessness is defined as insecure housing tenure with previous accommodation including living with friends or relatives on a short-term basis or a car, tent, park street or squat. According to Berry, there are three reasons that homelessness has become a key driver of housing policy in Australia. These include its entrenched nature, its impact on additional demands on human service systems and the community consensus that growth of homelessness is a bad thing (Berry 2002). Homelessness is typically associated with health vulnerability because it can result from ill-health, it causes ill-health and it aggravates ill-health (Mullins and Western 2001). Moreover, homelessness typically translates in most developed countries to welfare assistance and prioritisation of accommodation need (Pleace 1995).

In Australia the Supported Accommodation Assistance Program (SAAP) provides housing assistance designed to meet the needs of homeless persons. The goals of SAAP are to resolve crises, re-establish family links where appropriate and re-establish the capacity of clients to live independently of SAAP. A stated health and housing outcome of this program includes "greater housing stability for people with mental health problems" (NSW Health Department 2002). According to analysis of the SAAP national data set, provision of accommodation support was the most frequently expressed need with 79% of recipients reporting this and with nearly a fifth (17%) of those receiving SAAP assistance, reporting being homeless for a year or more prior to receiving assistance (Wang and Wilson 2000).

Care health issues and housing assistance provision:

Given that community care is the preferred care context, the ability to remain in the community often depends on the availability of informal care. Nevertheless being a carer, increases housing vulnerability by impacting income and by increasing the likelihood of acquiring a disability. It is, therefore, not surprising that the ABS survey noted that carers were twice as likely as those who were not carers to have a disability (32% compared with 17%). Indeed, carers are particularly vulnerable as many carers are older and informal care arrangements typically evolve as reciprocal arrangements over many years (Australian Bureau of Statistics 1998c). The trend towards increasing expectations of carers has resulted both from 'ageing in place' and from 'deinstitutionalisation'. Without carers neither would be feasible. Currently, concern exists over inadequate forward planning, lack of training and assistive devices, and the cost of caring (Bridge *et al* 2002).

There are currently no specialised housing assistance programs for this group but carers are eligible to apply for Home and Community Care funded Home Modification and Maintenance Services and if sharing with a person seeking medical priority rehousing would be included in social housing allocation. However, the fact that only those carers who live in are accommodated for within social housing allocations means that social isolation or dependence on formal care provision may result.

Preventative health outcomes:

The home has been identified as a primary locus for public and population health initiatives (Burrige and Ormandy 1993; Dunn 2002b). The renewed interest in housing as a public health hazard and housing assistance to increase safety and reduce harm has arisen out of the notion that population effects at a community level will reap rewards by enabling the correlation of variables that will facilitate causal modelling and substantially cut escalating health care costs.

Injury health issues and housing assistance provision:

According to Ranson (1993), deaths and injuries in the home present one of the biggest public health challenges with the World Health organization ranking them the fifth amongst the leading causes of death. Home injuries in Australia are a common occurrence, as in other countries - 12% of the general population when surveyed by the Australian Bureau of Statistics indicated that they had sustained an injury in the previous month. The types of injury most likely to require medical interventions were falls from less than 1 metre, which accounted for a third of injuries reported; followed by hitting or being hit by something; and bites/stings which require some treatment (Australian Bureau of Statistics 2002b).

In terms of mortality and morbidity outcomes resulting from injury in the home they are worst for more vulnerable population subgroups such as young children and older adults implying a double disadvantage situation. Fiscally, home accidents result in annual health related expenditure estimated at \$2,369 million for older persons (Hill *et al* 2000), and \$660 million for children (Atech Group and Minter Ellison Consulting 2001). Apart from these substantive direct costs there are also substantial indirect and unquantifiable human and social costs. Nevertheless, proving direct causality presents difficulties because injury and falls in particular are viewed as multifactorial.

Acknowledging the multifactorial nature of injury means that architectural features such as open rise stairs, absence of guards or railings and slippery floor surfaces may not cause injury to the able-bodied but their presence or absence in combination with impaired reasoning or dexterity dramatically increases the risk of injury. Consequently, dwelling design appears to be indirectly causally implicated in the majority of accidents in the home. It is not surprising then that Australia like other developed nations has sought to legislate to improve housing outcomes rather than relying entirely on voluntary approaches such as codes of practice or guidelines. However, legislation as the main housing assistance intervention, is not without its issues, for instance, in reviewing the Australian legislature in relation to child injury prevention. Atech Group and Minter Ellison Consulting (2001) found over 93 standards (approximately 30 made mandatory by legislation) and, whilst all States and Territories have legislation to prevent injury, there is not necessarily a uniform or consistent approach.

Wellbeing health issues and housing assistance provision:

There is surprisingly little direct evidence on housing’s independent effects on wellbeing (Mullins and Western 2001). Nevertheless, there is some evidence that views, light, colour, proximity to amenities and space do improve wellbeing (Bell *et al* 1996). This is not surprising given that these attributes are generally valued and directly impact on housing sales and land valuation. Unfortunately, though, the emphasis within housing and health research remains predominantly on aspects of ill-health at population levels not on the more elusive aspects of wellbeing. The Australian Bureau of Statistics, reports that whilst most Australians report being in good health, a staggering 87% of those aged 15 years and over and 78% of the total population have experienced one or more long-term medical conditions, the most commonly reported include; eyesight and back problems (21%); hayfever and allergic rhinitis (16%); arthritis (14%); asthma (12%); complete or partial hearing loss (11%) and hypertensive disease (10%) (Australian Bureau of Statistics 2002b).

Ill-health and disability whilst linked are not synonymous and many persons with pregnancy, mild visual loss, musculo-skeletal, hayfever, hypertensive or cardio-vascular problems would not identify themselves or be identified as disabled. There are currently no specialised housing assistance programs for this group and previous research has instead centred around health impacts of renewal predominantly in social housing programs.

Some of the main health variables associated with housing are listed in Table 4.1 below.

Table 4.3: Health typology

Health perspective	Input variables specified	Health outcome reported	
		Negative (X)	Positive (v)
Curative	Aged/Older persons (i.e. those over 65 or retired)	Increased morbidity Institutionalisation/Relocation Social isolation	Reduced morbidity Ability to age in place Social inclusion
	Physical/Medical (i.e. those with mobility impairment. HIV, respiratory or cardiovascular disease etc.)	Hospitalisation/Institutionalisation Increased mortality Increased morbidity	Deinstitutionalisation Decreased mortality Reduced morbidity
	Mental (i.e. those diagnosed with mental health problem etc.)	Increased depressive symptoms Increased anti-social behaviour Increased confusion Increased hospitalisation	Decreased depressive symptoms Decreased anti-social behaviour Reduced confusion Increased community participation
	Homeless (i.e. those persons identified as having insecure accommodation.)	Increased hospitalisation Increased mortality Increased morbidity	Stability of tenure Decreased mortality Reduced morbidity

Health perspective	Input variables specified	Health outcome reported	
		Negative (X)	Positive (v)
	Care (i.e. those persons requiring either formal or informal support.)	Increased formal care need High staff turnover Lack of informal supports	Decreased formal care need Low staff turnover Increased informal supports
Preventative	Injury (i.e. those persons sustaining injury)	Trips/Slips/Falls Burns Electrocution Poisoning Bites	Harm reduction Reduced occasions of medical intervention
	Wellbeing (i.e. those persons reporting health/wellbeing indicators)	Increased rate of Infection Increased stress and or depression Increased visits to general practitioner	Improved quality of life Improved life satisfaction Greater 'happiness' Reduced visits to general practitioner

4.3.2 How is housing variation and outcome measured?

Housing definitions typically refer to dwellings in general, and are principally about shelter and safety. Housing facilitates protection from the elements, pests, toxins and enable access to facilities that sustain life such as access to water, sanitation and drainage. Housing is defined here according to the housing assistance provided and housing environ qualities.

Housing assistance outcomes

As previously discussed Australia, like many other Western and developed countries, has a long history of housing assistance measures. The Commonwealth, States and Territories provide a number of housing assistance interventions designed to positively impact on housing tenure. However, whilst there are a number of national programs, there are substantial differences between and within states/territories in terms of eligibility and access.

Ownership health issues and housing assistance provision:

Owner occupied private dwellings are those dwellings that are either fully owned, or being purchased. Previous research has linked owner occupation to longer life expectancy and better health status, less serious health conditions, less visits to a general practitioner and less negative health habits such as smoking in comparison to those persons living in rented accommodation (Waters 2001). Home ownership has also been linked to more positive mental health outcomes with improvements in wellbeing (Kearns and Hiscock 2000; Hiscock and Kearns 2001). On the negative side, being a home purchaser or mortgagee has been linked to unemployment (Oswald's thesis), increased stress/depression, inability to purchase medication/equipment, inability to maintain a property and inability of the open market to supply dwellings suitable to the needs of disabled occupants. According to Rohe, McCarthy and Zandt (2000), however, the evidence is limited and the underlying mechanism by which ownership impacts health remains unclear.

Housing assistance in Australia has traditionally fostered homeownership as a universally desirable good and this is reflected in ABS data which indicates that owner occupied dwellings are the predominant form of dwelling accounting for 66.2% of all housing stock in Australia (Australian Bureau of Statistics 2002a). However, the number of young people who have entered homeownership by the age of thirty has decreased by over 30% in the past forty years and it has

become increasingly difficult to achieve for the single income household. Home purchase assistance is primarily designed to make the option of homeownership more affordable and comes in a number of forms including, inter alia, the Federal Government's, First Home Owners Grant and State Government exemption from stamp duties for first home buyers.

Rent subsidy health issues and housing assistance provision:

Housing rental requires prospective tenants to locate and access housing that best fits their needs and is within their budget on the open market. Selection, whilst facilitating some individual choice and control, requires trade offs be made and the effectiveness of these, to some extent, is affected by the availability of stock from which choices can be made. Typical trade-offs include location, size, design, suitability and affordability. Poor mental health outcomes have been linked with anxiety and stress relating to insecurity of tenure, inability to get repairs and or maintenance in a timely manner and the difficulty or impossibility of adapting the dwelling to better meet the needs of the occupants. On the other hand, previous research has linked tenants' poorer physical health outcomes to issues associated with affordability, availability, insecurity, lack of maintenance/upkeep and poor dwelling design. For instance, being a renter has been correlated with shorter life expectancy and poorer health status, more serious health conditions, more visits to a general practitioner and more negative health habits such as drug addiction which is the inverse of the results claimed for homeownership (Waters 2001).

Currently low income earners who rent privately are entitled to Centrelink's Rental Assistance depending on how much rent is paid, income generation, the number of dependent children and whether applicants are single or a couple (Commonwealth of Australia 2003, p114). In Australia, rental subsidies provides eligible persons more affordable housing. Whilst rental assistance has the potential to increase choice and decrease health impacts resulting from homelessness, the provision of rental assistance has been linked to worse health outcomes than other forms of housing assistance.

Social housing health issues and housing assistance provision:

Social housing provision is seen as being primarily curative in nature and is strongly associated with being older and or having a physical or medical disability. In Australia, the 'Commonwealth/State Housing Agreement (CSHA)' provides a National framework for social housing provision. Social housing access for vulnerable population groups is essential given the fact that there are increasing numbers of older disabled tenants living alone (30% as reported by Bishop (2000)) and social housing in Australia appears to be well targeted as just on two-fifths of all public housing tenants are identified as having a disability (40% as reported by the Australian Institute of Health and Welfare (AIHW) (1999)). The increasing disability focus within social housing reflects a shift that has ramifications on property profiles, stock upgrading, housing allocation, staff training and linkages with support agencies (Bridge *et al* 2002). Public or social housing rents are generally set at approximately 20-25 per cent of the tenant's income. If this income related amount is less than the actual market rent of the dwelling, the rebate is the difference between the market rent and the income related rent. A rental rebate is provided to tenants in public housing whose market rent is greater than the designated proportion of their income.

Retrofit health issues and housing assistance provision:

Retrofit is seen as being primarily curative in nature and is strongly associated with being older and or having a physical or medical disability. A supportive home and neighbourhood environment provides one of the most desirable ways of overcoming disabilities. Typical property modifications comprise structural changes, such as ramp, toilet/bath/laundry modification, door widening, handrails, remote controls, new or changed heating, air-conditioning, home automation system, tele-monitoring systems etc. (Kochera 2002; Pynoos *et al* 1998). For instance, previous research in the US has found that 7% of housing stock owned or rented by older person is unfit, poorly maintained, and generally inappropriate to the occupants needs (Bayer and Harper 2000).

Whilst no survey of housing fitness has been conducted in Australia, the secondary data analysis conducted with the Disability Ageing and carers Survey data, indicated that the most common unmet need (17 %) was for property maintenance (Bridge *et al* 2002). This same study, found

that with property maintenance, the strongest predictors of need are being female, having greater disability severity, having a physical disability, living in a house, and being an owner. Those who are unemployed, or who are not in the workforce, are the most likely to have this need. Presumably this is because they cannot afford the upkeep of their home. However, those on higher incomes also are more likely to require assistance, which may be associated with living in houses and owning homes where there is greater responsibility for maintenance.

The need for property maintenance was somewhat more likely to be noted by social housing tenants than by private renters with slightly more public tenants than private tenants undertaking home modifications. This result accords with what might be expected, because of the medical prioritisation aspect of social housing in combination with the fact that social housing authorities are generally more willing to allow retrofit than private property investors who see retrofit as property damaging rather than property enhancing. Overall, owners are most likely to have modifications, presumably because they have the necessary resources and control and face more barriers in moving to more supportive accommodation.

Renewal health issues and housing assistance provision:

Renewal is seen as being primarily preventive in nature and is not typically associated with vulnerable population groups *per se*, rather it is typically targeted at urban developments which are assessed as being of population health concern because of poor quality construction. Some countries such as the UK and Canada conduct regular housing and health audits and produce guidelines such as the Minimum Housing and Health Standards and the House Health and Safety Rating System respectively (Alberta Health and Wellness 1999; Chartered Institute of Environmental Health 2001). The primary objective of these types of standards is to protect the health and wellbeing of renters. Results from housing and health audits are typically used by planners in considering urban renewal projects and by governments in consideration of legislative change or permit issuance.

Historically the concept of renewal is strongly associated with the notion of 'unfit' housing and the slum clearance programs of the 19th century (Ineichen 1993). Housing renewal interventions seek to improve health by reducing unfit or poor quality housing. They also seek to reduce home accidents, resulting from rotten materials and age or design deficits in construction, plumbing, and wiring etc. Some renewal programs also seek to improve energy efficiency to reduce energy bills and or improve indoor temperature control or ventilation. The control of weather such as water, and cold is typically associated with urban developments in environments with unusually harsh weather conditions. Many renewal projects are also strongly associated with social housing or slum housing whose original construction aimed to prioritise affordability over quality. The link with social housing means that there is an inherent association with those tenants most likely to have existing medical conditions (medical priority) or to be living in poverty and thus indirectly are also more likely to suffer from adverse health resulting from malnutrition and stress related adverse health habits such as drug addiction etc.

Housing planning and design characteristic outcomes

The growth of the city and urban planning has been a spectacular feature of the 19th and 20th centuries. Whilst utopian ideals have really borne the intended fruit, the notion that housing can contribute to ill health is widespread fuelling slum clearance and urban regeneration projects alike. Whilst there is considerable evidence that particular diseases are directly associated with particular dwelling planning or design features, the role of these in fostering wellbeing is almost unknown. For instance, kitchen design is indirectly linked to food production means and hence malnutrition but whilst a reasonable quality kitchen can reduce accidents and improve sanitary food handling and storage only the availability of food itself can prevent starvation. Previous researchers have hypothesised that aspects such as neighbours, dwelling and area are linked to health outcome (Smith 1990; Phibbs and Young 2002); overcrowding has been similarly linked (Waters 2001).

Physical locale health issues and housing assistance provision:

Urban planning is a critical part of urban housing development and the site and physical locale of housing developments are directly implicated in adverse physical health outcomes. For instance,

placement of housing in areas where soil, air or water are contaminated will directly affect the occupants health status (Diez-Roux and Nieto 1997; Diez-Roux and Merkin 2001; Dunn 2002b). However, the actual health outcome will be mediated by the relative toxicity, vulnerability of the population being exposed, and the duration of contamination. Physical locale determined aspects such as access to social support and amenity such as transport, schools and shopping facilities have also been implicated in adverse mental health outcomes (Badcock, 1994). In addition, for vulnerable populations, such as the aged and disabled, physical locale has been implicated in accommodation transitions to social housing and formal care facilities such as nursing homes and aged care facilities (Dwyer *et al* 1994).

Social support/Neighbours/community health issues and housing assistance provision:

Who a human resides with and our relations to those around us determine the amount and quality of social interaction and informal support available. Humans are social animals and social isolation has direct adverse mental health consequences with previous research linking lack of social interaction to poorer mortality and morbidity outcomes (Havens and Chipperfield 1990; Krause 1993; Bassuk *et al* 1999).

The dwelling design, physical location and homogeneity or otherwise of housing occupants indirectly determines the degree and amount of formal care required to remain within the community (Smith *et al* 1993; Cape and Gibson 1994). In Australia, there have been substantial changes in family structure in the last 30 years that have major social support impacts. Indeed the proportion of lone person households increased to 23% whereas the proportion of group households fell to 4% in 2001. This decrease in average household size is related to the increase in the number of people living alone, and the declining fertility rate (Australian Bureau of Statistics 2002a). The fact that lone person households is increasing is significant because it implies a mismatch of existing housing stock to relative need plus it places those who are most vulnerable older persons and those with physical disabilities at greatest disadvantage. This disadvantage is most likely to be acute in social housing where the high concentration of persons with disability will reduce the informal support availability consequently increasing the formal care needs of occupants (Steer 1994; Lincoln Gerontology Centre 1998). Social support is generally managed by guidelines and regulation rather than legislation. However, it is very difficult to coordinate and manage particularly within social housing allocation (Bridge *et al* 2002). Consequently, additional support for the most vulnerable groups often has to be individually purchased or agreed as part of the housing allocation package.

Dwelling design health issues and housing assistance provision:

There has been a longstanding belief that health is directly impacted by the quality of a dwelling. Dwelling quality is a product of the relative quality of its design and construction in relation to its site and proposed usage. The significance of the impact will depend on human genetic predisposition; relative fit with occupants needs over time and the length of time spent within the dwelling. Not surprisingly, those who spend most time at home or whose needs change most dramatically will be most at risk of adverse health outcomes. Some of the dwelling characteristics responsible for adverse physical disease outcomes have been implicated as follows;

- Infection and enteric disease, with pest infestations (Howard 1993);
- Enteric disease, with amount of space, sanitation, plumbing (Ineichen 1993);
- Pneumonia, tuberculosis, asthma, hayfever and respiratory infections, with mould, damp and poor ventilation (Mood 1993);
- Burns, with cooking and heating design and provision (Ineichen 1993);
- Fall injuries, with door, hall, stair, landing and bathroom design (Hill *et al* 2000);
- Puncture injuries, with window and door and shower glazing (Ranson 1993);
- Chaga's disease with roofing thatch (Ineichen 1993); and
- Parasite transmission, with dirt flooring (Ineichen 1993).

In terms of adverse mental health outcomes, dwelling characteristics such as height of home from the ground and multi-unit design have been implicated (Thomson *et al* 2002). On the other hand, adverse mental health outcomes have also been associated with privacy, aesthetics and comfort. Previous research has shown these less tangible dwelling factors to impact on self esteem and sense of self (Marcus 1997).

The primary governmental response to problems with dwelling design as in the previous section on injury has been legislative with similar inconsistencies. Recently, a number of other developed countries have moved to introduce newer housing regulation emphasises not just the desire to improve health but also to enable community participation and inclusion by people with disabilities whilst minimising cost impacts associated with rehousing, renewal and retrofit. The two most significant of these innovations include the USA 1991 Fair housing Act amendment and the UK housing 'visitability' requirements. Both require dwellings designed and constructed for first occupancy, to be accessible to and usable by people with disabilities. This type of legislation typically requires new housing to have an entrance without steps, a bathroom at street level, wide halls, doorways that are passable by wheelchairs and other elements of universal design.

Despite an ageing population and lowered birth rates, Australia's population continues to expand, as does housing demand. The ABS estimates that the number of households in Australia will rise by 2021, by more than a third. Moreover, the projected household growth rate will be (24%) faster than population growth (Australian Bureau of Statistics 1996). The fact that housing stock is set to increase, implies that there is a rapidly narrowing window of opportunity to intervene in dwelling design to create better health outcomes.

Physical crowding health issues and housing assistance provision

Physical crowding concerns the health outcomes associated with the density of living arrangements. As was mentioned in the discussion of social support Australian and indeed living conditions in most well developed countries is changing rapidly. The extended family and higher density communal living arrangements favoured in previous generations seem to be being replaced by greater numbers of persons living alone as a result of higher divorce rates, social custom and increased longevity.

The adverse health consequences of physical crowding have been linked to both physical and mental health problems. For instance, crowding has been consistently linked to adverse physical health outcomes most typically those related to increased infection rates (Burrige and Ormandy 1993; Byrne and Keithley 1993; Howard 1993; Mood 1993; Baker *et al* 2000). As might be expected physical health consequences will be worst for those population who are most vulnerable - that is, children, persons with disability and the elderly. On the other hand, adverse mental health outcomes are also implicated as a result of psychological impacts resulting from lack of privacy and territoriality (Sommer 1969). Again, those most at risk include persons previously diagnosed with mental health problems.

Overcrowding is generally managed by guidelines and regulation rather than legislation. This is particularly true of social housing and boarding house type accommodations. Homes that are privately owned or rented are typically not subject to any regulation.

Some of the main housing variables associated with health outcomes are listed in Table 4.2 below.

Table 4.4: Housing typology

Housing perspective	Input variables specified	Housing outcome reported	
		Negative (X)	Positive (v)
Type of assistance	Ownership (i.e. first homeowner grant, or other assistance package directed at increasing home purchase ability)	<p>Decreased employment</p> <p>Increased stress/depression</p> <p>Inability to purchase medication/equipment</p> <p>Inability to maintain</p> <p>Market unable to supply dwelling</p>	<p>Increased wellbeing</p> <p>Increased choice/control</p> <p>Ability to renew/retrofit to meet individual need</p> <p>Increased security of tenure</p> <p>Market able to supply curative dwelling</p> <p>Increased informal supports</p>
	Rent subsidy (i.e. income top up, or other assistance package directed at increasing private rental ability)	<p>Decreased choice</p> <p>Insecurity of tenure</p> <p>Dwelling does not match individual need</p> <p>Inability to purchase medication/equipment</p> <p>Poor maintenance</p> <p>Market unable to supply dwelling</p>	<p>Improved quality of life</p> <p>Increased choice</p> <p>Increased disposable income</p> <p>Decreased homelessness</p> <p>Market able to supply curative dwelling</p> <p>Increased informal supports</p>
	Social housing (i.e. provision of community or public housing directed at increasing housing availability ability)	<p>Decreased choice</p> <p>Poverty</p> <p>Poor maintenance</p> <p>Housing stock insufficient</p> <p>Lack or informal support</p> <p>Increased formal care need</p>	<p>Increased wellbeing</p> <p>Increased disposable income</p> <p>Supply of curative dwelling</p> <p>Decreased homelessness</p> <p>Maintained informal supports</p>
	Retrofit (i.e. provision of assessment and intervention directed at increasing curative aspects of dwelling)	<p>Increased hospitalisation</p> <p>Increased mortality</p> <p>Increased morbidity</p> <p>Increased formal care need</p> <p>High staff turnover</p> <p>Carer injury</p>	<p>Reduced hospitalisation</p> <p>Stability of tenure</p> <p>Decreased mortality</p> <p>Reduced morbidity</p> <p>Decreased formal care need</p>
	Renewal (i.e. provision of maintenance and dwelling upgrading directed at increasing fitness of housing stock)	<p>Increased hospitalisation</p> <p>Increased mortality</p> <p>Increased morbidity</p> <p>Increased formal care need</p> <p>High staff turnover</p> <p>Carer injury</p>	<p>Improved quality of life</p> <p>Reduced hospitalisation</p> <p>Stability of tenure</p> <p>Decreased mortality</p> <p>Reduced morbidity</p> <p>Decreased formal care need</p>

Housing perspective	Input variables specified	Housing outcome reported	
		Negative (X)	Positive (v)
Type of Environ	Physical locale (i.e. environmental quality of public amenity, and degree of air, water, noise pollution etc.)	Trips/Slips/Falls Burns/Electrocution/Poisoning/Bites Hearing loss Social isolation Increased formal care need	Improved quality of life Harm reduction Decreased mortality Reduced morbidity Reduced medical intervention
	Social support/Neighbours/community (i.e. quality of social relations, opportunity for social support etc.)	Increased rate of Infection Increased stress and or depression Increased visits to general practitioner Social isolation	Improved quality of life Reduced morbidity Ability to age in place Deinstitutionalisation
	Dwelling design (i.e. quality of legislation and guidance re dwelling design and incorporation of materials and features such as to result in sufficient space, adequate heating/ventilation etc.)	Trips/Slips/Falls Burns/Electrocution/Poisoning/Bites Hospitalisation/Institutionalisation Increased mortality Increased morbidity (aches/pains/cough/cold)	Improved quality of life Reduced medical intervention Reduced morbidity Ability to age in place/Deinstitutionalisation
	Physical Crowding (i.e. design and monitoring of dwelling to ensure that amenity and space allocated fits with the number of persons inhabiting dwelling etc.)	Increased rate of Infection Increased stress and or depression Increased visits to general practitioner Increased mortality	Improved quality of life Reduced mortality Reduced morbidity Reduced medical intervention

4.3.3 How has evidence been gathered?

In order to systematically analyse the type and quality of the research being conducted over the last ten years, a framework was needed that could classify research by methodology. Because systematic reviews are typically associated with hierarchies of evidence being clear about what constitutes acceptable research and clarity about levels enables meta analysis. Previous researchers have noted that difficulties in determining the importance and causality relations of improvements in housing may be attributed to their multifactorial, complex nature and the degree that the chosen methodology controls for confounding variables and or fits with the research question being answered (Dunn 2002b; Thomson *et al* 2002). These issues are discussed in more detail in chapter 6. The main methodologies employed in deriving the evidence reported below were outlined in chapter 2 as were the inclusion and exclusion criteria.

4.4 Systematic review results: impact of housing assistance on health outcomes

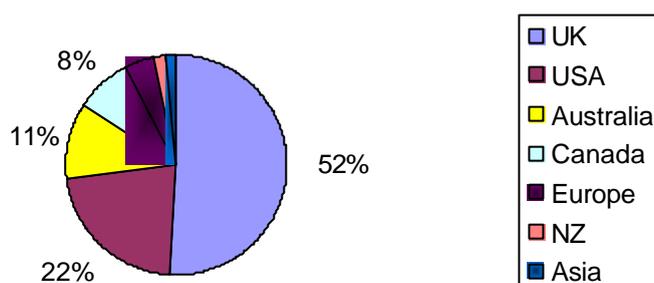
As indicated in the material in chapter 2, 145 studies in total were systematically reviewed in order to determine the evidence base of the impact of housing assistance on health outcomes. A summary of the main findings, process and issues and raw matrix analysis is provided in Appendix F. Because of the inclusion criteria set, the earliest study reviewed was 1993. The meta analysis following examines the results in terms of nationality, population health, housing environment and methodologies employed.

4.4.1 Nationality

Inclusion criteria restricted the review to the English language so it is not surprising that 95% of the literature reviewed comes from English speaking countries.

Figure 4.1 below illustrates the breakdown of the material reviewed by the author's country of origin. The fact that material from outside the more developed western nations was located - that is, those coming from Asia (1%) and Europe (4%) - tends to indicate that concern about health and housing interactions are not restricted to affluent or developed nations but remain a universal concern.

Figure 4.4-1: Country of origin of the literature reviewed by percentage



Of more surprise is the fact that over half (52%) of the literature reviewed originates from the UK. However, a number of factors may account for this observation. Firstly, although population numbers are greater in the USA, population density is greater than that of all the other western countries, which implies more acute housing problems. Secondly, and possibly more significantly, unlike the USA, the UK has had a long history of both social housing provision and free public health care. Indeed, the interest in public health consequences of substandard housing has its roots in Victorian England (Dunn 2002b).

The connections between housing and health are well established in the UK and an analysis of the national context (Fletcher and Spencer 2000), indicates that the commissioning of a major public inquiry into health inequality in 1997 made the link between peoples living conditions and their health status explicit. The subsequent release of the results from this inquiry and the resultant policy decisions to invest in health action zones and research into cross sectorial workings appear to have fuelled much of the reawakening of interest in health and housing research. Internet searches also located a large amount of grey literature not cited in library databases but held within private housing research organisations such as the UK charitable trust and published and funded via the Joseph Rowntree Foundation.

The fact that 15% of the literature sourced comes from Australia and New Zealand is likely a result of explicit searches targeting Australian databases such as APAIS and explicit internet searches of grey literature published by AHURI, Commonwealth Department of Family and Community Services and the Australian Institute of Health and Welfare. Indeed a good

percentage of current research in Australia regarding health and housing stems from projects funded by the newly reinvigorated AHURI over the last few years.

4.4.2 Health Outcomes

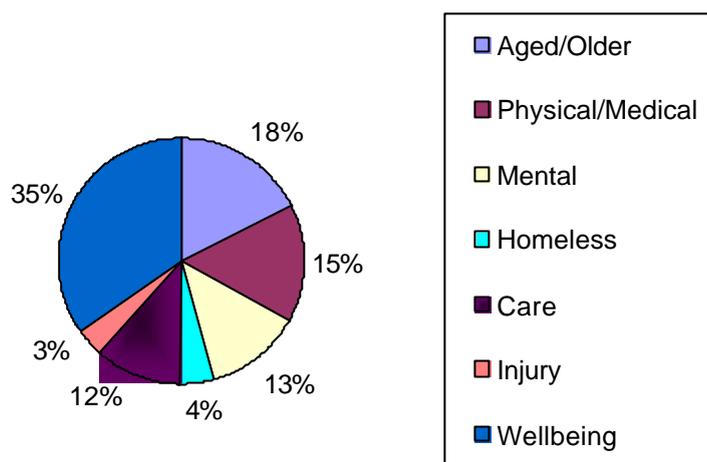
Of the studies reviewed the health outcome variable that appears to be most frequently cited is wellbeing (35%) one of the preventative population health variables within the analysis matrix. However, this is potentially misleading, as the majority of studies examining this variable do so in terms of adverse mortality and morbidity or ill-health impacts relevant to population health, not in terms of improvement in quality of life, and happiness outcomes, which would be more truly indicative of wellbeing. This factor is more fully discussed in the more detailed analysis of individual health variables, which follows this section of the health outcome analysis.

The next most frequently cited health variables were curative in nature with older and aged persons (18%) representing the secondly most frequently identified variable. This is not surprising as population aging is one of the most significant demographic changes of recent times and combined with social and policy change has become one of the most significant health assistance variables. Other curative variables such as Physical and medical health (15%), Mental health (13%) followed closely again not surprising as these populations have been well researched and being particularly vulnerable are typically directly targeted in housing assistance programs.

The relatively low frequency of homelessness (4%) as a variable is most likely a product of homelessness not being explicitly included in search terms selected and may also have something to do with the fact that loss or absence of a home whilst connected to understanding the health impacts of housing is an antonym or polar opposite. The fact that the literature also relatively rarely referred to injury as a variable (3%) may also be a product of the choice of search terms as indeed a sizeable body of literature does exist but as stated earlier it was not explicitly included in our choice of search terms. It could also be a factor of the focus being on population health impacts. For instance, as previously discussed injury most typically impacts vulnerable populations such as children and older persons and some data about injury variables may well overlap with that examining older and physically or medically disadvantaged populations. Furthermore, with the exception of studies examining childhood asthma and infections which would have registered under physical health and or wellbeing it would appear that childhood injury does not appear to be registering within the broad health and housing domain. It is of interest that the bulk of the articles reviewed concerned curative (144) versus preventative (87) outcomes, this implies that a number of studies if not the majority were more concerned with curative features of housing rather than in the prevention of ill health or better understanding population wellbeing.

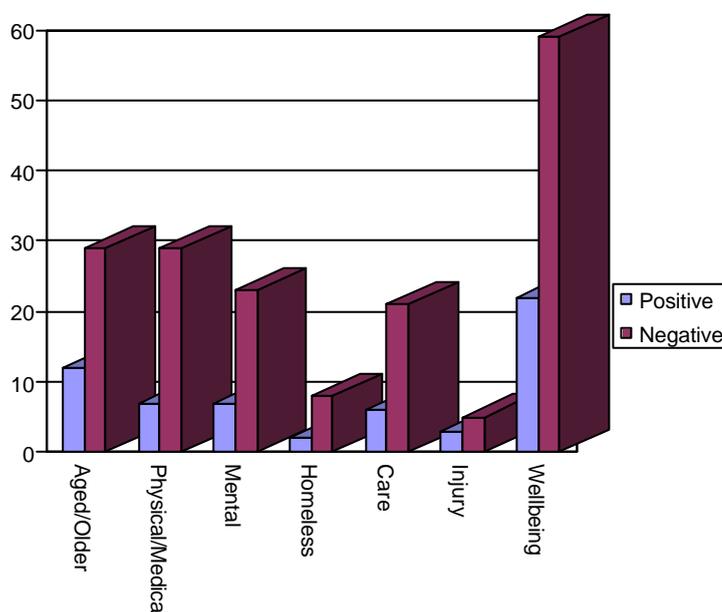
The pie chart illustration in Figure 4.2 below provides information about the relative frequency of health outcome variables being cited across the literature reviewed by the study.

Figure 4.4-2: Percentage spread of outcomes covered by the literature in regard to health



The bar chart illustration in Figure 4.3 below, provides information about the positive or negative nature of the variables being measured and reported. This reveals that the vast majority of studies report adverse rather than positive outcomes. This is not surprising, as they did not examine housing assistance provision explicitly. Instead, the majority aimed to confirm a particular hypothesis or set of correlations or associations. A more detailed analysis of each variable follows.

Figure 4.4-3: Comparison of outcomes covered by the literature in regard to health



Aged/Older persons

Of the 41 studies (18% of those reviewed) that mentioned aged or older persons as a significant variable, focus and outcomes varied widely with both negative and positive health correlations being noted. The meta-analysis revealed that the most generalisable findings concerned the importance of linking care to housing provision and the importance of provision for more adaptable dwelling design. The majority of health outcomes cited were adverse. Nevertheless, evidence from a number of these studies support the notion that health can be positively improved by enhanced formal care provision matched to need whilst maintaining housing choice and personal control as these are positively correlated to improved quality of life, with decreased

acute and cared accommodation costs (Cates 1994; Walker *et al* 1998; Harrison and Heywood 2000c; Oldham 2000; Robbins *et al* 2000). However, studies also reported older persons often have problems accessing care: the two greatest impediments being transport and income (Malmgren *et al* 1996).

The preventive nature of integrated housing and care provision is highlighted by the finding that older persons are particularly at risk of adverse mental health impacts such as depression with consequently greater need for formal care (Grosser and Conley 1995; Banerjee and Macdonald 1996; Black *et al* 1997) and this may be associated with social isolation (Black *et al.*, 1999). Moreover predictors of transition to formal care appear to be profound disability particularly neurological disability (Cape and Gibson 1994), in conjunction with social isolation (Bridge *et al* 2002). Other studies have found area of residence, sex, race and living arrangements significant as predictors of relocation to cared accommodation settings (Dwyer *et al* 1994). Older persons who are most likely to be doubly disadvantaged are women with disabilities (Currie 1996; Moss 1997).

