

Falling through the net? A risk management model for home ownership support schemes

authored by

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Abbreviations

ABS	Australian Bureau of Statistics
ACSIP	Aboriginal Communities Strategic Investment Program
AHOS	Aboriginal Home Ownership Scheme
AHURI	Australian Housing and Urban Research Institute
ATSIC	Aboriginal and Torres Strait Islander Commission
CDEP	Community Development Employment Program
CSHA	Commonwealth and State Housing Agreement
CURFS	Confidentialised Unit Record Files
FACS	Family and Children's Services
HREOC	Human Rights and Equal Opportunity Commission
LTV	Loan to Value Ratio
PFD	Public Facilities Department
RAESP	Remote Areas Essential Services Program
RCIADIC	Royal Commission into Aboriginal Deaths in Custody
SA	South Australia
SHAs	State Housing Authorities
SHC	State Housing Commission
USA	United States of America
WA	Western Australia

GLOSSARY

Arrears: An unpaid, over due debt.

Balloon Mortgages: A mortgage in which the debt service (interest and principle) that is paid regularly will not result in a complete payment of the loan at the end of the mortgage term.

Equitable Estate: The value an owner has in the property, less the amount owing.

Default: The failure of the borrower to make a payment of principle or interest when due.

Foreclosure: A legal procedure undertaken to permit a creditor to sell property that is collateral for a defaulted loan.

Loan To Value ratio (LTV): The percentage of the selling price or appraised value of a property that a lending institution will grant to a borrower.

Mortgage: An instrument which the borrower (the **Mortgagor**) gives the lender (the **Mortgagee**) a lien on property (generally real estate) as security for the payment of an obligation. The borrower continues to use the property and, when the obligation is extinguished, the lien is removed.

Mortgage in Possession: When the mortgagee has taken possession of a mortgaged property, usually because the borrower defaulted on a repayment.

Power of Sale: An agreement, between mortgagee and mortgagor, that allows the lender to sell the property if a default occurs on a mortgage.

Sweat Equity: Reflects the personal labour and effort invested.

EXECUTIVE SUMMARY

Traditionally, Australian government housing policy has encouraged homeownership in the belief that it provides the foundation to stable democratic society. (Dalton, 2002) This was particularly evident in post-war housing policy. Governments have developed policies with regard to housing in the belief that everyone has a right to own their home. Further, both Federal and State Governments have put a range of safety nets in place to assist people on low incomes or in disadvantaged circumstances to have access to home ownership.

Since at least the early 1900s, Australian Federal and State governments have successfully fostered a relatively high rate of homeownership through a raft of explicit and implicit policies and incentives. More recently though, concerns have been raised as to whether Australia can maintain its high rate of homeownership (Berry, 1998; Wulff & Evans, 1999). Such concerns were also raised in respect of home ownership rates in the United States and in the United Kingdom in the wake of the 1991 recession (Davis & Dhooze 1993; Ford, Kempson & Wilson, 1995). The findings of the research suggest that the possibility of maintaining high rates of homeownership is subject to external economic and political uncertainties.

This study both explores the effectiveness and adequacy of existing safety nets as well as develops a model which focuses on the various risks associated with government programs assisting marginal income households into homeownership. The threat of mortgage default, arrears and foreclosure are of concern to 'at risk' homeowners as well as to the private and public institutions that initiate and service the mortgages. There are two sets of risks – first the risk to government of lending money to a population that may not be able to repay it, and second, the risk to the households of losing money they have paid on mortgage interest and indeed their home. Consequently the key questions driving the research include:

- Are existing homeownership assistance schemes sound government policy?
- Are homeownership assistance schemes ultimately beneficial to the recipients?
- What modifications or new schemes could contribute to the sustainability of long term home ownership?

Methods

To help answer these questions, an econometric model is developed and used to assess the potential risk for both households and governments associated with different recipients of homeownership assistance. The model profiles both the successes and the failures within different recipient populations of home ownership assistance schemes. The model can be used to identify the type and level of further assistance that would support particular groups identified as being at risk. It can also be used to gauge the increased risk posed by exogenous shocks such as interest rate rises, or increases in water and land rates.

The study identifies factors such as income, credit history, demographic, location and market characteristics which have contributed to defaults in the past, and assumes these same parameters may lead to future defaults. The actual modelling process incorporates data from three main sources encompassing ABS CURF data (1999), together with housing assistance program level data from Western Australia, and South Australia. These data sets incorporate both financial and personal information, however, they are stripped of any individual identifiers prior to extraction and use, and therefore address concerns in respect to individual privacy.

Similarly, although the data is developed from individual records, the analysis and results are geared to assessing 'grouped' rather than individual characteristics. This takes into account both ethical and practical considerations to ensure that the *research* and analysis do not unduly or inadvertently focus upon individual characteristics which could have unintentional negative consequences for already disadvantaged groups. With this approach, the analysis and the policy and program development outcomes are geared towards clarifying and responding to the character of the risks within the total applicant pool. To be clear, there is no intention or capacity to assess the risk of individual households.

The model is positioned through a consideration of the policy environment and the implications of the literature on socio-economic restructuring, which are then complemented

by a section focused on the repercussions of defaults and arrears for both individuals and institutions. The causes are complex, however, the literature generally points to a long term policy emphasis to increase homeownership rates confronting contemporary trends in social and economic restructuring which ironically undermine that potential among householders. This concern is particularly acute given that policies and programs such as the First Home Buyers scheme, which arguably play both an economic and social function, have encouraged households on increasingly marginal incomes into homeownership.

Although data and perspectives from South Australia will be used for sensitivity testing, the research primarily focuses on Western Australian housing assistance programs to trial the proposed socio-economic risk assessment model. There are several advantages to basing the study on WA. The Keystart program is the largest marginal income targeted homeownership assistance program in Australia, with some 40,600 households assisted since 1989 (Keystart, 2001). The opportunity to consider these dynamics in respect to a pool of Indigenous recipients of homeownership assistance is also possible through the W.A. Aboriginal Home Ownership Scheme (AHOS). The sample populations are large enough to identify whether existing policies and institutional strategies are able to adequately deal with the differing aspirations, needs and socio-economic circumstances and opportunities that are likely to exist between Indigenous and non-Indigenous homeowners.

The narrower geographic focus allows for a more detailed contextualisation of the model's application, in order to gauge its scope and sensitivity to deal with a range of variables including local and regional influences and to allow a more sensitive and accurate interpretation of results (Ambrose 2001). This grounded research approach also helps to overcome some of the concerns with modelling identified by Thomson and Dean (1995). The research will build and refine the model through an ongoing dialogue with the literature, together with local perspectives developed from interviews with a range of stakeholders, including financial councillors and program staff. Notwithstanding the prospect of distinctive local characteristics, the study does profile a range of different household groups, which are broadly representative of the socio-economic groupings that comprise the wider Australian population.

Anticipated Findings

Early indications are that Keystart and AHOS programs have developed a range of strategies and policies that are effective in mitigating the possible risks associated with applicant pools. The most significant findings to date are that the vast majority of the recipients are successfully servicing their mortgages and benefiting from homeownership. Nevertheless, the social and economic costs of homebuyer default are potentially high for individual mortgage holders on marginal incomes and for the private and public institutions that service them.

We anticipate that there will be three main outcomes corresponding to the research aims.

Firstly, and key among these will be the results directly associated with the model. It is anticipated that the research will allow us to identify the key variables associated with mortgage defaults, and hence identify and profile the risks of default for **pools of** recipients of homeownership assistance;

These findings will not only inform housing policy and programs but will contribute to the contemporary theoretical issues surrounding econometric modelling and the refinement of the variables and parameters used for determining risks for government and financial institutions and prospective first home buyers. The model will create a predictive tool suitable for adaptation by other State Housing Authorities to assist in the modification of existing or development of new homeowner support programs.

Secondly, in addition to the modelling process it is expected that the qualitative research will facilitate a more accurate assessment of the degree of influence of these different variables (demographic, location, exogenous) within the pools of existing Keystart and AHOS recipients; and, importantly to suggest ways to mitigate the risks while maintaining access to homeownership opportunities for marginal income earners. These latter findings will be of significant benefit to informing future policy directions.

Factors such as relationship break down and sudden job loss have a significant bearing on household income and their lifetime earnings. It is envisaged that lifetime income of households is one of the most important determinants of credit risk yet given changes within the macroeconomic environment there is increasing insecurity and uncertainty surrounding the concept of lifetime employment. This research will therefore inform the macro economic policy environment as well as the micro policy and program support mechanisms around relationship breakdown and sudden job loss.

It is expected that the research will show that the social and economic costs of mortgage default are potentially high for marginal income homeowners; reinforcing the need for, as well as identifying modifications to, default and/or arrears practices which can assist low to moderate income earners to retain homes.

Thirdly, the combined quantitative and qualitative dimensions of the research are expected to provide the opportunity to reflect on a range of policy and program design issues. For example:

- In a depressed market it is likely that the higher the loan-to-value-ratios (LVR) the larger the risk of defaults and default-induced sales.
- Indications point to clusters of mortgage defaults in particular suburbs and rural communities and regions highlighting the need for strategies to sustain housing, education, health, employment and community wellbeing outcomes within broader regional development planning.

More broadly, the anticipated research findings suggest that with global economic uncertainties and shifts in national employment and social structures, governments may need to encourage the private financing sector to assume greater levels of social responsibility. At the very least codes of ethical practice and improved 'safety net' mechanisms such as mortgage moratoriums for limited periods, that take account of the big picture analysis as well as individual circumstances, could be considered. The preliminary analysis also highlights the need for government policy makers to identify a set of criteria for determining when the financial and other costs of extending/strengthening the safety net for homebuyers is preferable to the immediate and indirect costs upon government, individuals and society generated by default proceedings.

The contribution this research makes to broader housing policy questions would for example include assessing the impact of the Federal first homebuyer assistance funding on the risk profile of Keystart and AHOS recipients. It is also possible to consider some of the ramifications of privatisation, through the contracting out of housing assistance service providers, as an issue which directly relates to the institutional environment supporting the programs. Each of these issues requires ancillary contextual detail with respect not only to the workings of the policies and programs under investigation in this research, but also to such aspects as key patterns and trends within the housing market such as increases in interest rates and other housing related costs.

1 INTRODUCTION

The research develops an economic risk management model for home ownership support schemes servicing economically marginal households, inclusive of Indigenous households. The research examines the operation of two such support schemes in WA: Keystart and the Aboriginal Home Ownership Scheme (AHOS). Notwithstanding the overall success of each of these programs in assisting thousands of households to access homeownership, this research is directed at modelling the potential impacts on mortgagees' ability to remain in home ownership as a consequence of exogenous economic shocks and increases in the cost of living. The model will be tested for goodness of fit against data from a similar program in South Australia. Most directly, the model creates a predictive mechanism to identify the possible risks of default, as well as for defining improvements to existing safety net mechanisms.

By focusing more specifically on marginal income households this study extends the work of Berry, Dalton, Engels and Whiting (1999). The study also considers the influence of location factors, and investigates the possibility of important distinctions between Indigenous and non-Indigenous households which go beyond previous studies and will therefore have relevance for Indigenous housing policies as well as mainstream policy sectors. The modelling exercise, together with an appreciation of the broader socio-economic and policy context, provides the basis for answering the key question – are home ownership support schemes sound investments for government and for the households involved? It is acknowledged that there are many factors that need to be taken into the calculation in determining what constitutes sound investment. This includes the recognition of the potential for home ownership to contribute on different levels to enhanced social and economic well-being (Saunders, 1990; Winter 1994; Rohe, Van Zandt & McCarthy 2000).

Acknowledging the potential benefits of home ownership the research will identify possible modifications to existing and new schemes in order to tailor home ownership support closely to the needs of economically marginal household groups. Such potential improvements to SHAs' risk management capacity will offer SHAs more efficient and cost effective delivery of housing support mechanisms. This could involve potential savings on lost equity loans and avoidance of costs of re-housing households who fall out of homeownership. At the same time, we will be working to ensure that the model to minimise risk does not result in government policies that severely limit the opportunities for low income or marginalised groups to achieve homeownership. The dangers of this occurring will be overcome in our research through our ethical position and the adherence to a reflexive methodology and commitment to identifying success indicators through policy analysis of existing homeownership assistance schemes.

1.1 Aims & Objectives

- A non-linear forecasting model, which provides a risk management assessment of home ownership support schemes, is to be used to inform policy, improve existing schemes, and help define guidelines and regulations for lending institutions.
- To test the model using data from interstate (South Australia) to establish the model's robustness, replicability and reliability.
- To identify the variables which, are most likely to lead to circumstances of mortgage default and arrears and those that are likely to lead a household to cope with increased costs of living, interest rates and/or decreased incomes.

- To examine the impact of increasing living costs and/or decreasing income streams on marginal owner-occupiers, including Indigenous households.
- To offer a contemporary assessment of the economic and social costs and benefits of governmental home ownership support schemes for economically marginal groups and the extent to which the schemes meet the needs of those groups.
- To evaluate the safety net mechanisms currently designed to help financially troubled recipients of homeownership assistance to retain their homes.
- To recommend possible modifications to existing schemes and/or to suggest new schemes in order to maximise benefits and minimise the costs identified above.

