

THE EFFECT OF RENT INCREASES ON HOUSING STRESS IN AUSTRALIA

Quoc Ngu Vu
National Centre for Social and Economic Modelling (NATSEM)
University of Canberra
ACT - 2601

Telephone: (02) 6201 2790
Fax: (02) 6201 2751
Email: Quocngu.Vu@natsem.canberra.edu.au

The Effect of Rent Increases on Housing Stress in Australia

ABSTRACT

This paper estimates the impact of various rent increase scenarios on the housing stress situation in Australia and its regions from 2007-08 to 2011-12. It projects that if rent is increased by 10% per annum the rate of housing stress would increase from the current rate of just over 13 per cent to 25 per cent in 2011-12, or from over 292,000 to nearly 566,000 households. Queensland has the highest rates of housing stress, followed by New South Wales and Victoria. Tasmania, South Australia and Western Australia have the lowest rates. Overall, the rates are slightly greater in non-metropolitan than metropolitan areas. Differences in disposable income and rent levels are the main reason for the varying rates between regions. This paper reinforces the conclusions of previous studies of a range of policies to tackle the housing affordability problem, and emphasises the need for a low and stable interest rate regime and regulation of rent levels. It also calls for suitable policies at the State and local level to address the gap in housing stress rates.

1. Introduction¹

Over the past decade, there has been a large and steady increase in the housing prices in Australia. This upward trend has occurred in all parts of Australia and there has been no sign that the trend is reversing. Statistics from the Australian Bureau of Statistics (ABS 2007) show that between June 2000 and June 2005, the price index of established home, averaged for 8 capital cities, increased by 171 per cent. In the context of the upward trend in the housing prices, more and more people find it difficult to purchase a house, and consequently have to rely on rental properties for their accommodation. In addition, the supply of rental properties has not met with the increasing demand, particularly in recent years. As a result of this disparity, the rent for private rental properties has been soaring. The impact of this on renters is compounded by the incomes of renters, which are not necessarily increasing at the same rate. With increases in private rents predicted to continue, it is very likely that “housing stress” - a situation in which private renters have to pay at least a third of their disposable income in rent - will be a very important issue for years to come. Yates *et al* (2007) predicted that the number of Australian households experiencing housing stress could double in the next 40 years under realistic scenarios. Housing stress is especially prevalent among lower income working households in the private rental market (Yates *et al* 2006). Randolph *et al* (2007, 2005) showed that especially in metropolitan areas, high rents are forcing low income renters into the outer suburbs, constraining their access to labour market opportunities. In spite of consensus on these issues, these studies have not clearly quantified the extent of housing stress among renters within Australia and its regions, particularly in relation to rent increases resulting from changes in interest rates or the disparity between demand for and supply of rental property.

This paper supplements previous studies by quantifying the impact of the changes in rent on the housing stress situation in Australia. The paper assesses the proportion of private renters in housing stress in Australia as rent is assumed to increase in five scenarios between 2007-08 and 2011-12. The metropolitan and non-metropolitan areas of each state and territory are also compared. Section 2 discusses the growth in rents and the number of renter households in Australia since the early 1990s. Section 3 outlines the methodology of the study. Section 4 presents the simulation results and Section 5 investigates the reasons behind the difference in the housing stress rates between different locations. Section 6 suggested some policy implications and concludes the paper.

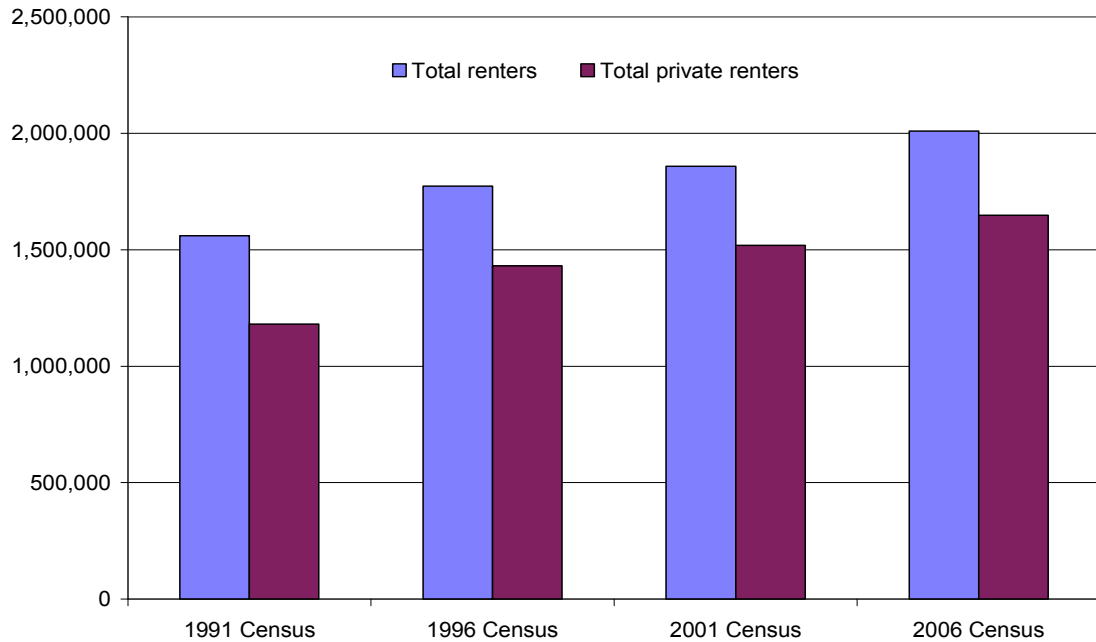
2. Increases in rent and the number of renter households