Poor maintenance and dwelling deficiencies are most prevalent amongst older less well off sole occupants (Golant and Greca 1995; Markham and Gilderbloom 1998; Choi 1999) and dwelling characteristics can have adverse impact on life expectancy of frail elders (Zhao *et al* 1993). Also there is some evidence that greater accessibility afforded by enhanced dwelling design reduces dependence (National Housing Federation 1998; Connell and Sanford 2001).

There appears to be a growing body of evidence that home modification and homeownership improve safety, wellbeing and mental health (Gilderbloom and Markham 1996; Fisher and Giloth 1999; Howden-Chapman *et al* 1999; Heywood 2001a; Faulkner and Bennett 2002; Kochera 2002). Nevertheless, there was a general perception that utilisation of high technology may be inappropriate because of issues associated with learning and cognition (Pragnell *et al* 2000) and that home modification programs were generally difficult to access (Pynoos *et al* 1998). There was also some qualitative evidence that elders perceived that pressure to modify rather than add on care might increase informal care burden in environs where there was a concentration of older or disabled persons (MacDonald *et al* 1994). Indeed there is some evidence that age segregation may have variable negative impacts on mental health and self esteem (Percival 2001)

There is some evidence that specifically targeted programs such as the assistance with care and housing for the aged (ACHA) program which specifically aims to prevent homelessness and institutionalisation can be effective (Department of Health and Family Services 1996). Variation in how housing and care are coordinated for older persons also affects outcomes, creating a multiple jeopardy situation (Silveira and Ebrahim 1998; Houben 2001). There is evidence that policy innovation, such as legislative change to facilitate the creation of granny flats, has been less effective than anticipated because dwelling design has failed to accommodate disability (Chapman 2001).

Less generalisable findings include the notion that that the level of disability, particularly within social housing, may be a function of lack of physical activity as those in social housing were found to be disproportionately physically inactive (Buchner *et al* 1997). One study indirectly provided evidence of a negative association between older persons and greater winter mortality (Aylin *et al* 2001).

Physical / Medical

Of the 36 studies (15% of those reviewed) that mentioned persons with medical or physical health vulnerabilities as a significant variable, focus concerned type of condition, length of time in the home, adequacy of the dwelling and access to medical priority, income supplementation, care and support. Those that listed negative or adverse outcomes (such as insecurity of tenure) included specific sub populations groupings (such as persons with HIV (Arno *et al* 1996); those with respiratory diseases (Barnes 1998); and those with high care needs (Greenwood 2000)). An association was made between ill-health and the increased amount of time spent indoors at home potentially compounding environmental exposure issues (Barnes 1998). For those with respiratory problems the degree of ill-health experienced appears to be correlated to length of exposure in a dose response manner (Williamson *et al* 1997).

The increased risk of homelessness for population experiencing discrimination especially disabled women (Currie 1996) and women with HIV was associated with the need for medical priority rehousing (Conway 1995; Arno *et al* 1996; Robinson 1998) and was also correlated to lower T cell counts, lethargy and depression (Bonuck and Drucker 1998).

The profoundness of the disability resulting from the medical and or physical illness was a predictor of the risk of institutionalisation (Dwyer *et al* 1994; Bridge *et al* 2002) as was lack of housing accessibility (Chapman 2001; Connell and Sanford 2001). Additionally, high levels of dependence were inversely correlated to lack of dwelling accessibility (Sapey 1995; Connell and Sanford 2001). However accessibility alone may be necessary but insufficient to ensure quality of life and improve wellbeing, instead there is some evidence that social control and less restrictive environments may be more strongly associated with improved wellbeing (Cooper and Rodman 1994; Seilheimer and Doyal 1996; Moss 1997; Felce 1998).

Medical and physical health was also negatively associated with excess winter mortality (Aylin *et al* 2001). This effect appears to be more strongly associated with medical and or physical health than damp (Evans *et al* 2000). Other studies, however, have associated the occurrence and severity of adult asthma with mould exposure (Zock *et al* 2002). Nevertheless, there is some evidence that better heating and insulation decrease respiratory symptoms, reduce days off school for children and reduce joint stiffness, relieve pain and reduce care (National Housing Federatio, 1998). Other studies have demonstrated respiratory functioning decrements in association with subtropical humidity (Yang *et al* 1997) whilst the inverse is true and there is evidence of respiratory improvement with interventions to reduce indoor humidity (Peat *et al* 1998).

Better quality housing and medical priority housing assistance can to some extent alleviate symptoms and improve health (Easterlow and Smith 1997b; Smith and Alexander 1997; Easterlow *et al* 2000). Nevertheless, disabled respondents report both positive and negative health outcomes (including increased stress and perceived loss of control) associated with relocation (Wasylishyn and Johnson 1998). Medical priority rehousing is geared towards crisis accommodation and lack of preparation especially living skills training and support may jeopardise housing outcomes by coming after housing allocation and not prior to housing allocation (Hudson *et al* 1996).

Good quality housing can become unsuitable as a result of medical needs exceeding basic quality standards (Oldman and Beresford 2000). Housing adaptations may be an effective means of improving quality of life (Heywood 2001a; 2001b). However, the curative impact or decrease in adverse outcomes for owner occupiers is inversely mediated by ability to secure finance and locate and maintain a suitable property (Easterlow *et al* 2000; Stewart *et al* 1999). The importance of receiving adequate housing income supplementation is strongly linked to satisfactorily being able to meet care needs (Griffiths 1995).

Lack of care and support (McNelis and Nicholls 1997; Robson 1995; Robbins *et al* 2000) and retrofit services are also associated with increased morbidity particularly in rural areas (Karwat 1998; Pynoos *et al* 1998).

Mental

Of the 30 studies (13% of those reviewed) that mentioned persons with mental health vulnerabilities as a significant variable, focus and outcomes varied from the nature of preferred housing to the quality of the housing. People with mental illness want housing similar to the general population and living in independent housing is associated with greater housing and neighbourhood satisfaction (Newman 2001a; 2001b). However, tenure patterns are substantially different for persons with mental illness with the majority renting and only a minority owning (Lambert *et al* 1999; Tanzman 1993). Not surprisingly then, mental illness and is strongly associated with insecurity of tenure and homelessness (Crane 2000).

Whilst there is some evidence for health improvements following medical priority rehousing (Elton and Packer 1987; Parkinson *et al* 1999; Palmer and Molyneux 2000), the lack of care and support services is problematic (Tanzman 1993). This is most acute in social housing because there appears to be less informal care available (Robson 1995; Arblaster *et al* 1996).

Cooperation between agencies is evident in coordinating housing and care for people with mental illness, but appears to fall down because of its patchy and unplanned nature (Goss and Kent 1995; McNelis and Nicholls 1997; Parkinson *et al* 1999; Palmer and Molyneux 2000). Lack of living skills training and support not being available prior to housing allocation have also been identified as issues (Hudson *et al* 1996). Tenancy support and social support reduce anxiety and maintain health (Quilgars 1998; Robbins *et al* 2000). They may also assist in building relations with the local community and provide a viable low cost alternative to residential care (Simons 1995; Simons 1998).

The benefits of co-location in remedying the care shortfall remain unconfirmed (Chilvers *et al* 1997). Another critical factor in securing and maintaining housing and support is adequate and timely income supplementation (Griffiths 1995) and access to sufficient facilities (Grosser and Conley 1995; Reynolds *et al* 2002). The pressure on facilities is becoming more acute because primary carers are ageing (Grosser and Conley 1995).

There is some evidence that quality of housing impacts on mental health especially children's mental health and that physical crowding may have adverse mental health outcomes (Evans and Wells 2000; Evans and Saegert 2001; Evans and Saltzman 2001). The effects of height from the ground, when allowance for confounding factors is factored in, does seem to have some independent influence on mental wellbeing (Freeman 1993).

Mental health appears to be adversely affected by housing renewal. This negative stress impact appears to be primarily associated with loss of control (Allen 2000). Other studies have indicated the inverse: that is, positive mental health outcomes are associated with a perceived increase in control (Cooper and Rodman 1994). The adverse mental health outcomes associated with housing renewal appear to be primarily associated issues with affordability as more desirable housing typically commands an increased rental.

The presence of cognitive impairment and depression increased dependency (Banerjee and Macdonald 1996) and places people at risk of institutionalisation (Black *et al* 1999; Bridge *et al* 2002). Indeed, persons with mental illness require training (Currie 1996), care and support but there is a serious discrepancy between need and care availability (Arblaster *et al* 1996; Black *et al* 1997).

Homeless

Of the 10 studies (4% of those reviewed) that mentioned homelessness as a variable in health vulnerability, there were two main foci: firstly how homelessness causes ill-health and secondly the health impacts. Homeless lifestyles and environments directly impact on health (Robinson 1998). Secondly, those with health problems are more vulnerable to becoming homeless. For instance, for persons with physical or mental disabilities, the three most significant predictors of homelessness are insufficient support (Arblaster *et al* 1996); low domestic skills competence (Crane 2000); and discrimination resulting from restrictive social inclusion practices (Arno *et al* 1996; Somerville 1998). There is also some evidence that the inverse is true for prevention of homelessness and institutionalisation (Department of Health and Family Services 1996). There is also evidence that priority housing allocation with less formal rules and attention to consumer issues assist in better maintaining social housing tenancies for single homeless people (Robinson 1998).

Housing deprivation in childhood or homelessness has been directly linked to increased morbidity and there is some evidence that a dose-response relationship exists, implying the longer the housing deprivation persists the worse the adult health outcomes (Marsh, Gordon *et al* 2000). Housing deprivation is typically associated with poverty and benefit dependence, meaning that health and housing are increasingly being delivered to the same people (Molyneux 2001a, 2001b). Molyneux goes on to point out that the association with poverty means that rental increase, such as might occur following gentrification or renewal, makes doubly disadvantaged individuals most vulnerable.

Care

Of the 27 studies (12% of those reviewed) that mentioned care as a variable in health vulnerability, the three main foci concerned policy interdependence, need and provision

outcomes. Policy changes that regulate social housing provision, care arrangements, and income have all been implicated in negative outcomes. Care in the community policy is based on people staying in their own homes however the impact on housing policy is generally poorly considered or factored in, for instance in the UK the impact on housing policy was not considered until 18 months after the introduction of the National Health Service and Community Care Act (Conway 1995). Thus, shortfalls in care have been shown to be most acute in social housing (Arblaster *et al* 1996; Malmgren *et al* 1996). The residualisation of social housing results in more tenants requiring care and support to maintain tenancies (Clapham and Franklin 1995). Additionally, perverse incentives, poor linkages and or policy, that increase complexity of decision making and interdepartmental communication, may place care arrangements at risk (Bamford 2001; McNelis and Nicholls 1997; Simons and Ward, 1997). Whilst, changes to benefits may also negatively impact clients ability to cover care costs (Griffiths 1995; Houben 2001; Malmgren *et al* 1996; Taylor 2000).

Mental illness affects basic abilities required to sustain tenancies (Reynolds *et al* 2002). In addition, wellbeing depends not just on tenancy maintenance but in building relations with the local community (Simons 1995). Moreover, the fact that rehousing remains predominantly a crisis response results in inadequate planning and preparation for relocation with living skills and support only sought after accommodation is secured (Hudson *et al* 1996). Indeed, focused personal assistance and futures planning improves outcomes (Simons and Ward, 1997). Lack of secure housing and support affects morbidity (Karwat 1998; Reynolds *et al* 2002). Shortages of housing and care are most acute in rural areas (Karwat 1998).

The number and type of housing on offer is also impacting care outcomes negatively. For instance demographic trend analysis indicates that housing shortfalls will eventuate for severely mentally ill persons whose primary caregivers are ageing (Grosser and Conley 1995). Furthermore, group home type housing remains the predominant model of supported accommodation but fails to address the issues of client base diversification and individualisation of care needs (Bostock *et al* 2001). Indeed, a decent, homelike and reasonably staffed environment is necessary but insufficient to explain wellbeing (Felce 1998). Indeed, whilst co-location of individuals may facilitate care and outcomes for those with severe mental health outcomes, the lack of evidence means that benefit remains unconfirmed (Chilvers *et al* 1997). Numerous innovative housing and care options exist (Simons 1995).

Community care is enhanced when housing facilitates rather than decreases access to services (Bochel *et al* 1999). For older persons in particular, remaining in the community with care and support correlates to both better health maintenance and wellbeing (Faulkner and Bennett 2002; MacDonald *et al* 1994). Moreover, there is some evidence that increasing home help services for older and disabled persons correlates to decreased acute hospital costs (Cates 1994; Sapey 1995). Whilst improving quality of housing via renewal and retrofit for people with disabilities can reduce dependency (Sapey 1995; Watson and Conway 1995), special initiatives partnerships can achieve both curative and preventative health gain when core purposes are aligned (Palmer and Molyneux 2000). Indeed, provision of housing tenancy support, socio-emotional support and direct practical support have all been found to improve wellbeing and self-esteem (Quilgars 2000).

Injury

The 8 studies that mentioned injury as a variable in health vulnerability concerned the effectiveness of interventions and vulnerable populations to morbidity and mortality. Indeed because injury is most commonly associated with housing that is of poor repair or quality (Ambrose 1997; Sandel and Zotter 2000), renewal can decrease accidents and injury with a seven-fold reduction in reported morbidity (Allen 2000; Ambrose 2001b). Improving safety and security features in housing increase market potential as these features appear to be highly valued (Pragnell *et al* 2000). Improved housing conditions are particularly critical for children (Sandel and Zotter 2000; Chang *et al* 2002) and the frail elderly (Kochera 2002). Poor indoor air quality adversely effects morbidity and mortality (Chang *et al* 2002) and has been associated with housing features such as poor ventilation, dampness, house dust mites, gas appliances, radon, lead exposure and carbon dioxide emissions (Evans and Bennett 1998a).

Wellbeing

The 81 studies that mentioned wellbeing as a variable in health vulnerability were primarily concerned with how housing situation determined health as improvements in wellbeing are typically associated with better health (Conway 1995). For instance, physical locale, housing quality, and social support are the three key factors most strongly associated with health gain (Kahlmeier *et al* 2001). Most articles measured wellbeing at a psychological level using self report measures and used the term wellbeing as synonymous with happiness, companionship, self-esteem, control and coping (Faulkner and Bennett 2002).

Physical locale influences wellbeing because mental health is linked to neighbourhood quality and access to social support whereas lack of access to services and poor quality housing is linked to poor physical health. There is some evidence that the conditional nature of physical locale and communities can impact on health status (Black *et al* 1997; Diez-Roux and Merkin 2001; Diez-Roux and Nieto 1997; Ellaway and Macintyre 1998, 2000; Fuller-Thomson and Hulchanski 2000; Mitchell and Gleave 2000; Percival 2001; Sooman and Macintyre 1995; Waitzman and Smith 1998; Yen and Kaplan 1999). For instance, low-income homeowners can only afford to purchase in fringe areas and this is associated with increased mental stress (Badcock 1994; Dunn 2002a) as is poorly coordinated support (Bamford 2001; Bochel *et al* 1999; Dunn 2000, 2002b; Malmgren *et al* 1996; Reynolds *et al* 2002; Robson 1995.). Health behaviours such as nutrition, physical activity and harmful habits are also negatively correlated with physical locale (Ellaway and Macintyre 1996; Molyneux 2001a, 2001b). Conversely, promoting physical activity for older residents within social housing reduces medical interventions (Buchner *et al* 1997).

On the one hand, poor housing and design quality has been strongly linked to adverse health outcomes (Dunn 2002a, 2002b; Evans and Bennett 1998; Marsh *et al* 2000). Whilst correlations are evident, the evidence is weak for direct correlations with the exceptions of physical effects of housing quality, which have been directly associated with decreased lung function (Blane *et al.*, 2000); hyperthermia (Evans *et al.*, 2000; Wilkinson *et al.*, 2001) and lead and radon poisoning (Wilkinson 1999). Theoretically the impacts are most likely when the contrasts are most extreme (Rosenberg and Wilson 2002). Infectious disease, such as meningococcal, are associated with overcrowding (Baker *et al* 2000). Of more concern is the fact that conditions such as overcrowding, poor ventilation and sanitation in childhood have been linked to lower life expectancy and increased morbidity in adulthood (Dedman and Gunnell 2001; Rahkonen and Lahelma 1997).

The psychological impact of housing quality has been shown to benefit mental health in proportion to the degree of improvement (Evans and Wells 2000) and has been significantly related to children's socio-emotive status independent of income (Nettleton and Burrows 1998, 2000; Evans and Saegert 2001; Evans and Saltzman 2001; Sharfstein and Sandel 2001). Low-income is directly related to housing stress (Griffiths 1995) and this is more significant for older persons (Golant and Greca 1995). Whilst the importance and evidence to support factors such as height from the ground are unclear there does appear to be some independent correlation with mental wellbeing (Freeman 1993).

On the other hand, the presence of disease or disability has been correlated to poor housing fit and lack of wellbeing (Moss 1997). The needs of specialised populations such as disabled women have been largely unidentified and are unexplored (Currie 1996). Particular issues for people with disabilities is housing suitability, as even good quality housing may become unsuitable in relation to additional supportive demands imposed by having a disability (Oldman and Beresford 2000). Medical rehousing can improve quality of life (Easterlow and Smith 1997b) but the crisis nature of allocation may reduce potentially beneficial outcomes if insufficient consideration is paid to community support needs (Hudson *et al* 1996).

Renewal and retrofit have been strongly associated with both physical (Curtis, Cave and Coutts 2002; Ellaway and Macintyre 2000; Sandel and Zotter 2000; Thomson *et al* 2001) and mental health gains (Barnes 2001; Blackman and Harvey 2001; Hopton and Hunt 1996a, 1996b; Thomson *et al* 2002). The usefulness of housing modifications increases as health worsens (Gilderbloom and Markham 1996). The benefits decrease with issues limiting access,

fragmentation and poor coordination (Pynoos *et al* 1998). However, mental stress during and following renewal interventions has been noted unless effort is made to involve participants and minimise cost impacts (Curtis *et al* 2002).

Policy factors outside the health system, such as the introduction of legislation, and the increased provision of medical priority and special needs housing, improved access to renovation, repair and retrofit grants and home safety initiatives all work to improve health and wellbeing (Easterlow and Smith 1997b; Evans and Bennett 1998b; Palmer and Molyneux 2000; Parkinson *et al* 1999). One such example is allergen reduction resulting from low technology housing (Barnes 1998). Lack of attention to linkages between health and housing and poor care planning has led to insecurity of tenure and adverse impacts on wellbeing (Goss and Kent 1995; Greenwood 2000; Harrison and Heywood 2000a, 2000c; Robbins *et al* 2000; Robinson 1998; Robson 1995; Sawyer 1998).

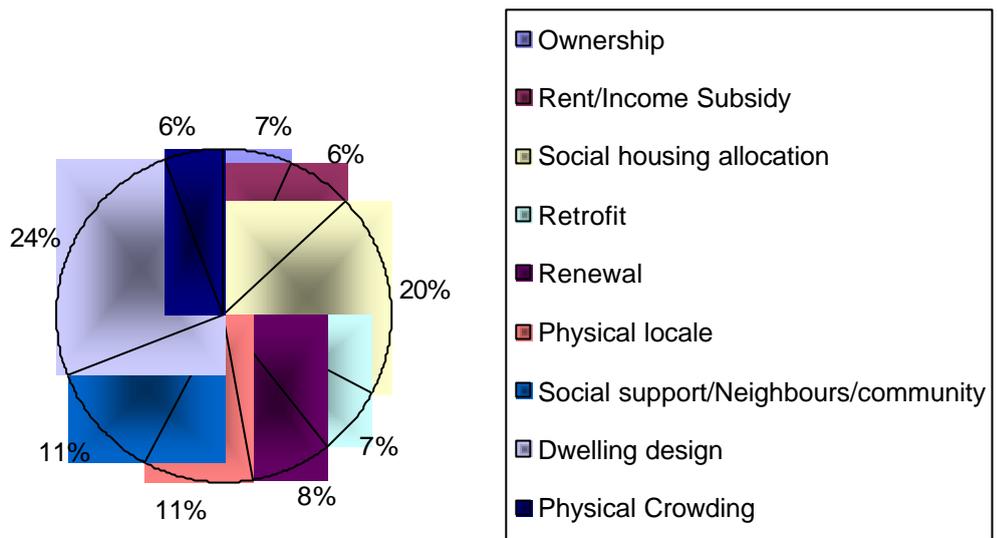
Tenure is a significant predictor of health and wellbeing after controlling for social class and income (Macintyre *et al* 2001). Indeed, housing tenure issues such as homeownership has been linked to wellbeing with those who are not homeowners indicating lower levels of wellbeing (Faulkner and Bennett 2002; Hiscock and Kearns 2001; Waters 2001). However mortgage indebtedness has an independent negative affect on wellbeing and increases the likelihood that men will visit their GP (Nettleton and Burrows 1998, 2000). Older homeowners are more likely to live in older homes and better quality housing correlates with less visits to the GP and lower power bills (Howden-Chapman *et al* 1999). Conversely, older renters are at greater risk because of insecurity and lower housing quality (Silveira and Ebrahim 1998) with Australian social housing tenants being some of the worst off (Wiggers *et al* 2001).

4.4.3 Housing Outcomes

Of the studies reviewed, the housing outcome variable that appears to be most frequently cited is dwelling design (24%) one of the four housing environ variables within the analysis matrix in Table 4.2 above. The next most frequently cited housing variable was assistive in nature with social housing allocation (20%) representing the secondly most frequently identified variable. The high frequency of social housing is unsurprising as this is a relatively easy population to access and social housing allocation has been the chief form of direct housing assistance. Social support and physical locale were the next most frequently cited at 11% with the rest varying from 6-8%. It is of interest to note that the bulk of the articles reviewed concerned housing environs (118) rather than housing assistance (105). This implies that the studies reviewed were more concerned with features of housing associated with ill health than they were with examination of the impacts of housing assistance.

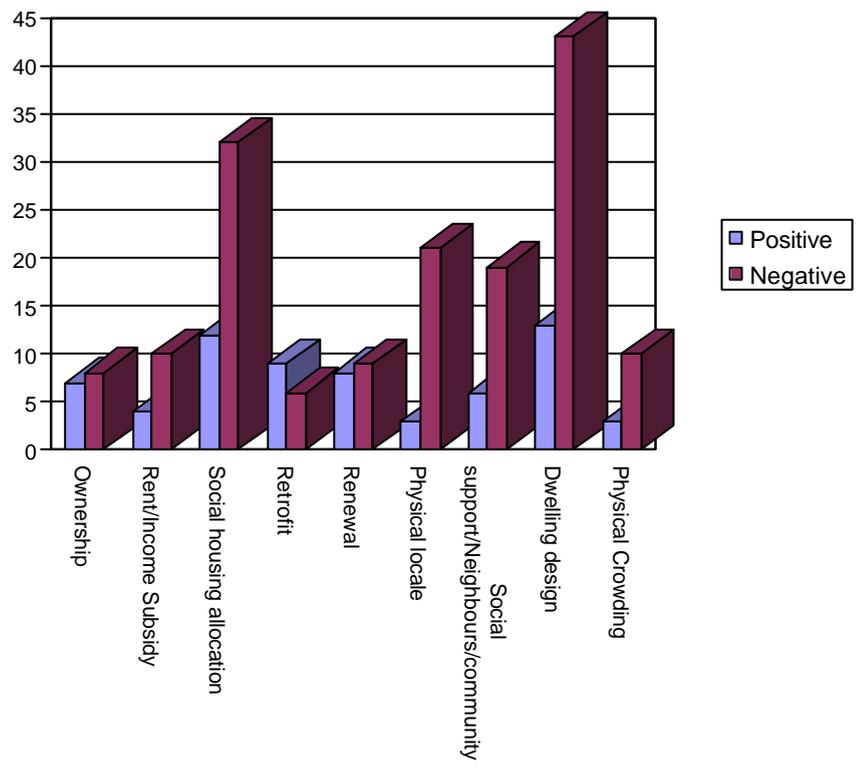
The pie chart illustration in Figure 4.4 below provides information about the relative frequency of housing outcome variables being cited across the literature reviewed by the study.

Figure 4.4-4: Percentage spread of outcomes covered by the literature in regard to housing



The bar chart illustration in Figure 4.5 below provides information about the positive or negative nature of the variables being measured and reported. This reveals that the vast majority of studies report adverse rather than positive outcomes. This is not surprising, as the majority of studies did not examine housing assistance provision explicitly. Instead, they focussed on confirming a particular hypothesis or set of correlations.

Figure 4-5.5: Comparison of outcomes covered by the literature in regard to housing.



Ownership

The 15 studies (7% of those reviewed) that mentioned ownership as a variable in health vulnerability were primarily concerned with health impacts of homeownership. Whilst more negative correlations than positive ones were mentioned, the balance between negative and positive health impacts was more nearly equal here than in most other housing assistance areas reviewed. No study relating to homeownership compared or explicitly commented on what housing assistance enabled or sustained home purchase.

Home ownership has less negative associations than being a renter but this effect is primarily socio-economic and is mediated by physical locale (Ellaway and Macintyre 1998; Hiscock and Kearns 2001; Markham and Gilderbloom 1998; Waters 2001). Positive correlations cited include improved wellbeing, the ability to retrofit to meet changing needs (Adams 2001) and decreased chance of institutionalisation (Tanzman 1993; Dwyer *et al* 1994).

Whilst negative correlations included mortality and morbidity associated with dwelling design that failed to provide adequate heating (Aylin, Morris *et al* 2001), had inadequate plumbing (Markham and Gilderbloom, 1998), had limited flexibility (Howden-Chapman and Pene 2000) and increased mental stress associated with locale (Badcock 1994). The benefits of homeownership are mediated by ability to secure finance, locate a suitable property and maintain the home resulting in poorer outcomes for older persons and those with disability (Easterlow, Smith *et al* 2000; Golant and Greca 1995; Somerville 1998). Irrespective of age or disability, mortgage indebtedness reduces wellbeing, invoked unhealthy behaviours and increased visits to the GP for men (Nettleton and Burrows 1998, 2000).

Rental or income subsidy

The 14 studies (6% of those reviewed) that mentioned rental or housing benefit as a variable in health vulnerability were primarily concerned with health impacts of rent assistance. Only one study compared the degree of direct income supplementation or compared this to indirect supplementation in the form, for example, of food vouchers, free or subsidised support services. This one study was a UK expert review that suggested that separation of housing rental from service charges and support costs may place those in need of housing and support packaging at greater risk (Taylor 2000).

Extensive evidence supports the hypothesis that individual health is a concave function of individual income (Aylin *et al* 2001; Bonuck and Drucker 1998; Rahkonen and Lahelma 1997). For instance one study found that tenants in enhanced shelter projects had greater disposable incomes with more choice and control and this was associated with enhanced wellbeing (Oldham 2000). However, of particular interest is the finding that the health related differences noted when appropriate statistical controls were in place were only significant at a State level, implying that difference between inequality indicators may be explained by State level policies impacting on low income earners rather than income inequality *per se* (Wagstaff and Van Doorslaer 2000).

Rental subsidy can reduce homelessness for some (Department of Health and Family Services, 1996) but alone cannot guarantee security of tenure. Mental (Crane 2000; Lambert *et al* 1999) or physical ill-health (Golant and Greca 1995) and excess care costs (Griffiths 1997) may place tenancies at risk. Renters suffer more housing related stress than homeowners (Ellaway and Macintyre 1998) and delays in the benefit system directly impact homelessness and health (Griffiths 1995; Sharfstein and Sandel 2001). Additionally there are adverse injury and reduction in wellbeing outcomes as a direct result of the fact that quality of rented dwellings is statistically worse than owner occupied dwellings (Lambert, Ricci *et al* 1999; Markham and Gilderbloom 1998).

Social housing allocation

The 44 studies (19% of those reviewed) that mentioned social housing allocation as a variable in health vulnerability were primarily concerned with health impacts of social housing allocation. Social housing assistance has been strongly associated with both poor housing conditions and housing renewal projects. It should not surprise, that both are associated. This association can be explained by two factors. Firstly, social housing is primarily designed for affordability not quality and secondly housing estates because of the departmental management strategies are

prone to area based major renewal programs unlike owner occupied or market rental houses where owners control the renewal schedule on a house-by-house basis.

There is general consensus among researchers that poor quality design and construction of housing has both direct and indirect health impacts (Ambrose 1997). However the evidence for housing renewal programs is mixed, with some evidence indicating an up to seven fold improvement in health results (Ambrose 2001a; Ellaway and Macintyre 2000). Other researchers have noted negative health impacts primarily associated with loss of control (Allen 2000). Moreover, there is some research that indicates physical control alone does not improve wellbeing. Instead, social control over the environment appears to be more strongly correlated to satisfaction (Cooper and Rodman 1994). The distinct lack of research into the needs of vulnerable population groups has the potential for creating situations of double disadvantage (Currie 1996). For instance some evidence exists that attention to consumer issues and flexibility are critical to creation of stable tenancies in rehousing homeless persons (Robson 1995).

Medical priority rehousing is believed to be a major method of both preventing homelessness (Arno *et al* 1996), institutionalisation (Department of Health and Family Services 1996; Bochel *et al* 1999) and curing disease (Easterlow and Smith 1997b; Palmer and Molyneux 2000). Rehousing has also been shown to produce health service savings (Smith and Alexander 1997). However, rehousing effectiveness is reduced by policy factors such as rent restructuring (Taylor 2000) and acute shortages of suitable dwellings (Easterlow and Smith 1997a; Evans and Bennett 1998a; Grosser and Conley 1995; McNelis and Nicholls 1997). Shortage of dwellings has partially resulted from shrinkage of stock that has been of a factor between 4-30% of total stock (Smith and Mallinson 1997). Lack of suitable dwellings is most acute in regard to wheelchair housing (Stewart *et al* 1999) and in rural areas (Karwat 1998). Effectiveness is further hampered by the fact that this is predominantly allocated in a crisis situation leaving little opportunity to prepare for and support rehousing transitions (Hudson, Watson *et al* 1996; Simons and Ward 1997; Sawyer 1998).

Suitability of housing remains critical for those with ill-health as they spend substantially more time (70% or more) in their homes and thus are more susceptible to things such as indoor air quality (Barnes 1998). Additionally, the practice of medical priority rehousing can place tenancies at risk where care or support is required to ensure stable tenancies (Bamford 2001; Reynolds *et al* 2002; Tanzman 1993) and community inclusion. Medical priority tenancies may also be at risk because of the complexity of relationships involved (Clapham and Franklin 1995; Goss and Kent 1995) and or lack of access to income and transport (Malmgren *et al* 1996). Nevertheless, where appropriate support is available, mental and physical health are improved (Quilgars 1998, 2000; Simons 1995, 1998; Robbins *et al* 2000).

The gradual residualisation of social housing has resulted in an unusually high density of persons with physical and mental health problems (Walker *et al* 1998; Wiggers *et al* 2001). While Walker *et al* (1998) noted that the level of cognitive disability was no greater than that in the community and posited the theory that age segregation of single older people may protect against depression, this result is more likely a result of the particular project and may not be generalisable. Indeed, other researchers have noted that ability of these persons to provide neighbourly informal support is scant and as a result there is some evidence that older people are less physically fit (Buchner *et al* 1997) and more depressed (Banerjee and Macdonald 1996; Black *et al* 1997; Black *et al* 1999) than their homeownership or market renting counterparts. The inability of social housing to provide adequate and timely support for tenants with low independent living skills results in instability of tenure and prolonged homelessness (Crane 2000; Greenwood 2000).

Retrofit

The 15 studies (7% of those reviewed) that mentioned retrofit as a variable in health vulnerability were primarily concerned with direct and indirect health impacts. Housing improvement has both direct health impacts such as enabling key policy objectives such as acute hospital discharge (Adams 2001; Hiscock and Kearns 2001). It also has indirect health impacts such as improving confidence and increasing independence (Adams 2001; Hiscock and Kearns 2001). Some research has also noted that the benefits are proportional to the health decrement (Gilderbloom

and Markham 1996; Kochera 2002). However, whilst retrofit can reduce dependence (Connell and Sanford 2001; National Housing Federation 1998; Sapey 1995), it cannot eliminate the need for care for those most disabled (Arblaster *et al* 1996). Moreover, adaptive strategies may be adopted in preference to retrofit of dwellings (Connell and Sanford 2001).

There is also some evidence that policy initiatives may impact on access to and knowledge about retrofit options (Evans and Bennett 1998b). There is also an acute shortfall of retrofit services (Easterlow and Smith 1997a) particularly in rural areas (Karwat 1998). For older persons the ability to obtain retrofit services is critical to safety, maintenance of health and mental wellbeing (Pynoos *et al* 1998; Faulkner and Bennett 2002). However, access to retrofit services is impeded by service fragmentation and poor coordination (Pynoos *et al* 1998). There is also some evidence that older people take time to make decisions, make small changes first and are more likely to make changes with self identified problems (Fisher and Giloth 1999). Retrofit and relocation are not mutually exclusive and provision needs to encompass both specialist and mainstream providers (Watson and Conway 1995).

Renewal

The 17 studies (8% of those reviewed) that mentioned renewal as a variable in health vulnerability were primarily concerned with providing evidence of the positive and negative health impacts. As was noted earlier in the section on social housing, housing renewal is strongly associated with direct positive physical and mental health gain (Ambrose 2001a; Barnes 2001; Blackman and Harvey 2001; Choi 1999; Conway 1995; Curtis *et al* 2002; Ellaway and Macintrye 2000; Evans and Wells 2000; Hopton and Hunt 1996b; Molyneux 2001a; Thomson *et al* 2001, 2002; Watson and Conway 1995) but has the potential for negative mental health impacts (Allen 2000; Ambrose 1997) in certain circumstances (Curtis *et al* 2002; Molyneux 2001a). Many of the negative health impacts noted are ascribed to the benefits of renewal being hampered by policy initiatives that fail to account for gentrification and that fail to consult with communities. In these circumstances, they arise from a perceived lack of control and a resultant shortage of affordable housing (Easterlow and Smith 1997a; Evans and Bennett 1998b; Watson and Conway 1995).

Physical locale

The 24 studies (11% of those reviewed) that mentioned physical locale allocation as a variable in health vulnerability were primarily concerned with health impacts. One theoretical paper suggested that specification of a communities impact on health status may assist in controlling for the conditional nature of health determinants (Birch, Stoddart and Beland 1998). The physical locale will to some extent determine the severity of natural environmental features experienced such as humidity, winter temperature, wind, and precipitation. The severity of exposure mediated by dwelling design and health vulnerability will determine health outcome (Rosenberg and Wilson 2002). For instance, changes in respiratory capacity are directly related to both physical locale and dwelling design which mediates indoor air quality (Blane *et al* 2000). However the percentage of time spent indoor versus outdoors (Barnes 1998), the severity of the impairment and the health status of the individual will also mediate any effects noted (Dunn 2002a, 2002b).

Physical locale also correlates with housing quality as an inverse effect of affordability and age of dwellings within the locale (Choi 1999). Furthermore, affordability shapes choice for home purchasers resulting in homeownership in fringe localities with consequent lack of access to services indirectly and negatively impacting on physical and mental health (Badcock 1994). For instance, lack of access to transportation may impair health outcomes by providing barriers to receipt of adequate care and support (Malmgren *et al* 1996).

However other neighbourhood effects are likely as neighbourhood deprivation has been correlated with decreased satisfaction and poor health outcomes including lower life expectancy even after controlling for income, education and occupation (Diez-Roux and Merkin 2001; Diez-Roux and Nieto 1997; Marsh *et al* 2000; Silveira and Ebrahim 1998; Waitzman and Smith 1998; Yen and Kaplan 1999). There is some evidence that factors such as nutrition, physical activity and harmful habits are primarily correlated to locale (Ellaway and Macintrye 1996; Molyneux 2001a). Exposure to particular dwelling characteristics (Fuller-Thomson and Hulchanski 2000), lack of car access (Macintrye *et al* 2001) and perceptions of safety and security (Hiscock and Kearns 2001; Sooman and Macintrye 1995) are likewise related to locale.