1.2 Direction and Structure

In responding to these aims, the discussion begins by outlining the main policy implications and dynamics associated with homeownership difficulties, mortgage defaults and arrears. The literature explaining the immediate and broader social benefits of homeownership have been comprehensively examined in Australia and elsewhere (Saunders 1990; Paris 1993; Winter 1994; Badcock & Beer 2000). These benefits are not contested here. The contrasting literature presented in Chapter Two builds on the work of Berry et al (1999), to raise questions as to how prudent it is for governments to encourage 'at risk' households to enter into homeownership, and whether additional supports should be offered? In particular, it considers the critical policy dimensions related to governmental homeownership support schemes for marginal income households and the extent to which these existing schemes meet their needs.

In Chapter Three, the discussion turns to consider the economic and social trends that conspire to challenge government homeownership assistance programs and the fortunes of the households they serve. The implications of social economic restructuring on Australian housing markets have been extensively discussed (Badcock, 1997; Fincher & Nieuwenhuysen (eds.), 1998; O'Connor (ed.), 1999), but what this paper emphasises is the difficulties that such trends pose for marginal income households meeting the financial obligations integral to homeownership. In particular, this approach serves to foster an appreciation of the interrelationship between macro socio-economic trends and the financial pressures experienced at the level of the household.

The discussion in Chapter Four narrows the focus to consider more specifically the risks and ramifications of home mortgage defaults and arrears for both institutions and households. Much of this literature originates from Britain and the United States where the severity of the mortgage default phenomena during the early 1990s was such that it generated an extensive body of research. Although the Australian experience appears small scale by comparison, the worth of these international studies is that they indicate how bad the circumstances can get, and to some degree, what can be done to ameliorate the situation.

The modelling process outlined in Chapter Five describes the development of an econometric tool to assess the potential risk of mortgage defaults and arrears in the various homeownership schemes. The discussion is structured around key variables including income, credit history, demographics and macro economic factors. The literature explains the dynamics surrounding each of the variables in terms of the

underlying assumptions and statistical treatment. Some of the more technical aspects of this discussion have been incorporated into the Appendix. It needs to be re-emphasised at this juncture that the model is not intended as a sieve mechanism to constrain access to homeownership for certain groups.

In the concluding Chapter Six, the discussion clarifies the methodological approach in terms of the overall research project. The existing pools of Keystart and AHOS recipients are reviewed using the model to gauge and profile the risk potential of mortgage arrears and defaults relative to the experience in the literature and, also in comparison with the actual track record of each of the programs under scrutiny. Importantly, the modelling process is to be paralleled by a grounded research agenda that incorporates the views of stakeholders, program staff and other experts to provide a more detailed understanding of both the context and the data.

1.3 Ethical Position

The inclusion of the risk modelling process within the study brings with it a number of important ethical considerations, which will be taken into account throughout all phases of the research. In particular, the research team is conscious of the fact that some of the anticipated findings with regard to identifying specific geographic or social characteristics in areas where there are concentrations of defaults and foreclosures could be misused if not contextualised. To overcome this problem all the data collected is embedded within a highly rigorous and ethical analysis to avoid potentially sensitive information being used by financial institutions or other stakeholders in ways that are not intended.

The ethical position of this research is developed from 'Ethical Principles and Guidelines for Indigenous Research' (AHURI 2001) and 'Investigating Appropriate Evaluation Methods and Indicators for Indigenous Housing Programs' (Walker, Ballard & Taylor 2002). These principles mean that the ethics of employing the econometric model will be considered throughout the research. The importance of such a critically self-reflexive methodology is reinforced by Shrader-Frechette (n.d.) who identifies that 'naïve positivists' oversimplify risk management models to scientific rules and therefore minimise their ethical content. Ethical questions which are raised by the model are:

- What possible impacts will the use of the model have on low to moderate income earners inclusive of Indigenous people?
- Is the model sensitive to Indigenous cultural differences, goals and aspirations?
- Does the use of the model contribute to the well being and capacity building of Indigenous and other disadvantaged groups?

These are crucial ethical questions as this model will be used to assess the efficacy and the appropriateness of government sponsored homeownership programs that are intended to assist low to moderate income earners inclusive of both non-Indigenous and Indigenous people. By answering these questions of the model we will also be able to ascertain whether it can contribute to answers for our second and third questions 'Are homeownership assistance schemes ultimately beneficial to the recipients?' and 'What modifications or new schemes could contribute to the sustainability of long term home ownership?'

2 POLICY ENVIRONMENT - HOMEOWNERSHIP

2.1 International and National Context

Australia's rate of homeownership, at approximately 70%, is relatively high by international standards. Spain has possibly the highest rate of homeownership (85%) while relatively affluent nations such as the Netherlands (44%) and Switzerland (30%) have quite low homeownership rates (Choko, 1993). Such variation in homeownership rates has as much to do with the degree of rurality and the timing of the onset of suburbanisation as it does with public policy (Choko, 1993). It is also apparent that the rapid increase in the rate of homeownership, as experienced by many nations during the post war period, was considered a highly desirable outcome by governments of different political persuasions (Hays ed., 1993).

Despite the considerable differences in historical and contemporary socio-political housing contexts, increasing the rate of homeownership was an abiding goal of successive Labor and conservative governments in Australia and Britain, as it was among the conservative and liberal governments of Canada and the United States (Hays ed., 1993; Paris 1993). The potential benefits to citizens arising from homeownership such as financial security, capital gains, and cultural status, together with the broader social and political stabilising influences held considerable public policy appeal for many nations, but not all. Nations such as Germany, France and those in Scandinavia maintain a strong emphasis on social housing as part of the public policy commitment to preserve a comprehensive social welfare net (Hays ed., 1993).

The common experience in Britain, the USA and Australia that underpinned a policy shift towards a greater role for state intervention into the housing market was the need to rapidly respond to post-war housing shortages. It was an urgent concern created by a combination of returning soldiers, increasing numbers of migrants and chronic shortages of construction materials. Under these conditions, governments that had been traditionally reluctant to intervene in the housing market were compelled to do so. In keeping with other State Housing Authorities, Western Australia's State Housing Commission (SHC) was established to alleviate the worst of these post war housing conditions. At that time it became the primary housing and land developer in the State (Selwood, 1981).

2.1.1 Indigenous Perspectives

The government's assimilation policy was also at its height during the postwar period. There was strong push for Aboriginal people to purchase their own home. As evident in the documentary, *The Coolabaroo Club*, at the time there was firm belief by government policy makers that Indigenous people would share the same aspirations as other Australians, including immigrants. It was hoped that homeownership would hold the key to smooth absorption into broader society. As history has shown this has not been the case.

Until recently Indigenous people have been largely excluded from policy decisions on homeownership in Australia and therefore also excluded from historical discussions on homeownership (Ross, 2000). However, Indigenous homeownership can be seen within a broader context of housing policy in Australia; 'The history of housing for and by Indigenous people must be understood in the context of general trends on Aboriginal and Torres Strait Islander affairs policy, especially those which had significant effects in locating people (Ross, 2000:4). These policy trends have shifted over the years from disintegration to assimilation and then integration. This in turn has led to the current climate whereby the majority of Indigenous people are

significantly disadvantaged on all socio-economic indicators including housing, health, employment and education (HREOC, 2000:2).

The policy shift to self determination has seen some changes however as a consequence of this history and the continued inappropriateness or inadequacy of contemporary housing policies. Compared with the national average of 70%, only 30.8% of Indigenous households were buying or own their own homes in 1996 (ABS, 1998a:22). Western Australia fares lower than the national average with only 24.69% of Indigenous households purchasing or owning their own home (ABS, 1998b:26), ¹ By comparison, in the USA 56% of Native American people have homeownership as compared to the national average of 68% (Legal Symposium, 2001:3). This would be partly due to the emphasis that the US has laid upon homeownership on tribal lands (Legal Symposium, 2001:10).

2.1.2 National Perspectives

In Australia, Federal government involvement in housing is essentially limited to a largely financial role, albeit through a range of programs and mechanisms. Under the constitution, land administration, development controls, utilities and infrastructure provisions are all State vested responsibilities. As such, only the States have the enabling powers and resource capacity to be directly involved in housing provision. Nevertheless, Federal housing policy directives are expressed through prioritised grant funding programs, competitive or special purpose grants, welfare payments such as rental assistance, and also through tax incentives. Indigenous housing funds are primarily distributed through federal funding via the Aboriginal and Torres Strait Islander Council (ATSIC) and with each of the States making some contribution.

The main instrument for coordinating Federal funding and State implementation is the Commonwealth and State Housing Agreement (CSHA). This was initiated in 1945 and involves negotiating the priorities for distributing the 'social housing' budget' created from matched Federal and State government funds. For the first 10 years the development of public rental housing was the focus. However, since then the funding priorities have increasingly shifted to encourage homeownership and private investment (Clapham, 1990).

As with Britain, once the post war shortages dissipated, 'equity and distribution were less of a concern and 'national aims and housing policies were increasingly linked to individual choice, reward, accumulation and enterprise' (Williams, 1999:132). The same policy emphasis within the CSHA has become more pronounced since the 1980s. Public rental housing development has been scaled back and properties sold off while home ownership has been expanded through subsidised home loans, grants and incentives (Paris, 1993). In the US there was a similar shift, with the same results in terms of more households on lower incomes accessing homeownership (Rohe, Van Zandt & McCarthy, 2000).

A current example of this continuing policy direction in Western Australia is the Federally funded but State administered New Living redevelopment program. This program redevelops older public rental housing estates, reducing the levels of public tenants and inducing low to moderate income earners to enter into homeownership (Ministry of Housing 2001:62). Although there are concerns about the relocation of public tenants (see Ballard, Hillier, Taylor & Walker, *The Effects of New Living on Indigenous Wellbeing: a case study of urban regeneration*, AHURI forthcoming, 2002), the remaining tenants and the new homeowners benefit from the urban

¹ This comparison needs to take account of the fact that the Indigenous population is on average younger (median age of 20.1 compare to 34 years of the population as a whole - ABS, 1998a:4) with proportionally fewer people within the age group likely to be buying their own home.

renewal on many levels. In particular, the new homeowners benefit from the wealth generated through increasing property values as well as from the enhanced social status and capacity for self-determination. In this way, by increasing property values and encouraging homeownership, the SHC fulfils its dual role as housing provider and land developer.

Another very significant form of Federal government support for owner occupation is through tax concessions for homeowners. Owner occupiers are exempt from tax on the capital gains accruing from home sales, which is one of the reasons that the family home is such a focus of family savings and providing a 'retirement nest egg' (Wood, 1990). Importantly though, these tax and equity incentives are less effective for lower income households given that their taxable income thresholds are already low, and the capital gains on an affordable home during uncertain times may also be relatively low (Paris, 1993). 'Families who buy into areas of low capital appreciation increasingly fall behind families who buy into areas that appreciate rapidly in terms of their economic resources and their options to relocate' (Burbidge & Winter, 1995:65).

Perhaps the most influential Federal policy with respect to encouraging private investment in the housing market relates to the deregulation of banking and finance (Perkins, 1989). Since the 1980s, through a series of ongoing measures, the number of lending institutions and the pool of available funding for housing in Australia have greatly expanded. This increased liquidity and competition has facilitated greater access to home mortgages for people on lower incomes. However, it has also increased the risks for institutions and individuals (Berry et al, 1999:5). Loan to Value Ratios upwards of 95% have become common practice but at the same time, the monitoring and regulation of lending practices have been relaxed (Perkins, 1989). The fact that interest rates remained relatively low throughout the 1990s was a saving grace to those mortgaged to the edge of their ability (Ford and Burrows, 1999; Berry et al, 1999). The model developed through this research will have the capacity to anticipate the scale of the increased risk of defaults from the impact of interest rate rises which are captured through the home loan affordability indicator.

Although it has been argued that there has been a general withdrawal of public sector involvement in the housing market (Dalton, 2000), this seems less so with respect to encouraging homeownership. As Pretecille (1982:129) reminds us, whether governments decide to intervene in the market or not, is nonetheless, intervention. Over the long term, the degree and form of intervention may have waxed and waned between direct and indirect means, but the importance of homeownership as an income distribution mechanism, and as a focus for investment and job creation (Greig 1995; Winter & Stone, 1999) is too important to be ignored. The recent \$14,000 Federal grant to all first time home buyers building a new home is a clear example of the dual housing provision and job creation agenda. Although the subsidy, which amounted to \$800 million in 2001-02 financial year, is received directly by the homebuyer, overall it represents a very significant contribution to the broader home building and property development industry.

The institutional configuration and operational mechanics of the Keystart program in Western Australia reflect this supportive public sector role, together with a growing private sector contribution in terms of promotion, implementation and finance. The program was introduced to service the needs of those whose incomes were too high to be eligible for public housing, and yet were likely to be too low for bank financing (Keystart, 1999:3). Although the program is dependant upon the State Government's credit rating and guarantee, the actual program is administered by a private sector service provider, which won a competitive tender as directed by the State Housing Commission. The finance derives from the private sector, with the provider deriving its healthy profit from the difference between the interest rate cost of borrowing \$2

billion, versus its earnings from lending \$2 billion to low-to-moderate income home buyers.