There has been steady growth in the number of renter households in Australia since the early 1990s. Data from the last four Censuses show that the total number of renter households increased from 1.5 million in 1991 to 1.7 million in 1996, 1.8 in 2001 and

¹ The author would like to thank Rob Tanton, Ben Phillips, Alicia Payne and two anonymous referees for their helpful comments.

2.0 million in 2006 (ABS 2001, 2006). Forming a major proportion of these totals, the number of private renter households has also increased steadily; from 1.1 million in 1991 to 1.4 million in 1996, 1.5 million in 2001 and 1.6 million in 2006. Chart 1 shows the number of renter and private renter households across the four Censuses.

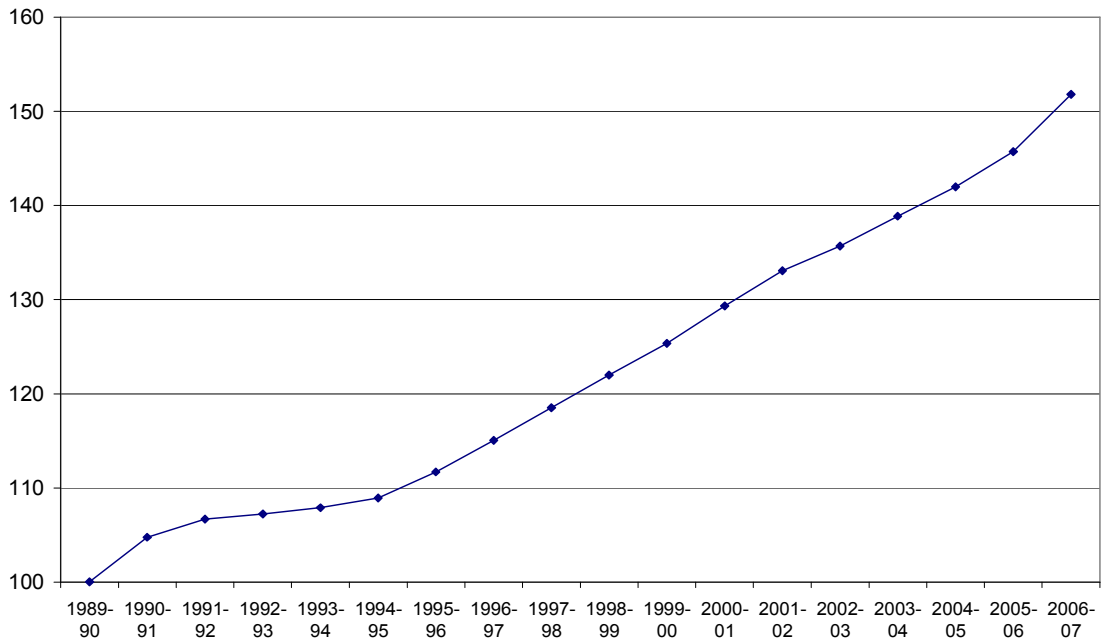
Chart 1: Total and private renter households, 1991-2006



Source: ABS Census 2001 and 2006

Rents have also increased steadily over this period. Chart 2 shows that the rent increased by 25 per cent in the decade to 1999-00, and by more than 25 per cent again by 2006-07. This sharp increase in rents clearly has major implications for renter households.