A comparative analysis of movers indicate that gains in self-rated health are strongly associated with relocation to a preferred locale (Kahlmeier *et al* 2001; Wasylshyn and Johnson 1998). The ability to build relationships with people in the local community is also associated with wellbeing (Simons 1995). The inverse is also true with women, unemployed and unskilled persons being particularly vulnerable to social exclusion (Somerville 1998).

Social support

The 27 studies, (12% of those reviewed) that mentioned social support as a variable in health vulnerability were primarily concerned with health impacts in terms of institutional relocation and homelessness. One author's review concluded that social support is a better indicator of health inequality than housing *per se* (Dunn 2000). Social discrimination in combination with lack of social support increases the risk of homelessness (Bonuck and Drucker 1998).

Furthermore, the risk of institutionalisation increases for older and more cognitively disabled people living alone (Black *et al* 1999; Bridge *et al* 2002; Cape and Gibson 1994). The inverse is also true with access to paid helpers and communal living arrangements reducing the likelihood of institutionalisation and increasing self rated health (Chilvers *et al* 1997; Dwyer *et al* 1994; Faulkner and Bennett 2002; Kahlmeier *et al* 2001; Parkinson *et al* 1999). However access to care and support depends on physical locale (Bochel *et al* 1999), attitude to the community (Mitchell and Gleave 2000), access to services and income. For instance, the physical locale of the dwelling determines access to informal and formal support services whilst changes to benefits may also reduce ability to cover care costs (Griffiths 1997; Houben 2001; Oldham 2000). Group homes whilst facilitating formal care arrangements are often physically located such that informal support systems and community participation are lacking (Bostock *et al* 2001). Proximity to services is a factor identified in meeting social support needs (Dunn 2002b).

Additionally, the residualisation of social housing has resulted in less informal support availability (Arblaster *et al* 1996; Chapman 2001; Parkinson *et al* 1999) and increased the need for more formal care. For instance, older people believe that better access to formal care services in congregate settings reduces the support burden required of the more healthy (MacDonald *et al* 1994). The need for and ability to reciprocate support impacts self esteem both negatively and positively respectively (Percival 2001). Inequalities in access to social support place more vulnerable people at greater risk as they age (Silveira and Ebrahim 1998).

Improving linkages between housing and support services is critical to sustainable tenancies for people with disabilities (McNelis and Nicholls 1997; Robson 1995.). Additionally, care planning often fails to consider housework and gardening support with resultant decreases in wellbeing (Harrison and Heywood 2000a). Whilst there is some evidence that increasing home help services correlates to decreased acute hospital cost (Cates 1994).

Dwelling Design

The 55 studies, (24% of those reviewed) that mentioned dwelling design features as a variable in health vulnerability were primarily concerned with age of the housing stock and the legislation and regulation governing its construction and maintenance, in conjunction with the rate of renovation, renewal and retrofit. Design legislation is primarily concerned with preventing direct harm. It typically sets minimums and the key role of housing in preventing ill health remains unrecognised because housing need remains invisible at the acute health services end (Harrison and Heywood 2000a).

Dwelling design is impacted by affordability and available technology at the time of construction and the age and condition of the dwelling (Fisher and Giloth 1999). Thus it is not surprising that homeowners aged over 85 years are the most likely to dwell in deficient housing (Golant and Greca 1995; Howden-Chapman *et al* 1999; Markham and Gilderbloom 1998; Zhao *et al* 1993) as are those with cognitive and mental health limitations (Lambert *et al* 1999). Renters with low incomes and low social status are also most likely to live in poor quality housing as quality and affordability are inversely related (Silveira and Ebrahim 1998; Somerville 1998).

Poor dwelling design and or construction deterioration and faults result in both direct and indirect health impacts (Ambrose 1997; Curtis *et al* 2002; Dunn 2002b; Fuller-Thomson and Hulchanski 2000; Kahlmeier *et al* 2001; Molyneux 2001a; Palmer and Molyneux 2000; Zhao *et al* 1993).

Childhood mortality for instance, correlates to inflexibility of affordable housing designs resulting in overcrowding with consequent lack of infection control (Howden-Chapman and Pene 2000).

Direct impacts include excess winter mortality resulting from poor heating (Aylin *et al* 2001; Evans *et al* 2000), indoor air quality (Barnes 1998; Chang *et al* 2002; Dales, Miller and McMullen 1997; Peat *et al* 1998; Yang *et al* 1997) or the presence of hazards (Sandel and Zotter 2000). Indirect health impacts like exposure to poor ventilation, dampness, dust mites, radon, lead, carbon monoxide etc. contribute to low quality or unfit housing and correspond to housing deprivation measures (Evans and Bennett 1998a; Wilkinson 1999). Whilst the negative health impacts of radon and lead are now accepted, evidence for the direct health impact of others is limited because of variability in immunity, exposure and dosage (Wilkinson 1999). Housing deprivation in childhood has been correlated to mental health status (Evans and Saltzman 2001) and decreased adult life expectancy in a dose response manner (Dedman and Gunnell 2001; Marsh *et al* 2000; Williamson *et al* 1997). Design features such as height from the ground are indirect and unclear but do seem to have some independent influence on mental wellbeing (Freeman 1993)

Dwelling upgrading and maintenance whilst yielding physical and mental health improvement (Ambrose 2001a; Barnes 1998; Heywood 2001b; Hopton and Hunt 1996b; National Housing Federation, 1998) are mediated by negative mental health impacts primarily associated with perception of loss of control this being most acute for renters and those in social housing (Allen 2000). Whilst policy trends towards more direct income supplementation to individuals and difficulties in accessing and organising mainstream structural adaptation services may threaten outcomes (Houben 2001). Safety and security features are most valued and consequently have the most mainstream market potential (Pragnell *et al* 2000).

Good quality housing is not synonymous with suitability as disability requirements determine suitability (Oldman and Beresford 2000). The fact that dwelling design fails to account for ageing and disability contributes to dependence, places carers at risk of injury and increases risk of institutionalisation (Bridge *et al* 2002; Faulkner and Bennett 2002). Lack of market provision of accessible housing has resulted in medical priority rehousing and has contributed to inability to meet demand (Stewart *et al* 1999). However design for accessibility does not of itself correlate to improved wellbeing as it is necessary but insufficient to explain wellbeing which tends to be more strongly associated with social control (Cooper and Rodman 1994; Felce 1998; Moss 1997). Moreover there has been little research into the design attributes that are most desired or are most beneficial for particular population subgroups such as women with disabilities (Currie 1996).

Design for congregate and or age or disability segregated living reduces the cost of formal care (Bostock *et al* 2001; Cates 1994; Percival 2001). Nevertheless congregate design also often fails to sufficiently account for individualisation (Bostock *et al* 2001) and the desire to live independently (Newman 2001a). There is some evidence that the prosthetic quality of design features is most useful in relation to severity of disability (Gilderbloom and Markham 1996; Kochera 2002). Additionally changes to design and construction legislation designed to facilitate informal care arrangements sometimes fail to produce the expected results because design and incentives are insufficiently specified (Chapman 2001).

Physical Crowding

Of the 13 studies, (6%) of the literature review that specifically discussed overcrowding outcomes, most did so on the basis of measures related to mortality and morbidity. One study supported the hypothesis that overcrowding in childhood was one of a number of housing deprivation indicators which was correlated in a dose- response relationship to later ill health in adulthood (Marsh *et al* 2000). The most commonly cited adverse outcome of overcrowding was the spread of infection diseases, some of which like meningococcal disease can have fatal outcomes (Baker *et al* 2000) but which are also fortunately relatively rare on a population basis. Infection rates are also likely to depend on the particular mode of disease transmission. Moreover, whilst the pathway and causality relationships in relation to infectious disease transmissions are well accepted and well known, the relative incidence of infectious diseases and the infection rate is determined by a number of other factors. These factors include the type of disease transmission, genetic predispositions to resistance, individual immune capacity,

availability of vaccines vaccination rates and general health behaviours of housing occupants such as hand-washing and cleansing. Nevertheless, any infectious disease will have the most negative impacts on vulnerable populations, i.e. children, older persons, and those with lowered immune systems. Indeed, a well fed, healthy adult with a genetic resistance will remain immune despite overcrowding, but, as Byrne and Keithley (1993) describe, other things being equal, generous, well ventilated internal spaces are less likely to spread disease. This implies that strategies that prevent or control air, water or body contact transmission and are to some extent amenable to legislation, and to renewal and retrofit interventions, which aim to improve filtration, ventilation and or sanitation are most profitably targeted to those with the highest risk. Indeed more stringent regulation and housing renewal projects have been shown to reduce mortality and morbidity by lowering if not eliminating transmission rates (Ambrose 2001a).

However, other studies have also reported increased anxiety or negative mental health impacts (Burrige and Ormandy 1993; Hopton and Hunt 1996b). Study comparisons are risky because of the general lack of control for confounding factors in combination with variance in overcrowding indicators selected. For instance, Waters (2001) noted little consensus exists between researchers on what concentration of persons over what period constitutes physical overcrowding. Definitions of overcrowding, for instance, appear to be culturally and socially determined to some extent. Methodological weaknesses aside, only one study reviewed reported positive outcomes from physical crowding. Interestingly enough this is a recent Australian Study, and the authors admit that this unexpected outcome may have resulted because of the self-report measures chosen which may have been too crude (Waters 2001). Nevertheless, the fact that the Australian study failed to confirm a link in a context where the housing trend is towards more personal space and sole dwelling occupation raises the possibility that social isolation may in fact have more detrimental mental health impacts than overcrowding *per se*. Indeed the results of ABS 'Mental Health and Wellbeing Survey' indicated that, the prevalence of mental disorder was highest for both men and women living alone. This was the case for anxiety, affective and substance use disorders individually. The same survey also indicated that the prevalence rates decreased as the number of people living in the household increased (Australian Bureau of Statistics 1998a).

It may even be that, infection issues aside, higher density accommodation by increasing human interaction has the potential for both positive and negative mental health outcomes depending on the perceived choice and control. Thus, a reasonable hypothesis might be that positive mental health outcomes are most likely when choice and control increase informal support but least likely when control or choice are lacking. This follows given the widely held belief that perceptions of choice and control are critical for mental well being (Hudson *et al* 1996; Newman 2001a; Thomson *et al* 2002).

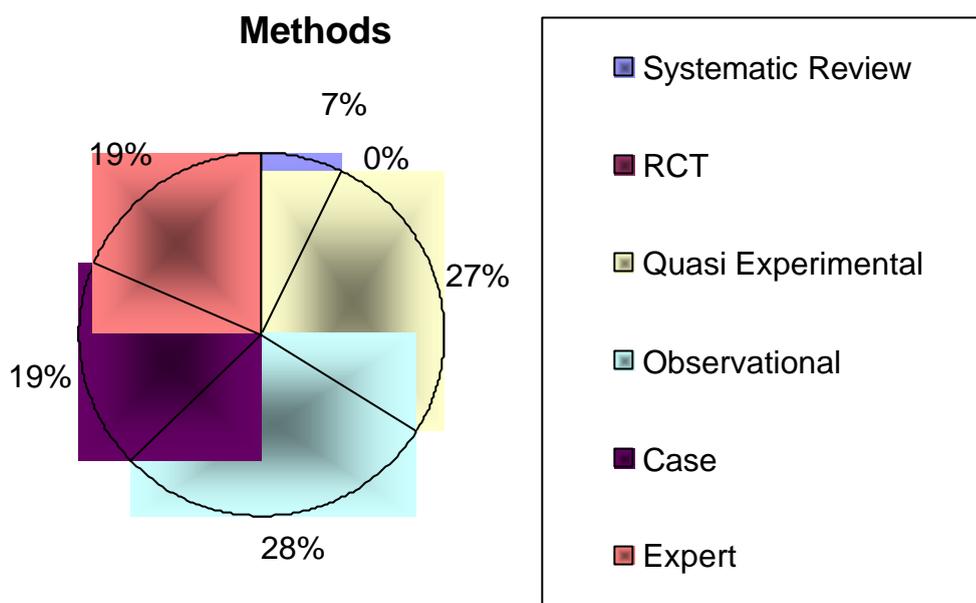
4.4.4 Evidence gathering outcomes

In the review of six methods employed that met study inclusion criteria, those methods that are most systematic and could be described as more classically experimentally driven (i.e. systematic reviews and quasi experimental methods) account for 51 of the studies, (34% of those reviewed). Of particular interest is the fact that no random control studies were located. If as in Cochrane reviews this had been the sole inclusion criteria, no results would have been forthcoming. Methodological issues exist because randomised controlled trials can be unethical and impractical and studies using birth cohorts are constrained by financial and practical problems of measuring long-term exposure.

Consequently, evidence is limited to case-control or cross sectional studies, with 99 studies (66% of those reviewed) being primarily qualitative or observational in nature. Of the studies reviewed, the methodology that appears to be most frequently used (at 29%) are cohort studies, pre and post test studies, cross-sectional and longitudinal studies, most of which use secondary data analysis as the primary investigative method. It is generally accepted that triangulation of methods serves to add validity and rigour to findings and whilst some studies did this, this was predominantly a mix of observational method with case method for illustrative purposes.

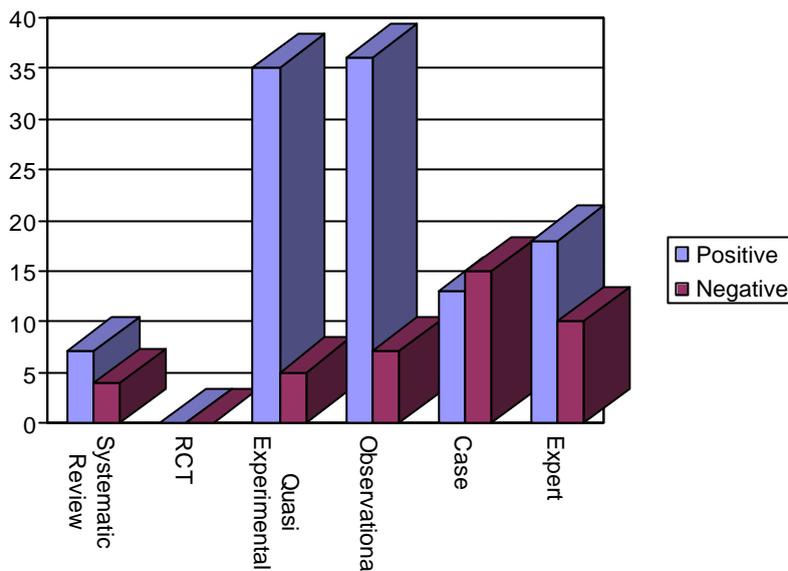
The pie chart illustration in Figure 4.6 below provides information about the relative frequency of methods being cited across the literature reviewed by the study.

Figure 4-6.6: Percentage spread of covered by the literature in regard to research methods



The bar chart illustration in Figure 4.7 below provides information about the positive or negative nature of the methodology being used and reported on. This reveals that the majority of studies have attempted to identify and control for a finite number of predefined variables. However, health causality is notoriously difficult to demonstrate and artificially partitioning or weighting data to allow comparison or to dull noise may conflate variables and or reduce statistical significance. Given that just under a fifth of the studies reviewed, involved social housing tenants controlling for variables such as age, disability severity, degree of isolation, medication, adverse health habits, physical locale, living arrangements and income would have been particularly difficult as this group appears to be more likely than any other to have all these factors operating simultaneously on health outcomes. In terms of experimental methods the biggest methodological flaws were choice of measures many of which were non-standardised and may not be considered valid internationally and or non-randomisation and purposive sampling of populations with consequent higher potential for selection bias. A more detailed analysis of each method follows.

Figure 4-7.7: Comparison of outcomes in regard to research methodology



Systematic Review

Of the studies reviewed, a total of 11 (7% of those reviewed) indicated that they were applying systematic review techniques. These did in general attempt to answer particular research questions which ranged from relationships and pathways between housing, socio-economic status, and health status generally to the effects of supported housing schemes compared with outreach support schemes or 'standard care' for people with severe mental disorder/s living in the community specifically. The wide range meant that an analysis of the systematic reviews alone would have failed to map the inputs and outcomes relevant to starting to develop and model linkages and interrelationships.

The only study that attempted to apply the Cochrane inclusion criteria of only including relevant randomised, or quasi-randomised, trials was unable to locate any studies fitting its criteria. Six studies had poor documentation on how articles were selected for review and or the degree of validity or level of rigour pertaining to their inclusion. There were also issues associated with database selection. For instance, one study only reviewed articles from the Medline database whilst the timeframe for inclusion varied significantly with one study setting its inclusion criteria from 1936 a period of 66 years whereas others spanned ten or twenty five years instead. The logic behind some of these sampling decisions was not immediately logical or transparent and whilst it's true that sampling decisions are to some extent pragmatic being driven by either funding limitations or time pressures, the comparability and reliability of the resultant research becomes flawed.

Quasi Experimental

Of the studies reviewed, 40 (27% of those reviewed) indicated that they were applying quasi experimental methods. These ranged from small area ecological and epidemiological studies using secondary data to case control trials using cluster sampling. There were issues identified with methodologies particularly in terms of lack of control and comparisons groups. In general, correlational research was also noted as problematic in terms of difficulty in establishing causal relationships but a few longitudinal studies did control for demographic variables. Controls varied enormously between studies with some studies controlling for smoking and medication whilst others only allowed for medical problems, sex or age. The presence of confounders and limited housing data (tenure and household size) also created methodological difficulties and impacted on results.

Only a small number of studies reported using longitudinal data and there was no mention of cohort studies. Furthermore, the vast majority of the raw data was secondarily derived from national census and housing surveys. In large-scale secondary data analysis, the unit of analysis

is often the dwelling so generalisation is limited to the housing unit not to individuals. The number of pre and post and prospective studies was limited and variance in time intervals between sampling was large. Additionally, much of the data analysis was confined to one geographic area, making generalisation difficult.

Because logistic regression analysis was common so was the use of weighting to compensate for sampling issues. Another issue was the suitability of the statistical models applied these varied with one study using Odds ratios, three studies using Cox's proportional hazard model while the bulk applied more standard bivariate and multivariate analysis techniques. Another study used hierarchical multiple predictor regression analysis whilst another used analysis of variance in conjunction with time series analysis.

Sampling was not always random and only a small number reported stratification. Overall, a number of methods were evident from probability sampling to stratified random sampling.

Lastly, only a small number of studies reported use of standardised health measurement tools such as psychometric scales. A number of studies developed their own scales and their psychometric properties are questionable as these tools frequently appeared to have had limited reliability and validity testing prior to usage.

Observational

Of the studies reviewed, 43 (29% of those reviewed) indicated that they were applying observational methods. These ranged from provider surveys to in-depth interviews with some mixing these methodologies. Mail surveys were relatively common as were semi-structured interviews of key informants. Survey methods used in these studies were generally likely to be less standardised and health measures were consequently those of participant self-report. One study used videotaped physical audit. Statistical methods were less frequently applied and when used were limited to bivariate and multivariate analysis. Observational methodologies generally have difficulty demonstrating causality.

As in the comments on quasi-experimental studies, population sampling varied but was much less likely to be random and only a small number reported stratification. Only one study reported stratified random sampling. Overall, a number of methods were evident from purposive sampling to snowball sampling. The setting or physical locale selected was also typically purposive with a number of studies designs which were prospective in nature. Sample sizes tended on average to be smaller, but there is considerable variance with sample sizes ranging widely from the 4,389 for mail or take home surveys to between 532 and 20 for in-person interviews.

Case

Of the studies reviewed, 29 (19% of those reviewed) indicated that they were applying case methods. These ranged from case comparisons across projects and locales to a small number of in-depth unstructured interviews. Only one study reported employing a project evaluation method. Sampling was predominantly of convenience and the nature of selection and potential for self-selection may have caused some response bias. Measurement varied from analysis of individual performance indicators to qualitative thematic and content analysis techniques. However, whilst qualitative methods were predominate these varied widely from an ethnographic approach (one study), to grounded theory (one study) and participant observation (one study). In some instances sample sizes and selection procedures were unclear.

Expert

The remaining 27 studies, (18% of those reviewed) that had no other method than expert opinion, ranged from theoretical reviews to non-systematic literature reviews of empirical studies and policy. Just over a third (10) of these studies reviewed policy whilst just under a third (8) provided some much needed theoretical models and an even smaller number (2) provided a combined historical and policy context review.

4.5 Summary of evidence regarding housing assistances impact on health outcomes

Research into the effects of housing assistance interventions on health outcomes is almost non-existent. No comparative studies were located that examined the effect of various forms of housing assistance on health for vulnerable populations or on wellbeing. Nevertheless, there are a number of studies that have looked at housing interventions more generally for particular populations, as evidenced in the previous housing assistance review section.

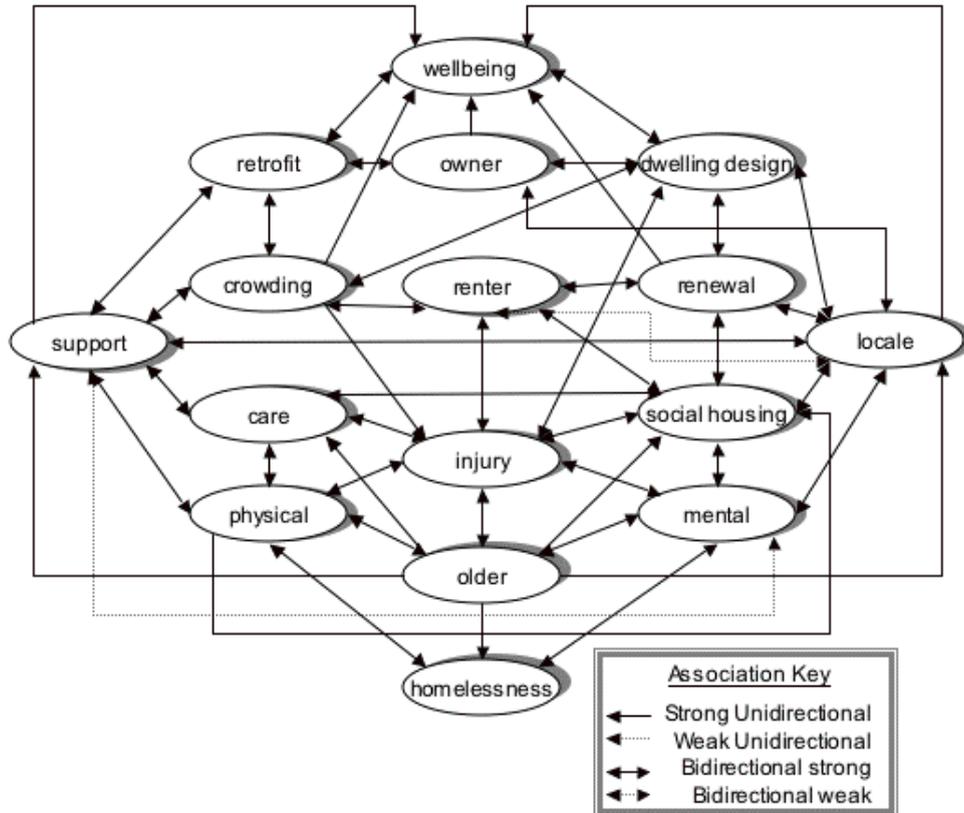
Research on housing and health more generally remains substantial but limited in its ability to reliably model causality. Failure to demonstrate causality is unsurprising given the lack of control and comparisons groups and the high prevalence of correlational research in combination with selection bias and poor control for demographic variables. Current research has primarily; either looked at the current impact of a particular type of dwelling in relation to particular measures or has taken a longitudinal approach and has examined health consequences of previous dwellings on adult health.

The relationships between health and housing outcomes are neither straightforward nor particularly well documented. Nevertheless, evidence does exist for a variety of positive and negative impacts to both individuals and society. The evidence is stronger for some and weaker for others. It is also clear that in nearly all cases the degree of impact is mediated by myriad other factors.

Figure 4.8 below, attempts to highlight *most* of the obvious associations derived from a meta-analysis of the literature review between population health and housing environment outcomes. The diagram highlights the complexity and indeed in some cases circularity and indirectness of the issues involved. The arrows linking the sixteen dimensional variables shown to be critical are both unidirectional and bi-directional in nature. Evidence for associations is strengthened by results that indicate that outcomes are bi-directional and amenable to housing assistance interventions.

In Figure 4.8, wellbeing is at the top whilst homelessness is at the bottom because these are almost polar opposites. For instance, no hypothesis or research reviewed provided any evidence that associated homelessness and wellbeing; instead, homelessness was strongly correlated to decreased life expectancy and greater physical and mental morbidity. In addition, the diagram highlights the fact that associations are both direct and indirect. As an example, being older both increases your chances of having an injury and of the injury being more debilitating. This becomes clear, when we take the example of fall injuries.

Figure 4-8.8: Linkages between population health and housing environment outcomes



Older persons have a statistically much greater chance of having a disability and or ill health. This makes having an injury like a fall more likely, whilst the presence of poor dwelling design features such as open risers on stairs, lack of handrails and or small changes in level will also directly increase the likelihood of slipping, tripping or falling. Nevertheless, the severity of the fall will depend on factors such as bone density, which may be indirectly related to inactivity resulting from a particular physical locale (fear of crime, lack of public transport or public seating etc) and or social isolation or lack of social support.

The meta-analysis summary, which follows the structure presented in Table 4.1 and Table 4.2 above, follows.

4.5.1 Curative

There is evidence from the former sections that effective curative housing outcomes are linked to the following:

- Aged and older populations outcomes varied depending on the linkages between care and housing assistance provision and the necessity of increasing the short term provision of retrofit services whilst in the longer term increasing adaptable dwelling design provision for the next cohort.
- Physical and or medically impaired population subgroups outcomes varied with the type of condition, length of time in the home, adequacy of the dwelling (*quality and suitability*) and access to housing assistance, care and support all critical factors. Moreover, poor quality dwelling design and inappropriate physical locale, specifically inadequate space, lack of transport and lack of social supports negatively impacts health costs and formal care need. For instance, the collective evidence suggests that homes that are specifically designed to minimise indoor humidity may improve health outcomes for both children and adults with an allergic disposition. This may be more cost effectively achieved by design than post-hoc modification. The absence of standards for indoor air quality in the home implies that their development and application to new dwelling construction is a priority.

- Mentally impaired population subgroups outcomes hinged on housing assistance in the form of medical priority rehousing and rental subsidy, in combination with provision of appropriate support, training and dwelling design. The evidence for impact of physical crowding and height from the ground remain inconclusive, implying that more research with better control of confounding variables is needed.
- Homeless population subgroups outcomes hinge on housing assistance in the form of medical priority rehousing and rental subsidy, because homelessness impacts physical morbidity and mortality. The need for provision of flexible support and better dwelling design relates to the fact that having a physical or mental health problem or being older make maintaining tenancies and housing upkeep more difficult. The outcomes vary in terms of the length of time of housing deprivation and the time of onset with some evidence indicating that children of homeless adults have worse health outcomes in later life.
- Being cared for and providing care outcomes are associated with policy interdependence. Medical priority housing provision outcomes with shortfalls in care have been shown to be most acute in social housing. Lack of secure housing and support affects morbidity as does dwelling design and location. Indeed, dwelling design has been shown to decrease dependency whilst location impacts access to services.

4.5.2 Preventative

There is evidence from the former sections that effective preventative population housing outcomes are linked to the following:

- Injury is most commonly associated with housing that is of poor repair or quality whilst the effectiveness of interventions and targeting of vulnerable populations relates to morbidity and mortality outcomes. Poor quality construction and lack of regular maintenance, specifically bad plumbing, poor drainage, lack of insulation and poor ventilation negatively impact on mortality and morbidity; and negatively impact mental health and wellbeing.
- Health is strongly associated with physical locale, housing quality, and social supports. Theoretically, the impacts are most likely when the contrasts are extreme. The psychological impact of housing quality has been shown to benefit mental health in proportion to the degree of improvement. Policy factors outside the health system, such as the introduction of legislation, and the increased provision of medical priority and special needs housing, improved access to renovation, repair and retrofit grants and home safety initiatives all work to improve health and wellbeing.

4.5.3 Assistance

There is evidence from the former sections that housing outcomes and related housing assistance programs are linked to the following health outcomes:

- Outright homeownership has been linked to lower morbidity than being a renter but this effect appears to be primarily socio-economic in nature and is linked to locale and to the ability of homeowners to maintain their home over time and in relation to changing need.
- Rental subsidy can reduce homelessness but cannot guarantee choice or security of tenure. The generally poorer quality of dwellings and or delays in benefits all impact health.
- Social rehousing prevents homelessness and produces health service savings however effectiveness is impacted by shortage of dwellings, dwelling quality, locale and lack of social support.
- Retrofit enables health cost savings associated with hospital discharge and deinstitutionalisation and it also decreases dependence and increases confidence. However, shortage of service and service inflexibility and fragmentation are impeding outcomes.
- Renewal can reduce morbidity and improve wellbeing and life quality but failure to consult with communities may produce a perceived lack of control and resultant shortage of affordable housing.

4.5.4 *Environs*

There is evidence from the former sections that housing environ outcomes are linked to the following health outcomes:

- Physical locale can impact morbidity and mortality both positively and negatively. The severity of exposure to factors such as neighbourhood deprivation, humidity, winter temperature, wind, and precipitation is nevertheless mediated by dwelling design, length of exposure and health vulnerability.
- Social support is primarily associated with improved wellbeing but inequalities in access to social support place more vulnerable people at greater risk of institutional relocation and homelessness. Availability of support is mediated by physical locale and program linkages.
- Dwelling design impacts overall dwelling quality and suitability. The overall quality and suitability of a dwelling result in both direct and indirect health impacts for occupants. Direct impacts relate to mortality whilst indirect impacts correlate with housing deprivation and relate to lower quality of life and greater morbidity. Lack of market provision of accessible housing has resulted in medical priority rehousing and has contributed to inability to meet demand.
- Overcrowding is both culturally and socially determined but has been identified as a causal factor in increased infection rates and respiratory disease. It is indirectly associated with both increases and decreases in wellbeing and mental health. The contradictory nature of findings, raises the possibility that, when choice and control increase, informal support wellbeing increases but decreases if the inverse is true.

4.6 What level of evidence is there for policy change?

Australia offers the full range of housing assistance interventions but the most prominent are those promoting homeownership. However, public policy that encourages homeownership without paying sufficient attention to housing quality and suitability will increasingly marginalise vulnerable populations who are either unable to locate or afford a suitable dwelling. This has both direct and indirect health consequences and has unintended cost implications in terms of health care. As Rohe *et al* (2000), point out, overselling homeownership where this is unsustainable or where neighbourhood deprivation is evident or where long term maintenance and quality are severely compromised is counterproductive. Moreover, this is particularly so in terms of health outcomes because whilst causality remains unclear, evidence indicates that mechanisms such as physical locale, housing quality and suitability are critical. This implies that both funding and legislative change are needed in regard to these areas.

4.6.1 *Funding*

- Commonwealth/States to allocate funding to ensure better harmonisation and articulation of healthy housing principles both within Commonwealth/State agreements and within State based policy and programs across the broad areas of urban planning, housing, social welfare, health, and disability support.
- Commonwealth/States to increase HACC Home Modification and Maintenance funding to enable preventative strategies for vulnerable population groups in addition to the primarily curative retrofit programs already in place.
- Commonwealth/States to provide incentive grants for homeowners with physical and or mental ill-health whose homes are assessed as uneconomic for retrofit to facilitate relocation to new housing constructed to meet at a minimum the AS 4299 adaptable housing standard.

4.6.2 *Legislation*

- Building Code of Australia (BCA) be amended to regulate standards of adaptability and visitability to all new residential housing construction.
- That regulatory housing related construction codes designed to promote health and or safety objectives be simplified, consolidated and checked for internal consistency wherever possible.

4.7 Research priorities

Despite many studies, there is a dearth of housing assistance based on intervention focused studies. Additionally, because causal conceptualisation was generally poor amongst all the studies reviewed, with no accepted theory driving inquiry this has resulted in very few studies having clear hypotheses or reasonable control of other contaminating variables. Consequently, much is still unknown including which housing attributes or factors are critical to achieving independent community based living for vulnerable population groups.

The lack of random control trials examining housing assistance and health impact highlights the need to place this on to national research agenda as a matter of urgency. However, this will be no easy feat given that clinical trials are so costly and typically funded in Australia by the National Health and Medical Research Council (NHMRC), a body that traditionally has focused on acute health and has only recently included more indirect health related research. In addition, getting a random controlled clinical trial up in regard to housing assistance may be difficult because of the lack of clear causality theory in combination with robust measures and lack of any significant pilots. Achieving better research requires a clear identification of research priorities and methods.

4.7.1 Priority areas

- Develop a theoretical multifactorial model that maps the indirect and direct health benefits of housing assistance and that can be used to better predict outcome.
- Review standardised measures of housing and health with the view to standardising the health and housing inputs and outputs being measured to facilitate comparisons. Whilst, more robust methods of assessing effectiveness must also be developed
- Because much of the literature on supported housing describes consumer preferences, more studies are needed that examine and correlate physiological data.
- Compare and contrast State related policy differences (legislation and organisational) to promote greater insights into common and divergent aspects. Reports, statistical data or legislation have never been systematically collated and analysed so as to better assist policy makers in decision making.
- Examine how a whole of government perspective might be achieved. For instance, an examination of patterns of expenditure at a State level related to need indicators might assist in evaluation of particular housing and support models.
- Initiate post-occupancy evaluation of retrofit and renewal programs to be able to accurately cost health benefits related to improved dwelling design.
- Explore options for promoting the concept and implementation of more inclusive, safe and flexible housing.
- Initiate more research to address pathways between housing, socio-economic status and health.

4.7.2 Study design

- Investigate the curative effects of housing assistance on vulnerable population subgroups within a randomised control trial framework.
- Much of the existing research studies are limited by methodological issues such as lack of accepted measurement tools.
- More large-scale quasi-experimental studies are required as are more studies comparing the cost effectiveness of particular housing improvements.
- There is an urgent need to incorporate research and evaluation components into the newer supported housing provision as the most effective method of addressing the shortfall of quality research in this area.

4.8 Conclusions and implications for policy

In answering the original systematic review question which was posed at the start of the chapter and was concerned with the type and effect of housing assistance, on health outcomes in Australia we have seen that housing assistance and health outcomes are related to wellbeing. Evidence already exists to support the adverse health consequences of housing interventions where exposure to housing with environmental risk factors is evident particularly for vulnerable groups such as children, the disabled, and the elderly. However, most of the research located was observational in nature and whilst it would be expected that these results are equally applicable in Australia. It would appear that further investigation of adverse health outcomes is required to provide more systematic and controlled evidence.

This chapter has identified and reviewed the main findings of 145 health and housing studies. This review enabled systematic coding of relevant health, housing and method outcome variables for the purposes of a meta-analysis. The meta-analysis was then analysed in terms of the Australian context to determine policy change and or additional research. Nevertheless, the extent to which housing either enables or disables health and how housing assistance impacts outcomes remains unclear particularly in the Australian context where programs and packaging differ from that of other countries.

Despite this, this study has made a number of contributions to current knowledge about housing and health in Australia. Amongst these are:

- The results suggest that much of the prior research findings are generalisable to Australia.
- That health and housing interactions whilst complex and multifactorial can be consistently associated and mapped.

That health is strongly associated with physical locale, dwelling design, and social supports. Theoretically, the impacts are most likely when the contrasts in either or both health and housing are extreme.

- That housing assistance is associated with health change.
- That strengthening disadvantaged communities and tackling the wider determinants of health and housing inequalities for marginalized and vulnerable population groups through commitment to whole of government and policy linkage are likely to be both cost effective and more efficient in the longer term.