In recognising this overlapping government-private sector configuration as being in keeping with the contemporary character of government intervention, the argument is that a combination of very different implicit and explicit policies and mechanisms continues to foster a culture of homeownership, with owning a home interpreted as a right of citizenship (Paris, 1993). What governments seek through these policies is less direct intervention and lower costs, together with more private investment. The rationale includes a sense of social stability and cohesion that emanates from the long-term financial investment and 'sweat equity' that home ownership entails. So while there is continuing evidence of the policy support for homeownership as demonstrated by recent and ongoing Federal and State government programs, questions remain as to how sustainable and universally beneficial these policies may be in the long term.

2.1.3 Western Australian Perspectives

The programs under review include the Western Australian government sponsored Keystart scheme, and the Aboriginal Home Ownership Scheme. Western Australia has by far the most significant homeownership assistance schemes in Australia. The State accounts for over 50% of the national total in terms of the numbers of families assisted and the amount of capital expended.

Since its inception twelve years ago, the Keystart program has assisted over 36,000 families into homeownership. As with earlier government-backed finance schemes, the program was designed to assist households on incomes too high to be eligible for public housing, but too low to be considered for private mortgage financing. Keystart works by providing access to loans on generous terms including flexible eligibility criteria and very low deposit requirements. In recent years, following Federal and State government policies, targeted schemes have been introduced to encourage particular groups – such as Aborigines and people with disabilities – to enter into homeownership.

Although Keystart is totally reliant upon private financing, the margin for operation relies on the Government's credit rating and its ability to underwrite the risk. In this capacity, Keystart serves as an anchor for public and private land development activities, which attract private corporate investment, together with individual savings and mortgage investment. This use of private finance has meant that Keystart has been particularly significant in the context of declining CSHA funding. As a result, Western Australia's share of government-supported loans has increased from around 8% to more than 50% of the National total (Housing Assistance Act Annual Report, 1996).

The Aboriginal Home Ownership Service was designed to help more Aboriginal and Torres Strait Islanders to make the transition from renting to homeownership. The scheme enables clients to purchase a minimum of 70% share in an existing home, construct a home, or purchase their existing Homeswest tenancy. The AHOS began in 1995 and has assisted 311 Indigenous people into home ownership. In the year 2000 – 2001 the program assisted 51 households totalling \$5 million. (DHW 2001:23).

2.2 Homeownership Sustainability Questions

The benefits accruing to individual homeowners, together with a full appreciation of the broader social advantages of homeownership have been thoroughly discussed within the literature. The two principle motives for people to own their home relate firstly and most importantly to financial benefits, and secondly to a greater sense of

independence (Saunders, 1990:84). The financial benefits include the disciplined savings and investment that provides a vitally important income supplement in aged retirement (Castles 1997:34). For some fortune seekers, a lifetime of strategic housing investment can also generate more wealth than they could possibly earn through employment (Badcock & Beer, 2000:63). More commonly though, the mortgaged home is used as collateral for securing credit card financing or a personal or business loan.

Homeownership can also become a focus for social action, expressed individually or collectively, and in this manner there are distinct political and cultural advantages over renting (Winter, 1994:217). In comparison, the often insecure and temporary rental home is more likely to engender vulnerability rather than any sense of stability or control. The advantages of homeownership are reinforced by more ethereal, but never the less highly valued attributes such as social status, attachment and belonging, and also with respect to self-determination. So, in combination with the more immediate financial and social advantages of homeownership, there are benefits across generations accruing through inheritance and also with respect to the passing on of positive cultural values and expectations. In a world increasingly characterised by rapid change and stressful living, 'the privately owned home represents a secure anchor point', a familiar customised and relatively permanent space, from which to engage life challenges (Saunders 1990:311).

In positioning this research, there is no intention to question the validity of these advantages of homeownership. Rather, this research is more concerned with the policy implications when these 'assumed' benefits do not eventuate. In particular, as Badcock and Beer (2000:73) surmise, it is sadly ironic when government assistance with homeownership leads marginal income families into mortgage default, as was the case across Australia in the late 1980s. As is discussed in Chapter Five, the impact and ramifications of mortgage defaults for individuals and institutions extends well beyond the immediate financial costs. This raises questions; as to how responsible are governments for such instances of default, and whether this responsibility should extend to the private sector institutions that are increasingly likely to be providing the service?

Although Badcock and Beer (2000) identify several types of winning scenarios with respect to home ownership, they also identify several types of losers. Amongst those homeowners who lose are those who have multiple investments or over capitalise and those who may have had to sell at a loss in a buyers' market. The focus here is on those with marginal incomes who are losing the struggle to retain their own home because, one way or another, they are overwhelmed by the costs involved. Given that Keystart and AHOS recipients are first homebuyers, there is a particular interest in understanding the special difficulties faced by this important segment of the market (see Kupke & Morano, 2001).

There is a growing body of research which recognises and begins to describe a negative turn with respect to the first time home buyer market (Berry 1998, Berry et al, 1999). The propensity for home purchase has declined for some groups. In particular, home purchase has been deferred by the current generation of first home buyers (Yates, 1999, 2002). Trends in household composition have had a negative impact on home purchase rates as have real or imagined employment and income insecurity (Mudd, Tesfaghiorghis, & Bray, 1999; Winter & Stone, 1999). As Nettleton and Burrows (2000:163) point out, 'discourses surrounding homeownership contain an inherent contradiction, on the one hand buying a home is presumed to be a secure investment and a means of taking control over one's life, on the other hand buying a home is fraught with hazards and risks'.

Although the underlying trends have been widely discussed, the potentially deep policy implications of this negative shift in homeownership trends have yet to be fully explored in the Australian context. Badcock and Beer (2000) offer an important contribution in not only characterising the winners and losers of homeownership, but also in relation to the longer term cost and benefits to governments. Useful insights are also to be gleaned from the British and USA experience where concerns over homeownership rose to prominence in the aftermath of the 1991 recession (Ford, 1994). Focusing directly on the issue of mortgage defaults, it is clear that there are significant and far reaching financial and social costs incurred by governments, institutions, whole communities and, perhaps most severely, by individuals. The possibility that government assistance with homeownership could be continuing to precipitate housing stress and mortgage defaults among the recipients would, if so, be of considerable concern. Such a finding would reinforce the need for a strong whole of government approach to coordinating housing, employment and supportive welfare strategies in revitalising communities.

In Britain, it is recognised that 'homeownership was over-promoted by successive Conservative governments and that some re-balancing must take place' (Williams, 1999:136). One aspect of this argument emphasises that homeownership is only one form of tenure, and as such cannot possibly satisfy the diversity of needs provided for by all forms of housing tenure in combination. Policies encouraging one form of tenure over all others will reduce the availability of alternative choices, as the few remaining choices are taken up, and in the long term, they may perpetuate household preferences for the dominant tenure (Dieleman & Everaers, 1994).

By the end of the twentieth century there was also widespread recognition that many families who had been encouraged into homeownership were unable to cope with the financial burdens and responsibilities. As Nettleton and Burrows (2000) point out:

The extent to which they can fulfil these household responsibilities will be contingent on both their own economic resources (for example their paid work, their savings and their financial obligations) and the other forms of capital they possess (for example their level of education, health status, physical prowess, marketable skills and so on). ...The fact that individuals have to be flexible and responsive may in turn contribute to new forms of inequities. (Nettleton & Burrows, 2000:159).

Nettleton and Burrows (2000) highlight the increasingly unrealistic expectations of employers and government welfare programs that insist upon flexible and responsive employees and recipients in satisfying their respective obligations, when not everyone can be flexible and responsive. Furthermore, this expectation of employers and welfare programs appears to be regressively one sided.

On one hand those who cannot succeed with homeownership will have to endure less secure private rental markets, perhaps with corresponding issues of entrapment (Wulff & Evans, 1999). On the other hand, the international and national experience suggests that policies encouraging marginal income households into homeownership can produce both highly desirable and undesirable outcomes (Ford & Burrows 1999; Rohe, Van Zandt & McCarthy, 2000). The vast majority of new homeowners rise to the challenge of meeting the responsibilities and costs and are rewarded by the long term capital financial gains and social stability. However, some will be saddled with a financial and maintenance burden that will push them into financial difficulties, poverty and possibly homelessness. There is evidence that Australian homeownership assistance programs have been associated with these types of negative outcomes in the past when interest rates spiralled (Badcock & Beer, 2000:73). The long term psycho-social problems experienced by individuals and the potential for community destabilisation, are also borne by governments through higher social security, health and welfare costs (Rohe et al, 2000).

The ongoing emphasis on mutual obligation requirements within all manner of social policy and programs also has relevance with respect to the delivery of homeownership assistance. In particular, recent indications are that the two-way relationship — between citizen and state — implied by the mutual obligation principle, needs to be reassessed with respect to government responsibilities. As the Reference Group on Welfare Reform (2000:3) states, 'central to our vision is a belief that the nation's social support system must be judged by its capacity to help people participate economically and socially'. In the USA, such a rethink has resulted in the 'Bridges to Work' and 'Moving to Opportunity' programs to address the mismatch between housing and employment (United States General Accounting Office 1998). In other words, it is beholden of governments, that the housing assistance they provide is ultimately economically and socially enabling for the recipients.

2.3 Policy Implications

In this light, and given that not every household has the capacity to own and maintain their home, key policy questions would include:

- At what point is it imprudent, or irresponsible for governments to encourage or offer direct assistance to 'at risk' households to enter homeownership?
- What further type and level of supports can or should be offered by governments if they are to continue to assist marginal income households into homeownership?

Such policy questions can be approached through a 'human rights' framework. The International Covenant on Economic, Social and Cultural Rights spells out the right to housing and freedom to economic development both of which are implicit in homeownership when it meets its ideals. The positive impact that the various homeownership programs can have on individual rights is that they offer another form of tenure for those on low to moderate incomes and therefore greater choice in accessing shelter. As some of the literature discussed previously suggests, homeownership can also offer people a greater sense of control over their immediate surroundings and stability that is often lacking in the rental market.

Self-determination, which spans both individual and collective rights, has an economic imperative (Lea, 2000:6). In cases where people have bought houses that appreciate in value the property becomes an asset which provides people with greater economic opportunities to determine their own future. Access to such opportunities is especially critical for Indigenous peoples whose social and economic position in Australia is generally lower than that of other Australians. However, because housing affordability is linked with location there is a greater likelihood that people on low to moderate incomes will purchase low cost housing in locations with greater risk of stagnation or even depreciating value; these factors when coupled with the inability to meet the loan repayments create serious difficulties for people who fall into mortgage arrears for any reason. This generally leads to a loss of the economic resources invested into the property (Rohe et al, 2000). The hardship experienced is likely to be prolonged through such factors as being excluded from future credit services, and for some extreme cases, homelessness may result (Ford & Burrows, 1999). In such cases, an individual's rights to shelter and economic development are eroded and as a consequence the risk is that they become reliant upon other government safety nets within the welfare system such as state housing and rental assistance.

2.3.1 Policy Relevance for State Housing Authorities

Monitoring of policy outcomes in WA and modelling circumstances of increasing living costs in WA and SA will be of direct relevance to both government housing agencies and those non-governmental agencies which deal with the repercussions of mortgage default on households. Other, SHAs may be stimulated to reconsider the the longer term cost and benefits of homeownership assistance programs as a result of the knowledge and insights delivered by this research project.

Policy implications include the production of a model which the Commonwealth and the State and Territory Housing Authorities can utilise to determine the likely impact of existing and potential home ownership policies on marginal households and thus make any modifications to increase the effectiveness of those policies where necessary. Policy implications include:

- The improvement of risk management capacity, SHAs will become more cost effective.
- The ability to fine-tune state home ownership support schemes for different groups including Indigenous people (AHOS), low income households (Keystart), with regard to a potential minimum income level for eligibility for a scheme, provision of financial counselling pre-entry to a scheme, provision of follow-up assistance if necessary for more efficient and effective delivery;
- Identification of potential areas of assistance for SHAs and other agencies of governance engaged in welfare provision to target 'at risk' households.
- Indication of the degree of 'tolerance' of marginal owner-occupiers for increases in living costs to inform a more responsive safety net to help maintain those who are at risk of losing their homes generation through mortgage default.
- With less households falling out of homeownership, there will be lower costs involved in responding to the needs of those rendered homeless and in debt.

3.INSTABILITY AT HOME AND AT WORK IMPLICATIONS FOR FIRST HOME OWNERS

3.1 Introduction

Over the last two decades, the profile of work, family structure and living patterns has experienced considerable change. The implications of these changes with respect to housing have been the focus of a raft of international and Australian studies (Stilwell, 1993; Marcuse, 1996; Wulff & Evans, 1999; O'Connor (ed.), 1999). This section considers more specifically the prospects of marginal income households maintaining their first mortgages in an era characterised by employment insecurity, fluctuating income streams and increased family and relationship breakdowns.

The relevance of this line of inquiry becomes clear upon reviewing the results of a comprehensive UK study of people living in mortgage arrears. The qualitative approach to their research revealed the complexity of the individual experience. From this research six recurring themes were identified among households as to why people 'slide into arrears' (Davis & Dhooge, 1993:37). These include:

- disruption to employment
- self employment and business failure
- failure of income support
- repair obligations and improvements to home
- financial over commitment, and
- relationship breakdown.

In a later quantitative study in the UK, Ford et al (1995) also identified four similar factors:

- redundancy
- loss of income
- small business failure, and
- personal relationship breakdown.