Chart 2: CPI for Rent, Australia, base year 1989-90



Source: ABS Cat 6401.0

3. Methodology and data

The concept of “housing stress” has been defined in a number of ways. In some studies (Vu 2007, HIA 2007, Yates and Gabriel 2006) a private renter household is defined as being in housing stress when the household’s rent payments are more than 30 per cent of their disposable income, either with or without having its disposable income in the bottom two quintiles of the income distribution.² In Mikesell (2004), a household is classified as being in housing stress if it meets physical conditions including more household members than rooms or home lacking necessary bathroom or kitchen facilities. In this study, the definition of more than 30 per cent of disposable income of a household being spent on rent payments without being in the bottom two quintiles of the income distribution was adopted. However, any amount of Commonwealth Rent Assistance (CRA) is deducted from both the household’s income and their rent paid.

The underlying Data for this study is from two ABS surveys: the Survey of Income and Housing Costs 2002-03 and the Survey of Income and Housing 2003-04. However, since the amount of the disposable income and of CRA of a household depend on several other income variables as well as the characteristics of the household in complicated interactions, the determination of the disposable income and CRA of the household, and hence its housing stress status, needs to be calculated through the application of a microsimulation model, which can handle these complicated interactions. In this paper, the STINMOD model is used for these

² The disposable income used in the calculation of the bottom two quintiles has been equalised to account for household size.

calculations. STINMOD is a static microsimulation model of Australian income taxes and cash transfers. The model can provide reliable estimates of the income, tax, and the majority of transfer payments for Australian individuals and families for the current year and projects five years into the future.³

As the data from the two ABS surveys were collected during the 2002-03 and 2003-04 periods, they only represent the economic and demographic settings of these time periods. Thus, the data is further manipulated to represent the demographic and economic characteristics of the 2006-07 and future years. This process was completed during the basefile creation for version 06B of STINMOD, by reweighting the existing weights (which were attached to the observations in the survey data) to reflect the actual and projected demographic and administrative benchmarks for the future years. The existing income and other monetary variables were also updated to reflect the change over time in the value of these variables by using various actual and projected CPI, Average Weekly Earnings figures and other factors.⁴ The final basefiles, which consist of hundreds of variables showing both demographic and socio-economic for households and their individual members, are thus a statistical representation of the economic and demographic settings of the current and future years.

Given the level of rent that each household in the STINMOD basefiles has to pay in each scenario, the model simulates the interaction of those rents with the tax and social security system to produce various tax/transfer/income variables for each household. Whether or not a household is experiencing housing stress is then determined based on these variables, allowing the proportion of households facing housing stress in Australia as a whole, each state and territory and their metropolitan and non-metropolitan areas to be calculated.

In this study, the rents were assumed to increase by 2%, 4%, 6%, 8% and 10% per annum in real terms. The rents in each basefile, which had already been updated during the basefile creation process, were thus further inflated by these rates for each of the years, before STINMOD was run, simulating the interaction of these rents with the tax and social security system in each year.

4. Simulation results

4.1 Australia

As expected, the increase in private rent has a direct impact on household's disposable income and CRA, and hence on the proportion of households' disposable income being spent on rent. The simulation results show that the higher the rent, the higher

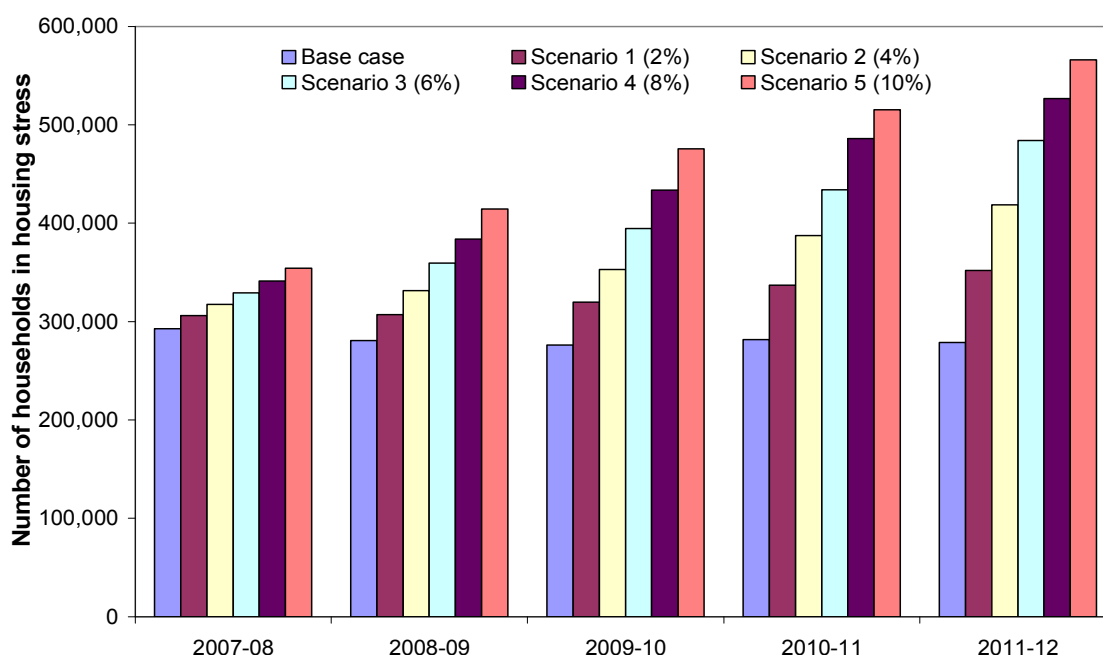
³ See Appendix 1 for more details on this model.