5 HOUSING AND COMMUNITY VIABILITY AND COHESION

5.1 Introduction

This chapter reviews Australian and international research which links housing assistance programs to those non-shelter outcomes associated with community viability and cohesion. Whilst housing and housing assistance have the potential to affect these particular outcomes, they are also affected by a number of other factors. The issue of whether different aspects of housing assistance have a direct (positive or negative) impact on community viability and cohesion or whether they operate indirectly through a number of different pathways and whether the literature identifies these impacts are questions that are to be examined in this chapter. A number of factors have been identified as impacting on community viability and cohesion. These are crime, social capital neighbourhood effects, market effects, tenure patterns and income and wealth effects. Although these factors are covered separately in this section, there is a strong degree of interdependence between them and with the non-shelter outcomes covered in earlier chapters. This leads to the inevitable result that there is some overlap in the material covered both between this and earlier chapters and within the individual sections below.

For example, a concentration of low-income households tends to be correlated with neighbourhoods that are generally deprived on a range of measures (including employment, education and health), in which the incidence of crime is higher than elsewhere and where social capital may be lower. It is plausible that the coincidence of such factors can contribute to a dynamic process that reinforces tendencies towards social exclusion for households in deprived neighbourhoods (and, more generally, towards social polarisation within society). The processes involved and the role of housing and housing assistance in exacerbating or ameliorating these are the subject of this chapter.

Each section of this chapter deals with the linkages between housing and a dimension of community viability and cohesion. The chosen dimensions include crime, social capital, neighbourhood effects, market effects, tenure effects and income and wealth effects. The sections review the literature, present the major research findings and list policy implications where relevant. As with earlier chapters, the conclusions regarding the state of the research in each area and the research priorities arising from this are covered in chapter 6.

5.2 Housing and Crime

5.2.1 Introduction

This section examines the relationship between housing assistance measures and their impact on crime or criminal activities. It is well recognised in the literature that some communities are more prone to crime and criminal activities than others. This may reflect a greater propensity for individuals in that community to engage in criminal activity, or it may reflect a greater tendency for individuals in a community to be the victims, real or perceived, of criminal activity. It has also been recognised that housing assistance (HA) policies may be partly responsible for the creation of 'crime ridden' communities, or at least the perception that a community is a 'hotbed of crime'. The existence and nature of the relationship between HA policies and criminological outcomes have been examined in a number of places in the literature. The nature of these linkages is described below.

In the following section, the relationship of housing assistance measures to crime and criminal outcomes is described. The discussion below focuses largely on the linkages between public housing and crime outcomes. Although forms of HA other than public housing may be associated with variation in crime related outcomes, the literature has generally concentrated on crime 'problems' associated with public housing. The key linkages between housing assistance, especially public housing, and crime related outcomes are identified. As with other non-shelter outcomes described in this report it is worth emphasising that criminal activities are influenced by a plethora of factors in addition to housing. Some of these factors are readily identified. Others are unknown or their exact contribution is unclear. Further, the impact of housing on crime is complex and may involve complex feedback mechanisms.

5.2.2 *Housing Assistance and Crime Linkages*

Housing policy, and HA measures specifically, may influence crime and criminal outcomes for a range of reasons. A key relationship linking HA policy to poor criminological outcomes is the notion of 'defensible space', popularised by Newman (1972). In short, Newman identified certain architectural design features of buildings and communities that contributed to them being prone to crime related activities. Certain design features gave residents control over their environment by clearly defining public and private space, and also encouraged the surveillance of the environment through participation in surveillance opportunities by members of the community. Although not the first to identify the importance of the design features of buildings for their impact on the crime related outcomes experienced in a community, Newman's application of his concept of 'defensible space' to public housing estates in New York City highlighted the potential impact of certain design features of public housing estates for their impact on the high levels of criminal activity generally associated with these developments (Mawby 1977).

Newman's notion of defensible space highlighted the capacity of the physical environment to do a number of things. It creates zones of territorial influence amongst its residents; provides surveillance opportunities that may be key to limiting the ability of individuals to engage in criminal activity, and; influences perceptions of the environment and community by potentially creating isolation and stigmatisation of the community and its inhabitants. Geographical juxtaposition with safe zones impinges on the security of adjacent areas (Mawby 1977). These features of design in turn can influence the behaviour of two sets of individuals, namely possible offenders and possible witnesses or victims of crime.

Newman's work related the high crime rates exhibited in some public housing estates in New York City with the poor defensible space qualities of these projects. In particular, high-rise developments exhibited poor defensible space qualities that in turn facilitated a high rate of criminal activity among these communities. Design features of these developments effectively inhibited monitoring and other crime prevention activities by tenants. Residents were unable to undertake informal but active surveillance of corridors, lobbies, stairways and public grounds, which facilitated an increase in the potential and actual occurrence of criminal activities.

The intuitively appealing nature of Newman's work has resulted in the re-examination of his analysis and attempts to apply the defensible space phenomena in other countries. In terms of the methodological rigour of Newman's original work, a number of faults have been readily identified. The statistical basis of Newman's analysis was limited and, it appears, selective in its reporting. Moreover, Newman failed to distinguish between offence and offender rates. That is, distinguishing between whether crime or criminal activities are undertaken by residents of a community (offender rates) or simply by individuals who enter and leave the community for the purpose of criminal activity so that it is the crime experienced by residents of a particular community or estate that is of concern (the offence rate) (Mawby 1977).

5.2.3 *Evidence*

The empirical evidence on the relationship between HA programs and crime is discussed below. Despite the limited analysis of the relationship between housing assistance policies and crime related outcomes the evidence suggests that:

- The defensible space hypothesis cannot be dismissed entirely but the evidence linking the design features of the built environment (especially for public housing estates) and criminal activity is mixed.
-
- Support for the specific patterns identified by Newman is weak. Hence, there is little evidence that high rise housing necessarily exhibits poor defensible space qualities and are therefore prone to high rates of crime related activities.
-
- There is some evidence that a sense of community, or lack thereof, may be partly responsible for the crime problems commonly associated with some public housing estates.

This lack of participation in the collective policing of community and social norms reflects two distinct influences. First, certain design features of housing may limit community interaction and therefore the willingness and ability for households to be the 'eyes and ears' of the community. Second, HA allocation policies may result in individuals without a sense of community responsibility being concentrated in a neighbourhood. Rather than the design features *per se*, it is the implementation of the HA program that may lead to poor crime related outcomes for some neighbourhoods.

Attempts to replicate Newman's findings in different contexts have proved somewhat elusive. It is clearly not the case that high rise developments, the type of public housing that Newman identified as exhibiting poor defensible space qualities, will necessarily be prone to poor crime related outcomes. In Australia and overseas, a number of studies have identified comparable high rise and low rise public housing developments and found little or no systematic relationship between the criminological patterns and design features of the estates (see for example Bottoms and Wiles 1986; Bottoms and Xanthos 1981; Mawby 1977; Matka 1997; and Weatherburn *et al* 1999).

In the Australian context there is little or no evidence that the concentration or design characteristics of public housing estates are associated with higher levels of reported criminal incidents (Matka 1997). The criminal activities considered in the Matka study including offences to the person (assault) and property (for example, theft and robbery). Similarly, Weatherburn *et al* (1999) find little or no evidence that the quantity (dwellings or number of residents) or qualitative characteristics of public housing in a postcode area affect the participation in criminal activities by area residents.²²

Studies by Bottoms and Xanthos (1981) and Bottoms and Wiles (1986), both identify housing estates in Sheffield, England that are architecturally similar but exhibit substantially different crime related outcomes. In those studies high rise developments that exhibit above and below average rates of reported crimes are identified, as are low rise developments that are architecturally almost identical but again exhibit substantially different offence and offender rates. Hence, Bottoms and Xanthos (1981, p206) argue that "there is no simple correlation of high-rise and criminality". Mawby (1977) finds mixed evidence on the defensible space hypothesis. When offender rates are considered, that is the number of offences committed during a certain time by individuals who reside in that area, no support for the defensible space hypothesis is found at least in relation to the distinction between high and low rise areas. On the other hand, when the reporting of criminal activity is examined, Mawby does find some evidence that offences are more likely to be reported when the surveillance opportunities are greater. A result he claims is consistent with the defensible space hypothesis.

In the United States research has failed to substantiate Newman's claims in other contexts. Hence, Holzman, Kudrick and Voytek (1996) survey a set of public housing residents to identify the nature of the relationship between architectural design and crime problems. The results generally fail to find a relationship between the type of public housing (high rise versus low rise) and resident perceptions and experience of criminal behaviour. Rather, their findings suggest that low rise developments and townhouse type accommodation exhibit more pronounced crime related problems. There does, however, appear to be a positive relationship between the size of the public housing development and crime related problems. This suggests that there may be a linkage between the size of public housing estates and the ability of residents and appropriate authorities to manage them. This leads to what Holzman, Kudrick and Voytek describe as disorder problems rather than serious crime problems. The relationship is not, however, between the type of public housing and crime related outcomes. Farley (1982) also finds little or no evidence that the design features of public housing estates in the St Louis area exhibit higher crime rates than other parts of the city.

For Sweden Wikström (1989) considers the offender rates of juveniles in Stockholm. He finds no significant impact of housing type on participation in criminal behaviour.

²² Both of these studies are described in Appendix E.

In Australia public housing developments designed to encourage a sense of community and with defensible space considerations in mind have subsequently been associated with poor design features that actually facilitate criminal activity. The development of 'Radburn estates' with dwellings facing each other and restricted vehicular access at the rear of the property were designed to encourage a sense of community and informal policing by residents. The design of the developments, it was hoped, would provide opportunities for individuals to provide informal surveillance and limit the opportunities for criminal activity. Further, it was envisaged that the sense of community created would encourage a sense of ownership and communal efficacy that would encourage residents to provide an informal surveillance network (Galster *et al*/2002).

Ironically, the design features incorporated into the Radburn estates have subsequently been associated with limiting opportunities for informal surveillance by residents and creating opportunities for criminal activity (Weatherburn 1999). Access to properties from the rear was largely unhindered and unseen, limiting the ability of residents to identify and report criminal activity.

If the design features of the public housing estates can only partly explain the crime problems of these developments, there must be other features of public housing developments that contribute to the real or perceived notion that they represent communities with above average crime problems. For example, it has been argued that public housing estates may contain a transitory set of residents who are especially prone to participating in criminal activity. Neither the theoretical basis nor evidence in support of this has been proffered (Bottoms and Wiles 1986, p206). Nonetheless, a high turnover among residents of public housing may be a symptom of a crime problem if households try to escape a 'crime infested environment', resulting in the constant reallocation of residents into and out of the public housing estate. Further, Bottoms and Wiles report that there has been no support for the notion that a lack of leisure facilities may be associated with high rates of juvenile delinquency on council estates in Britain.

In a carefully conducted longitudinal analysis of the development of supportive housing in Denver, Colorado Galster *et al* (2002) fail to find any relationship between the development of supportive housing estates *per se* and reported crime rates. To the extent that crime impacts occur following the development of these estates, Galster *et al* (2002) argues that it may be attributed to the creation of a larger set of potential victims and the difficulty in engineering a sense of social cohesion that allows neighbours to collectively enforce norms of civil and lawful behaviour through informal social control. The existence or lack of a sense of community or 'communal efficacy' can only partly be attributed to the design features of public housing. Communal efficacy may be undermined for a variety of reasons associated with the housing assistance measure. For example, if public housing is rationed resources may be targeted to individuals in need. Such individuals may possess characteristics that impair their ability to be active ears or eyes of the community and fully contribute to collective or communal efficacy.

The relationship between the allocation mechanism and crime patterns in public housing estates has been examined in a number of studies. For the United Kingdom, Bottoms and Wiles (1986) undertake a lengthy discussion of the 'crime careers' of various residential communities. In particular, they examine participation in criminal behaviour by the residents of certain communities over time. The conclusions they reach suggest that housing allocation processes may, over time, establish a community in which criminal activity, if not encouraged, is at least accepted as a part of life. In this situation, communal efficacy may be undermined or non-existent.

Ludwig, Duncan and Hirschfield (2000) argue in a similar manner that in high crime areas, criminal activity may be 'contagious' because the social penalties associated with this type of behaviour is low. This pattern may arise because individuals with a pre-disposition for participating in criminal activity are concentrated in public housing estates or because such estates are located in areas with high pre-existing rates of crime. Patterns of behaviour that make criminal activity acceptable or less costly from a social point of view may, in turn, be reinforced in schools and other forums where individuals are influenced by their peers. This effect may be particularly pronounced in the formative years of childhood (Wikström 1989). Moreover, to the extent that a community gains a reputation consistent with the encouragement or facilitation of criminal activity, the allocation mechanisms associated with public housing may entrench and

encourage deleterious patterns of criminal behaviour. In a sense, the downward spiral of the community or public housing development may itself become self-perpetuating.

This deleterious pattern may reflect two features of the public housing allocation mechanism. The first is the self-selection of potential residents into the housing estate. The second is the selection of residents by the authority responsible for allocating available accommodation. With regard to the former, to the extent that a community gains an undesirable reputation, the individuals who are willing to accept placements in the community may be more susceptible to participation in criminal activity. Further, administrators of policy may exacerbate the problem by allocating proportionately more crime prone individuals into communities or public housing developments that already have crime problems. That is, individuals with a predisposition to criminal behaviour are allocated to public housing that already exhibits poor crime outcomes.

Of course, the characterisation of the perpetuation of a crime problem in terms of the allocation mechanism is overtly simplistic. The nature of a public housing community at any point in time will reflect placement policies that potentially stretch back a long way (Bottoms and Wiles 1986). Moreover, at least in Britain there is little or no evidence that administrators set out to concentrate individuals predisposed to criminal activity in particular public housing estates. The current stock of tenants may reflect family and community ties that have been entrenched across generations. Allocation policies may change over time and exogenous factors, like high unemployment, may also contribute to the character of public housing estates and their tenants.

It should also be clear that design features of the public housing are not the only reason they may be associated with abnormally high rates of crime. Public housing may be located in areas vulnerable to criminal behaviour *per se*. Peer group effects may then result in individuals being exposed to patterns of criminal behaviour, and in turn induce criminal behaviour (Ludwig *et al* 2000). This may reflect the availability of properties at low cost, or an ability on the part of affluent communities to lobby against the development of public housing in their neighbourhood. The location of a public housing development in an economically depressed neighbourhood that exhibits pre-existing high rates of crime may in turn undermine the tenant's willingness and or ability to be part of the community. Community efficacy may be further undermined.

The discussion above is intended to highlight the multifaceted relationship between housing assistance measures and the determinants of crime and criminal behaviour. The relationship is complex and highly non-linear with feedback mechanisms operating amongst the various components that determine aggregate criminal outcomes. A range of socio-economic factors, other than simply the physical design of the built environment, contributes to the criminal experiences of individuals and neighbourhoods or communities. The evidence on the role of the built environment on crime outcomes, especially the design features of public housing estates, is mixed. Recent attempts to renew some Radburn type estates in Sydney for example, have met with mixed success in reducing the incidence and or perception of criminal behaviour (Judd, Samuels and O'Brien 2002, pp50-55).

Figure 5.1 below highlights *some* of the important linkages between HA policies and crime related outcomes and the complexity of the issues involved. Housing assistance policy itself has a number of dimensions including the design features of the housing support, the spatial characteristics of the assistance including its location, and, the form in which assistance is provided. The arrows linking these characteristics of HA indicate that these dimensions are not independent. For example, the form in which assistance is provided, either as public housing or a rental subsidy that can be used in the private market, will influence the spatial characteristics of the housing outcome. That is, the community or neighbourhood where the HA recipient resides.

These dimensions of HA policy will, in turn, influence the crime related outcomes for HA recipients. The crime related outcomes may be diverse and include participation and victimisation. Again, the experience of HA recipients with any one of these crime related outcomes may in turn affect other crime related outcomes.

The diagram highlights the fact that the linkages between the HA policy and crime related outcomes may be direct or indirect. For example, the defensible space hypothesis suggests that the physical design characteristics of HA measures may impact directly on a range of crime related outcomes. The work of others, such as Galster *et al* (2002), points to the effect of

physical design on crime via its impact on neighbourhood and household dynamics. The physical design may limit community cohesiveness and the development of a communal efficacy. This may then produce an environment in which crime related activities are encouraged or at least unhindered both at the household and community level.

The direction of causality in the relationships identified in Figure 5.1 may not be one way. For example, a community or neighbourhood characterised by poor crime related outcomes might itself lead to the deterioration in community and household function that in turn, produces a poor crime outcome (Ludwig, Duncan and Hirschfield 2000).

The discussion of the relationship between HA policy and crime described here should not be seen as exhaustive. Moreover, it should be clear that the relationship is multi-faceted and highly non-linear. In an environment in which housing assistance resources are limited the implementation of HA policy may itself be contributing to poorer crime related outcomes for recipients and the communities where they reside, whether those outcomes are real or perceived. The limited resources available to those who implement HA policy, coupled with the disadvantaged socio-economic characteristics of many HA recipients, makes identifying the relationship between HA measures and crime a difficult task. A key research task will be to establish a better understanding of the relationship between HA measures and crime related outcomes while at the same time identifying and controlling for the multitude of other factors that impact on this relationship.

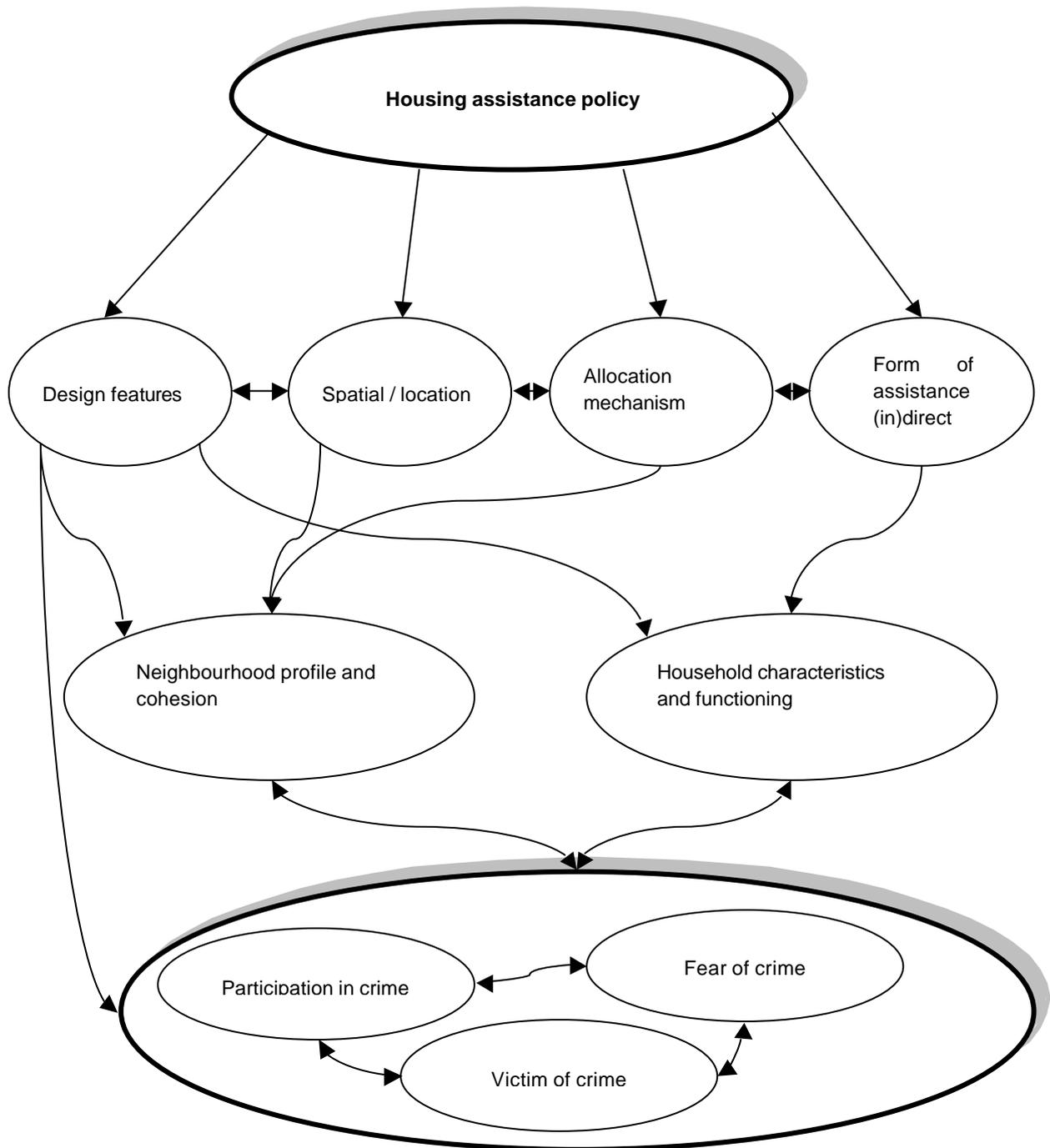


Figure 5.5-1 (above): Linkages between housing assistance and crime outcomes

5.2.4 Research Gaps

The discussion of the relationship between housing assistance policies highlights a number of gaps in the literature linking housing assistance policies and crime related outcomes. This dearth of research is particularly acute in the context of Australian housing assistance policy and community outcomes related to crime.

- The Australian research examining the relationship between HA policies and the participation in crime or community experience of criminal activity, using a quantitative framework, is limited to Matka (1997) and Weatherburn *et al* (1999). These studies, however, suffer from methodological problems that limit the conclusions that can be drawn from the results in those studies.

- From the studies found as a result of the systematic review for this section, there is an absence of Australian analysis on the relationship between HA programs (public housing and CRA recipients), measures of community involvement and crime related outcomes experienced by neighbourhoods. The analysis of the relationship between housing and crime in the United States suggests that this is an important mechanism linking HA policies and crime related outcomes experienced by communities. Some of these concerns are covered in more detail in sections 5.3 and 5.4 below.
- No Australian analysis exists of the long term relationship between childhood housing experiences, for example being raised in public housing, and the criminal activities of the individual as an adult.
- Qualitative analysis of perceptions of crime and how, if at all, behaviour is altered in Australian communities in response to those perceptions is required. The study by Galster *et al* (2002) suggests that perceptions of crime related problems may exceed that warranted by actual criminal activity. Further, Galster *et al* (2002) argues that the provision of information about HA policies may help assuage the fears and poor reputation of communities associated with housing assistance measures.

In the absence of quasi-experimental data that allows for a rigorous analysis of the impact of housing assistance policies on crime related outcomes, there is a need for the development and analysis of panel datasets that overcome some of the methodological issues associated with the analysis of cross sectional data. Ideally, such datasets would contain information on both the experiences of the individual, and those of the community. Further, qualitative analysis of community attitudes will aid in the development of policies and community participation programs that overcome adverse perceptions of communities.

Crime, or the absence of crime, is often seen as one of the factors that can contribute to community viability and cohesion. Its impact is likely to be ameliorated or exacerbated by the strength of other contributing factors such as the extent of social capital within the community and the strength of neighbourhood effects. These are covered below.

5.3 Social Capital

5.3.1 What is social capital?

Social capital is a concept of current enquiry, research and debate, especially with regard to the direction of welfare policy in Australia. Social capital has been defined as social connectedness from which arise norms of trust and reciprocity (Putnam 1993). Individuals draw on this resource of trust and reciprocity for mutual benefit and to advance social and economic goals.

The concept of social capital is not new. The ability of communities to generate 'good will, fellowship and sympathy' (Winter 2000) and consequent societal benefits has long been of interest to scholars and policymakers. The renewed interest arises out of a concern to demonstrate that social capital is a powerful contributor, alongside the State and markets, to the social and economic well being of communities. It is conceived as a previously ignored resource that can both ameliorate State and market failure, or complement State and market efficiency. Concern has also arisen due to the perception that civic and social trust is in decline.

Social capital is not a resource owned by an individual but rather a resource that arises out of social relationships based on trust and reciprocity. It may be argued however that individual qualities of sociability, tolerance, generosity, etc., which enhance engagement in social relationships, increase access to social capital resources. Individuals without these qualities may therefore exclude themselves from access to social capital resources and also contribute to lower levels of social capital within their community. The implications of this for the non-shelter outcomes of housing assistance are important and will be discussed below.

The formation of social capital by some parties may result in negative outcomes for other parties (Bourdieu 1986; Coleman 1988) if the latter are excluded from the accrued social capital resource. Social capital may therefore enable competitive advantage of some over others. The literature refers to these polar outcomes as 'dark-side' outcomes (Winter 2000). Putnam (2000) makes no judgement regarding negative and positive outcomes but refers to 'private-regarding',

i.e. dimensions of social capital that offer the prospect of a market or non-market return to the individual who contributes to the formation of such social capital, and 'public-regarding' uses of social capital that yield benefits to the wider community. However, these distinctions are interrelated as private-regarding social capital does not necessarily result in dark-side outcomes, whilst public-regarding social capital may have unintended dark-side outcomes.

Other important forms of social capital that describe network characteristics are bonding (support), bridging (leverage) and linking social capital (Stone and Hughes 2002, p4). Put simply, bonding refers to connectedness within a community, bridging refers to connectedness between communities, and linking social capital refers to the social relationships communities have with those in authority. All three domains are important to both housing and non-shelter outcomes.

5.3.2 The social capital debate in Australia

Active debate in Australia was renewed with Eva Cox's 1995 Boyer Lectures (Winter 2000). Cox is interested in human agency, which promotes mutual benefit and engages/empowers civil society. She argues that government initiatives and social welfare organisations can promote social capital formation among low-income citizens and communities.

Research on social capital formation has been taken up by diverse disciplines and in varied policy arenas but remains in its infancy. To date most Australian literature focuses on the potential of 'common-good' social capital rather than 'dark side' outcomes. DeFilippis (2001) believes current research mythologizes social capital as only providing common-good outcomes. Baum (1999) suggests social capital must be defined to include dark-side outcomes and cites the example of close-knit communities that are distrustful, exclusionary, and unhealthy.

The promotion of social capital within Australian communities is presently being considered as a policy objective, in response to the escalation of welfare expenditure. This is consistent with the Mutual Obligation policies of the current government and the Third Way politics of the UK that advocates the need for a new contract between government and citizens. Whilst there may be agreement that governments need to develop policies that encourage social capital formation, there is disagreement as to the causes of low social capital levels, and hence the pathway to raising levels is not clear.

For those who subscribe to the "too much State" argument (Winter 2000) the provision of welfare is a disincentive to social capital formation as it erodes individual initiative and responsibility, resulting in further reliance on the State. We should look to the role of other institutions, besides the State, including voluntary associations, the family and firms, which are more effective creators of social capital.

The "too much market" argument suggests over reliance on market mechanisms to allocate societies resources is not compatible with the goal of increased levels of social capital. The market values of competitiveness and self-interest are claimed to be at odds with the development of norms of trust and reciprocity. The current economic policy of privatisation and deregulation has encouraged the dominance of market values to the detriment of social capital levels. The State is therefore required to intervene and provide policy that encourages social structures that promote social capital formation.

However, these two explanations for declining social capital levels falsely polarise causation as all social institutions, including the market and the State, have the potential to either increase or decrease social capital levels (Bowles and Gintis 2002). It is not the institutional setting that is important to good social capital outcomes, but the nature of the social structures, which arise out of that setting and their impact on relationships between people. These structures need to promote feelings of recognition, worth and dignity (Fukuyama 1992) so that individuals can confidently put forward opinions and questions; cope with refutation; show flexibility in their means to achieve; and be confident enough to anticipate success (Coleman 1988).

How then do we achieve these social structures and what shapes the social relations that encourage common good outcomes? Do we actively try to reproduce these structures in our institutions and what role should government play? The following sets out to determine how these questions might be addressed in the housing domain, and discusses the possible linkages between housing assistance and social capital formation.

5.3.3 *The Linkages between Housing and Social Capital*

There are four ideas and concepts that are central to an understanding of the linkages between housing and social capital. Firstly housing can be acquired under different property rights arrangements (Jaffe 1996). At one extreme we have outright homeowners who have rights of exclusive use over the properties they own, and the right to transfer ownership (subject to the prices prevailing in housing markets) and capture any gain in capital value that has accrued during the course of ownership. At the other extreme of the landlord-tenant relationship in an unfettered market, the occupant has circumscribed rights of use over the term of the lease, but has no right to a share in the gain in capital value. In between there are intermediate forms of ownership and self-management such as shared ownership or housing partnerships (see Caplin *et al* 1997; Yates 1992), and tenant coops (Saegert and Winkel 1998).

Secondly, investments in social capital are typically specific to a community/neighbourhood, so that a substantial part of the value of the investment is lost if the resident(s) associated with the investments move out of the community (Glaeser, Laibson and Sacerdote 2002). To explore this aspect of asset specificity²³ consider a resident actively involved in the parents association at a local school. If this resident moves out of the community and their children change enrolment, he or she cannot export the stock of social connections built up through his or her period of involvement. These social connections are not portable²⁴.

Thirdly, institutional, cultural and religious differences and physical distances separate residents in a community, and can be impediments to the social connections that foster trust and reciprocity which are central to the formation of social capital (Putnam 1993). The height of these impediments can be referred to as 'social distance' (Glaeser *et al* 2002). It will be a function of the physical design of buildings in a community and the socio-economic, ethnic and demographic composition of residents in a community.

Finally, the linkages between housing and social capital will not be uni-directional. So for example, a key area for enquiry in Hugman and Sotiri (2001) is whether social capital formation follows from change in dimensions of housing, or do housing systems and programs of assistance accommodate to changes in social capital formation. Indeed, might there be a complex relationship involving interdependencies that reflect pathways of causation in both directions, as in Saegert and Winkel (1998).

These ideas form the basis of observations on four linkages between dimensions of housing and social capital:

- *Incentive Effects.* This linkage operates due to complementary components of social capital. Active participation in civic organisations responsible for the management of physical infrastructure in a community (e.g. parks) is illustrative in this respect. Improvements in physical infrastructure will boost residential capital values. Existing homeowners benefit both directly as consumers, but also indirectly via accrued capital gains. Renters benefit directly as consumers, but higher rents are the likely indirect consequence, as a community becomes a more attractive place to reside. The indirect benefits to homeowners sharpen the incentive to participate in the civic arena.
- *Commitment Effects.* As discussed above social capital assets are typically community specific and not portable. It is generally believed that the transactions costs of homeowners when they move are higher than those of renters, and so the former are less mobile.²⁵ In

²³ The specificity of social capital has a parallel in the concept of asset specificity in the industrial organisation literature (see Williamson 1996).

²⁴ Furstenberg and Hughes (1995) use of whether a child has ever changed schools as a measure of social capital uses this idea that an individual's social capital is accumulated over time, and is typically neighbourhood/local community specific, so that much of its value is lost if the household moves out of the community.

²⁵ Homeownership is then more likely to appeal to those whose expected housing careers involve stability with regard to residential location, and household types who are more costly to move, such as large families. This is the source of statistical issues. Are homeowners more immobile because of the high transactions costs of buying or selling, or are the people who become homeowners predisposed to stable residential locations over housing careers.

addition renters do not have security of tenure, and so may be forced to move if a private landlord decides to sell up, and a suitable vacancy in the present community cannot be guaranteed. The willingness of renters to commit to investments in social capital is understandably weaker, *ceteris paribus*, as the expected residence period over which returns/benefits can be enjoyed is shorter (Durlauf 2002, p461).

- *Urban form and resident composition effects.* The physical design and location of buildings and the socio-economic, ethnic and demographic heterogeneity of communities affect the 'social distance' between residents. Most obvious here is the physical distance between residents, and Putnam (2000) cites urban sprawl as negatively impacting on the formation of social capital. However, Briggs (1998) emphasises the importance of class, race and life stage to the formation of social connections. Also there is the design of buildings and the common areas between residential buildings that has been invoked as a determinant of the capacity of residents to engage in surveillance activities for security reasons (Saegert, Winkel and Swartz 2002, and section 5.2 above). Impediments to social connection can be heightened if the allocation procedures of social housing authorities concentrate poorer households in 'sink' estates that are associated with social exclusion (Briggs 1998; Burrows 1999).
- *Feedback mechanisms.* The trust and reciprocity that are at the core of the social capital concept will impact on housing outcomes. Saegert and Winkel (1998) and Hugman and Sotiri (2001) hypothesise that tenant participation in social housing management and policy development help cement relationships between the social landlord and tenant to the benefit of housing outcomes (Bothwell, Gindroz and Lang 1998).

5.3.4 Measurement and Key Findings

Putnam (2000) has acknowledged that we know little about how social capital works at the micro-level and housing's role in the process. Measurement of the linkages is complicated because the direction of causation is two-way, and therefore the researcher cannot be sure that a relationship of one direction or the other has been identified.²⁶ A degree of imprecision in measurement is inevitable because social capital is an intangible asset that is not traded in organised markets. The yardstick of dollar prices cannot be invoked.²⁷ Instead researchers resort to various proxy measures of behaviours and investments that are believed to be correlates of social capital. Thus in Furstenberg and Hughes (1995) the proxy measure is whether a child has ever changed schools and uses the idea that an individual's social capital is accumulated over time, and is typically community specific, so that much of its value is lost if the household moves out of the community. General attitude to trust measures are employed in the Narayan and Pritchett (1999) and Knack and Keefer (1997) studies, while in Di Pasquale and Glaeser (1999) there is a wide range of measures such as individuals' membership of non-professional organisations, propensity to vote in local elections, whether they are likely to garden and, more controversially, whether they own guns and attend church. In Glaeser, Laibson and Sacerdote (2002) there is empirical analyses of number of types of membership, as well as for each individual organisation. The aim is to detect any evidence of a stronger homeowner propensity to become members of organisations that complement residential capital.

Since these measures are proxies for the underlying concept of social capital measurement error is inevitable. The problem is compounded by definitional ambiguity. For example, the Furstenberg and Hughes (*op cit*) measure has an alternative interpretation as the weight placed by parents on their children's welfare²⁸. Typically social capital is thought to be a 'good thing'

²⁶ See Durlauf, 2002 for further discussion in the context of social capital empirics.

²⁷ However, if the net benefits from social capital investments are capitalised into house prices and rents an indirect estimate of the dollar value can be obtained as in Temkin and Rohe (1998). The use of house price to estimate the value of social capital in communities is a research gap that has not been explored in Australia.

²⁸ Yet another example is the use of ethnic conflict measures as a measure of social capital in Knack and Keefer (*op cit*), and the employment of this same measure by Easterly and Levine (1997) to measure the formation of public goods. So the same proxy measure has been used to 'instrument' two different causal mechanisms.

because “trust acts like a lubricant that makes any group or organisation run more efficiently” (Fukuyama 1992, p16). But there is a dark side – social capital does not always correlate with healthy communities – Bosnia maintains a good deal of social glue within ethnic groups, but few bridges between them. Social capital can also be the basis of exclusionary old-boy civic networks and corrupt political machines (Lang and Hornburg 1998).

Empirical studies of the linkages between social capital and housing can be grouped under three headings:

Housing Assistance Policies and Social Capital

Moving to Opportunity (MTO) programs are attracting increasing attention because of evidence that the voucher-based Gautreaux program is having favourable impacts on previous residents of high-poverty communities in inner city Chicago (Rosenbaum 1995; Rosenbaum and Popkin 1991)²⁹. In tenant mobility programs, such as Gautreaux, tenants are offered rental subsidies conditional on moving from their current residence (say public housing in a poor neighbourhood) to a neighbourhood with richer social capital. In unit mobility programs such as Yonkers, NY (Briggs 1998), a social housing authority acquires or builds housing that is scattered in neighbourhoods with richer levels of social capital. It is then typically offered to eligible households by lottery or on a first-come-first-served basis. These latter programs are closest to the head leasing programs introduced by some State Housing Authorities in Australia.³⁰

Briggs (1998) examines whether the unit mobility program in Yonkers, NY has positive or negative impacts on forms of social capital. The key dimensions of social capital are social support capital and social leverage capital. Social support capital is the assistance, material and emotional, that helps one ‘get by’ or cope. Social leverage capital is the clout or influence that enables one to ‘get ahead’ by means of access to job information, for example. The pro-mobility case rests on the belief that access to the leverage one needs to get ahead is more likely if he/she has social ties to dissimilar people, and the concentration of poor households in (say) public housing estates prevents access to such social leverage capital. By dispersing tenants to suburbs populated by higher income households with richer stocks of human capital, it is hoped that these tenants will benefit from wider social ties and peer group influences in the new locations (stronger job networks, better schools and so forth).