It is likely that Australian households share similar experiences. Gregory and Sheehan (1998) have described the increasing gulf between the 'haves' and the 'have-nots' in Australia as arising from its global competitive positioning. This has precipitated lower real wages, high rates of chronic unemployment and under-employment, together with increasing numbers of families with no parents in the work force, or both parents in the work force, and increasing poverty especially among female single parents (Murphy & Watson 1994). More specifically, the negative shift in homeownership propensities across a range of different household types suggest the influence of a complex array of demographic, macro economic and social influences (Yates1999:41).

The literature on social economic restructuring offers several important insights with respect to understanding the emergent opportunities and constraints for homeownership. The influence of the deregulation of finance markets was, for example, mentioned earlier as a Federal government policy initiative, and it will also be discussed in Chapter Four in relation to institutional perspectives on mortgage defaults. In this section though, the emphasis is on highlighting the interrelationship

between insecure employment, fluctuating incomes, and family stress. The importance of this link between family or household composition and the impact of an era of insecure employment cannot be overstated. These factors are interlinked in complex ways and they feed back onto each other to influence the default-foreclosure outcome (Davis et al, 1993; Nettleton & Burrows, 1997).

3.2 Insecurity at Work

In Australia, there is a general understanding that part time and casual work has increased as a proportion of all employment (Stilwell, 1993). This casualisation of employment has been an emerging trend for over twenty years and although it masks a high level of underemployment, the rate of unemployment has also increased significantly during this period (Gregory & Sheehan, 1998). This pattern of insecure employment covers all employment sectors and industries. However, it is clear that some industries and employee levels are much more affected by these trends than others. The declines in manufacturing and more recently in middle management through technological displacement have been most pronounced (Gregory, 1993).

Internationally these trends have had the affect of polarising income distributions into highly paid, full time professional elites, separate from low paid part time and casually employed labour and service personnel (Reich, 1991). The consequence of these trends in Australia has been a 20% decline in the number of middle-income earners since the early 1970s (Kemp, 1996). With growth occurring at the top and bottom of the employment and income levels, and with declines in the middle, the structure of society is shifting from an egg to an hourglass shape reflecting the squeeze on the middle class (Lepani, 1994)

Although the complexities hinder firm conclusions, the concern is that the housing market is reinforcing, rather than ameliorating, the nature and character of the inequity in employment markets and income levels (Winter & Stone, 1999). More specifically, the threat is that increasing income polarisation is leading to a polarisation of tenure whereby increasing numbers of households are being locked out, or are falling out, of home ownership (Berry et al, 1999). In a UK study, it was found that borrowers who were foreclosed upon had considerably lower incomes than those who were in arrears, and in turn, those who were in arrears, had considerably lower average incomes than those who were mortgage-current (Ford et al, 1995).

Whereas mainstream Australia may be experiencing an erosion of its middle income earners, it is generally accepted that low and moderate income earners, among them many Indigenous households, are enduring the worst of the employment and income repercussions of economic restructuring (Gregory & Sheehan, 1998). The rate of unemployment among the Indigenous population was 17.6% in 2000 compared to 7.3% for non indigenous Australians (Trewin, 2000). The advent of the term the 'working poor' applied to 800,000 of Australia's lowest paid working households also suggests that intermittent work, and single-worker families relying on part time or casual work are an increasingly common phenomenon (ABS, 2000).

Several studies in Australia have also pointed to the decline in the propensities of some groups to access home ownership, particularly low-moderate income earners aged under thirty (Yates 1994, 2000; Berry 1998; Wulff & Newton, 1995). Other research suggests that the realisation of homeownership aspirations is increasingly dependant upon the prospect of two income households (Merlo & McDonald, 2002). Conversely, an apparent hesitancy among potential first homebuyers is closely related to the perceived income and employment insecurity (Wulff & Evans, 1999). Government assistance to support marginal income households to access homeownership serves to confront these trends. However, it is important to

recognise that accessing homeownership is only the first challenge, and that given the insecurity at work and at home, it is the discipline of the long term payment regime that poses the bigger challenge.

Mortgages are premised on the assumption of stable employment over a long period of time. And there is an increasingly clear disjuncture emerging between the supposed need for flexible labour markets and the ability of people to sustain mortgage payments over long periods. It would seem that as long as this disjuncture exists, homeownership will remain problematic and or unsustainable for a significant proportion of homeowners (Badcock & Beer 2000:161).

The uncertainty that comes with job insecurity and fluctuating incomes also negatively impacts upon household consumption and saving patterns (Ford et al, 1995). Under such conditions, and in addition to servicing the mortgage payments, it becomes difficult for low and moderate income households to budget for big bills such as rates and water or unexpected home maintenance costs (Shelter WA, 2000). Although mortgage-originating practices factor in these eventualities, the implication of structurally insecure employment is that employment circumstances and income levels are subject to change and hence capacity to service a mortgage is subject to change.

Once a job has been lost, homeownership can actually impede the search for employment in the sense that any necessary relocation is problematic (Reilley & Witt, 1994). While homeownership does not appear to be an impediment in urban settings there are some issues in relation to the boom and bust of regional employment. This can be especially severe in areas that have experienced waves of retrenchments or long-term structural decline such as in mining and agricultural towns and regions dominated by one industry. In Western Australia, Keystart officials note that some of the largest financial losses resulting from mortgage defaults have occurred in the mining towns currently experiencing retrenchments in the face of commodity price declines. Questions have also been raised with respect to why it is that financial counsellors in country areas seem to be seeing a higher proportion of borrowers with Keystart loans (Shelter WA, 2000).

The literature also indicates that even a contraction of hours or wage rates is enough to edge some marginal income households into default (Ford et al, 1999). Such dynamics manifest an arrears profile of 'skipped' mortgage payments, which may be strung out over several years accumulating an increasing level of debt. The use of credit cards and other credit mechanisms to bridge the gaps in household income streams is another symptomatic and compounding problem (Davis & Dhooge, 1993). In Western Australia some 80% of all bankruptcies are personal rather than commercial, with multiple credit cards, car loans and telephone contracts, together with low deposit loans cited as the most common reasons (Stevens, 2001).

Given that home purchase and maintenance requires a stable income stream, the spectre of the increasing casualisation of labour suggests an emerging 'disjuncture'. In this context, unemployment benefits and other welfare payments can serve a critically important role in ameliorating household income fluctuations. In the UK, such was the scale of the retrenchment and foreclosure problem; welfare benefits were introduced to cover the interest rates on home mortgages (Williams, 1999). The punitive orientation to the mutual obligation requirements, so much a feature of contemporary Australian welfare policy, tends to overlook the wider implications of financially penalising wayward recipients (Reference Group on Welfare Reform, 2000; Saltau, 2001). The current research will seek to identify any relevant patterns in the influence of social welfare provisions and procedures.

3.3 Instability at Home

The insecurity in employment and housing markets is compounded by several key demographic trends, particularly those associated with the breakdown of kinship networks. One of the 'well documented' changes among Australian households is 'the rising divorce rate along with an associated growth in single parent families' (Yates & Wulff, 1999:1). Moreover, 'with respect to the accumulation of housing wealth the difference between one and two income families is becoming increasingly significant' (Badcock & Beer 2000:52). In addition to the fragmentation of financial capital that occurs when families split, the loss of social capital in terms of reciprocal support in meeting family life demands undermines their capacity to maintain homeownership (Davis et al, 1993).

Next to employment and income loss, divorce and family break-ups are the most commonly cited explanation for mortgage defaults (Berry et al, 1999). But what the literature is pointing to with respect to mortgage defaults is that stressful home life; insecure employment and fluctuating incomes are not necessarily mutually exclusive factors. Whether it may be a 'marriage break up or the arrival of another mouth to feed, either event has the potential to slash a families earning power, just when the financial drain on a household paying off a home is peaking' (Badcock & Beer 2000:74).

The imminent prospect of having children is still regarded as the most influential factor in determining the timing of the purchase of a home (Merlo & McDonald, 2002), however, along with the arrival of dependants come costs and risks. Families with dependant children, particularly single parent families are among the poorest households and the *Perth Social Atlas* (ABS, 1997) highlights the distributional effects of these dynamics. The concentration of couples with children matches fairly closely the distribution of dwellings being purchased on the urban fringe (op.cit:37). However, the distribution of single parent families is quite different, with concentrations in areas characterised by high rates of public housing and low income households (op.cit: 21).

According to the ABS (1998a:13), Indigenous families are more than twice as likely to have four or more dependant children (12%) than other Australian families (4.5%), and the rate of single parent families (26.6%) among the Indigenous population is almost twice as high as that of other families (14.2%). Such diversity of households requires flexible programs to enable Indigenous people with low to moderate incomes to engage in them.

Indigenous families also have obligations and support mechanisms that extend beyond the 'nuclear family' into the extended family (Collard 2000:28). Assistance is available from kinship networks in times of economic difficulty (ibid), however, government programs may fail to recognise and hence under-utilise the wealth of skills, resources, knowledge and assets that exist within these extended family networks. While these networks can be an important source of support, problems in securing or maintaining a mortgage can arise if these extended kinship networks and obligations place additional financial pressures upon applicants. Some from intergenerational disadvantaged backgrounds have not accumulated assets or the knowledge of how to manage assets and this places them at an extreme disadvantage in both entering and maintaining homeownership (Moran, Memmott, Stacy, Long & Holt 2001). In these families there is a lack of assets and in times of difficulty they are either unable to ask family members for assistance, or if they do, there is the danger of also placing their relatives under financial pressure

As marginal to homeownership as these income and household circumstances can be, the high risks of default can be offset by important long-term advantages for both recipients and governments. Homeownership programs play a key role in 'promoting growth of assets among Indigenous people and reducing intergenerational poverty.' (Commonwealth Grants Commission, 2001:153).

An obvious advantage in providing homeownership assistance to families enduring such fragile income and household circumstances is the potential to begin to build an asset base, enhance life expectations and reduce welfare dependency. Several prominent stakeholders have argued that homeownership is critical to ending welfare dependency as it has potential to significantly add to individuals' and communities' capacities to determine their own economic future and self-determination (Martin, 2001; Pearson, 2000). Walker, et al (2002) link self-determination to capacity building while at the same time acknowledging that intensive resources are often required. From this perspective, homeownership can enable families to overcome the impacts of intergenerational disadvantage provided they have access to appropriate support resources.

This perspective is based on the assumption that homeownership represents an appreciating asset, however, in today's uncertain context this cannot be taken for granted. If location has always been important in terms of real estate values, the implications from the socio-economic restructuring literature suggest that it has become a much more critical factor. Although there is broad agreement with respect to the depth and pervasiveness of social-spatial polarisation across Australian cities and regions (Stilwell, 1993), the pattern of inequity does not necessarily give rise to large uniform and entirely separate clusters of rich and poor (Knox, 1995; Marcuse, 1996). Rather, the research suggests that economic and social influences, together with the structural tendencies in the supply side of the housing market are, in combination, driving increasingly differentiated patterns of housing choices, constraints and outcomes (Yates & Wulff, 1999).

3.4 Summary

The prospects of increasing self-determination, breaking cycles of poverty, and reducing welfare dependency are highly desirable outcomes from homeownership assistance schemes. However, in an insecure employment market, together with less than stable household and family circumstances, the risks of defaults and arrears, are relatively high. In this context, homeownership assistance and support schemes need to be highly attuned towards maximising the positives and minimising the risks. In particular, homeownership assistance programs need to be designed and resourced to help those assisted to succeed in their home ownership.

In focusing specifically on marginal income households taking on the responsibilities and financial burdens of homeownership this study is positioned to examine some of the critical interrelationships between irregular employment and income streams, family break-ups and household pressures, together with locational factors. These variables are not mutually exclusive and together they underpin a fuller appreciation of how households are able to adjust and react to exogenous shocks such as high increases in the cost of living (such as petrol prices), large bills, periods of sickness, extended periods of unemployment, and or changes in welfare policy and procedures. There are short and long-term dimensions to these dynamics, both of which will be explored during the processes of assembling and qualifying the modelling data. It is anticipated that the nature and character of these linkages will emerge from in-depth interviews with financial counsellors and other key informants, together with insights from housing assistance program staff.

4 ARREARS AND DEFAULTS

4.1 Introduction

In most States of Australia the mortgage foreclosure process generally involves making an application to the Register of Titles that satisfies two main conditions. There must be a default in the payment of principle or interest on a mortgage that has been outstanding for over six months, and the property must also have been offered for public auction where the highest bid achieved less than the amount owed (Duncan and Willmott, 1996). Once these two conditions have been satisfied the Registry of Titles may issue an order that allows the Mortgagee to foreclose — take possession of — the equitable estate of the Mortgagor without further appeal or recourse. The Mortgagee thus becomes the undisputed owner of the property.

An important qualification relates to the understanding that a Mortgagee's 'power of sale' is a simpler and more expedient remedy for mortgage arrears (Duncan & Willmott, 1996:137). Initiating a foreclosure through the courts is therefore an unnecessary option in almost all cases because it is generally more practical to sell the property to cover the debt. Although the term 'foreclosure' is used in common parlance, the process is more aptly described as Mortgagee in Possession, whereby the finance institution exercises its power of sale and transfers the deed to a third party through a Mortgagee's sale.