⁴ The reweighting and updating during the basefile creation is a rather complicated process. Some explanation is given in Appendix 1. More technical details of these processes can be seen in Bremner et al. (2002).

the number of households in housing stress and thus the rate of housing stress. This trend holds for all the years and across all states/territories and areas. Chart 3 presents the number of households who would be experiencing housing stress in each rent increase scenario. From the base case of just over 292,000 households in the 2007-08 financial year, the number increases by more than 13,000 households when the rent is increased by merely two per cent. This difference increases to over 61,000 households when the rent increases by 10 per cent in the last scenario.

While the increase in rent draws more households into housing stress across all years and scenarios, the additional number of households in housing stress becomes greater year after year. While the additional number of households living in housing stress between the base case and the fifth scenario for 2007-08 financial year is just above 61,000, this number increases to more than 133,000 in 2008-09; almost 200,000 in 2009-10 and more than 287,000 in 2011-12. At the extreme, the number of households who would be living in housing stress increases from more than 292,000 in 2007-08 to nearly 566,000 households in 2011-12 when private rents increase by 10 per cent per annum (scenario 5). This corresponds to an increase from just over 13 per cent to nearly 25 per cent of private renter households facing housing stress.

Chart 3: Number of private renter households in housing stress, Australia

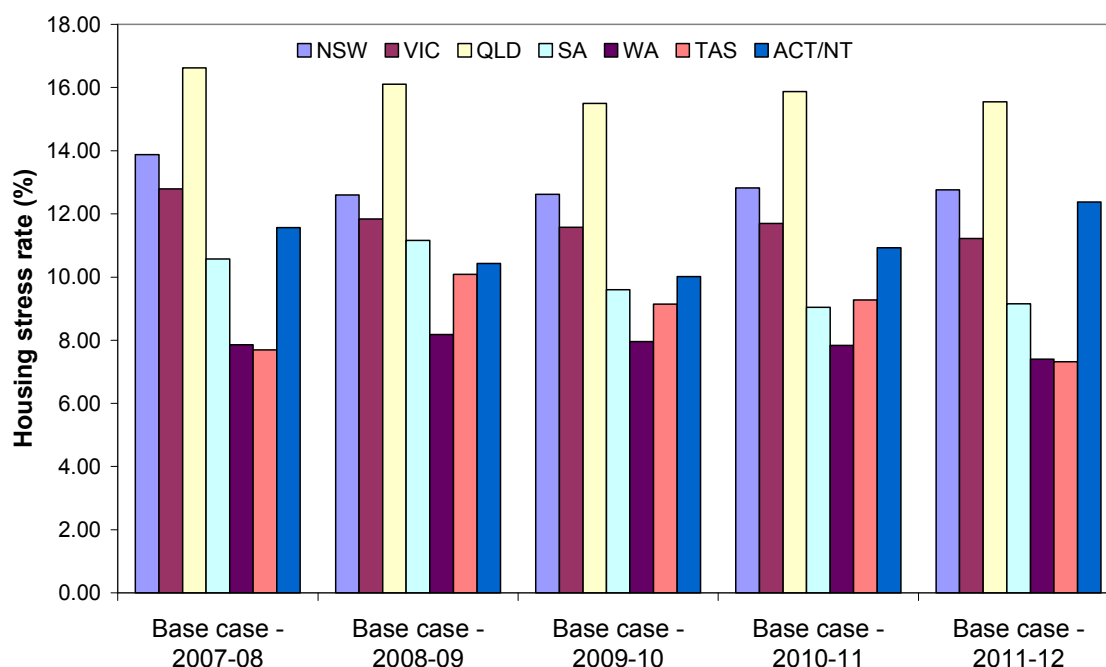


4.2 Comparison by state and territory

The picture of housing stress differs across between the states and territories. For almost all the years and scenarios, Queensland has the highest rate of households living in housing stress among all states and territories at a given increase in rents. Generally Western Australia, and for most years and scenarios, Tasmania, have the lowest housing stress rates. New South Wales and Victoria are similar, behind Queensland, and South Australia is further behind New South Wales and Victoria. The Australian Capital Territory and Northern Territory, as a combined group, stand in the middle of the ranking. Chart 4 shows the relative position of each state and

territory regarding the housing stress rates for the base case in all the years under study.