Yonkers had for many years’ implemented segregative policies that concentrated poor nonwhites into a few census tracts. In 1986 the Federal District Court ordered the city authorities to desegregate schools and provide subsidised housing opportunities outside of the southwest section of the city. The city eventually responded by initiating newly built scattered-site public housing, which was designed to look like privately owned housing, and according to defensible space principles (Newman 1972, and section 5.2 above). The movers were selected by lottery from applicants who expressed interest and met eligibility criteria.

The study design is a natural experiment³¹ involving 132 low-income African-American and Latino adolescents eligible to participate in a MTO program in Yonkers, NY. The author designed a sophisticated controlled experimental design in which chain-sampling methods were used to carefully match stayers and movers in terms of motivation and socio-economic and demographic characteristics, thus addressing omitted variable problems. There remain selection bias issues because we cannot observe the outcomes for those who did not express interest in participating in the programs.

²⁹ More detail about the MTO program is provided in Appendix B.

³⁰ Measurement of the impacts of head leasing policies using the careful controlled experimental methods used in Briggs (*op cit*) is a research gap in Australia. For a discussion of related Australian studies see section 5.4.3 below.

³¹ A natural experiment arises when an exogenous change in legislation creates a ‘treatment’ group and a ‘control’ group from a homogeneous subgroup in the population. In these rare circumstances worries about omitted control variables are assuaged. When the subgroup is heterogeneous but assignment to treatment and control group is by lottery this can also allay omitted variable concerns. The natural experiment study design is rarely comparable to randomised experimental study designs, because eligibility criteria and participation decisions give rise to selection bias.

Briggs argues that in the formation of social networks and social capital it is social distance, i.e. class, ethnicity, and life stage boundaries that are key factors, rather than proximity. Thus the more heterogeneous are the residents of a community the weaker are the social networks or connections between members of that community. Thus a household who moves to a new neighbourhood will not necessarily form social networks with neighbours if the social distance separating them is large. This theoretical analysis predicts that housing mobility impacts on non-shelter outcomes will be mediated by the size and content of social networks formed by the movers.

Thus Briggs is concerned to measure impacts on access to the key forms of social capital, and thereby scrutinise the hypothesis that movers will gain access to richer social capital. The main findings are that movers appear to retain the same access to social support as stayers. This is due to enclave effects, i.e. the maintenance of social networks with other movers living in the vicinity. However, contrary to the pro-mobility case, movers are no more likely to access social capital leverage that might enhance opportunity. However, moving has large and rapid effects on parenting; mover parents are not struggling to isolate their kids from neighbourhood risks.

Lang and Hornburg (1998) point out that while people-based housing policies such as MTO programs may promote the formation of leveraged social capital, place-based housing programs that improve the physical condition of residential housing in a community can foster social support capital. But McGregor and McConnachie (1995) show that place-based housing investment programs can promote both forms of social capital. They emphasise the design of housing assistance programs to strengthen local economic capacity, by involving local community members and employing local contractors rather than importing labour. By stabilising communities social support capital is fostered, while the employment opportunities created by integrating housing investment programs with the local economic base, promote leverage social capital.³² The McGregor and McConnachie study questions the social capital literature that typically disconnects the social aspects of community dynamic processes from economic aspects, in both an analytical and policy sense (Hugman and Sotiri 2001).

Burrows (1999) has argued that UK privatisation of the housing stock has resulted in residualisation of the social housing tenures, and that this is a form of social exclusion that erodes social capital. Sale of the public housing stock leaves behind marginalized tenants in the poorer quality housing that remains in the social sector; this increases the 'social distance' between low-income tenant households and the 'better off', with adverse consequences for leveraged social capital. Wood, Watson and Flatau (2003, forthcoming) offer evidence suggesting that the Australian Federal Government's First Home Owners Grant is contributing to a polarisation between rental and homeowner tenures in much the same way as public housing sales. However, the causal linkages between tenure polarisation and social capital have not been spelt out or measured and are therefore poorly understood.

Finally there is a group of studies investigating the hypothesis that incentive and mobility effects cause homeowners to be more socially connected with their communities (Ahlbrandt and Cunningham 1979; Baum and Kingston 1984; Cox 1982; DiPasquale and Glaeser 1999; Lyons and Lowery 1989; Glaeser, Laibson and Sacerdote 2002; Guest and Oropesa 1986; Rohe and Stegman 1994; Rossi and Weber 1996).³³

Glaeser *et al* (2002) use as their preferred measure membership of non-professional organisations. Despite misgivings it is used because it correlates well with measures of community-mindedness. The authors employ the US General Social Survey and the number of types of organisations that the individual belongs to as the dependent variable in a series of regression models. The regression estimates produce a striking inverted u-shaped relationship between age and organisation membership that remains significant as additional variables are added to the model. The decline for older adults is unaffected by health. The young make

³² The linkages between investments in a community's physical capital and social capital, and how public sector investment programs can be integrated in such a way as to promote social capital, are poorly understood. This is a potentially fruitful research area.

³³ For a review of this literature see section 5.6 and McCarthy, van Zandt and Rohe (2001).

relatively low investments in individual social capital because they are more mobile, and have a greater tendency to be single without children. A statistically strong relationship is found with respect to a predicted mobility variable.

On social capital and homeownership Glaeser *et al* (2002) find that the coefficient on homeownership is significant. When separate regressions are estimated for membership of individual organisations the homeownership coefficient is significant for all but one organisation (veterans). However, there is no evidence that it is stronger for membership of organisations that complement residential capital. Glaeser *et al* conclude that the homeownership effect works most strongly through its negative effects on expected mobility. However, as Rohe *et al* (2000) point out in their literature review, none of the studies on this topic have totally ruled out the possibility that the association between homeownership and social and political participation is spurious. Although unlikely, there may be a more fundamental orientation toward social involvement that predisposes people both to participate in voluntary and political activity and to purchase homes (Rohe *et al*, *op cit*, p26). These issues are revisited in section 5.6.

Building Form, Design and Social Capital

As signalled by the discussion in section 5.1, there is a view that the physical design of buildings and the spaces between them impact on social capital in a community. For instance, the physical distances separating residents determines the time cost associated with maintaining social connections and should influence the propensity of residents to make social capital investments (Glaeser, Laibson and Sacerdote 2002). Glaeser and Sacerdote (1999) find that residents of big cities and individuals who live in apartment buildings are more likely to socialise with their neighbours. Putnam (2000) offers evidence that social capital is negatively associated with urban sprawl. Festinger *et al* (1950) is regarded as the seminal study, as it uses survey data from individuals randomly assigned residential units in different buildings. The study reports that individuals who are spatially apart are less likely to form social connections. The randomised experimental study design is rare in the social sciences, and it represents the strongest evidence on the role that physical distance plays in deterring social connection (Glaeser *et al* 2002). However, Briggs (1998) argues that physical distance is but one dimension of the space separating residents in communities (see above). Other and perhaps more important dimensions are class, race and demographic boundaries that can deter social connection. Talen (2002) points out that many studies that claim that there is a relationship between design and community only examine the relationship between design and social interaction not the more psychological sense of community. In particular the focus on community and the built form ignores the fact that many elements of community are no longer connected to a place.

“The community of place, usually defined in terms of neighborhood, still exists but has been supplanted to a large extent by the community of interest or “portable personal communities” that are detached from any specific locale.” (Talen 2000, p175)

In Bothwell *et al* (1998) the new urbanist design methods and their contribution to the formation of social capital is assessed. These design methods aim to create intimate urban villages in cities by, for example, adding porches to establish a private space in the public realm and thus creating a secure venue for social interaction (see section 5.2 for a related discussion). This “architecture of engagement” aims to restore a sense of community to distressed neighbourhoods. The authors use a case study of Diggs Town, a public project in Norfolk, Virginia, to explore the effectiveness of new urbanist design methods. Their findings support the view that such methods “improve the quality of life by facilitating the social exchanges that create social capital”. However, the case study method, though backed up by a resident survey, raises questions about whether these conclusions can be generalised. A more robust methodological inquiry is required before firm policy implications can be drawn. The claims of the new urbanist movement have been the subject of widespread debate which is well summarised in Bohl (2000) and Talen (2002). The essential issue is the one raised above – advocates of new urbanism have confused levels of social interaction with “community”.

Social Capital and Housing Outcomes

The studies reviewed so far are focused on how housing and housing assistance programs can contribute to the formation of different forms of social capital. This section turns to the reverse

linkages: that is the role of social capital in shaping shelter outcomes and, equally importantly, its role as a mediating influence on the effectiveness of housing assistance programs. There is growing consensus among urban analysts that an area without a strong stock of social capital is less likely to benefit from revitalisation efforts that focus on housing investment programs (the social capital mediation model). In the worst off parts of metropolitan areas urban analysts are calling for the development of social capital. Thus authors, such as Spence (1993), conjecture that social capital affects the conditions in public housing. Keyes (1996) believes that social capital affects the ability of cities to provide affordable housing.

Temkin and Rohe (1998) note that, if this policy perspective is to have relevance, then social capital will be an important predictor of neighbourhood change. Neighbourhoods with currently high levels of social capital should, in the future, exhibit signals consistent with healthy and stable communities. Their study uses measures of two elements of social capital – sociocultural milieu and institutional infrastructure – to test this hypothesis. The latter is an attempt to operationalise the concept of civic engagement via measures of the propensity of residents to vote, the level of residential volunteerism and the presence of neighbourhood organisations. The sociocultural milieu construct is an attempt to operationalise the concept of trust, by using measures of activities that are correlated with trust, such as whether residents discuss neighbourhood problems with other residents. The measure of neighbourhood health and stability is change in the neighbourhood's property values relative to the city as a whole. The rationale here is that the net benefits from high levels of social capital in an area will be capitalised into property values.

The research design uses a 1980 to 1990 timeframe to predict neighbourhood change in property values using census tract property value data for Pittsburgh. The 1980 Pittsburgh Neighbourhood Study is used to formulate measures of institutional infrastructure and sociocultural milieu in 1980. The multivariate model shows that neighbourhoods with high levels of social capital in 1980 are less likely to experience subsequent (1980-'90) falls in property values when other factors are held constant. The direction of causation problem is addressed by using future rather than contemporaneous change in property values, though if property values are correlated with their own past values it could mean that neighbourhoods with high levels of social capital in 1980 have achieved those high levels because of strong surges in property values in preceding time periods. So this statistical issue nevertheless clouds interpretation of the findings. Omitted variables will also be an unavoidable problem given the essentially non-random nature of the study design. However the use of changes in neighbourhood property values to measure the importance of social capital to neighbourhood cohesion is a novel one.

Saegert and Winkel (1998) is a study designed to explore whether social capital adds value to housing assistance programs – in particular, whether it adds value to government investments in low income housing. Thus it explicitly scrutinises the social capital mediation model. In the late 1960s through into the 1970s New York landlords responded to poor returns by simply not paying property taxes. After one year of serious tax arrears the city government took possession (*in rem*). The New York City's holding grew to a high of 53000 buildings in 1986. Since about 1980 it has sought to re-privatise *in rem* buildings by selling them back to for-profit owners, community based organisations and limited equity tenant cooperatives. The re-privatisation program offers a 'natural' experiment study design because possession of these buildings occurred due to unanticipated events that were unrelated to the city's housing programs, they are located in the poorest neighbourhoods, and offer rental housing to low-income tenants. Thus the re-privatisation program was implemented within a reasonably homogeneous set of buildings and neighbourhoods. However, the study design is not problem free. There will be selection biases since residents are not randomly allocated across ownership forms. As the authors themselves note (Saegert and Winkel 1998, p50), new tenants could be selected on the basis of their expected participation in tenants associations and the social and managerial skills they bring.

Their study focuses on a specific linkage between housing policy, housing outcomes and social capital; that between multi-occupancy building ownership form, housing quality and social capital. Regression models that relate building condition, building security and crime problems to a vector of variables that include multi-occupancy building ownership form, are estimated. The findings support the social capital mediation model of the effects of ownership on building quality and

safety. Thus social capital proxy variables have the strongest impacts in buildings whose ownership form (in this case, tenant owned coops) nurture the formation of social capital.

5.3.5 Policy Implications.

For some policy makers the importance of social capital is its potential capacity to stabilise communities in response to welfare reforms that incorporate *mutual obligation* provisions, and *devolution* of federal aid and responsibilities. It has been argued that affordable housing is critical to the building of this social capital as it “gives people roots and stabilises communities” (Lang and Hornburg 1998, p5). A suitable supply of affordable housing will then ease the implementation of contemporary welfare agendas. But such a conviction lacks the firm foundation of unambiguous evidence built on robust study designs.

For Temkin and Rohe (1998) the critical causal path is from social capital to housing outcomes and housing policy needs to take this direction of causation into account. Evidence is offered to show that social capital has a positive impact on housing outcomes and neighbourhood dynamics. Putting doubts about methodology to one side, what are the implications for housing policy and community development? Temkin and Rohe (1998, p85) argue that the following policy conclusions can be drawn:

- Comprehensive community development initiatives may be more successful than those focusing exclusively on housing development
- Housing improvement programs need to be integrated into revitalisation efforts that help build social capital in neighbourhoods

In Briggs (1998, p179) housing policy is of vital importance to welfare reform, because it influences the residential location and access to services of people at the bottom of the opportunity structure. The critical importance of residential location to leveraged social capital is an important assumption underlying the US mobility housing programs. The natural experiment study design that researchers have been able to employ in examinations of the Gautreaux, Chicago and Yonkers, New York mobility programs are more robust than the typical cross section designs based on secondary data. However, the promising early benefits from Gautreaux have not been reproduced in Yonkers, so unambiguous policy prescriptions are not justified. In Australia there have been no equivalent studies using the sophisticated natural experiment study designs that are reviewed above³⁴. There are head leasing initiatives in Australia that can offer the same sort of opportunities as the US mobility programs, and a consideration of these from the leveraged social capital perspective is warranted.

This discussion of mobility housing programs draws on a policy relevant distinction between social support capital, which is help to ‘get by’, and leveraged social capital which are links to the world outside communities that help one to ‘get ahead’. To maximise leveraged social capital we require people-based policies such as mobility and housing assistance programs that sharpen work incentives; support social capital relies on place-based policies that seek to leverage existing civic infrastructure. But a weakness in this thinking is that it typically disconnects the social aspects of community dynamic processes from economic aspects, in both an analytical and policy sense. It might be more productive to think in terms of how we might integrate housing assistance programs and economic processes to promote both support social capital and social leverage capital (McGregor and McConnachie 1995).

Numerous studies have revealed a strong positive association between homeownership and proxy measures of citizenship that are thought to correlate with social capital (Rohe, van Zandt and McCarthy (2000, pp 19-26). DiPasquale and Glaeser (1999) is one of those studies, and since it employs panel and cross section secondary data sets from two different countries (USA and Germany), its study design compares favourably with other studies that are typically more limited. However, the authors are cautious about drawing any firm policy implications, and stress

³⁴ See chapter 6 for further comment and a suggestion that Australian policy makers adopt pilot programs with experimental study designs more frequently.

that “our results should not be interpreted as wholesale support for policies that promote homeownership”. This caution is rationalised on the following grounds:

- A substantial fraction of the difference in citizenship between homeowners and private renters is due to differences in their socio-economic and demographic characteristics.
- When length of residence in the community is taken into account it is found that in over one-half of the models estimated, more than 50% of the homeownership effect is due to the relative immobility of homeowners, with incentive effects making a relatively minor contribution in those cases.
- The study does not provide a monetary measure of the benefits to society that can be compared to the costs of programs geared to promoting homeownership.

The second of these cautions is relevant because there are costs associated with the reduced mobility of homeowners that can include adverse effects on employment, and these have not been considered (see, in the Australian context, Flatau, Forbes, Hendershott, O’Dwyer and Wood 2002). Some of these issues were discussed in section 3.3 above. Others will be returned to in section 5.6 below.

5.4 Neighbourhood effects

The social capital discussion in the previous section pointed to the close relationship that this concept has with community and with neighbourhoods. This section focuses specifically on neighbourhood effects. It begins by addressing the US literature that examines whether characteristics of neighbourhoods, e.g. the rate of homeownership or public housing, have an independent effect on non-shelter outcomes such as the educational attainment of children over and above the effects associated with more direct housing assistance programs and other factors known to affect these outcomes. It then moves on to a more UK oriented literature dealing with the related idea of social exclusion of which neighbourhood effects are believed to be a cause. The role of area-based initiatives that include housing assistance measures is examined in this context. Finally it explores the Australian literature in this area. These issues are important because they suggest the place-based effects of housing assistance policies may have an impact that interacts with the effects of housing assistance policies that are focussed more directly on the recipients.

Much of the recent work on neighbourhood effects has taken as its starting point the observed tendency for spatial sorting by households according to similar socio-economic status and housing preferences. Market and non-market processes in housing systems that can be shaped by housing assistance programs generate this sorting. A concern that these tendencies have increased has been at the heart of the socio-tenurial and spatial polarisation literature. The high correlation between socio-economic characteristics of households and the neighbourhoods in which they live means that considerable care needs to be taken in order to separately and correctly identify the impact of each. Since housing assistance programs can contribute to the spatial sorting of households, they therefore play a role in generating non-shelter outcomes associated with neighbourhood effects.

5.4.1 *The US Literature*

The best evidence of the ways in which neighbourhood effects have an impact on non-shelter outcomes from the literature covered by this review can be found in a systematic review of the empirical literature undertaken by Ellen and Turner (1997).³⁵ These conclusions, however, are drawn from a literature that is solely US based. While this specific institutional framework raises obvious questions about the applicability of the results to an Australian context, the methodological issues raised and the focus of the studies undertaken are relevant in any country. Ellen and Turner present the evidence from their systematic review according to the life-stage taxonomy summarised below:

³⁵ There are 88 references that meet their inclusion criteria.

- *Infants and preschool:* neighbourhood has an impact through effects on parents. Evidence shows that parents' access to social and institutional networks is important but does not show whether these networks must be in the local neighbourhood to have beneficial effect. There are few quantitative studies on child development. Those that exist suggest that the presence of affluent neighbours is more important than the presence of poor neighbourhoods but endogeneity has not been controlled for in most of the studies generating these results.
-
- *Elementary school:* there are few robust studies that focus specifically on this age group as most combine the effect of neighbourhood on elementary and high school outcomes. These tend to show modest but significant effects.
-
- *Adolescents:* the impact of neighbourhood is most compelling for this age group because of peer influence. In general, the evidence is strongest for educational outcomes and weakest for crime, but results need to be treated with caution since few studies control for endogeneity. In relation to specific outcomes,
 - education: neighbourhoods matter, but it is not obvious which characteristic is important
 - employment: most studies show a positive relationship but it is unclear whether these effects are persistent with a change of location
 - sexual activity and pregnancy: all existing studies find a link, but this disappears in studies that control for unobserved family effects.
 - crime: few studies attempt to determine the impact of neighbourhood on crime; but neighbourhood and social interactions are shown to be important in those that do
- *Adults:* there is tentative evidence that neighbourhood location as well as socioeconomic composition affects employment outcomes. The best evidence is from the Gautreaux program, which focuses on severely disadvantaged, predominantly black households who move to suburbs where they benefit from improved labour market prospects. Most research has concentrated on the importance of physical distance rather than social composition (spatial mismatch) but findings are inconsistent³⁶. More sophisticated study designs seem to find stronger effects (but the best of these that control for endogeneity focus on youth, not adults)

From their review, Ellen and Turner concluded that empirical research generally confirms the significance of neighbourhood as an influence on important outcomes for children and adults but suggest that attempts to identify which neighbourhood characteristics matter have been inconclusive. They also suggest that, whilst neighbourhoods do matter, neighbourhood effects are smaller than the effects of observed family characteristics. Studies that control for parenting skills and values, for example, generate no neighbourhood effect. This raises significant methodological pitfalls: first for studies that do not identify neighbourhood effects and secondly for studies that do not incorporate relevant parental characteristics. In their view, additional methodological issues arise from difficulties in measuring neighbourhood characteristics, difficulties in identifying neighbourhood effects (because of non-linearities) and difficulties in separating neighbourhood effects from individual or family characteristics.

Since their study was undertaken, there has been a small but growing literature that does take into account the processes identified by Ellen and Turner and which addresses at least some of the methodological issues. Those reviewed have tended to focus on the neighbourhood rather than the parental characteristics identified as contributing factors by Ellen and Turner. Housing attributes including the incidence of housing policy interventions in a neighbourhood is a dimension that can mediate neighbourhood effects. Whilst there are relatively few studies that

³⁶Of 6 reviews, three find substantial support, two find moderate support and one offers mixed findings.

examine interdependencies between public housing, rent assistance, homeownership and neighbourhood effects, there are at least a number that are beginning to do so.

In a recent study in which they attempted to determine whether the existence of public housing has contributed to increased poverty rates in the neighbourhoods in which it is located, for example, Carter, Schill and Wachter (1998) find weak evidence for their hypothesis. They point to the importance of the size of the public housing development being considered (thus providing support for the Quercia and Galster concern that threshold effects are important). Whilst Carter, Schill and Wachter controlled for other neighbourhood characteristics, they did not explicitly consider the direction of causality in the observed relationship. A number of studies of the US MTO program (for example, Rosenbaum and Harris 2001; and Katz, Kling and Liebman 2001) show that tenant based assistance leads to better neighbourhood environments for those who relocate from existing public housing (located in distressed neighbourhoods), and that this program enables them to move to lower poverty neighbourhoods. Lee, Culhane and Wachter (1999) provide a narrative review of the early MTO literature and conclude that public and private project based assistance does little to improve neighbourhood quality for welfare recipients, and that poverty concentration is seen to have a negative impact on property values. However, these studies are generally based on small samples with low response rates and, as such, do not meet the inclusion criteria set for this review.

A richer but still sparse literature exists on the interdependence of neighbourhood effects and homeownership. Haurin, Dietz and Weinberg (2002) provide an excellent review of the relevant theoretical and empirical literature. They conclude that, although the literature yields numerous theories, empirical studies of the size of neighbourhood effects are sparse. Neighbourhood effects occur "when an individual's or household's characteristics or actions affect the neighbour's behaviour or socio-economic outcomes." (p120) Knowledge of such effects has important implications when determining whether public policy should encourage spatial clusters of homeowners. Their review provides a comprehensive overview of the technical issues associated with separately identifying and measuring neighbourhood effects. They conclude that the estimated size of these effects tends to be reduced when studies control for a large number of individual or family factors, and account for the endogeneity of neighbourhood choice. They also conclude that empirical results prior to 1990 are unlikely to be statistically robust.

Together Dietz and Haurin (2002) and Rohe, Van Zandt and McCarthy (2000) and McCarthy, Van Zandt and Rohe (2001) have reviewed hundreds of articles that have developed the underlying theory and tested hypotheses concerning the economic and social consequences of homeownership. The economic returns to homeownership provide an incentive for homeowners to invest in their properties and neighbourhoods. Their increased stability leads to longer periods for building social networks and engaging in local activities. It also leads to improved child cognition and behaviour and better civic virtues. Haurin, Dietz and Weinberg (op cit) suggest that aggregation of these household level consequences suggests predictions about the consequences of increased homeownership in a neighbourhood.

Numerous studies have suggested that neighbourhood effects are capitalised in house prices and there is a strong consensus that housing prices do, in fact, reflect spatial variations in neighbourhood amenity levels. The market effects of a range of different types of housing assistance are considered separately in section 5.5 below. Haurin, Dietz and Weinberg suggest that, if amenity levels affect house prices, and if homeownership causes neighbourhood effects, then it is reasonable to suggest that spatial variations in homeownership rates will be reflected in house prices. They argue that very few studies include a neighbourhood homeownership rate as an explanatory variable and suggest that failure to do so means that studies do not control for neighbourhood sorting and so their results are suspect. Coulson, Hwang and Imai (2002), in one of the first studies to test for the impact of homeownership rates on house prices, while accounting for the endogeneity effects associated with spatial sorting, show that house prices are positively related to neighbourhood homeownership rates and that additional benefit is gained if homeowners are clustered as opposed to being spatially dispersed. Other studies, however, have failed to replicate this result. One reason is the problem of how to define a neighbourhood. Many of the benefits that arise are attributed to social networks or to peer group effects and it does not follow that these form an identifiable spatial unit. For effects that are spatially

determined, the question of how large an area should be considered is one that is still to be determined.

Haurin, Dietz and Weinberg conclude that research on the effects of neighbourhood homeownership rates has policy relevance. "If there are no effects of neighbourhood homeownership rates, the spatial distribution of owned homes does not affect social welfare. In contrast, the existence of neighbourhood effects for homeownership suggests that welfare could be enhanced by pursuing optimal clustering or dispersion policies. In particular, findings that do not show a homeownership rate neighbourhood effect but that do support the conjecture that individual homeownership is beneficial socially suggest that policy need concentrate only on programs that promote homeownership irrespective of its location." (p143). They also conclude that the preponderance of studies suggests there is a positive effect.

Ioannides and Zabel (2001) suggests that it is the increase in income inequality in the 1990s that has led to this new focus on measuring the impact of social effects on economic behaviour. In their words, "this rise is due, in part, to the belief that the rich benefit from a better social environment more than do poor individuals." (p1). They suggest that a "keeping up with the Joneses effect generates a self-reinforcing effect of maintenance, renovation and repair that leads to increasingly higher neighbourhood quality which, in turn, fosters access to social capital and serves to increase the economic gap between individuals in good and bad neighbourhoods." Ioannides (2002) provides evidence to support this.

This is an important issue as Dietz and Haurin (2002) provide considerable evidence that results of the impact of homeownership on a range of non-shelter outcomes are over-turned once more robust analyses take into account what they call "sorting" - the tendency of households with similar characteristics and preferences to locate in the same neighbourhood. The specific role of homeownership in relation to neighbourhood effects is considered in more detail in section 5.6 below. This section focuses more on the impact of disadvantaged neighbourhoods and it is this issue that is taken up in the UK literature considered below.

5.4.2 The UK Literature and Social Exclusion

In one of the few UK based studies covered in this review³⁷, Gibbons (2002) examined the impact of neighbourhood on educational outcomes for teenage children. As were many of the US studies referred to above, Gibbons empirical work was underpinned by Wilson's (1987) theory of the breakdown of social capital arising from a concentration of poverty. Gibbons showed that neighbourhoods do influence outcomes, regardless of family resources but that they determine only a small proportion of the variation in individual outcomes. Family background matters more. His study concludes that there are benefits from aggregate improvements in neighbourhood quality and implies there are social benefits from tackling childhood disadvantage at the neighbourhood, rather than the family or individual level. However, the evidence from this paper is that these additional benefits are small.

A feature of Gibbons' study is that it also considers the impact on public housing tenants of living in neighbourhoods with different characteristics. His results indicate "differences between public housing tenants in their neighbourhood quality – residents incomes, education or wealth for

³⁷ Gibbons study was undertaken as a contribution to evaluation of the area regeneration policies implemented in the UK in the mid 1990s. Time constraints have limited the capacity for a systematic review of this literature. Access to that which originated from the ESRC cities program of research can be found at <http://cwis.livjm.ac.uk/cities> (as at 14 March 2003). One of the important non-shelter outcomes not considered in this particular review but which has emerged from the cities program of research is the importance of housing and housing assistance in determining the competitiveness of cities. Housing and housing policy is seen by the OECD as part of the paradigm shift in the territorial policies of OECD countries which reflects a change in focus from subsidies to ways of enhancing competitiveness and contributing to the success of regions and urban areas. An OECD presentation to a recent conference in New York which highlights the role of housing in enhancing competitiveness can be found at <http://www.newyorkfed.org/pihome/news/speeches/2003/con032003.html>.

example – are less related to their own incomes and resources than are differences between property owners' or private tenants' neighbourhoods." Gibbons attributes this to the fact that public housing tenants' choices of residential location are less determined by their ability to pay for housing than are the choices of homebuyers and private renters. He shows that there is a link between neighbourhood education levels and the eventual qualifications of public tenants.

Disadvantaged households, who lack the resources to participate in day-to-day activities that the typical person regards as routine, are a growing concern. Their plight is central to the social exclusion debate. Whilst housing is identified as one of the many factors that are associated with or contribute to social exclusion in our society, with the exception of a growing literature on the impact of urban or neighbourhood renewal on reducing social exclusion, there is virtually no literature that explicitly deals with the capacity that housing assistance might have in combating social exclusion.

Two recent review papers, however, do provide a comprehensive review of the issues relevant to the area-based initiatives being implemented in the UK. Both suggest a focus for a future research agenda. The first, by Cole and Reeve (2001), explicitly focuses on the impact of housing initiatives on specific outcomes. The second, by Kintrea and Atkinson (2001), provides a broader overview of the rationale for neighbourhood-based initiatives in terms of their impact on social exclusion.

In their review of the UK evidence base on housing related initiatives in area regeneration programs, Cole and Reeve (2001) conclude; "within broader evaluations of regeneration programs, there is often a lack of evidence about specific housing measures within the package of initiatives... Evidence of longer-term impact through longitudinal research is particularly scarce." Research emphasis tends to be on the responses to problem estates rather than with the impact of these responses. Cole and Reeve also point to the difficulty of keeping (and question the wisdom of attempting to keep) clear boundaries around any particular intervention, particularly in the light of attempts to promote social inclusion and 'joined up' thinking about problems and solutions at a neighbourhood level.

The primary purpose of their evidence based review was to provide a summary of 'what works, when and in what circumstances' for the benefit of New Deal for Communities (NDC) partnerships. Their assessment of the evidence based on an evaluation of (UK) government programs and initiatives, reports from housing organizations, research institutions and charities, academic research bodies and local housing agencies was that there are many examples of what works but specifying where and under what circumstances was more problematic. The focus of their review of some 150 studies and reports was on housing led initiatives in achieving neighbourhood renewal and they relied on "concrete evidence" that evaluated actual strategies rather than examining underlying causes, although they recognise the rich literature on causes is important for providing general pointers about priorities for intervention.

The conclusions drawn from their review of the relevant evidence are categorised into four broad themes. These are low demand, anti-social behaviour, housing investment and housing management. The summary below is based on their findings and conclusions; the original literature that underpins these has not been independently evaluated.

'Low demand areas' are characterised by a high turnover of rented properties, little movement in the owner-occupied market, falling values or negative equity amongst homeowners and a poor neighbourhood reputation. They are areas associated with high unemployment, high crime rates, vandalism, a poor physical environment, prevalent drug use, poor educational achievement and poor health. Housing related initiatives are improving the physical appearance and condition of the stock, demolishing unpopular property types or housing in areas of over supply, reshaping the range and type of residential properties, devising image management strategies for estates, rethinking management and allocation policies for public housing (and moving away for needs based allocations) and encouraging greater tenure and tenant mix.

'Anti-social behaviour' covers a wide range of behaviours from criminal activity and noise nuisance to neighbour disputes. Potential housing related initiatives are security upgrading for properties, changed letting policies and changed tenant contracts and, at a neighbourhood level, improved surveillance and creation of defensible space.

'Housing investment' covers that investment undertaken to tackle a wide range of issues ranging from poor stock condition, bad housing design to low demand. Housing investment programs are undertaken in conjunction with initiatives focussed on reducing unemployment and crime as part of regeneration measures aiming to make physical, environmental, social and economic changes. Most evidence is based on the impact of physical improvement although there is an emerging focus on management and wider issues.

'Housing management' covers initiatives such as localised management with estate-based offices, specialist staff as caretakers, neighbourhood warders, locally determined allocations, tenant management initiatives, multi-landlord initiatives.

Not all of these are likely to be relevant to the Australian environment but indicative findings are summarised below. The Cole and Reeves report provides references to the source evidence that underpins the conclusions drawn.

Low demand:

- It is unlikely that areas suffering from chronic low demand can be turned around using a single approach. Improving the appearance and condition of properties without also tackling social and economic issues, improving management or addressing the poor reputation of an area is unlikely to have a significant impact on a neighbourhood.
- Low demand is not so much a housing specific but increasingly a neighbourhood centred problem
- Low demand is not tenure specific
- There is little evidence to suggest that the increase in mixed tenure areas will bring about positive changes in patterns of social interaction and local networks

Anti-social behaviour:

- A balanced strategy between legal, design-led and management-led initiatives is usually more effective than a single strand approach.
- Coordination between different services, profession and agencies is needed
- Negative sanctions to exclude/evict 'difficult' tenants need to be balanced with positive measures to attract new households
- A localised service base can aid preventative work; flexibility is needed
- Intensive schemes are more effective than dispersed
- Initiatives to tackle anti-social behaviour risk displacing the problem to neighbouring areas

Housing investment at a neighbourhood level:

- There is extensive evidence that investment has limited impact on issues such as poverty and deprivation. The success of large housing investment programs may be dependent upon strong linkages to areas such as crime prevention and employment.
- Housing investment alone is unlikely to turn around estate decline. Integrated physical, management and social issue strategies are required.
- On-going resident involvement is critical at every stage of a housing investment program; both existing and potential residents need to be considered.

Housing management:

- Localised housing management initiatives (whilst important in a portfolio of measures to improve a neighbourhood) will have a limited impact in areas of serious decline or where there is local housing market failure

Kintrea and Atkinson (2001) provide a narrative review of the literature on social exclusion and neighbourhood effects. Whilst this does not provide a systematic account of what is and what is known about the importance of neighbourhood effects in contributing to social exclusion, it does

provide a useful complement to the Cole and Reeve review in that it provides an overview of the key issues, highlights the potential mechanisms that might contribute to observed outcomes and signals gaps in the current knowledge base. It also provides a critical assessment of the US based literature that has provided the core of the quantitative based evidence of neighbourhood effects.

Kintrea and Atkinson (*op cit*) begin by stressing that neighbourhood effects are not the most important source of neighbourhood inequalities. More significant sources of spatial inequalities and neighbourhood deprivation arise as a result of the combined operation of housing and labour markets. However, neighbourhood effects, defined as "the independent, separable effects on social and economic behaviour which arise from living in a particular neighbourhood", (Kintrea and Atkinson, *op cit*, p6) are important because of their potential to intensify these inequalities. Although lack of services is seen as the most obvious source of neighbourhood effects, it is the effects generated through social interaction that are seen as being the more important.

They also suggest the neighbourhood effects approach to understanding deprived areas is controversial because

- it is firmly based in a US context of origin
- it is associated with a discredited underclass thesis and
- it ignores the value of community solidarity arising from segregation

Kintrea and Atkinson (*op cit*) suggest that the neighbourhood effects approach is not a well developed body of theory but is better described by five main propositions; the first three of these relate to the conditions under which such effects exist and the final two to the mechanisms by which they can intensify social exclusion. These five propositions are:

1. The neighbourhood provides an important source of social contact through spatial proximity.
2. People tend to associate with those similar to themselves (a sorting process that is exaggerated by the physical isolation of poor areas, poor public transport and social homogeneity of residents).
3. Attitudes, beliefs and expectations converge in shared social worlds.
4. Isolation of the poor is reinforced by weak ties outside the local neighbourhood, by sustaining but constraining social capital, by a levelling down through peer group behaviour or role models and by stigma and discrimination associated with the neighbourhood.
5. Unconventional social norms (such as US ghetto behaviour) are adopted by those exposed to key elements of social exclusion (eg joblessness)

They argue "altogether, the propositions hold that these processes will have negative effects on people's life chances over and above any negative effects which are the result of individual or household inequalities such as education, age, ethnicity, and that they will tend to reinforce inequalities between neighbourhoods which are ultimately the result of labour and housing market forces." (Kintrea and Atkinson, *op cit*, p10).