Problems arise when the sale price is unlikely to cover the debt or when the property is likely to remain unsold for an extended period, and as is discussed below, these circumstances are in turn interrelated with increasing rates of defaults, depreciating property values, and negative equity situations. Furthermore, when the ramifications of the trends toward increasing socio-spatial polarisation are considered, the literature anticipates the prospect and influence of clustering effects with respect to mortgage defaults and associated housing related stress (Yates & Wulff, 1999).

In this chapter, the discussion focuses more specifically on the risks and ramifications of home mortgage defaults and arrears for institutions, communities and households. Much of the research originates from Britain and the United States where the scale of the mortgage default problem during the early 1990s generated considerable policy interest and interventions. Although the Australian experience may be small scale in comparison, the worth of these international studies is that they indicate how bad the circumstances can get, and to some degree, what can be done to ameliorate the situation.

4.2 Institutional Perspectives

From a finance industry stand point; mortgage defaults will generally be pursued as quickly as possible. The aim is to recover the costs, reduce the number of initial defaults, and to reduce the overall length of the process (Ambrose, Buttimer & Capone, 1997). These practices are followed by such socially committed housing finance institutions as the Fannie Mae Corporation in the USA;

A major component of loss mitigation is early intervention because experience has shown that once a borrower has missed three or more payments the less likely the loan will become current. If repayment plans, a temporary forbearance, or a modification of terms are not appropriate, the loan servicer may attempt to arrange a pre-foreclosure sale. In case of foreclosure, Fannie Mae will process them expediently to minimise the amount of time the corporation retains a non-earning asset. (*Fannie Mae Corporation 1999:31*)

As well as the strict guidelines that it requires the agents servicing its loans to follow, Fannie Mae has also developed several other loss and risk reduction strategies. One of these, the Risk Profiler, predicts the likelihood that a loan will go into default by

using updated data on credit history and property values. The 'Desktop Underwriter', is a decision support tool used in evaluating mortgage applicants (Fannie Mae, 1996:3). What these efforts signify, is the recognition that the action of the mortgagee is also an important influence, with respect to originating and servicing the loan, as well as managing the refinancing or the foreclosure processes (Vandell, 1995:261).

An increasingly common approach used by lenders to reduce their risk is mortgage insurance. In a risky environment, lenders still want to grow and increase their market share. Mortgage insurance facilitates more competitive and marginal lending (Nott, 1998). The borrower pays a single up-front premium (approximately \$1,000) that protects the lender from losing in the case of a debt accruing through foreclosure. It is also the borrower who owes the insurer if the lender makes a claim. Lenders are still reliant on the data collected by the agent. Misrepresentation by the applicant and/or agent does occur and 'although a lot of information is required it is seldom checked' (Nott, 1998). So although mortgage insurance does offer some protection to lenders, it does little to alleviate the plight of borrowers who find themselves sliding into arrears (Ford & Kempson, 1997). What it does for the borrower is to facilitate lower house deposits and lower income thresholds to qualify for a mortgage, and therefore, it increases the risk of defaults.

The quasi-State owned banks, the building societies and credit unions that dominated Australian home mortgages prior to the 1980s de-regulation measures were traditionally highly reluctant to foreclose. Mortgage foreclosures were a rarity. One of the outcomes of the finance industry de-regulation and restructuring has been the loss of the 'relational banking' ethos that prevailed when branch managers were more in touch with the local context (Mathews, 1999; Maine, 2000). It was a different kind of risk minimisation strategy; one where the branch manager was familiar with local property conditions, together with a greater sense of the family and employment background of the mortgage applicants. There was also less money around, lending was a more cautious practice and there were restrictive quotas and tight guidelines. It was a very different banking culture than today's semi-nomadic mortgage agents who earn commissions based on the number and size of the loans they originate (Nott, 1998).

Research in the USA indicates that Indigenous communities and people with low incomes tend to be vulnerable to the more unscrupulous financiers who focus primarily on people with bad credit ratings. Predatory financiers have very high interest rates, balloon mortgages; excessive fees; prepayment penalties that result in loan default leading to property repossession and the break up of communities (Legal Symposium, 2001:5). Berry et al (1999:53) cites Hall (1997) who provides evidence that these practices are becoming more common in Australia. Keystart program officials note that first homebuyers can be subject to unscrupulous agents who offer financing packages for soft furnishings, gardens and other new householder needs at high interest rates.

In Britain during the 1991 recession, lenders significantly improved their skills and procedures in dealing with faltering mortgages: there was better case management, reporting and staff training (Williams, 1999). These rescue systems were complex, and resulted in higher arrears, but for lenders, they were preferable to the mass of foreclosures that they were potentially facing. The introduction of the Code of Mortgage Lending also helped to ensure that buyers were better informed about the choices they were making in a risky market (Wilcox & Sutherland, 1996). This was potentially a very important initiative given that borrowers were often poorly equipped to assess their own risks or to appropriately adapt their housing choices (Munro, 2000).

In Australia the recently updated code of practice increases the responsibility attributable to banks with respect to helping borrowers overcome financial difficulties before they call in the debt collectors or attempt to take possession. This initiative was pursued by the Australian Consumers Association in response to complaints of 'harsh treatment, including banks which offered too much credit on a low income base, then refused to help when money becomes tight' (Rose, 2002). The type of help that is now to be expected includes restructuring the mortgage payments or advice on how better to arrange the mortgagor's finances. It remains to be seen whether this initiative will cover other mortgage originators, or other bank credit practices, such as financing credit cards.

The safety net that operates with the Keystart program has proven effective at saving some 85% of its applicants from accruing further debt and ultimately losing their home. The assistance offered varies relative to individual needs, although a six month period of payment at half rate is a common allowance. Although 'most applications for safety net assistance work well'; complaints have been received with respect to inconsistencies among the servicing banks and about how long the process can take (Shelter WA, 2000). Interviews with stakeholders and financial counsellors will seek to establish the strengths and weaknesses of the safety net as it currently exists.

4.3 Community and Household Perspectives

In contrast to the rational financial perspective of lenders, borrowers are more personal in their outlook, with the home mortgage viewed as a reflection of personal status and pride (Morgan, 1996). As a consequence, borrowers tend to actively resist mortgage foreclosure even when it is not in their financial interest to do so. Termed 'non-ruthless' or 'non-optimal' default behaviour, an appreciation of the prevalence of this phenomenon begins with the acknowledgment that negative equity situations are routine for very many current mortgages (Vandell, 1995).

Among the several studies which Vandell (1995), reviewed, were predictive models using Loan to Value (LTV) ratios of 110% that appear to have substantially over-estimated the default rate found in real markets. This difference is regarded as indicative of the commitment to resist losing their home. Evidence also points to the importance of non-financial triggers or compounding factors, such as a divorce or accidents, which act to push people into default or foreclosure, when otherwise they would be likely desperately to hold onto their property despite the adverse equity outcomes (Riddiough, 1991).

Using a house price equation, which factored in the influence of income, unemployment, age structure and foreclosures in the United Kingdom, Reilley and Witt (1994:480) concluded that negative equity was 'a significant contributor to the potential for mortgage foreclosure among first time homebuyers'. In the context of the British experience in the wake of the 1991 recession, the scale of the fallout from homeownership was said to be massive, with over 380,000 households affected (Ford & Burrows, 1999). Under such conditions, even when home prices were stable with no prospect for appreciation, the resolution of the negative equity status would take too long for lenders.

Perhaps the most important finding from Reilley and Witt's (1994) study was that the distribution of foreclosures in Britain was significant enough to feed back to influence regional house price differentials. Put more bluntly, declining home prices foster more foreclosures, which in turn act to undermine surrounding home prices in a vicious circle. Such a conclusion was reached by a study of mortgage foreclosures in Boston, USA, where it was found in some neighbourhoods that up to 60% of all home sales were the result of foreclosures. In these neighbourhoods, median prices for the

worst affected housing types declined by at least 30-40% over the study period (PFD, 1993:12).

This process of the spatial and temporal clustering of foreclosure effects has the potential to undermine whole communities with far reaching social and financial implications. In this sense, arrears and default would act to undermine the Federal Government's initiative to strengthen communities. It will be timely to see if initiatives such as the New Living program serve to offset or exacerbate such problems. As Ford and Burrows (1999: 318) argue, just the knowledge that people are living in arrears and facing foreclosures would 'contribute to a wider sense of unease among the population as a whole'.

The financial costs directly experienced by households facing the prospect of losing their homes are crippling by themselves. Such costs include: the missed mortgage payments, the interest on the arrears, financial fees and processing costs, real estate and maintenance fees, as well as the legal costs associated with the foreclosure proceedings (Rohe et al, 2000). The lack of future borrowing capacity also underscores the extent of the longer term financial implications, which are often overlooked by families facing an immediate crisis (Ford & Burrows, 1999). Moreover, it is the cumulative effect of both the immediate and the longer term financial costs that is so debilitating.

Research on those living in arrears has also highlighted the enormous stress levels that such families endure to a point where the psycho-social affects far outweigh the financial costs (Nettleton & Burrows, 1997). As the discussion on clustering effects implied, mortgage indebtedness is strongly socially and spatially patterned. Several studies have highlighted how employment and income insecurity are interrelated with such factors as physical sickness, mental health, domestic violence, divorces and suicides (see, for example, Davis et al, 1993; Nettleton & Burrows, 1997). There are also many more instances of people living in arrears than there are experiencing foreclosure. They all carry the stress, and although the stress is borne most directly by individuals and families, it translates into broader social costs as reflected in public health, crime and homeless statistics (Davis & Dhooge, 1993; Bereczkei & Csanaky, 2001)

Homeownership for people with low incomes may often mean moving to outer suburbs where property prices are cheaper. This may increase other financial burdens on a family such as the need for reliable car/s in order for the children to attend school and the adults to attend their place of employment and access shops for groceries (Greive, Thorpe & Newman, 2002). Preliminary discussions with those administering the Aboriginal Homeownership Scheme have highlighted car loans as being a common item for Indigenous people in terms of their over-committing themselves after acquiring a housing loan.

4.4 Summary

The cost of default, arrears, and the possible loss of a home is high for individual households. It is not only high with respect to the immediate financial losses, but also respect to the longer term economic ramifications, together with all the psycho-socio consequences. In keeping with the implications of socio-economic restructuring, the evidence indicates that housing related stress and debt are strongly socially and spatially patterned. In-turn, this does not bode well for any communities that may be enduring relatively high concentrations of defaults. The research also indicates that a variety of institutional based strategies can be employed to reduce the risks to both mortgagees and mortgagors. The real challenge, however, is to see how this increased protection can be used to enable more rather than less access to home loans for those on marginal incomes.

5 METHODOLOGY: MODELLING LOAN DEFAULT PROPENSITY

This section lays the foundations for building a model that will examine the credit risk involved in home purchase. There have been only a few empirical studies that have used a sound methodology and produced consistent results (Pennington-Cross, Yezer & Nicholas, 2000). The present research identifies certain features such as income, credit history, demographic, locational and macro economic factors, which have contributed to defaults in the past, and assumes that these same parameters may lead to future defaults. An econometric model is suggested which is able to indicate the propensity of, and likely entropy points at which, households in home ownership programs may experience mortgage default and lose their homes. This section lays the foundations for building a model that will examine the credit risk involved in home purchase.

As the previous discussion of the literature shows borrowers may experience adverse situations which cause difficulties in paying their loan obligations. The three options that the mortgagors or lenders may consider in such circumstances are: prepayment, forbearance and default. While facing difficulties with mortgage repayments, a household may decide to prepay its mortgage if the property has positive equity. In certain cases, however, lenders may realise that the particular borrower has experience with property markets and is generally reliable. The lender therefore may provide forbearance to the mortgagor rather than foreclosing on them or taking possession of the property. This would be the case only if the mortgagor's adverse situation is considered as being temporary and they had a history of good financial management and/or other assets that could be used as collateral.

The final option of default on a mortgage (often leading to foreclosure) tends to only take place when the mortgagor is unable to pay the loan obligation and the current market value of the property is less than its original purchase price. Recent models (Straka, 2000; Wheaton, Torto, Southard & Hopkins, 2001) have expressed default as the end result of some trigger event, which makes homeownership economically untenable. In such circumstances negative equity makes it advantageous to default rather than sell at a loss.

Developing a good model of risk assessment requires quality data. As noted by Straka (2000) most modellers have experienced a learning curve regarding data analysis of credit risk and have used a combination of data from financial institutions, academic institutions and external sources. Wheaton, Torto, Southard & Hopkins (2001) observed that researchers face a range of different challenges while modelling mortgage loan risk: the limited number of assets, a limited time period of coverage and limited variables for which data is available.

Quality data was scarce as late as the early 1990s. There were very few institutions which stored credit records on mortgage loans in an easily accessible form. In the 21st Century the situation is slowly changing and automated credit evaluations are possible in some of the major financial institutions and property investment (portfolio diversification) consultants. These consultants provide computerised credit evaluation programs such as the property investment optimiser (www.quartile.com.au). The property optimiser calculates individuals' current borrowing capacity for investment purposes and demonstrates likely long-term projections with a view to providing an optimum investment strategy for the individual. This technological change is beginning to touch the residential mortgage market. The new technologies will promote modellers to develop increasingly robust credit subsidy models (Stanton, 2001). While computerized technology may pose problems at its inception, the new programs will eventually improve the linkage

between government agencies, private financial/lending institutions and housing research institutions.