Chart 4: Private renter housing stress rate, State and territory



As the largest state, NSW has the greatest number of households in housing stress, in spite of Queensland having the highest rates. The share of housing stress households from this state accounts for around a third of total housing stress households within entire Australia for all the scenarios and years in the study. From the base case of just over 104,000 in 2007, the number of private renter households in housing stress in New South Wales increases to 185,000 when the rent increases by 10 per cent in 2012. Followed New South Wales are Queensland, with around nearly 29 per cent, and Victoria, with around 20 per cent of total Australian housing stress households. This is despite the fact that Queensland is the third highest population after New South Wales and Victoria. In absolute number, Queensland is projected to have 154,000 private renter households in housing stress by 2012 under the worst case scenario where rent increases by 10 per cent. Table 1 reports the number of households in housing stress for all scenarios for the 2007-08 financial years for Australia and by state and territory.

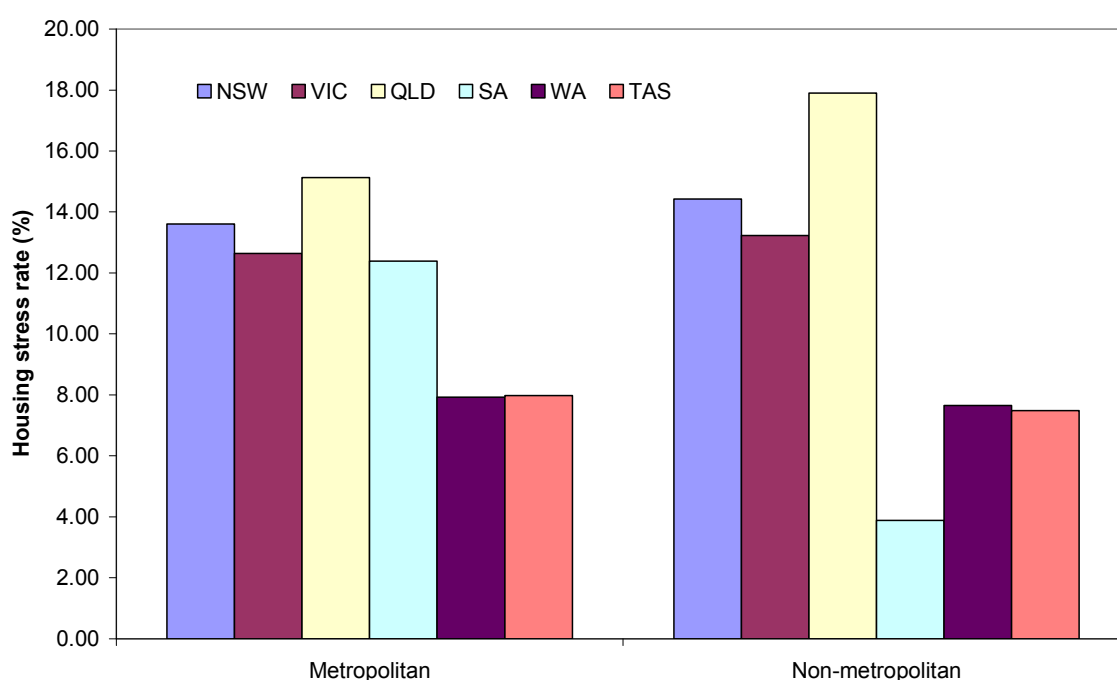
Table 1: Number of households in housing stress, 2007-08

	NSW	VIC	QLD	SA	WA	TAS	ACT/NT	AUST.
Base case	104,379	61,431	85,021	15,485	16,904	3,289	6,175	292,682
Scenario 1 (2%)	107,619	66,982	87,821	16,013	17,730	3,611	6,298	306,075
Scenario 2 (4%)	110,245	69,513	90,410	18,412	18,908	3,620	6,393	317,499
Scenario 3 (6%)	115,275	72,200	92,808	19,627	19,267	3,620	6,563	329,359
Scenario 4 (8%)	118,980	75,567	95,475	19,627	20,848	3,846	6,668	341,011
Scenario 5 (10%)	123,093	78,936	98,838	21,164	21,484	3,878	6,668	354,061