The authors suggest that only one of these propositions - that relating to stigma and discrimination - has been extensively examined and that UK government sponsored research, such as that reviewed by Cole and Reeve, has tended to focus on program evaluation rather than processes. The studies that do exist are seen "to suffer from small scale and an absence of comparators or a longitudinal perspective so that it is difficult to understand what is peculiar or distinctive about deprived neighbourhoods" (Kintrea and Atkinson, *op cit*, p12) although some work is currently underway.

They conclude that, from an evidence-based policy perspective, it is premature to be discussing the implications of neighbourhood effects. On the basis of their five propositions, however, they outline the research agenda in Table 5.1 below.

Table 5.5: Neighbourhood effects - the research agenda

Proposition	Illustration of likely effects	Research agenda
1.	daily life confined to neighbourhood	examination of spatial patterns of daily activity
2.	association with friends and relatives in broadly similar economic situations	examination of patterns of social life
3.	common elements of beliefs etc	consideration of extent to which people in same neighbourhood hold similar views
4. (weak ties)	few contact with middle class and non-neighbourhood residents	assessment of extent and nature of social networks
4. (constraining social capital)	support for everyday tasks focussed on domestic activities	assessment of trust and reliance on friends and neighbours; nature of social support
4. (levelling down)	low aspirations; lack of self belief	assessment of expectations and attitudes to work, education etc
4. (stigma, discrimination)	barriers to employment access	examination of perception and experience of discrimination within and without neighbourhood
5.	acceptance of crime, teenage pregnancy, fraud etc as everyday behaviour	exploration of beliefs, values, tolerance of such behaviour

Source: Kintrea and Atkinson (2001)

Kintrea and Atkinson (op. cit) go on to argue that there are two ways of tackling social exclusion. The first is to widen the social base of deprived neighbourhoods in order to sponsor more inclusive patterns of social life. The second is to move deprived residents to more advantaged neighbourhoods. They see UK policy as reflecting the first of these. Much of the US policy discussed in section 5.4.1 reflects the second. They point to a number of elements of area based regeneration policies that might need reconsideration. They suggest area regeneration policies and development of new housing based on a principle of desegregation and the creation of mixed communities. They challenge the concentration of spending on social housing and other forms of improvement in deprived areas (as implied by the NDC approach). They suggest portable subsidies that allow recipients to choose where they live. They suggest deprived neighbourhoods should be made more 'permeable' for both residents and outsiders.

The implications Kintrea and Atkinson draw from their assessment of neighbourhood effects and social exclusion are controversial and in urgent need of an evidence base on which to assess their validity.

5.4.3 *The Neighbourhood Literature in Australia*

The previous sections in this Chapter have discussed the complexity that shapes the relationship between housing and neighbourhood effects, and how the outcomes of this relationship might contribute to social exclusion. Housing policy initiatives to renew and rebuild neighbourhoods can be seen as an appropriate response to social exclusion. The discussion in this section turns to the Australian experience of rebuilding community cohesion through neighbourhood regeneration/renewal.

Randolph and Judd (1999) point mainly to market and state effects for explanation of the increase of social polarisation in Australia. These effects over the last few decades arise from change in “global and local labour markets, the structures of welfare provision and support, related constraints on public expenditure across all public services and emerging demographic patterns” (p2). Hugman and Sotiri (2001) take a similar position but also include the direct neighbourhood effect where public housing communities and residents are stigmatised by non-residents.

Renewal programs to reverse this decline are often housing led initiatives, usually implemented by government in partnership with local businesses, community groups and residents. The chief aim of renewal is to reduce poverty and inequality by improving social and economic benefits to a community. This aim is achieved through both community and asset renewal with the improvement of neighbourhood quality. Measures include upgrading the quality of housing stock, streetscapes and public amenities (including better management of parkland and playgrounds); increasing access to services; providing education and training opportunities; and promoting health, well-being, community participation and pride. This broad sector approach indicates that effects at all levels (housing, neighbourhood, family and individual) need to be targeted and pursued for program success. Improvement of housing, therefore, is only one of many factors considered necessary to undertake neighbourhood renewal with the implication (discussed in the previous sections) that non-shelter outcomes that follow from housing changes are also the by-product of contemporaneous change in other relevant factors that shape these outcomes.

Whilst many renewal programs have been implemented across the States there is little empirical work that identifies the processes underlying renewal strategies. The main method of program assessment is either through cost/benefit analysis or evaluation of program objectives. Assessment is mainly concerned with identifying success against stated objectives, and implementation and management practices that facilitate renewal programs. This in itself is very important for ensuring program procedures do not contribute to poor outcomes, however without analysing underlying processes and establishing causality, outcomes remain associative. This is similar to the situation in the UK pointed out by Kintrea and Atkinson (2001) where program evaluation tends to ignore processes and report on outcomes only. Overall neighbourhood renewal evaluation has tended to provide qualitative assessment without methodological rigour (Randolph and Judd 2001). Consequently there are few program evaluations that qualify for inclusion in this review.

Stubbs and Storer (1996), nevertheless, is one frequently reported study that evaluates the Neighbourhood Improvement Program (NIP) initiated by the NSW Department of Housing in Airds, NSW. This program addresses problematic physical, social and management issues on large public housing estates with the aim of community ‘regeneration’ (Randolph and Judd 1999). Stubbs and Storer find that whilst poor urban design may exacerbate social problems it is not the cause and physical improvement of housing stock is unlikely on its own to reduce social problems. They conclude that large economic and social benefits can be had from a range of strategies through improved transport, job creation, homeownership, and reduction of crime and property turnover.

Spiller Gibbins Swan Pty Ltd (2000) make similar observations following 19 case studies of public housing estate renewal projects across Australia. Social dysfunction is linked to public housing estates regardless of the quality of the housing stock. For neighbourhood renewal to be successful it requires sustained funding and strong cross-sectoral partnerships in the service delivery of education and training.

Whilst these conclusions may be appropriate for cost/benefit program evaluation, barriers to success posed by dysfunctional social relations remained unexamined. Like the UK findings made by Cole and Reeve (2001) programs evaluations are likely to find a resource intense, multi-level approach is necessary to achieve successful neighbourhood renewal without providing an analysis of the continuing processes of social exclusion where renewal strategies fail.

The literature in which processes are most likely to be examined is that surrounding the concept of social capital.³⁸ Beer and Maude (2002) in their recent review of the literature on housing assistance and community development consider social exclusion and social capital powerful analytical concepts with strong relevance to public housing redevelopment strategies. They find the social capital potential of regional public housing communities remains an untapped resource. Membership of sports clubs, community meetings, and activities centred on child rearing can raise community norms of trust and reciprocity and act to transform social relationships within communities. Equally as important is the development of social structures that facilitate trust and reciprocity between communities and renewal service providers (Taylor 1998 in Beer and Maude 2002, p11).

Wood (2002) obtains similar findings in a study of resident participation in urban and community renewal. If local residents are engaged in renewal programs collective agency is encouraged, social capital is increased and program success more likely. Wood finds the demands of successful participation complex, and thus requires significant resources. Local views must be canvassed and identified, and residents must be involved in education and development of skills to facilitate interaction with renewal professionals, and participation in tenant and resource groups. These processes can lead to empowerment of a community but participation itself does not overcome the multiple problems faced by disadvantaged communities.

Strategies aimed at raising social capital levels include the 'social mix' approach where greater diversity in tenure types and income levels is thought to create the right 'neighbourhood effects' for increased community cohesion. The US equivalent of this strategy is the MTO demonstrations discussed elsewhere in this review. These programs attempt to reduce concentrations of public housing by relocating tenants to other neighbourhoods and refurbishing their vacant housing for sale in the private sector. Higher income residents are attracted and homeownership rates within the community are raised. This increase in neighbourhood heterogeneity is the means by which the remaining public housing tenants are able to reconnect to mainstream society. Arthurson (2003) explores the fundamental assumptions underlying this strategy in an empirical analysis of six case study estates in NSW, SA and QLD. Findings suggest breaking up and moving tenants away from existing supportive social networks can in fact reduce social capital levels. The alternative renewal approach of targeting social disadvantage in situ allows existing social capital levels to be developed and enhanced while access to stable, secure, and low cost housing is maintained (see also discussion of Briggs, 1998 in section 5.3.4 above where similar but more robust findings are reported from Yonkers, NY).

Beer and Maude (2002) conclude that the multiple reasons for social exclusion indicate community development must be the 'point of departure' for renewal programs. Refurbishment of housing stock, simple job creation and promotion of community without participation are short-term measures unlikely to provide lasting benefits to those residents who 'have low prospects for success' (p12).

Randolph (2000) perhaps best summarises this consistent finding of the need to address the multiple factors of disadvantage if community renewal is to be successful. He states: 'renewal must integrate physical renewal and asset management strategies and social and economic renewal strategies' (p 13). Communities are not rebuilt by achieving social mix and dispersing disadvantage elsewhere. Social capital initiatives cannot renew a community without job and skills training programs to improve economic outcomes.

³⁸ See section 5.3 of this review, which deals with the broad linkages between housing assistance and social capital outcomes.

Regeneration and renewal policy assumes communities and neighbourhoods are sites where effective social change can take place. While the evidence on community and neighbourhood effects remains unclear, and renewal assessments typically lack methodological rigour, it is impossible to be definitive about the ways in which housing assistance contributes to or ameliorates social exclusion. At best the evidence suggests public housing is associated with social disadvantage and not necessarily a cause. Public housing may facilitate the rebuilding of community cohesion and viability; however a much larger and robust evidence base is required to identify appropriate renewal strategies.

5.4.4 Research gaps

There are not many Australian evaluations of renewal programs that meet the inclusion criteria of this Systematic Review. The quality and focus of evaluation need to be improved, and an appropriate evaluation methodology established. It is not sufficient or appropriate to rely on cost/benefit analyses that may not capture or explain the qualitative issues necessary for successful neighbourhood renewal. Individual studies are currently too broad in their focus and aims thereby reducing the quality of their findings. Whilst it is important that evaluation of renewal projects continue, it is equally important that future empirical studies narrow the question of research to a specific issue within renewal projects so that studies might:

- Evaluate implementation and management practices of programs for ways in which these practices contribute to physical deterioration of housing stock, and reinforce social relations with and amongst tenants which result in human and social capital decline.
- Undertake research into the linkages between social capital and renewal projects i.e. are initial high social capital levels necessary for renewal projects to succeed, and/or is social capital raised by participation in renewal projects?
- Focus on the linkages between renewal and individual, rather than multiple, non-shelter outcomes.
- Report on factors necessary for successful cross-sectoral collaboration.
- Compare renewal projects for difference in types of physical and social renewal undertaken, with a view to identifying those dimensions of renewal which are successful.

5.5 Market effects

The possibility that the impact of housing policies would be capitalised into house prices (and rents) was raised above in relation to the impact of homeownership policies and neighbourhood effects. This section returns to the issues associated with the market effects of housing assistance policies but focuses more on those associated with housing assistance policies directed towards rental housing. Two key issues are covered below.

5.5.1 Capitalisation and Crowding-out

These issues relate to the capitalisation of demand-side housing assistance programs into rents and prices, and the crowding-out or displacement impacts of supply-side housing assistance programs. Because these are associated with externalities that have consequences for the economic well being of those affected, there is an indirect linkage between the market effects of housing assistance programs and non-shelter outcomes. For example, suppose that an urban rehabilitation program displaces low-income households, who subsequently fail to find alternative affordable housing opportunities. The negative externalities are borne by low-income households whose standard of living is adversely affected. To take another example, consider a grant program that aims to bridge potential first homebuyers' deposit gaps, and ease transition into homeownership. Suppose the grant program pushes up (is capitalised into) house prices, and some existing homeowners who wish to re-locate are disadvantaged, as well as ineligible tenants who aspire to homeownership. These two groups of households standard of living is adversely affected as a result of a negative externality directly attributable to the market effects of this housing assistance program. An understanding of the market effects of housing assistance programs, and their quantitative significance, is thus critical to an appreciation of the economy-

wide consequences for standards of living. Numerous studies have attempted to isolate the market effects of different types of housing assistance programs.

In evaluating the market impact of housing assistance provided to low-income households, two broad areas of concern have emerged. In relation to tenant based assistance, or demand side assistance, questions of whether the assistance has enabled recipients to locate in more desirable neighbourhoods than would otherwise be the case and what the impact of their choices has been on their neighbourhoods of choice has been a key focus of concern in the predominantly US based literature and particularly that evaluating the mobility programs implicit in the MTO demonstration projects. The most common way of examining these market effects has been via an examination of the impact that the assistance in question has on property values in related housing markets. As indicated in the previous section, one of the major methodological problems has been a failure of studies to take into account the relative size of the program being implemented or to effectively identify market impacts due to factors other than the housing assistance program.

In relation to project based assistance or supply side assistance, the principal concern is with whether such assistance generates an increase in the supply of housing or merely crowds out housing that would have been provided in the absence of any assistance. The more sophisticated of these analyses recognise the existence of sub-markets and explicitly identify the impact of assistance on the low-cost end of the housing market.

Well-established theories suggest that the market impact of housing assistance will depend on two main factors. On the demand side, it will depend on the extent to which the assistance generates an increase in housing consumption. On the supply side, it will depend on the underlying elasticity of supply in the relevant sub-market.

Olsen (2001) recently completed a review of some 75 studies that examined the impact of housing subsidies provided to low-income households.³⁹ Many of these date back to the early 1970s and to the experimental housing allowance schemes of that time.⁴⁰ Relatively few of the studies he reviews are current. On the basis of evidence reviewed (from 17 studies between 1971 to 1986), he finds that all housing programs result in substantially improved housing for the recipients of the assistance provided with the percentage increase tending to be greater for construction programs in their early years when dwellings are new.⁴¹

The evidence from this early literature on the experimental housing allowance program suggested that there was relatively little upward pressure or market impact on rents as a result of the observed increase in housing consumption from those who participated. In part this was attributed to the fact that take up rates were relatively low, many of those who participated were already in adequate standard housing and did not have to move, and the program ran for only a limited length of time. There is some evidence, however, of tangible external effects as reflected in changed values for neighbouring properties.

Olsen, however, reports that no study finds substantial positive external effects for any program: there are small positive effects for some programs and small negative effects for others. Many of these studies, however, fail to take into account a number of critical factors that are likely to affect

³⁹ Olsen's view is that housing assistance to low income households is warranted only if it encourages recipients to occupy better housing than they would if provided with a cash grant with no strings attached or if there are significant externalities associated with increased housing consumption by low income households. This presumes either that low-income households under-value housing or that market imperfections prevent them from gaining access to appropriate housing.

⁴⁰ Olsen reports this experiment cost \$500m and of this more than half was accounted for by research and data collection. Over 300 reports were produced as a part of the evaluation of this program. This provides an indication of the importance place on policy evaluation in many US based programs.

⁴¹ He also concludes "almost all housing programs at almost all times have also increased the consumption of other goods by participants." (*op cit* p37) From the evidence collected he concludes that the percentage increase in the consumption of other goods is less than the percentage increase in housing consumption in public housing and that the opposite is true for tenant based certificates. This point will be returned to below.

the market impacts of housing assistance programs. A more sophisticated analysis undertaken by Galster, Talian and Smith (1999) suggests that the differences in outcomes depend on the specific contexts or location of the programs being evaluated. Susin (2002), in a study which examines impacts at a low-middle-high sub-market level of disaggregation, suggests that rent assistance provided through vouchers has increased rent levels by up to 16 percent in the low income housing market as a result of a low elasticity of supply of low income housing.

Galster *et al* (1999) highlight issues of endogeneity in their literature review of the impact of housing assistance policies on property values. Their study was motivated by a concern with the impact of mobility strategies such as in the MTO program in the US. Their study showed that there was a tendency for assisted, or subsidised, tenants, to locate in less desirable, weaker sub-markets. They were concerned with the possibility that this might be seen as creating a potential backlash if an increase in the number of assisted tenants is seen to erode the quality of life in the neighbourhood. To determine whether or not this is the case requires determination of causality. It is not clear whether low-income neighbourhoods result from an increase in the number of assisted households or whether assisted households are attracted to low-income households because that is all that is affordable. In their relatively more sophisticated analysis (which examines house prices before and after subsidised tenants moved into a specific location and so addresses this issue of causality) they were unable to distinguish between a number of alternative and opposing hypotheses regarding the direction of causality and the rationale for this. One of the key methodological issues that arises from their analysis is that results can be affected by the proportion of subsidised tenants in the neighbourhood. Thus, studies that ignore this are likely to yield misleading results.

In general, the literature on the market effects of demand side impacts of housing assistance remains unresolved, but there is some indication that tenant based assistance will result in an upward pressure on market rents.

The evidence on the impact of supply side assistance is equally problematic and, as with the literature reviewed above, there are few studies that unequivocally meet high-level inclusion standards in relation to methodology. The issues that have been addressed in the US literature on supply side assistance have dealt with the market impact of public housing construction and of private construction undertaken as a result of tax credit incentives although there is also a sparse literature on the impact of urban renewal construction programs.

Supply side interventions, such as direct provision of public housing or tax incentives to encourage provision of private housing have the potential to have a different impact from demand side interventions. A number of studies have attempted to identify these effects. One of the key concerns has been whether such supply side assistance increases the net stock of housing or whether it simply displaces private construction that would have taken place in any case.

In comparing the market impacts of public housing that is targeted on low income households with subsidised private housing for moderate income households, Murray (1999) concludes that the former adds to the overall stock of housing whereas the latter crowds out unsubsidised privately provided housing. The underlying mechanism hypothesised for this outcome is that the former, which provides dwellings predominantly for single parents and elderly persons, enables these low income tenants to form separate households and, in so doing reduces crowding pressures in the private market. Subsidised housing for moderate-income households, on the other hand, is targeted to already existing households. Thus, this again raises the possibility that housing assistance and household formation are interdependent⁴².

This more recent analysis undertaken by Murray is of particular interest because it repeats work done by the same author some 15 years earlier (Murray 1983). That early study, which failed to recognise the relevance of distinct sub-markets in the housing system, concluded that all publicly assisted production crowded out private construction. This more recent analysis is based on a more sophisticated model of the housing market, which does explicitly incorporate sub-markets. Critics of his approach, however, have suggested that his statistical method raises some

⁴² See Wood, Watson and Flatau (2003) for evidence on First Home Owners' Grants and household formation.

difficulties. Both Malpezzi and Vandell (2002) and Sinai and Waldfoegel (2002) adopt instead a cross section equilibrium approach. Sinai and Waldfoegel suggest that, contrary to prior expectations, demand side programs are more effective than supply side programs in creating new additions to the stock and suggest that the strength of their result depends on the extent of excess demand from low-income households in the locality in which the impact of the assistance is felt. However, they also suggest that their attempts to control for endogeneity were, in their words, "less than successful". Malpezzi and Vandell are unable to reject either the hypothesis that there is 100% crowding out, or that there is 0% crowding out associated with use of the low income tax credit to stimulate housing production. Neither of these two studies recognise Murray's distinction between low and moderate income housing sub-markets.

DiPasquale (1999) addresses the question of why we don't know more about housing supply in her critical review of the literature on the impact of housing assistance on housing supply. She is particularly concerned with that literature that compares the impact of assistance provided through direct expenditures, with that provided by tax credits to private producers. She suggests there is support for the claim that production subsidies targeted at housing for other than low-income households tend to displace private construction, and results in no increase in stock. Housing assistance for low-income households provided through public housing, however, tends to increase the overall stock of housing. This is attributed to the additional demand that is created from single parents and elderly households who, in the absence of an affordable housing option, would double up with other households, and from low-income households unable to afford market rents who are also a source of latent or unmet demand. Whilst her conclusion about assistance provided for housing for moderate income earners is based on an assessment of the tax credits available to private producers in the US, it is possible that the results are equally applicable for assistance such as that provided by the first homeowners grant for new housing in Australia.

None of the studies concerned with the impact of rental housing assistance provided for rental housing has explicitly considered the effects on market price. Briggs *et al* (1999), on the other hand, in a study limited to Yonkers alone, do examine the impact of scattered site public housing on neighbouring property values and show that this has no detectable price effect. From their review of 14 related research studies they conclude their result is consistent with the results from earlier studies: there is no evidence of a consistent price effect. They also suggest that this earlier research suggests that a number of contextual factors are important: These are described as political, housing and occupancy factors. Political factors refer to whether the implementation of the public housing program was supported by public officials; housing factors refer to whether it was situated in lower or higher value areas and whether the housing was well designed and managed, and occupancy factors relate to the extent of the differentials in socio-economic characteristics of in-movers and neighbours, and to the extent of concentration of problem tenants.

A number of studies have been concerned with the impact of indirect housing assistance provided to homeownership through the tax system, although the most quoted of these (Rosen 1979) is now several decades old and reflects a structure of assistance no longer in place. In his seminal paper on this topic, Rosen estimated that both homeownership rates and dwelling prices were higher than they would otherwise have been in the absence of the assistance provided to homeownership through the tax system.⁴³ These results have been confirmed by later studies and have been updated by Green and Vandell (1999) and Capozza *et al* (1997) who suggest that tax expenditures less generous than those that exist in Australia have increased US house prices by up to 15 per cent in high house price areas⁴⁴. Bourassa and Hendershott (1992, 1995) provide supporting evidence for Australia.

⁴³ Consideration of the non-shelter impacts arising from assistance provided to homeownership will be covered below.

⁴⁴ Green and Vandell (1999) show that a revenue neutral redistribution of tax expenditures associated with mortgage interest deduction in the US would increase house values by 10.4 per cent for low-income households. Capozza *et al* (1997) impose variations in taxes across regions in the US on a formal asset price model that takes into account variations in supply elasticities. They estimate that a .03 decrease in the average marginal federal tax rate would result in an overall decrease in real house prices by 5.5 per cent, with declines of up to 12.5 per cent in high price regions.

In a formal theoretical framework, Voith (1999a) suggests they may have contributed to greater lot sizes and hence to suburban sprawl. Voith (1999b) and Voith and Gyourko (1998) suggest they create incentives for communities to enact exclusionary zoning, which contributes to geographic sorting of households by income. These effects depend on the extent to which subsidies are capitalised into land and house prices and this, in turn, depends on the relevant supply elasticities. In the Australian context, Ellis and Andrews (2001) have argued that the degree of urbanisation in Australia, with an "unusual concentration of Australia's population in two large cities", contributes to these pressures. This conceptual work, however, has yet to be empirically tested.

As Dietz and Haurin (2002) indicate in their systematic review of the literature on the impacts of homeownership assistance on non-shelter outcomes, the literature provides considerable conjectures as to the possibility that homeownership contributes to urban sprawl but no direct empirical evidence.

In relation to current US initiatives Lee, Culhane and Wachter (1999) provide evidence that suggests homeownership programs or rehabilitation programs likewise place an upward pressure on house prices - in this case because of the increased quality of the newly constructed units and because of positive neighbourhood externalities that arise from their production. As with much of the literature discussed above, however, this study does not provide a reliable benchmark against which the impact of the program under review can be assessed and the results must be treated with some caution.

5.5.2 Findings

The above overview suggests there are a number of findings from the literature concerned with market effects:

- The impact of demand side housing assistance on rents remains unresolved, but there is some indication that tenant based assistance will result in an upward pressure on market rents.
- There is support for the claim that production subsidies targeted at housing for other than low-income households tend to displace private construction, and results in no increase in stock.
- Housing assistance for low-income households provided through public housing tends to increase the overall stock of housing.
- Both homeownership rates and dwelling prices are higher than they would otherwise have been in the absence of the assistance provided to homeownership through the tax system
- The literature provides considerable conjectures as to the possibility that homeownership contributes to urban sprawl but no direct empirical evidence.

5.5.3 Research gaps

The main point to be made from this exploratory diversion is that there is a well-developed literature that provides a sufficiently strong framework to support the indicative but limited empirical results that have been identified to date. More research is needed to determine the impacts of housing assistance on housing markets and on urban form, and this is particularly so in Australia. This is critical in relation to the impact that housing markets have on the spatial sorting of households and on the resultant segregation of households and, therefore on the whole range of non-shelter outcomes discussed in this report via the neighbourhood effects discussed above.

Market effects are generally presumed to arise whenever the program in question serves to increase housing consumption and housing demand. For many low-income households, however, any housing assistance provided simply serves to increase the household's capacity to

Removal of the property tax exemption would reduce overall house prices by 4.7 per cent with declines of up to 15 per cent in high cost regions.

meet non-housing consumption. As such, of course, it can serve to increase well-being. These factors are considered below in section 5.7.

5.6 Tenure effects

5.6.1 Introduction

Because the main focus of this review has been on direct housing assistance, the significant levels of assistance provided to homeownership through the tax system has been excluded from consideration. A recent AHURI study by Yates (2003), however, provides estimates of this assistance, which suggests that the indirect assistance provided to homeowners through the income tax system outweighs that provided to renters through budget outlays by a factor of 10. The distributional analysis undertaken by Yates also suggests that, unlike the housing assistance provided to renters, the housing assistance provided to owners is poorly targeted, providing the greatest assistance to those who are least in need of it. The literature reviewed in the section above suggests that this assistance is capitalised into house prices and, therefore, is likely to have perverse affordability and related impacts on those excluded from homeownership.

This penultimate section of chapter 5 provides a brief indication of the potential non-shelter outcomes of the housing assistance that is targeted to homeowners rather than to renters. The final section examines the dynamic consequences of the impacts of the types of HA policies reviewed in all sections. Because these latter sections are outside of the requirements of this report, much of the material presented relies on critical reviews undertaken elsewhere rather than presenting result from primary research. These sections in particular should be seen as providing an indicative rather than a systematic review of the literature.

The non-shelter impacts of homeownership have been covered in two outstanding reports commissioned by the Research Institute for Housing America. Rohe *et al* (2000) cover social outcomes; McCarthy *et al* (2001) cover economic outcomes. Together these reports summarise, respectively, 60 and 96 relevant English language studies, emanating primarily from the US but a number of UK and European studies are also included as is just one from Australia. Whilst these reports do not explicitly identify the criteria employed in determining whether or not a study was to be included in the review, the results of the studies that are included are examined critically. A complementary paper by Dietz and Haurin (2002), covering some 240 studies, provides independent support for the conclusions drawn.

5.6.2 Social impact of homeownership

Rohe *et al.* provide a summary table that summarises various attributes of homeownership and indicates the positive and negative social outcomes that can arise as a result of these attributes. This is reproduced below as Table 5.. This comprehensive review covers evidence on a range of social impacts at both an individual (covering satisfaction, psychological health and physical health) and at a societal (covering neighbourhood stability, civic involvement and socially desirable) level. For each impact considered, there is also an overview of the theory that underpins the observed outcomes and an indication of the mechanisms that bring about the observed outcome.⁴⁵

Home ownership is seen as contributing to both life and residential satisfaction as a rite of passage symbolising achievement of a certain economic status, through the satisfaction it affords those who maintain and improve their homes; the freedom of choice and control over living space this reflects; and through the ability owners have to customise their dwellings to suit their own tastes. In terms of life and residential satisfaction, Rohe *et al* (*op cit*) suggest the limited research evidence tends to support a positive association with these outcomes and homeownership. Their overall assessment in relation to this is as follows: "Although there is not a great need for additional research on this topic, future studies might delve deeper into the specific explanations for why homeowners are more satisfied. At this point, the basic relationship is well established, but we are still inferring the reasons for this relationship. A comparison of different types of ownership, such as condominium, cooperative, community land trust, and fee simple, may

⁴⁵ Studies of civic involvement are reviewed in section 5.3 above, and are not tackled below.

provide additional insights on this issue. Each of those types of ownership confers a different set of benefits, and those differences may result in differing levels of satisfaction." (Rohe, *et al*, *op cit* p11).

The mechanisms by which homeownership affect psychological health are similar to those indicated above in relation to satisfaction. They are associated with the control ownership affords and the esteem that arises from the social status associated with homeownership. These mechanisms, however, can result in negative outcomes for those unable to cope with the financial pressures of ownership. In terms of psychological health Rohe *et al* suggest that the evidence is scant and far from conclusive but supports the idea that homeownership may contribute to a person's self-esteem. Their overall assessment is as follows: 'Clearly there is need for additional research on the impacts of homeownership on self-esteem and perceived control. The research conducted to date suffers from a variety of methodological problems including small sample sizes, a lack of adequate controls for possible confounding influences, inadequately developed measures and social expectancy bias. Assuming there really is a positive association between homeownership and psychological health, we also need to know much more about the process involved and the specific circumstances under which this relationship will hold.' (Rohe *et al*, *op cit*, p15)

Table 5.6: Potential Impact of Homeownership

Potential Positive Impacts	Attribute of Homeownership	Potential Positive Impacts
Neighbourhood stability	Higher transaction costs	Decreased residential mobility
Civic involvement Desirable social behaviour	Exchange and use value	Exclusionary efforts
Improved psychological health	Greater control over property	Decreased psychological health
Improved residential satisfaction	Financial stake	Residential dissatisfaction
Improved life satisfaction	Lower costs for comparable quality	Dissatisfaction
Improved physical health	Loan qualification and sale process	Deleterious physical health

Source: Rohe *et al* (2000, p7)

The main factors affecting physical health are housing condition and location (or surrounding neighbourhoods) rather than homeownership, and the high correlation between homeownership and these confounding influences make it difficult to separately identify the impact of homeownership *per se*. However, in theory, homeownership can impact upon physical health by providing a level of security that contributes to wellbeing and through this to physical health. Rohe *et al*'s (*op cit*, p18) overall assessment is as follows: "The weight of the limited evidence on the relationship between homeownership and health suggests a positive association between homeownership and health, as long as the household is current on its mortgage payments. The existing studies, however, do not adequately control for potentially confounding variables

including socioeconomic status, and housing and neighborhood conditions. Thus, it seems premature to conclude that there is a causal relationship between homeownership and health."

Existing research does not adequately identify the mechanisms through which ownership affects health with the result that the precise target for intervention is not clearly indicated. If, for example, homeowners are not exposed to health-threatening physical conditions because they tend to live in higher quality units, a more aggressive enforcement of building codes or other means of improving the condition of rental properties might address this problem as effectively as homeownership policies. Likewise, if homeownership affects health by providing owners with greater psychological security as long as they can meet their mortgage payments, more attention to ensuring that homeownership is, in fact, a secure tenure will contribute to healthy outcomes.⁴⁶ Rohe *et al* suggest more research is needed to better isolate the independent impacts of owning and to better identify the mechanisms through which ownership affects health.

The above has focussed on the impact of homeownership on the individual. Home ownership, however, can also have broader impacts such as discussed earlier in this chapter in relation to social capital. Home ownership is seen as contributing to society by providing greater social stability, social involvement and socially desirable behaviour among youth and adults and, as discussed in the section on market values above, to contribute to local property values through the greater maintenance of and investment in property undertaken by homeowners.

Societal effects of homeownership operate in part through the neighbourhood stability that arises because of the greater length of tenure of homeowners vis a vis renters. This, in turn, arises because of their lower mobility and from the transaction costs associated with ownership. As with so many of the factors affecting non-shelter outcomes, the question of simultaneity arises here. The same factors that determine mobility are likely to be the factors that determine homeownership and identification of the mechanism through which homeownership affects neighbourhood stability is likely to be problematic (see also footnote 25, section 5.3.3). Rohe *et al*, however, point to two potential mechanisms. These relate to the higher human capital associated both with the characteristics of homeowners and with the improved education outcomes associated with residential stability and to the economic benefits associated with homeownership.

Much of the evidence of the relationship between homeownership and neighbourhood stability was reviewed above in relation to the confounding effects that neighbourhood has on identify causal pathways. High homeownership levels have been reliably and independently associated with neighbourhood stability, and low homeownership levels have been empirically correlated with high levels of social problems in studies that have taken into account the fact that these outcomes are also affected by the same characteristics that are associated with homeownership rates. However, Rohe *et al* also point out that a growing body of literature suggests that homeownership can trap households in distressed neighbourhoods. Their overall assessment is as follows: "Although the relationship between homeownership and mobility is straightforward and well documented, the impacts of decreased mobility, caused by homeownership or other structural impediments, are not so well established. The tension between individual mobility and group stability remains unresolved within housing policy. While homeownership has been shown to improve neighborhood stability, thus conferring certain benefits to the individual, at the same time it restricts individual mobility, which in certain instances may stunt the individual or household's ability to escape a neighborhood of poor quality and move to better one. Although facilitating homeownership among disadvantaged groups may enable them to escape distressed neighborhoods, it may also lead to the entrapment of such households in declining neighborhoods, thus perpetuating rather than improving the problems associated with such neighborhoods." (Rohe *et al*, *op cit*, p 23). They conclude that further research is needed to establish the conditions under which homeownership traps households in such neighbourhoods.

⁴⁶ A systematic review currently being undertaken by Baldwin *et al* (2002) at the University of York will provide additional evidence on the efficacy of such policies.

5.6.3 Economic impacts of homeownership

The same three authors have undertaken a companion piece to the study summarised in section 5.6.2. McCarthy, van Zandt and Rohe (2001) review the literature on the economic rather than social impacts of homeownership. At the individual or household level, they cover literature on what they call the housing and financial security provided by homeownership and, at the societal level, they cover literature on the impact that homeownership has on the national economy and on the efficient operation of markets. This literature on this is considerably sparser than the behavioral literature that attempts to determine what factors determine homeownership. Because many of the results obtained depend on institutional environments that hold within the US, only a brief summary of them will be provided here.

From the point of view of housing security, McCarthy *et al* suggest "homeownership makes a lot of sense. For essentially the same price per room or square foot as renting, an owner-occupier can live in a better dwelling and have the added security of knowing that his or her mortgage cost burden will diminish over time. Renters can usually look forward to rent increases and the uncertainty that their dwellings will be sold out from under them." (McCarthy *et al*, *op cit*, p17) Based on evidence for the US, they suggest the tax system is such that the cost savings can be substantial for those who own rather than rent similar housing, but that much of the cost savings, is depleted by transaction costs, maintenance costs, and other costs. For Australia, Yates (2003) shows that tax benefits accrue when households are older rather than younger.

Whilst higher maintenance costs than those incurred by renters help to preserve a home's investment value, and keep it from filtering down into lower-price sub-markets, they do tend to rise at an increasing rate with the age of a dwelling. Owners who buy older dwellings run the risk of substantially increased maintenance costs. In the US at least, it is lower and moderate-income households who are significantly more likely to bear these higher expected maintenance burdens, and who are therefore also more likely to experience large unanticipated maintenance expenditures. This increases the uncertainty associated with the financial benefits of homeownership for these households.

In examining the literature on financial security, McCarthy *et al* (*op cit*) suggest that homeownership provides better financial security because homeowners have better access to capital than renters (both in the form of secured debt in the form of mortgages and unsecured debt in the form of credit cards or consumer loans). Such access provides owners with more financial flexibility in covering large expenses but has a downside in that it brings with it an associated higher default risk. In examining the literature on the role of housing in asset accumulation, the effect that homeownership has on savings behaviour, the patterns of house price appreciation, the access to credit available to homeowners and the default risk associated with homeownership, McCarthy *et al* (*op cit*) draw the following conclusions from the evidence reviewed.

"Through homeownership, most homeowners can increase their wealth. For homeowners, housing equity accounts for almost half of all household wealth. At first blush, homeownership appears to bring financial security for families as an added benefit to the housing security established above. However, the financial benefits of homeownership do not accrue evenly to homeowners in all income brackets. In sum, it appears that homeownership offers much better financial security for wealthy owners than for low- and moderate-income and minority owners. Several factors contribute to the lower financial security offered to these households:

- Lower-income households accumulate lower-than-average non-housing savings.
- Lower-income and minority households hold more housing than is optimal in wealth portfolios, exposing them to higher risk.
- Lower-income households borrow more against their equity and more expensively than higher-income households, eroding the wealth accumulated through house price appreciation.
- Houses in low- and moderate-income tracts have more volatile and generally lower price appreciation than in middle and upper-income tracts.