In this research, ABS data will be utilised as appropriate to establish the relationships between default risk of homeowners with their socio-economic and housing characteristics. In addition to the program specific data, detailed data for the variables identified in the discussion of the econometric model are obtained from ABS, 1999 Australian Housing Survey (CURF) document (See Appendix 3).

One of the primary aims of the model is to estimate the likelihood of default risk associated with income factors using a life cycle/permanent income hypothesis. It is generally believed that people who become unemployed and receive government assistance are more likely to default than others due to liquidity and wealth constraints. The model will also examine whether other demographic variables including level of education, occupation and migrant status influence the risk of default. Moreover a test will be conducted to analyze the influence of loan-to-value-ratios and property value uncertainty and the risk that is attached to default.

5.1 Income Factors

Although, as mentioned earlier, several factors have been identified as contributing to households entering into mortgage arrears the main cause for mortgage default is a fall in household income (Pennington-Cross, Yezer & Nicholas, 2000). Much of the empirical research on income factors takes the consumption function as the starting point (Keynes, 1936, Hall and Mishkin, 1982, Hayashi, 1982.) The major durable consumption expenditure for households is housing expenditure (mortgage repayments). Given that the demand for debt increases with the increased demand for consumer durables such as housing, low-income and low-wealth families could be credit constrained. The work of Hall and Mishkin (1982), Hayashi (1982) and Peter & Kerr, (2001). provides evidence that the time path of consumption expenditures for households that are credit constrained differs from that of families for which borrowing constraints may not be binding. A limitation of these studies, however, is that the data used do not directly identify credit-constrained and unconstrained marginal households. Instead, these studies presume that families with either low wealth-to-income ratios or low savings rates are credit constrained, while high wealth families are not (Pennington-Cross, Yezer & Nicholas, 2000).

We have estimated the income measure for credit risk of homebuyers by examining economic studies on household consumption. According to Ando and Modigliani (1963) lifetime income is the most suitable measure for consumption of durable goods, such as buying a home. For a detailed exposition of the theories of consumption that determine the income factors of default risk, refer to Appendix 1.

There are a number of theories that explain consumption and savings behaviour. Broadly speaking, this empirical research on consumption/savings can help us to test competing theories and to estimate the value of crucial parameters. Most economy-wide models examine the aggregate consumption function with disposable income, wealth and other income variables (such as labour income, property income) as the independent variables (Peter & Kerr, 2001). These parameters from the consumption function are used to derive the credit risk function.

In the model, a measure of household income (X_1) is estimated from the cross-section of homebuyers following the procedure adopted by life cycle/permanent income theories. Employment status is coded as (X_3) and permanent employment reduces risk of default while unemployment increases it. It is presumed that the unemployed who receive government assistance (X_4) are more likely to default than others due to liquidity and wealth constraints.

5.2 Factors relating to Credit History

The rapid rate of change in today's credit market makes it necessary for the State Housing Authorities to use financial early warning signals to avert future credit problems. Lending institutions set a limit to their risks by providing rules governing percentage of loan to property value limits. In an underserved depressed market, the higher the loan-to-value-ratios (denoted by (X_5) in the model) the larger the risk that is attached to default. The probability that the lender would receive an amount less than the loan balance is high in such a market.

There are several studies on credit risk modelling using company data that throw some light for credit risk modelling on housing data. Altman's (1968) seminal paper has resulted in the mushrooming of studies on estimating a single weighted index of foreclosure, the Z-score, using information on several financial ratios in conjunction with macro-economic data. The most common methods of estimating credit risk use either discriminant analysis or logit/probit models. It has been argued by several risk management modellers that the use of logit/probit estimators is more efficient compared to estimation based on discriminant analysis (For further details refer to Aldrich and Nelson, 1984, Lo, 1986 and Wilson, Summers and Hope, 2000).

5.3 Macro Economic Factors

Defaults vary greatly due to overall macroeconomic and regional effects. For instance, for a given loan-to-value ratio, the probability of a loan having negative equity varies with house price inflation, which varies greatly across location and time. With the international macro economic shocks reflected in recession in the Australian economyⁱ, the danger that outstanding mortgage debts of marginal homeowners would exceed the true market values of their homes causes considerable concern about the propensity for defaults. As indicated earlier this is especially the case in some regions that have been negatively impacted by declining commodity prices. Housing costs have increased and this is mirrored in the home loan affordability indicator published by the Real Estate Institute of Australia and AMP Banking (2002). This indicator clearly shows a decline in the loan affordability, since 1997-98. For further details on the home loan affordability indicator, refer to appendix 2.

How do marginal owner-occupiers respond to changes in cost of living increases (reflected in decline in affordability) over which they have little or no control? Work by Ford (1997) and Munro (2000) is beginning to develop an understanding of the strategies which people adopt to cope with such exogenous shocks. Do exogenous shocks have the same or different impacts on marginal households? Do they respond in similar manners? The variable that is used in the study to measure the influence of macro economic factors is the affordability indicator adjusted for inflation (X_{12}). This measure indicates if there has been an improvement in affordability or not for the homebuyers (See Appendix 2.).

5.4 Locational Factors

In most cases, indicators of increased risk are associated with the location of the borrower. This is especially true for indicators that would affect the willingness of the borrower to pay their mortgage in the future due to decline in the value of the property. The model includes variables that capture equity, ability-to-pay and willingness to pay. A major consideration is the behaviour of the transaction volume of sales. Several studies have shown that a historic transaction volume of sales is negatively related to property value uncertainty. Appraisal uncertainty is high in localities where the volume of transactions is low, especially in underserved (poor social amenities/services) areas (Van Order & Zorn, 2000). According to Mills and Lubuele (1997), in developed countries like the US, locational factors play a crucial role in determining property value uncertainty.

As noted by Nadler, Rabb, Rosenberg & Ford (1993), locational factors are important not only for homebuyers but also for mortgage lenders who find regional differences play a major role in determining foreclosure rates. Regional differences in foreclosure rates are determined by regional unemployment, personal disposable income, home loan affordability, industry diversification, population growth, and other factors that influence the economic development of the region. The present study will examine whether or not there is a discernible trend in the influence of locational factors on credit risk in Australia.

It is expected that as a homebuyer in an underserved area, low-income borrowers will not be satisfied with the location of the property and coupled with financial stress may default on their payments more frequently than other homebuyers in better serviced areas. In this research, the locational factor is represented by a dummy variable (X_{13}) equal to 1, indicating that the purchaser is not satisfied with the location of the property.

5.5 Demographic Factors

The research by Burrows (1998); Vandell and Thibodean (1985); Zorn and Lea (1989) and Quercia and Stegman (1992) indicates that marriage breakdown, (including single person households with several dependants), occupation, education background and employment status have an influence on households that default. This is similar to some of themes or findings discussed in Chapter 3.

Economic theories regard education and training as investments in human capital that increase the scope of gainful employment and improve net productivity of an individual. The benefit of education and training has been underestimated in most of the studies on default. The present research attempts to fill this gap.

After controlling for income, credit and locational default risks, however, it is generally argued that minority households most of them poorly educated and unskilled workers and recent immigrants to Australia may be more likely to default than Australian-born homebuyer. However, studies such as Mills and Lubuele (1994) challenged the conventional wisdom and empirically proved that minority households (who are skilled) had performed equally well with regard to loan repayment in US. The present study will examine and test if demographic factors such as occupation (skilled/unskilled), education, migrant status, ethnic difference (Indigenous/non-Indigenous) play a major role in the determinant of default risk in Western Australia and South Australia.

Demographic factors in the present study include the age of head of household (X_2), marital status (X_6), number of children (X_7), household/family type (X_8) level of education of head of household (X_9) occupation (skilled or unskilled), (X_{10}) and year of arrival in Australia (X_{11}). Research indicates that the risk of poverty measured by these demographic factors is an important indicator of housing stress, which leads to loan default (ABS, cat. no. 1301.0).

5.6 Bivariate logit model

A logit model of household loan default experience is estimated using the procedure adopted by Canner, Gabriel and Woolley (1991). From the perspective of the creditor, predicting future loan delinquency is important. As discussed earlier, there are a number of financial and non-financial factors that are systematically used to assess the credit worthiness of individual borrowers. Nevertheless, there are other events that are difficult to foresee and therefore cannot be modelled. These comprise the unexplained random component (μ_i).

According to Noordewier, Harrison and Ramagopal (2001), the two types of risks associated with the mortgage housing market are: (1) Is the borrower willing and able

to fulfill the mortgage requirement and (2) in case the mortgagor defaults because of non-payment of principal and interest on time, what is the collateral value of the property? If the mortgagor defaults due to non-payment, then third parties through the mortgage underwriting industry would independently estimate the residual or collateral value of the property.

In this research, the dependent variable credit risk equals 1 if the household repaid its loans on schedule and 0 if the household defaults. The model is expected to yield the predicted probability of default in housing loan repayment. An empirical examination of the influence of income variables, credit history variables, demographic and locational variables (the determinants of residential mortgage loan default) will facilitate in determining the credit risk.

We can write default risk for the homebuyer as:

$$L_i = \ln \left(\frac{P_i}{1 - P_i} \right) = \delta_0 + \delta_1 Y_i + \delta_2 C_i + \delta_3 D_i + \delta_4 E_i + \delta_5 P_i + \mu_i \quad (1)$$

Where Y_i is a matrix of variables relating to income

C_i is a matrix of variables relating to credit history

D_i is a matrix of demographic variables

E_i is a matrix of macro economic variables

P_i is a matrix of place/location specific variables

μ_i refers to the error term

Expressing differently and expanding the above equation, we can state:

$$L_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_6 X_{6i} + \beta_7 X_{7i} + \beta_8 X_{8i} + \beta_9 X_{9i} + \beta_{10} X_{10i} + \beta_{11} X_{11i} + \beta_{12} X_{12i} + \beta_{13} X_{13i} + \mu_i \quad (2)$$

Figure 1. Conceptual Model of Credit Risk for Low Income Households

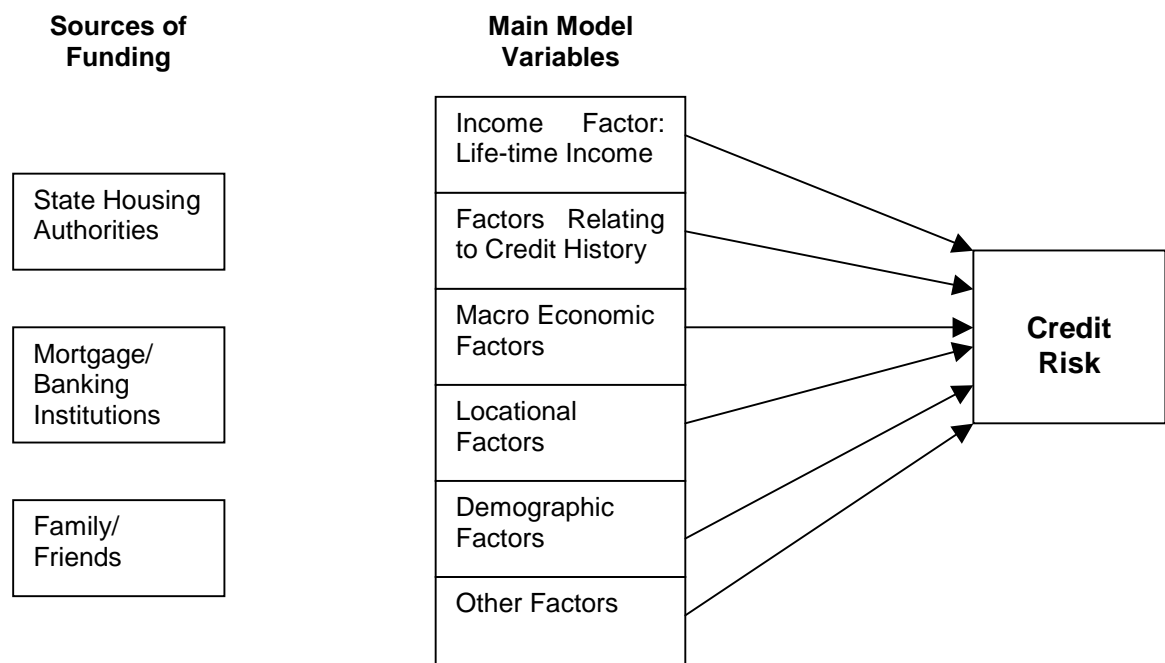


Table 1 below gives a description of the variables and the expected signs for each of the estimated coefficients.