4.3 Comparison of metropolitan and non-metropolitan areas

When the metropolitan areas states are compared, Brisbane has the highest housing stress rate for most of the scenarios, followed by Melbourne, Sydney and Adelaide. Perth has the lowest housing stress rates for almost all the scenarios and years. Within the non-metropolitan areas, the above trend is repeated. Queensland again has the highest rate of housing stress, followed by New South Wales and Victoria. South Australia, for several scenarios and several years, has the lowest rate. Chart 5 shows the difference in the housing stress rate within the metropolitan and non-metropolitan areas between the states for the base case of the 2007-08 financial year.⁵

**Chart 5: Housing stress rate for metropolitan and non-metropolitan areas
base case, 2007-08**



Overall, housing stress rates are generally slightly higher in the non-metropolitan areas than in the metropolitan areas. In the 2007-08 financial year, the housing stress rate for non-metropolitan areas of Australia is estimated to be around 14.33 per cent while that rate for the metropolitan areas is 12.78 per cent for the base case. This trend generally holds at the state and territory level, with a few exceptions. As shown in Chart 5, the rate for non-metropolitan areas is clearly higher in Queensland, New South Wales and Victoria, while in Western Australia and Tasmania the trend is not as pronounced. In South Australia the trend is reversed, with households more likely to experience housing stress in metropolitan than non-metropolitan areas. In spite of this overall higher rate of housing stress, however, the non-metropolitan areas of Australia share a much smaller number of housing stress households than the metropolitan areas. For the case in Chart 5, the number of housing stress households

⁵ As Australian Capital Territory and Northern Territory is classified in a separate category in the ABS survey, the housing stress rate for these territories is not reported here.

for metropolitan areas is estimated to be nearly 177,000 while that number for the non-metropolitan areas is only around 110,000.

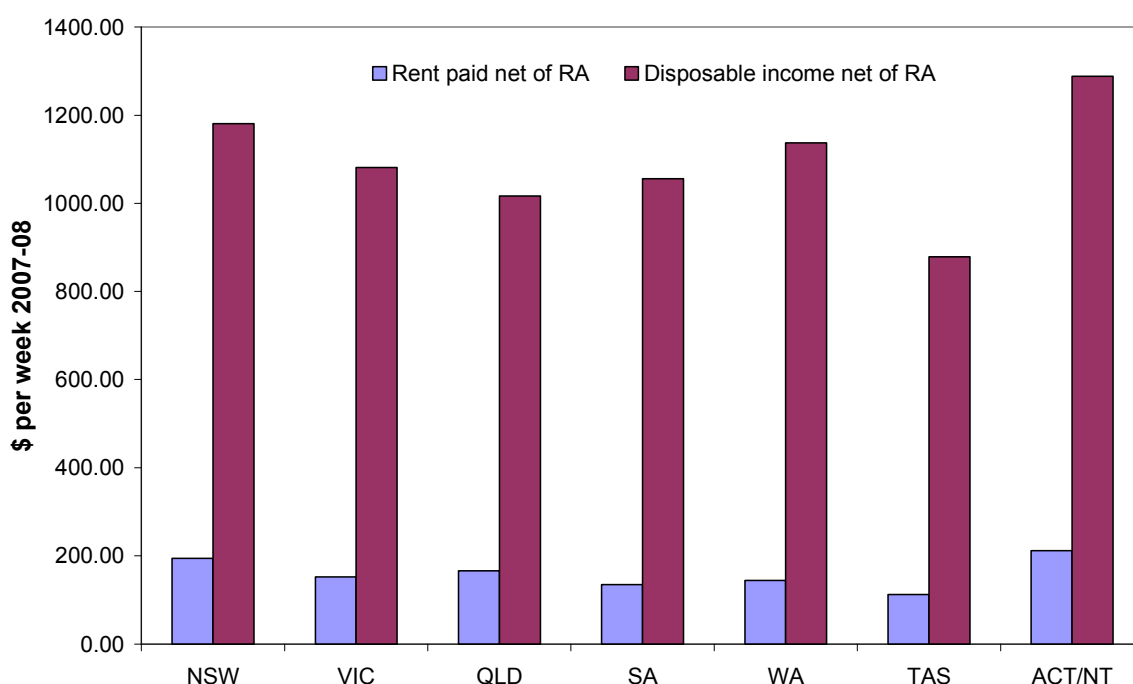
Due to their special characteristics of size and population, Australian Capital Territory and the Northern Territory are classified as one separate category. For most scenarios and most years, the rates of housing stress of these two special territories are low-to-middle ranking. Their overall rate is also moderately lower than the national average for most scenarios and years.