On average, homeowners do not tend to save more - in excess of the wealth associated with housing equity - than renters. As house prices increase, however, homeowners show higher-than-average accumulation of savings. This suggests that low and moderate-income households save at a lower-than-average rate. If this is true, these households will have lower cash reserves to help them weather an interruption in income or unforeseen expenses related to higher maintenance costs.

Because the housing purchase decision involves both consumption and investment concerns, most homeowners invest in more housing than is optimal. While optimal portfolio allocations indicate that 10 percent of wealth holdings should be devoted to housing investment, the average homeowner holds more than 40 percent of net worth in housing. Low-income and minority homeowners are particularly over invested - holding more than 60 percent of their assets in housing.

Housing is a relatively good investment. It brings a return that is lower than riskier stock market investments and higher than lower-risk bonds and bills. However, housing is characterized by a higher probability of extreme events. These extreme events seem to be associated with regional economic decline. Low-income and minority homeowners also experience higher volatility of returns on housing, even in good housing markets.

Households balance the risk of high housing investment by holding lower-risk instruments in the balance of their portfolios. Even so, the risk profile of households has increased over the last two decades, spurred by increased access to housing equity through second mortgages and HELs⁴⁷, as well as the built-in incentive of federal tax policy.

The higher risk and lower and less certain returns on housing investment for these households put them at greater risk of foreclosure and its associated economic impacts. The linkages between housing and labor markets increase the probability that local job losses will be coupled with house price declines. If lower-income or minority households are more likely to suffer job loss, and if house prices in low-priced markets are more sensitive to employment-related cycles, then affordable lending efforts might be exposing these households to higher default risk.

Homeowners have better access to credit. Although proponents identify access to home equity as a way to help pay for college tuition or medical bills, only 6 percent of HELs are used this way. The majority of HELs finance consumption expenditure or substitute housing debt for other debt. Indeed, the increased risk exposure of households has been linked to the rapidly increasing foreclosure rates of the 1990s." (McCarthy *et al*, *op cit*, p32). Dietz and Haurin's (2002) independent review of the same literature reinforces much of that reported above. There is substantial evidence that homeownership has important effects on some household behaviours and outcomes but much of literature on which these conclusions are based is deficient both theoretically and statistically. There is good evidence that young households distort life cycle consumption to save for down payment; but ambiguous results about impact of variation in house prices on this relationship. There is no consensus as to whether house prices rise at the same rate across income and ethnic groups.

In their view the evidence about effects of homeownership on residential mobility is convincing (attributed to higher transaction costs) as is the evidence that transaction taxes do reduce mobility. The evidence on homeownership and unemployment (due to reduced mobility), however, is sensitive to chosen methods of estimation and control variables. That on female participation (attributed to a financial need to pay off a mortgage) is not definitive and causality is not clear. The issue of whether homeowners maintain properties better is unresolved and results can depend on whether neighbours' behaviour is taken into account.

As with social impacts, the economic impacts of homeownership can also be observed at a societal or economy wide level as well as at the individual level examined above. Much of the discussion in McCarthy *et al* relates to the impact of housing on the economy rather than to the impact of homeownership. They suggest attempts to quantify the societal impacts of homeownership are rare and evidence is highly conjectural. Their overall assessment is as

⁴⁷ Home Equity Line of credit

follows: "Research on the macroeconomic importance of housing and homeownership is seriously underdeveloped. Nevertheless, it gets significant attention from policymakers and industry stakeholders. For example, the unsubstantiated claim made in Clinton's National Homeownership Strategy that the employment multiplier is 2.1 construction jobs for each new home built almost certainly is not a net figure—accounting for the employment necessary to produce alternative rental housing. Similarly, because housing starts are a leading indicator of economic activity does not mean that increases in housing starts *make* the economy improve." (McCarthy *et al.*, *op cit*, p39).

An attempt to estimate the role housing plays in relation to Australian economic growth is presented in Wood (1988). His estimates imply that, if anything, housing has a positive impact on long run growth rates. Bourassa and Hendershott (1992) explore how tax favored housing investment may crowd-out private investment in other sectors to the detriment of Australian economic performance. Since these studies, there have been few attempts to explore the macroeconomic impact of housing in Australia.⁴⁸

5.6.4 Research gaps

At the conclusion of their literature review of the social impact of homeownership, Rohe, van Zandt and McCarthy (2000) provide both general and specific recommendations on the future of homeownership research. A number of the general recommendations at least raise similar issues to those raised in earlier sections of this chapter. Most of these are relevant to all research on the non-shelter outcomes of any form of housing assistance. Some of the key factors are revisited in the concluding chapter of this review. At a general level, Rohe, McCarthy and van Zandt recommend:

- Future research needs to do a better job of addressing the self-selection bias inherent in almost all the research on the impacts of homeownership.

Self-selection of households into homeownership or rental housing raises significant questions about the validity of much of the research done on the impacts of tenure on non-shelter outcomes. If this is not addressed explicitly, it is impossible to determine the causal direction of any relationships found. The most effective way of addressing this is through randomized control experiments. However, there are also statistical techniques available that enable self-selection to be taken into account in more readily available data.⁴⁹ Longitudinal studies can also be used to address the self-selection problem, particularly if they include comparison groups. The time sequences available in such data help in establishing causality.

- Future research needs to do a better job controlling for potentially confounding variables.

A number of these variables have been identified in the work reviewed in this chapter.

- Future research needs to do a better job identifying the processes or mechanisms *though which homeownership influences the various social variables of interest*

Future research also needs to go beyond inferring these processes to actually testing them.

- Future research needs to do a better job of identifying the circumstances under which ownership leads to both positive and negative outcomes.

A number of outcomes are likely to be contingent on other factors such as whether house prices increase or income remains adequate to meet mortgage payments. These factors operate as confounding factors similar to those discussed above.

Rohe *et al* (2000) also recommend a number of topics that are specific to homeownership policies that are also in need of further research. These include:

- The social and economic impacts of mortgage delinquency and default.

⁴⁸ There has been a recent revival of interest at the Reserve Bank of Australia.

⁴⁹ Rohe *et al* point specifically to two-stage modeling techniques.

By implication, this includes an evaluation of the role and need for mortgage protection insurance for marginal homebuyers.

- Differences in the benefits and costs of homeownership between low- and moderate-income homeowners and middle- and upper-income homeowners.

Awareness that the impact of any particular policy (such as promotion of homeownership) may not have the same impact on different households is critical to assessing its efficacy.

- The impact of homeownership on perceived control

The degree of control over their lives that homeownership accords owners, and particularly the benefits of security of tenure, is said to contribute to many of the observed non-shelter outcomes discussed above.

- The impact of homeownership on health

This is a specific example of the more general recommendation above. Rohe *et al* (*op cit*) suggest that too many studies fail to determine whether positive health outcomes can be attributed to the size, quality, location or tenure of housing and that, as a result, there is inadequate information known about the causal mechanisms between homeownership and health.

The above research gaps have all been related to the social impact of tenure in general and homeownership in particular. There are as many gaps that relate to the economic impacts of tenure.

As a result of their review of the literature on the economic benefits of homeownership, McCarthy *et al* (*op cit*) make the following general and specific recommendations regarding research gaps.

- Future research needs to do a better job of establishing the conditions under which housing is a good investment.

Most of the existing research on the impacts of homeownership fails to recognize that the homeownership experience may not be the same for all types of homebuyers or for those who buy in different neighborhoods or housing markets. Rather, it looks at the average experience of homeowners. The impacts of homeownership may depend on the characteristics of the neighborhood in which a home is bought. In a soft market the residential mobility of homeowners may be restricted as they may have difficulty selling their homes.

- Future research needs to determine methods for preserving homeownership rather than just expanding it.
- Future research needs to develop a better understanding of market dynamics.
- Future research needs to do a better job of identifying the mechanisms through which homeownership influences the various economic variables of interest

At a more specific level, they also recommend that future research also needs to focus on

- Differences in the benefits and costs of homeownership between low- and moderate-income homeowners and middle- and upper-income homeowners.
- House price depreciation.
- Maintenance performance of owners and price appreciation.
- The economic impacts of mortgage delinquency and default.
- Measuring the macroeconomic importance and impact of the housing sector.

In their view, the macroeconomics of homeownership and housing markets is, as yet, an undeveloped area of the literature. They suggest it will not be possible to address policy questions adequately until it is possible to measure and compare the relative costs and benefits of homeownership for the economy as a whole.

5.7 Income and wealth effects

5.7.1 Introduction

The literature reviewed in this chapter suggests that housing assistance can make a considerable difference to the well being of households, and, in particular to the well being of low-income households. This final section examines the contribution it makes to well being both because of the impact it has on the capacity of these households to meet other costs and because of the key role played by homeownership in a household's wealth portfolio. Housing costs for low-income households generally are the largest component of household budgets. The non-discretionary nature of this expenditure for those who have already moved to the cheapest dwellings in the cheapest locations means that often too little income is left for the other essentials of life. Home ownership enables many older low-income households to enjoy a standard of living far greater than their renter counterparts.

5.7.2 Housing assistance and poverty

Numerous studies in Australia have documented the impact of housing on poverty and, in many ways, the literature in Australia in this area is as good or better than much of that elsewhere. Good recent examples using a variety of different measures and approaches can be found in Burke and Ralston (2003), Wood *et al* (2003, forthcoming), Flatau and Wood (2000), Harding and Szukalska (2000), Karmel (1998), King (1998), and Landt and Brady (1997). The differences between these, and the controversies that they have engendered, highlight the importance of maintaining a broad based input into such research.⁵⁰ An excellent account and overview of the issues associated with the different measures employed can be found in King (1994). Whilst the details of the outcomes differ between these studies, and considerable caution needs to be applied when aggregating results over different tenures, over types of households at different stages in their life cycle and located in different regions, there are several consistent findings irrespective of the measures employed. The housing assistance provided to public tenants reduces the extent of poverty after housing compared with poverty before housing. Home ownership protects older households from after housing poverty. Rent assistance alleviates after housing poverty but the greatest incidence of such poverty is found amongst low-income private renters.

These results raise the first of the two key non-shelter outcomes to be discussed in this section. The first relates to the impact that housing assistance has on poverty. The second, to be discussed below, relates to the impact it has on wealth. Each of these has the capacity to contribute to a process of cumulative advantage and disadvantage.

Whilst housing affordability as a specific shelter outcome of housing assistance, is outside the range of this systematic review of non-shelter outcomes, the complement of housing affordability - that is the affordability of non-housing expenditures - is a relevant non-shelter outcome that, in part, can be a contributing factor to some of the outcomes discussed in earlier chapters, and in the earlier sections in this chapter. After housing poverty, for example, may be a factor that contributes negatively to children's educational outcomes over and above any effect associated with low income when housing affordability problems place pressure on non-housing budgets. The housing costs that contribute to this are one of the key variables that contribute to, and constrain, the location choices of many households with the result that the neighbourhood effects discussed above can be a direct outcome of the consequences of any assistance provided for housing. Based on his review of relevant US based literature, Olsen (2001) concludes there is considerable and consistent evidence to suggest that housing assistance has resulted in an increase in consumption of goods other than housing for all housing programs.

Recent work undertaken for AHURI by Burke and Ralston (2003) has used data from the 1998-99 Household Expenditure Survey to show that the bulk of public tenants and low income private tenants unable to meet what is defined as a minimum standard of expenditure experienced a

⁵⁰ Each of these studies makes the methodology employed explicit but each is based on a different set of assumptions. It is not possible within the framework of a systematic review to make a judgement as to which employs the better measure.

range of problems in addition to their financial problems.⁵¹ This resulted in their “inability to be a full participant in society by virtue of being unable to undertake behaviours or practices that the rest of society takes for granted.” (Burke and Ralston, *op cit*, p32)

In his scoping study examining the social and economic impacts of unmet housing needs, Phibbs (1999) suggested that a number of improved outcomes could be attributed to the increased disposable income arising from housing assistance. He specifically pointed to improved diet, standard of living, health, medical care and educational performance. King’s simulations (King 2002), show that the long run impact that these non-shelter outcomes might have on income and income distribution can be significant, and can far outweigh the levels of assistance provided.

Concerns that the outcomes associated with after housing poverty might be self-perpetuating have been long held. There is now some indicative (as distinct from systematic) evidence emerging that these concerns are well grounded. Pech and McCoull (1998), relying on US longitudinal research from the 1970s, claim the US data generally show that there is both considerable movement into and out of poverty as well as some persistence in poverty. Whilst persistent poverty is not widespread, that which does exist is highly concentrated. However, they also suggest that increasing rates of lone parenthood since the 1960s and 1970s could well mean that persistent childhood poverty is now more prevalent than the earlier data would suggest, and quote data from the 1990s to provide evidence that, in the US at least, growing up poor increased the probability of long-term poverty in adulthood (Corcoran and Chaudry 1997, p49).

An earlier study (Gottschalk *et al* 1994), based on longitudinal surveys and which controls for a range of relevant factors, shows that, “compared with young people from intact families, those from non-intact families were

- more than twice as likely to drop out of high school early;
- two to four times as likely to have a child outside marriage before the age of twenty (girls);
- one and a half times as likely to be workless in early adulthood (boys).”

A key finding of Shroder (2002) in his review of the impact of housing assistance and self-sufficiency is the evidence of a strong association between housing assistance and single adult household formation. The reasons for this are unclear, but Shroder speculates it could arise either because the price effect (of income related rents) creates a disincentive to cohabit, or because the income effect (arising from a reduced rent obligation) reduces the need to do so. However, he suggests that the problems arising from self-selection greatly inhibit the capacity of the researcher to effectively analyse such effects of a housing assistance program

Pech and McCoull report Australian evidence is sketchy and incomplete but they conclude there is some evidence of patterns of intergenerational correlation similar to those reported in the US literature.⁵² Their overview of the intergenerational poverty literature is couched in terms of welfare dependency. It does not explicitly indicate whether housing assistance either contributes to or prevents the outcomes of concern. Winter and Bryson (1998), however, provide indicative support for the argument that housing assistance is relevant in this process. They suggest “the measures the state has adopted in relation to economic change and housing provision have, in conjunction with forces of economic restructuring, actually forced particular suburban spaces as sites of urban poverty.” (Winter and Bryson, *op cit*, p60) Housing policies identified as contributors to the deepening poverty situation include poor initial housing design; tightly targeted allocations of rental vacancies; inadequate tenancy and asset management practices. Added to these rental based factors are the financial strains which home purchase (mostly achieved through past government financed sales programs) has placed on a community where job losses

⁵¹ They employ a budget standard approach based on work undertaken by Saunders *et al* (1998).

⁵² No check has been undertaken on whether or not the studies on which these conclusions are based meet the inclusion criteria for studies reviewed in this report. To do so is outside of the scope of the report. The results, however, are based on a review of poverty literature and indicate the problems that can arise.

have been very significant. More evidence is needed to establish the causal link between these processes and housing assistance programs that leave households in after housing poverty.

This discussion raises the possibility that there is an intergenerational transfer of disadvantage but does not provide firm evidence. The question of whether such processes can be influenced by housing assistance - such as through more generous rent assistance or provision of public housing to alleviate after housing poverty; or to enable renter households to locate in neighbourhoods that provide better life chances; or through facilitating low income homeownership programs to break a cycle of dependency on rental housing - are issues that have been touched upon in a short term framework in some of the literature associated with the mobility programs in the US, but they are not issues that have been addressed explicitly in a dynamic intergenerational framework. They are issues for which answers are needed.

5.7.3 Housing assistance and wealth

Intergenerational transfers, however, can also work positively. As indicated in section 5.6, homeownership typically confers social and economic advantages both on owners and on their children. Homeowners tend to have both higher incomes and higher net worth than other households. As shown in Yates (2002b), housing wealth in Australia amounts to approximately \$1,500 billion. This accounts for almost 50 per cent of gross household wealth. Real housing wealth increased at an annualised growth rate of just under 4 per cent per annum in the decade to 2001. Kelly (2002) provides evidence that suggests there was a general trend towards a reduction in wealth inequality in Australia from the start to the middle of the 20th century; attributable in large part to the growth of widespread owner-occupied housing wealth, but that this was reversed in the 1990s as a result of the boom in real estate and shares. Kelly forecasts that increasing wealth inequality will be reflected primarily in an age divide, with the wealth of older households growing faster than that of young. His results, however, are based on simulated projections, and do not take possible intergenerational transfers into account.

Though not primarily concerned with distributional issues, Wood (1999) offers net personal wealth estimates in Australia which demonstrate how highly skewed is the distribution of wealth due to its concentration among high income groups. The importance of housing in wealth accumulation means that the uneven distribution of homeownership is in large part responsible for the unequal distribution of wealth (see table 3, Wood 1999).

The advantages of homeownership are reinforced by the indirect assistance provided through the tax system (Yates 2003). The question of whether such advantages are enhanced by housing assistance schemes targeted at those who are marginal first home buyers is, as yet, unanswered but concerns have been raised in both national and international literature about assisting households into homeownership in regions where asset growth is not assured.

Recent housing literature has raised concerns about the possibility of a cumulative causation effect working through the interaction of housing and labour markets. Yates (2002a) provides an overview of the conceptual literature that has pointed to the role that housing may play in contributing to social and spatial polarisation. Because of the multitude of factors that are likely to contribute to such outcomes, the evidence base on such processes is still in its infancy. Concerns arise from the impact of housing on wealth creation, access to employment and education opportunities and other non-shelter outcomes, as well as the possibility that housing choices permanently lock a significant proportion of the population out of the gains enjoyed by the majority, has been articulated clearly in this literature.

The main thrust of this literature has been to identify potential interactive mechanisms; the cases made have tended to be supported by illustrative rather than substantive empirical results. The long run implications of such outcomes suggest that this is a clear case where more work should be undertaken.

6 CONCLUSIONS AND RESEARCH PRIORITIES

6.1 Introduction

A good quality systematic review differs from a more traditional narrative review in that the review question is explicitly stated, a systematic attempt is made to locate all relevant literature, and explicit description of what types of studies are to be included is provided to limit selection bias on behalf of the reviewer. A systematic approach is used to examine methods employed in studies and to identify potential biases and sources of heterogeneity between studies and the conclusions are based on studies that are most methodologically sound.

For a number of reasons that are articulated in Appendix A to this report, no studies were found that met the high level inclusion criteria identified as defining a methodologically robust study. One of the reasons for this is the nature of social science research.

One option was to exclude all studies as not meeting the criteria. A compromise approach, and that employed in this review, was to include studies in which the factors addressed (and ignored) were explicitly identified and taken into account in the best way possible within the constraints of the research. However, the sheer volume of external factors that are likely to affect outcomes means that some caution should be employed in interpreting the results of work that meets the criteria identified for inclusion in a systematic review. This review should be regarded as a thorough and detailed scoping study. A systematic review requires a narrowing down of the research questions addressed.

We aim to achieve three aims in this concluding chapter. First a summary of the key findings and pathways linking housing and non-shelter outcomes is presented. This summary draws on the detailed material made available in the subject chapters 3 – 5. Secondly, we discuss what gaps exist in the evidence base. A detailed listing of relationships between housing assistance and non-shelter relationships that deserve attention is dealt with in the individual subject chapters, and the reader is referred to the relevant sections for details.

In this concluding chapter we offer an overview that focuses on the methodological difficulties that must be addressed if gaps in the evidence base are to be filled in. This naturally leads on to a third aim, which concerns the future research agenda. How might researchers seek to fill in gaps in the evidence base?

6.2 Key Findings and Linkages

6.2.1 *Housing, Labour Markets and Education*

Labour markets and education are inextricably interrelated because of the critical importance of formal schooling and training to the development of skills, expertise and know-how (human capital) of workers. Housing assistance programs can favour human capital development:

- By reducing housing costs and increasing family resources that can be used to purchase educational and training resources.
- By providing security of tenure and hence a stable learning environment that is believed to foster child development.
- By improving the physical, social and economic foundations of neighbourhoods that can be positive influences on education and training processes and outcomes.

On the other hand housing assistance measures can contribute to unemployment/poverty traps by increasing marginal effective tax rates, thereby blunting the incentive to participate in labour markets. They may also impair geographical mobility, and thus exacerbate any spatial mismatch between the residential locations of people and location of jobs. Homeowners are thought to be less mobile than private renters because of high transaction costs that in part reflect state government taxes (stamp duties). Public housing tenants are thought to be less mobile because of their security of tenure, and the non-portable nature of indirect subsidies. Finally, housing assistance policies can have negative impacts on neighbourhoods and hence on the educational

and training outcomes for their residents. This is particularly evident in settings where housing assistance programs produce spatial concentrations of poor households.

Labour Supply

The labour supply effects of housing assistance programs include potential impacts on the decision to participate in the labour market as well as on the number of hours of work. The key findings from studies reviewed are:

- The theoretical impact of HA programs on labour market activities, in particular hours worked, is ambiguous.
- Empirical analysis suggest that participation in the labour market is less likely for individuals in receipt of benefits from HA programs after controlling for other factors.
- For those who choose to participate in the labour force, the amount of labour supplied will depend critically on the structure and parameters of the HA program and how this affects labour market opportunities. The incentives created and the response on the part of individuals will be a function of all income support programs, and how benefits under alternative programs interact with one another and opportunities in the labour market.
- The rationing aspect of HA benefits means that labour force behaviour is affected while waiting for benefits in addition to when the household is in receipt of benefits. These impacts can be negative (to preserve entitlement) or positive (the benefits are not worth waiting for). There is some evidence to suggest that lengthening the waiting period increases employment.
- Residing in public housing as a child has beneficial affects on labour market outcomes as a young adult after controlling for other observable characteristics of the individual. It is not possible to ascertain whether this is due to security of tenure aspects or the better quality of public housing as compared to the alternatives for low-income households.
- The form of HA and its associated spatial characteristics may affect the behaviour of individuals via the impact of neighbourhood and related opportunity effects.

Unemployment

Tenure and mobility effects can impact on wage cuts people are prepared to accept in order to keep jobs, and their preparedness to move in order to find employment. Key findings in the literature review include:

- The probability of terminating an employment relationship (quitting) and therefore becoming unemployed is increased if an individual is faced with longer commutes to the workplace as a result of placement in public housing.
- Tenure type may impact on the ability and/or willingness of a household to migrate from a region with high unemployment to a region with low unemployment. Hence local unemployment outcomes may be adversely affected by household immobility.
- There is evidence that public housing tenure reduces an individual or household's willingness to migrate and therefore move to regions of greater employment opportunity. This pattern may reflect two aspects of HA policy. Limited supply may mean that public housing tenures are unavailable in regions with good employment prospects. Further, the application of policy does not facilitate the relocation of households by giving priority to those moving for employment related reasons.
- There is consistent evidence that public housing tenure reduces household mobility (relative to private rental) and is likely to exacerbate local unemployment problems. An important qualification is the overwhelming importance of UK evidence on the link between public housing and mobility. The small-scale private rental-housing sector may magnify the adverse impacts on public tenant mobility in the UK. A relatively healthy Australian private rental tenure could mitigate these impacts on mobility.

- Home-ownership may also constrain or reduce the ability of a household to migrate between regions and therefore worsen a local unemployment problem. For example, owner-occupiers with negative equity may also be constrained in their labour market mobility. Hence, HA measures designed to promote homeownership may in fact reduce labour market flexibility and increase unemployment.
- This is in fact the thinking behind the Oswald thesis, which hypothesises a positive relationship between the rate of home-ownership and the level of unemployment. The evidence is inconclusive. Australian studies using data on persons find that contrary to the Oswald thesis, the probability of being unemployed decreases if you are a homeowner and spells of unemployment are shorter for homeowners.
- Structural change to the economy may result in 'spatial mismatches' between local labour supply and employment opportunities. If credit constraints inhibit the ability of households to relocate, some regions of an expanding and otherwise prosperous economy may be characterised by limited opportunities and poverty. Widening regional house price differentials can exacerbate the severity of these credit constraints and spatial mismatches, but the evidence (largely from the UK) is mixed.

Housing Assistance and Education

Housing assistance impacts on educational outcomes through effects on crowding, security and safety at the household level, and through access to schools and peer group effects at the neighbourhood level. Conclusions that emerge from a review of the literature are:

- Identifying the influence of HA policy and the separate dimensions of HA measures on education outcomes is difficult in light of the multitude of influences that impact on education outcomes.
- The empirical evidence, both Australian and US, suggests that the receipt of HA measures *per se* is not associated with poorer educational outcomes. Poor education outcomes is associated with other characteristics, measured and unmeasured, of HA recipients.
- Two well-designed studies have found that homeownership has positive effects on education outcomes, but the evidence has not been replicated in Australia and remains limited in overseas countries. The Moving to Opportunity (MTO) programs in the USA promise better education outcomes as a result of the use of vouchers to relocate in suburban neighbourhoods, but the findings of relevant studies is equivocal.

The empirical analysis examining the relationship between HA and education outcomes is hindered by the need to control for the range of factors that potentially influence the education outcome of individuals. There is a widely held view that the causal role of HA is difficult to establish due to the multiple risk factors that contribute to low educational levels, and the non-shelter factors such as health through which HA effects are mediated.

6.2.2 Housing and Health Outcomes

The fact that both natural and man-made environments directly impact human health appears self-evident. Human habitation serves to mediate natural environmental extremes. As such, housing sustains and supports human life, and thus housing environments directly and indirectly impact on health, social support, absence of disease, quality of life and well-being. In this context better understanding the links between housing assistance and health are essential for better understanding how insufficient housing investment might lead to additional costs for other services, including health, through increased need for health care, prescription costs, etc. Research into the relationship between health and housing while profuse has to contend with many confounding factors. For instance, poverty; poor nutrition; violence; exposure to weather, pest and toxins; social isolation and self damaging behaviours such as drug addiction are typically observed concurrently in poorly housed populations where inequality exists, and all have been linked to poor health.

These confounding factors will mediate the impact of housing on health outcomes, and as with other non-shelter outcomes, these complex interrelationships make identification of causality

problematic. Indeed research on housing and health though substantial remains limited in its ability to reliably model causality. Failure to demonstrate causality is unsurprising given the complexity of relationships noted above and the lack of control and comparisons groups; high prevalence of correlational research in combination with selection bias and poor control for demographic variables.

An important feature that is evident from the systematic review is the absence of research into the effects of housing assistance interventions *per se*. Though there is substantial research on housing and health relationships, it is rare for researchers to focus on a housing assistance program and identify and measure associated health outcomes. This is once again a feature shared with the other research areas reviewed. The principal findings from the systematic review are classified into four groups. Curative outcomes are circumstances where a housing outcome helps ameliorate or aggravate an existing health problem. Preventative outcomes are circumstances where a housing outcome assists the avoidance of a health hazard, or exposes people to a health hazard. Finally we group together studies that identify and measure general associations between housing, housing environments and health, but where causal paths are particularly uncertain.

Curative

There is evidence from the former sections that effective curative housing outcomes are linked to the following:

- Aged and older populations outcomes varied depending on the linkages between care and housing assistance provision and the necessity of increasing the short term provision of retrofit services whilst in the longer term increasing adaptable dwelling design provision for the next cohort.
- Physical and or medically impaired population subgroups outcomes varied with the type of condition, length of time in the home, adequacy of the dwelling (*quality and suitability*) and access to housing assistance, care and support all critical factors. Moreover, poor quality dwelling design and inappropriate physical locale, specifically inadequate space, lack of transport and lack of social supports negatively impacts health costs and formal care need. For instance, the collective evidence suggests that homes that are specifically designed to minimise indoor humidity may improve health outcomes for both children and adults with an allergic disposition. This may be more cost effectively achieved by design than post-hoc modification. The absence of standards for indoor air quality in the home implies that their development and application to new dwelling construction is a priority.
- Mentally impaired population subgroups outcomes hinged on housing assistance in the form of medical priority rehousing and rental subsidy, in combination with provision of appropriate support, training and dwelling design. The evidence for impact of physical crowding and height from the ground remain inconclusive, implying that more research with better control of confounding variables is needed.
- Homeless population subgroups outcomes hinge on housing assistance in the form of medical priority rehousing and rental subsidy, because homelessness impacts physical morbidity & mortality. The need for provision of flexible support and better dwelling design relates to the fact that having a physical or mental health problem or being older make maintaining tenancies and housing upkeep more difficult. The outcomes vary in terms of the length of time of housing deprivation and the time of onset with some evidence indicating that the children of homeless adults have worse health outcomes in later life.
- Being cared for and providing care outcomes are associated with policy interdependence. Medical priority housing provision outcomes with shortfalls in care have been shown to be most acute in social housing. Lack of secure housing and support affects morbidity as does dwelling design and location. Indeed, dwelling design has been shown to decrease dependency whilst location impacts access to services.

Preventative

There is evidence from the former sections that effective preventative population housing outcomes are linked to the following:

- Injury is most commonly associated with housing that is of poor repair or quality whilst the effectiveness of interventions and targeting of vulnerable populations relates to morbidity and mortality outcomes. Poor quality construction and lack of regular maintenance, specifically bad plumbing, poor drainage, lack of insulation and poor ventilation negatively impact on mortality and morbidity; and negatively impact mental health and wellbeing.
- Health is strongly associated with physical locale, housing quality, and social supports. Theoretically, the impacts are most likely when the contrasts are extreme. The psychological impact of housing quality has been shown to benefit mental health in proportion to the degree of improvement. Policy factors outside the health system, such as the introduction of legislation, and the increased provision of medical priority and special needs housing, improved access to renovation, repair and retrofit grants and home safety initiatives all work to improve health and wellbeing.

Housing and Health Associations

There is evidence from the former sections that housing outcomes, and related housing assistance programs, are linked to the following health outcomes:

- Outright homeownership has been linked to lower morbidity than being a renter but this effect appears to be primarily socio-economic in nature and is linked to locale and to the ability of homeowners to maintain their home over time and in relation to changing need.
- Rental subsidy can reduce homelessness but cannot guarantee choice or security of tenure. The generally poorer quality of dwellings and or delays in benefits all impact health.
- Social rehousing prevents homelessness and produces health service savings however effectiveness is impacted by shortage of dwellings, dwelling quality, locale and lack of social support.
- Retrofit enables health cost savings associated with hospital discharge and deinstitutionalisation, and it also decreases dependence and increases confidence. However, shortage of service and service inflexibility and fragmentation are impeding outcomes.
- Renewal can reduce morbidity and improve wellbeing and life quality but failure to consult with communities may produce a perceived lack of control and resultant shortage of affordable housing.

Housing Environments and Health Outcomes

There is evidence from the former sections that housing environment outcomes are linked to the following health outcomes:

- Physical locale can impact morbidity and mortality both positively and negatively. The severity of exposure to factors such as neighbourhood deprivation, humidity, winter temperature, wind, and precipitation is nevertheless mediated by dwelling design, length of exposure and health vulnerability.
- Social support is primarily associated with improved wellbeing but inequalities in access to social support place more vulnerable people at greater risk of institutional relocation and homelessness. Availability of support is mediated by physical locale and program linkages.
- Dwelling design impacts overall dwelling quality and suitability. The overall quality and suitability of a dwelling result in both direct and indirect health impacts for occupants. Direct impacts relate to mortality whilst indirect impacts correlate with housing deprivation and relate to lower quality of life and greater morbidity. Lack of market provision of accessible housing has resulted in medical priority rehousing and has contributed to inability to meet demand.
- Overcrowding is both culturally and socially determined but has been identified as a causal factor in increased infection rates and respiratory disease. It is indirectly associated with both

increases and decreases in wellbeing & mental health. The contradictory nature of findings, raises the possibility that, when choice and control increase, informal support wellbeing increases but decreases if the inverse is true.

6.2.3 Housing and Community Viability and Cohesion

Housing and Crime

Most of the literature to date has explored linkages between public housing and crime. The following linkages are thought to be particularly important in relation to crime.

- It is thought that the design features of public housing may influence crime rates. In particular poor 'defensible space' qualities of public housing estates inhibit monitoring and other crime prevention activities by tenants, and facilitate criminal activity.
- Public housing allocation mechanisms may result in individuals with a pre-disposition to engage in crime being concentrated in particular estates.
- Alternatively, self-selection processes produce the same outcome. Individuals willing to accept placements in crime prone estates are pre-disposed to engage in crime.
- Finally public housing supply decisions could result in estates located in areas vulnerable to criminal behaviour *per se*.

Empirical studies and the findings from these studies support the following conclusions:

- The defensible space hypothesis cannot be dismissed entirely but the evidence linking the design features of the built environment (especially for public housing estates) and criminal activity is mixed.
- Support for associations between crime and specific patterns of housing design is weak. Hence, there is little evidence that high rise housing necessarily exhibits poor defensible space qualities and are therefore prone to high rates of crime related activities.
- There is some evidence that a sense of community or lack thereof, may be partly responsible for the crime problems commonly associated with some public housing estates. This lack of participation in the collective policing of community and social norms reflects two distinct influences. First, certain design features of housing may limit community interaction and therefore the willingness and ability for households to be the 'eyes and ears' of the community. Second, public housing allocation policies may result in individuals without a sense of community responsibility being concentrated in a neighbourhood. Rather than design features *per se*, it is the implementation of the HA program that may lead to poor crime related outcomes for some neighbourhoods.

Housing and Social Capital

Social capital in a community incorporates features of social organisation, such as networks, norms and social trust that facilitate coordination and cooperation for mutual benefit. We can identify four linkages between housing and social capital:

- *Incentive Effects*. This linkage operates due to complementary components of social capital. Active participation in civic organisations responsible for the management of physical infrastructure in a community (e.g. parks) is illustrative in this respect. Improvements in physical infrastructure will boost residential capital values. Existing homeowners benefit both directly as consumers, but also indirectly via accrued capital gains. Renters benefit directly as consumers, but higher rents are the likely indirect consequence, as a community becomes a more attractive place to reside. The indirect benefits to homeowners sharpen the incentive to participate in the civic arena.
- *Commitment Effects*. Social capital assets are typically community specific and not portable. It is generally believed that the transactions costs of homeowners when they move are higher than those of renters, and so the former are less mobile. In addition renters do not have security of tenure, and so may be forced to move if a private landlord decides to sell up, and a suitable vacancy in the present community cannot be guaranteed. The willingness of

renters to commit to investments in social capital is understandably weaker, *ceteris paribus*, as the expected residence period over which returns/benefits can be enjoyed is shorter.

- *Urban form and resident composition effects.* The physical design and location of buildings and the socio-economic, ethnic and demographic heterogeneity of communities affect the 'social distance' between residents. Most obvious here is the physical distance between residents, and thus urban sprawl may negatively impact on the formation of social capital. Also there is the design of buildings and the common areas between residential buildings that has been invoked as a determinant of the capacity of residents to engage in surveillance activities for security reasons. Impediments to social connection can be heightened if the allocation procedures of social housing authorities concentrate poorer households in 'sink' estates that are associated with social exclusion.
- *Feedback mechanisms.* The trust and reciprocity that are at the core of the social capital concept will impact on housing outcomes. Tenant participation in social housing management and policy development can help cement relationships between the social landlord and tenant to the benefit of housing outcomes.

The revival of interest in ideas related to the social capital concept is relatively recent, so empirical studies focusing on the linkages between housing and social capital are few, and in the case of Australia there are no finalised studies that we can draw on for guidance.

The Movement to Opportunity (MTO) program in the US is based on the assumption that poor tenants in public housing estates will benefit if encouraged to move to neighbourhoods possessing richer levels of social capital. Early findings from the Gautreaux program in inner city Chicago are encouraging, though a similar program in Yonkers, NY cannot confirm these linkages.