Table 1. Variable definitions and expected signs

L_1 = Loan default	1 if household has repaid loans as scheduled; 0 otherwise
X_1 = Household income	Log of household income (+)
X_2 = Age of head of household	age of household at the time of loan (as indicated in the data base) (+)
X_3 = Employment status	1 if unemployed; 0 otherwise (–)
X_4 = Government assistance	1 if household is not a welfare recipient; 0 otherwise (+)
X_5 = Loan to value ratio	Ratio of loan to value of the property (–)
X_6 = Marital status	1 if household head is divorced or separated; 0 otherwise (–)
X_7 = Children	Number of children under 18 (–)
X_8 = Family type	One parent family or couple family: with or without children under 15 and dependent students (–)
X_9 = Educational level of the head of the household	With post school qualifications or without post school qualifications (+)
X_{10} = Occupation	1 if household head is unskilled; 0 otherwise (–)
X_{11} = Migrant status	Australian born or migrant year of arrival in Australia (+)
X_{12} = Affordability indicator	Home loan affordability indicator adjusted for inflation (+)
X_{13} = Locational indicator	1 if the household is not satisfied with the location; 0 otherwise (–)

Logistic regression is similar to multiple regression in many respects, such as the diagnostic measures of residuals, residual plots and measures of influence. However, it is different in the method of estimating coefficients. Instead of minimising the squared deviations (multiple regression), logistic regression maximises the likelihood that an event will occur. Various goodness of fit measures, such as -2 log likelihood, Pseudo R^2 , Cox and Snell R^2 , Nagelkerke R^2 , and Hosmer and Lemeshow values are used to assess model fit. To test the significance of its coefficients that the odds ratio does not change and the probability is not affected, logistic regression uses the Wald statistic. It provides the statistical significance for each of the estimated coefficients similar to that of multiple regression.

5.7 Ethical Concerns

The review the literature and early discussions with stakeholders has identified several ethical concerns common to risk management models that this study seeks to avoid or minimise:

- Risk management models tend to focus on negatives and therefore do not identify the strengths of people.
- Models are often limited to the availability of data rather than being able to specify the data needed and this in turn can undermine the quality of the analysis.
- Risk management models rely on quantitative data and are unable to contextualise the circumstances of individuals. (Thomson & Dean 1995).
- Risk management models are in danger of reinforcing stereotypes due to their reliability on available data and the focus on negatives.

- Risk models are not generally very reliable at identifying individual risk as they tend not to include behavioural data. Such models should not therefore be used to assess the likelihood of an individual's ability to repay a mortgage.

5.8 Summary

According to Stanton (2001), the conventional mortgage market cannot serve the many marginal borrowers who are disadvantaged and who will not qualify for private loans. These borrowers can be served well if the management of public credit programs is more flexible. Once the government credit agencies have set up a good data base management system of loan-level information, it becomes easier to test alternative risk management strategies. One of the drawbacks of new technology is that it turns the average individual householder into a score-based commodity. Despite this drawback, the private lenders who deployed the new technology early have benefited in terms of market share and profitability. For governments with the objective of supplementing rather than dominating the market, these new technologies may provide the opportunity for promoting some of their programs more effectively.

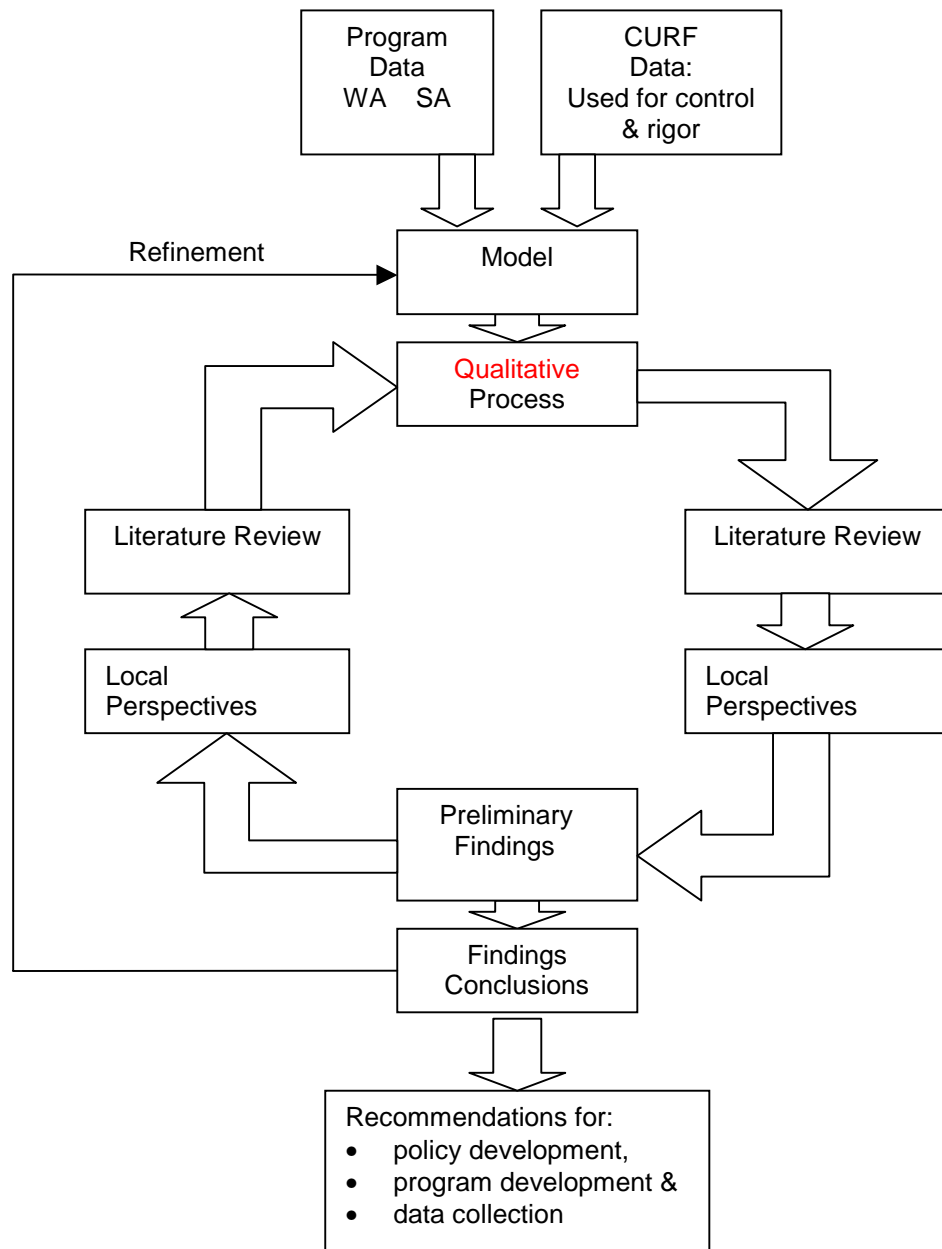
Several empirical studies on mortgage default research have shown that the major driver of default risk is negative-equity risk, which is reflected in the loan-to-value ratio (LTV). The financial or income factors are measured through variables such as life-time-income, employment status and government assistance, while credit factors measure the LTV and others. With more detailed demographic and locational factors available, it is simpler to focus on the default risk. However, a pure option-theoretic view of mortgage default holds the view that variables other than negative equity measures do not matter. This in turn contrasts with the experience that householders will often desperately try to hold on to their home even when it is not in their financial interest to do so. To conclude, it is the tension between these two positions that defines a fertile area for our modelling based research.

6 RESEARCH AGENDA

6.1 Overview

This discussion clarifies the methodological approach in terms of the whole research project. As is now clear, an econometric model will be developed to assess the risk of defaults among pools of recipients of government supported assistance with homeownership. The approach is to build and refine the model through an ongoing dialogue with the literature, together with a range of ancillary data sets and local perspectives developed from interviews. This detailed contextualisation of the model's application helps to gauge its scope and sensitivity in dealing with a range of variables including local and regional influences. It will also facilitate a more sensitive and accurate interpretation of the results (Ambrose 2001). The combination of an econometric modelling process paralleled with an ongoing review of the literature, together with a detailed appreciation of the context provides the basis for a robust methodology with the capacity for progressive refinement (see figure 1).

Figure 2. Research Process



The first phase of the literature review has laid the foundations for building a model that examines the credit risk involved in home purchase. This foundation includes an explanation of the relevance and treatment of key variables, together with an appreciation of important macro-economic and cultural trends. The opinions and experiences of stakeholders, including Keystart and AHOS program staff, Homeswest and DHW officials, Shelter (WA) representatives, together with financial counsellors and other such experts, also inform the broader research agenda. The knowledge and experience from these local experts serves to 'ground' the theory presented in the literature relative to the local urban context and also in terms of program specifics. The strength of this approach is that it both values and facilitates the direct input from the stakeholders early on in the proposal and positioning phases of the study.

As the study progresses, the strengths and limitations of the data will show through in the same way that important program specific questions and issues come to the fore through inquiry. By paralleling the modelling process with field inquiries these questions can be refined, contradicted or corroborated by facts, experiences, and other data sets. Interviews with financial counsellors have already suggested the need to examine the basis for the seemingly high numbers of Keystart mortgage defaults in regional areas (Shelter 2000). Financial counsellors are well placed to shed light on the effect of the cocktail of mortgage pressures experienced by individual households. They can also comment on the time factor with respect to people falling into and recovering from mortgage default and arrears. Program officers are similarly well placed to reflect on the breadth of their experiences in terms of helping to refine the methodology, interpreting the results and suggesting recommendations.

The study's combined quantitative and qualitative dimensions also serve to extend the opportunity to reflect on a range of policy and program design issues. As well as direct program related concerns such as the design and implementation of mortgage safety net provisions, there is a contribution to be made to a broader range of housing policy questions. For example, it is feasible to examine the impact of the Federal first home buyer assistance funding on the risk profile of Keystart and AHOS recipients. It is also possible to consider some of the ramifications of the privatisation of housing assistance service providers as an issue which directly relates to the institutional environment supporting the programs. Each of these issues requires ancillary contextual detail with respect not only to the workings of the policies and programs under investigation in this research, but also to such aspects as key patterns and trends within the housing market. Although this study is positioned to consider these broader questions, there are nevertheless limits to how much can be generalised from the Western Australian experience and, in this sense, results will be indicative rather than conclusive.

By contrast, more definitive results can be expected with narrower program specific questions. The Keystart program is currently the largest income targeted homeownership assistance program in Australia. Through an analysis of the AHOS program, there is also the opportunity to consider these dynamics with respect to a pool of Indigenous recipients of homeownership assistance. Data from a similar homeownership assistance program in South Australia will be used to help test and calibrate the model.

The two Western Australian schemes will be analysed to identify the variables which are most likely to lead to circumstances of mortgage default and arrears and those which are likely to lead a household to cope with exogenous shocks such as higher interest rates, increased costs of living or decreased income levels. The sample populations are large enough to identify whether existing policies and institutional

strategies are able to deal adequately with the differing aspirations, needs and socio-economic circumstances and opportunities that are likely to exist between Indigenous and non-Indigenous homeowners.

Each of the programs providing data sets for modelling will be profiled using a common format. This will facilitate a more meaningful analysis and interpretation of the modelling results. The comparative program profiles will include the following characteristics. - Eligibility Criteria, Minimum Deposits/Conditions; Regional Allowances; Property Values; Interest Rates and Fees; Levels of Defaults and Arrears and; Safety Net Provisions. This approach also provides a basis for considering the transferability of the applications and insights with respect to other past, current and future Australian homeowner assistance programs.

6.2 Anticipated Findings

Early indications are that Keystart and AHOS programs have developed a range of strategies and policies that are effective in offsetting the possible risks associated with applicant pools. The most significant findings to date are that the vast majority of the recipients are successfully servicing their mortgages and benefiting from homeownership. Nevertheless, the social and economic costs of homebuyer default are potentially high for individual mortgage holders on marginal incomes and for the private and public institutions that service them.

We anticipate that there will be three main outcomes corresponding to the study's aims.

Firstly, and key among these will be the results directly associated with the model. It is anticipated that the research will allow us to identify the key variables associated with mortgage defaults, and hence identify and profile the risks of default for **pools of** recipients of homeownership assistance;

These findings will not only inform housing policy and programs but will contribute to the contemporary theoretical issues surrounding econometric modelling and the refinement of the variables and parameters used for determining risks for government and financial institutions and prospective first home buyers. The model will create a predictive tool suitable for adaptation by other State Housing Authorities to assist in the modification of existing or development of new homeowner support programs.

Secondly, in addition to the modelling process it is expected that the qualitative research will facilitate an more accurate assessment of the degree of influence of these different variables (demographic, location, exogenous) within the pools of existing Keystart and AHOS recipients; and, importantly to suggest ways to mitigate the risks while maintaining access to homeownership opportunities for marginal income earners. These latter findings will be of significant benefit to informing future policy directions.

Factors such as relationship break down and sudden job loss have a significant bearing on household income and their lifetime earnings. It is envisaged that lifetime income of households is one of the most important determinants of credit risk yet given changes within the macroeconomic environment there is increasing insecurity and uncertainty surrounding the concept of lifetime employment. This research will therefore inform the macroeconomic policy environment as well the program policy and support mechanisms around relationship break down and sudden job loss.

It is expected that the research will show that the social and economic costs of mortgage default are potentially high for marginal income homeowners; reinforcing the need for, as well as identifying modifications to, default and/or arrears practices which can assist low to moderate income earners to retain homes.

Thirdly, the combined quantitative and qualitative dimensions of the research are expected to provide the opportunity to reflect on a range of policy and program design issues. For example:

- In a depressed market it is likely that the higher the loan-to-value-ratios (LVR) the larger the risk of defaults and default-induced sales.
- Indications point to clusters of mortgage defaults in particular suburbs and rural communities and regions highlighting the need for strategies to sustain housing, education, health, employment and community wellbeing outcomes within broader regional development planning.