5. Factors influencing regional variations in housing stress

The difference in housing stress rates between different locations in Australia can be attributed to the differences in disposable income and rent levels between these locations. As shown in Chart 6, the average disposable income, net of rent assistance, is highest in Australian Capital Territory and Northern Territory, followed by Western Australia, Victoria and New South Wales. Tasmania, Queensland and South Australia rank lowest. In addition, the average rent, net of rent assistance, that the households have to pay is also significantly different between these states/territories. As shown in the same Chart, Australian Capital Territory and Northern Territory, New South Wales and Victoria have highest average rents. Renter households in Tasmania, South Australia and Western Australia pay much less. The variation in disposable income and rents across the states led to the significant difference in the housing stress rates across these locations.⁶

⁶ As the disposable income and rent amount are calculated as an average for the whole state/territory, the ranking of these two variables may not be the same as the ranking of the housing stress between different states/territory.

Chart 6: Average household rent and disposable income



6. Conclusion

The simulation results for the six scenarios of rent increases show that growth in private rents will lead to considerable increases in housing stress in Australia. A base rate of housing stress of just over 13 per cent in 2007-08 would increase to nearly 25 per cent in 2011-12, or from over 292,000 to nearly 566,000 households, if rents increase by 10 per cent per annum.

At a sub-national level, the rates vary significantly between states and territories, and between metropolitan and non-metropolitan areas. Queensland has the highest rate of housing stress for almost all the years and scenarios in the study period. This is true for the whole of Queensland, Brisbane and areas outside Brisbane. New South Wales and Victoria have the next highest housing stress rates. Western Australia and, for most scenarios, South Australia and Tasmania have the lowest housing stress rates across all years. In addition, the housing stress rates are slightly greater in the non-metropolitan areas as compared to the metropolitan areas. As a separate group, the rates of housing stress for the Australian Capital Territory and Northern Territory are in the low-to-middle range for most scenarios and most years. The significant difference in disposable incomes and rent between different states and territories explains the difference in the housing stress rates between these locations.

Given the direct impact of an increase in rent on the rate as well as number of private renters in housing stress, and the recent upward trend in rent in Australia, it is fair to say that housing stress and housing affordability in general will remain a major problem in Australia for several decades to come. In that context, by quantifying the extent of the impact of an increase in rent on the housing stress situation, this study further reinforces conclusions of previous studies on the housing affordability problem about the need for a broader, nationally driven and well-coordinated

approach to tackle both the drivers and the consequences of a long-term decline in housing affordability (Yates et al 2007). While acknowledging the importance of several broad policy strategies at both micro and macro levels (Yates et al 2007), the findings from this study further emphasise the importance of maintaining a low and stable interest rates regime via fiscal and monetary policies, and the need to consider establishing some regulations on the level of rent. The study also calls for suitable policies at the state and local level to address the difference in housing stress rates between different parts of Australia.

Appendix 1

STINMOD was first developed in 1994 and has been continuously updated by the National Centre for Social and Economic Modeling (NATSEM). STINMOD is a leading microsimulation model internationally and has been extensively used by several Commonwealth Departments, research institutions as well as social organisations and individual researchers. The model is used to calculate the simulated impact of major Australian federal government cash transfers, income tax and the Medicare levy. It can provide the aggregate fiscal impact of a change in tax and/or transfer policy on revenue or government expenditure. STINMOD can also provide the distributional impacts of policy change at the household level, for groups of people and individuals, either at the national or state level.

STINMOD is written in the SAS language and works by applying the current and future settings of tax and transfer system (program modules), which has been translated into computer codes using SAS language, to a sampled population (basefile), which is constructed to be a representation of the Australian population at a given point in time. The rates and payments settings of the tax and transfer system (parameters) are used to determine and calculate different tax and income variables for each of the individuals in the sampled population.

Due to the changes in tax and social security policy, as well the changes in demographic and economic indicators every year, STINMOD needs to be updated regularly. During the updating process, major changes in tax/transfer policies since the previous release of STINMOD are incorporated into the program modules. The parameters are also updated with the latest information on the payment rates, which are released quarterly by various Commonwealth Departments. For the future years, the parameters are indexed according to the current indexation rules, which are based on the CPI or Average Weekly Earnings (AWE) of corresponding years. The specific values for CPI and AWE of a particular future year are, in turn, projected based on the forecast CPI and AWE, which are given in the May Budget of the updating year.