There are a plethora of studies using different statistical techniques and data sets from a range of countries, offering evidence that homeowners are more socially connected with their communities. The replication of this finding in a sizeable number of studies indicates that this is one of the more reliable findings in the literature. However, caution is warranted. Researchers in this area are rarely able to use the randomised controlled experimental study designs favoured by health researchers and regarded by the latter as necessary if we are consider evidence to be reliable.

An exception to this rule is a study into the role of building design that could fortuitously study random assignment of families to residential units in different buildings (Festinger 1950). The study reports that individuals who are spatially apart are less likely to form social connections. This finding must be given credence in view of its methodological strengths.

The social capital mediation model posits that social capital adds value to housing policies, i.e. it makes them more effective. We review evidence that offers some evidence to support this model. There is also evidence indicating that neighbourhoods with richer social capital are more stable, as reflected in house price patterns. Though the studies reviewed employ sound statistical techniques, the cross section data bases pose unavoidable methodological problems.

Housing and Neighbourhood Effects

Neighbourhood effects arise because an individual's characteristics or actions can affect neighbours' behaviour and socio-economic outcomes. A neighbourhood is the product of market and non-market processes in housing systems that spatially sort households in terms of their residential location choices. There are growing concerns that housing systems and the housing assistance programs that shape these systems, are contributing to socio-tenurial and spatial polarisation that is the cause of various negative non-shelter outcomes at the neighbourhood level.

A systematic review of 88 studies by Ellen and Turner (1997) concludes that the neighbourhood is an influence on important outcomes for children and adults, but suggests that attempts to identify which neighbourhood characteristics matter have been inconclusive. However, since their review was completed a number of studies have been published which have examined

interdependencies between public housing, rent assistance, homeownership and neighbourhood effects. This area is in its infancy and so firm conclusions have not yet emerged.

Disadvantaged households, who lack the resources to participate in day-to-day activities that the typical person regards as routine, are a growing concern. This issue is central to the social exclusion debate. Affordable housing that meets satisfactory standards is thought to be essential to an individual's participation in society. Neighbourhood effects are also believed to contribute to social exclusion, though the causal links are poorly understood and under researched.

The social exclusion debate has been most prominent in the UK, and area based initiatives (incorporating housing assistance measures) have been invoked to address this policy problem. A consensus appears to be solidifying around the idea that a balanced strategy involving integration and coordination of different services, and featuring resident involvement, is necessary. Housing investment alone will not then turn around areas where social exclusion problems are apparent. These conclusions have emerged from program evaluations rather than empirical studies of the processes linking housing, neighbourhood effects and social exclusion. A similar conclusion is evident on examining the Australian literature in this area.

Market Effects

The capitalisation of demand-side housing assistance programs into rents and prices, and the crowding-out or displacement impacts of supply-side housing assistance programs are associated with externalities that have consequences for the economic well being of those affected. There is then a linkage between these market effects of housing assistance programs and non-shelter outcomes. An understanding of the market effects of housing assistance programs, and their quantitative significance, is then critical to an appreciation of the economy-wide consequences for standards of living.

The early evidence from the US experimental housing allowance program suggested that there is relatively little pressure on rents as a result of the introduction of a demand side rental subsidy. However, critics have suggested that outcomes for rents will depend on the specific contexts or location of the programs being evaluated, and there are studies demonstrating such patterns. In general, the literature on the market effects of demand side effects impacts housing assistance remains unresolved.

It seems that the market impacts of supply side housing assistance programs is conditional on the segment of the housing market that such programs are targeted upon. If new subsidised additions are targeted on moderate (or higher) value housing segments, the evidence indicates a 100% crowding-out effect with zero net additions to the housing stock. However, if targeted on low value segments, particularly in the form of public housing, net additions to the stock of housing eventuate. It seems that public housing is targeted on single parents and older households typically resident in shared dwelling arrangements. On taking advantage of public housing opportunities new households are formed, and there is no contraction in demand for private housing, hence the net increase in housing stock. Moderate (or higher) value subsidised housing supply does not prompt new household formation, and the consequent reduced demand for unsubsidised housing results in offsetting reductions in private housing construction.

Tenure Effects

Most of the housing assistance received by homeowners is delivered via the tax system. It is widely acknowledged that this assistance has a regressive distribution. To the extent that it promotes rates of homeownership, and to the extent that homeownership has positive social and economic benefits, the homeowner tax subsidies can be said to have non-shelter outcomes. Studies of the wider social and economic impacts of homeownership are thus relevant.

Homeownership is said to have a range of positive social impacts that include; neighbourhood stability, civic involvement, improved psychological health, improved residential satisfaction, improved life satisfaction and improved physical health. The limited evidence on individual social impacts offers some confirmation of a positive association with homeownership, however the evidence is subject to a list of reservations and qualifications that is sufficiently long to suggest that it would be premature to conclude that the associations reflect causal relationships.

The economic non-shelter impacts range from individual effects such as wealth and financial security to impacts on the national economy. There is clear evidence that homeownership increases wealth but that wealth accumulation benefits do not accrue evenly to homeowners in all income brackets. Indeed, for lower income households, a number of studies reveal a higher holding of owner occupied housing assets than is optimal from a risk and portfolio return perspective. The national economy impacts of housing is an under researched area, despite the importance of this sector to economic performance.

Income and Wealth Effects

Housing assistance programs can reduce housing costs and permit a higher level of spending on other goods and services. This is particularly important to low income households who can be lifted out of after-housing cost poverty by housing assistance. This is an area of strength in the Australian literature with a considerable body of evidence and several consistent findings:

- The housing assistance provided to public tenants reduces the extent of poverty after housing cost poverty compared with poverty before housing costs.
- Home ownership protects older households from after housing cost poverty.
- Rent assistance alleviates after housing cost poverty but the greatest incidence of such poverty is found amongst low-income private renters.

Less is known about the dynamics of poverty and intergenerational poverty. What studies there are give no indication of whether housing assistance is a relevant factor.

For the typical household housing assets is a critically important vehicle for the accumulation of wealth. It has been estimated that housing wealth accounts for almost 50% of gross household wealth in Australia. Despite rising rates of homeownership in the first half of the 20th century, the distribution of wealth remains highly unequal and housing plays an important role in determining that unequal distribution. Furthermore, there is evidence that the 1990s boom in housing markets and equity markets has accentuated wealth inequalities in this period.

6.3 What we do not know: Gaps in the Evidence Base

On reading the subject chapters' detailed list of research gaps three themes are clearly apparent. Firstly, there is a dearth of Australian evidence on the links between HA programs, housing outcomes and non-shelter outcomes. Secondly, whether we consider the relatively abundant overseas literature, or the more limited Australian literature, there is a lack of conceptual understanding about:

- How dimensions of HA are linked to non-shelter outcomes
- How HA is interrelated with other government interventions that have combined impacts on non-shelter outcomes that are either offsetting, or mutually reinforcing.
- Thirdly, as foreshadowed in chapter one, even if we have a good theoretical understanding of the linkages between housing and non-shelter outcomes, establishing the magnitude and direction of impacts has proved problematic.

We now consider the first of these themes in a little more depth. In all but one case the authors of subject chapters in the systematic review bemoan the lack of Australian studies. In the review of Housing, Labour and Education in chapter 3 the authors conclude:

“Despite the very large body of Australian research on both housing issues and on the determinants of labour market and education outcomes, there exist surprisingly few Australian studies that are devoted specifically to an analysis of linkages between Australian housing assistance measures and labour market and education outcomes. The paucity of robust Australian research on the linkages between housing assistance and labour market and education outcomes contrasts with an ever-growing array of such studies in the US and the UK, specifically focussed on housing assistance and non-shelter linkages”.

In chapter 4 on health it is pointed that in Australia

“Despite many studies, there is a dearth of housing assistance intervention focused studies”.

Similar statements can be found in each of the subsections in chapter 5 on social cohesion and viability. The only exception is the relationship between housing assistance programs and poverty. Here it is concluded:

“Numerous studies in Australia have documented the impact of housing on poverty and, in many ways, the literature in Australia in this area is as good or better than much of that elsewhere”.

But this is very much the exception to the rule. Most of the literature reviewed is therefore based on overseas experience. While there are many carefully designed research studies exploring linkages between housing and non-shelter outcomes the relevance of the evidence to Australia must be questioned. Policy analysis and development is clouded by differences between features of the Australian socio-economic and institutional environment and those of the overseas country. For example the MTO programs in the US have been widely cited as offering evidence supportive of the beneficial impacts of moving disadvantaged households to more prosperous suburban locations. But at least in Yonkers, New York the MTO program has been prompted by racial segregation and discrimination. Are the findings transferable to an Australian environment that is not characterised by widespread racial segregation? Similarly, local school districts in Australia show a greater degree of homogeneity than those in the United States because of the central role played by state rather than local governments in the provision of secondary education. The applicability of the American studies of housing's links with education outcomes within the Australian environment is then questionable.

The second theme that emerges from a close reading of the subject chapters is casual theorising that characterises much of the thinking on links between housing and non-shelter outcomes. In the health subject chapter a complaint is that “because causal conceptualisation was generally poor amongst all the studies reviewed, with no accepted theory driving inquiry, this has resulted in very few studies having clear hypotheses or reasonable control of other contaminating variables”. In chapter 5 it is argued that housing improvement programs might be more effective if integrated into revitalisation efforts that help build social capital in neighbourhoods, but knowledge of the linkages between different government interventions is too limited to base firm judgement. The conceptual weaknesses often preclude firm policy recommendations; though there is widespread evidence of a positive association between homeownership and social capital, for instance, we cannot be certain whether this is due to a mobility effect or an incentive effect, and this ambiguity results in noncommittal policy implications.

The final theme apparent from the subject chapters is the methodological difficulties associated with measuring the direction and magnitude of impacts on non-shelter outcomes. Even if we have a good conceptual understanding of the linkages between housing assistance and non-shelter outcomes, measurement can be problematic. These issues of method are important for an appreciation of future research strategies, so we go into this third theme in more detail below.

6.3.1 Methodological Hurdles

The earlier chapters have examined the impact of housing assistance and various housing outcomes on a range of non-shelter outcomes. They have shown that housing assistance can have an impact upon both housing and non-housing outcomes through a number of different and highly complex mechanisms. Identification both of the pathways and the impacts is made difficult because of the many explanatory factors that affect non-shelter outcomes in addition to the impacts of the specific forms of housing assistance being considered. Some of the more important of these explanatory factors are the socio-economic and demographic characteristics of the households who are the target group of assistance, and the tenure and physical characteristics of the dwelling in which they live. All studies selected for inclusion in this review have attempted to take these factors into account. Added to these explanatory factors, however, are the characteristics of the neighbourhood in which housing assistance recipients live (or to which they move) and the question of whether these are affected by the provision of different

forms of housing assistance. Other explanatory factors affecting the impact of housing assistance on non-shelter outcomes are less tangible or less readily available because of data limitations. Typically various government policy interventions will impact on a non-shelter outcome that a Housing Assistance (HA) measure has a linkage with, so that separating the impact of HA from other non-housing interventions can be an important consideration.

This section raises some of the methodological issues that have emerged from this systematic review of the impact of housing assistance on non-shelter outcomes and which raise more complex issues than those identified in setting the inclusion criteria in chapter one. It covers, inter alia, issues of omitted variables, endogeneity, measurement, and dynamic processes. In many ways, these issues can be seen as highlighting the differences between the multi-disciplinary social science research that characterises the literature covered by this review, and the more narrowly defined literature from which the desire for evidence based policy emerged. This section is intended to reinforce Pawson's caution that 'there are different ways of explaining why a particular program has been a success or failure. Any particular evaluation will thus only capture a partial account of the efficacy of an intervention.' (Pawson 2002, p179).

Omitted Variables

A problem most commonly encountered using secondary data sets is omitted variables. The issue is addressed to differing degrees by all multivariate statistical models that explore the link between HA programs, housing outcomes and non-shelter outcomes. The problem arises because:

- Factors other than HA programs impact on non-shelter outcome(s) and/or
- HA programs impact on non-shelter outcomes is mediated by some other factors that in turn effect non-shelter outcomes.

The methodological problem arises if these other influences are omitted from the statistical inquiry. It is a particularly important source of error if the assistance provided by the housing policy intervention is correlated with an omitted factor. Typically this will result in the omitted factor's impact being erroneously attributed to the HA measure. Research based on secondary databases is particularly prone to omitted variable problems because the data has not been collected with any one researcher's needs in mind. The researcher is commonly forced into using inadequate proxy measures (or no measure at all) to control for the influence of other variables, because measures are not available in the secondary data set.

Endogeneity

The possibility that housing assistance and related housing outcomes can affect other relevant explanatory variables, or that the non-shelter outcome to be explained is in turn a determinant of housing outcomes, creates additional methodological concerns. These are associated with endogeneity concerns or issues of causality. Many of the concerns with public housing, for example, arise from its hypothesised impact on concentrated poverty and social isolation,⁵³ but analyses can fail to take into account the fact that public housing is more likely to be located in low income neighbourhoods than housing occupied by recipients of other types of housing assistance, simply because of allocation policies. Poverty concentration can reflect the existence of public housing; or it may be caused by it. Similarly, social isolation and associated mental health issues can arise when there are a high proportion of single adult households in a particular neighbourhood. The availability of housing assistance, however, whether in the form of rent assistance or public housing, might be one factor that facilitates the formation of single adult households. In other words, household formation itself is potentially endogenous and is both affected by housing assistance and affects the non-shelter outcomes observed.

Beauvais and Jenson (2002) provide an update of the literature on social cohesion. At the conclusion of their structured review, they conclude that there has been an emerging tendency to see relationships as bi-directional. Once this is recognised, however, and once causal arguments

⁵³ A number of these are based on Wilson's (1987) theories of social isolation in neighbourhoods with high concentrations of the very poor. See, for example, Newman and Schnare (1997).

become bi-directional, estimation of their impact becomes less robust. They suggest that this places the emphasis back on the development of theory as a useful quasi or framing concept for thinking through complex issues (Beauvais and Jenson, p. 20).

The possibility of interdependence amongst the key variables of interest constitutes a persistent theme of recent literature in other relevant areas. Galster (1998), for example, makes a start at an empirical exploration of the urban opportunity structure framework developed in Galster and Killen (1995). In this framework socioeconomic mobility is affected by choices regarding education, employment, child rearing, participation in criminal activity and by constraints operating through housing, mortgage and labour markets, criminal justice, social service delivery, local political systems and access to social and other relevant networks. His empirical work suggests that there are positive feedback loops giving mutually reinforcing shocks with per capita employment rates being an important transmission mechanism and with crime, high school dropouts, female headship operating with a strong pattern of mutual reinforcement. Researchers need to be aware that bi-directional rather than uni-directional causation might be a more appropriate assumption. There are diagnostic tests for guidance and use of before and after study designs can address the problem, though not always satisfactorily (see section 6.4 below).

Measurement error

Measurement error is an issue that troubles most research studies in the social sciences. The problem arises when a variable is imprecisely measured because of reporting error, processing error or due to difficulties of defining a variable. The first two causes of measurement error can hopefully be ignored in large samples, on the assumption that their occurrence is random⁵⁴. Much more problematic is difficulties associated with definition. These frequently arise with respect to intangibles. For example, a household's neighbourhood requires researchers to define boundaries for an unobservable concept. When using secondary data sets the researcher is commonly forced to accept administratively defined spatial units that may bear little relationship to the household's perception of the neighbourhood he or she lives in.

An emerging theme is that impacts of policy changes have threshold effects, as in the medical science field where treatments might need to reach a critical level before impacting on the ailment. This theme has emerged from attempts to examine the impact on neighbourhood revitalisation of various place-based programs. Policy makers have been concerned with both the attempts to determine the effect of various policies (for example as exemplified by attempts to increase homeownership rates in a particular neighbourhood) and with the issue of whether there is an identifiable point at which these policies "take off". A threshold effect is defined as ".. a dynamic process in which the magnitude of the response changes significantly as the triggering stimulus exceeds some critical value." (Higgins 2001).

An instructive example is Galster, Quercia and Cortes (2000) who investigate whether threshold effects are associated with four key non-shelter outcomes (neighbourhood environment, adult non-employment rate, female headship rate for families with children and secondary school drop-out rate). They identify two separate processes: the first is a threshold effect in the value of the outcome being examined whereby once the outcome reaches a critical point it subsequently causes a much greater change in itself. The second is in relation to the factors affecting this outcome whereby once they reach a critical value they cause a much greater change in the indicator⁵⁵.

⁵⁴ An example commonly confronted by housing researchers is the use of owner estimates of the house price that their property would sell for if offered for sale at survey date. Researchers commonly use these self-estimates as measures of market prices. Tests have shown that though individual errors are widespread these tend to cancel out in the aggregate, so that use of means or averages is reliable.

⁵⁵ For adult non-employment, secondary school dropouts and incidence of female headship rates, their results suggest that there is no self-generating process that inexorably drives neighbourhoods that exceed some threshold in relation to these factors to ever-higher incidences of them. However, they do find a distinct threshold effect in relation to the poverty rate. "For neighborhoods above the threshold, there is a rapid and, apparently, ever-increasing growth in poverty over time. For neighborhoods with lower poverty rates, however, the pattern is one of relative stability."(Galster, Quercia and Cortes 2000, p724)

The importance of this work is that it signals the importance of allowing for the possibility that the impact of policy intervention might vary both with current circumstances and with the size and duration of the intervention. It also suggests that significant programs may show little measurable impact if they fail to attract critical masses or their impact remains below the relevant threshold. Conversely, small programs may show dramatic impacts if they operate at the threshold point. Earlier studies (Quercia and Galster 1997, 2000) developed theoretical underpinnings for these results.

Dynamic Effects and Cumulative Causation

The final challenge to be raised in relation to methodology arises from what researchers have called the problem of cumulative causation. This features in the social capital and neighbourhood literature where the spatial implications of housing assistance and housing outcomes are taken into account⁵⁶. It reflects a concern that spatial inequality may have within it the seeds of a cumulative process. An AHURI positioning paper prepared by Yates (2001) provides an overview of some of these concerns expressed in both the Australian and international literature as they relate to homeownership.

This cumulative causation literature is in its infancy with conceptual frameworks still being developed. As such, it does not provide a sound foundation for evidence-based policy. However, failure to take into account the possibilities it raises could result in a significant underestimation of the impacts that housing assistance has on non-shelter outcomes. In recent AHURI research, for example, King (2002) simulated the impact of housing assistance on educational activity and labour force activity over a "typical" lifetime of recipients. The results of his study suggest that the lifetime benefits can be significant, particularly for a single male and for couples with children. These results, however, are based on the assumption that housing assistance contributes to the assumed education and employment outcomes. His study provides no evidence that they do. It does, however, signal the importance of taking a long term view in order to measure the cumulative impact of assistance on non-shelter outcomes and the results can be seen as providing an implicit critique of studies that examine only short term impacts. The latter overlook the possibility that an initial (dis)advantageous housing outcome might have a cumulative impact that 'feeds upon itself' such that it cannot be reversed in later life.

In this literature, typical concerns are raised about the impact of housing (and by implication, housing assistance) on income inequality, wealth creation, access to employment opportunities etc. But importantly the emphasis is on how housing outcomes can permanently lock a significant proportion of the population out of the gains enjoyed by the majority. The interest in processes of cumulative causation is due to a concern with the dynamic implications of the interdependencies between the key variables of concern in this systematic review.

6.4 How Do We Fill In The Gaps? Future Directions for Research

This is perhaps the most difficult question to answer. Once again we draw on the subject chapters and the recommendations that the experts make in these chapters. Interestingly there is a reasonably uniform set of opinions across the subject chapters.

Specific policy issues that require further investigation in the Australian context are listed above for each of the relevant subject areas.

In general terms, we can summarise these issues into **five key areas** that should inform the development of any collaborative research venture established to examine the non-shelter impacts of housing assistance programs.

1. What are the housing and non-shelter benefits and costs of public (and social) housing assistance on the one hand and private market rent assistance on the other? Which form of assistance (public housing or private market rent assistance) works best to meet clearly

⁵⁶ The spatial dimension to models of cumulative causation has a long history. Theories of cumulative causation in regional growth models can be found in Kaldor (1960).

defined housing and health, education, labour market, and community objectives? Is it a matter of 'one-size fits all' or of tailored assistance programs for different housing and non-shelter sources of disadvantage?

1. What are the housing and non-shelter benefits and costs of policies that financially assist households to enter homeownership? If such policies have regressive income distribution features but lead to other net non-shelter benefits how are we to treat and design such policies to better promote non-shelter benefits and reduce regressive impacts?
2. How can we best connect housing policy to private market activity and urban and regional design policy so that Australians live and participate in vibrant communities and neighbourhoods?
3. How must housing assistance policies interact with income support policies, welfare and community programs and ageing policies to achieve higher levels of economic and/or community participation?
4. How must we link housing policy to education, health, ageing and community policies to ensure that children, adolescents and adults live in environments that are conducive to better learning, promote better mental and physical health outcomes and are less prone to crime and negative social behaviours.

How are these issues to be addressed?

All the authors continue to advocate the use of secondary databases, but there is a strong advocacy of panel data sets that permit a researcher to track a cohort of individuals over time. In reviewing the US literature, it strikes many of the expert authors that carefully specified experimental study designs are a typical component of pilot housing assistance programs. This enables analysts to monitor and evaluate HA programs using data specifically designed for the purpose. The MTO programs and studies of their impacts on non-shelter outcomes are typical, but they have a long history going back to the US Housing Allowance Experiments in the 1960s. It would be highly beneficial from a policy evaluation perspective if this practice were adopted in Australia. Finally the expert authors frequently find weak conceptualisation of the linkages between HA and non-shelter outcomes. Deductive theorising as in Glaeser *et al* (2002) can help clarify the linkages and generate unambiguous hypotheses. On the other hand inductive methods based on qualitative applied research methods, can be helpful in uncovering unanticipated linkages.

6.4.1 Secondary Data Analyses

The confidentialised unit record files (CURF) of cross section Australian Bureau of Statistics surveys are the 'bread and butter' tools of many housing researchers. The Australian Census of Population and Housing, the Income and Housing Cost Survey, the Rental Investors Survey, the Australian Housing Survey, the Disability, Ageing and Carers Survey, the Mental Health and Wellbeing of Adults Survey and the National Health Survey) have all proved fruitful as the basis for housing research. They have advantages that ensure they will be used in the future, including research into linkages between HA programs and non-shelter outcomes. Most importantly these surveys are conducted to very high professional standards in relation to sampling procedures, survey design etc. Equally importantly they are low cost, and so applied research that is ambitious in scope can be conducted using confidentialised information on thousands of survey respondents at a fraction of the cost of collecting primary data⁵⁷.

But as the expert authors make clear in their subject chapters these databases have their limitations. Control over what information has been collected does not rest with the researcher, and so omitted variables are a commonly encountered problem. Sample selection bias will also be a limitation, though this is by no means restricted to cross section databases.⁵⁸ Cross section

⁵⁷ Australian researchers employed at universities who are participants to the ABS-AVCC agreement can obtain the CURF of the databases listed in this paragraph free of charge.

⁵⁸ The classic research exercise prompting much of the work on sample selection bias is research into the determinants of wages. Early studies used multivariate estimation techniques to samples of workers and their wages.

databases offer a 'snapshot' at a particular point in time and do not allow researchers to track pathways of causation over time. Identification of the direction of causality can then be problematic.

There are statistical procedures that allow researchers to address some of these problems, and they should be employed where possible. If the researcher is using regression modelling techniques diagnostic statistics can be employed that test for the presence of specification errors such as omitted variables. Selection bias can be addressed using censored regression models and two stage estimation methods. Diagnostic tests exist for detection of direction of causality in regression models, and appropriate estimation of multiple equation models can uncover pathways of causation.

Nevertheless our expert authors have a strongly held view that limitations imposed by cross section databases cannot always be overcome, because the linkages between HA and non-shelter outcomes are often complex and indirect. Panel or longitudinal databases in which information is collected from a cohort of individuals at successive points in time have undoubted advantages, and the expert authors recommend their development and use.

In the Labour and Education chapter 3 the expert authors conclude that an:

“..... important reason for the lack of empirical studies on housing and education is due to the methodological difficulties of designing useful studies. Longitudinal studies which compare tenant cohorts pre-housing assistance and post-housing assistance are mostly not possible.”

Elsewhere they argue:

“A key step in any future analysis of the relationship between HA and non-shelter outcomes is a dataset that facilitates analysis of a range of important policy questions. In the absence of quasi-experimental data, including the random assignment of different individuals or households between control and experiment groups, a comprehensive panel dataset should be developed that allows the analysis of the relationships identified in this chapter. A panel or longitudinal dataset will allow the analysis of many of the issues canvassed in this chapter in a methodologically sound manner.”

In chapter 5 in the section on crime we have the same sentiments expressed:

“In the absence of quasi-experimental data that allows for a rigorous analysis of the impact of housing assistance policies on crime related outcomes, there is a need for the development and analysis of panel datasets that overcome some of the methodological issues associated with the analysis of cross sectional data. Ideally, such datasets would contain information on both the experiences of the individual, and those of the community.”

What are the advantages of panel datasets? Consider a research exercise where we are seeking to estimate the impact of a HA program (e.g. Commonwealth Rent Assistance) on a non-shelter outcome (e.g. the incentive to work). A cross section database allows us to compare the employment experiences of private renters ineligible for CRA (control group) with private renters eligible for CRA (treatment group) at a point in time. But if there are unobserved differences between the eligible and ineligible control and treatment groups, we risk attributing the effects of omitted variables to CRA. Now consider a panel of private renters observed at a series of points

The selection bias arises because we do not observe the wages of those who do not choose to participate in the labour force. If a large proportion of non-participants are discouraged by the low wages they would obtain if they worked, estimation using a sample of *employed* workers will suffer from sample selection bias even though our sample might be representative of the employed.

in time, that enable identification of tenants who make a transition from ineligibility to eligibility. Characteristics such as gender remain fixed at the two points in time relevant to the transition, and we need not be concerned if these fixed characteristics are unobserved and omitted. The pre- and post- HA impact studies using panel data sets in effect use the treatment group as its own control group.

The first wave of a large scale Australian panel dataset has recently been released. The new Household, Income and Labour Income Dynamics in Australia (HILDA) dataset is an initiative of the Department of Family and Community Services and is a key resource that in the future will facilitate the analysis of a range of housing related issues. Similar in structure to the Panel Survey of Income Dynamics in the US, the HILDA survey will over time allow the analysis of a range of housing related issues. A key recommendation is that the HILDA be developed and implemented with a comprehensive range of housing related questions and data. Additional housing related questions could be added to future waves of HILDA. In view of the expert authors strong advocacy of panel datasets, a priority is ensuring that future waves contain survey questions that permit investigation of the key housing policy issues.

6.4.2 Experimental Study Designs and Pilot Programs

Random control experiments are at the apex of any hierarchy of study designs. In overly simplistic terms these experiments randomly assign a population group who have a particular 'symptom' into a treatment group, who receive the same or different dosages of a treatment, and a control group for whom no treatment is available. The use of medical terms to describe the method reflects its widespread use in medical science. This is one reason why our expert author on HA and Health linkages is a particularly strong advocate.

In chapter 4 on HA and Health the following conclusion emerges:

“The lack of random control trials examining housing assistance and health impact highlights the need to place this on to the national research agenda as a matter of urgency. However, this will be no easy feat given that clinical trials are so costly, and typically funded in Australia by the National Health and Medical Research Council (NHMRC) a body that has traditionally focused on acute health and has only recently included more indirect health related research. In addition, getting a random controlled clinical trial up in regard to housing assistance may be difficult because of the lack of clear causality theory in combination with robust measures and lack of any significant pilots.”

In the social sciences cost and lack of a strong theoretical foundation for linkages are also relevant considerations; but equally important is ethical constraints that prevent the sort of clinical trials that are the 'bread and butter' tools of medical science researchers. Indeed it is noticeable that our expert authors in other areas assume that random control experiments are not a relevant option to consider (see section 6.4.1 above).

There are however quasi-experimental methods that a social science researcher may have the opportunity to use. There are so-called natural experiment studies.

A natural experiment arises when a change in legislation creates a 'treatment' group and a 'control' group from a homogeneous subgroup in the population. If this change in legislation occurred for reasons unrelated to the need for housing assistance programs that accompany the legislative change, the method is particularly robust. The program of scattered public housing constructed in Yonkers, New York in response to a court order on racial desegregation is exemplary (Briggs 1998). In these admittedly rare circumstances worries about omitted control variables and selection bias are assuaged. When the subgroup is heterogeneous but assignment to treatment and control group is by lottery this can also allay omitted variable concerns. The natural experiment study design is rarely exactly comparable to randomised experimental study designs, because eligibility criteria and participation decisions give rise to selection bias. Moreover it is uncommon for legislative change to cause change in HA programs independent of the need for change. The more common natural experiment study designs involve a jurisdiction

(say local or state government) introducing a change in a HA program, and the residents of (a) similar jurisdiction(s) who chooses not to introduce the change are used as the control group. Because the jurisdictions belong to the same country a similar institutional background can be assumed, and by using careful sample selection techniques the socio-economic and demographic differences between control and treatment groups can be minimised.

A noticeable feature of the US policy environment is the inclusion of evaluation study designs into pilot HA programs. The evaluation is essentially a pre- and post- HA impact methodology. A major advantage over secondary data sets is that the researchers control data collection and it can be specifically designed for the task in hand. As mentioned above, secondary data sets whether cross section of panel, have their limitations because the data has not been collected with one research task in mind. There is now an impressive stock of evidence based policy evaluation in the US as a result of this approach.

The US based MTO (moving to opportunity) demonstration program is exemplary. This was designed to address methodological issues associated with evaluations of housing mobility programs. It is a 10 year program, which was started in 1994 and incorporates a controlled experimental study design to measure impacts. Its target group is low income (predominantly black) families living in publicly assisted housing in high poverty neighbourhoods in 5 cities. Participating families have been randomly assigned to one of three groups (1) an experimental or MTO group receiving housing assistance and mobility counselling who are required to move to low poverty neighbourhoods; (2) a comparison (section 8) group who received rent assistance certificates or vouchers and who could move anywhere subject to their new dwellings meeting required minimum physical standards; and (3) a control group who continued to receive project based assistance. More details of this experiment are provided in Appendix A.

This program has been lauded as providing for the social sciences a methodologically robust approach to addressing issues of endogeneity and unobserved heterogeneity arising from the multiplicity of factors that influence outcomes associated with policy interventions. It enables before and after effects to be examined for the same population.

However, even with this program, the confounding effects of external factors remain and cannot be controlled for. Amongst these are economic, political and, to a lesser extent, social factors which do not remain constant over time. As well, many of the problems of causality discussed above remain and the self-selection issue associated with volunteering to be involved in such a program remains. The program has a very clearly defined target population (low income, predominantly black, households living in extremely depressed inner city neighbourhoods) and it is not obvious that it can be generalised to other groups.

These concerns, notwithstanding, an important lesson from the MTO demonstration program is the importance of integrating program evaluation with program design. In this program, the resources dedicated to evaluation were of the same order of magnitude as those set aside to fund the program and this provides an important signal for policy development in Australia.

6.4.3 Qualitative Study Designs

The previous sub-sections have outlined approaches that rely on a quantitative analysis of data. However, as should be clear from the discussion above of the methodological issues that arise in the social science, it is not obvious that evidence can, or should, rely solely on quantitative data. It can, and should, be supported by evidence from qualitative studies.

Good practice suggests that evidence collected from one source should be confirmed by evidence from a different and independent source. Evidence from qualitative studies provides an obvious complement to that derived from quantitative data. A key recommendation arising from this review in light of the difficulties obtained in many areas is that the practice of supporting research from a number of different methodologies and disciplines be maintained.

The use of both quantitative and qualitative data recognises the importance of obtaining information from a number of different sources. Qualitative data, for example, from case studies and focus groups, can be employed to provide valuable insights into the processes by which the outcomes of interest are generated. It can be used to identify potential weaknesses in quantitative studies (e.g., as suggested above, in terms of omitted variables).

These sentiments reflect what is called triangulation, which, in an ideal world, would be a characteristic of any study included in a systematic review. Triangulation involves the comparison of results from either two or more different methods of data collection (for example interviews and observation) or, more simply, from two or more data sources (for example, interviews with members of different interest groups). The researcher looks for patterns of convergence to develop or corroborate an overall interpretation. Triangulation is generally accepted as a means of ensuring the comprehensiveness of a set of findings (Mays and Pope 1999).

Mays and Pope (1999), who provide an excellent overview both of the role of qualitative research and of the debates concerning quality issues associated with qualitative data, suggest that triangulation is one of a number of criteria that can be employed to assess the quality of qualitative research. The criteria they list are:⁵⁹

- *Triangulation*: Triangulation involves the comparison of the results from either two or more different methods of data collection (for example interviews and observation) or, more simply, from two or more data sources (for example, interviews with members of different interest groups).
- *Respondent validation*: Respondent validation includes a range of techniques in which the investigator's account is compared with the accounts of those who have been investigated in order to establish the level of correspondence between the two sets.
- *Clear exposition of methods of data collection and analysis*: Since the methods used in research unavoidably influence the objects of enquiry (and qualitative researchers are particularly aware of this), it is important to provide a clear account of the process of data collection and analysis.
- *Reflexivity*: Reflexivity means sensitivity to the ways in which the researcher and the research process have shaped the data collected, including the role of prior assumptions and experience.
- *Attention to negative cases*: As well as exploring alternative explanations for the data collected, a long-established tactic for reducing error is to search for, and discuss, elements in the data that contradict, or appear to contradict, the emerging explanation of the phenomena under study. Another version of deviant or negative case analysis is to attempt to incorporate seemingly different findings from different studies into a more refined, overarching analysis.
- *Fair dealing*: The final technique for reducing bias in qualitative research is to ensure that the research design explicitly incorporates a wide range of different perspectives so that the viewpoint of one group is never presented as if it represents the sole truth about any situation.

Mays and Pope (*op cit*) also set out a number of guidelines that could be used to determine whether or not qualitative research is of good quality. These include the relevance of the question addressed (has the work contributed usefully to knowledge), the clarity of the research question, the appropriateness of the study design to the question, the extent to which the context is adequately described, the sampling frame used, the extent to which the data collection and analysis procedures were systematic (and whether an audit trail is provided) and reflexivity (the extent to which the researcher assess the impact of the methods used on the data collected).

The guidelines suggest that good quality work can be conducted outside of the constraints imposed by quantitative analysis and signal the possibility that, in future, the inclusion criteria set for any systematic review might be more broadly defined than those employed in this particular review. Because the focus of a systematic review on evidence-based studies is the construction of hierarchy that permits identification of 'reliable' evidence, there is no place for pure theory. Yet the expert authors point out at numerous points in their chapters that the conceptual basis for linkages between HA programs and non-shelter outcomes is often weak. There is then a case for

⁵⁹ The descriptions of these are taken verbatim from Mays and Pope (1999). More detailed descriptions are available in Mays and Pope (available at <http://www.bmjjpg.com/qrhc/chapter9.html>.)

further broadening the inclusion criteria to include studies that eschew the search for evidence, but instead use the principles of logic to establish the theoretical foundations for causal relationships.

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FINAL REPORT VOLUME TWO

Please refer to Volume 2: Appendices of the Final Report

Appendix A: Observations on systematic review process

Appendix B: The MTO Demonstration Program

Appendix C: AHURI and related research

Appendix D: Literature search process

Appendix E: Labour outcomes matrix

Appendix F: Health outcomes matrix

Appendix G: Community Cohesion and Viability outcomes matrix

AHURI Research Centres

Sydney Research Centre
UNSW-UWS Research Centre
RMIT NATSEM Research Centre
Swinburne-Monash Research Centre
Queensland Research Centre
Western Australia Research Centre
Southern Research Centre

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