More broadly, the anticipated research findings suggest that with global economic uncertainties and shifts in national employment and social structures, governments may need to encourage the private financing sector to assume greater levels of social responsibility. At the very least codes of ethical practice and improved 'safety net' mechanisms such as mortgage moratoriums for limited periods, that take account of the big picture analysis as well as individual circumstances, could be considered. The preliminary analysis also highlights the need for government policy makers to identify a set of criteria for determining when the financial and other costs of extending/strengthening the safety net for homebuyers is preferable to the immediate and indirect costs upon government, individuals and society generated by default proceedings.

Where to From Here?

In addition to these anticipated findings, several important questions have emerged from the first round of inquiries, but at this stage of the research it is too early to envisage answers. These questions will be explored further in the forthcoming Work in Progress Report but for now they can be identified as the following:

- Where do the responsibilities lay with respect to government housing assistance policies, given the increasing likelihood that it will be private institutions that actually deliver the service, and what monitoring systems are and could be in place?
- What is the impact of the Federal first home buyer assistance funding on the risk profile of Keystart and AHOS recipients?
- Are Keystart homeowners pioneering homeownership in newer outer suburbs, and if so, what is the impact with respect to the risk profile of the recipients?
- Can homeowner assistance programs become more culturally appropriate to the needs and aspirations of Indigenous Australians?
- From a whole of government perspective, are the rigours of welfare assistance programs associated with sickness and unemployment benefits commensurate with homeownership safety net provisions?

We believe these questions are integral to the broader questions leading this research, which consider how sustainable and universally beneficial are homeownership assistance programs in the long term?

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APPENDIX 1

The present research identifies the factors that determine credit risk from various theories of economics. One of the important theories is consumption theory, which examines the income factors and the types of income (such as, current income, transitory income, permanent, life time income) that should be included while examining the credit risk of homebuyers.

There is a long-standing debate in economics concerning the specification of the consumption function. Keynes (1936) specified a consumption function with current income as the sole determinant of consumption. Later developments in the consumption function treated consumption as determined by relative income (Duesenberry, 1949) and permanent income (Friedman, 1957). The next phase in the development of the consumption function was the life-cycle hypothesis developed by Ando and Modigliani (1963). Here, the aggregate consumption function is given as:

$$C_t = \alpha_1 Y_{Lt} + \alpha_2 Y_{Lt}^e + \alpha_3 A_{t-1}, \quad (A1)$$

where C = aggregate optimal consumption

A = net worth

Y_L = aggregate non-property income

Y_L^e = aggregate expected non-property income

$\alpha_1, \alpha_2, \alpha_3$ = constants

Ando and Modigliani (1963) hypothesised that consumption is a function of lifetime income, rather than current income as envisaged by the Keynesians. Hall (1978) argued that changes in the rate of interest, income tax and the inflation rate will affect lifetime income (and hence consumption and savings) only if the changes are unanticipated and are not already incorporated in the estimation of lifetime/permanent income. Hall's main empirical finding is that disposable income has no predictive power in the regression of the consumption function. His basic model is:

$$C_t = \alpha C_{t-1}^{1/\sigma} + \mu_t, \quad (A2)$$

where μ_t is the disturbance term that summarises the impact of all new information in period t . Hall fitted the current and lagged consumption predicted by the pure life-cycle or permanent income theory. Hall showed that the lagged consumption coefficient, α , for the model was approximately equal to 1, and was found to be statistically significant.

According to Hall's life-cycle or permanent income framework, foreseen changes in income should not affect private savings or consumption because these changes are already embodied in past savings decisions when inter-temporal choice is assumed. Hall's hypothesis may be criticised on the following grounds: even if a consumer knows with certainty that their income will double in the following year, they may still not be able to increase their current consumption due to liquidity constraints. This criticism was examined by Hall and Mishkin (1982).

The major findings of Hall and Mishkin (1982), using panel data of 2000 households over a seven-year span, are as follows:

- Consumption responds more strongly to the permanent component than to the transitory component of income.
- The response of consumption to transitory income is weak. Transitory income would affect consumption only if interest rates are as high as 20 per cent and above.
- Pure life-cycle or permanent income behaviour is compatible with the observed covariation of income and consumption for 80 per cent of consumption. For the remaining 20 per cent, the simple proportionality rule of consumption and income will hold good.
- The estimated marginal propensity to consume out of transitory income relative to lifetime income is 0.29, which shows that the equal response of both these components is rejected.
- The effect of lagged changes in real income on changes in consumption has a significant but small negative effect. This effect should be zero in the life-cycle model and one in the liquidity-constrained case.
- However, their study did not consider the effects of government housing policies on consumption/savings via substitution effects.

Hayashi (1982) explains the permanent income hypothesis by restating it within a rational expectation framework. By adding the error term to the deterministic case, Hayashi presents the stochastic version of the permanent income hypothesis.

$$C_t = \alpha(A_t + H_t) + \mu_t, \quad (A3)$$

where t represents the time period, A is real non-human wealth, and H is the real human wealth which is expressed as the present discounted value of expected future real labour income. The error term μ_t represents transitory consumption. The above consumption function is for a wealth-constrained consumer.

The consumption function for a liquidity-constrained consumer is simply $c = Y_d$, where Y_d is the disposable income. Aggregate consumption is then a linear function of the wealth and disposable income of the above two consumers. The generalised aggregate consumption function is:

$$C_t = \alpha (A_t + H_t) + \lambda Y_{dt} + \mu_t, \quad (A4)$$

where α is interpreted as the product of the propensity to consume out of total wealth and the ratio of the wealth-constrained household's total wealth to aggregate total wealth, and λ is the liquidity-constrained household's share of disposable income.

The budget equation of Hayashi (1982) is written as:

$$A_t = (1+p) (A_{t-1} + Y_{t-1} - C_{t-1}) + \varepsilon_t, \quad (A5)$$

where p is the value-weighted expected real rate of return from non-human wealth, and ε_t represents any shock to the budget equation (which is expressed as the unanticipated movement in asset prices and measurement errors).

Interpretation of empirical results from the Hayashi model suggests that governments can control aggregate demand in the short-run through government benefits on liquidity-constrained households' consumption expenditures and wealth-constrained households' durable expenditures. Both of these are important components of aggregate demand. Policy measures, such as a fully-anticipated government benefits scheme, can influence those components of aggregate demand when enacted, even though they have no noticeable effect on permanent/life time income.

APPENDIX 2

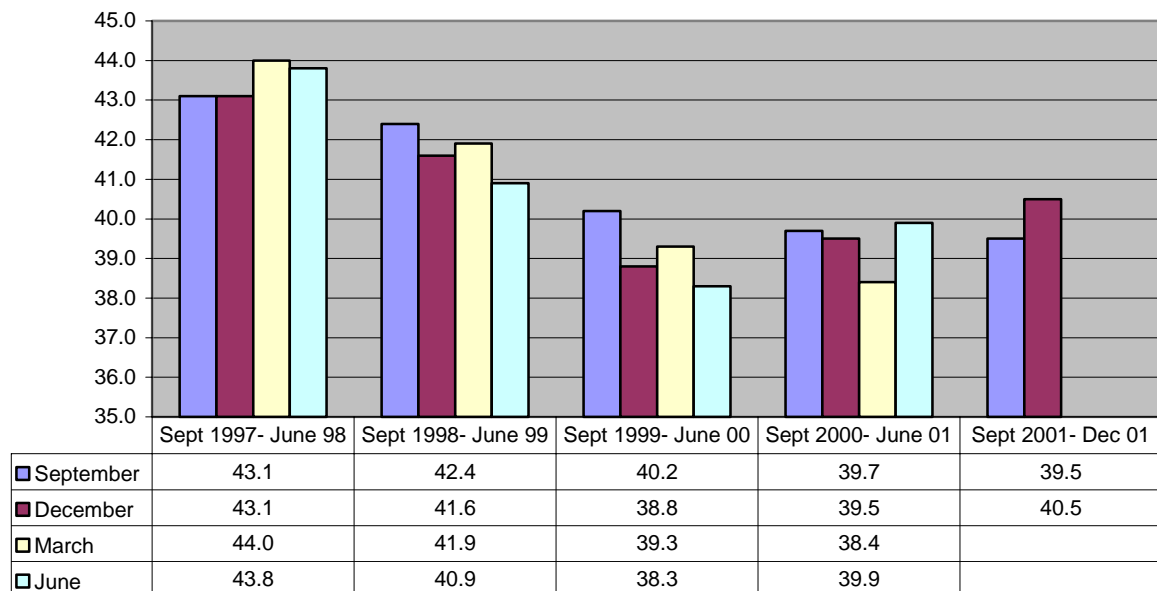
The home loan affordability indicator is used to measure if there is an improvement in affordability or not for homebuyers. This indicator captures the effect of average household income and average costs of repayment of loans on affordability. The HLAI is estimated as a ratio of median annual family income to the average loan repayment multiplied by 10. This indicator is provided quarterly by the Real Estate Institute of Australia and AMP Banking.

An increase in the indicator shows that there is an improvement in affordability. The median annual family income data and average annual repayment figures are obtained from the Australian Bureau of Statistics (ABS 2001b, Income Distribution Survey, cat.no. 6523.0), Cannex Ltd and lending institutions.

Affordability problems may arise due to a number of factors:

- decline in income caused by relationship break down, loss of job and others
- rising loan repayment costs, including mortgage and rate payments

Graph A1: Home Loan Affordability Indicator



Source: Real Estate Institute of Australia and AMP Banking, June 2002

Graph A1 shows the volatility in the home loan affordability indicator and reveals that there has been deterioration in affordability over the years. The lowest value of the HLAI ever recorded for the entire period, September 1997 to December 2002, is 38.3 in the June quarter 2000. The lowest value of the HLAI for the September quarter during the past five years is 39.5 recorded in 2001. Though there has been a mild improvement during December quarter of 2001, the value 40.5 is lower compared to 1997 and 1998 figures, 43.1 and 41.6, respectively.

Appendix 3

Appendix 3 presents an overview of WA housing market and data description for WA from the document, 1999 Australian Housing Survey (AHS).

Overview

As we are aware, economies in various parts of Australia conceal varying growth prospects. Nationally, economic growth declined in 2000-01, with GDP declining to 1.8%. Growth in Western Australia also slowed, falling by 1.2%, marginally lower than the national figure. This period, 2000-01 was the first recorded economic contraction for the past few decades in Australia. The housing affordability indicator too reveals a declining trend and the annual national average for 2000-01 is 39.4. (For further details, see Appendix 2.)

As indicated in Quartile Property Network (2002), the house and unit prices in Perth have also shown a slower growth rate (percentage change in house prices) and the yield on houses have fallen behind the yield on units. If we compare the house prices for the recent two periods (from March 2001 to 8th July 2002 and from December 2001 to 8th July 2002), it is evident that there is a sharp decline in the percentage change in house price from 10.5% to 4.8%. The unit price also fell from 11% to 4.1%.

The vacancy rate has increased substantially over the 12 months to March this year and as with a number of the other capital cities Perth looks to be nearing the end of its current upturn (Quartile Property Network, 2002: 1).

Table A1: Perth Housing Market

	Growth Rate (Percentage Changes)		
	March 2001 quarter median	(March 2001 to July 8 2002)	(December 2001 to July 8 2002)
House Price	\$180,100	10.5	4.8
Unit Price	\$133,500	11.0	4.1
Vacancy Rate	4.2	0.9	-0.4
House Rent	\$167 per week	6.4	0.6
Unit Rent	\$139 per week	5.4	0.7

Source: Quartile Property Network, 2002: 1

Data Description

The statistical information required for testing the risk management model is obtained from ABS (2001a), Australian Housing Survey 1999 (Confidentialised Unit Record Files). Some of the information provided in the 1999 AHS CURF Technical Paper released in May 2001 is as follows:

The release of the data is made possible under the *Census and Statistics Act 1905*, which provides for the release of data in the form of unit records where the information is not likely to enable the identification of a particular person or organisation. Accordingly, there are no names or addresses of survey respondents on the CURF and the detail for some data items has been suppressed or reduced to

ensure that the confidentiality of individuals is protected. Data on the AHS CURF will not exactly match published data. There are 13,788 household records and 27,688 person records on the 1999 AHS CURF. Subject to limitations of sample size and the data categories used, it is possible for users to manipulate the data, produce tabulations and undertake statistical analyses to their own specifications.

The 1999 AHS collected detailed information on the demographics, tenure, housing costs and income of persons and households, as well as the characteristics, affordability and adequacy of buildings, from a sample of households resident in private dwellings throughout Australia. The sample excluded special dwellings (such as hospitals, institutions, nursing homes, hotels, hostels, etc.), and dwellings in remote and sparsely settled parts of Australia.

Information was collected from all persons aged 15 years and over in the selected households. Personal interviews were conducted over the period 13 September 1999 to 10 December 1999. (ABS, Cat. no. 4186.0.30.001: 4).

As stated by Macfarlane (2002), Governor of Reserve Bank of Australia, international macro economic shocks adversely affected Australian economy.

We have weathered two quite large contractionary external shocks: the Asian crisis of 1997/98 and the world slowdown/recession of 2001. Australia also experienced recessions roughly co-incident with the international ones..

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