The basefiles are updated with the latest Surveys of Income and Housing Costs released by ABS. These surveys are normally released a few years after data is collected and therefore have to be further manipulated to represent the demographic and economic setting of the current updating year and of the future years. First, the existing weights, which are attached to each observation in the surveys and represent the number of similar Australian families at the time of the survey, have to be recalculated. To do so, various sets of demographic and administrative benchmarks are calculated for the current year and each of the future years. Demographic benchmarks include the total Australian population and its decomposition by variables such as sex, age, state, family type for each of the years. These figures are generally taken from the ABS publications, both actual for the current year and projected for future years. The administrative benchmarks are the actual and projected numbers of the recipients of various welfare payments for each of the years. These actual and projected benchmarks are published by relevant federal departments. These sets of benchmarks are then incorporated into a very complicated reweighting process to

produce a new weight for each observation in the survey for each of the years. The new weights will reflect the new demographic setting for different year in the future. In the second step, all existing income and other monetary variables in the surveys are inflated (uprated) to reflect the upward trends over time in the CPI and AWE. Several uprating factors are calculated using CPI, AWE and other variables from various publications by ABS and other institutions. While the future values for some variables are available, these for other variables have to be projected using a number of methods. These uprating factors are further classified by state/territories and some uprating factors for income variables are also classified by income quintiles, type of income or type of employment.

Once the weights are recalculated, and income and other monetary variables are uprated for each of the years, they are attached to the original surveys to create the basefiles for the current year and each of the future years. These basefiles are now statistically represent the demographic and economic characteristics for these years, as the demographic and economic trends, both actual and projected, have been incorporated into relevant variables in these basefiles. Any research findings based on these basefiles can therefore be concluded to be statistically reliable.

Once basefiles are finalised, various tax/transfer/income variables of each member of the household can be calculated. Starting with the private income of an individual, which includes income from wages and salary, business and investment, the model applies the tax and social security settings of the relevant year, as chosen by the user, and using the tax and transfer payment parameters of that year to calculate various tax/transfer/income variables for that individual in reference to his/her personal circumstance. These tax/transfer/income variables of the household are then aggregated from each individual within the household. Additional tax/transfer/income variables can then be calculated using these individual or household level variables, as seen in the example of calculation of “housing stress” in the main paper.

Reference

Australian Bureau of Statistics (ABS) 2007, *Cat 6416.0 - CPI: Groups, Sub-groups and Expenditure Class, Index Numbers by Capital City*, ABS online publication.

Australian Bureau of Statistics (ABS) 2006, *Cat 2068.0 - Tenure Type and Landlord Type by Dwelling Structure by Indigenous Status of Household - Australia*, ABS online publication.

Australian Bureau of Statistics (ABS) 2001, *Cat 2068.0 - Tenure Type and Landlord Type by Dwellings and Persons - Time Series Statistics (1991, 1996, 2001 Census Years) - Australia*, ABS online publication.

Bremner, K, Beer, G, Lloyd, R, and Lambert, S 2002, *Creating a basefile for STINMOD*, Technical paper number 27, NATSEM.

Housing Industry Association (HIA) 2007, *Half a Million Australian Households in Housing Stress*, HIA Pres Release, February.

Mikesell, J 2004, *One in Four Nonmetro Households are Housing Stressed*, Economic Research Service, United States Department of Agriculture.

Randolph, B, and Holloway, D 2007, *Where do Low-income Private Renters Live?*, AHURI Research and Policy Bulletin, issue 88, July 2007.

Randolph, B, and Holloway, D 2005, *Social Disadvantage, Tenure and Location: An Analysis of Sydney and Melbourne*, Urban Policy and Research, 23, 2, 173-202.

Vu, Q 2007, *Current housing stress situation in Australia*, a consultancy report for the St. Vincent De Paul society, NATSEM.

Yates, J, Milligan, V, Berry, M, Burke, T, Gabriel, M, Phibbs, P, Pinnegar, S, and Randolph, B 2007, *Housing Affordability: A 21st Century Problem*, AHURI Final Report No. 105, September 2007.

Yates, J, and Gabriel, M 2006, *Housing Affordability in Australia*. AHURI Research Paper 3, February 2006.

Yates, J, Randolph, B, and Holloway, D 2006, *Housing Affordability, Occupation and Location in Australian Cities and Regions*, AHURI Final Report No. 91, March 2006.